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HRT Music Streamer II review

By Andrew Harrison | [PC Advisor](#)
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For most listeners, good digital sound from a computer is a fait accompli, a done deal. The built-in soundcard on a PC or laptop promises '20Hz to 20kHz' reproduction, so providing you play uncompressed WAV or lossless digital formats like FLAC or Apple Lossless (ALAC), you're getting sound as good as a CD player, right?

Well, not necessarily. Or less courteous to the efforts of PC makers, almost certainly not. For one thing, audio circuits hate computers.

Audio amplifiers and analogue circuits are easily upset by the interference from radio frequency noise – such as the multi-megahertz clocks cycling all through a personal computer. So the first stride forward in sound quality is usually found by simply locating the digital-to-analogue converter (DAC) away from a noisy motherboard and its switch-mode power supply.

A quick-and-easy solution for this can be found in the shape of the USB audio adaptor. Working out of the box without additional drivers or software on modern Macs and Windows PCs, these devices take raw digital data audio from the computer, with the minimum of fuss. But audio data still needs some care in its transport, lest its precise timing is subtly smeared, leading to a form of audible distortion often dubbed jitter.

This can make for a harder, grittier sound with a looser sense of musical timing. In short, the sound may be rough-edged and glassy or vague and tuneless. Or all these things.

HRT Music Streamer II: Adaptive versus asynchronous
Until recently, sending sound over USB relied on a default transmission protocol called adaptive-mode USB audio. In short, the essential clock timing signals needed in D-A conversion are derived here from the computer's clocks. Like the long-standing S/PDIF interface used to connect CD players to outboard converters, a bi-phase clock recovery system is essential to recreate the timing pulses required to reassemble the binary stream correctly.

It kind-of works, but perhaps not as well as a more up-to-date system, known as asynchronous mode USB audio. Asynchronous mode USB audio now has the host (the computer) and the outboard converter's clocks free-running relative to each other.

Crucially, the converter device itself dictates when data packets are sent from the host, ensuring a timely flow of data with no chance of overflow or underflow in the data buffer.

Put another way, rather than passively receive whatever the computer dishes out, asynchronous mode devices such as the HRT Music Streamer II take a much more pro-active role, telling the computer when to send data packets. And the final D-A

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conversion is referenced to a precision local clock, right inside the unit.

In the case of the HRT Music Streamer II, the digital input receiver module is actually a transceiver – able to transmit instructions back to the host as well as receive music data packets. HRT employs a Texas Instruments TAS1020B chip, under the guidance of the company's own custom firmware to do this critical work. Set up this way, interface jitter is said to be eliminated.

After this, a Burr Brown PCM1793 chip (specified for 24-bit/192kHz operation) carries out the actual D-A conversion in the HRT Music Streamer II, from digital bitstream into analogue music.

Care has also been taken to ensure good isolation between the computer and audio system, lest unwanted noise intrude into those precious audio circuits. HRT quotes a greater-than 20 megaohm isolation figure.



The HRT Music Streamer II features a Texas Instruments TAS1020B input transceiver running custom firmware (left), feeding a Burr Brown PCM1793 DAC (top right)

In practice, the HRT Music Streamer II appears as 24/96 device to the computer; a true audiophile standard. Which is not so surprising when you discover the pedigree of the HRT Music Streamer II.

HRT stands for High Resolution Technologies, an offshoot between Kevin Halverson, chief designer at US high-end audio brand Muse Electronics, and Mike Hobson of audiophile record label Classic Records. Both Halverson and Hobson have been championing the benefits of 24/96 audio since at least the early days of DVD in the late 1990s.

Kevin Halverson told us, 'Our goal has been to bring to the average person a bit of what makes a high end product worth the price of admission.'

[1] [2] continued on page 2 »

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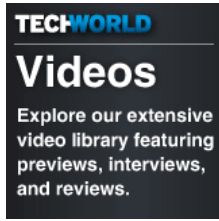
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