PureLink

PM Series CAT5 Extenders Owner's Manual

PM-CT102: PM series HDMI over CAT5e (HDBaseT) Extender Transmitter

PM-CR101: PM series HDMI over CAT5e (HDBaseT) Extender Receiver

PM Series CAT5 Standalone and Wall-plate type Extender

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Chapter 1. Introduction

1.1 Safety Precautions

When using and installing Dtrovision PureLink product, adhere to the following basic safety precautions.

- Read and understand all instructions before using and installing this product.
- The safety and operating instructions should be retained for future reference.
- Always use the correct external power supply (indicated on the product label) when operating this unit.
- Unplug this product from the wall outlet before cleaning.   Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- Mishandling of this product may lead to a fire or explosion hazard.
- Do not place any heavy objects or equipment on top of the product.
- Keep away from wet, magnetic, and flammable surfaces or substances.
- Air vents should be kept clean and unobstructed at all times.
- Any external impact may cause damage to the operation of this unit.
- Be sure this product is properly grounded (earthed) in order to prevent the risk of electrical shock.
- Turn off and unplug power before adding or removing Input/Output Boards.
- Input/Output Boards may be damaged when they are replaced with power turned on.
- Use surge protectors and/or AC line conditioners when powering this product.
- Only use a fuse(s) with the correct fuse rating in your enclosure.
- Make sure the product is on or attached to a stable surface.

If you experience any malfunctioning of product or have any question as to operation of the product, please contact our customer service center.

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1.2 Product Introduction

Single CAT5 (HDBaseT) cable for video, audio, and control signal with POE

PM series CATx (HDBaseT) extension system is designed to transmit video (DVI, HDMI or VGA), audio (Embedded or analog stereo audio), control (RS232/422 and IR), and power over a **single CATx cable** for long distance up to 330ft. This CATx connection enables to minimize electrical noise and EMI free that is ideal for long distance extension of high definition HDMI/DVI or VGA video signal, HDMI embedded audio or 3.5mm stereo analog audio, and control signal with POE.

1.3 Package Contents
Please make sure all of the following items are included in the package:

1) One of PM-CT101, CT102, CT103 Transmitter Module or
2) One of PM-CR101, CR102, CR103 Receiver Module
3) 5pin Phoenix Connector for RS-232/422
4) 4pin Phoenix Connector for IR
5) DC 12V Power Supply Unit with a Power Cord

Chapter 2. Features and Specifications

2.1 Features

▶ **Transmitters directly compatible with PM CATx (HDBaseT) Input Board**
PM CATx (HDBaseT) Transmitters can send signal directly to PM series Matrix Router's CATx (HDBaseT) Input Board, eliminating the need of matching Receiver.

▶ **Receivers directly compatible with PM CATx (HDBaseT) Output Board**
PM CATx (HDBaseT) Receivers can receive signal directly from PM series Matrix Router's CATx (HDBaseT) Output Board, eliminating the need of matching Transmitter.

▶ **HDMI v1.4, 3D Support**
Adopting latest HDMI version 1.4 enables to support 3D, 48-Bit Deep Color, 4K x 2K resolution and 7.1 Channel Dolby TruHD & DTS MasterHD

▶ **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.

▶ **HDCP Compliant**

▶ **Various Transmitter and Receiver Choices**
There are three different type of transmitters and three different type of receivers to make today's sophisticated digital AV environment simple and felxible.

▶ **RF6 1RU Rack Mountable Version Available**
PM-CT101, PM-CT102, PM-CR101, and PM-CR102 are also available in PureLink's popular RF6 Rack Mountable Extension Center Modules.

▶ **Analog Support (VGA and Component)**
On PM-CT102 and PM-CT103 series, there are two video inputs; DVI/HDMI and VGA, which are selectable via front panel button or serial command when it is connected PM

series Matrix Router. VGA port is designed to take component (YPbPr) signal with appropriate adapters or cables.

▶ **USB Firmware Update**

▶ **Long Distance Transmission up to 330ft (100 m)**

▶ **Plug-N-Play**

▶ **Resolutions up to WUXGA 1920x1200, HD 1080p @ 60Hz, and 4K2K**

▶ **Integrated Noise-cancellation and Error-correct Logic for both Input and Output Ports to prevent any damage caused by Electrical Noise.**

▶ **POE**
Only one power supply is necessary to power both devices.
When PM CATx (HDBaseT) extenders are used with PM series Matrix Router CATx Input and Output board, they can receive power from the Matrix Router.

2.2 Specifications

Transmitters :

PM-CT101 : Standalone type (Loop Through)

        Input: HDMI + 3.5mm stereo audio (x1) + RS-232/422 + IR

        Output: CATx (HDBaseT) and HDMI Loop-Through

        POE, 330ft, Compatible with PM-CIS4 input board

Front Connection Ports:

Power S/W: Power On/Off switch

Power LED: Power status indicator

Status LED: Video signal presence indicator

HDMI LED: HDMI signal indicator

EDID save S/W: EDID save button

EDID select S/W: EDID library function selection rotary switch

Firmware: USB firmware update port

Back Connection Ports:

HDMI/DVI In: HDMI/DVI input port

HDMI/DVI Out: HDMI/DVI Loop-thru output port

Audio In: Stereo audio input port

CAT5: HDBaseT output port

RS-232/422: RS-232/422 communication port

IR: IR communication port

IR voltage: IR voltage selection switch (12V or 5V)

DC In: DC 12V Power port

Model Name	PM-CT101 (HDMI version), PM-CT101-D (DVI version)
Input Signal	DVI / HDMI (TMDS) 3.5mm stereo audio
Output Signal	HDBaseT 0,1,2,3+/- DVI / HDMI (Loop-thru)
Data Transmission Speed	3.4 Gbps/ch, Total 10.2 Gbps Max
Supporting Display Resolutions	PC: VGA ~ WUXGA (up to 1920 x 1200 @60Hz) HDTV: 480i ~ 1080p, 2K4K

Max. Distance	1920 x 1200 @ 60Hz or at 1080p : 330 ft (100m)
Connector Type	DVI 29P/HDMI 19P Female (x 2) 3.5mm Stereo Jack RJ-45 Jack 2P /3.5MM Terminal Block (for Power) 4P /3.5MM Terminal Block (for RS-232/422) 5P /3.5MM Terminal Block (for IR) Mini USB (for firmware update)
Conformations	DVI 1.0 , HDMI 1.4, HDBaseT
HDCP Compliance	Yes
Power Rating	DC +12V, 10Watts Max
Dimension	6.3' x 4.4' x 1.7' (160 x 112 x 42 mm)
Weight	1.43 lbs (0.65 Kg)

PM-CT102 : Standalone type (2x1 switch)

Input: Selectable HDMI/DVI or VGA + 3.5mm stereo audio (x2) +

RS-232/422 + IR

Output: CATx (HDBaseT)

POE, 330ft, Compatible with PM-CIS4 input board

Front Connection Ports:

Power S/W: Power On/Off switch

Power LED: Power status indicator

Status LED: Video signal presence indicator

HDMI LED: HDMI signal indicator

VGA LED: VGA (or component) signal indicator

EDID save S/W: EDID save button

EDID select S/W: EDID library function selection rotary switch

Firmware: USB firmware update port

Back Connection Ports:

HDMI/DVI In: HDMI/DVI input port

VGA In: VGA (or component) input port

Audio In: Stereo audio input port

CAT5: HDBaseT output port

RS-232/422: RS-232/422 communication port

IR: IR communication port

IR voltage: IR voltage selection switch (12V or 5V)

DC In: DC 12V Power port

Model Name	PM-CT102 (HDMI version), PM-CT102-D (DVI version)
Input Signal	DVI / HDMI (TMDS), VGA (supports YPbPr component) 3.5mm stereo audio
Output Signal	HDBaseT0,1,2,3+/-
Data Transmission Speed	3.4 Gbps/ch, Total 10.2 Gbps Max
Supporting Display Resolutions	PC: VGA ~ WUXGA (up to 1920 x 1200 @60Hz) HDTV: 480i ~ 1080p, 2K4K
Max. Distance	1920 x 1200 @ 60Hz or at 1080p : 330 ft (100m)

Connector Type	DVI 29P/HDMI 19P Female
	VGA Female
	3.5mm Stereo Jack (x 2)
	RJ-45 Jack
	2P /3.5MM Terminal Block (for Power)
	4P /3.5MM Terminal Block (for RS-232/422)
	5P /3.5MM Terminal Block (for IR)
	Mini USB (for firmware update)
Conformations	DVI 1.0 , HDMI 1.4, HDBaseT
HDCP Compliance	Yes
Power Rating	DC +12V, 10Watts Max
Dimension	6.3' x 4.4' x 1.7' (160 x 112 x 42 mm)
Weight	1.43 lbs (0.65 Kg)

PM-CT103 : Wall plate type (2x1 switch), 2 Gang Decora style, white finish.

Input: Selectable HDMI or VGA + 3.5mm stereo audio (x1) + RS-232

Output: CATx (HDBaseT)
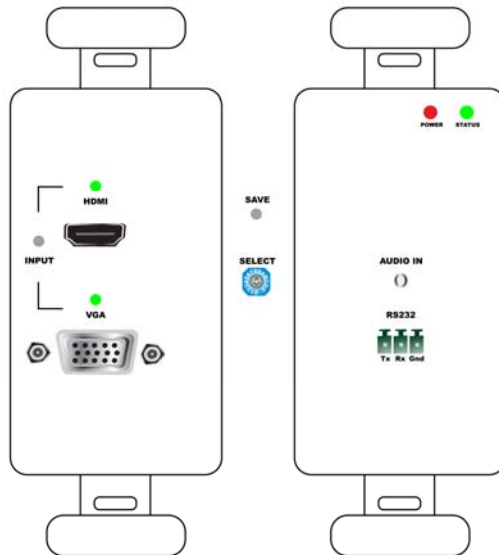
POE, 330ft, Compatible with PM-CIS4 input board

Front Connection Ports:

Power LED: Power status indicator

Status LED: Video signal presence indicator

HDMI LED: HDMI signal indicator

VGA LED: VGA (or component) signal indicator

EDID save S/W: EDID save button

EDID select S/W: EDID library function selection rotary switch

HDMI/DVI In: HDMI/DVI input port

VGA In: VGA (or component) input port

Audio In: Stereo audio input port

RS-232: RS-232 communication port

Back Connection Ports:

CAT5: HDBaseT output port

DC In: DC 12V Power port

| Model Name	PM-CT103
Input Signal	DVI / HDMI (TMDS), VGA (supports YPbPr component) 3.5mm stereo audio
Output Signal	HDBaseT0,1,2,3+/-
Data Transmission Speed	3.4 Gbps/ch, Total 10.2 Gbps Max
Supporting Display Resolutions	PC: VGA ~ WUXGA (up to 1920 x 1200 @60Hz) HDTV: 480i ~ 1080p, 2K4K
Max. Distance	1920 x 1200 @ 60Hz or at 1080p : 330 ft (100m)
Connector Type	HDMI 19P Female VGA Female 3.5mm Stereo Jack (x 2) RJ-45 Jack 2P /3.5MM Terminal Block (for Power)

	4P /3.5MM Terminal Block (for RS-232)
Conformations	DVI 1.0 , HDMI 1.4, HDBaseT
HDCP Compliance	Yes
Power Rating	DC +12V, 10Watts Max
Dimension	2 Gang Decora style, actual dimension will be updated
Weight	TBD

Transmitter Input Signal Characteristics

Input Signal	Description	Unit	Min	Typical	Max	Remarks
DC input	DC Voltage	VDC	11.5	12	12.5	
	Power Consumption	Watts	13.5	13.8	14.4	
DVI input (29Pin DVI)	Differential Output	mVp-p	450	510	570	TMDS Interface
HDMI input (19Pin)	Differential Output	mVp-p	400		600	TMDS Interface

Transmitter Output Signal Characteristics

Output Signal	Description	Unit	Min	Typical	Input Signal	Remarks
CAT5/e/6 LINK	Differential Output	mVp-p	400	AVcc	600	HDBaseT Interface

Analog Video Signal Supported Resolution

- 640*480 60Hz	- 1024*768 60Hz	- 720*480p 60Hz
- 640*480 72Hz	- 1024*768 70Hz	- 720*576p 50Hz
- 640*480 75Hz	- 1024*768 75Hz	- 1280*720p 60Hz

- 640*480 85Hz	- 1024*768 85Hz	- 1280*720p 50Hz
- 800*600 56Hz	- 1280*1024 60Hz	- 1920*1080i 60Hz
- 800*600 60Hz	- 1280*1024 75Hz	- 1920*1080i 50Hz
- 800*600 72Hz	- 1280*1024 85Hz	- 1920*1080p 60Hz
- 800*600 75Hz	- 1600*1200 60Hz	- 1920*1080p 50Hz
- 800*600 85Hz	- 1920*1200 60Hz	

Digital Video Signal Supported Resolution:

- PC resolution: VGA ~ WUXGA @ 60Hz (1920 x 1200 @ 60Hz)

- HDTV resolution: 480i ~ 1080p @ 60Hz, 4K2K

PM CATx Transmitter Compatibility Chart

Transmitters Compatibility	PM-CT101	PM-CT102	PM-CT103
PM Extender Compatibility	PM-CR101 PM-CR102 PM-CR103	PM-CR101 PM-CR102 PM-CR103	PM-CR101 PM-CR102 PM-CR103
RF6 Compatibility	PM-CR101-RF6 PM-CR102-RF6 PM-CR103-RF6	PM-CR101-RF6 PM-CR102-RF6 PM-CR103-RF6	PM-CR101-RF6 PM-CR102-RF6 PM-CR103-RF6
PM Matrix Board Compatibility	PM-CIS4	PM-CIS4	PM-CIS4

Receivers :

PM-CR101 : Standalone type.

Input: CATx (HDBaseT)

Output: HDMI + 3.5mm stereo audio + RS-232/422 + IR

POE, 330ft, Compatible with PM-COS4 output board

Front Connection Ports:

Power S/W: Power On/Off switch

Power LED: Power status indicator

Status LED: Video signal presence indicator

Firmware: USB firmware update port

Back Connection Ports:

HDMI/DVI Out: HDMI/DVI output port

Audio Out: Stereo audio output port

CAT5: HDBaseT Input port

RS-232/422: RS-232/422 communication port

IR: IR communication port

IR voltage: IR voltage selection switch (12V or 5V)

DC In: DC 12V Power port

Model Name	PM-CR101 (HDMI version), PM-CR101-D (DVI version)
Input Signal	HDBaseT 0,1,2,3+/-
Output Signal	DVI / HDMI (TMDS) 3.5mm stereo audio

Data Transmission Speed	3.4 Gbps/ch, Total 10.2 Gbps Max
Supporting Display Resolutions	PC: VGA ~ WUXGA (up to 1920 x 1200 @60Hz) HDTV: 480i ~ 1080p, 2K4K
Max. Distance	1920 x 1200 @ 60Hz or at 1080p : 330 ft (100m)
Connector Type	DVI 29P/HDMI 19P Female 3.5mm Stereo Jack RJ-45 Jack 2P /3.5MM Terminal Block (for Power) 4P /3.5MM Terminal Block (for RS-232/422) 5P /3.5MM Terminal Block (for IR) Mini USB (for firmware update)
Conformations	DVI 1.0 , HDMI 1.4, HDBaseT
HDCP Compliance	Yes
Power Rating	DC +12V, 7.4 Watts Max
Dimension	6.3' x 4.4' x 1.7' (160 x 112 x 42 mm)
Weight	1.43 lbs (0.65 Kg)

PM-CR102 : Standalone type. Built-in auto scaler

        Input: CATx (HDBaseT)

        Output: HDMI + 3.5mm stereo audio + RS-232/422 + IR,

        330ft, Compatible with PM-COS4 output board

Front Connection Ports:

Power S/W: Power On/Off switch

LCD Display: 16*2 LCD display

▲▼◄►: Menu navigation button

MENU: Menu and Enter button

EXIT: Cancel and Exit button

Back Connection Ports:

HDMI/DVI Out: HDMI/DVI output port

Audio Out: Stereo audio output port

CAT5: HDBaseT Input port

RS-232/422: RS-232/422 communication port

IR: IR communication port

IR voltage: IR voltage selection switch (12V or 5V)

DC In: DC 12V Power port

| Model Name	PM-CR102 (HDMI version), PM-CR102-D (DVI version)
Input Signal	HDBaseT 0,1,2,3+/-
Output Signal	DVI / HDMI (TMDS) 3.5mm stereo audio

Data Transmission Speed	3.4 Gbps/ch, Total 10.2 Gbps Max
Supporting Display Resolutions	PC: VGA ~ WUXGA (up to 1920 x 1200 @60Hz) HDTV: 480i ~ 1080p, 2K4K
Max. Distance	1920 x 1200 @ 60Hz or at 1080p : 330 ft (100m)
Connector Type	DVI 29P/HDMI 19P Female 3.5mm Stereo Jack RJ-45 Jack 2P /3.5MM Terminal Block (for Power) 4P /3.5MM Terminal Block (for RS-232/422) 5P /3.5MM Terminal Block (for IR) Mini USB (for firmware update)
Conformations	DVI 1.0 , HDMI 1.4, HDBaseT
Image Scaler	Sigma Design GF9452A
HDCP Compliance	Yes
Power Rating	DC +12V, 15 Watts Max
Dimension	6.3' x 5.7' x 1.7' (160 x 145 x 42 mm)
Weight	1.77 lbs (0.80 Kg)
User Control	6 Buttons Control (LCD and OSD)

PM-CR103 : Wall plate type, 2 Gang Decora style, white finish.

        Input: CATx (HDBaseT)

        Output: HDMI + 3.5mm stereo audio + RS-232

        POE, 330ft, Compatible with PM-COS4 output board
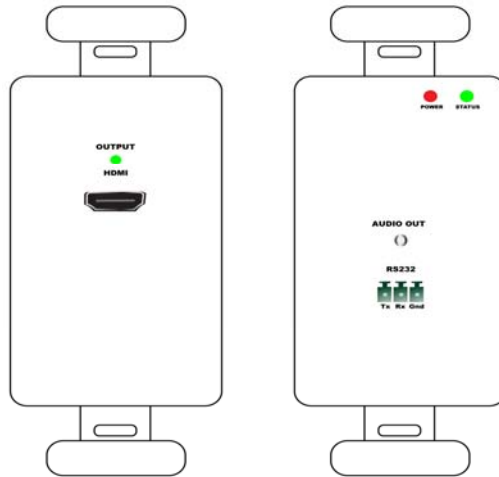
Front Connection Ports:

Power LED: Power status indicator

Status LED: Video signal presence indicator

HDMI Out: HDMI output port

Audio Out: Stereo audio output port

RS-232: RS-232 communication port

Back Connection Ports:

CAT5: HDBaseT Input port

DC In: DC 12V Power port

Model Name	PM-CR103
Input Signal	HDBaseT 0,1,2,3+/-
Output Signal	DVI / HDMI (TMDS) 3.5mm stereo audio
Data Transmission Speed	3.4 Gbps/ch, Total 10.2 Gbps Max
Supporting Display Resolutions	PC: VGA ~ WUXGA (up to 1920 x 1200 @60Hz) HDTV: 480i ~ 1080p, 2K4K
Max. Distance	1920 x 1200 @ 60Hz or at 1080p : 330 ft (100m)

Connector Type	HDMI 19P Female
	3.5mm Stereo Jack
	RJ-45 Jack
	2P /3.5MM Terminal Block (for Power)
	4P /3.5MM Terminal Block (for RS-232)
Conformations	DVI 1.0 , HDMI 1.4, HDBaseT
Image Scaler	Sigma Design GF9452A
HDCP Compliance	Yes
Power Rating	DC +12V, 15 Watts Max
Dimension	2 Gang Decora style, actual dimension will be updated
Weight	TBD

Receiver Input Signal Characteristics

Input Signal	Description	Unit	Min	Typical	Max	Remarks
DC input	DC Voltage	VDC	11.5	12	12.5	
	Power Consumption	Watts	13.5	13.8	14.4	
CAT5/e/6 LINK	Differential Output	mVp-p	400	AVcc	600	HDBaseT Interface

Receiver Output Signal Characteristics

Output Signal	Description	Unit	Min	Typical	Input Signal	Remarks
HDMI Output (19Pin)	Differential Output	mVp-p	400		600	TMDS Interface

Scaling Receiver (PM-CR102/PM-CR102-D) Supported Output Resolution

- Auto Time Set	- 1920*1080p 50Hz	- 1280*1024 75Hz
- 720*483p 59.94Hz	- 1920*1080p 59.94Hz	- 1280*1024 85Hz
- 720*576p 50Hz	- 1920*1080p 60Hz	- 1360*768 60Hz

- 1280*720p 50Hz	- 800*600 60Hz	- 1366*768 50Hz
- 1280*720p 59.94Hz	- 800*600 75Hz	- 1400*900 60Hz
- 1280*720p 60Hz	- 1024*768 60Hz	- 1600*1200 60Hz
- 1920*1080i 25(50)Hz	- 1024*768 75Hz	- 1920*1200 60Hz
- 1920*1080i 29.7(59.94)Hz	- 1024*768 85Hz	- 1920*1080p 60Hz
- 1920*1080i 30(60)Hz	- 1280*1024 60Hz	

Scaling Receiver's Output resolution can be set via front panel control button or serial command from PM Series Matrix Router.

OE: Output Extender Scaler Timing Select

The "OE" is an initiation command for Output Extender Scaler timing selection. The characters and numbers that follow the "OE" command tell the system, set scaling timing on selected Output. The last character "!" is found at the end of a command code which tells the system to execute the command. For a complete list of command characters and their functions, see examples below.

✓ OE command only applies to the HDMI with scaling Board and CATx/Fiber Output Board with PM-CR102 (CATx) and PM-FR102 (Fiber) Extender Receiver.

T00	Auto	T09	1080p (50Hz)	T18	SXGA (1280x1024@75Hz)
T01	480p (60Hz)	T10	1080p (59Hz)	T19	SXGA (1280x1024@85Hz)
T02	576p (50Hz)	T11	1080p (60Hz)	T20	UXGA (1600x1200@60Hz)
T03	720p (50Hz)	T12	SVGA (800x600@60Hz)	T21	1360x768@60Hz
T04	720p (59Hz)	T13	SVGA (800x600@75Hz)	T22	1366x768@60Hz
T05	720p (60Hz)	T14	XGA (1024x768@60Hz)	T23	1440x900@60Hz
T06	1080i (50Hz)	T15	XGA (1024x768@75Hz)	T24	1920x1200@60Hz
T07	1080i (59Hz)	T16	XGA (1024x768@85Hz)		
T08	1080i (60Hz)	T17	SXGA (1280x1024@60Hz)		

Example:

Command Codes	Action
*255OEO01T00! ↵	Set Output 1 Extender Scaler timing to Auto
*255OEO02T11!	Set Output 2 Extender Scaler timing to 1080p

PM CATx Receiver Compatibility Chart

Receivers / Compatibility	PM-CR101	PM-CR102	PM-CR103
PM Extender Compatibility	PM-CT101 PM-CT102 PM-CT103	PM-CT101 PM-CT102 PM-CT103	PM-CT101 PM-CT102 PM-CT103
RF6 Compatibility	PM-CT101-RF6 PM-CT102-RF6 PM-CT103-RF6	PM-CT101-RF6 PM-CT102-RF6 PM-CT103-RF6	PM-CT101-RF6 PM-CT102-RF6 PM-CT103-RF6
PM Matrix Board Compatibility	PM-COS4	PM-COS4	PM-COS4

Operation and Reliability Specification

1. Operating Environment
   Temperature   : 50F ~ 104F (10℃ ~ 40℃)
   Humidity   : 10% ~ 80%
   Altitude   : 3,000m Max.

2. Transit Environment
   Temperature   : -13F ~ 140F (-25℃ ~ 60℃)
   Humidity   : 5% ~ 95%
   Altitude   : 15,000m Max.

3. Storage Environment
   Temperature   : -4F ~ -49F (-20℃ ~ 45℃)
   Humidity   : 5% ~ 95%
   Altitude   : 3,000m Max.

4. Reliability
   MTBF: 90% at over 50,000 hours aging test
   In compliance with LCD Monitor reliability test standard

Chapter 3. Installation and Operating Instruction

Installation Connection Instruction

1. Turn off the video source and the display before connecting any cables
2. Connect CAT5 cable between the PM CATx (HDBaseT) transmitter and the receiver.
3. Connect DVI, HDMI, or VGA cable between the source and the transmitter AND the receiver and the display
4. Connect the power supply unit to both transmitter and receiver module or either one module if using a POE function
5. Turn on display
6. Turn on source

Operating Instruction

EDID

PM series Extenders provide 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) and etc.

In a digital connectivity environment; in order to support the maximum resolution of connected monitor, EDID handshake is a 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.

PM series Extenders provide 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 user can take and save onto the PM series transmitter.
EDID library list

①800 x 600 @ 60Hz	②1024 x 768 @ 60Hz	③1280 x 768 @ 60Hz
④1280 x 1024 @ 60Hz	⑤1360 x 768 @ 60Hz	⑥1366 x 768 @ 60Hz
⑦1400 x 1050 @ 60Hz	⑧1600 x 900 @ 60Hz	⑨1600 x 1200 @ 60Hz
⑩1680 x 1050 @ 60Hz	⑪1920 x 1200 @ 60Hz	⑫HD 1080i @ 60Hz
⑬HD 1080p (2CH)	⑭HD 1080p (Multi)	⑮RESERVED

Factory default EDID is set to 1920 x 1080p@60Hz

By optimizing factory default EDID and EDID library feature, in most cases, PM series Extender 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 PM series Transmitter. By saving display device's EDID information on the Transmitter, it will act as a display to the Video source.

* Connect display device to PM series Transmitter's HDMI/DVI port and then press EDID S/W button. It will copy and save display's EDID information to Transmitter's EEPRom.

> **Note)** **There may be display devices that are not allowing other device to emulate its EDID data.**

> **Note)** **Certain EDID data may not be compatible with some devices, in this case, it is recommended to user scaling option receivers.**
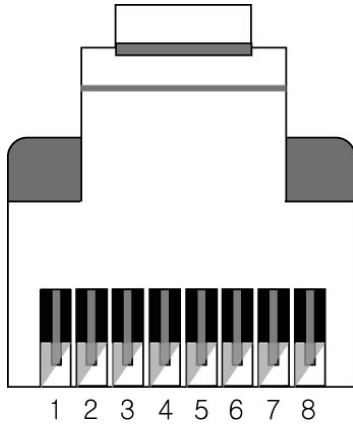
3.1 Cable Termination

- **CATx (HDBaseT) cable**
- **RS-232/422 cable**
- **IR cable**

CATx Cable Termination (for CATx Input/Output Boards)
PM series CATx (HDBaseT) extenders are designed TIA/EIA-566-B Standard.   Please ensure that each PIN layout of the cable is corresponding with the picture below before connecting the

cable. Please note that CATx or above level cable enables to deliver 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

5-pin Phoenix connector is used for RS-232/422 communication between PM extender Tx/Rx to the devices that are attached.

| Pin	RS-232	RS-422
1	Tx	Tx +
2	Not used	Tx -
3	Ground	Ground
4	Rx	Rx +
5	Not used	Rx -

* Pinout from the left
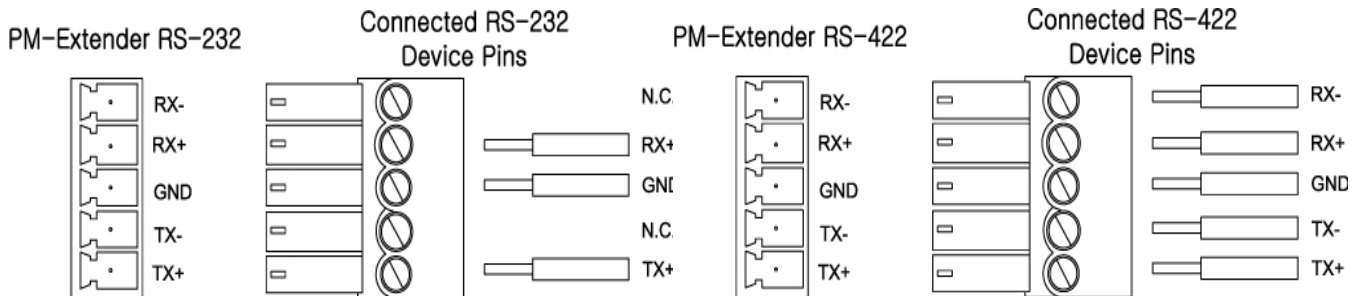
IR Cable Termination

PM series CATx (HDBaseT) standalone type extenders supports both 5V and 12V and it can be selected by IR voltage switch on the side of the unit. Please choose the voltage that IR cable requires. (Factory default is 5V)
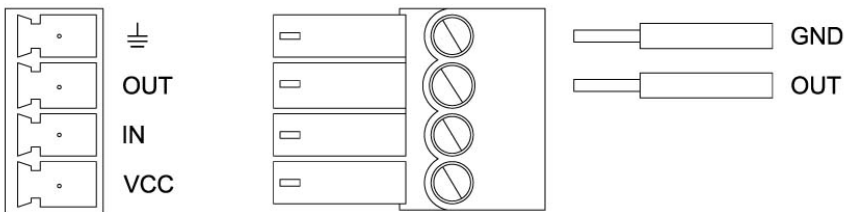
* Please note that wall plate type extenders do not support IR signal transmission.

* Please note that IR transmission only works between standalone type transmitters and extenders. IR transmission do not work with wall plate type extenders and PM matrix router.

Please refer below for the IR cable termination;
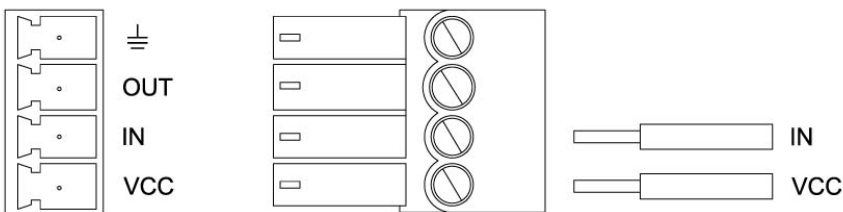
Connector Pin Assignment

DC Input

Part Number	Pin No.	Description	Remark
ECH350R-03	1	VCC(DC12V)	
	2	GND	
	3	GND	

RS232/422

Part Number	Pin No.	Description	Remark
ECH350R-03	1	TXD	
	2	RXD	
	3	GND	

IR

Part Number	Pin No.	Description	Remark
ECH350R-04	1	VCC	
	2	IN	
	3	OUT	
	4	GND	

CAT5 LINK

Part Number	Pin No.	TIA/EIA-568B(Wire color)	Description	Remark
RJ-45	1	Orange/ White	HDBT0+	
	2	Orange	HDBT0-	
	3	Green/ White	HDBT1+	
	4	Blue	HDBT2-	
	5	Blue/ White	HDBT2+	
	6	Green	HDBT1-	
	7	Brown/ White	HDBT3+	
	8	Brown	HDBT3-	

DVI-D Input & Output

Part Number	Pin No.	Description	Remark
DVI-D 29pin	1	TMDS DATA 2M	
	2	TMDS DATA 2P	
	3	TMDS DATA 2/4 Shield	
	4	TMDS DATA 4M(N.C)	
	5	TMDS DATA 4P(N.C)	
	6	DDC Clock	
	7	DDC Data	
	8	N.C	
	9	TMDS DATA 1M	
	10	TMDS DATA 1P	
	11	TMDS DATA 1/3 Shield	
	12	TMDS DATA 3M(N.C)	
	13	TMDS DATA 3P(N.C)	
	14	5V	
	15	GND	

	16	Hot Plug Detect	
	17	TMDS DATA 0M	
	18	TMDS DATA 0P	
	19	TMDS DATA 0/5 Shield	
	20	TMDS DATA 5M(N.C)	
	21	TMDS DATA 5P(N.C)	
	22	TMDS DATA Clock Shield	
	23	TMDS Clock P	
	24	TMDS Clock M	

HDMI Input & Output

Part Number	Pin No.	Description	Remark
HDMI 19pin	1	TMDS DATA 2P	
	2	TMDS DATA 2 Shield	
	3	TMDS DATA 2M	
	4	TMDS DATA 1P	
	5	TMDS DATA 1 Shield	
	6	TMDS DATA 1M	
	7	TMDS DATA 0P	
	8	TMDS DATA 0 Shield	
	9	TMDS DATA 0M	
	10	TMDS Clock P	
	11	TMDS Clock Shield	
	12	TMDS Clock M	
	13	CEC	
	14	RESERVED	
	15	DDC Clock	
	16	DDC DATA	
	17	GND	
	18	+5v	
	19	Hot Plug Detect	

Chapter 4. Additional Information

Manufacturer's Warranty (2-Year)

Dtrovision warrants this PM series Matrix Router to be free from defects in workmanship and materials, under normal use and service, for a period of two (2) year 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 of 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.

FCC/CE Statement

This device complies with part 15 of FCC Rules and EN 55022/55024/61000-3 for CE certification. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must not accept any interference received, including interference that may cause undesired operation. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 and 2 of FCC Rules and EN 55022/55024/61000-3 for CE certification. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and. if not installed and used in accordance with the instruction guide, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult a service representative for help.

Properly shielded and grounded cables and connectors must be used in order to comply with FCC/CE emission limits. Changes or modifications not expressly approved by the party responsible for compliance could void the user s authority to operate the equipment.

UL Statement

This device has completed a UL Commercial Inspection and Testing Services for the multimode HDMI cable complied with VW-1 under UL 758. it is validated by the UL file number SV2038 and project number 04CA05353.