



AV over IP Product Line

Largest AV over IP Line Up in the
Industry

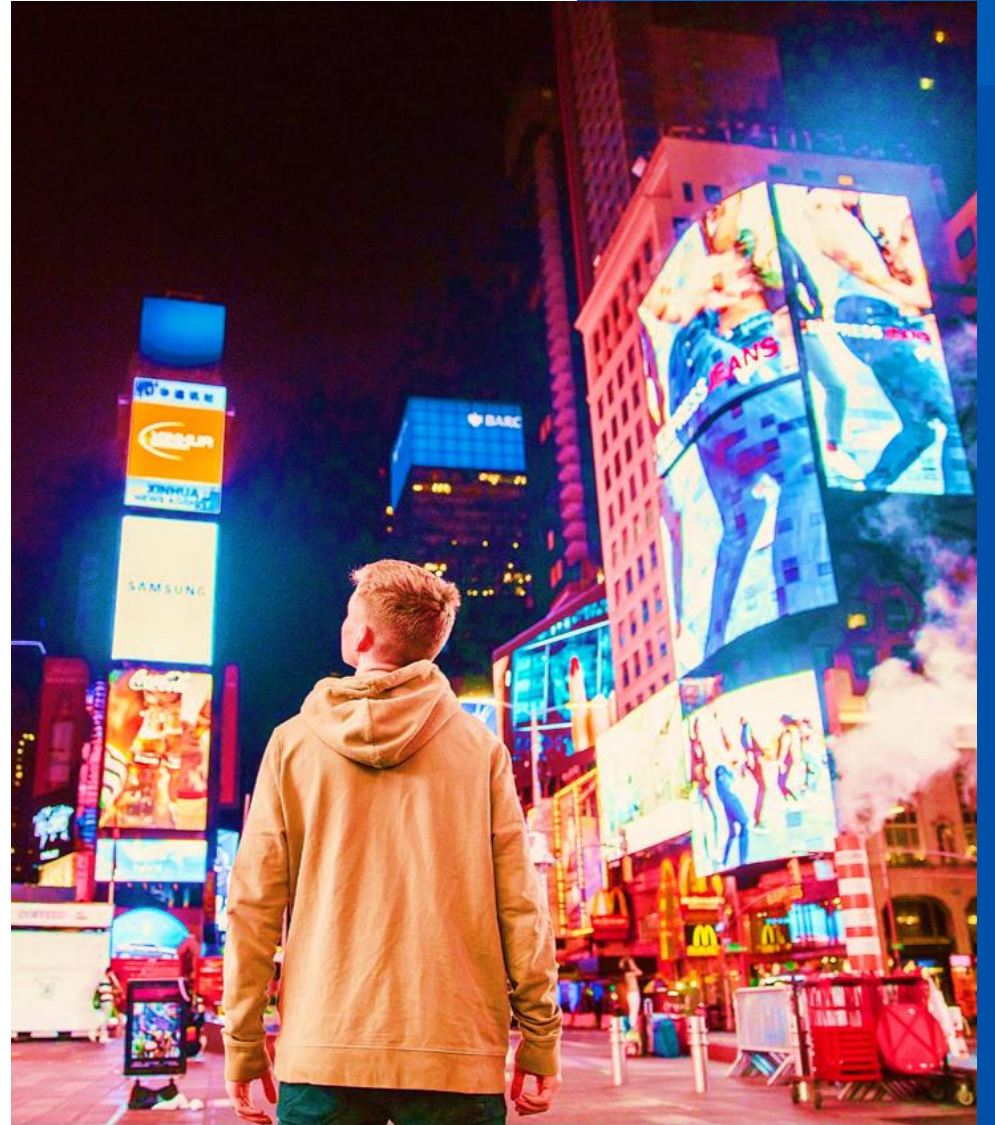
ENVISION THE POSSIBILITIES

Imagine the ability to access and control any av system from anywhere.

Envision unprecedented levels of control through smart devices at any time.

Imagine all our solutions working seamlessly to enable flawless av management.

Together, we are achieving our vision.



OUR EXPERTISE


“The entire MuxLab AV over IP system is just seamless.”

“We used MuxLab’s ProDigital network controller for the system configuration so that it’s really simple to operate.”

“It’s just very intuitive, and the entire system works perfectly.”



“With this MuxLab system, av can go anywhere.”

–Paul Alegado, Consultant, Engineering Harmonics Inc.



AV and IT Work Seamlessly to Elevate the Student Experience at Mount Royal University with MuxLab's HDMI over IP Extender Kits

Success Story



“The entire system is just seamless, and we used MuxLab's ProDigital Network Controller (500811) for the system configuration so that it's really simple to operate...”

Cadigary-based Mount Royal University boasts a rich history dating back more than 100 years. These deep roots provide the ideal pillar on which to build better experiences for students whether they be pursuing a traditional four-year degree or moving on to post-graduate development.

The campus's intimate classes of no more than 30 students provides the unique opportunity to receive a more personalized, intellectually engaging learning experience. Key to this experience is the University's newly unveiled Riddell Library and Learning Centre, dedicated to promoting an exceptional learning and researching experience for everyone. As the intellectual heart of the campus, the new library and learning centre houses several educational and teaching areas including classrooms designed for active learning experiences.

“Several student rooms can be combined or used separately in the new facility, and the University wanted a sustainable method of moving AV around the main room or each individual room to facilitate teaching,” explained Paul Alegado, a Consultant with Engineering Harmonics Inc. “When we began specifying this project, I was already familiar with and had worked with MuxLab's AV over IP solutions. We were able to confidently recommend the AV over IP portion of the project knowing the quality of solutions available.”

Local reseller Matrix Video Communications Corp. supplied MuxLab's HDMI RS232 over IP Extender Kit with PoE (model 500753), which sends hi-def AV from various sources to one or more displays via a TGB Ethernet Switch. All equipment connects to the Kit's transmitters and receivers, enabling nearly unlimited combinations of point-to-point, point-to-multipoint and multipoint-to-multipoint configurations without long-distance cabling. All transmitters and receivers support PoE, eliminating power requirements, and one more cable, at both source and display locations. In the active learning classroom, there are six student tables in a circle with the teacher's station in the center, each equipped with a display and inputs for computers, laptops and smart devices. Using MuxLab's IP Extender Kits, the teacher can send the AV on that display to all six student displays, to just one display or to just a few. Likewise, each student can

OUR EXPERTISE

“It’s like a mini-Nasa in there now.”

“The video wall spans the entire wall so it’s very effective for the operators to keep their eyes on the areas they need to monitor daily.”

“MuxLab’s AV over IP solutions have proven to be exceedingly reliable.”

“They’re not only easier to install but they’re also ultimately more cost-effective.”

– **Chris Meaney, Evolution Presentation Technologies Account Manager**



Major Rail Company Upgrades Command Centre with MuxLab’s IP-Based 4K Video Wall

Success Story



“Massive Video Wall Gives Up-to-the-Second Live Feeds for Remote Monitoring.”

Monitoring remote railways in varied locations can be a challenging endeavor. But with a new live streaming 4K video wall installed at the Command Centre based in Calgary, remote monitoring is more a possibility today than ever before. With sixteen 55-inch displays stacked in an 8x2 configuration, this massive video wall provides a bird’s eye view of train locations with the ability to zoom in anywhere needed.

Cameras are installed alongside MuxLab’s processing equipment to transmit live video over IP to all video wall displays for 24/7 access. MuxLab’s Video Wall 4K over IP PoE Extender Kits (model 500799) connect many HDMI sources to many displays via a 1Gig Ethernet Switch. With this solution, 4K video can be delivered long range to create a video wall of nearly any user configurable size. Each source connects to a transmitter, which delivers 4K through the Switch to the receiver connected to a display. Ethernet connectivity enables anytime / anywhere viewing free from traditional cabling constraints.

“It’s like a mini-NASA in there now,” said Evolution Presentation Technologies’ Account Manager, Chris

Meaney, who oversaw the system integration. “The video wall spans the entire wall so it’s ultimately very effective for the operators to keep their eyes on the areas they need to monitor daily.”

By electing to use an IP-based solution, the entire installation was more cost-effective and easier to implement. They were able to avoid traditional cable-based solutions for transmitting 4K HDMI such as fiber which can be very costly to implement. The biggest challenge was finding the correct Ethernet Switch.

“We went to a 48-port managed PoE switch because if you use a more cost-effective switch, your performance can suffer. You can’t go low end in this kind of mission-critical installation. We needed a heavy reliable system and that’s what we went with,” added Meaney. “MuxLab’s AV over IP solutions have proven to be exceedingly reliable, they’re not only easier to install but they’re also ultimately more cost-effective.”

With this system now in place, less manpower is required, and a more effective means of remote surveillance is achieved.

About MuxLab: MuxLab is a leading designer of value-added connectivity solutions for the pro AV and broadcast markets. Since 1984, MuxLab has supported its main mission to provide customers with innovative, dependable and industry leading designs that are engineered in Canada. A forerunner of the AV over IP evolution, MuxLab continues to deliver comprehensive, game-changing IP-enabled systems for both commercial and residential installations of all shapes and sizes.

OUR EXPERTISE

“Compared to other pubs, we definitely have a superior system.”

“Our goal was to guarantee excellent sports viewing from any seat in the house.”

“We are incredibly happy with this new MuxLab system.”

Pint Pub’s District Manager, Cesar Mesen



Toronto’s Pint Pub Serves up HD in Every Room in its Expansive, Multi-Level House

Success Story



“Our goal was to guarantee excellent sports viewing from any seat in the house. We are incredibly happy with this new MuxLab system.”

The impressive, beautifully designed **Pint Public House** in downtown Toronto made the switch to a sophisticated, IP-based AV system, with a little help from MuxLab. This vibrant sports bar located next to the Rogers Centre, home to the Toronto Blue Jays, and less than two blocks from the newly named Scotiabank Arena, home to the Maple Leafs and Raptors, wanted to up its game when it came to AV content and entertainment viewing in its many dining areas. Designed and implemented by Dymax, a well-established industry leader in AV installations in the Toronto area, this IP system encompasses 16 zones throughout multiple levels, ten AV sources and nearly 100 HD displays.

“The AV objective was to give managers and staff the ability to control AV content from ten different sources that is delivered to almost 100 displays in a cost-effective system,” said Dymax’s President, Richard Kuris.

The MuxLab-based IP video system included ten HDMI/RS232 over IP Extender Kits with PoE (model 500753) transmitters, sending AV from eight cable boxes, one auxiliary input for a laptop computer regarding special events and an input in the DI

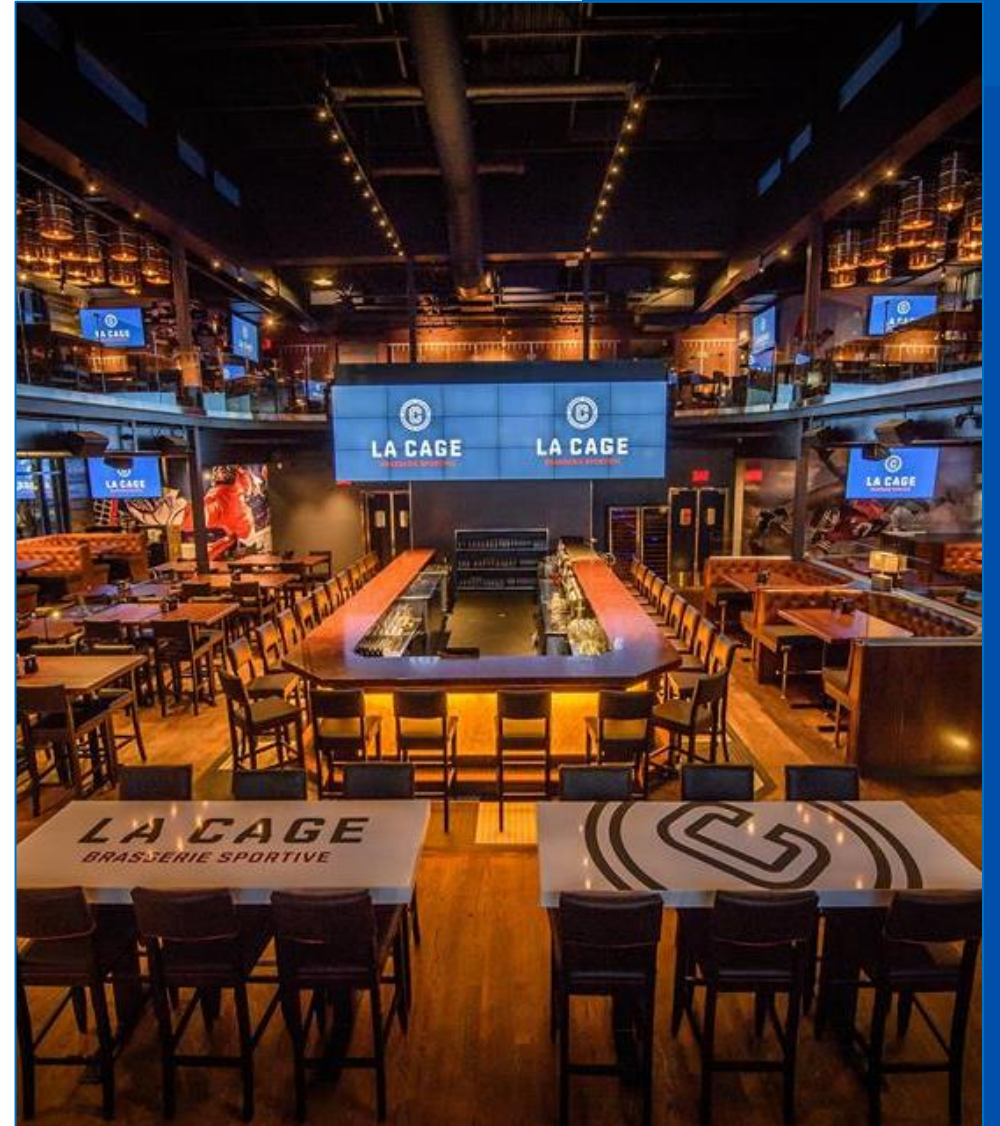
booth for accompanying video. There are 93 HDMI/RS232 over IP receivers delivering AV via an Ethernet switch to the various displays throughout the pub. Specific zones include the stair lobby, entrance, six separate dining rooms, VIP room, two bars, washrooms, a walkway, outside patio and corridor. The final zone includes the control system where the rack, the MuxLab Extender Kits and sources are located as well as four Aruba PoE network switches and one MuxLab ProDigital Network Controller (model 500811).

The Network Controller allows users to manage virtual IP-based systems from any smart device. It centralizes control of all IP-connected MuxLab equipment and is accessible both on-and off-site using an intuitive web interface and third-party apps on smartphones and tablets. Just a tap or swipe selects and directs connected AV devices. It also provides the building blocks to develop automation control applications. IP-based devices can be managed with a scripted command that automates actions for a totally hands-free operation. It also auto-discovers MuxLab’s AV over IP devices to simplify installation and centralizes software upgrades to enhance performance. Plus, it supports a common API for third-party control of

OUR EXPERTISE

“MuxLab was ideal for this scenario. We presented the right solution at the right price and the customer went for it. I support the MuxLab brand because their support is perfect. Plus, we have access to their engineering teams, and we can grow together on projects to enhance AV over IP installations.”

Christian Tellier, Câblage Expert

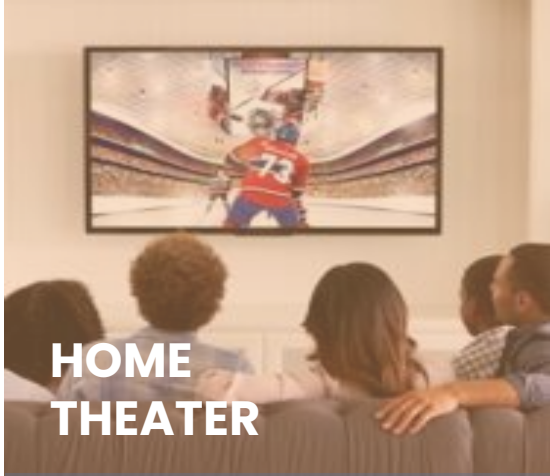


OUR EXPERTISE

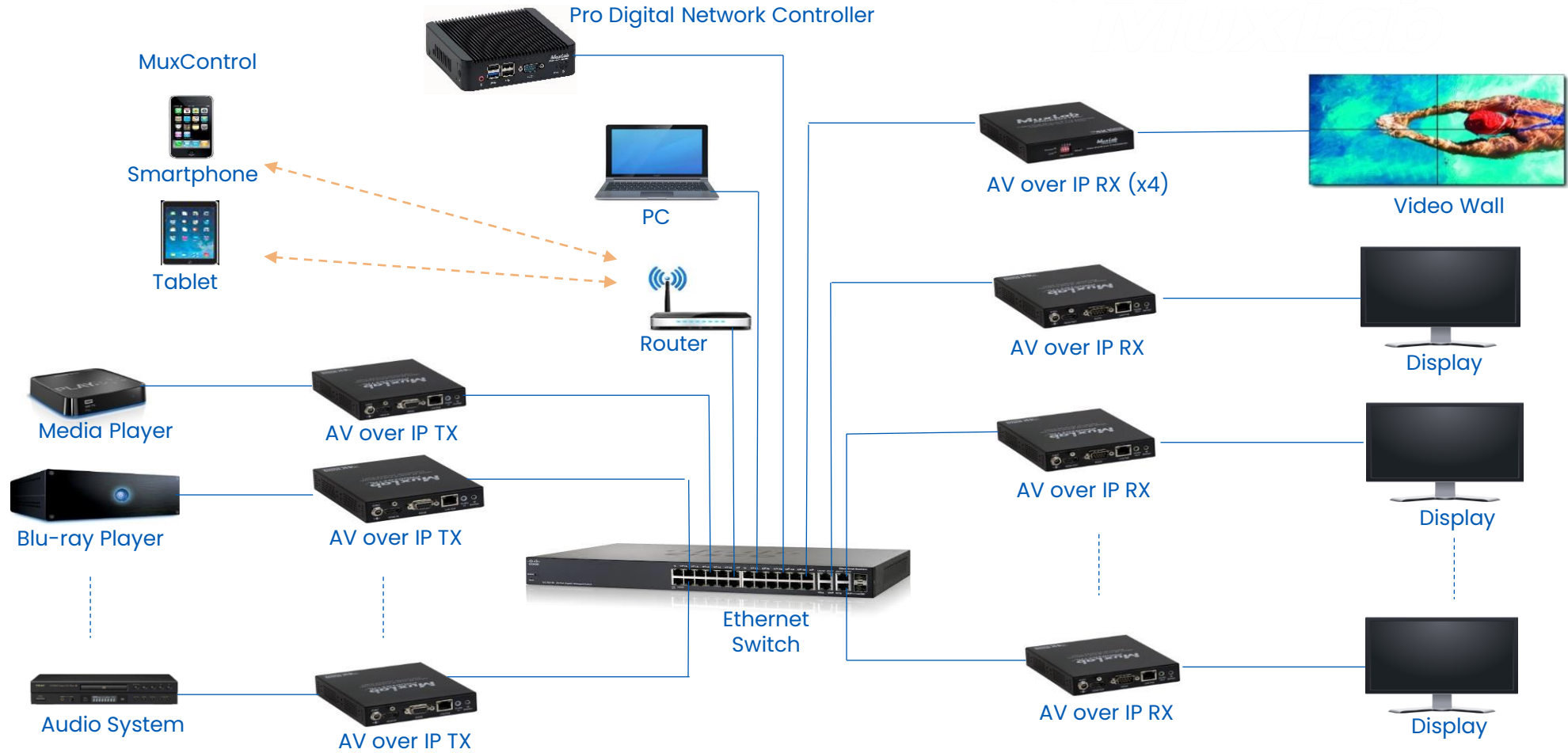
MuxLab was selected as the provider of AV over IP connectivity equipment to extend, interconnect and switch AV among various sources and displays.

MuxLab's HDMI/RS232 over IP Extender Kit with PoE (model 500753) extends displays up to 100m from source equipment and switches any source to any display in the classroom or between classrooms for remote lectures.





Typical AV over IP Arrangement



AV over IP Family Overview

1080p Entry Level		VideoWall / PIP	4 K Entry Level	Residential	4K/60 Uncompressed	
						
500752	500754	500762 (*) 500763-TX 500764-TX	500759 (**) 500759-TX-Dante	500778	500760, 500761 500760-KVM	500768
HDMI Ext.	HDMI VideoWall	HDMI VW & PIP	HDMI VideoWall	HDMI Ext.	HDMI VideoWall	HDMI Ext.
1080p/60	4K/60 (RX)	4K/30	4K/60 4:4:4	4K/60 4:2:0		
Motion JPG	H.264/H.265	JPG 2000	BlueRiver NT+	Uncompressed		
1 frame/80Mbps	200ms/16Mbps	1 frame/500Mbps	0 latency/<10Gbps			
Visually Lossless						Lossless
IR & PoE	RS232, IR & PoE	HDR, audio, RS232, IR & PoE		Aud, RS232 & IR	Eth, RS232 & IR	

(*) RX now supports local mouse switching control (without Controller)

(**) RX now supports remote volume control on audio extract

AV over IP Family Overview

Wall Plate	KVM	Audio		SDI		
						 ST-2110
500773-TX, 500777-TX & RX	500770 500771	500755- AMP 500755-70V	500755	500756	500767 ST-2110	500774 500775 Q4 21
HDMI/VGA WP & HDMI/VGA/USB WP	KVM HDMI Ext. & KVM DVI Ext.	Audio Ext.		SDI Ext.		HDMI/SDI Ext.
4K/30	1080p/60	2CH Audio		3G-SDI	3G-SDI	4K/60 & 12G-SDI
JPG 2000	JPG 2000	Motion JPG			Uncompressed	
1 frame/500Mbps	1 frame/500Mbps	1 frame/80Mbps (audio unit are 2Mbps)			0 Latency/3Gbps	0 latency/ <18Gbps
Visually Lossless					Lossless	
Audio, USB (777) & PoE	Aud, Mic & PoE	RS232, IR, Amp, Mic & PoE	RS232, IR & PoE		RS232	Eth & RS232

AV IN THE AIRPORT



HDMI 2.0 Digital Signage Media Player (500789)

Streams multiple H.264/H.265 sources up to 4K/60 (4:4:4) from a local network, the Internet, internal memory or external USB memory devices. It supports multi-views and scheduling.

HDMI over IP H.264/265 PoE Transmitter (500763-TX)

Transmits 4K/30 HDMI in one-to-many and many-to-many configurations via an Ethernet network. Supports video wall and multi-views.

ProDigital Network Controller (500812)

Allows users to control products via a web interface.

HDMI over IP H.264/265 PoE Receiver (500762-RX)

Delivers up to 4K/60 HDMI in one-to-many and many-to-many configurations via an Ethernet network. Supports video walls and multi-views.

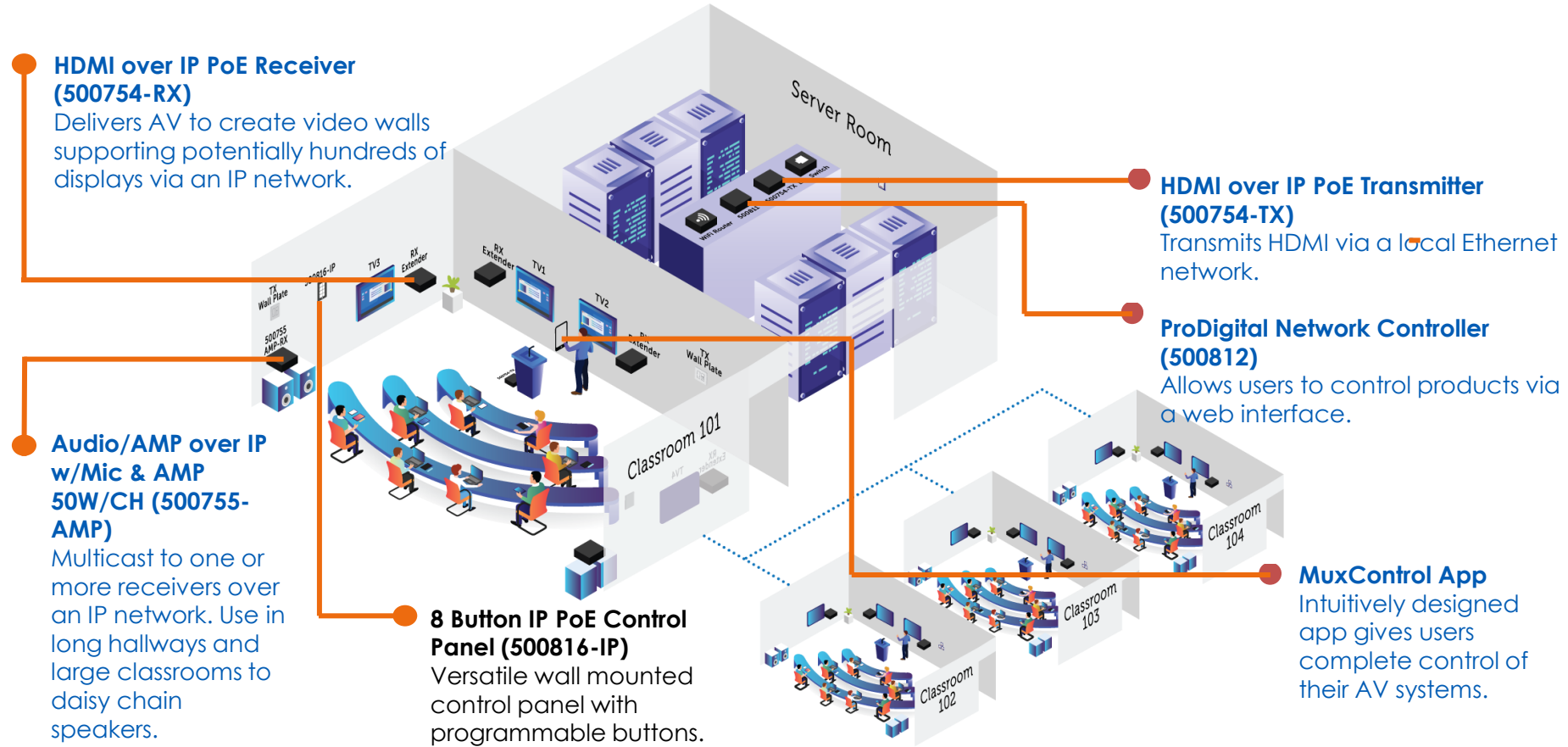
DigiSign CMS Software

Works with the media player to create, manage and control AV from a variety of sources.

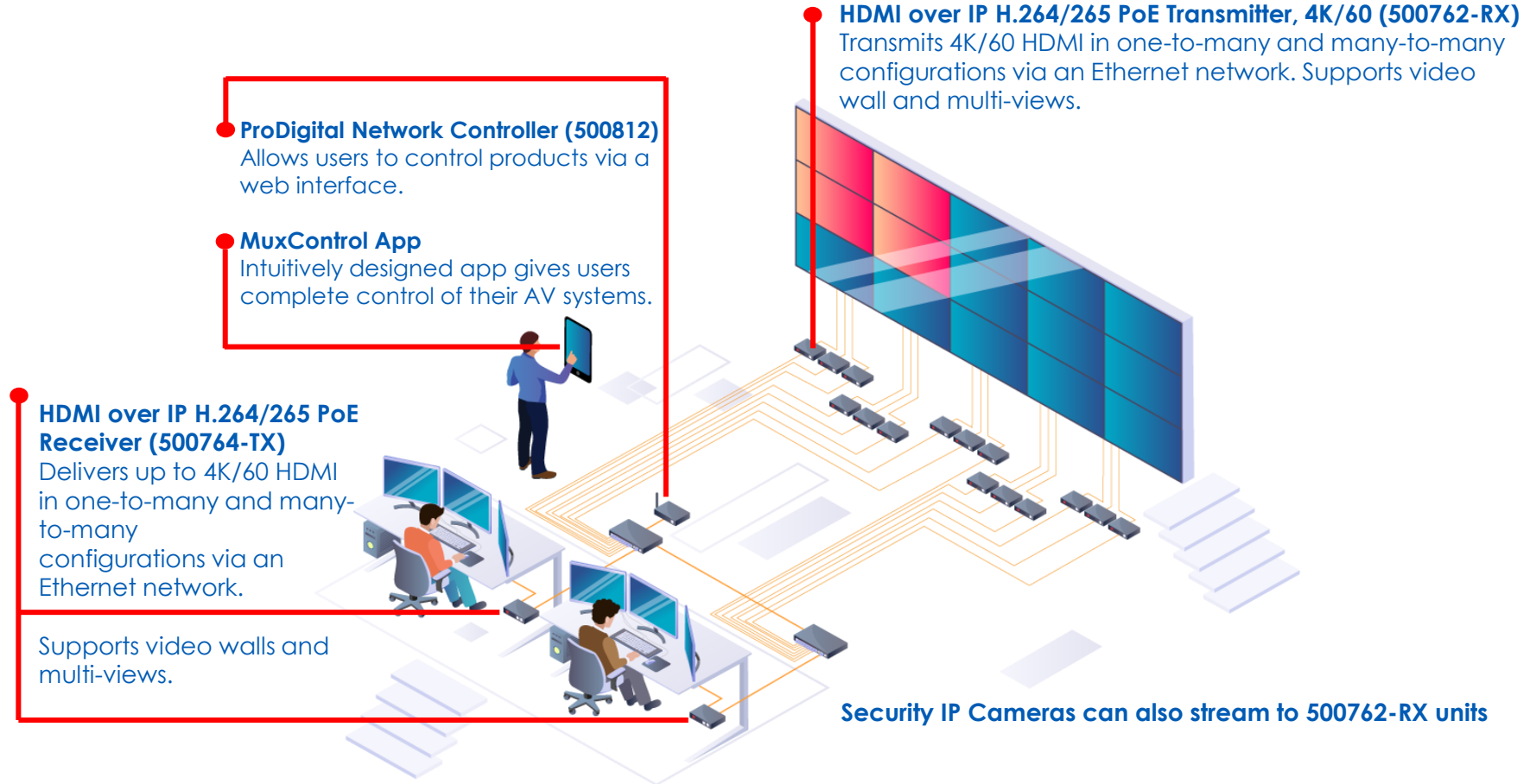
MuxControl App

Intuitively designed app gives users complete control of their AV systems.

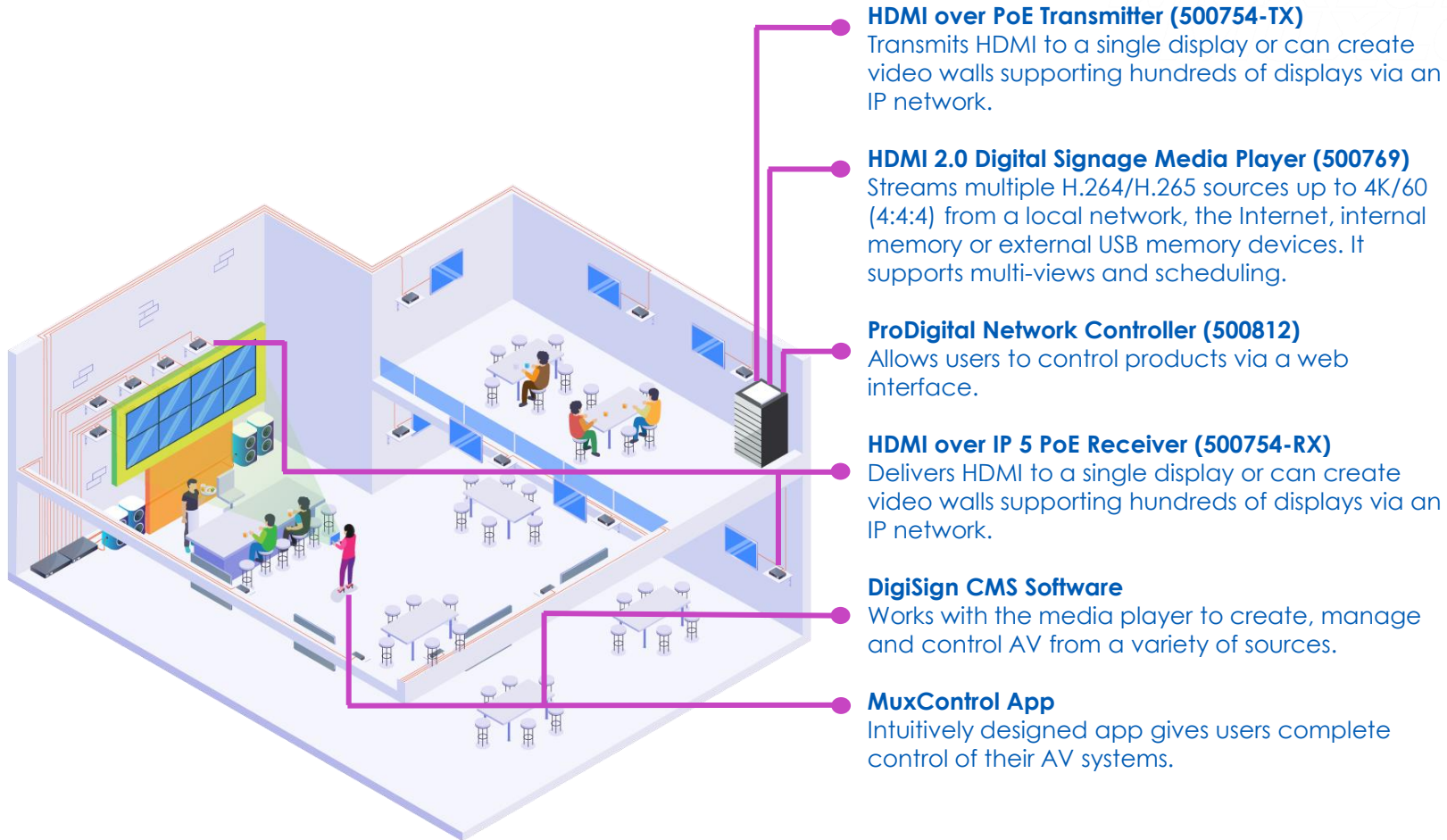
AV IN THE CLASSROOM



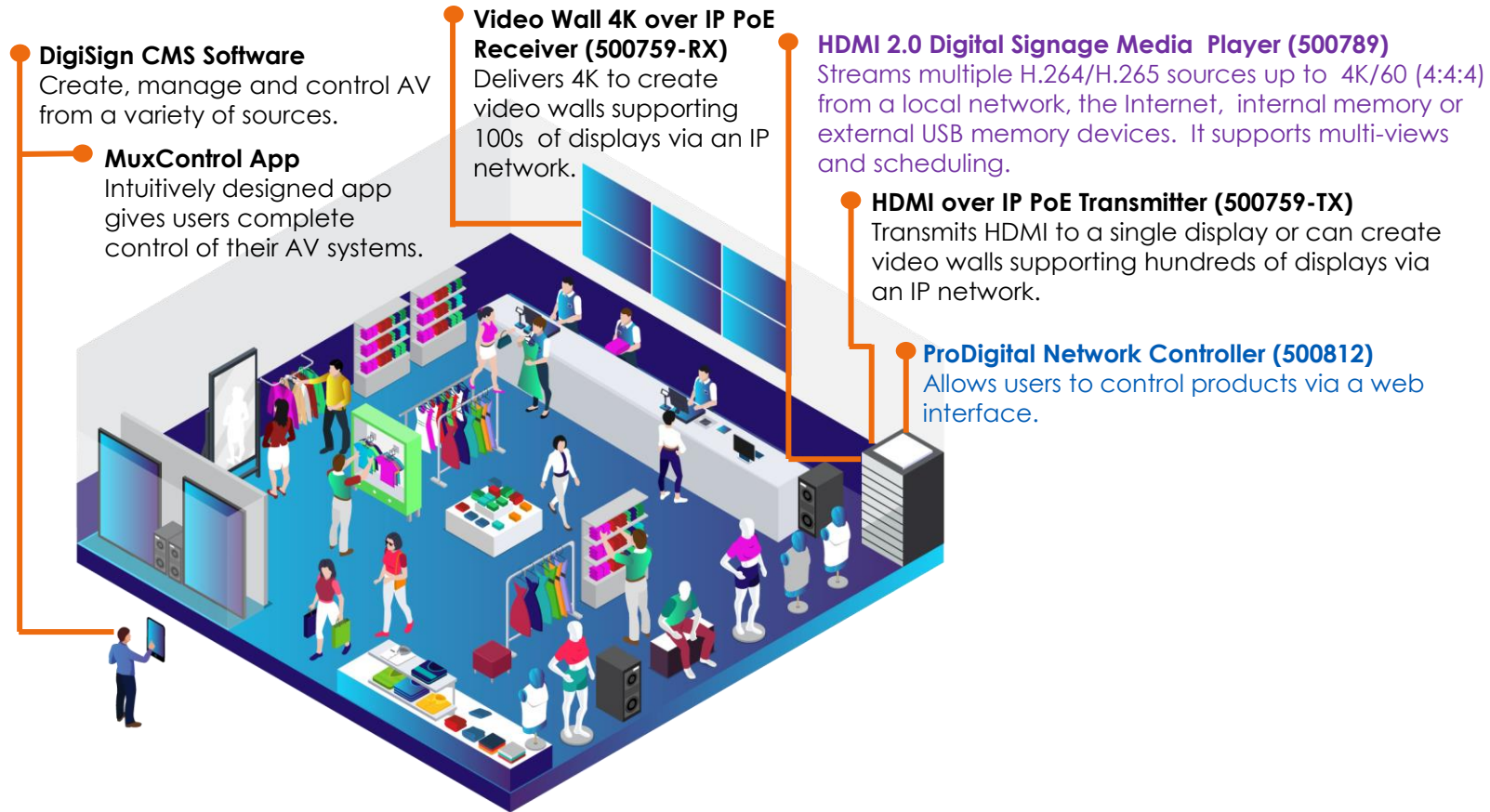
AV IN A COMMAND / SECURITY CENTER



AV IN A SPORTS BAR



SIGNAGE IN RETAIL

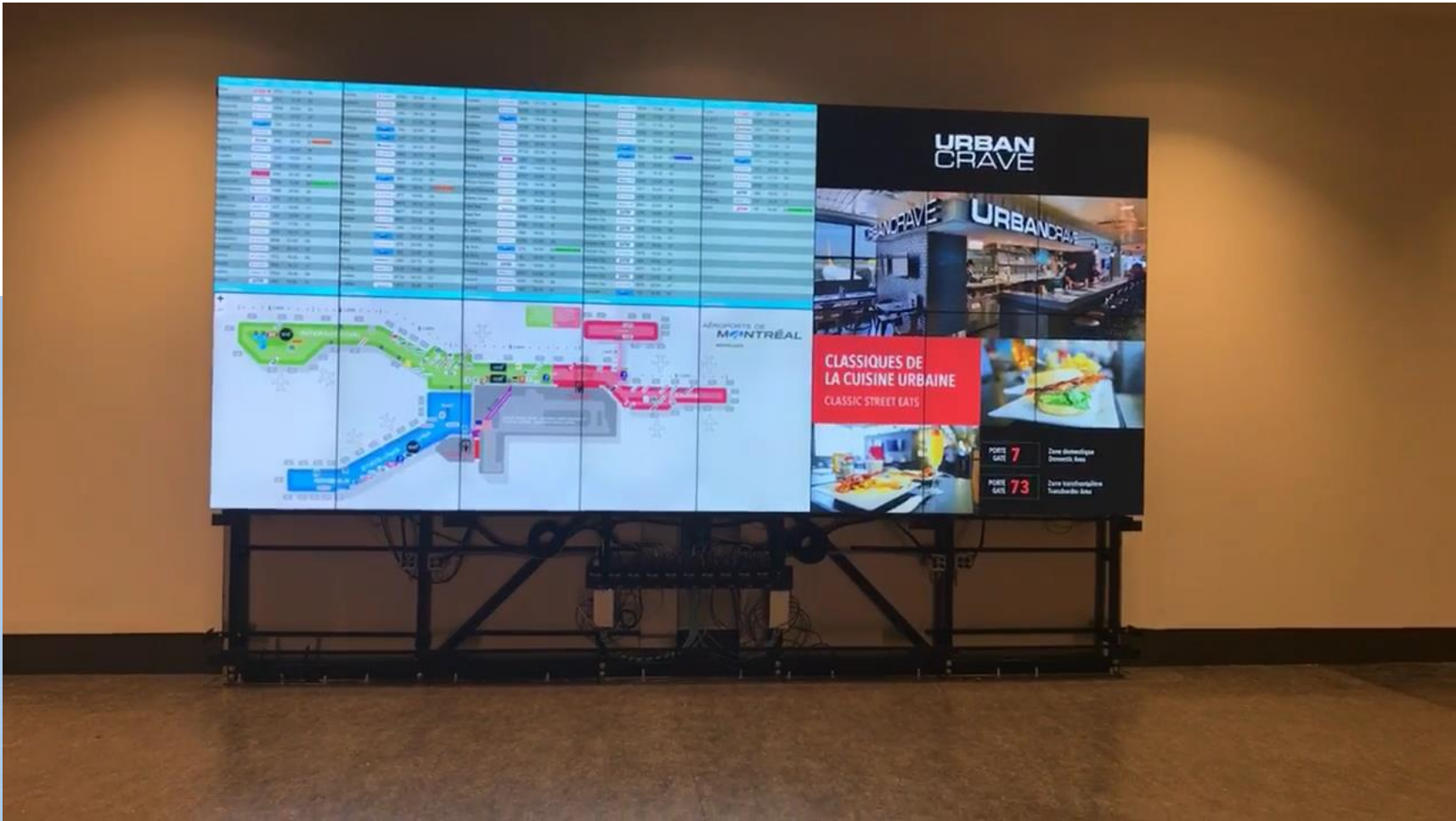


AV Over IP Video Wall

Largest line-up in the industry



AV Over IP Video Wall





OUR SOLUTIONS

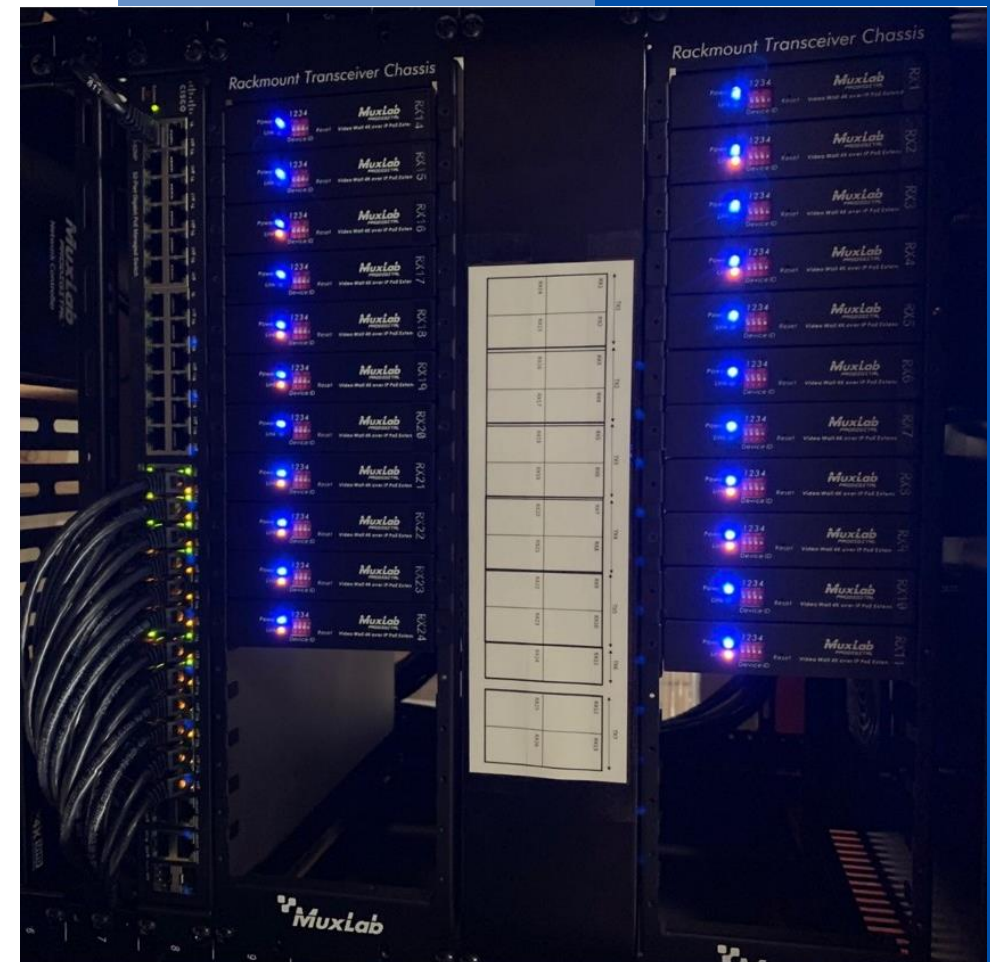
Complete family of AV over IP solutions.

Easy to install and configure.

Virtual Matrices, Splitters, Switchers, Video Walls and Amplifiers.

Powerful and reliable.

Managed seamlessly from our network controller, MuxControl or 3rd party apps.





FLEXIBLE & EXPANDABLE CONVENIENT & COST EFFECTIVE



**REMOTE
MANAGEMENT**



**EASE OF
INSTALLATION**



**VIDEO WALL
SUPPORT**



**LOW LATENCY
SOLUTIONS
WITH 4K/60
ABILITY**



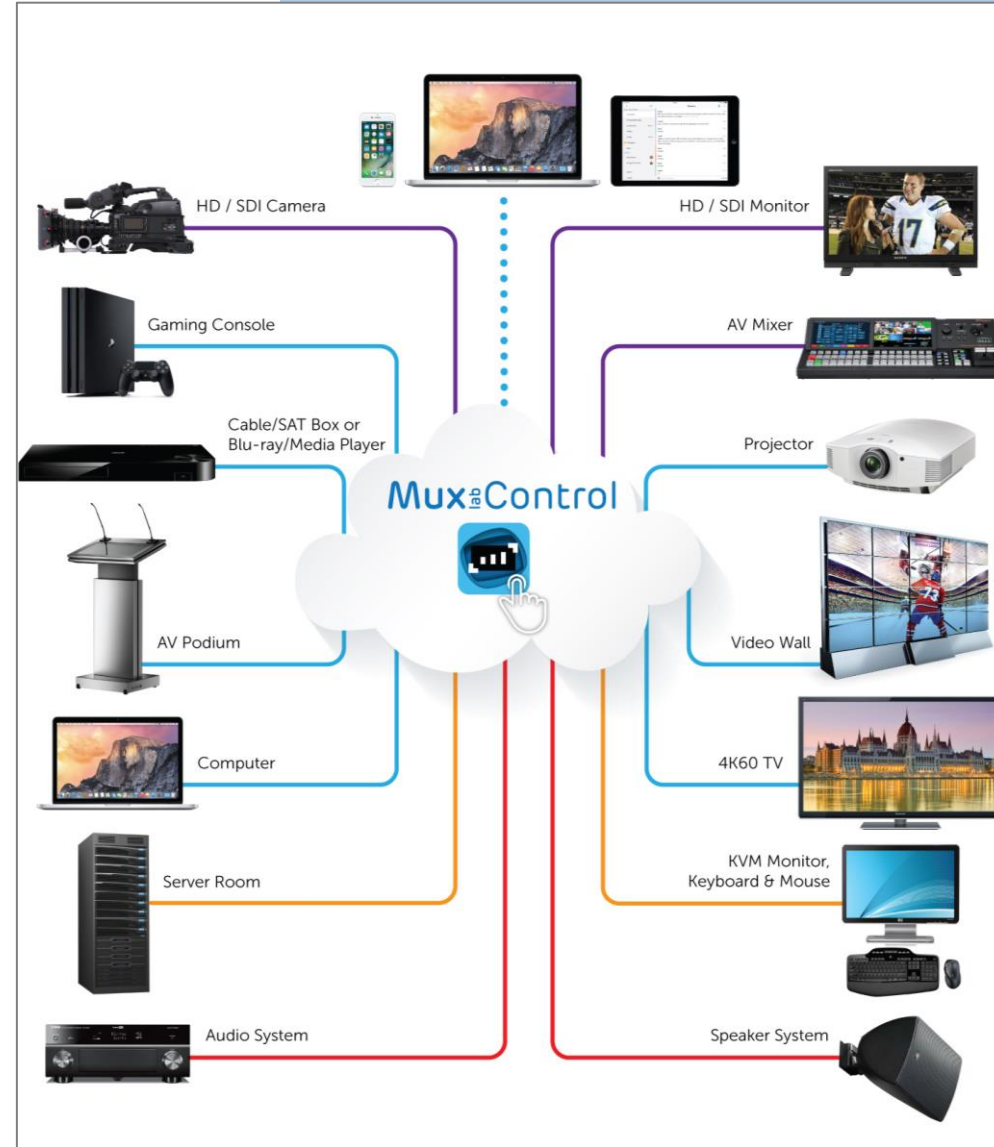
MULTIVIEW



**DIGITAL
SIGNAGE**

EVERYTHING OVER IP

MuxLab is proud to carry the largest line-up of AV over IP in the industry.



4K
UHD-4K

3G/6G
SDI

HDMI
2.0

4K60
ULTRA HD

D
Display
Port



DVI



Audio



KVM



Bring it all together.

Local Cloud (Q2 2021) | Public Cloud (Q3/4 2021)

- CENTRALIZED CONTROL OF ALL MUXLAB AV OVER IP PRODUCTS
- INTUITIVE GUI FOR EXCEPTIONALLY EASY ACCESS, CONTROL AND MANAGEMENT
- MANAGED SEAMLESSLY FROM OUR NETWORK CONTROLLER, MUXCONTROL APP, 8 BUTTON CONTROLLER OR 3RD PARTY APPS



500812

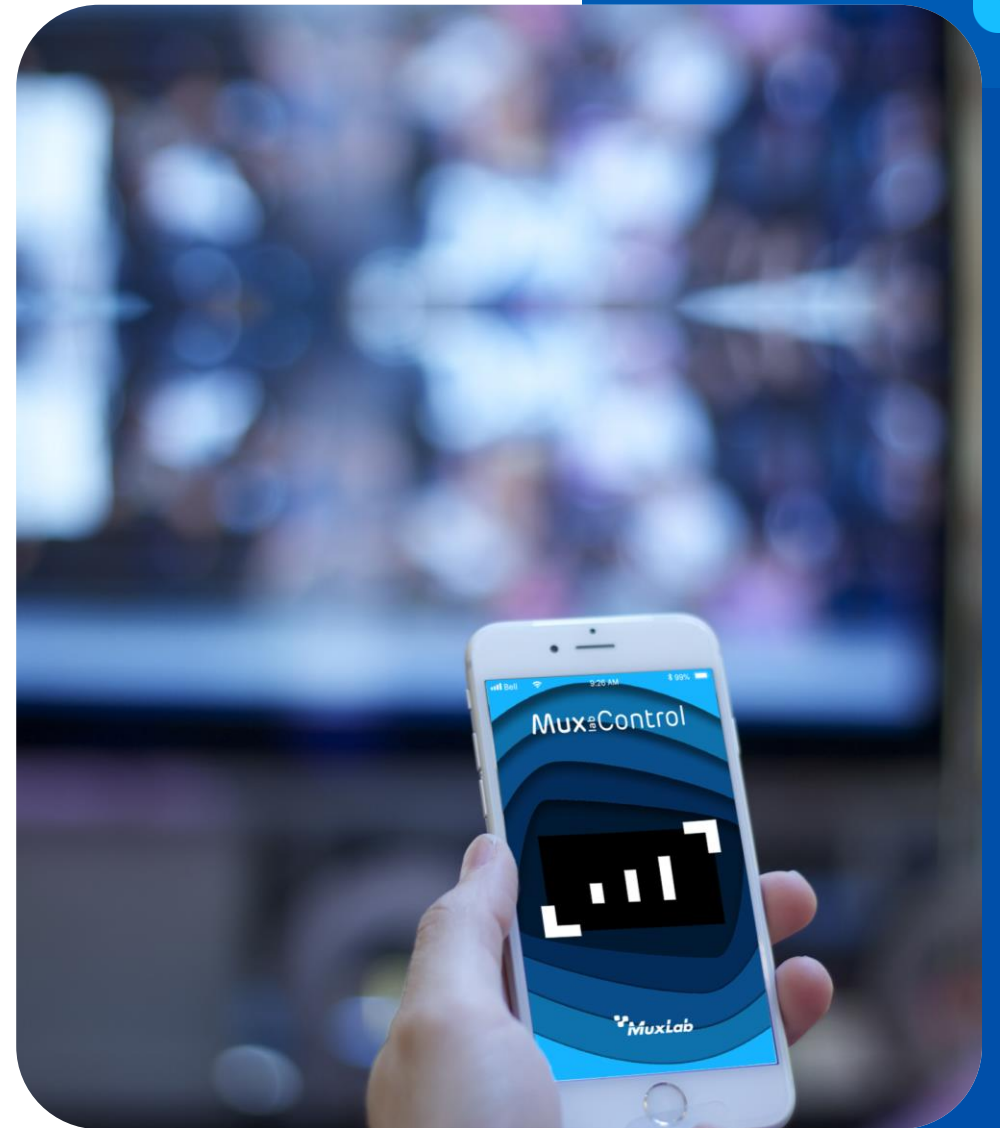


MuxControl App



500816-IP

+ Third Party Apps





COMMERCIAL APPLICATIONS

- 01. HDMI/RS232 OVER IP W/POE**
1080p/60 HDMI @ 1Gbps MJPEG Compression
- 02. 4K OVER IP W/ POE**
4K/30 HDMI @ 1Gbps JPG2000 Compression
- 03. AV OVER IP 4K/60 UNCOMPRESSED**
4K/60 HDMI 4:4:4 @ 10Gbps
- 04. HDMI OVER IP UNCOMPRESSED 4K/60**
4K/60 HDMI 4:2:0 @ 10Gbps





STREAMING AV

01. HDMI OVER IP H.264/H.265 POE EXTENDER

TX 1080p/60 HDMI, RX 4K/60 HDMI 4:4:4 @ 1Gbps
H.264/5 Compression

02. HDMI OVER IP H.264/H.265 POE EXTENDER, 4K/30

TX 4K/30 HDMI, RX 4K/60 HDMI 4:4:4 @ 1Gbps
H.264/5 Compression





KVM SOLUTIONS

- 01. KVM HDMI OVER IP POE EXTENDER**
1080p/60 HDMI @ 1Gbps JPG2000 Compression
- 02. KVM DVI OVER IP POE EXTENDER**
1080p/60 DVI @ 1Gbps JPG2000 Compression





CLASSROOM AUDIO

- 01. AUDIO/RS232/IR OVER IP WITH POE**
2CH Audio Line Level, Intercom separate from Classroom AV
- 02. AUDIO / AMP OVER IP EXTENDER KIT, WITH MIC & AMP 50W/CH**
2CH Audio 50Wpc, Intercom separate from Classroom AV
- 03. HDMI 2.0 / ST2110 OVER IP UNCOMPRESSED GATEWAY CONVERTER, MMF**
HDMI 2.0/ST2110 @ 2x 10Gbps Uncompressed





SECURITY AND SURVEILLANCE

- 01. HDMI OVER IP H.264/H.265 POE EXTENDER**
TX 1080p/60 HDMI, RX 4K/60 HDMI 4:4:4 @ 1Gbps
H.264/5 Compression
- 02. HDMI OVER IP H.264/H.265 POE EXTENDER, 4K/30**
TX 4K/30 HDMI, RX 4K/60 HDMI 4:4:4 @ 1Gbps
H.264/5 Compression





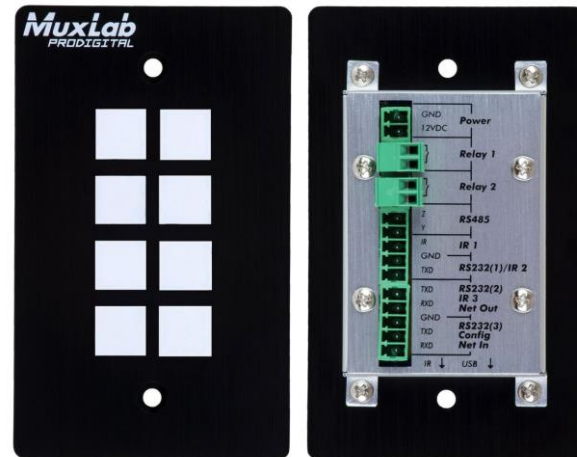
CONFERENCE ROOMS

01. HDMI/VGA/USB OVER IP POE WP, UHD-4K

4K/30 HDMI/VGA/USB @ 1Gbps JPG2000 Compression

02. 8 BUTTON IP POE CONTROL PANEL

AV over IP/RS232/IR/Relay Controller





BROADCASTING

- 01. 3G-SDI OVER IP WITH POE**
3G/SDI @ 1Gbps MJPEG Compressed
- 02. 3G-SDI/ST2110 OVER IP
UNCOMPRESSED
GATEWAY CONVERTER (UTP & MMF)**
3G/SDI @ 10Gbps Uncompressed
- 03. 70V AUDIO CONVERTER**
Mono Audio 70V systems for chaining speakers,
Intercom separate from Classroom AV





RESIDENTIAL

01. **DOMOSTREAM**

4K/30 HDMI @ 1Gbps JPG2000 Compression
Supports LPCM, Dolby Atmos and DTS:X

02. **HDMI OVER IP 1G POE EXTENDER, 4K/60**

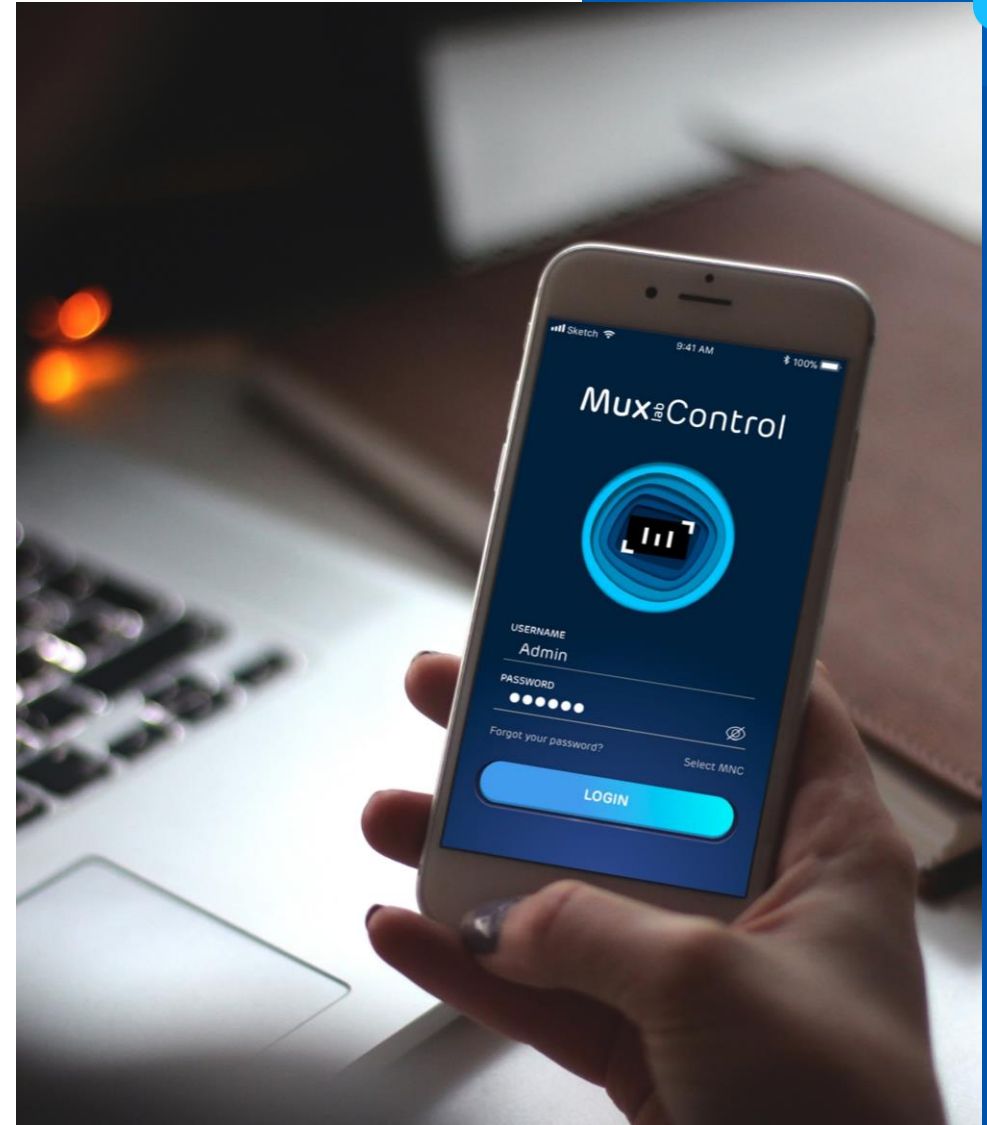
4K/60 HDMI 4:4:4 @ 1Gbps JPG2000 Compression





MuxControl Management

- ✓ Supports virtual matrix and Video Wall configurations
- ✓ Manage multiple sites via graphical floor plans
- ✓ Color coded connectivity of sources and displays
- ✓ Supports connectivity pre-sets for often used connections



MuxControl Management

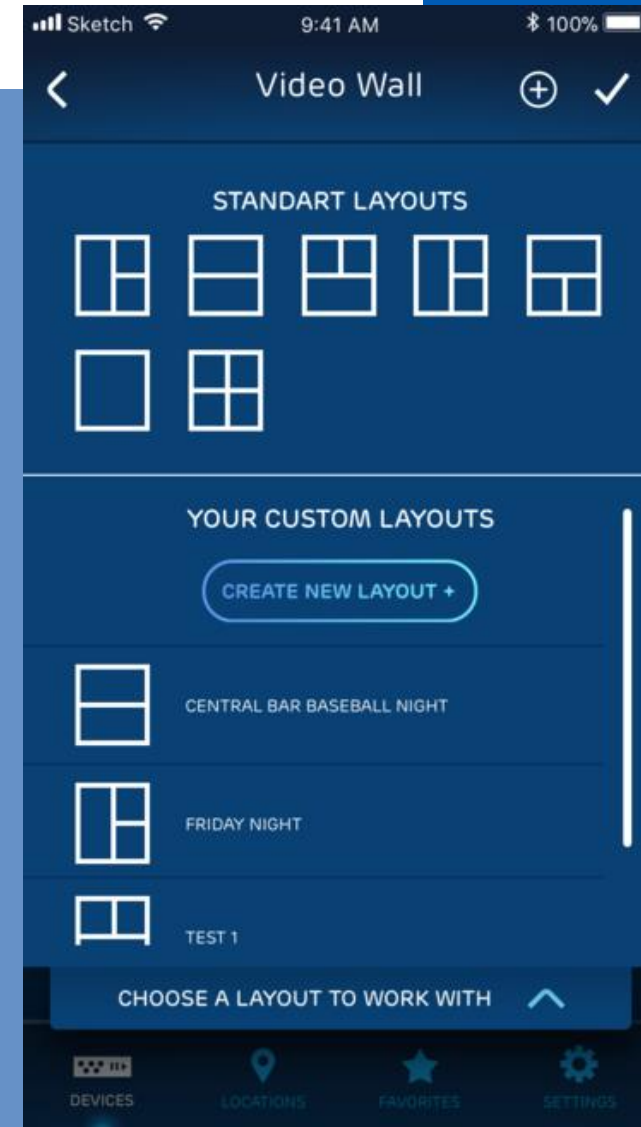
User-friendly, simple, easy.

Programmable remote control to configure button layouts

Assign multiple RS232 and IR commands to turn on/off different brands

Assign commands such as volume up/down, mute/unmute, play/pause/stop, etc.

Create virtual remotes per room, and master remotes across a home or commercial building.





Thank you!

