

# PRODUCT CATALOG 2016 - 2017

**HR** HALL  
RESEARCH  
A NEW WAVE IN CONNECTIVITY



# A Message from the Chief Executive Officer

## Welcome to Hall Research's 2016-17 Catalog of Products!

I can hardly imagine that it has been 32 years since Hall Research shipped its first product. It was designed and made in the USA, like most of our current product lineup. I guess because the Pro AV technology is evolving at such a fast rate (and us with it), who we were just a couple of years ago (in terms of product offering) is very different from today, so nothing gets stale and excitement abounds! But one thing that has not changed in all those years is our commitment to total customer satisfaction. We truly strive to win our customer's loyalty. Without a doubt, it has been the key to our continued growth.

I see endless opportunities in the new Digital AV and control technologies, and we are committed to remain 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 with advanced degrees. Having come from an engineering and academic background myself (BS in Electrical Engineering, BS in Biomedical Engineering, and MS in Electronics), 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](http://www.hallresearch.com)

Our product portfolio continues to expand. This catalog includes many new items - among them is the award winning EMX-I-AMP which won the Best of Show Award at ISE 2016.

We thank you for your support and welcome your feedback.



Ali Haghjoo  
Chief Executive Officer



3 0   Y E A R S   O F   I N N O V A T I O N

# What's New!



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# Video Extension

over LAN/ UTP / Fiber / Coax

# VIDEO over LAN / IP



## Dynamic Virtual Matrix Switch™



### Features

- Send up to 64 different HDMI sources on your LAN
- Add unlimited number of Receivers on the network
- Dynamically assign the source displayed at each Receiver
- Visually lossless H.264 compression for a crisp 1080p 60Hz video
- User definable Compression Ratio to use minimum bandwidth
- Extends bidirectional RS-232 for control
- PoE versions available (no power supply needed)

### Description

HHD264 family of economical HDMI over LAN senders and receivers provide unparalleled power and ease to distribute one or more HDMI sources to multiple displays on any LAN. Up to 64 independent senders can be simultaneously connected to the network and up to 256 receivers can be accommodated. Gigabit (1000 BaseT) network infrastructure is recommended to allow for up to 64 video streams to be transported, although the system works with 100 BaseT networks but with fewer sources. Full-HD (1080p/60) video is transmitted using the latest H.264 encoding scheme with user definable bit rate. For a perfect image Full-HD uses 15 Mbps whereas HD (1080i or 720p) uses 12 Mbps. However, if the content is mostly static (such as slide shows), users can encode with lower data rates to save bandwidth and still have a perfect image.

HDMI video and audio are extended along with bidirectional RS-232 data. Video routing from the senders to the receivers can be pre-assigned (using multi-cast group dip switch), but the system can also behave as a Dynamic Virtual Matrix Switch™. So if the signal routing from senders to receivers is going to be fixed, the installer can just set the dip switches to route senders to any one or group of receivers. However, users can switch the source shown on any receiver on the fly (dynamically). This is done by going into each receiver's IP address and accessing the WebGUI, or by using Hall Research's free Dynamic Virtual Matrix™ Windows software. Using the software enables the user to re-route the signals to all receivers from one central screen easily and conveniently.

### Models

HHD264-R	HDMI over LAN Receiver
HHD264-R-PD	HDMI over LAN Receiver w/ PoE
HHD264-S	HDMI over LAN Sender
HHD264-S-PD	HDMI over LAN Sender w/ PoE



# HDBaseT™

## HDBaseT™ the “Must-Have” Audio, Video and Control Extension Technology

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 to extend control signals (IR, RS-232, 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.

**Hall Research is a member of the HDBaseT™ Alliance and shipped its first HDBaseT™ product in 2012.**

### What Makes HDBaseT™ Great? \*\*

\*\*Answer: think of the “Honey Badger”

1. No compression which affects image quality
2. Resolution Agnostic – Supports virtually all VGA and HDMI resolutions
3. HDBaseT™ acts as a “Virtual Wire” passing the signal blindly to avoid color issues
4. Like the Honey Badger, HDBaseT does not care!

### What is POH?

Power over HDBaseT™ (PoH) enables the transfer of DC power in conjunction with video and control over a single UTP cable to a distance of up to 150 meters 500 ft. The POH standard is based on the IEEE 802.3af standard.

Hall Research utilizes the POH standard and adheres to PoE (Power over Ethernet) nomenclature of PSE (Power Sourcing Equipment) which is used as the power source over UTP to the PD unit (Powered Device) in their product descriptions. For example the UHBX-X-PSE unit will use one +5v power supply, internally create 48v POH and comply with the IEEE 802.3af handshake to pass power to the UHBX-X-PD unit.

## HDMI Over UTP HDBaseT™



UH-1BTX

### Features

- Extend HDMI or DVI over one UTP to 100m / 330ft
- Utilizes HDBaseT™ extension technology
- Full HD support 1080p deep color, 3D, and 4K
- HDCP Compliant with pass-thru EDID from display to source
- Long Reach Mode on UH-1BTX for extension to 150m / 500ft

### Description

The UH-1BTX extends HDMI or DVI video signal up to 100m / 330ft (4K video to 70m / 230ft over inexpensive Cat5e/6 cable using HDBaseT™ technology. The economical UH-1BT extends up to 70m / 230ft (4K video to 40m / 130ft). 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: (Kits)

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

### Models: (Individual)

UH-1BT-S	HDMI Over HDBaseT™ Sender 70m / 230ft
UH-1BT-R	HDMI Over HDBaseT™ Receiver 70m / 230ft
UH-1BTX-S	HDMI Over HDBaseT™ Sender 100m / 330ft
UH-1BTX-R	HDMI Over HDBaseT™ Receiver 100m / 330ft



**NEW FOR 2016** - Long Reach Mode Switch for extension to 150m (500ft) on UH-1BTX

## HDMI, RS-232 and IR Extension over HDBaseT™



### Features

- Extends HDMI or DVI video to 150m / 500ft over one UTP
- Includes RS-232 and IR extension in both directions
- Supports all HDMI resolutions including 4K
- Sturdy metal enclosures with mounting provisions
- Complies fully with HDBaseT™ standard
- Fully isolates ground between TX and RX sides

### Description

The UHBX extender kit (UHBX-S+UHBX-R) extend uncompressed HDMI, bidirectional IR and full-duplex RS-232. The Receiver has two user selectable distance modes, "Standard" and "Long Reach". In Standard mode all formats including 1080p and 4K can be extended to 100m / 330ft. In Long Reach mode 1080p can be extended 150m / 500ft.

Full-duplex RS-232 extension is provided that can operate at any baud rate to 115,200 bps. The extender can also extend IR from one end to the other. IR Detector and IR Emitter cables are sold separately. The IR extension preserves the modulation (carrier) frequency and provides compatibility to all standards. It supports modulation range from 30 KHz to 60 KHz.

*Application Note: All Hall Research extenders comply with HDBaseT™ specifications and are compatible with other certified HDBaseT™ gear. For example, the UHBX-S transmitter can be plugged into any projector or display with compatible input such as the Panasonic's DIGITAL LINK, Epson's PowerLite Pro series and others.*

### Models: (Individual)

UHBX-S	HDMI Video Extender with Bidirectional IR, and RS-232 Sender
UHBX-R	HDMI Video Extender with Bidirectional IR, and RS-232 Receiver

### Models: (Kit)

UHBX	UHBX-S + UHBX-R for HDMI, IR and RS-232 over HDBaseT™
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## HDMI, RS-232 and IR Extension over HDBaseT™ with PoH



### Features

- Extends HDMI or DVI video to 150m / 500 ft on just one UTP
- Includes RS-232 and IR extension in both directions
- Supports all HDMI and DVI resolutions including 4K
- Only one end requires power, other side is powered via UTP
- Power-over-HDBaseT™ (PoH) meets IEEE 802.3af standard

### Description

UHBX-P1 is an extender kit (UHBX-S-PSE + UHBX-R-PD) that utilizes HDBaseT™ technology. It can send HDMI, RS-232, IR and PoH (Power-over-HDBaseT™) to 500 ft (150 m) on a single UTP cable. The UHBX-P1 supports DVI and HDMI signals of virtually any resolution up to 4K x 2K to 100m / 330ft, and in Long Reach mode it supports resolutions to 1920x1080 to 500 ft (150 m).

Full-duplex RS-232 extension is provided that can operate at any baud rate to 115,200 bps. The extender can also extend IR from one end to the other. IR Detector and IR Emitter cables are sold separately. The IR extension preserves the modulation (carrier) frequency and provides compatibility to all standards. It supports modulation range from 30 KHz to 60 KHz.

### Models: (Individual)

UHBX-R-PD	HDMI, IR and RS-232 receiver over HDBaseT™ powered via UTP cable.
UHBX-R-PSE	HDMI, IR and RS-232 receiver over HDBaseT™ with power inserted through UTP cable.
UHBX-S-PSE	HDMI, IR and RS-232 sender over HDBaseT™ with power inserted through UTP cable.
UHBX-S-PD	HDMI, IR and RS-232 sender over HDBaseT™ powered via UTP cable.

### Models: (Kits)

UHBX-P1	UHBX-S-PSE + UHBX-R-PD for HDMI, IR and RS-232 over HDBaseT™ Receiver with Power Sourcing sender unit via UTP cable.
UHBX-P2	UHBX-S-PD + UHBX-R-PSE for HDMI, IR and RS-232 over HDBaseT™ sender with Power Sourcing receiver unit via UTP cable.



## HDMI, with optional RS-232 and IR Extension over HDBase™ with (PoH) on Wall Plate Sender and Stand-alone Receiver



UHBX-WP-P2

### Features

- Extends HDMI or DVI video to 150m / 500ft over one UTP
- May include RS-232 and IR extension in both directions with additional wall plate
- Supports virtually all HDMI and DVI resolutions including 4K
- Wall plate is powered through UTP.
- Power-over-HDBase™ meets IEEE 802.3af standard

### Description

The UHBX-S-WP wall plate HDMI sender fits in a single gang Decora® style wall plate and extends HDMI video. It is powered using PoH through the UHBX-R-PSE power injecting receiver. A second single-gang module can be added to the wall plate to provide RS-232 and IR extension and is also powered using PoH.

The Receiver has two user selectable distance modes, "Standard" and "Long Reach". In Standard mode all formats including 1080p and 4K can be extended to 100m/330ft. In Long Reach mode 1080p can be extended 150m / 500ft

Full-duplex RS-232 extension is provided that can operate at any baud rate to 115,200 bps. The extender can also extend IR from one end to the other. IR Detector and IR Emitter cables are sold separately. The IR extension preserves the modulation (carrier) frequency and provides compatibility to all standards. It supports modulation range from 30 KHz to 60 KHz.

*Application Note: The wall plate sender may alternatively be connected directly to projectors or TVs that have HDBase™ inputs, however a PoH inserter would be required (part number 511-PoH-17W).*

### Models: (Individual)

UHBX-S-WP	HDMI Extension over HDBase™ sender in single-gang Decora® Wallplate
UHBX-R-PSE	HDMI, IR and RS-232 over HDBase™ power injecting receiver unit via UTP cable.
UHBX-SC-WP	HDMI, RS-232, IR, PoH UTP ( Dual Gang Wall Plate Sender)
511-PoH-17W	PoH Inserter

### Models: (Kits)

UHBX-WP-P2	UHBX-S-WP and UHBX-R-PSE with HDMI over HDBase™ 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 RS-232 over HDBase™ Sender in double-gang Decora® Wallplate with Power injecting receiver unit via UTP cable

## Daisy Chainable HDBaseT™ Receiver with IR and RS-232 Control



UHBX-R-XT

**4Kx2K**

### Features

- Daisy-chainable HDBaseT™ receiver
- Chain up to 8 receivers to 800m / 2625ft source to display
- Supports virtually all HDMI and DVI resolutions including 4K
- Send unique RS-232 or IR commands to any unique box

### Description

The UHBX-R-XT is a daisy-chainable HDBaseT™ receiver with both HDMI output for connection to local display as well as a re-buffered HDBaseT™ output for connection to downstream receivers. The device utilizes Class-A HDBaseT™ technology with Long-Reach mode that allows up to 150m / 500ft of Cat6 between any two receivers. Up to 8 receivers (displays) can be placed in the chain for a total chain length of 2625 ft @ 1080p). The UHBX-R-XT provides an HDMI output, as well as IR and RS-232 for control. The RS-232 ports are addressable, so when connected in a chain, the user can address a particular box and send commands to a specific TV or projector. IR can also be extended from the sender and issue any common IR command.

### Models

UHBX-R-XT Daisy Chainable HDBaseT™ Receiver with IR and RS-232 Control

## HDBaseT™ Wall Plate Receiver with IR, RS-232 and PoH



UHBX-R-WP

**4Kx2K**

### Features

- Extends HDMI or DVI video to 150m / 500 ft over one UTP
- Includes RS-232 and IR extension in both directions
- Supports virtually all HDMI and DVI resolutions including 4K
- Powered via UTP (Cat6)
- Power-over-HDBaseT™ meets IEEE 802.3af standard

### Description

UHBX-R-WP is an HDBaseT™ receiver in a 2-gang Decora® style wall plate with HDMI output and bidirectional RS-232 and IR for control. It is powered using PoH (Power-over-HDBaseT™) from the Sender, so no power supply connection is needed.

The UHBX-R-WP utilizes Class-A HDBaseT™ technology with Long-Reach mode that allows extension of HDMI video up to 150m / 500ft. The wall plate receiver provides an HDMI output, as well as IR and RS-232 for control.

All HDBaseT™ senders that comply with the standard are compatible such as UHBX-S-PSE. The wall plate requires a PoH compliant sender (with IEEE 802.3af handshake), alternatively you can use the Hall Research 511-PoH-17W power inserter anywhere in the Cat6 path, if the sender does not provide power.

### Models: (Individual)

UHBX-R-WP	HDBaseT™ Wall Plate Receiver with IR, RS-232, and PoH
UHBX-S-PSE	HDMI, IR and RS-232 over HDBaseT™ power injecting sender unit via UTP cable.
511-PoH-17W	PoH Inserter

## HDMI + USB + LAN over HDBaseT™ 2.0 with PoH & Control



UH2X-P1

4K x 2K

### Features

- Extends Video, USB, LAN, Audio, Control, and Power over a single Cat6 cable
- Uncompressed HDMI extension supports all resolutions including 4K x 2K (UHD)
- Extends USB 2.0 seamlessly for connection of keyboard, mouse, touchscreen, memory devices, smart white boards, and more
- Extends RS-232 and IR control signals in both directions
- Powered via UTP (Cat6)
- Power-over-HDBaseT™ meets IEEE 802.3af standard

### Description

The UH2X-P1 is the most powerful video and data extender from Hall Research. It extends uncompressed HDMI with audio, LAN, USB 2.0, RS-232, IR, and PoH (power over HDBaseT™) over a single Cat6 cable to 100m / 330ft. It also provides a separate digital audio path from the receiver to the sender (in reverse direction of video). The audio in return path can be from the ARC (Audio Return Channel) from the display, or from an S/PDIF RCA connector, switch selectable. The sender requires a power supply (provided). Power is sent to the receiver via PoH (power over HDBaseT™), per IEEE 802.11af standard.

Conveniently a USB 2.0 hub is provided on the receiver with two USB connectors to support keyboard, mouse, touchscreen, memory devices, smart white boards, and more. Local Area Network (100-BaseT) is extended to provide a convenient way to get access to the display's IP port. Bidirectional RS-232 and IR signals are also extended.

### Models

UH2X-P1      HDMI over HDBaseT™ 2.0 Extender

## HDMI Multi-Port Sender with HDBaseT™



UHBX-8X

**4Kx2K**

### Features

- Converts 8 separate HDMI inputs to corresponding HDBaseT™ outputs
- Extends IR in both directions
- RS-232 and IP control port to issue RS-232 commands to any output
- Supports HDCP, 3D, Deep Color, CEC, and 4K (UHD) resolutions
- Sturdy 1RU design with built in power supply
- Can power compatible receivers through UTP using PoH (requires optional 48v supply)
- Front panel status indicators for power, link, video and more for each channel

### Description

The UHBX-8X converts 8 HDMI inputs to corresponding HDBaseT™ outputs for extension to 150m / 500ft 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 (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™
UH-1BT-R	HDMI Over HDBaseT™ Receiver 70m / 230ft
UH-1BTX-R	HDMI Over HDBaseT™ Receiver 100m / 330ft
UHBX-R-PD	HDMI, IR and RS-232 receiver over HDBaseT™ powered via UTP cable.
511-PS4812	48V Power Supply

## HDMI on HDBase™ 1x3 Splitter / Extender



UHBX-3S

**4Kx2K**

### Features

- Extend HDMI Video to 3 remote displays using HDBase™ on UTP
- Drive cables to 100m / 330 ft in 4K x 2K 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 HDBase™ 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 HDBase™ parameters to quickly verify proper operation.

The UHBX-3S supports PoH (Power over HDBase™) using an optional (sold separately) external 48 v DC power supply with the UHBX-R-PD. Other compatible receivers for sending only HDMI are the UH-1BT-R and the UH-1BTX-R.

### Models

UHBX-3S	1x3 HDMI on HDBase™ Splitter
UH-1BT-R	HDMI Over HDBase™ Receiver 70m / 230ft
UH-1BTX-R	HDMI Over HDBase™ Receiver 100m / 330ft
UHBX-R-PD	HDMI, IR and RS-232 receiver over HDBase™ powered via UTP cable
511-PS4812	48V Power Supply



## HDMI Switcher with HDBaseT™ Input & 50 watt Audio Amp



VSA-X21

**4Kx2K**

### Features

- 4K HDMI audio extractor with EDID management
- 1 HDMI Input and 1 HDBaseT™ input (provides PoH to sender)
- HDBaseT™ input supports UHBX-SW3-S / WP providing multiple HDMI and VGA inputs
- Built-in 50 watt (25 X 2 Stereo or Mono) audio amp for direct connection to 8 Ohm speakers
- Separate analog audio input for connection of line-level mics or other audio inputs
- Volume control via, front panel, RS-232 commands, Digital Pot (rotary encoder) and USB port
- Two RS-232 ports for controlling auxiliary devices such as projectors or screens
- Can store On/Off RS-232 commands for controlling TV/projector's power
- Provides port for connection of smart keypad (VSA-UI-DP)
- IP Port for control via Telnet or Web GUI

### Description

The VSA-X21 is a 4K HDMI switcher with HDBaseT™ input and features Audio Extractor with built-in 50 watt audio amplifier for direct connection of 8 ohm speakers. The device also provides line-level stereo Aux audio input and allows audio mixing of HDMI audio with the Aux input. Volume can be controlled from the front panel, RS-232, or external digital rotary pot (encoder) that can be mounted on a wall-plate.

The device provides 1 HDMI Input and 1 HDBaseT™ input (with PoH power to sender). HDBaseT™ input supports UHBX-SW3-S / WP providing multiple HDMI and VGA inputs.

The VSA-X21 includes a port for connection of a smart keypad (VSA-UI-DP) that can be used to select inputs, adjust volumes, and turn displays on and off. Two RS-232 ports are available for controlling auxiliary devices such as projectors or screens. The unit can store On/Off RS-232 commands for controlling TV/projector's power. Volume control via, front panel, RS-232 commands, Digital Pot (rotary encoder UI-KNOB-DP) and USB port. Advanced features also include page sense mute, audio ducking, auto input detection, stereo-to-mono down mixer and ARC support.

Full EDID management is provided with the ability to learn, download, upload, emulate or pass-thru EDID. A USB port is featured on the front panel that can be used to configure EDID behavior, update firmware, and more.

### Models

VSA-X21      HDMI Switcher with HDBaseT™ Input 50 watt Audio Amp

## VGA, HDMI, MHL Auto-Switching Sender and Receiver over HDBaseT™

Senders

Receiver



UHBX-SW3-WP



UHBX-SW3-S



UHBX-R-PSE

-Or-

4K x 2K

### Features

- Inputs handle VGA, Component, HDMI and MHL
- Programmable IR and RS-232 commands for display on/off control
- Supports all HDMI resolutions including 4K (UHD)
- No power supply required (powered through Cat6 cable from the receiver)
- Uses only one Cat6 distance to 150m / 500ft at 1080p, or 100m / 330ft at 4K resolution

### Description

The UHBX-SW3 is a kit comprised of a multi-input switcher / sender and an HDBaseT™ receiver. Both wall-plate and surface mount configurations are available. The device accommodates 2 HDMI and 1 VGA inputs with audio. The HDMI #1 input also supports MHL (Mobile High-Definition Link) with phone-charging feature to allow video presentation from a smart-phone using just a passive cable. The VGA input also accepts YPbPr Component video. To ensure a proper image on the display, the switcher's VGA input is scaled to 1080p (user specifiable). This eliminates compatibility issues with various notebook or PC VGA formats that may not be displayable on an HDMI TV if not scaled to a standard HDTV resolution such as 1080p. The user can also configure the unit to pass-through 3.5 mm audio input from an MP3 audio player independent of the VGA signal.

The sender can manually or automatically switch between the various inputs and extends the video using HDBaseT™ standard. To control the power on/off function of the remote display, the sender can generate RS-232, and IR control signals which are extended using the same Cat6 cable. An IR detector is built-in to the sender to extend IR Signals. A USB port is provided for configuring the control method and other operational modes. Virtually all VGA and HDMI resolutions are supported including 4K (UHD). 4K video can be extended to 330 ft (100m) while 1080p signals can go as far as 500 ft (150m). The sender is powered through the same cable from the receiver using PoH (Power-over-HDBaseT™) standard. The UHBX-R-PSE receiver includes a small power supply and provides HDMI, RS-232 and IR outputs.

*Application note: The UHBX-SW3 complies fully with HDBaseT™ Alliance's design specifications and may be connected to other compliant PSE receivers including Crestron's DM Series switchers. It can also be connected to displays or projectors with HDBaseT™ inputs without the external receiver. In that case, a PoH compliant power inserter would be needed to power the sender.*

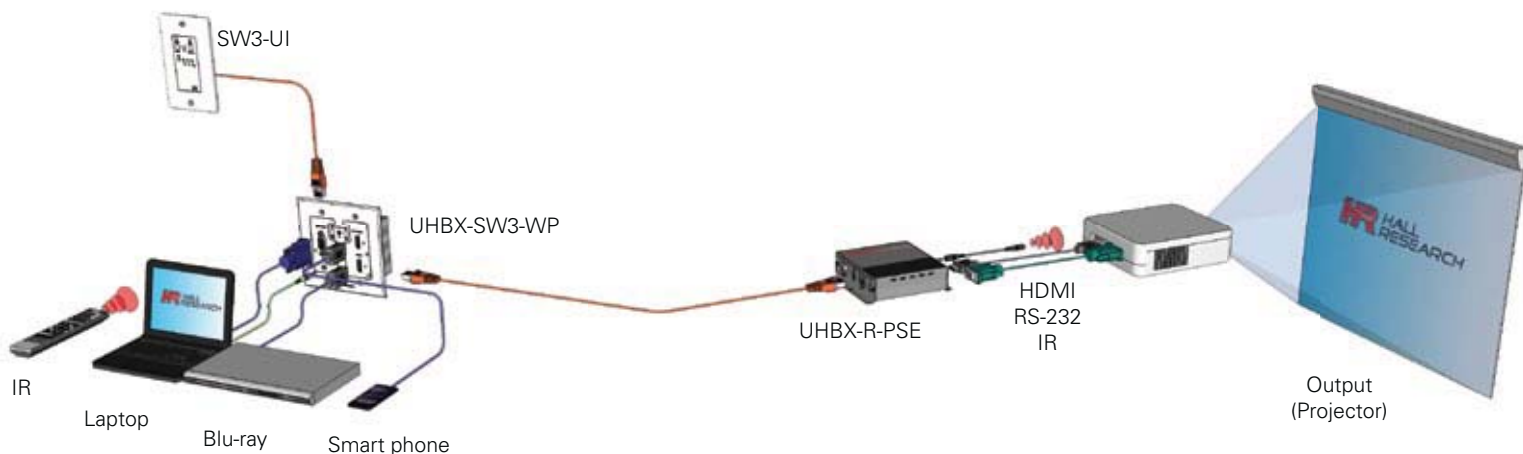
## Add Remote Control Using Auxiliary Keypad

The SW3-UI and the SW3-UI-VOL are auxiliary control keypads that can be plugged to the UHBX-SW3-WP using a single Cat5 cable. These single-gang keypads allow the user to see which input is currently selected and status of the display power command sent (ON or OFF). When in manual mode the user can use the push buttons on the auxiliary keypad to select inputs or to turn the display on and off. The buttons can also be used to make power and input control automatic (Auto LEDs will indicate the mode). For those users that have a display which has a controllable variable line output (with volume and mute control), or a compatible audio amp with RS-232 volume control (for example EMX-AMP shown below), the SW3-VOL provides 3 additional buttons (Volume up/down, and mute).

SW3-UI



SW3-UI- VOL



## Models

UHBX-SW3-WP	VGA, HDMI, MHL Auto-Switching Wall-Plate Sender with HDBaseT™
UHBX-SW3-S	VGA, HDMI, MHL Auto-Switching Sender with HDBaseT™
UHBX-R-PSE	HDMI+RS-232+IR+PoH UTP Receiver with Power Inserted into UTP
SW3-UI	Auxiliary Keypad for Manual Control and Status
SW3-UI-VOL	Auxiliary Keypad with Manual Volume Control
511-PoH-17W	PoH Inserter

# HDMI over UTP

## HDMI over 1 CAT6 Extender Kit



UH-1D

### Features

- Use only one Cat5e/6 cable to extend HDMI™ without compression
- Can extend Full HD (1080p) to 40m / 130ft or 720p to 52m / 170ft
- Provides local HDMI loop-output on the transmitter for connection to local monitor or to another UH-1D sender
- EDID learn button (to store and emulate EDID from any display)
- Can extend IR in both directions
- Receiver provides both 3.5mm analog and RCA digital audio output

### Description

The UH-1D is a member of the video over twisted pair extension line from Hall Research. This economical and easy to install extension kit uses only a single UTP (Cat6) cable to extend Full HD 1080p HDMI signals to over 40m / 130ft, or 720p/1080i to 52m / 170ft. The product is comprised of a sturdy and compact Sender and a corresponding Receiver.

The UH-1D offers several unique features such as a local HDMI output (loop) on the Sender for connection to a local monitor, and EDID management capability with ability to learn and emulate EDID from any display. In addition to the HDMI video output, the Receiver provides both digital audio (S/PDIF) as well as analog stereo (L/R) outputs for connection to audio equipment.

The UH-1D allows connection of an IR detector and an IR emitter cable to each end. This provides the ability to extend IR signals in either direction. For example, when an IR detector is connected to the remote Receiver and IR emitter is connected to the sender, the user, from the remote TV end; can control the source using an IR remote. IR cables are sold separately.

The devices have L-shaped brackets on each end for easy surface mounting and they feature locking HDMI connectors to secure compatible locking cables such as Hall Research C-HDMI-L series cables.

### Models

UH-1D	HDMI over 1 CAT 6 Extender (Sender & Receiver)
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## Low Cost HDMI over 2 Cat6 Extender



UH-2D



UH-2D-S-DP

### Features

- Extend HDMI or DVI over 2 Cat6 Cables
- Can extend Full HD (1080p) to 40m / 130ft or 720p to 52m / 170ft
- Only one power supply needed

### Description

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 53m / 170ft @ 1080i/720p or 40m / 130ft @ 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.

### 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 (sender & receiver)
UH-2D-DP	HDMI over 2 UTP Wallplate Extender (sender & receiver)

## 1x3 Splitter HDMI Extender over Dual UTP



UH-2D-3S

### Features

- One local HDMI output plus 3 dual UTP outputs
- Internal power supply
- Pass-thru or emulated EDID

### Description

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.

### Models

UH-2D-3S	1X3 Splitter HDMI Extender over Dual UTP
UH-2D-R	HDMI over Dual UTP Receiver



# VGA Over UTP

## VGA + Audio Over UTP Senders



UVA-8



UVA-DP

### Features

- Transmit VGA and audio up to 305m / 1000ft 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 305m / 1000ft over UTP cable. They support resolutions up to 1920x1200 @ 60 Hz. Senders are available with 2 to 8 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)

## VGA + Audio Over UTP Receivers



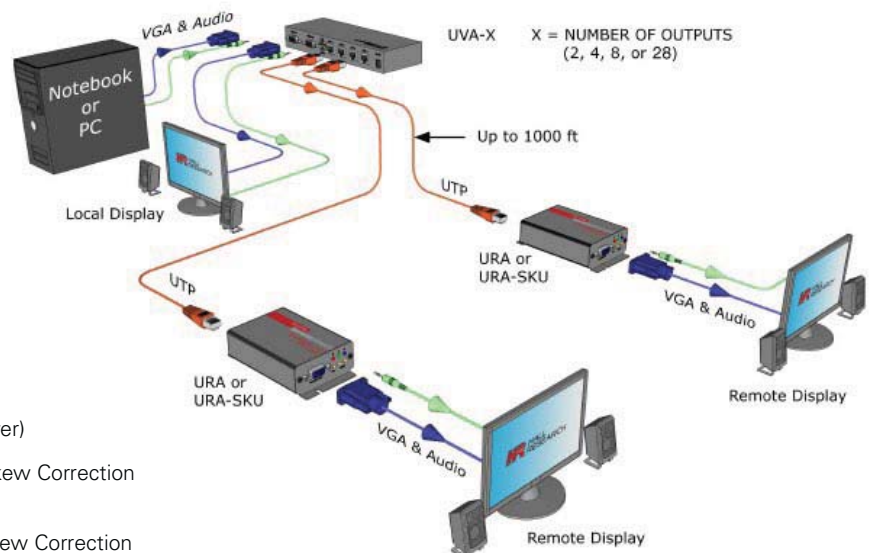
URA-SKU

### Features

- Receive VGA and audio from up to 305m / 1000ft 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 (URA-SKU + URA-XT)
- Optional RJ45 output for daisy chaining multiple receivers in a single run (URA-XT)

### Description

The URA series receivers accept VGA and audio over UTP cable from compatible senders up to 305m / 1000ft away. They support resolutions up to 1920x1200 at 60Hz. They 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



UV1-SL

### Features

- Extend VGA and power up to 153m / 500ft 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 153m / 500ft 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-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



UV2-S

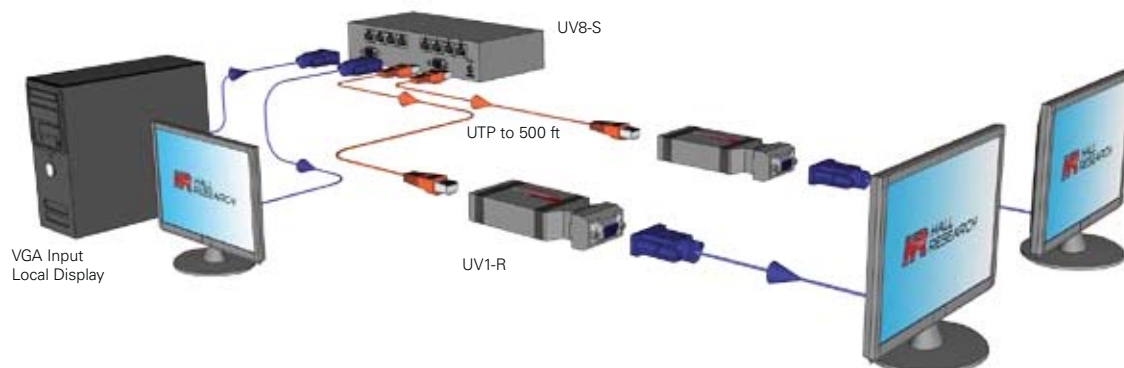
### Features

- Extend VGA and power up to 153m / 500ft 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 153m / 500ft over a single UTP cable. Supports resolutions up to 1920x1200 @ 60 Hz. Senders are available with 2 to 8 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)
UV1-R	VGA Over UTP (Receiver)

## VGA + Audio + RS-232 Over UTP Receiver



URA-232

### Features

- Receive VGA, audio, and RS-232 from up to 305m / 1000ft 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 305m / 1000ft 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 Research SKU Correction technology for adjusting individual RGB values to compensate for signal skewing over long distances. URA-232 series receivers are compatible with UV232A splitter senders.

### Models

URA-232	VGA + Audio + RS-232 Over UTP with SKU Correction (Receiver)
UV232A-S	VGA + Audio + RS-232 Over UTP (Sender)



## VGA + Audio + RS-232 Over UTP



UV232A

### Features

- Extend VGA, audio, and RS-232 up to 153m / 500ft 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. Unidirectional 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 + Bidirectional RS-232 Over UTP



UV232B

### Features

- Extend VGA and bidirectional RS-232 up to 153m / 500ft 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 (bidirectional) 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. Bidirectional RS-232 transmitted from sender to receiver can be used to control devices or displays and receive a response.

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.

*Applications include kiosk solutions, conference halls, digital signage, interactive operator systems, factory or laboratory data acquisition and control, and more.*

### Models

UV232B	VGA + Bidirectional RS-232 Over UTP (Sender and Receiver)
UV232B-S	VGA + Bidirectional RS-232 Over UTP (Sender)
UV232B-R	VGA + Bidirectional RS-232 Over UTP (Receiver)

## Component Video + Power Over UTP “Active Balun”



UVB1-CP

### Features

- Extend component video and power up to 305m / 1000ft 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 305m / 1000ft 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-R	Component Video + Power Over UTP (Receiver)
UVB1-CP-S	Component Video + Power Over UTP (Sender)

## Composite/S-Video + Audio Over UTP “Isolated Balun”



UBL-CSA

### Features

- Extend Composite/S-Video and audio up to 610m / 2000ft 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 610m / 2000ft 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)

## All in One Console Extender



### U97-Ultra-2B

#### Features

- Extend Dual-Head Video, Audio, RS-232, and 3 independent USB ports
- Includes 2 "Direct" USB ports (DR1 & DR2), and a 3rd port with 4 port hub in the receiver.
- Built-in EDID (Extended display ID), allows PC to detect LCD's even if none is connected at the sender or the receiver.
- Built-in video skew correction on both video channels. This corrects the lack of RGB convergence when long Cat6 cables are used.
- Built-in Test Pattern Generator for long cable compensation (High Frequency Gain) and skew correction.
- Amplified audio input and loop output at the sender as well as DB15 output at the receiver to directly drive passive speakers.
- Built-in power supply with standard 110~240 VAC IEC320 jack.
- Eliminates the need for Utility Box (Receiver includes a guard plate that goes over all the connectors with tie-down provisions for strain relief).

#### 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)

# Video over Fiber

## HDMI and RS-232 Over Single Fiber



**HR-731**

### Features

- Transmits uncompressed HDMI video along with RS-232 to 1000m / 3280ft
- Supports Deep-color (HDMI 1.3 or 1.4) and 3D
- Status indication of fiber-optic link, Source video, RS-232 or CEC extension
- Bidirectional 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 bidirectional 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 (Sender + Receiver)

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

## 4K Javelin Active Plenum HDMI Cable



CHD-APxx

4Kx2K

### Features

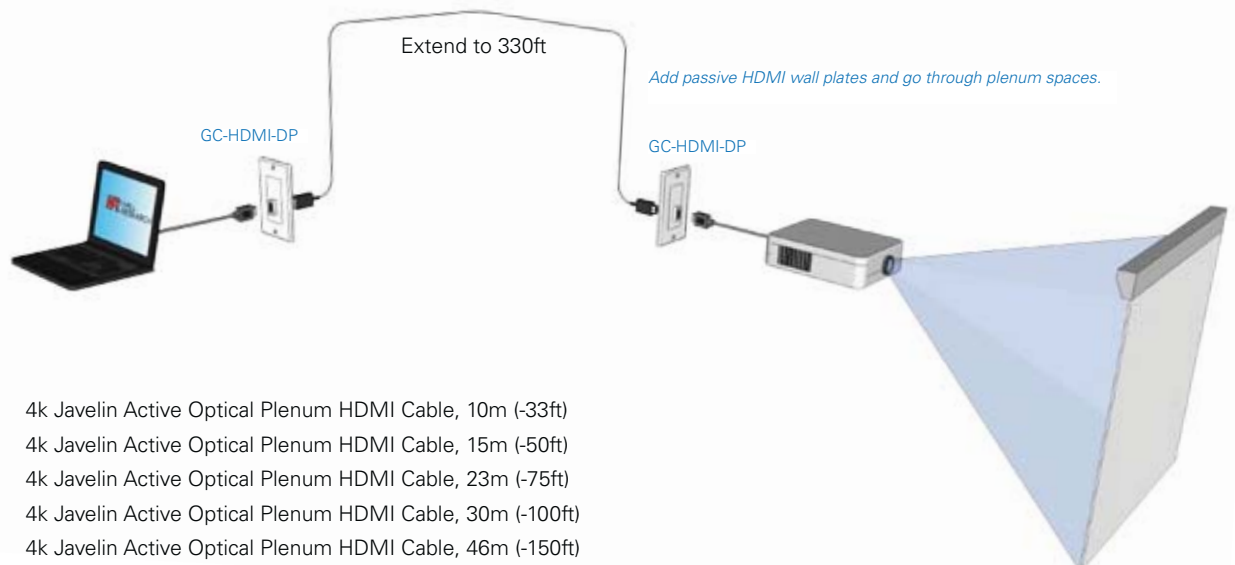
- Plenum Rated
- Resolutions to UHD (4K)
- Offers fiber-optic noise immunity
- No additional power supply required
- Supports DDC for HDCP and EDID, CEC
- Thin and flexible with bend radius of 0.2 inch

### Description

Hall Research 4K Javelin™ Active Plenum HDMI extension cables utilize the latest in optoelectronic technology to transmit HDMI signals far beyond the typical limitation of copper cables. The cable is a hybrid of fiber and copper that allows HDMI signals to be extended 200 ft or more with zero loss. All PC and HDTV resolution are supported including 4K Ultra HD. The HDCP compliant cables also support DDC and CEC. Proprietary circuitry is conveniently incorporated inside the HDMI connectors to convert the video signals to light pulses and back.

The plug-n-play cable requires no external power supply. Power is drawn from the 5v signal pin of the source HDMI output. The cable draws less than 0.25w of power from the source. Per HDMI specifications all HDMI compliant sources must at least provide 0.25 watts of power.

Among the impressive features of the 4K Javelin™ is its indifference to the resolution that is being extended. It has the ability to handle any resolution or color depth including non-standard video formats as the video is sent using light pulses, the cable provides higher immunity to EMI or RFI interference and there is less chance of video dropouts due to environmental electromagnetic noise. The 4K Javelin™ Plenum cable can be used as a regular HDMI cable but without the worry of boosters or equalizers; being Plenum, also makes it possible to be used in any installation environment. Applications include, home theater, conference rooms, schools, airports, hospitals and more.



### Models

CHD-AP10	4k Javelin Active Optical Plenum HDMI Cable, 10m (-33ft)
CHD-AP15	4k Javelin Active Optical Plenum HDMI Cable, 15m (-50ft)
CHD-AP23	4k Javelin Active Optical Plenum HDMI Cable, 23m (-75ft)
CHD-AP30	4k Javelin Active Optical Plenum HDMI Cable, 30m (-100ft)
CHD-AP46	4k Javelin Active Optical Plenum HDMI Cable, 46m (-150ft)
CHD-AP60	4k Javelin Active Optical Plenum HDMI Cable, 60m (-200ft)
CHD-AP100	4k Javelin Active Optical Plenum HDMI Cable, 100m (-330ft)



# HDMI over Coax



## HDMI over Coax Extender



EXHD-RG6

### Features

- Extend uncompressed HDMI to 70m / 230 ft or longer
- Supports resolutions up to 1080p 1920x1080 at 60 Hz
- No user settings, plug-n-play
- Includes Sender with two coax outputs and Receiver with daisy-chain coax output
- Uses Locking HDMI connectors

### Description

The EXHD-RG6 is an HDMI-over-Coax extender that can extend HDMI signal to 230 ft or longer. Maximum cable length depends on signal resolution and quality of RG-6U cable used. It extends video with no compression for a perfect reproduction at the receiver.

The kit includes a Sender (EXHD-RG6-S) and a corresponding Receiver (EXHD-RG6-R). The Sender has an HDMI input connector and provides two BNC outputs for connection to one or two RG-6U coaxial cables. The kit also includes one Receiver (EXHD-RG6-R).

The Receiver has a BNC input for connection to the Sender, and provides an HDMI output. Additionally a buffered Coax output is also provided that can be used to daisy chain to another Receiver if required.

The extender supports HDCP and provides HDCP content protected output. Standard TV and HDTV resolutions are supported including 486i/576i, 720p, 1080i, and 1080p

### Models

EXHD-RG6

HDMI over Coax Extender ( Sender + Receiver)





# Control Systems



# IP Enabled Digital AV Room Control System



VSA-51



IP Manager

## Features

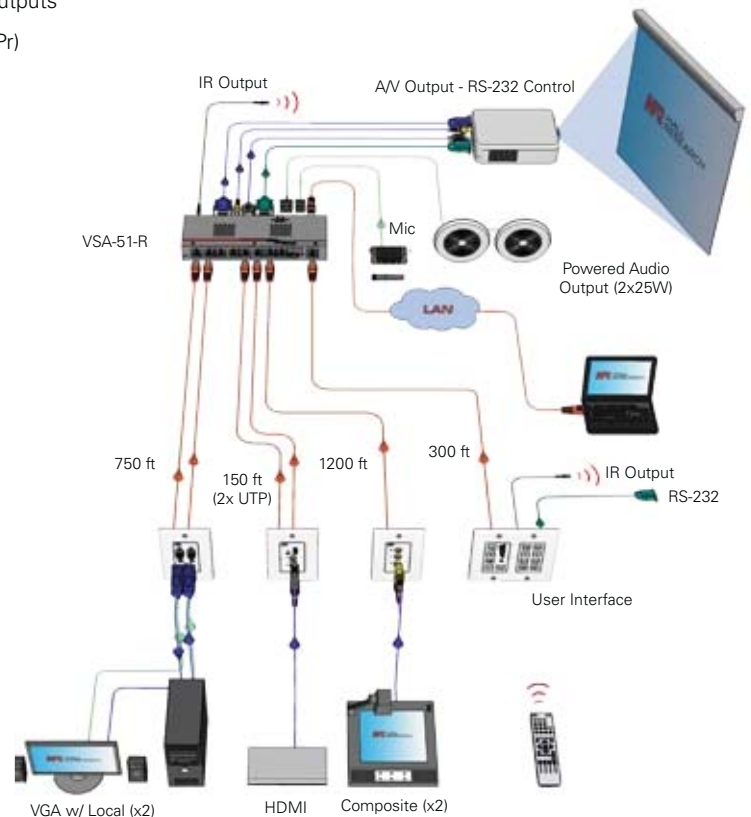
- Control a Display and other Devices Via IP, RS-232, IR, and 2 Discrete Outputs
- Up to 5 Modular Audio/Video Inputs (1 HDMI, 2 Composite, 2 VGA/YPbPr)
- Embedded Software Accessible from a PC, Smart Phone, or Tablet
- Task Scheduling and Automation
- Individual Audio Level Control with Amplification

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

## HDMI Switcher with HDBaseT™ Input & 50 watt Audio Amp



VSA-X21

**4Kx2K**

### Features

- 4K HDMI audio extractor with EDID management
- 1 HDMI Input and 1 HDBaseT™ input (provides PoH to sender)
- HDBaseT™ input supports UHBX-SW3-S / WP providing multiple HDMI and VGA inputs
- Built-in 50 watt (25X2 Stereo or Mono) audio amp for direct connection to 8 Ohm speakers
- Separate analog audio input for connection of line-level mics or other audio inputs
- Volume control via, front panel, RS-232 commands, Digital Pot (rotary encoder) and USB port
- Two RS-232 ports for controlling auxiliary devices such as projectors or screens
- Can store On/Off RS-232 commands for controlling TV/projector's power
- Provides port for connection of smart keypad (VSA-UI-DP)
- IP Port for control via Telnet or Web GUI

### Description

The VSA-X21 is a 4K HDMI switcher with HDBaseT™ input and features Audio Extractor with built-in 50 watt audio amplifier for direct connection of 8 ohm speakers. The device also provides line-level stereo Aux audio input and allows audio mixing of HDMI audio with the Aux input. Volume can be controlled from the front panel, RS-232, or external digital rotary pot (encoder) that can be mounted on a wall-plate.

The device provides 1 HDMI Input and 1 HDBaseT™ input (with PoH power to sender). HDBaseT™ input supports UHBX-SW3-S / WP providing multiple HDMI and VGA inputs.

The VSA-X21 includes a port for connection of a smart keypad (VSA-UI-DP) that can be used to select inputs, adjust volumes, and turn displays on and off. Two RS-232 ports are available for controlling auxiliary devices such as projectors or screens.

The unit can store On/Off RS-232 commands for controlling TV/projector's power. Volume control via, front panel, RS-232 commands, Digital Pot (rotary encoder UI-KNOB-DP) and USB port. Advanced features also include page sense mute, audio ducking, auto input detection, stereo-to-mono down mixer and ARC support.

Full EDID management is provided with the ability to learn, download, upload, emulate or pass-thru EDID. A USB port is featured on the front panel that can be used to configure EDID behavior, update firmware, and more.

### Models

VSA-X21      HDMI Switcher with HDBaseT™ Input 50 watt Audio Amp

# I/O Controllers

## 16-Channel Programmable Serial Controller



HR-16P

### Features

- Automatically issue RS-232 commands based on contact closures
- Store up to 33 user-programmable command strings
- Windows GUI software for programming

### 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.

Hall Research provides a powerful Windows® based application that is used to create the data files and for uploading them to the HR-16P, via a supplied serial cable. The latest version of this file is available for free download.



### Models

HR-16P

16 Channel Programmable Serial Controller



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



HR-4P

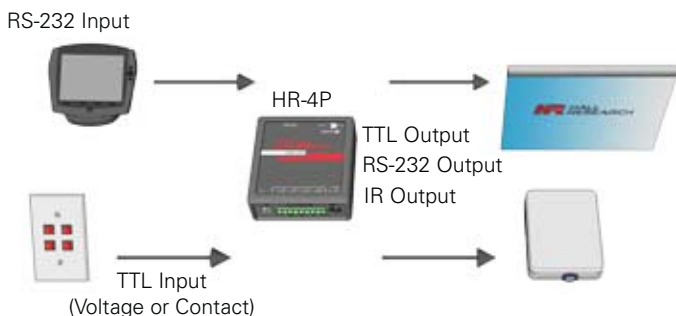
### Features

- 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

### Features

- Embedded Software Accessible from any PC, Smart Phone, or Tablet
- RS-232 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) RS-232 ports, (1) IP RJ-45 network port. The CNT-IP-2 controller also has the ability to route the RS-232 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
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## 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

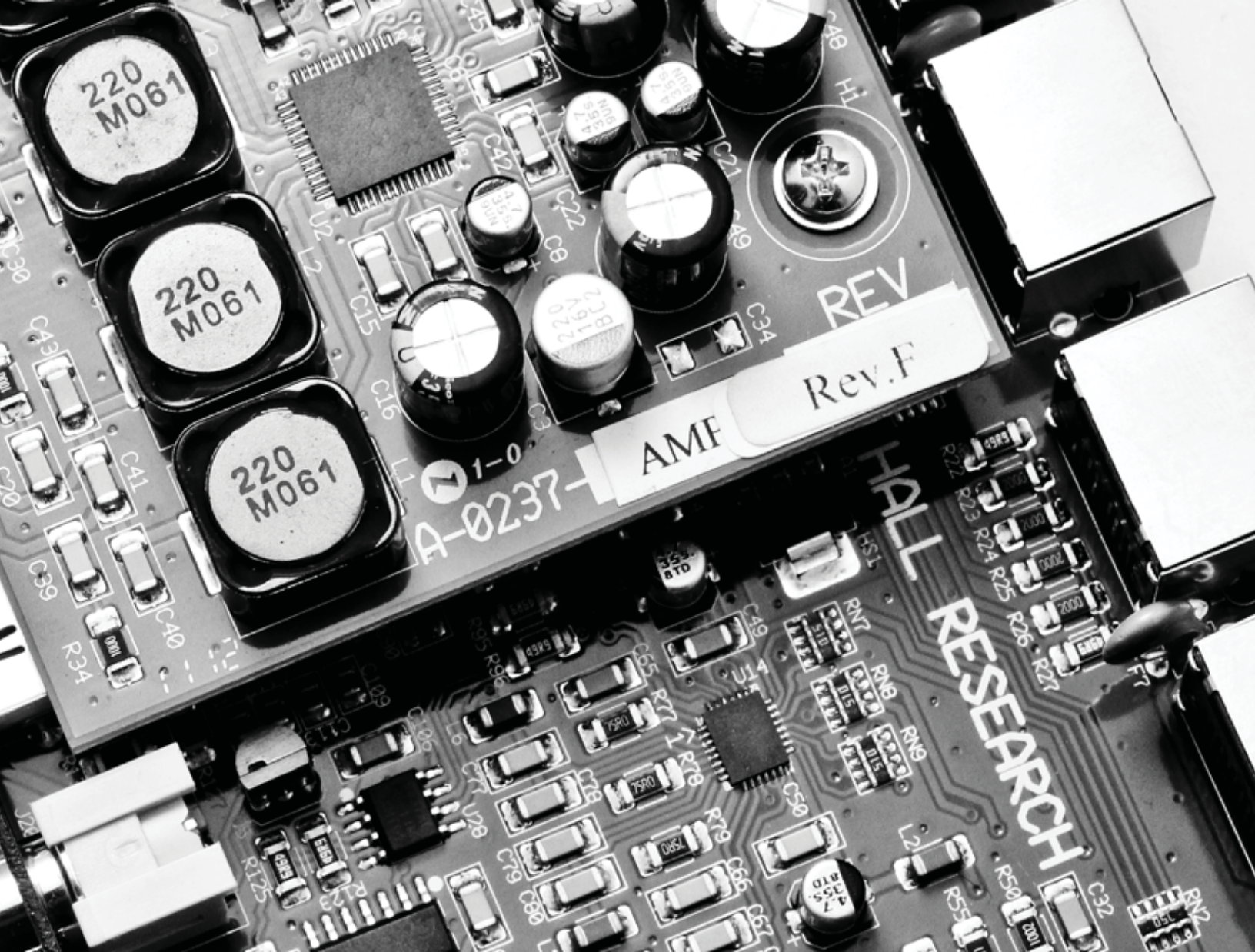


CIR-EMT2-CVR

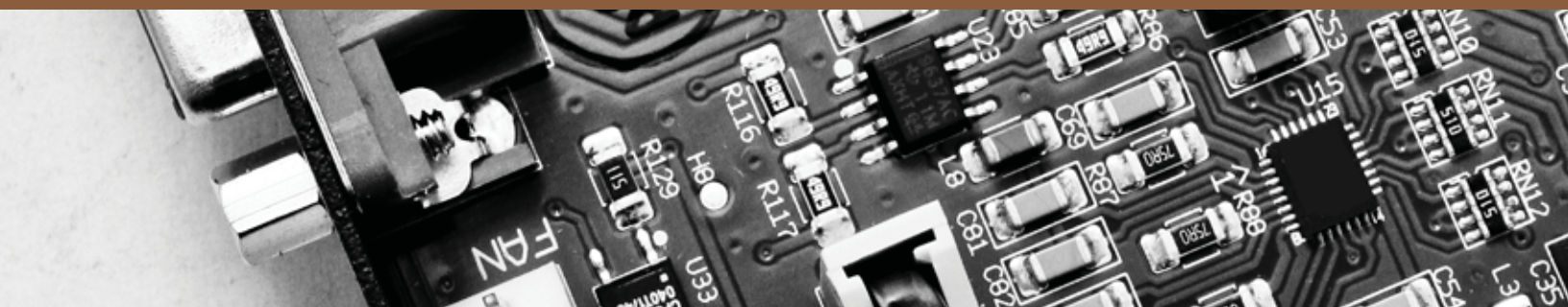
#### Models

IRCNT-16      16 Port Universal IR router





# AV Processors & Scalers





# Single Input Processors & Scalers



## HDMI Scaler & Audio Extractor / Embedder



SC-HD-2A

### Features

- Any PC or HDTV video signal can be scaled up or down to any other PC or HDTV resolution
- Analog and digital audio inputs and outputs
- Embeds audio to HDMI from analog or digital audio source
- Horizontal mirroring (x-axis flip)
- Advanced scaling for real-time frame rate capture & conversion
- Selectable audio delay up to 150ms (for lip sync)
- OSD adjustment of contrast, brightness, color, size, sampling clock, phase, position, audio source and delay

### Description

The SC-HD-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-HD-2A

HDMI Scaler & Audio Extractor

## Analog Video and Audio to HDMI Scalers



**SC-VHD-HD**

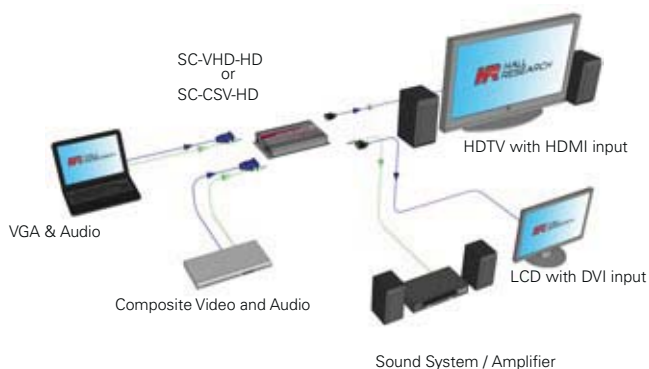
### Features

- 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
- DVI 1.0 compliant

### Description

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

## Composite / S-Video and Audio to HDMI



**SC-CSV-HD**

### Features

- Convert Composite or S-Video and audio to HDMI
- Provides scaled HDMI output to various resolutions up to 1080p and 1920x1200
- Horizontal mirroring for teleprompting
- DVI 1.0 compliant

### Description

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



## VGA/Component Scaler



SC-VGA-2B

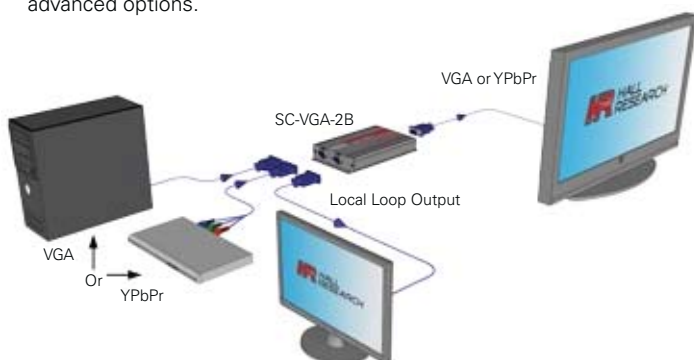
### Features

- 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



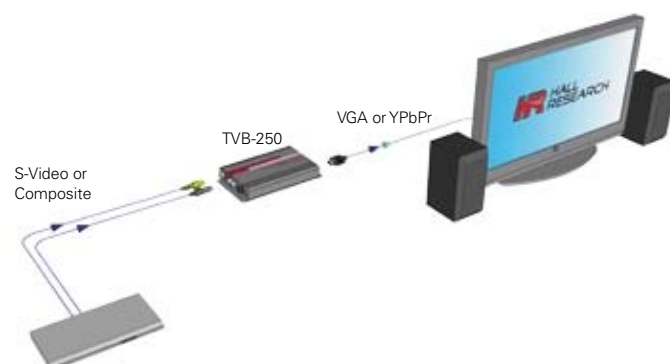
TVB-250

### 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



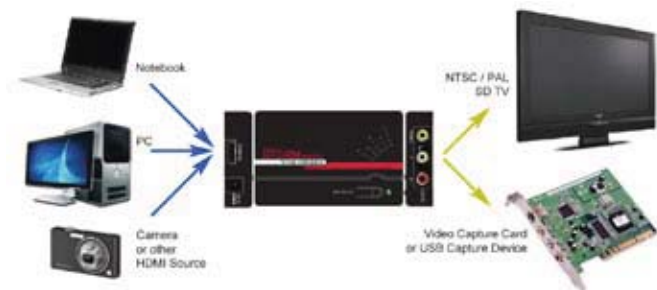
VHD-HD2CV

### 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**

### 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 SC-1080H 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 resolution. The SC-1080H 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  $\Omega$  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-defined 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  $\Omega$  speakers.

#### Models

SC-12BT      Multi-Format Scaler Switch with HDBaseT™

# Seamless 4-Port HDMI Switch with Quad Multi-View



SSW-HD-4

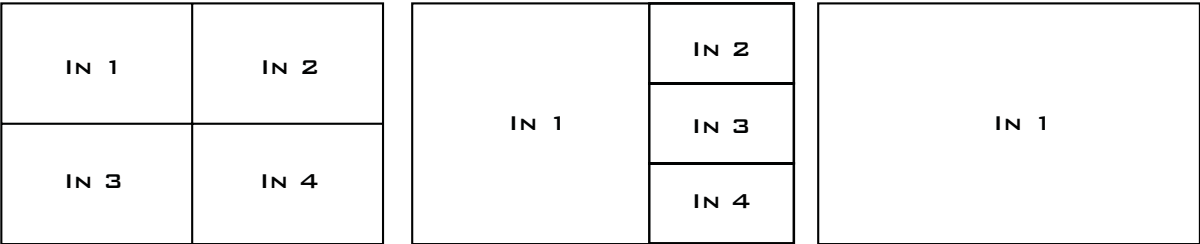
### Features

- Totally seamless switching among inputs
- Separate Digital Audio Output (LPCM/AC3/DTS)
- Scales output to fixed resolution independent of inputs
- Multi-view modes allow viewing of all inputs in real time (60 frames/sec)
- Multiple Viewing Modes
- Includes IR remote
- RS-232 control of all functions

### Description

The SSW-HD-4 is a 4 input HDMI seamless switch with Quad Multi-View capability. The output resolution can be set independent of the inputs. Both HDTV and PC output resolutions are selectable. The unit also de-embeds the audio from the selected HDMI source (digital S/PDIF RCA connector).

As a multi-viewer, it can show the inputs in various window configurations (4 equal size windows, or one large window with 3 smaller ones). The output mode, resolution, and input selection can be selected using 3 methods. (1) Front panel buttons, (2) IR remote (included), or (3) RS-232 commands.



Applications include command and control centers, presentations, and sports bars. For example, a large 80 inch can be used to display 4 sources simultaneously (as a quad view).

### Models

SSW-HD-4                      Seamless 4-Port HDMI Switch with Quad Multi-View



## Multi-Format Switcher & Scaler



SC-1080R

### Features

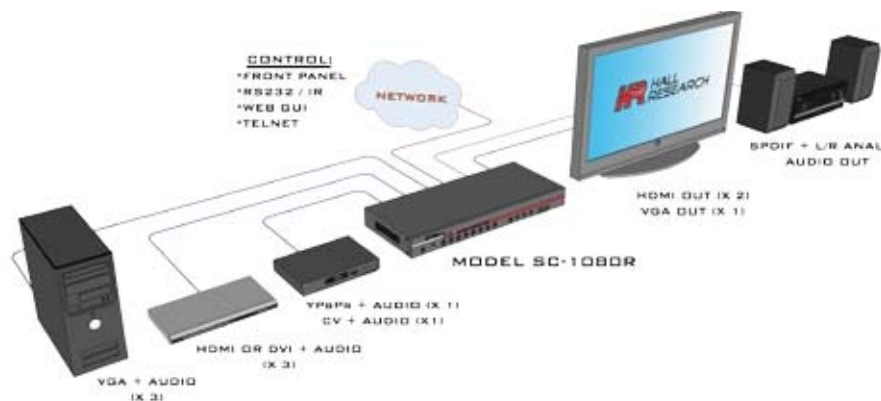
- Switch and scale among 8 AV inputs
- 4 different types of inputs are supported HDMI, VGA, YPbPr, CV
- 3 simultaneous analog and digital outputs
- Separate analog and digital audio outputs
- IP enables with user-friendly WebGUI and Telnet control
- Powerful and intuitive RS-232 Control Commands
- Individual buttons on the front panel for direct input selection
- Includes IR remote control
- Includes detachable rack-mount ears
- Auto Scan Switching mode

### Description

The SC-1080R can switch and scale among 8 AV inputs (3 HDMI, 3 VGA, 1 YPbPr, and 1 Composite Video) to 3 simultaneous outputs (2 HDMI, 1 VGA). All outputs show the selected input. The output format and resolution can be specified as either PC (VGA (640x480) to WUXGA (1920x1200) or Component Video (YPbPr from 480i/p to 1080i/p). Both Analog and Digital audio outputs are provided for convenience.

The Video Scaler can be controlled in many ways including: front panel push buttons, using the included IR remote control, Telnet (via LAN), WebGUI (via LAN), or RS-232 Serial interface.

The SC-1080R features an OSD menu for configuration, picture setup, system information and other advanced options. It is ideal for use in boardrooms, classrooms, digital signage, and high-end home-theatre applications.



### Models

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

## VGA, HDMI, and MHL Multi-format HDMI Switch and Controller ( with HDBaseT™ output on SC-3BX )



SC-3H

4Kx2K

### Features

- 3 inputs handle VGA, Component, HDMI (or DVI), and MHL
  - Supports phone charging feature if MHL source is detected
- VGA input is scaled to 1080p or user specified output resolution to ensure proper image
- Supports all HDMI resolutions including 4K (UHD)
- Manual or automatic input selection
- IR Extension
- Can issue its own RS-232 or IR commands to turn display On or Off
- Display power control can be manual or automatic
- USB port for configuration (including display power on/off control methodology)
- SC-3BX provides additional HDBaseT™ output with PoH

### Description

The SC-3H and SC-3BX are desktop switchers accommodate 2 HDMI and 1 VGA inputs with audio. The HDMI #1 input also supports MHL (Mobile High-Definition Link) with phone-charging feature to allow video presentation from a smart-phone using just a passive cable. The VGA input also accepts YPbPr Component video and to ensure compatibility with all HDMI displays, the VGA/YPbPr input is scaled to 1080p or 720p).

The units provide an HDMI output, along with separate audio outputs (S/PDIF digital and L/R analog). The SC-3BX also provides a Class-A HDBaseT™ output with PoH (sends power to receiver using Power-over-HDBaseT™) for connection to compatible receivers such as UHBX-R-PD. The SC-3BX can extend 4K video to 330 ft (100m) while 1080p signals can go as far as 500 ft (150m).

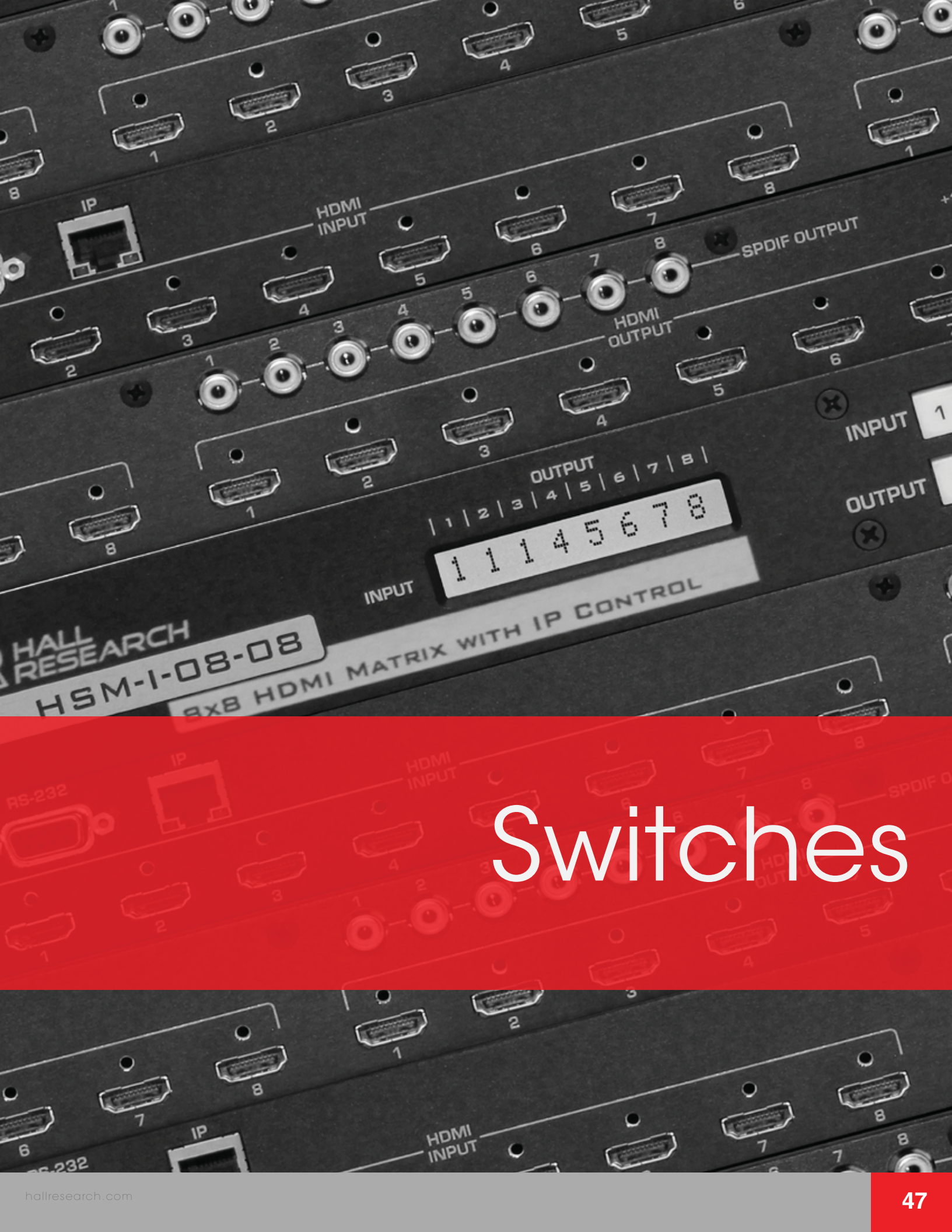
The unit can manually or automatically switch between the various inputs. In manual mode select inputs by pressing the Source button on the front panel or buttons on optional expansion wall plate keypads (SW3-UI and SW3-UI-VOL). The input selection can also be automatic based on detecting video.

Both units are designed to control the power on/off function of the display by generating RS-232, and/or IR control signals. For example in Auto Power mode, if a video is detected on the selected input, the wall-plate will issue the desired ON command, and if there is no video, it can issue an OFF command after a programmed delay. The control commands can be RS-232 or IR based on the user's needs.

A USB port is provided on the device for programming the commands using free Windows® GUI software. Moreover, the switcher features an IR detector that can extend IR signals.

### Models

- |        |  |
|--------|--|
| SC-3H  | VGA, HDMI, and MHL Multi-format HDMI Switch and Controller               |
| SC-3BX | VGA, HDMI, and MHL Multi-format HDMI Switch and Controller with HDBaseT™ |



# Switches



# HDMI Matrix Switches

## 4x4 and 4x2 HDMI Matrix Switches



### HSM-I-04-04

#### 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, RS-232, IR remote or IP (Telnet and built-in web interface)

#### Description

The HSM-I-04-04 is a powerful 4x4 HDMI matrix switch with RS-232, 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: 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.



IP Manager

#### 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

## 8x8 HDMI Matrix Switch



**HSM-I-08-08**



IP Manager

### 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, RS-232 or IP (Telnet and built-in web interface)



**Try me!**

### Description

The HSM-I-08-08 is a powerful 8x8 HDMI matrix switch with RS-232, 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.



### Models

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



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



VSM-A-I-4-JA4

### Features

- Cross-point switching of VGA or HD video and audio signals
- Independent audio routing
- Balanced stereo audio inputs/outputs allow interference free connections
- RS-232, 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 intuitive 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

### 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 rack mount brackets are also available

## HDMI 4-Port Switch



**SW-HDMI-4**

### 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

This model is a high performance HDMI Switcher capable of switching and boosting 4 independent HDMI sources to 1 output.

Make selections by using the front panel push buttons, using the IR remote control or by RS-232 from an external controller.

## 4-Port HDMI Fast Switch with IP/RS-232/IR Control



SW-HD-4

4Kx2K

### Features

- Supports 4K, 3D, 36-bit Deep Color
- Fast Switch Technology
- Control via IR, RS-232, Telnet and Web GUI control
- EDID Management

### Description

The SW-HD-4 is a 4 input HDMI Switcher with InstaPort™ Technology from Silicon Image enabling fast switching among four HDMI sources. It supports 4K (UHD), 3D, 36-bit Deep Color video. Control switching via front panel button, using IR remote control, RS-232, Telnet and also web GUI built in the unit.

Full EDID control is provided, where EDID content for each input can be set independently. Choose from a list of standard EDIDs or copy the EDID from the connected display to any input.

The SW-HD-4 offers Auto switching with priority. In this mode, the unit scans all inputs and automatically selects the active input.

Front panel buttons can be locked to prevent users from switching or changing modes. The switcher can also disable HDCP support for any input forcing the source to send unencrypted content when permitted. This is a useful feature for connecting the output to devices that do not support HDCP such as video conferencing gear.



### Models

SW-HD-4 4-Port HDMI Fast Switch with IP/RS-232/IR Control

## Seamless 4-Port HDMI Switch with Quad Multi-View



SSW-HD-4

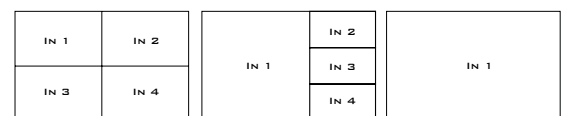
### Features

- Totally seamless switching among inputs
- Separate Digital Audio Output (LPCM / AC3 / DTS)
- Scales output to fixed resolution independent of inputs
- Multi-view modes allow viewing of all inputs in real time (60 frames/sec)
- Multiple Viewing Modes
- Includes IR remote
- RS-232 control of all functions

### Description

The SSW-HD-4 is a 4 input HDMI seamless switch with Quad Multi-View capability. The output resolution can be set independent of the inputs. Both HDTV and PC output resolutions are selectable. The unit also de-embeds the audio from the selected HDMI source (digital S/PDIF RCA connector).

As a multi-viewer, it can show the inputs in various window configurations (4 equal size windows, or one large window with 3 smaller ones). The output mode, resolution, and input selection can be selected using 3 methods. (1) Front panel buttons, (2) IR remote (included), or (3) RS-232 commands.



Applications include command and control centers, presentations, and sports bars. For example, a large 80 inch can be used to display 4 sources simultaneously (as a quad view).

### Models

SSW-HD-4 4-Port HDMI Fast Switch with IP / RS-232 / IR Control

# Analog Switches



## 2 Port VGA Switches



### VS-2

#### 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 rack mount brackets are available.

#### Models

VS-2                      2x1 VGA Switch



## 2 Port VGA + Audio Switches



VS-2A

### 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 rack mount and surface mount 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
-------	------------------------



# 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
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## 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 >

## 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

## 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



# AUDIO



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



HR-101-S

- 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 S/PDIF 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 S/PDIF 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 S/PDIF 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 S/PDIF 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 up to 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 S/PDIF inputs are provided (switch selectable by the user).

### Models

DAC-51	Universal Digital to Analog Audio Decoder DSP
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## 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-3.5mm

### 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  $\pm .03$  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-3.5mm      Stereo Audio Ground-Loop Isolator & Filter with 3.5mm Connectors

## HDMI Repeater and Audio Extractor



**HD-AUD**  
**4K x 2K**

### Features

- Buffers and re-clocks HDMI signals
- Extracts audio from HDMI input
- Works with or without display
- Supports Full HD and 4K x 2K (UHD)
- USB to mini-USB cable included

### Description

Use this compact HDMI Repeater to buffer HDMI signals (helps resolve compatibility issues), and extract the stereo audio (analog L/R) from the video.

The repeater consumes very little power and most HDMI sources can power it just using the HDMI connection. If a source does not provide enough power, a USB cable is included to apply power (USB power supply is not provided).

### Models

HD-AUD HDMI Repeater and Audio Extractor

## 4K HDMI Audio Extractor with Audio Amplifier, RS-232 and IP Control



### EMX-AMP

4Kx2K

#### Features

- 4K HDMI audio extractor with EDID management
- Built-in 50 watt audio amp
- Separate analog audio input for connection of line-level mics or other audio inputs
- 2nd RS-232 port for controlling auxiliary devices
- Volume control via, front panel, RS-232, Digital Pot (rotary encoder), and IP

#### Description

The EMX-AMP and EMX-I-AMP are 4K HDMI Audio Extractors with line-level audio input and built-in 50 watt audio amplifier for direct connection of 8 ohm speakers. Both devices allow audio mixing (HDMI audio and/or analog L/R input), and volume control from the front panel and RS-232. The EMX-I-AMP also provides IP connectivity which allows network control of the device using TELNET commands or via the built-in webpage control.

The devices also have a provision of controlling the volume remotely using a simple rotary encoder that can be mounted on a wall-plate. They also feature a second auxiliary RS-232 that can be connected to a projector. Using the primary RS-232 input, or the IP port, the user can send power on/off commands to the display through the Auxiliary RS-232 port.

Full EDID management is provided with the ability to learn, download, upload, emulate or pass-thru EDID. A USB port is provided on the front panel that can be used to configure EDID behavior, update firmware, and more.

#### Models

EMX-AMP	4K HDMI Audio Extractor with Audio Amplifier, RS-232
EMX-I-AMP	4K HDMI Audio Extractor with Audio Amplifier, RS-232 and IP Control



## Universal Audio Delay Processor



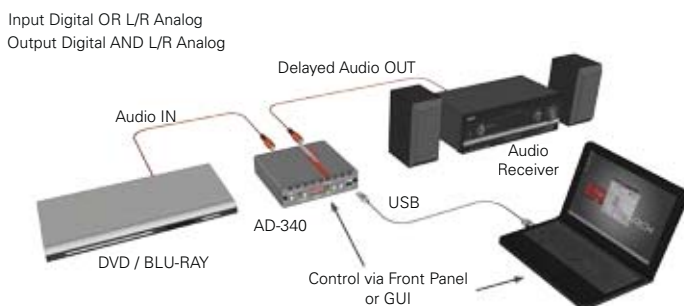
AD-340

### 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 (S/PDIF) 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.



### 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



# USB Extension

## USB 2.0 Over UTP



U2-160



U2-160-DP



U2-160-4

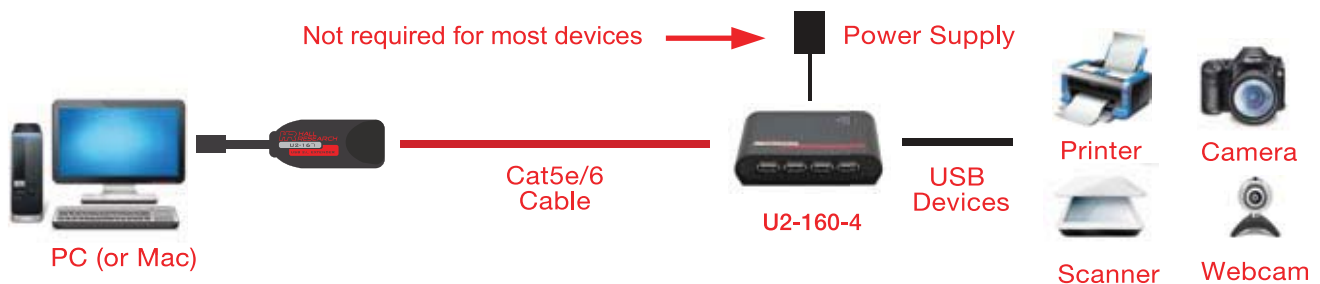


### Features

- 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
- Sends power from local to remote using PoC (power over cat5)
- Compatible with interactive white boards, 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 . All models send power over Category cable and for most USB devices connection of an additional power supply is not required. However all models include a power supply incase it is needed.



### 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
U2-160-4	USB 2.0 Over UTP Extension Kit with 4-port hub in Remote

## HDMI + USB + LAN over HDBaseT™ 2.0 with PoH & Control



UH2X-P1

**4Kx2K**

### Features

- Extends Video, USB, LAN, Audio, Control, and Power over a single Cat6 cable
- Uncompressed HDMI extension supports all resolutions including 4K x 2K (UHD)
- Extends USB 2.0 seamlessly for connection of keyboard, mouse, touchscreen, memory devices, smart whiteboards, and more
- Extends RS-232 and IR control signals in both directions
- Powered via UTP (Cat6)
- Power-over-HDBaseT™ meets IEEE 802.3af standard

### Description

The UH2X-P1 is the most powerful video and data extender from Hall Research. It extends uncompressed HDMI with audio, LAN, USB 2.0, RS-232, IR, and PoH (power over HDBaseT™) over a single Cat6 cable to 100m / 330ft. It also provides a separate digital audio path from the receiver to the sender (in reverse direction of video). The audio in return path can be from the ARC (Audio Return Channel) from the display, or from an S/PDIF RCA connector, switch selectable. The sender requires a power supply (provided). Power is sent to the receiver via PoH (power over HDBaseT™), per IEEE 802.11af standard.

Conveniently a USB 2.0 hub is provided on the receiver with two USB connectors to support keyboard, mouse, touchscreen, memory devices, smart white boards, and more. Local Area Network (100-BaseT) is extended to provide a convenient way to get access to the display's IP port. Bidirectional RS-232 and IR signals are also extended.

### Models

UH2X-P1      HDMI over HDBaseT™ 2.0 Extender



## USB 3.0 Active Extension with 4-Port Hub



**USB3-33H4**

### Features

- 4 downstream USB 3.0 ports
- Backward compatible with USB 2.0 /1.1 devices
- Data Transfer rates to up 5Gbps
- Plug and Play no driver required
- Works without external power supply
- Optional power supply for high current devices included

### Description

USB 3.0 Active Extension Cable with Hub enables you to connect to multiple devices up to 10m / 33ft away. The USB3-33H4 supports data transfer rates up to 5Gbps and is fully backward compatible with 2.0 / 1.1 devices.

Additional DC-Jack is provided for devices which need more power such USB HDD, PTZ cameras, etc.

A power supply is also included.

### Models

USB3-33H4      HDMI over HDBaseT™ 2.0 Extender

## USB 3.0 ACTIVE EXTENSION CABLE - 16'



**USB3-EXT-16**

### Features

- Perfect for USB 3.0 HD cameras, portable HDDs, etc
- Active extension with no drivers needed
- USB bus powered for one or two in a daisy-chain
- Connect up to 4 to achieve 20 m / 65ft
- Optional power supply for daisy-chains more than 2
- Meets USB 3.0 Super speed devices to 5 Gbp Perfect for USB 3.0 HD cameras, portable HDDs, etc
- Active extension with no drivers needed
- USB bus powered for one or two in a daisy-chain
- Connect up to 4 to achieve 20 meters (65ft)
- Optional power supply for daisy-chains more than 2
- Meets USB 3.0 Super speed devices to 5 Gbps

### Description

The USB3-EXT-16 is an active extension cable which can be cascaded (up to 5) to extend the distance between USB devices and a PC. It regenerates the USB signal for maximum reliability and performance over extended distances.

Can be used without a power supply when cascaded up to 2 devices maximum otherwise the power supply is required at the farthest connection from the USB source.

### Models

USB3-EXT-16      USB 3.0 Active Extension Cable - 16'



# Accessories

# EDID Emulation & Programming



## VGA EDID Emulator



EM-EDID-HD15

### 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



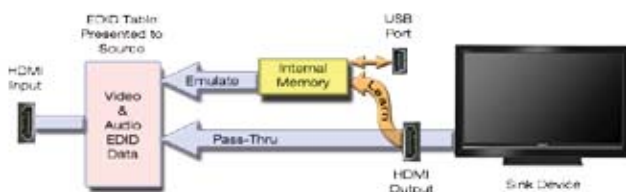
**EMX-HD-AUD**

### 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

## Single & Dual Link DVI Extender with EDID Management



**EMX-DVI**

### 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-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-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

## USB to Serial



USB-RS-232-1	USB to RS-232 Serial Converter
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# 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)

## 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)

## 4K Javelin Active Plenum HDMI Cable



### Features

- Plenum Rated
- Resolutions to UHD (4K)
- Offers fiber-optic noise immunity
- No additional power supply required
- Video supports 3D, Deep color, xvYCC Color
- Audio supports PCM, Dolby, True HD, DTS-HD
- Supports DDC for HDCP and EDID, CEC
- Thin and flexible with bend radius of 0.2 inch

### Description

Hall Research 4K Javelin™ Active Plenum HDMI extension cables utilize the latest in optoelectronic technology to transmit HDMI signals far beyond the typical limitations of copper cables. The cable is a hybrid of fiber and copper that allows HDMI signals to be extended 200 f or more with zero loss. All PC and HDTV resolutions are supported including 4K Ultra HD. The HDCP compliant cables also support DDC and CEC. Proprietary circuitry is conveniently incorporated inside the HDMI connectors to convert the video signals to light pulses and back.

The plug-n-play cable requires no external power supply. Power is drawn from the 5v signal pin of the source HDMI output. The cable draws less than 0.25w of power from the source. Per HDMI specifications all HDMI compliant sources must at least provide 0.25 watts of power.

Among the impressive features of the 4K Javelin™ is its indifference to the resolution that is being extended. It has the ability to handle any resolution or color depth including non-standard video formats as the video is sent using light pulses, the cable provides higher immunity to EMI or RFI interference and there is less chance of video dropouts due to environmental electromagnetic noise. The 4K Javelin™ Plenum cable can be used as a regular HDMI cable but without the worry of boosters or equalizers; being Plenum, also makes it possible to be used in any installation environment. Applications include, home theater, conference rooms, schools, airports, hospitals and more.

### Models

CHD-AP10	4k Javelin Active Optical Plenum HDMI Cable, 10m (-33ft)
CHD-AP15	4k Javelin Active Optical Plenum HDMI Cable, 15m (-50ft)
CHD-AP23	4k Javelin Active Optical Plenum HDMI Cable, 23m (-75ft)
CHD-AP30	4k Javelin Active Optical Plenum HDMI Cable, 30m (-100ft)
CHD-AP46	4k Javelin Active Optical Plenum HDMI Cable, 46m (-150ft)
CHD-AP60	4k Javelin Active Optical Plenum HDMI Cable, 60m (-200ft)
CHD-AP100	4k Javelin Active Optical Plenum HDMI Cable, 100m (-330ft)

## 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)

## 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)

## 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)

## VGA to Component Cable



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

## PoH Compliant Power Inserter



511-PoH-17W

## Universal Power Supply w/IEC320 input & 48v @ 1.2A output



511-PS4812

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## 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 3 years from the date of purchase. Cross-shipment for replacement products is available for products within 1 year of purchase.

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