

Test SOTM tX-USBHUB + Sclk-12.0: high-end audiophile combo for PC

Posted by Jacko in HDnews , Tests HDfever | 3 comments

5



Last year we had concocted a SOTM product-oriented record to turn your PC into a true audiophile digital platform. Measures to support, we observed the undeniable qualitative contribution of these filtering devices and stabilization of the digital audio signal. One of this folder flagship products was a small-tX USBHUB Universal USB card that you could connect to an internal USB port of the PC and then cleaning the digital signal from the noise from the power supply circuits and which also operated a re-clocking by its own clock. Powered by internal SATA cables PC with integrated filtering or circumvented by providing the external power supply on-Mbps digital stream d2s battery and stabilized by a clock of very high quality, this card already showed excellent performance.

SOTM now offers a major evolution of this card by adding a dedicated clock with its power supply circuit with coarse filter, even better regulation and an even better oscillator. The SCLK-12.0 is a complete clock, but it will acquire the combo including tX-USBHUB because the USB card then work required to accept this new clock. The SCLK-xxxx for its generic name will also be added to dX-USB HD, iM-USB HD, tX-USBexp and many others. Will require a specific version of the clock and probably do make

a change devices and destinations cards. SOTM also offers a bespoke clock program if you want to device of a different brand.

Technical specifications :

tX-USBHUB

- USB Interface: Internal USB connector 3 pins
- USB output ports: 2x USB 2.0 Type A, USB power on / off button
- USB Chipset: Controller HUB USB 2.0 HS (480 Mbps), FS (12 Mbps), LS (1.5 Mbps)
- Internal power supply: + 12.0V (+ 0.5V, -0.5V), max 2A, 15 pins SATA Connector
- External power: + 6.5V ~ Automatic selection 9Vdc +, 2A max, Jack 5.5mm / 2.1mm
- USB port power: + 5.0V (+ 0.5V, -0.25V), Overload protection 0.8A at 20 ° C, recommended 0.5A C
- Operating conditions: Operating temperature 10 ~ + 30 ℃, Storage Temperature 0 ~ + 40 ℃, humidity 10% ~ 90%

PUT YOURSELF IN OENOLOGY!

Embark on a new challenge and get back with the pleasure of learning to feel valued and ...

READ MORE NO THANKS

In partnership with Yoplait

Sclk-12.0

- Operating Voltage: 6.5Vdc ~ 9Vdc (optional 12Vdc input available)
- Consumption: 0.3A>
- Very low noise regulator
- active circuit noise filtering
- isolation transformer on the clock circuit
- Dual independent clock circuit for digital audio systems
- - Sclk-2224: 22.5792MHz, 24.576MHz
- - Sclk-1124: 11.2896MHz, 24.576MHz
- - Other availables frequencies optional
- Circuit simple clock for interfaces
- - Sclk-12: 12MHz
- - Sclk-48: 48MHz
- - Other availables frequencies optional
- Input control
- - Clock select 1: Low
- - Clock select 2: High
- output power with very low noise: 5Vdc, 0.5A max
- Package price: 790 € TTC

Useful Links:

- tX-USBHUB
- Sclk-12.0
- SOTM in Epectaz

technical Overview

USB cards and pack the clock are supplied with all necessary mounting. With the USB card tX-USBHUB we find the front adapter made for computers to small profile, the USB connection cable and two USB adapters that are used to connect a USB port on the PC motherboard.





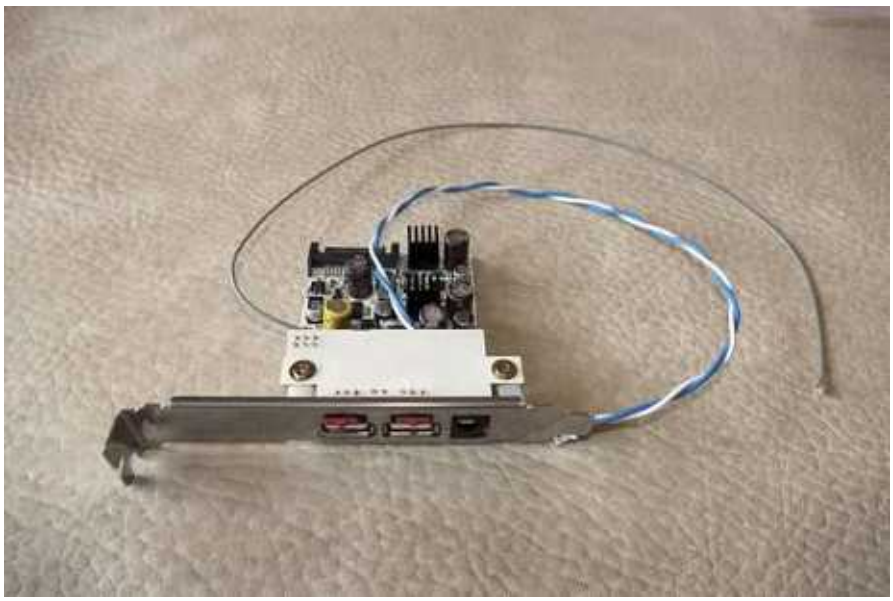
PUT YOURSELF IN OENOLOGY!

Embark on a new challenge and get back with the pleasure of learning to feel valued and ...

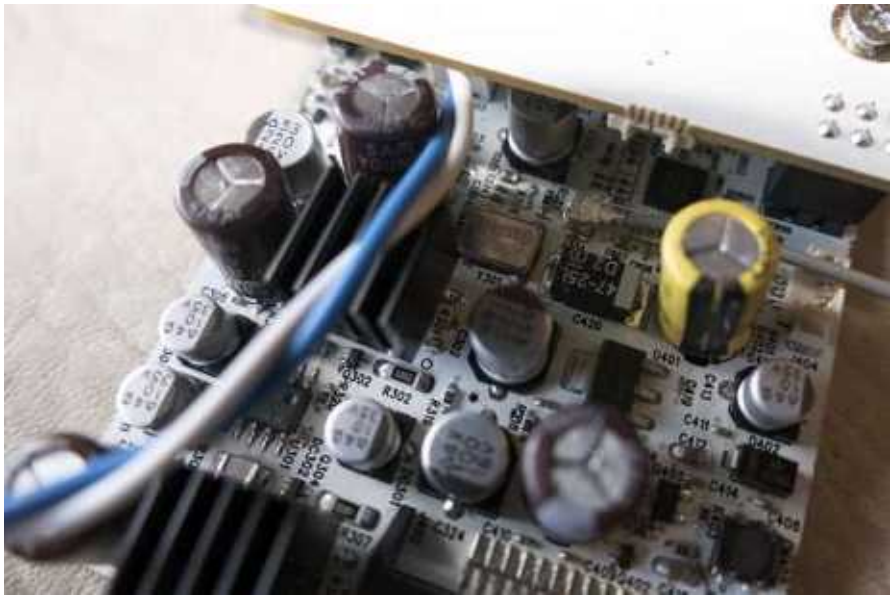
READ MORE NO THANKS

In partnership with Yoplait

The card itself has not changed except the addition of a small RF connector to connect the coaxial cable that is connected to the clock SCLK-12.0. We therefore always have a double supply circuit allowing a connection either by an internal SATA power to the PC or by the external power supply to battery SOTM MBDP-d2s. These power circuits are filtered and regulated as required to ensure the delivery of the best possible current to the digital elements of the USB card. Each USB port is completed by an individual switch that mutes the USB self-powered circuit. An interesting option if the device connected to the card requires no power supply by USB. This capability drastically eliminates any risk of noise induced by this often guilty of circuit performance DACs cuts. However, the vast majority of DACs using this USB self-supply circuit despite the presence of a dedicated power supply. The tX-USBHUB always has its own clock.









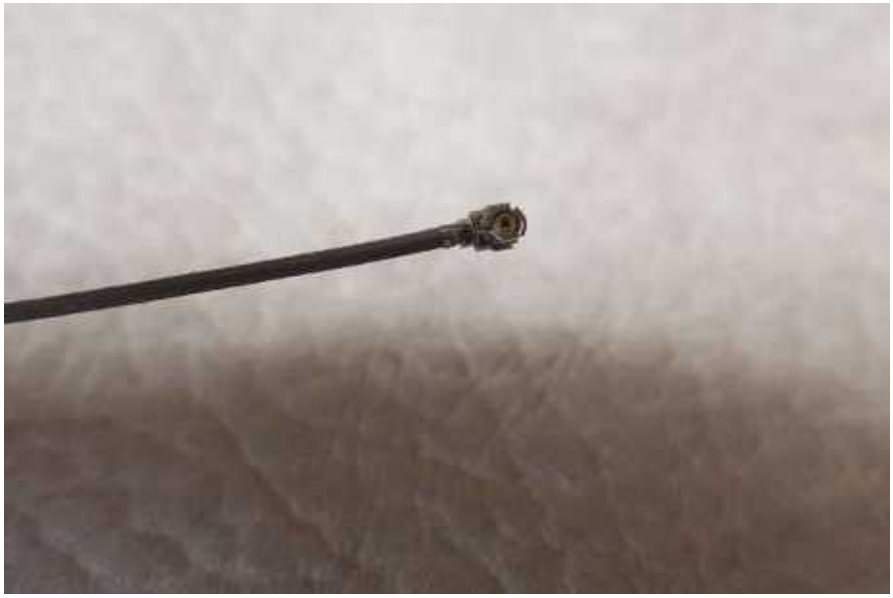
PUT YOURSELF IN OENOLOGY!

Embark on a new challenge and get back with the pleasure of learning to feel valued and ...

READ MORE NO THANKS

In partnership with Yoplait

The clock card comes with everything necessary, a coaxial cable connection to the USB card, a power connection cable and a SATA power adapter with filter.





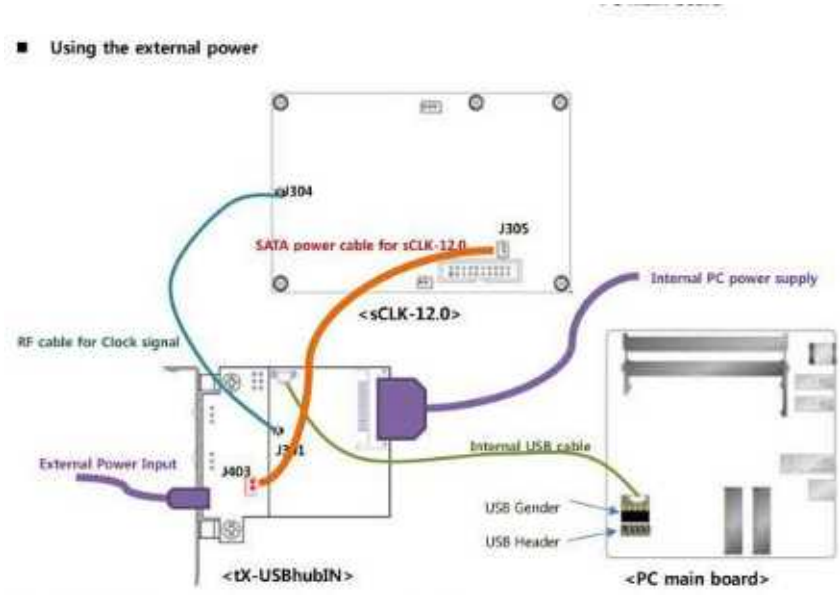
PUT YOURSELF IN OENOLOGY!

Embark on a new challenge and get back with the pleasure of learning to feel valued and ...

READ MORE NO THANKS

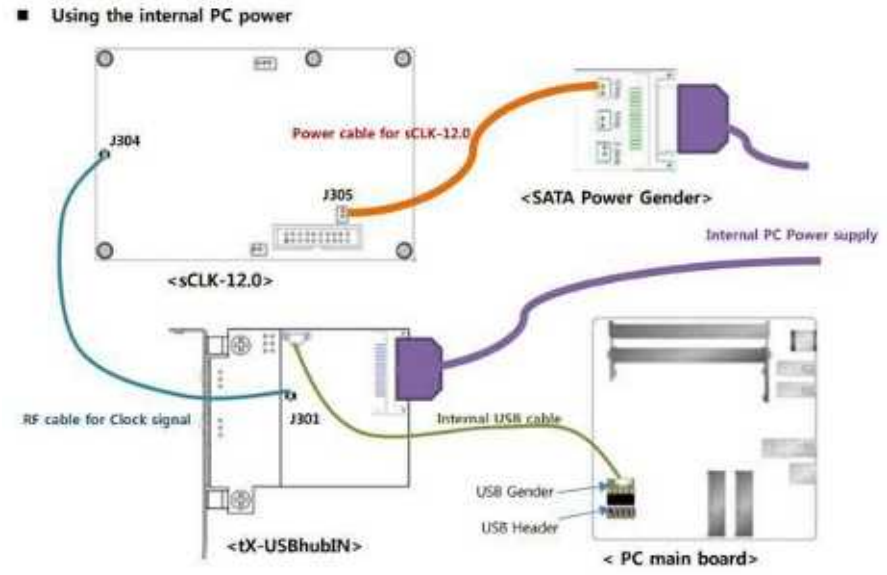
In partnership with Yoplait

Before installation you must choose the power plan you will use as the next solution, wiring between the two cards and power supplies PC will not be the same. The classical assembly will be through internal SATA power supplies PC. In this case each card will be powered by a SATA power output of the PC. The SCLK 12.0-card will use its adapter with filter.



Another solution involves an external power supply, the SOTM on MBDP-d2s battery will be a perfect candidate. In this case the power supply circuit will first places in the USB card, and then to the clock bypass card. It will first dismantle the daughter card

supporting USB ports power switches. In this map is a small power connector, it will house the cable
This cable is then connected to the clock card. SOTM advises to also connect the USB card to a SATA p



PUT YOURSELF IN OENOLOGY!
Embark on a new challenge and get back with the pleasure of learning to feel valued and ...
READ MORE NO THANKS
In partnership with Yoplait

The 12.0-Sclk menu is quite impressive and occupies the equivalent surface of a 3.5 "hard drive, it is also delivered on a support for housing in a space reserved for this type of hard drive . The build quality is equal to any product SOTM, ie perfect, rational and flawless. The copper tracks are large sections are completely covered and which ensures optimum performance of the transmissions of the feed streams and data streams.



The single-sided PCB is organized into three distinct sections. The first section relates to food. This section occupies half of the surface of the PCB and displays many filtering and control devices. This complex device starts with a large capacitor of 2200 uF who will be assisted by four capacitors of 470 uF and 220 uF of three. No less than three control circuits come into play, including one in a aluminum heat sink. Other capacitors and insulation filter systems complete the assembly already well supplied.



PUT YOURSELF IN OENOLOGY!

Embark on a new challenge and get back with the pleasure of learning to feel valued and ...

READ MORE NO THANKS

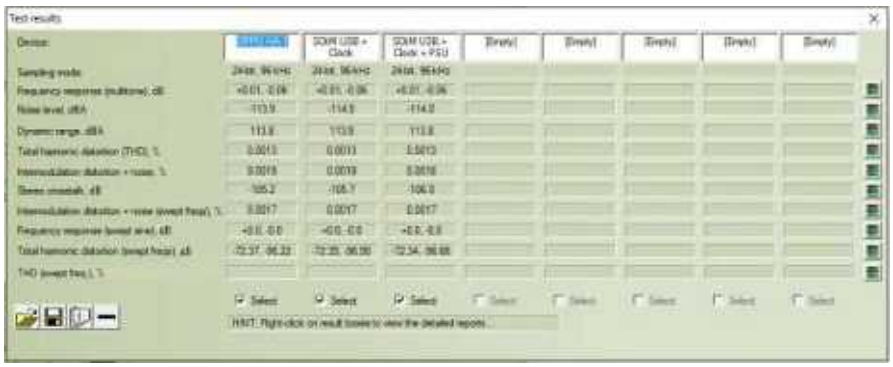
In partnership with Yoplait

The rest of the card is dedicated to clocks. The SCLK-xxxx can accommodate two different frequency clocks. TX-USBHUB the card does not require an oscillator, the SCLK-12.0 is equipped with a single clock. However, the card already has everything necessary to the second clock, it lacks only the oscillator and the isolation transformer attached to it. The signal is therefore filtered very effectively prior to being fed to the oscillator. This is a very well designed clock that leaves nothing to chance both in his power and in terms of the integrity of the digital audio signal which it will be responsible.



Measurements Right Mark Audio Analyzer

The measures YMIR will be on a test bench consists of a PC running Windows 10 pro 64 bit and equipped with a Sound Blaster card as zxr catch. I will use the OPPO HA-1 as the reference DAC act as a witness to the gains from the SOTM cards. We will establish two sets of comparative measurements. The first batch will involve the HA-1 in direct USB connection to a PC port, then the HA-1 connected to the card-tX USBHUB clocked by the clock SCLK 12.0-in SATA internal PC power supply. The second batch of measures will add external power-Mbps d2s, we will have three curves measures identified by FFT. We will focus on the indices for which noise is a dominant factor: the noise level, the dynamic range, the Harmonic Distortion Total and Intermodulation Distortion. Consider opening statements FFT in another browser window and view them in full screen. Indeed catches are very precise and small scale, only this display allows you to make comments on the curves and observe the gains by SOTM cards.



PUT YOURSELF IN OENOLOGY!

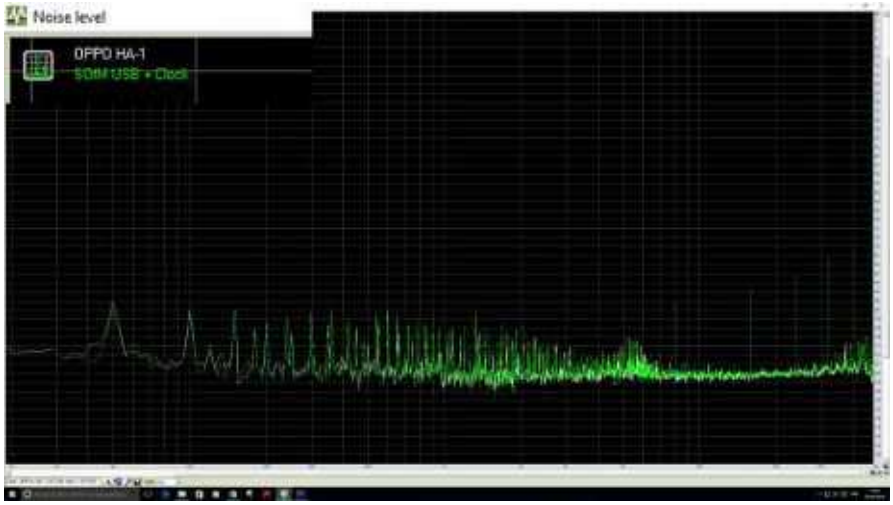
Embark on a new challenge and get back with the pleasure of learning to feel valued and ...

READ MORE NO THANKS

In partnership with Yoplait

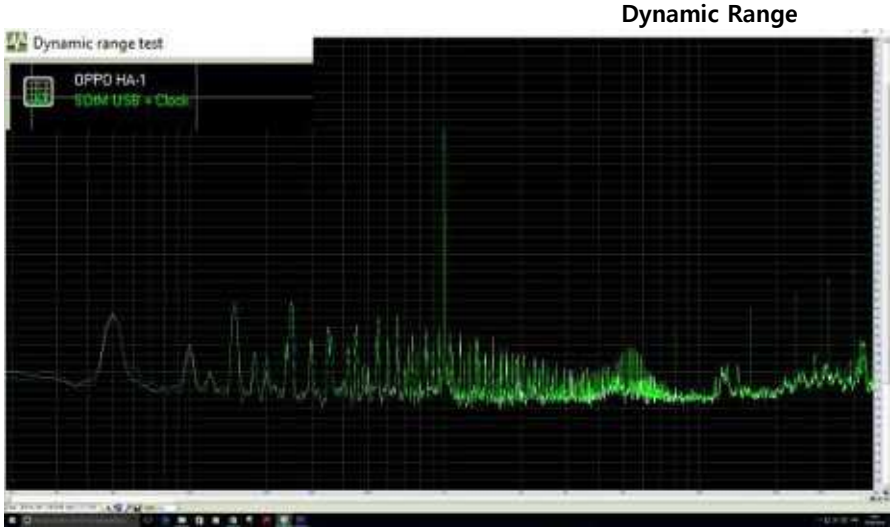
OPPO HA-1 USB port on PC vs OPPO HA-1 SOTM internal SATA power cards:

Noise Level



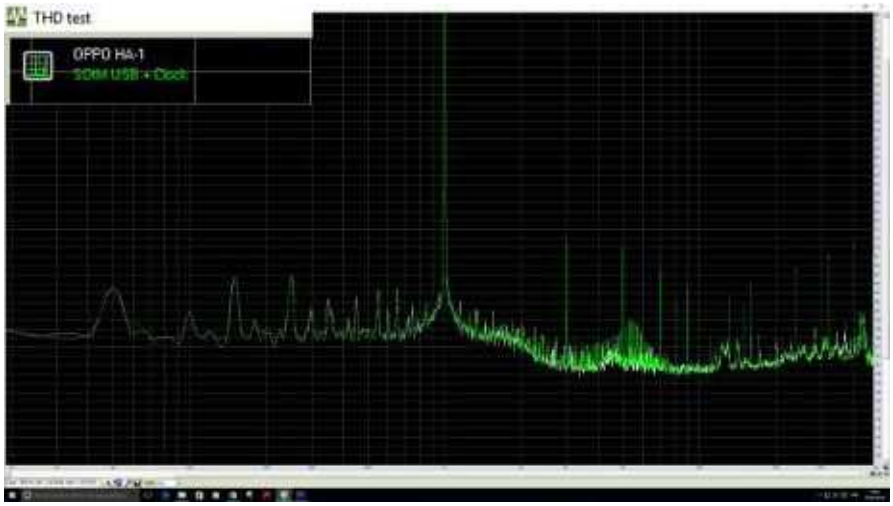
The noise level measured on the OPPO HA-1 earns 0.1 dB average performance. Reading the FFT graph shows that all card + USB clock (green curve) significantly reduces noise peaks of about 3 dB to 5 dB at certain frequencies. Overall noise level displayed better performance and better content, showing less variation of amplitudes.

Dynamic Range



Dynamics PLage is an index closely related to the noise level. Logically we reach the same observations.

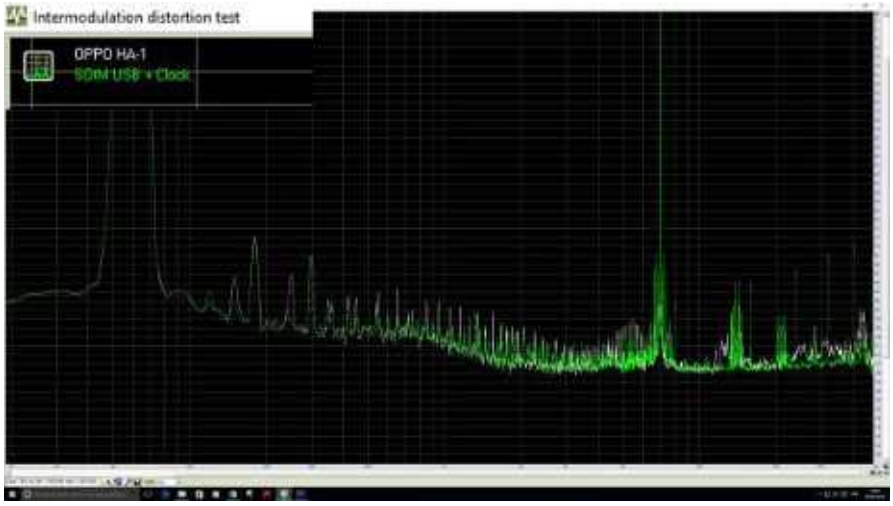
Total Harmonic Distortion



PUT YOURSELF IN OENOLOGY!
Embark on a new challenge and get back with the pleasure of learning to feel valued and ...
READ MORE NO THANKS
In partnership with Yoplait

Harmonic Distortion Total reveals more stability and balance. Mainly at high frequencies over which we have localized gains of up to 10 dB.

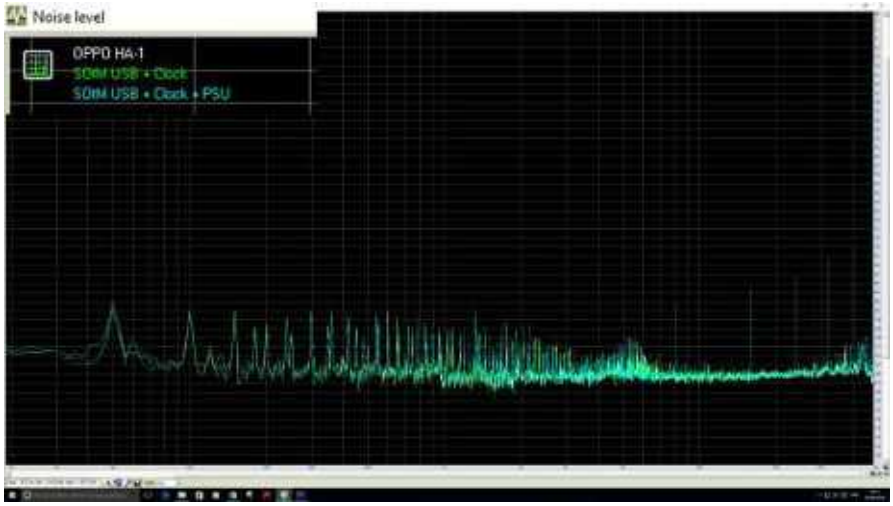
Intermodulation Distortion



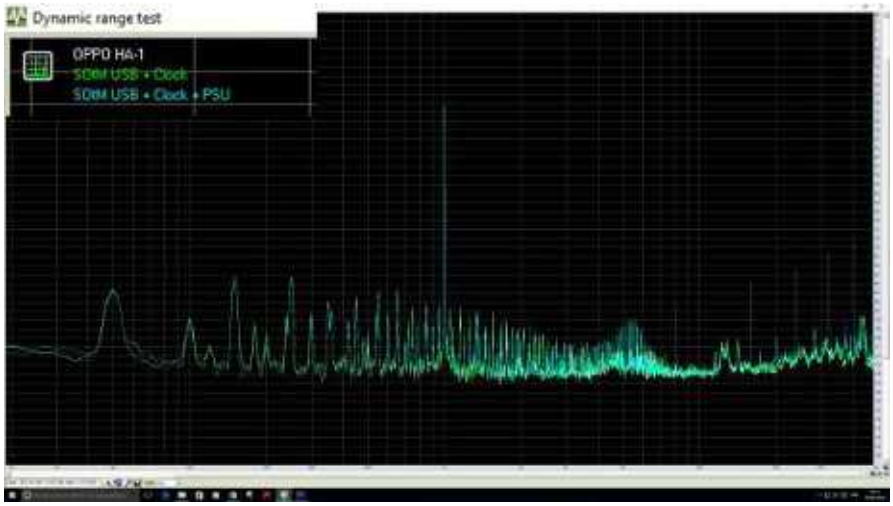
The intermodulation distortion is the most telling clue. In effect the superimposition of the two curves gives an advantage dominant SOTM device and this over the entire frequency range. We see maximum gains localized up to 15 dB, the average gain being found around 6 dB. Noise peaks have attenuations of the order of 5 dB.

Table deductions already averages gives an advantage to SOTM cards, but small values. This is a thorough analysis of surveys FFT allows us to better understand the gains. This detailed observation allows us to realize that SOTM cards reduce the noise: the green curves are under the white curves. Jitter is reduced: the peaks are reduced values. The signal is more stable: variations green curves are refocused around their mean values. The residual defects comes tester (capture card powered by the power of the PC and OS not optimized for audio) and the OPPO HA-1 design limitations (because no electronic is totally perfect .) **OPPO HA-1 USB port on PC vs OPPO HA-1 cards SOTM internal SATA power and external power-mbps d2s:**

Noise Level



Dynamic Range



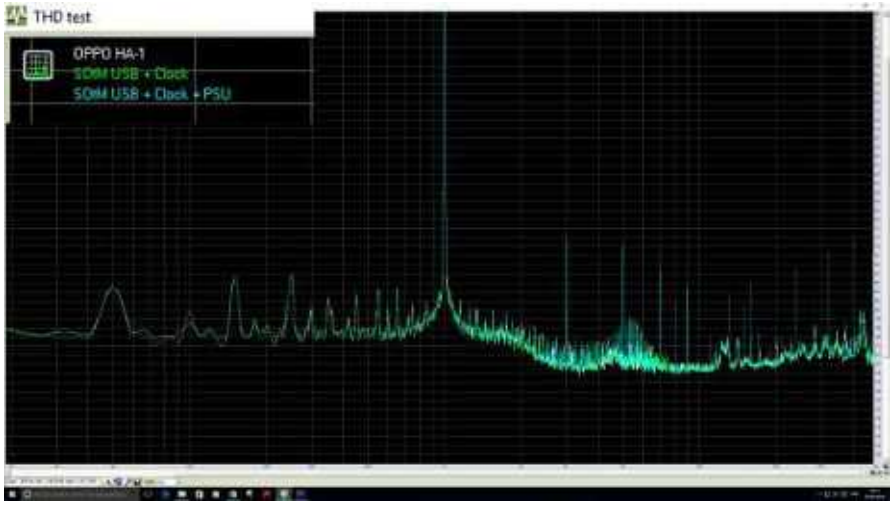
PUT YOURSELF IN OENOLOGY!

Embark on a new challenge and get back with the pleasure of learning to feel valued and ...

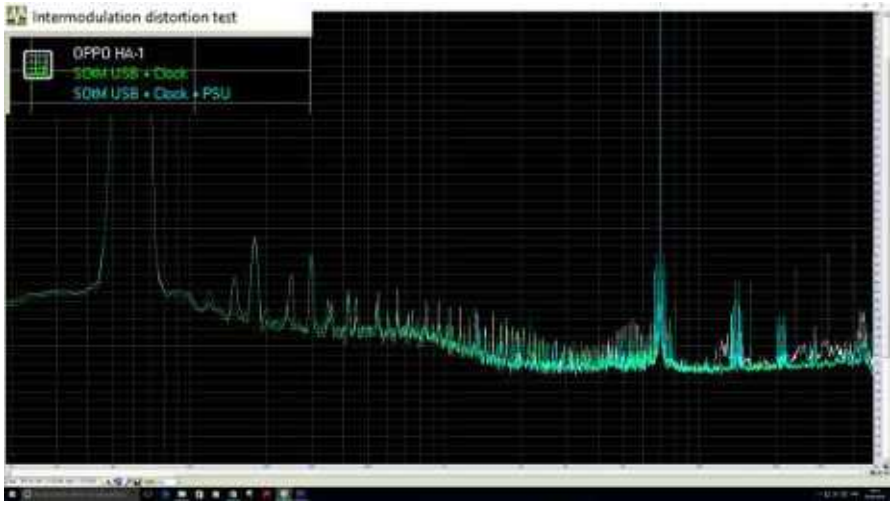
READ MORE NO THANKS

In partnership with Yoplait

Total Harmonic Distortion



Intermodulation Distortion



The addition of the external power supply leads to very interesting conclusions. The noise peaks are identical and do not seem to have improved compared to SATA power of the PC. By cons, the curves are more refocused on their average values. This means two things: first, the filtering power supplies on both cards is already very good and eliminates noise very effectively. On the other hand, the contribution of a more efficient supply table especially on the stability of the resulting signal. This power supply will not be essential, but it will add more balance and clarity in sound reproduction.

eavesdropping



PUT YOURSELF IN OENOLOGY!

Embark on a new challenge and get back with the pleasure of learning to feel valued and ...

READ MORE NO THANKS

In partnership with Yoplait

The plays will be on my PC SOTM in which I substituted map tX-SUBhub first generation compatible version Sclk-12.0. The card will feed externally by a d2s-Mbps to ensure their best possible operation. Streaming software will JRiver, DAC a OPPO HA-1 SE, an amplifier Teac AX-501 and the speakers will be Tannoy DC-4 and a subwoofer REL Quake. The acoustics of the hall is corrected by DiracLive via MiniDSP DDRC22A.



Are not going to beat around the bush, tapping through this set SOTM are simply sumptuous. I certainly have the chance to have a OPPO HA-1 SE which is probably the best DAC for its price and could definitely compete with DAC costing twice. My PC is already changed and displays excellent digital audio performance levels. But very clearly, whether simple file 16 bit 44.1 kHz, high resolution PCM or DSD, OPPO has never sounded so good on this small system. Such realism is simply amazing! Aeration in the notes is worthy of the best audio system and I think I have far exceeded the potential of the DC-4 associated with REL Quake, a set that works very well yet. Very often the limiting factor of a modern audio system is at the level of the digital source: the streamer, or DAC, or both. Unless catastrophe or bad association, speakers and amplifier are rarely at fault. With tX-USBHUB cards and Sclk-12.0 the problem of the quality of delivery of the digital stream is finally solved.

If you go later in the process, the result will be even better, I invite you to check our previous article on PC SOTM products for you to realize the degree of progress that you can get step by step. Returning to plays strictly speaking, do you expect a revelation. Not content to ensure a perfectly balanced and melodious reproduction at will, the sound image gaining momentum phenomenally. The consistency of my system was already very good, but I had no idea that the DC-4 could reach this level of performance, evidence that the digital source with an audio system is essential. Between realism instruments, natural voices, the sound stage that gained in scope and magnitude, I am more than delighted with these plays.



PUT YOURSELF IN OENOLOGY!

Embark on a new challenge and get back with the pleasure of learning to feel valued and ...

READ MORE NO THANKS

In partnership with Yoplait

Conclusion

If you thought the tX-USBHUB was already a nice evolution for your PC audiophile then you will love the combo including Sclk 12.0-clock. Even more if you add the recipe to a good external dedicated power supply as the d2s-Mbps, you will get a result beyond all expectations. Of course if we return to our previous article dedicated to SOTM PC components, you will understand that adding other filtering devices in the PC can only be beneficial. My recording was made on a PC almost completely changed including its main power supply. Over time, this machine has become a great digital transport.

Associated JRiver, then we have an audio ultra high functional range streamer. However, I must admit that this new version of the USB card completed its clock dedicated to passing my PC to a new level and the quality gain is a sacred bond. The OPPO HA-1 SE is also a great success and this pair excellentissime DAC to a digital source of high level achieved the sumptuous plays which I profité.vSi you use a PC as a digital audio source and you want to improve to enjoy plays worthy of the best digital transport high-end, I can only advise the combo SOTM tX-USBHUB + Sclk-12.0. This SOTM solution is to open the way of the most efficient appliances on the market, you can then include a high-end DAC in your audio system without the PC and its design limits penalize the quality of your sound.

I liked the combo + tX-USBHUB Sclk-12.0:

- The build quality
- The possibilities for power integrations
- The performance of the highest level

I liked the combo + tX-USBHUB Sclk-12.0:

- Internal USB connection cables and longer supply of 20 cm.

5

Sponsored content by Taboola

Elsewhere on the web

7 tips to learn any language when one is no language
Babbel

Sparta: The Game Strategy Phenomenon 2016
Sparta Game Online Free

Play alongside Stormfall and mythical dragons, symbols of power
Stormfall: Free Online Game

Photos: the most beautiful hostesses auto showroom
Zone-Numerique.com

Lose weight with the sport possible