PRODUCT CATALOG 2014

HALL RESEARCH

A New Wave in Connectivity

A Message from the Chief Executive Officer

Welcome to Hall Research's 2014 Catalog of Products!

It is hard to believe that 2014 is the 30th year since I started this company. One thing is for certain, we have consistently grown year after year in terms of sales, market penetration, and breadth of products that we offer. So, first and foremost I would like to thank our customers who have been loyal supporters for years and consider Hall Research a valuable partner. In a way, I feel that we are just getting started. We see endless opportunities in the new Digital AV and Control technologies and we are committed to be a leader in this ever-evolving landscape. Our strong and growing engineering team is a mix of young talent with new ideas together with accomplished and experienced engineers many with advanced degrees. Having come from an engineering and academic background myself, I attribute much of our success to our ability to innovate and produce leading edge, user friendly and reliable products.

We hope that you will find this catalog informative and easy to use. Products are divided into functional categories, the header of each page features a color-coded tab indicating the category for the page, and most sections contain a feature set or compatibility chart to aid in choosing the right products for specific requirements.

Of course, for detailed descriptions, full specifications, product photos (including animated 360° views), and User's Manuals, please refer to our website: www.hallresearch.com

Our 2014 catalog includes many new items including the award winning UHBX-3S (HDBaseT™ Splitter) that won a Salute Award at Government Video Expo and the EMX-HD-AUD (HDMI audio extractor and EDID manager) that was given Best Product of the Year award in Video Components category by Commercial Integrator at InfoComm 2013.

We thank you for your support and welcome your feedback.

Ali Haghjoo
Chief Executive Officer


30 YEARS OF INNOVATION

HALL RESEARCH

A New Wave In Connectivity

Switches

Distribution Amplifiers

Extension

AV Processors & Scalers

Control Systems

Audio

Accessories

TABLE OF CONTENTS

PRODUCT INDEX

Hall Research Icons Defined

Hall Research has been developing AV solutions since 1985. Since then we have continuously improved our extension technology as well as developing new technology standards through out our product lines. Products displaying these symbols utilize technology or features based on over 25 years of R&D.

Extends video long distance over Unshielded Twisted Pair (UTP) cable such as Cat5/5e/6.

Extends audio long distance over Unshielded Twisted Pair (UTP) cable such as Cat5/5e/6.

Extends low voltage power long distance over Unshielded Twisted Pair (UTP) cable such as Cat5/5e/6.

Extends RS-232 long distance over Unshielded Twisted Pair (UTP) cable such as Cat5/5e/6.

Extends USB long distance over Unshielded Twisted Pair (UTP) cable such as Cat5/5e/6.

Extends keyboard, video, and mouse long distance over Unshielded Twisted Pair (UTP) cable such as Cat5/5e/6.

Extends video long distance over fiber optic cable.

Extends audio long distance over fiber optic cable.

Extends RS-232 long distance over fiber optic cable.

Locking connector for securing HDMI cables. Compatible with Hall Research Locking HDMI Cables.

Embedded software for control from a smart phone, tablet or PC.

Emulates a display with custom EDID information.

Adjustable RGB timing to correct video skew over long distance extension.


IP
HDMI INPUT
SPDIF OUTPUT
HDMI OUTPUT
OUTPUT
INPUT
HALL RESEARCH
HSM-I-08-08
8x8 HDMI MATRIX WITH IP CONTROL

Switches

Matrix Switches

8x8 HDMI Matrix Switch

HSM-I-08-08

FEATURES

8x8 HDMI or DVI cross-point in 1 RU

Full HD support 1080p deep color, 3D

Supports lossless digital audio: both 5.1 and 7.1 Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio

Extracts Audio from each source and can be routed independently

Control from front panel, RS232 or IP (Telnet and built-in web interface)

DESCRIPTION

The HSM-I-08-08 is a powerful 8x8 HDMI matrix switch with RS232, front panel and IP control (internal web-server and Telnet). The unit supports HDMI 1.4a with HDCP, deep-color, multi-channel digital audio (up to 7.1 channels), and may be used with any combination of DVI (PC) or HDMI (HDTV) sources and displays.

Advanced features include: "Fast-Switch" technology with EDID management, audio extraction, independent audio routing, user defined names for inputs and outputs, with video overlay of the user-defined input name on the output video (duration and position of OSD overlay are adjustable).

Control and manage your video switch from anywhere on your network using a browser or smartphone. The IP (LAN) port includes a smart web server with embedded software to configure and control the switch.

IP Manager

MODELS

HSM-I-08-08	8x8 HDMI Matrix Switch with RS-232 and IP Control

4x4 and 4x2 HDMI Matrix Switches

HSM-I-04-04

IP Manager

FEATURES

4 x 4 HDMI or DVI cross-point in 1 RU

Full HD support 1080p deep color, 3D

Supports lossless digital audio: both 5.1 and 7.1 Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio

Control from front panel, RS232, IR remote or IP (Telnet and built-in web interface)

Try me!

DESCRIPTION

The HSM-I-04-04 is a powerful 4x4 HDMI matrix switch with RS232, IR, front panel and IP control (internal web-server and Telnet). The unit supports HDMI 1.4a with HDCP, deep color, multi-channel digital audio (up to 7.1 channels), and may be used with any combination of DVI (PC) or HDMI (HDTV) sources and displays.

Advanced features include: "Fast-Switch" technology with EDID management, user defined names for inputs and outputs. Control and manage your video switch from anywhere on your network using an iphone or Android phone. The IP (LAN) port includes a Smart built-in web server with software to configure and control the switch.

Control and manage your video switch from anywhere on your network using a browser or smartphone. The IP (LAN) port includes a smart web server with embedded software to configure and control the switch.

MODELS

HSM-04-02	4x2 HDMI Matrix Switch
HSM-04-04	4x4 HDMI Matrix Switch
HSM-I-04-02	4x2 HDMI Matrix Switch with IP Control
HSM-I-04-04	4x4 HDMI Matrix Switch with IP Control

VGA + Audio Matrix Switch with Optional IP Control

VSM-I-A-16-16

HD ready 1080p RS-232 IP LAN

FEATURES

Allows cross-point switching of VGA or HD video and audio signals

Control from front panel or RS232

Supports VGA resolutions to 1920x1200 or HD to 1080p

Balanced stereo audio outputs provide ground-loop isolation

Save and recall preset configurations

Optional Pro Audio allows level adjustment of each audio input channel

Optional IP Control

DESCRIPTION

The VSM-A-16-16 and its variations are compact high-end matrix switches for video and audio. The matrix switches provide 16 video (and audio) outputs, each capable of independently displaying any of 16 inputs in any combination. Additionally, the outputs can be blanked out and/or muted. The VSM-A-16-16 can be used in TV broadcasting environments, multimedia conference halls, public facilities, large display projects, schools, courtrooms, and command & control centers.

This video matrix switch can be controlled in 3 ways: manually using the buttons on the front panel, through one or two serial RS-232 control ports, or remotely via IP port (models with IP control function)

The matrices are available as 8x8 or 16 x 16 assembly with or without line level or Pro audio. IP control can be added to any switch.

MODELS

VSM-8-8	8x8 VGA Matrix Switch
VSM-16-16	16x16 VGA Matrix Switch
VSM-I-8-8	8x8 VGA Matrix Switch with IP Control
VSM-I-16-16	16x16 VGA Matrix Switch with IP Control
VSM-A-8-8	8x8 VGA + Audio Matrix Switch
VSM-A-16-16	16x16 VGA + Audio Matrix Switch
VSM-I-A-8-8	8x8 VGA + Audio Matrix Switch with IP Control
VSM-I-A-16-16	16x16 VGA + Audio Matrix Switch with IP Control
VSM-AP-I-8-8	8x8 VGA + Pro Audio Matrix Switch with IP Control
VSM-AP-I-16-16	16x16 VGA + Pro Audio Matrix Switch with IP Control

VGA + Audio Matrix Switch with UTP Outputs

VSM-A-I-16-JA16

FEATURES

Cross-point switching of VGA or HD video and audio

Wide bandwidth to support up to 1920x1200 or 1080p

Output Video + Audio over UTP cable for long runs (compatible with URA family receivers)

Save and recall preset configurations

Optional IP/LAN

DESCRIPTION

The Hall Research 8x8 and 16x16 VGA matrix switches are available in a variety of configurations with RJ45 outputs and/or inputs so video can be extended to or from the matrix using Cat5e/6 UTP cables. On the output side, the RJ45 can carry not only the VGA, but depending on the model they can piggyback, power, audio, audio+RS232 (TX), or bidirectional RS-232 (TX+RX). In each case compatible receives will be required. On the input side, RJ45 connectors can provide power to the remote senders. As with other VSM series switches, they feature saving and recalling preset configurations, front panel and RS-232 control and optional IP/LAN control.

MODELS: VGA + Audio with UTP Ouputs

VSM-A-8-JA8	8x8 VGA + Audio Matrix Switch with UTP Output
VSM-A-16-JA16	16x16 VGA + Audio Matrix Switch with UTP Output
VSM-I-A-8-JA8	8x8 VGA + Audio Matrix Switch with UTP Output and IP Control
VSM-I-A-16-JA16	16x16 VGA + Audio Matrix Switch with UTP Output and IP Control

MODELS: VGA + Power on UTP Ouputs

VSM-8-JP8	8x8 VGA + Power Matrix Switch with UTP Output
VSM-16-JP16	16x16 VGA + Power Matrix Switch with UTP Output
VSM-I-8-JP8	8x8 VGA + Power Matrix Switch with UTP Output and IP Control
VSM-I-16-JP16	16x16 VGA + Power Matrix Switch with UTP Output and IP Control

MODELS: VGA + RS232 on UTP Ouputs

VSM-8-JR8	8x8 VGA + bi-directional + RS-232 Matrix Switch with UTP Output
VSM-16-JR16	16x16 VGA + bi-directional + RS-232 Matrix Switch with UTP Output
VSM-I-8-JR8	8x8 VGA + bi-directional + RS-232 Matrix Switch with UTP Output and IP Control
VSM-I-16-JR16	16x16 VGA + bi-directional + RS-232 Matrix Switch with UTP Output and IP Control

MODELS: VGA + Audio + RS232 on UTP Ouputs

VSM-A-8-JAR8	8x8 VGA + Audio + RS-232 Matrix Switch with UTP Output
VSM-A-16-JAR16	16x16 VGA + Audio + RS-232 Matrix Switch with UTP Output
VSM-I-A-8-JAR8	8x8 VGA + Audio + RS-232 Matrix Switch with UTP Output and IP Control
VSM-I-A-16-JAR16	16x16 VGA + Audio + RS-232 Matrix Switch with UTP Output and IP Control

MODELS: VGA + Power on UTP Inputs and Outputs

VSM-JP8-JP8	8x8 VGA Matrix Switch with UTP Input and UTP Output
VSM-JP16-JP16	16x16 VGA Matrix Switch with UTP Input and UTP Output
VSM-I-JP8-JP8	8x8 VGA Matrix Switch with UTP Input and UTP Output and IP Control
VSM-I-JP16-JP16	16x16 VGA Matrix Switch with UTP Input and UTP Output and IP Control

4x4 VGA + Audio Matrix Switch with UTP Output and IP Control

VSM-A-I-4-JA4

VIDEO UTP AUDIO UTP HD ready 1080p RS-232 IP LAN E-CONTROL

FEATURES

Cross-point switching of VGA or HD video and audio signals

Independent audio routing

Balanced stereo audio inputs/outputs allow interference free connections

RS232, front panel or IP control (via built-in web-based software and Telnet)

4x additional UTP outputs for sending audio and video up to 1,000 ft

550 MHz video bandwidth to support resolutions to 1920x1200

Supports EDID at all inputs

DESCRIPTION

The powerful and highly economical 4x4 VGA matrix switches from Hall Research have balanced stereo audio inputs and outputs with its own audio cross-point. They have RS-232 supporting Hall's intiitive ASCII Genesis™ Control Command Set and user friendly front-panel controls. Users can initiate ties (routing) from input or output and the device can store and recall 8 presets.

The VSM–I-A-4-JA4 adds UTP extension of video and audio up to 1000 ft for each of the outputs and adds a powerful IP port with web based embedded configuration and control software accessible from any browser or smart device. User can assign meaningful English names to each of the inputs and outputs so making ties using the embedded app is easy and intuitive. Telnet control is also provided for those that do not wish to use the embedded app.

IP Manager

MODELS

VSM-A-4-4	4x4 VGA + Audio Matrix Switch
VSM-I-A-4-JA4	4x4 VGA + Audio Matrix Switch with UTP Output and IP Control

Digital Switches

2 & 4 Port DVI Switch with Audio

DVS-4A

FEATURES

Supports resolutions up to 1920x1200 and 1080p

Control via front panel or RS-232

Hot Pluggable

DVI-D, HDCP & HDMI 1.3 Compatible

Switches stereo audio

DESCRIPTION

The unit allows one monitor to be switched between multiple video and audio sources. The switched output can be selected via front panel push-button, RS-232 serial port, or automatically by scanning and detecting source 5v power on the inputs.
The switched output can be blanked (with audio muted) or unblanked via the front panel or through the serial port.

Optional rackmount brackets are also available

MODELS

DVS-2A	2x1 DVI + Audio Switch
DVS-4A	4x1 DVI + Audio Switch

4 Port HDMI Switch with RS-232 Control

SW-HDMI-4

FEATURES

Supports resolutions up to 1920x1200 and 1080p

Equalizes the inputs and outputs for losses in the cable to 65 feet

Supports High Definition Audio Dolby Digital TrueHD and DTS-HD

HDMI, HDCP, and DVI Compliant

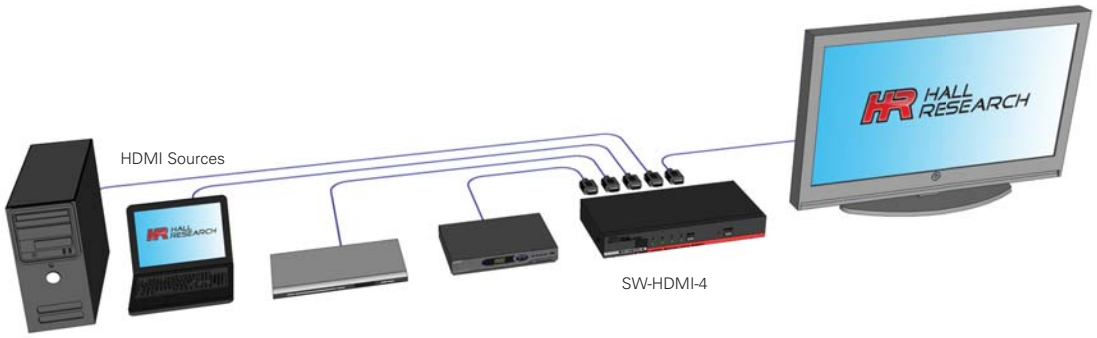
Control via front panel, IR, or RS-232

Supports 24 / 30 / 36 bit color depth

DESCRIPTION

The SW-HDMI-4 is a high performance HDMI Switcher capable of switching and boosting 4 independent HDMI Video sources to 1 output.

Make selections by using the front panel push buttons, the IR remote control or by RS-232 from an external controller. Since HDMI (and DVI) digital signals have cable distance limitations, the SW-HDMI-4 provides the ability to boost the output signal to drive long HDMI cables to about 50 feet. In addition the unit has built in automatic equalizers on the inputs so that it can handle long input video cables to 65 feet.



MODELS

SW-HDMI-4	4x1 HDMI Switch

Analog Switches

2 & 4 Port VGA Switches

VS-2

HD ready 1080p RS-232

FEATURES

Supports resolutions up to 1920x1200 and 1080p

Switch one monitor between multiple VGA sources

Can be controlled manually, via Serial port , or auto-switching

Auto mode automatically scans and selects the input with active video

Priority auto switching gives input priority when multiple video signals are present

Output can be blanked

DESCRIPTION

These versatile and compact VGA switches support VGA to 1920x1200 or 1080p. Allows one monitor to be switched between multiple video sources. The switched output can be selected via push-button, through RS-232 serial port, or automatically by scanning and detecting active video on the inputs.

The switched output can be blanked or unblanked via the front panel or through the serial port.

Optional rackmount brackets are available.

MODELS

VS-2	2x1 VGA Switch
VS-4	4x1 VGA Switch

2 & 4 Port VGA + Audio Switches

VS-2A

HD ready 1080p RS-232

FEATURES

Switch one monitor and speakers between multiple VGA + audio sources

Can be controlled manually, via RS-232 or auto-switching

Auto mode automatically scans and selects the input with active video

Priority auto switching gives input priority when multiple video signals are present

Output can be blanked

2 port model has local loop output for one of the inputs

DESCRIPTION

These versatile and compact VGA & audio switches supports PC resolutions to 1920x1200 or 1080p. They allow one monitor to be switched between multiple video and audio sources. The switched output can be selected via front panel push-button, through RS-232 serial port, or automatically by scanning and detecting active video on the inputs. The switched output can be blanked (with audio muted) or unblanked via the front panel or through the serial port. Optional rackmount and surfacemount brackets are available.

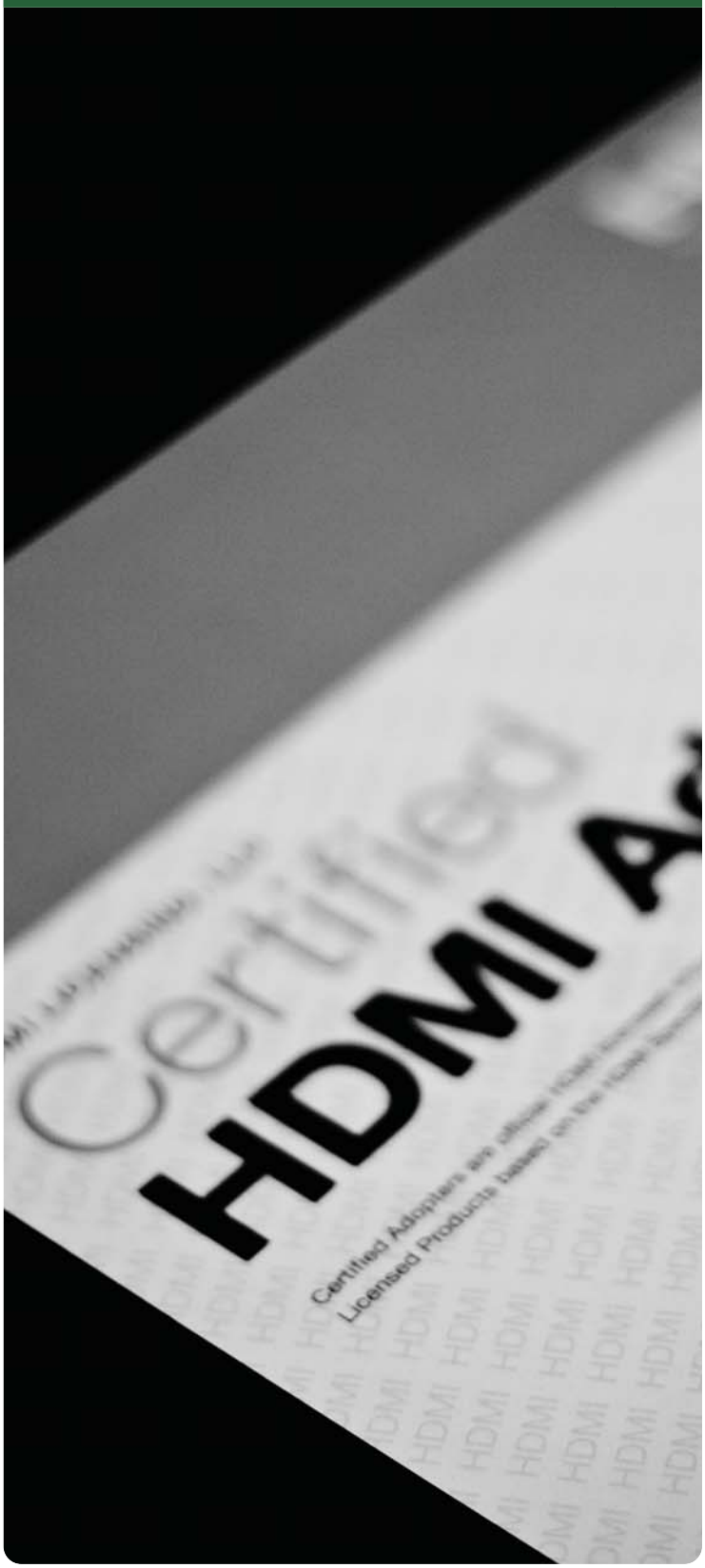
The 2 input unit (VS-2A) provides a buffered loop-out for input #1, making it ideal for presentation scenarios where the 2 inputs are from: (a) a fixed desktop PC with its own LCD, and (b) a guest notebook PC, either of which can be switched to and displayed on one projector.

MODELS

VS-2A	2x1 VGA + Audio Switch
VS-4A	4x1 VGA + Audio Switch

Distribution Amplifiers

Digital Amplifiers



DVI Splitters

SP-DVI-4A

FEATURES

Supports resolutions up to 1920x1200 and 1080p

Can be cascaded (2-levels deep) for more outputs

Supports both digital and analog DVI signals (DVI-I)

DESCRIPTION

Split a single DVI signal to multiple DVI displays. This Amplifier can boost DVI outputs to 10 meters (33 feet). Multiple units can be cascaded to provide even more outputs.

MODELS

SP-DVI-2A	1x2 DVI Distribution Amplifier
SP-DVI-4A	1x4 DVI Distribution Amplifier

Single & Dual Link DVI Extender with EDID Management

EMX-DVI

FEATURES

Extend and boost DVI video to 90 ft total

Can Learn and store EDID from any LCD

Pass-through EDID or emulate any LCD

Supports Single and Dual-Link DVI, HDMI™, CEC & 3D Video

Can be powered from DVI input or external power supply

LED Indicators for Mode Display

DESCRIPTION

The EMX-DVI automatically compensates for signal degradation in long cables. Input cable length can be up to 50 ft (15 m), and the unit can drive long DVI Cables on its output to 40 ft (12 m) by boosting the DVI video output.

The DDC channel (for EDID and HDCP) can either be bypassed through the EMX-DVI (source "sees" the connected LCD), or Emulated, where the EDID is supplied from internal EDID memory in the EMX-DVI. When EDID is Emulated, HDCP is turned off (forcing the source to send non-content protected video without HDCP). Using the learn button, you can copy and store EDID from any HDMI or DVI LCD into the internal EDID memory of the EMX-DVI.

MODELS

EMX-DVI	Single & Dual Link DVI Extender with EDID Management

HDMI Splitter/Extender

SP-HD-8A

FEATURES

Splits an HDMI source to multiple outputs without loss

Supports HDMI 1.4 deep-color (up to 12 bits per color) and 3D formats

Supports VGA & HDTV resolutions, VGA to WUXGA and HD from 480p to 1080p

4 port model supports 4K resolution

HDMI, HDCP, and DVI Compliant.

LED indicators for power, source signal, and 8 output connections

High bit-rate digital audio - Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio

DESCRIPTION

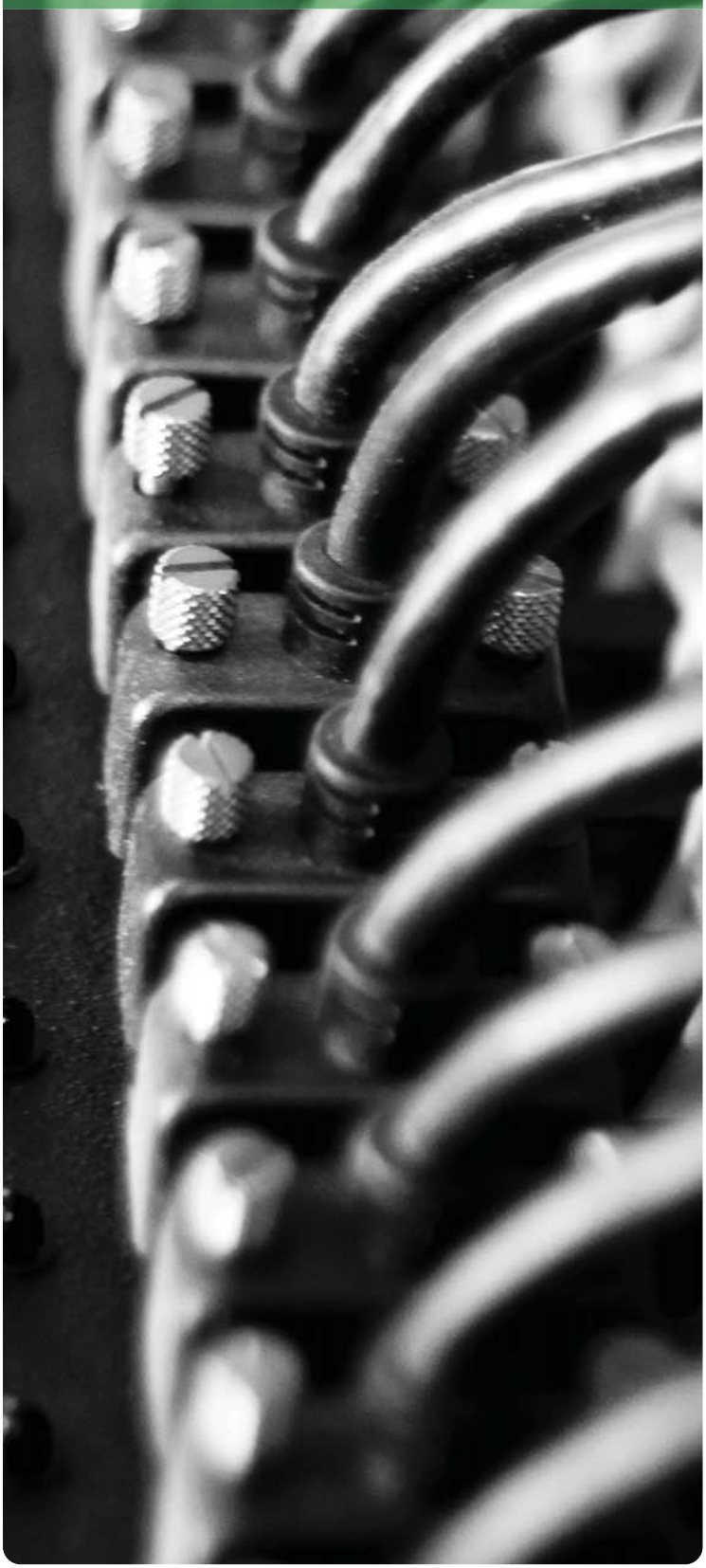
Hall Research offers 2,4, and 8 Channel HDMI Splitters that can be used with any single-link DVI or HDMI input signals. The HDCP compliant splitters support Full-HD and deep-color and currently the four channel model (SP-HD-4A) also supports 4K video.

The splitters feature HDMI locking connectors (for use with compatible locking HDMI cables such as Hall's C-HDMI-L-xx) and each output is buffered to drive HDMI cables to 12 meters (40 meters).

MODELS

SP-HDMI-2A	1x2 HDMI Distribution Amplifier
SP-HD-4A	1x4 HDMI Distribution Amplifier
SP-HD-8A	1x8 HDMI Distribution Amplifier

Analog Amplifiers



VGA Splitter Extender

400

200A

FEATURES

Split a single VGA signal to multiple displays

Boost output to 150 feet or more

2 channel (200A) splitter features audio and EDID routing switch (pass-thru or emulate)

Supports resolutions up to 1920x1200 and 1080p

DESCRIPTION

Distribute a single VGA signal to multiple displays. Amplified outputs allow cable lengths up to 150 feet or more depending on the resolution.

MODELS

200A	1x2 VGA Distribution Amplifier with Audio and EDID Management (pass-thru or emulate)
400	1x4 VGA Distribution Amplifier

RGBHV Splitter with Universal Sync Processor

210-LU

FEATURES

Automatically detects and accepts all input sync modes (RGBHV, RGBS, or RGsB)

Each output can generate all three sync types, user selectable

300 MHz Bandwidth

Boost output to 150 feet or more

DESCRIPTION

The 210-LU buffers and splits component (RGBHV, RGBS, or RGsB) video signals for display on two monitors. The device is capable of outputting separate, composite, or sync-on-green based on a switch setting independently for each output. Outputs video up to 150 feet or longer depending on the resolution used and cable quality.

MODELS

210-LU	1x2 RGBHV Distribution Amplifier

S-Video / Composite Splitter / Extender

CSV-3

FEATURES

Split a single s-video and/or composite signals to 3 displays

Boost output to 200 feet

DESCRIPTION

The CSV-3 is a compact and highly versatile S-video and Composite Video 3-way video splitter. It splits composite video, S-Video, or both 3-ways with no loss in image quality or ghosting. Input signals are terminated to eliminate reflections and ghosting.

MODELS

CSV-3	1x3 S-Video and Composite Distribution Amplifier

Extension
OVER UTP / FIBER

Digital AV Over UTP

HDMI Over UTP HDBaseT™

UH-1BTX

FEATURES

Extend HDMI or DVI over single UTP 5e/6 up to 330 ft (100 m)

Utilizes HDBaseT™ extension technology

Full HD support 1080p deep color, 3D, and 4K

HDCP Compliant with pass-thru EDID from display to source

DESCRIPTION

The UH-1BTX extends any HDMI or single link DVI video signal up to 330 ft (100 m) over inexpensive Cat5e or UTP cable using HDBaseT technology. The economical UH-1BT extends 230 ft. Video and embedded audio signals are transmitted without any compression to the remote for a 100%identical reproduction.

The UH-1BTX consists of a kit of compact but sturdy Sender and Receiver with metal enclosures. All secondary data channels such as HDCP, DDC, and Hot-Plug detect are transparently connected between the source and the sink for a truly trouble-free operation.

MODELS

UH-1BT	HDMI Over HDBaseT™ kit (Sender & Receiver) 230 ft (70m)
UH-1BTX	HDMI Over HDBaseT™ Kit (Sender & Receiver) 330ft (100m)

All Models in the above table are comprised of a sender (-S), and a receiver (-R)

HDMI, RS232 and IR Extension over HDBaseT™ with Power over UTP (POH) on Wall Plate

UHBX-WPC-P2

FEATURES

Extends HDMI or DVI video to 500 ft on just one UTP

Includes RS232 and IR extension in both directions

Supports virtually all HDMI and DVI resolutions including 4K

Only one end requires power, other side is powered via UTP

Power-over-HDBaseT™ meets IEEE 802.3af standard

DESCRIPTION

Hall Research's wall plate HDMI transmitters can be purchased individually or as kits that include other pieces such as compatible receiver. The basic HDMI sender fits in a single gang Decora® style wall plate and is capable of extending any HDMI video signal, including 4K video, up to 150 meters (500 ft).

A second single-gang module can be added to the wall plate to provide RS-232 and IR extension in both directions. The RS-232 can operate at any baud rate including 115,200. The IR extension is fully compatible with all standards (SONY, NEC, RC5, RCA, etc). The wall plate is powered though the UTP cable eliminating the need for a separate power supply. The wall plate conforms to HDBaseT power standard (IEEE802.3af) making it compatible with any certified HDBaseT power sourcing equipment.

The wall plate sender may be connected to projectors or TVs that have direct HDBaseT inputs. In this case no external receiver would be needed. A PoH inserter will be required (part number 511-POH-17W).

MODELS (Individual)

UHBX-S-WP	HDMI Extension over HDBaseT sender in single-gang Decora® Wallplate
UHBX-R-PSE	HDMI, IR and RS232 over HDBaseT power injecting receiver unit via UTP cable.
UHBX-COM	IR and RS232 in double-gang Decora® Wallplate

MODELS (Kits)

UHBX-WP-P2	UHBX-S-WP and UHBX-R-PSE with HDMI over HDBaseT sender in single gang Decora® Wallplate with Power injecting receiver unit via UTP cable
UHBX-WPC-P2	UHBX-SC-WP, and UHBX-R-PSE - HDMI, IR and RS232 over HDBaseT Sender in double-gang Decora® Wallplate with Power injecting receiver unit via UTP cable

HDMI over UTP Extender with HDBaseT™

UHBX-P1

FEATURES

- Extends HDMI or DVI video to 500 ft on just one UTP
- Includes RS232 and IR extension in both directions
- Supports virtually all HDMI and DVI resolutions including 4K
- Only one end requires power, other side is powered via UTP
- Uses standard 5v power supply
- Power-over-HDBaseT™ (PoH) meets IEEE 802.3af standard
- Sturdy metal enclosures with mounting provisions

DESCRIPTION

UHBX-P1 is an extender kit (UHBX-S-PSE + UHBX-R-PD) that utilizes HDBaseT™ technology. It can send HDMI and PoH (Power-over-HDBaseT™) to 500 ft (150 m) on a single UTP cable. The extender uses only one +5v power supply, internally creates 48v PoH and complies with IEEE 802.3af handshake. The P1 extender's sender unit provides power to the receiver. In standard mode the UHBX—P1 supports DVI and HDMI signals of virtually any resolution up to 4K x 2K to 330 ft (100m), and in Long Reach mode it supports resolutions to 1920x1080 to 500 ft (150 m). The end identified as PSE (power sourcing equipment) injects power on to the UTP cable and the side identified as PD (Powered Device) is powered through the UTP cable. The PSE side requires connection of an AC adapter that supplies 5v DC, while the PD side is simply powered through the RJ45 connector from the opposite side.

MODELS (Individual)

UHBX-R-PD	HDMI, IR and RS232 receiver over HDBaseT™ powered via UTP cable.
UHBX-R-PSE	HDMI, IR and RS232 receiver over HDBaseT™ with power inserted through UTP cable.
UHBX-S-PSE	HDMI, IR and RS232 sender over HDBaseT™ with power inserted through UTP cable.
UHBX-S-PD	HDMI, IR and RS232 sender over HDBaseT™ powered via UTP cable.

MODELS (Kits)

UHBX-P1	UHBX-S-PSE +UHBX-R-PD for HDMI, IR and RS232 over HDBaseT™ Receiver with Power Sourcing sender unit via UTP cable.
UHBX-P2	UHBX-S-PD +UHBX-R-PSE for HDMI, IR and RS232 over HDBaseT™ sender with Power Sourcing receiver unit via UTP cable.

HDMI Multi-Port Sender with HDBaseT™

UHBX-8X

FEATURES

Converts 8 separate HDMI inputs to corresponding HDBaseT™ outputs

Extends IR in both directions

Can issue RS-232 or IR commands to any output

RS-232 and IP control ports

Supports HDCP, 3D, Deep Color, CEC, and 4K (UHD) resolutions

Sturdy 1RU design with built in power supply

HDBaseT™ Compliant

Can power compatible receivers through the cable using PoH (requires optional 48v supply)

Front panel status indicators for power, link, video and more for each channel

DESCRIPTION

The UHBX-8X is a 1 RU box that converts 8 HDMI inputs to corresponding HDBaseT™ outputs for extension to 150 meters (500 ft) on single UTP. The extender supports HDCP, 3D, Deep Color, CEC, and 4 K (UHD) resolutions. Compatible receivers include the low-cost self-powered UH-1BT-R and UH-1BTX-R for HDMI extension to 230 ft or 330 ft respectively, or the UHBX-R-PD that supports RS-232, IR, PoH, and Long Reach modes to 500 ft. When using receivers with PoH function, a single optional 48v power supply is needed for the 8-channel sender (power supply part number: 511-PS4812).

The UHBX-8X provides both IP (Ethernet), and RS-232 ports for control. These ports allow the user to address and send RS-232 or IR commands to any of the receivers to control the remote display. IR signals can be extended in both directions, and the UHBX-8X provides a jack for an IR detector cable. The IR received by the detector can be routed to any one or combination of outputs. Eight separate IR emitter ports are provided on the rear of the UHBX-8X which are used to connect IR detectors to each remote location for controlling multiple sources.

The extender is constructed as a 1RU rack-mountable unit and has a built-in power supply. LED indicators on the front panel show Link Status, HDCP status, Long Reach and Power for each of the 8 outputs

MODELS

UHBX-8X	HDMI Multi-Port Sender with HDBaseT™

HDMI on HDBaseT™ 1x3 Splitter

UHBX-3S

FEATURES

Compact unit sends HDMI video to 3 remote displays using HDBaseT™

Can drive cables to 100m (330 ft) in 4Kx2K resolution, or 150m (500 ft) in 1080p

Local HDMI output for direct connection to a local display

Advanced EDID management with USB port for EDID manipulation using a PC

RS-232 port for sending commands to remote displays

DESCRIPTION

The UHBX-3S is an HDMI 1.4 compliant splitter with one local HDMI output and 3 HDBaseT™ outputs for transmission to compatible receivers up to 150 meters (500 ft away). The Splitter supports HDCP, 3D, Deep Color,CEC, and 4K resolution. EDID management is integrated into the unit with "Pass-thru", "Learn", and "Emulate" features. Advanced users can use the USB port to download, edit, and upload EDID data to and from the device. The unit provides an RS-232 port that can individually address and control remote displays that feature RS-232 interface. The UHBX-3S provides convenient front panel LED status indicators for all HDBaseT™ parameters to quickly verify proper operation.

The UHBX-3S supports PoH (Power over HDBaseT™) using an optional (sold separately) external 48 v DC power supply (part number 511-PS4812). Compatible receivers are powered from the sender using PoH standard so no additional power supplies are needed. The HDBaseT™ compliant PoH performs all necessary low voltage handshakes prior to injecting power on the UTP line for maximum reliability, safety, and compliance.

Compatible receivers include: UHBX-R-PD, UH-1BTX-R, UH-1BT-R (please refer to our Compatability Matrix at the end of this section)

MODELS

UHBX-3S	1x3 HDMI on HDBaseT™ Splitter

Digital Over Dual UTP

UH-2D

UH-2D-S-DP

FEATURES

Use UTP cables to extend pure digital high definition HDMI™ audio video signals

Can drive cables to 170 ft @ 1080i/720p or 130ft @ 1080p on 2 UTP cables

Supports DVI-D single link extension with optional adapter cables

Only one power supply needed

Buffers DDC (Display Data Channel) for reliable operation of HDCP and EDID

Supports CEC, HPD, and DDC

DESCRIPTION

Hall Research's Model UH-2D is a member of the Hall Research HD-Cat™ video extension product line. The UH-2D extender kit uses two UTP cables to extend high definition video well beyond the limitations of HDMI cable. The Sender and Receiver set support HDCP, Deep-Color, 3D and can achieve a distance of up to 170 ft @ 1080i/720p or 130 ft @ 1080p resolution.

A single power supply is provided that can be plugged at either end for easy installation. The extender equalizes TMDS video using state of the art technology for a crisp image, and buffers the DDC channel for error free EDID and HDCP operation that help prevent image dropouts. The extender can also extend single link DVI video from any PC.

The HD-Cat™ family of products are designed and manufactured in the USA. They offer a reliable and low-cost alternative to HDBaseT extenders for shorter distances. The UH-2D extender is typically sold as a kit, however senders and receivers are also separately available for purchase. There is also a single-gang Decora® style wall-plate of the sender side.

MODELS (Individual)

UH-2D-R	HDMI over Dual UTP Receiver
UH-2D-S	HDMI over Dual UTP Sender
UH-2D-S-DP	HDMI over dual UTP Decora Wallplate (Sender)

MODELS (Kits)

UH-2D	HDMI over 2 UTP Extender Kit
UH-2D-DP	HDMI over 2 UTP Wallplate Extender Kit

HDMI Over Dual UTP Splitter

UH-2D-3S

FEATURES

Compact unit sends uncompressed HDMI video to 3 remote displays on 2 UTP cables

Can drive cables to 170 ft @ 1080i/720p or 130ft @ 1080p on 2 UTP cables

Local HDMI output for direct connection to a local display

Built-in power supply with standard IEC320 AC power jack

Supports HDMI 1.4 Deep-Color (up to 12 bits per color) and 3D formats

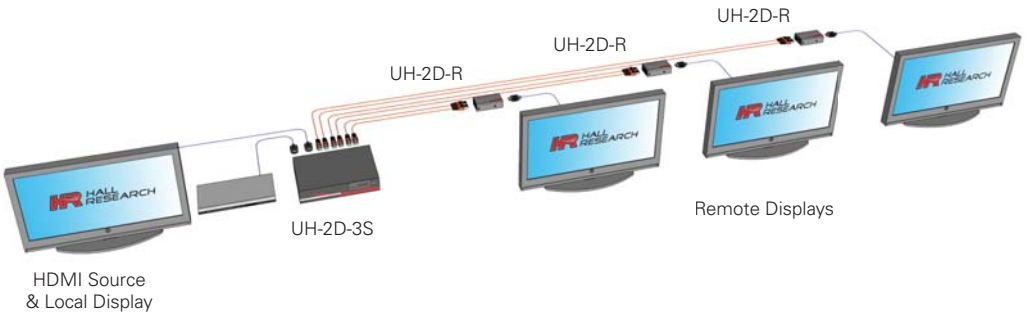
Supports VGA HDTV resolutions, VGA~WUXGA and 480p~4K

DESCRIPTION

Hall Research's Model UH-2D-3S is a member of the HD-CAT® video extension and distribution product line. The UH-2D-3S is used to extend HDMI™ or DVI video up to 170 ft @ 1080i/720p or 130 ft @ 1080p resolution on 2 UTP cables to 3 remote receivers (Model UH-2D-R). The unit provides one local HDMI output and 3 sets of RJ45 pairs for connection to the remote receivers. Cables that are of lower quality and construction will reduce the maximum distance.

The UH-2D-3S is compatible with HDMI versions 1.2a, 1.3 and 1.4 in terms of 3D, deep- color, and 4K video support. The remote receiver (UH-2D-R) includes state of the art automatic equalization to compensate for signal losses in the cables and produces a crisp image as clear as the original.

The unit is housed in a compact sturdy metal enclosure that is 1RU high. Two can be mounted side-by-side using Hall Research Model RMS-1U-1A rack shelf (UH-2D-3S has threaded holes on the bottom for this purpose), or a single unit can be mounted using the Model RMK-05 Rack Mount Kit.



MODELS

UH-2D -3S	1x3 HDMI Over Dual UTP Splitter (Sender)

DVI + Audio + RS-232 Over Dual UTP with EDID Management

UD2A-EDID

FEATURES

Extend DVI, Audio, RS-232 and Power up to 200 ft (61 m) over UTP Cables

Sends 720p signal up to 200 ft (61 m) or 1080p up to 100 ft (30 m)

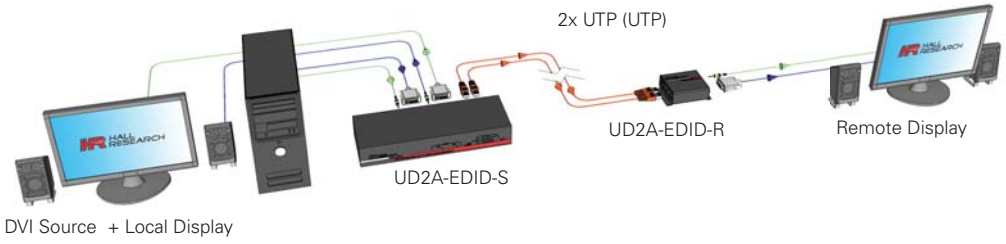
Auto learning and programming of EDID information.

Supports bi-directional RS-232

DESCRIPTION

The UD2A-EDID sends DVI video, audio, bi-directional RS-232 and power over two UTP cables. It transmits 720p video up to 200 ft (61 m) and 1080p video up to 100 ft (30 m) away.

The UD2A-EDID has a unique EDID learning feature that allows you to learn or record the EDID information from a display. The EDID information can be modified or programmed directly into the sender to emulate the display.



MODELS

UD2A-EDID	DVI + Audio + RS-232 Over Dual UTP (Sender & Receiver)

Analog AV Over UTP

VGA + Audio Over UTP Senders

UVA-8

FEATURES

Transmit VGA and audio up to 1000 ft (305 m) over UTP cable

Supports resolutions up to 1920x1200 or 1080p

Compatible with URA series receivers

Local VGA and Audio outputs

DESCRIPTION

The UVA series senders transmit VGA and audio up to 1000 ft (305 m) over UTP cable. They support resolutions up to 1920x1200 @ 60 Hz. Senders are available with 2 to 24 split outputs. Senders are DDC compliant and will pass-through EDID from locally connected display, or automatically emulate EDID data if no local LCD is detected.

Single output senders are also available in a single-gang metal wall plate or single-gang Decora plate form factor. UVA series senders are compatible with URA series receivers.

MODELS

UVA-DP	VGA + Audio Metal Decora Plate (Sender)
UVA-WP	VGA + Audio Metal Wall Plate (Sender)
UVA-2	1x2 VGA + Audio Over UTP Splitter (Sender)
UVA-4	1x4 VGA + Audio Over UTP Splitter (Sender)
UVA-8	1x8 VGA + Audio Over UTP Splitter (Sender)
UVA-24	1x24 VGA + Audio Over UTP Splitter (Sender)

16 Independent VGA + Audio Over UTP Multi-Port Sender

UVA-16X

FEATURES

Distribute VGA and audio up to 1000 ft (305 m) over a single UTP cable

Supports resolutions up to 1920x1200 or 1080p

Compatible with URA series receivers

Durable 2RU 19" enclosure with internal power supply

DESCRIPTION

The UVA multi port sender transmits VGA and audio up to 1000 ft (305 m) over UTP cable. It is compatible with URA series receivers. For runs of over 250 feet, it is recommended to use "Skew-free" cables or a receiver with built-in SKU Correction technology such as URA-SKU .

The sender has multiple 1:1 channels which means each input will extend the signal to a dedicated receiver. No signal splitting. Each sender input uses EDID Emulation so they can be programmed with any custom EDID information using our USB-EDID-HD15.

The Sender is housed in a 2 RU, 19" Rack mount enclosure and has connectors for up to 16 video inputs and 3.5 mm jacks for audio inputs, as well as multiple RJ45 output connectors for connection to the remote systems.

MODELS

UVA-16X	1:1x16 VGA + Audio Over UTP (Sender)

VGA + Audio Over UTP Receivers

URA-SKU

FEATURES

Receive VGA and audio from up to 1000 ft (305 m) over UTP cable

Supports resolutions up to 1920x1200 or 1080p

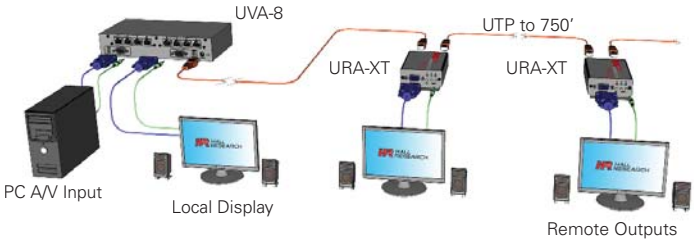
Differential signaling eliminates ground loops and noise

Optional Skew correction for compensating long cable runs

Optional RJ45 output for daisy chaining multiple receivers in a single run

DESCRIPTION

The URA series receivers accept VGA and audio over UTP cable from compatible senders up to 1000 ft (305 m) away. It supports resolutions up to 1920x1200 at 60Hz. It can fully compensate for signal attenuation in long UTP cables using a 5-stage active filter. Low skew cable such as Hall Research Zero-Skew™ are recommended with the URA. URA-SKU and URA-XT include a built-in Skew Correction feature that allows individual adjustment of RGB signals to compensate for signal skew that tends to occur over long distances with regular UTP cable. The URA-XT also features an RJ45 output for daisy-chaining additional receivers. Note that the URA-XT outputs the skew adjusted signal requiring compensation only for the distance between each receiver.



MODELS

URA	VGA + Audio Over UTP (Receiver)
URA-SKU	VGA + Audio Over UTP with Skew Correction (Receiver)
URA-XT	VGA + Audio Over UTP with Skew Correction and Extension (Receiver)

VGA + Power Over UTP

UV1

FEATURES

Extend VGA and power up to 500 ft (153 m) over a single UTP cable

Supports resolutions up to 1920x1200 or 1080p

Only one power supply required which can be plugged to either end.

DESCRIPTION

The UV1 series extenders transmit VGA and power up to 500 ft (153 m) over a single UTP cable. Power can be supplied from either sender or receiver. Senders can be programmed with custom EDID information using our USB-EDID-HD15.

UV1 senders and receivers are available in a variety of form factors including single-gang wall plates and Decora plates

MODELS

UV1	VGA Over UTP (Sender & Receiver)
UV1-R	VGA Over UTP (Receiver)
UV1-R-DP	VGA Over UTP Metal Decora Plate (Receiver)
UV1-R-WP	VGA Over UTP Metal Wall Plate (Receiver)
UV1-S	VGA Over UTP (Sender)
UV1-SL	VGA Over UTP with Local Output (Sender)
UV1-SL -DP	VGA Over UTP Metal Decora Plate with Local Output (Sender)
UV1-S-DP	VGA Over UTP Metal Decora Plate (Sender)
UV1-S-WP	VGA Over UTP Metal Wall Plate (Sender)

VGA + Power Over UTP Splitter/Sender

UV8-S

FEATURES

Extend VGA and power up to 500 ft (153 m) over a single UTP cable

Supports resolutions up to 1920x1200 or 1080p

Differential signaling eliminates ground loops and noise

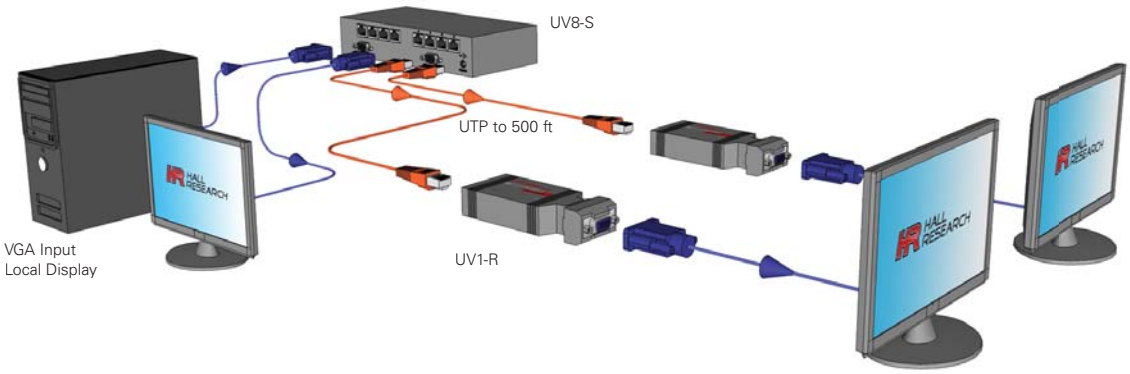
No power supply required at receiver side

Compatible with UV1 series receivers

DESCRIPTION

UV series splitters distribute VGA and power up to 500 ft (153 m) over a single UTP cable. Supports resolutions up to 1920x1200 @ 60 Hz. Senders are available with 2 to 24 split outputs for distributing the same signal to multiple displays. Power is supplied by the sender to the receiver. Each sender includes a local output.

UV series senders are compatible with UV1 series receivers.



MODELS

UV2-S	1x2 VGA + Power Over UTP Splitter (Sender)
UV4-S	1x4 VGA + Power Over UTP Splitter (Sender)
UV8-S	1x8 VGA + Power Over UTP Splitter (Sender)
UV24-S	1x24 VGA + Power Over UTP Splitter (Sender)

16 Independent VGA + Power Over UTP Multi-Port Sender

UV1-S-16X

FEATURES

16 Indepedent VGA inputs with corresponding RJ45 outputs

Distribute VGA and power up to 500 ft (153 m) over a single UTP cable

Supports resolutions up to 1920x1200 or 1080p

Durable 2RU 19" enclosure with internal power supply

Compatible with UV1 series receivers

DESCRIPTION

The UV1-S-16X multi port sender transmits VGA and power up to 500 ft (153 m) over UTP cable. It is compatible with UV1 series receivers. For runs of over 250 ft, it is recommended to use "Skew-free" cables.

The sender has multiple 1:1 channels which means each input will extend the signal to a dedicated output. No signal splitting. Each sender input uses EDID Emulation so it can be programmed with any custom EDID information using our USB-EDID-HD15.

The Sender is housed in a 2 RU, 19" Rack mount enclosure and has connectors for up to 16 video inputs as well as multiple RJ45 output connectors for connection to the remote systems. Power is supplied to the receivers from the sender unit.

MODELS

UV1-S-16X	1:1 x16 VGA + Power over UTP (Sender)

VGA + Audio + RS-232 Over UTP Receiver

URA-232

FEATURES

Receive VGA, audio, and RS-232 from up to 1000 ft (305 m) over a single UTP cable

Supports resolutions up to 1920x1200 or 1080p

Stores pre-programmed RS-232 commands for triggered activation

Built-in SKU Correction technology

Compatible with UV232A senders

DESCRIPTION

URA-232 series receivers accept VGA, audio and RS-232 from up to 1000 ft (305 m) over a single UTP cable.

URA-232 receivers feature a built-in trigger function for firing pre-programmed RS-232 commands. This allows a sender unit to send a single command triggering all connected receivers to fire a pre-programmed RS-232 command specific to the device to-or display they are connected to. A typical application for this would be sending a power on/off command in an environment with mixed display types.

Each receiver features Hall Reseach SKU Correction technology for adjusting individual RGB values to compensate for signal skewing over long distances. The URA-232-XT includes an RJ45 output for daisy-chaining multiple receivers. Note that the URA-232-XT outputs the skew adjusted signal requiring compensation only for the distance between each receiver.

URA-232 series receivers are compatible with UV232A splitter senders.

MODELS

URA-232	VGA + Audio + RS-232 Over UTP with SKU Correction (Receiver)
URA-232-XT	VGA + Audio + RS-232 Over UTP with SKU Correction and Extension (Receiver)

VGA + Audio + RS-232 Over UTP Splitter

UV232A-8S

FEATURES

Extend VGA, audio, and RS-232 over a single UTP cable

Supports resolutions up to 1920x1200 or 1080p

Send RS-232 commands on push button or serial trigger event

Built-in video test pattern generator to assess and/or achieve optimum adjustment of long-cable compensation and RGB skew at each remote URA

Compatible with URA-232 series receivers

DESCRIPTION

The UV232A series of multi channel splitter senders distributes VGA, audio and RS-232 up to 1000 ft over a single UTP cable. They are compatible with URA-232 series receivers.

RS-232 data that is output at each remote receiver can be triggered or come from various sources:

- Pass-Thru data from the Sender
- Locally stored data in each remote URA-232, triggered by RS-232 command sent to the sender
- Locally stored data in each remote URA-232, triggered by detection of contact (located on each URA-232)
- Locally stored data in each remote URA-232, triggered by a push button on the Sender

The mode of operation is set using a dip switch on the Sender and by programming each URA-232 receiver using free Windows® GUI.

MODELS

UV232A-4S	1x4 VGA + Audio + RS-232 Over UTP Splitter (Sender)
UV232A-8S	1x8 VGA + Audio + RS-232 Over UTP Splitter (Sender)

VGA + Audio + RS-232 Over UTP

UV232A

FEATURES

Extend VGA, audio, and RS-232 up to 500 ft (153 m) over a single UTP cable

Supports resolutions up to 1920x1200 or 1080p

DDC compliant EDID emulation on the sender

DESCRIPTION

The UV232A sender transmits VGA, audio and RS-232 up to 500 ft (153 m) over a single UTP cable to the UV232A receiver. The input video can be RGBHV or YPbPr format. Uni-directional RS-232 transmitted from sender to receiver can be used to control devices or displays.

The sender includes EDID emulation assuring a proper DDC compliant signal to a connected PC. When the sender is powered from VESA compliant VGA source (+5 on Pin 9) a power supply is only required at the receiver. If the source is not VESA compliant or YPbPr then a power supply is needed at both sender and receiver.

MODELS

UV232A	VGA + Audio + RS-232 Over UTP (Sender & Receiver)
UV232A-S	VGA + Audio + RS-232 Over UTP (Sender)
UV232A-R	VGA + Audio + RS-232 Over UTP (Receiver)

VGA + Bi-Directional RS-232 Over UTP

UV232B

FEATURES

Extend VGA and bi-directional RS-232 up to 500 ft (153 m) over a single UTP cable

Supports resolutions up to 1920x1200 or 1080p

DDC compliant EDID emulation on the sender

DESCRIPTION

The UV232B sender transmits VGA and (bi-directional) RS-232 up to 500 ft (153 m) over a single UTP cable to the UV232B receiver. The input video can be RGBHV or YPbPr format. Bi-directional RS-232 transmitted from sender to receiver can be used to control devices or displays and receive a response. Applications include kiosk solutions, conference halls, digital signage, interactive operator systems, factory or laboratory data acquisition and control, and more.

The sender includes EDID emulation assuring a proper DDC compliant signal to a connected PC. When the sender is powered from VESA compliant VGA source (+5 on Pin 9) a power supply is only required at the receiver. If the source is not VESA compliant or YPbPr then a power supply is needed at both sender and receiver.

MODELS

UV232B	VGA + Bi-Directional RS-232 Over UTP (Sender and Recevier)
UV232B-S	VGA + Bi-Directional RS-232 Over UTP (Sender)
UV232B-R	VGA + Bi-Directional RS-232 Over UTP (Recevier)

Component Video + Power Over UTP "Active Balun"

UVB1-CP

FEATURES

Extend component video and power up to 1000 ft (305 m) over a single UTP cable

Supports resolutions up to 1080p

Power can be supplied to both sides from sender or receiver

Ground-loop Isolation (GLI) and RFI (radio frequency interference) immunity

DESCRIPTION

The UVB1 extends Component video up to 1000 ft (305 m) over a single UTP cable. Power is also extended and needs only be supplied at the sender or receiver.

Unlike other passive Baluns this device is active and boosts the signal using wide bandwidth (450 MHz) differential (balanced) amplifiers for an unprecedented sharp and clean image. It provides Ground-loop Isolation (GLI) and RFI (radio frequency interference) immunity to prevent 60 cycle video hum or distortion. Most other baluns provide no common mode rejection at low frequencies and are subject to facility grounding issues and noise pickup. The active design matches the impedance of the UTP cable perfectly at all frequencies so that there is no image ghosting.

MODELS

UVB1-CP	Component Video + Power Over UTP (Sender & Receiver)
UVB1-CP-S	Component Video + Power Over UTP (Sender)
UVB1-CP-R	Component Video + Power Over UTP (Receiver)

Composite/S-Video + Audio Over UTP "Isolated Balun"

UBL-CSA

FEATURES

Extend Composite/S-Video and audio up to 2000 ft (610 m) over a single UTP cable

Custom transformer-based design offers 100% ground isolation at any frequency

Same unit can be used at either end

No power supply necessary

DESCRIPTION

The UBL-CSA transmits composite or S-Video and audio up to 2000 ft (610 m) over a single UTP cable. The passive design does not require any power supply. The 100% isolated outputs mean that there is no ground connection between the monitors connected at the output and the video source at the input. This eliminates any ground-loop video or audio noise that can cause hum bars on the video or 60 cycle noise on the audio.

MODELS

UBL-CSA-KIT	Composite/S-Video + Audio Over UTP (2x Stand-alone)
UBL-CSA	Composite/S-Video + Audio Over UTP (Stand-alone)

Dual-Display VGA + Audio + RS-232 + USB Console Extender

U97-Ultra-2B

FEATURES

Combines the functions of Hall Research Models U97-H2, UU2X4-P1, two SKU-RGB, DVC-3 video test pattern generator, and more

Eliminates the need for Utility Box (Receiver includes a guard plate that goes over all the connectors with tie-down provisions for strain relief)

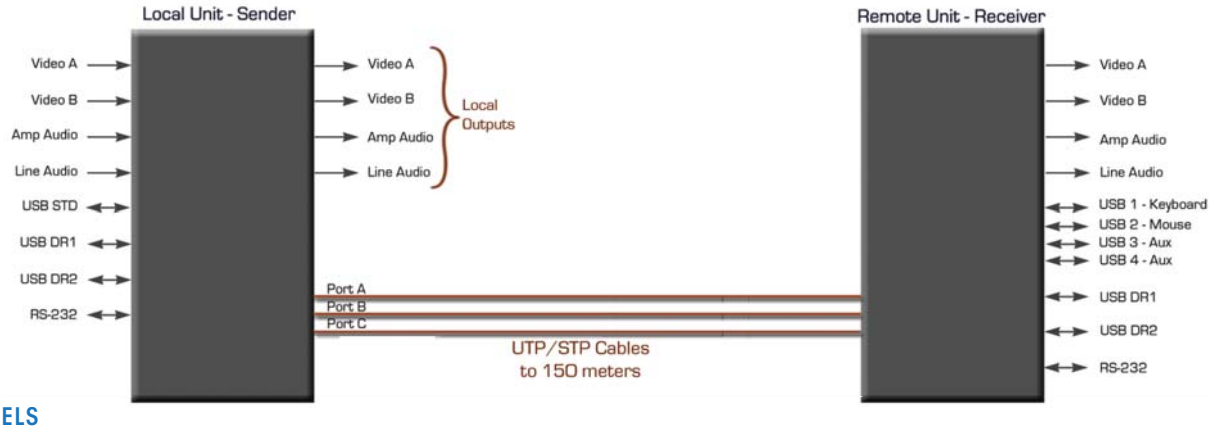
Does not require external power supply (built-in supply with standard 110~240 VAC IEC320 jack)

Includes 2 "Direct" USB ports (DR1 & DR2), and a Standard with Hub at receiver.

DESCRIPTION

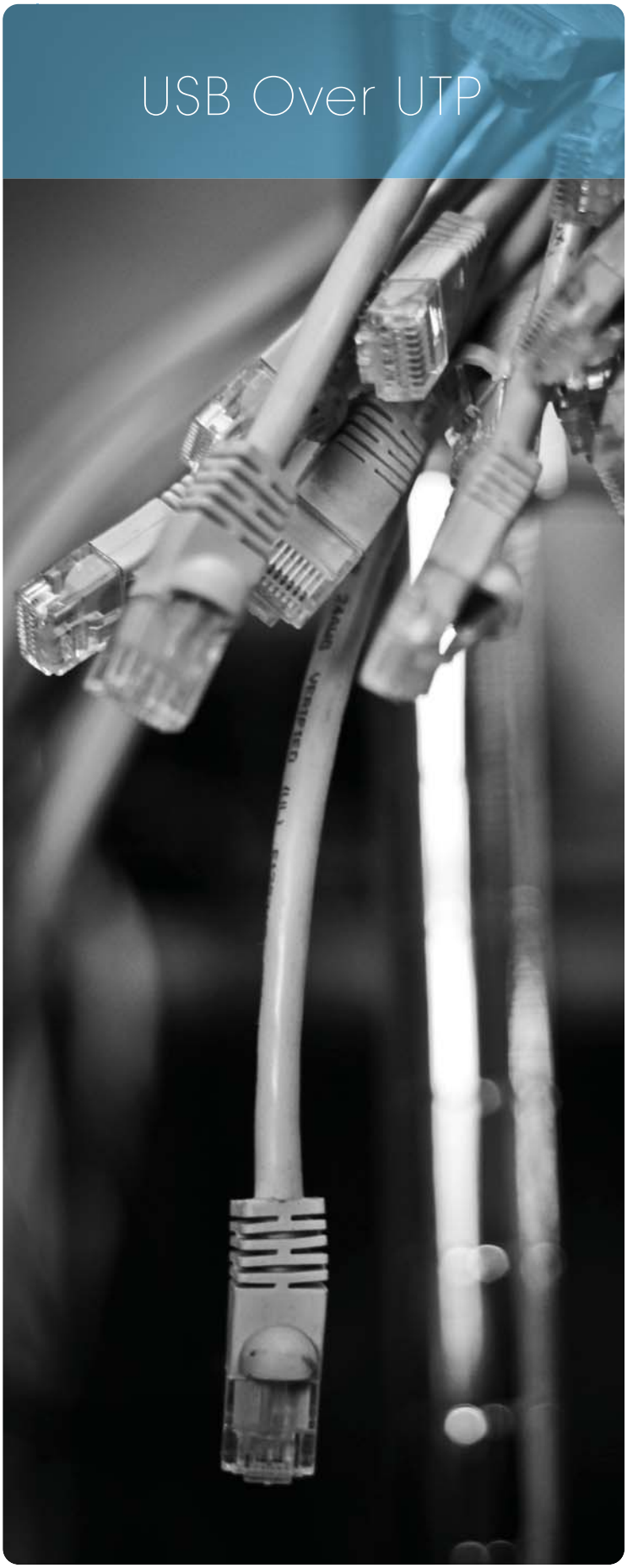
The U97-Ultra-2B kit is used to extend Dual Display PC Video, Stereo Audio (amplified or line level), RS-232, and up to 3 independent USB ports to a remote location up to 500 feet away on any Category Cable (CAT5e/6 etc).

These products include a rack-mountable Sender Unit plus a wall-mountable Receiver (and I/O hood cover), packaged together. However they can also be sold separately under the U97-Ultra-2B-R and U97-Ultra-2B-S Part #'s.



MODELS

U97-Ultra-2B	Dual-Display VGA + Audio + RS-232 + USB Console Extender (Sender & Receiver)
U97-Ultra-2B-S	Dual-Display VGA + Audio + RS-232 + USB Console Extender (Sender)
U97-Ultra-2B-R	Dual-Display VGA + Audio + RS-232 + USB Console Extender (Receiver)



USB Over UTP

U2-160

U2-160-S-DP

FEATURES

Support for any high-speed (480 Mb/s) , full-speed (12 Mb/s) or low speed (1.5 Mb/s) USB device.

Allows a USB device to be remotely located up to 50m (164 ft).

Compatible with USB 2.0 at low (1.2 Mbps) and Full (12 Mbps) speeds

Supports Hot Plug/Unplug.

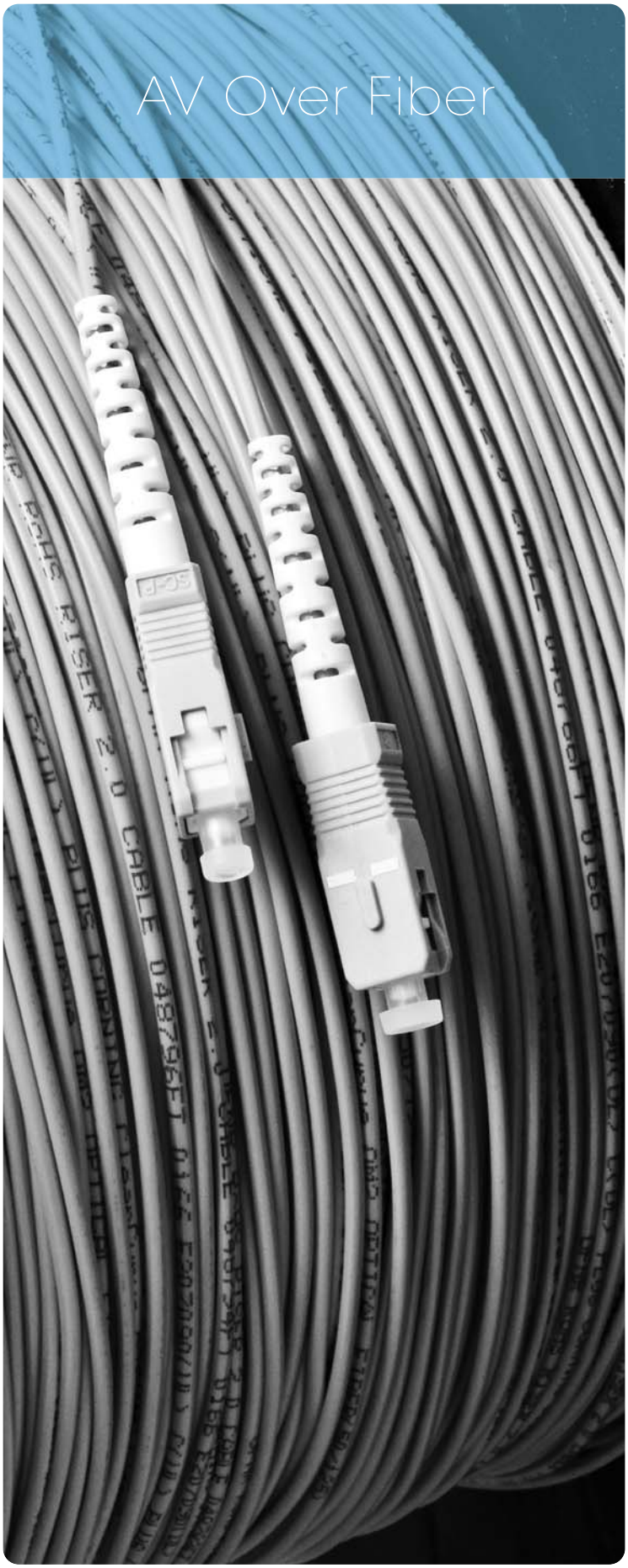
Compatible with interactive whiteboards, touchscreens, KVM, and USB video cameras

DESCRIPTION

The U2-160 is an economical but high performance USB extender, compliant with USB 2.0 specifications. Extend any USB 1.1 or 2.0 device from the Host (PC) up to 50m (164 ft) using twisted pair cable. It can be used in the applications like extending USB web camera, keyboard, mouse and printer etc. to a distance of 50m(164 ft).

MODELS

U2-160	USB 2.0 Over UTP Extension Kit with Local & Remote
U2-160-DP	USB 2.0 Over UTP Extension Kit with Local (Decora®) & Remote



HDMI and RS-232 Over Single Fiber

HR-731

FEATURES

Transmits uncompressed HDMI video along with RS-232 to 1000m

Supports Deep-color (HDMI 1.3 or 1.4) and 3D

Status indication of fiber-optic link, Source video, RS232 or CEC extension

Bi-directional RS-232 data transmission between the sender and the receiver

RS-232 control of the data channel selection and setup

Requires a single (simplex) multi-mode fiber with SC connectors

DESCRIPTION

The HR-731 is a kit of Sender and Receiver modules to extend HDMI and bi-directional RS-232 up to 1 Km (3280 ft) on a single multi-mode cable. The unit is fully HDCP compliant and supports HDMI 1.4 deep-color and 3D. EDID pass-through from the remote display to the source guarantees trouble free operation. Virtually all PC (DVI) and HDTV resolutions are supported

MODELS

HR-731	HDMI and RS-232 Extender

*Hall Research can provide pre-terminated fiber optic cables at lengths to 1500m. Please contact your sales representative.

HDMI + VGA + Audio + RS-232 Over Single Fiber

HR-733

FEATURES

Transmit HDMI and RS-232 up to 3280 ft (1000 m) over multi-mode fiber

Converts and scales VGA/Component video and audio to HDMI

3 remotely selectable video inputs (2 HDMI and 1 VGA/YPbPr with Audio)

Front panel LCD display

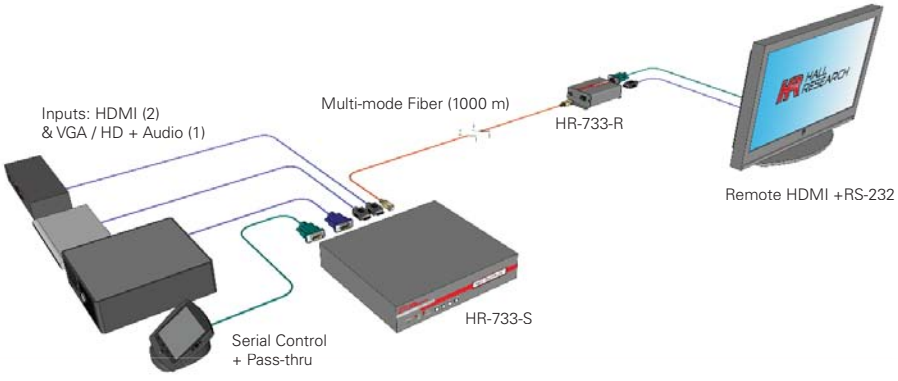
Supports HDMI 1.4 and 3D HDMI

DESCRIPTION

The HR-733 extends uncompressed HDMI video, audio, and bi-directional RS-232 up to 3280 ft (1000 m) over multi-mode fiber optic cable. It accepts 2 HDMI inputs and 1 VGA/YPbPr with audio (via 3.5mm stereo or S/PDIF TOSLINK). Analog input is converted to HDMI with a built-in scaler/converter and output at the receiver as HDMI with embedded audio.

The HR-733 can also extend a bi-directional data channel (CEC, or RS-232 Serial) along with the video and audio. The RS-232 port can also be used to control the Sender (for input selection, adjusting settings such as baud-rate, resolution, etc).

A user friendly front panel with high contrast LCD read-out is used for easy setup and control of the system. Advanced features include: automatic scaling of the analog video input to match the native resolution of the remote display, diagnostic messages on the front panel LCD (e.g. RS-232 strings sent or received), audio delay of the analog input to correct lip-sync, support for CEC data channel of HDMI (choice of RS-232 or CEC extension), and 3D deep-color HDMI 1.4 support (without ARC or Ethernet extension).



MODELS

HR-733	HDMI + VGA + Audio + RS-232 Over Fiber (Sender & Receiver)
HR-733-T	HDMI + VGA + Audio + RS-232 Over Fiber (Sender)
HR-733-R	HDMI + VGA + Audio + RS-232 Over Fiber (Receiver)

*Hall Research can provide pre-terminated fiber optic cables at lengths to 1500m. Please contact your sales representative.

Extension Compatibility Matrix

Compatibility Table For Single UTP HDMI/DVI Extenders HDBT™

SENDER	RECEIVER				DESCRIPTION
	UH-1BT-R	UH-1BTX-R	UHBX-R-PD	UHBX-R-PSE	
UH-1BT-S	◉	●			HDMI to 230ft (70m)
UH-1BTX-S	●	◉			HDMI to 330ft (100m)
UHBX-S-WP	●[1]	●[1]		◉	HDMI + Power over Cat6 to 330ft (100m)
UHBX-SC-WP	●[1]	●[1]		◉	HDMI + RS232 + IR + Power to 330ft (100m)
UHBX-S-PD				◉	HDMI + RS232 + IR + Power to 330ft (100m)
UHBX-S-PSE			◉		HDMI + RS232 + IR + Power to 330ft (100m)
UHBX-3S	●	●	●[2]	●	HDMI + RS232 + Power to 330ft (100m)
UHBX-8X	●	●	◉	●	HDMI + RS232 + IR + Power to 330ft (100m)

Compatibility Table For Dual UTP HDMI/DVI Extenders

SENDER	RECEIVER			DESCRIPTION
	UH-2D-R	UH-2C-R	UD2A-EDID-R	
UH-2D-S	◉	●		HDMI to max length of 130-170ft
UH-2D-S-DP	◉	●		HDMI to max length of 130-170ft
UH-2D-3S	◉	●		HDMI to max length of 130-170ft
UH-2C-3S	●	◉		HDMI to max length of 70-150ft
UH-2C-S-DP	●	◉		HDMI to max length of 70-150ft
UD2A-EDID-S			◉	DVI, L/R, Audio, RS-232

Compatibility Table For VGA and Component Video Extenders

SENDER	RECEIVER											DESCRIPTION
	URA	URA-SKU	URA-XT	URA-232	URA-232-XT	UV1-R	UV1-R-DP	UV1-R-WP	UVB1-CP-R	UV232A-R	UV232B-R	
UVB1-CP-S						◉	◉	◉	◉			Component video to 500 ft (150 m)
UV1-S						◉	◉	◉	◉			VGA + Power to 500 ft (150 m)
UV1-S-16X						◉	◉	◉	◉			16 independent VGA + Power to 500 ft (150 m)
UV1-S-DP (WP)						◉	◉	◉	◉			VGA + Power to 500 ft (150 m)
UV1-SL-DP						◉	◉	◉	◉			VGA (w/ loop out) + Power to 500 ft (150 m)
UV1-SL						◉	◉	◉	◉			VGA (w/ loop out) + Power to 500 ft (150 m)
UV2-S / 4-S / 8-S /24-S						◉	◉	◉	◉			VGA (w/ loop out) + Power to 500 ft (150 m)
UVA-2 / 4 / 8 / 24	◉	◉	◉	●	●					●	●	VGA (w/ loop out) + Audio to 1000 ft (300 m)
UVA-16X	◉	◉	◉	●	●					●	●	VGA (w/ loop out) + Audio to 1000 ft (300 m)
UVA-DP (WP)	◉	◉	◉	●	●					●	●	VGA (w/ loop out) + Audio to 1000 ft (300 m)
UV232A-4S / 8S	●	●	●	◉	◉					●		VGA (w/ loop out) + Audio + RS232 to 1000 ft
UV232A-S	●	●	●	◉	◉					◉		VGA + Audio + RS232 to 1000 ft (300 m)
UV232B-S	●	●	●								◉	VGA + RS232 (bi-directional) to 500 ft (150 m)

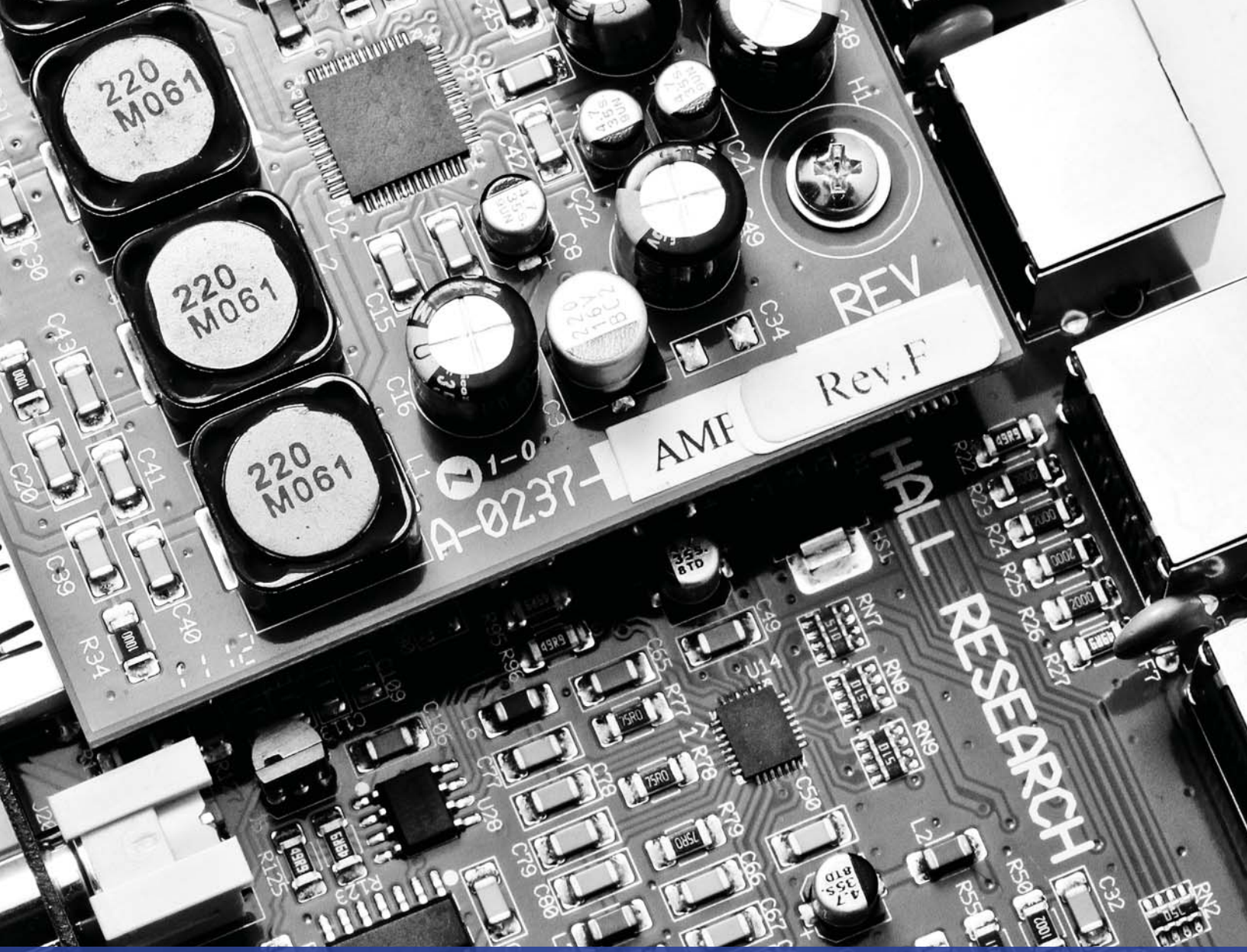
●[1] Compatible pair but requires separate power supply (511-POH-17W)

●[2] Compatible pair but requires separate power supply (511-PS4812)

● Compatible pair but not all features fully supported

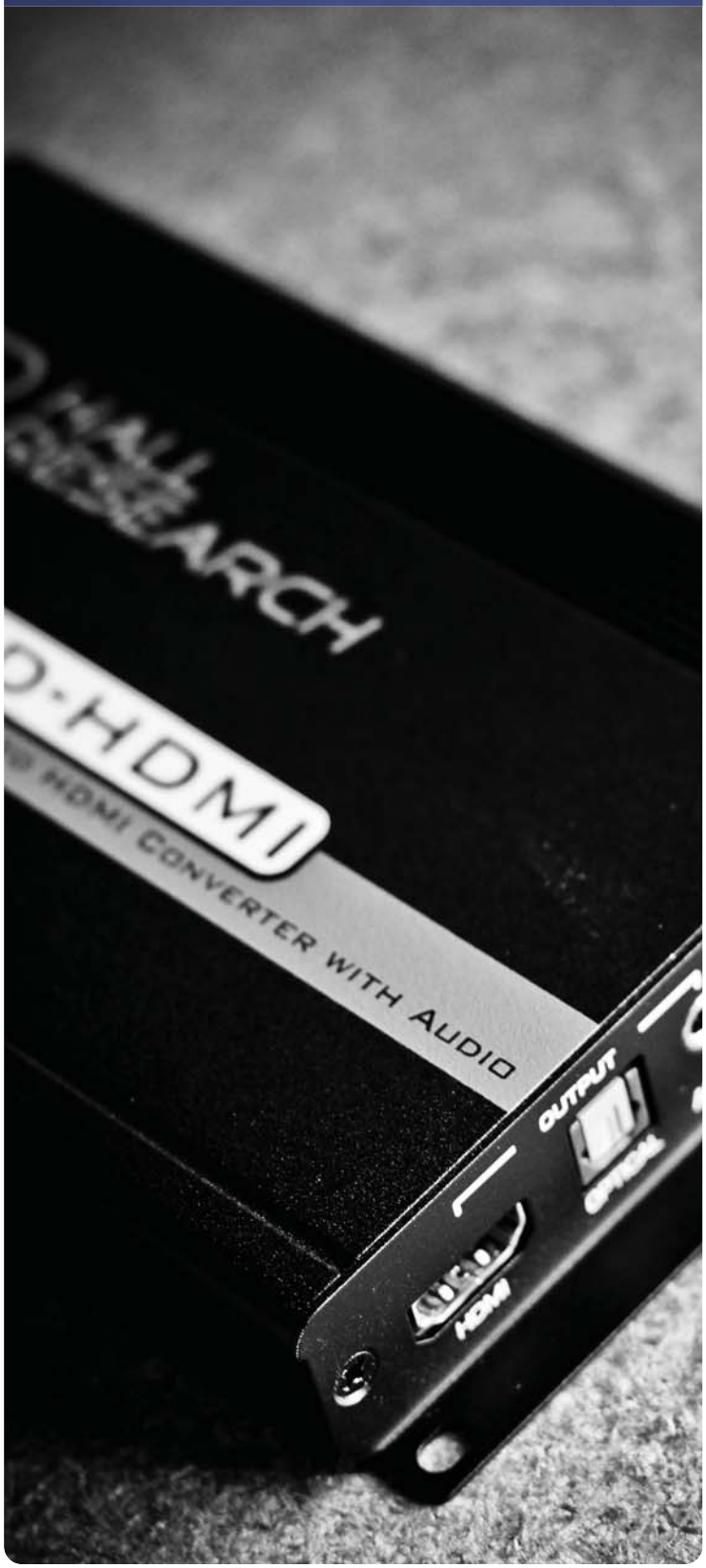
◉ Fully compatible pair

◉ Pair Sold as kit



AV Processors & Scalers

Single Input Processors & Scalers



HDMI Scaler & Audio Extractor / Embedder

SC-HDMI-2A

FEATURES

- Provides scaled HDMI output to various resolutions up to 1080p and 1920x1200
- Perfect for converting DVI + Audio to HDMI
- Extract audio from HDMI stream to analog or digital audio output
- Embed analog or digital audio into the HDMI stream
- Horizontal mirroring for teleprompting
- HDCP 1.1 and DVI 1.0 compliant

DESCRIPTION

The SC-HDMI-2A scales DVI or HDMI signal to various resolutions up to 1080p and 1920x1200. It accepts analog or digital audio input which is embedded into the HDMI output stream. It can also extract audio from the HDMI input stream and output in stereo analog or multi-channel digital format.

It accepts all standard PC and HDTV resolutions. It then scales and outputs the video automatically at the native resolution of the connected display (or any particular user specified output setting).

MODELS

SC-HDMI-2A	HDMI Scaler & Audio Extractor

VGA and Audio to HDMI Scaler

SC-VHD-HDMI

FEATURES

Convert VGA or Component video and audio to HDMI

Provides scaled HDMI output to various resolutions up to 1080p and 1920x1200

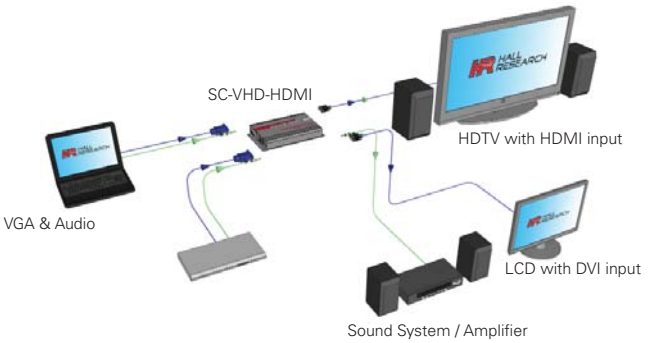
Horizontal mirroring for teleprompting

HDCP 1.1 and DVI 1.0 compliant

DESCRIPTION

The SC-VHD-HDMI converts and scales Component (YPbPr) or VGA video and audio to HDMI. It supports output resolutions up to 1080p and 1920x1200. It accepts audio input on stereo analog or digital optical (TOSLINK) connector.

The SC-VHD-HDMI features a unique horizontal mirroring function that flips video along the x-axis. This feature is useful for Teleprompters and rear projection systems. It also has an OSD menu for configuration, picture setup, system information and many other advanced options.



MODELS

SC-VHD-HDMI	VGA / Component and Audio to HDMI Processor

Composite / S-Video and Audio to HDMI

SC-CSV-HDMI

FEATURES

Convert Composite or S-Video and audio to HDMI

Provides scaled HDMI output up to 1080p and 1920x1200 resolution

Horizontal mirroring for teleprompting

HDCP 1.1 and DVI 1.0 compliant

DESCRIPTION

The SC-CSV-HDMI converts and scales Composite or S-Video and audio to HDMI. It supports output resolutions up to 1080p and 1920x1200. It accepts audio input on stereo analog or digital optical (TOSLINK) connector.

The SC-CSV-HDMI features a unique horizontal mirroring function that flips video along the x-axis. This feature is useful for Teleprompters and rear projection systems. It also has an OSD menu for configuration, picture setup, system information and many other advanced options.

MODELS

SC-CSV-HDMI	Composite / S-Video and Audio to HDMI Processor

VGA/Component Scaler

SC-VGA-2B

FEATURES

Signal format conversion between RGBHV and YPbPr

Adjustable output frame rate

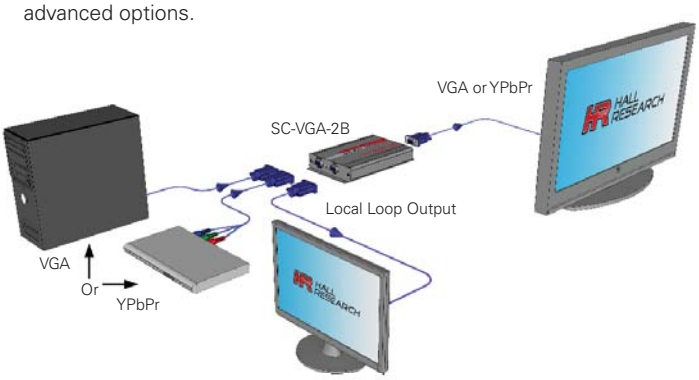
Allows adjustment of sampling clock, phase, and position on screen

Horizontal mirroring for teleprompting

DESCRIPTION

The SC-VGA-2B is a high-performance universal VGA / HDTV to VGA / HDTV Scan Rate converter with a local loop out with a scaling (Up / Down) mirroring capabilities.

The SC-VGA-2B has the ability to output a specified resolution and refresh rate regardless of the input. Output timing to the display is constant regardless of the input so when switched from one input to another, the display device does not see any interruption in the signal coming to it. The video processor combines the functions of a video scaler, scan-converter, and format transformer. The SC-VGA-2B also includes a horizontal mirroring feature which is useful for teleprompter's and rear projection systems. The SC-VGA-2B features an OSD menu for configuration, picture setup, system information and many other advanced options.



MODELS

SC-VGA-2B VGA/Component Scaler

Composite/S-Video to VGA/Component

TVB-250

FEATURES

Scale Composite/S-Video to VGA/Component with resolutions up to 1920x1200 and 1080p.

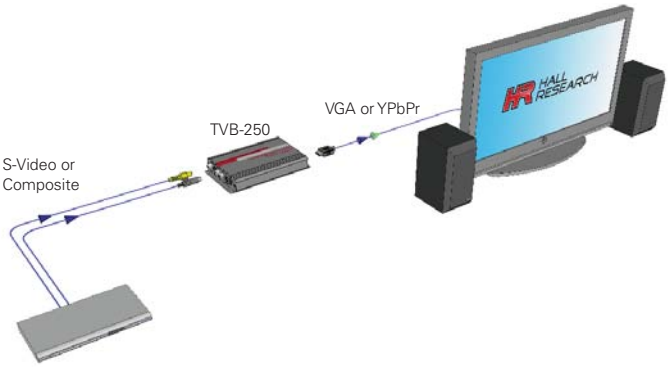
Advanced 3D motion adaptive de-interlacing

Automatic 2:2 and 3:2 film mode detection

Supports 50/60 Hz frame rate conversion

DESCRIPTION

The TVB-250 scales NTSC and PAL Composite and S-Video sources to a VGA output with a range of resolutions up to 1920x1200 and 1080p. It has an easy to use OSD menu for configuration, picture setup, system information and other advanced options.



MODELS

TVB-250 Composite/S-Video to VGA/Component Scaler

HDMI or DVI to Composite Video & Audio Scan Converter

VHD-HD2CV

FEATURES

Converts and scales digital HDMI or DVI to composite video

Extracts HDMI audio to analog stereo output

Output interlaced NTSC or PAL video with overscan and two under-scan output options

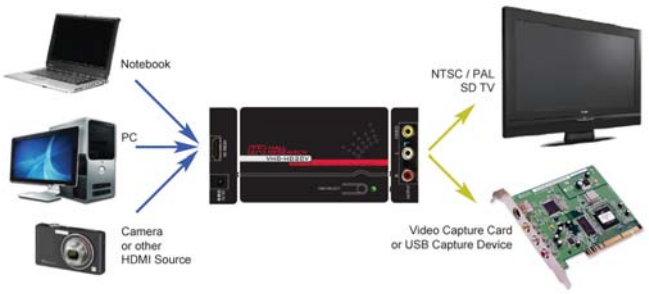
Multiple aspect ratio adjustment options

Motion adaptive 3D de-interlacing and adaptive interpolation

Quick and simple to install

DESCRIPTION

The VHD-HD2CV is a compact HDMI to composite video & audio converter. It accepts HDMI or DVI video input up to 1080p and converts it to composite video. If the input HDMI signal has embedded audio, it is extracted and output as line level stereo L/R on RCA connectors.



MODELS

VHD-HD2CV	HDMI or DVI to Composite Video & Audio Scan Converter

VGA to Composite/S-Video

VHD-PCTV

FEATURES

Convert VGA Signal to Interlaced NTSC or PAL Video

Support PC Resolutions Up to UXGA (1600x1200 @60Hz)

Output in S-Video or Composite video format

Underscan / Overscan Selection

DESCRIPTION

The VHD-PCTV converts a PC video signal to NTSC or PAL format on S-Video or Composite cable. It supports Overscan or Underscan via a selector switch.

The VHD-PCTV is very simple to setup and use. Just connect the video input and output cables, plug it in and the unit is ready to go. The LED on the top of the unit indicates the device has power and is operational.

MODELS

VHD-PCTV	VGA to Composite / S-Video

Multi Input Processors & Scalers

Multi-Format Digital/Analog Video and Audio HDMI Processor

SC-1080H

HDMI dvi HD ready 1080p

IR ((HDCP)) RS-232

FEATURES

Provides scaled HDMI output to various resolutions up to 1080p and 1920x1200

Accepts 5 input formats: HDMI/DVI, PC/VGA, YPbPr, S-Video and Composite Video

Converts audio input into digital format for output on HDMI or separate Coaxial S/PDIF

Horizontal mirroring

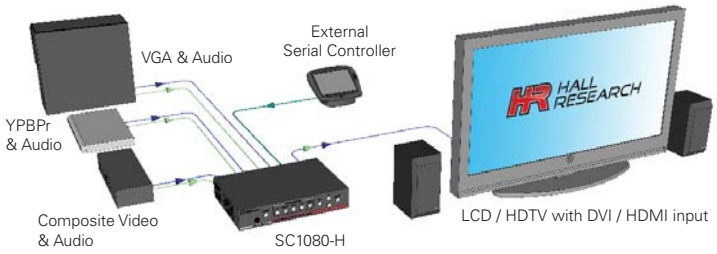
Control from front panel, IR or RS-232

HDMI 1.2, HDCP 1.1 and DVI 1.0 Compliant

DESCRIPTION

The SC1080-H is a multiple format switching video scaler. It has 5 different types of video inputs and a scaled digital output of up to 1080p or 1920x1200 reoslution. The SC1080-H accepts various input formats such as HDMI, VGA, Component, Composite and S-Video and outputs on HDMI. The SC-1080H also accepts audio inputs with each source and outputs audio in the HDMI stream or on coaxial S/PDIF.

The SC-1080H features an On Screen Display (OSD) for advanced features such as brightness, color, sharpness, and tint adjustment. It also features a horizontal mirroring function for use with teleprompters.



MODELS

SC-1080H	Multi-Format Digital/Analog Video and Audio HDMI Processor

Multi-Format Scaler Switch with HDBaseT™

SC-12BT

FEATURES

12 input Switcher

4x HDMI, 4 x VGA, 2 x CV, 1 x S-Video, 1 x YPbPr

3 Simultaneously Active Outputs

VGA, HDMI, and HDBaseT™ (70 m)

Scaler with User Settable Output Resolution

User friendly and intuitive front panel design

RS-232 and IP Control

English-Based ASCII Command Set

HDMI Audio Extraction and Embedding

Balanced Microphone and Stereo Line Inputs

Line level and HDMI embedded audio outputs

20 Watt Power Amp for driving 4 or 8 Ω speakers

DESCRIPTION

The Model SC-12BT is a 12 input HD Scaler that accommodates 4 HDMI, 4 VGA, and 4 AV inputs.

Select any of the inputs by using front panel push- buttons, RS-232 or IP commands. The Selected source is scaled to a fixed user-settable resolution and simultaneously output in 3 convenient formats: VGA, HDMI, and HDBaseT (for easy extension to 70m / 230 ft on a single UTP).

The SC-12BT provides comprehensive audio capabilities as well. HDMI audio is extracted; VGA and AV inputs (Composite, S-Video, and YPbPr) have their own separate audio inputs. Two auxiliary audio inputs are provided (balanced mic and stereo line-level).

Separate audio controls are provided on the front panel (for selected video and for Aux input). The overall audio is embedded in the HDMI and HDBaseT outputs and also available on RCA jacks. The unit also boasts a 20 watt audio amplifier for direct connection to 4 or 8 Ω speakers.

MODELS

SC-12BT	Multi-Format Scaler Switch with HDBaseT

Multi-Format Video to VGA / Component

TVB-400A

RS-232

FEATURES

Professional Video Scaler and multi-format switcher

4 different inputs: Composite, S-video, YPbPr, and a PC (RGBHV)

Can provide RGBHV (PC) VGA, SVGA (800x600), XGA(1024x768), SXGA(1280x1024) outputs

Can provide YPbPr HDTV outputs of 480p, 576p, 720p, 1080i

RS-232 interface allows control from an external device

OSD (On-Screen Display) with Blanking and Freeze functions

DESCRIPTION

The TVB-400 is a high-end video scaler that up-converts PC, Composite, S-Video or Component (YcbCr) inputs to HD VGA or Component output. Output resolutions available for VGA (RGBHV) are VGA, SVGA, XGA or SXGA and component resolutions are 480p, 576p, 720p and 1080i. The TVB-400 can be controlled from the front panel, IR remote or through RS-232. Advanced configuration is available through the On-Screen Display (OSD) menu.

The TVB-400A accepts audio with each input.

MODELS

TVB-400	Multi-Format Video to VGA/Component Scaler Switch
TVB-400A	Multi-Format Video to VGA/Component Scaler Switch with Audio

Multi-Format Digital/Analog Processor

SC-1080D

RS-232 dvi HD ready 1080p IR ((HDCP))

FEATURES

Provides scaled VGA and DVI output to various resolutions up to 1080p and 1920x1200

Horizontal mirroring

Accepts DVI, VGA and Component input formats

Control from front panel, IR or RS-232

HDCP 1.1 and DVI 1.0 Compliant

DESCRIPTION

The SC-1080D combines the functions of many products in one compact and versatile unit. It provides both high definition analog as well as digital inputs. Two outputs are available (simultaneously active: one analog RGBHV and one digital DVI-D). Output resolution up to 1080p or 1920x1200.

The SC-1080D uses the latest high-resolution video scaling techniques to produce a professional grade and superior video output for a perfect image on the LCD. User-friendly On Screen Display (OSD) is available for advanced feature settings. Can be controlled via front panel, IR remote, or RS-232.

MODELS

SC-1080D	Multi-Format Digital/Analog Video Processor
F10295-KIT	Rack Mount Brackets for SC-1080D

Closed Caption Decoder and Text Video Overlay

CC-101-PRO

RS-232

FEATURES

Overlay text on video

Decode closed captioning data

S-Video and Composite Video inputs and outputs

VGA or Component output (CC-101-PRO)

DESCRIPTION

Capture closed captioning text (CC1 through CC4). Text can be overlaid on video or streamed through a serial port (CC-101-PRO). Perfect for classrooms and digital signage applications where closed captioning decoding may not be an option (such as when projectors or scalers are used that strip out the captioning).

The CC-101 is equipped with a serial port, through which the unit can display user defined text anywhere on the screen. The unit also has internal non-volatile flash memory for storing up to 10 strings of data which can be automatically displayed when the unit is turned on or activated via the front panel. Windows™ software is available for defining and storing text.

MODELS

CC-101	Closed Caption Decoder and Text Video Overlay
CC-101-PRO	Closed Caption Decoder and Text Video Overlay with Component Output

AV Processors & Scalers Comparison

	INPUTS							OUTPUTS						
	AUDIO SUPPORT	DVI	HDMI	COMPONENT	VGA	COMPOSITE	S-VIDEO	DVI	HDMI	COMPONENT	VGA	COMPOSITE	S-VIDEO	HDBaseT
CC-101						1	1					1	1	
CC-101-PRO						1	1			1	1	1	1	
SC-1080D		1		1	1			1			1			
SC-1080H	●		1	1	1	1	1		1					
SC-CSV-HDMI	●					1	1		1					
SC-HDMI-2A	●		1						1					
SC-12BT	●		4	1	4	2	1		1		1			1
SC-VGA-2B				1	1					1	1			
SC-VHD-HDMI	●			1	1				1					
TVB-250						1	1			1	1			
TVB-400				1	1	1	1			1	1			
TVB-400A	●			1	1	1	1				1			
VHD-HD2CV	●		1									1		
VHD-PCTV					1							1	1	

The numbers in each square represents quantity of input or output type.

Control Systems

Modular Digital Room Control System

VSA-51

IP Manager

FEATURES

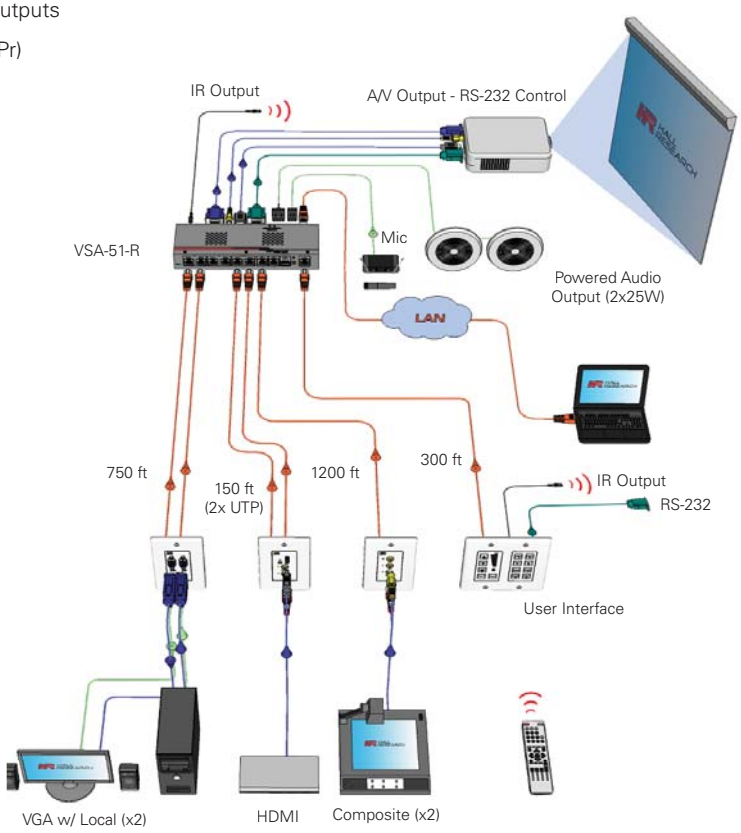
Control a Display and other Devices Via IP, RS-232, IR, and 2 Discrete Outputs

Up to 5 Modular Audio/Video Inputs (1 HDMI, 2 Composite, 2 VGA/YPbPr)

Embedded Software Accessible from a PC, Smart Phone, or Tablet

Task Scheduling and Automation

Individual Audio Level Control with Amplification



DESCRIPTION

The VSA-51 is a modular room control system. It accepts up to 5 remote video and audio sources (2 VGA/Component, 2 Composite, and 1 HDMI/DVI) switched to a classroom projector or display. Switching can be controlled via wall mounted user interface panel or through a browser based control screen on a PC, tablet, or smart phone.

Each input for the VSA-51 is on a single-gang metal decora plate which can be mounted together or separately on the wall or lectern. All inputs transmit over UTP (Cat5) cable back to the receiver. Each input automatically receives power from the receiver so no additional wiring is necessary.

The VSA-51 offers advanced IP-based access, configuration and control. All configuration and control software is embedded in the receiver and served over HTTP to a browser. Custom programmable control strings allow advanced control of virtually any device via IR, IP, RS-232 and discrete output. All buttons on the User Interface panel and control software are programmable, allowing a high level of customization. Buttons can be configured to perform a string of actions so, for example, pressing the button to power on the projector may also trigger a motorized screen and turn down lights. Other software features include task scheduling, theft detection with notification, paging sensed muting, and more.

MODELS

VSA-51-R	System Receiver
VSA-UI-DP	User Interface Panel
VSA-UI-8	8 Button User Interface Expansion
VSA-HA-DP	HDMI + Audio Decora Plate Sender
VSA-V-DP	VGA + Audio Decora Plate Sender
VSA-C-DP	Composite + Audio Decora Plate Sender
VSA-C-DP	Composite + Audio Decora Plate Sender
VSA-PGSNS	Non-Invasive Priority Page Sensor
VSA-MNT-01	Ceiling Mount Kit for VSA-51 (Cage only)
VSA-MNT-02	Ceiling Mount Kit for VSA-51 (Ceiling Mount, Cage, and Pole)
VSA-H-DP	HDMI + Audio Input Decora Plate (No HDMI Audio Extraction)
SPK-820-T	Ceiling Tile Speaker, 25 Watt, 2ftx2ft, 8 Ohm

Switch-UTP AV Control System

VSA-31-SP-W

FEATURES

Control a classroom display with multiple video and audio sources

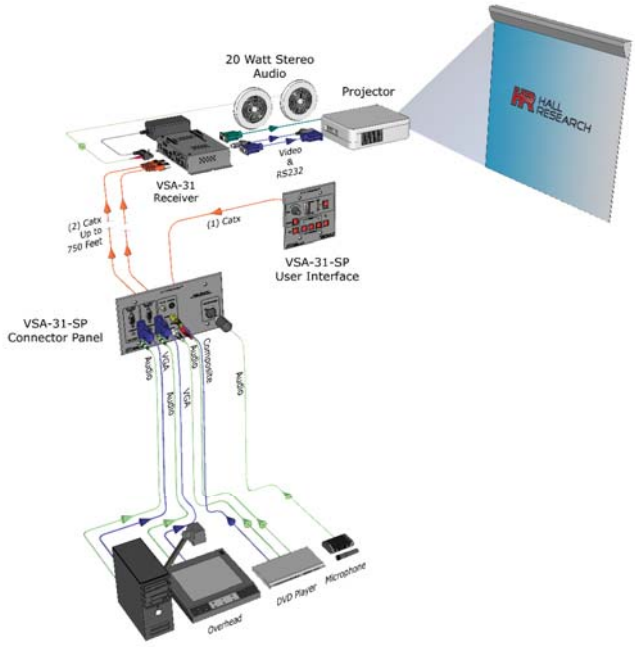
Switch between 2x VGA and 1x S-Video/Composite video sources with audio

Built-in 20 Watt (2x10W) stereo amplifier

Programmable relay contacts can switch on or off with a press of a button

All components connect to the central receiver via Cat5 cable

Power provided to in-wall components via Cat5 from the receiver



DESCRIPTION

The Switch-UTP AV control system is a convenient system for controlling a display in a classroom or conference room environment. It supports 2x VGA/Component and 1x S-Video/Composite source inputs with audio as well as mic input. The programmable user interface panel can be used to turn a display on/off, control volume, and switch between sources. Modular user interface and VGA wallplate options are available.

The source input plate sends the selected AV source to a receiver via 2 Category 5 cables up to 750 feet (230 m) away. No power supply is needed for either wallplate since power is supplied via the Cat5 cables from the remote receiver unit.

The system features a built-in 2x10W stereo audio amplifier to drive 4 or 8 Ohm speakers directly. In addition, the remote receiver features line-level audio output for connection to an external audio amp if required. Relay contacts for controlling things such as lights and motorized screens are also available.

The optional VSA-31-IP serial to IP adapter allows the system to be controlled remotely over a LAN via Windows software. It can also be used to extend any serial connection over a LAN.

MODELS

VSA-31-SP-W	1x3 Analog AV Control System (Modular User Interface, White)
VSA-31-IP	IP to Dual RS-232 Controller

I/O Controllers

Auto-Sensing Projector Controller

HR-3P

RS-232

FEATURES

Automatically control a display when a video signal is detected

Accepts S-Video / Composite and VGA input

Provides video pass-thru for S-Video/Composite and 1x2 splitter for VGA

RS-232 port for control

DESCRIPTION

The HR-3P is a serial control device that automatically detects the presence or loss of a video signal on one of its 3 video inputs and subsequently issues a RS-232 and/or relay commands to a display and screen (e.g. turn on/off, select input, etc). It supports S-Video/ Composite and VGA inputs, and has a 1x2 splitter for the VGA. It features a bi-directional RS-232 serial port for controlling the display. The HR-3P is an ideal tool for the basic automation of a display.

16-Channel Programmable Serial Controller

HR-16P

RS-232

FEATURES

Automatically issue RS-232 commands based on contact closures

Store up to 33 user-programmable command strings

Front panel LED status indicator

DESCRIPTION

The HR-16P is a versatile programmable RS-232 serial device designed to control any device with a serial port or using relays. It has 16 discrete inputs on screw terminals that sense a DC voltage level or contact closure. It detects both "low-to-high" and "high-to-low" transitions of these discrete inputs and issues corresponding commands out the serial port to the serial device. Command strings can be a single command or a series of commands with embedded delays.

4 Port Programmable RS-232 I/O Controller with IR Learn

HR-4P

RS-232

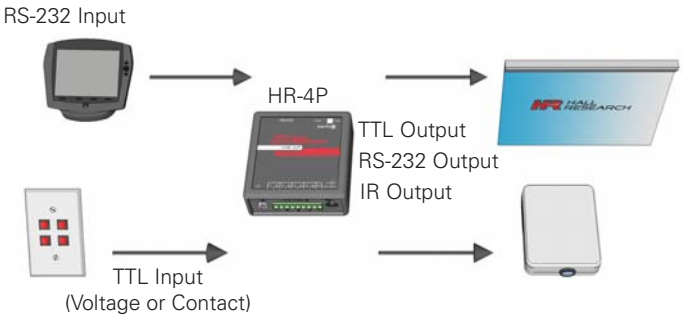
FEATURES

- 4 user definable I/O screw terminals
- Can issue programmed or learned IR commands based on contact or RS-232 inputs
- 10 user-programmable command strings
- IR connector for optional detector or emitter
- 32 user-programmable IR Memory
- Optional IR remote control learn and playback

DESCRIPTION

The HR-4P is a programmable RS-232 device designed for control & automation of a projector, LCD, or any other device with serial or IR port.

It has 4 configurable I/O lines that can be defined individually to act as input or output. It can control devices that do not have an RS-232 port by converting RS-232 commands (or contact closure external switch inputs) to IR commands. It also has the ability to learn and store up to 32 different IR codes.



MODELS

HR-4P	4 Port Programmable RS-232 I/O Controller with IR Learn
CIR-EMT	IR Emitter
CIR-DET-D2	IR Receiver

Web Enabled Serial Controller

CNT-IP-2

RS-232 IP LAN ECONTROL

FEATURES

- Embedded Software Accessible from any PC, Smart Phone, or Tablet
- RS232 pass-thru or dual-port control of devices
- Control other devices via Telnet (IP)
- Task Scheduling
- Real-Time Clock with Super Capacitor backup
- Custom Webpages are available

DESCRIPTION

The CNT-IP-2 allows two or more RS-232 devices to be remotely controlled across a LAN using a web browser.

The CNT-IP-2 consists of a compact modular enclosure with (2) RS232 ports, (1) IP RJ-45 network port. The CNT-IP-2 controller also has the ability to route the RS232 signals across a Telnet IP connection on IP Port# 23 of the devices assigned IP address. All configuration and control software is embedded in the device and served over HTTP to a browser which means you can create custom controls and access the device from a PC, Mac, smart phone, or tablet. Custom programmable commands offer advanced control of the device and 3rd party equipment. Software features include embedded device control, task scheduling and automation and more.

User Programmable Control Screen

MODELS

CNT-IP-2	Web Enabled Serial Controller

16 Port IR Router

IRCNT-16

FEATURES

No software required

Pass-through IR supports carrier frequencies from 30-50kHz

Internal Power supply using standard IEC connector.

IR routes only to selected outputs

Rack mountable with included hardware – only 1RU

DESCRIPTION

The IRCNT-16 is used to direct incoming IR signals to specific components selected by the user. This prevents unintended switching when duplicate components are present, and allows for simultaneous control when desired. Once all the IR emitters have been connected to the unit, simply press the button(s) corresponding to the device(s) you wish to control. The buttons that are lit will relay any IR signals that are sent. The unit stores and recalls the previously selected channels upon power on.

IR Emitter Cable

CIR-EMT2

IR Emitter Cover with Adhesive

CIR-EMT2-CVR

MODELS

IRCNT-16	16 Port Universal IR router


AD-340
AUDIO DELAY PROCESSOR
DISTANCE
DIGITAL
TIME
(mSEC)
DELAY
L/R INPUT
SELECT
AUDIO INPUT
POWER

AUDIO

Microphone Preamp with Line Mix and Analog + Digital + Fiber Outputs

HR-101-S

AUDIO FIBER

FEATURES

XLR mic input with low noise preamp

Adjustable gain for MIC preamp

Stereo line level input on 3.5mm jack

VU meter to indicate sound level

Phantom power to accommodate a wide range of MIC inputs

Analog stereo and digital SPDIF audio outputs

Fiber optic output for extension to 1 km (3280 ft)

DESCRIPTION

The HR-101 is an ultra low-noise microphone preamp with Stereo line level mix (XLR and 3.5mm inputs). Local outputs include analog Stereo line-level on 3.5mm jack as well as Digital SPDIF on an RCA. The front panel includes a color LED bar for VU indication, mic gain adjustment knob, and a switch for injecting phantom power in the XLR input. The HR-101-S has both stereo analog (on 3.5mm) and SPDIF digital (on RCA) outputs as well as a fiber-optic ST connector for driving long cables to 3,280 ft. to compatible receiver.

The Model HR-101-R Receiver has an ST fiber optic input connector to receive audio from the sender. It provides a stereo line level output on 3.5mm mini-stereo jack and a SPDIF digital audio output on a RCA connector.

The HR-101 can extend an audio over a single multi-mode fiber optic cable spanning distances of over 1000m (3280ft). For lengths of upto 500 meters OM2 or OM3 cables are recommended, and for distances of over 500 meters OM3 cable is recommended. Hall Research can provide pre-terminated fiber optic cables at various lengths up to 1,000 meters at competitive prices

MODELS

HR-101-S	Microphone Preamp with Line Mix
HR-101-R	Fiber Optic Audio Receiver
HR-101	Mic and Line Level Fiber Optic Audio Extender Kit

Universal Digital to Analog Audio Decoder DSP

DAC-51

FEATURES

Converts any digital audio to analog

Optical (TOSLINK) and Coax (RCA) inputs

Compatible with PCM or DTS/ AC3 digital source audio

Down-mixes multi-channel digital audio into 2 channel stereo

Plug and play

DESCRIPTION

The DAC-51 Digital to Analog Audio Decoder uses 24-bit audio DSP and 192KHz DACs to convert virtually any type of digital audio input to stereo output.

It supports uncompressed two-channel PCM as well as compressed multi-channel bit-stream audio (Digital AC-3, Pro Logic, DTS) and provides two channels of analog outputs both on RCA as well as 3.5mm headphone jack. When the input is multi-channel, the device down-mixes (using downmixing or fold-down algorithm) the digital channels to 2-channel stereo for easy connection to entertainment devices. Both TOSLINK optical, coaxial digital SPDIF inputs are provided (switch selectable by the user).

MODELS

DAC-51	Universal Digital to Analog Audio Decoder DSP

HDMI Audio Extractor with EDID Management

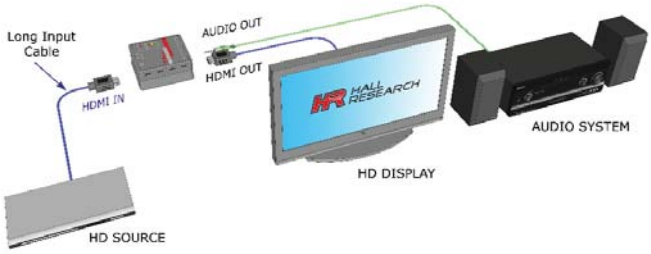
EMX-HD-AUD

FEATURES

- Extracts both analog and digital audio
- Pass-through EDID or Learn and emulate custom files
- Powered from HDMI input (100 mA req'd) or external power supply
- Re-clocks HDMI and buffers DDC (resolves EDID and HDCP issues)
- Surge protects HDMI input and output
- Supports DVI, HDMI™, CEC, Deep-Color & 3D Video

DESCRIPTION

The EMX-HD-AUD device can be used to extract the audio from HDMI, extend HDMI cable length, manage EDID (pass-thru or emulate), and re-clock both TMDS video and DDC data. The use of EMX-HD-AUD can often resolve system level HDMI signal-chain issues by acting as an intelligent intermediary.



MODELS

EMX-HD-AUD	HDMI Audio Extractor with EDID Management

Ground Loop Isolator

GLI-35mm

FEATURES

- Eliminates ground loop noise between the audio source and TV, or audio amp
- Near perfect response of .03 db from 20 to 20,000 Hz
- Perfect for AV presentations in classrooms or conference rooms

DESCRIPTION

Stereo Audio Ground-Loop Isolator & Filter. Eliminates ground loop noise between any audio source such as a notebook PC and audio equipment. Perfect frequency response of +.03 db from 20 to 20,000Hz. Uses proprietary audio transformers and filters for total elimination of any spurious buzz and hum in the audio.

MODELS

GLI-RCA	Stereo Audio Ground-Loop Isolator & Filter with RCA Connectors
GLI-35mm	Stereo Audio Ground-Loop Isolator & Filter with 3.5mm Connectors

Universal Audio Delay Processor

AD-340

FEATURES

Delay analog or digital audio in milliseconds, frames, or distance

Analog to Digital and Digital to Analog conversion

Supports CD, DVD, and Blu-Ray sample rates at 32kHz, 44.1kHz, 48 kHz and 96kHz

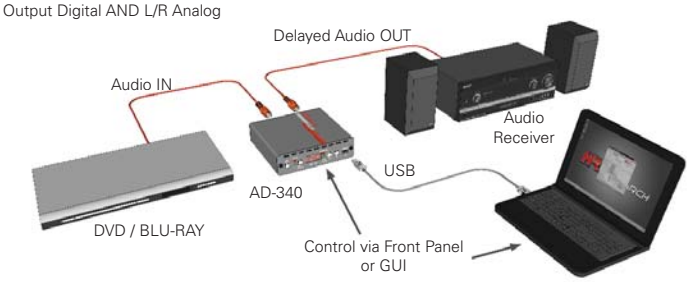
Supports 2-channel linear PCM digital audio and 5.1 Channel Dolby Digital and DTS encoded bitstreams

USB interface for advanced control via Windows software

DESCRIPTION

The AD-340 is an audio delay processor with universal analog (L/R) and digital (SPDIF) inputs and outputs. Both outputs are simultaneously active, enabling conversion between analog stereo audio to LPCM or vice versa. Delay time can be specified in milliseconds, frames, or distance depending on the application. Analog inputs provide +/- 24 db of gain for direct connection of low level mic as well as handling 2vrms line-level signals. The AD-340's digital I/O support 2-channel linear PCM, 5.1 Channel Dolby Digital, and DTS Surround encoded bitstreams at any sampling rate from 32KHz to 96KHz.

Input Digital OR L/R Analog
Output Digital AND L/R Analog



MODELS

AD-340	Universal Audio Delay Processor

Ceiling Tile Speaker

SPK-820-T

FEATURES

Installs quickly into suspended tile ceilings

Supported by the T-bar grid

Acoustically transparent perforated grille blends with ceiling tiles

24 watts maximum continuous program power handling

Excellent frequency response in its class 50 Hz to 18 KHz at 95 dB SPL

3.5 inch deep protective enclosure over the speaker

DESCRIPTION

Designed for operation with Hall Research "VSA Series" room control systems, these speakers are perfect for unobtrusive appearance and easy installation in suspended ceiling applications.

They are shipped ready to install and require no speaker cut-outs in the tile. The fully enclosed and protected driver is mounted to a fine perforated 2' x 2' square grille finished in white powder epoxy for long lasting appearance that blends perfectly and unobtrusively.

Speakers include Five (5) seismic tie-off points and meet plenum requirements. No assembly required.

MODELS

SPK-820-T	Ceiling Tile Speaker, 25 Watt, 2ftx2ft, 8 Ohm

Accessories

EDID Emulation & Programming

VGA EDID Emulator

EM-EDID-HD15

EDID EMULATION

FEATURES

Allows PC to 'see' an LCD in absence of DDC channel (common problem with extenders)

Record EDID from any VGA, DVI or HDMI display using USB-EDID-PRO

Can be powered from VGA input (if source is VESA compliant)

Ideal for use with video splitters, switches and extenders

DESCRIPTION

Some analog video extenders do not transmit a DDC channel which is necessary for computers to negotiate what display resolutions are available. Hall Research EDID Emulators are designed to emulate an EDID table for a PC or notebook where a direct connection to the display is not available. Each one comes pre-programmed with a common set of resolutions but they can also be custom programmed using the EDID Programmer.

The USB-EDID programmer allows you to easily connect directly to a display to record the EDID information which can then be uploaded to an EDID emulator. You can also modify the EDID table using our software utility.

MODELS

EM-EDID-HD15	VGA EDID Emulator
EM-EDID-HD15-P	VGA EDID Emulator with External DC Adapter
USB-EDID-HD15	EDID Programmer

HDMI Audio Extractor with EDID Management

EMX-HD-AUD

Single & Dual Link DVI Extender with EDID Management

EMX-DVI

FEATURES

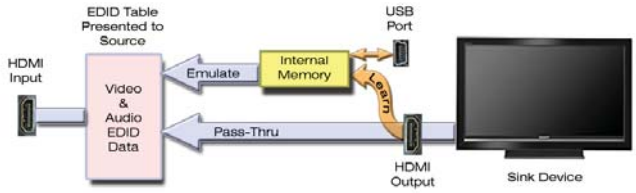
- Extracts both analog and digital audio
- Pass-through EDID or Learn and emulate custom files
- Powered from HDMI input (100 mA req'd) or external power supply
- Re-clocks HDMI and buffers DDC (resolves EDID and HDCP issues)
- Surge protects HDMI input and output
- Supports DVI, HDMI™, CEC, Deep-Color & 3D Video

FEATURES

- Extend and boost DVI video to 90 ft total
- Pass-through EDID or emulate any LCD
- Can be powered from DVI input or external power supply
- Can Learn and store EDID from any LCD
- Supports Single and Dual-Link DVI, HDMI
- LED Indicators for Mode Display

DESCRIPTION

The EMX-HD-AUD device can be used to extract the audio from HDMI, extend HDMI cable length, manage EDID (pass-thru or emulate), and re-clock both TMDS video and DDC data. The use of EMX-HD-AUD can often resolve system level HDMI signal-chain issues by acting as an intelligent intermediary.



DESCRIPTION

The EMX-DVI automatically compensates for signal degradation in long cables. Input cable length can be up to 50 ft (15 m), and the unit can drive long DVI Cables on its output to 40 ft (12 m) by boosting the DVI video output.

MODELS

EMX-HD-AUD	HDMI Audio Extractor with EDID Management

MODELS

EMX-DVI	Single & Dual Link DVI Extender with EDID Management

Adapters

DisplayPort Adapters

GC-DP-DVI-P	DisplayPort to DVI Adapter
GC-DP-HDMI-P	DisplayPort to HDMI Adapter
GC-DP-VGA-P	DisplayPort to VGA Adapter
GC-MDP-DVI-P	Mini DisplayPort to DVI Adapter
GC-MDP-HDMI-P	Mini DisplayPort to HDMI Adapter
GC-MDP-VGA-P	Mini DisplayPort to VGA Adapter

DVI - VGA / HDMI Adapters

GC-DVI-VGA	DVI to VGA Adapter
GC-HDMIF-DVIM	DVI Male to HDMI Female Adapter

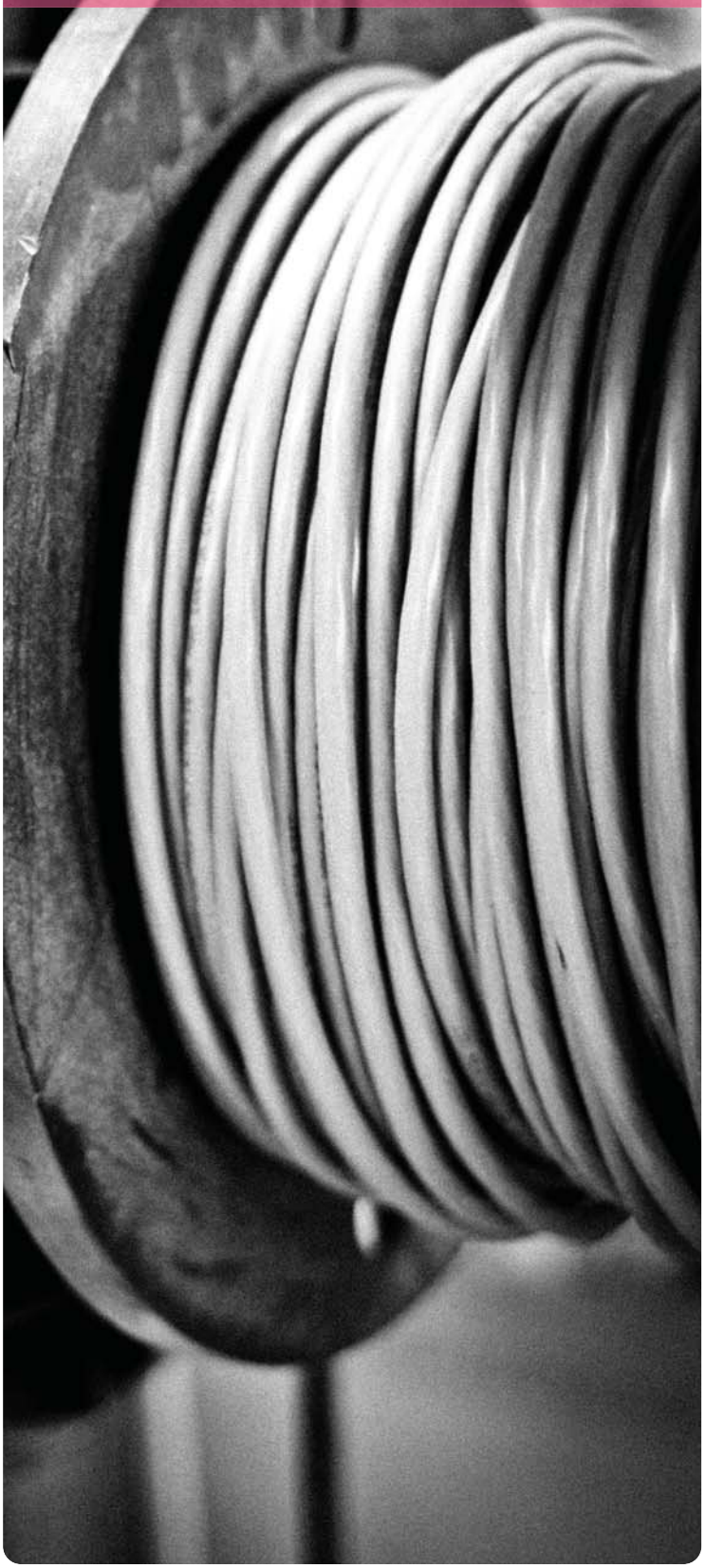
IR Detectors and Emitter Cables

CIR-DET-D2	IR Detector Cable, Demodulated (for use with HR-4P)
CIR-DET-P2	IR Detector Cable, Pass-thru (for use with UHBX Series)
CIR-EMT	IR Emitter Cable, 3.5mm Stereo (for use with HR-4P, UHBX, VSA-51)
CIR-EMT2	IR Emitter Cable, 3.5mm Mono (for use with IR-CNT-16, UHBX)
CIR-EMT2-CVR	Adhesive Cover for CIR-EMT2 Cable

Serial to USB

USB-RS232-1	USB Serial Adapter

Cables



Locking HDMI Patch Cables

C-HDMI-L-1.5	Locking HDMI Patch Cable (1.5 feet)
C-HDMI-L-3	Locking HDMI Patch Cable (3 feet)
C-HDMI-L-6	Locking HDMI Patch Cable (6 feet)
C-HDMI-L-10	Locking HDMI Patch Cable (10 feet)
C-HDMI-L-15	Locking HDMI Patch Cable (15 feet)
C-HDMI-L-25	Locking HDMI Patch Cable (25 feet)
C-HDMI-L-35	Locking HDMI Patch Cable (35 feet)
C-HDMI-L-50	Locking HDMI Patch Cable (50 feet)

HDMI Patch Cables

C-HDMI-5i	HDMI Patch Cable (5 inch)
C-HDMI-2M	HDMI Patch Cable (2 meter)
C-HDMI-3M	HDMI Patch Cable (3 meter)
C-HDMI-5M	HDMI Patch Cable (5 meter)
C-HDMI-25	HDMI Patch Cable (25 feet)

HDMI to DVI Patch Cables

C-HDMI-DVI-2M	HDMI to DVI Patch Cable (2 meter)
C-HDMI-DVI-3M	HDMI to DVI Patch Cable (3 meter)
C-HDMI-DVI-5M	HDMI to DVI Patch Cable (5 meter)

DisplayPort Patch Cables

CDP-03-MM	DisplayPort Patch Cable (3 foot)
CDP-06-MM	DisplayPort Patch Cable (6 foot)
CDP-10-MM	DisplayPort Patch Cable (10 foot)
CDP-15-MM	DisplayPort Patch Cable (15 foot)

DVI-D Cables

C-DVID-D-1M	DVI-D Dual Link Cable (1 meter)
C-DVID-D-2M	DVI-D Dual Link Cable (2 meter)
C-DVID-D-3M	DVI-D Dual Link Cable (3 meter)
C-DVID-D-5M	DVI-D Dual Link Cable (5 meter)
C-DVID-D-10M	DVI-D Dual Link Cable (10 meter)
C-DVID-D-15M	DVI-D Dual Link Cable (15 meter)

DVI to VGA Cable

C-DVI-VGA-1M	DVI to VGA Cable (1 meter)
C-DVI-VGA-2M	DVI to VGA Cable (2 meter)
C-DVI-VGA-3M	DVI to VGA Cable (3 meter)
C-DVI-VGA-5M	DVI to VGA Cable (5 meter)

Ultra-Thin VGA Patch Cable

CUTV-00-MM	Ultra-Thin VGA Patch Cable (8 inch)
CUTV-03-MM	Ultra-Thin VGA Patch Cable (3 feet)
CUTV-06-MM	Ultra-Thin VGA Patch Cable (6 feet)
CUTV-10-MM	Ultra-Thin VGA Patch Cable (10 feet)
CUTV-15-MM	Ultra-Thin VGA Patch Cable (15 feet)
CUTV-25-MM	Ultra-Thin VGA Patch Cable (25 feet)

VGA Patch Cable

CVGA-X-03-MM	VGA Patch Cable (3 feet)
CVGA-X-06-MM	VGA Patch Cable (6 feet)
CVGA-X-10-MM	VGA Patch Cable (10 feet)
CVGA-X-15-MM	VGA Patch Cable (15 feet)
CVGA-X-25-MM	VGA Patch Cable (25 feet)
CVGA-X-50-MM	VGA Patch Cable (50 feet)
CVGA-X-75-MM	VGA Patch Cable (75 feet)
CVGA-X-100-MM	VGA Patch Cable (100 feet)
CVGA-X-BULK	VGA Patch Cable (Custom)

VGA + Audio Patch Cable

CVGA-XA-03-MM	VGA + Audio Patch Cable (3 feet)
CVGA-XA-06-MM	VGA + Audio Patch Cable (6 feet)
CVGA-XA-10-MM	VGA + Audio Patch Cable (10 feet)
CVGA-XA-15-MM	VGA + Audio Patch Cable (15 feet)
CVGA-XA-25-MM	VGA + Audio Patch Cable (25 feet)
CVGA-XA-50-MM	VGA + Audio Patch Cable (50 feet)

Component Patch Cable

C-3RCA-CP-8i	Component Patch Cable (8 inch)
C-3RCA-CP-12i	Component Patch Cable (12 inch)
C-3RCA-CP-16i	Component Patch Cable (16 inch)

Category 5 Skew Free Cable

CUTP-Z-50-MM	Category 5 Skew Free Cable (50 feet)
CUTP-Z-75-MM	Category 5 Skew Free Cable (75 feet)
CUTP-Z-100-MM	Category 5 Skew Free Cable (100 feet)
CUTP-Z-200-MM	Category 5 Skew Free Cable (200 feet)
CUTP-Z-300-MM	Category 5 Skew Free Cable (300 feet)
CUTP-Z-500-MM	Category 5 Skew Free Cable (500 feet)
CUTP-Z-1000-MM	Category 5 Skew Free Cable (1000 feet)

VGA to Component Cable

CHD15-RGB-3	VGA to Component Cable (3 foot)
CHD15-RGB-6	VGA to Component Cable (6 foot)

Category 5 Skew Free Plenum Rated Cable

CUTP-ZP-100-MM	Category 5 Skew Free Plenum Rated Cable (100 feet)
CUTP-ZP-200-MM	Category 5 Skew Free Plenum Rated Cable (200 feet)
CUTP-ZP-1000-MM	Category 5 Skew Free Plenum Rated Cable (1000 feet)

Does HDBT™ meet your expectations?

By: Ali Haghjoo, CEO Hall Research

There is a lot being said and written about HDBaseT, so it is fair to assume that most AV professionals have heard the term, may be familiar with the concept, or have even used it in some installations. This article is intended to explain the technology and highlight its strengths.

The Need for Video Extension

Cable length remains one of the biggest A/V challenges for integrators. High definition video standards from VGA to DVI and HDMI are typically developed with a home-centric mindset, meaning that the standard developers consider a typical setup where sources such as PCs or video players, and sinks such as TVs, are in close proximity to one another. If a maximum cable length is specified in the standard, it is typically only a few meters. In the real world, we often need to extend the HD video signals to much longer distances and there exists a need to overcome the limitations in terms of cable reach, features, ease of installation and overall flexibility. Prior to the advent of digital, HD video signals were analog such as VGA or YPbPr. To overcome distance limitations many companies, including Hall Research, came up with ways to utilize inexpensive and ubiquitous Category cable (Cat5/5e/6 UTP or STP) to extend video and even pack other signals (such as audio, and control) in the same cable. However due to a lack of industry-wide standard for video over UTP, each manufacturer had come up with their own proprietary implementation creating incompatibility among extension devices.

HDBaseT Offers a Standard Solution

HDBaseT was conceived by Valens Semiconductor to provide an industry-wide platform for sending HDMI video and audio to 100 meters or longer. The standard also addressed the common need in commercial AV space to extend control signals (IR, RS232, CEC, Ethernet) and even power so only one end of the extension needs a power supply, allowing the other end to be powered through the UTP cable, and even allow for extra power to be available for external devices such as low-power display screens.

What Makes HDBaseT Great?

Besides HDBaseT, there are other ways to extend HD video over a single UTP. Virtually all non-HDBaseT methods use some sort of compression scheme such as H.264/MPEG-4 coding to reduce the data rate. Lossy compression schemes affect image quality and create visual artifacts. One of HDBaseT's main advantages is that it uses no compression. The video signal at the receiving end is pixel-by-pixel identical to that of the source.

Another shortcoming of extenders that use compression is that they can handle only a few input resolutions, like 1080p or 720p. Give them a 1280x800 signal (common notebook PC output) and they choke. In contrast HDBaseT is resolution agnostic, it just does not care. It supports virtually all PC and HDTV resolutions from 640x480 to 1920x1200@60. Even the HDMI 1.4's 4Kx2K@30 is supported.

Like a conduit, HDBaseT passes the signals blindly from one side to the other. This is a good thing! Digital video signals can have different color spaces such as RGB or YCbCr. Being blind to the format of the video data and just treating the data as 1s and 0s avoids color issues (such as screens that can appear purple). The same is true for HDCP (content protection). Video that has HDCP is scrambled and extenders that use compression need to decode it first with HDCP keys, then compress, encrypt, decode, decompress, and re-apply HDCP. But just like the *"honey badger"*, HDBaseT does not care! It is acting as a virtual direct connection between the ends.

As mentioned earlier, besides HD video and audio, HDBaseT can also extend power and bi-directional IR and RS-232. The standard allows 100-BaseT extension as well on the same cable.

Are there any limitations in HDBaseT?

Though not a limitation per se, it is important to point out that HDBaseT is not a LAN/Ethernet signal and therefore it cannot be connected to any network switches or routers. Also be very careful in reading the distance specs of the extenders that utilize HDBaseT. There are actually 3 levels of distance performance. The most economical is HDBaseT Class-B (formerly referred to as HDBaseT-Lite), this class depending on cable type or resolution used allows a maximum cable length of 60 to 70 meters (200 to 230 ft). The standard HDBaseT can extend signals to 100 meters (328 ft), but the chipset has a feature called Long-Reach that some manufacturers are utilizing. In this mode the signal can be extended to 150 meters (approximately 500 ft), however this mode supports a maximum resolution of 1080p@60 with 8-bit color, so 1080p with "deep-color" and 4K video are not supported.

Celebrating 30 Years of Innovation!

Tustin Crew

Santa Ana Crew

We truly appreciate your business, and we're grateful for the trust you've placed in us.

Notes

About Us

Hall Research has been a leading manufacturer of innovative Audio/Video distribution, switching, scaling and automation products for over 30 years. Hall Research products are used in thousands of installations worldwide by every major industry.

Our corporate office and manufacturing facilities are located in Orange County, CA

Warranty and Return Policy

Hall Research guarantees that the supplied equipment is free from defective workmanship and materials. Hall Research will repair or replace, at it's option, the defective components for a period of 2 years from the date of purchase. Cross-shipment for replacement products is available for products within 1 year of purchase.

Returns requested within 90 days of the original ship date from Hall Research will receive a full refund (minus shipping charges) if the product is fully functional, completely free of any damages or scratches and includes all components and packaging originally shipped with the product

1163 Warner Avenue, Tustin, CA USA 92780

ph: 714-641-6607
fax: 714-641-6698

sales@hallresearch.com
support@hallresearch.com

1163 WARNER AVENUE
TUSTIN | CALIFORNIA | 92780
800.959.6439
www.hallresearch.com