

Typical Application¹ - Characteristics

PARAMETER	TYPICAL
1394 Ports	3
Data Rate	S400 ²
1394a Enhancements?	Yes ³
DTCP Copy Protection?	Optional
Galvanic Isolation?	Yes
Channels ⁴ -Audio -Video	8 ⁵ 1 ⁶
Hot-plugging?	Yes ⁷
Cycle Master?	Yes
Protocols Supported ⁸	AV/C and IEC61883
Host Interface	Yes ⁹

Audio I/O Daughtercard

PARAMETER	TYPICAL	UNITS
Sample Rates	44.1 and 48	kHz
Word Length	24 ¹⁰	bits
Audio Formats	PCM, DTS, Dolby Digital	-
Dynamic Range	>100	dB
Ports	RS-232(2), MIDI In, MIDI Out	-
Protocol Supported	IEC61883-6	-

Notes:

- As currently used in planned 1394 devices.
- Supports S100, S200, and S400 data rates simultaneously.
- Includes arbitrated short bus reset function to eliminate dropouts caused by hot-plugging of devices.
- Transmits/receives 8 channels of digital audio, one DV stream, or one MPEG transport stream in full duplex.
- Audio formats supported per IEC61883.
- Supported video formats include DV and MPEG-2TS per IEC61883.
- Allows DHIVA modules to be added to or removed from a 1394 bus without restarting devices or cycling power to the bus.
- For a complete list of supported protocols, please contact Digital Harmony.
- The host interface is used to a) configure DHIVA, b) provide a mechanism for loading new firmware, and c) transfer asynchronous payload data to/from 1394 asynchronous packets. DHIVA provides multiple methods of connecting to a host processor. A simple serial interface provides the easiest method of connection. The serial interface can be configured to operate either in synchronous or asynchronous mode. In synchronous mode, the Baud Rate Clock can be configured as either an input or output. In addition to the serial interface is a high-bandwidth parallel interface to the onboard ARM processor. The primary purpose of this interface is to provide a means for transmitting and receiving high-speed asynchronous payload data.
- Maximum.

Disclaimer

This information describes a technology that has been developed, but for which full characterization data is not yet available. Digital Harmony Technologies, Inc. ("DHT") has made best efforts to ensure that the information contained in this document is accurate and reliable. However, the information is subject to change without notice. No part of this publication may be used as a basis for the manufacture or sale of any items without the prior written consent of DHT.

DHIVA Transceivers (IEEE-1394)

Description

IEEE-1394 has been accepted by the electronics industry as the preferred digital interconnect for consumer electronics, computer peripherals, and professional audio/video networks. Digital Harmony delivers its 1394 solution to manufacturers as the DHIVA™ (*Digital Harmony Interface for Video and Audio*) transceiver. With DHIVA, manufacturers are able to significantly reduce development time by easily adding a standards-compliant 1394 interface to their audio/video designs.

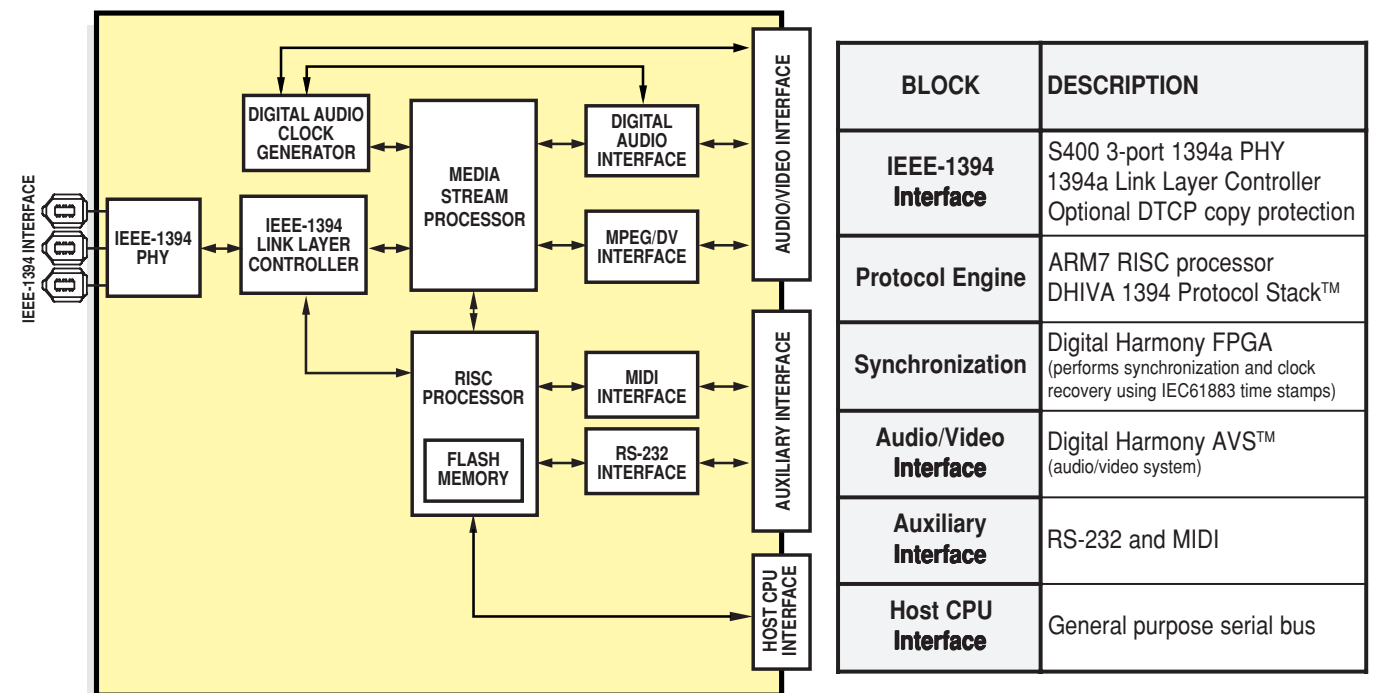
Availability

Demonstrations, reference designs, schematics/BOM, manufactured modules, and customization services are available. For licensing program details, contact sales@digitalharmony.com.

Features

- OEM module allows quick time-to-market of new 1394 devices
- Modular PHY daughtercard for flexibility in mounting
- Three (3) IEEE-1394 connectors
- S100, S200, and S400 data rates
- IEEE 1394a enhancements
- DTCP copy protection option
- Transmits/receives 8 channels of digital audio, one DV stream, or one MPEG transport stream in full duplex
- Isochronous transmission complies with IEC61883
- Hot-plugging
- Can serve as 1394 bus Cycle Master
- ARM7 RISC processor runs DHIVA 1394 Protocol Suite™ (family of international standards)
- On-board Flash ROM allows firmware upgrades
- Daughtercard options: Audio I/O (see back page), Video I/O and 1394b (planned)

Block diagram

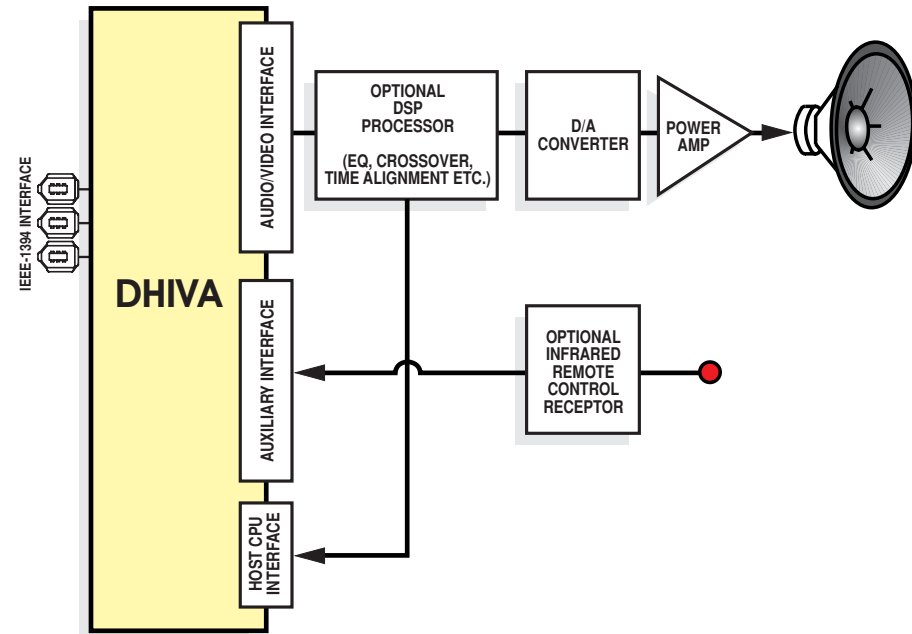


Applications

1394 Loudspeaker (audio sink)

BENEFIT: Allows loudspeakers to be networked and controlled with other audio devices.

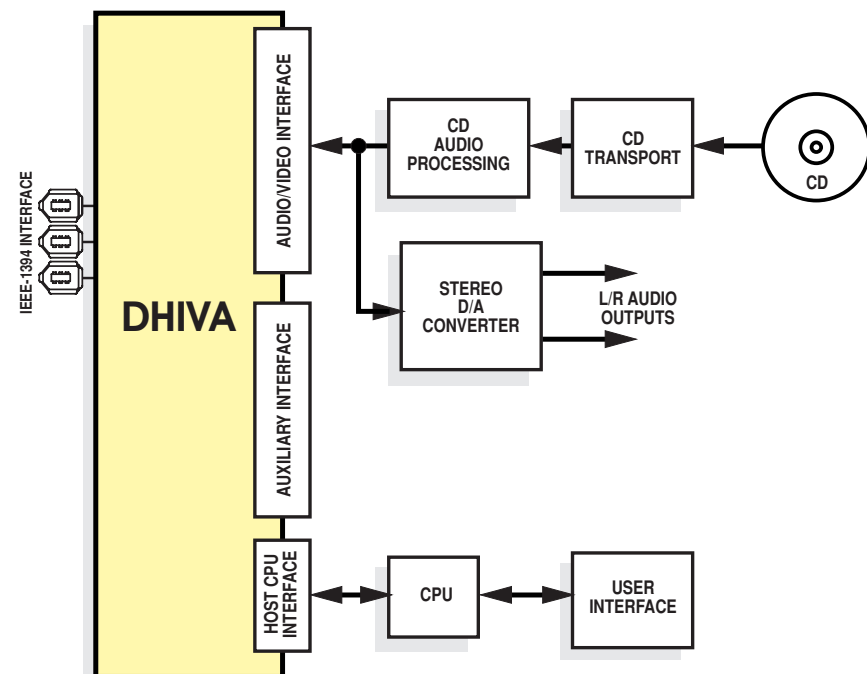
Design can be applied to powered loudspeakers, powered monitor speakers, multichannel amplifiers, headphones, headphone amplifiers, and other audio sink devices



1394 CD Player (audio source)

BENEFIT: Allows audio source devices to be networked with loudspeakers, amplifiers, and audio decoders.

Design can be applied to CD players and changers, MP3 jukeboxes, DVD-Audio players and changers, MiniDisc players, and other audio source devices

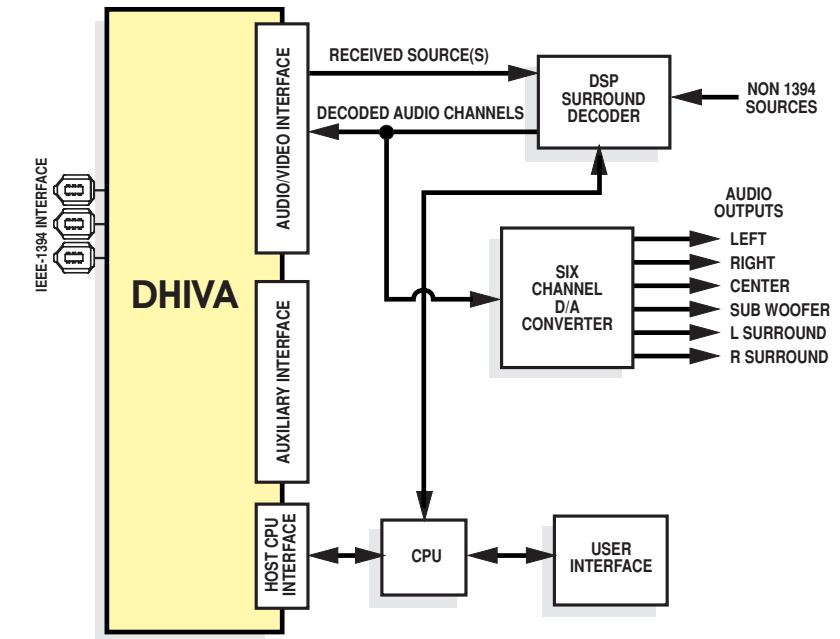


Applications Continued

1394 Surround Sound Decoder (audio processor)

BENEFIT: Allows simultaneous reception, realtime processing, and transmission of digital audio streams.

Design can be applied to standalone decoders, audio/video receivers, digital signal processors in the studio, and other audio processing devices



1394 Audio I/O Adapter (audio transcoder)

BENEFIT: Allows consumers to connect non-1394 audio devices to a 1394 network of devices.

Design can be applied to standalone adapters, audio/video receivers, and professional audio I/O "breakout" boxes for the studio:

- Connect analog and digital audio source and sink devices (e.g., CD players, cassette tape players, MiniDisc players, amplifiers, tuners, VCRs, camcorders, etc.) to the Digital Harmony-enhanced entertainment system

