



Win tickets to the 2010 FIFA World Cup™

in association with Mahindra Satyam

Enter our free prize draw here

IT Jobs | Newsletters | Videos | Awards |

Go to:

Search

News | Reviews | Features | Blogs | Downloads | White Papers | How-tos

Security | Virtualisation | Operating Systems | Networking | Personal Tech | All Topics

Login | Register

Home > Review > Hardware > Audio

Personal Tech Feed

Personal Tech

Audio

HRT Music Streamer II review

By Andrew Harrison | [PC Advisor](#)
Published: 16:00 GMT, 20 May 10



Overview | Review | Spec | Verdict | Related Products



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

Newsletters

Techworld's Personal Tech Newsletter - Exploring the hottest topics in personal tech, with essential product reviews and expert opinion on laptops, mobile phones, digital cameras, monitors, printers, wireless, MP3 players and more.



[Sign-up](#)



Is paying for IT infrastructure on a usage basis attractive to your organisation?

Yes No

Popular Topics

force10 warehousing yahoo mail cymru spoofing attacks data cloud facebook login google stumbled brocade forerunner utm oracle 12g what does # means in twitter hp 8100 elite video cards memory s30 skype password killer



Win tickets to the 2010 FIFA World Cup™

Enter our free prize draw here

in association with Mahindra Satyam

Advertisement

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 »

- Email
- Print
- Comment
- Permalink
- Contact Us
- RSS
- ShareThis
- 0 tweet

Popular Topics

- Audio
- Camcorders
- Compact cameras
- Wi-Fi
- Budget PCs
- LCD monitors
- Home entertainment
- Laptops
- Budget laptops
- High-end laptops
- Netbooks/Mini-laptops
- Multifunction devices
- PDA's
- Phones
- Inkjet printers

Comments

Add your comment

Top How-Tos / Advice articles

- How to build your own Wikipedia
- How to transfer data between BlackBerry devices
- How to add Facebook and LinkedIn contacts to Outlook
- How to use Virtual PC with Windows 7
- How to compare VMware and Amazon Cloud Services
- How to use your BlackBerry as a modem
- How to set up a call centre

Stay Updated

- Follow us on Twitter
- Subscribe to RSS
- Sign Up to Newsletters
- Download Widget

Most Read

Features

- The best free antivirus programs
- 11 top Snow Leopard features
- iPhone app purge: Are template-based apps next?
- Ten top apps for Palm WebOS
- 10 free software downloads for your laptop
- The Apple iPad's five worst surprises
- 10 things the Internet has killed or ruined (and five things it hasn't)
- iPhone 4 glass case tested

News

How-tos

Reviewers Blogs



John E Dunn
[War on Error](#)

Subscribe to this blog



Max Cooter
[The Blue Screen](#)

Subscribe to this blog



David Cartwright
[Technically Speaking](#)

Subscribe to this blog

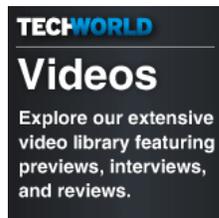
Win tickets to the 2010 FIFA World Cup™

Enter our free prize draw here

CIO in association with Mahindra Satyam

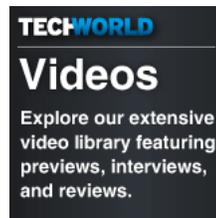
Advertisement

- [Film scanners](#)
- [Flatbed scanners](#)
- [DVD/Optical drives](#)
- [Software](#)
- [Browsers](#)
- [Media players](#)
- [Desktop OSS](#)
- [Mobile OSS](#)
- [Anti-virus](#)
- [Disk tools and backup](#)
- [Web design](#)



TECHWORLD
Videos
Explore our extensive video library featuring previews, interviews, and reviews.

Advertisement



TECHWORLD
Videos
Explore our extensive video library featuring previews, interviews, and reviews.

Advertisement



Win tickets to the 2010 FIFA World Cup™
Enter our free prize draw here
in association with
Mahindra Satyam

Advertisement

Ads by Google

[Online Backup Solutions](#)
Trust Iron Mountain. The Leader in Online Data Backup and Recovery.
www.IronMountain.com

[Business Continuity Plan](#)
Bull offers Disaster Recover & Business Continuity Services.
BullServices.com/Disast

[Data disaster recovery](#)
Free Disaster Recovery VM Servers SAS70 II, SLA's, Microsoft Gold, VMw
www.Avazpour.com/Disa

[L.A.'s trusted IT Company](#)
Sit back, relax, and leave the technology to us.
www.velocityns.com

Advertisement

Techworld White Papers

How to improve disaster recovery for the enterprise

Examining the business and technology trends that complicate and increase the cost of enterprise-wide DR planning, and the proven benefits of disk-to-disk backup and replication technologies.

[Download Whitepaper](#)

Reduce IT costs by simplifying and improving data centre operations management

Learn more about automating complex IT processes.

[Download Whitepaper](#)

Spoofing server-server communication

SSLStrip attack is threatening to expand the potential for attackers to compromise enterprise servers and the critical data on them. Find out how you can protect your organisation against these threats.

[Download Whitepaper](#)

Reinforcing and reassuring smartphone security

Learn more about how you can keep control of smartphone security

[Download Whitepaper](#)

[Newsletters](#)

[Blogs](#)

[Awards](#)

[IT Jobs](#)

[Contact us](#)

[White papers](#)

[Downloads](#)

[Site Map](#)

[Widgets](#)

[About us](#)

[RSS feeds](#)

[Slideshow](#)

[Video | Webcasts](#)

[Login | Register](#)

[Terms & Conditions](#)

Sponsored Links

Opal Office Broadband only £10 a month

Get to the heart of a cheaper package with up to 24Mbps broadband, wireless router, security package, IP address and free line connection. Save over £270 compared to BT. See how Opal compares

Backup Resource Centre

Using data de-duplication to accelerate efficiency and drive down IT costs

HP ROI Survey

Please complete our quick survey to give us your views on the impact increasing ROI has on your organisation

Switch your antivirus to ESET

for superior computer security and get 50% off MS Exchange protection and more...

Resource Centre

Solution Centre for Midsized Companies

Techworld UK - Technology - Business



Enabling agile and intelligent businesses

Changing markets, competitive pressures and evolving customer needs are placing increasing pressure on IT to deliver greater flexibility and speed. Explore truly flexible SOA foundations with this Oracle video.
[Watch](#)



IT Misuse Survey Complete this survey and you could win a Nexus One

Techworld are running a short survey to discover how UK businesses are managing Internet and email misuse in the Enterprise.

[Complete Survey](#)



Complete our survey and you could win a Sony E-book Reader.

Techworld have teamed up with HP to compile a survey relating to server virtualisation. Complete the short survey and you could be the lucky winner of a Sony E-book reader.

[Complete the survey here](#)

Win tickets to the 2010 FIFA World Cup™

CIO in a sso ciation with **Mahindra Satyam**

Enter our free prize draw here

Site Map IDG Network

Techworld

- Techworld Home
- News
- How-Tos
- Reviews
- Features
- Software Downloads

Most Popular

- Most Read News
- Most Read Features
- Most Read How-Tos
- Popular White Papers

Techworld Knowledge

- Centres**
- Storage
- Applications
- Virtualisation
- Personal Tech
- Green IT

- Security
- Operating Systems
- Networking
- Mobile & Wireless
- Data Centre
- SME

All Technology Topics

- Blogs**
- War on Error
- The Blue Screen
- Technically Speaking
- The Green Screen of Death
- Defragging the Enterprise
- The Virtual Enterprise

White Paper Library

- Latest White Papers
- Featured White Papers
- Most Popular White Papers

Resources

- Video Homepage
- Webcasts Homepage

The 2009 Techworld

- Awards**
- Techworld Awards
- Homepage
- Product Categories
- User Categories
- Entry Form
- Information about our Judges

Member Services

- Login to Techworld.com
- Register for an Account
- Sign-Up to Techworld Newsletters
- Update Your Account Preferences

Update Your Newsletter

- Preferences
- RSS
- Widgets
- Search

Contact Us /

- Information for Advertisers**
- Contact Techworld
- About Techworld
- Terms & Conditions
- Advertise with Us



All contents © IDG 2010: webmaster@techworld.com | Information for Advertisers | Privacy Policy

Techworld Worldwide: Techworld Sweden | Techworld Australia | Techworld Netherlands |