Plug & Play AV Distribution Designs for K-12 and Higher Education
Smart Interactive Classroom 1 HDMI & USB Over 1 CAT6

This small classroom solution provides video and USB extension over a single CAT6 cable. It features built-in audio extraction, and the ability to program serial, IR, and I/O ports to control displays or other devices. Integrated IP control option available.

**OPPORTUNITY**

Provide a single-cable solution for HDMI and USB extension to an interactive display. Allow remote access control over a network.

**SOLUTION**

EX-HDU-WP carries HDMI and USB over a single CAT6. EX-HDU-R-IP outputs HDMI and USB. Network interface allows for remote control of RS-232, IR, and digital I/O.

**Benefits**

- Easy installation – Video and USB over a single cable
- User-programmable option for external device control
- Extracted audio for use with an audio amplifier

**Add-ons:**

- AMP-4840 - 8 Ohm Audio Amplifier
- UI-IP8-DP - 8-button IP Controller
- CNT-IP-2 - Programmable Network IP Controller

**Parts List - Smart Interactive Classroom Kit**

- EX-HDU
  - HDMI and USB Extension on CAT6 with Audio and Integrated Control
- OR
- EX-HDU-IP
  - HDMI and USB Extension on CAT6 with Audio, Integrated Control and IP

Also Available:

HDMI, USB, CAT6 Cables
Smart Interactive Classroom 2  Dual Input & USB Over 1 CAT6

This powerful classroom solution provides HDMI, VGA, and USB extension over a single CAT6 cable. It features auto-switching between video inputs, 4K 60Hz Support, USB 2.0, RS232, and IR extension over HDBaseT.

**OPPORTUNITY**
Upgrade an old classroom two gang solution to support digital video, legacy sources and USB for interactive displays over a CAT5e/6 cable.

**SOLUTION**
UHB-SW2 Sender and Receiver Kit extends either video signal and USB over a single CAT5e/CAT6. The sender is powered through the CAT5e/6 Cable from the receiver.

**Benefits**
- Easy installation – Video and USB over a single cable
- VGA input for legacy PCs or Laptops
- Auto Switches to last-plugged video input
- RS232 and IR are also extended

**Add-ons:**
- AMP-4840 - 8 Ohm Audio Amplifier
- AMP-7040 - 70v / 100v Audio Amplifier

**Also Available:**
HDMI, USB, CAT6 Cables

**Parts List - Smart Interactive Classroom Kit**
- UHB-R HDBaseT™ receiver
- UHB-SW2-WP 2-Gang HDBaseT™ transmitter
- UHB-SW2 (Kit) Auto-Switching HDMI, VGA and USB Extension System

**Diagram**
- UHB-SW2-WP WALL PLATE SENDER
- CAT6 UTP 70m @ 1080p 40m @ 4K 60Hz 4:4:4
- UHB-R Receiver with HDMI output & USB hub
- Interactive Display

**Image**
A classroom setup with a laptop, document camera, and interactive display.
Simple Interactive Classroom Pass-Through Extension

This small classroom solution provides a quick, clean extension for video and USB, without requiring any additional setup or programming.

**OPPORTUNITY**
Provide a quick, clean extension of HDMI and USB for use with an interactive display.

**SOLUTION**

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**Parts List - Simple Interactive Classroom Kit**

- **GCDP-1HD x1**
  HDMI Passive Extender Decora Plate

- **CHD-DE46 x1**
  4K Javelin™ Active Plenum HDMI Cable w/Detachable Ends

- **U22-160-DP x1**
  USB over CAT6 Extender

**Benefits**
- 100% Plug and Play - no programming
- Extend 4K UHD video up to 100m
- Extend USB 2.0 up to 50m

**Add-ons:**
- HD-AUD-IO - Audio Extractor & Embedder
- HR-4P - Digital I/O Serial Controller
Digital Signage  Video Over IP Networks

Adding digital signage to a campus, whether it’s news feeds, message boards, event promotions, or schedule changes, gives students access to real-time information in any location. With FHD264 Video over IP extenders, up to 64 different video sources can distribute content to an almost unlimited number of displays.

**OPPORTUNITY**
Replace message walls with digital signage. Distribute multiple video sources across the campus, using existing IT infrastructure.

**SOLUTION**
FHD264-S and FHD264-R encoders and decoders support 1080p video, and can extend over 100m on standard UTP cabling. Use existing IGMP-Enabled network switches.

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**Parts List - Digital Signage Kit**

- **FHD264-R** x1
  AV and Control over IP Receiver with Extracted Audio, RS232 over IP & IR

- **FHD264-S** x1
  AV and Control over IP Sender with Loop output, Audio, RS232 over IP & IR

*Also Available:* HDMI, USB, CAT6 Cables

**Benefits**
- Use existing LAN infrastructure
- Scalable from 1:1 to 64:255 or more
- Create Dynamic Virtual Matrix

**Add-ons:**
- **AMP-4840** - 8 Ohm Audio Amplifier
- **CNT-IP-264** - Web GUI Controller
- **FHD-RM** - Rack Mount Shelf, 4 RU

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**Diagram**

- HDMI SOURCES
- FHD264-S ENCODERS
- GIGABIT SWITCH (MANAGED + POE)
- HDMI, CAT5e
- FHD264-R DECODERS
- HDMI DISPLAYS

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**Diagram Details**

- **FHD264-R**
  - AV and Control over IP Receiver
  - Extracted Audio
  - RS232 over IP & IR

- **FHD264-S**
  - AV and Control over IP Sender
  - Loop output, Audio
  - RS232 over IP & IR

- **HDMI SOURCES**
- **FHD264-S ENCODERS**
- **GIGABIT SWITCH (MANAGED + POE)**
- **HDMI, CAT5e**
- **FHD264-R DECODERS**
- **HDMI DISPLAYS**

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**Diagram Notes**

- Use HDMI, USB, CAT6 Cables
- Scalable from 1:1 to 64:255 or more
- Create Dynamic Virtual Matrix

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**Add-ons**

- **AMP-4840** - 8 Ohm Audio Amplifier
- **CNT-IP-264** - Web GUI Controller
- **FHD-RM** - Rack Mount Shelf, 4 RU
Lecture Classroom Auto Switch Multiple Sources

This small-to-medium classroom solution provides two HDMI and one legacy VGA inputs on a single wallplate, extended up to 100m over a single CAT6 cable. It features VGA upscaling, programmable source and power buttons, auto-switching, an optional remotely-located keypad, and lossless HDBaseT technology.

OPPORTUNITY

Provide a single-cable extension for multiple sources, including HDMI and VGA. Auto-switching and programmable on/off buttons to simplify the end-user’s experience.

SOLUTION

UHBX-SW3-WP + UHBX-R-PSE provide extension and auto-switching without the need for additional equipment. Simple programming ensures the end user never needs to search for a remote.

Parts List - Lecture Classroom Solutions Kit

- **UHBX-SW3 [Kit]**
  - VGA, HDMI, MHL Auto-Switching
  - Wall-Plate with HDBaseT

- **Also Available:**
  - HDMI, USB, CAT6 Cables

Add-ons:

- **SW3-UI** - External Keypad Controller
- **HD-AUD-IO** - Audio Extractor
- **VSA-X21** - HDBaseT™ Switching Receiver with 40W Audio Amp

Benefits

- Auto-switching with priority
- RS-232 output for control of display
Auditorium Solution Integrated Video, Audio and Control

This solution is designed for medium-sized auditoriums, lecture halls, and larger classrooms where instructors teach from a lectern, and need both projected video and amplified audio. The VSA-X21 provides many integrated features to support a wide range of needs found in a larger educational space.

SOLUTION

Transform an outdated analog system with support for 4K HDMI. Integrate video switching, amplified audio, and control in a compact, simple interface.

UHBX-SW3-WP and VSA-UI Keypad are installed in a lectern. VSA-X21 provides remote video out, line-level mic in, 50W audio amplification, and a built-in Web GUI.

Add-ons:
- HR-4P - Digital I/O & Serial Controller
- AMP-4840 - 8 Ohm Audio Amplifier
- CHD-DE46 - 46m HDMI Javelin cable

Parts List - Auditorium Solution Kit

Benefits
- Intuitive keypad and Web control
- Built-in 50w audio amp with mixing, ducking, and line out
- 100m video extension for larger room
- Priority Page Sensor input

Add-ons:
- HR-4P - Digital I/O & Serial Controller
- AMP-4840 - 8 Ohm Audio Amplifier
- CHD-DE46 - 46m HDMI Javelin cable
Dual Room Solution

Independent or Combined

Accordion room dividers are a convenient way to shift between one large learning space, or two smaller ones. The HSM-44-BX matrix provides a convenient way to split or combine video to accommodate the same task. Each sub-room can display independent content or, when needed, show the same content on both displays.

OPPORTUNITY

Create a single, unified video switching, extension, and control system for a large room that can be subdivided into two separate classrooms with an accordion room divider.

SOLUTION

HSM-44-BX provides two HDMI inputs for each sub-room. UI-IP8-DP keypads and a CNT-IP-2 web controller are programmed for single and dual control. Built-in HDBaseT outputs in the HSM-44-BX extend video to HBX-R Receivers at the projectors.
**Benefits**

- Control each room separately, or combined
- RS-232 control of projectors through keypad or Web GUI
- Telnet control of HSM-44-BX matrix through keypad or Web GUI

**Add-ons:**

- **AMP-4840** - 8 Ohm Audio Amplifier
- **CHD-DE46** - 46m HDMI Javelin cable
- **SC-3H** - HDMI/VGA - Auto-Switching scaler

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**Parts List - Dual Room Solution Kit**

- **HSM-44-BX x1**
  - 4K 4x4 HDMI Matrix Switch with Simultaneous HDMI and HDBaseT™ outputs
- **CNT-IP-2 x1**
  - Web Enabled Serial Controller
- **HBX-R x2**
  - HDMI Video Extender With Ultra-HD AV, IR, RS232 and Ethernet (Receiver)
- **UI-IP8-DP x2**
  - Programmable 8-button IP Keypad Wall Plate with PoE

Also Available: HDMI, USB, CAT6 Cables
Huddle spaces in education promote collaborative learning. Using VERSA-4K encoders and decoders to create a Dynamic Virtual Matrix gives students and instructors unlimited flexibility to work as a team and share with the class. Groups can share between one another, or send to the projector at the front of the room. The instructor can share with a single group or the entire class, all in beautiful 4K video with near-zero latency. An auto-switching scaler allows connection to multiple sources such as a PC, Laptop and Document Camera. USB keyboard and mouse function are also controllable over the network.

**OPPORTUNITY**
Create multiple huddle spaces, each with a dedicated PC. Allow spaces to share video between groups or with entire class.

**SOLUTION**
Each huddle uses a pair of VERSA-4K-S and VERSA-4K-R for Video, Keyboard, and Mouse. Software GUI on instructor’s PC controls routing.
Benefits
- Scalable for larger classrooms
- Virtual Matrix - any source to any display
- Instructor can share with any group

Add-ons:
- AMP-4840 - 40W Audio Amplifier
- CNT-IP-2 - Web GUI Controller

Parts List - Learning Lab Kit

VERSAS-4K-S x1
4K Video Plus USB Extension - Point-to-Point and over LAN
Sender

VERSAS-4K-R x1
4K Video Plus USB Extension - Point-to-Point and over LAN
Receiver

SC-3H x1
HDMI / VGA - Auto-Switching Scaler

Also Available: HDMI, USB, CAT6 Cables