



CONNECTING THE DOTS

CLASSROOM AV TECHNOLOGY

TECHNOLOGY- ENHANCED LEARNING

In the past, the technology used by teachers was an afterthought. Today, with the increasing use of the internet and technologies like Chromebooks and portable devices, the uses for technology in the classroom are endless. Learning a subject has never been more achievable, from learning apps to connecting with those on the other side of the planet; learning is more attainable, all because of technology. Today, teachers are using audio visual (AV) technologies in their classrooms to teach, support, supplement, and engage their students.

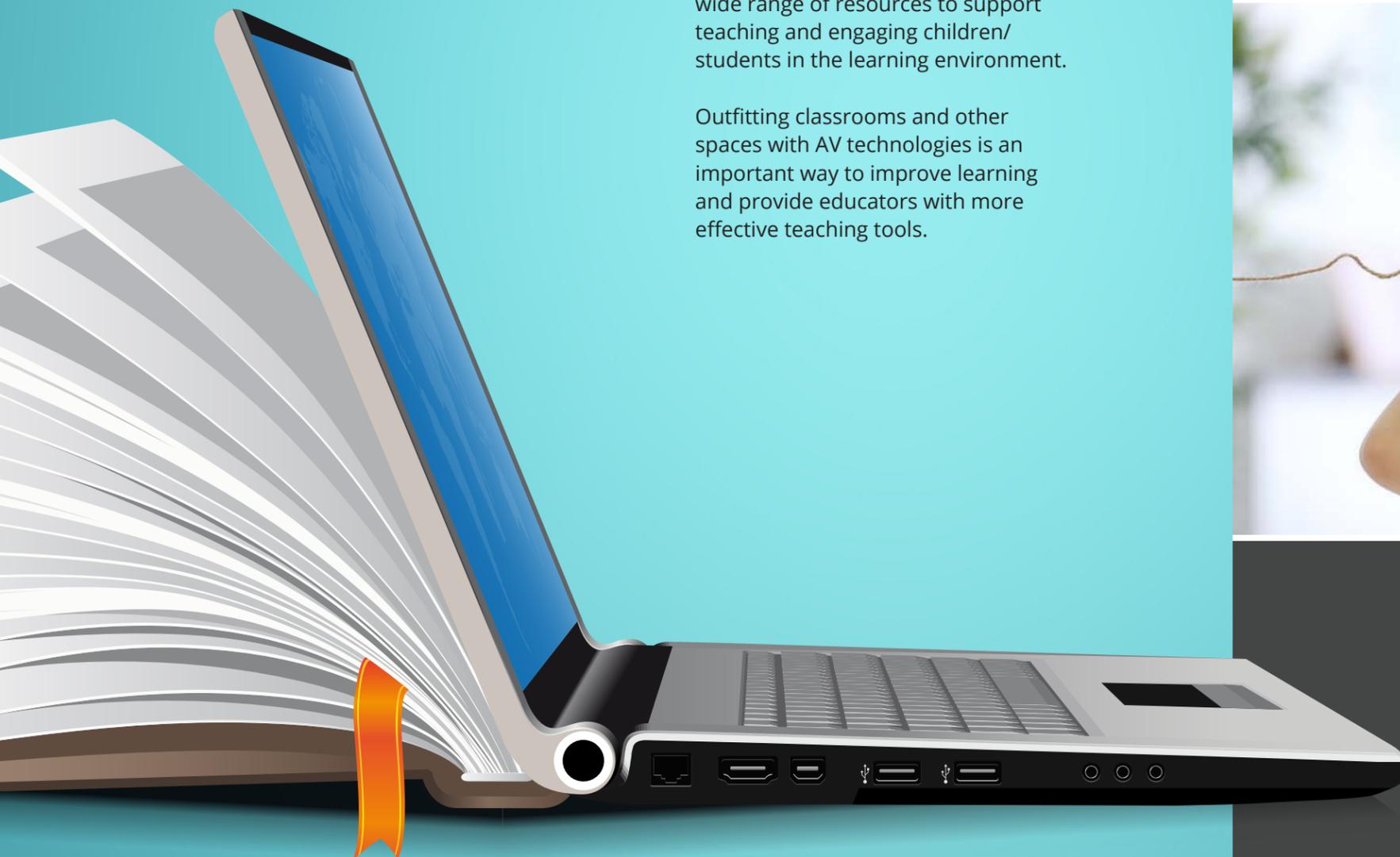
AV technology gives staff access to a wide range of resources to support teaching and engaging children/ students in the learning environment.

Outfitting classrooms and other spaces with AV technologies is an important way to improve learning and provide educators with more effective teaching tools.

Depending on the task and the type of technology used to complete it, technology has the potential to develop personalized learning systems where students have the opportunity to expand their knowledge, skills, and understanding.

Liberty AV Solutions brings your imagination to life by aiding in the development of technology-enhanced classrooms, which are spaces with built-in computing, multimedia/AV equipment, and cabling infrastructure to assist in the teaching, interaction, and presentation of material with students. Integrating technologies to aid in simple tasks such as content sharing, collaboration, and remote/hybrid learning can be difference-makers in students' growth.

With the wide assortment of constantly changing technologies, schools are finding themselves under pressure to keep up with recent trends, while also having to weigh the benefits with the cost of investment. Selecting the right cabling infrastructure, signal extension, and signal connectivity products ensures reliability, not only for today, but also for the future.



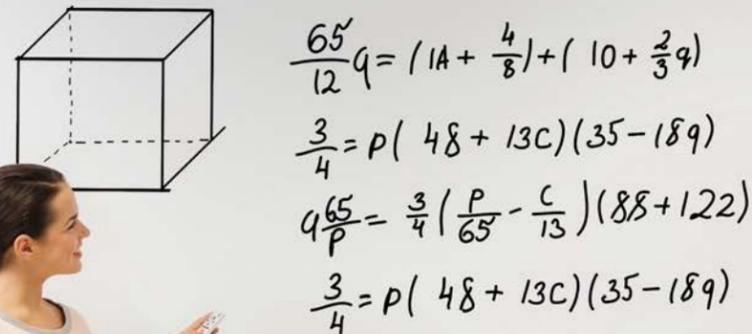
**CAN YOU IMAGINE
EDUCATION WITHOUT
TECHNOLOGY?**

There are a few main considerations when it comes to investing in technology-enhanced classrooms:

1. Value of the product for the money.
2. Is the product suitable for the needs of the school?
3. How easy it is for the staff to use the technology.

Whichever consideration you choose, rest assured Liberty AV provides certified, standards-based AV equipment, AV cabling, and resources for the teaching staff and students to extend learning by focusing on value, the right solution for your need, and ease of use.

TECHNOLOGY-ENHANCED CLASSROOM:
WIRED CONTENT SHARING



Choose

Simply choose the content you want to show.



Connect

Using the HDMI cable and USB cable, connect the laptop you want to share, and content will instantly appear on the large-format interactive display.



Any content you can see on your laptop you can view on your projector or TV.

Schools today are using display and projection equipment to enhance the students' learning experience through visual and interactive activities in every subject.

Liberty AV's DigitaLinx signal extension series allows teachers to easily extend the AV signal such as an HDMI or VGA signal from their laptop to display devices anywhere in the room. We help create a near-universal standard for content sharing by sending video and audio from one device to another. Our solution is a single, relatively thin cable connected to a wall plate that doesn't get tangled as easily as previous standards,

and has full support for high-definition and sometimes ultra-high-definition images. As well, it has been designed to be bi-directional, meaning the display will talk to your source and tell it what resolutions it can support, what color depth is provided, and a myriad of other features your device can use.

Unlike previous standards, HDMI provides a way for both audio and video to be sent by one cable, greatly simplifying your set-up when you want to connect your computer to your display to share your ideas with your students.

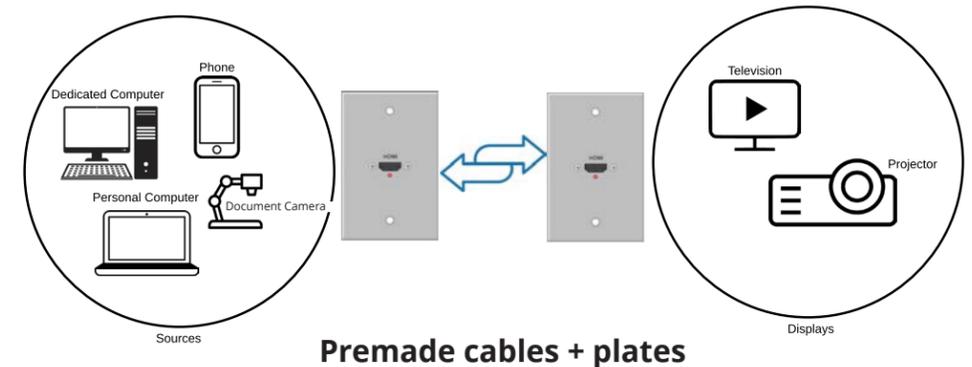
Connect with Confidence

When it comes to sharing content, there is one main factor to consider when selecting the right application: the distance between the laptop (source) to the display. Basic signal extension, also known as passive, works best with the most basic application where the distance you are spanning is generally close. Simplifying connectivity, active signal extenders solve the distance problem allowing connectivity anywhere in the room along with combining five other signals including digital audio, video, control, power, and USB over one cable.

Offerings from Liberty AV

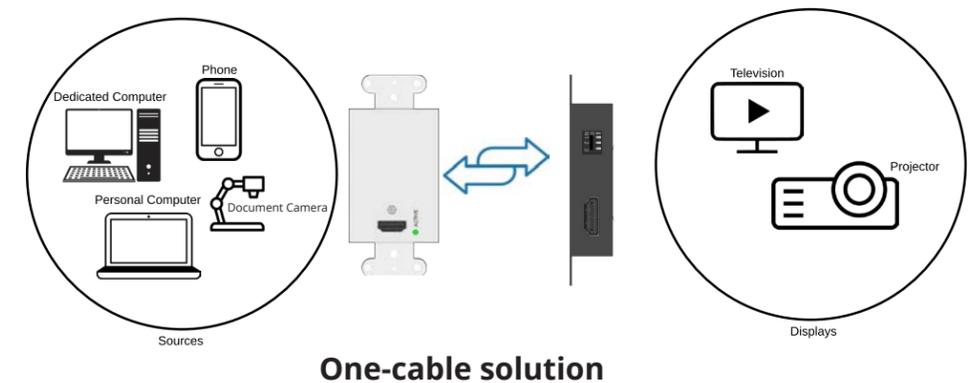
BASIC

Also known as passive. HDMI. Endless options available.



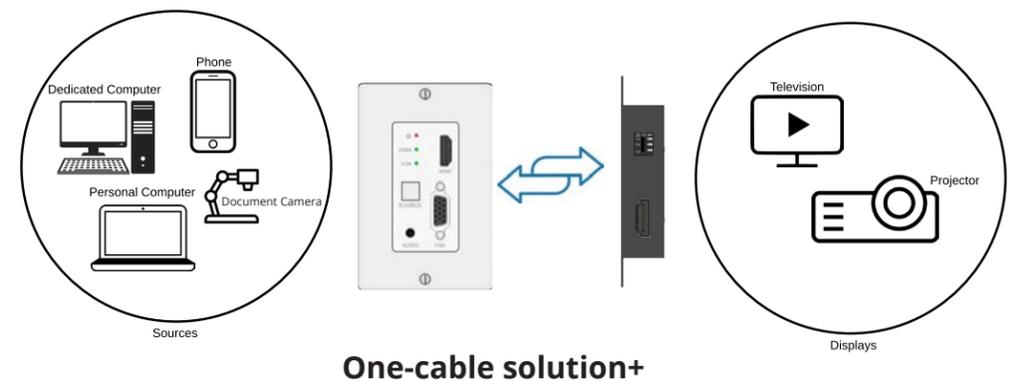
INTERMEDIATE

Simplifying connectivity while solving distance limitations, HDMI.



ADVANCED

Expanding compatibility, VGA & HDMI. Dual HDMI. Auto switching.



TECHNOLOGY-
ENHANCED CLASSROOM:
**INTERACTIVE
COLLABORATION**



Capture the Presenter
Picture quality and placement

Be Heard
Crystal-clear audio

Capture the Audience
Picture quality and placement

Teacher-To-Student & School-To-Student Interactive Collaboration

Taking advantage of touch displays and interactive boards, along with easy content sharing and collaboration features helps students and teachers think, organize, and create — from learning the alphabet to algebra. Liberty AV's DigitalLinx and Intelix signal extension series allow teachers to easily extend not only the HDMI signal, but also a USB signal from their laptop to an interactive white board or display anywhere in the room.

We help create a near-universal standard for collaboration connectivity by sending USB from one device to another. Our solution is a single, relatively thin USB cable or USB/AV signal extender that doesn't get tangled as easily as previous

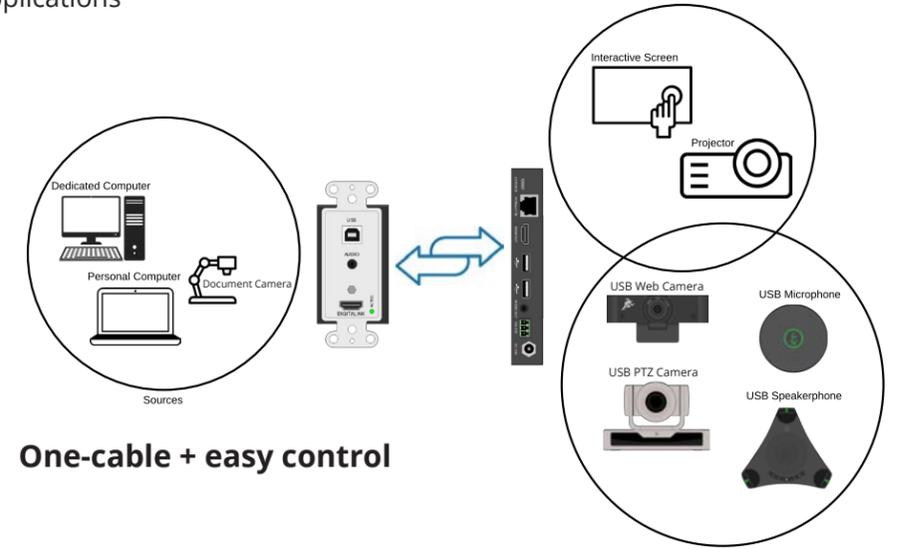
standards, and has full support for high-definition and ultra-high-definition images. As well, it has been designed to be bi-directional, meaning the device will talk to your laptop and tell it what high-definition resolutions it can support, what control is provided, and a myriad of other features your device can use.

Unlike previous standards, USB provides a way for both control, data, audio, and video to be sent by one cable, greatly simplifying your set-up when you want to connect your computer to your collaboration devices to share your ideas with your students.

Connect with Confidence
Interactive Collaboration Applications

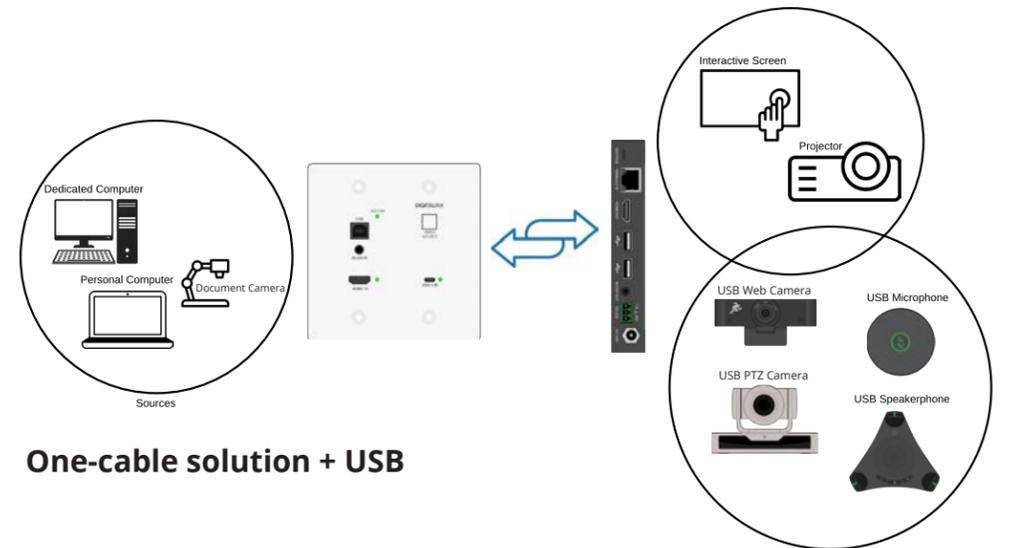
**Offerings from
Liberty AV**

BASIC
Seamless
integration.
AV & USB.



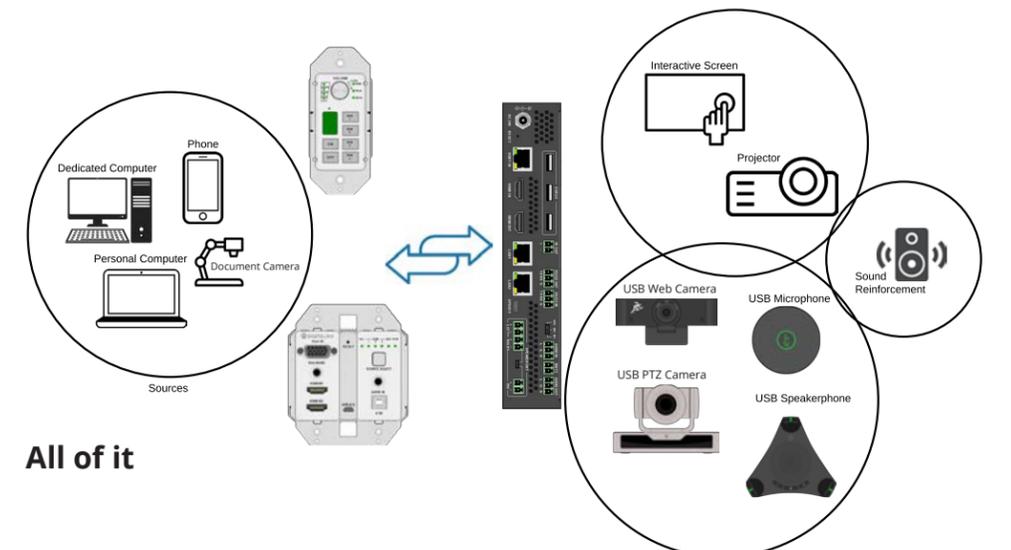
One-cable + easy control

INTERMEDIATE
Expanding
connectivity,
easy control.
Multiple AV / USB
formats.



One-cable solution + USB

ADVANCED
All-in-one control
sound amplification
management.
Easy configuration
and set-up.



All of it

TECHNOLOGY-ENHANCED CLASSROOM:
REMOTE/HYBRID



Students and Teachers Connecting Inside and Outside the Classroom

Providing an opportunity for students and teachers to remain connected and engaged in the curriculum while learning from anywhere is the key to offering a remote/hybrid solution.

Liberty AV's TeamUp+ series offers a plug-and-play, USB focus and is compatible with all the leading videoconferencing and collaboration software, which means it can be used immediately with any laptop.

We help create a near-universal technology standard by connecting one device to another. Our solution offerings are relevant, simple, and

easy to use, allowing an existing space to instantly transform into a remote/hybrid space. Having the right products in place, be it for students or teachers, can make all the difference. Quality products built for the task allow for an engaging lesson for immersive education.

Thanks to our TeamUp+ series, we are able to bring the remote/hybrid classroom to life, by offering HD cameras, microphones, and USB expansion products to complete the hybrid learning experience.

Creating a Technology-Enhanced Classroom

Add any of the USB accessories below to your **wired content sharing** or **interactive collaboration** classrooms to instantly go online for creating remote and hybrid courses.

Offerings from Liberty AV

BASIC
Personal 1:1
plug-and-play.



USB Microphone



USB Webcams



USB Portable Hub

INTERMEDIATE
Simplifying
connectivity.
Solving distance
limitations. HDMI.



USB Speakerphone



USB PTZ Cameras



USB Powered Portable Hub

ADVANCED
Capturing
larger spaces.



USB Ceiling Microphone



USB + HDMI PTZ Cameras



USB Commercial-Grade Powered Hubs

BRINGING IT ALL TOGETHER:

THE CONNECTED CLASSROOM

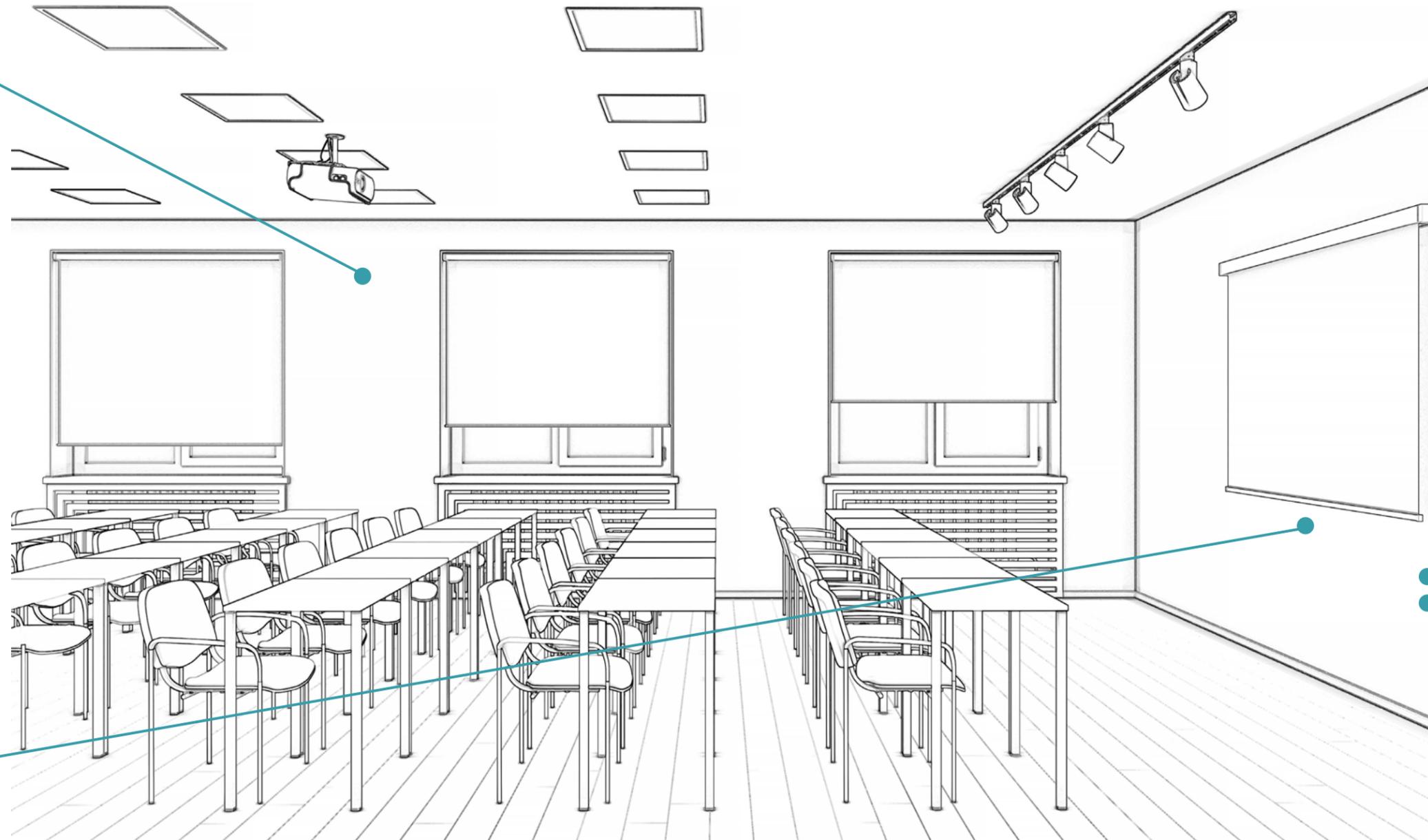
There's no one-size-fits-all technology system that is ideal for every school, situation, or curriculum, but the variety of inventive products and solution providers, combined with schools'

desire to create new learning environments, bodes well for the future of higher education. Through audiovisual integration, colleges and universities can increase flexibility for students, faculty, and campus infrastructure usage while improving classroom engagement with interactive lessons and lectures. The only question now is will you usher in the next great innovation in education?

TeamUp+ PTZ USB presenter camera with Intelix USB signal extender



TeamUp+ webcam audience camera with Intelix USB signal extender



DigitaLinx interactive collaboration plate for presenter



TeamUp+ speakerphone for presenter

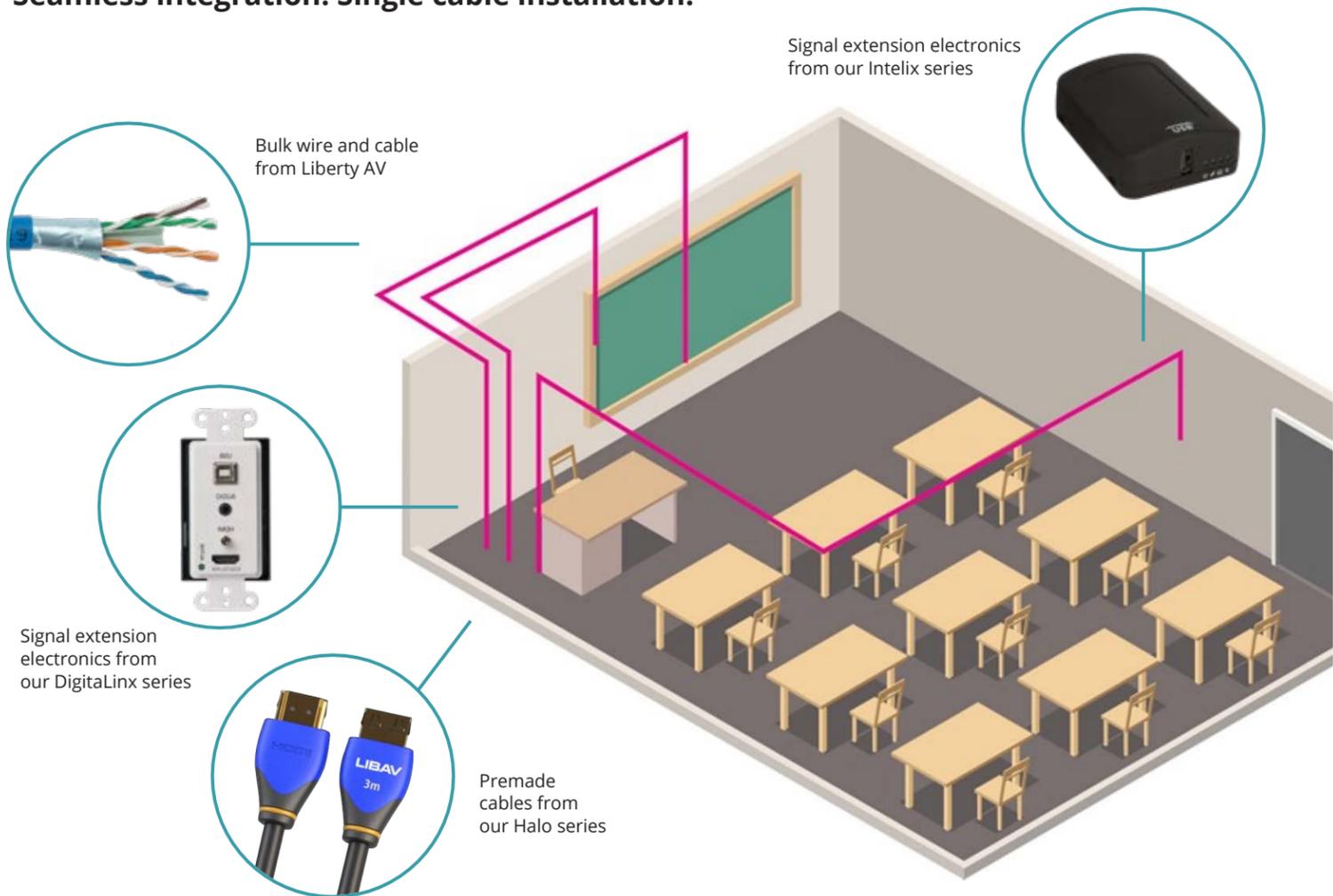
HAVING THE RIGHT SIGNAL EXTENSION TECHNOLOGY MAKES ALL THE DIFFERENCE:

IMPROVING THE WAY YOU USE YOUR TECHNOLOGY

No matter how simple or complex your design may be Liberty AV can provide you with a performance-based, cost-effective solution for all your structured cabling and low-voltage cable installation needs.

We simplify complex designs and optimize and implement the appropriate solution to enhance your operations, increase productivity, and reduce costs, while ensuring scalability and project performance.

Seamless integration. Single cable installation.



GUARANTEE THE OUTCOME
never miss a beat

LATEST TECHNOLOGY
unlocking features that others cannot come close to

EASE OF USE
reduce the complexity, not your standards

Wired Content Sharing Comparison Table

Liberty's HDMI Point-to-Point Extension

MODEL	BASIC		INTERMEDIATE		ADVANCED	
	PC-G1790	DL-HD50C-WPKT	DL-1H1A-WPKT-W	DL-HD70	DL-2H-WPKT-H2	DL-1H1V-WPKT-H2
Supported Resolution	Up to 4K	1080p @60Hz	up to 4K @60 4:2:0	up to 4K @60 4:2:0	up to 4K @60Hz 4:4:4	up to 4K @60Hz 4:4:4
Transmission Range	x	50 Meters	Up to 70 Meters	Up to 70 Meters	Up to 70 Meters	Up to 70 Meters
HDMI Inputs	1	1	1	1	2	1
VGA Inputs	x	x	x	x	x	1
HDMI Outputs	1	1	1	1	1	1
Audio Connectivity	x	x	x	x	●	●
HDMI ver	1.3b	1.3b	2.0a	2.0a	2.0a	2.0a
Power Over Cable (PoC)	x	●	●	●	●	●
Bandwidth	5 Gbps	5 Gbps	10.2	10.2	18G	18G
Control Extension	x	x	RS232	RS-232, IR	RS-232	RS-232
EDID Management	x	x	x	x	●	●
HDBaseT	x	●	●	●	●	●
Cable Type	x	Cat5e or Above	F/UTP Cat6 or Above	F/UTP Cat6 or Above	F/UTP Cat6 or Above	F/UTP Cat6 or Above
HDCP	Passive	1.4	2.2	2.2	2.2	2.2
Kit	* ●	●	●	●	●	●
Wall Plate	●	** ●	** ●	●	●	●

General Notes

* Check out Liberty's Panel Crafters series for configured and custom-built wall plates.
** Can be purchased as a wall plate or traditional black box.



CUSTOM KITTING

Liberty AV's custom kitting service can create a single part number, price, and kit from any list of materials. Save money and time while increasing efficiencies on every school project!

Interactive Collaboration Comparison Table

Liberty's HDMI +USB Point-to-Point Extension



MODEL	BASIC		INTERMEDIATE		ADVANCED	
	*LIBAV-WQ564462	**DL-1H1A1U-WPKT	DL-HDBT2 -WPKT	DL-1H1A1UC-WPKT	DL-ARK-4H	DL-ARK-3H1VC
Supported Resolution	Up to 4K	up to 4K @60Hz 4:2:0	4K60 4:2:0	up to 4K @60Hz 4:2:0	4K60 4:2:0	4K60 4:2:0
Transmission Max Range	x	70 Meters	100m	70 Meters	70m	70m
HDMI Inputs	1	1	2	1	4	3
VGA Inputs	x	x	1	x	x	1
HDMI Outputs	1	1	1	1	1	1
Audio Connectivity	x	HDMI, 3.5 Jack, USB	1	HDMI, 3.5 Jack, USB-C	HDMI, 3.5 Jack	HDMI, 3.5 Jack
HDMI ver	1.3b	2.0a	2.0a	2.0a	2.0a	2.0a
Power Over Cable (PoC)	x	●	yes	●	●	●
Bandwidth	5 Gbps	10.2	10.2	10.2	10.2	10.2
Control Extension	x	RS-232	RS-232	RS-232	RS-232 / IR / IP	RS-232 / IR / IP
Display Control	x	x	CEC / RS232	x	CEC / RS232	CEC / RS232
HDBaseT	x	●	Yes	●	Yes	Yes
Cable Type	x	F/UTP Cat6 or Above	F/UTP Cat6 or Above	F/UTP Cat6 or Above	F/UTP Cat6 or Above	F/UTP Cat6 or Above
HDCP	x	●	2.2	●	2.2	2.2
EDID Management	x	●	●	●	●	●
USB Host Connection	***1	1	1	2	●	●
USB Client Connection	***1	2	4	2	2	2
USB 2.0	●	●	●	●	●	●
USB-C with Video	x	x	x	●	x	x
USB-C with Power	x	x	x	●	x	x
Kit	x	●	Yes	●	●	●

General Notes
 * Check out Liberty's Panel Crafters series for configured and custom-built wall plates.
 ** Can be purchased as a wall plate or traditional black box.
 *** Purchased as a host or client wall plate. Each sold separately.

The Remote/Hybrid Classroom Comparison Table

Liberty's Collaboration Switchers



MODEL	DL-SCU21C	DL-SCU31U-BX	DL-SC41UP-BXTX	DL-SCU33-SW	DL-SC41U-TX	DL-SCU-RX
Input x Output	3x1	3x1	4x1 **5x1+1	3x3	4x2 **5x2	2x1
Table Box Or Cable Cubby Enclosure	x	●	●	x	x	x
Supported Resolutions	4K60 4:4:4	4K60 4:4:4	4K60 4:4:4	4K60 4:4:4	4K60 4:4:4	4K60 4:4:4
*USB 3.0 Client Ports	2	4	4	4	2	x
USB 2.0 Client Ports	x	x	x	x	x	2
USB 3.0 Host Ports	2	3	3	2	3	x
USB-A Charging Port	x	●	●	●	●	x
HDMI Specification	2.0 b	2.0 b	2.0 b	2.0 b	2.0 b	2.0 b
HDCP	2.2	2.2	2.2	2.2	2.2	2.2
HDR	●	●	●	●	●	●
Power Over Cable (PoC)	x	x	●	x	●	●
Bandwidth	18G	18G	18G	18G	18G	18G
RS-232	●	●	●	●	●	●
IP Control	x	●	●	●	●	x
HDBaseT Output	x	x	●	x	●	x
HDBaseT Input	x	x	x	x	x	●
EDID Management	●	●	●	●	●	x
Control Methods	Front Panel Push Buttons, CEC, RS-232	Front Panel Push Buttons, CEC, RS-232, TCP/IP	Front Panel Push Buttons, CEC, RS-232, TCP/IP	Front Panel, CEC, RS-232, IP, Contact Closure Digital I/O	Front Panel Push Buttons, CEC, RS-232, TCP/IP	CEC, RS-232,
Audio Extraction	●	x	x	●	x	●
Dual Video Output	x	x	***●	●	***●	x
UC Compatible such as Microsoft Teams, Google Meet, Zoom, and many others	●	●	●	●	●	●

General Notes
 *USB 3.0 is backwards-compatible with USB 2.0 and USB 1.
 ** When using Receiver DL-SCU-RX
 ***Mirrored Video Output

USB Camera Comparison Table



MODEL	CAM90	CAM120	PTZ10	PTZ20
Suggested Spaces	Home Office, Huddle Room	Huddle Room, capturing students, fixed shots that need to cover a wider shot	Medium to Large Conference Rooms	Training Rooms, house of worship, Key areas where the presenter needs to be in the shot
Field of View	90 degrees	120 degrees	8.3 (tele) to 66 (wide)	6.3 (tele) to 72.5 (wide)
Resolution	1920x1080p@30FPS	1920x1080p@30FPS	1920x1080p@30FPS	USB 3.0 1920x1080p@60FPS USB 2.0 1920x1080p@30FPS
USB Interface	USB 2.0	USB 2.0	USB 2.0	USB 3.0, 2.0
UVC	●	●		●
HDMI	x	x	x	●
3G-SDI	x	x	x	●
NDI	x	x	x	x
IP-Streaming	x	x	x	●
RS-232	x	x	●	●
RS-485	x	x	●	●
RS-422	x	x	x	●
# of Presets	x	x	255 (10 on Remote)	255 (10 on Remote)
Wide Dynamic Range			x	●
3D Noise Cancellation			x	●
Backlight Compensation	x	x	x	Backlight Compensation
Power	USB	USB	DC 12V or *USB	DC 12V or PoE
Wall Mount	*Optional	*Optional	Included	Included
Tripod Thread	●	●	●	●
Ceiling Mount	x	x	*Optional	*Optional
Built In Gyro	x	x	x	●
Color Options	Black	Black	Black or White	White
UC Compatible such as Microsoft Teams, Google Meet, Zoom, and many others	●	●	●	●

General Notes
*Ceiling mount is sold separately.

USB Microphone Comparison Table



MODEL	360MIC	360SPKMIC
Suggested Spaces	Home Office, Huddle Room	Home Office, Huddle Room
Pickup Pattern	Omnidirectional	Omnidirectional
USB Interface	USB 2.0	USB 2.0
UVC Compliant	●	●
Power	5V USB	5V USB
Plug-and-Play	●	●
Quick Mute	●	●
Volume Control	x	●
Speaker	x	●
LED Indicator	●	●
Recording Sample Rate	48 kHz	48 kHz
Bit Depth	16 bit	16 bit
Connection	USB Micro	Premolded USB-A
Cable Included	●	N/A
UC Compatible such as Microsoft Teams, Google Meet, Zoom, and many others	●	●



CUSTOM KITTING

Liberty AV's custom kitting service can create a single part number, price, and kit from any list of materials. Save money and time while increasing efficiencies on every school project!

Extending USB Signals Comparison Table

Liberty's USB Point-to-Point Signal Extension



MODEL	BASIC		INTERMEDIATE		ADVANCED	
	***PMI-A9X	***AVO-USB-X	DIGI-USB2	INT-USB2-xx	INT-USB3.1CX	INT-USB3.1CX-PLUS
Data Transfer Rate	12 Mbps	13 Mbps	480 Mbps	480 Mbps	5Gbps	5Gbps
*USB 3.1 Client Ports	x	x	x	x	4	4
USB 2.0 Client Ports	1	1	1	2	●	●
USB 3.1 Host Ports	x	x	x	x	1	1
USB 2.0 Host Ports	1	1	1	1	●	●
50m Transmission Range	●	●	●	●	●	●
100m Transmission Range	●	●	●	x	●	●
Isochronous 2.0 Data Transfer	x	x	●	●	●	●
Bulk Transfer	x	x	●	●	●	●
Isochronous 3.1 Data Transfer	x	x	--	--	--	●
USB Compliance	2.0, 1.0	2.0, 1.1	2.0, 1.0	2.0, 1.0	3.x, 2.0, 1.0	3.x, 2.0, 1.0
Wall Plate	Optional	x	x	** ●	x	x
Extender Set	x	x	●	x	●	●
Cable Type	Cat5e+	Cat5e+	Cat5e+	Cat5e+	FTP Cat6a +	FTP Cat6a +
Provided Cable	x	x	●	x	●	●

General Notes
 *USB 3.0 is backwards-compatible with USB 2.0 and USB 1.
 ** Can be purchased as a wall plate or traditional black box.
 ***Client and host extender set purchased separately.

HDMI Premade Cables Comparison Table

Liberty's Basic to Premium Digital Connectivity

LIBERTY
 AV SOLUTIONS
 www.libav.com 800-530-8998

SERIES	Comet	Zero-G	Halo	Halo-P	Kinetic	Nebula 4k	Nebula 8k/10k	Intergalactic 8k/10k
HDMI Certification	High Speed HDMI™ with Ethernet	High Speed HDMI™	High Speed HDMI™ with Ethernet	High Speed HDMI™	Premium	Premium	Ultra	Ultra
Physical Color	Head: Black w/ White Lettering Jacket: Black	Head: Silver w/ White Lettering Jacket: Black	Head: Blue w/ White Lettering Jacket: Black	Head: Blue w/ White Lettering Jacket: Black	Head: Blue w/ White Lettering Jacket: Black	Head: Green w/ White Lettering Jacket: Black	Head: Green w/ White Lettering Jacket: Black	Head: Red w/ White Lettering Jacket: Black
Core Material	Bare Copper	Tinned Copper	Oxygen-Free Copper	Oxygen-Free Copper	Pure Copper	Oxygen-Free Copper	Oxygen Free Copper	Silver-plated Oxygen-Free Copper
Length in Meters	0.5, 1, 1.5, 2, 2.5, 3, 4, 5	1, 1.5, 2, 2.5, 3	0.3, 0.6, 1, 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10, 12, 15, 23, 30	5, 8, 10, 15, 20, 23, 30	0.9, 1.8, 3, 4.5, 6, 7.3, 9	4, 6, 8, 10	1, 2, 3	1, 2, 3
Bandwidth	10.2 Gbps	18 Gbps	18 Gbps / 10.2 Gbps*	18 Gbps	18 Gbps	18 Gbps	48 Gbps	48 Gbps
Orbit ID	x	●	●	●	x	●	●	●
HDCP Compliance	All	All	All	All	All	All	All	All
Audio Return Channel (ARC)	●	●	●	x	●	●	●	●
Enhanced Audio Return Channel (eArc)	●	x	●	x	●	●	●	●
Ethernet Channel (HEC)	●	x	●	x	●	●	●	●
Supports 3D	●	●	●	●	●	●	●	●
Maximum Resolution	4K30 4:4:4	4K @ 60 Hz 4:4:4	4K @ 60 Hz 4:4:4	4K @ 60 Hz 4:4:4	4K @ 60 Hz 4:4:4	4K @ 60 Hz 4:4:4	4K120/8K60/10K	4K120/8K60/10K
Color Depth	8-12 bit	8-14 bit	8-14 bit	8-14 bit	8-16 bit	8-16 bit	8-16 bit	8-16 bit
Dynamic HDR	x	●	●	●	●	●	●	●
L-Grip Connector	x	x	●	●	x	●	●	●
12lb of Pull Force on L-Grip Connector	x	x	●	●	x	●	●	●
Plenum-Rated	x	x	x	●	x	●	x	x
Certifications	RoHS, UL Listed AWM, CE	RoHS, UL Listed AWM, CE	RoHS, UL Listed CL2, CE	RoHS, UL Listed CMP, CE	RoHS, UL Listed CM, CE	RoHS, UL Listed CL2, CE	RoHS, UL Listed CL2, CE	RoHS, UL Listed CL2, CE
In-Wall Rated	x	x	4m+	●	●	●	x	x
Active Fiber or Copper	x	x	8m+	●	x	●	x	x
Bulk Pack Option	●	●	●	x	x	x	x	x

*Cable length determines the associated bandwidth



**SERVICE AND
TECHNICAL SUPPORT**

**THE LIBERTY
EDGE**

**LIBERTY EDGE
WARRANTY**



**WORLD-CLASS
TRAINING**

TALK TO US ABOUT YOUR PROJECT

**LIBERTY
AV SOLUTIONS**

800.530.8998 www.LibAV.com