MAX2 4K60 Cross Platform Matrix Router

Owner's Manual

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Introduction

Product Introduction

The MAX2 series Matrix Router is a Cross-Platform Matrix Router providing connectivity and ability to convert multiple different digital signal types in a single system. PureLink's unique "Cross-Platform" feature makes the MAX2 the most flexible and simple solution for today's sophisticated digital AV environment.

The MAX2 series Matrix Router accepts and manages the following standards:

- HDMI v2.0b   (w/ scaling)
- DisplayPort V1.3   (w/ scaling)
- 12G-SDI   (w/ scaling)
- HDBaseT 3.0   (w/ scaling)
- 1LC Fiber Optic   (w/ scaling)

The MAX2 frames can be partially or fully populated with any combination of available input and output cards.

Input and output cards typically offer four channels of connectivity. In some cases depending on the card, there may be additional audio or video connections. Please review the list of available cards for specifics of each card.

Frame sizes and maximum card capacities are:

MAX2-12X (12 inputs, 12 outputs):   3 Input cards   3 output cards.

MAX2-20X (20 inputs, 20 outputs):   5 Input cards   5 output cards.

MAX2-36X (36 inputs, 36 outputs):   9 Input cards   9 output cards.

MAX2-72X (72 inputs, 72 outputs):   18 Input cards   18 output cards.

MAX2-144X (144 inputs, 144 outputs):   36 Input cards   36 output cards.

MAX2-216X (216 inputs, 216 outputs):   54 Input cards   54 output cards

MAX2-288X (288 inputs, 288 outputs):   72 Input cards   72 output cards

The MAX2 can switch any input signal/standard to any combination of various output signals / standards. The MAX2 can also simultaneously convert incoming resolutions and refresh rates to different resolutions and refresh rates for each output. For example, an HDMI 1080p60 input signal can be converted to DisplayPort output, Fiber Optic output, and HDBaseT output each at different resolutions. The Matrix Router can route multiple input / output configurations simultaneously.

> **Note**   12G-SDI is not a licensed HDCP interface therefore if the content received from an HDMI input is protected by HDCP, a 12G-SDI output card will not pass the signal.

MAX2 series HDBaseT I/O Cards are used in conjunction with MAX2 HDBaseT Transceiver.
MAX2 series Fiber Optic I/O Cards are used in conjunction with their relative MAX2 Fiber Transmitter or Receiver.

Front View:

The MAX2 Matrix Router frame is mountable in a 19" standard rack. The frame height varies with each model. The touch screen control panel allows you to set up and operate the MAX2. The touch panel can be locked to avoid unintended or unauthorized use.

Figure 1-1 Front view of MAX2-20X enclosure

Rear View:

The input and output card section, MCU card (which includes communication ports and Dante™ ports, fan blade, and power supplies are found on the rear panel. Actual rear view will vary depending on the configuration of input and output cards that you choose to populate in the frame.

Figure 1-2 Rear view of MAX2-20 Enclosure

① Input Card Section
② Output Card Section
③ Main MCU Card
④ Airlift Fan Blade
⑤ Standard Redundant Power Module
⑥ Standard Redundant Power Module

Features and Specifications

Features

▶ **End to EndUltra HD / 4K**

MAX2 offers a complete solution of distribution and extension solutions for 4K60 connectivity that can be customized for any application. From 4K matrix switcher frames to 4K extenders, all with TOTALWIRE™ (HDMI, HDBaseT, and Fiber) cabling, Media Axis 2 solutions deliver a more seamless transition to 4K connectivity than any other.

▶ **Auto-Scaling with Don't Blink™ Seamless Switching**

MAX2 provides auto scaling in the frame cards, virtually eliminating latency while increasing system design flexibility. The second generation of the first cross platform matrix delivers unparalleled flexibility and performance, the MAX2 continues the legacy and also offers instant, seamless switching regardless of input or output signal conversions.

▶ **Audio Insertion / Extraction**

Every MAX2 Matrix Router input card provides install friendly phoenix stereo audio insertion and extraction, and output cards provide phoenix stereo audio extraction.

▶ **Cross-Platform Conversion**

MAX2's advanced Cross-Platform Switching Technology allows interchangeable switching between any input signal formats to any output signal formats. MAX2 is compliant with the following uncompressed 4K standards:

- HDMI v2.0b
- DisplayPort 1.3
- 12G-SDI
- 10G 1LC Fiber, multimode, or single mode auto-detect
- HDBaseT 3.0

Note: 10G 1LC Multimode Fiber modules are supplied with fiber cards and extenders

▶ **Available in various I / O sizes from 12x12 to 288x288**

MAX2 series Matrix Router offers an effective range of frames to match your applications. Seven frame sizes are available:

- o MAX2-12X (up to 12X12)
- o MAX2-20X (up to 20x20)
- o MAX2-36X (up to 36x36)
- o MAX2-72X (up to 72x72)
- o MAX2-144X (up to 144x144)
- o MAX2-216X (up to 216x216)
- o MAX2-288X (up to 288x288)

▶ **PoC power for HDBaseT extenders**

MAX2 provides power to the MAX2 HDBaseT 3.0 transceiver at the remote location over the same HDBaseT cable that transmits Audio, Video, and Control.

Note: PoC requires the optional MAX2-PoC-PSU.

▶ **Three Convenient Control Methods**

- Front panel touch screen, with lockout option
- RS-232/422C (API Commands)
- LAN (TCP/IP) (API Commands)

▶ **RS-232 +**

An industry first, the MAX2 RS-232 + extension / distribution system simplifies managing control to sources and displays connected to MAX2 extenders. RS-232 + enables a control system connected via LAN or RS232 to the MAX2 frame to control the system on three separate levels:
1) MAX2 Matrix Router set up, diagnostics and operation
2) MAX2 HDBaseT and Fiber Extenders set up, diagnostics and operation
3) Control of third-party devices attached to MAX2 Extenders (both Tx and Rx)

RS-232 + simplifies control, increasing reliability while also lowering costs by removing control design, hardware and cabling.

▶ Signal Analyzer

MAX2 provides built-in comprehensive signal analysis of both incoming and outgoing signals, via the front panel LCD touch screen or through its API commands. Signal information provided includes EDID, HDCP, transmission status, and resolution.

▶ 18 Gbps Data-Rate Frame

Full 4K60 bandwidth of 18Gbps for each signal ensures lossless High-Definition digital AV signal switching and distribution.

▶ Standard Redundant Power

Every MAX2 series Matrix Router is equipped dual redundant power supply as standard

▶ LCD Touch-Screen Display w/ Security Lock-Out

Every MAX2 frame includes a front panel LCD Touch Screen for intuitive set up, diagnostics, and operation. The Security Lock-Out can be set to lock from the front panel or an API command. In lock-out mode, a password entered from the touch screen or API command sent from a control system can disable the lock-out mode.

▶ Auto-EDID (EDID Library, Emulation)

PureLink's EDID library and emulation features failsafe EDID capture & storage to provide constant and continuous EDID for source devices. MAX2 allows different EDID assignments per input.

▶ HDCP Compliant

MAX2 provides HDCP 1.4 and 2.2, including the ability to manage keys for all inputs and outputs.

▶ **Modular, Field-upgradeable**

MAX2 is designed to expand, upgrade, and reconfigure in the field. Install or replace input and output cards, fan blade cards, and power supplies.

▶ **Custom Programmable Matrix Presets**

Multiple matrix presets can be programmed and saved to memory. Your custom matrix presets can be recalled via the front panel control or API commands.

▶ **Fan / Power Supply Monitoring**

Real-time fan, and power supply modules status is presented on the front panel LCD touch screen and available through API commands.

▶ **MAX2 Universal Input/Output Cards**

All MAX2 Input/Output Cards can be used in all sizes of MAX2 frames.

▶ **Maximum Distance up to 32,808ft**

Extend audio, video, control signal and power up to 330ft with our HDBaseT 3.0 IO cards and extenders. For longer distances, Fiber Optic IO cards and extenders provide audio, video, and control extension up to 32,808ft.

▶ **Hostname, Network Lock system**

on and Create and save your specified host name, and set and lock network settings from the front panel or API commands.

▶ **CEC (Power On/Off)**

MAX2 provides CEC on and off commands for compatible displays, which can be sent using our API commands.

▶ Video Sync Detect Push Notification

When a video signal is lost or found on an input port, MAX2 will automatically send an API command to advise the third-party controller.

▶ HDMIVideo Wall / Multi View

HDMI outputs can be configured for either Video Wall or Multiview. The Video Wall features provide for size, position, and bezel compensation. Multiview allows up to four sources simultaneously with multiple layout choices.

▶ Noise-cancellation and Error-correct Logic

Input and output ports include noise cancellation and error-correction circuitry to ensure connected signals can be ingested and distributed at high integrity.

Router Frame Specifications

MAX2-12X	
Maximum # of Input Card load	(3) Three
Available Input Card	HDMI 2.0 MAX2-HIS100 DisplayPort 1.3 MAX2-DIS100 12G SDI MAX2-SIS100 HDBaseT 3.0 MAX2-HIS100 Fiber Optic 1LC MAX2-FIS100
Maximum # of Output Card load	(3) Three
Available Output Card	HDMI 2.0 MAX2-HOS100 DisplayPort 1.3 MAX2-DOS100 12G SDI MAX2-SOS100 HDBaseT 3.0 MAX2-HOS100 Fiber Optic 1LC MAX2-FOS100 Dante with HDMI inputs MAX2-AOD100
Built in Dante™ IO	2x2 Dante™ built in to Frame
Power	100-240VAC 50/60Hz Redundant power supply is standard
Power Consumption (max)	120W + 120W (Dual) = 240W
Operational Temperature	32° ~ 117° F (0° to 47° C)
Storage Temperature	- 40° ~ 158° F (-40° to 70° C)
Humidity	0 ~ 90% non-condensing
MTBF	90,000 hours
Dimensions (W x D x H)	17.2" x 14.5 X 8.6"
Shipping Dimensions (with cover box)	22"X21"X18"
Rack mounting	19" standard rack, 5RU
Weight (w/o Cards installed)	22 Lbs
Shipping Weight(w/ accessories, hard metal case, and cover box)	30 Lbs
Shipping Weight of Individual Cards	2 lbs (0.9 kg)

MAX2-20X

Maximum # of Input Card load	(5) Five
Available Input Card	HDMI 2.0 MAX2-HIS100 DisplayPort 1.3 MAX2-DIS100 12G SDI MAX2-SIS100 HDBaseT 3.0 MAX2-HIS100 Fiber Optic 1LC MAX2-FIS100
Maximum # of Output Card load	(5) Five
Available Output Card	HDMI 2.0 MAX2-HOS100 DisplayPort 1.3 MAX2-DOS100 12G SDI MAX2-SOS100 HDBaseT 3.0 MAX2-HOS100 Fiber Optic 1LC MAX2-FOS100 Dante with HDMI outputs MAX2-AOD100
Built in Dante™ IO	2x2 Dante™ built in to Frame
Power	100-240VAC 50/60Hz Redundant power supply is standard
Power Consumption (max)	120W + 120W (Dual) = 240W
Operational Temperature	32° ~ 117° F (0° to 47° C)
Storage Temperature	- 40° ~ 158° F (-40° to 70° C)
Humidity	0 ~ 90% non-condensing
MTBF	50,000 hours
Dimensions (W x D x H)	17.2" x 14.5" x 15.6"
Shipping Dimensions (with cover box)	22"X21"X28"
Rack mounting	19" standard rack, 10RU
Weight (w/o Cards installed)	33 Lbs
Shipping Weight (w/ accessories, hard metal case, and cover box)	42 Lbs
Shipping Weight of Individual Cards	2 lbs (0.9 kg)

MAX2-36X	
Maximum # of Input Card load	(9) Nine
Available Input Card	HDMI 2.0 MAX2-HIS100 DisplayPort 1.3 MAX2-DIS100 12G SDI MAX2-SIS100 HDBaseT 3.0 MAX2-HIS100 Fiber Optic 1LC MAX2-FIS100
Maximum # of Output Card load	(9) Nine
Available Output Card	HDMI 2.0 MAX2-HOS100 DisplayPort 1.3 MAX2-DOS100 12G SDI MAX2-SOS100 HDBaseT 3.0 MAX2-HOS100 Fiber Optic 1LC MAX2-FOS100 Dante with HDMI outputs MAX2-AOD100
Built in Dante™ IO	2x2 Dante™ built in to Frame (support Input/Outpu up to #32)
Power	100-240VAC 50/60Hz Redundant power supply is standard
Power Consumption (max)	300W + 300W (Dual) = 600W
Operational Temperature	32° ~ 117° F (0° to 47° C)
Storage Temperature	- 40° ~ 158° F (-40° to 70° C)
Humidity	0 ~ 90% non-condensing
MTBF	90,000 hours
Dimensions (W x D x H)	17.2" x 14.5" x 15.6"
Shipping Dimensions (with cover box)	22"X21"X28"
Rack mounting	19" standard rack, 10RU
Weight (w/o Cards installed)	42 Lbs
Shipping Weight (with accessories, hard metal case, and cover box)	50 Lbs
Shipping Weight of Individual Cards	2 lbs (0.9 kg)

MAX2-72X	
Maximum # of Input Card load	(18) Eighteen
Available Input Card	HDMI 2.0 MAX2-HIS100 DisplayPort 1.3 MAX2-DIS100 12G SDI MAX2-SIS100 HDBaseT 3.0 MAX2-HIS100 Fiber Optic 1LC MAX2-FIS100
Maximum # of Output Card load	(18) Eighteen
Available Output Card	HDMI 2.0 MAX2-HOS100 DisplayPort 1.3 MAX2-DOS100 12G SDI MAX2-SOS100 HDBaseT 3.0 MAX2-HOS100 Fiber Optic 1LC MAX2-FOS100 Dante with HDMI outputs MAX2-AOD100
Built in Dante™ IO	2x2 Dante™ built in to Frame
Power	100-240VAC 50/60Hz Redundant power supply is standard
Power Consumption (max)	600W + 600W (Dual) = 1,200W
Operational Temperature	32° ~ 117° F (0° to 47° C)
Storage Temperature	- 40° ~ 158° F (-40° to 70° C)
Humidity	0 ~ 90% non-condensing
MTBF	90,000 hours
Dimensions (W x D x H)	17.2" x 14.5" x 34"
Shipping Dimensions (with cover box)	22"X21"X38"
Rack mounting	19" standard rack, 21RU
Weight (w/o Cards installed)	105 lbs
Shipping Weight (with accessories, hard metal case, and cover box)	120 lbs
Shipping Weight of Individual Cards	2 lbs (0.9 kg)

MAX2-144X	
Maximum # of Input Card load	(36) Thirty-six
Available Input Card	HDMI 2.0 MAX2-HIS100 DisplayPort 1.3 MAX2-DIS100 12G SDI MAX2-SIS100 HDBaseT 3.0 MAX2-HIS100 Fiber Optic 1LC MAX2-FIS100
Maximum # of Output Card load	(36) Thirty-six
Available Output Card	HDMI 2.0 MAX2-HOS100 DisplayPort 1.3 MAX2-DOS100 12G SDI MAX2-SOS100 HDBaseT 3.0 MAX2-HOS100 Fiber Optic 1LC MAX2-FOS100 Dante with HDMI outputs MAX2-AOD100
Built in Dante™ IO	2x2 Dante™ built in to Frame
Power	100-240VAC 50/60Hz Redundant power supply is standard
Power Consumption (max)	600W + 600W + 600W = 1,800W
Operational Temperature	32° ~ 117° F (0° to 47° C)
Storage Temperature	- 40° ~ 158° F (-40° to 70° C)
Humidity	0 ~ 90% non-condensing
MTBF	90,000 hours
Dimensions (W x D x H)	17.2" x 14.5" x 51.6"
Shipping Dimensions (with cover box)	22"X21"X61"
Rack mounting	19" standard rack, 32RU
Weight (w/o Cards installed)	155 Lbs
Shipping Weight (with accessories, hard metal case, and cover box)	170 Lbs
Shipping Weight of Individual Cards	2 lbs (0.9 kg)

MAX2-216X	
Maximum # of Input Card load	(54) Fifty-four
Available Input Card	HDMI 2.0 MAX2-HIS100 DisplayPort 1.3 MAX2-DIS100 12G SDI MAX2-SIS100 HDBaseT 3.0 MAX2-HIS100 Fiber Optic 1LC MAX2-FIS100
Maximum # of Output Card load	(54) Fifty-four
Available Output Card	HDMI 2.0 MAX2-HOS100 DisplayPort 1.3 MAX2-DOS100 12G SDI MAX2-SOS100 HDBaseT 3.0 MAX2-HOS100 Fiber Optic 1LC MAX2-FOS100 Dante with HDMI outputs MAX2-AOD100
Built in Dante™ IO	2x2 Dante™ built in to Frame
Power	100-240VAC 50/60Hz Redundant power supply is standard
Power Consumption (max)	600W + 600W + 600W + 600W = 2,400W
Operational Temperature	32° ~ 117° F (0° to 47° C)
Storage Temperature	- 40° ~ 158° F (-40° to 70° C)
Humidity	0 ~ 90% non-condensing
MTBF	90,000 hours
Dimensions (W x D x H)	TBD
Shipping Dimensions (with cover box)	TBD
Rack mounting	TBD
Weight (w/o Cards installed)	TBD
Shipping Weight (with accessories, hard metal case, and cover box)	TBD
Shipping Weight of Individual Cards	2 lbs (0.9 kg)

MAX2-288X	
Maximum # of Input Card load	(72) Seventy-two
Available Input Card	HDMI 2.0 MAX2-HIS100 DisplayPort 1.3 MAX2-DIS100 12G SDI MAX2-SIS100 HDBaseT 3.0 MAX2-HIS100 Fiber Optic 1LC MAX2-FIS100
Maximum # of Output Card load	(72) Seventy-two
Available Output Card	HDMI 2.0 MAX2-HOS100 DisplayPort 1.3 MAX2-DOS100 12G SDI MAX2-SOS100 HDBaseT 3.0 MAX2-HOS100 Fiber Optic 1LC MAX2-FOS100 Dante with HDMI outputs MAX2-AOD100
Built in Dante™ IO	2x2 Dante™ built in to Frame
Power	100-240VAC 50/60Hz Redundant power supply is standard
Power Consumption (max)	600W + 600W + 600W + 600W = 2,400W
Operational Temperature	32° ~ 117° F (0° to 47° C)
Storage Temperature	- 40° ~ 158° F (-40° to 70° C)
Humidity	0 ~ 90% non-condensing
MTBF	90,000 hours
Dimensions (W x D x H)	TBD
Shipping Dimensions (with cover box)	TBD
Rack mounting	TBD
Weight (w/o Cards installed)	TBD
Shipping Weight (with accessories, hard metal case, and cover box)	TDB
Shipping Weight of Individual Cards	2 lbs (0.9 kg)

Input Cards Specification

HDMI Input Card - MAX2-HIS100	
Number of Port	4 HDMI ports, 4 audio In/out ports
Connector Type	Female HDMI connector, Female phoenix stereo jack
Signal Type	RGB digital Video (DVI and HDMI standards) or YCbCr digital component Video (HDMI)
Digital Audio	Dolby Digital® Plus, Dolby® TrueHD, DTS-HD High Res, DTS-HD Master Audio™, up to 8ch PCM
Audio Extraction	Via phoenix stereo Audio out ports
Audio Insertion	Via phoenix stereo Audio in ports
Maximum Data Rate	18 Gbps per color (R,G,B)
Maximum Pixel Clock	300 MHz
Standard	HDMI 2.0b
Switching Speed	Max 200ns
Output Re-clocking	Automatic
Output Peripheral Device Power	600 mA per Output
Input Equalization	Automatic, Max 30m 1920 x1200 @50/60Hz or 1080p; 8 bit color, Ultra HD 4K
Resolution	Up to Ultra HD 4K 4096z2160 4:4:4 @60Hz
HDCP Compatible	HDCP version 2.2
Support Hot Plug Detection	Yes
Single Card Weight	0.5 lbs (0.23 kg)

DisplayPort Input Card - MAX2-DIS100

Number of Port	4 DisplayPort ports, 4 audio In/out ports
Connector Type	Female HDMI connector, Female phoenix stereo jack
Signal Type	RGB digital Video (DVI and HDMI standards) or YCbCr digital component Video (HDMI)
Digital Audio	Dolby Digital® Plus, Dolby® TrueHD, DTS-HD High Res, DTS-HD Master Audio™, up to 8ch PCM
Audio Extraction	Via phoenix stereo Audio out ports
Audio Insertion	Via phoenix stereo Audio in ports
Maximum Data Rate	18 Gbps per color (R,G,B)
Maximum Pixel Clock	300 MHz
Standard	HDMI 2.0b
Switching Speed	Max 200ns
Output Re-clocking	Automatic
Output Peripheral Device Power	600 mA per Output
Input Equalization	Automatic, Max 30m 1920 x1200 @50/60Hz or 1080p; 8 bit color, Ultra HD 4K
Resolution	Up to Ultra HD 4K 4096z2160 4:4:4 @60Hz
HDCP Compatible	HDCP version 2.2
Support Hot Plug Detection	Yes
Single Card Weight	0.5 lbs (0.23 kg)

HDBaseT 3.0 Input Card - MAX2-CIS100	
Number of Port	4 HDBaseT ports, 4 audio In/out ports
Connector Type	Female RJ45 connector, Female phoenix stereo jack
Supported Twisted Cable Type	CAT5/5e, CAT6/6e, CAT6a, CAT7
Digital Audio	Supported when HDMI signal source used
Audio Extraction	Via phoenix stereo Audio out ports
Audio Insertion	Via phoenix stereo Audio in ports
Supported Twisted Pair Cable Length	330 ft (100m) ; 1080p, 1920x1200 @50/60Hz, Ultra HD 4K
P.O.E Maximum Output Watt	Max 9.6 Watt per channel
Resolution	Up to Ultra HD 4K 4096z2160 4:4:4 @60Hz
Maximum Data Rate	3.4 Gbps per color (R,G,B)
Switching Speed	Max 200ns
HDCP Compatible	HDCP version 2.2
Compatible Extenders	MAX2-CTR100, MAX2-CT100-WP
Single Card Weight	1 lbs (0.45 kg)

Fiber Optical Input Card - MAX2-FIS100

Number of Port	4 SFP+ Optical ports, prepopulated with SFP+ modules (multi-mode) 4 audio In/out ports
Connector Type	Female 1 LC connector, Female phoenix stereo jack
Mode Type	Supports both single mode & multi-mode
Digital Audio	Supported when HDMI signal source used
Audio Extraction	Via phoenix stereo Audio out ports
Audio Insertion	Via phoenix stereo Audio in ports
Operating Distance	Up to 2km when used single mode, Up to 300m when used multi mode
Nominal Peak Wavelength	1310 and 1490, 1550 nm
Transmission Power	> -5 dBm, typical
Maximum Receiver Sensitivity	< -20 dBm, typical
Optical Loss Budget	10 dB, Maximum
Maximum Channel Data Rate	3.4 Gbps each channel
Pixel Data Bit Depth	12 bits per channel, 3 channel (R, G, B)
Rise and Fall Times (20%-80%)	75psec≤ Rise time / fall time
Resolution	Up to Ultra HD 4K 4096z2160 4:4:4 @60Hz
Switching Speed	Max 200ns
HDCP Compatible	HDCP version 2.2
Compatible Extenders	MAX2-FT100, MAX2-FT100-WP
Single Card Weight	1.5 lbs (0.68 kg)

12G-SDI Input Card MAX2-SIS100

Number of Port	4 12G-SDI ports, 4 audio In/out ports
Connector Type	Female BNC connector, Female phoenix stereo jack
Audio Extraction	Via phoenix stereo Audio out ports
Audio Insertion	Via phoenix stereo Audio in ports
Nominal Level	0.8 Vp-p ±10 %
Impedance	75 ohm
Return Loss	< -15 dB @ 5 MHz to 1.5 GHz
Equalization Input Cable Equalization Distance	Automatic or manual SDI: 150m / HD-SDI: 100m / 3G-HD-SDI: 50m
DC Offset	± 0.5 mV with Input at 0 offset
Re-clocking	Automatic
Jitter	<0.3 UI
Rise and Fall Times(20%-80)	135psec≤ Rise time / fall time @2970Mbps
Maximum Data Rate	2.97 Gbps
Auto Data Rate Lock	Yes
Data Types	8 bits or 10 bits
Operation Standard	SMPTE 292M, SMPTE 259M, SMPTE 424M, ITU-RBT.601, ITU-RBT.1120
Single Card Weight	1.5 lbs (0.68 kg)

Output Cards Specification

HDMI Output Card - MAX2-HOS100	
Number of Port	4 HDMI ports, 4 audio out ports
Connector Type	Female HDMI connector, Female phoenix stereo jack
Signal Type	RGB digital Video (DVI and HDMI standards) or YCbCr digital component Video (HDMI)
Digital Audio	Dolby Digital® Plus, Dolby® TrueHD, DTS-HD High Res, DTS-HD Master Audio™, up to 8ch PCM
Audio Extraction	Via 3.5mm stereo Audio out ports
Maximum Data Rate	3.4 Gbps per color (R,G,B)
Maximum Pixel Clock	300 MHz
Standard	HDMI 2.0b
Switching Speed	Max 200ns
Output Reclocking	Automatic
Output Peripheral Device Power	600 mA per Output
Output Equalization	Automatic, Max 30 m 1920 x1200 @50/60Hz or 1080p; 8 bit color, Ultra HD 4K
Resolution	Up to Ultra HD 4K 4096z2160 4:4:4 @60Hz
HDCP Compatible	HDCP version 2.2
Support Hot Plug Detection	Yes
Single Card Weight	0.5 lbs (0.23 kg)

DisplayPort Output Card - MAX2-DOS100	
Number of Port	4 DisplayPort ports, 4 audio out ports
Connector Type	Female HDMI connector, Female phoenix stereo jack
Signal Type	RGB digital Video (DVI and HDMI standards) or YCbCr digital component Video (HDMI)
Digital Audio	Dolby Digital® Plus, Dolby® TrueHD, DTS-HD High Res, DTS-HD Master Audio™, up to 8ch PCM
Audio Extraction	Via 3.5mm stereo Audio out ports
Maximum Data Rate	3.4 Gbps per color (R,G,B)
Maximum Pixel Clock	300 MHz
Standard	HDMI 2.0b
Switching Speed	Max 200ns
Output Reclocking	Automatic
Output Peripheral Device Power	600 mA per Output
Output Equalization	Automatic, Max 30 m 1920 x1200 @50/60Hz or 1080p; 8 bit color, Ultra HD 4K
Resolution	Up to Ultra HD 4K 4096z2160 4:4:4 @60Hz
HDCP Compatible	HDCP version 2.2
Support Hot Plug Detection	Yes
Single Card Weight	0.5 lbs (0.23 kg)

HDBaseT 3.0 Output Card - MAX2-COS100

Number of Port	4 HDBaseT ports, 4 Audio out ports
Connector Type	Female RJ45 connector, Female phoenix stereo jack
Supported Twisted Cable Type	CAT5/5e, CAT6/6e, CAT6a, CAT7
Digital Audio	Supported when HDMI signal source used
Audio Extraction	Via phoenix stereo Audio out ports
Supported Twisted Pair Cable Length	330 ft (100m) ; 1080p, 1920x1200 @50/60Hz, Ultra HD 4K
P.O.E Maximum Output Watt	Max 9.6Watt per channel
Resolution	Up to Ultra HD 4K 4096z2160 4:4:4 @60Hz
Maximum Data Rate	3.4 Gbps per color (R,G,B)
Switching Speed	Max 200ns
HDCP Compatible	HDCP version 2.2
Compatible Extenders	MAX2-CTR100
Single Card Weight	1 lbs (0.45 kg)

Fiber Optical Output Card - MAX2-FOS100	
Number of Port	4 Optical ports, 4 Audio out ports
Connector Type	Female 1 LC connector, Female phoenix stereo jack
Mode Type	Supports both single mode &multi mode
Digital Audio	Supported when HDMI signal source used
Audio Extraction	Via phoenix stereo Audio out ports
Operating Distance	Up to 2km when used single mode, Up to 300m when used multi mode
Nominal Peak Wavelength	1310,1550 nm
Transmission Power	> -5 dBm, typical
Maximum Receiver Sensitivity	< -20 dBm, typical
Optical Loss Budget	10 dB, Maximum
Maximum Channel Data Rate	3.4 Gbps each channel
Pixel Data Bit Depth	12 bits per channel, 3 channel (R, G, B)
Rise and Fall Times (20%-80%)	75psec≤ Rise time / fall time
Resolution	Up to Ultra HD 4K 4096z2160 4:4:4 @60Hz
Switching Speed	Max 200ns
HDCP Compatible	HDCP version 2.0
Compatible Extenders	PM-FR101-U, PM-FR102-U, PM-FR103-U
Single Card Weight	1.5 lbs (0.68 kg)

12G SDI Output Card - MAX2-SOS100

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Number of Port	4 HDMI ports, 4 Audio out ports
Connector Type	Female SDI connector, Female phoenix stereo jack
Signal Type	RGB digital Video (DVI and HDMI standards) or YCbCr digital component Video (HDMI)
Digital Audio	Dolby Digital® Plus, Dolby® TrueHD, DTS-HD High Res, DTS-HD Master Audio™, up to 8ch PCM
Audio Extraction	Via phoenix stereo Audio out ports
Maximum Data Rate	3.4 Gbps per color (R,G,B)
Maximum Pixel Clock	165 MHz
Standard	HDMI 2/0b
Switching Speed	Max 200ns
Output DVI Re-clocking	Automatic
Output Peripheral Device Power	600 mA per Output
Output Equalization	Automatic, Max 30m 1920 x1200 @50/60Hz or 1080p; 8 bit color
HDCP Compatible	HDCP version 2.2
Support Hot Plug Detection	Yes
Single Card Weight	0.5 lbs (0.23 kg)

Dante Audio Output Card - MAX2-AOD100	
Number of Port	4 HDMI ports, 2 Dante ports
Connector Type	Female HDMI connector, Female RJ45
Signal Type	RGB digital Video (DVI and HDMI standards) or YCbCr digital component Video (HDMI)
Digital Audio	Up to 8ch LPCM
Audio Insertion	Via phoenix stereo Audio in ports
Maximum Data Rate	18 Gbps per color (R,G,B)
Maximum Pixel Clock	300 MHz
Standard	HDMI 2.0b
Switching Speed	Max 200ns
Output Re-clocking	Automatic
Output Peripheral Device Power	600 mA per Output
Input Equalization	Automatic, Max 30m 1920 x1200 @50/60Hz or 1080p; 8 bit color, Ultra HD 4K
Resolution	Up to Ultra HD 4K 4096z2160 4:4:4 @60Hz
HDCP Compatible	HDCP version 2.2
Support Hot Plug Detection	Yes
HDMI Digital Audio Formats	LPCM up 8ch
IP Audio transmitter Type	Dante/ASE67, Software Selectable
IP Output Channel	HDMI Audio 32 Channel
IP Audio format	Uncompressed, 24bit, 48khz
IP Audio Lantency	Selectable, 0.25ms, 0.5ms, 1.0ms, 2.0msm5.0ms
Single Board Weight	0.5 lbs (0.23 kg)

Extenders Specifications

HDBaseT 3.0 Transceiver - MAX2-CTR100

Connector Types	(1) HDBaseT port (1) Female HDMI port (1) 5-pin Phoenix for RS-232/Audio out
Signal Type	HDMI, HDBaseT w/Deep Color, 3D, & 4K
Supported Twisted Cable Type	CAT5/5e, CAT6/6e, CAT6a, CAT7
Digital Audio Formats	Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio™, LPCM up to 8 channels
Compliance	HDCP 2.2
Power Injection for CATx Extenders	POE Injector
Maximum Resolution	up to Ultra HD/4K (4096x2160, 4:4:4 @ 50/60Hz)
Maximum Data Rate	18 Gbps
Shipping Dimensions (W x D x H)	6" X 5.4" X 1.25"
Shipping Weight	1.5 lb. (0.68 kg)
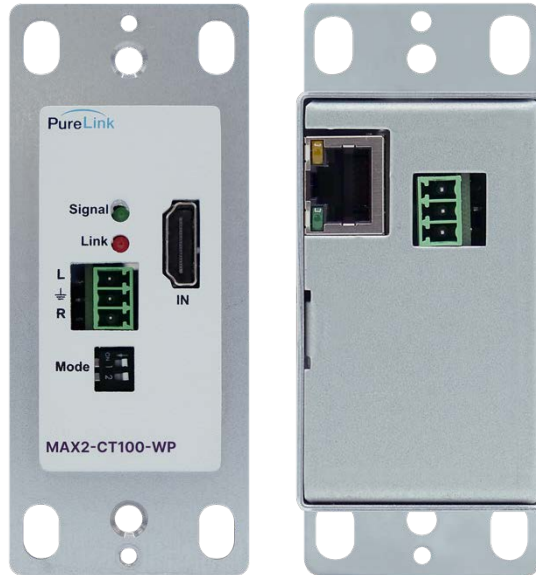
HDBaseT 3.0Wall Plate - 1 Gang Plate - MAX2-CT100-WP

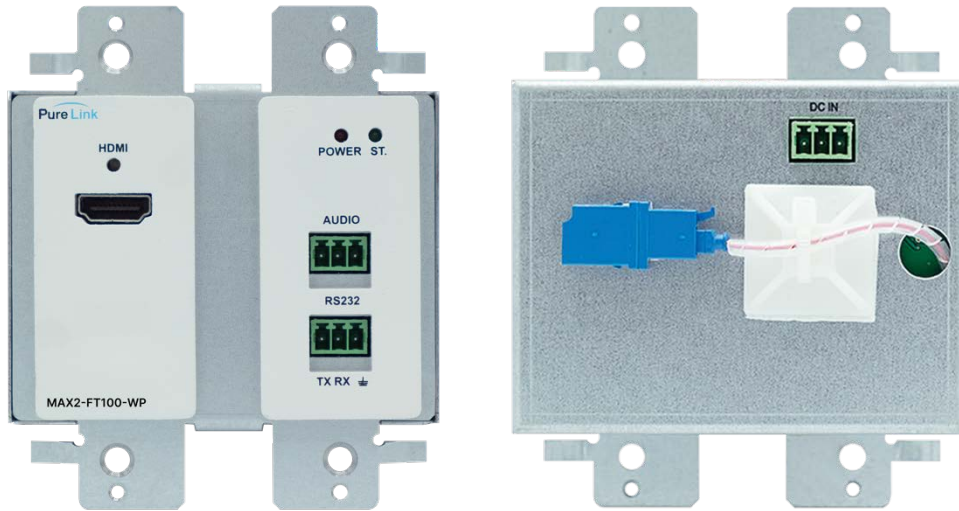|	
Connector Types	(1) HDBaseT port (1) Female HDMI port (1) 3pin Phoenix
Signal Type	HDMI, HDBaseT w/Deep Color, 3D, & 4K
Supported Twisted Cable Type	CAT5/5e, CAT6/6e, CAT6a, CAT7
Digital Audio Formats	Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio™, LPCM up to 8 channels
Compliance	HDCP 2.2
Power Injection for CATx Extenders	POE Injector
Maximum Resolution	up to Ultra HD/4K (4096x2160, 4:4:4 @ 50/60Hz)
Maximum Data Rate	18 Gbps
Shipping Dimensions (W x D x H)	1.94" X 3.06" X 4"
Shipping Weight	1.0 lb. (0.34 kg)

1LC Fiber Transmitter -   MAX2-FT100

Connector Types	(1) 1LC Fiber input port (1) Female HDMI port (1) 3-pin Phoenix stereo audio for Extraction (1) 3-pin Phoenix for ES-232
Signal Type	Fiber w/Adaptive Singlemode & Multimode processing
Digital Audio Formats	Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio™, LPCM up to 8 channels
Maximum Data Rate	18 Gbps
Operating Distance	multimode 300m, Singlemode 2Km
Compliance	HDCP 2.2
Maximum Resolution	up to Ultra HD/4K (4096x2160, 4:4:4 @ 50/60Hz)
Nominal Peak Wavelength	1550nm, 1310nm
Maximum Receiver Sensitivity	Singlemode -15dbm, multimode -16dbm

1 LC Fiber Wall plate transmitter - 1 Gang Wall Plate - MAX2-FT100-WP

Connector Types	(1) 1LC Fiber input port (1) Female HDMI port (1) 3 Pin Phoenix
Signal Type	Fiber w/Adaptive Singlemode & Multimode processing
Digital Audio Formats	Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio™, LPCM up to 8 channels
Maximum Data Rate	18 Gbps
Operating Distance	multimode 300m, Singlemode 2Km
Compliance	HDCP 2.2
Maximum Resolution	up to Ultra HD/4K (4096x2160, 4:4:4 @ 50/60Hz)
Nominal Peak Wavelength	1550nm, 1310nm
Maximum Receiver Sensitivity	Singlemode -15dbm, multimode -16dbm

| 1LC Fiber Receiver - MAX2-FR100	
Connector Types	(1) 1LC Fiber output port (1) Female HDMI port (1) 3-pin phoenix for audio extraction (1) 3-pin Phoenix for ES-232
Signal Type	Fiber w/Adaptive Singlemode & Multimode processing
Digital Audio Formats	Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio™, LPCM up to 8 channels
Maximum Data Rate	18 Gbps
Operating Distance	multimode 300m, Singlemode 2Km
Compliance	HDCP 2.2
Maximum Resolution	up to Ultra HD/4K (4096x2160, 4:4:4 @ 50/60Hz)
Nominal Peak Wavelength	1550nm, 1310nm
Maximum Receiver Sensitivity	Singlemode -15dbm, multimode -16dbm

POE Injector Specifications

POE Injector - MAX2-POE-PSU	
Voltage Per output	48V
INPUT VOLTAGE RANGE	90 - 264 Vac; 127 - 350 Vdc
NUMBER OF OUTPUTS	UP TO 16 (Module)
REGULATION	±2%
RIPPLE	480mV
MAX CONTINUOUS LOAD (FREE AIR)	8.3 A
MAX PEAK LOAD (FREE AIR)	13.5A
MAX CONTINUOUS LOAD (FORCED AIR)	13.5A
MAX. PEAK LOAD (FORCED AIR)	15.6A
Operating temperature	-20 °C to +80 °C (derate at 50 °C), startup at -40 °C
Operating humidity	5% to 95% (non-condensing)
Dimension & Weight	12 ⅝" X 9 ⅜" X 3.5" / 10Lbs

Application Diagram for MAX2-POE-PSU
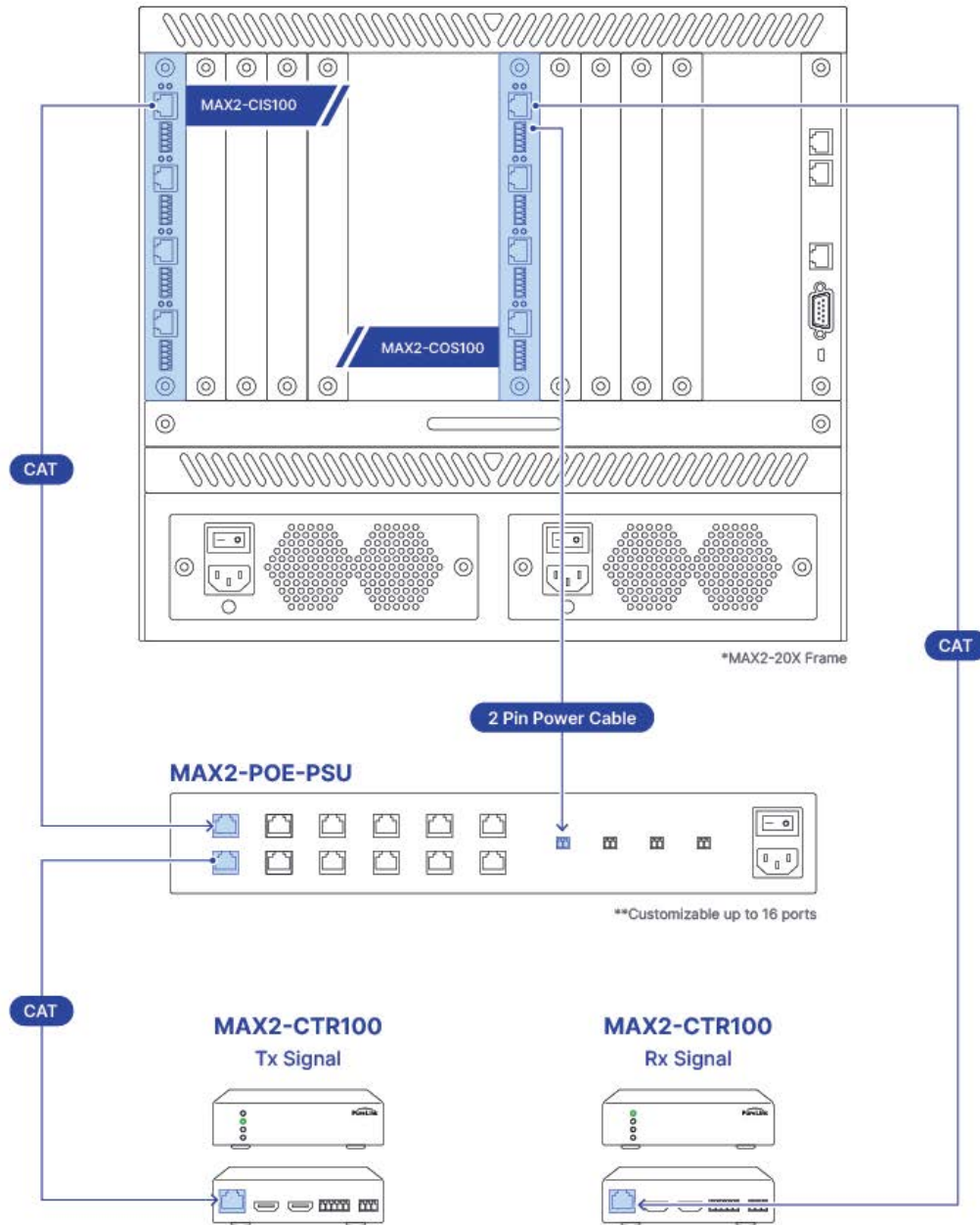
HDBaseT 3.0 (MAX2-CIS100, MAX2COS100, MAX2-CTR100)

Work distance

Cable Type	Bandwidth	HDBaseT Link rate	Max Video Resolution	Distance
CAT6a (U/FTP)	450 < Mcsc < 594	16Gbps	4K 4:4:4 @60	100m(straight) 70m(with patches)
	<= 450	12Gbps	4K 4:2:0 @60	100m(with patches)
CAT5e/CAT6 (UTP)	450 < Mcsc < 594	16Gbps	4K 4:4:4 @60	40m(straight) 30m(with patches)
	<= 450	12Gbps	4K 4:2:0 @60	70m(with patches)

Installation

Package Contents

The shipping group consists of the followings:

- 1 x MAX2 series Matrix Router MainFrame
- *Input / Output Cards purchased separately*
- AC Power Cords
- 1 x RS-232C Cable (crossed type)
- 1 x RJ-45 UTP Cable (crossed type)
- User's Manual

Installation Environments

For installation environments, we recommend the following environments.

- Below 30°C of ambient temperature
- Install and operate in the environment below 60% of ambient humidity (Best condition)
- Use it in the environment of free of vibrations and dusts and in good ventilation condition
- Avoid areas with direct sunlight, heat sources, or high levels of EMI
  * EMI: Electro-Magnetic Interference
- Recommend stabilized AC Input power
  * AVR: Automatic Voltage Regulator
- All physical connections to the product use industry-standard connectors.
- Be careful when you contact the product because some parts can be somewhat hot

Install Card as follows.

1. Align the Card with metal guide rail.
2. Gently slide the Card into the frame until it connects to the main frame.
3. Tighten the top and bottom screw knobs (clockwise) to lock the Card to the main frame.

Removing Card as follows.

1. Disconnect any connected cables.
2. Loosen and pull the top and bottom screw knobs (counterclockwise) to unlock the Card from the main frame.
3. Gently slide Card out of the main frame

Installing the Matrix Router in a Rack

Note) **When mount the Matrix Router in a rack, ensure that none of the fans have restricted air flow.**

Rack Installation Tips

- Write down the serial number (usually located on the bottom of the unit) in an easily accessible location prior to installing the unit in a rack
- It is recommended to test unit to ensure the unit is working properly prior to installing the unit in a rack
- It is recommended to use two or more people installing the unit in a rack
- For HDMI Input and/or Output Cards, we recommend using copper cable no longer than 330ft (10 meters) for HD Video quality assurance. Above 330 ft (10 meters), we recommend using the HDBaseT or Fiber Optic extension system. This will assure a future with higher resolution Video transmission.
- For HDBaseT Input and/or Output Cards, MAX2 HDBaseT Transceivers are required.
- For Fiber Input and/or Output Cards, MAX2 Fiber Extenders are required. MAX2 Fiber Extender Transmitters pair with MAX2 Fiber Input Card and MAX2 Fiber Receivers pair with MAX2 Fiber Output Card.

- Use crossed RS-232/422 cable for serial control.
- Use crossed RJ-45 cable for LAN control.

Installation and Setup

- Place the Matrix Router into a desired position and screw in the rack ear holes.
  - *   Recommended to screw all holes for secure installation
- Plug power cord into power supply unit on the Matrix Router. For redundancy power use, plug power cords into both power supply unit.
- Connect source devices to the Matrix Router's Input Card using appropriate cables.
- Connect display devices to the Matrix Router's Output Card using appropriate cables. Connect control devices to the Matrix Router's communication ports.
  - * Command Protocols are communicated through RS-232/422, LAN, or front panel touch screen.
- Make sure any connected Extenders' power is on.
  - *   HDBaseT Extenders may not need power if they will be powered via POE
- Turn on the power of display devices.
- Turn on the power of Matrix Router
- Turn on the power of source devices.

> **Note)**   **For most cases, PureLink's Auto EDID factory default setting will result in a satisfactory image on the display. It's almost a plug-n-play system. There may be cases where additional adjustment is required.**

Cable Termination

- **HDBaseT (HDBaseT) cable**
- **RS-232/422 cable (MAX2 Matrix)**
- **LAN cable**
- **Audio cable**
- **RS-232/422 cable (MAX2 Extenders)**

HDBaseT Cable Termination (for HDBaseT Input/Output Cards)

PM series Matrix Router and Extenders are designed TIA/EIA-566-B Standard. Please ensure that each PIN layout of the cable corresponds with the picture below before connecting the cable. Please note that HDBaseT or above level cable enables better quality and longer distance.
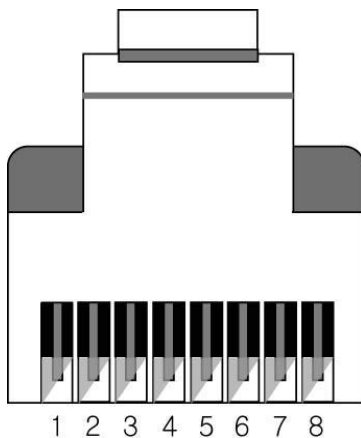
Pin	TIA/EIA-568B	Signal
	Wire color	Digital RGB
1	Orange/ White	TMDS Data2+
2	Orange	TMDS Data2-
3	Green/ White	TMDS Data1+
4	Blue	TMDS Data0+
5	Blue/ White	TMDS Data0-
6	Green	TMDS Data1-
7	Brown/ White	TMDS Clock+
8	Brown	TMDS Clock-

RS-232/422 Cable Termination (for Control)

Note)   Crossover (Null modem) cable must be used for the communication with PM series Matrix Router

The following table shows the pinout of the RS-232/422 connector. Note that in the pinout table, some transmit/receive functions (abbreviated as Tx/Rx) are different for RS-232 versus RS-422. DB9 cables are available with male-to-male, female-to-female, and male-to-female connectors. PM series Matrix Router's RS-

232/422 port uses a male DB9 connector and therefore requires a cable with a female connector.
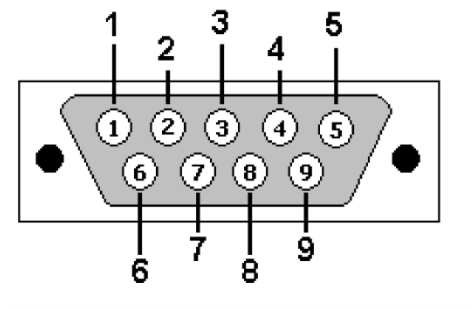
Pin	RS-232	RS-422
1	Not used	Not used
2	Rx: Receive	Rx-: Receive (-)
3	Tx: Transmit	Tx-: Transmit (-)
4	Not used	Not used
5	Ground	Ground
6	Not used	Not used
7	Not used	Tx+: Transmit (+)
8	Not used	Rx+: Receive (+)
9	Not used	Not used

LAN Cable Termination (for Control)

The following table shows the pinout of the LAN connector. Note that in the pinout table, some transmit/receive functions (abbreviated as Tx/Rx) are different for straight-through cable and crossover LAN cable.

Straight-through Cable: for connection of PM series Matrix Router to an Ethernet network

Crossover Cable : for direct connection between the PC or controller and the PM series Matrix Router.
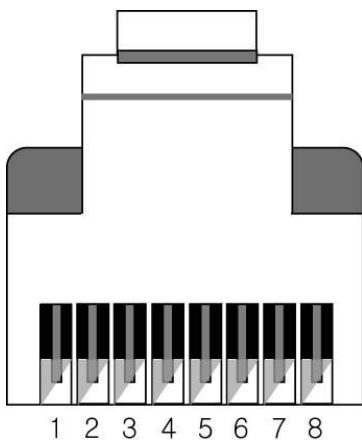
Pin	Crossover Cable	
	End 1 Wire Color	End 2 Wire Color
1	Orange/ White	Orange/ White
2	**Orange**	**Green**
3	Green/ White	Green/ White
4	Blue	Blue
5	Blue/ White	Blue/ White
6	**Green**	**Orange**
7	Brown/ White	Brown/ White
8	Brown	Brown

Operation

MAX2 series Matrix Router can be operated via three convenient methods.
1) Front panel LCD touch screen
2) RS-232/422C
3) LAN (TCP/IP)

Front Panel LCD Touch Screen Operation

Front panel LCD touch screen of MAX series Matrix Router is designed for user to operate and configure settings through six main menus;

1. **Create** - Configuring Input - Output switching connections
2. **Preset** - Create, save and recall the presets
3. **EDID** - Configure EDID settings
4. **Settings** - Configure communication settings and resetting the system
5. **Info** – Check system, input, and output status
6. **I/O Configuration** - Configure I/O options
7. **Dante**

1. Create

MAX2 series Matrix Router is designed to create and switch. This section will guide users how to create/disconnect switching Video connections.
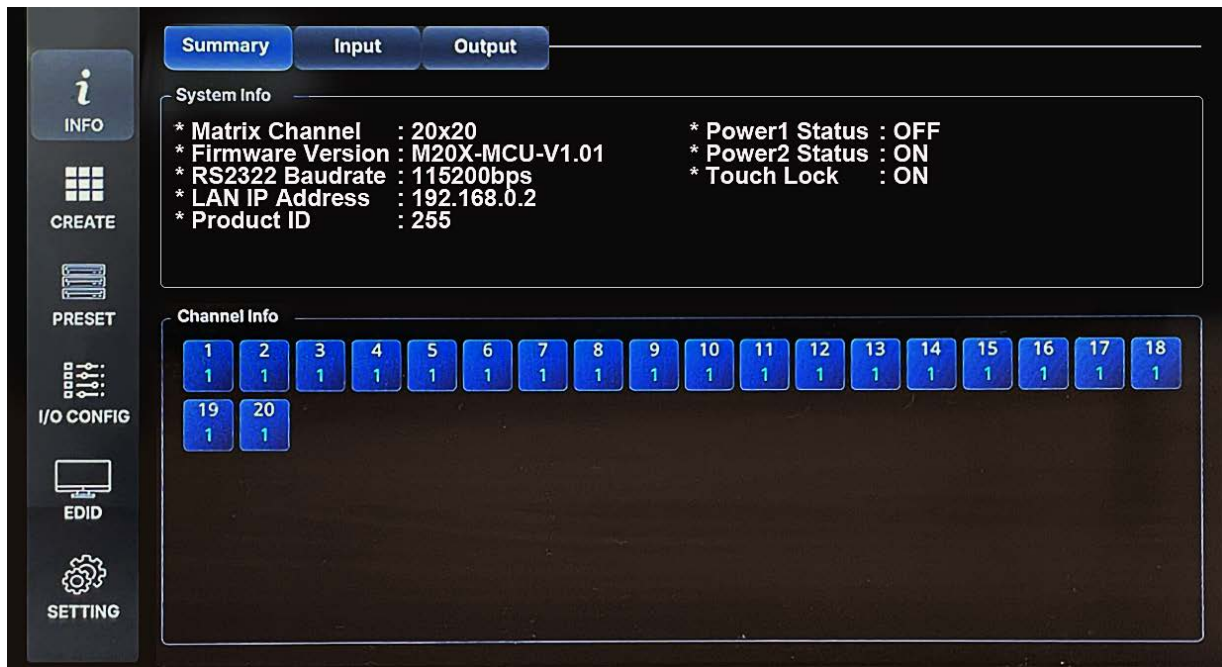
1.1) Video
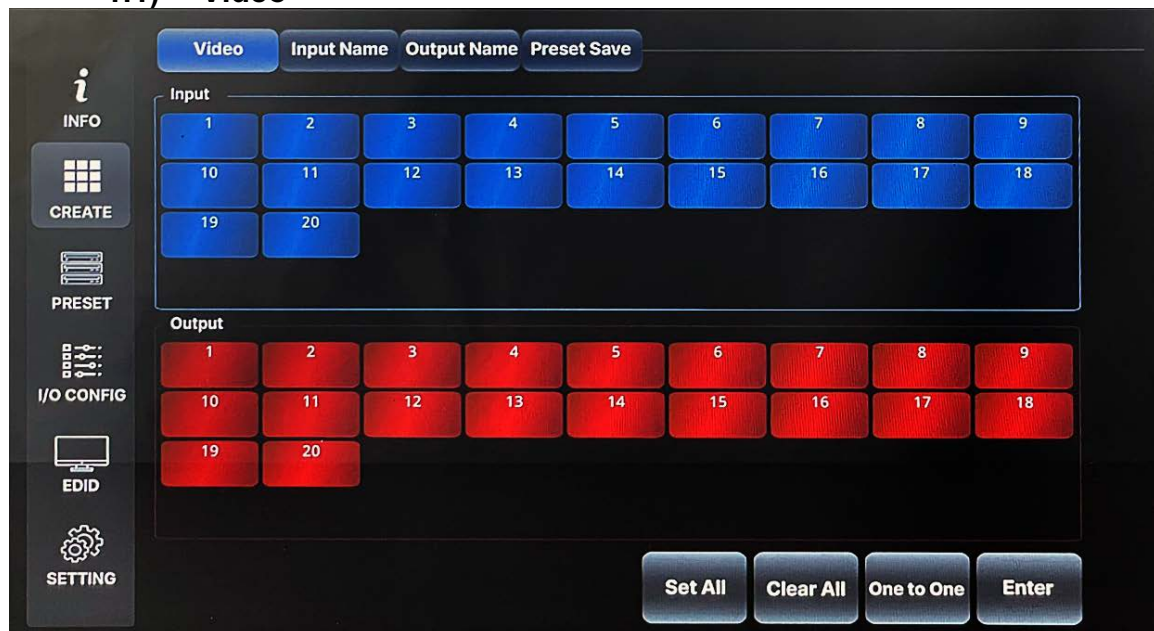
This section is to switch Video connection only. Select Input and Output numbers to route source signal to destination devices. EX) select 2->1 = input 2 is routed to output 1.
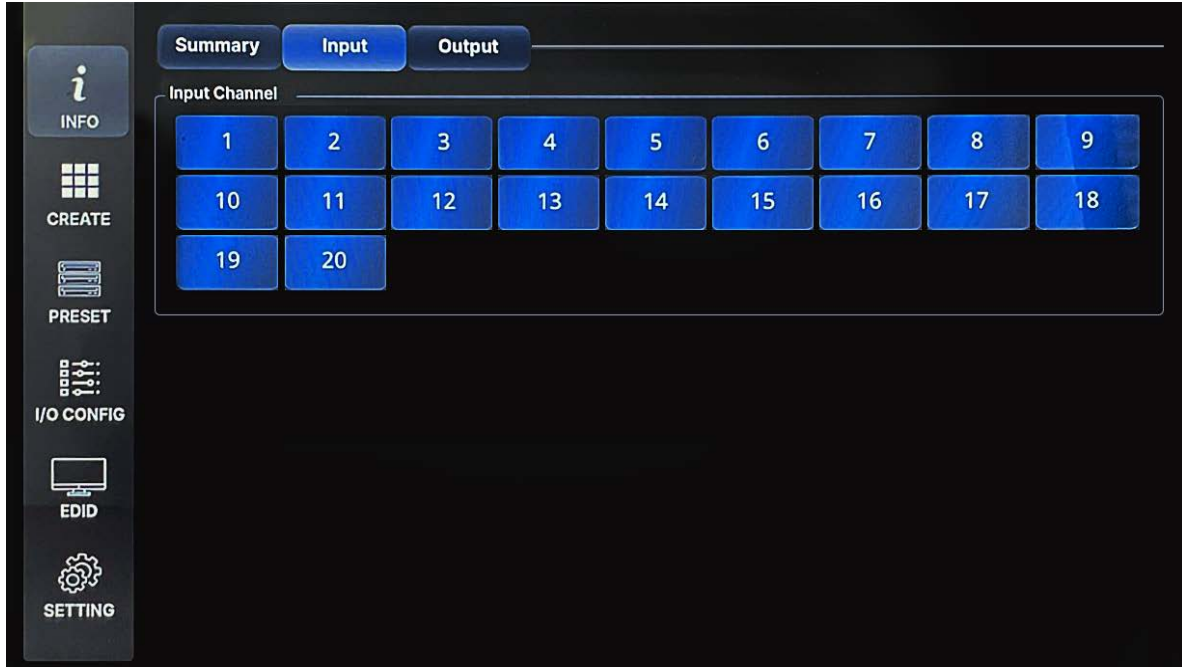
1.2)   Channel info
- It displays Matrix Router's current Video switching status

2) Summary

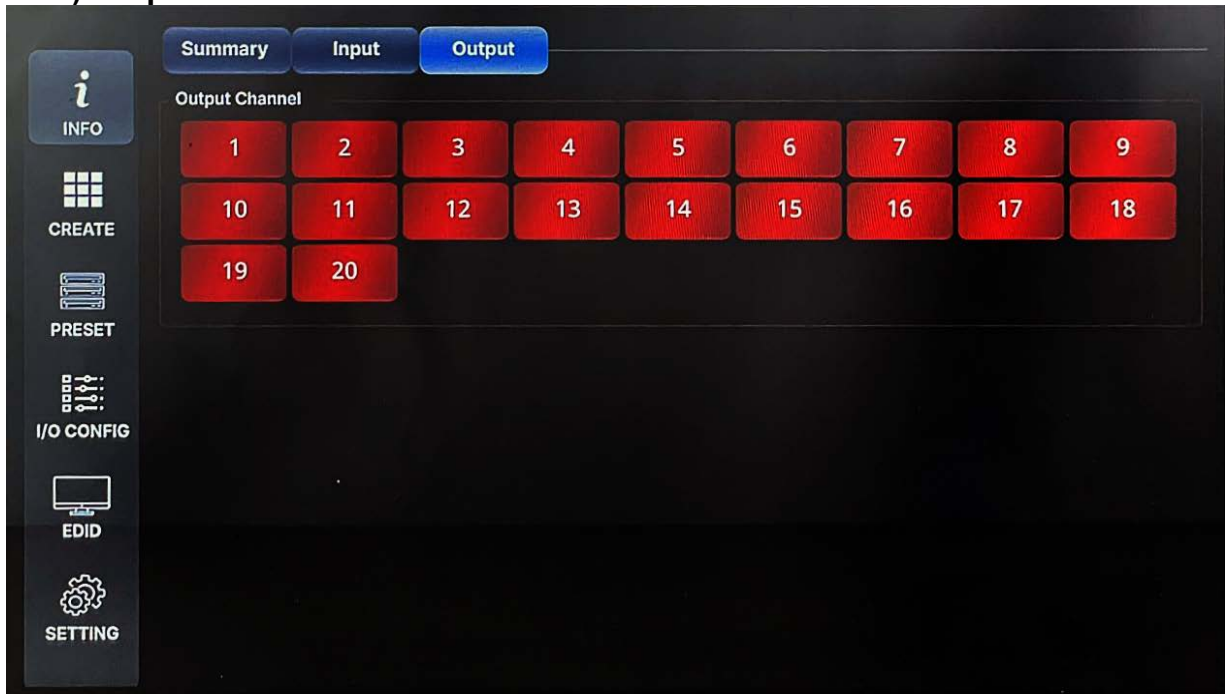This section is the information of matrix firmware version, Baud rate, LAN and status.

3) Input

MAX2 Matrix Router has a built-in signal analyzing function which enables the user to check the detailed information of incoming and outgoing signals.

- It displays Input port number, Card type, firmware version, Status information, EDID information, incoming signal's resolution, Video format, and transmission status.

4) Output

MAX2 Matrix Router has a built-in signal analyzing function which enables the user to check the detailed information of incoming and outgoing signals.
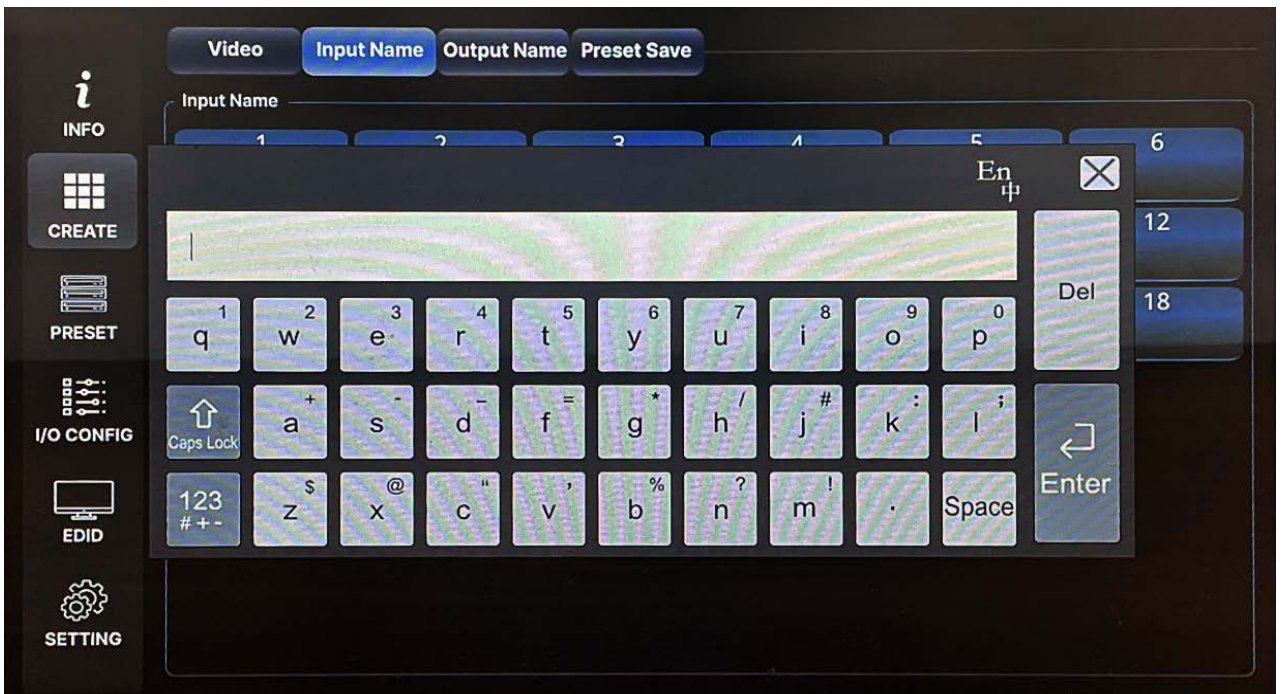
● It displays Output port number, Card type, firmware version, selected Input channel number, connected monitor's EDID information, incoming signal's resolution, Video format, and transmission status.

Name Edit (video and audio)
MAX2 matrix series allows you to change/edit names of both input and output
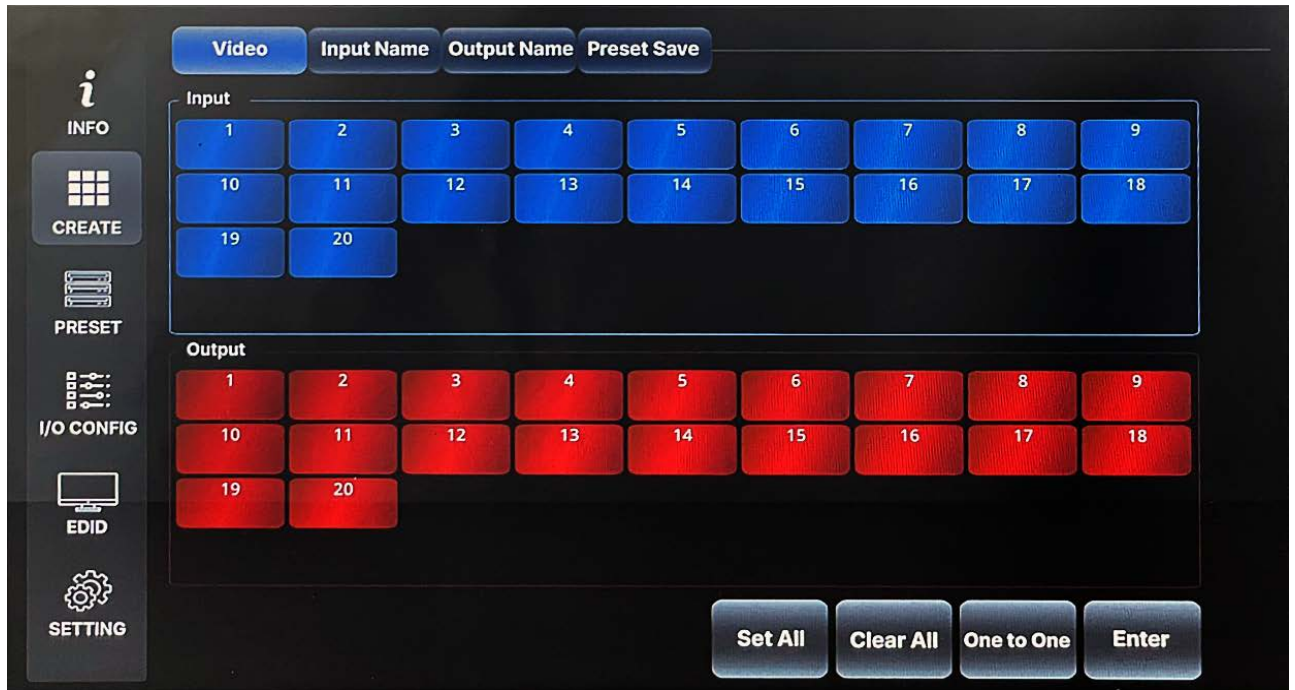 devices.

*Name Edit page for video

- Press the input to change/edit using the keypad shown as above (video)

1) Video

This section is to switch Video connection only. Select Input and Output number to route source signal to destination devices to execute.

2) Set All
   "Set All" button is to select all the Output w/o pushing them individually.

3) Clear CH
   "Clear CH" button is to clear all the Output that was selected w/o pushing them individually.

4) One to One
   "One to One" button is to create an one to one connection between Input and Output; for example, connect Input #1 to Output #1, Input #2 to Output #2, ~ Input #15 to Output #15, Input #16 to Output #16.

Settings
MAX2 series Matrix Router's communication setting can be configured using a front panel touch screen LCD not needing an external PC or device. This section will demonstrate how to set RS-232, LAN, and Product ID information.

1) RS232

There are four values that need to be set for serial communication; baud rate, data bits, stop bits, and parity. Click and select each value using the touch screen and push enter button to save.

> Factory default (recommended) settings for serial communication are:
> Baud rate - 19200
> Data bits - 8
> Parity - none
> Stop bits - 1
> Flow control - none

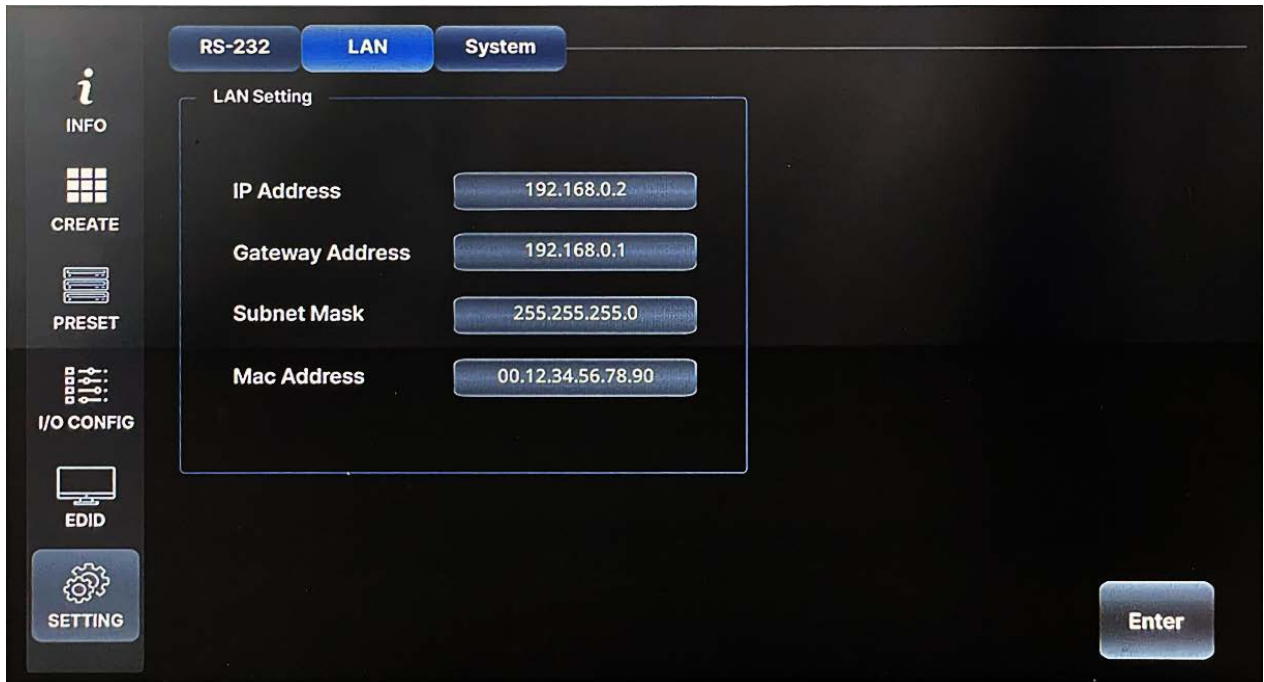and supported settings are:
  Supported Baud Rate: 4800 Bps, 9600 Bps, 14400 Bps, 19200 Bps, 38400 Bps, 57600Bps, 76800 Bps, 115200 Bps
  Supported Data bit: 5 bit, 6 bit, 7 bit, 8 bit
  Supported Parity: Non, Even, Odd
  Supported Stop bit: 1 bit, 2 bit

2) LAN

MAX2 series Matrix Router can be controlled through the 10/100 base Ethernet port using either GUI (graphic user interfaces) or a command line interface. The graphic user interfaces use a standard web browser such as Microsoft Internet Explorer.

There are four values that need to be set for LAN communication: IP address, Gateway address, Subnet mask, and Mac address. Click and select each value using the touch screen and push enter button to save.

> **Note) Please contact your Network Administrator for network information to avoid any IP conflict.**

Factory default settings for LAN communication are:
　　IP Address:　　　　　192.168.000.002
　　Gateway Address:　　192.168.000.001
　　Subnet Mask:　　　　255.255.255.000
　　Mac Address:　　　Matrix Router has its own MAC address, and that MAC address allows users to communicate with PC network solutions without any communication conflict.
　　Use a number keypad to set network information.
　　Use "." to move to the next section.

3) Router ID

By setting a different ID to the Matrix Router, up to 255 units of MAX2 series Matrix Router can be connected and operated in the same network either via serial or LAN communication. Router ID can be set between 001 ~ 255. Factory default setting is 001.

> **Note)** **Router ID is associated with command control Protocol; therefore, it is important to remember Matrix Router's current Router ID.**

Preset
MAX2 series Matrix Router provides a Preset function for users to execute predefined multiple switching at once. Presets can be saved and recalled from the front panel touch screen. Preset only works for Video switching.

● All presets remain stored when power is lost and restored unless the user sets the Matrix Router to the factory reset.
● When a preset is recalled, it replaces the current configuration. The recalled preset overwrites all of the current configuration.

1) Preset Select
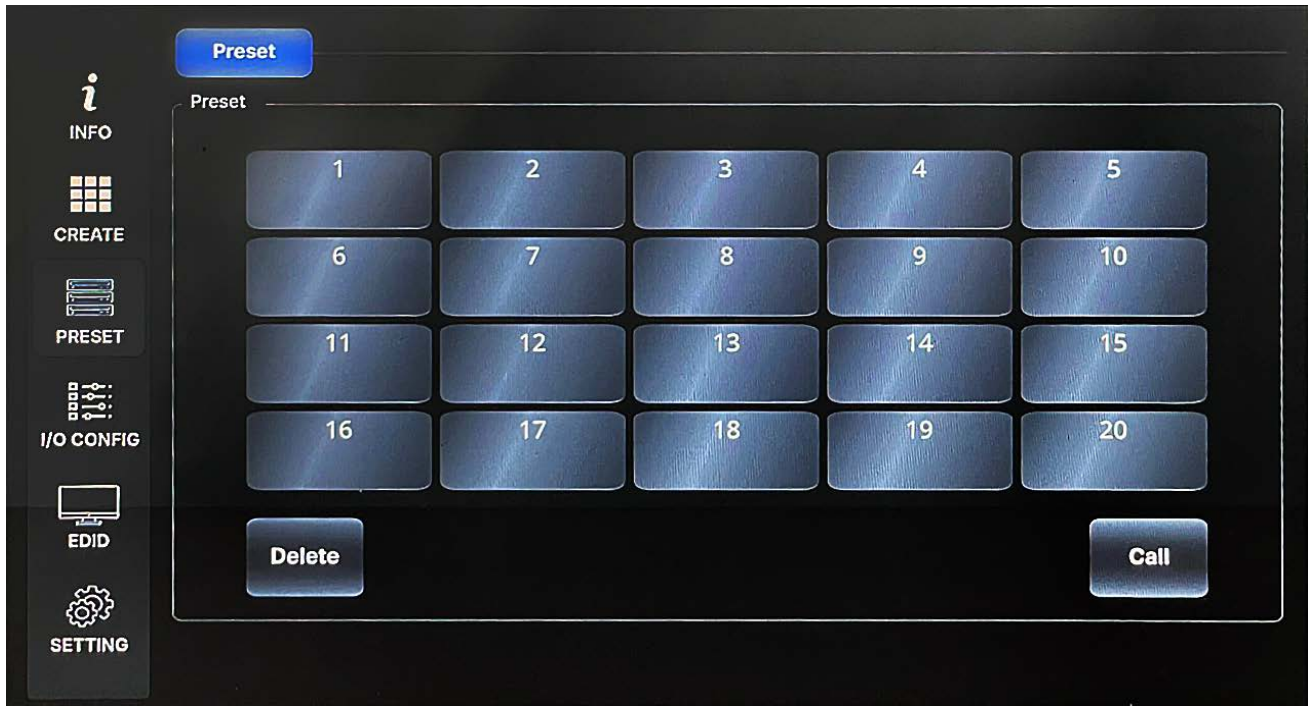
Select preset # where you want to create, edit channel, edit name, delete, or recall preset.
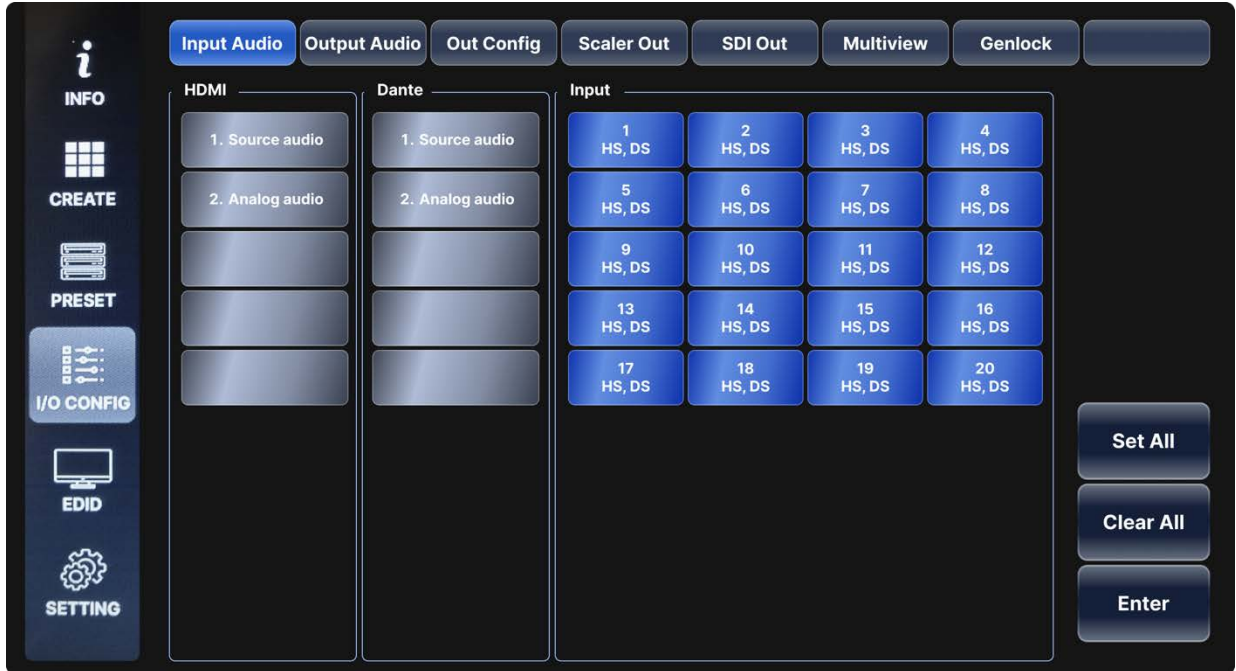
2) Preset load

Select preset # and then press the call button to recall pre-programmed preset settings.

I/O Configuration

On this I/O configuration menu, users can configure Input and Output Video settings.

1. Input audio

- You can configure Source audio or Analog audio (Embedding/ De-embedding)
- You can configure Dante audio (Embedding/ De-embedding)

2. Output audio

- You can configure Source audio or Analog audio (De-embedding)
- You can configure dante audio (De-embedding)

3. Output configuration

Configuration on each output of Media Axis2 can be changed through the Output Config page.
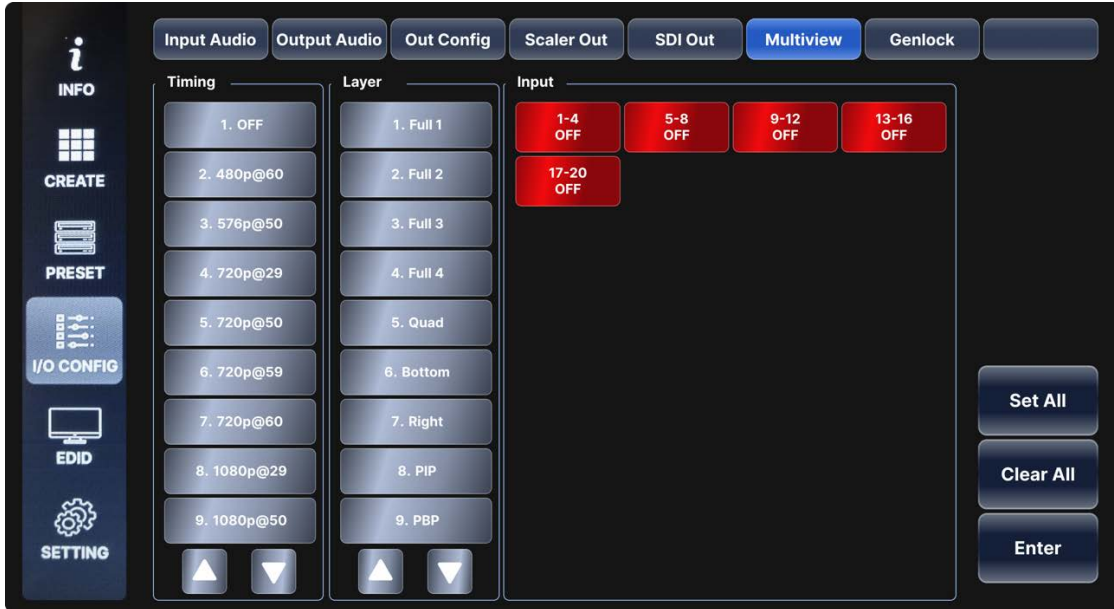
4. Scaler out

-For scaling output, you can set output resolution independently per output channel.
-Select output # -> Output timing -> Enter
-Multiple Outputs can be selected at once

5. Multiview

Configuration multiview on each output of Media Axis2 can be changed through the Output

6. SDI Out scaler

-For scaling output, you can set output resolution independently per output channel.

-Select output # -> Output timing -> Enter

-Multiple Outputs can be selected at once

EDID
MAX Matrix Router provides Auto EDID management system; easy and fail-safe way to handle EDID, via EDID library system and EDID emulation.

What's EDID?
Extended **D**isplay **I**dentification **D**ata (**EDID**) is an information set that digital display provides to describe its capabilities to a Video source. Video source will know what kinds of displays are connected and it will determine which resolution to Output according to the EDID information received from the display.

The EDID normally includes manufacturer name and serial number, sets of capable resolution including native resolution, supported timing, pixel mapping data (for digital displays only) , etc.

In a digital connectivity environment; in order to support the maximum resolution of a connected monitor, an EDID handshake is critical because improper EDID handshake between sources to the display will result in no image on the display.

EDID handshake may sound simple; however, with multiple peripheral devices within the chain, display's EDID information easily get lost or blocked while it is traveling to the source device.

MAX series Matrix Router provides Auto EDID management system to meet today's sophisticated digital connectivity integration environment.
Auto EDID management system

EDID library
14 Most widely used EDID data is pre-programmed internal EEPROM chipset which the user can take and save onto any of the Matrix Router's Input EEPROM.
EDID library list

By optimizing factory default EDID and EDID library features, in most cases, MAX Matrix Router will work out of the box without any additional configuration.

Emulation
The user can easily save an EDID data from any display devices directly onto the Matrix Router's Input port or EDID library's empty spot. By saving the display device's EDID information on the Matrix Router Input port, the Input port will act as a display to the Video source.

> **Note)** **There may be display devices that do not allow other devices to emulate its EDID data.**

> **Note)** **Certain EDID data may not be compatible with some devices, in this case, it is recommended to use scaling option**

1) External EDID (Emulation)

This menu is to emulate EDID data from any display devices that are connected to the Matrix Router's Output via copper cables and save it on to Matrix Router's Input EEPROM.

✔ For HDBaseT and Fiber Output Cards, EDID emulation is not possible. In this case, try the EDID library feature.
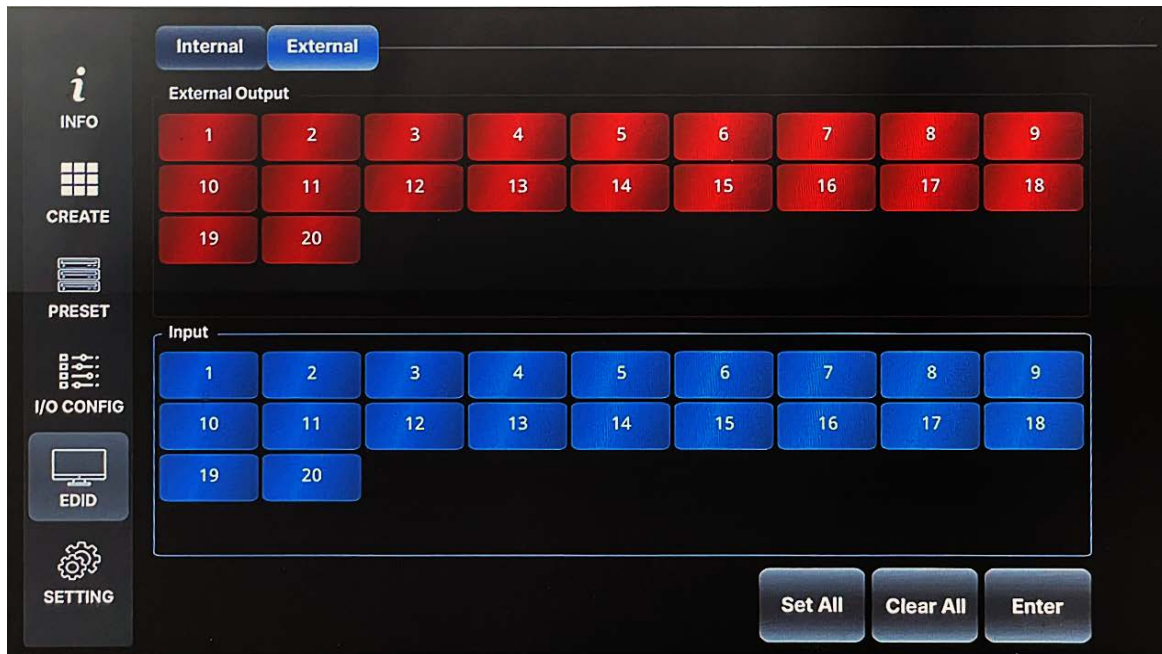
- Select Output #
- Selected Output's display device's EDID information will be displayed.
- Select Input# where selected EDID data will be saved on to. Multiple Input can be selected at once.
- Push the enter button to save.

2) Internal EDID (EDID library)

On this menu, select an EDID from the library and save it on to the Input EEPROM. MAX series Matrix Router has 14 selectable most widely used EDID data pre-programmed and 6 empty slots that can be used to upload and save EDID data from any external display device.
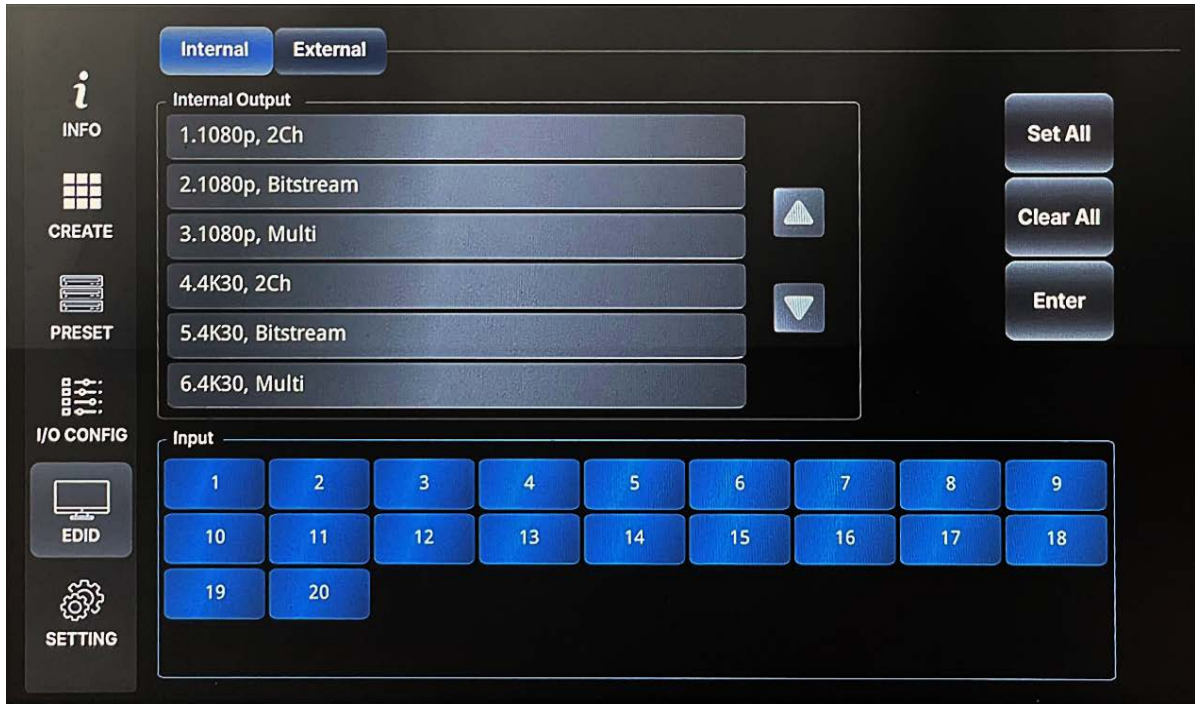
- Select EDID using ↑ ↓ arrow
- Select Input# where selected EDID data will be saved on to. Multiple Input can be selected at once.
- Push enter button to save

Command Line Operation

Control Programmer's Guide (Code Structure and Examples)

This section is designed for programmers who wish to create their own control programs using the command code. All PureLink digital Matrix Routers provide a simple character stream control used by external control devices attached to a PureLink device. Command codes are used primarily for control, during system installation and setup, and for diagnostic purposes.

Command code is a set of alphanumeric characters that combine to form control commands. Command code strings are entered into a terminal emulation program (such as windows HyperTerminal) running on an external control device. The control device (PC, third-party controller) sends the commands to the system. Control devices must be able to send and receive ASCII or HEXA code via an RS-232 or Ethernet port.

Command Code Formats

A command code is a series of command characters and numbers used to send commands to the system. Commands include basic formulas for creating and disconnecting switches, as well as for verifying the status of switches and other functions.

In a command code, each character is either general command (e.g, C for connect) or an identifier that indicates what the following number designates (e.g, "O" and the number following it designates an "Output number"). The command code *255CI01O01! Can be interpreted as follows: (*) Starting the command code (255) Router ID is 255 (C) Create connection on (I01) Input 01 to (O01) Output 01 (!) take the command. For a complete list of command characters and their functions, see page 67.

Ack value (Acknowledge value: Response from Pure Link device) will be echoed back to the terminal screen as the unit accepts them. When a command is successfully executed, all of the characters appear containing the character "s" which stands for status. For example;

Ex 1)   Command (Connect Input 1 to Output 1)
        *255CI01O01!
    Ack value
        *255sC I01O01!

Ex 2)　　Command (Check Input connection status on Output 3)
　　　*255?O03!
　　Ack Value
　　　*255s? I03O03!

General Rules for Command Codes

The commands are coded in ASCII and HEXA. Please refer to Table 5.1 on pg.68 for detailed descriptions of keys and functions. A basic command code setup is shown below;

Ex)　　*255CI01O01!

Start + Router ID + Command + Input number + Output number + End + Enter
(*)　(255)　　(C)　　　(I01)　　　(O01)　(!)　(　)

▶ A command line allows execution of only one command. Multiple commands require execution of multiple strings; one command per string.
▶ All commands begin with * (Start) byte.
▶ All commands end with ! (End) byte.
▶ All commands will be executed when　(Enter) is entered.
▶ The correct Router ID must be entered in a command code. Systems will not react to the command if a wrong Router ID is entered. The factory default Router ID is set to 255 and the universal Router ID is 999. Systems will react to the command whenever universal Router ID is entered in command code.
▶ Command codes typically are not case-sensitive.
▶ To specify multiple Inputs and Outputs, enter a "," (Comma) between numbers.
(Ex., *255CI01O01,02,03!　　: Connects Input 01 to Output 01, 02, and 03)
▶ Use - (Hyphen) for range connection.
(EX., *255CI01O01-04!　　: Connects Input 01 to Output 01,02,03, and 04)

Command Ack (Acknowledge) Value Response

When command codes are entered into a terminal emulation program (such as HyperTerminal) and are accepted by the system, they respond back to the terminal screen one at a time, as noted below in the table. The complete command has been executed successfully when all of the entered characters including "s" which stands for status, appear. If a command character is not accepted, a different character than the one entered appears and all or part of the command has not been executed.

Ack (Acknowledge) Value Response Table

The following table shows ack value response characters along with their descriptions and meanings, which may appear instead of the initially entered character or number. If these characters appear, all or part of the command has not been executed.

Table 5.2 Descriptions of Acknowledge (ACK) Signals

Ack value	Description
Input 1 is not connected	No information in channel 1
Command Code Error	Indicates that system has rejected all or part of the command
Router ID Error	Indicates that the wrong ID number was entered

Command Code Ack Value Examples

Command Code Entered	Ack Value as appears in the control program	Explanation of Result
*255CI01O01!	*255sC I01O01!	The command was successfully Executed
*255CO01!	Command Code Error	The command was not executed because the Input number was not included
*255CI01O01	Command Code Error	The command was not executed because "!" (End) was not included
*300CI01O01!	Router ID Error	The command was not executed because the actual Router ID and entered Router ID did not match

◉ **Switching Command**
- ▪*255C : Video connecting switch command
- ▪*255D : Video disconnecting switch command
- ▪*255P : Preset video connecting call command

▪ **Video Connecting Switches**
- ☞ *255CIxxxOxxx!+0x0D : Command code
- ☞ *255CIxxxOxxx,IxxxOxxx!+0x0D : Command code
- ☞ *255CIxxxOxxx-xxx!+0x0D : Command code
- • Ixxx : Input port number (I000 : Output disconnect)
- • Oxxx : Output port number

Examples ():

Command Codes	Action
*255CI001O012! ↵	Connect input 1 to output 12

*255CI002O001-005! ↵	Connection input 2 to output 1~5
*255CI000O002!↵	Disconnect output 2

▪ **Video Disconnecting Switches**
   ☞ *255DI000Oxxx!+0x0D : Command code
   ☞ I000 : Disconnect input parameter
   • Oxxx : Output port number

Examples ():

Command Codes	Action
*255DI000O012! ↵	Disconnect output 12
*255DI000O001-005! ↵	Disconnection output 1~5
*255DI000O002!↵	Disconnect output 2

▪ **Video Preset Call :**
   ☞ *255PCxx!+0x0D : Command code
   • Cxx : Preset number

Examples ():

Command Codes	Action
*255PC02! ↵	Video preset 2 call
*255PC12! ↵	Video preset 12 call

▪ **Video Channel Status Return :**
   ☞ *255?VOxxx!+0x0D : Command code
   ☞ *255?VO000!+0x0D : Command code
   • Oxxx : Output port number (O000 All Output)

Examples ():

Command Codes	Action
*255?VO005! ↵	Check video input connection status on Output 5
*255?VO000! ↵	Check video all input and output connection status

◉ **Input Config Command**
   ▪*255IF : Input Infomation check command
   ▪*255IA : Input audio setting command
   ▪*255IV : Input video stream setting command
   ▪*255IT : Input test pattern setting command
   ▪*255IP : Input RS232+ setting command
   ▪*255IR : Input reset command

▪ **Input Infoamtion Check Command :**
☞ *255IFIxxx!+0x0D : Command code
• Ixxx : Input number

Examples ():

Command Codes	Action
*255IFI001! ↵	Input 1 infomation check
*255IFI012! ↵	Input 12 infomation check

▪ **Input Audio Mode Setting Command :**
☞ *255IAIxxxHxx!+0x0D : Command code
☞ *255IAIxxxDxx!+0x0D : Command code
☞ *255IAIxxx-xxxDxx!+0x0D : Command code
☞ *255IAIxxxIxxxIxxxDxx!+0x0D : Command code
• Ixxx : Input number
• Hxx : HDMI audio select(H00:HDMI source audio , H01:Stereo audio)
• Dxx : Dante input audio select(D00:HDMI source audio , D01:Stereo audio)

Examples ():

Command Codes	Action
*255IAI001H01! ↵	Set input 1 hdmi audio to stereo audio
*255IAI005D00! ↵	Set input 5 dante audio to hdmi source audio
*255IAI001I005D01! ↵	Set input 1,5 dante audio to stereo audio

▪ **Input Video Stream Setting Command :**
☞ *255IVIxxxMxx!+0x0D : Command code
☞ *255IVIxxx-xxxMxx!+0x0D : Command code
☞ *255IVIxxxIxxxMxx!+0x0D : Command code
• Ixxx : Input number
• Mxx : Video stream (M00 : Normal , M01 : Freeze , M02 : Black)

Examples ():

Command Codes	Action
*255IVI001M01! ↵	Set input 1 video stream to freeze
*255IVI002M00! ↵	Set input 2 video stream to normal
*255IVI002I005M02! ↵	Set input 2,5 video stream to black

▪ **Input Test Pattern Command :**

☞ *255ITIxxxMxx!+0x0D : Command code

☞ *255ITIxxx-xxxMxx!+0x0D : Command code

☞ *255ITIxxxIxxxMxx!+0x0D : Command code

• Ixxx : Input number

• Mxx : Test Pattern (M00 : OFF)

Examples ():

Command Codes	Action
*255ITI001M01! ↵	Input 1 test pattern Mode 1
*255ITI002M00! ↵	Input 2 test pattern Mode OFF
*255ITI002I005M02! ↵	Input 2,5 test pattern Mode 2

◉ **Output Config Command**

*255OF : Output infomation
*255OS : Output HDMI, SDI Scaler Timing
*255OV : Output Video Stream Set
*255OT : Output Test Pattern Set
*255OG : Output Scaler Color Set
*255OA : Output Audio Set
*255OP : Output RS232+ Set
*255OQ : Output Quadview Set
*255OW : Output Wall Set
*255OB : Output Wall Bezel Set
 *255OR : Output Reset Set
*255OC : Output CEC Set

▪ **Output Infoamtion Check Command :**

☞ *255OFOxxx!+0x0D : Command code

• Oxxx : Output number

Examples ():

Command Codes	Action
*255OFO001! ↵	Input 1 infomation check
*255OFO012! ↵	Input 12 infomation check

▪ **Output Port Audio Setting Command**

☞ *255OAOxxxHxx!+0x0D : Command code

☞ *255OAOxxxSxx!+0x0D : Command code

☞ *255OAOxxx-xxxHxx!+0x0D : Command code

☞ *255OAOxxxOxxxOxxxHxx!+0x0D : Command code

• Oxxx : Output port number

• Hxx : HDMI Tx Audio Set
  (H00 : Source Audio , H01 : Dante Audio , H02 : Audio Mute)

• Sxx : Analog Stereo Audio Set
    (S00 : Source Audio , S01 : Dante Audio , S02 : Audio Mute)

Examples ():

Command Codes	Action
*255OAO001H01! ↵	Set HDMI output 1 audio selection to dante audio
*255OAO001S02! ↵	Set stereo output 1,3 audio selection to mute
*255OAO001O004H02!↵	Set HDMI output 1,4 audio selection to mute

▪ **Output Port Wall Mode Setting Command:**

☞ *255OWOxxx-xxxMxxHxxVxxOxxxOxxxOxxxOxxx!+0x0D : Command code

☞ Oxxx-xxx : Wall mode display all output number

• Mxx : Wall mode timing set (Mxx=00 : Wall mode off , Mxx>00 : Wall mode on)
  M00: Wall mode off
  M01: 720x480p@60   Wall mode on
  M02: 720x576p@50   Wall mode on
  M03: 1280x720p@29 Wall mode on
  M04: 1280x720p@50   Wall mode on
  M05: 1280x720p@59   Wall mode on
  M06: 1280x720p@60   Wall mode on
  M07: 1920x1080p@29   Wall mode on
  M08: 1920x1080p@50   Wall mode on
  M09: 1920x1080p@59   Wall mode on
  M10: 1920x1080p@60   Wall mode on
  M11: 3840x2160p@29   Wall mode on
  M12: 3840x2160p@50   Wall mode on
  M13: 3840x2160p@59   Wall mode on
  M14: 3840x2160p@60   Wall mode on
  M15: 1024x768p@60   Wall mode on
  M16: 1280x1024p@60   Wall mode on
  M17: 1920x1200p@60   Wall mode on

• Hxx : Horizontal layer division

• Vxx : Vertical layer division

• Oxxx : Wall layer output number

Examples) Wall mode off
*255OWO001-009M00!+0x0D

1	2	3
4	5	6
7	8	9

Examples) 2x2 wall(1,2,4,5) , 1x1(3,6,7,8,9)
*255OWO001-009M09H02V02O001O002O004O005H01V01O003O006O007O008O009!+0x0D
Examples) 3x3 wall(1,2,3,4,5,6,7,8,9)
*255OWO001-009M09H03V03O001O002O003O004O005O006O007O008O009!+0x0D

1	2
3	4

Examples) 2x2 wall(1,2,3,4)
*255OWO001-004M09H02V02O001O002O003O004!+0x0D
Examples) 1x1 wall(1,2,3,4)
*255OWO001-004M09H01V01O001O002O003O004!+0x0D

▪ **Output Port Wall Switching Command:**
☞ *255OWIxxxOxxxOxxxOxxxOxxx!+0x0D : Command code
 • I**x**x : Input Port number
 • O**x**x : Ouptut Port number

▪ **Output Port Wall Layer & Switching Command:**
☞ *255OWHxxVxxIxxxOxxxOxxxOxxxOxxx!+0x0D : Command code
 • Hxx : Horizontal layer division
 • Vxx : Vertical layer division
 • I**x**x : Input Port number
 • O**x**x : Ouptut Port number

▪ **Output Port Wall Bezel Setting Command:**
☞ *255OBOxxxHxxVxx!+0x0D : Command code
☞ *255OBOxxx-xxxHxxVxx!+0x0D : Command code
☞ *255OBOxxxOxxxOxxxHxxVxx!+0x0D : Command code
 • O**x**x : Ouptut number
 • Hxx : Horizontal bezel

• Vxx : Vertical bezel

Examples ():

Command Codes	Action
*255OBO001H01V01! ↵	Output 1Horizontal bezel 1, Vertical bezel 1
*255OBO001-009H02V02! ↵	Output 1-9 Horizontal bezel 2, Vertical bezel 2
*255OBO001O004H02V02!↵	Output 1 and 4 Horizontal bezel 2, Vertical bezel 2

▪ **Output Port Quadview Setting Command:**
☞ *255OQOxxxMxxLxx!+0x0D : Command code
☞ *255OQOxxxXxxYxxWxxHxx!+0x0D : Command code
 • Oxxx : Output port number
 • Mxx : Quadview mode set (Mxx=00 : Quadview mode off , Mxx>00 :
 Quadview mode on)
 M00: Quadview mode off
 M01: 720x480p@60   Quadview mode on
 M02: 720x576p@50   Quadview mode on
 M03: 1280x720p@29   Quadview mode on
 M04: 1280x720p@50   Quadview mode on
 M05: 1280x720p@59   Quadview mode on
 M06: 1280x720p@60   Quadview mode on
 M07: 1920x1080p@29   Quadview mode on
 M08: 1920x1080p@50   Quadview mode on
 M09: 1920x1080p@59   Quadview mode on
 M10: 1920x1080p@60   Quadview mode on
 M11: 3840x2160p@29   Quadview mode on
 M12: 3840x2160p@50   Quadview mode on
 M13: 3840x2160p@59   Quadview mode on
 M14: 3840x2160p@60   Quadview mode on
 M15: 1024x768p@60   Quadview mode on
 M16: 1280x1024p@60   Quadview mode on
 M17: 1920x1200p@60   Quadview mode on
 • Lxx : Quadview layer set
 • Xxx : PIP layer horizontal posiotion set (1~99 , 0:default)
 • Yxx : PIP layer vertical posiotion set (1~99 , 0:default)
 • Wxx : PIP layer width set (1~99 , 0:default)
 • Hxx : PIP layer height set (1~99 , 0:default)

Examples ():

Command Codes	Action
*255OQO001M13L05! ↵	Set the quadview output 1~4 (Timing 3840x2160@59)

▪ **Output Port Scaler Timing Setting Command**

☞ *255OSOxxxHxx!+0x0D : Command code

☞ *255OSOxxx-xxxHxx!+0x0D : Command code

☞ *255OSOxxxOxxxOxxxHxx!+0x0D : Command code

• Oxxx : Output port number

• Hxx: HDMI output timing set

   H00: AUTO
   H01: 720x480p@60
   H02: 720x576p@50
   H03: 1280x720p@29
   H04: 1280x720p@50
   H05: 1280x720p@59
   H06: 1280x720p@60
   H07: 1920x1080p@29
   H08: 1920x1080p@50
   H09: 1920x1080p@59
   H10: 1920x1080p@60
   H11: 3840x2160p@29
   H12: 3840x2160p@50
   H13: 3840x2160p@59
   H14: 3840x2160p@60
   H15: 1024x768p@60
   H16: 1280x1024p@60
   H17: 1920x1200p@60

• Sxx: SDI output timing set

   S00: AUTO
   S01: 720x480p@60
   S02: 720x576p@50
   S03: 1280x720p@29
   S04: 1280x720p@50
   S05: 1280x720p@59
   S06: 1280x720p@60
   S07: 1920x1080p@29
   S08: 1920x1080p@50
   S09: 1920x1080p@59

S10: 1920x1080p@60
S11: 3840x2160p@29
S12: 3840x2160p@50
S13: 3840x2160p@59
S14: 3840x2160p@60
S15: 1024x768p@60
S16: 1280x1024p@60
S17: 1920x1200p@60

Examples ():

Command Codes	Action
*255OSO001H01! ↵	Output 1 HDMI scaler 720x480p@60
*255OSO001-004H02! ↵	Output 1-4 HDMI scaler 720x576p@50
*255OSO001O004H05!↵	Output 1,4 HDMI scaler 1280x720p@59

▪ **Output Scaler Stream Setting Command**
☞ *255OVOxxxMxx!+0x0D : Command code
☞ *255OVOxxx-xxxMxx!+0x0D : Command code
☞ *255OVOxxxIxxxMxx!+0x0D : Command code
• Oxxx : Output port number
• Mxx : Video Stream Set
(M00 : Normal , M01 : Freeze , M02 : Black , M03 : Output disable)
Examples ():

Command Codes	Action
*255OVO001M01! ↵	Set output 1 to video stream set freeze
*255OVO001-004M01! ↵	Set output 1-4 to video stream set freeze
*255OVO001O002M02!↵	Set output 1,2 to video stream set Black

▪ **OUT Test Pattern:**
☞ *255OTOxxxMxx!+0x0D : Command code
☞ *255OTOxxx-xxxMxx!+0x0D : Command code
☞ *255OTOxxxIxxxMxx!+0x0D : Command code
• Oxxx : Output number
• Mxx : Test Pattern (M00 : OFF)

*255OTO002M00! ↵	Output port 2 Test pattern off
*255OTO001-004M02! ↵	Output port 1-4 Test pattern mode 2

▪ **Output Graphic Setting Command**

☞ *255OGOxxxBxxx!+0x0D : Command code

☞ *255OGOxxx-xxxSxxx!+0x0D : Command code

☞ *255OGOxxxOxxxSxxx!+0x0D : Command code

• Oxxx : Output port number

• Bxxx : Brightness Set (0~255 , Default : 128)

• Hxxx : Hue Set(0~255 , Default : 128)

• Sxxx : Saturation Set (0~255 , Default : 128)

• Cxxx : Contrast Set(0~255 , Default : 128)

Examples ():

Command Codes	Action
*255OGO001C128! ↵	Output 1 Graphic change contrast to 128

▪ **Output CEC Setting Command**

☞ *255OCOxxxMxx+0x0D : Command code

☞ *255OCOxxx-xxxS"xxxx"+0x0D : Command code

☞ *255OCOxxxOxxxMxx+0x0D : Command code

☞ *255OCOxxxOxxxS"xxxx"+0x0D : Command code

• Oxxx : Output port number

• M00 : Power OFF

• M01 : Power ON

• S"xxxxxxxxxx" : CEC Stream Set

Examples ():

Command Codes	Action
*255OCO001S"FE8210F0"! ↵	Set output 1 CEC stream "FE8210F0"
*255OCO001-004S"FE8210F0"! ↵	Set output 1-4 CEC stream "FE8210F0"
*255OCO001-004M01!↵	Set Output 1-4 Power ON

▪ **Output RS232+ Set:**

☞ *255OPOxxxBxx,Dxx,Pxx,Sxx!+0x0D : Port Open Command code

☞ *255OPOxxx-xxxBxx,Dxx,Pxx,Sxx!+0x0D : Port Open Command code

• Oxxx : Output port number [O000 : All output]

• Baudrate : B00(4800) , B01(9600) , B02(19200) , B03(38400) , B04(57600) , B05(115200)

• Databits : D00(7bit) , D01(8bit)

• Parity   : P00(None) , P01(Even) , P02(Odd)

• Stopbit   : S00(1bit) , S01(2Bit)

☞ *255OPCOxxx!+0x0D : Port Close Command code

☞ *255OPCOxxx-xxx!+0x0D : Port Close Command code
   • Oxxx : Output port number [O000 : All output]
☞ *255OPOxxx"xxxxxx"!+0x0D : Data Stream Command code
   • Oxxx : Output port number [O000 : All output]

Examples ():

Command Codes	Action
*255OPO001B02,D01,P00,S00!↵	Send command to the device that is connected to Output #1 extender at 19200bps , 8bit , None , 1bit Set
*255OPO001-004 B01,D01,P00,S00! ↵	Send command to the device that is connected to Output 1~4 extender at 9600bps , 8bit , None , 1bit Set
*255OPO000 "abcdefg" !↵	Send to all Output open port (abcdefg)
*255OPO001"abcdefg"! ↵	Send to Output open port #1 (abcdefg)
*255OPO001-004"abcdefg" !↵	Send to Output open port #1 ~ #4 (abcdefg)

▪ **LAN Data Setting Command**
☞ *255SNIPxxx.xxx.xxx.xxx!+0x0D : Command code
☞ *255SNSMxxx.xxx.xxx.xxx!+0x0D : Command code
☞ *255SNGWxxx.xxx.xxx.xxx!+0x0D : Command code
☞ *255SNMAxxx.xxx.xxx.xxx.xxx.xxx!+0x0D : Command code

*255SNIP192.168.000.004! ↵	Set IP address at 125.135.199.004
*255SNSM255.255.255.000! ↵	Set Subnet Mask at 255.255.255.000
*255SNGW192.168.000.001! ↵	Set Gate Way at 192.168.000.001
*255SNMA000.001.250.128.156.005! ↵	Set Mac Address at 00.01.FA.80.9C.05

▪ **RS232 Setting Command**
☞ *255SRBRxx!+0x0D : Baudrate Command code
   • R01 : 9600 , R02 : 19200 , R03 : 38400 , R04 : 57600 , R05 : 115200

▪ **Product ID Setting Command**
☞ *255SIDxxx!+0x0D : Baudrate Command code

• Dxxx : (1~255)

▪ **System Lock Setting Command**
☞ *255SLDxx!+0x0D : Command code
•D00 : All Unlock
•D01 : RS232 LAN Setting + Touch Setting Menu locked
•D01 : RS232 LAN Setting + Touch Create,Preset,I/O Config , Setting locked

▪ **Video Connection Return**
☞ *255?VOxxx!+0x0D : Command code

▪ **Firmware Version Return**
☞ *255?VERSION!+0x0D : Command code

▪ **LAN Data Return**
☞ *255?SNA!+0x0D : Command code

▪ **Product ID Return**
☞ *255?SID!+0x0D : Command code

▪ **RS232 Return**
☞ *255?SRA!+0x0D : Command code

▪ **Connect Command**
☞ *255H000!+0x0D : Command code

▪ **Input Resolution Return**
☞ *255?IRIxxx!+0x0D : Command code
☞ *255?IRIxxx-xxx!+0x0D : Command code
☞ *255?IRIxxxIxxx!+0x0D : Command code
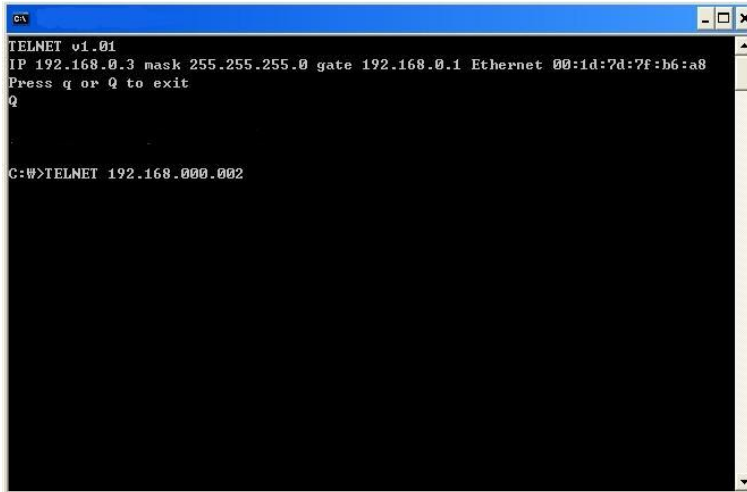
4.1 LAN (TCP/IP) Operation
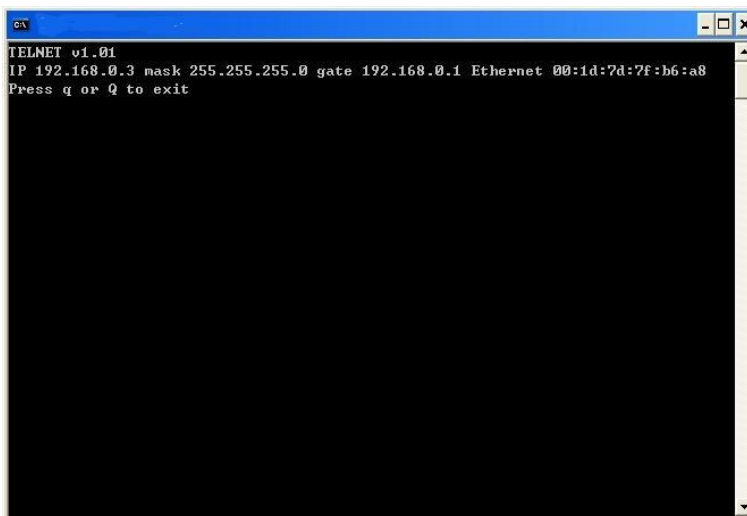
TELNET Protocol with LAN(TCP/IP)
The MAX series Matrix Router can be controlled from remote locations through the LAN port using WINDOWS XP DOS prompts, hyper-terminal, or TELNET program (the control code is fully compliant with RS-232C).

Enter TELNET <Router IP Address> in the DOS prompt

Message indicating TELNET connection will appear
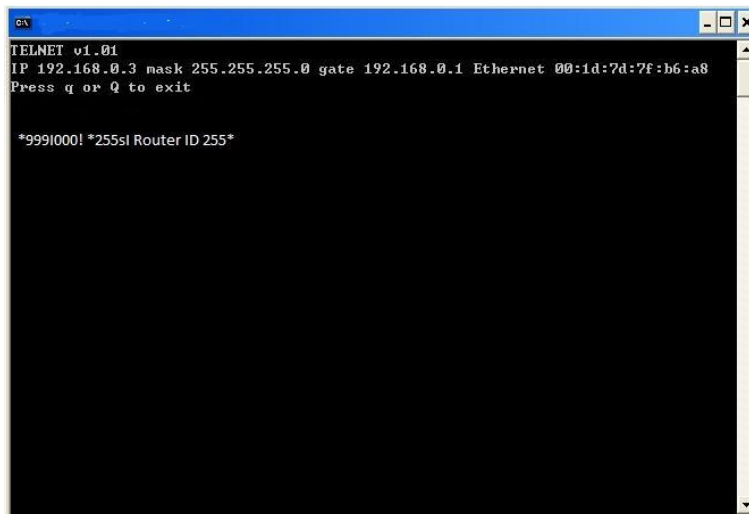
```
TELNET v1.01
IP 192.168.0.3 mask 255.255.255.0 gate 192.168.0.1 Ethernet 00:1d:7d:7f:b6:a8
Press q or Q to exit


*999I000! *255sI Router ID 255*
```

Router ID verification command code
Send " *999I000! "
Router will send response:
" *255sI Router ID 255"

HTTP Protocol with LAN(TCP/IP)

Control PC Search

Searching data for channel configuration

Character train should begin with "LCD.CGI" to "O01=I08" to Output 01 = Input 8. The sequence and size of the character train must be the same.

To RESET the Protocol, a new connection to the server (Switcher) must be established.

Switching Channels

http://192.168.0.2/LCD.CGI?O01=I01&O02=I02&O03=I03&O04=I04&O05=I05&O06=I06
&O07=I07&O08=I08&Submit_=SEND

RESET

http://192.168.0.2/LCD.CGI?O01=I01&O02=I02&O03=I03&O04=I04&O05=I05&O06=I06
&O07=I07&O08=I08&Submit_=RESET

Additional Information

Firmware Update Instruction

1. Set MAX2 series Matrix Router's baud rate to 115200bps using front panel LCD touch screen or control command. (Data bits : 8bit, Stop bits : 1bit, Parity : disable)
2. Connect PC to MAX2 series Matrix Router using USB cable (update cable is included in an original box)
   ✔ Please disconnect RS-232 cable from the Matrix Router during firmware update.

   Confirm if MAX2 series Matrix Router (USB serial port) is properly connected to the   PC on PC's device manager section.
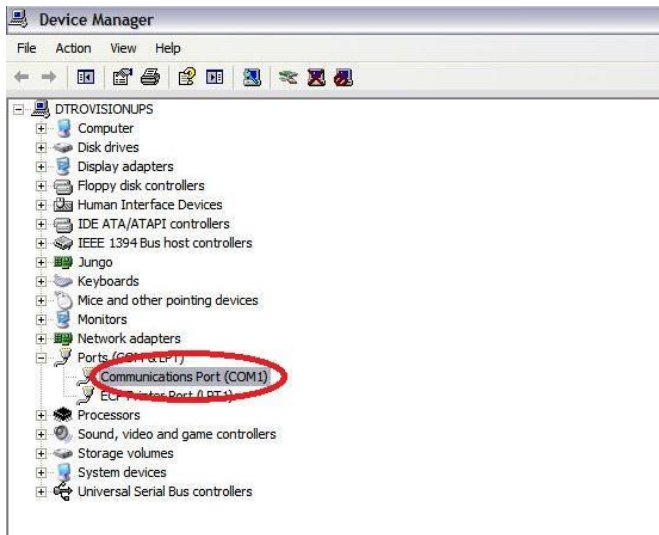
3. Create a hyper terminal connection (connect it using same com port number; COM1)
   - Create a name (ex, PureLink)
   - Bits per second: 115200bps
   - Data bits: 8
   - Parity: None
   - Stop bits: 1
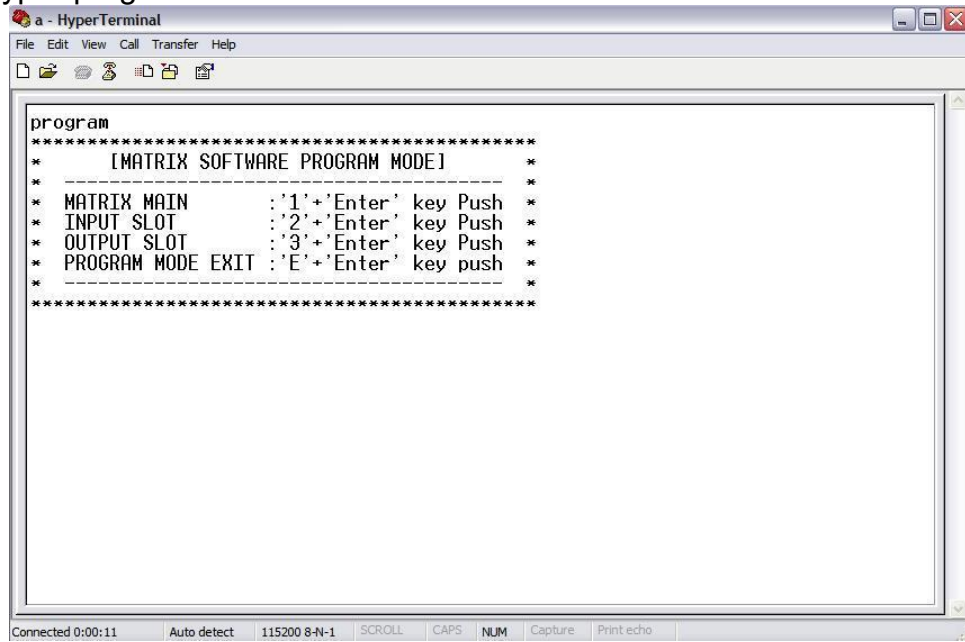   - Flow control: None
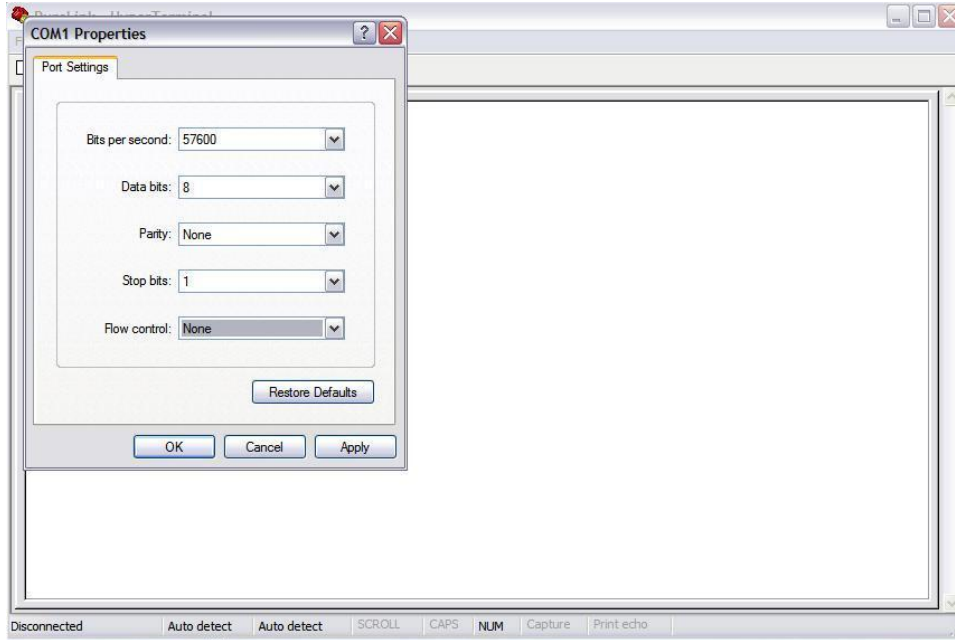
4. Hyper terminal setting
   Go to file --> Properties setting --> ASCII setup
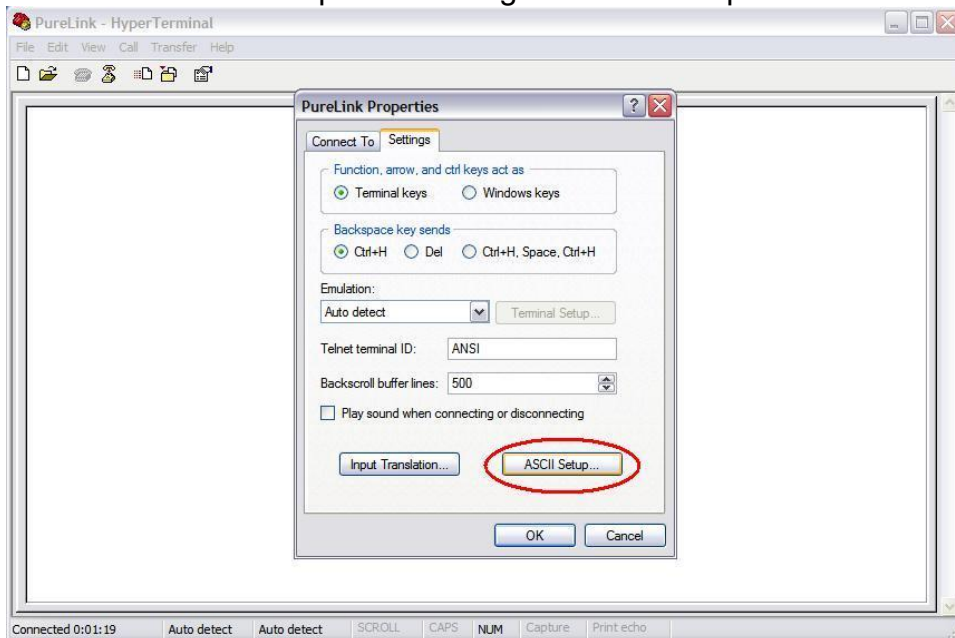
Check on "Echo typed characters locally" and then ok.
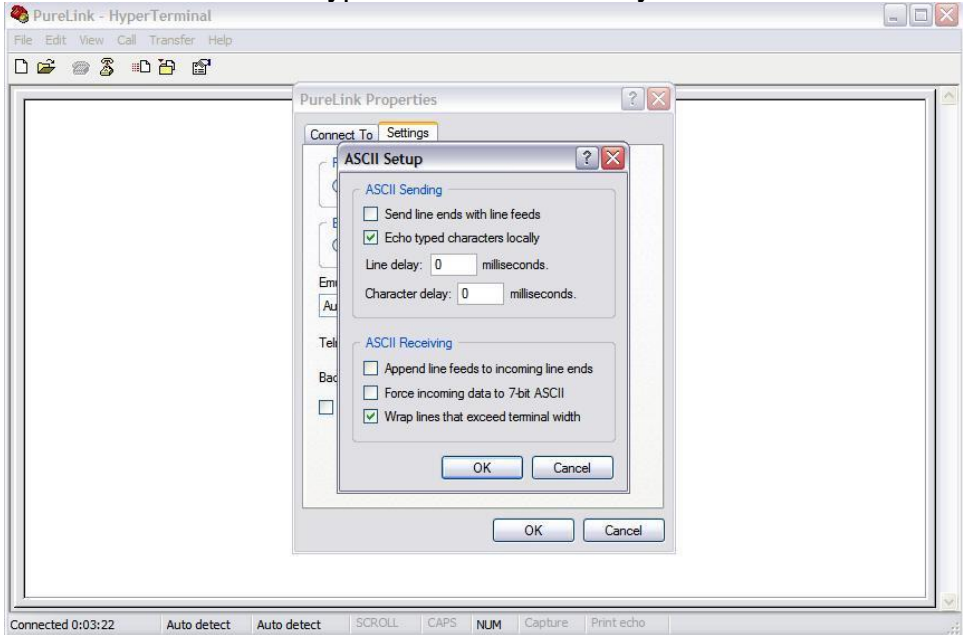
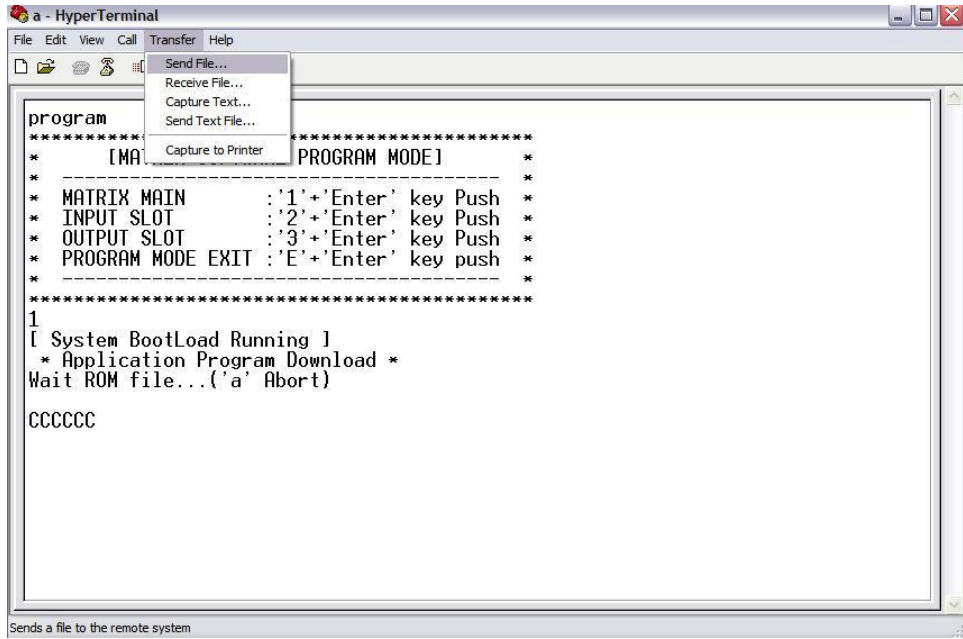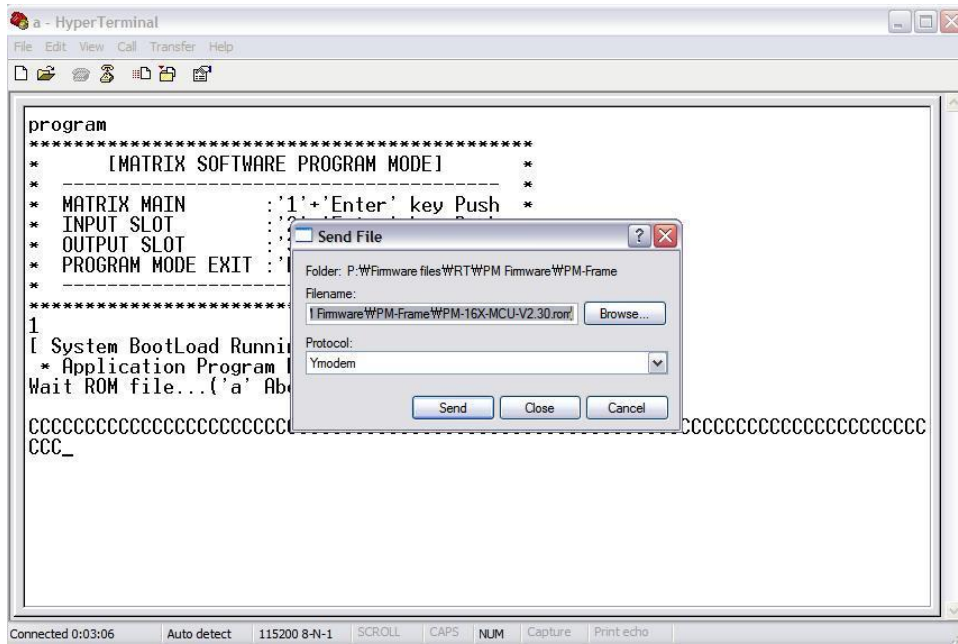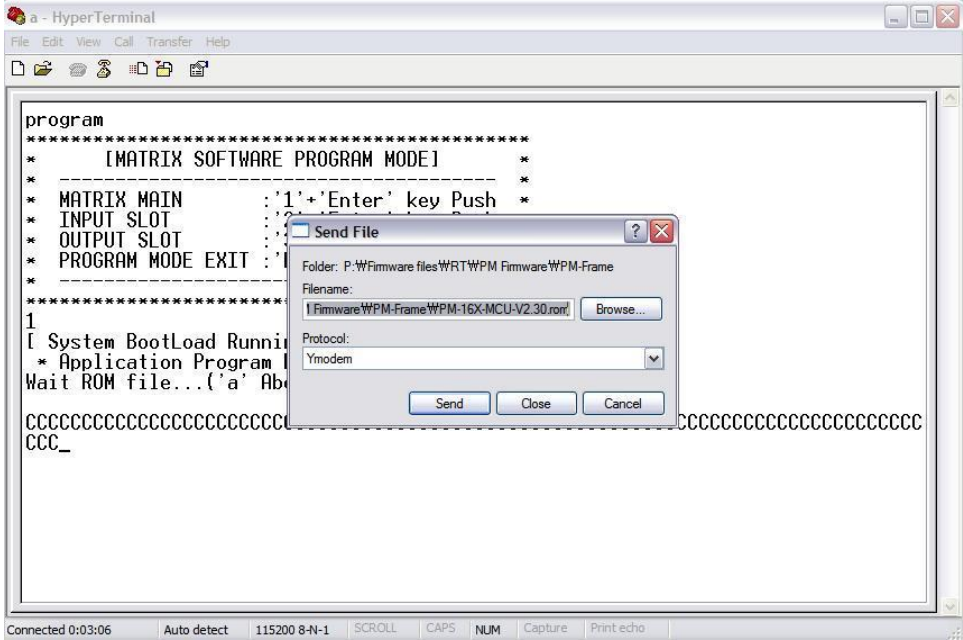5. Type "program" and enter

6. Type "1" and enter

7. Go to send (T) menu and then => send file
   Select Ymodem Protocol

8. Select firmware file (.rom) and then, => Send (S)

9. Firmware update progress window
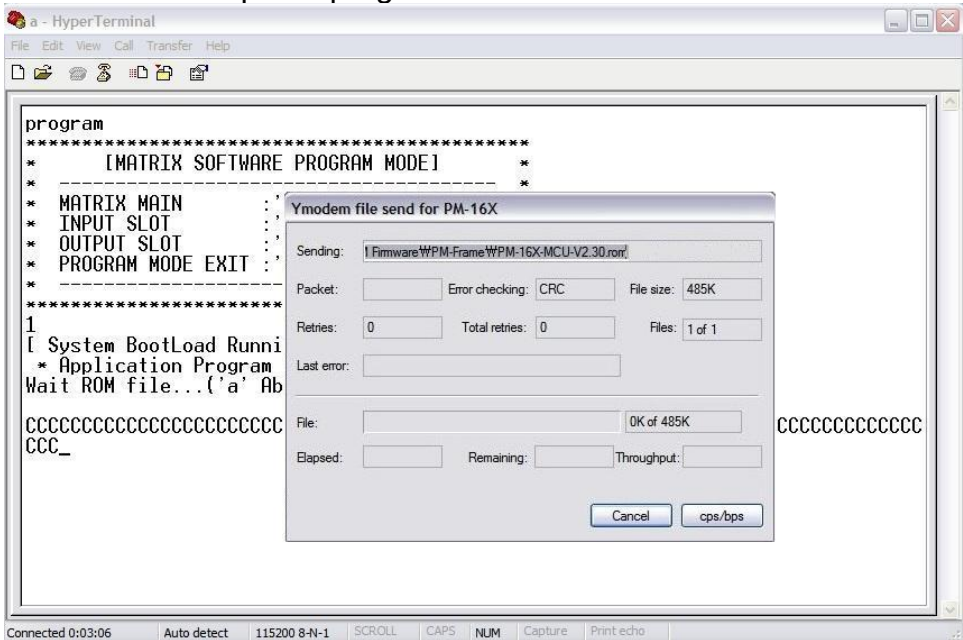
Firmware update completion window => Once firmware update is completed, disconnect USB cable and power cycle the unit (OFF/ON)
Set baud rate back to 19200

Manufacturer's Warranty (5-Year)

Dtrovision warrants this PureMedia series Matrix Router to be free from defects in workmanship and materials, under normal use and service, for a period of five (5) years parts for MAX2 series Matrix Routers and its I/O Cards, and three (3) years on labor from the date of purchase from Dtrovision or its authorized resellers.

If the product does not operate as warranted during the applicable warranty period, Dtrovision shall, at its option and expense, execute one of the following as necessary:
1. Repair the defective product or part.
2. Deliver to customer and equivalent product or part to replace the defective item.
3. Refund to customer the purchase price paid for the defective product.

All products that are replaced become the property of Dtrovision, LLC. Replacement products may be new or reconditioned. Repaired or replacement products or parts come with a 90-day warranty or the remainder of the warranty period. Dtrovision shall not be responsible for any software, firmware, information, or memory data loss contained in, stored on, or integrated with any products returned to Dtrovision for repair under warranty.

Customer Service
Any customer service inquiries can be submitted electronically through the Q&A form on our website at www.purelinkav.com. For immediate assistance please contact us at (201) 488-3232 to reach our customer care or tech support team.

Revision History

1.2   first manual release