MMX4x2-HDMI-USB20-L

4x2 Matrix Switcher for HDMI video and USB 2.0 peripherals

MMX4x2-HDMI-USB20-L is an integrator-friendly, 4x2 matrix switcher for HDMI video and USB2.0 peripherals.

It has four HDMI inputs and two independent HDMI outputs, as well as a USB 2.0 layer that provides the switching of four external USB peripherals (USB devices such as webcamera, speakerphone, multitouch display, etc.) to four independent host computers or laptops. The Power Switch Delay that cuts power for 2 seconds when switching between hosts, allowing the device to recognize the change of USB host.

Unique USB functions allow seamless integration in Unified Communication and small Video Conference rooms. The USB "Host5vSense" function recognizes when a USB cable is connected and performs condition triggering for the Event Manager. For example, switch USB devices to the last connected USB laptop if configured accordingly. The "Device5vEnable" turns ON or OFF peripherals' 5 Volt over the USB cable.

One of the USB-A type connectors is capable to power connected devices with 1000mA at 5V, such as the Huddly Go and Huddly IQ cameras, that require at least 900mA.

"HostSelect 0" disconnects Cisco Room Kit Mini and allows Touch 10 control unit to switch between Webcam and Webex video conferencing operation modes.

The device offers two individual RS-232 interfaces to allow independent control of two separate 3rd party devices, such as a Cisco Room Kit Mini or an external display.

MMX4x2-HDMI-USB20-L and built-in Event Manager automation makes the meeting room easy, intuitive and hassle-free; it detects powered computers, turns on the screen and camera, and prepares for the next call. Based on the specific configuration it allows auto-switch for USB and video signals. In other cases USB may not follow video, according to the application.

Audio can be de-embedded from the HDMI signal to a balanced 5-pole Phoenix (Euroblock) port and external audio signal can be embedded into the HDMI stream from another 5-pole Phoenix input port. The volume and gain properties of the audio signal can be modified at both input and output.

HDMI connectors are 4K capable and HDCP compliant and additional control options are served by the USB, RS-232, IR (in and out) and Ethernet ports.
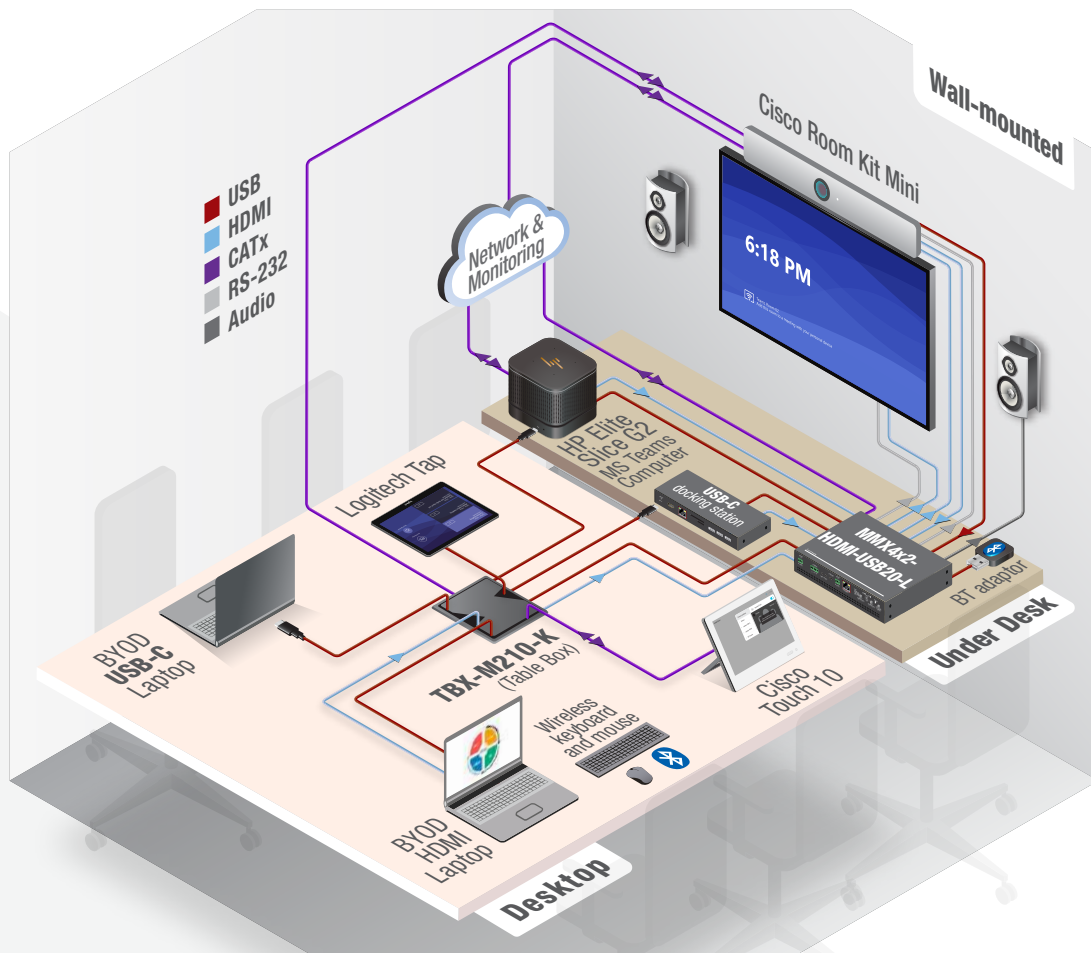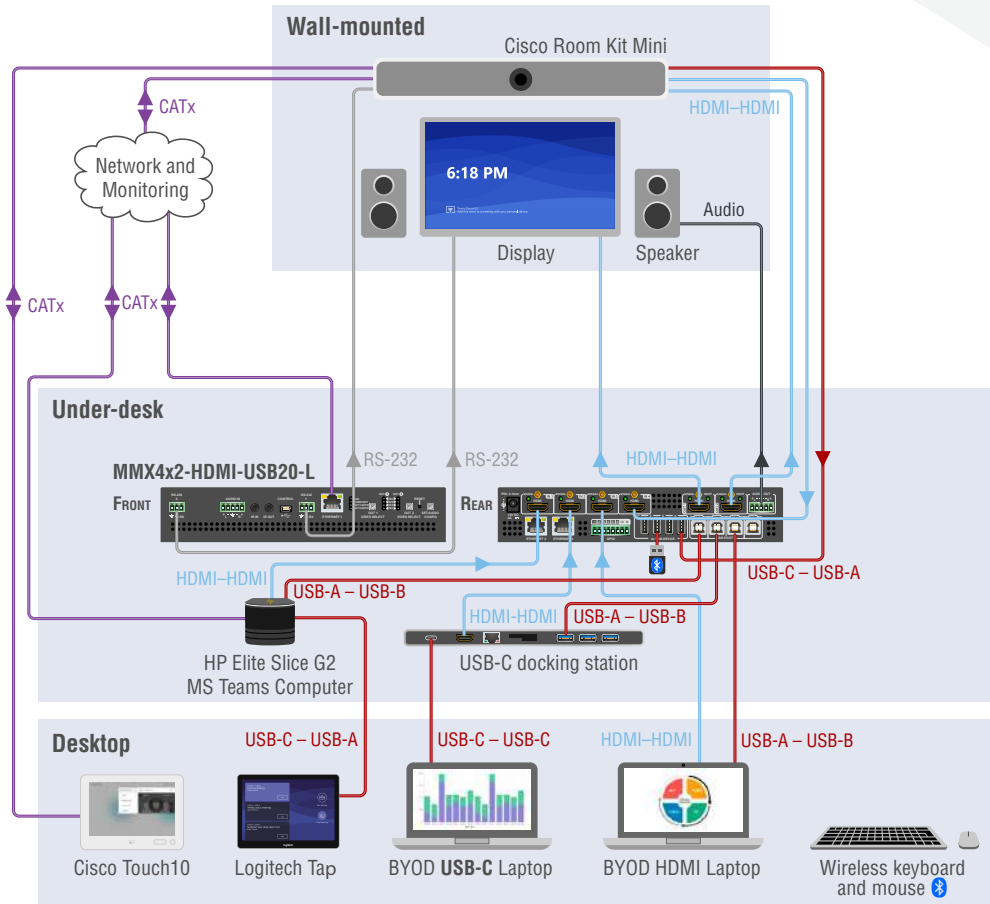
Features

- 4 x 2 Matrix Switcher with HDMI 1.4 ports
- 4K/UHD (30Hz RGB 4:4:4, 60Hz YCbCr 4:2:0)
- USB 2.0 Host switching layer for external USB 2.0 peripherals (Camera; Touch sensor; Speakerphone, etc.)
- 4 x USB 2.0 Device peripherals
- 4 x USB 2.0 Host computers
- USB Host switching is compatible with Windows, MacOS and any other operating system
- "Host5vSense" triggers Event Manager
- "Device5vEnable" function turns ON or OFF peripherals' 5 V USB power
- "HostSelect 0" disconnects Cisco Room Kit Mini's webcam
- USB-C Laptop Support (With external adaptors)
- 1 x 5-pole Phoenix connector for balanced analog audio embedding
- 1 x 5-pole Phoenix connector for balanced analog audio de-embedding
- Analog audio volume control
- Event Manager
- Command injection on IR and RS-232 connections
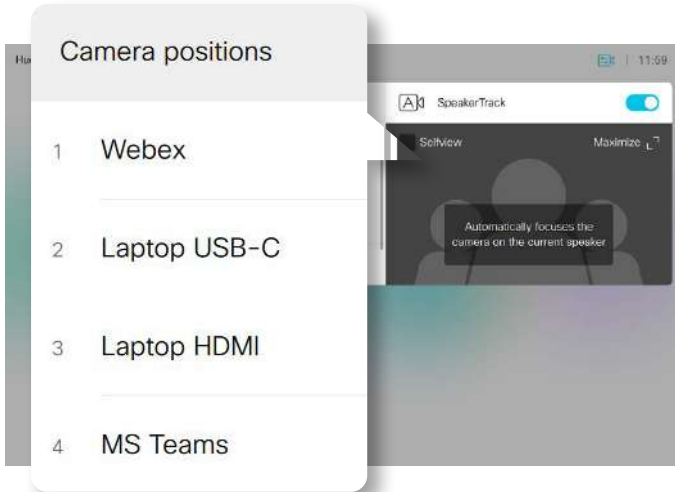- Advanced EDID Management
- Zero frame delay

Applications

- Meeting and conference rooms
- Huddle Rooms with Soft VC

Lightware Insights - Proof of Concept Video

Cisco Webex and MS Teams mixed Application

Wall-mounted

Cisco Room Kit Mini

CATx

Network and Monitoring

CATx   CATx

HDMI–HDMI

6:18 PM

Audio

Display   Speaker

Under-desk

MMX4x2-HDMI-USB20-L

FRONT   RS-232   RS-232   HDMI–HDMI   REAR

HDMI–HDMI   USB-C – USB-A

USB-A – USB-B   HDMI-HDMI   USB-A – USB-B

HP Elite Slice G2
MS Teams Computer   USB-C docking station

Desktop   USB-C – USB-A   USB-C – USB-C   HDMI–HDMI   USB-A – USB-B

Cisco Touch10   Logitech Tap   BYOD **USB-C** Laptop   BYOD HDMI Laptop   Wireless keyboard and mouse

USB
HDMI
CATx
RS-232
Audio

Wall-mounted

Cisco Room Kit Mini

6:18 PM

Network & Monitoring

Logitech Tap

HP Elite Slice G2 MS Teams Computer

USB-C docking station

MMX4x2-HDMI-USB20-L

BT adaptor

Under Desk

BYOD **USB-C** Laptop

TBX-M210-K (Table Box)

Wireless keyboard and mouse

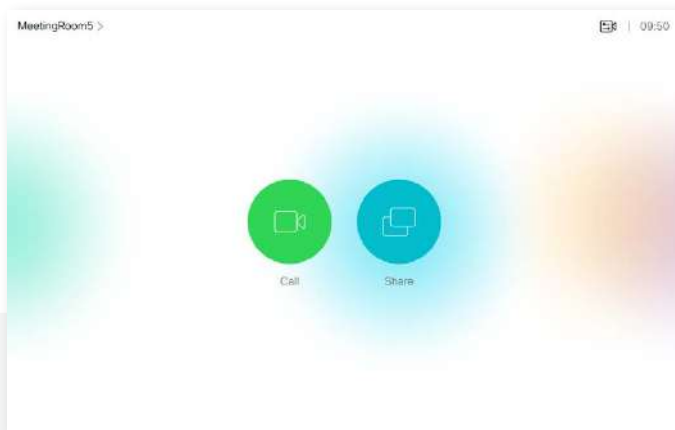Cisco Touch 10

BYOD HDMI Laptop

Desktop

The Camera Selector Icon on the top right corner of the screen provides access to the Camera Selector Menu.

In the Camera Selector Menu users can choose from a list of pre-defined and per-configured camera options.

Once the required camera is selected, the Lightware matrix sets up the system to be immediatelly ready for collaboration on the chosen VC platform.

When the Webex RoomKit Mini is utilized as a USB camera, the 'Do-not-disturb' screen is displayed on the Touch10 to advise users about the current status.
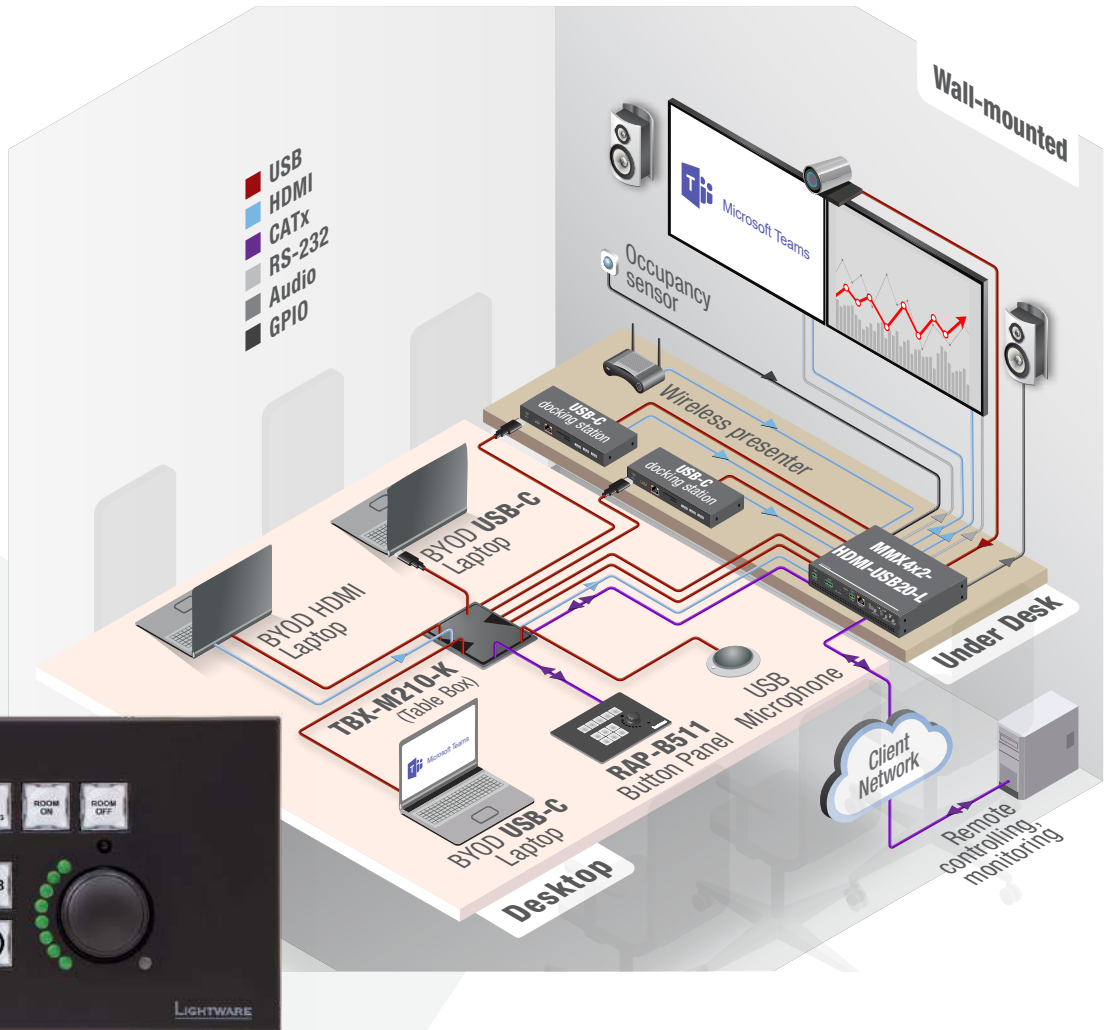
Upon tapping the Touch10, users are presented with the Main Screen in Normal Mode where they can either initiate a call using the Cisco Webex platform or enter the Share Menu to choose from additional input options.

The desired input device can also be chosen inside the Share Screen Menu where all available options are displayed.

The currently active input device is highlighted in green and it's content is displayed on the room's main screen.
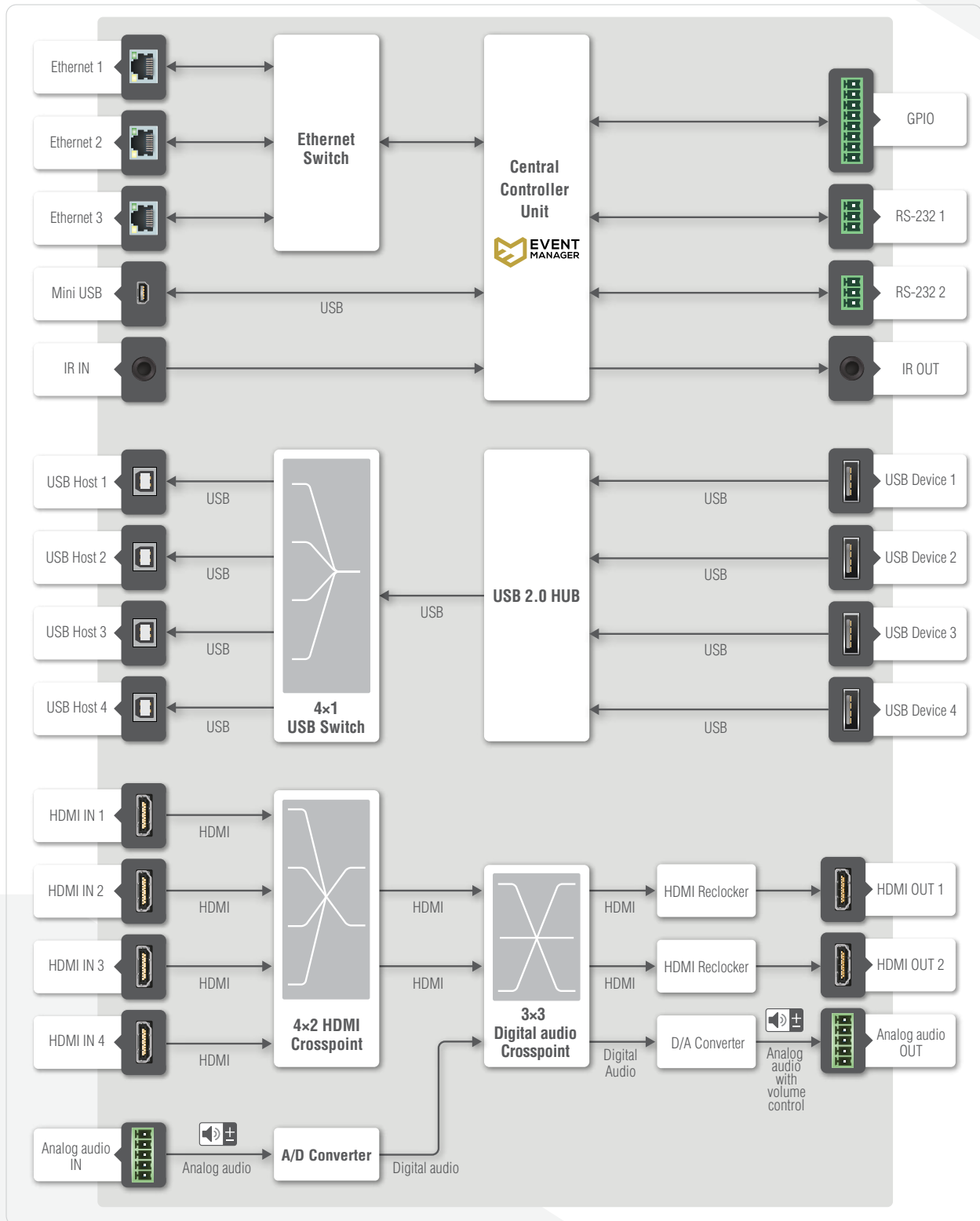
MMX4x2-HDMI-USB20-L

Dual Screen Application with Wireless Presenter
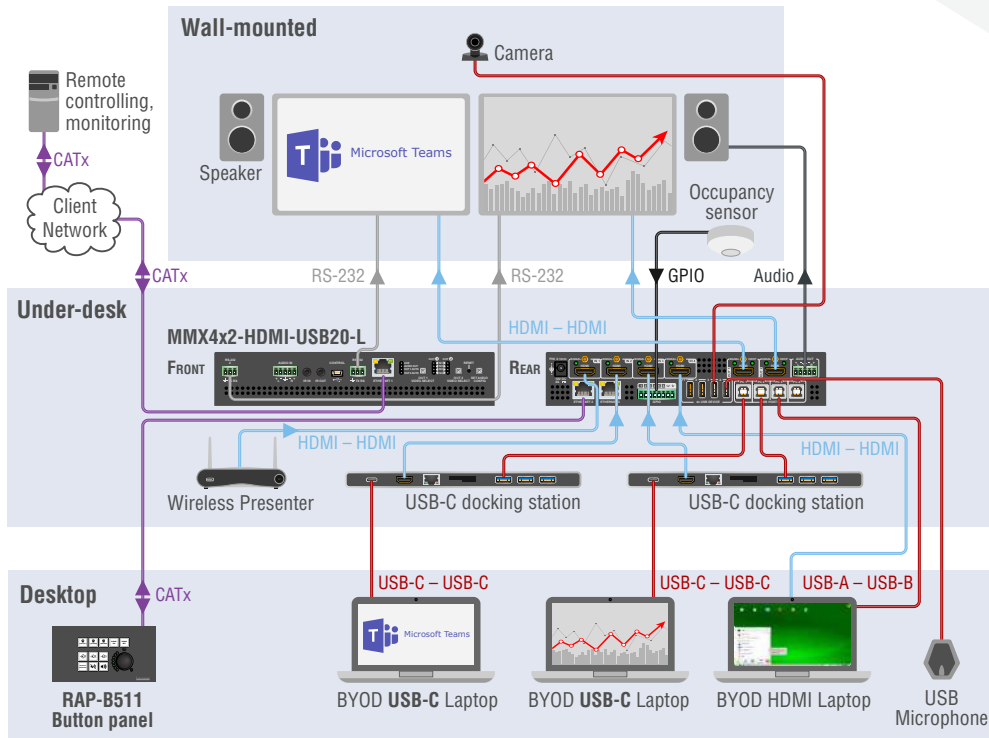
RAP-B511
Button Panel

MMX4x2-HDMI-USB20-L

MMX4x2-HDMI-USB20-L Port Diagram

Port Diagram showing:

- Ethernet 1, Ethernet 2, Ethernet 3 → Ethernet Switch
- Mini USB → USB → Central Controller Unit (EVENT MANAGER)
- IR IN → IR OUT
- Central Controller Unit connects to GPIO, RS-232 1, RS-232 2, IR OUT
- USB Host 1, USB Host 2, USB Host 3, USB Host 4 → 4×1 USB Switch → USB → USB 2.0 HUB
- USB 2.0 HUB → USB Device 1, USB Device 2, USB Device 3, USB Device 4
- HDMI IN 1, HDMI IN 2, HDMI IN 3, HDMI IN 4 → 4×2 HDMI Crosspoint → HDMI → 3×3 Digital audio Crosspoint
- 3×3 Digital audio Crosspoint → HDMI Reclocker → HDMI OUT 1
- 3×3 Digital audio Crosspoint → HDMI Reclocker → HDMI OUT 2
- 3×3 Digital audio Crosspoint → Digital Audio → D/A Converter → Analog audio with volume control → Analog audio OUT
- Analog audio IN → Analog audio → A/D Converter → Digital audio → 3×3 Digital audio Crosspoint

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Specification

Resolution:	Up to 4K UHD 3840×2160@30Hz,1600x-1200@60Hz, FullHD 1920x1080@60Hz
Digital audio formats:	Supports up to 8 channel PCM, Dolby TrueHD and DTS-HD Master Audio 7.1 formats
EDID emulation:	Yes, Advanced EDID Management
EDID memory:	120 factory preset, 12 user programmable
HDCP compatibility:	Yes
RS-232 pass-through	Yes, configurable
RS-232 (control option):	9600, 19200, 38400, 57600, 115200 Baud Rx,Tx (default: 57600)
Local power:	DC Power supply 12V, 2A
Power consumption:	7W (max)
Enclosure:	1 mm metal
Dimensions:	221 W x 100.4 D x 42.5 H mm
Compliance:	CE
Warranty:	3 years

*Depends on cable category and quality

Connectors

Digital video inputs:	4 x HDMI connector
Digital video outputs:	2 x HDMI connector
Balanced audio input:	5-pole Phoenix (Euroblock) connector
Balanced audio output:	5-pole Phoenix (Euroblock) connector
Ethernet:	3 x RJ45
USB device:	4 x USB-A
USB power:	1 x 1000 mA & 3 x 500mA
USB host:	4 x USB-B
USB control:	mini-USB-B connector
Control:	6 x GPIO, 8-pole Phoenix (Euroblock)
IR in and out:	3.5 mm jack
Serial port:	2 x RS-232 Serial Port
Power:	Locking DC connector (2.1 / 5.5 mm)

Supplied Accessories

PSU-12VU Universal DC adaptor (Part No: 1180 0098)
Wall power adaptor with interchangeable plug for international use.
Universal input: 100-240 V AC, 50-60 Hz, output: 12 V DC, 2 A

IR emitter and IR eye
(Part No: 1374 0003 TX, 1374 0002 RX)
IR emitter is supplied with TPS-TX, IR eye is supplied with TPS-RX units. Needed for IR extension.

Optional Accessories

Rack shelf (Part No: 5240 0269)
The 1U high rack shelf provides mounting holes for fastening two half- rack or four quarter-rack sized units.