

PureLink

PM Operation / Troubleshooting Guide



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Chapter 1. How to operate the touch panel screen

1. System info

Summary:

On the system info menu, you can get information of the current system configuration

Here is the following information you will see on the system info menu.

1. Maximum capacity of I/O port
2. RS-232 baud rate
3. Status of security lock <touch panel>
4. Status of cooling fan
5. LAN IP address
6. Status of redundant power
7. Channel information < video & audio channel>



FAQ:

Q: What is the input (or output) option on this screen and what can you do with it?

A: It will help you with analyzing the input signal and allows you to obtain detail information of incoming Signal (or outgoing signal)

Q: What is the audio button and what does it do?

A: It displays the status of PM's audio channel and output volume.

Q: What is the system lock? Does it mean you can lock the system?

A : Yes, it allows you to lock the front screen so even if someone mistakenly touch it or try to change the setting, this mode will prevent it from happening.

2. Create

Summary:

You can either create new Video & Audio I/O channel or modify current Video & Audio I/O channel.

Here are the following information you will see on the create menu.

1. I/O channel
2. Video mode
3. Audio mode
4. Video & audio mode
5. Set all
6. Clear all
7. One to one
8. Enter
9. Cancel



Simple way to create I/O channel

Select desired input # -> select desired output # -> Press enter to confirm

FAQ:

Q: What does the video mode do?

A: You are only able to modify video I/O channel when video mode is selected.

Q: What does the audio mode do?

A: You are only able to modify audio I/O channel when audio mode is selected.

Q: What will happen when video & audio mode is selected?

A: It allows you to modify both video & audio channel simultaneously.

Q: When do you set all, clr all and one to one buttons?

A: Set all - It allows you to select all output channel at once

Clr all - It allows you to remove all of selected output channel.

One to one - It allows you to create one to one connection between input and output channel.

3. System config

3.1. Serial communication

Summary:

System config menu will allow you to change the following settings.

1. RS-232
2. LAN
3. Product ID
4. Factory reset

Factory default value of serial (RS-232).

-LAN and Product ID are as follows-

RS-232 :

Baud rate -19200

Data bits - 8

Stop bits - 1

Parity - disable

Flow control - none

LAN:

IP address:

192.168.000.002

Gateway address:

192.169.000.001

Subnet mask:

255.255.255.000



Default Router ID is 255.

*Up to 255 units of PM Matrix router can be connected and operated in the same network either via RS-232 or LAN control by assigning different ID to each individual matrix router

FAQ:

Q: What are my other actions if I'm using an external control device which requires different RS-232 Setting?

A: There are more settings that can be selected to meet your system requirement.

Here is the list of supported options for RS-232 :

Supported Baud rate: 4800 bps, 9600 bps, 14400 bps, 19200 bps, 38400 bps, 57600 bps, 76800 bps, 115200 bps.

Supported data bit: 5 bit, 6bit, 7 bit, 8bit

Supported parity: non, even, odd

Supported stop bit: 1 bit, 2 bit

3.2 LAN communication



FAQ:

Q: What are my other options if I'm using an external control device which requires different LAN setting?

A: There are four specific values that need to be changed in order to connect with your network system.

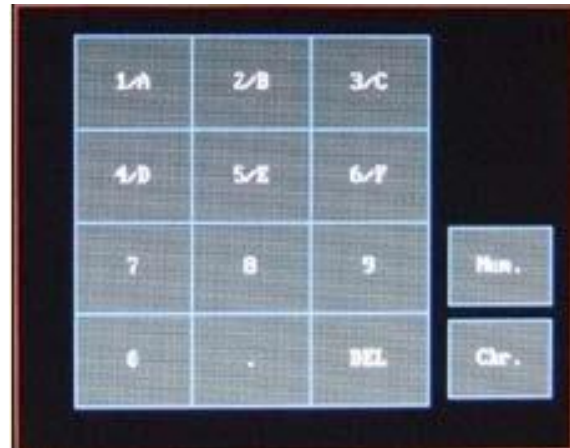
IP address, gateway, subnet mask, and mac address.

They can be easily be re-configured by using the number/alphabet key pad on the right side of LAN config screen.

Number/Alphabet key pad - >

Select IP address - > Select gateway address ->

Select subnet make -> Press enter to make change.



3.3 Router ID & Factory reset

Router ID



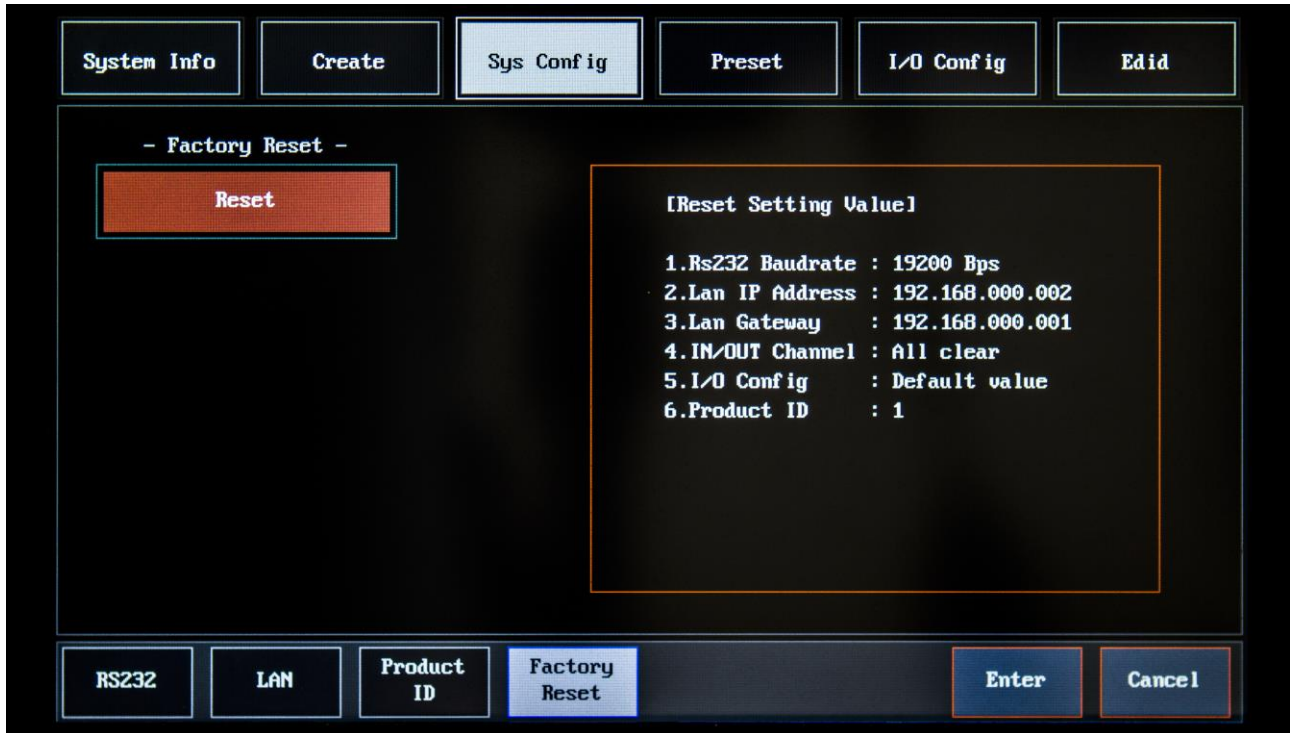
Router ID is associated with protocol. Therefore, it is very important to know the ID number for the matrix router that you want to control

FAQ:

Q: What will happen if I use incorrect ID number from my command?

A: Router will send you a "router ID error" message.

Factory Reset



Factory reset will turn PM matrix system back to the factory default setting.

RS-232 baud rate: 19200 bps
 IP address: 192.168.00.002
 Gateway: 192.169.001
 In/output connection: no connection
 Product ID: 255

FAQ:

Q: What would happen to the other settings on the PM matrix router?

A: Here are the lists of other changes after the factory reset.

1. All video/audio switching connection becomes clear
2. All audio output volume will be set to 0db
3. Input board's video will be set to SM: HDMI/SDI and audio will be set to AS: embedded
4. Output Board's audio will be set to 1S: embedded, 2S: embedded

4. Preset

Summary:

Preset Function enables you to pre-program video & audio's I/O channel and recall them as you need them.

Definition of each button in preset menu:

Preset select: PM has 16 empty slots where you can use to store your setting.

Channel edit: Modify and save you video/audio I/O channel.

Name edit: You can name your preset.

Store: Save preset setting.

Preset delete: Delete selected preset.



FAQ:

Q: What will happen to my preset if the power outage suddenly occurs?

A: All preset will remain stored even if the power outage occurs. However, factory reset will delete all presets.

Q: How can I modify my previously stored preset?

A: You can always go back to channel edit menu and change the setting again.

5. I/O Config

Summary:

On I/O configuration menu, you can configure I/O video, test patterns and preview monitoring output setting.

Input config: It displays current input video and audio settings.

Output config: It displays current output setting.

Test pattern: enables to test output port b using built-in test pattern.

Monitor out: Allows users to view any input source before making any switch.

5.1. Input configuration



FAQ:

Q: When do I need to use input configuration? Why is it so important to know?

A: It is applicable to only specific PM's Input board types such as CAT5 (HDBaseT), Fiber and DVI. For example, HDMI-only input board doesn't apply to this since it only has HDMI input port for use. PM's CAT5 (HDBaseT), Fiber, and DVI board comes standard with HDMI port built in parallel. So it is important that you know which port you need to select whenever you use the CAT5, Fiber, or DVI input board for PM matrix router. The only difference between input config and output config is that you have a full control of video and audio setting in the input config mode but there is only audio setting available in the output config.

Q: Can you explain the definition of both video & audio menu?

A: In video menu, there are three ways to configure the video input port:

1. SA - auto detect mode input will automatically detect the first active video signal.
2. SM - Select HDMI port.
3. SS - Select DVI port, CAT5 port, or Fiber port.

There are three ways to configure audio setting on input board:

1. AA - audio in auto mode, PM will detect audio between embedded audio from HDMI port (or PM transmitter) and inserted audio from 3.5mm audio port on input board, and outputs whichever is active.
2. AS - Use embedded audio from either HDMI port on input board or HDMI port on PM transmitter (CAT5 or Fiber)
3. AJ - Use inserted audio from 3.5mm stereo audio port on input board.

5.2. Output configuration



FAQ:

Q: When do I need to use my output config option? Why is it so important to know before installation starts?

A: It is applicable to only specific PM's output board type such as CAT5 (HDBaseT), Fiber and DVI.

For example HDMI-only output board doesn't apply to this since it only has HDMI output port for use PM's CAT5 (HDBaseT), Fiber and DVI output board comes standard with a HDMI port built in parallel.

The only difference between input config and output config is that you have a full control of video and audio setting in the input config mode, but there is only audio setting available in the output config mode.

Q: How to use HDMI/SDI audio and CAT5/Fiber audio setting?

A: There are three ways to configure output board's HDMI/SDI audio setting

(Or CAT5/Fiber audio setting).

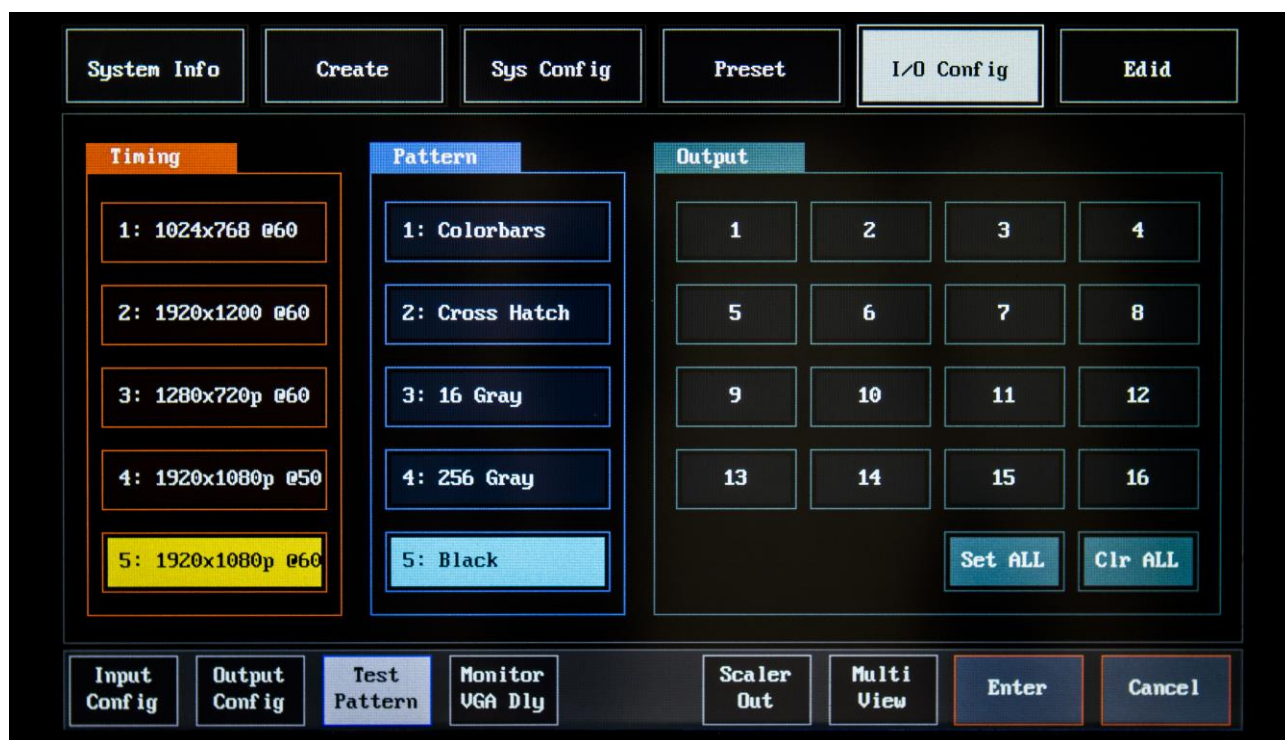
1.1A (2A):

PM series matrix router will detect signal between embedded audio from router's input and inserted audio from output boards 3.5mm stereo audio jack and output whichever is active. If both 1S (2S) and 1J (2) are active, it will output 1S (2S). Factory default is set to 1S (2S)

2.1S (2S) embedded audio represents audio from selected input's audio.

3.1J(2J) 3.5mm stereo audio represents inserted audio from output boards 3.5mm stereo audio jack.

5.3. Test pattern



FAQ:

Q: What is the purpose of test pattern option?

A: It is one of the most convenient features in PM matrix because you can perform quick and easy test on each individual output port without using the actual video source.

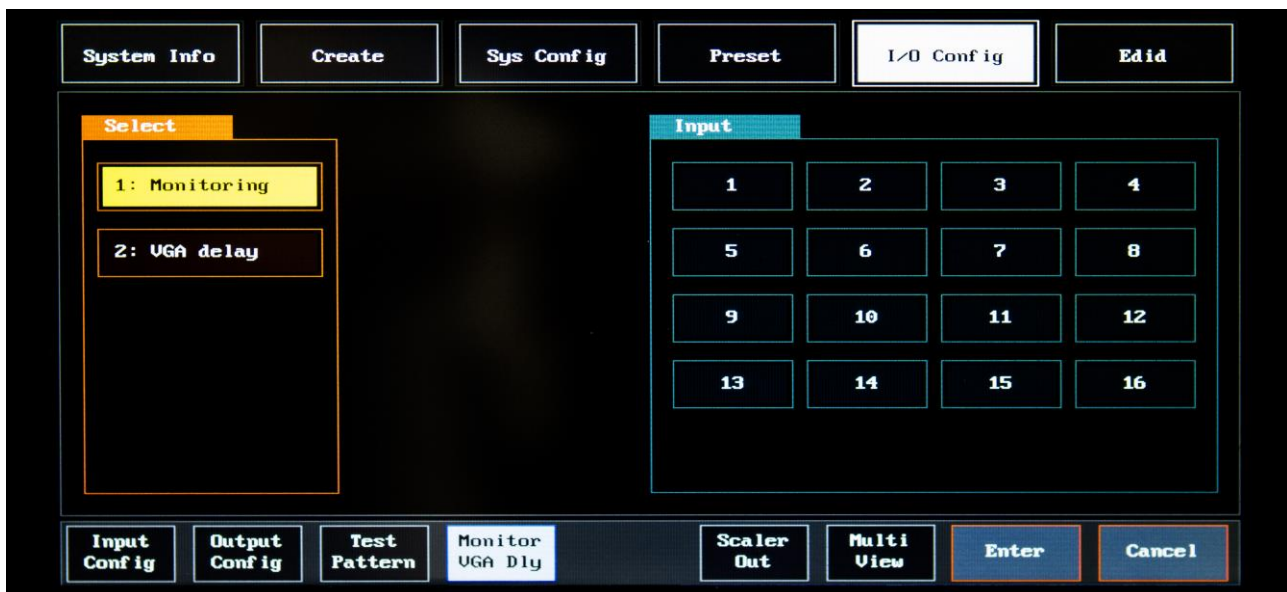
Q: How many different resolution and test pattern are there?

A: Video Resolution	Test Pattern
1024 x 768 @ 60Hz	Color bars
1920 x 1200 @ 60Hz	Cross Hatch
720 x 480p @ 60Hz	16 Gray
1280 x 720p @ 60Hz	256 Gray
1920 x 1080p @ 60Hz	Black

Q: How to run a quick test pattern test?

1. Select the video resolution
2. Select the test pattern
3. Select the output port number
4. Enter to confirm the change

5.4. Monitor Out



FAQ:

Q: How to use the Monitor Out?

A: PM Matrix Router provides an HDMI preview monitoring port, which further simplifies system testing by gaining an ability the monitoring.

Chapter 2. Matrix EDID Setting

1. EDID

Summary:

PM Matrix Router provides Auto EDID management system, easy and fail safe way to handle EDID via internal system and external EDID emulation.

External EDID: user can use this function to emulate EDID by using any external display device.

Internal EDID: user can freely select any pre-programmed EDID from internal EDID library.

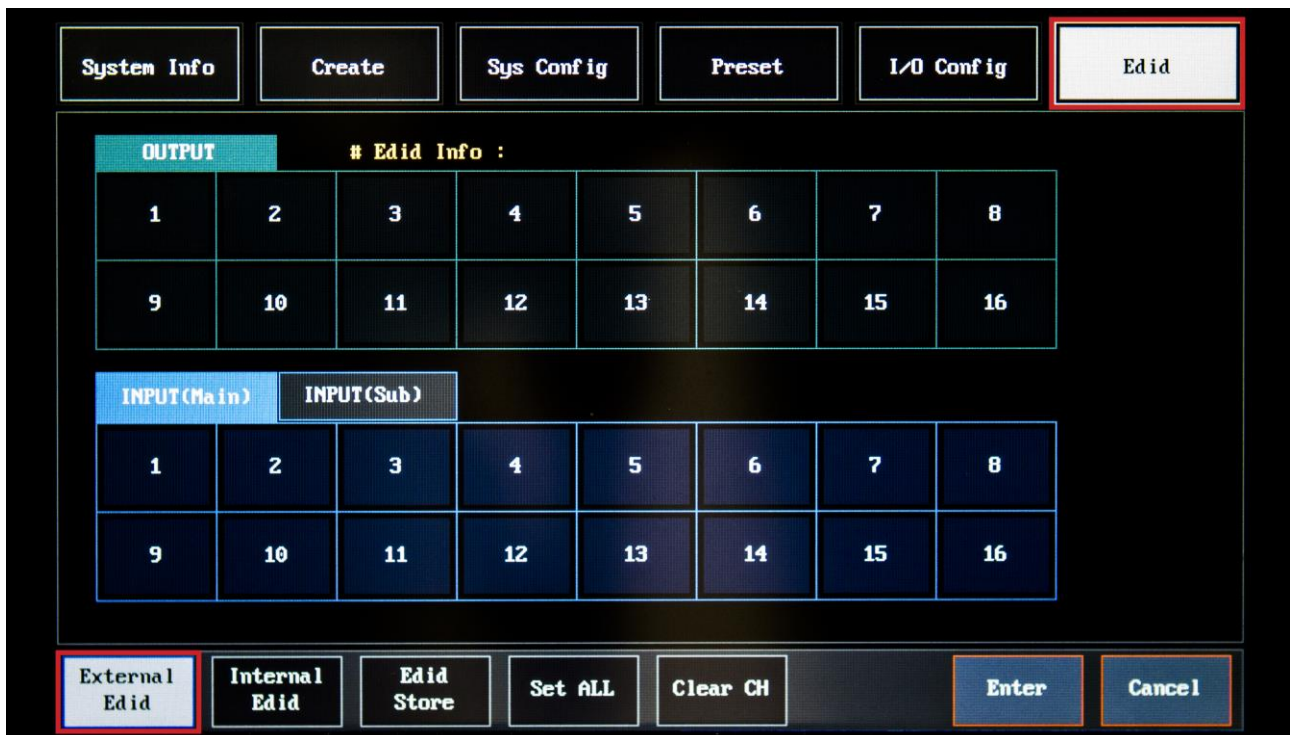
EDID store: user can store up to five different EDID from external monitors and save them permanently.

Set All: will select all input buttons.

Clear All: cancel the selected input buttons.

Programing External EDID

1. Press the EDID button on the top right
2. Press the External button on the bottom left.



3. Choose the output that is connected to the display.



4. Choose the input (main) port that needs the EDID saved.



5. Press enter to save.

6. Power cycle the matrix.

Please continue to step 7 if the issue still remains.

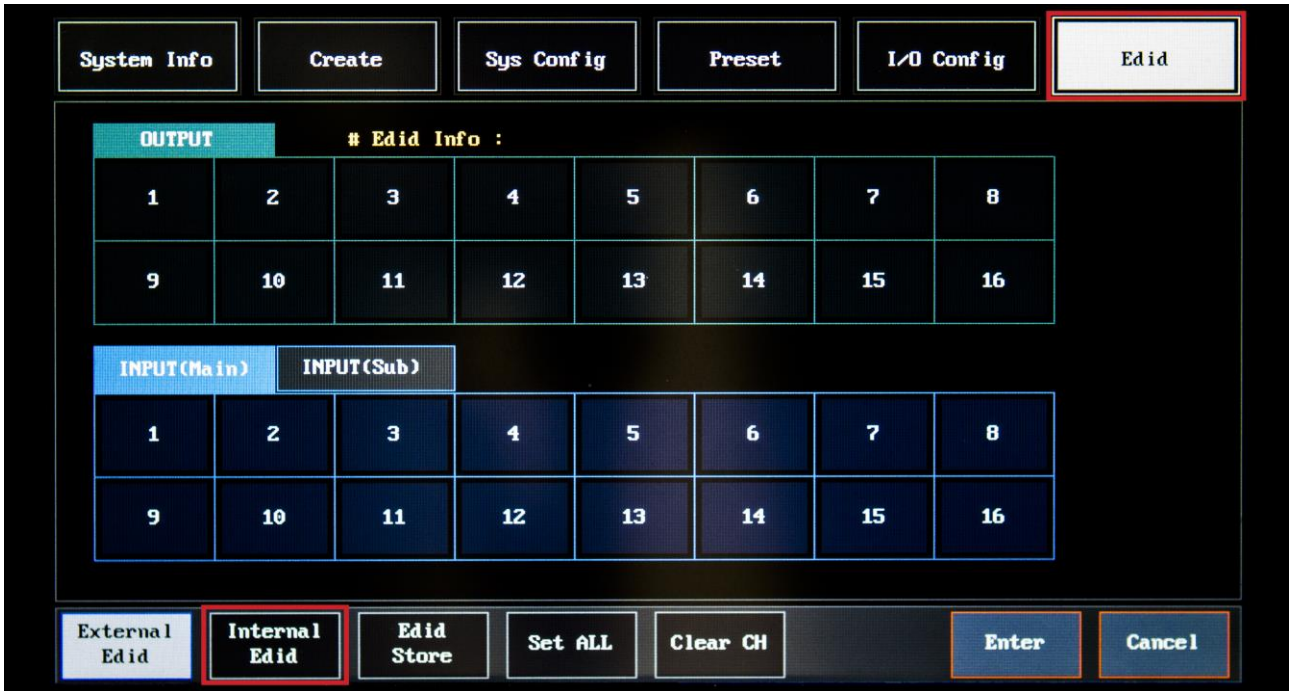
- 7. Please repeat steps 1 through 3.
- 8. Choose the input (sub).



- 9. Choose the input (sub) port that needs the EDID saved.
- 10. Press enter to save the EDID.
- 11. Power cycle the matrix.

Programing Internal EDID

1. Press the EDID button on the top right
2. Press the Internal button on the bottom left.



3. Choose the resolution you are trying to achieve. You can scroll up and down using UP & DOWN buttons on the screen. (1080p (2CH) is the most common resolution)



4. Choose the inputs (main) ports that needs the EDID saved.



5. Press Enter to save.

6. Power cycle the matrix.

Please continue to step 7 if the issue still remains.

7. Please repeat steps 1 through 3.

8. Choose the input (sub).

The screenshot displays the EDID configuration interface. At the top, there is a menu bar with the following options: System Info, Create, Sys Config, Preset, I/O Config, and Edid. The main area is divided into two sections: 'OUTPUT # Edid Info :' and 'INPUT (Main) INPUT (Sub)'. The 'INPUT (Sub)' section is highlighted with a red box. Below the main area, there are buttons for 'External Edid', 'Internal Edid', 'Edid Store', 'Set ALL', 'Clear CH', 'Enter', and 'Cancel'.

OUTPUT # Edid Info :							
1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16

INPUT (Main)		INPUT (Sub)					
1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16

External Edid Internal Edid Edid Store Set ALL Clear CH Enter Cancel

9. Choose the input (sub) ports that need the EDID saved.
10. Press enter to save.
11. Power cycle the matrix.

2. PM Extenders can be programmed in both watts <Internal & External>

1) PM-CT101, PM-CT102, PM-CT103 uses the same method to save the EDID.

2) There is a dial with numbers and letters on all of the transmitters.

3) Here are the definition of the numbers and the letters on the rotary button:

0: EXTERNAL EDID

1: 800 x 600 @ 60Hz

2: 1024 x 768 @ 60Hz

3: 1280 x 768 60Hz

4: 1280 x 1024 @ 60Hz

5: 1360 x 768 @ 60Hz

6: 1366 x 768 @ 60Hz

7: 1400 x 1050 @ 60Hz

8: 1600 x 900 @ 60Hz

9: 1600 x 1200 @ 60Hz

A: 1680 x 1050 @ 60Hz

B: 1920 x 1200 @ 60Hz

C: HD 1080i @ 60Hz

D: HD 1080p (2CH)

E: HD 1080p (Multi)

F: RESERVED

How to save internal EDID (only applies to 2K transmitters)

1) Rotate the dial to the letter or a number that fits the resolution of your requirement.



2) Press save button for 4-5 Seconds.



3) A green LED light should light up for 4-5 seconds.

(If the green LED light blinks a few times, please repeat the steps one more time)

3) Power cycle the unit.

How to save external EDID

1) Rotate the dial to 0.



2) Connect the monitor to the transmitter using HDMI cable.

3) Press save button for 4-5 seconds.

4) A green LED light should light up for 4-5 seconds.

(If the green LED light blinks a few times, please repeat the steps one more time)

5) Power cycle the unit.

Chapter 3. Basic Troubleshoot (PM Matrix)

1. Symptoms

- *No Pictures
- *Picture Blinking
- *Wrong Color Output
- *Wrong Resolution Output

Note

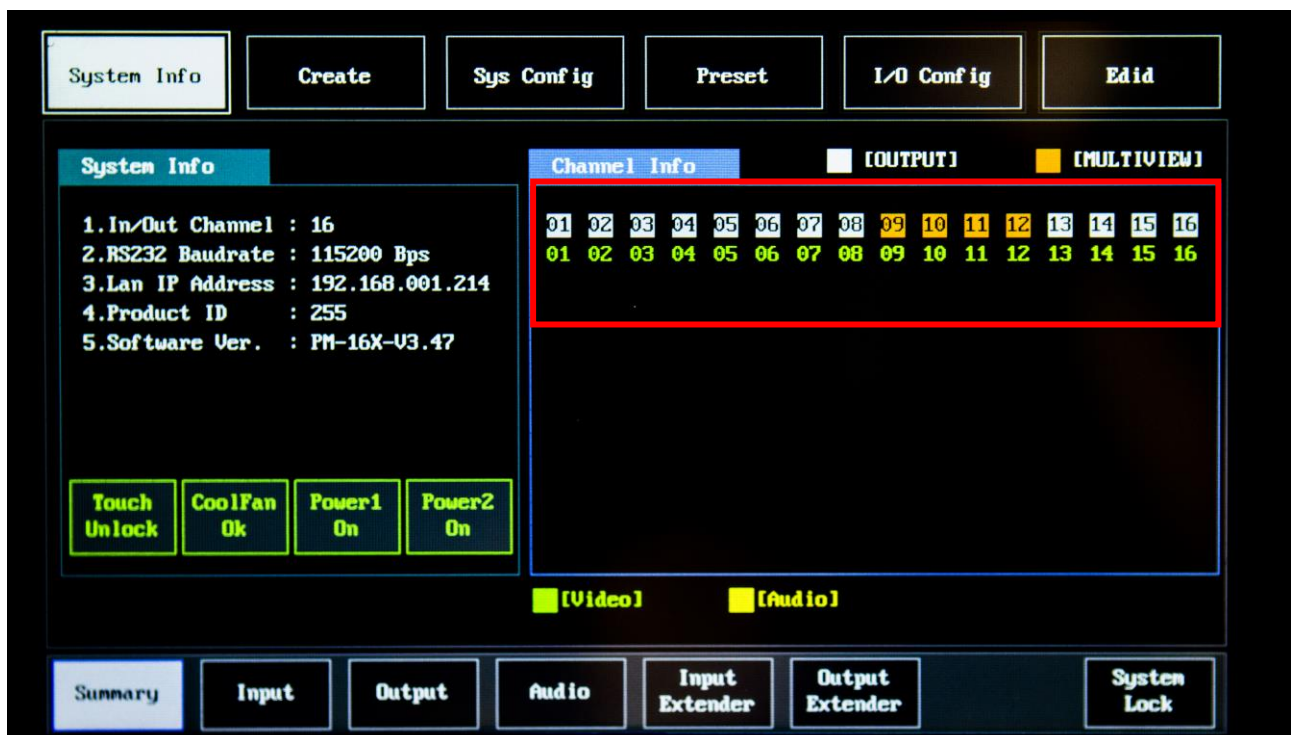
If you don't have the power & signal LED light on, please contact us at support@purelinkav.com

2. Resolutions

Note

Please test the unit after each step has been processed.

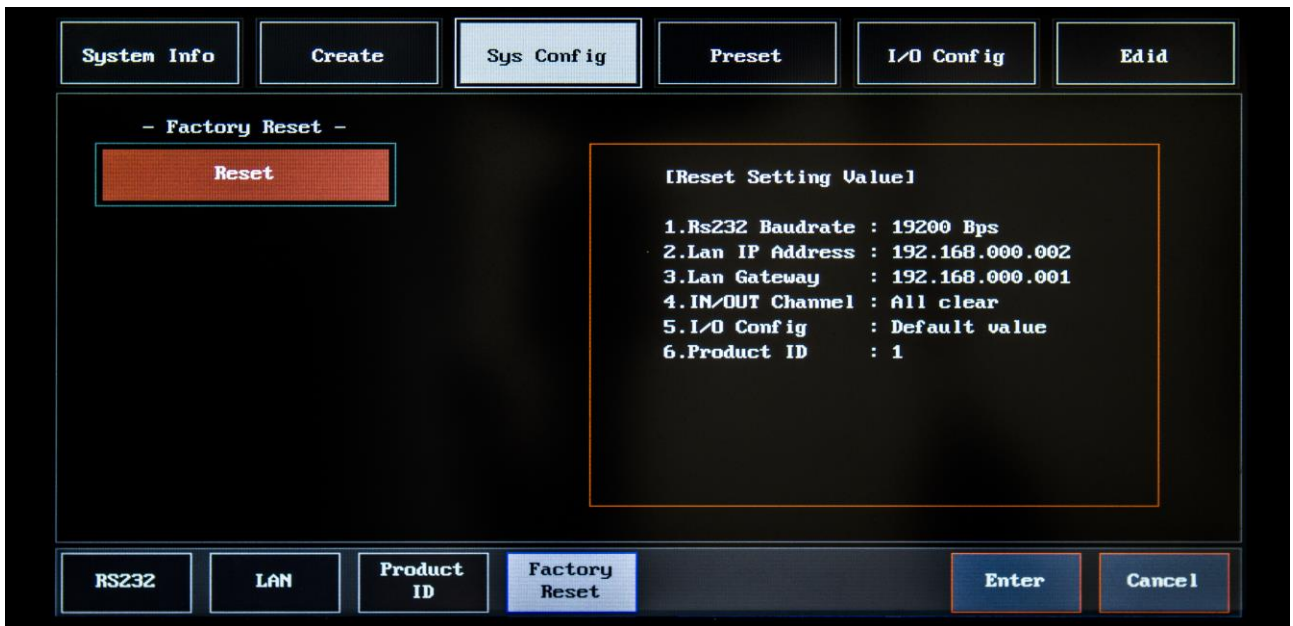
1. Check all the cable connections including the power supply adapter.
 - Make sure all of the cables are working properly.
2. Check all input/output channel settings and make sure it is setup as it is intended



3. Route the input ports to a different output ports and test if it's working properly.



4. If all Input/output have the same issue, please try to factory reset.



5. Save the EDID (External or Internal) see Config 13 to 19

6. Power cycle the matrix.

Note

If the issue still remains, please contact PureLink Tech Support at support@Purelinkav.com for further assistance.

Chapter 4. Basic Troubleshoot (PM Matrix Control)

1. Symptoms

*Not responding to 3rd party controller

2. Resolutions:

3. Check all the cable connections including the power supply adapter

- Make sure all of the cables are working properly.

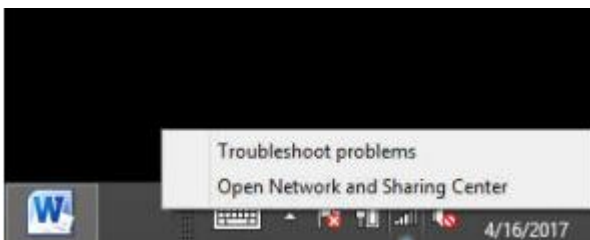
4. Check the control setting

- RS232: Baud rates, Data Bits, Stop Bits, Parity
- LAN: Subnet mask, Gateway

5. Bypass the 3rd party controller

EX: bypassing the controller to test the LAN port

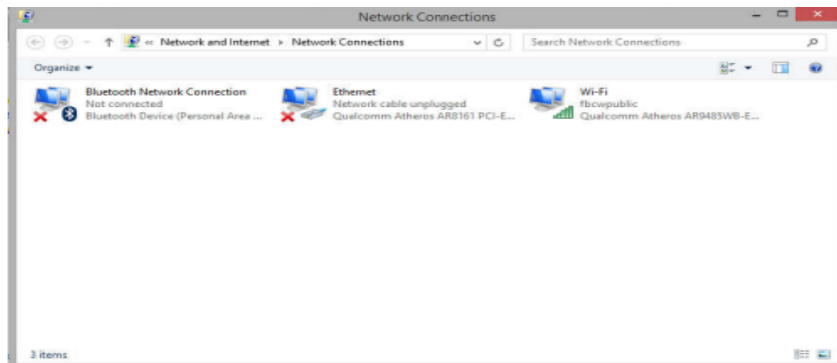
- After making a direct connection to PM matrix, you will need to set your computer to be on the same subnet as the PM.
- Right Click on the taskbar icon that looks like a signal strength indicator. Then click on “Open Network and Sharing Center”



- The next page will be as shown below. Select the “Change adapter settings”.



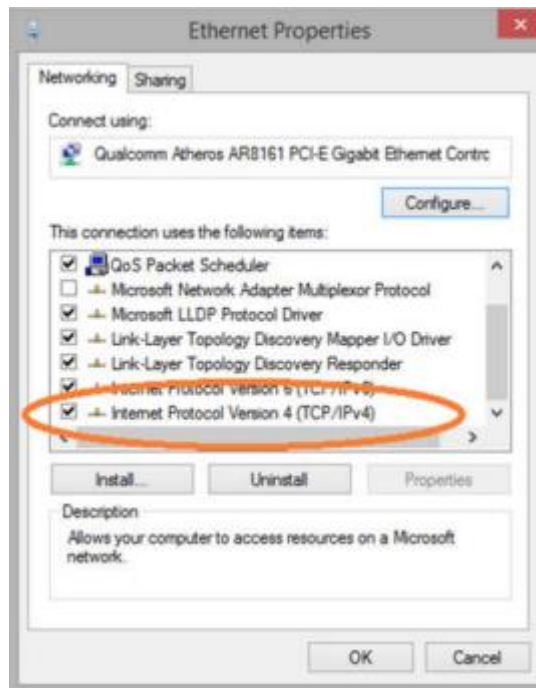
- When you are in the Change Adapter Settings page as shown below, select the LAN adapter that you will use to communicate with the PM system.



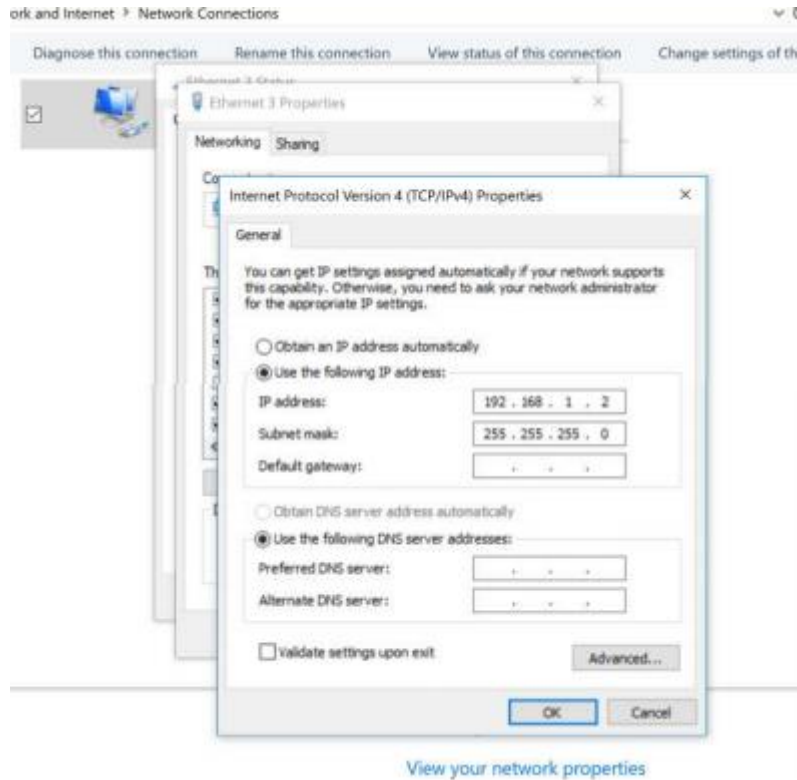
- For this example, we will select the middle listing, Qualcomm Atheros LAN Adapter. Double click on the listing. The properties page will open as shown below.

Select "Internet Protocol Version 4 (TCP/IPv4)" by double click on the text.

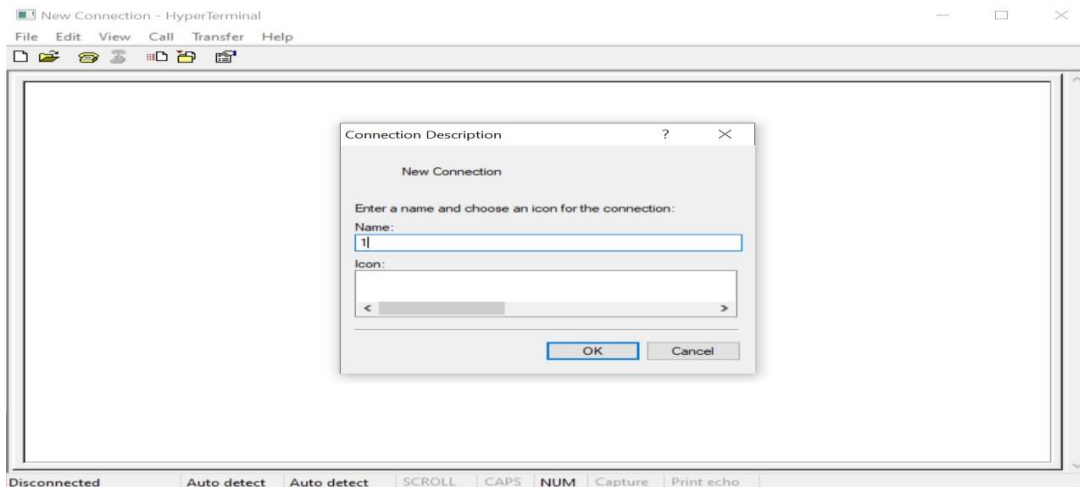
Note: Do not deselect the checkbox or change the selections of any other properties in the menu.



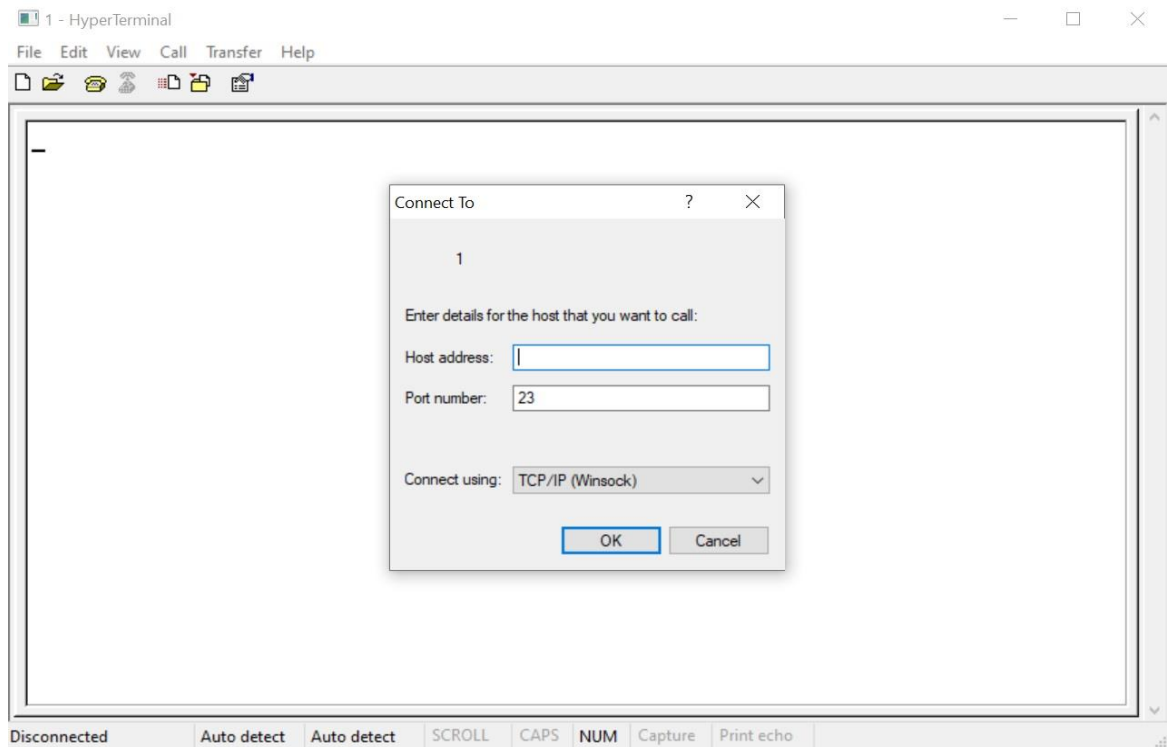
- When the window changes to the Properties page for the Internet Protocol Version 4, enter the same IP subnet as the PM system. Please see example below of one possible setting to connect to the device. Be careful to not use the same IP address as another device on the network.



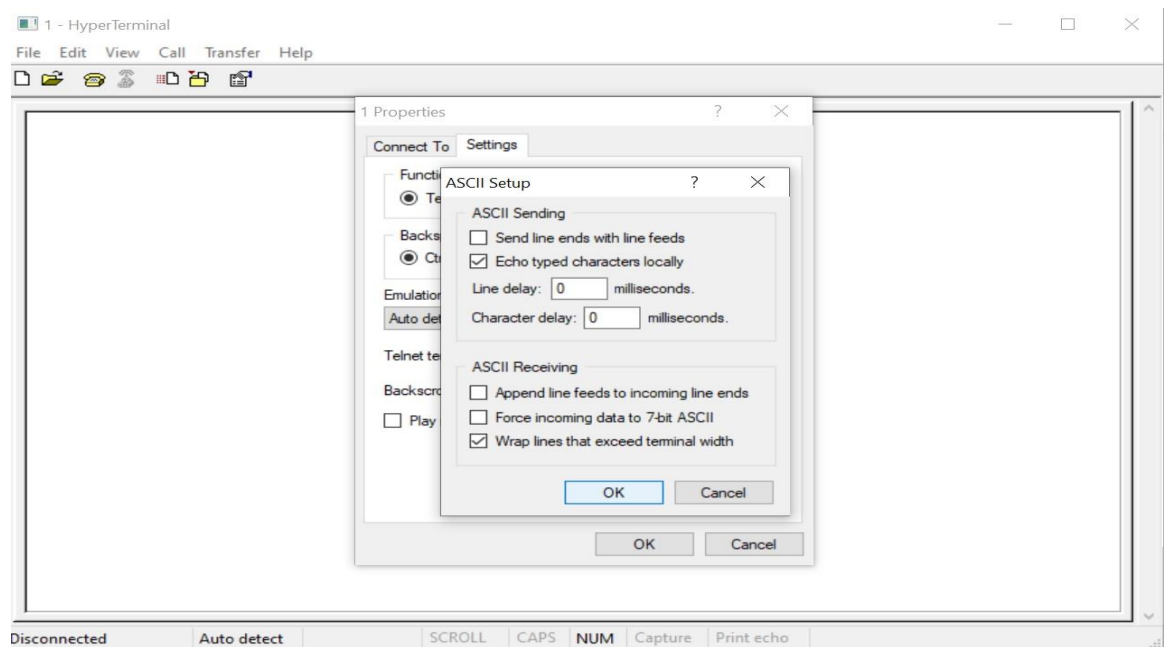
- Open Hyperterminal program (link: <https://cloud.purelinkav.com/index.php/s/fr7cRNJwbkmaDc8>)
- Type any letter under name and hit Ok



- Type in the IP address of PM, enter in port# 23 or 1200 and hit Ok



- Step 3: "File" -> "Properties" -> "Settings" tab -> "ASCII Setup" button -> Echo typed characters locally" checked -> Ok



- Type in *999?version! or *(PM's router ID)?version!

Chapter 5. Basic Troubleshoot (PM Extender)

1. Symptoms

- *No Pictures
- *Picture Blinking
- *Wrong Color Output
- *Wrong Resolution Output

Note

If you don't have the power & signal LED light on, please contact us at support@purelinkav.com

2. Resolutions

Note

Please test the unit after each step has been processed.

1. Check all the cable connections including the power supply adapter.
 - Make sure all of the cables are working properly.
2. Save the proper EDID (External or Internal) see page 20.
3. Power cycle the unit.

RF4



1. ST1 & ST2 LED

- ST1: "Signal"
This LED will light up if there is signal passing through.
- ST2: "Connection status"
This LED will light up if RF4 module such as PM-FR101-U-RF is properly connected to RF4.

4K PM Extenders can be programmed using either Internal or External EDID

1. PM-CR101-U, PM-CR102-U, PM-FR101-U, and PM-FR102-U used the same method to save EDID.
2. Press the menu button and then press the down arrow until you see EDID Setup, then press Menu to select.



3. Scroll through the EDID options using the left and right arrows.
4. Once you find the EDID you would like to choose, then press Menu to execute this change.
5. The EDID options are as follows :

1. TV & Monitor Check
2. 1080P (2CH)
3. 1080P (Multi)
4. 1080i (2CH)
5. 1920 x 1200p @ 60Hz
6. 1920 x 1080p @ 60Hz
7. 1366 x 768p @ 60Hz
8. 1360 x 768p @ 60Hz
9. 1280 x 1024p @ 60Hz
10. 1027 x 768p @ 60Hz
11. 3840 x 2160p @ 60Hz
12. External EDID Load

With the extenders listed above, you will also have the capability to scale to a specific resolution.

1. Press the Menu button and then press the Menu button again to select Output Format.



2. Then you will press the right and left buttons to select your desired scaling resolution.
3. Once you find the correct scaling resolution you would like to choose, then press Menu to execute this change.

4. The scaling resolutions are as follows :

1. Auto
2. 720 x 480p @ 59.94
3. 720 x 576p @ 50Hz
4. 1280 x 720p @ 50Hz
5. 1280 x 720p @ 59.9Hz
6. 1280 x 720p @ 60Hz
7. 1920 x 1080i @ 50Hz
8. 1920 x 1080i @ 59.9Hz
9. 1920 x 1080i @ 60Hz
10. 1920 x 1080p @ 50Hz
11. 1920 x 1080p @ 59.9Hz
12. 1920 x 1080p @ 60Hz
13. 800 x 600p @ 60Hz
14. 1024 x 768p @ 60Hz
15. 1280 x 1024p @ 60Hz
16. 1360 x 768 @ 60Hz
17. 1366 x 768p @ 60Hz
18. 1440 x 900p @ 60Hz
19. 1400 x 1050 @ 60Hz
20. 1600 x 1200p @ 60Hz
21. 3840 X 2160p @ 24Hz

22. 3840 x 2160 @ 25Hz

23. 3840 x 2160 @ 30Hz

24. BYPASS Mode

- If changing the EDID mode or Output resolution does not resolve the issue, please swap the swap the extender with a known working extender and check if the issue persists
- If there is no spare / known working extender to swap, please move the extender to a known working zone and check if the issue persists.

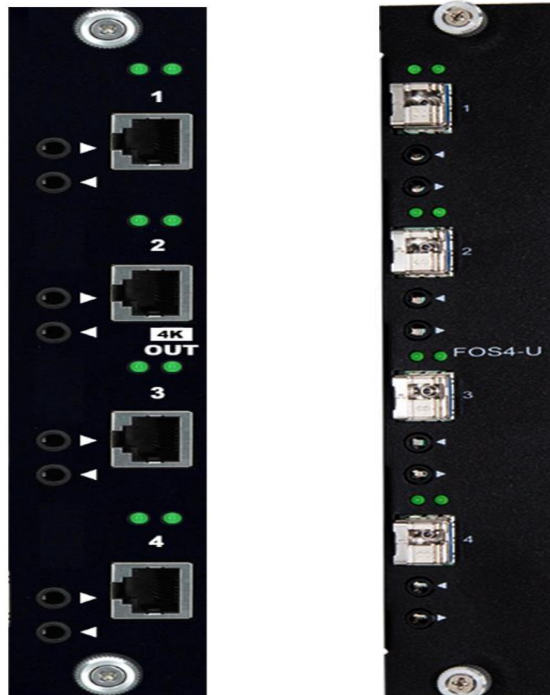
Note

If the issue still remains, please contact PureLink Tech Support at support@Purelinkav.com for further assistance.

Chapter 6. Basic Troubleshoot (PM Input / output card)

1. Symptoms

- *No Pictures
- *Picture Blinking
- *Wrong Color Output
- *Wrong Resolution Output



- Left LED: "Connection status"
The left LED will light up if PM-COS4-U or PM-FOS4-U card is properly connected to the PM matrix.
The left LED will light up even if there is nothing plugged in to the ports.
- Right LED: "Signal"
The right LED will light up when there is a source routed to the ports.

Note

If you don't have the connection & signal LED light on, please contact us at support@purelinkav.com

2. Resolutions

Note

Please test the unit after each step has been processed.

- Reseat the PM-FOS4-U card and check if Left LED lights up on every port of PM-FOS4-U.
- If certain LEDs are still not lighting up, please swap the PM-FOS4-U card with a known working PM-FOS4-U card.
- If there is no spare / known working PM-FOS4-U card to swap, please move the PM-FOS4-U card to a known working output slot and check if the issue persists.