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## MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/02 00:07

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Hi all - I love my MD SPS-1 to bits - no question - so this is in no way a rant/slag off of the MD or Elektron who I have a great respect for on all counts - I've done some fairly detailed testing and found the step/tempo clock jitter on my MD/SPS-1 is not that crash hot. I wondering if anyone else might verify this by doing a few test just in case it's my machine that has the issue? The numbers and testing details/instructions are on this page of my site:

<http://www.innerclocksystems.com/index.asp?action=page&name=34>

I'd love to know if any SPS-1 owners out there get similar results. All the very best - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by nkirchner - 2007/04/02 00:20

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The testing method if flawed. You cannot use you DAW software as a reference as (ALL) computer's timing is absolutely pathetic.

There is also error introduced as the graphical wave form drawn by your DAW will be an average of sample at every plot point. And another error for the markers position. Although the computer timing error will be by far the largest.

So, I advice you buy a 100MHz+ DSO (Digital Oscilloscope) and repeat your tests.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/02 00:30

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I disagree totally. Even if the errors are out by even a few samples the DAW/Windows/SoundForge Method is more than accurate enough to show timing deviations and drift over relatively long periods (as in tempo testing) - You don't need a CRO to show timing flaws that you can hear. If Sound Forge was that inaccurate as a sample editor to begin with - no one would use it. Any many professionals do. Regards - David

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/02 00:35

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Also - yes - computer midi I/O timing is flawed and pathetic - I agree but that is not being used here for these test. This is 100% audio from MD outputs to Firewire Soundcard direct into Soundforge. If Digital Audio was that poor as to misrepresent such corse variations in signal it would be unusable to record music in the first place - which we all do and have done for quite some time. Regards again - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/02 00:39

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And - Elektron have looked at these numbers and acknowledged the data and made no comment as to the nature of my test methods either - regards again David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/02 01:57

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Sorry to go on about this but it is worth clarifying that these results are indeed valid considering Jedi's quick dismissal of my initial post. Take a close look at the SPS-1 test numbers: you will see that the different period jitter/offsets between steps is far too regular for a flawed analysis method.

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Similarly all the other devices I have looked at so far. Sound Forge accurately represents the timing characteristics - certainly well enough to show tempo timing stability over a given period.

To prove this even further - I use the same method to test Sync between two machines. If I lock two machines via Midi Clock and pan one machine hard left and the other hard right to a Stereo recording in Sound Forge and record a few bars I can zoom in and see the sample offset between them.

If I use the Sync Shift or use another method of sync/offset so I can delay the FSK using a standard DDL (Digital Delay Line) with enough precision (say a TC-1280) - I can adjust the slave device start time to compensate for the initial sync lag reported in Sound Forge by setting the delay time to the exact number of samples the two devices are out by.

If I then record the two machines again into Sound Forge and zoom in on the waveforms I see an almost perfect waveform alignment - give or take a few samples error possible introduced by Markers/DAW or Windows.

And more importantly than the numbers themselves - it sounds better when the numbers are spot on.

Hope that clears things up.

Regards David.  
www.innerclocksystems.com

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## Re: MD SPS-1 Timing Performance Issues

Posted by nkirchner - 2007/04/02 02:03

Maybe they had nothing nice to say about your method of "testing" so they chose to say nothing?

"If Digital Audio was that poor as to misrepresent such coarse variations in signal it would be unusable to record music in the first place"

People recorded on tape for years... Tape was/is so famous for its speed up/down during record and playback that people have gone to great lengths to create plug-ins simulating it.

Based on my professional experience it is my opinion that whilst the machines in question quite possibly have timing issues the method outlined to quantify these timing issues is flawed.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/02 02:36

Again - I don't want to start a nasty dispute here but in this case you are incorrect in your assumption. Elektron has indeed acknowledged the numbers in question - and to quote 'David - that was thorough testing!' in my last reply from Elektron Support.

I'm not sure what recording to tape or plug in simulation of Tape Wow/Flutter has to do with this thread....?

The best analogy I have for these tests is like a Dyno for car engine performance/power output. The Dyno will not provide accurate kilowatt/Horse Power engine output but it will show if an engine is providing more or less power output after modification and this is still a valid test.

Again - have a look at the numbers - they are too accurate and reliable/repeatable to be ignored.

And again - even if they are out by the odd sample given Windows/DAW/Graphic errors - they still show reliable deviation that is worth taking into consideration.

I'm not sure why you seem determined to negate my finding so strongly. I have spent a long time discussing timing issues in sequencers with many individuals with far more scientific background than my own and all feel these results are indeed valid along with the method of testing to achieve them.

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In the end, as I said on my test page - I am only interested in getting timing better across the board for all users concerned and this can only be a good thing can't it?

Again - I love Elektron and my SPS-1 without question.

If you have a Dual Trace Storage CRO - I'd love if you could verify/improve on my test results?

Regards David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/02 04:31

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Hey David,  
thanks for testing/posting  
great idea for a website, I'll have to give it a good read later.

do you know if there's a quality stand-alone midi clock out there ? if I slaved all my 'grooveboxes' to a single clock (using a splitter on the midi/in for each unit-- one cable from the clock, the other cable from a sequencer) , in conjunction perhaps with some kind of midi-delay for the clock signal where necessary, is this the way towards synchronisation utopia ?

OR....is it just a handful of classic drum machines, basically the mpc60/mpc3000 , that spit real tight midi clock ? I'm hoping my googling skills are terrible and quality stand-alone midi clock (with multiple outs maybe) exists...

also, do you think its fair to assume the ASQ10 (just the midi sequencer part of the mpc60) would have as tight timing as the mpc 60 ? I assume the mpc60 is tight as hell going by anecdotal evidence I've seen on the interweb.

any info/links/ideas are most appreciated

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## Re: MD SPS-1 Timing Performance Issues

Posted by rgmccaig - 2007/04/02 05:42

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Hi David,

the method sounds fine to me as long as the jitter of the sound card's a/d process is much less then the jitter you are measuring. given the short length of a single sampling period (1 second / 44100) that does seem likely, doesn't it.

so, you have found that the max deviation between quarter notes is ~2ms... am i correct in thinking that implies that the max deviation of a given quarter note from the 'perfect' time is smaller than that? i seem to remember elektron giving a figure for the latter that was around 1ms. and i remember thinking 'that's good enough for me, and better than most'. would you agree? of course, it would be great if the mpc3000 set a new benchmark that would be followed by all modern machines :)

also, do the errors accumulate in such a way to cause a variable drift over longer periods... or do the errors 'self adjust' over the course of each couple of bars keeping the total drift smaller?

on your site you talk about inter-ear timing; i believe that is computed in the brain by a different mechanism from what we call 'rhythm'... I have seen claims from psychoacoustic testing that highly skilled musicians typically can't distinguish timing errors of less than 4ms or so. (Of course, smaller jitters still do matter, because relative changes between different voices will cause different phasing etc, similar to the inter-aural phenomena. i suppose that's what you were thinking.)

pls correct me if im misinterpreting any of your findings; its interesting stuff.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/02 07:14

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nkirchner wrote:

Maybe they had nothing nice to say about your method of "testing" so they chose to say nothing?

This is the standard method for testing MIDI timing. Elektron themselves have said as much, but it's also supported by Colin from Sequentix, Graham Hinton and others.

Rereading your findings, I should amend the above. Why don't you tap the MIDI output to a 1/4" cable and record the clock signal, in your DAW, which is how MIDI clock accuracy is typically measured?

Innerclock, there are other threads about this subject, and Daniel Elektron posted in one of them that, if you found evidence of clock jitter with the MD as master, they'd be very interested to hear it - posting a link to this thread in it may be a useful way to link the two discussions.

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## Re: MD SPS-1 Timing Performance Issues

Posted by Toni - 2007/04/02 09:15

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I looked the data and it seems to be pretty much what I've experienced also. I would say that the data is right, no reason to defend any particular machine here. But I think your interpretation is way of the charts. Let's see:

2.18 ms of fluctuation (what you call jitter)

sound travels 344 m/sec

So 2.18 ms translates to 75 centimeters in 2.18ms

So, it means that the fluctuation corresponds the same situation as when you move your head or move around while listening the rhythm; god it fluctuates all the time! Hearing this kind of fluctuation must be curse for people how can here it (read: sarcasm).

Ok, there is some fluctuation (it's really no news). But you have interpreted this in wrong way. 3.5 points means something between "Ok to walk but too drunk to drive" and "Sharp enough to cut it". The truth is that it's totally safe and there is no such "timing performance issues" as you call it. Also calling this "jitter" connotates in a very negative ways, linking it to jitter conversation with the soundcards. Yes, in a way it's jitter, but from it's nature it's different jitter and should be expressed more clearly.

I would correct the scale on your website. Your study is correct (I believe), but your interpretation is biased by the thing that you sell devices that exist on the same area of timing. Get your interpretation unbiased and it shows out more positive message.

Aside from harsh words, I have to say that the Sync-Shift Mark II looks absolutely fabulous. The faceplate is so cool, it makes me want to have one (even though I have no use of it).

I also find interesting to read about differencies in timing. The MPC seems pretty solid machine. Still it should be stated that every machine on that page is absolutely sharp enough. When these numbers are taken into computer environment, they seem to somehow grow much bigger. Maybe because we can measure it so accurately that it's beyond every-day experience; we start thinking through numbers and not the actual thing. While numbers are correct, they make us the control-freaks. The computer can do sample accurate rendering, which seems to be very important issue for people. However sample-accuracy is well beyond our capabilities and some of it is just a way of having a safe world around you. We need to re-evaluate this thing.

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## Re: MD SPS-1 Timing Performance Issues

Posted by rgmccaig - 2007/04/02 11:10

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another thought the issue brings to mind, is that the 808 sure seems to crank out some funky drums, and it has a certain amount of jitter... frankly im glad it wasnt designed any tighter, every time i hear 808 the timing sounds just great.

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## Re: MD SPS-1 Timing Performance Issues

Posted by nkirchner - 2007/04/02 12:12

First image --> This image shows the lag time between the Midi clock (blue) and the when the GND - IM audio came out the MD's output (Red). The IM was placed on the 16th, the MD at 120bpm. I ran this test several times.

The midi clock was ROCK solid at 48Hz (24ppq at 120bpm with a /4 in the MidiCLK - Pulse converter). However, it was interesting to note that it was almost as if the clock had 'swing' on every second pulse. With the spacing between adjacent clocks varying by 1ms. This is difficult to see in the image so you will have to take my word for it.

The IM was either approximately 3.5ms after the triggering midi clock pulse or 4.5ms after the clock. The IM was rock solid at 32Hz (which is correct for 16th notes at 120bpm)

[http://farm1.static.flickr.com/186/443376561\\_5e2edc23e8.jpg](http://farm1.static.flickr.com/186/443376561_5e2edc23e8.jpg)

Second Image --> This image shows the spacing between the IM pulses placed on 16th notes (Red) with the MD running at 120bpm. I took several readings of the time difference between to adjacent pulses on the output with the result always being 125ms. Unfortunately so that the picture was clearer I had to zoom out and the measurement shown on the picture is not exactly 125ms. This is due to the resolution of the DSO's PC software. Whilst zoomed in the IM where always spaced by a constant 125ms.

[http://farm1.static.flickr.com/173/443376563\\_faa5cdd026.jpg](http://farm1.static.flickr.com/173/443376563_faa5cdd026.jpg)

Although there is an interesting effect on the Midi clock that resembles a 1ms swing in adjacent clock pulses the Midi clock is running at 24 clocks per quarter note and as this is 'swing' is a constant effect the net timing effect on 16th, or 32th or 64th (or any multiple of 2) notes is zero.

The MD timing is ROCK solid, if you are hearing a timing issue it is something else!

So, as I mentioned before and as these results show using a PC and DAW software will not provide accurate results for this kind of test even though the results may be repeatable.

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## Re: MD SPS-1 Timing Performance Issues

Posted by hageir - 2007/04/02 13:06

@original poster

can you upload the original sound recording of the rim shot? (for the md?)  
I'd like to listen to the sound file and see if I can even hear the jitter...

and also, if you're gonna test the midi timing of the md, can you test it with and without the TM-1 TurboMidi?

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/02 14:32

Thanks Niall - I trust Graham Hinton on anything as far as timing measurements are concerned. As far as testing the Midi Clock output directly - I'm yet to go that far. I was more interested initially in testing the Voice/Step audio timing stability of devices first just to see how different boxes behaved. Apart from my obvious interest in timing what got me started on the comparisons was when I began using the MD/SPS-1 running in Sync with my MPC-3000. I would get a tight groove working on the 3K and then switch on the SPS-1 slaved to the 3K clock output. No matter what I programmed in the

SPS-1 - I found my self constantly muting the outputs and listening to the 3K in solo and liking what I heard 'better' than when both were in the mix together. This was frustrating as I really wanted the SPS-1 sounds in the mix. Hence the testing. I sampled the SPS-1 GND/IM 'click' into the 3K and top and tailed it properly. I programmed in a quarter note, hard-quantised 2 bar pattern and panned the 3K output hard left on my desk. Next I wrote quarter note steps on a 2 bar pattern in the SPS-1 and panned its output hard right, set it to external Sync and pressed play on the 3K. I then recorded 10 or so bars of both into a stereo file on Sound Forge 8 at 44.1 kHz. Two things came to light - the SPS-1 was consistently around 3.5 ms behind the 3K give or take a few samples here and there. Now that on its own is dealable with - if the lag/start offset is fixed you can compensate for it a number of ways of course. What was surprising in the measurements (and I tried this many times with the same results overall) was that the 3K remained very stable between quarter note intervals across the whole length of the recording but the SPS-1 'pushed and pulled' the whole way through - up to nearly 3ms at it's worst. What was most interesting was just how precise the SPS-1 is in its 'push-pull' deviation. Most boxes with bad clock performance just slop around all over the place. The SPS-1 repeats the same duration/step errors with a high degree of regularity. This leads me to think it is an OS/Code Interrupt routine somewhere in the SPS-1 that compromises its clock/step/event generation. This means it plays 'Drag' and 'Catch Up' all the time. I've let Elekton know about it and they have said they will look into it.

All the best - and thanks for the positive vibes regarding this thread. I'm not trying to bag Elekton or anyone else for that matter - I'm not even trying to sell more of my own Sync Shifts with this either - in absolute honesty - I really just would love to lock up two great sequencers and have them play in time the way I know they could/should do without having to mess with offsets in the first place. If anyone can do it - Elekton can! Best regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/02 15:31

Hi Toni - thanks for the reply - in your post you state:

2.18 ms of fluctuation (what you call jitter)  
sound travels 344 m/sec  
So 2.18 ms translates to 75 centimeters in 2.18ms

So, it means that the fluctuation corresponds the same situation as when you move your head or move around while listening the rhythm; god it fluctuates all the time! Hearing this kind of fluctuation must be curse for people how can here it (read: sarcasm).

I think timing is a very personal thing - I've been working in studios and with sequencers and electronics for nearly 20 years and I've had the good fortune to use a lot of good (and bad) equipment over this time.

A short story if I may - many years ago I borrowed a TR-808 off a friend. I loved it but eventually he wanted it back of course. In my innocence I hatched a plan. I had an Apple Performer 580 running Logic with an Opcode interface and an Akai S-3200XL sampler. I spent a whole weekend sampling the TR-808 to perfection and happily returned the TR-808 to its owner. The next weekend I started writing TR-808 patterns into Logic. I was stunned and surprised to find none of my patterns gave me the same 'rush' as I had felt playing the TR-808 itself. I spent hours checking quantising, polyphony, sample start times - you name it. It did my head in.

I borrowed the TR-808 again thinking it was just my ears playing tricks - sure enough - soon as I hit play on the TR-808 - it blew me away with how straight up funky and engaging it sounded - it made me want to stay up all night and play which is the object after all!

So - I devised a crude but effective test - my partner at the time was a dancer - great feel and incredible body/rhythmic timing but she knew nothing about technology or making music. I recorded 10 or so patterns out of the TR-808 to DAT. Next I programmed identical patterns in Logic firing the S-3200XL samples via the Opcode Midi Interface and then recorded these to DAT also - same levels, same balance. Next I stuck 60 seconds of each on a CD, in pairs (the same pattern but by each method of sequencing) but mixed up which came first or second over the whole 10 pairs. - I wrote down which was which and stuck the paper in my pocket.

I gave the CD to my girlfriend and told her to play it as many times as she wanted and told her to write down which of each pair she was drawn to the most just on the basis of how it 'felt'.

Out of all 10 pairs she chose every single one made using the TR-808. This blew me away as you can imagine.

The purpose of this story in response to your post (and sarcasm! of course) was that the following weekend I made some audio file measurements and even though the TR-808 was not razor precise by any means - the

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Mac/Logic/Opcode/S3200XL slopped around more particularly where say a Kick/Hat and Clap were on the same step but more importantly the average extra slop between intervals on the sampled grooves and the original TR-808 recordings was no more than 4ms!

Which ever way you look at it - with no technical or musical theory knowledge at all - a human being was naturally drawn to music and rhythm with a 4ms tighter groove.

We don't have to understand it - but we can all feel it and that is the purpose of my thread here.

Thanks for the positive words about my little box too - I made the Sync-Shift not to make money though - I built it to make my first 808 sync properly with my Atari/Notator. A few people wanted one and so I made a few. Then I added Midi. The purpose of this thread is purely personal not financial. I want my SPS-1 investment to run tighter than it does because against my other equipment - I can hear it. And I want it to be better than that. It should be for what it cost me.

I also disagree with you on the fact that you feel all boxes on my testing page are sharp enough. They are not. The MD could be better and might be if Elektron look at it which I am sure they will. The TR-808 is average - what saves it is that it has no polyphony/midi/step issues - you can layer a Kick/Snare/Hat/Tom/RS and Clap all on step 1 of a pattern and they will all fire bang on top of each other. Try that in a Korg Triton - you get a nice arpeggio not a tight 'crack'.

And it's not anything about control or even about measuring - it all about feel and the more you get that feel is about subtle degrees of timing then you start craving machines that give you that response. Then, when you get used to working and hearing those fine shades of push and pull - it stand out like a sore thumb when a box or software program just isn't up to the task.

Sorry for going on a bit - you made some interesting points that I felt needed a response.

All the best - David.  
[www.innerclocksystems.com](http://www.innerclocksystems.com)

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/02 15:49

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Hi - nkirchner (not sure of your first name so forgive me) - thanks for the detailed testing response. I don't have that software Application but I will investigate it in more detail for certain and try it at my side as well.

One question that I do have - the Storage Scope you use is obviously software - wouldn't this still be at the same mercy of Graphical/Audio/Serial/Windows errors as a professional two track audio recording application sampling streaming audio at 44.1 KHz like Sound Forge 8?

Does it report in samples rather than (ms) - I would be more interested in seeing the period tempo deviation between 16ths/120 BPM in samples rather than (ms) which I feel is too wide a test window.

Again - all I can say is that I have run my testing methods and figures by many well experienced individuals today and they all agree that despite taking into account any Graphical/Sound Card/Windows/Marker/Crossing Point minor errors - the audio input test captured at 44.1 kHz with even a half-decent Firewire or USB audio capture card into a program like Sound Forge will provide a very close analysis of tempo stability of the device being tested.

Regards again - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/02 16:13

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Hi Bounce,

Thanks for the good vibes!

Not many super tight Midi Clock generators out there - I'm yet to physically test the 'Clock' outs of boxes - need a good scope - not yet but soon hopefully. What gets tricky is that each box or software sequencer has what I loosely call the

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External Sync Timing Event Horizon! Take the MD SPS-1 - in my tests so far under its own steam it has a degree of Step/Tempo drift - this is its best timing performance. If I drive it with a Midi Clock with worse slop than its own internal best then I increase the overall slop - you get a cumulative tempo/step drift that is its own plus the added incoming sloppy Sync pulses. Contrary to popular thought - providing a super tight external tempo clock does not automatically fix or rectify a device's own timing problems unlike say word-clock generators which improve digital audio sample jitter. What happens in most cases is the timing performance of the slave device or software gets no better than its own 'best' timing performance. So - in a nutshell - yes get a great master Midi Clock source absolutely - but remember that not all your slaves are going to be able to keep up. Love them for what they are!

ASQ-10 - interesting - yes it's the MPC-60 sequencing engine and yes it generates great clock and the sequencing is superb but it's not as tight as a 60 or a 3K. Why - Midi mostly. What makes the 60/3K extra sharp is how the internal hardware and software work together to fire the internal samples. Even the 3K driving external Midi Notes (although it's better than any software you can buy to this day) is still not as slick as when it's generating its own samples internally.

All the best - David

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/02 16:42

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Hi rgmccaig - thanks for the post - your understanding of the testing method is what every professional I have spoken to agrees with - 44.1 kHz for measuring tempo event variation is more than accurate enough to give reliable readings.

2.18ms max between any consecutive quarter note steps - some are less but that is the worst at least in my tests. Strange thing about the SPS-1 is how accurately it 'push-pulls' between steps - have a close look at the numbers.....

Not cumulative - if it was it would only stay in external sync for a few bars at best. In basic terms it seems the SPS-1 tempo-drags when the OS is busy doing something else and then plays catch up to compensate over the course of a whole pattern.

The Inter-Aural reference is there just to show how much we all rely on timing subtleties every waking moment.

I agree 'rhythm' is felt or perceived by another (possibly related) part of our brain - the 4ms boundary is an interesting concept indeed. I work regularly with electronic musicians who have good ears for rhythmic timing. One in particular made me go out and purchase a delay line with better resolution than 1ms because he needed to delay a 16th Hi Hat pattern in a track and 350ms made it sound pushed and 351ms made it sound dragged and the rest of his programming was so damn tight - you could hear it without question.

An added bonus to the delay purchase that also relates to fine degrees of rhythmic time - feedback and regen. We were working a track with some nice triplet/dub style repeats over the snare. With the previous 1ms resolution delay line - the most sustained feedback/regen we could get and still stay in rhythmic time with the track was about 10 seconds. Bumping the delay time up by 1ms and the repeats dragged almost straight away. Dropping it down by 1ms and the repeats were rushed by the end of the same bar.

With the TC-1280 (5 microsecond resolution!) we were able to find a precise delay time that at the track's tempo we could leave feedback/regen on for over 2 minutes and the repeats were still in rock solid rhythmic time with the groove. Unbelievable!

All good stuff.

All the very best - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by nkirchner - 2007/04/02 16:52

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innerclock wrote:

Hi - nkirchner (not sure of your first name so forgive me)



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Nathan

innerclock wrote:

One question that I do have - the Storage Scope you use is obviously software

It's a independent hardware DSO. It has a USB port so dump data from the DSO to a PC.

innerclock wrote:

Again - all I can say is that I have run my testing methods and figures by many well experienced individuals today and they all agree that despite taking into account any Graphical/Sound Card/Windows/Marker/Crossing Point minor errors - the audio input test captured at 44.1 kHz with even a half-decent Firewire or USB audio capture card into a program like Sound Forge will provide a very close analysis of tempo stability of the device being tested.

I guess its going to be one of those agrees to disagree situations.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/02 17:27

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Hi again nkirchner - just had a closer look at your Scope screens - in particular - the second one showing 16th division duration: You mention that in your measurements all divisions were exactly 125ms which is indeed perfect at 120BPM and the basis for your statement that the SPS-1 is ROCK solid and the problems must be elsewhere. However - unless I am reading the Scope screen incorrectly - the reported duration between the two MD Impulse samples on the screen you posted earlier is actually 126.2ms (1.2ms or 52.9 samples out from ideal at 44.1 kHz). I've posted a zoomed screen shot along with my post. Could you please verify I am reading the Scope Screen correctly? If this is the case - would you mind checking 16 intervals if you have time and posting your new findings? If the 1.2 ms is indeed the deviation for 16ths at 120BPM based on the Scope then it follows that my findings of 2.18ms for quarter notes might not be that far off the mark after all. Regards as always - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/02 17:35

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Toni,

Elektron have been vocal about the tightness of their timing {I, for one, agree with them}, so it's not out of line to verify and even challenge their claims. It's not like anyone's being insulted here, and no one's feelings will be hurt.

Nathan, very cool program, thanks. Is it this? [http://www.parallax.com/detail.asp?product\\_id=28014](http://www.parallax.com/detail.asp?product_id=28014)

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/02 17:50

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Hi all - sorry - for the life of me I can't seem to stick a jpg on this post! - If your interested just zoom in on the second USB Scope shot and in the box third down next to the blue triangle - 126.2ms

Best and goodnight (it's 2am!) and thanks for the generous participation today. So long as we keep up some dialogue about this stuff and get a clear idea of what is and what isn't good timing then things can only improve across the board. David [www.innerclocksystem.com](http://www.innerclocksystem.com)

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/02 19:38

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Hi Hageir, I'll try and post the file sometime tmrw if I get around to it - you know, on it's own it's a tough call to pick it I'll admit. I'll tell you something though - the more you surround yourself with beats and rhythms that do nail it timing wise - the more your ears do start to pick up when things are even slightly off. When I was testing the sync between SPS-1 and the 3K, I had the 3K Click sample in solo running for about 3 minutes in the background of my studio while I was doing some patching. I stopped it and re-started but solo'd the SPS-1 instead and before 2 bars had recorded I knew it wasn't up to the 3K I had been listening to even before I did any tests. I have been doing this stuff a long time now. In the early days my sequencing used to be faster and busier - 130 BPM - lots of 16ths. When you speed things up it narrows all the gear/midi/software slop so you get the illusion that things are tight. Slow things up - the slop that's been there all along opens up and you can drive a bus through it mostly! Keeping things busy fills up the holes too. I realised a while back that if you can make a track work at slower tempos with plenty of space you are doing something right. Then they really sound hot when you speed things up. You need ultra-tight clocks and tight sync to get this happening and most current workstations, sequencing hardware and software apps just don't cut it enough in my opinion - I wish they did! An experienced recording engineer told me when I was a young studio assistant in the UK that if a Mix wasn't working, backtrack and mute everything then unmute one track at a time - the instant you unmute a track and it loses the groove or it changes your listening focus then you know what you need to work on. These days I apply that principle to rhythmic programming. I get the timing as tight as I can from the first sound I record and then only add something if it adds to or complements the feel. If you have a Kick/Snare doing simple 'Boom-Tick-Boom-Boom-Tick' in your track - you really should be able to listen to just those two elements for the length of your song and not get bored. I guarantee you - if you do get bored within 8 bars - it's not the Kick or the Snare sound or the compression or the EQ or the pattern or even the repetition - it's the timing of the sequencer that's driving it. When the timing is spot-on - even a quarter note metronome sounds funky! Hence the reason for this rave - after listening to the 3K ticking away for three minutes and swapping to the SPS-1 - within 2 bars I it became an irritation. So - yes I'll post the file but in isolation I'm not sure what it will do - maybe I should post them both!

Best regards - David  
[www.innerclocksystems.com](http://www.innerclocksystems.com)

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## Re: MD SPS-1 Timing Performance Issues

Posted by Toni - 2007/04/02 20:36

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This thread seems to live..

For David:

Ok, maybe I was too straight with my opinion. Maybe I was just tiring up for all the clock and timing and syncing-issues that has been going on here for some while already (nothing to do with you). I take some of my words back, because it's obvious you have more experience on this matter (after all you build these things and I do not). Should have stated my arguments better, because I didn't want to accuse you of trying to benefit financially. I just ment, that because you build these clocking devices, you are more sensible to it (and it really might not matter so much to other people). Like people with ability to hear perfect pitch; they just rag other people about it, but it doesn't make music anymore perfect; it isn't science and anyone who thinks it is, is some way obsessed (with the pitch or other things). I have to say it's an interesting story about 808 you tell. I'll keep that in mind.

About timing stuff:

One way of testing it out is to record same simple sequence twice and check how accurately the individual hits align. I've done this and I've never succeed to have perfect align. And yes, I'm talking about MD. I have RME hammerfall dsp soundcard, motherboard recommended by Rme and very clean win2000. Now I don't know what is causing this, but I'm tired of thinking about it and it has never prevent me of making things I want. I think it's an instrument not output of computer science or software-inside-the-box; it shouldn't even be thinked with terms of sample-rate or interrupt-drive-os. If we wouldnt have an accurate way of measuring, would we be crying about this. I mean there are lots of records were rhythm is provided by real human, not algorithym.

Guys at Elektron must be fed up by this already. :-D Every month there comes up some an 'issue' how things are not 'perfect'. It's timing or knobs or MD doesn't do some specific thing user x wants it to do (I've done my own share of this). I can already see in my eyes how Daniel reads this thread and thinks "ohh god damn, not this shit again!" LOL :-D Now, I don't how other gear-communities work, but the elektron-one is pretty demanding and ever-hungry (which I can sort of understand because of the reputation of the Elektron gear).

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Ok, I'm off to bed. Peace people, however the god damn clock works. :-D

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/02 21:09

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Sorry Toni - forgot to respond to this part of your post earlier:

"Ok, there is some fluctuation (it's really no news). But you have interpreted this in wrong way. 3.5 points means something between "Ok to walk but too drunk to drive" and "Sharp enough to cut it". The truth is that it's totally safe and there is no such "timing performance issues" as you call it. Also calling this "jitter" connotes in a very negative ways, linking it to jitter conversation with the soundcards. Yes, in a way it's jitter, but from its nature it's different jitter and should be expressed more clearly.

I would correct the scale on your website. Your study is correct (I believe), but your interpretation is biased by the thing that you sell devices that exist on the same area of timing. Get your interpretation unbiased and it shows out more positive message."

When you say 'there is no such timing issues' I have to disagree strongly. The MPC-3000 is over 10 years old now and people the world over refuse to part with them. Why? 16 bit/44.1 is nothing special, 32 MB Ram is a joke these days and a very small screen with no track or note display at all. Until I was convinced by a close friend to go all out and prove a point I was skeptical. Three years ago I had ditched Mac and PC and got an Atari with Notator driving a good Akai S-5000 sampler with my SPS-1 in Sync and I was happier than I had been in years. The day the 3000 was delivered I loaded up a kit and sequenced up a basic 8th Kik/Snr/Hat pattern - no swing at all. I sold the Atari a week later. You can't describe it. You have to hear it. Other skeptics come to my studio and I can't drag them off it. Above all else - the sounds, the pads, the swing - what kills it is how it keeps time. Doesn't matter what you ask it to do - the clock is bolted down real hard. Check the numbers and you'll see what I mean. I have at least 15 drum machine/sequencers in my room and everyone even if they don't know what it is comments on it - most think its the sounds coming out of it - it's not - it's when they come out of it. I want all my gear to lock down this tight. I know if I sample an SPS-1 kit in the MPC-3K and program up identical patterns on both machines and play it to five of my clients blindfolded I know which one they will ask me to keep playing. The numbers we are talking here seem small but the proof is in the listener response and what makes a great or just an average sequencer is how tight these small numbers are.

And yes jitter is associated negatively - for good reason - 3ms drift or tempo clock jitter between steps on a sequencer made in the last 5 years is criminal in my opinion. It's not as if the technology and experience isn't there. The MPC-3K proves that hands down. Users and manufacturers have just put precision timing on the backburner instead of making it the number 1 priority above all else. Also my Litmus Test page isn't meant to come across as unbiased or have a positive slant - quite the reverse. It is pure cold fact. From a personal point of view I hate seeing the Fantom above the MD SPS-1 but the point of the page is to show where things stand with a view to doing something about it. I've spent years glossing over the pros and cons and shining a positive light on gear that didn't really deserve it. Nothing gets achieved that way. I want Elektron to tighten up my SPS-1 that I paid \$2000 for and I want them to know that it is the most important thing a sequencer can do. If I hated it that much I'd sell it but I LOVE IT - it's just a bit rubbery that's all and without a bit of pressure it won't happen.

What my aim is in this thread is really to try and remove some of the voodoo/black magic timing/feel prejudices we all have. To get away from saying - '3ms here or there is nothing' or 'people can't hear things that fine' or 'every box is good in it's own way' - for each individual these may all be different priorities but my vision for electronic music making is that we start acknowledging a common core truth that timing precision in sequencing makes a fundamental difference to how music is made and appreciated.

For that to happen - we need to state very clearly - this machine exceeds the benchmark and this one doesn't. Only then will designers and manufacturers tighten up the slack which, even if you personally can't hear it in a metronome click track yourself, wouldn't it still be a better thing to have as a standard than to ignore it?

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/02 21:44

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Hey Toni - thanks for the nice reply - just read it after my second rant posting - don't take my tone as hostile at all - a tad enthused is all as you can tell! I'm out too. I can help out with your RME/Tracking/Pass-Offset issue too - but another

time maybe! I'm out! Peace - and note the sub-title of my Litmus Testing page - part tounge-in-cheek, part reminder to myself - 'Don't Cry - it's only the Rhythm'

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/02 22:57

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Sorry - rgmccaig, your post on the TR-808 being fine and funky just the way it is - interesting point and I have mentioned this elsewhere in the thread. I've owned 5 x TR-808s over the years and my Mark I Sync Shift was deigned and built because I wanted to run my very first one with my Midi Clock gear but after Clock to Din conversion those poor 16th hats were so hopelessly late against everything else they may have well have happened yesterday! I've done a lot of testing and fiddling with the TR-808 and, in a nutshell, she's generally not the tightest puppy on the planet (they are all a little different being VCO Tempo Controlled but my current one drifts by max. 1.97ms per quarter note) - not real bad but not anywhere near as tight as say a Roland MC-4 sequencer which is close to the same vintage but tighter rhythmically by a factor of 10 times (0.18ms maximum drift between quarter notes). You say you're glad it's not any tighter and it sounds great the way it is. There is a good reason too. In any sequencer - two critical factors determine our response to timing/feel: 1. The period/tempo clock jitter or drift between rhythmic steps which is what my testing and this thread are focused on; and 2. Step Event Polyphony Cram: there is probably a better term for this but I like it for now! Simple example - PC Sequencer driving a common 16 Part/16 Channel Sound module off a single midi port. In a song you have (a) a 6 note Piano Chord, (b) a Bass Note, (c) a Kick Drum, (d) a Hi Hat, (e) a Ride Cymbal (f) a 4 note String Pad and (g) 2 x Vocal samples. All these sounds are inside the one midi module and at a particular point in the song they all happen together at precisely the same grid/tick/quantise point. This is not uncommon. Because Midi is serial - those 16 Midi events arrive one at a time and are processed one at a time by the module. Instead of a tight 'crack' on the first beat of the bar you actually get a sloppy blur/flam/fast-arpeggio. One of the evils of Midi unfortunately. In this example you might even get close to a 15 or 20 ms gap between the first and last arriving event which you would very easily hear. Remember too that most/all current all-in-one workstations suffer from this too - the sequencing data is stored as Midi internally and this Midi data is passed on to the Voice/Sound generator section inside the workstation. Same s#@t - just in one sloppy box! Some are better than others obviously. You can do lots to minimise this - keep events away from each other (hard in a 6 note piano chord I'll admit) and multiple Midi I/O ports is great but this seems to be becoming more rare these days particularly on hardware. Back to the TR-808 - it doesn't suffer from this serial affliction. Each TR-808 Drum Voice can fire at exactly the same time if it receives a trigger pulse from the CPU. If all 10 voices fall on the same step in a pattern - the CPU sends out 10 triggers at the same clock interval and all 10 voices go 'Crack' on the money. No wait, no flam and no arpeggio. This is what saves the TR-808 and why people still love it so much. Back to your point - if it could be tightened up (which won't ever happen) you would love it even more because it would still have the Step-Crack quality and be tight enough to shave with too! This flip side of this also applies to new gear too. If you design a sequencer or workstation/sampler/drum machine that suffers badly from Step/Event/Cram to start with - AND - has a rubber band for a timing clock - you have a Boat Anchor.

Regards - David  
[www.innerclocksystems.com](http://www.innerclocksystems.com)

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## Re: MD SPS-1 Timing Performance Issues

Posted by dreg - 2007/04/02 23:44

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Just some random obsevatons.

Over the many years involved in electronic music, my ears have become more attuned to imprecise or accurate timing, through the use of seq with quantization etc.

But if I listen to an old 70's funk record they are as sloppy as, sometimes on purpose others just out.

Do I care no. Still rocks the boat

I don't think every electronic music song I like is created on an MPC 3000 and will an average tune on a one make me like it?

Not likely

Most here like Krafwerk, do a timing test on their tunes, are they 3k tight? Possibly.

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When I used to work with notator/ste combo I was always shifting tracks to fix/play with the midi spread.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/03 00:13

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Hi Dreg - I appreciate your post - however, it's not about the MPC-3000 specifically - it's just that it does happen to have a very reliable internal clock for a modern sequencer - and - if you know much of how Kraftwerk's music was created which I'm sure you and many/all people on this list would do - the clock precision built into the 3K is indeed very similar to the vintage hardware - pulse driven step/gate sequencers and early tape sync driven compositions. Certainly a lot closer than most current sequencing hardware and most/all software sequencers currently available. I'm not debating live feel either - have a look on my jukebox page - most of the CDs listed are just that. I also know there are many ways to make good electronic music - that is not my point either and a crap song is still crap no matter how tight it is if it's not your thing. I like shifting and moving things round too - always have - but it is far more satisfying to move notes around when you know the base timing grid that you are working with is well fixed rather than a floating pontoon which many boxes and software apps are. And I guess the 'moving right along' closing comment is disappointing really because I feel it reinforces the idea that getting clock timing right is an obsessive wank that is not worth worrying about and we should all just make tunes with what we have. I'm sure Kraftwerk wouldn't think so. I know it's sometimes seems a nerdy and futile debate to have - but if you had the choice between two drum machines - one that had a tight internal clock and a rubber band - which would you choose? I'm just trying to apply some friendly pressure to see if we can make it happen.

Best regards - David  
www.innerclocksystems.com

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## Re: MD SPS-1 Timing Performance Issues

Posted by kuniklo - 2007/04/03 01:01

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Is this tight MPC clock something that Akai has lost in newer models like the 1000 & 2500?

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/03 01:24

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Hi Kuniklo - uncertain - need someone to do the test who has the newer models. regards - David

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## Re: MD SPS-1 Timing Performance Issues

Posted by nkirchner - 2007/04/03 02:51

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innerclock wrote:

Hi all - sorry - for the life of me I can't seem to stick a jpg on this post! - If your interested just zoom in on the second USB Scope shot and in the box third down next to the blue triangle - 126.2ms

Best and goodnight (it's 2am!) and thanks for the generous participation today. So long as we keep up some dialogue about this stuff and get a clear idea of what is and what isn't good timing then things can only improve across the board. David www.innerclocksystem.com

As I mentioned in my post I had to zoom out so that multiple pulses could be shown on the screen at the same time. I did this so that the test data would make more sense to someone that wasn't there for the test.

But as I also said, at the finer resolution the result was a constant 125ms

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/03 11:11

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Hi Nathan - does the Software Scope let you view results in samples rather than (ms) - I find it hard to believe any device locks down tight at an even 125 ms for all 16th divisions at 120 BPM. I tried the same test again today with almost exactly the same set of numbers/errors in exactly the same 'push-pull' step - pattern/relationship to each other. I got to thinking about what you said was inaccurate SF8/DAW reporting so I tested the Fantom X-6 as well and it came up almost identical to my original test also. If Sound Forge/Windows was so bad at representing and marking real-time 44.1 kHz audio - even graphically - surely my second set of tests would produce another set of numbers that were nothing like the first. Not only were they close to being identical for both machines and down to the number of samples we're talking here - not milliseconds! - but the numbers again show clearly that one machine (SPS-1) moves around much more than the other (Fantom X-6) and that has to be worth taking into real consideration here don't you agree? If I record the SPS-1 and the Fantom to the end of a stereo audio file in SF8 - I still see more period drift in the SPS-1 than I do on the Fantom. Sound Forge is used a sample accurate editor all over the world. Surely if I can record a James Brown 2 bar drum loop and when I play it back in Sound Forge it sounds identical in both sound quality and rhythmic feel to the original CD - doesn't that indicate precision file capture? If it couldn't do that it would be useless as an audio recorder surely. Another way of looking at this - lets say I am working on a project in Ableton Live that is 110 BPM. I have a roughly half bar vocal phrase sample that I want to use but because it's not edited to a rhythmic duration - when I drop it into Live it's hard work lining it up to the tempo grid. An easy fix for this - work out what a full bar is at 110 BPM in samples at 44.1 kHz. Open up the vocal sample in SF8 and add 5 seconds silence to the end so it's much longer than you need. Place a marker at the precise sample number that equates to a full bars duration at 110 BPM. Discard the remainder. You now have a perfect 1 bar sample to drop into Ableton Live. Now, here is the point - if SoundForge was so bad at capture, edit points and markers - my sample accurate 110 BPM 1 Bar Audio file would not line up correctly when dropped into Live. But the contrary is in fact the case - not only does the SF8 Edited 1 Bar file line up perfectly with the Live Grid BUT - Live also analyzes the sample file and reports it's tempo to two decimal places - and the result shown using this method - 110.00 BPM on the money. You gotta concede defeat now brother. Come on?

Best regards - David

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## Re: MD SPS-1 Timing Performance Issues

Posted by nkirchner - 2007/04/03 12:04

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It is a hardware scope that has a software front end. It does not work in samples, only time & Hz.

The MD is more than likely running off a 20MHz Xtal. Such Xtals have a 1ppm error and the divide factor to get to 24ppq for a midi clock is 833,333.33 divide per quarter note. So with one error per million oscillations that means you would get at most a 20us error spread over 20 seconds of output.

I believe that it is possible to get repeatable results with your testing method. The algorithms for deciding what to display for instance is a likely source of overall error all be it a repeatable error.

I am not saying soundforge, albeton, etc, are bad at recording. I am however saying that it is NOT possible to test to the level of accuracy that you indicate with these type of software as a test base. Think about it, your screen is only 1000 pixels wide... so to see even a reasonable representation of the incoming audio you would need to have the time frame of your DAW set to at least  $(1/441000)/2.2 = 10\mu s$ ... TEN MICRO SECONDS! can Soundforge do that? display 10us sections of recording across the full screen? (the 2.2 is for Nyquist)

Another trick that is common in DAW software is that when a lag is sensed a sample and hold + interpolation algorithm is entered into. The DAW simply can't keep up and just guesses what the samples would of been. Of course this is limited to a small number of consecutive samples so as not to be perceivable.

As for the example you give.. james brown recording, vocal patch, etc. The recordings aren't accurate and the playback pitch is not perfect. Developers design such things so that the output variation is below perceivable levels, there is pitch shift, there is variation... you just can't sense it.

Windows, Mac OS X and Linux are not realtime systems. There is no way to get accurate results with anything running on any of these OS. When you are concerned with accurate results the DSO is going to win everytime.

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## Re: MD SPS-1 Timing Performance Issues

Posted by lcvl - 2007/04/03 13:47

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I think David has definitely a point.

Because of this thread I've done some timing tests using my MPC4000 and MD-UW and - beside what Nathan is saying about the impossibility of using a DAW/stereo editor as an accurate measurement tool - the results I got are DEFINITELY repeatable.

If our software tools were that inaccurate (well, at least regarding audio editing. I agree with David that MIDI thorough software mostly sucks) we probably wouldn't get repeatable results.

Regarding SF8, I can assure you it's one of the most accurate tools you could ever use for the task.

A big part of my income comes from audio editing, and I've used Sound Forge/Vegas for any kind of material and any sort of editing job. From simple beat quantization, phase-alignment down to the single sample, to x-fade looping: I've always been able to get 100% accurate results, both visually and sonically.

And finally, regarding those timing tests, I sampled and accurately trimmed my MPC4000 internal click sound. Then I loaded the sample both into my MD-UW and MPC.

I had them playing a 2 bars sequence of constant quarter notes @ 120bpm, using their own internal timing.

The MPC4000 seems to have a very constant variation range of 3 samples (7 samples only for the first beat, then it stabilize itself to 3 samples).

The MD-UW has a definitely less stable timing (the jitter was more than 50 samples in the worst cases) and as David already said it DOES look like it follows a "push-pull" pattern in its timing variations.

I can post the file containing both recordings later today: each click is clearly marked so you can easily measure the distance between clicks using any audio editor at your disposal.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/03 13:49

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This is getting ridiculous Nathan - I agree that at super fine nano second values a CRO does the job but we are talking very wide (2ms plus) variations which are more than reliably reported in any decent audio application. The pitch and timing jitter you are talking about in audio is very very small - imperceptible as you mention. The clock drift and quarter note event variation I am concerned with and recording in my tests is not only audible - it is quite clearly visual as well even with screen resolution taken into consideration. The 20Mhz Xtal CPU crystal reference is a red herring in this thread - Elektron could put a military grade reference Xtal in the SPS-1 - it makes not one difference to the tempo clock/event stability which is 100% under the influence of the OS Code the CPU is running. Average code/interrupt routines are what mess with a sequencers timing - not the precision of the Xtal Crystal clocking the instruction set. The whole nano second issue is irrelevant in all of these discussions - again the tempo variation I am concerned with and have found in the SPS-1 is way broader than that. You don't need a microscope to know when a picture isn't hanging straight on a wall.

regards - David

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/03 15:20

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innerclock wrote:

And yes jitter is associated negatively - for good reason - 3ms drift or tempo clock jitter between steps on a sequencer made in the last 5 years is criminal in my opinion.

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I tested the MD's clock with a decidedly less rigorous method a couple of years ago, recording the clock messages through USB MIDI interface and processing the results with a shell script. These were my findings:

In a sample of 1001 ticks, we see

797 ticks with 21ms between them  
191 ticks with 22ms between them  
13 ticks with 20 ms between them

That means a deviation of +/- 1ms about 20% of the time. People barked about the method, objected that the USB MIDI interface would have added more jitter and asserted that the best way to test was via an audio interface {rightly, I think}, but they missed the point spectacularly - the MIDI interface adds, rather than takes away, jitter. These are pretty good numbers any way you look at it, and are miles away from your findings.

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## Re: MD SPS-1 Timing Performance Issues

Posted by nkirchner - 2007/04/03 15:21

The picture is straight, you are standing on a slant!

I don't believe the timing issue you describe exists. I believe an inaccurate testing method has led you believe that there is a timing issue when there is not.

There are a LOT of variables with the DAW test method, a lot of unknowns. An oscilloscope is considerably more accurate and reliable, it is the industry standard for these type of measurements. If the DAW results are giving one set of results and an oscilloscope another then the DAW method is flawed.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/03 16:05

Again - you are all missing the point. Forget Midi Clocks, and forget USB, shell scrips and Windows screen resolutions and CROs - Self run, the SPS-1 playing 1/4 note steps into a good audio recorder - the recorded audio divisions vary by up to 96 samples over a 16 event period at 120 BPM. In the end its about what's being recorded as music that I am interested in and that I can hear - and 96 samples deviation at 44.1 kHz is 2.18ms. It's not rocket science. It's what the box plays. Period. If I record the MPC as audio (which is the aim after all) the same quarter notes deviate in duration by a maximum of 4 samples over 16 events which is 0.09ms. That is as complicated as it gets. Please!

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/03 16:45

A great resource page for anyone interested in timing performance and Midi Delays:

<http://www.hinton-instruments.co.uk/reference/midi/promidi/pg05.htm#measure>

And a quote I think is most relavant from this page clearly states that any timing errors greater than 0.5ms effect rhythmic timing:

"The trace illustrated above shows a MIDI Out delayed by 0.6ms from the MIDI In. As the device does not read the data until the end of the first byte this breaks down into 0.32ms transmission time (which is constant) plus 0.28ms processing time. If the processing time varies there will be a spread of delays on the second trace and if that exceeds 0.5ms this will start to effect critical timings in rhythmic music."

Regards - David.



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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/03 17:18

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innerclock wrote:

Again - you are all missing the point. Forget Midi Clocks, and forget USB, shell scrips and Windows screen resolutions and CROs - Self run, the SPS-1 playing 1/4 note steps into a good audio recorder - the recorded audio divisions vary by up to 96 samples over a 16 event period at 120 BPM.

Shouldn't we expect to see your findings in those other tests, as well, though?

{edit, I'm charging the minidisc recorder now, and will duplicate your method in an hour}

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/03 17:32

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To my non-scientific mind yes Niall but I did have a lengthy discussion with a boffin who uses hardware storage scopes regularly earlier today and he felt strongly the raw audio recording test method in a good DAW application was very valid for tempo deviation measurements where nano-second sampling was too fine. He also said that DSO's can misrepresent if they are set to trigger-sync off one of the actual inputs. I'm not saying this is the case here but either way - he is bringing one over next week and I'll be glad to update the results of course. - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/03 18:57

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<http://syncretism.net/snd/snares120bpm.mp3>

16 snare hits on quarter notes, 120 BPM. Tempo out turned off. Left channel only.

Also, this was recorded with a dedicated recording device, the Sony MZ-RH1, which should be a suitable medium for all.

I'm sorry, I don't have the wherewithal to look at the results, right now, but if you're looking for another instance, here's one.

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## Re: MD SPS-1 Timing Performance Issues

Posted by rgmccaig - 2007/04/03 20:19

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keep up the good work guys... i for one find this info valuable, although i will state for the record that 2ms interval deviation, which = more like 1ms deviation 'from grid', is pretty darn good in mho.

i am curious to see the resolution of the whole scope vs. sound card debate. if i had to take a wild guess, i think the sound card method is essentially fine, and someone will find a problem with the scope testing procedure. it doesn't really matter whether the pc OS is 'realtime' since the audio card buffers the information, (theoretically) enough to prevent missed data.

i am glad someone suggested the idea of soundcard samples being skipped/interpolated by the software.. i've never heard of that but at least it suggests a potential mechanism to explain soundcard readings being off by more than 1/44100th of a second, one i hadn't thought of.

regarding screen display, many editors can numerically display the data of each given sample: isn't that good enough?

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at the very least, if the md soundcard timing measurements are repeatable across users, we can clearly say that for whatever reason, the md \_produces recordings\_ with more jitter than the mpc3000. and i agree, thats the important thing, isn't it.

...

and thanks for the interesting comments re the 808 discussion. i am hesitant to believe that 'improving' the 808 timing would help the sound... i listen to a lot off stuff these days made 100% in software and that is usually sample-accurate... a lot of it sounds 'too precise' to my ears, ie kind of dead. so for me, there may really be a 'too precise'. of course those software pieces are typically also lacking the analog timbre variation that makes 808's so nice, so , tough to say...

cheers

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/03 23:27

I run into the same problem..when i cut loops from the machinedrum i cant cut them all the same length..sound engine jitter when running the machinedrum alone is between 1,5 and 2 ms..

interesting is that you get better results when running the MD in slavesync via turbo midi !!! that actually gives the internal clocking of the MD a rather bad name... maybe a software issue?

So timingwise the MD is not as tight as elektron claims..it is actually one of the worst machine on the market regarding that issue... electribes and all other drummachines i measured are well below 0,3 ms.. when running alone

however..the elektron jitter is pretty relaxed from the karakter..it sounds rather groovy... And the general performance of the machine as master and slave is good...its not so late as a electribe when beeing in slave sync for example I will do more measurements in the future..i still have to measure the MD?s clock output... hope to find this more stable... For the time beeing i let my ears judge..and sofar i can life with it..just more fine trimming for loops necessary...

Same jitter you have on old apple systems on OS9 ...and the machinedrum sounds more groovy than that..beats under os9 that was programmed only in the computer usually had a bit tired feeling...

Another thing that is not optimal is that 120 bpm on the MD is not the same as 120 bpm in the real world...

we have the same with electribes and 909?s..but...i actually expected the more refined MD to be more precise there..i like to do free jamming when possible..and this works perfect between a protocols on pc and a ableton live on an apple for example...you can run minutes before you hear the drift..

actually there is no drummachine i know that gets the tempo so precise to match that performance... electribes are over 0.1 bpm off for example..

so nothing to blame Elektron here...but in an ideal world 120 bpm just would be exact 120 bpm

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/03 23:37

and one thing..never use mp3?s to measure timings..the compression is altering the timing and therefore all measurements are irrelevant..

a decend sample clock on 44,1 or 48 khz with a plain wave or aiff file is doing a good job..

44 samples or 48 samples are one ms

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The reference machine mpc 3000 has max 2-3 samples jitter...  
1 sample is measurements tollerance so we have a max from beeing 0,05 ms timing jitter..

an electribe ES-1 is doing 10-12 samples... so around 0,25ms timing jitter..

The MD is doing 60 samples and more ...so around 1,5 ms timing jitter...

wich is 30 times more than the MPC 3000 ;-)

An 808 is doing 1sample timing jitter.. equals no jitter..but...every view bars its missing one beat badly... up to 60 samples... but such a thing is no jitter..sound more like groove when sometimes a beat is a bit off while beeing tight most of the time...together with the sound fluctuations of the analog sound engine the 808 sound more alive than a MPC 3000 ...

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/04 00:11

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niall wrote:

Innerclock, there are other threads about this subject, and Daniel Elektron posted in one of them that, if you found evidence of clock jitter with the MD as master, they'd be very interested to hear it - posting a link to this thread in it may be a useful way to link the two discussions.

So...i do it now because i like to know...

midi clock of the MDUW on 123bpm ..

Jitter very good...most of the time sample accurate...max i found 6 samples off..  
but as the ears tell..not in a nervous jitter fashion..just ocasionaly..

So i can state the MD has a rock solid internal clock...

Sound output jitter must be related to the DSP soundengine..what explains why this appears to the ears rather as groove than nervousity...

when its the soundengine ther is probably a relation between the beats programmed and the charakter of the timing derivation has an internal cycle somehow that gives the thing a more organic feel...

i can live with that...

it would be however good if the One would have priority and be more precise... Than the looplevelength would be constant what helps when working with DAWs... Or having the one exact every 4 bars..

So... the internal clocking of the MD is rocksolid...the soundengine plays around..

sounds good ..makes more work...

A statement that fits to the MD in general... :-/

Only curious thing left...why i got better results in external sync with the turbo midi interface?...

Maybe a lucky measurement...

I ve to repeat that at one point to verify...because when the MD is better on an external supermidi clock than to its internal rocksolid one than there is a little bug somewhere...

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## Re: MD SPS-1 Timing Performance Issues

Posted by dreg - 2007/04/04 00:30

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Hi David,

my "moving right along" is at the bottom of every post I make/made here, with the mini keys.

so no insult to you or this thread intended.

I just write lyrics sometimes and mostly they are short 1 line stuff, that happen to be one.

cheers

an electribe ES-1 is doing 10-12 samples... so around 0,25ms timing jitter..

Strange I think my MnM is way tighter than the es1 es1mk2 I have.

Wonder if the Mono is different to the MD?

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/04 00:48

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the problem with the electribes is not that they are not tight..they are late...

with ableton live you can have independend clock delays on each midiinterface.. so when you have an extra one for the electribes and make it 12 ms earlier than the others you will see that it fits much better

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/04 01:01

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rudebop wrote:

and one thing..never use mp3?s to measure timings..the compression is altering the timing and therefore all measurements are irrelevant..

I must contest this - like jitter in ASIO/CoreAudio recording, there's no way it could be an accepted behavior, and would have been redressed years ago, if it ever happened.

Please find the linked Audacity project. Mp3 is on channel one and wave on channel two. You'll see no timing deviations.

<http://syncretism.net/snd/MD-Audacity.zip>

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/04 01:36

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Ignoring outgoing Clock Sync which has zero bearing on how the SPS-1 behaves internally - the majority of these findings do seem to suggest that the Voice generation/Step tempo accuracy/stability of the SPS-1 is a tad on the rubbery side of things - particularly if you compare it to an MPC-3000/4000 and even an old MC-4 Sequencer. Even if you personally feel 2.18 ms is not that big a deal - considering the MPC-3000 is over 10 years old in technology terms and the MC-4 is nearly 30 years old - both these sequencing devices have a voice/step tempo stability that outclasses the SPS-1 by at least a factor of 24 times! These numbers start to mean something when you run devices side by side and

'feel' the difference. The SPS-1 was the first drum sequencer I felt happy buying in a sea of mostly average 'groove boxes'. It was a lot tighter than my PC and much more of a joy to compose with. Then I was talked into buying an MPC-3K for sampling duties. It's like buying a new pair of shoes - suddenly the rest of your outfit looks a bit shabby. That's not a bad thing - and sometimes - with things like higher sample resolution, colour screens, more patches, USB etc - these things are just fluff mostly and hanging on to your old 12bit/32KHz 4 MB Casio Sampler is far more rewarding than upgrading to get all the trinkets. However - timing stability IS NOT FLUFF. It is the foundation of sequencing. It's not OK that we went backwards by a factor of 24 times in the timing stakes between MPC3K (mid 90's) and SPS-1(2004). My musical partner had a Future Retro Mobius. It always bothered us - it never sat right and it didn't do Kraftwerk very well. We never tested it but we never let it run for very long. Six weeks ago I convinced him to purchase an MC-4B for analogue sequencing. Three days later he sold the Mobius. Without doing the Mobius testing I can almost bet the timing improvement between it and the MC-4B was by a factor even greater than 24! And you can still move notes around if you wish - it doesn't have to be grid quantised. But - BUT.....if you do lock a 16th arpeggio down it makes your eyes water. And that is down to the tempo/step precision. The Mobius was never in the race.

So - the million dollar question. Are we going to put pressure on Elektron to put the SPS-1 back in the ballpark?

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/04 02:12

Also - it's worth mentioning I think - we all have emotional and financial investment in the equipment we buy and use and with that investment we put faith in the tools and really wish and hope and believe that they are worth their weight and cost. However - sometimes we can be blinded by our investment - a close friend who spent over \$5K on a Mac/Logic rig a few years back spent a good year refusing to acknowledge what he could plainly hear - that his external Midi stuff sounded sloppy as all hell. He did everything - groove templates, micro event adjustments, moved his room around, changed his mix position - he even stopped listening to tight production because it reminded him of how rough his own shit sounded! His emotional and financial investment kept him from seeing the simple truth - the rig didn't do Midi justice - period. After a few beers one day I convinced him to let me bring over my Atari/Notator/Unitor system and hook it up to his Midi gear. Next we copied some of his midi files to Notator Format. I'll never forget the look on his face when he pressed the space bar. Priceless - the illusion falls away and you can go back to what you know is right even if you have to buck the trend and use a computer that is 20 years old to get there. But from there you can move forward. My purpose of this topic/thread is not to slag or negate the value of different gear and certainly not Elektrons'. It's about listening truthfully and saying 'yes - that 20 year old sequencer makes the hairs stand up on the back of my neck' and 'no - this new one that I have just spent a months salary on doesn't cut it'. Only then can you begin to ask 'why?' and once you start to find out why you are then in a position to do something about it. Regards as always - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by mvmono - 2007/04/04 05:21

I don't mean this to be a diversion away from the technical issues but I thought I might give some observations from a drummers perspective. Interesting that Innerclock's reading of the MD show a regular irregularity if you might call it and Rudebop's TR808 observations show solid groove with occasional wide fluctuations. IMO Elektron boxes have already confirmed their reputation as funky boxes, capable of creating sick grooves. I can appreciate that the MPC3000 is also a funky box capable of robotic or tight electro beats or funkiness can be created by offsetting notes manually against a very stable midi clock. My point is that perhaps an irregularity is a contributing factor to the funkiness when heard against a theoretical perfect pulse.

I don't want to get caught up in a theoretical vs. practical aspects of timing debate as science and art will always be coming from different perspectives but as a point of departure two things that have interested me are:

- 1) Tactus in early Renaissance vocal music. In a historical period where no barlines existed in music manuscript the importance of a pulse that each singer recognized universally, albeit via a conductor/choirmaster (master clock), was essential for the proper interpretation of a piece of music. If you ever see original manuscript from the period there are individual pages given to each performer with nothing but a series of different note values and pitches, each singer having to accurately place complex syncopated melodies against the other singer's parts.
- 2) The influence of African rhythm in American music. When listening to BigBand Jazz of the 1920's onward, Funk, Rock and RnB, the relationship to dancing is unquestionable. Why is it that bands who never even listened to click tracks grooved so hard people couldn't help but get down on the dance floor? There is a constant in all these styles whether

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you call it The Funk, Swing or Groove. Take any number of great bandleaders, Count Basie, James Brown, George Clinton etc. Miles Davis was very particular about feel, the list goes on?but what is it raises them above the rabble?

From a drummers perspective, but this could go for any musician, the most important thing to develop is your internal clock. All the other stuff will come but if you can't keep good time internally it doesn't matter how good your chops are it's not going to groove. Sure you can push and pull the feel but against what? There has to be a constant that all band members follow. Take for example a simple 4/4 pattern playing 8th notes on the Hihat with your right hand and accenting the 2 and 4 on the snare with your left. If you switch to a pattern playing 16th notes on the hihat leading with your right hand suddenly your right hand is accenting the 2 and 4 on the snare and you have to calculate, or delay compensate, for the time it takes your right hand to get from the hihat to the snare and back for the next hihat 8th note without interrupting the flow of the groove. This is by no means an easy feat and impossible if you don't have a good internal clock.

So my point is that if a box does have reliable clock with the occasional stutter then this is funky but if it's all over the place and you don't have a reliable reference point to begin with then the overall feel is going to suffer. Computer sequencers present a whole range of synchronization problems but maybe there is something simple at the core of it? One machine needs to be master but if they are all dancing to the beat of a different drum they're not going to sound like a tight band are they? I'll leave it to the more technically minded to discuss these finer points of computer sync and I hope this wasn't too off track from the issues. I just thought a drummers perspective might not be out of place, since most often a drummers job is to make sure people tap their toes and boogie down. :-)

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/04 05:34

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niall wrote:

rudebop wrote:

and one thing..never use mp3's to measure timings..the compression is altering the timing and therefore all measurements are irrelevant..

I must contest this - like jitter in ASIO/CoreAudio recording, there's no way it could be an accepted behavior, and would have been redressed years ago, if it ever happened.

Please find the linked Audacity project. Mp3 is on channel one and wave on channel two. You'll see no timing deviations.

<http://syncretism.net/snd/MD-Audacity.zip>

I tested mp3s in the past and found them jittering the timing..maybe this dont happens allways... i just dont have the time to make a scientific thing from that... just.. i proved it to myself that it can happen..thats enough to warn about timing measurements based on mp3's...

Jitter in a normal digital recording is way below the range we talking here about its measured in us not ms...

However... i found the MD sounding tight for me..i was shocked the first time i realized how wobbely it is in relation to other drum machines... but it dont hurts..it wobbels nicely.. its only a problem when you want to sett the reference looplenght.. with tghe MD i ve to cut 10 loops and take the common denominator..so i rather record a click of one of my nord modulars and take that as reference..

The important issue for me was that i feared that the clock output of the MD is wobbely aswell..but as i proofed for myself today..its not...thats the biggest issue. Its a capabel clock master..when it swings its own sounds around the clock a bit its ok... I would perfer this kind of "human factor" centered on the one..but it dont sounds bad ...that the main thing... i started timing measurements mid 90's because i got pain from that jitter... Aqnd i had to proove to c-lab (later emagic) that i had a point.. so i started measure my sytem..and bought an mpc 3000... So Jitter is a bad thing when it fucks up a groove by its nervous and chaotic behaviour... A slightly wobble in the timing is a different thing..Our brain interpreates that as natural...

So to answer this thread..yes..the MD wobbels around the sounds...but it has a good timing never the less.. a drum machine with inbuild human factor...pretty unique ;-)

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/04 05:54

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mvmono wrote:

I hope this wasn't too off track from the issues. I just thought a drummers perspective might not be out of place, since most often a drummers job is to make sure people tap their toes and boogie down. :-)

no..not at all... the problem with the devil timing problems is that they keep you from the main goal..to do music...

So its important to dont dig deeper into that than necessary... and get reminded to the main goal again... this machines are tools or instruments... not the main theme...

i however run into that trap in the past and its good to isolate problems...

its not an easy goal to mix systems... either DAW+ plug ins..that works...

Or pure hardware.. (with atari seen as hardware)...that works...

All mixtures can have real big problems... and you just dont feel not good..and dont know why..than you start to look around..and look and look..

When a machine hurts it needs to be replaced..point..

i today replaced my MD... with another MD...its much better now :-))

I

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## Re: MD SPS-1 Timing Performance Issues

Posted by neonleg - 2007/04/04 06:03

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thanks for doing all these tests guys, its a very interesting discussion though a little hard to follow @ times.

has anyone considered that perhaps elektron have taken into account the leap year phenomenon?

time is rubbery at best.

btw can someone please test an emu xl7 my friend needs to know how his clock rocks.

greetz :-D

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/04 06:07

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innerclock wrote:

So - the million dollar question. Are we going to put pressure on Elektron to put the SPS-1 back in the ballpark?

I wouldnt want the MD to be as sterile as the mpc 3000..but i would like to have a clean 1...

Would be nice if this "human factor" would be a switchable option, or if at least the one of a bar would be stable

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/04 06:44

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Hi Rudebop - please don't ever think tighter event precision means sterile. The MPC-3K funks and grooves like a

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motherfucker. This type of thinking is what lets manufacturers off the hook! With good swing and quantize/tick placement options - you can create any feel you like - rubber or robo! The trick is locking the clock drive chain down so that it never budges between steps. Trust me when I say - if you like the MD now - it will blow your head off if they can straighten up the event precision. Best regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/04 06:50

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Hey Rudebop - just saw your last post - you have an MPC so you know how it sounds already!

Best - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/04 07:42

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Hey Rudebop - my only point of contention (and it's a personal one I know) from your earlier post about the MD SPS-1 being unique because it adds a 'human' factor. Two points about this I feel strongly about - 1. If the seemingly proven SPS-1/MD 'Human' feel/step 'push-pull' was a very deliberate feature inclusion on Elektron's part I could accept that just so long as they gave me the option to switch it off. The fact that it is not deliberate and more down to the code crunchers not keeping things tight is where I have issue. 2. If I really want 'human' feel in my sequencing then as the human being programming the beats - I think any 'human-ness' in the groove should only come from me. Not from any machine and certainly not in a way that I have no control over. Again - I feel this lets manufacturers and designers off the hook when it comes to getting timing right. I know wrist watches are a poor analogy and some are better at keeping time than others of course - but you wouldn't go out of your way to buy a watch that kept poor time - what would be the point? Get a good watch that keeps accurate time and you choose to be early or late to your appointments if you want to be human..... See my point?

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by kuniklo - 2007/04/04 08:24

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I don't think it's any accident that an MPC can be so tight. All it's really doing is dumping sample data out at regular intervals, so the computational requirements are predictable and constant. I'm sure all the drum models in the SPS-1 are much less predictable computationally and harder to deliver on exact intervals. It's the same reason computer sequencers start to fall apart when they're running too many plugins and effects at once but the variations aren't as extreme.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/04 08:44

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Hi Kuniklo - I see your point but again - ROM sound based sequencers and drum machines are really no different to samplers - they still have to trigger a sound/voice at a specific grid/tick count and there are many of these with crap voice/event performance believe me. And even if the SPS-1 is generating/synthesizing voices in real-time - with the dedicated high speed DUAL DSP and all the other available hardware at their disposal in 2004 - a well written event scheduling/buffer design would make certain voices fired on perfect time. And again - in 2004 - if you are designing/manufacturing a world class drum machine - regardless of the fancy voice modeling and DSP synthesis you build into it - if compromises in the OS mean it can't fire on time properly and more significantly if it falls behind on much earlier products and designs then it needs to be addressed - don't let 'em off the hook!

Regards - David



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## Re: MD SPS-1 Timing Performance Issues

Posted by lcvl - 2007/04/04 11:18

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Here you can find the recording used for my timing test:

[www.groundloops.com/test/MPCvsMDUW\\_Timing\\_Test.wav](http://www.groundloops.com/test/MPCvsMDUW_Timing_Test.wav)

The first part is the MPC, the second part is the MDUW.

If you open it in SF you'll be able to see all the markers already in place.

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## Re: MD SPS-1 Timing Performance Issues

Posted by Khazul - 2007/04/04 14:22

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Interesting thread.

Some additional observations:

1. Myself and Tarekith have both observed agravation of arpeggiator timing issues with a Virus TI (in old TI OS versions) when using an MD as the master clock.
2. I have observed issues which my V-synth when using it as a master clock - v-synth seems to have a bug which can sometimes make it incredibly sensitive to clock jitter with certain fx in use - as evidenced by odd squeaks at times.
3. Using MD as master clock, push some of the trigger buttons. To make this extreme, simply run you finger quickly along the trigger buttons - this will causee a massive and very audible slow down of the MD tempo and all clock slaved devices.

MIDI itself is a very hit an miss mechanism for syncing synths - you are allways going to get jitters due to other traffic on the cable that will be upto the length of the otehr message that is contending for the clock message. Typically this works out around 1ms or so, or 0.1 ms with the MD in turbo mode. I have regular observed far higher level for jitter from the MD, especially around pushing buttons on it.

Also I have tried to use it from live in pattern gate mode - this can only be made to work reliably by advancing the gate tracks. Obvious thought - just means that live is not properly syncing notes with clock, or midi interface lag etc. MIDI interface lag is ruled out by clock and notes going along same data path. Live is not ruled out, but I dont consider it a highly likely culprit as 8 otehr synths mangle to trigger arps and switch arp note patterns perfectly well under identical circumstances.

The MD is a wonderful bit of kit, but it isnt perfect, its clocks are flawed relative to most other gear I have, but none the less for convenience I still use it as my master clock and live with its flaws. These flaws are a contributing factor is my regular thoughts about ditching the MD completely and buying an MPC2500 instead... I know different machines different style of use etc, but it would probably do the job and Im sure I would adapt :)

DAW/computers are not perfect, but most sample clocks are very good references on a decent quality audio i/o card - if they werent, all of our recording would sound like shit for reasons other than dubious musical skills ;)

Also some DAW can be worse than others - Cubase 4.0, 4.01 have been particular bad, I havnt tried tests on midi in 4.02 and 4.03 yet. Live 6.0.3 isnt perfect either.

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/04 14:47

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innerclock wrote:

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Hey Rudebop - my only point of contention (and it's a personal one I know) from your earlier post about the MD SPS-1 being unique because it adds a 'human' factor.  
Regards - David.

this was a slightly cynical statement...of cause such a thing should be an option..  
but it also would be necessary to have individual track delays ...the global menu would be a good place for that...

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## Re: MD SPS-1 Timing Performance Issues

Posted by Toni - 2007/04/04 14:48

I find this thread very interesting and I'll add my little counter-voice (not that it means to anybody anyway).

The sample accurate stomping seems to be new sacred gate to perfect music; if you don't enter into it, you will never see the light of the truth. If the SPS would be more precise, it would blow my head off. Right. Sounds familiar in the odd way, doesn't it. Well, we have all heard it thousands times before (by the way, kvr is great place to find them). All this talk of clock precision, it's getting into areas of mystical speak. I love it.

Some months ago, it was analog summing that made all the differences between the good and pro mix (can you hear that soundfield depth). Before that, the tape was only way to truly record magnificiant stuff (that harmonic distortion and transient response). You are not getting there (where ever you are going), because you haven't found \_the one truth behind them all\_. Forget the monster-cables and cosmic radiation shielded environment, here it comes.

Precision of the internal clock is the thing. Real music works with the clock. If the song doesn't work, it's probably because the clock of the sequencer is floating around; you are losing the funkiness by 2ms. Or your inner clock is out of rhythm. You can't hear it (because you haven't trained yourself into it), but that's the reason. Actually you cannot hear it at all, but you can only sense it (are you sensing it now?).

Now the MD clock. It has a special push/pull character, that makes MD so funky machine. It is really something you cannot have from any other machine. If you did suspect that MD has something 'extra' that other machines don't have, congratulations: you are starting to hear the subtle microtiming that surrounds us and for some of us it is perhaps a never-achievable state. For most of us, it is only the dark hours of ever lasting night, where we might once hear it, but never realize of the true meaning of it. But once you conquer it, you will be doing astonishing things with it. You will never hear world same way again.

What we are actually seeing here is reproduction of the MPC-mysticism. It is a special machine, that has some never-to-be-fully-understanded features that actually separates the successfull artist from unsuccessful. It cannot be rationalized or fully measured, it's more like sacred coincident that has perhaps happened in the Akai factories by how knows for what reasons. Take something like MPC-1000; utter shit. They can't reproduce the original magic. The originals had special flavour on ad/da -converters and don't even get me started with the swing (there have been some reproduction attempts with the software, but they don't have \_the feel\_; it's something very special, way beyond the measurable world). Same way as the funkyness of 808 (it has nothing to do with the fact that you have been teached to see 808 in a very special light. You are not seeing your preconceptions).

MPC-mysticism takes the ingredients of artificial hiphop-idol myth and glues it into the machine. It's all about the machine; you cannot make some of the best stuff without MPC (and you know it!)

But the MPC-mysticism isn't the only mystic sect here, there is also the Elektron-mysticism. These machines have, how should I put it, something very special about them. Use these machines and your mind will open up like a flower. And the quality; they are virtually perfect. No, I don't mean good or hi-quality, they are \_perfect\_, putting end for searching the right gear in the wonderland of consumerism. Finally we have come to the end of history of music machines. We are feeling very pioneer, because only the most progressive minds know it (such as Autechre).

Now what to trust in this fantasized world? Monster cables maybe? Why not trust your own ears and intuition? It's not so bad option really. It's the only partner you can have true conversation with (and sometimes prove wrong).

Ok, all the kidding aside. I'm not bitching anyone. a few serious lines after all this writing. I took the change. I really listened the quarters on 120 bpm and I think innerclock is on to something here. If you are careful enough, you \_can hear\_ it. Ok, maybe the hear is wrong word, put you can \_defineatly\_ sense it if you listening the recorded one with the corrected one. It's like you feel more confident to dance. Inspired by this, I took my mpc3000 out of closet and did some sequencing. This \_defineatly\_ proves it: I can hear it from the mpc also! It's not perfect; just like innerlock measured, there is a very little drift going on (maybe just a fraction of ms). Phew and fuck. I can \_defineatly\_ see of rather hear, how this drifting of mpc could endanger my groove. We need the perfect clock! I know some of you might think this as a

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question of taste, but you've got to trust me: if you would hear the corrected version, you head will blow up!

ps. nevermind the way you feel, you have got to see this as an act of love.

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/04 14:52

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Khazul wrote:  
Interesting thread.

Some additional observations:

3. Using MD as master clock, push some of the trigger buttons. To make this extreme, simply run you finger quickly along the trigger buttons - this will cause a massive and very audible slow down of the MD tempo and all clock slaved devices.

Really? that would explain some issues i had live with ableton live running out of sync with the MD as master... i have to test that.. because thats cant be tollerated..

a machine that is doing that cant be used as a clockmaster and has nothing like a solid clock...solid means it stays stable independent from what you do with the machine... a stable clock is one that holds the tempo..but solid means reliable... I investigate

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## Re: MD SPS-1 Timing Performance Issues

Posted by dreg - 2007/04/04 15:17

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I used Atari ste/notator for at least 10+ years and pushed/pulled tracks to compensate for the midi slop of the things it was driving.  
So I think I have a good grasp on this tight timing issue and it still won't make an average song "Blow your head off" sorry don't get or dig all this tech details as you only notice it after listening to something over and over and over or scoping it.

Again all this talk of mpc 3k being the one and only is bs, there are heaps and heaps of tracks I and many others like and they groove like hell with out an mpc or an mc4 or an atari.

just try to finish a song is my take :-o

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/04 15:18

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again - in 2004 - if you are designing/manufacturing a world class drum machine - regardless of the fancy voice modeling and DSP synthesis you build into it - if compromises in the OS mean it can't fire on time properly and more significantly if it falls behind on much earlier products and designs then it needs to be addressed - don't let 'em off the hook!

Regards - David

Actually i think this has to do with listening experience...the MD sounds and behaves timingwise like a computer sequenced system of the 80's...we have the same lag here...same groovy circling that happens by squeezing the note data thru a midi cable..you always had wobble around 2 ms...similar groove  
My guess is that the Elektrons didn't have access to real drum machines and was living rather in a computer geek world...

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The Sidstation indicates that...

Some design flaws in the user interface of the MD indicate that aswell... Its made by programmers that do music.. while the mpc3000 was done by Linn..a musican that learned to program...

Linn started with clocking and sequencing the thing... sound engine later..

Elektron started with the soundengine...clocking and sequencing later...

You can see that in a lot of details like that mute and pattern access need double keystrokes...

no problem for a geeky point of view...but something the direct access used musican have to adapt to... on an old mpc each function has a dedicated button. The mpc is simple in relation to the MD..but all sync issues are 100%

The MD works well when you work in a single pattern...

Or you use songmode..but only geeks would do that ;-)

there we come to another point good point about the midi alike timing of the MD

The MD with it limitetd multibar abilitys is ment to be arranged in a DAW sequencer.. so with the highspeed midiinterface you can record all your moves in a DAW and after that run the drumsequencing from the DAW using the MD as expander without loosing the timing...

When the MD would be absolutly straight you couldnt do that without loosing the tightness..

So in general wobbely timing is bad..but as with the MD you can choose internal or external sequencing without loosing the feel...

quite unique for drum machine...

again we see that the MD is rather an soundexpander that later got a sequencer than a drummachine that is based on a sequencer...

Its quite a lot of sound they squeeze out of 2 dsps... when i would use my 8 dsps on the G2 i wouldnt be able to simulate a MD...

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/04 15:23

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dreg wrote:

just try to finish a song is my take :-o

Word!

however...its a forum to discuss such issues... but in the end of the day the question is ..

can you do music with it...and the answer to that question is that are rather to many MD records out there than to few..so YEs...it works out...

Timing is not precise..but within the range where it still sounds good and natural. Not irritated as you can have it with sloppy DAW/soundcard combinations.

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/04 15:46

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Toni wrote:

I find this thread very interesting and I'll add my little counter-voice (not that it means to anybody anyway).

.....

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ps. nevermind the way you feel, you have got to see this as an act of love.

some true in your article aswell..its not about measurments its about the feel of a thing. And we are sensetiv enough to feel frequency related phenomens well above 50k...and timing is a frequency related phenomenon..but.. its like water...when its meandering in nice ways it feels good...everything on a 100% straight clock wouldnt sound nice aswell..something jumping around in an edgy fashion is the worst...circular motion...like water..

what pushed against your nerves by listening to the mpc was that there is absolutely no movement..its so straight that it hurts..

in this sense the MD is better...but the wide range of swing causes editing problems...

I ve circular timing on my nord modulars and the 808 without variating loop length

In ideal it would be possible to set one track into clock precession mode and there you place a sound event as you like that gives you the loop marker.. the other 15 tracks can cycle as they do now... or you swith that precession track mode off and all 16 tracks do as they do now.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/04 17:39

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rudebop wrote:

.but..

its like water...when its meandering in nice ways it feels good...everything on a 100% straight clock wouldnt sound nice aswell..something jumping around in an edgy fashion is the worst...circular motion...like water..

what pushed against your nerves by listening to the mpc was that there is absolutely no movement..its so straight that it hurts..

in this sense the MD is better...but the wide range of swing causes editing problems...

with all due respect we've gone over this already, features like SWING exist so you can humanise your grooves. Maybe you dont like the mpc3k because you dont know how to program swing yourself, and you prefer the md because by the fact its timing is already off 'it does the swing for you' .....personally, if I'm not using swing I want the steps to be straight. I've had problems recording straight loops into ableton live, from the MD...and just assumed the problem laid elsewhere...but the push-pull thing is making sense.

I'm not down with the 'let it be sloppy, cos thats like human swing' rhetoric. Also, at first I thought this timing issue was down to midi & sync, but learning of the INTERNAL timing issues sucks, also explains alot of the nagging quirks I've had in the past. I just totally assumed the internal timing was spot on, and the midi could be improved.

anyways, good to know. Keep up the good work guys

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## Re: MD SPS-1 Timing Performance Issues

Posted by divi - 2007/04/04 19:30

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LOL @ toni ^^

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## Re: MD SPS-1 Timing Performance Issues

Posted by divi - 2007/04/04 19:33

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there we come to another point good point about the midi alike timing of the MD

The MD with it limitetd multibar abilitys is ment to be arranged in a DAW sequencer.. so with the highspeed midiinterface you can record all your moves in a DAW and after that run the drumsequencing from the DAW using the MD as expander without loosing the timing...

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So in general wobbely timing is bad..but as with the MD you can choose internal or external sequencing without loosing the feel...

quite unique for drum machine...

again we see that the MD is rather an soundexpander that later got a sequencer than a drummachine that is based on a sequencer...

i have never ever experienced the MD as being ment to be sequenced from DAW... that's really your own take on it

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/04 20:52

divi wrote:

i have never ever experienced the MD as being ment to be sequenced from DAW... that's really your own take on it

Its not my take..its in the design of the machine drum itself.. i just tested it and was astonished that it didnt fucked up the timing..later i learned that this is because of an allready "fucked" timing....

so sequencing the MD over midi dont sounds worse than internal sequencing...

which is in the end of the day rather prtcal because you can choose each way of working without destroying your established listening experiance.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/04 22:57

Khazul wrote:

Interesting thread.

Some additional observations:

1. Myself and Tarekith have both observed agravation of arpeggiator timing issues with a Virus TI (in old TI OS versions) when using an MD as the master clock.

Hi Khazul - thanks for the reply and detail - all talk of Sync aside which is very important I know - but getting the internal clock/event tempo stability straight needs to be nailed first which is what these test show as being flawed.

REgards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/05 02:12

Please! Please! PLEASE! - I know all these cross threads about Midi and Sync and external control are all valid issues in

their own right but they dilute focus on the core issue - I agree that personal timing and feel are subjective but what I think must be stressed is getting away from the 'Mystic' mysterious 'black art' theory of sequencer timing. There is nothing mysterious about it - one of the reasons this never gets resolved is because there is a tendency to reduce what is absolute science and logic into the realm of magic and voodoo. Event/Step/Clock precision is science. Period. Time is not a variable. OK in a Black Hole maybe but not in music. One second is a bullet proof absolute. In the same way a quarter note time division at any given tempo is an absolute. This is NOT OPEN to debate. By all means choose where you want notes to fall along that absolute timeline to create any mystic feel you like but don't fuck with the timekeeper. Lock it down, keep it running, don't interrupt it's flow - all things that need a reference or trigger from that time clock must get it WITHOUT compromising the solid and continuous flow of the clock itself.

Regards - David  
www.innerclocksystems.com

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/05 03:55

For those interested - a quick history lesson that relates to my previous post - before CPUs and DSP - sequencers were built around simple voltage gates, switches and timers. The master tempo clock was either an internal analogue VCO that generated regular Square/Pulse waves or; an externally generated Square/Pulse wave running at a particular tempo. Just like today, there were tight and sloppy Square Wave clock generators - BUT (and this is the important bit in all this) - the way the sequencer designs of the day responded to the incoming Square Wave Sync Pulse was fundamentally different to the way most/all modern sequencer devices are designed today.

In a vintage (say 1978) step sequencer - the Tempo Clock voltage Pulses hit a combination of gates and switches - and then - depending on the gate and switch positions - a voltage at the precise sync timing clock pulse is then fired off to generate a note or pulse etc. Because these designs are all voltages (real electrons) - they are all running around at light speed (or close to it depending on what you read) so pulses in and pulses out are effectively instantaneous. The critical thing in all of this is that the switches and gates are all passive to the Sync Pulse Tempo Clock stream. They do nothing to it in order to do their job. There is no possible way for any component or operation state of the sequencer to pause, stall, rush, drag, jitter or halt the tempo clock pulses. When designers moved away from this proven method of handling event synchronisation using discreet and passive components and instead towards CPUs and EPROMS running instruction sets to handle many different tasks - this is when things started to go deep south on the sync front. And it's easy to understand why: The CPU and OS all-in-one design philosophy means that tempo and sync are just two aspect the machine has to manage now governed by the speed of the CPU and the number of tasks it has to achieve overall. Of course we now have CPUs running at very high speeds but they are also running incredibly deep and complex instruction sets. Designing a modern sequencer that has all the features we have come to expect while still maintaining the sort of razor-sharp tempo/clock performance we had in 1978 is not easy - sure - but not impossible - Roger Linn proved that hands down with the MPC-60 and the MPC-3000 and the later only runs a 16MHz processor at its core! Its not about speed - it's about smart design that uncompromisingly puts clock/sync/tempo/event scheduling at the absolute top of the feature list and building everything else around it. Add features - sure - but if they fuck with the clock - find another way to get there. And if it can't be done - leave it out!

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/05 06:25

kuniklo wrote:

I'm sure all the drum models in the SPS-1 are much less predictable computationally and harder to deliver on exact intervals. It's the same reason computer sequencers start to fall apart when they're running too many plugins and effects at once but the variations aren't as extreme.

The Quasimidi Polymorph does this. Busy sequences will make you seasick.

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## Re: MD SPS-1 Timing Performance Issues

Posted by kuniklo - 2007/04/05 07:00

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The Quasimidi Polymorph does this. Busy sequences will make you seasick.

Likewise the E-Mu Command Stations and (I've heard) the Roland MC- grooveboxes.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/05 07:07

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dreg wrote:

I used Atari ste/notator for at least 10+ years and pushed pulled tracks to compensate for the midi slop of the things it was driving.

So I think I have a good grasp on this tight timing issue and it still won't make an average song "Blow your head off" sorry don't get or dig all this tech details as you only notice it after listening to something over and over and over or scoping it.

Again all this talk of mpc 3k being the one and only is bs, there heaps and heaps of tracks I and many others like and they groove like hell with out an mpc or an mc4 or an atari.

just try to finish a song is my take :-o

Dreg - I'm not debating the fact that a good song can be made with even a comb and a piece of tissue paper - it's important I think however, to separate these two issues - creative/technical for the purpose of this thread. Again I use the Mobius/MC-4 example: We spent many hours moving and shifting notes around, changing the analogue synth ADSR settings to get the Mobius sequencer feel right in a 16th note arpeggio in a track we were working on. This might be fun in a geeky techno sort of way but its counter productive to the creative process. Those 3 hours could have been better spent when really all we were doing was manually compensating for a shitty clock inside the Mobius. By contrast - the same sequence punched into an MC-4B is done, finished, nailed, and totally funky in 60 seconds. You dance around the room and move on to the next thing you want to add. Simple and far more creatively productive. The same goes for drums - in my work I see people every day programming beats in software and average hardware and they spend all their time moving things backward and forwards looking for the groove. If I punch an 8th note Kick/Snr/Hat hard-quantised pattern in my 3K - it's all over in 60 seconds. Rock solid. Move on to the next thing. No moving shit around to compensate for rough clock. And if I want swing - bang - one button - game over. I'm not saying the 3K is the only way to make music. I am saying having a tight sequencer clock makes creating music more rewarding, more interactive and far less nerdy. And the reason I keep using the 3K as an example is because I have one and it is one of the only boxes in recent years that does the trick and believe me when I say I have tried them all! I want the sounds and features in my MD SPS-1 to have that same 'Snap, Crackle and Pop'. And in 2007 that should be mandatory for any half decent sequencer let alone one that is as expensive and as well regarded as the Elektron surely?

Regards - David

[www.innerclocksystems.com](http://www.innerclocksystems.com)

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/05 07:14

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Dreg wrote....

just try to finish a song is my take :-o

In all the time you spent moving stuff around to get timing right in one song you could have probably finished a whole album if the gear was better designed (clock/sync-wise) in the first place.

Regards - David

[www.innerclocksystems.com](http://www.innerclocksystems.com)

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/05 08:59

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Toni wrote:

I find this thread very interesting and I'll add my little counter-voice (not that it means to anybody anyway).

Ok, all the kidding aside. I'm not bitching anyone. a few serious lines after all this writing. I took the change. I really listened the quarters on 120 bpm and I think innerclock is on to something here. If you are careful enough, you can hear it. Ok, maybe the hear is wrong word, put you can definitely sense it if you listening the recorded one with the corrected one. It's like you feel more confident to dance. Inspired by this, I took my mpc3000 out of closet and did some sequencing. This definitely proves it: I can hear it from the mpc also! It's not perfect; just like innerlock measured, there is a very little drift going on (maybe just a fraction of ms). Phew and fuck. I can definitely see of rather hear, how this drifting of mpc could endanger my groove. We need the perfect clock! I know some of you might think this as a question of taste, but you've got to trust me: if you would hear the corrected version, you head will blow up!

ps. nevermind the way you feel, you have got to see this as an act of love.

Hi Toni - your comments and testing are always welcome and indeed important - and thank You! There is a difference and it shouldn't be optional in 2007. People are totally OK spending a fortune getting Word Clock tight for reducing Digital Audio jitter (Apogee/Prism etc). Sequencer manufacturers need to apply the same degree of interest and quality control in getting Tempo/Event/Clock stability to at least the same benchmark - if not better than a ten year old MPC3K or a 25 year old MC-4B.

No-one with half a brain these days disputes that tighter Word Clock accuracy means a better audio recording. Why is it then, in the area of rhythmic/tempo/event clocking which is equally if not more important (A shitty groove captured by an Apogee A/D is still a shitty groove even if it sounds special after all!) than Word Clock jitter - we find resistance to the idea of improving it? And worse - people using these tools write off any notion that these numbers actually mean anything and are nothing more than a fanatical obsession for control?

Best regards - David

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## Re: MD SPS-1 Timing Performance Issues

Posted by dreg - 2007/04/05 10:48

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Problem is 99.9% of the gear people are using has this "shitty clock" and its only making people feel shitty about their gear/music.

If Elektron ain't doing it then no one else is and they claim solid internal timing in their publicity.

So its a mute point in the end cause as you say its only good on a 1 10 and 1 30 year old kit plus a few other bits, no manufacturer sees it as a problem and bit of noise from here won't change it.  
And when I talk about Kraftwerk sure they used analog seqs BUT it(their early stuff) was recorded on tape, with its inherent wow and flutter

Which is why I get back to, just play the damm things and enjoy, if I could write "Computer World" I'd be pulling myself around the block.

I'm not trying to dis your approach or integrity on this subject as you no doubt know your stuff.

Guess it depends on your background, I started with sound design, then to synth pop then to gear geeking and now twirl btw them.

Cheers :hammer:

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## Re: MD SPS-1 Timing Performance Issues

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Posted by innerclock - 2007/04/05 11:53

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Hey Dreg - yeah, I know it - and I've spent a small fortune on gear over the years with shit timing which I guess is why I'm so vocal about sorting it out. I bought Computer World in my late teens and many other records with the same feel over the years. In my early days of my own sequencing it drove me nuts why the best computers and hardware I could afford didn't do Kraftwerk any justice. I asked people, retail - there was no web back then - no straight answers. Then I was fortunate enough to work on a studio session that used analogue modular synths driven by voltage stepped sequencers synced to tape via a Sync Pilot Pulse Tone generated by the sequencer itself. The Wow and Flutter means nothing because everything you track to tape FOLLOWS THE SAME WOW AND FLUTTER EVERY PASS. Revelation and horror at the same time. Why did I have to go back 20 years to get that? What the hell went wrong in all that time? Did we all forget what tight sequencing actually sounds like? Did we all think it was a happy accident in 1978? I don't want anyone to feel shitty - in all honesty they probably feel shitty anyway if they compare their stuff with Computer World - worse if you don't know why or how to fix it. What I am trying to do is wake people up to the fact that we don't have to put up with it - there is a concrete reason behind all this and if we don't make a noise, however small it may be - it will only get worse. I know Elektron give a shit - that's why I bought an SPS-1. I'm giving them stick because I want the SPS-1 to be the best Drum Sequencer in the world and to be that it has to sort out the slop and if anyone can lead the way - it's these guys.

Best as always - David  
www.innerclocksystems.com

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/05 13:06

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dreg wrote:

Which is why I get back to, just play the damm things and enjoy, if I could write "Computer World" I'd be pulling myself around the block.

Hey again - had a final thought after reading your post - this may get me knee-capped but it's worth saying all the same - I'm not taking anything away from the Kraftwerk genius - both is skill, scope and being a million years ahead of the music world at the time - BUT - they had one thing going for them that is a cornerstone of their sound overall and that the vast majority of us do not have access to anymore - super tight clock for sequencing duties.

Kraftwerk rocks just as hard now as it did then because it's ROCK SOLID.

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by teknobryan - 2007/04/05 16:29

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so stuff made completely in software has a 100% steady clock? So by your logic that stuff should "groove" better.

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/05 16:35

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innerclock wrote:

that it has to sort out the slop and if anyone can lead the way - it's these guys.

Best as always - David  
www.innerclocksystems.com

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come on... elektron makes nice freaky machines but in relation to others they are not that ahead.. its faster than programming a nordmodular or reaktor or max msp...but its the same world of sounds...

so wehn you want to go for tight timing i suggest that you have a look to the more professional equipment of the above mentioned branches...

Regarding product design elektron shines most on a optical side..  
all the user interface design is not really 100% thought thru..  
its not bad also..but many inconsistencies.. unlogical things... like sharing  
pattern/song button with the global setup and kit with songsetup...  
The songmode nobody uses i know is the only direkt acces function on the whole machine... ... The patern/sample /kit  
safe operations are deeply quirky..a machine wher you constantly loose work..and the most inferior sound engine timing  
on the market...

The MD is a percussion syntheziser... its great for that..but its not the very best drum machine...

If you after rocksolid timing you should work DAW internal...the mixup of systems allways causes problems..midiclocking  
works with an atari or mpc but not with modern DAW?s...

Logic for example fucked the good OSX timing...its as bad as it was regarding clockjitter in the 90?s... dont ask me why...  
inbetween it was fine..the clock very precise..but now we have 1,5 ms again...

So its actually not the trend to deliver timing precission to the hardware world from DAW side....why should equipment  
that is supposed to run as slave have a better timing than the external clock prvides...

Best is to give up on hardware and work only wih the computer ..that the message that is in this development ;-)

Btw: i just reformed my studio to the state of mid 90?s...

we have an akai harddiskrecorder as timecode master and an atari that runs synced with smpte and delivers the  
midiclock...#

#  
the laptop is alo in smpte sync and wordclock synced to the harddiskrecorder...

so all work is done in the harddiskrecorder and the laptop just integrated as dubber and editor...

We will see how that works out..  
i am not willing to be forced to do everything on a computer..that kills at least my creativity...

What is probaly the plan behind this timing conspiracy ;-)

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by kim - 2007/04/05 18:06

woah. this is indeed a very interesting thread. it has given me a wicked headache, spawned paranormal activity in my  
bedroom, and been otherwise, very stimulating... i'm at a bit of a loss for words, but i have a few questions - the initial  
tests were done using a md clocked from a mpc3k? has anyone run the same test in reverse order? i remember reading  
that someone ran both side by side on internal clocks, but i don't recall seeing an md master mpc slave test, and i'm just  
morbidly curious about those results.

cheers!

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## Re: MD SPS-1 Timing Performance Issues

Posted by neonleg - 2007/04/05 18:14

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rudebop wrote:

innerclock wrote:

that it has to sort out the slop and if anyone can lead the way - it's these guys.

Best as always - David  
www.innerclocksystems.com

come on... elektron makes nice freaky machines but in relation to others they are not that ahead.. its faster than programming a nordmodular or reaktor or max msp...but its the same world of sounds...

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Best is to give up on hardware and work only wih the computer ..that the message that is in this development ;-)

:~O

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/05 22:59

Guys - come on - you are missing the wood for the trees here. One of the reasons we have all been encouraged to go DAW to get good timing is precisely because you can't get good hardware clock/event/sync/timing in modern hardware - and you certainly can't get good tempo/clock/event sync between Windows/OS-X and external hardware - Period. Midi clock via USB is at best a nice bowl of custard. Come on people - have a good listen! I for one refuse mix with a god damn mouse. I use a big Analogue Console with faders I can move with my hands - 2 at a time if I wish and Aux sends that don't have 4ms latency by the time my signal comes back from my effects rack. I say again at the risk of repeating myself - improving sequencer tempo/event/clock precision IS POSSIBLE and IMPORTANT. We have existing older technology that proves it.

I bought my SPS-1 because I DIDN'T WANT TO SEQUENCE IN PRO-TOOLS! Are you guys telling me ' oh well - that's just the way it is these days?' ? Are you telling me I should use a shitty crack of Battery or Reason - or worse sample up the SPS-1 and waste my life moving shit around with a mouse? That's not fun and it's not making music in my book either. That's insane and pissweak - sorry but I can't believe the lack of commitment to something so fundamentally important by a group of people with obviously good enough ears to purchase an SPS-1 in the first place.

Waiting for your responses - David

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/05 23:10

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Hey Kim - thanks for checking it - yes it is an interesting thread mainly because it gets down to a fundamental issue in music making. Initial test on my site have nothing to do with Sync - although that is of course valid in its own right. My very first test was done this way though - 3K master/MD Slave and vica versa. I thought the slop I could hear was just a constant value start time offset which I could fix another way. What I found was indeed a 3ms start offset but far worse was the rough MD push/pull on top of the offset. I even tried flipping it round - MD master/MPC Slave - same result - MPC holds lock tight/MD has the same push/pull event slop. Hence my test page and this thread. So - Sync is important but far secondary to getting a box to internally be tempo/event precise in the first place - if it can't do that - all the offsetting in the world still means your beats sound soggy.

regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/05 23:29

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Maybe I'm crazy but I think I'm going to put a time limit on having this issue at least acknowledged by the fine folks at Elektron and then a time limit on having this resolved - if not in an OS Update then in a new (improved) version of the SPS-1. I've emailed Daniel and the Support crew and informed them of this link so they will I'm sure get a handle on the issues on hand. I don't particularly want to buy an expensive hardware modular synth and drive it with vintage sequencers to get close to what I know the MD SPS-1 can achieve if they fixed it's internal step/clock stability but I refuse to put up with it the way it is. And I'm not buying Battery or G2 or Max/MSP however funky they are. So - I'm buying some nice rope today instead and maybe in a few weeks time I'll take some nice photos of it on the bottom of Sydney Harbor while I'm doing a spot of fishing and listening to the local Indian Minor Birds doing their fabulous 'clk - clk -clk - clk' birdcall - now they can keep time!

Regards as always - David

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## Re: MD SPS-1 Timing Performance Issues

Posted by kuniklo - 2007/04/05 23:54

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David, I think it's good that you're raising these issues but I also think you might be getting a little obsessive here. I'd like to see the timing of the MD improved, but, in the meantime, lots of people have made music I enjoy with the MD in its current state and I personally find it an inspiring and fun instrument to play. I bought it and use it not because I thought it had exceptionally tight timing but because it adds something valuable to my music I haven't found in other tools.

Other tools put other obstacles in the way of creativity so I guess you just have to pick your poisons. Personally I can't imagine switching back to 90's era midi gear or an all-cv analog rig. Both would have a much more negative impact on my music than the timing issues of the MD do.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 00:16

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kuniklo wrote:

David, I think it's good that you're raising these issues but I also think you might be getting a little obsessive here. I'd like to see the timing of the MD improved, but, in the meantime, lots of people have made music I enjoy with the MD in its current state and I personally find it an inspiring and fun instrument to play. I bought it and use it not because I thought it had exceptionally tight timing but because it adds something valuable to my music I haven't found in other tools.

Other tools put other obstacles in the way of creativity so I guess you just have to pick your poisons. Personally I can't imagine switching back to 90's era midi gear or an all-cv analog rig. Both would have a much more negative impact on my music than the timing issues of the MD do.

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Hi Kuniklo - partly my stance is devils advocate and partly because I do obviously think it is worth fixing. Yes it adds value as it is and yes you can make music with the MD as it stands now - as I've said before - I can have fun making music with two sticks and some bottle caps if I wish for free if I want to - what I am trying to say (again) is that improving this should be a priority not an option and that it will make a difference overall. The reason I'm barking up Elektron's tree is because I believe they (possibly more than any other current sequencer designer) understand this concept and have the commitment and vision to lead the way back/forward to tighter timing. The fact that they only produce 2 very high quality sequencing products means their code/R&R teams have more time/focus to look at this and make it a valid priority in their design.

I don't want to go back 20 years either but none of us would have to consider it if this issue was taken as seriously by sequencer users/designers as say Apogee/Prism/Drawmer user/designers take Word Clock jitter stability in digital audio.

Without pressure - nothing changes.

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by kuniklo - 2007/04/06 00:18

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By all means put pressure on them. I'd like to see this improved too. However, I intend to go on enjoying making music with the MD in the meantime.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 00:26

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kuniklo wrote:

By all means put pressure on them. I'd like to see this improved too. However, I intend to go on enjoying making music with the MD in the meantime.

Kuniklo - as I am sure I will too! Again - it's not personal - and I don't want anyone to not enjoy music making in any form at all. If it doesn't bother you then it won't matter if it's fixed or not but over ten years and more of working with music machines and people there is more than enough evidence to prove that sequencer tempo/clock/event stability does have an impact on the way we feel, respond, interact and play with music and in 2007 it is long overdue that this was acknowledged and rectified by our product designers.

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 00:45

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teknobryan wrote:

so stuff made completely in software has a 100% steady clock? So by your logic that stuff should "groove" better.

Not necessarily - if it's generating audio in real-time you have one set of issues - if you render it and sample accurate re-align it to exact tempo sample markers and divisions then yes it's as accurate as your word clock crystal.

Would anyone want to actually do this by choice? Please tell me this isn't true?

Even if you spend three weeks surgically doing this and then you want to play a mad free form/unquantized synth solo over the top with a soft-synth - you can't really get there because your dealing with 5ms average latency anyway which is going to rhythmically mess with how you play anyway.

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So - you play it in rough and fix it with the mouse - right?

Tell me which bit is fun in all of this?

Regards David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/06 00:47

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I havent done all the timing measurements when i wouldnt be on the side of the stable time freaks...

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its just that i havent decided yet how to judge about the MD..because its the most sloppy drummachine on the market...and as such i would get rid of it imideatly..

BUT..  
it also transports this sloppyness with a good groove..what makes the timing issue much more enoyable than on other problematik systems where it just hurts...

I ve to watch the phenomen..it gave me some problems in the past with looplevelth..but the biggest problem was the time it took to identify the reason ...the machindrum itself was the last thing i expected! just because its allwright from the listening experiance...

I ve no time wright now to find the reason why this is so..its just a theory that this is caused because the timing wobble follows a pattern that is pleasing...

I just start a new production series...this time the MD has competitors because i installed a big hardware setup again...

when the timing causes problems it goes..i am tired of problems like such..

what works stays..what gives me pain goes...

No time anymore for research..

So... Its good to point to the issue..its just to earlie to quantify the problem..

At least i need a bit more time...now that i know that it wobbles i am more chilled about it...but finding the phenomen killed a studio session and took very important time..

At least elektron shouldnt advertize a rock solid timing..they should call it a liquid groove...than the people that know can read between the lines and can choose if they can go for that or not...solid timing is close to a lie under the actual circumstamces...

but as i see wright now...the solid timing claim seems to have disappeard from theire webside..

So conclusion..a machine that generates a good groove without beeing very precise...

Wether this causes problems or is rather beneficial for certain styles has to be evaluated...

For me it dont hurts too much wright now... opposite to usb/midi jitter...that is the bigger problem..

The elktron turbomidi is something i would like to see on all my machines...would be nice if they give it to other manufactors for free but claim the priviledge to produce the interfaces...

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 01:13

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rudebop wrote:

At least elektron shouldnt advertize a rock solid timing..they should call it a liquid groove...than the people that know can

read between the lines and can choose if they can go for that or not...solid timing is close to a lie under the actual circumstances...

but as i see wright now...the solid timing claim seems to have disappeared from their website..

So conclusion..a machine that generates a good groove without being very precise...

Whether this causes problems or is rather beneficial for certain styles has to be evaluated...

Well stated my friend, it isn't rock solid - far from it in fact - 'Liquid Groove' maybe but it's still a cop out - even though the internal event/push-pull seems fixed (and very precise at that) it still doesn't fit any 'groove template' or 'feel' that I want in any of my tracks. Have faith - I think the Elektron boys have enough fortitude to sort this out. I do - otherwise I would not have started this thread.

Best regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 02:49

Hi all - just to let you know that I wasn't just blowing smoke by starting this thread - here is a direct copy of an email I sent yesterday to Elektron Support:

Hi Jon and Daniel - I know it's probably the last thing you guys feel like getting involved with but I thought it at least courteous to point you to a topic/thread regarding the SPS-1 internal tempo/timing stability I have emailed you about a few weeks back.

As with all these things - it starts out with a genuine, positive desire to get to the truth about something and suddenly all hell breaks loose and people start getting personal and feeling offended when really it's about getting things right.

With timing, in particular, there are always two main camps - those who think feel and timing precision are some mystical thing we have no control over and those who know that time is fixed and it's an exact science getting events to line up properly.

The thread has had nearly 400 views in 4 days so it's obviously got people talking.

Here is the link:

[http://www.elektron-users.com/modules/newbb/viewtopic.php?topic\\_id=2155&viewmode=flat&order=ASC&start=0](http://www.elektron-users.com/modules/newbb/viewtopic.php?topic_id=2155&viewmode=flat&order=ASC&start=0)

Many of my posts quote the MPC3000 (also the old MC-4B too) and a few members seem to think I am placing the Akai above all else - particularly the SPS-1. This is not the case as you will see. My only reason for using the 3K/MC-4B etc is to show that internal clock stability is achievable.

Some of my posts might seem demanding of Elektron and I for one know how much you already put into your designs - the tone of my comments is more to get people thinking and expecting more - to actually question these things rather than put it down to chance.

So - have a read if you feel up to it and of course add to the thread if you wish.

I hope you take it all as positive overall.

Regards as always.

David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by jngpng - 2007/04/06 04:18



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I still haven't seen any evidence that the MD has bad timing.

David made measurements using DAW equipment that showed problems.

Nathan made measurements using actual scientific equipment that showed no problems.

Personally, the conclusion that I'd draw from the above two pieces of information is that David's measurement are flawed - not that the MD's timing is bad.

If you can give me measurements taken on proper scientific equipment that show the MD having a timing problem, I'll believe you. Until then, no. There are too many other factors involved when recording with a DAW.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 04:24

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jngpng wrote:

I still haven't seen any evidence that the MD has bad timing.

David made measurements using DAW equipment that showed problems.

Nathan made measurements using actual scientific equipment that showed no problems.

Personally, the conclusion that I'd draw from the above two pieces of information is that David's measurement is flawed - not that the MD's timing is bad.

If you can give me measurements taken on proper scientific equipment that show the MD having a timing problem, I'll believe you. Until then, no. There are too many other factors involved when recording with a DAW.

Please - have a good read through the whole thread - there is more than enough evidence and you can hear it anyway without scopes or DAWs and without having to listen real hard when you ref it against something tight. I have a close friend with three expensive all hardware HP Storage Scopes bringing one over next week to finally lay the doubters to rest.

regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by jngpng - 2007/04/06 04:29

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I have already read the thread thoroughly thank you, and I call bullshit. You have not presented a shred of credible evidence. If you can repeat these findings using scientific equipment, then I'll accept them. Until then, you need to accept that they may not be correct.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 04:31

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Not that I doubt Nathan's intentions but I must admit I am reluctant to really trust any scientific test results made on a software/hardware combination that costs \$150 tops.

[http://www.parallax.com/detail.asp?product\\_id=28119](http://www.parallax.com/detail.asp?product_id=28119)

compared to the real deal:

<http://www.home.agilent.com/agilent/product.jsp?cc=US&lc=eng&ckey=564654&nid=-35671.536905497.00&id=564654>

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Regards again - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 04:37

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jngpng wrote:

I have already read the thread thoroughly thank you, and I call bullshit. You have not presented a shred of credible evidence. If you can repeat these findings using scientific equipment, then I'll accept them. Until then, you need to accept that they may not be correct.

There really is no need to take any of this personally - in reality as I said before - it's not about Scopes or even hard evidence when you can hear it plain as day if you listen to what's happening agaisnt something that is doing the job right and others have said exactly the same thing on this thread. I will provide the core results on an HP DSO just to make certain there is no doubt in everyones mind.

Regards again - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by jngpng - 2007/04/06 04:41

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I really don't see how the cost of Nathan's scope has any bearing on this argument. A scope is designed to provide accurate measurements of a signal. A DAW is not - it is designed to record and manipulate a signal for artistic purposes. I'm going to believe the scope until something more credible is presented to me.

I look forward to you getting your hands on this expensive storage scope David. Until then, I'm not convinced.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 04:46

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jngpng wrote:

I really don't see how the cost of Nathan's scope has any baring on this argument. A scope is designed to provide accurate measurements of a signal. A DAW is not - it is designed to record and manipulate a signal for artistic purposes. I'm going to believe the scope until something more credible is presented to me.

I look forward to you getting your hands on this expensive storage scope David. Until then, I'm not convinced.

I'm sorry to get blunt but it has everything to do do with it when you are talking measurements. In absolute basic terms - a scope is great for micro (ie: nanosecond) variation measurements. Tempo variation is massive compared to that. We are talking variation you can hear. No one needs a scope for that type of measurement and even a crappy PC soundcard with free DAW software of the net will show you if things are in time or not. Sorry man but do some homework before you post.

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by jngpng - 2007/04/06 04:47

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innerclock wrote:

There really is no need to take any of this personally - in reality as I said before - it's not about Scopes or even hard evidence when you can hear it plain as day if you listen to what's happening agaisnt something that is doing the job right and others have said exactly the same thing on this thread. I will provide the core results on an HP DSO just to make certain there is no doubt in everyones mind.

Regards again - David.

Give me a fucking break. Of course it's about hard evidence! Hearing is a subjective process, and hence is worthless when drawing scientific conclusions.

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## Re: MD SPS-1 Timing Performance Issues

Posted by jngpng - 2007/04/06 04:49

Apologies if I sound offensive, but as an actual scientist your self-assured psuedo-scientific bullshit gets my back up.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 04:55

Give me a fucking break. Of course it's about hard evidence! Hearing is a subjective process, and hence is worthless when drawing scientific conclusions.

No break - sorry - forget subjective - I know when something is in or out of time - the DAW tests just prove it.

Regards - David.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by jngpng - 2007/04/06 05:02

innerclock wrote:

I'm sorry to get blunt but it has everything to do do with it when you are talking measurements. In absolute basic terms - a scope is great for micro (ie: nanosecond) variation measurements. Tempo variation is massive compared to that. We are talking variation you can hear. No one needs a scope for that type of measurement and even a crappy PC soundcard with free DAW software of the net will show you if things are in time or not. Sorry man but do some homework before you post.

Regards - David.

Sorry, but "noone needs a scope for that type of measurement" doesn't cut the mustard.

Real proof or STFU.

No break - sorry - forget subjective - I know when something is in or out of time - the DAW tests just prove it.

DAW tests prove nothing. Your sense of whether something is in or out of time proves nothing. Neither are reliable measurement devices. That is the entire point.

Real proof or STFU.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/06 05:57

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Let's be civil, please.

I have hard evidence, please see attached.

This is a composite of two passes. The left channel is an impulse on quarter notes at 120 BPM, with all other tracks muted. The right channel is the same impulse track, but with all other tracks unmuted and their mix volumes turned to zero. I wanted to see if there would be a difference.

Both passes were recorded to a Sony HiMD MZ-RH1. While I concur with David that a DAW is an acceptable means to capture and present sample-accurate recordings, I have opted to use a dedicated, realtime recording device to address concerns voiced by Nathan and others.

Here are the first six peak to peak measurements.

1 to 2: 22016  
2 to 3: 22112  
3 to 4: 22016  
4 to 5: 22048  
5 to 6: 22112  
6 to 7: 22016  
...

You can follow the rest by opening up the wave file in your DAW. There appears to be a periodic fluctuation, but in the first six peaks, it's less than a millisecond at 96 samples. I'm not really concerned about the "musical" effect this entails, but I don't think these numbers are as extreme as the ones David has reported. David, what say you?

The right channel, which was recorded with other tracks unmuted, but mixed to silence, is very interesting. You'll note that the first peak lines up exactly with the left channel, but they're all over the place, relatively speaking, after that!

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/06 06:05

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Arg. The file was too big for an attachment.

Anyway, I uploaded it here - please try it before downloading from Elektron-Users:

[http://syncretism.net/snd/niall\\_-\\_impulse\\_120\\_bpm.wav](http://syncretism.net/snd/niall_-_impulse_120_bpm.wav)

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 07:50

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niall wrote:

Let's be civil, please.

I have hard evidence, please see attached.

This is a composite of two passes. The left channel is an impulse on quarter notes at 120 BPM, with all other tracks muted. The right channel is the same impulse track, but with all other tracks unmuted and their mix volumes turned to zero. I wanted to see if there would be a difference.

Both passes were recorded to a Sony HiMD MZ-RH1. While I concur with David that a DAW is an acceptable means to

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The right channel, which was recorded with other tracks unmuted, but mixed to silence, is very interesting. You'll note that the first peak lines up exactly with the left channel, but they're all over the place, relatively speaking, after that!

Hi Niall - I agree about being civil - anyway - your numbers are actually almost identical to mine and certainly show the push-pull as well - by my calculations though 96 samples (which is the maximum variation I measured) is 2.18 ms [1 sample at 44.1 kHz = 0.022675474ms) - Can anybody verify my maths in case I'm out.....

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 08:00

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jngpng wrote:

Real proof or STFU.

I assume by STFU - you mean 'Shut The Fuck Up' - correct?

I'm not sure why you have such a strong negative response to either my testing methods or the nature of my posts on this thread.

I have no point to make here other than to fix what I know to be an issue as do others it seems.

I don't need you to agree or a scope to prove it.

A captured audio waveform at 44.1 kHz of rhythmic pulses at musical BPM rates shows very clearly if the pulses are evenly spaced or not. You do not need to be a scientist to either see or comprehend that.

Using that as a basis for the tests on this thread is 100% sound - no discussion required.

The scope stuff is just fine tuning the obvious.

Chill. It will be worth it in the end.

Regards - David.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 08:33

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niall wrote:

You can follow the rest by opening up the wave file in your DAW. There appears to be a periodic fluctuation, but in the first six peaks, it's less than a millisecond at 96 samples.

Just checked my own maths:-

Sample Rate @ 44100 cycles/samples per 1000 ms (1 sec)

So 1 cycle/sample = 1000ms divided by 44100

1000 divided by 44100 = 0.02267574 ms

So 1 sample = 0.02267574 ms

Based on that: 96 samples variation between quarter note step durations at 44.1 kHz = 2.17687 ms

Regards - David

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/06 09:24

Its no question anymore that we have an issue here...

3 or more independent people measuring the same with a standard timing measurement operation.

I did measurements myself and YES... it is wobbling...

thats a fact...

Measuring positions over the DAW timeline is an 100% accurate method.

you measure the distance between recorded events... thats an absolute measurement method...its not related to anything than the sample clock...

and clockjitter is measured in us.... so not a factor that gets even visible on the screen.

So no question about it.. the timing is not precise...its not totally chaotic either..it wobbles...that describes the phenomem...

How this wobbling has to be interpreted is another question...its defenetly much better than normal midi jitter that just has chaotic behavior...

Otherwise the MD would sound tired...

And it defenetly dont sounds tired! rather the opposite...

Its not precise never the less...

Question... is the wobbling a feature or un optimized behaviour?

Could be a design choice to give that machine a ditinctiv groove...

Or its just a lucky accident that it turned out to sound good?

Or its a problem that when solved would make the thing sound even better?

the only way to find out would be to record complete grooves via the single outputs to a DAW and correct the timing in there for at least 4 bars and compare that with the original groove on exact the same mix settings...

and this for at least 3 differnt beats...

A lot of work... i am not willing to do that wright now...

But... maybe david like to proove that straight timing is better timing...

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/06 09:40

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rgmccaig wrote:

I have seen claims from psychoacoustic testing that highly skilled musicians typically can't distinguish timing errors of less than 4ms or so.

It is true that timing derivations are not as good to hear on single events than pitch derivations...The brain interpretates louder events as earlier events for example...so variation in the volume can make a groove sounding more unstable as any midiclock could do..

There is however something like groove...and we have a feel for that...

I had good musicans in the studio and can tell that they hit the one within a 1 ms window...but not every time...

So even when a trained musican might fail by judging in a listening test..  
They are able to play better than this 4ms story...

And with todays listening experiance you cant wobble 4 ms around without sounding crappy...thats the interval where you clearly hear that something goes wrong...the real shaddow area where its rather feel than getting it is within the 2 ms window...

it however can make a difference to a groove if a kickdrum is 2 ms early or late...

4ms early or late even the deff get that difference...

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## Re: MD SPS-1 Timing Performance Issues

Posted by lcvl - 2007/04/06 09:49

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if these DAW timing tests are so flawed why are we all getting the same results?

why are different machines showing different and repeatable timing behaviours?

if there's a margin to improve a piece of gear we all love, why shouldn't we aim for that?

and anyway, DAWs are used every day for scientific purposes.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 09:50

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Question... is the wobbling a feature or un optimized behavior?

Could be a design choice to give that machine a distinctive groove...

Or it?s just a lucky accident that it turned out to sound good?

Or it?s a problem that when solved would make the thing sound even better?

the only way to find out would be to record complete grooves via the single outputs to a DAW and correct the timing in there for at least 4 bars and compare that with the original groove on exact the same mix settings...

and this for at least 3 different beats...

---

A lot of work... I am not willing to do that right now...  
But... maybe David like to prove that straight timing is better timing...

Hi again - I don't think the 'wobble' is deliberate on Elektron's part for sure - the internal step duration variation we're seeing is just rush/drag. When the SPS-1 operating system interrupts the internal clock rate to perform another task it halts/stalls for a period. Then, after the task/interrupt is dealt with it frees up the tempo/clock and it plays catch up until the next task/interrupt. This is why the push-pull is so regular. If the errors were just random across all steps it would show a poor internal clock/tempo design overall but the fact that the errors/push-pull are so 'perfectly out' shows that the SPS-1 has an extremely stable tempo/clock generator but it is being compromised by a task/interrupt at the operating system level and this is why I am confident it can be rectified by Elektron. If they can work out which task/interrupt is compromising the Clock/Tempo routine and re-code it a better way then I believe this issue will be resolved.

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 09:53

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lcvl wrote:

if these DAW timing tests are so flawed why are we all getting the same results?

why are different machines showing different and repeatable timing behaviours?

if there's a margin to improve a piece of gear we all love, why shouldn't we aim for that?

and anyway, DAWs are used every day for scientific purposes.

Thank you - and thank you again!

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/06 09:53

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jngpng wrote:

DAW tests prove nothing. Your sense of whether something is in or out of time proves nothing. Neither are reliable measurement devices. That is the entire point.

Real proof or STFU.

THat listening dont proves anything except that we talk about something that dont hurts too much is true...

That the DAW test dont proves anything is a rather stupid statement from a so called scientist...

Its just time measurement ...the most expensiv scopes wouldnt bring better results here because the resolution of 44 unints per ms is good enough for that purpose...

its rather the other way around..doing it with scopes gives much more error possebilitys during the measurements because you need to trigger with a refference clock to get a reading...

Our refference clock is inbuild in the DAW...and its very precise...

it triggers the "scope" 44100 times the second...

A sample editor is nothing else than a scope...with tools that give us precise sample location..



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location 2 minus location 1 gives us the distance between the location..

in samples... very accurate method..

BTW... the midiclock output of the MD measures straight this way as it should...

So the proof is done even in reference to the MD's own clock output...

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 09:57

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rudebop wrote:

That the DAW test dont proves anything is a rather stupid statement from a so called scientist...

Its just time measurement ...the most expensiv scopes wouldnt bring better results here because the resolution of 44 unints per ms is good enough for that purpose...

its rather the other way around..doing it with scopes gives much more error possebilitys during the measurements because you need to trigger with a reference clock to get a reading...

Thank you and THANK YOU!

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/06 10:14

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innerclock wrote:

Question... is the wobbling a feature or un optimized behavior?

Hi again - I don't think the 'wobble' is deliberate on Elektron's part for sure -

I aggree with that..the MD tells its storry pretty much itself...

It has chaos build in from the beginning..they havent started with a proper sync/timing tactics...they started with the sound engine...and added other things later... So its not design by initial plan...

But...its maybe design by choice..the choice leaving it like that because they found it beneficial.. maybe charakterfull...

I really dont like a timing beeing so unstable..it can cause many problems during editing!!!

Therefore it would be good if the wobbeling could be switched off...

I understand your point that it dont feels to nice to have the most wobbely drummachine in the world as the main machine in the studio...

However.. i have to see how the MD behaves in my actual productions... i ve bigger problems with the permanent flux than with the timing..

So far i got results with the MD that make it worthy... rather on the percussion side...but sometimes i like the kick aswell...

when i need it straight i use the 808 or the nord modulars

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 10:29

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rudebop wrote:

But...its maybe design by choice..the choice leaving it like that because they found it beneficial.. maybe charakterfull...

I think it's doubtful that it was deliberate considering Elektron was/is so vocal about their products being so tight in the first place. And if it was deliberate - why then is the outgoing Midi Clock Sync so closer to the mark? What this proves is the outgoing clock sync is running freeform off the SPS-1 tight clock/tempo generator. The errors we are seeing is down to the SPS-1 failing to fire/trigger it's internal voices exactly at the precise clock pulse per step.

Regards - David.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/06 10:31

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innerclock wrote:

Hi again - I don't think the 'wobble' is deliberate on Elektron's part for sure - the internal step duration variation we're seeing is just rush/drag. Regards - David.

Even when the initial situation might be there be accident i find that the pattern in this is based on quarter notes actually a hint for a design choice from elektrons side...

the MD itself is based on a 16 grid... we should see an evenly distributed timing variation between 16th... as we do... but at a much smaller scale...there is a bigger push pull thing around the quarters that looks rather like design and shadows the smaller timing derivations around the 16th...

Dont looks too accidentally for me... a machine with 2 ms accidentally wobble would sound horrible... But the MD dont sounds horrible at all ..it defenently has an own groove to it...

So maybe we have booth here ..a sound engine that has some problems to deliver all tasks in time... and intended groove design to structure that situation?

Its defently not so easy to just say the MD is bad... I measured many machines in my life... i usually can make clear statements...

With the MD its different...

I am serious about the question..

Is the wobbling a flaw or a feature?

When its a feature its understandable that they dont advertise it because its rather a trick than...

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 10:58

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rudebop wrote:

I am serious about the question..

Is the wobbling a flaw or a feature?

As I said before - it would be an odd thing to build in on purpose. With a tick based sequencer where you can place notes anywhere you wish within the resolution of the grid and none of the internal 'push-pull' step errors reported match any that I know of - and in any case - if they did - I only want swing when I dial in swing.....

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by daniel - 2007/04/06 13:39

Before diving in to measuring the beat of the MD, did anyone actually feel it was off beat?

As you have mentioned there are certain beats that are important to get right, and others that can add "feeling", I still claim that the Machinedrum is the machine you will get the tightest, or maybe it is better to rephrase it best feeling from among any drum machine. That is if it can run off its own inner clock, which should be as tight so you can set it to a certain value and let two machines, or one machine plus a well behaved one go in sync for hours. (Protools is an example where we've succeeded)

We studied the "magic groove" very well of the MPC-60 before doing the sound engine. When it comes to programming of the Machinedrum not much is left to coincidence (beside straight bugs of course.

The interrupts and multitasking layers are well thought out to get things done in due time (I leave the term exact). We have always relied on our ears when it comes to the sound of the machine.

We're also talking about a 4-CPU system (1 main, 2 DSP's and 1 slave), where the DSP's render the audio. And there the highest priority is to feed the DSP's with note data, put on its own hard interrupt, so nothing can come in between there.

When it comes to MIDI clock it should be as stable as possible, and I was a bit surprised to see any fluctuation there, but I think tests came up (couldn't read all the thread) showing that the MIDI clock was nothing but spot on (as spot on it can be with the standard MIDI). All units should have a fair chance at interpreting the clock and do what it thinks is best possible from it. In the Machinedrum we chain-lock as I've explained before.

Before looking at the screen too much, take a sound test and see what your ears tell you.

Still, MIDI clocks is for timing and should be watched carefully. :)

Daniel

PS. Regarding the Gridlock Mark 2 I think its a very cool and useful invention. But there is one statement I find odd:

"'Brick Wall' Midi Input Filter - because the Midi Specification gives no priority to Midi Clock messages we felt that in order to get the best possible I/O sync integrity we had to make sure that all midi message other than strict Midi Clock were well and truly ignored."

So, you drop all messages beside MIDI Clock, but that's quite natural since you won't be doing anything with the other MIDI data anyway?!

And - yes - it is allowed to insert real-time MIDI events in the middle of other messages (byte-wise), so it can be given priority, although I think it's not utilized to a great degree.

And this could not fix anything if I'm not mistaken - a misplaced clock is still going to be misplaced. A broken (in terms of jittering) MIDI clock can not be saved unless you have time to interpret the history, which is not the most desirable to

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need to do in a real time environment.

(We try to the best with looking at the history in the MD and Mono, and therefore people get scared when seeing the tempo fluctuating. But it's just used for LFO's and slides etc locked to the tempo that need a much higher resolution than 16/32pqn. The notes are always straight chained in slave mode, so it's up to the master to supply a steady chain.)

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/06 13:53

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innerclock wrote:

Just checked my own maths:-

Sample Rate @ 44100 cycles/samples per 1000 ms (1 sec)  
So 1 cycle/sample = 1000ms divided by 44100  
1000 divided by 44100 = 0.02267574 ms

So 1 sample = 0.02267574 ms

Based on that: 96 samples variation between quarter note step durations at 44.1 kHz = 2.17687 ms

Regards - David

Doh, you're right. I blame the hour, sorry!

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 14:03

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daniel wrote:

Before diving in to measuring the beat of the MD, did anyone actually feel it was off beat?

As you have mentioned there are certain beats that are important to get right, and others that can add "feeling", I still claim that the Machinedrum is the machine you will get the tightest, or maybe it is better to rephrase it best feeling from among any drum machine. That is if it can run off its own inner clock, which should be as tight so you can set it to a certain value and let two machines, or one machine plus a well behaved one go in sync for hours. (Protocols is an example where we've succeeded)

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We're also talking about a 4-CPU system (1 main, 2 DSP's and 1 slave), where the DSP's render the audio. And there the highest priority is to feed the DSP's with note data, put on its own hard interrupt, so nothing can come in between there.

When it comes to MIDI clock it should be as stable as possible, and I was a bit surprised to see any fluctuation there, but I think tests came up (couldn't read all the thread) showing that the MIDI clock was nothing but spot on (as spot on it can be with the standard MIDI). All units should have a fair chance at interpreting the clock and do what it thinks is best possible from it. In the Machinedrum we chain-lock as I've explained before.

Before looking at the screen too much, take a sound test and see what your ears tell you.

Still, MIDI clocks is for timing and should be watched carefully. :)

---

Daniel

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And - yes - it is allowed to insert real-time MIDI events in the middle of other messages (byte-wise), so it can be given priority, although I think it's not utilized to a great degree.

And this could not fix anything if I'm not mistaken - a misplaced clock is still going to be misplaced. A broken (in terms of jittering) MIDI clock can not be saved unless you have time to interpret the history, which is not the most desirable to need to do in a real time environment.

(We try to the best with looking at the history in the MD and Mono, and therefore people get scared when seeing the tempo fluctuating. But it's just used for LFO's and slides etc locked to the tempo that need a much higher resolution than 16/32pqn. The notes are always straigh chained in slave mode, so it's up to the master to supply a steady chain.)

Daniel - thanks for responding - there is a lot to go through in your reply of course - and yes - before any tests or measuring on my part - the 16th hat pattern of my SPS-1 synced to my MPC-3000 were rough to my ears in comparison. Certainly enough to make me wonder why and enough to make me take a close look. To be honest, and after looking at the timing characteristics of many machines - MPC-60 and MPC-3000 included - I feel confident enough to conclude that there is no 'magic groove' at play here, only a very strict relationship between tempo clock and internal event triggering. I understand your DSP and CPU architecture is well thought out but that still does not explain what is plain to hear and obvious under closer inspection.

Nothing in my tests relates to sync or midi clock generation in the SPS-1. In fact a number of users have verified super accurate SPS-1 clock output stability.

My interest is only in the internal voice generation event stability and accuracy referenced to the tempo/grid which by my ears and tests and others on this thread have also found.

My ears were what got me looking closer.

Midi clocks don't need any investigation at all.

Kind regards as always - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 14:44

niall wrote:

Doh, you're right. I blame the hour, sorry!

No problem - I know the feeling!

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/06 16:26

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edit: whoops

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/06 16:47

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daniel wrote:

Before diving in to measuring the beat of the MD, did anyone actually feel it was off beat?

Hi,  
The MD behaves good and sounds groovy when run with other systems...  
But you get problems when cutting a production because all bars have a different length..

for example .. i record 6 tracks into protocols.....the MD is the clock master...

We just use protocols as a tape machine... now we want to align the recording to protocols tempo grid... i choose the bassdrum track to define tempo and time line...

problem: which bar do i choose to get this done?

with an 808 i just use one bar...set the one...and look at bar 200 and adjust a little...enough... with the MD i am at bar 200 so off that i cant tell if i am to slow or to fast...

i ve to measure the lenght of 5 bars... do the common denominator..  
Cut to the one..check at bar 200...

I started to record a clicktrack from another source (nord modular) as reference again ...

So its more work... resulting from a not very precise one...

Thats the only harm the problem has done to me yet..

And...

It needed me some time to tidentify the MD as source of the Problem...

That was the shit part of it because i havent expected my master clocking drum computer to be allmost 2 ms off...

As i now know the clock is tight...that was my biggest fear because my nords dont like bad clocks..that fucks my patches...

Its only the soundoutput that swings somehow

it indeed has a tight feel...

Its not a jittering machine...

#

But could be handy to have a flag in the global menu that forces higher precission on the One...

Or a global menu point where one priority track can be choosen that plays exactly on the clock...

Also a good thing ... would be nice if there would be track offste delays in the global menus...

i often shift Md recordings 1-3 ms to get a slightly different groove feel...

would be good if that could be done on stage aswell without using a yamaha digital desk... Especially hihats and similar 16 percussions can alter the feeling a lot when moved a few ms..

And certain grooves start glowing when the BD gets delaed a bit..

i know that this is not a common drum machine feature..

but the MD is not a common drum maschiene aswell ;-)

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/06 17:21

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daniel wrote:

Before diving in to measuring the beat of the MD, did anyone actually feel it was off beat?

Yes.

It's not uncommon for me to hear a snare come in late, eg, but because I tested the clock a couple of years ago and found it stable, I'd always assumed that it was just my imagination. It didn't occur to me that the notes on timing and the clock might be two different things.

Some time ago, I recorded my Machinedrum tempo- and transport-slaved to the Monomachine and, in a second pass, the MD transport-slaved to the MnM, with each machine running its internal clock at 120 bpm. I was surprised by the audible lag.

Anyhow, the timing fluctuations aren't as obvious when it's just one sound playing quarter notes. When you have a number of voices playing in a sequences, it's really apparent - just listen to my upload in headphones, and listen to the right channel as goes in and out of time:

<http://www.elektron-users.com/modules/wfdownloads/singlefile.php?cid=1&lid=683>

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## Re: MD SPS-1 Timing Performance Issues

Posted by lcvi - 2007/04/06 20:00

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I just tested my Nord Modular ("G1", keyboard version), using its internal step-sequencers running on internal clock.

Only 3 samples of variation range while playing a quarter notes sequence at 120bpm.

Pretty tight!!

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/06 20:13

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hey, Daniel's post count is the same as the amount of samples the MD is fluctuating by...

spooky! is that a sign from jeebus or what ?

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/06 23:53

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lcvi wrote:

I just tested my Nord Modular ("G1", keyboard version), using its internal step-sequencers running on internal clock.

Only 3 samples of variation range while playing a quarter notes sequence at 120bpm.

Pretty tight!!

3 samples drift I bet sound pretty damn slick - pity there is no way to slave it except via USB/Midi these days - I bet that 3 samples suffers whatever you clock it from?

Regards David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/07 00:14

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b0unce wrote:

hey, Daniel's post count is the same as the amount of samples the MD is fluctuating by...

spooky! is that a sign from jeebus or what ?

Hey all - I really appreciate all the comment and debate around this issue. As difficult as it is - I guess after 20 years of myths and legends and mumbo jumbo about what sounds right and why, I finally felt it was time to lay this tired old ghost to rest and put cold hard fact on the table. The blunt truth is that we are sensitive to very fine variances in tempo/clock/rhythmic intervals and more so when referenced to things that really are in time. There really is no MPC 'magic' - the internal sequencer clock and events that are programmed to occur on that tempo grid are just locked together a lot closer than on most/all other modern sequencer/drum units. There is nothing else to it. You can argue the toss all you like but it matters not. Some things are fact. This is one of them. You may not like it. Hostility doesn't help us to improve things either. The world was flat until someone got in a boat and didn't fall off. We all need to jump on the boat and nail this! I think we all need the ability to move things around to create whatever 'feel' we want but the benchmark 'grid-quantised' state of all rhythmic sequencers should aim for at least that same degree of clock/event precision as we achieved 10 years ago in hardware. I think software is a good thing and indeed if no hardware ever existed that gave me the feel I know I want to hear in my head - I would be using software for everything even if I do hate the mouse! The thorn in this theory is that we have built hardware in the not too distant past that can do the job. If we could then - why not now? It might be a tall order but I for one would like to see a design culture change where this issue is no longer seen as 'magic/subjective/voodoo/mystery and instead raised to the level that it needs to be.

Peace and regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/07 00:34

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daniel wrote:

We're also talking about a 4-CPU system (1 main, 2 DSP's and 1 slave), where the DSP's render the audio. And there the highest priority is to feed the DSP's with note data, put on its own hard interrupt, so nothing can come in between there.

Daniel

Hi Daniel - I had a very close read of your post last night and this bit is where I really take issue - if I can personally measure 96 samples variation over quarter note intervals on a single MD (Impulse) track (and I can hear it too) then the note/step priority isn't as good as it could be surly?

And please - it's not a criticism of you or Elektron - I love you guys to bits - I just feel that we have an opportunity here to really improve things if we can at least acknowledge what is going on.

regards as always David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/07 02:28

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As a sad reminder of the importance this issue has on music making for all of us - I found this blog entry from Gareth Jones - check his CV here if you need to:

<http://garethjones.com/cvStuff/CV1980s.htm>

This is a direct quote:

Thu, 19 Oct 2006

I was up early this morning, and for some reason I got involved in testing the sync between the G5 and the laptop. In my world the days of tight sync are long gone (Vince and I spoke fondly of remembered sync boxes - the SRC Friendship, the SBX80, FSK from the MC4, The Unitor on the Atari)

Unquote]

Vince Clarke (who Gareth is obviously speaking to) is also someone familiar to all of us I am sure.

Here are two people with all the financial and technical tools and skills at their disposal and this blog indicates very clearly that they remember what tight event sync sounds like and struggle to find it to this day.

Here is the whole Blog:

<http://garethjones.com/news/erasureNews.html>

Regards David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by rgmccaig - 2007/04/07 02:34

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innerclock wrote:

b0unce wrote:

hey, Daniel's post count is the same as the amount of samples the MD is fluctuating by...

spooky! is that a sign from jeebus or what ?

Hey all - I really appreciate all the comment and debate around this issue. As difficult as it is - I guess after 20 years of myths and legends and mumbo jumbo about what sounds right and why, I finally felt it was time to lay this tired old ghost to rest and put cold hard fact on the table. The blunt truth is that we are sensitive to very fine variances in tempo/clock/rhythmic intervals and more so when referenced to things that really are in time. There really is no MPC 'magic' - the internal sequencer clock and events that are programmed to occur on that tempo grid are just locked together a lot closer than on most/all other modern sequencer/drum units. There is nothing else to it. You can argue the toss all you like but it matters not. Some things are fact. This is one of them. You may not like it. Hostility doesn't help us to improve things either. The world was flat until someone got in a boat and didn't fall off. We all need to jump on the boat and nail this! I think we all need the ability to move things around to create whatever 'feel' we want but the benchmark 'grid-quantised' state of all rhythmic sequencers should aim for at least that same degree of clock/event precision as we achieved 10 years ago in hardware. I think software is a good thing and indeed if no hardware ever existed that gave me the feel I know I want to hear in my head - I would be using software for everything even if I do hate the fucking mouse! The thorn in this theory is that we have built hardware in the not too distant past that can do the job. If we could then - why not now? It might be a tall order but I for one would like to see a design culture change where this issue is no longer seen as 'magic/subjective/voodoo/mystery and instead raised to the level that it needs to be.

Peace and regards - David.

yo David,

Fundamentally I share your preference for improving the sps timing to be closer to sample-accurate (primarily for the mentioned reason of easier trimming and editing of audio chunks).

imho you are going a \_little\_ overboard with your characterization of some of these issues.

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it is not a 'cold hard truth' that humans in general will like a drumbeat better and better as the amount of timing slop decreases from X to Zero. In fact, that has never been proven, and really \*is\* just your opinion.

Also, personally, for me, as an electronic musician, there is always a 'relationship' with the tools (wasn't there some great quote about Art in that regard) and I really don't have a problem with some of my tools having quirks or 'personalities' that come out quite independently of my own artistic choices. I have no A PRIORI philosophical belief that it's always better for each tools to be a 'perfect blank slate'; whereas you do seem to have that belief.

Again, all things considered, I actually share your preference for jitter reduction in this case, but you are starting to alienate the converted here with your heated descriptions of these things.

Your work has already been most helpful in terms of explaining some alignment deviation problems I have noticed.

cheers  
Graeme

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/07 05:17

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Again, all things considered, I actually share your preference for jitter reduction in this case, but you are starting to alienate the converted here with your heated descriptions of these things.

Your work has already been most helpful in terms of explaining some alignment deviation problems I have noticed.

cheers  
Graeme

Hi Graeme - thanks for the reply and comments - I guess I feel that unless we all push a little harder than normal on these things - nothing changes - hence my heated and sometimes over-zealous approach.

All the best and thanks for the kind words.

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/07 07:26

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Also, personally, for me, as an electronic musician, there is always a 'relationship' with the tools (wasn't there some great quote about Art in that regard) and I really don't have a problem with some of my tools having quirks or 'personalities' that come out quite independently of my own artistic choices. I have no A PRIORI philosophical belief that it's always better for each tool to be a 'perfect blank slate'; whereas you do seem to have that belief.

Graeme

Hi again Graeme - was reading your post again - I agree about a relationship an artist has with the tools he chooses to use and I respect your decision to work with quirks and 'personalities' as such. However - my philosophical belief is not so much based on having a 'perfect blank slate' but rather on one that does not move about. I see the SPS-1 as a combination of both artistic tool and canvas - the tool aspect is the part that makes sounds - the canvas is the timeline these sounds play on. It is the stability of this canvas I am most interested in. I don't mind tools that have their own intrinsic quirks - I just want the canvas I am placing them on to stay still so I can fully choose where I place them and that is and has always been my issue with sequencer timing.

Regards and respect - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/07 08:26

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b0unce wrote:

Hey, Daniel's post count is the same as the amount of samples the MD is fluctuating by...

spooky! is that a sign from jeebus or what ?

Sorry but that has to be a sign from the God of Tempo (jesting of course!) - and I've just noticed my picture that I've uploaded for my User Name - unintentionally the SRC Clock rotary is set at - 96!

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/07 09:26

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Hi all - I've uploaded a few files to listen to if you're interested. They are not SPS-1/MD. There are two files - the first is simply two cross-tempo clicks generated from an SRC synchroniser. Have a listen - maybe I'm mad but they sound funky as hell to me! Then open them in an editor and check the durations and L/R offsets through the file.

The second is a similar setup except the click is driving an old Yamaha CS-30 via a step/gate switch to vary the pattern a little and the click is the SRC driving quarter note pulses. The Yamaha EGs are not that quick but you can still hear and see (if you zoom in) how tight they reference against each other.

Let me know what you think.

Regards David.

<http://www.elektron-users.com/modules/wfdownloads/singlefile.php?cid=28&lid=685>

<http://www.elektron-users.com/modules/wfdownloads/singlefile.php?cid=28&lid=686>

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/07 09:52

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While I'm at it - I just uploaded the same SRC Click and file but this time I applied between 2.5 and 3ms offset on the click as well as a small amount of jitter (yes - the SRC lets you dial-in clock jitter to let you match your sync up with sloppy sequencers!). Have a listen and zoom in close if you can. Even without a microscope I know which one I would rather be listening to and we are talking the same degree of jitter/event offset error as we are talking in the SPS-1 here as well.

Regards - David.

<http://www.elektron-users.com/modules/wfdownloads/singlefile.php?cid=28&lid=687>

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## Re: MD SPS-1 Timing Performance Issues

Posted by Toni - 2007/04/07 11:32

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rgmccaig wrote:

Fundamentally I share your preference for improving the sps timing to be closer to sample-accurate (primarily for the

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mentioned reason of easier trimming and editing of audio chunks).

imho you are going a \_little\_ overboard with your characterization of some of these issues.

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cheers  
Graeme  
Finally; music to my ears... :-D

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## Re: MD SPS-1 Timing Performance Issues

Posted by Tarekith - 2007/04/07 13:52

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Yeah man, go outside, look at the trees and the sun, or maybe just make some music. :) You've raised some good points, and obviously Elektron is watching. But you're starting to hurt your cause with some of the generalizations you're making. Not everything in the world has to be perfect, just have some fun making music for a bit. :)

(cue 8 posts replying to my one paragraph)

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## Re: MD SPS-1 Timing Performance Issues

Posted by Black-Man - 2007/04/07 19:17

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compensating for a shitty clock inside the Mobius. By contrast - the same sequence punched into an MC-4B is done, finished, nailed, and totally funky in 60 seconds.

Regards - David  
[www.innerclocksystems.com](http://www.innerclocksystems.com)

ok... this is depressing as hell.

After being disgusted w/ MIDI timing issues I reached out to Graham Hinton and came up w/ a solution using multiple single MIDI interfaces on PCI buss cards on a PowerMac.

It still sucked.

I went w/ a MD and its light years better - to my ears. I also use the Mobius MIDI clocked slave to the MD using CV/Gate to a modular. Again.. it sounds way better than the even the optimized software.

Now you're saying even this sucks? Please... don't tell me the only solution is to buy a 30 year old Roland CV/Gate sequencer. That ain't happenin'... there were few made and I already own enough 30 year old analog machines that could die at any moment where there are no spare parts available.

Suggestions please.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/07 23:09

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Tarekith wrote:

Yeah man, go outside, look at the trees and the sun, or maybe just make some music. :) You've raised some good points, and obviously Elektron is watching. But you're starting to hurt your cause with some of the generalizations you're making. Not everything in the world has to be perfect, just have some fun making music for a bit. :)

(cue 8 posts replying to my one paragraph)

Tarekith - I do go outside (I have three kids so playing in the sun is something I do lots of anyway!) and I do make music when I feel like it with what I have - even bottle caps and teaspoons sometimes but I can't really hurt 'the cause' because my points are mostly not generalizations - if you read between the posts you'll see that. I had three professional musicians over last night discussing this topic and thread in detail and they all have good ears for timing and they all felt it was a more than a valid point to raise. I'm not saying everything in the world has to be perfect - some things are perfect as they are. You must remember though that for professional recording studios in the 1980s - getting a tight synchronizer was serious business - no producer or studio manager of any note thought it was being perfectionist or obsessive to either purchase or hire a clock/sequencer synchronizer that had a list price of \$6000 USD in 1984! I was there and I know. These were times when tight sync was considered critical because there was no argument by any professional that it was an absolute fundamental to making good music. So what happened in 20 years? Time isn't elastic and we have boxes made in recent time that did honor this principle and I have spent enough years working in this field to know that there are many others who feel just as I do. I can play in the sun and write music with what I have and if I was born in the middle ages I'd be playing the lute but it still doesn't take away that this issue is still 100% valid and putting it down lightly doesn't do 'the cause' any good. Does it?

Regards David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/07 23:45

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Tarekith wrote:

But you're starting to hurt your cause with some of the generalizations you're making. Not everything in the world has to be perfect, just have some fun making music for a bit. :)

And to stress the point again Tarekith that I am not barking up the timing tree solo here - I've had more than a few emails over this last week privately from current MD users, musicians who are considering MD/UW purchases in the near future and electronic musicians generally that feel just as strongly (if not more so in a few cases) as I do about this issue and have taken great interest in this thread as you can see from the viewing numbers. Please don't just put it down as an obsession for something abstract or technically unattainable otherwise nothing ever changes.

Positive regards as always - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/07 23:53

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I went w/ a MD and its light years better - to my ears. I also use the Mobius MIDI clocked slave to the MD using CV/Gate to a modular. Again.. it sounds way better than the even the optimized software.

Now you're saying even this sucks? Please... don't tell me the only solution is to buy a 30 year old Roland CV/Gate sequencer. That ain't happenin'... there were few made and I already own enough 30 year old analog machines that could die at any moment where there are no spare parts available.

Suggestions please.

Yes it is depressing my friend but better to look at it than pretend it's all in your head right? I spent too long pretending it was my imagination and I had plenty of people telling me to get over it too. Trust your ears always and don't let it eat your head. I did the Megawolf Dual PCI Card/Logic thing too. Spent a fortune. Retailers told me my Opcode Studio 4 was

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perfect. I heard every lame story from 'get a faster Mac' to 'maybe you need more RAM'. Wrong. The timing was rough. End of story. Design architecture flaw. Multiplexing Midi out to multiple ports fails dismally unless you like lumpy beats. Game over. The Megawolf was better but not great. Died with system 9.2.2 as well. Hence my return to hardware and the Atari and now the 3K. The MD is light years better and so is the Mobius from what you were using but it's still not what it was or could be. Doesn't mean it's unusable and if you can't hear it then no problem but if you can and you know the difference then it's always going to bug you. Stay on it. We'll see what happens.

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by hyphen - 2007/04/08 02:01

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innerclock wrote:

Tarekith wrote:

But you're starting to hurt your cause with some of the generalizations you're making. Not everything in the world has to be perfect, just have some fun making music for a bit. :)

And to stress the point Tarekith that I am not barking up the timing tree solo here - I've had more than a few emails over this last week privately from curent MD users, musicians who are considering MD/UW purchases in the near future and electronic musician generally that feel just as strongly (if not more so in a few cases) as I do about this issue and have taken great interest in this thread as you can see from the veiwing numbers. Please don't put it down as an obsession to something abstract or unattainable otherwise nothing changes.

Positive regards as always - David.

Actually, I have no idea what your "cause" is, other than the fact that you don't like the midiclock on the Machinedrum...ok, that's fine, thanks for pointing it out, it seems like something I might want to know, but this thread has become so irritating to me, that I felt the need to join yet another forum just to comment.

Personally, I love the looks of your products, David. I have your site stashed in a folder on my browser for future purchase {wish I had seen it before I sold some old roland gear...but to be honest, as an outsider, this looks like you are trying to drum up buzz about yourself by firebombing Elektrons forum...

-hyphen nation, aka, DC, aka David

{que up 3-5 more posts with the red avatar}

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/08 02:08

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hyphen wrote:

Actually, I have no idea what your "cause" is, other than the fact that you don't like the midi clock on the Machinedrum...ok, that's fine, thanks for pointing it out, it seems like something I might want to know, but this thread has become so irritating to me, that I felt the need to join yet another forum just to comment.

Personally, I love the looks of your products, David. I have your site stashed in a folder on my browser for future purchase {wish I had seen it before I sold some old Roland gear...but to be honest, as an outsider, this looks like you are trying to drum up buzz about yourself by firebombing Elektrons forum...

I am just saying how it looks from the outside...

-hyphen nation, aka, DC, aka David

{que up 3-5 more posts with the red avatar}

David - there is no 'cause' and personally - I don't really care if no one ever buys another of my Shiftas - I mean that without question. And to prove that - The Sync-Shift only offsets the ENTIRE MIDI CLOCK or DIN SYNC signal - it cannot correct for event push/pull or clock slop AT ALL - so my whole angle on this thread doesn't help me sell any more Sync-Shifts. Quite the reverse in fact - if you have a tight clock/event sequencer to begin with - fine - but if not - no amount of moving things forwards and backwards is going to rectify slop. Please don't try and negate the valid points I am making by suggesting my motivations are profit/exposure based which they are not.

And you've missed the point regarding clock as well. The Midi Clock is 100% perfect on the SPS-1 - it's the internal triggering that needs tightening up.

I don't need the profile 'buzz' either and firebombing Elekton via this forum is not my intention. I also feel it's important to answer as many responses/questions as I can - not to blow my own trumpet but to actually achieve something. I just don't want this point to drop off the radar when I think it's important and there is no point opening up a thread/topic if it doesn't lead anywhere - then it's just techno geeks blowing hot air - right?

And in closing - if you find the thread/topic irritating - just don't look at it and please leave it to those with a positive contribution to offer.

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by Black-Man - 2007/04/08 03:57

.... I did the Megawolf Dual PCI Card/Logic thing too. Spent a fortune. Retailers told me my Opcode Studio 4 was perfect. I heard every lame bullshit story from 'get a faster Mac' to 'maybe you need more RAM'. Wrong. It was shit. End of story. Design architecture flaw. Multiplexing Midi out to multiple ports fails unless you like lumpy beats. Game over. The Megawolf was better but not great. Died with system 9.2.2 as well. Hence my return to hardware and the Atari and now the 3K. The MD is light years better and so is the Mobius from what you were using but it's still not what it was or could be. Doesn't mean it's shit and if you can't hear it then no problem but if you can and you know the difference then it's always going to bug you. Stay on it. We'll see what happens.

Regards - David.

Yup. Had 4 dual Megawolf cards... luckily I picked 3 of them up on ebay for next to nothing, but the one I bought direct cost so much I am now embarrassed. ;-)

There has to be a "modern" CV/Gate sequencer out there that is tight. Doepfer... analog solutions, Sequentix, some obscure German ones, etc. Have you tried any of these?

And I think you're onto something w/ the MPC3K. They are getting bid upwards of 1.2K on ebay. Crazy.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/08 08:05

Tarekith wrote:

(cue 8 posts replying to my one paragraph)

And at the risk of providing a self fulfilling preemptive prophecy Tarekith - if someone posts a reply/response or valid question and there are 8 points worth either considering, debating and/or clarifying - what is the purpose of this forum if not to achieve something worthwhile in the dialogue? I hope it is not the sole property of time wasters and one-shot noisemakers that seek only to contribute by sarcasm and cynical suggestions?

Please - let's keep it positive.

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Regards as always - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by hyphen - 2007/04/08 08:22

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And in closing - if you find the thread/topic irritating - just don't look at it and please leave it to those with a positive contribution to offer.

Regards - David.

Hey,

It's a public forum, I totally agree, I don't plan on looking at it much again...

I actually was posting as a heads up for how those of us, not as married to performance issues you are noting might read the motivations behind this thread...honestly, you have to realize that I have never, in all my years of geeking of music gear, noticed someone so determined to make a point as you have on this thread....

Be that as it may, it reads kinda like the flame war I saw on an amp forum a year or two ago, where the guy behind Maven Peal, started critiquing the THD products...he ended up looking like a chump when the Andy at THD finally responded and put the shut down on this guys ranting...this is obviously a different can of worms, and you clearly know your sh\*t, but to me, and for what it is worth, you are sounding a hair fanatical...

You are welcome to post this thread is till it is longer than the "How about some pics of your set up" on vintage synth...BUT from the outside, from my vantage point, it feels like you have an ax to grind...for real...that's all...I am glad this is a selfless act for you...my apologies for throwing my uninformed opinions around...its the interweb, we get all get to post our opinions...

Sincerely,

DC

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/08 09:39

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hyphen wrote:

It's a public forum, I totally agree, I don't plan on looking at it much again...

I actually was posting as a heads up for how those of us, not as married to performance issues you are noting might read the motivations behind this thread...honestly, you have to realize that I have never, in all my years of geeking of music gear, noticed someone so determined to make a point as you have on this thread....

Be that as it may, it reads kinda like the flame war I saw on an amp forum a year or two ago, where the guy behind Maven Peal, started critiquing the THD products...he ended up looking like a chump when the Andy at THD finally responded and put the shut down on this guys ranting...this is obviously a different can of worms, and you clearly know your sh\*t, but to me, and for what it is worth, you are sounding a hair fanatical...

You are welcome to post this thread is till it is longer than the "How about some pics of your set up" on vintage synth...BUT from the outside, from my vantage point, it feels like you have an ax to grind...for real...that's all...I am glad this is a selfless act for you...my apologies for throwing my uninformed opinions around...its the interweb, we get all get to post our opinions...

Sincerely,



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DC

Hiya DC - I appreciate the reply - I guess geeking doesn't really appeal to me and forums aren't really my thing either but I guess because of the boutique nature of Elektron users and the investment required to 'join the club' so to speak, I felt it was a good space to voice what I felt was a valid issue. No Axe to grind either I promise you - yes this issue has always bugged me and because I love my SPS-1 and because I know Elektron really care about design and because they only make two products I felt there was a fighting chance of improving something I felt would be beneficial in many ways. Whatever Elektron say I seriously doubt I would wind up looking a chump. I've done too much homework for that to happen. They and others might disagree with my opinion of course and that remains to be seen. Fanaticism on the whole I also treat with a degree of suspicion also but, if something valuable that genuinely existed once has now been lost in the way we make our music I think that is worth at least discussing and, if possible, reclaiming so that we all may benefit.

Regards as always - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/08 16:57

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I'm curious how a SP1200 scores in this test

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/08 23:58

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b0unce wrote:

I'm curious how a SP1200 scores in this test

MV-8000/8800 coming Tuesday and Monomachine later today if I can get to it.

Got a Linndrum, Drumtrax and Drumulator to do as well.

If anyone has an SP-1200 I'd love to see the quarter note numbers too as I don't know anyone who has one???

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/09 00:22

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Just wondering if anyone got around to listening to those three audio file click examples I uploaded and had any comment?

Regards David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by texmex - 2007/04/09 01:32

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innerclock wrote:

Just wondering if anyone got around to listening to those three audio file click examples I uploaded and had any comment?

Regards David.

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I did listen to them, and I definitely heard the difference. I didn't notice sloppiness in the rythm that much, but I noticed that the one with jitter had some kind of artifacts in it. The invidual clicks sounded different when played alone. In the thight one they were all the same. How did you create this jitter? I hope it's not some modulation effect on the thight one, because it would ruin the sound of the click. Also compressing them with mp3 is a bad move, especially when we are supposed to hear something psychoacoustive which mp3 is supposed to alter.

When you listen the thight one in stereo, you actually hear two click tracks taking turns as it should. But with the jittered one you start to hear a stereo effect similar to a chorus. Both the click tracks can be easily distinguished (obviously because they don't hit at the same time).

So I think they sound different but not necessarily for the reasons you say they should.

You should make this same test with synthetic samples and give them as uncompressed wavs.

Other than that, I think this is an interesting issue. But I don't think it's top priority in the list.

BR,  
Samps

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/09 02:01

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texmex wrote:

I did listen to them, and I definitely heard the difference. I didn't notice sloppiness in the rhythm that much, but I noticed that the one with jitter had some kind of artifacts in it. The individual clicks sounded different when played alone. In the tight one they were all the same. How did you create this jitter? I hope it's not some modulation effect on the tight one, because it would ruin the sound of the click. Also compressing them with mp3 is a bad move, especially when we are supposed to hear something psychoacoustive which mp3 is supposed to alter.

When you listen the tight one in stereo, you actually hear two click tracks taking turns as it should. But with the jittered one you start to hear a stereo effect similar to a chorus. Both the click tracks can be easily distinguished (obviously because they don't hit at the same time).

So I think they sound different but not necessarily for the reasons you say they should.

You should make this same test with synthetic samples and give them as uncompressed wavs.

Other than that, I think this is an interesting issue. But I don't think its top priority in the list.

BR,  
Samps

Hiya - the applied jitter on the second pass is direct from the SRC synchroniser itself - no artificial modulation whatsoever - the SRC has a Jitter module that lets you make one clock slightly more random than the other to simulate the stability of less stable sequencers and drum machines. The chorus/stereo effect you mention is down to the second 'jittery' click moving around the more stable one. When you apply this same amount of slop to actual sounds the effect is far more pronounced and most definitely makes for lumpy sequencing. The tighter you can make things the less lumpy your tracks sound overall. You say this is not a top priority in this list? Why then has it been viewed over 1000 times in less than a week? Also remember that the flamming/chorus effect you could hear in my second audio upload is in the same region/margin of error that has been measured in the MD SPS-1. By contrast my quarter note click pattern played inside my MPC3K is within only a few samples of the precision SRC click pulses in the 'non - jitter' upload. If you can plainly hear it in the SRC uploaded click tracks without the need for a scope and the same errors apply in the MD/SPS-1 - don't you feel it might be worth fixing if possible and, if this precision was indeed possible with other sequencer technology that existed in 1996 - why shouldn't we expect it as standard in 2007?

Regards David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/09 02:19

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innerclock wrote:

MV-8000/8800 coming Tuesday

sweet, the rza uses the mv.

If anyone had to guess....do they think the rza, arguably the best hip-hop producer out there, cooks his beats with a machine running on a 'tight' clock or one thats off a bit...

\*sitting on the edge of my seat\*

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/09 02:32

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Personally - I think any corporate endorsee that features on promo posters and web advertising is on the payroll which isn't a bad thing really - we'll just never know what he actually uses for beats. Just read a link with an interview with Dre saying he still runs 5 x 3Ks preloaded for writing. The MV is a great sounding piece of kit hands down. I got a mate dropping one over later today to check the Litmus Test with a Monomachine and a Linndrum too.

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/09 02:36

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shit...

I didnt know he was on posters etc.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/09 02:42

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Here is the quote from Dre:-

Can you talk a bit about some of the equipment you use?

I love using the MPC3000. I like setting up like four or five different MPC3000's, so I don't have to keep changing disks. So I have them all lined up, and I have different drum sounds in each one, and then we use one for sequencing the keyboard.

Here is the whole interview:-

[http://www.dr-dre.com/info/interview\\_scratch\\_dr\\_dre.php](http://www.dr-dre.com/info/interview_scratch_dr_dre.php)

Again - I'm not saying the 3K is the be all and end all - what I keep stressing is that there is a reason why people feel this way and under not-too-close examination - the only core/fundamental difference between the 3K and other sequencing machines is the relative event/step accuracy to the units own internal tempo/clock which is extremely precise.

Can't we all get away from seeing this as a negative debate and embrace the concept that recognizing the importance of this issue can only be a positive move forward across the board?

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by kim - 2007/04/09 03:02

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my, the beat goes on. eagerly awaiting your results for the mv and the linndrum. i would also be very interested in your measured accuracy of the jomox boxes.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/09 03:03

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I think I found one of those promo videos by the rza...  
<http://www.youtube.com/watch?v=C0R7B12X8dY>

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## Re: MD SPS-1 Timing Performance Issues

Posted by DLX - 2007/04/09 04:14

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Gear scrutiny never ends does it. People said Adat's sucked, Alanis Morissette sold millions of albums made on them. People said the Yamaha 02R and Digidesign 888 sucked, millions of albums were sold on them. Some people say digital as a whole sucks, yet most of the world is making great music on it.

Here is a concept to embrace, gear doesn't make music... people do, and its those people that determine whether that music is good or bad. Please excuse me if I don't read 15 pages about 2ms :roll:. The best musicians in the world probably can't play with any more accuracy, how do you listen to any music ever? If 2ms is driving you crazy its time to hang up the boots and find a new hobby/career.

Now Shut up! Shut up! Shut up!

<http://i7.photobucket.com/albums/y263/miriamsucks/ohmygod.jpg>

Let us make music in peace without this "the timing is bad and I can't make music" BS.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/09 04:55

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Let us make music in peace without this "the timing is bad and I can't make music" BS.

We'll continue to make music and, if possible, improve our tools. Thanks, anyway.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/09 08:50

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DLX wrote:

Gear scrutiny never ends does it? People said Adat's sucked; Alanis Morissette sold millions of albums made on them. People said the Yamaha 02R and Digidesign 888 sucked, millions of albums were sold on them. Some people say digital as a whole sucks, yet most of the world is making great music on it.

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Now Shut up! Shut up! Shut up!

Let us make music in peace without this "the timing is bad and I can't make music" BS.

I personally think ADATS did suck, I don't care how many albums AM sold - she sucked too IMO. I don't like Tools or O2R's and I don't care how many billion albums are made and or/sold on them. I know gear doesn't make music - read my posts in detail if you want proof of that. If you don't like the topic and you have nothing positive to contribute - stay off the thread - easy. There are enough people obviously who this matters to. All those boxes and programs you use to make music my friend - even ADATS and O2Rs, 3Ks, SPS-1s - all of them - you know something fundamental DLX - everyone of those devices and programs only came about because of a healthy interest and passion and sometimes obsession for creating and improving things that work. It might not be your cup of tea to look at these things in more detail and that is totally fine with me just so long as you don't criticise me for doing so or worse, get in the way of some positive progress this may help create. If this basic process didn't happen throughout the course of human history we would all still be drawing on walls and stone tablets and Alanis Morissette would be skinning goats for her supper. Get over the attitude mate - there is no place for it here.

David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/09 08:53

niall wrote:

Let us make music in peace without this "the timing is bad and I can't make music" BS.

We'll continue to make music and, if possible, improve our tools. Thanks, anyway.

Thank you Niall for pointing out what I have been saying THE WHOLE TIME. Keep making tunes but let those that wish to sharpen the blade do so - especially if it doesn't get in your way - WHICH IT DOESNT!

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/09 11:42

DLX wrote:

Let us make music in peace without this "the timing is bad and I can't make music" BS.

And again - I'm not stopping you make music in peace - visiting this thread and forum is/was your choice. Remember - if you don't like a book in the library - you don't have to read it. And you certainly don't have the right to burn the book or the library down because it disturbs you. Thankfully we live in a world where mostly you can question authority, state your views, question the status quo and we can all move forward.

Take it easy and remember to BREATHE.... - regards David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by DLX - 2007/04/09 15:08

Pfft... my attitude? I'm just not arrogant enough to blame a midi clock for making my music shit.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/09 15:57

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\*tumbleweed\*

Hey david, do you ever use trackers for your beats ?

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## Re: MD SPS-1 Timing Performance Issues

Posted by louvega - 2007/04/09 21:29

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David - Excellent thread on a very important issue. I find it amazing some people seem to be against improving the tools they work with. Anyways, thanks.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/09 22:25

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DLX wrote:

Pfft... my attitude? I'm just not arrogant enough to blame a midi clock for making my music s#@t.

Which proves your misunderstanding of the entire thread - it has nothing at all to do with midi clock and nowhere have I ever said my music was bad - I just know that some of my tools that I use in my craft (including the SPS-1) could be a tad sharper than they are.

If I was making a woodcut (see here:

<http://en.wikipedia.org/wiki/Woodcut>

and my blade/tool of choice was blunt when doing some fine carving - would anyone bag me out for getting it sharpened? Of course not. This is not just another case of an artist seeking to 'blame' his tools for the work produced. Have a look at the detail in prints made using this method. Music and particularly rhythm share the same elements of precision. I just want my best tools as sharp as they can possibly be. Absolutely nothing wrong in that. Especially when I know that they can be that sharp if I find a craftsman willing to do the job for me. And - I LOVE LOVE LOVE using them when they are!

Seems more than logical and 100% fair to mind and a few others so it seems.

As a related aside - I had a shave this morning with a brand new, triple blade razor - smooth as silk and a pleasure to do the job - a world of difference to three days ago when I all I had was the one my GF has used on her fine legs the day before. Sure I managed to shave myself but I lost a fair slab of my flesh and it wasn't anywhere near as much fun either. There is a point here for those that hear it.

Peace and regards as always - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/09 22:26

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b0unce wrote:

\*tumbleweed\*

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Hey david, do you ever use trackers for your beats ?

No - hardware only for the beats. Ableton Live for vocal re-timing. I put up with USB/Midi Clock Sync into the PC because it's all we have!

Regards David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/09 22:35

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louvega wrote:

David - Excellent thread on a very important issue. I find it amazing some people seem to be against improving the tools they work with. Anyways, thanks.

Hey louvega! - even if you are or not anyone even remotely connected to them or even if you just like their stuff your user name of course reminded me of MAW - a team that throughout their entire creative output deeply understood how timing subtlety makes all the difference when composing tracks - especially when it comes to making your body move! And more than anything - thank YOU for posting the support. I think it's worth sorting too. Best and respect - David.

[www.innerclocksystems.com](http://www.innerclocksystems.com)

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 04:30

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So - not wishing for this issue to 'die on the vine' after all the initial effort - where do we go from here people? For everyone else - I'd be very interested to know if anyone else has emailed Elektron Support directly about the numbers and what their take on it is. The response from Daniel on this thread (although detailed) neither confirmed nor denied the claims. I would like to know if those step/duration numbers can be verified at Elektron's side firstly so there is a least a level playing field to this thread. Then maybe, for those who do see this as significant - we can look for ways to improve the numbers if possible?

Regards, as always - David  
[www.innerclocksystems.com](http://www.innerclocksystems.com)

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 05:12

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Interesting thread.

I've read the link you posted to your website, the part about Interaural Time Difference bares zero significance in actually hearing the delay caused by hardware though. Like you mentioned, its a process used to define time differences between the two ears only.

I think the emphasis placed on human hearing in this thread is a little optomistic to say the least. Human hearing is fundamentally flawed as an kind of scientific measurement device. We don't hear every frequency equally, we can't notice volume changes below 3dB differences very much, 3 cents is about the smallest difference in pitch we can hear and we can only really pinpoint the location of sound sources to about 2degrees in most directions.

The human ear is so flawed that the brain can alter what we think we are really hearing. Take recent 64bit vs 32bit DAW comparisons for example, most people said mixdowns done at 64bit resolution sounded better. Then the two audio files were null tested and low and behold they were identical, some people were still convinced that the 64bit mixdown sounded better. The power of suggestion/placebo effect has a huge influence over what we think we can hear.

Perhaps a much more fitting introduction to this thread would have been a bunch of listening tests to actually determine

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what the human can really identify time-wise, not a list of figures developed by scientific means. It is what we can actually hear that will ultimately determine what we really need.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 05:21

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ZiggY wrote:  
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I've read the link you posted to your website, the part about Interaural Time Difference bares zero significance in actually hearing the delay caused by hardware though. Like you mentioned, it?s a process used to define time differences between the two ears only.

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Perhaps a much more fitting introduction to this thread would have been a bunch of listening tests to actually determine what the human can really identify time-wise, not a list of figures developed by scientific means. It is what we can actually hear that will ultimately determine what we really need.

Ziggy - I know the ITD doesn't relate to rhythmic perception - I say that a number of times on this thread. I noted it here and on my website simply to show that our brains are sensitive to minute time/sound shifts in a number of ways.

Back to the tests - FORGET THE NUMBERS! - the 16th HATS ON MY SPS-1 SLOP AROUND MORE THAN I LIKE - IT'S THAT SIMPLE! The numbers just confirm what I can plainly hear with my ears - no microscope required! I don't need anyone else or a scope to confirm my hearing ability. Forget placebos and auto-suggestion - I have been in this game way too long my friend - I just want my SPS-1 tightened up! Your brain might trick you into hearing stuff that isn't there - I can't comment on that thankfully and you may need to a doctor for that but these numbers (and they have been reproduced by others on this thread besides myself) are just bullet-proof confirmation of what I can already hear perfectly anyway.

As for the 32/64 bit DAW audio reference - this is a total red-herring in this thread and again seeks to put the tempo/timing debate back in the voodoo/magic/witchcraft camp again where is most definitely does not belong. I personally agree that sonic difference in audio fidelity/soundstage depth between 32/64 bit apps and alternate word clock sources are miniscule. However - 2 to 3 ms is a big enough tempo/clock/event slop window to drive a very big bus through in my opinion and does not deserve to be discussed in the same context.

Please!

Regards David.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 05:48

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innerclock wrote:

ZiggY wrote:  
Interesting thread.



I've read the link you posted to your website, the part about Interaural Time Difference bares zero significance in actually hearing the delay caused by hardware though. Like you mentioned, it?s a process used to define time differences between the two ears only.

I think the emphasis placed on human hearing in this thread is a little optimistic to say the least. Human hearing is fundamentally flawed as a kind of scientific measurement device. We don't hear every frequency equally, we can't notice volume changes below 3dB differences very much, 3 cents is about the smallest difference in pitch we can hear and we can only really pinpoint the location of sound sources to about 2degrees in most directions.

The human ear is so flawed that the brain can alter what we think we are really hearing. Take recent 64bit vs 32bit DAW comparisons for example, most people said mixdowns done at 64bit resolution sounded better. Then the two audio files were null tested and low and behold they were identical, some people were still convinced that the 64bit mixdown sounded better. The power of suggestion/placebo effect has a huge influence over what we think we can hear.

Perhaps a much more fitting introduction to this thread would have been a bunch of listening tests to actually determine what the human can really identify time-wise, not a list of figures developed by scientific means. It is what we can actually hear that will ultimately determine what we really need.

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Regards David.

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Human sensory as a whole is easily influenced and quite often incorrect. Want to see?

Stare at the crosshair of the image below and see what happens. Stare hard and try not to blink.

<http://weblog.frittle.org/images/31.gif>

You can create things that never even existed.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by Ziggy - 2007/04/10 05:59

innerclock wrote:

Ziggy wrote:  
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Please!

Regards David.

Hah! I am glad you edited your post in a much more condescending way. There is really no point continuing this discussion. Why? You question other peoples attitudes, then you post junk like this. It doesn't matter how long you've been in the game... unless of course you include the potential increase in ability to be an arrogant prick of a musician who thinks he knows everything. You don't. Really.

I could go to the doctor, but you know what she'd say? "your hearing only follows human physiology". Do yourself a huge favour and at least acknowledge the facts that human hearing is not perfect, nor does it become amune to the placebo effect or any other brain related phenomom, because at the end of the day it is always the brain that determines what we hear.

Open a psycho-acoustics book before you comment.

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 06:04

Ziggy wrote:

But ITD doesn't show that our ears are sensitive to minute time shifts in a number of ways, only in a single way and thats the time difference between what our two ears hear.

I'm sorry, but your last statement kind of diminshes this thread somewhat in relevance. Science has clearly proven that human hearing is influenced very easily by a number of things. You used numbers to confirm what you were hearing, this means you should easily be able to confirm the findings of numbers without ever seeing them.

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ZiggY - forget ITD - I should have stayed on topic - it's easy to forget that some people need spoon feeding - I know what I hear and I know why - have a listen to my posted audio examples. One is skin-tight. One is sloppy. I can hear it and so can many others and I know what I like better and the numbers (if you take the time to measure them) just prove what is very plain to hear anyway. Please take the smoke and mirrors visual tricks somewhere else. I've seen them all before. They don't belong on this thread. If I wanted magic I would go to a circus.

David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 06:14

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ZiggY wrote:

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Open a psycho-acoustics book before you comment.

I'm not questioning anyone's attitude just so long as they stick to the facts as they are. I don't think I know everything either but I do know what I (and others) can hear and I know that when the numbers improve (SPS-1 against MPC3K for instance) - I like what I hear better and so do others as well. If the only thing I have changed between the two devices is reducing the window of tempo/clock/step duration error then what does that tell you. And that is 100% scientific and I don't need to read anything at all for that to be valid.

David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 06:30

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ZiggY wrote:

You used numbers to confirm what you were hearing; this means you should easily be able to confirm the findings of numbers without ever seeing them.

I knew the SPS-1 was moving around in the groove far more than my sequence inside the 3K. I could hear it plain as day. The fact that the numbers corroborated this just made sense.

As an afterthought - and maybe I should have posted this earlier - I sampled the SPS-1 hat into the 3K and sequenced up the same 16th note pattern. Result - no slop. No shifting in and out of phase. Perfect. The only difference - a lot less internal step/tempo/clock/event drift by a factor of at least 24 times.

Again - forget psycho-acoustics - this is easy stuff to hear and compare and indeed measure.

David.

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## Re: MD SPS-1 Timing Performance Issues

innerclock wrote:

ZiggY wrote:

Hah! I am glad you edited your post in a much more condescending way. There is really no point continuing this discussion. Why? You question other peoples attitudes, then you post junk like this. It doesn't matter how long you've been in the game... unless of course you include the potential increase in ability to be an arrogant prick of a musician who thinks he knows everything. You don't. Really.

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David.

But you aren't sticking to the facts as they are. The example you've given isn't scientific because it isn't isolating only human hearing as the only means to detect the changes. You are physically altering something with your hands which can very easily alter what you think you are hearing. You've made a change, therefore I must hear a change.

That is what a placebo pill is. A doctor gives a patient a pill that does absolutely nothing physically, but mentally they think they have taken something that has made a physical change thus the subconscious follows suit and they suddenly feel better.

By making a change physically you think you have caused a physical change to the audio as well, your mind acknowledges this and certainly can effect what we think we can hear. It happens all the time, I'm sure its even happened to everyone in this thread. For example, I've heard lots of stories of people adjusting eq's and compressors to aural perfection only to realise that they were in bypass the whole time. The ears and mind are easily deceived.

The only way to really determine what the ear is really hearing is to subject it to blind listening tests. These force the ears and the ears alone to make the judgement.

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 06:45

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innerclock wrote:

Again - forget psycho-acoustics - this is easy stuff to hear and compare and indeed measure.

David.

To suggest that we forget psycho-acoustics is to suggest that we forget human hearing altogether.

If this stuff is so easy to hear why are you so persistent in denying or sidestepping the idea of a blind test? If its so easy to hear we shouldn't have any problems confirming a measurement by ear. Are you scared of finding the truth, whatever it may be? It could confirm everything you are hearing, it could reveal it as complete audiophoolery like \$300 AC cables and titanium AC outlets.

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 06:46

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innerclock wrote:

ZiggY wrote:

But ITD doesn't show that our ears are sensitive to minute time shifts in a number of ways, only in a single way and that's the time difference between what our two ears hear.

I'm sorry, but your last statement kind of diminishes this thread somewhat in relevance. Science has clearly proven that human hearing is influenced very easily by a number of things. You used numbers to confirm what you were hearing, this means you should easily be able to confirm the findings of numbers without ever seeing them.

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David.

I didn't create any smoke and mirror tricks... your eyes did. Hearing can do it just as easily.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 07:09

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ZiggY wrote:

The only way to really determine what the ear is really hearing is to subject it to blind listening tests. These force the ears and the ears alone to make the judgement.

DONE DONE AND DONE - this is so over done! Please - I don't really care if you agree or not - just don't get in the way of a valid debate by those that know what I am talking about!

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 07:14

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ZiggY wrote:

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and titanium AC outlets.

There is no foolery - they are blind tests - my SRC Click Tracks are separate tests - my 3K/SPS-1 initial tests were blind and I know my ears and my brain enough to know what is psycho and what is concrete! I am not persistent in anything other than what is fact. This is no witch hunt and nowhere even close to AC/titanium whatever.... - now that is scary!

David

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 07:39

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tell me, how did you do these tests blind?

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 07:51

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ZiggY wrote:

tell me, how did you do these tests blind?

SRC Click first test - two clocks originating from the same single unit at 120 BPM - left/right - no jitter.

SRC Click second test - same single unit - % jitter applied internally to LHS click pulse.

Listen by ear - first test is tight - second test is rough.

SPS-1/3K:

1st Test: MPC as Master/SPS-1 as slave - same quarter note patterns and samples at 120 BPM - LHS SPS-1 moves around. RHS MPC3K stays steady.

2nd test - reversed: SPS\_1 as master/3K as slave - identical conditions - same result - SPS-1 moves around. 3K stays steady.

Even if you personally couldn't differentiate which machine was at issue here by ear - simple L/R recording on both tests shows you which one it is and by how much. As I have always stated - you don't need a scope for a degree of duration slop that is wide enough to park a family sedan in.

David.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 08:41

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innerclock wrote:

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David.

None of this is a blind test. You are still able to openly acknowledge and see which audio is coming from what equipment, as well as knowing exactly what equipment chain is operating at every point during your listening.

A blind test would involve a 3rd party recording audio from those signal chains then playing them to you without ever indicating which chain is playing at any particular time and leaving just you and your ears to determine which is which. You have not done this... I'll tell you right now, the differences that you perceive will diminish by a massive degree when put in a situation when you have only your ears to judge. You cannot do an unbiased blind test on yourself.

I know my ears and my brain enough to know what is psycho and what is concrete! I am not persistent in anything other than what is fact.

David

I must be honest, this is one of the most foolish things you've said. You obviously don't know your ears and brain at all. They, like every other set of human ears and brain are bound by human physiology, suggesting that what you are hearing is scientific is wrong. Suggesting that what you are hearing is what you are hearing is right, but that doesn't mean it bears any resemblance to the reality outside of your head... that goes for every human being. You've only delivered one fact in this thread... that being the measurements you've made via software. You haven't proven that you can hear anything, the only way you can do that is by a blind test that you have yet to do, and probably never will.

Keep in mind that the length of time you are referring to is three 1/1000th of a second. Did you know the brain takes 50ms (fifty 1/1000th's of a second) to process the light detected by the eyes. Human sight can't see changes above about 60fps either, that means we see a frame every 15ms or fifteen 1/1000th's of a second. If human hearing is so perfect, perhaps you can explain the "phantom fundamental".

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 08:47

ZiggY wrote:

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Ziggy - go away and leave this thread to those that understand. I don't like being rude but really - go away - I try and respond to everything I can but your points are really, and I mean really not worth responding to. I can hear 3ms offset/drift between different bits of my kit easy as can many others. Go away.

David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 09:17

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innerclock wrote:

ZiggY wrote:

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David.

My point is perfectly worth responding to, it's a very simple point too. Let's see if people can really identify by ear (and ear alone) these shifts in timing. The only reason you say they aren't worth responding to is because you have absolutely nothing constructive to say other than probably "my ears tell the truth, they are my ears and they are perfect" :roll:

I doubt many people in this thread will agree with you after posting some of the things you have done over the last page or two. I'm sure most would even happily do a blind listening test simply because they are here to learn and are actually open to discussion. You are not. Several people have raised valid points in this thread and you have replied in exactly the same way. That they don't understand or that they aren't valid points, it is really you who doesn't understand and you who is keeping this from gaining the most valid point there is - Can we really hear these small differences in timing?

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 09:36

ZiggY wrote:

Can we really hear these small differences in timing?

Are you crazy - 3 ms makes all the difference in the world in rhythmic terms. And I'm not talking super-fine detail here brother. In my programming that's a hi-hat pattern that's either pushing or pulling against the whole groove. If it doesn't bother you - fine. It bothers me. And I don't care a fig if the rest of the world disagrees with me frankly - I'm not looking for approval here by the holier-than-thou voodoo electronic music fraternity. Are you familiar with the Russian Dragon by Jenius Electronics from the late 1980s? Do some homework and find out who used it. Prince has one bolted in every control room at Paisley Park. It was designed to replace drum sounds accurately on tape down to the sub-ms in precision and to stop people arguing about if a snare was 'Rushing' or 'Dragging' against the groove. It works. I hear it. People who understand get it and the numbers prove the MD is a tad rubbery and I want it sorted if possible. That's as simple as it gets. I don't care if you think it's in my head - it ain't.

David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 09:41

does it really bother you, or do you only think it bothers you?

I'm not going anywhere, not until we really determine what is fact. Why? Because that bothers me. I hope your reply to this post doesn't force me to go over what constitutes scientific fact and fiction.



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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 09:50

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ZiggY wrote:

does it really bother you, or do you only think it bothers you?

If I needed psycho-analysis I would pay a shrink good money who would no doubt be more qualified to ask this type of question however interesting this type of cafe psychobabble may be to you. I'm not interested one bit. This is not about reality/fantasy. Get over it and leave well alone. Will someone else with a solid grasp of reality please back me up here so we can all move on and lose this?

David.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/10 10:04

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ZiggY wrote:

rCan we really hear these small differences in timing?

when we work in a produktion enviroment against other machines we can hear that... in ideal you would be able to dub any beat phase alingnend and just give the bassdrum some volume accents by doubling it on certain hits on a paralel track...

when the timing is sloppy this needs more work...

So the item of this thread is valid...

But...its not so easy to say precise timing is the lost church of electronic music...

its not the question about precission..its a question about groove..

an mpc without the ability to cut and offset samples in certain relations to each other wouldnt groove..

The MD allways grooves...done by a cheap trick that pays with unprecise timings...but well adjusted to please the ear... well worth a user discussion..but not worths for a personality show...

as i said in an earlier post... the offenders have brought the proove that the timing is not precise..

but we need a proof that shows that precise timing would make the thing sound better.

I am not sure about that...

at least whithout extra groove design features it probably would make the MD sound stiff...

however,,thats theory...we would know more if someboda really would cut a representativ MD groove in a Workstation precisly on the clock...

if the corrected groove sounds better we can talk ..but for now this is all still very much in the dark..

we have an issue here..but how to interpretate that is the open question...

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 10:23

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rudebop wrote:

ZiggY wrote:

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when the timing is sloppy this needs more work...

So the item of this thread is valid...

So you can really only hear a problem when its referenced against something else. Do you consider 3ms to be "sloppy"? Again, lets do some blind listening tests to really determine what we are actually hearing and what we consider acceptable.

But...its not so easy to say precise timing is the lost church of electronic music...

its not the question about precission..its a question about groove..

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 10:28

innerclock wrote:

ZiggY wrote:

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David.

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=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 11:58

ZiggY wrote:

Is anything in this world precise? Our hearing isn't. Musicians aren't... not even daw's are. Is music? Again, lets bust out some blind listening tests and see what people find acceptable.

Dude - take the mumbo jumbo back to dark ages - no one want to know.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 12:09

ZiggY wrote:

The only thing that is reality here is your ability to side step the proposition of some blind listening tests. Such tests that will clearly outline not just the problem, but the potential remedy for the things you propose.

but of course, you aren't interested in that... you just like playing the role of an arrogant musician that thinks he knows everything. Come on, pull that head of yours out of your ass and put some money where your mouth is. Let?s test those "perfect" ears of yours and see what you are really hearing.

No side stepping here my friend. I'm not even keen on taking the role of arrogant know-it-all either. My head may even be up my ass at times - I am not going to dispute that either. My ears are not golden but they can hear 3 ms push-pull and I don't need you or a test to prove it. Forget even if you think it's about blind testing. I have two sets of numbers that more than a few people seem fine to accept as significant (yes I can hear the difference as well but lets pretend for your sake that I can't) - Now, I want the clock/event/step precision of my SPS-1 to closer match my MPC-3000. Is that such a criminal thing to request? Why does it bother you that I want this? If Elektron can tell me my numbers are wrong - fine. But they won?t. If Elektron can tell me these numbers mean nothing - I'll go hide under a rock. But they won?t. They can't. Because they do.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 12:16

ZiggY wrote:

So you can really only hear a problem when it?s referenced against something else. Do you consider 3ms to be

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"sloppy"? Again, let's do some blind listening tests to really determine what we are actually hearing and what we consider acceptable.

Isn't everything 'referenced against something else'? I'm not saying I can hear a quarter note metronome in solo drift by 3ms either way. What would be the point in that anyway? Everything I do in my studio is 'referenced against something else'. What I am saying is when my REFERENCE IS TIGHT - and believe me when I say I have more than a few that are in my rig - then YES I CAN HEAR WHEN THINGS SLOP AROUND and I KNOW WHEN THINGS ARE BANG ON THE MONEY - BY MY EARS! AND my SPS-1 moves round MORE THAN IT SHOULD.

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 12:26

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numbers, numbers, numbers. A calculator can crunch numbers that my mind never could, simply because it is based on completely different processes. I'd be more interested to see if you can identify the difference between the SPS-1 running on its own clock, compared to running on the MPC3K's clock using nothing but your ears. I am sure Elektron would be keen to know the results of such a test as well. This is the suggestion that you are finding so criminal.

Elektron know its one thing to prove something by numbers and scientific tests... but they also know its a whole different ball game to actually prove that is has a profound effect on what we are actually hearing. But of course... you don't want to do this, you'd rather do a half-arsed job than approach a problem correctly and scientifically in order to actually find an appropriate resolution. Proving that you can actually hear a difference might even prompt elektron to acknowledge that their is a problem with the timing, but of course you thought of that right?

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 12:28

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innerclock wrote:

ZiggY wrote:

So you can really only hear a problem when it's referenced against something else. Do you consider 3ms to be "sloppy"? Again, let's do some blind listening tests to really determine what we are actually hearing and what we consider acceptable.

Isn't everything 'referenced against something else'? I'm not saying I can hear a quarter note metronome in solo drift by 3ms either way. What would be the point in that anyway? Everything I do in my studio is 'referenced against something else'. What I am saying is when my REFERENCE IS TIGHT - and believe me when I say I have more than a few that are in my rig - then YES I CAN HEAR WHEN THINGS SLOP AROUND and I KNOW WHEN THINGS ARE BANG ON THE MONEY - BY MY EARS! AND my SPS-1 moves round MORE THAN IT SHOULD.

How about if I post a combination live/electronic piece, surely you would be happy to point out which parts are "sloppy" by those 3ms?

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 12:30

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innerclock wrote:

ZiggY wrote:

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Is anything in this world precise? Our hearing isn't. Musicians aren't... not even daw's are. Is music? Again, lets bust out some blind listening tests and see what people find acceptable.

Dude - take the mumbo jumbo back to dark ages - no one want to know.

Dark ages? It really is time to do some reading about pyscho-acoustics champ. This ain't no dark ages stuff, this is relatively new material published and approved by the acoustics society of america. Surely you aren't suggesting that your "scientific" analysis directly ignores the findings of such a scientific organisation.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 12:39

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ZiggY wrote:

How about if I post a combination live/electronic piece, surely you would be happy to point out which parts are "sloppy" by those 3ms?

Sure - on one condition - you split your mix - LHS 8th reference clicks that deviate by no more than 10 samples per 8th note duration maximum (the 3k does it in under 4 samples per quarter division) - your other stuff all on the RHS of the stereo file.

David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 12:41

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ZiggY wrote:

Surely you aren't suggesting that your "scientific" analysis directly ignores the findings of such a scientific organisation.

Two different things. I await your audio file with anticipation.

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 12:44

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innerclock wrote:

ZiggY wrote:

How about if I post a combination live/electronic piece, surely you would be happy to point out which parts are "sloppy" by those 3ms?

Sure - on one condition - you split your mix - LHS 8th reference clicks that deviate by no more than 10 samples per 8th note duration maximum (the 3k does it in under 4 samples per quarter division) - your other stuff all on the RHS of the stereo file.

David.

Nope, I won't be splitting anything. Music is what we are making and I'll be presenting it as a final mixdown. Why? because the final mixdown is all that matters, its all that people listen to and its the entire reason for us even being here.

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What good does a comparison do us if it bares no resemblance to the way anyone listens to music?

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 12:47

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ZiggY wrote:

Proving that you can actually hear a difference might even prompt elektron to acknowledge that their is a problem with the timing, but of course you thought of that right?

I can and have and still do and that thought/hearing test got this thread started in the first place. The sounds came first - then the numbers. That is the important part. I wouldn't have got the calculator out if it sounded right in the first place.

David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 12:56

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ZiggY wrote:

Nope, I won't be splitting anything. Music is what we are making and I'll be presenting it as a final mixdown. Why? because the final mixdown is all that matters, its all that people listen to and its the entire reason for us even being here. What good does a comparison do us if it bares no resemblance to the way anyone listens to music?

You just shot your whole thesis down in one. Without a tight reference in your mix that I can prove is actually tight to begin with then the whole damn thing could be slopping around with no reference anyway and that's like trying to pin the tail on a moving donkey with a blindfold. I'm not interested in that at all. I print a solid reference 16th click track to Hard Disk before I record anything at all. Every sound I work on I reference by ear to this 16th click before I punch in to record it. I build all my tracks up this way to keep it as tight as I can and it pays dividends. After laying down 10 or so tracks of percussion this way - if I then lock up a semi-sloppy drum machine and put it up the desk on input/repro against all my other tracked stuff - it sticks out like dogs balls if it's pushing and pulling against the rest. What point is there listening to your stuff when there probably isn't a tight thing in there in the first place. As I said, you've just signed off. Thank you.

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## Re: MD SPS-1 Timing Performance Issues

Posted by hageir - 2007/04/10 13:11

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innerclock wrote:

ZiggY wrote:

You used numbers to confirm what you were hearing; this means you should easily be able to confirm the findings of numbers without ever seeing them.

I knew the SPS-1 was moving around in the groove far more than my sequence inside the 3K. I could hear it plain as day. The fact that the numbers corroborated this just made sense.

As an afterthought - and maybe I should have posted this earlier - I sampled the SPS-1 hat into the 3K and sequenced up the same 16th note pattern. Result - no slop. No shifting in and out of phase. Perfect. The only difference - a lot less internal step/tempo/clock/event drift by a factor of at least 24 times.

Again - forget psycho-acoustics - this is easy stuff to hear and compare and indeed measure.

David.

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I GET IT!

you're a salesperson from Akai!

at the end of this thread you'll recomend the new akai mpk49 :-D hehe J/K

great thread though, keep it up.

make the perfect machines 'perfecter'

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 13:13

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hageir wrote:

I GET IT!

you're a salesperson from Akai!

at the end of this thread you'll recomend the new akai mpk49 :-D hehe J/K

great thread though, keep it up.

make the perfect machines 'perfecter'

I wish! If you only knew. I'd only work for Akai if I could go back in a time machine my friend!

Thanks for the support.

Regards and respect - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 13:19

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I just posted two PDFs from my original Russian Dragon brochure from the late 1980's - two reasons - have a look at the people's names on the user lists, the people they produced and mixed and the obvious importance placed on rhythmic precision and; secondly, - note how people used to record and track stuff properly. No one ever tracked to tape without a tight 16th reference click - the tighter the better - especially when using sequencers. The same principle applies to Hard Disk/DAW. Everything recorded got matched hard by ear against the striped reference click. The Russian Dragon was just icing on the cake. Yes of course we listen to music as a whole stereo mix - but when you're recording - you always, always, always - REFERENCE TO SOMETHING TIGHT! Can I have a rest now please?

And Ziggy - read closely - the Tight Reference IS EVERYTHING! Now - will you please go away!

Regards - David.

[www.innerclocksystems.com](http://www.innerclocksystems.com)

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## Re: MD SPS-1 Timing Performance Issues

Posted by hageir - 2007/04/10 13:32

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one more thing, where are the audio demos you posted (this thread is 23 pages long, it's a drag to find it again) :-)

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 13:34

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No worries:

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Files - Machinedrum > Misc >

Russian Dragon PDFs here:-

Files - Machinedrum > PDF >

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by hageir - 2007/04/10 13:35

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ok thanks a ton man!  
I'll give it a listen!

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## Re: MD SPS-1 Timing Performance Issues

Posted by hageir - 2007/04/10 13:36

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oh I'mma read about that russyky dragon, sounds interesting

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 13:36

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It ain't music by any stretch but if you get my whole drift it will be clear as day.

Regards again - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 13:45

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innerclock wrote:

ZiggY wrote:

Nope, I won't be splitting anything. Music is what we are making and I'll be presenting it as a final mixdown. Why? because the final mixdown is all that matters, its all that people listen to and its the entire reason for us even being here. What good does a comparison do us if it bares no resemblance to the way anyone listens to music?

You just shot your whole thesis down in one. Without a tight reference in your mix that I can prove is actually tight to begin with then the whole damn thing could be slopping around with no reference anyway and that's like trying to pin the tail on a moving donkey with a blindfold. I'm not interested in that at all. I print a solid reference 16th click track to Hard Disk before I record anything at all. Every sound I work on I reference by ear to this 16th click before I punch in to record it. I build all my tracks up this way to keep it as tight as I can and it pays dividends. After laying down 10 or so tracks of percussion this way - if I then lock up a semi-sloppy drum machine and put it up the desk on input/repro against all my other tracked stuff - it sticks out like dogs balls if it's pushing and pulling against the rest. What point is there listening to your stuff when there probably isn't a tight thing in there in the first place. As I said, you've just signed off. Thank you.

Tell me then handsome, when does music have a tight reference? Is a drummer a tight reference?

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 13:51

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innerclock wrote:

I just posted two PDFs from my original Russian Dragon brochure from the late 1980's - two reasons - have a look at the people's names on the user lists, the people they produced and mixed and the obvious importance placed on rhythmic precision and; secondly, - note how people used to record and track stuff properly. No one ever tracked to tape without a tight 16th reference click - the tighter the better - especially when using sequencers. The same principle applies to Hard Disk/DAW. Everything recorded got matched hard by ear against the striped reference click. The Russian Dragon was just icing on the cake. Yes of course we listen to music as a whole stereo mix - but when you're recording - you always, always, always - REFERENCE TO SOMETHING TIGHT! Can I have a rest now please?

And ZiggY - read closely - the Tight Reference IS EVERYTHING! Now - will you please go away!

Regards - David.

[www.innerclocksystems.com](http://www.innerclocksystems.com)

You know when a tape machine is synced to a daw that its the daw that follows the tape machine. Why? Because a tape machine never plays back at the same speed... If you ever tried to dump a 24 track 2inch tape worth of material into the digital domain 1 track at a time, you'd really run into problems. So really, a tight reference isn't something so tight now is it... Do you think a vinyl record plays back at exactly the same speed? \*scratches chin and ponders \*

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 13:51

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ZiggY wrote:

Tell me then handsome, when does music have a tight reference? Is a drummer a tight reference?

Are you insane? Some are tighter than others of course. It all depends what you choose your REFERENCE TO BE. If all you have is a sloppy drummer and that's the tightest thing you have then that's the best you're going to get in your track. If you print a rough click and get the drummer to follow it (assuming they can follow it of course) then the best you get is as good as the click. If you have a rock solid click and the drummer is worth paying - you have solid gold. Game over. Where is the argument here? Why are you still here?

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 13:54

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ZiggY wrote:

You know when a tape machine is synced to a daw that its the daw that follows the tape machine. Why? Because a tape machine never plays back at the same speed... If you ever tried to dump a 24 track 2inch tape worth of material into the digital domain 1 track at a time, you'd really run into problems. So really, a tight reference isn't something so tight now is it...? Do you think a vinyl record plays back at exactly the same speed? \*scratches chin and ponders \*

Now you are looking dumb. Do some homework. Sorry - but really - do some REAL HOMEWORK. I own and have used over the years a combination of professional devices - TimeLine Lynx 2/Adams Smith Zeta 3/Digi-Design Universal Slave driver etc. Assuming you have a good SMPTE stripe on 2" - these devices convert LTC/EBU Timecode into a format Tools/DAW can track. They also provide Word Clock out usually that freewheels/varispeeds so that the DAW sample frequency accurately tracks any wow/flutter tape machine variation referenced to the LTC/EBU Time Code so that what is tight on tape remains just as tight on Hard Disk and over multiple record passes from the 2".

Finished yet?

Regards David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 14:17

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innerclock wrote:

ZiggY wrote:

Tell me then handsome, when does music have a tight reference? Is a drummer a tight reference?

Are you insane? Some are tighter than others of course. It all depends what you choose your REFERENCE TO BE. If all you have is a sloppy drummer and that's the tightest thing you have then that's the best you're going to get in your track. If you print a rough click and get the drummer to follow it (assuming they can follow it of course) then the best you get is as good as the click. If you have a rock solid click and the drummer is worth paying - you have solid gold. Game over. Where is the argument here? Why are you still here?

So you are suggesting that a great rock drummer is accurate to within less than three 1/1000ths of a second? After all, its three 1/1000ths of a second that you are complaining about.

---

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 14:25

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ZiggY wrote:

So you are suggesting that a great rock drummer is accurate to within less than three 1/1000ths of a second? After all, its three 1/1000ths of a second that you are complaining about.

You are seriously wasting my time. I don't care how tight the best rock drummer in the world is. I am probably never going to use him anyway. And if he can't keep up with my 3K he isn't worth jack to me besides - I don't care who he is. I know how tight my 3K is and I like it that way. There are drummers and players with very tight feel and you know what....they play better in the presence of other tight players - even playing to a tighter click. I want my SPS-1 to be as tight as my 3K is. I can hear the difference and most of the people on the Russian Dragon users list probably could too. Leave me alone.

---

## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 14:25

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innerclock wrote:

ZiggY wrote:

You know when a tape machine is synced to a daw that its the daw that follows the tape machine. Why? Because a tape machine never plays back at the same speed... If you ever tried to dump a 24 track 2inch tape worth of material into the digital domain 1 track at a time, you'd really run into problems. So really, a tight reference isn't something so tight now is it...? Do you think a vinyl record plays back at exactly the same speed? \*scratches chin and ponders \*

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is tight on tape remains just as tight on Hard Disk and over multiple record passes from the 2".

Finished yet?

Regards David.

What is tight though? A click track that shifts with the tape machine? Thats pretty tight. :roll: that doesn't particularly play in with the three 1/1000th's of a second that you seem to imply is destroying your music. Given that you've now defined a "tight reference" to a click recorded to analog tape which you've acknowledged will shift with the reproduction speed of the tape, you won't mind me posting a piece of music tracked in a daw that is synched to a click on tape. We shall see how easily you identify three 1/1000th's of a second.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 14:29

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innerclock wrote:

ZiggY wrote:

So you are suggesting that a great rock drummer is accurate to within less than three 1/1000ths of a second? After all, its three 1/1000ths of a second that you are complaining about.

You are seriously wasting my time. I don't care how tight the best rock drummer in the world is. I am probably never going to use him anyway. And if he can't keep up with my 3K he isn't worth jack to me besides - I don't care who he is. I know how tight my 3K is and I like it that way. There are drummers and players with very tight feel and you know what....they play better in the presence of other tight players - even playing to a tighter click. I want my SPS-1 to be as tight as my 3K is. I can hear the difference and most of the people on the Russian Dragon users list probably could too. Leave me alone.

No, Im not leaving you alone. So even in the presence of other tight players you are suggesting that they are accurate to less than three 1/1000th's of a second?

I shall post a clip to give those little ears of yours a test in the next day or two.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 14:30

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ZiggY wrote:

What is tight though? A click track that shifts with the tape machine? Thats pretty tight. :roll: that doesn't particularly play in with the three 1/1000th's of a second that you seem to imply is destroying your music. Given that you've now defined a "tight reference" to a click recorded to analog tape which you've acknowledged will shift with the reproduction speed of the tape, you won't mind me posting a piece of music tracked in a daw that is synched to a click on tape. We shall see how easily you identify three 1/1000th's of a second.

Go away - THE REFERENCE IS EVERYTHING - until you get that - go back to your stone tablet. You bore me stupid.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 14:32

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ZiggY wrote:

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I shall post a clip to give those little ears of yours a test in the next day or two.

Sure buddy - just stick your reference click hard left and I'll do your little dance. Until then - stay under your rock.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/10 14:41

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innerclock wrote:

ZiggY wrote:

What is tight though? A click track that shifts with the tape machine? Thats pretty tight. :roll: that doesn't particularly play in with the three 1/1000th's of a second that you seem to imply is destroying your music. Given that you've now defined a "tight reference" to a click recorded to analog tape which you've acknowledged will shift with the reproduction speed of the tape, you won't mind me posting a piece of music tracked in a daw that is synced to a click on tape. We shall see how easily you identify three 1/1000th's of a second.

Go away - THE REFERENCE IS EVERYTHING - until you get that - go back to your stone tablet. You bore me stupid.

Yeah, like you said:

note how people used to record and track stuff properly. No one ever tracked to tape without a tight 16th reference click - the tighter the better - especially when using sequencers.

Tape it is then.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 14:44

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ZiggY wrote:

Tape it is then.

Whatever ZiggY - Hard Left Tight Reference or no deal.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by neonleg - 2007/04/10 14:50

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ZiggY wrote:

numbers, numbers, numbers. A calculator can crunch numbers that my mind never could, simply because it is based on completely different processes. I'd be more interested to see if you can identify the difference between the SPS-1 running on its own clock, compared to running on the MPC3K's clock using nothing but your ears. I am sure Elektron would be keen to know the results of such a test as well. This is the suggestion that you are finding so criminal.

or were the findings that MDs midi clock is bang on and its the internal firing of sounds that moves around slightly? if so, there should be no real difference whether using MDs internal midi clock or a tight external midi clock such as MPC3000?

i would like to think the ELEKTRON gear might have an exceptionally accurate midi clock AND at least tighter than average regularity in the way internal sounds are triggered. if it could be improved then it def should be.

---

having sounds that shuffle about slightly is great if one can choose when to turn that feature on/off ie. when using the machine by itself or live for instance but when its in a studio environment alongside other drum machines, preset shuffle isnt really ideal.

ive tried many configurations in order to lock din sync devices to midi clock so the drum machines sound right together and it has def been worthwhile. theres a big difference if the drum machines are tightly locked and a very obvious one when A/Bing.

the small amount of variation in timing of the MD isnt really an obvious problem for me but then again i dont have an mpc3000. if the MD was more rigid that would be cool.

whether the song is better with or without timing offsets is another matter and up to the listner of course..  
nice 1

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 14:59

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I'm out - see if we have any positive consensus tmrw.

Regards to all despite the sometime heated debate which at the end of the day is all valid I feel - and remember the immortal words of one Grace Jones 'Don't Cry - It's only the Rhythm'

David  
[www.innerclocksystems.com](http://www.innerclocksystems.com)

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## Re: MD SPS-1 Timing Performance Issues

Posted by rgmccaig - 2007/04/10 19:52

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I think these ziggy/innerclock exchanges have raised an important point- it may be unlikely that most people could detect a 'bare' 2.2ms deviation at quarter note speed; however it is extremely likely that once tracks are layered together, the small deviations in inter-voice alignment will indeed be noticeable, probably as differences in the attacks of sounds that fall together. And that is a valid change that one can easily believe would make the track sound better or worse (or pushed/pulled etc)... also it makes loops harder to trim!

I \_am\_ also interested in what people could detect in 'bare' tracks; but we will never know that until some people do set up a proper test (properly blind, and with identical sounds). Claims such as "I don't need test results, I know what my ears tell me", are unhelpful for people who are familiar with science and desire the truth of the matter. (And these stone age comments are bizarre; I have never heard anyone equate instinct with modernity and scientific measurement with the stone age.)

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## Re: MD SPS-1 Timing Performance Issues

Posted by kuniklo - 2007/04/10 20:19

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Sure buddy - just stick your reference click hard left and I'll do your little dance. Until then - stay under your rock.

You've crossed the line with the defensiveness and obsessiveness of your last several posts. Make some music or go away.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 22:29

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rgmccaig wrote:

I \_am\_ also interested in what people could detect in 'bare' tracks; but we will never know that until some people do set up a proper test (properly blind, and with identical sounds). Claims such as "I don't need test results, I know what my ears tell me", are unhelpful for people who are familiar with science and desire the truth of the matter. (And these stone age comments are bizarre; I have never heard anyone equate instinct with modernity and scientific measurement with the stone age.)

The SRC Reference Tests I posted are Blind and totally scientific reference timing test which is how we all define timing ? one thing REFERENCED TO ANOTHER - what I mean by 'I don't need test results' is that my test (which many people feel are more than adequate for this purpose) and my ears are more than enough to prove my point on this thread.

I equate my test PLUS my ears as more than ample evidence of my claims - what I am putting down to Stone Age Voodoo is the notion that my ears PLUS my testing mean nothing and that referenced rhythmic timing judgment is all down to pure Psycho-Acoustics and 'that old MPC Magic feel' which is not at all.

David.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/10 22:38

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You've crossed the line with the defensiveness and obsessiveness of your last several posts. Make some music or go away.

There really is no line to cross here - it's just that any real point of significance will always create some healthy debate. I do make music and no I will not go away. I'm not even really that defensive, I am making a point though and - unlike some others here I am prepared to back up my claims and maintain an interest in this thread rather than post the odd stab and run the other way. Yes Ziggy was annoying me - like anyone who refuses to see the wood for the trees and yes I got a little heated but I am human after all and I refrained from swearing. Obsession isn't a bad thing either if channeled positively - it has been a fertile breeding ground for many things - the realisation of Space Travel, Midi, Democracy, Justice, Electricity, Astronomy, Architecture - I could go on of course?..

Regards David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/11 04:06

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Wow, this thread got ponderous pretty fast.

The matter has already been brought to Elektron's attention, and they'll either do something about it, or they won't, based on uploaded examples, their own tests and their willingness to address it.

Everything else is just strawmen, ad hominem attacks and teeth-grinding repetition, right now.

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## Re: MD SPS-1 Timing Performance Issues

Posted by mvmono - 2007/04/11 06:04

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This thread is getting too long to follow and is demanding a greater resource than can be provided in this format. An index and perhaps some hyper-linking would be helpful. :lol:

My suggestion is start your own timing issues forum David or clarify what it is you're trying to achieve? My guess is Elektron have got the message, how they choose to regard it is in their hands.

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Not to take anything away from the initial impetus of the thread which in a nutshell I would put in this way:

Roger Linn proved over 10 years ago that Midi Clock and Internal Event triggering can be accurate to within 3 samples. You have high regard for Elektron machines but would like to see them matching those figures because 1) they have made claims along those lines 2) You paid good money for a machine based on those claims. If Roger Linn has already achieved it then maybe it's not beyond Elektron to implement that kind of internal event triggering precision into their machines.

The debate around whether someone can hear 2ms probably needs to be fleshed out further as there are a number of factors to take into consideration and as I already stated, demands a greater resource than one thread within a relatively small online community can provide.

So, the "where to from here" question seems a good place to start as I'm definitely interested in more discussion along these lines. I personally believe that 2ms does make a difference and that this changes the "feel" especially when you take into consideration a number of tracks that are all pushing or pulling 2ms this way or that without the user being able to determine that amount of offset. To narrow the window of the "time vortex" can only be a good thing to my ears and feet :-)

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/11 06:47

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its not clear that timing precision sounds better than a good push pull...  
For me this needs to be investigated..

what i know is that timejitter sounds horrible..there a straight timing wins...always...

and a straight timing wins also regarding editing comfort and layering of sounds...

But what Elektron done here is a trick that fools our ears and makes the groove sound more alive... which is a cosmetic thing...

The question is if this cosmetic trick sounds good enough to pay for the inconvenience during editing...

Somebody has to build a reference pattern and copy that to a straight platform like MPC or a workstation... AN A/B comparison of that can show if its beneficial to straighten the timing...

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## Re: MD SPS-1 Timing Performance Issues

Posted by rgmccaig - 2007/04/11 07:26

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one thing for sure, I'd \_really\_ like to hear the numbers for an xbase and an sp1200. i think that would put everything in perspective.

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## Re: MD SPS-1 Timing Performance Issues

Posted by neonleg - 2007/04/11 08:36

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rgmccaig wrote:

one thing for sure, I'd \_really\_ like to hear the numbers for an xbase and an sp1200. i think that would put everything in perspective.

ok heres some other perspective

two quick recordings, of the x-base.. one of md

16 samples @ 24bit 96khz 120bpm 16ths over one bar using their own clocks. measurements in samples. edit. recorded into soundforge6 \*most stable version i know of\* via delta44 muadio soundcard

x-base triggering HH sample  
MD triggering gnd imp machine

i have marked anomalies \* for easier identification.. hehe

xbase	md
11922	11901
11921	11902
11941	11902
11922	11902
11927	12109 *AVG initiates virus check
11927	11902
11915	11902
11979	11902
11921	11902
11923	11902
11921	11971 *my mobile phone rang!
11921	11902
11932	11902
11922	11902
11920	11902
11922	11902

edit. in the manual jomox have claimed their timing to be extremely tight and the numbers here agree with that. apart from these freak abnormalities the MD is looking like a very tight drum machine indeed.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/11 09:45

Hiya Neon - thanks for the numbers your side - to keep things square and so we don't confuse everyone - any chance you can do quarters at 120BPM - the higher sample rate is OK of course. Even though most of the MD 16ths look very tight - the 11902 jump to 12109 (207 samples) still works out at 2.16ms hole bewteen a 16th - any chance even doing 16ths for a longer period to see if the 'hole' is regular or random? If you look at my original quarter note numbers - it shows the same overall tight event sequence but with very regular 'holes'. It's these holes I want to see if Elektron can bring in to line with all the other super-tight events. Then we will be in business.

The AVG/Phone \*\*\*\* is I assume - for laughs right?

Just so everyone is clear I mean.

Thanks again - David.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by neonleg - 2007/04/11 11:35

well yeah, not so funny i suppose.. :-D

ok new test here is 4 bars @ 1/4s 96khz 120bpm 16 samples with results similar to yours. there is a pattern.

samples	ms
47604	.495
47674	.496
47605	.495
47813	.498
47605	.495
47674	.496
47813	.498
47605	.495



---

47674 .496  
47605 .495  
47812 .498  
47605 .495  
47675 .496  
47812 .498  
47605 .495  
47674 .496

however, place triggers on all steps and get this..

2 bars @ 16ths

samples ms

11901 .123  
11902 .123  
11902 .123  
12110 .126  
11902 .123  
11902 .123  
11902 .123  
11902 .123  
11902 .123  
11902 .123  
11971 .124  
11902 .123  
11971 .124  
11833 .123  
11902 .123  
11902 .123  
11902 .123  
12109 .126  
11902 .123  
11902 .123  
11902 .123  
11902 .123  
11902 .123  
11902 .123  
11902 .123  
11971 .124  
11902 .123  
11902 .123  
11902 .123  
11902 .123  
11902 .123  
11902 .123  
12110 .126

so here we see that when its tight its VERY tight, when its off its regular in the amount its off. looks like there are three so called recurring holes marked 12110 11833 and 11971. other than this its perfectly tight

just quickly, 4 bars 8 hits 2/16

samples ms

95277 .992  
95486 .994  
95416 .993  
95278 .992  
95417 .993  
95278 .992  
95417 .993

edit. same recording technique

TR 808 Test for those who may wish to compare.. not exactly 120 bpm but its as close as the indented tempo knob getz!  
from CB trigger 2 bars 1/4s

samples ms  
49020 .510  
49024 .510  
49017 .510  
49026 .510  
49015 .510  
49024 .510  
49024 .510

TR 808 16ths

samples ms  
12117 .126  
12316 .128  
12316 .128  
12316 .128  
12315 .128  
12316 .128  
12315 .128  
12316 .128  
12313 .128  
12316 .128  
12314 .128  
12316 .128  
12315 .128  
12316 .128  
12320 .128  
12312 .128

ROCK SOLID! except for startup lag..

hope this info helps the discussion  
greetz :-D

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/11 14:45

I wish I had your 808 Neon - tighter than mine!

Anyways - thanks for re-doing the numbers your side - and glad you found the same 'holes' in almost the same places - however what is interesting is that 16 ths are a lot 'tighter' overall with the odd 'slump -hole' but that quarters show a more varied push pull. Hmm - my head tells me then, that if steps are 'called' or event interrupts are evenly placed within a pattern (16th steps all active) then the durations are more stable because the OS is always doing the same thing (doesn't explain the odd 'hole' of course but let's leave that for now). In my initial quarter note testing - the OS is alternating between a single active step and 3 inactive steps which may explain the 'push-pull'. Does this mean the MD gets more/less rough depending on active voices/steps? I hope not - that would not be so good. I will test tonight - All 16 steps active in a single track but only quarter note volumes turned up and do same test. If I get to it I will try with other tracks active as well. Great work Neon - some more info to go on. Regards David.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/11 15:00

innerclock wrote:  
If I get to it I will try with other tracks active as well.

If the results are anything like mine, then the fluctuations will seem more apparent. Psychoacoustics, HRTF, humidity and affect notwithstanding, it's an audible behavior that should be fixed. I'd rather use a swing track for slight nudges in time than have that behavior out of the box.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/11 15:39

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Just did my head in - check these numbers:

Three tests - Same MD IMP Click Measured 120 BPM Quarter Notes. On each test I had other random placed steps assigned to other Tracks and routed to C out so they were not heard. I also had all 16 steps on the test track active but only the 1/5/9/13 steps volume up to measure the durations. Yes there are variations but across all three tests have a look at the same numbers that come up again and again - these are not random at all - they must be something to do with specific CPU/Clock - 'Halt while Interrupt' time periods - I'd be interested if anyone has any other theories - these numbers are way too defined across really wacky patterns that I punched in to the other tracks to be random.

Test A	Test B	Test C
22018	22050	22114
22146	22082	22018
21986*	22050	22082
22050	22050	22050
22114	22082	22082
22018	21986	21986*
22050	22082	22082
22018	22082	22082
22114	22050	22018
22018	22018	22050
22050	22050	22114
22114	22146	22050
22018	21954*	21986*
22050	22050	22050
22018	22050	22178
22114	22146	21954*
22018	21986*	22050

The numbers with the asterisks are the most obviously 'out' but in SF-8 even with a rough hand at editing - these same errors down to the sample over three different patterns in three separate tests is plain out there - it's like surgically 'out' precision every time. We are still talking 2 ms plus drift at max and I'm prepared to accept that not everyone cares to have MPC3K (4 sample max) duration deviation to be happy in life but all the same - these numbers - and the regularity of the errors has to mean something to Elektron - Thoughts?

Again - the ideal number at 120 is 22050 samples but have a look how many times these same numbers and how the identical Push/drag errors appear through all three tests:

22050 (perfect) (16 times over the three tests)  
22018 (9 times) - dragging by 32 samples (0.73ms)  
22114 (6 times) - dragging 64 samples (1.45ms)  
22082 (8 times) - pushed by 32 samples (0.73ms)  
21986 (3 times) - pushed by 64 samples (1.45ms)

So 42 of the test step durations out of total of 48 (87.5%) over three different SPS-1 patterns separately tested (stop/restarted each time on the MD and a new recording made in SF-8 for each test) with random steps active across each are out (or bang on for the 16 x 22050) by very defined error values down to the sample. Even if my mouse/grid/markers were rough (which they are not BTW), the regularity of these errors means something and does show the MD is 'precisely rubbery'. If it was just random - that might show just a rough internal clock/event trigger design in the MD and that would be that. But as you can see - the reverse is true. The internal clock/event triggers are surgically precise but out by repeated values 54% of the time with these quarter note tests (26 of the 48 values are repeated in the sequences and are not the 22050 ideal)

OK - now to see these offset values in timing/rhythmic context.

---

What matters in these error values is not so much deviation from the 120 BPM ideal (22050 samples) duration but the amount of deviation BETWEEN CONSECUTIVE STEPS - as this is what makes it 'sloppy' against a tighter reference. I took a random look at the duration values above and worked out a few Consecutive Step Duration offset values - have a look at these:

-64 samples/pushed by 1.45 ms  
-64 samples/pushed by 1.45 ms  
+96 samples/dragging by 2.18 ms  
+160 samples/pushed by 3.63 ms  
-32 samples/pushed by 0.73ms  
-32 samples/pushed by 0.73 ms  
-96 samples/pushed by 2.18 ms  
96 samples/dragging by 2.18 ms  
-32 samples/pushed by 0.73 ms  
128 samples/dragging by 2.90 ms

A big surprise and I think a positive one too is that they are all precise multiples of 32 which again suggest a processing CPU error somewhere. The fact that they push-pull seems to point to this also IMO.

Again - 32 samples (0.73 ms) is a tight margin generally but you need to look at this in the context of your reference - at the risk of getting grilled - the 3K varies by no more than 4 samples (0.09ms) between any consecutive steps in my tests. Also look at Neons TR-808 which for a 25 year old sequencer drifts by 1 or 2 samples (mostly) at 96kHz which is effectively zero and may explain why they still fetch \$2500 AUD to this day.

Compare this to 128 samples max. (or 2.90ms) worst case in the SPS-1 and it is rough in comparison by a factor of 32 times which I still feel is a lot in 2007.

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/11 15:41

niall wrote:

If the results are anything like mine, then the fluctuations will seem more apparent. Psychoacoustics, HRTF, humidity and affect notwithstanding, it's an audible behavior that should be fixed. I'd rather use a swing track for slight nudges in time than have that behavior out of the box.

Thanks for the backup Niall - I'm with you - it audible for certain and I'd love it straightened out. The Swing button is there for a reason. If I don't want any Swing - then I don't want ANY....

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by neonleg - 2007/04/11 15:55

agreed :-)

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/12 00:18

OK - now to see these offset values in timing/rhythmic context.

What matters in these error values is not so much deviation from the 120 BPM ideal (22050 samples) duration but the amount of deviation BETWEEN CONSECUTIVE STEPS - as this is what makes it 'sloppy' against a tighter reference. I took a random look at the duration values above and worked out a few Consecutive Step Duration offset values - have a look at these:

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-32 samples/pushed by 0.73 ms  
-96 samples/pushed by 2.18 ms  
96 samples/dragging by 2.18 ms  
-32 samples/pushed by 0.73 ms  
128 samples/dragging by 2.90 ms

A big surprise and I think a positive one too is that they are all precise multiples of 32 which again suggest a processing CPU error somewhere. The fact that they push-pull seems to point to this also IMO.

Again - 32 samples (0.73 ms) is a tight margin generally but you need to look at this in the context of your reference - at the risk of getting grilled - the 3K varies by no more than 4 samples (0.09ms) between any consecutive steps in my tests. Also look at Neons TR-808 which for a 25 year old sequencer drifts by 1 or 2 samples (mostly) at 96kHz which is effectively zero and may explain why they still fetch \$2500 AUD to this day.

Compare this to 128 samples max. (or 2.90ms) worst case in the SPS-1 and it is rough in comparison by a factor of 32 times which I still feel is a lot in 2007.

Regards - David.

Hi Daniel - not sure if your checking this thread from time to time (you may want me knee-capped instead - I hope not! and I hope these numbers help make what is the best even better - I mean that). What think you about the number of precise 32 sample offset error multiples between step/event durations? If you can verify this your side can it be cured?

Regards as always - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/12 00:52

You're doing this with a hell of a lot more rigor that I would have done. Cheers.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/12 01:13

niall wrote:

You're doing this with a hell of a lot more rigor that I would have done. Cheers.

No worries Niall. What started out as an irritation well over 15 years ago when I couldn't get my 808 to sound 'right' against my Atari when I compared it to fave vintage Electronic tracks and 80's sequenced music has, I guess, become a bit of a mission for me. I've worked in studios big and small over the last 20 odd years and with every type of sync imaginable and with engineers and producers with far better ears and methods than my own. I am head of technical support for the audio/music tech company I work for full time and have been for nearly seven years now. In my past/previous life I did time as Tape Op at Metropolis Studios in London. My ex-employer who I spent many, many a late night with in my early 20s taught me the benefits of tight reference tracking - he is now chief engineer at Abbey Road. I am not name dropping to blow my horn - names mean nothing out of context. It just gives some idea of the practical knowledge I am referring to in my posts rather than just arrogant hot air. I have weekly dialogue to this day with many individuals who have, over the years, told me their techniques and reasons for using them. I know a tad of arrogance may come through

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my posts - it is not intentional - I mean it when I say that this only comes across because over that 20 odd year period of countless hours, days and months of questioning sync and rhythmic timing I have distilled down some very core fundamental truths that, to those that do understand, are irrefutable. I also believe deeply that we have all lost a quality to our creative collective output in electronic music that stems from a gradual acceptance over 20 years to less than perfect timing. I love Elektron's gear but I was disappointed when I discovered the drift in my SPS-1. I'd love them to lead the way forward/back to a world where tight timing in all our gear was a given - not an option. And as I say again - if anyone can do it - they can. Regards David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/12 01:18

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I don't have the means to do this, yet {been travelling}, but I'd greatly appreciate it if someone would take the next troubleshooting step and record multiple MD impulses at once {say, six at a time, one on each output} and see if the rush and drag is global or not.

If someone doesn't see the point, consider using a kick drum, snare and hi hat instead of impulses in a syncopated beat, like that break in "Blue Monday":

"tsst tsst tsst tsst tsst"

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## Re: MD SPS-1 Timing Performance Issues

Posted by lcvl - 2007/04/12 10:53

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Been away for some time and I'm amazed at how big this debate got, but I still really don't understand how some people can get so defensive.

After all, aren't we talking about improving the tools we all love and use every day?

David (Innerclock) is giving Elektron the exact measurements that hopefully will help fix some of the timing irregularities that most of us have experienced for some time now.

And still some guys on this forum seem to be so strongly against any potential improvement.

Why don't you just consider these timing anomalies as simple and plain bugs? Why shouldn't they be fixed, considering that sequencers and drum-machines from 20 years ago are able to deliver tighter timing than our MDs?

It doesn't matter if you're only using live-synced hardware or just a MD and a DAW: in both cases these timing variations DO affect your workflow and in both cases are pretty evident.

Regarding the first point (running hardware in sync) in my studio I can definitely hear the problem when running the MD alongside to my MPC4000 and Nord Modular (using its internal step-sequencers).

The Akai and the Clavia are really tight when running together and the tests this whole debate is based on proved that the internal timing jitter of these two sequencers is incredibly small: between 3 and 4 samples on both units.

Add the MD to the equation and the groove of the whole combo changes dramatically. You've lost something, and that's something you can immediately notice.

Regarding the DAW-only implication of the problem, when I record my MD beats into my sequencer/editor of choice, not only I can hear, but I also can clearly see where these timing inaccuracies occur. As David already pointed out there's a jitter pattern that makes working even with simple loops a PITA.

You trim the loops accurately and then you realize their internal pulses don't line up to the grid, or they occur at different points every bar, influencing the feel AND the sound of the groove.

What I usually do to overcome the problem is time-correct (slice/cut and re-align) every hit of the loop. If you don't care as much you'll probably end up using some kind of "quick fix", most likely in the form of some time-stretch algorithm applied to the whole beat to make it perfectly aligned to the grid.

---

No need to say that, no matter the sophistication of the time-stretching process, the pristine audio quality of the MD output is getting compromised.

Did you really buy a MD, paying all that cash for the most advance drum-machine ever, just for that? I wonder if you use badly soldered audio cables as well...

I don't want that. I don't want to spend extra time editing my beats or applying warp-markers and inferior sounding time-stretching algorithms to fix a problem that shouldn't be there in the first place.

And if that's not clear yet, the reason David and some others are still here debating and giving proof of their findings is because they are 100% sure the guys at Elektron have the balls to see/recognize the nature of the problem AND the programming skills to take care of the issue in their code.

Best Regards  
Leo

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/12 11:18

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lcvl wrote:

I don't want that. I don't want to spend extra time editing my beats or applying warp-markers and inferior sounding time-stretching algorithms to fix a problem that shouldn't be there in the first place.

Best Regards  
Leo

I wonder how they did that on motown records \*scratches chin and ponders\*

Do you know who matthew herbert is?

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/12 12:05

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lcvl wrote:

And if that's not clear yet, the reason David and some others are still here debating and giving proof of their findings is because they are 100% sure the guys at Elektron have the balls to see/recognize the nature of the problem AND the programming skills to take care of the issue in their code.

Best Regards  
Leo

You rock. Thank god - and I am not religious.

David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/12 12:12

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ZiggY wrote:

I wonder how they did that on Motown records \*scratches chin and ponders\*

---

Do you know who Matthew Herbert is?

What? Motown? I love live players - this is not the point!

Why are you still here?

Yes I know who Herbert is and yes I know how he makes music - I don't care if he plays the Tibetan Nose Flute -it doesn't change the relevance of this thread!

Murcof (another artist who uses cut/paste DAW exclusively to make music) made one of my fave albums of all time but it doesn't mean it is the only way to compose.

Take the Red Herrings somewhere else - PLEASE!

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/12 13:03

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Interested to find out if any has emailed Elektron Directly (other than myself I mean) regarding this issue and what, if any, has been the feedback so far?

Regards - David  
[www.innerclocksystems.com](http://www.innerclocksystems.com)

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/12 13:13

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lcvl wrote:

Regarding the first point (running hardware in sync) in my studio I can definitely hear the problem when running the MD alongside to my MPC4000 and Nord Modular (using its internal step-sequencers).

The Akai and the Clavia are really tight when running together and the tests this whole debate is based on proved that the internal timing jitter of these two sequencers is incredibly small: between 3 and 4 samples on both units.

Add the MD to the equation and the groove of the whole combo changes dramatically. You've lost something, and that's something you can immediately notice.

Leo

Leo - again - thank you for a real-world reference example of what I am talking about here. If I run my SRC click-referenced HDR audio tracks with the MPC3K slaved via Midi Clock from my SRC - driven from solid SMPTE stripe off the HDR and keeping everything lined up on the Dragon - including all my modular analogue stuff sequenced off the SRC's 5 volt clock outputs (all this running live of course) - if I then sync the SPS-1 off the 3K Midi Clock (which is tight) and run that in the mix my track goes from razor blades to rubber bands. I pull the SPS-1 out of the mix - I'm right back to a close shave.

Case closed.

Regards - David

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/12 13:32



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Found this - it's rough - no effects - not a good balance by any means but this was all tracked separately to HDR (no loops/no computer/no edits - all real-time sync-recorded) all hardware Dragon/Ear referenced to a tight SRC click. Can't get that sharp with SPS-1 in the soup as it stands. David.

<http://www.elektron-users.com/modules/wfdownloads/singlefile.php?cid=3&lid=691>

Just had another listen to it - as I said - the balance isn't that great but still - my ref. 16th ice pick that I used to track/Dragon this (even though muted in the mix) - is still there almost - driving the track like a freight train - now if there is magic and voodoo worth mentioning - the 'Phantom Click Track' as I'll call it - only ever 'appears' in a track when I've got my reference timing spot on. It can be 120BPM tech or 75 BPM half time shuffle - it matters not. This quality might not be everything to others - but it's my holy grail in music making if there is such a thing. Soft and hardware that take away or smudge the edges in what I look for just get left out of the final mix. I don't want my SPS-1 left out in the cold.

Peace and respect - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/12 14:06

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innerclock wrote:

ZiggY wrote:

I wonder how they did that on Motown records \*scratches chin and ponders\*

Do you know who Matthew Herbert is?

What? Motown? I love live players - this is not the point!

Why are you still here?

Yes I know who Herbert is and yes I know how he makes music - I don't care if he plays the Tibetan Nose Flute -it doesn't change the relevance of this thread!

Murcof (another artist who uses cut/paste DAW exclusively to make music) made one of my fave albums of all time but it doesn't mean it is the only way to compose.

Take the Red Herrings somewhere else - PLEASE!

Music is not the point? Perhaps even the most soulful and passionate music is not the point? What is the point? It seems to be falling off the hinges, almost as if the point of this thread is not music related at all.

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## Re: MD SPS-1 Timing Performance Issues

Posted by texmex - 2007/04/12 15:23

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innerclock wrote:

Yes there are variations but across all three tests have a look at the same numbers that come up again and again - these are not random at all - they must be something to do with specific CPU/Clock - 'Halt while Interrupt' time periods - I'd be interested if anyone has any other theories - these numbers are way too defined across really wacky patterns that I punched in to the other tracks to be random.

Interesting find you've made that the drift is in multiples of 32 samples. I've studied DSP programming a little, and I think that the usual way of implementing these things is that samples are generated once per interrupt. Your find, however, suggests that 32 samples are processed in a row, and after that the sequencer is updated. This could explain why some of the sounds are out of sync. If the sound misses the 32 sample frame, it is pushed to the next frame. This would mean that \*all\* sounds are quantized on a grid with 32 sample spacing.

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However, with this scheme the drift should be max 32 samples on both directions. It's not, instead its more than that, and not that regular. This would suggest that there is something else going on. I think we need some more testing.

And David, what I said about the not being in top priority in the list is that there are more critical issues such as ram machine stability. I didn't mean to bash your efforts, instead I agree with you. We want a tight drummachine and there seems to be still potential room for improvement (Well, I actually don't even own SPS-1 yet - monetary issues...)

David, could you do another test, and this time let it run for like one minute, save it to a WAV file (uncompressed, except with zip!) and upload somewhere if possible. I would like to inspect it a bit. Another test to make as well is the multi channel recording as suggested, and also more practical sound layering test, for example, with short pulse and a longer sine wave. This would help us to see if the samples generated are deviating from each other (this would greatly affect layering, I think).

Cheers!

Samps

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/12 16:43

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ZiggY wrote:

I wonder how they did that on motown records \*scratches chin and ponders\*

Do you know who matthew herbert is?

Zig, you've a real penchant for strawmen.

The general flavor of responses like these is "make the best of what you have, like real musicians do." This is a truism, and really can't be debated, but it's also not the point. We're not asking EEs to build us new compressors {or, in Barry Gordy's case, hiring Raymond Scott to make us new instruments}. We're asking Elektron to address what looks like a bug and correct it. If it's software, it's fixable.

I wonder how Trevor Horn got around the Synclavier's bad timing. Happily, there's an interview in Sound on Sound to disabuse us of the notion that he just sucked it up or, as you might have asserted earlier, chalked it up to his imagination. He made the effort and noise required to improve his tool, and still managed to make some music, after all:

If there was one piece of gear that cost the most and was the least useful it would definitely be the Synclavier. It cost well over a quarter of a million dollars and it's still there in a cupboard. We used it on a few records in the late '80s, but then it became too cumbersome. We more or less ? Lippo particularly with the Frankie stuff ? we really kicked Synclavier into shape because their sequencer was crap when we first got it. It wasn't even as good as a Linn drum machine!

With the first Synclavier, we tried to sequence the bass drum playing fours on a four-on-the-floor. It sounded dreadful. We phoned them up and said 'Is your sequencer accurate?' They said 'Oh yes, absolutely accurate.' 'Is it really accurate?' 'It's absolutely accurate.' 'How accurate is it?' 'Well it's accurate, give or take 200 milliseconds.' 'What the!... You think that's accurate? I know people that can hear a millisecond!' And they were saying 'That's impossible, nobody can hear a millisecond.' I said 'I know somebody that can hear a millisecond ? Chris Squire can hear a millisecond.' Then it came back again and they worked on it and they said 'It's perfect now,' and we listened to it and we said it still didn't sound right. And they said 'It's perfect but it corrects itself every two bars, to within plus or minus 10 milliseconds!'"

This thread won't take the MD out of its central position in my studio {I only have three synths and some multiFX}, and it's still my favorite instrument, hands-down. That doesn't mean it can't be improved.

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## Re: MD SPS-1 Timing Performance Issues

Posted by rgmccaig - 2007/04/12 19:48

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imagine if it was discovered that ableton live or fruity loops has a bug where instead of being sample-accurate, clips are randomly off by 32, 64 or more samples some of the time.

people would end up calling said s/w the biggest piece of crap in history and taking that as final evidence that protocol\$ etc is the 'ultimate'.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/12 23:36

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rgmccaig wrote:

imagine if it was discovered that ableton live or fruity loops has a bug where instead of being sample-accurate, clips are randomly off by 32, 64 or more samples some of the time.

people would end up calling said s/w the biggest piece of crap in history and taking that as final evidence that protocol\$ etc is the 'ultimate'.

That wouldn't be a bug - that is just these software apps under sync.

I might try those tests you know.....just for the sake of even handed play - I have access to Live and Loops.

As to whether of not they are bad software is up to the user to decide.

I use Live and Acid Pro for ease of use/fast re-timing vocal sometimes - I might have the track rocking but the phrasing of the vocals is a little off. Cut the vocal into even 4 bar loops and then adjust grid markers till I'm happy with the vocal feel. Quick and easy - OK. But - I'll tell you how I sync Live with my dedicated HDR - I take SMPTE into my clock synchroniser and then rock solid midi off that into a USB interface and that runs Live. To test my sync I have the same MD/IMP sample as a perfect 16th click track - 1 bar loop. I drag it into Live - it doesn't need re-aligning because I did it sample accurate in SF8. I press play on my HDR and Live chases. I run my HDR ref. click up one side of the Dragon and my Live Click up the test side of the Dragon. Depending on my FA-101 latency settings which is a fixed value) let's say the Live click is 18 ms behind my track which is being nice. I always print at least 100 ms of code slack so I have room to 'go back in time' if a box is running behind. So I compensate for this and get the Dragon showing close to spot on.

Now - the reason for my explanation - because of USB/Midi Clock sync and software time stretch algorithms - you do get slop in the audio file and I prove it everyday with my method of recording. With my above method - I can get the Live/MD Impulse Click Clip and my tight 16th ref of HDR close - but the Live Click ALWAYS moves around the reference. By ear and by the Dragon. No question.

With computers and sync - you have to decide - is it good enough for what I want to do? In my case - the advantages I get to re-align a vocal are fantastic and mostly, the vocal itself is not a super strong rhythmic component of the track. I personally wouldn't touch it for anything rhythmic in my work. If I like the sounds I get messing with a percussion loop in Live [detuning/stretching etc) - I run it down to HDR as a guide and when I get to it - I take the rendered clip into SF-8 - cut it up into it's individual rhythmic elements and dump it into my 3K and re-sequence the loop. It's tighter. It sounds better. I can hear it and so can my clients.

Personally - I really want an SPS-1UW for these duties too but I will not go there if the timing stability of my samples playing inside the MDUW is no better than Ableton Live. What would be the point? \$2500 or \$500? No contest. I'll keep the change.

It's all about what you can or can't live with and indeed, if you have tools to do it better.

So - this is a long winded (sorry) way of saying - time correcting software is rough when you compare it to something that nails it. Yes.

It's up to us as individuals to say if we are happy with that - or not.

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by rgmccaig - 2007/04/12 23:47

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hi David,

well my point was more regarding internal clocking/playback of Ableton etc., which i believe is sample-accurate, no?

and it was just an imaginary scenario about how most people expect all-digital sequencing to be sample accurate these days.

but it is educational to hear about the working methods you have come up with. i should pm you some time with some workflow questions i have about getting good timing alignment.

i hate to go OT but here's one such question: do you ever fix timing by taking a section and re-pitching it slightly (ie old fashioned re-sampling/interpolation, not the 'timestretch' stuff)? Do you think that having some small re-sampling artifacts is worth it if it made the timing line up better? Cause I'm considering making more heavy use of this method.

cheers  
Graeme

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## Re: MD SPS-1 Timing Performance Issues

Posted by rgmccaig - 2007/04/12 23:54

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ps. I don't follow the part where you make some percussion riffs in Live and have to slice/re-align them to improve timing...

why not just quantize the riffs to Live's internal grid and render them to disk as full loops... surely the loops would be sample accurate, what am i overlooking?

probably i don't understand where your \_original\_ clock is coming from and where the final files are getting pieced together.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/13 00:04

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rgmccaig wrote:  
hi David,

well my point was more regarding internal clocking/playback of Ableton etc., which i believe is sample-accurate, no?

Technically No - rendered audio yes (like any DAW App these days) but not audio as clips with Warp because in order to grid/time align - they have to compute grid position live and that means it really isn't 'bolted down' sample accurate.

and it was just an imaginary scenario about how most people expect all-digital sequencing to be sample accurate these days.

but it is educational to hear about the working methods you have come up with. i should pm you some time with some workflow questions i have about getting good timing alignment.

Sure - in my world - sample accuracy is far less important than rhythmic/tempo/grid accuracy - and in a musical world

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where the metronome thankfully is still with us - I would be much happier if software/hardware designers spent a little more effort getting things tempo-grid-sync locked properly rather than worrying about absolute time/phase accurate audio alignment in samples and word clock at 192 kHz.

i hate to go OT but here's one such question: do you ever fix timing by taking a section and re-pitching it slightly (ie old fashioned re-sampling/interpolation, not the 'timestretch' stuff)? Do you think that having some small re-sampling artifacts is worth it if it made the timing line up better? Cause I'm considering making more heavy use of this method.

Absolutely - in rhythmic programming I'd rather have a small degree of sonic artifact (depends what it is of course) and have it locked down hard with the click reference rather than live with a perfect transparent 96 kHz Gretsch Snare sample that slops around the groove.

Regards David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by DLX - 2007/04/13 05:43

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niall wrote:

ZiggY wrote:

I wonder how they did that on motown records \*scratches chin and ponders\*

Do you know who matthew herbert is?

The general flavor of responses like these is "make the best of what you have, like real musicians do."

But for this to be true, you would be implying that motown records were in some way a compromise? Do you consider motown records a compromise in some way?

I wonder how Trevor Horn got around the Synclavier's bad timing. Happily, there's an interview in Sound on Sound to disabuse us of the notion that he just sucked it up or, as you might have asserted earlier, chalked it up to his imagination. He made the effort and noise required to improve his tool, and still managed to make some music, after all:

So he noticed 10ms deviations? He complained about 200ms deviations and that somehow makes this discussion relevant because of 2.18ms deviations?

This thread won't take the MD out of its central position in my studio {I only have three synths and some multiFX}, and it's still my favorite instrument, hands-down. That doesn't mean it can't be improved.

If I started a thread about "no midi velocity issues" do you think it would grow to 20 odd pages long? Do you think people would suggest that because it is missing this feature the equipment is in someone broken? Do you think many people would even care about it? Why don't people consider 12bit conversion a part for improvement?

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/13 06:05

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But for this to be true, you would be implying that motown records were in some way a compromise? Do you consider

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motown records a compromise in some way?

I don't actually understand what you're asking here, please rephrase.

So he noticed 10ms deviations? He complained about 200ms deviations and that somehow makes this discussion relevant because of 2.18ms deviations?

Yes, because in each case, the complaining parties claim that they can hear the deviations. In Horn's case, he convinced NED that the Synclavier needed improvement. We hope to effect the same result here.

If I started a thread about "no midi velocity issues" do you think it would grow to 20 odd pages long? Do you think people would suggest that because it is missing this feature the equipment is in someone broken? Do you think many people would even care about it? Why don't people consider 12bit conversion a part for improvement?

1. I don't know.
2. Broken, or merely, incomplete, quite possibly. Elektron would fix it or they won't, and the end-users would decide whether the equipment was worth keeping, or not. I have a handful of gripes about the MD. Elektron have claimed that some of them simply can't be fixed now, as too much has been coded into the OS to address it, and that others may not be fixed, because they haven't figured out how to make it work to everyone's satisfaction, yet {eg program change behavior, which changed drastically with OS 1.12 and was enough to make me sell the MD the first time}.
3. I don't know.
4. I don't know. I think 12-bit rocks for drums, myself.

I do know that some people would respect, or at least acknowledge, the complaining parties' findings, while others would add nothing of substance to the discussion while still actually taking part. Why should your hypothetical thread be different from any other?

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/13 08:07

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DLX wrote:

If I started a thread about "no midi velocity issues" do you think it would grow to 20 odd pages long? Do you think people would suggest that because it is missing this feature the equipment is in someone broken? Do you think many people would even care about it? Why don't people consider 12bit conversion a part for improvement?

Time isn't elastic and tight sequencer/clock event precision should not be in the same ball park as a 'feature improvement or bonus addition'. The 12 bit conversion is great - most people love it because it adds character and it was A DELIBERATE feature inclusion on Elektron's part. The sloppy internal event/step/clock is not deliberate and therefore is a fault/bug in my book. I bought the SPS-1 because of features - yes - but mainly because a lot of noise was made about Elektron's dedication to good timing precision. At that stage I assumed if the outgoing Midi Clock was razor sharp - so would the internal voice trigger precision. Now we know it isn't. Many have heard it - some are not concerned. As I have said - side by side if I run a MAQ16 against my MC4B - the MC4B eats it for breakfast. That's not psycho-acoustic - that's the difference between a tight clock and a bowl of custard. The MAQ is a rubber band in comparison - sent it back to the store so they could use it as a paperweight. Same goes for the 3K and the SPS-1. 3K keeps time - SPS-1 is rough round the edges. That's a fault in 2007 not something to be halfway down a feature set wish list.

David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by mvmono - 2007/04/13 09:21

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Posted by neonleg - 2007/04/13 11:19

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Posted by jngpng - 2007/04/13 18:01

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Posted by texmex - 2007/04/13 20:24

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jngpng wrote:

\* To whoever claimed that DAWs are often used as scientific measurement devices - I'd be obliged if you could provide me with examples or references

Using soundcard for scientific measurement isn't particularly incredible. To measure analog signals, you need a A/D-converter. To avoid antialiasing in your data, you need antialiasing lowpass filter before the ADC. Soundcards happen to have all this. They are meant to be used with audio, but nothing is stopping people from measuring other signals, too. As long as the signal of interest lays between 0 Hz and the Nyquist frequency (half the sample-rate).

How about this?

"Correlation detection of fluorescent lamp flicker using a sound card"

<http://scitation.aip.org/getabs/servlet/GetabsServlet?prog=normal&id=AJPIAS000073000012001189000001&idtype=cvips&gifs=yes>

"Sound card based digital correlation detection of weak photoelectrical signals"

<http://www.iop.org/EJ/abstract/0143-0807/26/5/016>

"Computer sound card assisted measurements of the acoustic Doppler effect for accelerated and unaccelerated sound sources"

<http://scitation.aip.org/getabs/servlet/GetabsServlet?prog=normal&id=AJPIAS000069000012001231000001&idtype=cvips&gifs=yes>

And if that's not enough, in one of the Mythbusters episode they used soundcard to record tremors caused by a pickaxe :-D

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## Re: MD SPS-1 Timing Performance Issues

Posted by jngpng - 2007/04/13 21:48

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I'm not talking about the soundcard, I'm talking about the DAW software. Thanks for the references anyway though - interesting stuff :)

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## Re: MD SPS-1 Timing Performance Issues

Posted by texmex - 2007/04/13 22:05

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jngpng wrote:

I'm not talking about the soundcard, I'm talking about the DAW software. Thanks for the references anyway though :)

Well, I don't see how DAW software and software for scientific use would differ from each other in terms of quality or trustfulness. It is the job of soundcard and/or soundcard drivers to fill up the audio buffers. If samples are missed, it's completely because of a crappy soundcard or a horribly overloaded DAW, being unable to read samples from the buffer in time.

I'd say the DAW measurement is perfectly valid tool for measuring jitter in clock pulses (assuming the form of the clock pulse is constant so that distance between to pulses can be measured). It gives us sub-millisecond accuracy (with 44,1khz its ~0.022ms). Even if the samplerate in the device being measured wouldn't match the DAW, the error would be one sample at max. Of course there is latency involved many steps, but this affects all samples and not their relative timing.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/14 00:16



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jngpng wrote:

Wow, this thread grew pretty epic while I was gone.

However, I'd rather we drew conclusions on the MD's timing from firm ground rather than wasting Elektron's time by complaining about a potential red herring.

On a personal note. David - I think you would have had a much better reaction to this thread if you didn't feel the need to reply to and refute (often poorly) every post disagreeing with your opinion.

Hiya - no scope required, in the week you've been elsewhere my own discussions with far more knowledgeable individuals than myself plus others on this thread feel 100% OK with DAW timing tests for tempo variation and step duration errors in the millisecond range.

Elektron have already responded personally to me once in an email stating my test numbers were 'thorough' - no response as to a fix as yet though but I doubt any of this would be seen by Elektron as a waste of time and they would have negated the DAW timing tests straight away if they knew they results were flawed. They did not and have not.

As to my reactions/responses on this thread - I care enough about this issue to reply and respond as often as I can. You consider some of my responses 'poor?', however, at least I do respond which must count for something. I also feel that what you may consider as a 'poor response' by me may in fact only be down to my lack of willingness to entertain concepts, ideas and red herrings that are either plain wrong, misguided or at best a compromise to the valid points raised in this thread.

I don't suffer fools lightly at the best of times (even if I have had a good day!) and I have been working on sequencer timing stability way too long to waste internet pleasantries when, at the end of the day, if someone is wrong - they are wrong. Opinions are very cheap - everyone has one. I am not at all interested in comparing philosophies however interesting they may be. I only care about what are the facts and in this case - the facts are clearly and irrefutably stated.

I just want it acknowledged and fixed so I can get back to work or if it can't be fixed - then I will stop trying to use the SPS-1 for that which I thought it was designed to be.

Elektron now has the cards and numbers on the table - the debate as to this issues importance is over.

Regards David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/14 00:18

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texmex wrote:

I'd say the DAW measurement is perfectly valid tool for measuring jitter in clock pulses (assuming the form of the clock pulse is constant so that distance between to pulses can be measured). It gives us sub-millisecond accuracy (with 44,1khz its ~0.022ms). Even if the samplerate in the device being measured wouldn't match the DAW, the error would be one sample at max. Of course there is latency involved many steps, but this affects all samples and not their relative timing.

Thank you. It's easy once you see it.

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## Re: MD SPS-1 Timing Performance Issues

Posted by DLX - 2007/04/14 02:11

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niall wrote:

I don't actually understand what you're asking here, please rephrase.

You said that ziggy was implying that musicians should make do with what they have. Making do with what you have

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suggests that its in some way a compromise or a less than perfect scenario. So, do you consider motown records for example a compromise? A case of simply making do with what you have available?

Yes, because in each case, the complaining parties claim that they can hear the deviations. In Horn's case, he convinced NED that the Synclavier needed improvement. We hope to effect the same result here.

200ms deviations? It doesn't surprise me. But really, if anyone was hoping to really get the same result here, a bunch of blind listening tests of real world scenario's like ziggy has suggested countless times would only be a nail in the coffin for the folks at elektron.

1. I don't know.
2. Broken, or merely, incomplete, quite possibly. Elektron would fix it or they won't, and the end-users would decide whether the equipment was worth keeping, or not. I have a handful of gripes about the MD. Elektron have claimed that some of them simply can't be fixed now, as too much has been coded into the OS to address it, and that others may not be fixed, because they haven't figured out how to make it work to everyone's satisfaction, yet {eg program change behavior, which changed drastically with OS 1.12 and was enough to make me sell the MD the first time}.
3. I don't know.
4. I don't know. I think 12-bit rocks for drums, myself.

I do know that some people would respect, or at least acknowledge, the complaining parties' findings, while others would add nothing of substance to the discussion while still actually taking part. Why should your hypothetical thread be different from any other?

what do you want me to acknowledge? That the MD has drifting timing by 2.18ms? Sure, if you say so. But what no one has actually found nor proven yet is whether it has any detrimental effect on the music it makes. Not only that, suggestions to do so have been shot down with the most arrogant replies.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/14 02:43

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DLX wrote:

what do you want me to acknowledge? That the MD has drifting timing by 2.18ms? Sure, if you say so. But what no one has actually found nor proven yet is whether it has any detrimental effect on the music it makes. Not only that, suggestions to do so have been shot down with the most arrogant replies.

It doesn't need proving. Tight is right. Tighter is best. 3K 16ths rock. SPS-1 16th slop. MC4B arpeggio nails it. Mobius is a rubber band and sounds it too. These are not debatable findings. And the only substantial difference between what works and what doesn't is timing event duration precision.

This is not worth discussing any longer.

Elektron either fixes the bug or admits the SPS-1 is a rubber band.

David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by DLX - 2007/04/14 02:44

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innerclock wrote:

Time isn't elastic and tight sequencer/clock event precision should not be in the same ball park as a 'feature improvement or bonus addition'. The 12 bit conversion is great - most people love it because it adds character and it was

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A DELIBERATE feature inclusion on Elektron's part.

David.

How can you say the timing was not deliberate? Have the folks at elektron said its a bug? Do you think they didn't test it prior to its release? Do you suggest that the timing is a bug simply because it doesn't work for you? Out of curiosity, what is the lowest "swing" setting you can have on the MD?

Time isn't elastic, but music certainly can be and for the most part it is. Just because music needs time to unfold doesn't imply that it must conform rigidly to a grid. A lot of people actively seek these small inconsistencies in electronic music. Why is midi velocity a "bonus addition" when dynamics are one of the fundamentals in music? Is it simply because you don't need it? Perhaps you'd suggest that people who do need it should look for a drum machine else where because the MD doesn't offer it. Same with 12bit conversion... people buy the MD for its 12 bit conversion, but why is the timing any different? Why must the MD be like the MPC-3K in this aspect? Its not like they're similar in any other aspect, so why is it now Elektron's fault or a bug when it could simply be that you've chosen a piece of gear that doesn't entirely fit your needs?

The first thing they taught me in a composition degree many moons ago was to ask what instruments can't do, instead of what they can because you will get a much shorter list, then choose which best suits your needs. Just because a piano and guitar both have strings doesn't mean they are or should be anything alike.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/14 02:53

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DLX wrote:

How can you say the timing was not deliberate? Have the folks at elektron said its a bug? Do you think they didn't test it prior to its release? Do you suggest that the timing is a bug simply because it doesn't work for you?

The numbers are too random and don't conform to any rhythmic interval. I think it was an oversight. It's a bug. If I want in-built slop I would have bought some custard.

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## Re: MD SPS-1 Timing Performance Issues

Posted by DLX - 2007/04/14 02:56

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innerclock wrote:

DLX wrote:

what do you want me to acknowledge? That the MD has drifting timing by 2.18ms? Sure, if you say so. But what no one has actually found nor proven yet is whether it has any detrimental effect on the music it makes. Not only that, suggestions to do so have been shot down with the most arrogant replies.

It doesn't need proving. Tight is right. Tighter is best. 3K 16ths rock. SPS-1 16th slop. MC4B arpeggio nails it. Mobius is a rubber band and sounds it too. These are not debatable findings. And the only substantial difference between what works and what doesn't is timing event duration precision.

This is not worth discussing any longer.

Elektron either fixes the bug or admits the SPS-1 is a rubber band.

David.

Your arrogance astounds me, this is only not worth discussing because you can't see the forest through the trees... or perhaps the forest past your big ego (I must be the 10th person to call you on your inability to post anything even mildly

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rational). Who says tight is right? You? I don't... quite the opposite. What findings are you trying to debate? that the SPS-1 isn't an MPC of some kind? No shit! If you want it to be an MPC, use an MPC.

The only substantial difference between what works and what doesn't is the application. You of course can't comprehend it, because the MD doesn't fit your application its broken... yet for many it fits absolutely perfect. Honestly, it doesn't surprise me that you see it this way. Your posts, arrogance and ignorance have clearly made you think that you the centre of the music making world :roll:

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## Re: MD SPS-1 Timing Performance Issues

Posted by DLX - 2007/04/14 02:58

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innerclock wrote:

DLX wrote:

How can you say the timing was not deliberate? Have the folks at elektron said its a bug? Do you think they didn't test it prior to its release? Do you suggest that the timing is a bug simply because it doesn't work for you?

The numbers are too random and don't conform to any rhythmic interval. I think it was an oversight. It's a bug. If I want in-built slop I would have bought some custard.

Ziggy posted a clip in the other thread, you still haven't looked at it. Go and listen, you still haven't posted a comment on what you are hearing, please do.

You think it was oversight? Why? Because YOU dont like it?

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/14 03:11

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The people that know are already convinced and knew it anyway besides. The proof on this thread for those that know what is really going on is just a bonus. As I keep saying - the debate is over. If tight timing means little to you and you are happy with things the way they are - fine. Don't waste your time posting here. If Elektron do tighten the MD up and offer the 'slop' as a bonus feature you can switch on at will - fine too. You will still benefit anyway.

David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by DLX - 2007/04/14 03:26

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innerclock wrote:

The people that know are already convinced and knew it anyway besides. The proof on this thread for those that know what is really going on is just a bonus. As I keep saying - the debate is over. If tight timing means little to you and you are happy with things the way they are - fine. Don't waste your time posting here. If Elektron do tighten the MD up and offer the 'slop' as a bonus feature you can switch on at will - fine too. You will still benefit anyway.

David.

Why will I benefit? I don't want unnaturally rigid anything in my music and I know a lot of other people don't either. Again with the dismissals that those who don't see it your way shouldn't post, post something intelligent and on the subject instead of resorting to such nitwit responses that only emphasize how narrowminded and self-centered your really are. You haven't proven sqwat! Prove that this timing is having a detrimental effect on EVERY MD user's music, then you might have a case but at the moment you are acting like you are the only MD user and that the MD must be designed around your needs and your needs alone.

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Knock the f\*cking chip off your shoulder and come back down to earth. The only oversight in this thread is on your behalf and that was when you bought an MD and expected to get an MPC3K.

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## Re: MD SPS-1 Timing Performance Issues

Posted by louvega - 2007/04/14 05:19

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## Re: MD SPS-1 Timing Performance Issues

Posted by lcvi - 2007/04/14 11:23

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DLX, come on!!!!  
It's not that hard to understand!!!!

The MD is a drum machine. It must have tight internal timing. Period.

Then you can apply all the slop/swing/groove/feel you want to your groove, but it must be based on a solid and tight rhythmic foundation.

The last thing you want is not having any control on that slop, either because it's purposefully built-in (and it's already been proved that is not the case with the MD) or because of some kind of random jitter caused by a bug in the code.

And please, nobody said anything about how rigid we want our music to be. We're talking about something else here and you really seem not being able to get the point.

Your grooves can be the loosest, most dynamic and human-sounding drum parts in the whole world but you probably want them to play in the exact same way every time you press the MD Play button.

Right now it's not the case with the MD because of some more or less random timing variation that changes the internal relationship of the beat. We want that to be fixed.

Is that such an out-of-this-world request, considering we're talking about a drum-machine here?

Come on, Elektron itself was using the "tight timing" thing as a major selling point for its product! We just found out that things can be improved on that front, so why not help them to try make the MD an even better product???

And if rubber-band timing (not user-controllable) was such a desired feature in drum-machine design, why can't I think of any other drum-computer with that feature purposefully built-in and permanently active? Can you?

The MPC David is using as a timing reference is just ONE among the several sequencers showing a tighter internal clock than the MD. I tested my Clavia Nord Modular timing and I got pretty much the same numbers I got from my MPC4000, way better than my MD-UW.

Probably David's mistake was to forget how people can get so passionate (either pro or con) about anything "Akai MPC" related.

Please, leave that non-constructive, childish bull\*\*it for some other forums!

In case it needs to be said, this is NOT an MPC vs MD kind of thread!!!!

We all bought the MD for its unique features, and probably most of us know the difference between the two machines pretty well.

Nobody wants the MD to be an MPC clone or substitute. We just want tighter timing.

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Simple as that.

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## Re: MD SPS-1 Timing Performance Issues

Posted by daswesen - 2007/04/14 11:44

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I can't really understand the hate. One example of why this is important is for example when controlling a second synth using the MD. If I layer two kicks, one from the MD, one from the synth, it's always going to sound muddy because the MD will kind of jump around on \*each\* kick, phasing out my beautiful bottom end and flaming my attack.

If you fear that your music will become too rigid, you can always work around that with your programming, adding shuffle, playing with attack and decays (varying the decay on sounds can go a long way into humanizing it, even if the hit is dead on the spot), playing with volume. And I use the MD mostly to do techno kind of things, rhythmic perfection makes it groovier.

Btw, if you want an example of the flaming and phasing, this is MD and reaktor controlled by MD (the recording skips a bit sometimes, dumb reaktor :/). But when the MD comes in at 0:14, you can hear that the hits are moving, it feels a bit untight, and checking the two tracks against one another in live, you can see that the reaktor recording is spot on, so obviously all the MIDI out of the MD and stuff is not the problem, but the sound out of the MD.

Another good example is just trying to loop something in Live coming in from the MD. It almost always sounds weird.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/14 14:07

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DLX wrote:

The only oversight in this thread is on your behalf and that was when you bought an MD and expected to get an MPC3K.

Sorry DLX - you really have missed the point well and truly. It is a hard thing to grasp - took me years (literally) to work it out and I resisted the notion that such fine variations in clock stability made such an impact in music. And when I say stability - I don't mean rigid hard 16th grid robo-tech music. When I talk of MPC-3K stability - it runs at 96ppq - so you can push and pull things all you like to make your own lazy feels - at any tempo - every single one of those 96 event ticks is super close to being spot on the money duration-wise - and that makes ALL THE DIFFERENCE in the world in a sequencer. The Roland MV-8000 runs at 480 ticks ppq. I haven't tested it yet - but the added 480ppq resolution means absolutely nothing if those ticks are not locked down hard against a tight tempo grid. The MD can't keep 4 steps per quarter close to the mark in comparison and its variable and that takes away from any feel you are trying to create. I bought my MD because of the sounds and because I had all but given up on modern hardware and the manual clearly stated a dedication to tight outgoing midi clock. Since then I have been lucky enough to get an MPC3K and quite a few vintage step/analogue sequencers. As my rig got 'tighter' just tighter - I started getting rid of things that were not keeping the grade - MAQ16, Mobius etc - then I realised the SPS-1 had fallen into that pile and that saddened me. Rather than sell it and not make the effort I sent the numbers to Elektron and started this thread. It's tough to look at your expensive and loved toys and say - nice concept but not on patch on that 25 year old item in the corner I got for \$100 at auction you know. But only through that can change come about and I, for one think that change is worth the persistence.

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/14 14:10

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lcvl wrote:

DLX, come on!!!!

It's not that hard to understand!!!!

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The MD is a drum machine. It must have tight internal timing. Period.

Then you can apply all the slop/swing/groove/feel you want to your groove, but it must be based on a solid and tight rhythmic foundation.

Nobody wants the MD to be an MPC clone or substitute. We just want tighter timing.

Simple as that.

Thank you again - I get caught up in the dialogue myself sometimes - you nail the concept clearly all the way. Thank you for caring enough to stay with this thread and to back up the issue so well. I hope our efforts get through to Elektron.

Regards and respect - David

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/14 14:20

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daswesen wrote:

I can't really understand the hate. One example of why this is important is for example when controlling a second synth using the MD. If I layer two kicks, one from the MD, one from the synth, it's always going to sound muddy because the MD will kind of jump around on \*each\* kick, phasing out my beautiful bottom end and flaming my attack.

If you fear that your music will become too rigid, you can always work around that with your programming, adding shuffle, playing with attack and decays (varying the decay on sounds can go a long way into humanizing it, even if the hit is dead on the spot), playing with volume. And I use the MD mostly to do techno kind of things, rhythmic perfection makes it groovier.

Neither can I - seems damn obvious to me - tighter event-to-clock precision means a better world hands down. One of the reasons I got stuck into testing in the first place was the MD (in sync) moves around the rest of my other tracks so much. Only one or two Kick Drums in seven in a pattern had the right tone - the others sounded like they had slight pitch/VCF Modulation on the steps. It was really just that they were moving around a little bit too much to sound stable. What you call 'Rhythmic perfection' - I call Internal Step-Event/Tempo-Clock Precision. Same thing we are talking about though - the closer you get that to ideal - the better your music sounds - doesn't matter if it's 140 BPM hard-techno or 65 BPM hard swung swamp funk - in fact - the slower the tempos - the more you need real clock/event stability to keep the funk/groove going. Any chump can fudge it at 140 BPM - that's why it's dead easy to sequence half-decent stuff at anything above 120 BPM really - the gaps are so damn close it all gets blurry and the error margins close up of course. You can run a whole pile of very average gear together in rough sync at 130 BPM and get away with it sort of.... At 65 BPM - the gaps and event durations are so damn big you have nowhere to hide - a sloppy event-clock is a rough sounding track at that tempo no matter what tricky shit you do with accents and groove templates. If there is a Pepsi Challenge to run in this thread it would be this:

Line up 10 sequencer/drum machines.

Sequence up an identical sounding hard-quantised break beat and start playback at 135BPM.

Now listen to each in turn and pick a favourite.

Go back to the first but drop all the tempo by 10 BPM.

Again listen to all 10 and pick the best feel.

Keep going.

They might be even until you get to 90 BPM or lower.

When the gaps start to widen with lower tempos then the units with the rougher internal clock/event stability start to show their true shonky pedigree. When you really get down there - only a rare handful truly give up the funk without you moving a note or changing accents.

I really want to take my SPS-1 deep down with me to 100 fathoms at a nasty 45 BPM with the 3K and keep breathing!

Anyone coming down there with me?

Peace and respect - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by DLX - 2007/04/14 17:55

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Go on then, there is a clip in the other thread. Do your best... if you can actually identify by ear the timing "faults" that is has then you might have a point... but until then, this thread is nothing but a fallocentric extension to your ego's with zero relevance to anything musical.

I doubt the candy shirt, shiny shoed pill poppers that you make music for give two shits either way... this thread to them is nothing more than a bunch of chinscratching wankery used to compensate for sagging ego's from the inability to write any music that is worth a shit.

Go on, the clip is in the other thread... prove me wrong.

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## Re: MD SPS-1 Timing Performance Issues

Posted by DLX - 2007/04/14 17:59

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innerclock wrote:

DLX wrote:

The only oversight in this thread is on your behalf and that was when you bought an MD and expected to get an MPC3K.

Sorry DLX - you really have missed the point well and truly. It is a hard thing to grasp - took me years (literally) to work it out and I resisted the notion that such fine variations in clock stability made such an impact in music.

Pfft... people for years said digital sucked, then they suddenly realised it didn't suck, it was just different. Take your wankery somewhere else, music only sucks due to one cause, and thats because of the person who created it.

Again, there is a clip in the other thread... prove me wrong. Until then your posts and thread are nothing more than pathetic wankery in an attempt to find a scapegoat for your music.

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## Re: MD SPS-1 Timing Performance Issues

Posted by rgmccaig - 2007/04/14 20:17

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daswesen wrote:

I can't really understand the hate. One example of why this is important is for example when controlling a second synth using the MD. If I layer two kicks, one from the MD, one from the synth, it's always going to sound muddy because the MD will kind of jump around on \*each\* kick, phasing out my beautiful bottom end and flammng my attack.

If you fear that your music will become too rigid, you can alaways work around that with your programming, adding shuffle, playing with attack and decays (varying the decay on sounds can go a long way into humanizing it, even if the hit is dead on the spot), playing with volume. And I use the MD mostly to do techno kind of things, rythmic perfection makes it groovier.

Btw, if you want an example of the flammng and phasing, this is MD and reaktor controlled by MD (the recording skips a bit sometimes, dumb reaktor :/). But when the MD comes in at 0:14, you can hear that the hits are moving, it feels a bit untight, and checking the two tracks against one another in live, you can see that the reaktor recording is spot on, so obviously all the MIDI out of the MD and stuff is not the problem, but the sound out of the MD.

Another good example is just trying to loop something in Live coming in from the MD. It almost always sounds weird.



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No doubt! That's basically my take on the situation.

There are too many trolls in this thread distracting from the fact that this is a simple, real-world problem for the reasons you mention.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/14 23:12

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DLX wrote:

Again, there is a clip in the other thread... prove me wrong. Until then your posts and thread are nothing more than pathetic wankery in an attempt to find a scapegoat for your music.

Your comments are juvenile mostly and if they had any genuine substance despite the venom I would try and offer something positive. You are obviously threatened by this thread and this topic or you would not return. I mostly understand why - maybe not. It is not my concern or interest in appeasing or pacifying your anger. No more Pepsi Challenges either. As I keep saying, the ball is in Elekton's court now. I have received enough unsolicited positive emails agreeing with the core of my thread posts over these last 10 days. Some/most of these will have emailed Elekton directly asking for confirmation at least and an explanation.

As to a fix/solution - we shall see. In the end you will seem hasty and foolish in your willful desires to refute my findings and in trying to put them down as fanaticism because Elekton can't debate the basic facts any more. Even if they might suggest these small variations in timing are not significant (which they won't because they made a detailed and strong case for Midi Clock stability from the start so they obviously well understand its importance in good electronic music making - unlike yourself it seems) - they will have to look at it seriously simply because enough users of their equipment that I am certain they respect technically and creatively will have backed up the case for change. So, leave it for now. No more tests - it's all over anyway. Take it easy.

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## Re: MD SPS-1 Timing Performance Issues

Posted by DLX - 2007/04/15 03:26

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What findings? Your recorded findings that bare no significance to music thus far? Clip is in the other thread dude... go give I a listen and post your findings, because its those findings that really matter and its those findings that elektron care about. But you can't can you... you got nothing, just a bunch of hearsay.

So tell me, what is the lowest "swing" setting on the MD?

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by reset - 2007/04/15 03:39

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Big ups to Dave. I think he is completely right. Isn't a sequencer supposed to play notes back at the specified and programmed times? Looocking at the slight internal jitter of the MD, doesn't the question have to be raised that piano roll sequencers (ie punch cards in the 1890s) had more accurate timing than an MD? If I set a note in a sequencer I want the note to play (and the sound to sound) at the exact time that I have specified. That is the whole point of a sequencer, isn't it? Or am I getting something wrong here.

I give Dave full props for his arguments.

Chris, MnM owner and not blinded by the brushed aluminum.....

[http://en.wikipedia.org/wiki/Music\\_sequencer](http://en.wikipedia.org/wiki/Music_sequencer)

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/15 03:40

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DLX wrote:

So tell me, what is the lowest "swing" setting on the MD?

What's the MD Swing setting got to do with anything?

It's already got enough jelly built-in without me adding to it.

I want the bolts tightened then maybe the swing might be worth using.

I'm not doing the taste test either and you can make of that what you will. The numbers are in. The results are final. SPS-1 needs a re-sleeve. Just wait and see what happens now.

David.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by DLX - 2007/04/15 04:03

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What is the lowest possible "swing" setting on the MD? Tell me.

Yup, the numbers are in... but unfortunately numbers have nothing to do with music. I assume you aren't going to post your findings for the clip for no other reason than because you have none.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/15 04:27

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DLX wrote:

What is the lowest possible "swing" setting on the MD? Tell me.

Yup, the numbers are in... but unfortunately numbers have nothing to do with music. I assume you aren't going to post your findings for the clip for no other reason than because you have none.

Off I hope! tell me if I'm wrong...!

The numbers have everything to do with music my friend.

Ziggy's all-in-brawl slop-fest doesn't need analysis - it needs re-recording.

David.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/15 05:18

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innerclock wrote:

DLX wrote:

What is the lowest possible "swing" setting on the MD? Tell me.

Yup, the numbers are in... but unfortunately numbers have nothing to do with music. I assume you aren't going to post your findings for the clip for no other reason than because you have none.

Off I hope! tell me if I'm wrong...!

The numbers have everything to do with music my friend.

Ziggy's all-in-brawl slop-fest doesn't need analysis - it needs re-recording.

David.

Numbers have nothing to do with music, you only think they do because you consistantly use your eyes instead of your ears. You're a big talker for someone who is so persistant that there is a timing problem. If you actually put your money where your mouth is an identified the timing flaws in the clip in the other thread we probably would have had this wrapped up at page 5... Why does it need rerecording? Is it because you can't actually download it and analysis it with your eyes? Or is it simply because you can't identify sqwat and you are not manly enough to admit it? Have you used a MnM to know that is have similar timing to the MD?

Go on, press the swing button and tell me what the lowest possible "swing" setting is on the MD.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by DLX - 2007/04/15 06:10

ZiggY wrote:

innerclock wrote:

DLX wrote:

What is the lowest possible "swing" setting on the MD? Tell me.

Yup, the numbers are in... but unfortunately numbers have nothing to do with music. I assume you aren't going to post your findings for the clip for no other reason than because you have none.

Off I hope! tell me if I'm wrong...!

The numbers have everything to do with music my friend.

Ziggy's all-in-brawl slop-fest doesn't need analysis - it needs re-recording.

David.

Numbers have nothing to do with music, you only think they do because you consistantly use your eyes instead of your ears. You're a big talker for someone who is so persistant that there is a timing problem. If you actually put your money where your mouth is an identified the timing flaws in the clip in the other thread we probably would have had this wrapped up at page 5... Why does it need rerecording? Is it because you can't actually download it and analysis it with your eyes? Or is it simply because you can't identify sqwat and you are not manly enough to admit it? Have you used a MnM to know that is have similar timing to the MD?

Go on, press the swing button and tell me what the lowest possible "swing" setting is on the MD.

:-D

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## Re: MD SPS-1 Timing Performance Issues

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Posted by - 2007/04/15 07:09

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<http://www.twin-x.com/groupdiy/displayimage.php?album=lastup&cat=0&pos=0>

is that the link you guys are talking about ?  
it seems to be down..

whats up with this lowest swing setting business ? the answer is 50%, big deal ? were you hoping he'd say 0 or something ?

the main gripe with the timing issue is getting it to play in time with other boxes, instead of layering getting flam. So what do you think it proves when you record from the md/mnm alone ? that you cant decipher the slop when you record from the MD on its own ? congrats, you've made your point - meanwhile hows about we try and improve things for the good folks trying to sync a few machines ?

is that ok ?

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/15 07:14

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Ziggy and DLX both need to take a long boat and sail off the edge of the very, very flat earth they both seem to inhabit together. I hope everyone else gets as much amusement as I am from their continued debate of the bleeding obvious.

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/15 07:28

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b0unce wrote:

<http://www.twin-x.com/groupdiy/displayimage.php?album=lastup&cat=0&pos=0>

is that the link you guys are talking about ?  
it seems to be down..

The site is down, but it will be back up shortly.

whats up with this lowest swing setting business ? the answer is 50%, big deal ? were you hoping he'd say 0 or something ?

Nope, I just find it interesting that Elektron chose a number that doesn't imply zero/nothing as the lowest possible swing setting.

the main gripe with the timing issue is getting it to play in time with other boxes, instead of layering getting flam. So what do you think it proves when you record from the md/mnm alone ? that you cant decipher the slop when you record from the MD on its own ? congrats, you've made your point - meanwhile hows about we try and improve things for the good folks trying to sync a few machines ?

is that ok ?

I've expressed the importants of scientific tests several times, and of course I followed through with this in the clip... the clip isn't simply the mnm alone. Its several tracks from the mnm recorded one at a time in addition to sample accurate reference tracks, some playing alone while others are indeed layered. I even shifted some of them to numbers much much greater than the 128samples this thread seems to be based around so it contains "slop" and flams and phasing to a much greater degree. These were intention "psuh/pull" shifts, not simply displacing an entire track by a certain number of samples. One person has already commented and didn't pick any of it. When the site is back up have a listen yourself and tell me what you here. If you can pick it, then you might have a point that things actually need to be improved.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/15 07:38

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ZiggY wrote:

whats up with this lowest swing setting business ? the answer is 50%, big deal ? were you hoping he'd say 0 or something ?

Nope, I just find it interesting that Elektron chose a number that doesn't imply zero/nothing as the lowest possible swing setting.

at a swing setting of 50%, all of the even steps are (theoretically) exactly 50% between the odd steps.

I'll have a listen to your test before commenting further,  
ta ta for now,  
b0unce

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/15 07:59

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innerclock wrote:

Ziggy and DLX both need to take a long boat and sail off the edge of the very, very flat earth they both seem to inhabit together. I hope everyone else gets as much amusement as I am from their continued debate of the bleeding obvious.

Regards - David.

No, its bleeding obvious that you can't get past your ego and see the whole picture. Your only point is that because technology allows us to do something we must do it... just like autotune. You are convinced that anything even slightly resembling sample accurate timing will make your music better, that it will make your music more enjoyable to the listener... but like autotune its moot, its a bandaid on a severed limb, it is vastly insignificant compared to the whole picture, and the whole picture is based entirely on the compositional ideas behind the music, not the tools used to create it. Most people don't care that tracks use autotune, they aren't concentrating on the autotune. They are listening to the music, to the message, to the emotion. You think technology is a means to an end, you think that because we record music via samples per second that music must conform to these samples despite the fact that music has existed for millenia without it. It is you that is living in a flat world because it is you that thinks technology is music, that technology makes the music.

You can say I don't get whatever you like, but it is becoming immediately apparent that you just don't get music and its purpose. While you are here aruging about a "problem" that exists on a semantic level within the whole grand scheme of music, people are out their making music, listening to music, enjoying music with this "problem" having absolutely zero effect on them, and fixing this "problem" won't make any of the music more enjoyable, any better, any more passionate.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/15 08:53

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ZiggY wrote:

Nope, I just find it interesting that Elektron chose a number that doesn't imply zero/nothing as the lowest possible swing setting.

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Do some homework at least before you post please:

Here is a PDF explaining why (for the past 15 years or so) zero swing is reported as 50% and perfect triplet/shuffle is reported as 66%.

<http://www.elektron-users.com/modules/wfdownloads/singlefile.php?cid=1&lid=692>

No brainwave on Elektron's part - just sticking to what works.

Nothing to do with the SPS-1 having a tad of built-in swing just to get you juices flowing either.

David.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by lcyl - 2007/04/15 10:01

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ZiggY wrote:

Nope, I just find it interesting that Elektron chose a number that doesn't imply zero/nothing as the lowest possible swing setting.

that says A LOT about your experience with music production and music technology in general.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by lcyl - 2007/04/15 10:52

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Ziggy and DLX, you guys really keep missing the point.

Nobody here is talking about music, it's all about the numbers spit out by a series of fuc\*\*ng DSP chip inside the MD.

You NEED numbers and measurements to evaluate the "quality" of those numbers. These kind of tests DO NEED accurate measurements and can't be left to personal interpretation.

Each one has different ears and hears things in different ways.

Weren't you guys the ones talking about pshycoacoustic phenomenons?

So you should probably know that if you wanna improve a piece of code you need to know EXACTLY what's going on in there, and not limit yourself to just what YOU hear, to just what YOU think is happening inside the machine.

(I guess you've never been involved in some serious beta testing)

Your listening test, beside having been off-line for some time now, don't prove anything.

I can hear or not the slop in your recording, but if there's a slop caused by a problem in the code it's not through the use of your ears that you're gonna fix it.

You have to measure it, find a pattern in its jitter variations and somehow link that figure to the interrupt structure used by the MD DSPs to understand where that lag is generated.

Furthermore, there're some other perfectly valid reasons for wanting those timing problems to be fixed, even if you can't hear them AT ALL in a MD-only context.

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If you've ever edited your MD loops on a DAW you have probably noticed that they need some editing before they can be lined up to the tempo grid correctly (not for the sake of it, but considering you're using your DAW timeline as time-reference for looping you probably want your material to loop correctly).

That's pretty annoying. You're talking about making music, so you can probably understand how most people HATE having to stop their workflow to edit/fix something that shouldn't be there in the first place.

Please, answer: isn't that a good reason for wanting that bug fixed?

Same thing when syncing the MD to other sequencers. Even if I'm not able to hear the MD slop when it's playing by itself, I can definitely tell the difference in timing accuracy when the MD is playing alongside my MPC and Nord Modular.

Please, answer: isn't that a good reason for wanting that bug to be fixed?

I just remembered that someone around here tested the Korg Electribes internal timing accuracy and got better results than the MD (can somebody confirm that, please?)

I paid my MD-UW 1590 Euros. They're both drum-machines, but an ER-1 (about 5 times cheaper around here) - as far as internal timing goes - gives me better results.

Please, answer: isn't that a good reason for wanting that bug to be fixed?

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by Munchen - 2007/04/15 15:02

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Come on all you slop lovers - get with the program. Lets take it back to 1981. Have a listen - slick as. Why - tight clock.

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/15 16:42

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that says A LOT about your experience with music production and music technology in general.

Hah, whatever you say champ.

Yup, no one here is talking about music... You guys are a bunch of chinscratchers, not musicians. You guys like music equipment not music.

Each one has different ears and hears things in different ways.

Weren't you guys the ones talking about pshycoacoustic phenomenons?

So you should probably know that if you wanna improve a piece of code you need to know EXACTLY what's going on in there, and not limit yourself to just what YOU hear, to just what YOU think is happening inside the machine.

(I guess you've never been involved in some serious beta testing)

Your listening test, beside having been off-line for some time now, don't prove anything.

I can hear or not the slop in your recording, but if there's a slop caused by a problem in the code it's not through the use of your ears that you're gonna fix it.

\*scratches head\* So you are suggesting that you probably can't hear the slop, but it must be fixed because you can see it in a daw when recorded? What does beta testing have to do with anything? What does it have to do with judging a final piece of music? Why do we need numbers that pertain to a quality that you seem to suggest will never be noticed in the final context of a piece of music? How can those numbers not be left to personal interpretation when the entire reason

they exist in the first place is music, and music is nothing more than personal interpretation?

The only time you will need numbers like you say is if you can actually identify that there is a problem in a piece of music aurally (because that is how we enjoy music after all) to warrant those numbers being more accurate... and oh look, the clip is back up. I guess its come to the to either put up or shut up. Again, it contains all the "problems" that you are saying need to be fixed. Indeed people hear differently and psychoacoustics play a big role in determining what we hear, thats why the clip is hosted in a way that can only be listened to, not visually seen. The joys of psychoacoustics is that no one can suggest that they are hearing something properly until you conduct blind listening tests. People can try and refute this fact, but the only way you can really identify what you are hearing is by entirely removing all other stimulus (just like when you get your ears professional tested). Claiming that you know your ears and brain so much that you aren't effected by psychoacoustics is such a halarious notion.

<http://www.twin-x.com/groupdiy/displayimage.php?album=lastup&cat=10042&pos=0>

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/15 16:48

innerclock wrote:

ZiggY wrote:

Nope, I just find it interesting that Elektron chose a number that doesn't imply zero/nothing as the lowest possible swing setting.

Do some homework at least before you post please:

Here is a PDF explaining why (for the past 15 years or so) zero swing is reported as 50% and perfect triplet/shuffle is reported as 66%.

<http://www.elektron-users.com/modules/wfdownloads/singlefile.php?cid=1&lid=692>

No brainwave on Elektron's part - just sticking to what works.

Nothing to do with the SPS-1 having a tad of built-in swing just to get you juices flowing either.

David.

Indeed we should do our homework first, you missed the listening test which should have been done at the absolute beginning to validate anything in this thread instead of just suggesting that because the numbers look wrong they need to be fixed despite the fact that they could definately have zero effect either way on what we hear in the final piece of music. Good thing I found that piece of missing homework that you forgot to do. No more "I know what I hear" junk, because you only sound like your are trying to convince yourself... anyone who has expressed so much confidence in what they hear like you have in this thread really wouldn't have a problem hearing the issues in this clip:

<http://www.twin-x.com/groupdiy/displayimage.php?album=lastup&cat=10042&pos=0>

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/15 17:15

I'd like to listen to your file, ziggy, even tho I believe its irrelevant to my issues. I'm on dial-up so I cant stream the audio, is there a means of downloading that file instead ?

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## Re: MD SPS-1 Timing Performance Issues



Hi,

So let me get this straight:

Does the test file consist of two takes, one 'with slop' and one 'without'? Your description doesn't make it sound that way. It seems like you are asking us to identify \_which hits\_ are off.... is that right?

If we get a proper test file we can all agree on, then obviously I \_do\_ believe we will hear the difference; I also have had enough experience with the fact that EVERY BLINKING ELECTRONIC MUSICIAN HAS HAD EXPERIENCE WITH ADJUSTING A KNOB THIS WAY OR THAT BY ONE OR TWO MILLISECONDS AND HEARING AN AUDIBLE DIFFERENCE. That's why we're not exactly seeing this dire need to test the point.

But again, with a proper test, I believe we would hear the difference.

\*\*\*\*\*

Also, I feel I need to explain that some of us make music in the style of 'electronic music', 'electronic dance music', or 'techno', etc. Including me.

One of the features of this style is machine-like, super-tight, repetitive beats. We are in no way interested in achieving a 'humanly' sloppy sound like Jon Bonham or whatever, or a big band, or anything like that.

Many people have noticed, that such techo genres are really great for dancing, in part due to their 'inhuman' tightness. Many people have even noticed (gasp) that all this tightness gives techno a distinctive sound; in other words the tightness has a profound effect on the perception of this music style.

We bought this high tech 'drum machine' (emphasis on machine) to make machine-like music, with 'super tight' timing as touted by a company called 'Elektron'.

So, if you don't like EDM, don't like super-tight machine beats, etc etc..... Your opinion as a target user must be down-weighted by the fact that really, you're not in the majority the target market.

Don't get me wrong, I play a bunch of acoustic instruments and like that style too, but I sure as hell didn't buy my machinedrum to play classical or jazz.

P.S. All this idiot-talk about 'doing homework' and 'stone ages' and all that is dragging this thread down to sh\*\*\*.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/15 20:37

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innerclock wrote:

No more Pepsi Challenges either.

It took awhile for me to grok the repeated insistence on the blind test, but the idea is to prove our ears and internal timing, not the actual differences between the MD and other instruments.

So, I listened to Ziggy's MP3 and made my call. I haven't heard from him since, but I can't blame anyone for not coming back to this {Nathan, where are you?}.

Edit: Oop, Zig brought it back to this thread.

Note that I'm not comparing the MD to other instruments, as other chaps are. I hear snares coming in audibly late in some patterns, as if I had applied swing.

I like a little looseness in my music, but I'd rather put it in there, myself. I'd like Elektron to acknowledge that, though I suspect that nothing will be done about it.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/15 20:44

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ZiggY wrote:

Yup, no one here is talking about music... You guys are a bunch of chinscratchers, not musicians. You guys like music equipment not music.

I rather like my music =

...and the Elektrons are the best tools I've used to realise my musical ambitions.

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## Re: MD SPS-1 Timing Performance Issues

Posted by lcvi - 2007/04/15 22:03

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\*scratches head\* So you are suggesting that you probably can't hear the slop, but it must be fixed because you can see it in a daw when recorded?

Actually I didn't listen to your clip at all, because it was offline.  
I just tried the link again and the player doesn't seem to work on my Mac.

Anyway, I'm done trying to make you understand what we're talking about here. If you don't get it it's not my problem, and luckily you're not the one in charge of fixing this timing problem with the MD.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/16 00:56

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People - what this topic has served to prove to me without question (separate to the issue at hand but significant all the same) is that one of the fundamental reasons we have let tight event timing precision fall off the equipment/software radar over the last twenty years is because many electronic musicians seems determined to ignore and indeed refute it's fundamental significance in what we all do.

Separate to Elektron and the SPS-1 - I take this issue back to all the software and hardware made over the last 25 years that paid no importance to getting time right as a priority.

Contrasting this - I spent 12 hours in a studio last night with a room full of Moog Modular and CV/Gate Sequencers driven off properly synchronised click tracks - and we were nudging things and making envelopes make things early and late - so it's not about 'pill popping mindless music-by-numbers techno' - and no matter what we were working on in that room - drums, melodies, bass lines - everybody in that room was smiling and we couldn't leave the gear alone - the doubters can say all the crap they like but four professional people in that room with over 75 years collective electronic music production experience agreed on one thing that made all the difference - every note, every fill, every arpeggio, every empty space, every tom, every bass note - was rock-solid where it should be - no rubber bands - no custard.

I'm angry that the hard-line Elektron Voodoo 'music is not numbers' zealots like DLX and ZiggY have sought to undermine the base validity of this thread and the issue at stake.

More than that though - there is a far bigger issue at stake here - our tools are all more sloppy than they were 25 years ago across the board. If we take Ziggy and DLX's approach to its logical conclusion - then we may as well all start using stone tablets to write music on now - at least the numbers we carve in stone will stay still!

The very reason many of my clients cut everything up inside a PC these days is because all the hardware they can buy doesn't keep time properly. For those of you already living inside your mouse/screen this may seem over the top but I

have had hundreds of people tell me Rebirth/Reason is all they ever need and then they spend 5 minutes on my TR-808 with the internal three x 5 volt triggers driving three external sequencers in step time and they never use Rebirth ever again!

I personally don't like the trend and it would be better for those of us still capable of rational thought and the love of music stood up for what we know and maintain pressure on our 'tool-makers' to give us back what they have taken away.

As much as I love vintage gear - in 2007 I should still be able to buy a new hardware sequencer that outclasses the timing performance of something made in 1981. The SPS-1 is not cheap either as we all know. I have many people on my contact database who would happily trade their aging MC-4B sequencers for something twice the price of a Machine Drum if it stood up to the task of nailing the event precision but they can't. Is that so hard to comprehend?

Time is not Elastic - 1 second is 1 second - it is not a variable. Never has been. Never ever will be.

Here is an idea I've had for a while - how about we petition a new Sequencer Specification Standard across the industry - instead of note storage, polyphony, sample rate, connectors, USB etc - all the usual stuff - have a think about it - what is a sequencer supposed to do? Play events in time. So - top of the feature/specification list in the manual/brochure:

1. Internal Step Tempo/Clock precision
2. Max. Internal Voice Generation to Internal Step Trigger error
3. Polyphony Timing Precision - Step/Tick Event Internal (not Midi) voice alignment under maximum load - all voices on a single event tick. This is achievable if buffered correctly BTW.
4. Outgoing Midi Clock Precision.
5. Incoming Midi Clock Sync to Internal Sequencer Clock/Grid offset in samples/ms.

That would be a good start anyway.

Thoughts anyone?

Regards - David

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/16 01:42

niall wrote:

I like a little looseness in my music, but I'd rather put it in there, myself. I'd like Elektron to acknowledge that, though I suspect that nothing will be done about it.

Niall - have you heard back from Elektron?

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/16 01:51

ZiggY wrote:

anyone who has expressed so much confidence in what they hear like you have in this thread really wouldn't have a problem hearing the issues in this clip:

<http://www.twin-x.com/groupdiy/displayimage.php?album=lastup&cat=10042&pos=0>

Hi Ziggy - what am I listening to this for - it sounds like my Machine Drum - I'm assuming it is Monomachine? It sounds flat and limp to me - sure that's personal I know and I won't waste my time measuring it up in SF8 - no point because there is no tight reference in the file to compare the rest of the slop to anyway. The whole lot sounds blurry if you ask me. Like my MD - just a bit lifeless and rough round the edges. And it would sound better if the step/tempo precision was improved in whatever was driving it.

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David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/16 01:56

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ZiggY wrote:

Indeed we should do our homework first

Did you read my Swing PDF definition?

You still have not acknowledge that your most basic understanding that a swing/shuffle setting of 50% means some margin of minimum Swing was absolutely incorrect and has absolutely nothing to do with the absurd notion that Elektron some how decided to 'build-in' a degree of non-rhythmic 'human-feel' to their products - I think an admission on your part (and DLX too while we are at it) is well in order here ZiggY considering the amount of noise you feel compelled to make on the subject?

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/16 02:58

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innerclock wrote:

ZiggY wrote:

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Hi ZiggY - what am I listening to this for - it sounds like my Machine Drum - I'm assuming it is Monomachine? It sounds flat and limp to me - sure that's personal I know and I won't waste my time measuring it up in SF8 - no point because there is no tight reference in the file to compare the rest of the slop to anyway. The whole lot sounds blurry if you ask me. Like my MD - just a bit lifeless and rough round the edges. And it would sound better if the step/tempo precision was improved in whatever was driving it.

David.

\*claps\*

There is a tight reference. There are actually two sample accurate references in the clip, for the entire length of the clip. I guess you can't hear it though. :roll:

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/16 03:03

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ZiggY wrote:

Yup, no one here is talking about music... You guys are a bunch of chinscratchers, not musicians. You guys like music equipment not music.

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Have a read of my fave albums on my Jukebox page if you are questioning my musical miopia - plenty of funk and soul there brother and not a sequencer in sight - but they are all tight all the same....

<http://www.innerclocksystems.com/index.asp?action=page&name=32>

David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/16 03:13

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rgmccaig wrote:

Hi,

So let me get this straight:

Does the test file consist of two takes, one 'with slop' and one 'without'? Your description doesn't make it sound that way. It seems like you are asking us to identify \_which hits\_ are off.... is that right?

No, not which hits are off... but where it changes, and it changes to a much greater degree than 2ms.

If we get a proper test file we can all agree on, then obviously I \_do\_ believe we will hear the difference; I also have had enough experience with the fact that EVERY BLINKING ELECTRONIC MUSICIAN HAS HAD EXPERIENCE WITH ADJUSTING A KNOB THIS WAY OR THAT BY ONE OR TWO MILLISECONDS AND HEARING AN AUDIBLE DIFFERENCE. That's why we're not exactly seeing this dire need to test the point.

But again, with a proper test, I believe we would hear the difference.

What you are describing by "adjusting a knob and hearing a difference" is in essence exactly what psychoacoustics can do. If you are really hearing this change of 1 or 2ms you should be able to hear it without ever adjusting a knob, and thats exactly what is happening in the clip.

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/16 03:15

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niall wrote:

ZiggY wrote:

Yup, no one here is talking about music... You guys are a bunch of chinscratchers, not musicians. You guys like music equipment not music.

I rather like my music =

...and the Elektrons are the best tools I've used to realise my musical ambitions.

\*hats off\* I rather like your music too.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/16 03:20

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innerclock wrote:

ZiggY wrote:

Indeed we should do our homework first

Did you read my Swing PDF definition?

You still have not acknowledge that your most basic understanding that a swing/shuffle setting of 50% means some margin of minimum Swing was absolutely incorrect and has absolutely nothing to do with the absurd notion that Elektron some how decided to 'build-in' a degree of non-rhythmic 'human-feel' to their products - I think an admission on your part (and DLX too while we are at it) is well in order here ZiggY considering the amount of noise you feel compelled to make on the subject?

Hah, I'd be happen to acknowledge that I was incorrect... but its not going to happen until you acknowledge that all that "my hearing is perfect", "I know my ears and brain well enough that the placebo effect and power of suggestion don't effect them" junk is just miserably arrogant and so terribly in the contrary to modern science. :hammer:

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by rgmccaig - 2007/04/16 03:56

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ZiggY wrote:

rgmccaig wrote:  
Hi,

So let me get this straight:

Does the test file consist of two takes, one 'with slop' and one 'without'? Your description doesn't make it sound that way. It seems like you are asking us to identify \_which hits\_ are off.... is that right?

No, not which hits are off... but where it changes, and it changes to a much greater degree than 2ms.

Alrighty then... so why not redo the test file so that it addresses the issue at hand, rather than a 'straw man' issue, I'm sure some of us will be happy to take the test.

We're not saying that audience members could tell \_which hits\_ are off, or where, we're saying that overall, the version where everything is tight will sound audibly/testably different than the version where some tracks are tight and some are not. Just a 'gut feeling' of which mix sounds rock solid as compared to not rock solid. Make sense?

As opposed to many people here, I'm perfectly willing to change my opinion based on thorough evidence, it just needs to be properly done.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/16 04:06

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innerclock wrote:

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Niall - have you heard back from Elektron?

No. I do trust them to address the concern, because they're not jerks, but I expect that they'd want to do a little homework on their ends before saying anything definitive.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/16 04:09

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ZiggY wrote:

Hah, I'd be happen to acknowledge that I was incorrect... but its not going to happen until you acknowledge that all that "my hearing is perfect", "I know my ears and brain well enough that the placebo effect and power of suggestion don't effect them" junk is just miserably arrogant and so terribly in the contrary to modern science. :hammer:

I make music Ziggy - I'm no scientist thats's for certain but, arrogance aside, the SPS-1 is sloppy - there is no doubt in anyone's mind on this thread worth mentioning anymore.

David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/16 04:10

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niall wrote:

innerclock wrote:

Niall - have you heard back from Elektron?

No. I do trust them to address the concern, because they're not jerks, but I expect that they'd want to do a little homework on their ends before saying anything definitive.

Cool - phew - thought for a second they had said - no way Jose.....

Just checking..... :-)

David.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/16 04:16

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innerclock wrote:

Cool - phew - thought for a second they had said - no way Jose.....

O, no, but who knows how the MD was programmed. It may not be possible to make the change this late in the game, or it may not be deemed important {and I daresay that if this were put to a vote, democracy would put us out on our asses right now}. Regardless, I trust them to give it due consideration. I know they put a lot of thought into the program change behavior rewrite a couple of years ago, and Daniel H was kind enough to address my complaints in a private email.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/16 04:33

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niall wrote:

innerclock wrote:

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Yeah, that's my main concern also - a friend (who writes code/back engineers FPGA chips etc) used a great example a while back to me explaining code/hardware design - he said it's not that different to Genetic Mutations in living organisms - once the DNA is complex enough (as in humans) and all the organisms functions and chemical balances are symbiotic - any genetic modification however slight - if it involves changes and design consequences elsewhere in the system - the end result is usually a deformity or, in most cases - fatal.

This issue of timing stability in the SPS-1 may be at the limit of the code/hardware. I hope not. But I know how it goes. Still - no excuse in 2007 if you are building sequencers and rhythm machines to not take this into account before you bolt in the hardware I feel.

That being said, even if there is no fix for the SPS-1 (and it seems plenty of people are happy with it the way it is so I'm safe in the knowlege I'll get a good price for it when I do sell it!) I would still give Daniel/Elektron my cash for an SPS-2 or Mono2 that got it right in the future because I do believe they care and make great machines.

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/16 04:49

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PS - I'm only buying a cool new Elektron T-Shirt when my SPS-1 can stay in time!

Do you think that might be enough pressure?

Maybe the Elektron Web/Marketing/Clothing design department might push a few firm R&D buttons for us?

Did I buy my clothing from a sequencer manufacturer or a sequencer from a clothing designer?

Harsh as it may sound - less art, more substance please.

I'd rather see the Elektron Homepage showing their true wares not what they would like to see me wearing.

We shall see.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/16 04:56

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I'd like to underscore the love for Elektron, and perhaps lighten the mood for a few posts:

<http://matrixsynth.blogspot.com/2007/04/elektron-easter-suprise.html>



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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/16 05:12

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rgmccaig wrote:

ZiggY wrote:

rgmccaig wrote:

Hi,

So let me get this straight:

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As opposed to many people here, I'm perfectly willing to change my opinion based on thorough evidence, it just needs to be properly done.

Ok, I'll get together a bunch of tracks, some sample accurate some not. There will be no overlap though, I won't post the same track twice (one entirely sample accurate, one not) because it bares no relevance to a real world scenario.

Innerclock has said that if there is a sample accurate track within the clip he can identify the slop, I guess he can't despite there being an abrupt change much greater than a 2ms push/pull effect. I didn't say which tracks in the clip were sample accurate, why? because people who listen to your music have no idea what track is sample accurate or not, they have no idea what instruments were used to create what. For this thread to bare any significance it must simply be a scenario like this: A complete stranger hands you a track he made on the street and asks you if its sample accurate or not. Can you answer this accurately? Lets find out. Why do it this way? Its simple, its the only way that puts the sole emphasis on the final piece of music. There is no point scrutinizing a studio process that you can't hear or identify solely in the final context of a piece of music. There is no point in comparing a sample accurate version of a track to a sloppy version of the same track because music doesn't exist this way outside of a studio.

This is a true blind test of what you hear, not the processes you use, not the equipment you use and not a situation that is completely exclusive from the context of a completed piece of music, a complete piece of music being the sole purpose why we are here.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/16 05:15

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ZiggY wrote:

This is a true blind test of what you hear, not the processes you use, not the equipment you use and not a situation that is completely exclusive from the context of a completed piece of music, a complete piece of music being the sole purpose why we are here.

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The debate is over Ziggy, tests too - the SPS-1 could be tighter - lets just see what happens and have a rest OK?

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/16 05:42

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innerclock wrote:

ZiggY wrote:

This is a true blind test of what you hear, not the processes you use, not the equipment you use and not a situation that is completely exclusive from the context of a completed piece of music, a complete piece of music being the sole purpose why we are here.

The debate is over Ziggy, tests too - the SPS-1 could be tighter - lets just see what happens and have a rest OK?

pfft.

Yup, lets just see what happens with the listening tests. Of course, I don't expect you to do them... anyone expressing so much confidence in their hearing such as yourself potentially could have their ego's deflated quicker than a pin striking a balloon. So, naturally you are just going to keep running away from the idea. If the debate is so over, you won't mind participating just for shits and giggles... but of course, you won't be doing that.

On the other hand, a few people here seem very open to the idea of listening tests, I have nothing to lose, they have nothing to lose... we will simply find out well and truly if the SPS-1 NEEDS(not could) to be tighter. Again, simply because we can doesn't mean its necessary nor does it mean it will ever be noticed. If it NEEDS to be tighter is exactly what we will determine via listening tests.

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/16 05:47

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innerclock wrote:

PS - I'm only buying a cool new Elektron T-Shirt when my SPS-1 can stay in time!

Do you think that might be enough pressure?

Maybe the Elektron Web/Marketing/Clothing design department might push a few firm R&D buttons for us?

Did I buy my clothing from a sequencer manufacturer or a sequencer from a clothing designer?

Harsh as it may sound - less art, more substance please.

I'd rather see the Elektron Homepage showing their true wares not what they would like to see me wearing.

We shall see.

If you keep whinging like you are, they might even throw in a diaper and rattle for free!

Indeed, less art, less ego, less arrogance, less sidestepping a rock solid conclusion, more substance to actually base the need to improve anything. Its time for listening tests, but of course you are excused... Even I consider submitting your ego to potentially ego deflating listening tests a potentially hideous thing.

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## Re: MD SPS-1 Timing Performance Issues

Posted by rgmccaig - 2007/04/16 07:04

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Ok, I'll get together a bunch of tracks, some sample accurate some not. There will be no overlap though, I won't post the same track twice (one entirely sample accurate, one not) because it bares no relevance to a real world scenario.

No, that method is still a little flawed.

A complete stranger hands you a track he made on the street and asks you if its sample accurate or not. Can you answer this accurately? Lets find out.

Um no, how is that the reality? That would never happen in reality. The reality is actually: will people enjoy my track better if I can make it closer-to-sample-accurate. \_That\_ is the point.

It's pointless to test \_different\_ tracks, then you will be testing mainly people's preference for different compositions. This is known as a 'confound'; you must 'control' for this. You will not be able to balance out that confound unless you use a ton of different tracks and different subjects (and find a way to filter out your \_own\_ bias ie. choosing tracks to represent tightness that are 'better' in other ways) - i don't see that happening for this experiment.

The question we are interested in is, given the track i'm working on, will that particular track sound \_noticeably better\_ if the timing is made tighter. Best way is two use 2 versions of the same track, then the experiment is balanced.

It's theoretically fine if you want to do a 'between subject' design: use 2 versions of each track; but for each subject, only give them one version. Then average the numbers between subjects to find if there's a trend towards liking the tight versions better.

Problem is, you still need a lot of subjects that way, in order to cut through the randomness associated with using different subjects.

PS- in order to test the population of interest, imho you should use subjects that actually like/listen to/dance to electronic music; also you should test it on a decent 'body-rocking' system so that people can Feel the groove.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/16 07:40

ZiggY wrote:

I didn't say which tracks in the clip were sample accurate, why? because people who listen to your music have no idea what track is sample accurate or not, they have no idea what instruments were used to create what.

And again Ziggy - sample accuracy is not important on this thread outside of testing errors and deviations - what is important in listening/real-world examples is TEMPO/STEP/DURATION/EVENT precision. The people that get this know already. You keep flipping the same old hocus pocus about hearing timing drift in a complete mix. It's a crap argument dude.

It's bloody simple - If I take two drum machines and sync them up. One machine playing hard-quantized 8th Kick/Snr pattern - the other playing hard quantised 16th hats OK - now, if I love the feel/groove of the first machine playing solo (no hats) right - now I push up the fader with the 16th hats in sync.

OK - they are in sync - Fine. BUT - they sound wobbly against the Kick/Snr and take away from the original feel.

If I pull down the 16th Hats volume - the tight feel is there as before.

Now - if I record these two machines - the Kick/Snr to and the 16th Hats while in sync to SF8 as I have done many times and zoom in on the file - what do I find?

Very simple - the Event/space durations on the Kick/Snr pattern are very precise - no deviation more than 5 samples at 44.1 kHz across the whole 2 minute recording.

The Hi Hat 16ths in contrast move around by up to 128 samples from where they should fall.

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If that were two drummers playing on stage - any member of the audience with a musical/rhythmic ear would tell you the guy playing Hats is not a patch on the guy doing Kick Snare.

This is the whole focus of this thread - the SPS-1 is the guy playing hats in this example and the rest of my band want him to take some lessons..... :-P

David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/16 08:10

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rgmccaig wrote:

Ok, I'll get together a bunch of tracks, some sample accurate some not. There will be no overlap though, I won't post the same track twice (one entirely sample accurate, one not) because it bares no relevance to a real world scenario.

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Problem is, you still need a lot of subjects that way, in order to cut through the randomness associated with using different subjects.

PS- in order to test the population of interest, imho you should use subjects that actually like/listen to/dance to electronic music; also you should test it on a decent 'body-rocking' system so that people can Feel the groove.

Argh, no. The question and discussion was definately based on psychoacoustics to start with, like you said "adjusting a knob and hearing a difference". But anyway, you say my testing method is flawed because it simply uses compositional preference, yet you say that the test is done to see if people enjoy one way more than the other? Your method is based on exactly the same compositional preference that you suggest is what flaws my method. For timing to be identified as the reason for this preference, we must first be able to identify this timing... pretty straight forward. If people can't identify timing as sample accurate or not in single clips, how much of an increase in enjoyment do you think people would gain for sample accurate timing? I am happy to do both, yet the test you suggest cannot be done on this forum without bias.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/16 08:20

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ZiggY wrote:

Argh, no. The question and discussion was definately based on psychoacoustics to start with, like you said "adjusting a knob and hearing a difference". But anyway, you say my testing method is flawed because it simply uses compositional preference, yet you say that the test is done to see if people enjoy one way more than the other? Your method is based on exactly the same compositional preference that you suggest is what flaws my method. For timing to be identified as the reason for this preference, we must first be able to identify this timing... pretty straight forward. If people can't identify timing as sample accurate or not in single clips, how much of an increase in enjoyment do you think people would gain for sample accurate timing? I am happy to do both, yet the test you suggest cannot be done on this forum without bias.

Ziggy - the wheel fell off your barrow a good few pages back. You are welcome to keep posting of course but I do think your time would be better served getting the wheel back on straight and then come back with something positive to contribute. What you are offering is only blind repetition based on a deep misconception coupled with anger fueled by your own inability to see reason.

David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/16 08:24

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innerclock wrote:

ZiggY wrote:

I didn't say which tracks in the clip were sample accurate, why? because people who listen to your music have no idea what track is sample accurate or not, they have no idea what instruments were used to create what.

And again Ziggy - sample accuracy is not important on this thread outside of testing errors and deviations - what is important in listening/real-world examples is TEMPO/STEP/DURATION/EVENT precision. The people that get this know already. You keep flipping the same old hocus pocus about hearing timing drift in a complete mix. It's a crap argument dude.

It's bloody simple - If I take two drum machines and sync them up. One machine playing hard-quantized 8th Kick/Snr pattern - the other playing hard quantised 16th hats OK - now, if I love the feel/groove of the first machine playing solo (no hats) right - now I push up the fader with the 16th hats in sync.

OK - they are in sync - Fine. BUT - they sound wobbly against the Kick/Snr and take away from the original feel.

If I pull down the 16th Hats volume - the tight feel is there as before.

Now - if I record these two machines - the Kick/Snr to and the 16th Hats while in sync to SF8 as I have done many times and zoom in on the file - what do I find?

Very simple - the Event/space durations on the Kick/Snr pattern are very precise - no deviation more than 5 samples at 44.1 kHz across the whole 2 minute recording.

The Hi Hat 16ths in contrast move around by up to 128 samples from where they should fall.

If that were two drummers playing on stage - any member of the audience with a musical/rhythmic ear would tell you the guy playing Hats is not a patch on the guy doing Kick Snare.

This is the whole focus of this thread - the SPS-1 is the guy playing hats in this example and the rest of my band want him to take some lessons..... :-P

David.

No, you guys are quickly progressing away from your original statements that you can hear and notice these deviations and could pick them in blind tests because, what did you say again? your hearing is perfect? :roll:

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I know exactly what this thread is about, we have been over it many times but you keep drawing a blank it appears, I use sample accuracy as a reference for comparison exactly like you did. This thread has moved so far away from what NEEDS to be done to simply what people prefer it appears. You cannot get more in sync than it being sample accurate, you are suggesting that people prefer music that is more in sync. Regardless of whatever tests you do in your studio, for any of it to be relevant you must prove that people notice it and get more enjoyment out of a piece of music proportionally to how accurately in sync it is.

And again, for any of this to be a problem you should be able to pick it as the problem or as a track not entirely in sync just by listening to it.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/16 08:32

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ZiggY wrote:

No, you guys are quickly progressing away from your original statements that you can hear and notice these deviations and could pick them in blind tests because, what did you say again? your hearing is perfect? :roll:

I know exactly what this thread is about, we have been over it many times but you keep drawing a blank it appears, I use sample accuracy as a reference for comparison exactly like you did. This thread has moved so far away from what NEEDS to be done to simply what people prefer it appears. You cannot get more in sync than it being sample accurate, you are suggesting that people prefer music that is more in sync. Regardless of whatever tests you do in your studio, for any of it to be relevant you must prove that people notice it and get more enjoyment out of a piece of music proportionally to how accurately in sync it is.

And again, for any of this to be a problem you should be able to pick it as the problem or as a track not entirely in sync just by listening to it.

Wrong again Ziggy - that example I just gave IS THE VERY BASIS OF THIS ENTIRE THREAD - IT IS THE FOUNDATION OF MY WHOLE DEBATE - I HAVE NOT SHIFTED MY POINT OF VIEW by a single solitary sample. There, in that example is my issue with the SPS-1 in a nutshell - plain and simple to understand and test by anyone. It still stands.

David

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/16 08:45

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ZiggY wrote:

And again, for any of this to be a problem you should be able to pick it as the problem or as a track not entirely in sync just by listening to it.

I can't believe you dont get it. The example I gave is sound - two machines - one in time - the other sloppy.

If I'm in the studio right, to record a song - I get a session drummer in - he plays tight - nails the take perfectly. OK next day - I book a conga player - he lays down 15 takes over a whole day but he doesn't cut it next to the drummer - sloppy and loose. Ok - by your standards now - thats just music - live with it and move on right?

Wrong - I book another persussionist, and another, and another if I need - until I find the one that has ears AND feel and locks it down next to the kit.

He gets paid - the others don't get anymore work.

Now I book the bass player..... and so on.

This is how music is made. For real. Not fantasy.

Get on the web and have a look at how many great session musicians Fagan/Becker/Steely Dan went through just to get the feel right that they heard in their heads during sessions. Every one of those players would have cost a fortune to book and every take was probably gold in it's own right - but they wanted a very specific feel and quality - and Fagan was/still is a timing fanatic - that doesn't make him nuts - he just wanted it to feel very specific and he knew when it was 'on' and when it was 'off'. Do you think anyone told them at the time - 'Come on guys - that bass part is just fine - no one will notice in the final mix?'

Do you know for creating demos on his solo work he used to use an MPC-60II for drums which is more than tight enough to begin with but I'll tell you a little secret from Roger Nichols (Fagan/Steely Dan Engineer) - to get his demo drum feels right while he was composing - he had a rack of 8 x Roland SDE-3000 Delay Lines strapped over every output of the MPC-60II. Why?

He had them all set to 50 ms so he could push and pull individual instruments by as little as 1ms to get the feel he wanted but still driven by the tightest drum machine available at the time at any price.

You don't have to put up with slop - human or machine - especially if you can hear it and you can fix it.

Come on man - wake up.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by daswesen - 2007/04/16 08:55

Ziggy, I see that the issue may not be very important to you. I could not hear anything wrong with your sample, I then checked in a waveform editor quickly and could not find anything wrong. But also, even if the ear can be very precise to detect timing variation, it does so when two events are happening at the same time or not. Detecting variations on the order of 1 ms on a same repeating metronome like pattern is much much much harder (I think on this order it is next to impossible).

I do know from practicing a lot with a metronome that after being in the zone for a time, you can start to pick up very very minute variations in groove and timing (I have this one exercise when I pretty much know when playing a note that I am correct or lagging by 2ms, and in this case it is possible for me to shift my groove around by a mere matter of ms). That doesn't mean I can play any better than a MD, or in fact that anyone can. But really this kind of tightness is not the one that is discussed here.

On the magnitude of ms or less, you are starting to enter sample-realm. And what we can do with the MD is not something you'd attempt with a real drummer, but things that are possible with DSP and sample-like accuracy. For example putting two bass sounds together, or using their interlocking phase effects to do weird and beautiful sounds, or whatever. And that is something where everybody can hear ms wise differences. For example:

<http://bl0rg.net/~manuel/md-slop.mp3> (best heard on speakers and not on earphones)

The first is bd samples i lined up by hand in the audio editor. Flrst 1 ms difference, then 2ms, then 3, then 5ms. Can you pick out which kick has the difference between left and right? I know I definitely can, and most people (not into music producing) I asked definitely could too.

Then after that is a recording of the machinedrum, played against a loop recorded immediately after. Again right and left channel. Does that sound to you like a little phase-shifting melody is played? To me it does, and that is definitely not what I was looking for.

So, I know these examples are construed, but they for one show that you can definitely easily hear 1ms timing differences. And the other side of hearing such things is the pretty unconscious things of "tight machine robot impossible to achieve" groove versus "yeah tight drummer" versus "beginner" groove feelings.

What I don't understand is your need to go through this again and again. I mean, ok, you can't hear it, it doesn't interest, why do you even care about this thread?

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/16 09:15

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daswesen wrote:

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What I don't understand is your need to go through this again and again. I mean, ok, you can't hear it, it doesn't interest, why do you even care about this thread?

you've listened to the clip and could not hear anything? It contains all the things you've listed, including layered tracks that develop a big sloppy shift. The difference between my clip and yours are that mine aren't construed outside the context of a piece of music. Of course, david likes to say I don't get it and he can use all the metaphors he likes but he still hasn't identified the location in my clip where is suddenly falls apart timewise. Why? Why can't you hear it? Why can't he hear it?

Why am I still here? Look at some of the posts people have done in this thread. Some of them even arrogantly attacked the guys at elektron... yet so far it is only over a very construed studio process that nobody has even been able to link to having an effect on a final piece of music. I'll put it very clearly, if someone can identify when the wheels fall off the clip I have posted (which is entirely within the context and examples of "problems" that people have posted in this thread as the very reason for the MD needing improvement) then I will send an email to elektron myself and say the MD is broken.

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## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/04/16 09:19

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innerclock wrote:

ZiggY wrote:

And again, for any of this to be a problem you should be able to pick it as the problem or as a track not entirely in sync just by listening to it.



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I can't believe you dont get it. The example I gave is sound - two machines - one in time - the other sloppy.

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You don't have to put up with slop - human or machine - especially if you can hear it and you can fix it.

Come on man - wake up.

A session player plays tight? How tight? Have you every measured the tightness of a session musician? Do you think a session musician plays it indentically in every take? I need to walk up? Have you actually read what you are posting?

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/16 09:22

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ZiggY wrote:

.. yet so far it is only over a very construed studio process that nobody has even been able to link to having an effect on a final piece of music.

Have a read of my comments about Fagan/Steely Dan - the process I have described are not abstact at all - it is how music was and is still made by profesionals everywhere and it has every effect on the final outcome in the music.

You need to get outside your box and see whats out there my friend.

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## Re: MD SPS-1 Timing Performance Issues

Posted by rgmccaig - 2007/04/16 09:32

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ZiggY wrote:

But anyway, you say my testing method is flawed because it simply uses compositional preference, yet you say that the test is done to see if people enjoy one way more than the other? Your method is based on exactly the same compositional preference that you suggest is what flaws my method. For timing to be identified as the reason for this preference, we must first be able to identify this timing... pretty straight forward.

No no, think about it again.

If people rate 'SAMPLE A' better than 'SAMPLE B' and the two samples are the \_same song\_ except for tightness, we have clearly shown that people prefer tightness, get it? That's what is meant by balancing.

Btw, don't assume that my stance on this topic is exactly the same as everyone on my 'side'; the way I see it, there are multiple valid questions to be asked here:

1. Can timing deviations of 2ms make an audible difference in a track? (clearly the answer is yes, for reasons explained by daswesen etc.)
2. Does that audible difference tend to sound 'better' when tighter? (this is subjective; but for innerclock personally we know the answer is 'yes'.. I suspect for a majority of musicians the answer would be 'yes'... that alone is reason to improve timing; we want to enjoy playing the instrument, right?)
3. Does 'joe average' in the audience prefer a song more if the timing is tighter? (A well designed study could answer this question, however it must be done properly.)
4. Does 'joe average' know that the reason for his preference is 'tighter timing', or does he just know that he likes it better? (I don't really see why it matters, but it could be theoretically interesting to know.)
5. Could 'joe average' identify exactly in which tracks, or when, the timing slop occurs? (This is a red herring as far as I'm concerned, I mean, who cares?)
6. Would better sps timing make it easier to cut/edit loops as part of the recording process? (Definitely yes, I would say.)
7. Would it improve the capabilities of SPS overall to give the option of closer-to-sample-accurate timing? (this issue depends on the other answers, and is complicated; personally, given the other answers, I'd say it's a 'yes'.)

These are all valid questions;

except that debating question #1 is a waste of time, because anyone who works with electronic music (should) already know the answer.

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## Re: MD SPS-1 Timing Performance Issues

Posted by daswesen - 2007/04/16 09:37

Ziggy I was referring to your first clip. I haven't found the other one? I don't get the point of burying what I want to show in "music". For one, I haven't had the MD long enough to have any serious tracks to show it. One musical perspective of the problem is that I have a hard time looping anything from the MD live in reaktor, because the sound always shifts a bit. And the one problem of the flammings and phasing I made clear in that other mp3 is one thing that immediately jumps at you cause it kills the bottom end of the bass sometimes. Not very important while playing live and stuff, but for the track I'm building I ended up taking the wavs from the MD and realigning the kicks by hand. And you know it still has this detroit not so supertighty flair to it, which is fine by me really, but it's there, and from looking at it it's the hhs not sitting right.

On the other hand I must say that ziggy is right on the bass playing and stuff, I think it is impossible to have ms precision on a hand played instrument, at least not consistently. That's where feeling comes into play. However I know that it possible to hold a beat so steady that the small fluctuations won't make the pulse change, kinda like the MD then :)

But, have you noticed, when playing real instruments against electronic tracks, how *\*very\** hard it is to integrate those, even played by someone with great time and feel, without losing the "i'm a computer boom tschik"-electro-uebertight feel? It's almost impossible. Every time I try to put guitars or bass on an electro track of mine, I end up spending a lot of time in the wav editor to just not lose that tightness (or the simple solution to loop just a bar or two of the playing to make the sloppyness the new precision, if you're still following me).

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It is much easier when you play a MIDI Instrument, and can quantise selected notes or things, and easily rework the dynamics or small timing steps.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by daswesen - 2007/04/16 09:40

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Another way to look at it and the "publics" preference is to look at how unmanly tight timing-wise pro-tooled autotuned pop-music has become. This is not my personal preference really, but at least it's there.

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## Re: MD SPS-1 Timing Performance Issues

Posted by rgmccaig - 2007/04/16 09:46

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daswesen wrote:

Ziggy I was referring to your first clip. I haven't found the other one? I don't get the point of burying what I want to show in "music". For one, I haven't had the MD long enough to have any serious tracks to show it. One musical perspective of the problem is that I have a hard time looping anything from the MD live in reaktor, because the sound always shifts a bit. And the one problem of the flammings and phasing I made clear in that other mp3 is one thing that immediately jumps at you cause it kills the bottom end of the bass sometimes. Not very important while playing live and stuff, but for the track I'm building I ended up taking the wavs from the MD and realigning the kicks by hand. And you know it still has this detroitly not so supertighty flair to it, which is fine by me really, but it's there, and from looking at it it's the hhs not sitting right.

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It is much easier when you play a MIDI Instrument, and can quantise selected notes or things, and easily rework the dynamics or small timing steps.

Yup, i so agree...

Anyone else get the feeling that ziggy doesn't really make or enjoy techno-type music? (using the term techno loosely.)

It's a freakin 'elektron drum machine', how can we be faulted for trying to make 'machine music' with it.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/16 09:58

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rgmccaig wrote:

Anyone else get the feeling that ziggy doesn't really make or enjoy techno-type music? (using the term techno loosely.)

It's a freakin 'elektron drum machine', how can we be faulted for trying to make 'machine music' with it.

After the Motown questions and comments about session players not being sample accurate I think that's a fair comment.

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Hey, Motown being mentioned - I was rocking out hard to Stevie Wonder's 'Signed, Sealed Delivered' today in the car up nice and loud - three times in a row in fact - that tracks packs a solid punch in 2m30s straight up - they ain't sample accurate but f#\$k me whatever clock they were on - they were all riding it home together tight. Amen for that.

David.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by lcvl - 2007/04/16 11:30

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daswesen wrote:

On the other hand I must say that ziggy is right on the bass playing and stuff, I think it is impossible to have ms precision on a hand played instrument, at least not consistently. That's where feeling comes into play. However I know that it possible to hold a beat so steady that the small fluctuations won't make the pulse change, kinda like the MD then :)

That's a good point, although let me point out that a good musician rhythmic feeling is NEVER random (like on the MD, instead).

I regularly edit the recordings of some of the best session players in the world and you can always recognize a pattern in their timing variations.

That's what many call "groove".

A bug in the MD code causing random timing jitter is DEFINITELY not the same thing.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/16 15:40

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ZiggY wrote:

Why am I still here? Look at some of the posts people have done in this thread. Some of them even arrogantly attacked the guys at elektron...

There's fudging room in "arrogant", even if I don't believe it, but "attacked the guys at elektron" is a serious allegation that should be backed up. Please show your work, so those guys at Elektron won't look at this and think "WTF?" - more than they probably already have!

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/17 04:11

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Hi all - anyone with any Elektron news?

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## Re: MD SPS-1 Timing Performance Issues

Posted by lcvl - 2007/04/18 11:34

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I hope the Elektron guys are at least considering the issue.  
Just simply ignoring the problem wouldn't be a very smart move on their side.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/18 18:50

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I just got an email from them. I'll post the contents if they grant permission, but even if they don't, have faith; this discussion is on their radar.

O, but I will paste one thing:

"There is nothing wrong with your method of measuring the jitter, any fully working sound card will do."

Elektron approve of our recording and measurement methods. We're examining Elektron's products. That facet of discussion is settled.

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## Re: MD SPS-1 Timing Performance Issues

Posted by lcvl - 2007/04/18 20:36

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that's already something!

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/19 11:43

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Thanks Niall - been busy but great to know they have it in focus.....

Regards - David.

Didn't really have any doubts about the testing methods but glad to know all the same.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/19 16:46

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I got the go-ahead from Elektron to post this.

I have concatenated two emails. The paragraph enclosed with brackets came from the second email.

Hello Niall,

We are very sorry you are not fully satisfied with our product.

Of course we take these matters seriously and are looking into improving matters. We doubt we can ever make it as tight as some people may like it because of technical difficulties (it is a matter of synchronising 2 DSPs and a CPU, a multi sample resolution is necessary for us to keep communication and audio rendering efficient), so a latency and a small "jitter" will always be necessary.

There is nothing wrong with your method of measuring the jitter, any fully working sound card will do. But remember that the difference in time between two trigs from different recordings can be approximately twice as big as the difference from the ideal timing.

Could you please send examples of patterns you feels are lagging behind to us for testing, preferably with information on what to listen for and how to approximate your setup?

best regards

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Anders G?rder, developer at Elektron Music Machines.

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## Re: MD SPS-1 Timing Performance Issues

Posted by rgmccaig - 2007/04/19 21:27

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I am glad to hear their reply.

If they look at the problem in detail, it seems at least possible they will spot a do-able way to reduce the maximum jitter.

Thanks for your efforts, everyone who is working on this...

What i would really like is for elektron to look at the jitter pattern people have measured, and give an explanation of whether it could be

-improved overall

or at least

-changed to reduce the 2ms gaps;

or if not, why it's impossible or a bad idea.

Niall have you proceeded to give them examples of the distinctive jitter pattern people have measured?

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/20 02:59

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Hmmm - thanks for posting the Elektron Support response - personally the bit about DSP/CPU clocking points to a problem that may not be easily resolved I fear. Sounds like a compromise was made early on in the design that traded internal timing/event precision for DSP/Voice processing/rendering which I still feel is not really cool.

Niall - if you are communicating with Elektron directly - maybe they could provide an option similar to how Alesis dealt with these issues in the Andromeda A6 - they had CPU/Processing options in the system menu that let the user choose between (a) ultra hi-resolution audio rendering with slower VCA/Envelope attack precision or (b) lower resolution audio rendering with super fast VCA/Envelope attack precision for timing critical sounds/patches.

They could offer a similar option/trade off at the System Level - maybe in Classic/Pattern Mode (no param. locks) and by disabling internal effects as well they could prioritise timing precision.

Regards - David.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/20 07:41

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innerclock wrote:

Sounds like a compromise was made early on in the design that traded internal timing/event precision for DSP/Voice processing/rendering which I still feel is not really cool.

Regards - David.

I dont know what kind of DSP?s are used in the MD... but the machine is doing quite a lot of sounds with just 2 dsp?s...

We have very precise timing in the nord modulares but even with an expanded 8 dsp model i see problems to do all what the MD is doing...

I also heared that the MD is using some kind of compressed audioformat inside... ensuring a relatv higher sound quality

---

for given samplerates and bandwidth... also the 12 bit thing in their advertizing might be related to that...

I have no idea if that is reality or just gossip...but the MD sounds indeed very strong and the filters very smooth for a digital synthesizer...

realtime encode and decoding procedures might be a reason for a certain instability in the output of the soundengine... just a phenomenon you only would be able to organize somehow but probably can't get rid of it totally...

Elektron's mail is pretty clear about that the wobbling is caused by something they just can't switch off...

whatever the real reasons are...it must be a structural thing and nothing that is related to only DSP load..other wise a single track with a few events would behave better than 16 tracks..

But there seems to be no relation between the wobbling and the DSP load..

So just switching down DSP use probably wouldn't change anything...

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/20 08:52

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rudebop wrote:

But there seems to be no relation between the wobbling and the DSP load..

So just switching down DSP use probably wouldn't change anything...

That is my fear also. If it is not DSP related - I wonder if a voice/step buffering option might be able to be added in the OS? That way - step/voice events could all be held and then fired at precise clock/tempo intervals rather than with the push/pull as it is now.

This would probably mean a sacrifice of 3 ms overall MIDI Clock Sync I/O lag in order to absorb the current event slop into a buffer. But this would be inconsequential if using the MD on its own and could be very simply compensated for when using the SPS-1 in a sync situation by using some sort of Master/Slave offset.

I would much rather a sequencer stay in tight time with a fixed offset than have a sloppy sequencer with no offset at all.

You can work with the first case - the second is hard work.

Maybe it could be an option in the SPS-1 OS?

Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/20 11:12

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a 3 ms late machine? a Electrontribe or what?...no thanks

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## Re: MD SPS-1 Timing Performance Issues

Posted by lcvl - 2007/04/20 12:02

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I agree with David.

If I had to choose I'd rather have a drum-machine that has a rock solid internal timing, even if it's 3 ms late. You can find ways to compensate for that.

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In any case it would be great if the user could have the option to decide which timing response to use.

That said I REALLY hope Elektron will be able to fix the issue without any kind of compromise.

PS. Hey David, check your Inbox when you have time.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/20 17:00

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rudebop wrote:

I dont know what kind of DSP?s are used in the MD... but the machine is doing quite a lot of sounds with just 2 dsp?s...

They're bog-standard, 56k Motorolas, IIRC. Not that I've looked inside, or anything!

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/20 17:04

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rudebop wrote:

whatever the real reasons are...it must be a structural thing and nothing that is related to only dsp load..other wise a singel track with a few events would behave better than 16 tracks..

But it does, if my test was indicative.

Left channel is impulse with all other channels muted. Right channel is impulse with all other channels active, but mixed to zero:

[http://syncretism.net/snd/niall\\_-\\_impulse\\_120\\_bpm.wav](http://syncretism.net/snd/niall_-_impulse_120_bpm.wav)

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## Re: MD SPS-1 Timing Performance Issues

Posted by ipassenger - 2007/04/20 19:29

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Niall,

What is the worst deviation in yr sample, i spotted one of 1.5milli-secs when I had a quick look. As far as I can see the worst deviations between the L and R seems to be about 66/65 samples (rough check).

Cheers

R.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/20 19:33

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I haven't looked at the numbers in that file. The drift is audible in headphones, so I left it at that.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/20 20:04

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amen to that

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## Re: MD SPS-1 Timing Performance Issues

Posted by ipassenger - 2007/04/20 21:41

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doh!!

I didn't actually listen to it, just dropped it straight into soundforge.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/21 00:30

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niall wrote:

rudebop wrote:

I dont know what kind of DSP?s are used in the MD... but the machine is doing quite a lot of sounds with just 2 dsp?s...

They're bog-standard, 56k Motorolas, IIRC. Not that I've looked inside, or anything!

So the same as in a nord modular..where we have accurate timing..but we would have to realize the MD in 2 slots..  
so 8 machines per slot..sequencing is external... this is probably done in the processor of the md not inside the dsp?s

so 16 filters per slot.. 8 sat moduls...8 sr reduction modules 16 envelopes 16 oscillators, 16 eq modules, 8 lfo?s as a  
rough minimum...  
maybe possible ...

A md emulation on the nord? :-)) maybe a fun projekt just to see what it takes..but with accurate sound modeling you  
never get 8 machines in one slot.....

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## Re: MD SPS-1 Timing Performance Issues

Posted by neonleg - 2007/04/21 10:05

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MD dont take nearly as long to change kits as the nord modular does to change patches, they got that right anyway

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by Munchen - 2007/04/21 10:27

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Hey - great thread - wondered when a serious discussion about the loss of good timing in our tools might actually be had  
somewhere. Why there are so many doubters these days as to the significance it has in what we do astounds me.

Lets hope Elektron see the light and take us back to the future.

I've been waiting.....

A.

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/04/21 13:59

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neonleg wrote:

MD dont take nearly as long to change kits as the nord modular does to change patches, they got that right anyway

True..buts not right away..it morphs somehow.. quickly..but not right away...

probably one DSp holds the infrastructure with all basic parameters and fx and dont needs to be recompiled, while the other actually holds the sound machines..

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/25 09:06

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Been busy - plenty of views, not many posts - anyone got anything concrete from Elektron yet? I've decided to sell my SPS-1 in the meantime and when they fix the timing engine I'll buy a UW. \$950 USD. If anyone wants my pristine (original plastic still on the LCD Cover), well cared for, non-gigged SPS-1 with original manual and in the original box - let me know - either here or at david@innerclocksystems.com

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/26 13:28

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nkirchner wrote:

Maybe they had nothing nice to say about your method of "testing" so they chose to say nothing?

"If Digital Audio was that poor as to misrepresent such coarse variations in signal it would be unusable to record music in the first place"

People recorded on tape for years... Tape was/is so famous for its speed up/down during record and playback that people have gone to great lengths to create plug-ins simulating it.

Based on my professional experience it is my opinion that whilst the machines in questions quite possible have timing issues the method outline to quantify these timing issues is flawed.

Just in case you missed it Nathan - Elektron R&D made the following comment - 'There is nothing wrong with your method of measuring the jitter, any fully working sound card will do'

I'm sort of surprised I hadn't had any acknowledgement from yourself, Ziggy, DLX and all the others who slagged off my methods and refused to take anything less than lab grade scopes as evidence of timing errors in the SPS-1. Then again - it's not that surprising considering it was common sense in the first place. Still - if I'm wrong about something - I will always do my best to say so. Different strokes I guess. For those of you with a brain and still interested - this is a good lesson in how you need to filter what is real on the internet and forums like this one. There are plenty of posts on this thread that seem so quick and sure to dismiss my initial findings that they must be taken seriously. The eventual reply from Elektron both agreeing with the findings and the method to get them shows that many people with not much knowledge make a lot of noise that is not worth tuning into for the most part. Keep it tight. Regards - David.

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/04/26 14:55

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jngpng wrote:

Apologies if I sound offensive, but as an actual scientist your self-assured psuedo-scientific bullshit gets my back up.

that was my favourite dismissal =)

hoho

---

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/27 01:27

---

b0unce wrote:

jngpng wrote:

Apologies if I sound offensive, but as an actual scientist your self-assured psuedo-scientific bullshit gets my back up.

that was my favourite dismissal =)

hoho

Forgot that one - pure gold - I don't think I have ever heard an 'actual' scientist refer to themselves as such.....

Once again - opinions are like ars\*%\$es - everybody has one - you just have to filter the wheat from the husks....

Respect as always - David  
[www.innerclocksystems.com](http://www.innerclocksystems.com)

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## Re: MD SPS-1 Timing Performance Issues

Posted by herb - 2007/04/27 05:50

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wrong thread

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## Re: MD SPS-1 Timing Performance Issues

Posted by reset - 2007/04/30 15:34

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From the Elektron mailing list on yahoo:

"Re: advice Monomachine and Machine Drum or Spectralis  
Posted by: "daniel\_elektron" daniel@elektron.se daniel\_elektron  
Mon Apr 30, 2007 1:44 am (PST)

--- In elektron-users@yahoogroups.com, ehdyn81@... wrote:

> As for the user wave elektron, what ever became of the internal timing  
> issue? Some people on the forums were complaining of noticeable clock  
> jitter. Hard to believe as A.E. have really precise timing. But then  
> again,

I've always claimed that the Machinedrum is dead tight if you run it  
on its internal sequencer, and I don't want to back of.

People have measured sample delays on individual hits, which is not  
what I meant. There are some "magic" put into the timing of the

---

Elektron instruments, can't disclose all, but I suggested in the thread to do a listening test and see what feels tighter.

Not always your ear want to hear the most dead spot on note, the ear is more complex than that. Many of the legendary beat boxes have a special groove to it, and I think that people would feel a hard-to-tell lack of something if we made everything sample tight.

When we designed our own magic we went through all legendary drum machines , especially the MPC-60 to get an idea of the "magic swing". It's not a swing per as, but some notes we noticed where perceived as more catchy if put a few samples forward or, most often before in time. That's what people have been measuring. I don't want to go in detail as we put a lot of effort into this other than to say - do listening tests. Try a sample tight (computer sequencer) and take some of your favorite beat boxes and see which result you prefer real life.

It was a big thread and I just had time for one post to state our view on this, so it can easily get lost.

If you want rigidity, computer is the way to go, but we want to do something more.

Note also that there is no delay between patterns, so the tempo is kept dead tight over time. As a matter of fact we've had it run alongside Protocol for hours with any delays.

What you prefer is always individual, but there are reasons behind the small, \_almost\_ unnoticeable timing of the different notes in the 16:th and 32 note realm.

Note that the MIDI clock out is always exact on the spot and when running the internal sequencer (as well as standard MIDI can do it), and that the internal "magic" (that's our view of it at least, I respect others that prefer exact sample accuracy) is only applied when you run on internal clock on the internal sequencer and is/can not be applied to incoming MIDI triggering data.

Daniel, Elektron"

:~o

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by lcvi - 2007/04/30 16:13

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that's really weird....

so why not giving us the option to switch that timing behavior off????

:~o

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/04/30 20:20

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If you want rigidity, computer is the way to go, but we want to do something more.

---

Daniel, Elektron"

:-o

Thanks for the response Daniel - it's a tough issue and you have made your point clear enough although I disagree on a number of fundamental points though all the same and because I initiated this thread I felt it only fair that I respond after so much healthy and, at times, heated debate.

I don't think there is any 'magic' beat box feel - vintage or contemporary. What gives any rhythmic pattern 'feel' is how we anticipate where sounds fall in time and because every individual hears subjectively it makes practical analysis and criticism of timing performance in sequencers very difficult. This I well understand.

What I do feel strongly is that adding any random element to step/event placement in any sequencing device does not create feel. All it serves to do is blur the edges of the groove.

The exact opposite applies when deliberate Push/Pull placement of steps/events against a strict quantised tempo grid is used to customise feel - pushed hats, late snares and of course shuffle/swing.

You use rigidity as a way of describing the interest many musicians have in tighter event timing and suggest using computers for such tasks. The term rigidity has negative connotations for most musicians but I must stress again that a desire for precision and consistency in sequencing is not about rigidity or stiffness at all. Quite the reverse in fact.

Feel is all about rhythmic anticipation ? and that very human anticipation demands that if a snare is deliberately placed 5 ticks late it must always sound 5 ticks late to faithfully maintain the groove. The potential feel in any rhythm becomes less focused when the snares fall 3 ticks late sometimes and 7 ticks late other times in a pattern or loop when the timing variation is of a random nature.

This is not human feel. It is not feel in any sense because the timing variation is random ? this is simply software and hardware not keeping time.

Remember that my initial tests were not analytical to begin with ? I could hear things shifting around which made me look closer. This was something I could hear.

If you had implemented a secret 'groove template' in the SPS-1 I could appreciate that to a point although I would have liked an option to switch it off. What leaves me unconvinced is the random nature of the push/pull. If it was a deliberate process to add a 'feel template' - wouldn't the step push/pull variation be consistent across a complete pattern?

I guess I am a little disappointed as I love what the MD can do and had hoped the timing could be straightened out a little.

At the end of the day ? it's a very beautiful machine and makes beautiful music. That was never in any doubt. I just asked the question to see if it could be tightened up a little.

Regards and deep respect as always,

David.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by Thunder - 2007/04/30 20:40

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I'm with Daniel on this one. I think that perfectly quantized timing is for robots and all I hear is a bunch of nitpicky crybabies in this thread. The MPC-60 DOES have magic and so does the Machinedrum in my opinion. If it is that big of deal and you want perfect assembly line robot music, use an external sequencer. Or just sell your MD and never return, which is what I'd prefer.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by lcyl - 2007/04/30 20:58

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First, the MPC does not have any "magic". Its timing is just tight, almost to sample level. Do you own one? In that case you should do like many MPC users (me included) have done and measure its timing. You'll see that the magic everybody is talking about is just mathematically exact tightness.

Second, if the MD timing irregularity is a "feature" (sorry, but I have my doubts on this... I really hope I'm wrong though..) I want the option to turn it off, even for these two reasons alone:

- It makes syncing the MD to other gear a less than ideal experience.
- It makes editing audio loops rerecorded from the MD harder than it should be.

Isn't the MD supposed to be the most advanced drum-machine ever made?

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by husker - 2007/04/30 23:01

Surely we can have a "Magic Timing" On/Off option, given it's all on purpose. Then we can all be happy.

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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/05/03 10:01

For all the people who posted on this thread and dismissed the notion that 2.5 milliseconds is esoteric when discussing tempo variation and well outside the range of human perception - here is a direct quote from the well respected John Klett from a published and detailed article from a few years ago called 'Delay in Large Format Digital Music Consoles'

"Feel is a very subjective thing. Let's define feel as the "relative placement in time of rhythmic elements". The character of each element will make its placement in time more or less a factor in the overall feel. The Snare drum has a large contribution to overall feel in your average pop mix. The only data we have on this at present is empirical. At one time Roger Nichols (Engineer for Steely Dan, Donald Fagan) is said to have defined the limit of feel perception at around 250 microseconds for key elements. My own experience watching how certain producers place elements in time on digital audio workstations brings me to the conclusion that this perception limit is more like 100 microseconds. In any case, people who are very "feel conscious" will agree that we are looking at timing shifts well under a millisecond as important and affecting feel."

Even if you take Roger Nichols' figure of 250 microseconds -the acknowledged SPS-1 random timing variation of 2.18 ms between consecutive steps is over 8 times the perceived human limit of feel.

The entire article is here if you like a solid read:-

<http://www.technicalaudio.com/reading/digitalconsoledelay.html>

Roger Nichols is a legend in his own right and has a great website of very informative articles published in EQ magazine over many years.

<http://www.rogernichols.com/index.html>

Regards as always ? David  
[www.innerclocksystems.com](http://www.innerclocksystems.com)

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## Re: MD SPS-1 Timing Performance Issues

Posted by husker - 2007/05/03 10:16

Well even Elektron themselves have acknowledged both your method of measuring the variation (which was your first battle in this thread!), and the fact that it most certainly matters - as Daniel himself says they put a lot of effort into finding their magic timing in the machinedrum. He quite clearly says the timing variations are important.

---

Then there the quite different argument as to whether super-tight timing OR slightly-sloppy timing is better...but they are quite clearly different...I just wish we could choose.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/05/04 01:57

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husker wrote:

Well even Elektron themselves have acknowledged both your method of measuring the variation (which was your first battle in this thread!), and the fact that it most certainly matters - as Daniel himself says they put a lot of effort into finding their magic timing in the machinedrum. He quite clearly says the timing variations are important.

Then there the quite different argument as to whether super-tight timing OR slightly-sloppy timing is better...but they are quite clearly different...I just wish we could choose.

I'm still highly skeptical as to the 'deliberate' magic-random timing concept put up as a reason for the timing not being so spot-on in the SPS-1. However - the importance of choice regarding tempo stability/step jitter in a sequencer or drum machine was not lost on German synchroniser designers in 1984.

I have changed my 'Avatar' to a shot of the devices 'Jitter' module as proof. The manual description (forgive the poor German-English translation) I have uploaded also.

<http://www.elektron-users.com/modules/wfdownloads/singlefile.php?cid=17&lid=698>

It describes how to take the internal precision clock/sync signal, delay it by a frame so that the mean/average sync position is correct and then use the 'Jitter' value knob to add increased amounts of random (stochastic) clock/tempo/step errors.

The very existence of this feature alone shows two important points:

1. That strict tempo precision as a core time-base in sequencing anything was considered significant in the first place and;
2. That sometimes you may indeed wish to soften the edges a bit but you make this blur optional not the baseline precision reference of the device.

Regards - David  
[www.innerclocksystems.com](http://www.innerclocksystems.com)

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## Re: MD SPS-1 Timing Performance Issues

Posted by neonleg - 2007/05/04 05:00

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hey , i found it curious that Daniel Elektron included this in the very informative post on yahoo groups..

the internal "magic" is only applied when  
you run on internal clock on the internal sequencer and is/can not be  
applied to incoming MIDI triggering data.

soo.. has anyone been able to test this with access to a stable midiclock device? i tried briefly with my jomox as master and got pretty sloppy results.

perhaps the answer for some is to slave the MD?

=====

## Re: MD SPS-1 Timing Performance Issues

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Posted by innerclock - 2007/05/04 06:12

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neonleg wrote:

hey , i found it curious that Daniel Elektron included this in the very informative post on yahoo groups..

the internal "magic" is only applied when  
you run on internal clock on the internal sequencer and is/can not be  
applied to incoming MIDI triggering data.

soo.. has anyone been able to test this with access to a stable midiclock device? i tried briefly with my jomox as master  
and got pretty sloppy results.

perhaps the answer for some is to slave the MD?

Any talk of magic aside - it is true that a machine with a rough internal clocking engine can sometimes be 'tightened up'  
by providing external sync that has less jitter than the device itself. However - if the internal step/clock tempo jitter is at  
the very limits of the hardware/software then it is impossible to correct from even the most precise external sync source.

This holds true for the SPS-1. My initial tests were done with both the SPS-1 running on its own and slaved to very  
precise external Midi Clock. In both cases the same step/event/tempo random variation was evident which indicates  
baseline CPU/Code/DSP limitation.

What backs up my initial belief that the errors are not deliberate is the fact that the outgoing Midi clock is so very reliable  
on the SPS-1. The same internal SPS-1 clock/tempo/event generator drives both the outgoing Midi Clock and the  
Internal Sequencer/Voice DSP triggers. The outgoing Midi Clock has a 'clear pipeline' to the outside world. The same  
tempo/clock stream that also drives the internal sequencer and voice DSP generators has to deal with a lot more 'traffic'  
and is therefore subject to greater drift.

regards - David

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## Re: MD SPS-1 Timing Performance Issues

Posted by dreg - 2007/05/04 07:27

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David read this please,

These are the tools I've/we've got and I/we use em, pretty simple? I won't use the old saying about blaming but I'll get  
close

This thread should be closed. Its only going in circles.

Mods please?

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by lcvl - 2007/05/04 08:38

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I don't think this thread should be closed.

And it's not going in circles either.

I think it's a highly informative resource for current/new/potential MD users and it's taking us closer and closer to the  
source of the issue.

I'll try triggering the MD machines with my MPC and report the results. That might reveal if it's the synthesis engine  
getting in the way of timing tightness or not...

Later

leo



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## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/05/04 08:53

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dreg wrote:

David read this please,

These are the tools I've/we've got and I/we use em, pretty simple? I won't use the old saying about blaming but I'll get close

This thread should be closed. Its only going in circles.

Mods please?

I read every post and respond where possible Dreg.

The very reason these are the tools we have right now is precisely why the thread is important and possibly why the topic has had nearly 5000 views in just over a single month.

It may also be why the moderators are still leaving it open. I hope so.

The importance of timing stability is core to what we all do. If the thread gives you nightmares or causes you distress it is much simpler if you do not read it rather than seeking to gag healthy debate. The issue will still generate interest and creative discussion regardless and it may benefit you someday if you allow it space.

I feel fairly confident now nothing can be done to improve the SPS-1/UW in its current form, however, I am still a big Elektron supporter and I am certain the interest and topics raised will be of interest to them in the future.

In the end I am still a potential customer for future products and that will always be of importance to any manufacturer in any business.

It is not going in circles either - many of the hysterical outbursts by people who took personally my views as an attack on Elektron, themselves, their music and creativity in general have either calmed down enough to see rationally, grasped the concept finally or dropped off altogether because they have nothing constructive to contribute.

On the other hand there have been many posts and I have had many private messages from individuals who feel just as strongly as I do and agree that if we remain silent on these issues then we keep getting more of the same and our tools don't improve.

I'm not blaming my tools for creative frustration - I am not frustrated at all. I understand well that accepting limitation can be a good thing sometimes.

My motivation for this thread is not blame or axe-grinding for something impossible or unnecessary.

I have tools already from years gone by that honor the concept that a stable tempo/event clock was/is the foundation of sequencer design.

The importance of that concept has never changed but our equipment designers have let it slip down the priority order.

Many people feel the same as I do about this.

I'm not saying I can't make music with what we have.

What I am saying is that precisely the attitude of 'just live with what you have and stop moaning' over the last 20 years in the area of electronic music production has directly contributed to the overall slide in focus - most certainly in the area of clock/event/tempo stability.

Without debate no-one learns anything.

Without pressure, nothing changes.

---

In 1984 - dedicated controls for adding jitter to precision click tracks, dedicated I/O on all hardware for synchronisation and sub-millisecond drum/trigger alignment were considered an essential and expected part of making good records.

Why is it in 2007 we are happy to accept that 2.2 millisecond random clock/event/step slop in 'The World's Best Beat Box' is 'feel' and should in some strange way be seen as a feature?

Because over time we forget.

We forget what good timing in electronic music actually sounds like. We are so used to hearing software and hardware doing impressions of Linns and TR-808s that we start to believe the new stuff is just like the old stuff and any subjective difference is just nostalgia for the past.

Bullshit.

Yes of course sound quality has a role to play in this too and the electronic instrument industry has developed and nurtured ever increasing sample frequency and bit rates in its quest to make digital a convincing clone of analogue.

However, almost no effort has been made over that same period to ensure that our machines that play these sounds back to us do so with the same precision and consistency as we used to take for granted in the past.

Due to very clever marketing mostly rather than an understanding of the processes involved most consumers these days expect their DAW/Sound Card to at least record and play back at 96 kHz.

In my line of work many individuals with perfectly good ears will quietly admit to not hearing much difference between 48 kHz and 96 kHz in most listening environments and yet they all would have no problem throwing that 48 kHz sound card in the bin and insist they must always record at 96 kHz.

Think of the serious time, engineering, research, money and investment globally in developing precision Word Clock Generators with ever lower jitter figures to give digital audio mixes increased clarity and depth.

Would anyone with a brain walk into the Apogee or Prism head offices and tell them all to 'just be happy with what you have and make some music guys'.

Why is that same level of mostly blind, often peer-pressure driven commitment to higher sonic fidelity not seen when discussing timing stability in sequencing hardware and software when it is at least equal in significance when making music?

Baseline sequencer tight timing is worth striving for because it makes a huge difference to what we do and unless we, as the equipment consumers, make a noise about it then it just slips off the radar even further.

If we were to follow your advice and just be happy 'with the tools we have now' - in 5 years time, who knows, maybe 8 milliseconds of random clock/tempo/step slop will be considered the perfect human groove.

I'd rather reverse that trend if we possibly can.

Regards - David  
[www.innerclocksystems.com](http://www.innerclocksystems.com)

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## Re: MD SPS-1 Timing Performance Issues

Posted by lcvi - 2007/05/04 11:30

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Another thing to consider, mostly directed to who keeps repeating "stop complaining and make some music".

The MD - as every other Elektron product - is definitely a top-end, professional product (even just for the price of it!).

So why shouldn't it deserve a professional and constructive attitude from its users?

Most of us are not here to merely criticize the MD and spread bad reputation across the web.

We spend our time here because we'd like to understand where the issue (that many of us feel as an important point) is and hopefully help Elektron improve the situation.

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On any hi-end, pro gear forum/list nobody will sidetrack the technical discussion about how a A/D-D/A converter, a boutique preamp or a summing box perform saying "shut the f\*\*k up and go make some music".

Why shouldn't be the same thing here, regarding the MD?

The SPS-1 is marketed as a high end percussion synthesizer and rhythm sequencer.

In my own experience the synthesis part is simply brilliant: digitally cold and sharp as a razor blade (I definitely didn't buy my MD to emulate those analog TR boxes) but so incredibly versatile and inspiring.

Like many others I found that the sequencing part of the MD could be improved, mostly regarding its timing aspect.

So please tell me, where's the "heresy"?

Peace and Perfect Timing for everybody  
leo

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by hageir - 2007/05/04 15:09

---

^I do appreciate this thread :-)

but one thing I'm wondering about, is this problem fixable with a os update?  
or is it strictly hardware?

because the md doesn't apply this 'magic' to incoming midi signals so it must be in the os, right?

oh well, I'll just wait for my md and I'll try it out :-D

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/05/04 19:12

---

I guess that they could get rid of the push/pull timing that was measured here in the thread but cant eliminate the random factor...

so without the pushpull everything would probably sound worse than now because the random derivation becomes than more audible...

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## Re: MD SPS-1 Timing Performance Issues

Posted by Thunder - 2007/05/04 19:19

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Worst thread ever...

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by Thunder - 2007/05/04 19:24

---

By the way Innerclock, has this thread helped you sell more of your crappy overpriced syncshifts? I hope so, quite the marketing plan you've got there.

I've never HEARD any instability in the MD's timing. Just like I've never HEARD instability in an 808 or MPC. You might be able to see it with a wave editor, but when it comes to music, I've always been more interested in sound, you know? Elektron is aware, let this shit die already.

---

## Re: MD SPS-1 Timing Performance Issues

Posted by lcvi - 2007/05/04 20:29

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right said. :-o

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/05/04 21:21

---

I havent realized that he is selling a din sync shifter...  
what is overpriced? i havent found a price on the page?

However ..i was asking SND and Jomox many many years agoto develop such a device because in a multi drum machine 303 setup you really need such a device for good grooves...i eneded up with digital delay lines in the output of the drummachines to achieve such fx...but i was limited to the mix output than...

SND and Jomox refused to make such a produvt because the havent seen a big market for such a specialist product..so it indded has to cost something...

same with the MD itself... 1600 euro fur a UW? thats a heavy price...  
A small company with small total amounts of sales cant beat price wise a korg or roland that sell by the factor 10-100..

How much is such a syncshift mark 2?

---

## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/05/04 22:06

---

the syncshifts have NOTHING to do with this problem.  
that was made clear in the first couple of pages.

the syncshifts are for other uses.

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## Re: MD SPS-1 Timing Performance Issues

Posted by Thunder - 2007/05/04 22:49

---

Shut up and die bounce.

---

## Re: MD SPS-1 Timing Performance Issues

Posted by hageir - 2007/05/04 22:55

---

\*ouch\*

---

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/05/05 00:05

---

Thunder wrote:

By the way Innerclock, has this thread helped you sell more of your crappy overpriced syncshifts? I hope so, quite the marketing plan you've got there.

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As a matter of fact no Thunder - if you understood the SPS-1 random step error concept properly you would realise that no amount of Sync-Shift can fix tempo/step jitter in any hardware device or sequencing software.

All the Sync-Shift does is offset the sync signal it receives. If you send it sloppy clock it outputs sloppy clock - simple as that.

If the Sync-Shift fixed the problem as you seem to suggest then (a) I would be using it between my MPC-3K and the SPS-1, (b) I would be advertising the fact and selling bucket loads which I am not and (c) I would not have wasted my time starting this thread because I would have my own home grown solution.

So, let's make this perfectly clear for everybody - the notion of me using this forum as a marketing strategy is way off target.

The people who have Sync-Shifts (Mk1 or Mk II) didn't seem to think they were overpriced and no one has said they were crappy:-

<http://www.innerclocksystems.com/index.asp?action=page&name=17>

As I said before - I can hear the MD drifting against other things I own way before I open an editor. If you can't and don't care then stay off the thread and let others work it out.

Regards - David.

---

## Re: MD SPS-1 Timing Performance Issues

Posted by lcvi - 2007/05/05 00:10

Don't pay attention to Thunder. He's clearly a troll.

---

## Re: MD SPS-1 Timing Performance Issues

Posted by Thunder - 2007/05/05 00:53

I can see where my responses might come off as trolling. Reality is, I am just frustrated with this thread and forum in general. You might actually notice that I have been a member of this forum longer than almost anyone on this thread. I have seen this forum go from good to bad to worse, with bounce's inane, yet frequent 12 year old comments and attitude as a major catalyst to this.

Innerclock, you have made a valid point and I apologize for addressing you so harshly, slightly misdirected animosity on my part. I appreciate your ability to counter my offensive jabs at your company with intelligent reasoning, cheers.

---

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/05/05 01:01

Thunder wrote:

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---

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Innerclock, you have made a valid point and I apologize for addressing you so harshly, slightly misdirected animosity on my part. I appreciate your ability to counter my offensive jabs at your company with intelligent reasoning, cheers.

Thunder - response much appreciated - I was getting very used to taking body blows by ninjas who would hit low and then dissapear into the night. You have gone a long way to restoring my faith.

Best regards and respect - David.

=====

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## Re: MD SPS-1 Timing Performance Issues

Posted by - 2007/05/05 01:07

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heh.

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/05/05 03:06

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and how much are these sync shifter boxes? your webpage dont gives enough information..i dont have the time to search for hours..

At least i loose quickly interest in things when i cant get the information if its worth to think about in the moment..than i leave it..

however good to know that there is a shifter box available now...  
but if you would like to sell more of them price information shouldnt be hidden..  
that suggest that its unafordable...

=====

---

## Re: MD SPS-1 Timing Performance Issues

Posted by lcvi - 2007/05/05 09:56

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I found it in about 15 seconds... :-)

<http://66.102.130.170/innerclock/index.asp?action=page&name=21>

right in between the real world examples.

=====

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## Re: MD SPS-1 Timing Performance Issues

Posted by Black-Man - 2007/05/05 13:48

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<http://www.notable.com/index.php?page=about>

Hmmm... 808 tight? ROFLMAO.

=====

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## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/05/05 16:47

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Black-Man wrote:

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<http://www.notable.com/index.php?page=about>

Hmmm... 808 tight? ROFLMAO.

that measurment is crap..the 808 is damn tight.. i ve on hear wright in front of me..and i mesured it myself..not with a fancy machine...  
its as tight as it can be..  
the idiots probably mesured it in external sync to a bad pc clock...  
pinheads do all kinds of crazy things

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by rudebop - 2007/05/05 16:49

---

lcvl wrote:

I found it in about 15 seconds... :-)

<http://66.102.130.170/innerclock/index.asp?action=page&name=21>

right in between the real world examples.

ah ok..well hidden between the real world examples...  
the price is reasonable... actually very ok..  
Problem is that transport and customs would bring it 50% up...  
what is bad..

a good item to buy on a australia visit...but.. its so far away :-(

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by Allerian - 2007/05/06 00:56

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I don't have 43 pages of reading in me... here's my question: Does this timing issue exist when using the MnM as master clock?

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by rgmccaig - 2007/05/06 04:32

---

Black-Man wrote:

<http://www.notable.com/index.php?page=about>

Hmmm... 808 tight? ROFLMAO.

Here's what your page says:

Roland TR808 NA ? 0.1 ms ? 0.1 ms but slower tempo  
(rimshot)

So that's damn tight, yes ... ?!?

0.1ms, indeed what we wish the sps had; or am i missing something?

---

## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/05/06 04:40

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rgmccaig wrote:

Black-Man wrote:

<http://www.notable.com/index.php?page=about>

Hmmm... 808 tight? ROFLMAO.

Here's what your page says:

Roland TR808 NA ? 0.1 ms ? 0.1 ms but slower tempo  
(rimshot)

So that's damn tight, yes ... ?!?

0.1ms, indeed what we wish the sps had; or am i missing something?

No, it says NA where the timing measurement would be. .1ms is the variation in measurement accuracy.

Look how the other measurements are shown:

Emu SP12 Turbo 376.1 ms ? 0.1 ms ? 2 ms  
(rimshot)

I didn't read the whole thing, but just below it was this:

"The TR808, an analog drum machine, could not be measured for tempo accuracy because it has no digital readout. Strangely, it was not less consistent when parts were added. But its tempo did slow down."

---

## Re: MD SPS-1 Timing Performance Issues

Posted by rgmccaig - 2007/05/06 06:24

---

ZiggY wrote:

rgmccaig wrote:

Black-Man wrote:

<http://www.notable.com/index.php?page=about>

Hmmm... 808 tight? ROFLMAO.

Here's what your page says:

Roland TR808 NA ? 0.1 ms ? 0.1 ms but slower tempo  
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---

So that's damn tight, yes ... ?!?

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Look how the other measurements are shown:

Emu SP12 Turbo 376.1 ms ? 0.1 ms ? 2 ms  
(rimshot)

I didn't read the whole thing, but just below it was this:

"The TR808, an analog drum machine, could not be measured for tempo accuracy because it has no digital readout. Strangely, it was not less consistent when parts were added. But its tempo did slow down."

I disagree:: I believe the missing number is the startup time, and the plusminus numbers are the jitter. That's my reading of the page.

(After all, 376.1 ms couldn't possibly be a jitter figure.)

And here's a pretty clear quote from the page:

"The quarter note test showed fairly \*\*stable tenth of a millisecond resolutions\*\* among the SP12, TR808, and RX5 sequencers."

Boy, I hate to argue yet another point :)...

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by ZiggY - 2007/05/06 07:21

---

\*shrugs\* I don't know, I've only glanced at it.

"at a slower tempo", does that still qualify as being in time?

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/05/06 07:31

---

ZiggY wrote:

"at a slower tempo", does that still qualify as being in time?

The TR-808 has no way of setting an exact decimal tempo value (no keypad entry or display) when running on its own internal sync. It only has coarse and fine analogue/VCO circuit based rotary tempo setting knobs. So, running under self sync you can only approximate tempo by ear.

Most TR-808's I have worked with (being over 20 years old) have potentiometers that get a bit scratchy and temperamental - mix volume as well as the Tempo rotary controls.

Under self-sync and when adding step/voices or other real-time play pattern changes, unless the Tempo Potentiometers are clean and calibrated with no corrosion 'drop out spots' then fairly large tempo fluctuations can happen.

A quick rapid spin of the Tempo knob usually settles this down as it clears the corrosive build up on the potentiometer and the CV tempo value derived from the VCO becomes stable once again.

I have a feeling this is may be what the Tempo reduction is due to.

---

Once this is sorted what matters most as far as stability goes is not the actual tempo but step deviation at whatever tempo the unit happens to be running at and a well calibrated TR-808 is indeed tight.

If you drive it as a slave Din Sync off a tight sync clock source - same precision is evident which is the important thing.

Regards - David.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by glaive - 2007/05/07 00:13

---

Thunder wrote:

Shut up and die bounce.

This kind of talk is not appropriate to this forum. Please refrain from such outbursts in the future.

Glaive

Site Admin

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by hageir - 2007/05/07 00:53

---

glaive wrote:

Thunder wrote:

Shut up and die bounce.

This kind of talk is not appropriate to this forum. Please refrain from such outbursts in the future.

Glaive

Site Admin

Yes, that's correct

Geir Helgi

Awesome Admin

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by lcvi - 2007/05/09 11:46

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Copied from an email I sent to the Elektron mailing-list a few days ago.

-----  
Hi all

To make the timing thread even more interesting I just found out that when my MD-UW is triggered by my MPC4000 (playing a simple 120 bpm sequence containing a single MIDI note triggered every quarter note) it shows a very peculiar timing pattern.

(length in samples between each quarter notes @ 120bpm)

...  
22144 x  
22016

22017  
22016  
22144 x  
22016  
22017  
22017  
22144 x  
22017  
22016  
22015  
22144 x  
22016  
22016  
22017  
22144 x  
....

Can you see the pattern?  
Some other tests confirmed that the 128 samples lag is not coming from the MIDI out of the MPC.

Considering that in this specific case the MD sequencer is not even running it looks like the lag comes directly from the MD sound engine.

Interestingly enough the lag stays the same independently of the type of sound triggered (synthesized sound or UW sample).

I don't wanna draw any conclusion but this test seems to confirm that the "magic" factor in the sequencer is only partially responsible for this whole timing issue.

The sound engine clearly plays its part as well.

-----

To me the fact that the MD shows a regular timing lag even when triggered by a pretty tight sequencer confirms the fact that there must be some problem in the DSP architecture.

Anyone with other possible explanations?

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/05/09 13:30

lcvl wrote:

The sound engine clearly plays its part as well.

-----

To me the fact that the MD shows a regular timing lag even when triggered by a pretty tight sequencer confirms the fact that there must be some problem in the DSP architecture.

Anyone with other possible explanations?

Hiya - matches my tests also using the trigger input method driving the SPS-1 from the Roland MC-4B which under it's own tempo stability tests clocked in at a maximum of 8 samples variation (0.18ms) recording the quarter note output trig/gate pulses.

These are the numbers:

MC-4B

---

Maximum variance between consecutive quarter note intervals: 8 Samples (0.18ms)

SPS-1 (Track 1/MD-Imp - driven from same MC-4B Gate Output)

(Note: more precise overall than running under the SPS-1 internal sequencer but with a significant and very regular error of exactly 128 samples every few intervals which equates to 2.9ms)

I have to agree with lcvl here - the 'magic' groove template does indeed seem to have as much to do with DSP/Voice Triggering than it does just in terms of the sequencer stability alone.

I was as equally surprised by the regular instance of one trigger every few having a precise 128 (2.9ms) sample timing error.

In terms of accurate external drum triggering - 2.9 ms drift off the mark is a tad on the wide side I feel.....

If your replacing Kick drums with this method - anything above 1.5 ms you really start hearing tonal/phase changes and once you're up around 3 ms off the actual trigger point the transient punch really starts to suffer especially if you have any bass notes happening at the same time.

David

=====

## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by dreg - 2007/05/09 13:59

---

:)| I prefer the posts about obsessively improving timing compared to the posts obsessively attacking other people's posts.  
:)

Nobodies improving anything and I've made 4/5 posts on the subject. Obsessive? yes someone who makes 40/50

Don't crucify people who obviously know enough and care enough to stick their neck out regardless of where they work. That was a low blow Dreg. Shame on you.

Stating facts is a "low blow"? get real he should have declared it and I can go "lower" if you like, ask neonleg but it will be a fact. yawn!

Ziggy and Dreg, your mediocrity is really beyond words.  
taking the whole debate to a personal level,

Read some of his replies to see who got personal, and now who's getting personal no nothing dullard.

This site is mainly for Elecktron users wanting further their experience with their equipment, not for some employee of another company to make users feel that their equipment is sub standard. Which it is not!  
WITH NO ANSWERS ON HOW HIS PERCEIVED PROBLEM CAN BE FIXED.  
I left it alone for along time but at some point I will stand my ground and say CLOSE THIS THREAD!

And guys defending the Timing BS please read posts carefully it shows when you haven't fully read replies or understood them. Slag me all you want I've got broad shoulders and tough skin.  
And I'll get back to making some killer tracks and wild sounds ...!, :-x

=====

## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by psiagarik - 2007/05/10 14:37

---

---

'And I'll get back to making some killer tracks and wild sounds ..!.,'

ok you go back to doing that and we'll have some intelligent discussion on the forum .

:-o

=====

## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by lcvi - 2007/05/10 15:30

---

dreg wrote:

And I'll get back to making some killer tracks and wild sounds ..!., :-x

I've never stopped doing that. It's the way I earn my living.

And that's also the reason (having to use these tools every day for my professional activity) why I'd like to see the MD timing fixed.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by Black-Man - 2007/05/12 03:15

---

innerclock wrote:

As my rig got 'tighter' just tighter - I started getting rid of things that were not keeping the grade - MAQ16, Mobius etc

How can a CV/Gate sequencer exhibit slop? Thanks.

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by innerclock - 2007/05/12 04:48

---

Black-Man wrote:

innerclock wrote:

As my rig got 'tighter' just tighter - I started getting rid of things that were not keeping the grade - MAQ16, Mobius etc

How can a CV/Gate sequencer exhibit slop? Thanks.

Easy - the stability of any sequencer (CV/Gate/Midi/Din) is only as good as the clock driving it and how the design deals with processor/CPU interrupts as far as the tempo/clocking/step goes. Some are better than others. In the case of the Mobius which can be self driven under its own tempo clock - do the test and see how tight the steps are relative to each other. Now clock it from a stable external Midi Clock master and do the tests again - might be better, might be worse - dependant on design philosophy. Some new sequencers do OK under self sync but lose the plot when you run them slaved to even the best Midi Clock input?

Why is that you may ask?

Again - poor design basically. Instead of making sure external Midi Clock gets a hot-line direct to the sequencer clocking circuit - a badly written OS running on a single IC that looks after the whole operation means even the tightest external sync gets stuck in bad city traffic on the way to the running the sequencer properly.

Red Light, Green Light. Stop. Start etc etc.... get the picture? Our ideal non-stop clocking Pulse Train now has a bad case of the nervous jitters.

---

Early step CV sequencers just followed incoming Square Clock pulses - as long as that was rock solid, so was the step sequencer. Nothing got in the way of the pulse train.

As discreet/voltage design [Clocks/Timers/Latches/Gate arrays) gave way to monolithic CPU/IC shared resources for both tempo generation and step/event/serial processing - the simple, stable, uninterrupted Pulse Train Express design gradually became all stations to Sloppy Town.

The sequencer output type CV/Gate/Midi/Din - makes no difference. Tempo clock origin and handling is where it's at.

Regards -David.

=====

## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by rgmccaig - 2007/05/12 05:30

---

Hey, I demand you guys 'shut down' this thread right now!

The moderators should shut it down because I personally don't agree with what you're saying!

Haha, jk. That's my impression of certain posts on this thread.

:)

=====

## Re: MD SPS-1 Timing Performance Issues

Posted by Black-Man - 2007/05/15 03:23

---

innerclock wrote:

Mobius under internal sync: all it has to do is fire a fixed voltage and a gate timed to its internal clock. With modern CPU's I consider that *\*very\** trivial and have a hard time believing its *\*that\** bad - assuming one is just letting it run in song mode w/o realtime editing. My "feel ears" tell me its a helluva alot better than DP.

As always, thanks David.

=====

## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by DLX - 2007/05/15 04:43

---

rgmccaig wrote:

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Haha, jk. That's my impression of certain posts on this thread.

:)

Indeed. I also get the impression of "Throw your elektron products in the bin, they are broken" and "Get on elektron's back because elektron products don't work properly" from other posts.

---

I listen to stuff like this:

<http://www.punkdisco.co.uk/Videos.htm>

or these

<http://www.materialobject.com/>

...and I wonder what all the bickering is about. If people can write and create such great music with these products, then there really is no reason nor justification for having such a lengthy and unconstructive thread about "issues". The proof is in the pudding as they say... and it shows that there is no issue stopping anyone here from creating superb music with these products. I agree that this thread should be closed, simply because it hasn't been constructive for many many many pages. Its just a fast track to being side-tracked from making music.

Who knows what the motivation behind this thread was... but its been mentioned by certian people that elektron's claims for tight timing are wrong. By all means sticky a post at the top of the forum that says elektron products have a 2 odd ms variation... but put in a link to pieces of music like those linked above as well. Let people decide for themselves, instead of trying to persuade the world.

=====

## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by lcvi - 2007/05/15 07:34

---

rrrrright... :-o

=====

## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by innerclock - 2007/05/18 02:50

---

DLX wrote:

rgmccaig wrote:

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:)

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Hi DLX - I think rgmcraig was being tongue-in-cheek, maybe not but it's OK anyway.

There is really no bickering anymore; I think there was/is genuine constructive debate in this thread that is visible without looking all that hard. I have never said good music could not be made with Elektron gear ever - now or in any of the previous OS incarnations - remembering that the current Monomachine and Machine Drum; features added and bugs fixed right to this point were mostly materialised by user comment and constructive pressure from the beginning and yet the machines we have now are in many ways vastly different to the OS Version 1.00 units delivered initially.

You must agree with me when I say that these evolutionary OS changes have all been beneficial in both products and no one ever considered either unit to be incapable of making music in previous OS revisions and certainly never worthy of throwing in the bin despite whatever minor short comings they may have had.

With this in mind - the 'Proof-in-the-Pudding' comment is rather a weak point because my 'tighter timing' issue is just as valid as any other feature or bug fix requested and implemented by Elektron so far. People have always made great 'Puddings' with Elektrons from the very beginning but things can always be improved and features can always be added.

As far as 'side-tracking' the creative process goes - is it really different to any other bug/feature issue previously discussed?

As an example of what I mean - I don't really use the Arpeggio feature at all when using the Monomachine so my interest in fixing bugs found by others is of no consequence to me in my work. I don't visit threads or discussions relating to this feature and I keep making music the way I choose to.

I would expect those individuals who do use the Aprpeggio feature to keep the pressure up and work out solutions as they see fit because it is important to them. This would mean debate, argument and I am sure some heated dialogue to iron out what was really important and what direction to take.

The timing issue is not important to everybody I accept that however it is very important in my work hence my continual interest in having it resolved or at the very least acknowledged and explained if it can't be rectified.

I don't expect others to share my interest or have it disturb their creative work flow. That was never my intention.

I listened to Punk Disco and I like it very much and the Material stuff is very good also (Andre BTW is a long time associate of mine so I well appreciate and respect his technical chops and musical direction even before I listened to his work).

Pointing people to links of music created on Elektron gear and saying 'make up your own mind' doesn't really make any sense. None of the positive features added or bugs fixed to date (and lets be honest here - some of the bugs needed sorting) would ever have come to light if you constantly take this line of argument.

There is more than enough international positive publicity about how very good Elektron product is at making music - that is not in any doubt and never has been.

If someone posts an issue with Midi Machines or Arpeggio behavior - why are these considered appropriate for rational consideration by the Forum and by Elektron and yet a proven random timing fluctuation that many have also observed and heard is shot down and in some cases ridiculed as being obsessive and counter-creative?

My 'obsessive' and 'continual' posts/replies on the subject were not without rational explanation - unlike other forum topics that seemed to accept feature 'wish-lists' and bug discoveries openly - the timing thread and the findings acknowledged by myself, others and indeed by Elektron themselves generated ridicule and aggression.

I only ever sought to explain my position to the best of my ability and back up my findings when either my methods or my deeper motivation was questioned.

I accept that the MD timing is what it is.

I hope some forum members found the thread of interest anyway.

Regards David.



---

=====

## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by andreruello - 2007/05/18 03:07

---

Hey.  
I agree with david.

The timing thing is either an issue for your or it isnt.

Its not been for me so im not that fussed about it.  
i read the posts and found it interesting. if a little academic for me.

anyway, is the entire point of having this forum to generate such debate and interest in the products we all use?

=====

## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by DLX - 2007/05/18 04:08

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innerclock wrote:

With this in mind - the 'Proof-in-the-Pudding' comment is rather a weak point because my 'tighter timing' issue is just as valid as any other feature or bug fix requested and implemented by Elektron so far. People have always made great 'Puddings' with Elektrons from the very beginning but things can always be improved and features can always be added.

This is exactly why this thread should be closed. Its not going anywhere... Saying my point is weak bares little merit to me and many other people, because to many of us it is the only point worth considering. I can just as easily suggest that your point is weak because it is no more valid that any other point about a "bug" that exists in elektron gear. Take hanging midi notes on the MnM, it drives me f\*&king insane... Your point is so valid that it should have ended 42 pages ago like every other thread that points out a bug.

My 'obsessive' and 'continual' posts/replies on the subject were not without rational explanation - unlike other forum topics that seemed to accept feature 'wish-lists' and bug discoveries openly - the timing thread and the findings acknowledged by myself, others and indeed by Elektron themselves generated ridicule and aggression.

No offense mate, but thats bollocks. 6 out of the 10 posts on the first page are yours. The only reason this thread has generated ridicule and aggression is because you have used almost an alarmist approach in an attempt to make this "bug" more of an issue than any other problem with elektron products. Reading some of your posts indeed almost makes out that elektron products are useless, they really do.

Indeed, the timing issue is either an issue for you or it isn't. Just like any other issue in elektron equipment. Its exactly why I said easy access should be made so that people can make up their own mind instead of people attempting to spoon feed them a train of thought. Your point was made 44 pages ago... everything since then has just undermined any point that has attempted to be made, as can be seen with the deterioration of this thread. In case you haven't noticed, this thread has been counter creative and counter productive for quite some time... you've even aided it considerably yourself.

I would expect those individuals who do use the Aprpeggio feature to keep the pressure up

This is just an obsessive and unnatural thing to say. Why would I do such a thing? I write and make music because I enjoy it. It relaxes me. It gives me a thrill to perform in front of people... If I was ever driven to a point where I was so unhappy that I considered "keeping the pressure up" I'd sell up and move else where... I'd do that for no other reason than because I do what I do because it makes me happy. No one forces me to write music, no one forces me to buy a product, no one forces me to keep a product. What do you call those kind of people? People who only focus on the positive? Perhaps they are really just people who enjoy making music more than sitting on an internet forum or riding a companies back about an issue that isn't preventing anyone from making music? Really... if it makes you so unhappy

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that you think such an action is necessary, then its time to throw in the towel.

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by Munchen - 2007/05/18 06:14

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DLX wrote:

Take hanging midi notes on the MnM, it drives me f\*&king insane... Your point is so valid that is should have ended 42 pages ago like every other thread that points out a bug.

Come on DLX - for you - hung Midi Notes is something you obviously find a serious issue and with that sort of expletive I assume you must have gone hard to get it resolved - I would expect that in anyone with a genuine and valid point and that is a good thing my man. For me I don't use the MD or MnM for Midi at all so I couldn't give a hoot about hung notes.

I have heard what I thought were tonal/phase shifts in my MD kicks when synced up to my other gear over the years - I thought these were LFO/DSP/Pitch related but after the timing thread I know now they are random timing/step errors causing the tonal change against my bass tracks.

Now that is very important to me and Innerclock also obviously so why can't it be addressed or at least respected the same way?

Your comments about doing music to be happy and all is cool and I know where you are coming from but really man, bringing up real issues and genuine wish lists in gear we obviously all love is all about raising the bar and you can't shoot a brother for that, that just ain't fair. saying you would rather move on than get positively involved in fixing or improving some feature is just a dummy-spit and that way nothing gets improved.

Doesn't the 42 pages of dialogue at least distill down the truth, the method of measurement and the importance of the issue? If it got shit-canned at page one like you suggest(which it could very well have been if you had your way) I think a lot of us would still be in the dark about this and I would rather know than not know and that has to be worth something brother.

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by lcvl - 2007/05/18 08:06

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I think that probably 3 pages for this topic would have been more than enough if people like you didn't insist in dismissing our attempts to find out what was going with the MD timing, using every possible excuse and a childish, defensive attitude.

I mean, how many pages did we need only to convince some of you guys that the testing methods we were using were accurate enough for the purpose?

And why do you wanna close down the thread?

I'm sure many potential buyers would like to know about this kind of issues before buying a MD.

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by DLX - 2007/05/18 09:30

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lcvl wrote:

I think that probably 3 pages for this topic would have been more than enough if people like you didn't insist in dismissing our attempts to find out what was going with the MD timing, using every possible excuse and a childish, defensive attitude.

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I mean, how many pages did we need only to convince some of you guys that the testing methods we were using were accurate enough for the purpose?

And why do you wanna close down the thread?

I'm sure many potential buyers would like to know about this kind of issues before buying a MD.

Your ability to string together constructive post after constructive post leaves me speechless.

If you actually read my previous posts you would realise that the only thing I am dismissing is the need for 45 page long threads that do nothing constructive at all. If you read my previous post you would have noticed that I haven't suggested that anything be deleted or swept under the rug, but instead a simple neat announcement thread be sticky-ed to the top of the forum.

Yet you continually preach that your opinion needs to be respected? The childish, defensive attitude is yours not mine. You are the one failing to acknowledge any opinion other than your own. Why do I want to close this thread down? Because its redundant. The issue was brought to light, acknowledged by elektron and then dismissed by elektron. What purpose does this thread have that my suggestion doesn't provide? Do you want this thread to stay open for no other reason than because it could be considered a malicious attack at a company in an attempt to make them change something? You don't find it childish to yell "bs" when a company states that the timing in the MD was intentional? It certainly reveals how shallow your respect is for anyone with an opinion differing to your own, even the manufacturers and creators of these products.

Seriously, quit blowing hot air. Respect breeds respect. I certainly have an issue with the MnM's hanging midi notes, so much so that I even made an international collect call to Elektron to raise the issue. They acknowledged it and said they will look into it... but I guess you think I should start a complaint thread or the "hanging midi note doorknockers society".

Looking at david's two websites, he certainly has a passion for midi timing... or perhaps a hatred. If I were in his position as an employee of another company I would have stepped very lightly. I would have only confirmed the timing measurements (which he did, 42 pages ago) then raised the issue directly with elektron... because it is only elektron that can address the points being made. Instead his persistence gives this thread nothing but vicious overtones and connotations... But of course, given the degree of rationality you've displayed in some of your posts I don't expect you to agree. You just think that any post that disagrees with anything in this thread is childish and disrespectful :roll:

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by DLX - 2007/05/18 09:43

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Munchen wrote:

Come on DLX - for you - hung Midi Notes is something you obviously find a serious issue and with that sort of expletive I assume you must have gone hard to get it resolved - I would expect that in anyone with a genuine and valid point and that is a good thing my man. For me I don't use the MD or MnM for Midi at all so I couldn't give a hoot about hung notes.

yeah absolutely. I took the issue up directly with Elektron... why? Because they are the only people who can find a remedy.

Now that is very important to me and Innerclock also obviously so why can't it be addressed or at least respected the same way?

And respect goes both ways. My opinion has already been called "weak", thats some respect I tell ya. The issue has been addressed, if you look at the first page you will see when elektron was made aware of it. What more needs to be addressed? Oh, thats right... a solution, but thats not going to come from this thread thats going to come from elektron.

Your comments about doing music to be happy and all is cool and I know where you are coming from but really man, bringing up real issues and genuine wish lists in gear we obviously all love is all about raising the bar and you can't shoot a brother for that, that just ain't fair. saying you would rather move on than get positively involved in fixing or improving some feature is just a dummy-split and that way nothing gets improved.

I have no problem with issues being brought up. What positive envolvment can I do, or you or anyone outside of elektron

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do to improve the MD's timing in this thread? Is riding the backs of the guys at Elektron a positive thing? Is perhaps making a scene with dozens upon dozens of posts a positive thing? Is telling elektron that they are full of sh\*t when they say the timing in the MD is intentional like they have done in this thread? Why does respect stop at those who share your opinion? Why is respect not extended to elektron staff who are creating and implementing a design that they want to sell, to use and to enjoy? Are they not forwarded any respect simply because you don't agree with a design decision that they made? Thats petty and childish.

Doesn't the 42 pages of dialogue at least distill down the truth, the method of measurement and the importance of the issue? If it got shit-canned at page one like you suggest(which it could very well have been if you had your way) I think a lot of us would still be in the dark about this and I would rather know than not know and that has to be worth something brother.

What truth? I never doubted any of David's measurements, and as mentioned on the first page Elektron never doubted any of david's measurements... so really, truth has zero to do with the pages that follow. The importance of the issue? Like the importance of any issue with elektron product? An issue that is important enough to make you pick up the phone or send an email to elektron yourself? It is that important to you right? If you didn't know would the problem exist? I am sure to many the problem doesn't exist, either after reading this thread or prior to it. They just kept on writing music, and good music at that.

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by rgmccaig - 2007/05/18 10:25

i can see that sarcasm is lost on some of you.

here's the reality::

Threads should not, and will not be closed, just because certain people think they are 'lengthy and non-constructive'.

The idea that you should be able to lobby to shut down other people's conversations because you don't like them is crass, short-sighted, and downright offensive.

Fortunately, that's not how most internet forums (including this one) work.

Now, go try and impose your viewpoints somewhere else.

Next time you don't like what someone says, try sticking your fingers in your ears and shouting 'la la la, I can't hear you'. It's a better strategy then trying to censor free discussion, m'kay?

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by lcvl - 2007/05/18 11:43

Dear DLX

- Every finding regarding the MD timing issue posted on this thread has been posted privately to Elektron support as well. In my personal case it's not the first time that I've helped them reproduce a few bugs I found in the OS. I'm glad if I can help them.

- Nobody has ever "yelled" around here, except the ones with the "shut the f\*?k up and go make some music" attitude.

- Nobody has ever said that "Elektron are full of shit".

- I think we made clear, more than once, that all the time we've spent on these timing measurements and tests was 100% worth it because we love Elektron products.

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- Elektron gave a partial explanation of the timing issue. They've not said anything yet about the fact that the MD shows the same kind of "lag" (up to 3 ms of delay) even when triggered from an external MIDI sequencer. IMO the discussion is still completely open on this front.

- Like many others, I don't stare at my MD all day long, pissed off because I can't make any music with it. I use it almost daily for my sound-design/programming work for several companies around the world. That's why I hope its timing will get improved: because I use it a lot as one of my favourite production tools in a professional environment.

- If you can't hear how poor timing negatively affects your music, the problem is yours, not ours.

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by DLX - 2007/05/18 15:58

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rgmccaig wrote:

Next time you don't like what someone says, try sticking your fingers in your ears and shouting 'la la la, I can't hear you'. It's a better strategy then trying to censor free discussion, m'kay?

A free discussion? So people who have the opinion that there is nothing wrong with the MD's timing should be accused of being deaf in some way?

Its a great discussion when different opinions get replies like "you just don't get it" or "thats a completely different thing" or "thats not valid". It certainly aids a great discussion! You are just as active in killing any discussion, m'kay. If you don't like people expressing opinions that are different to yours, you can stick your own fingers in your ears.

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by dreg - 2007/05/18 16:02

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for my sound-design/programming work for several companies around the world

many have been or are professional, proves nothing, point to your world class work if you are going to mention it!

except the ones with the "shut the f\*k up and go make some music" attitude.

miss quoting to suit your needs?

If you can't hear how poor timing negatively affects your music, the problem is yours

So lets clear this up YOU think every piece of music done on sequencers, not mpc3k etc has shit timing and you hear it? Do you like any music?

THIS THREAD WOULD NOT HAVE BEEN STARTED OR LED ON A CURRENT ROLAND PRODUCT SITE!!! MV NATION anyone?

DISPUTE THAT FACT?

NOTHING POSITIVE HAS COME OUT OF THIS 46 PAGE THREAD.

DISPUTE THAT FACT?

no i don't wanna hear it, read it or smell it, cause it will stink.

The idea that you should be able to lobby to shut down other people's conversations because you don't like them is crass, short-sighted, and downright offensive.

How many boards you on? 1. Threads get closed on most sites when they become abusive, trollish, waste of bandwidth, WHEN THE THREAD HAS RUN ITS RACE. why am I explaining this?

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All you defender of the realm have continued to slag, belittle, name call, or jump on anyone who says its BS and doesn't affect their music.

I know myself it doesn't affect my tunes and i'll defend that position and by some members own reasonings of free speech here I'm allowed to.

Quite funny really cause its such a  
"pot calling" issue...

Go start your own board, troll this thread on other sites, this site is for Elektron users and lovers.

You guys have no idea how this rumor mongering could affect the sales of Elektron products even the company.

I'd prefer them to sell more and create other wonderful gear, but maybe I'm wrong? We could all buy roland stuff then hey?

NO they are absolutely GREAT WORLD CLASS PRODUCTS that shit on other gear

(please no I love my elek too but it got shit timing WE KNOW YOU THINK THAT)

I don't and your attacking it, I'm defending it. Remember?

Go on tell me how childish or shameful I'm being!

^^

!!!

dickheads

now you can..!,

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by DLX - 2007/05/18 16:25

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lcvi wrote:

Dear DLX

- Every finding regarding the MD timing issue posted on this thread has been posted privately to Elektron support as well. In my personal case it's not the first time that I've helped them reproduce a few bugs I found in the OS. I'm glad if I can help them.

Good for you.

- Nobody has ever "yelled" around here, except the ones with the "shut the f\*k up and go make some music" attitude.

Thats a lie... plenty of brash, unproductive and narrow sighted comments have been made by everyone. David has even apologised for some of his less than productive comments.

- Nobody has ever said that "Elektron are full of shit".

Not in those words exactly. But there are several posts that suggest that Elektron are lying.

- I think we made clear, more than once, that all the time we've spent on these timing measurements and tests was 100% worth it because we love Elektron products.

That would be grand if 100% of that time was actually spent on trying to improve products. 90% of it looks like it was spent on childish name calling, or declaring that "our opinion should be respected" while another person's is tramped on.

- Elektron gave a partial explanation of the timing issue. They've not said anything yet about the fact that the MD shows the same kind of "lag" (up to 3 ms of delay) even when triggered from an external MIDI sequencer. IMO the discussion is still completely open on this front.

Have you actually thought to ask how much of the sequencer aspect of the MD's design is integrated with the sound engine itself? Because really, that would be the first step in determining if anything is still "completely open".

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- Like many others, I don't stare at my MD all day long, pissed off because I can't make any music with it. I use it almost daily for my sound-design/programming work for several companies around the world. That's why I hope its timing will get improved: because I use it a lot as one of my favourite production tools in a professional environment.

Like I've said, I have no problem with that... but posting junk that says the people with opposing opinions are being childish or have bad attitudes then act in exactly the same way isn't going to fix anything. In fact, if anyone really had the desire to fix anything you'd think they'd stay strictly on the subject at hand instead of paying attention to the numerous side arguments... It hardly helps, in fact it does nothing but distract and dilute any point trying to be made. Like its been mentioned, if you don't like whats being said just put your fingers in your ears. Thats exactly why I think if David simply came and confirmed his measurements and took them to Elektron instead of religiously trying to persuade everyone into thinking this is the biggest problem since the cuban missile crisis, this thread would have been much much more productive and probably wrapped up pages ago.

- If you can't hear how poor timing negatively affects your music, the problem is yours, not ours.

do you find the need to kill every constructive post with stupid and irrational comments? Really, the sentence should read "if your MD is negatively effecting your music, the problem is yours, not ours". It is you after all that is trying to change something. If you actually listened to some of the music posted on this site you'd realise its still making some absolutely top quality stuff... See, this is the biggest problem with your posts. You try and take the moral high ground yet try and make personal attacks at the same time. You are like that hot head you see in a club or music store. You know, the type of guy that as soon as you see him you turn around and walk away because he is only going to pollute what could be a good conversation with a bunch of self indulgent hot air.

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by rgmccaig - 2007/05/18 19:34

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The idea that you should be able to lobby to shut down other people's conversations because you don't like them is crass, short-sighted, and downright offensive.

How many boards you on? 1. Threads get closed on most sites when they become abusive, trollish, waste of bandwidth, WHEN THE THREAD HAS RUN ITS RACE. why am I explaining this?

Go start your own board, troll this thread on other sites, this site is for Elektron users and lovers. You guys have no idea how this rumor mongering could affect the sales of Elektron products even the company.

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(please no I love my elek too but it got shit timing WE KNOW YOU THINK THAT)  
I don't and your attacking it, I'm defending it.Remember?

Go on tell me how childish or shameful I'm being!

^^

!!!

dickheads

now you can...!,

That was a revealing post, I can see that you would prefer an elektron-fanboy board where criticism/analysis of product performance is forbidden. I hope not everyone wishes this. Personally I think forums of that type are really lame.

This board is still quite young... so far its headed in the right direction imho and the owners take a good 'hands off' approach.

There was no rumor mongering on this thread, just some proven facts which several people validated and Elektron

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confirmed.

I don't mind anyone disagreeing with my opinions on this thread... I only mind when people get frustrated and fall back on complaining "shut down the thread". That's just noise.

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by rgmccaig - 2007/05/18 20:09

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So, getting back on topic, here's the unresolved question, to my mind::

-An Elektron rep. stated in an email response to one member (I believe) that the timing deviations were necessary results of the DSP architecture of the system (in particular, coordinating between the 2 processors)

-An Elektron rep. posted on some other forum, later quoted in this thread, that the timing characteristics were a purposeful attempt to give the sps a timing 'special feel' as found in certain other vintage drum machines

So, those statements seems a little at odds, don't they- how can they both be true?

Perhaps they can both be true in a sense- If they knew their design required a certain amount of jitter, they could have chosen the particular pattern of jitter to be what it is.

It is intriguing if they really think this pattern of jitter has musical/good qualities:: the pattern is kind of irregular- notes play dead steady for 4 or 5 beats, then one note comes off by 2ms, then back to steady.

The funny thing is that this pattern does not repeat in a bar-to-bar way. Usually when people think of 'timing groove' they think of a push-pull pattern that is aligned with the measure in a certain way. So I'm interested in learning more about how this type of randomness may be perceived as 'interesting'.

After all, we all have the ability to push/pull notes in our DAW down to the millisecond... so there is a creative choice to be had there. If this is the secret to the magic groove, why not learn about that and use it?

So there's still plenty of mystery and room for discovery regarding 'semi-random 2ms groove' imho, which is part of what this thread is for.

Another valid question is, assume this jitter pattern is actually purposeful, did it actually work out to a good thing? Purely subjectively, I would say there's a slight mismatch between the timbre of the machinedrum and the idea of a 'slightly off' rhythm. Those classic drum machines had more lo-fi, 'analog' sound- a good match with a slightly strange rhythm grid. For instance, I think tr-909's sound awesome, and I believe it has been measured that rhythmically they are not that tight- but the amount and nature of the not-tightness is a good fit with the aggressive, noisy, chunky sound of that machine.

To me, the sps has such a precise, 'digital' timbre flavour, that indeed I bought it to make precise, 'robotic' sounding beats and I think that any movement towards greater precision would in fact suit it better. It would make sense to me to have the precise modern/digital drum machine as the 'master beat' of my setup, then throw in the older quirky stuff on top, to taste. The sps has such input/output/sequencing/processing capabilities that it begs to be the centre of a studio setup, and therefore it makes sense for it to have the solidest timing of anything in the setup, if possible.

Just my opinion though. :)

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by innerclock - 2007/05/19 00:44

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rgmccaig wrote:

To me, the sps has such a precise, 'digital' timbre flavour, that indeed I bought it to make precise, 'robotic' sounding



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beats and I think that any movement towards greater precision would in fact suit it better. It would make sense to me to have the precise modern/digital drum machine as the 'master beat' of my setup, then throw in the older quirky stuff on top, to taste. The sps has such input/output/sequencing/processing capabilities that it begs to be the centre of a studio setup, and therefore it makes sense for it to have the solidest timing of anything in the setup, if possible.

Just my opinion though. :)

There in one single paragraph is the core issue/point to this thread in my opinion also.

regards - David

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by mononic - 2007/05/19 02:39

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Let me chime in and see if I can get this quoting business right

rgmccaig wrote:

So, getting back on topic, here's the unresolved question, to my mind::

-An Elektron rep. stated in an email response to one member (I believe) that the timing deviations were necessary results of the DSP architecture of the system (in particular, coordinating between the 2 processors)

-An Elektron rep. posted on some other forum, later quoted in this thread, that the timing characteristics were a purposeful attempt to give the sps a timing 'special feel' as found in certain other vintage drum machines

So, those statements seems a little at odds, don't they- how can they both be true?

Never underestimate serendipity dear sir. Valves in guitar amps are one of those things... I remember fenders blackface amplifiers were highly regarded because they created a nice overdrive when the volume was cranked - the overdrive of the valves. When fender released its next series of amplifier, the ones now referred to as silverface fenders a lot of people were disappointed because fender had increased the headroom. They increased the headroom because the last series went into overdrive. A lot of other people were probably very happy that the headroom was increased and that they could get a louder clean tone. You can see that regardless of what design approach Fender took, one group of users would ultimately be left a little disappointed.

I can certainly see those two statements being true, in fact as a tinker and designer I can see those two statements infact being exactly the same thing. During the design stage when prototyping the device why couldn't the timing be an acknowledged inclusion in the design? He strings together two processors and does some tests and finds a unique timing pattern, the designer likes it so instead of redesigning the entire thing he keeps it.

Perhaps they can both be true in a sense- If they knew their design required a certain amount of jitter, they could have chosen the particular pattern of jitter to be what it is. Designing gear can be a very spontaneous and often surprising thing.

It is intriguing if they really think this pattern of jitter has musical/good qualities:: the pattern is kind of irregular- notes play dead steady for 4 or 5 beats, then one note comes off by 2ms, then back to steady.

The funny thing is that this pattern does not repeat in a bar-to-bar way. Usually when people think of 'timing groove' they think of a push-pull pattern that is aligned with the measure in a certain way. So I'm interested in learning more about how this type of randomness may be perceived as 'interesting'.

Just like the fender example above, people are indeed divided on the opinion of timing. Just as some people strive to remove any timing inaccuracies, others move in the opposite direction and strive to get away from the unnaturally tight timing often associated with electronic music. If the design sits in one of these camps, then one of those groups of users is ultimately going to be left a little disappointed.

After all, we all have the ability to push/pull notes in our DAW down to the millisecond... so there is a creative choice to be had there. If this is the secret to the magic groove, why not learn about that and use it?

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So there's still plenty of mystery and room for discovery regarding 'semi-random 2ms groove' imho, which is part of what this thread is for.

I don't think this can work, as I'll point out below.

Another valid question is, assume this jitter pattern is actually purposeful, did it actually work out to a good thing? Purely subjectively, I would say there's a slight mismatch between the timbre of the machinedrum and the idea of a 'slightly off' rhythm. Those classic drum machines had more lo-fi, 'analog' sound- a good match with a slightly strange rhythm grid. For instance, I think tr-909's sound awesome, and I believe it has been measured that rhythmically they are not that tight- but the amount and nature of the not-tightness is a good fit with the aggressive, noisy, chunky sound of that machine.

I consider the MD to be lofi in an entirely different way. I formally studied music composition for quite some time which led to my complete musical perversion. I didn't even like electronic music prior to study, but now its my main point of focus. One thing I learnt was that every aesthetic in music is just as valid as the next, that includes "slop" or absolute rigidity. Whether it be high definition audio, grungey lofi analog or gritty 8 or 12bit digital. Because of this, I can certainly understand why some people are quite happy to debate that the MD really has no issue at all as far as timing.

To me, the sps has such a precise, 'digital' timbre flavour, that indeed I bought it to make precise, 'robotic' sounding beats and I think that any movement towards greater precision would in fact suit it better. It would make sense to me to have the precise modern/digital drum machine as the 'master beat' of my setup, then throw in the older quirky stuff on top, to taste. The sps has such input/output/sequencing/processing capabilities that it begs to be the centre of a studio setup, and therefore it makes sense for it to have the solidest timing of anything in the setup, if possible.

Just my opinion though. :)

Would you agree that this opinion is based solidly on your expectations? You thought you were buying a robotic tightly timed machine, and when you didn't get it you were ultimately left a little disappointed? You can understand that some people didn't have the same expectations as you, thus find this thread a little over the top. For them their really is no issue, not because they can't hear the MD's timing (I find that to be such a silly and narrow minded approach to the situation), but rather because unlike yourself they don't strive for absolute rigidity in their music. In fact, some of their heated replies could be for no other reason than because they strive to move away from it. Neither approach is right nor wrong, people have different expectations, people have different musical directions. Its because of this that I think discussing if the "jitter pattern is actually purposeful, does it actually work out to a good thing" will only lead to more arguments based on what peoples desires and intentions are with these products.

I am not going to answer if it is a good thing, that is a response based purely on the individual and the individual alone... its not an argument for changing the MD's design necessarily. I will however say that the definition for "music" is simply "the organisation of sound". If anyone replies keep it in mind when suggesting what might be "right" or "wrong" in musical composition... because the definition of music doesn't support any approach or opinion on this subject being incorrect.

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by innerclock - 2007/05/19 03:44

mononic wrote:

I am not going to answer if it is a good thing, that is a response based purely on the individual and the individual alone... its not an argument for changing the MD's design necessarily. I will however say that the definition for "music" is simply "the organisation of sound". If anyone replies keep it in mind when suggesting what might be "right" or "wrong" in musical composition... because the definition of music doesn't support any approach or opinion on this subject being incorrect.

Great post and I agree with much of your substance - the critical issue now I think is this:-

A long while back - many users stated they heard track/step tonal shifts in MD patterns where no modulation or parameter locks were present.

I heard 'movement' or jitter in SPS-1 16th hi hat patterns when locked up against my MPC3000.

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I tested both with Elektron verified/supported and found that the SPS-1 did move around more than the MPC-3K.

This may account for the tonal shifts reported previously.

Elektron had made much about timing stability in their manual.

I felt the random nature of the jitter/errors I (and others) could measure (and hear) was not in keeping with this philosophy.

If Midi Clock sync precision is important enough to print shouldn't the internal step/sequencer timing accuracy share the same focus?

I assumed this would be a given.

We were then told that a deliberate decision was made to create the internal random tempo/step 'blur' and that it is a feature.

If this was so deliberate why was it not printed in the manual along with the Midi Clock Sync statement?

It does not really add up because for a 'feel' or applied groove template to function at all it must be regular/repeatable per event step.

Feel is feel. Random is jitter.

I think the heat in this topic is down to those that feel timing precision is less about rigidity and more about how they wish to apply feel in their work.

I own many boxes by many manufacturers that also move around a bit and I love them in their own way for all that that do - I even like the wobble when it's against something tight but when I bought my SPS-1, what locked the deal for me was the part in the manual that stated rock solid clock sync and the point made about using it as a master sync source.

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by dreg - 2007/05/19 03:58

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well said mononic!

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by dreg - 2007/05/19 04:09

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innerclock wrote:

mononic wrote:

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Why dont you take this thread to a current Roland product site? Why did you hide your background? Why do you think your helping? Are you happy that you may affect Elektron sales?

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by mononic - 2007/05/19 04:50

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innerclock wrote:

Great post and I agree with much of your substance - the critical issue now I think is this:-

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I assumed this would be a given.

Its with great reluctance that I post a reply to this because it is questioning integrity more than anything else. I can

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understand peoples comments about this aspect of the subject having malicious connotations. Its a question of ethics more than anything else, and I am not going to point fingers.

What someone considers "precise" in music is just as subjective as what someone considers musical. Obviously people who strive for as close to sample accuracy precision are going to have a much more strict concept of what they consider to be precise, compared to perhaps a rock drummer, or a person who doesn't want rigidity in their music. To the latter, precise doesn't equate to any scientific measurement. Instead its just a concept applied in the context of a music composition. In that circumstance precision isn't what is measured as scientifically accurate but rather what is musically accurate or precise. This can have absolutely zero relationship to anything science might find.

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If this was so deliberate why was it not printed in the manual along with the Midi Clock Sync statement?

It does not really add up because for a 'feel' or applied groove template to function at all it must be regular/repeatable per event step.

Feel is feel. Random is jitter.

This is music... nothing "must be" anything. Do other less than precise drum machines also state in their manuals or advertisements that they have precise midi sync? I am sure they do, perhaps its more appropriate to consider this a reminder that not everything we read should be taken literally, especially when it can pertain to things that are musically subjective.

I've been sync'ing my monomachine to ableton live and for me is have been nothing but tightly synced. Thats using the MnM's clock and transport as the master. Does midi clock sync refer to the triggering of notes or the BPM of a complete setup?

People have used many aesthetics associated as being "wrong" in music, some have even become common musical components. Take tape saturation, it removes dynamic range and introduces distortion but people like it. Take the many sounds related to vinyl records, scratching, warping, clicks and pops. Take varispeed, thats found its way into countless musical works. CD skipping and digital aliasing, grungey digital sample reduction, digital clipping have all become common aesthetics in glitch music. Why does jitter necessarily remain a negative aesthetic entirely exclusive to music? John cage spent a lifetime investigating chance and random occurrences in music. He did it for no other reason than because "random" is just one of the thousands of directions "feel" can take.

I think the heat in this topic is down to those that feel timing precision is less about rigidity and more about how they wish to apply feel in their work.

I own many boxes by many manufacturers that also move around a bit and I love them in their own way for all that that do - I even like the wobble when it's against something tight but when I bought my SPS-1, what locked the deal for me was the part in the manual that stated rock solid clock sync and the point made about using it as a master sync source.

I don't know. Ive always approached music equipment differently to music composition. I believe that while compositional thought may be as distant from reality as possibly conceivable, its inevitably the equipment we use that determines what is actually feasible. For example, not many people would choose a step sequenced drum machine for pulseless ambient music. Perhaps this is yet another reason why people are so torn on this subject, those that suggest "just get on with it" are the people like myself who choose equipment and use it to the limitations it clearly outlines. Perhaps you and others are more upset with this rather than disagreeing with it because you thought the limitations of the equipment would be different to what they really are.

Just a note, I am happy to discuss elektron products, compositional ideas, even the timing of the MD. But I won't be pointing fingers, or questioning the integrity of people whom I don't know. Its not conducive to any constructive conversation, it will only lower this thread into more personal attacks (both towards Elektron, and between each other). While it appears you have good intentions with your contribution in this thread, being an employee from another company I'd suggest you perhaps do the same and try to keep this thread away from heading in a potentially malicious direction.

If anyone has an issue with the wording in the manual, send Elektron an email and tell them why you think it should be changed... it will be much more constructive and appropriate than blindly fingerpointing and questioning the ethics of unknown people, particularly when a lot of elektron customers have only have very positive experiences with them. Hell,

even post a copy of the email here with the suggestion you made. From my experience Elektron staff are nothing but friendly and obliging people with outstanding service. Sending them an email suggesting that you find certain wording or sentences misleading will be much more productive in correcting any situation.

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by hyphen - 2007/05/19 07:09

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Why dont you take this thread to a current Roland product site? Why did you hide your background? Why do you think your helping? Are you happy that you may affect Elektron sales?

What do you mean? Roland???? Really???

I thought David just did his own sync box, that wasn't really related to this thread?

And yes, at least one thread on VSE questioning whether if it was smart to buy a machinedrum has popped up specifically because of this thread here...luckily I think our resident pixel artist enthusiasm for the machine shined through the clouds of doubts

my appologies if my posting in here irritates anyone, I had said way back in the early decades of this thread that I'd stay away...just popped in cause I saw this thread was getting some traffic again...and the roland thing threw me for a loop...

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by innerclock - 2007/05/19 08:18

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dreg wrote:

Why dont you take this thread to a current Roland product site? Why did you hide your background? Why do you think your helping? Are you happy that you may affect Elektron sales?

Hi Dreg, if I had an issue with a Roland product I would ask R&D directly which I do often. At the moment I don't. The reason I am here is because I am an SPS-1 owner just like you.

I did not ever hide my background. I honestly felt that the best way to keep the thread focused on the issue I had was to remain neutral because I had no comparative axe to grind either way. Once it was raised I was more than happy to share that information.

Please look at all my posts - the overall tone has always been very positive towards Elektron and I have never once offered any Roland product up as an alternative to the SPS-1 or suggested potential Elektron customers look elsewhere.

Just because I work for Roland does not mean I cannot own other product or contribute to this forum. Many other members have found it constructive and not counter-creative or anti-Elektron in the slightest. Quite the reverse in fact. I hope I have not damaged Elektron's reputation or sales. Why should this issue be any more damaging than any other forum thread that brings up issues or feature wish lists?

People buying Elektron product are smart enough to make informed purchases. No where have I ever slagged them off - quite the reverse and in many private emails and conversations over the years I have recommended them to many people regardless of who I work for - my partner's brother for one owns a Monomachine which he purchased after spending time with my SPS-1 in my company.

Please - stop using who I work for as a way to damage this thread.

David.

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by innerclock - 2007/05/19 09:03

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hyphen wrote:

What do you mean? Roland???? Really???

I thought David just did his own sync box, that wasn't really related to this thread?

Hi Hyphen - yes, really.... but, just as representing my own Sync-Shift has zero bearing on my involvement or interest in this thread neither does who I work for - again, have a close look - I have always stuck close to the point and never once compared or offered any alternative to the SPS-1 ever to anyone - well maybe the obsolete MPC-3K by Akai if any.....

Regards - David.

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by innerclock - 2007/05/19 09:13

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mononic wrote:

Just a note, I am happy to discuss elektron products, compositional ideas, even the timing of the MD. But I won't be pointing fingers, or questioning the integrity of people whom I don't know. Its not conducive to any constructive conversation, it will only lower this thread into more personal attacks (both towards Elektron, and between each other). While it appears you have good intentions with your contribution in this thread, being an employee from another company I'd suggest you perhaps do the same and try to keep this thread away from heading in a potentially malicious direction.

Hi Mononic - again I appreciate the post, if I have ever questioned integrity it only comes from wanting a straight answer to what I believe is a valid question and getting what I do feel is a slightly 'spun' response.

I never wanted this to turn malicious in the slightest.

It seems better for all concerned it seems if I cease posting and let the issue die on the vine.

Best regards and thanks to all for an enlightening journey,

David.

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by neonleg - 2007/05/19 10:30

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innerclock wrote:

mononic wrote:

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I never wanted this to turn malicious in the slightest.

It seems better for all concerned it seems if I cease posting and let the issue die on the vine.

Best regards and thanks to all for an enlightening journey,

David.

na man!  
this is the most epic thread of all time, dont let the haters crush it :-D

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## Re: All SEQ/DM Timing Performance Issues moved from mono os

Posted by dreg - 2007/05/19 10:39

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if I had an issue with a Roland product I would ask R&D directly which I do often. At the moment I don't

So your saying current roland products have no "jitter"?

:-0

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## Thread locked

Posted by divi - 2007/05/19 10:39

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since no new facts about the topic are being presented anymore and the personal quarreling took the upperhand pages ago we have decided to close this thread. if and when new facts appear it can be reopened, just ask one of the mods.

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