

VIDEO WALLS VIDEO PROCESSORS VIDEO MATRIX SWITCHES EXTENDERS SPLITTERS WIRELESS CABLES & ACCESSORIES

9 Display Videowall Processor with Rotation





















Model #: DVI-PROWALL-9X

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Product Application & Market Sectors



Corporate



House Of Worship



Military



Residential



Education



Industrial



Medical



Aviation



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SECTION 1: GETTING STARTED

I.I IMPORTANT SAFEGUARDS

Please read all instructions carefully before you use the device. Save this manual for future reference.

What the warranty does not cover

- Any product, on which the serial number has been defaced, modified or removed.
- Damage, deterioration or malfunction resulting from:
- Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
- Repair or attempted repair by anyone not authorized by us.
- Any damage of the product due to shipment.
- Removal or installation of the product.
- Causes external to the product, such as electric power fluctuation or failure.
- Use of supplies or parts not meeting our specifications.
- Normal wear and tear.
- Any other causes which does not relate to a product defect.
- Removal, installation, and set-up service charges.

I.2 SAFETY INSTRUCTIONS

The **DVI-PROWALL-9X** Display Videowall Processor has been tested for conformance to safety regulations and requirements, and has been certified for international use. However; like all electronic equipments, the DVI-PROWALL-9X should be used with care and precaution. Read the following safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Do not dismantle the housing or modify the module.
- Dismantling the housing or modifying the module may result in electrical shock or burn.
- A Refer all servicing to qualified service personnel.
- Do not attempt to service this product yourself as opening or removing housing may expose you to dangerous voltage or other hazards.
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. Should an object or liquid falls or spills on to the housing, unplug the module immediately.
- Have the module checked by a qualified service engineer before using it again.
- △ Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.



This equipment has been tested and found to comply with Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. Any changes or modifications made to this equipment may void the users authority to operate this equipment.

Warning Symbols

Description



ONLY USE THE PROVIDED POWER
CABLE OR POWER ADAPTER SUPPLIED.
DO NOT TAMPER WITH THE
ELECTRICAL PARTS. THIS MAY RESULT IN
ELECTRICAL SHOCK OR BURN.



DO NOT TAMPER WITH THE UNIT. DOING SO WILL VOID THE WARRANTY AND CONTINUED USE OF THE PRODUCT.



THE VIDEO BOARDS ARE VERY SENSITIVE TO STATIC. PLEASE ENSURE IF RACK MOUNTED OR INSTALLED ON A SURFACE, IT SHOULD BE IN A GROUNDED ENVIRONMENT.



AWARNING

Read & understand user guide before using this device.

Failure to follow the proper installation instructions could result in damage to the product and preventing expected results.



2. INTRODUCTION

The DVI-PROWALL-9X/12x 9-Display Video Wall Processor was developed to meet and accommodate video resolution of up to 1080p60 (1920x1080).

This unit can support up to 12 DVI/HDMI outputs to expand the spectrum of video wall applications, because of its modular add-on card design concept, users can therefore modify the number of output ports based on different scenarios. Utilizing the same chassis for 9 and 12 video processing the bandwidth of the video can be controlled by any PC/laptop either via Ethernet or RS232 control. These control modules and control software has been revised for quick and easy setup within any environment.

The DVI-PROWALL-9X allows you to input 2 DVI/HDMI – supporting up to 1080p and the VGA/Component port supports up to WUXGA (1920x1200).

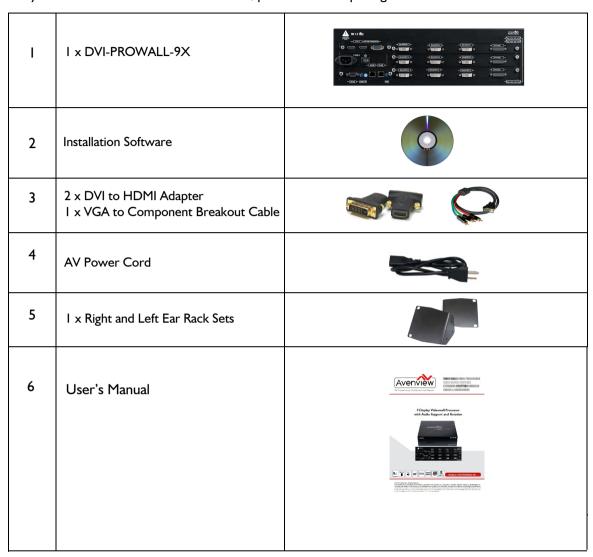
FEATURES

- Up to 12 DVI outputs from 640x480 to 1920x1080, 1920x1200;
- Supports input resolution up to 1080p/WUXGA;
- Supports VGA and Component input format from 640x480 to 1920x1200, interfaced or progressive;
- PIP, side-by-side (PAP), full screen modes and adjustable size and position through software;
- Resize, position, flip, zoom output video;
- Each DVI output has and independent controllable display area;
- User-selectable output settings, up to Full HD 1080p, 1920x1200;
- Software control through RS-232 and Ethernet;
- PCIE-interface add-on card design;
- Perfectly as a video screen splitter, a video converter and a video switcher;
- HDCP compliant;
- Supports input rotation;
- 2.5 RU size.



2.1 PACKAGE CONTENTS

Before you start the installation of the converter, please check the package contents.



If you require your DVI-PROWALL-9X to be upgraded to 12 ports. Please order the part # DVI-PROWALL-M3

Optional 3 Card Expansion Module with new easy Modular drawer insert design





2.2 BEFORE INSTALLATION

- Put the product in an even and stable location. If the product falls down or drops, it may cause an injury or malfunction.
- Do not place the product in high temperature (over 50°C), low temperature (under 0°C) or high humidity.
- Use the DC power adapter with correct specifications supplied with the unit. If improper power supply is used the unit may malfunction and cause a fire.
- Do not twist or pull by force ends of the video cable. It can cause malfunction.

2.2.1 CABLE SPECIFICATIONS





To achieve best results with our DVI-PROWALL-9X we highly recommend a premium quality 26 or 24 AWG HDMI cable with the below specifications to maintain signal integrity and distances.

FEATURES:

- Length: 5m (16ft) to 15m (50ft)
- Bandwidth: 10.2 Gbps data transfer rate
- Supports Resolution: Up to 3840x2160 @ 24Hz and 4096x2160 @ 24Hz, 1080p @ 24Hz / 50/60Hz/3D
- Conductor gauge: 26 / 24 AWG
- Deep Color
- 3D Capable
- CEC
- Ethernet Channel
- Audio Return Channel
- Connector I: HDMI (Type A) Male
- Connector 2: HDMI (Type A) Male

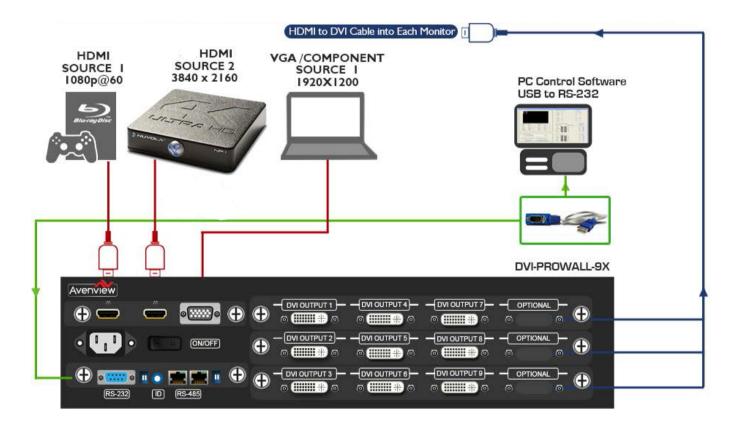


3. INSTALLATION (DVI-PROWALL-9X)

- I. Connect your source device such as digital signage player to DVI/HDMI Inputs on the DVI-PROWALL-9X.
- 2. Connect all displays/screens to DVI/HDMI Outputs on the DVI-PROWALL-9X.
- 3. Power up the DVI-PROWALL-9X.
- 4. Switch on all devices connected and then control the display output through RS-232, Ethernet and software.

GENERAL INSTRUCTIONS

- I. Before you begin the software installation from the CD provided or latest CS from the website, please ensure the DVI-PROWALL-9X is connected to AC power and your PC via USB or connected to the same network as the DVI-PROWALL-9X
- 2. PC Requirements-Windows® XP/Windows Vista®/Windows® 7
- 3. Ensure your laptop or desktop is plugged into AC power during the update process. It is not recommended to use only battery power during the installation. Do not remove power at any time during the process as this could lead to incomplete results. See Section 5 Operation Method B Software Control for more information.

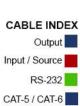


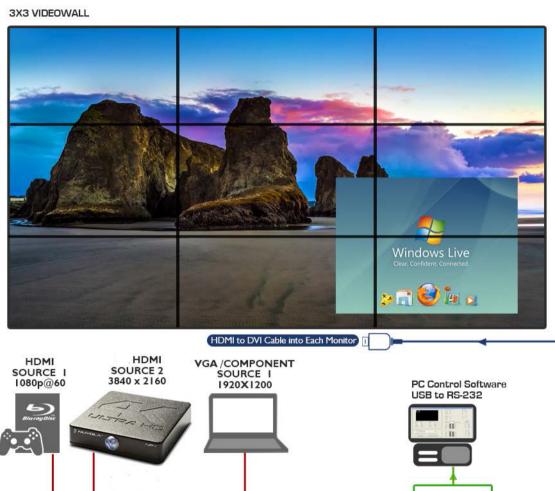


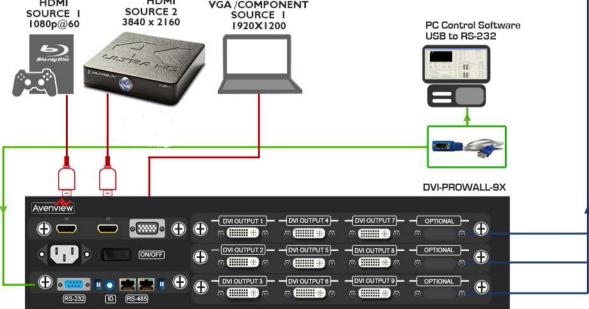
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DVI-PROWALL-9X

LAYOUT 1- DUAL INPUT VIDEOWALL PICTURE IN PICTURE

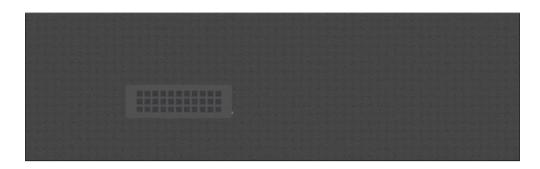








3.2.1 FRONT PANEL (DVI-PROWALL-9X)



3.2.2 REAR PANEL (DVI-PROWALL-9X)



I. POWER SUPPLY: Power Cord supplied with unit	2. INPUT PORT: DVI/HDMI Input
3. INPUT PORT: DVI/HDMI input, supports input resolution up to 1080p	4. INPUT PORT: VGA/Component input
5. RS232 CONTROL: RS232 control port	6. POWER SWITCH: Power ON/OFF switch
 ETHERNET CONTROL: Ethernet control port 	8. OUTPUT PORT I-9: DVI/HDMI outputs

Input Resolution Supported				
HDMI	VGA	Component (YPbPr)		
640x480	800x600 @60Hz	EIA 720x480p @59.95(60)Hz		
720x480	1024x768 @60Hz	EIA 720x576p @50Hz		
720×576	1280×720 @60Hz	EIA 1280x720p @59.94 (60)Hz		
800×600	1280×768 @60Hz	EIA 1920x1080i @59.94(60)Hz		
1024×768	1280x960 @60Hz	EIA 1920x1080p @59.94(60)Hz		
1152x864	1280x1024 @60Hz			
1280×720	1360×768 @60Hz			
1280×768	1400x1080 @60Hz			
1280×800	1600x1200 @60Hz			
1280×960	1920×1080 @60Hz			
1280×1024				
1360×768				
1366×768				
1400×1050				
1440×240				
1440x288(576i)				
1440×900				
1600×900				
1600x1200				
1680×1050				
1920x540(1080i)				
1920×1080				
1920×1200				

Output Resolution Supported
800x600@60
1024x768@60
1280x720@60
1280x1024@60
1366x768@60
1440x900@60
1440x1050@60
1600x1200@60
1920x1080@60
1920×1200@60



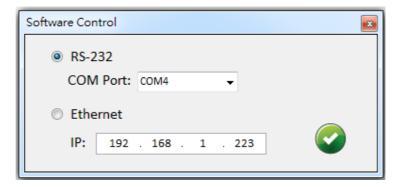
System Requirement and Precautions

- 1. Whenever powering off the DVI-PROWALL-9X, please stay unpowered for at least 5 to 10 seconds to allow power capacitors to discharge.
- 2. The DVI-PROWALL-9X provides software control program which runs under Microsoft Windows 98, 2000, XP, 7 through the interface of RS-232 serial control.
- 3. Before you click on the icon of the software, make sure you have secured the connection between your computer COM port and the DVI-PROWALL-9X.

Start the software control program

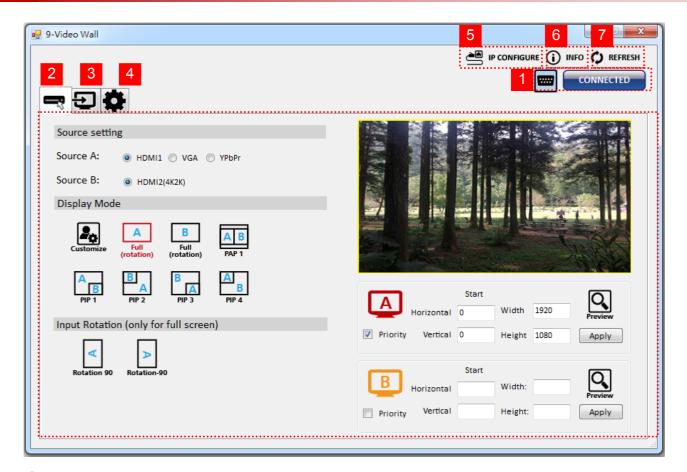
When clicking on the executable file, the following dialog will pop-up. It has two ways to control the DVI-PROWALL-9X device (under Microsoft Windows 7, please run as administrator). RS-232 serial Mode: Use RS-232 to connect the port on device and computer. Select correct COM port and click the button.

Ethernet Mode: Enter the device IP address and click the button.



After the software control setting is accomplished, it will enter directly to control interface.





Control Interface

1. Connection Status:

Show the connect information and status. If you use RS-232 serial control Mode to connect device the graph is . In contrast, the graph of Ethernet is ...

2. Input Control:

In this part, you can set up the input source, source display mode and screen rotation.

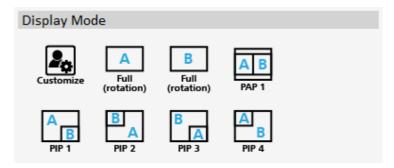
(I) Source setting



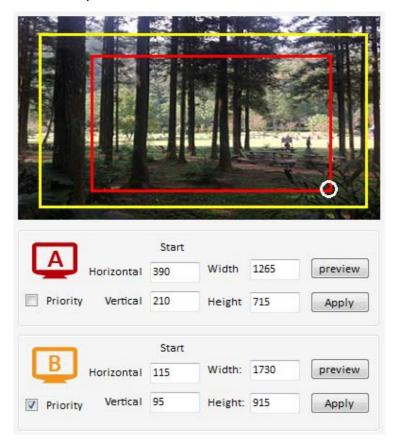
Set the Input source. You can select at most two input source.



(2) Display mode



In here, we provide 7 default mode and one customize mode for you to select.



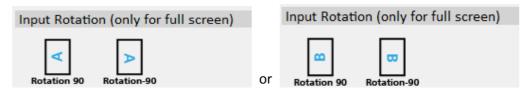
In the right part of control interface, it supply user to customize the display mode.

The different color of frame represents the different input source. The information of coordinate shows the position of input source screen. In a different color frame, it will show a white circle in the right corner. User can slide the white circle to resize the input source screen or adjust the position by setting coordinates, use can also can click the Priority. button to make the window precedence.



(3) Input Rotation

Please take a closer look at this function. This function for full screen mode use only. When full screen mode is selected, the following window will pop-up. Two directions to rotate the input screen is available.

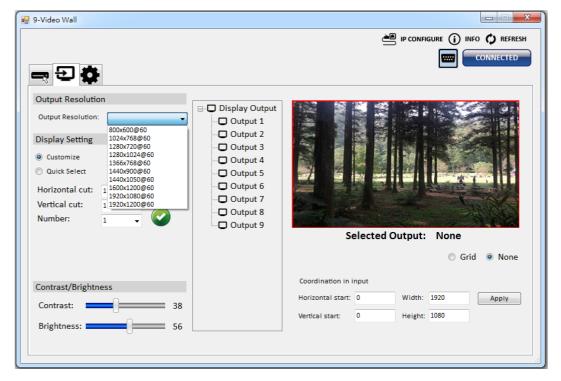


3. Output Control

In this part, user can set up the output resolution, display setting and the output's brightness and contrast.

(I) Output Resolution

Set the output resolution. User can choose the desired display icon to select the output port and setup resolution. When setting the different resolution, the coordinate of output will also be changed.



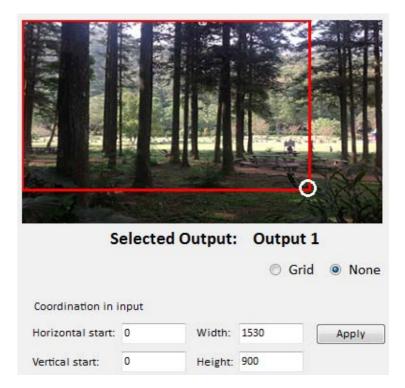
(2) Display setting

It has two modes can set up the display.

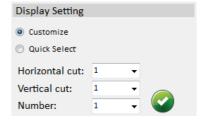
Customize

In Custom define mode, user can slide the white circle to adjust the size of the output screen or input the number to adjust the coordinate. In addition, if user want to understand or estimate which part you may select, it also can select the button to show grid on the graph. After the setting, please click

Grid



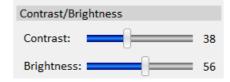
Quick Select



In Quick Select mode, user can define how to cut in both directions and the image you want to display.

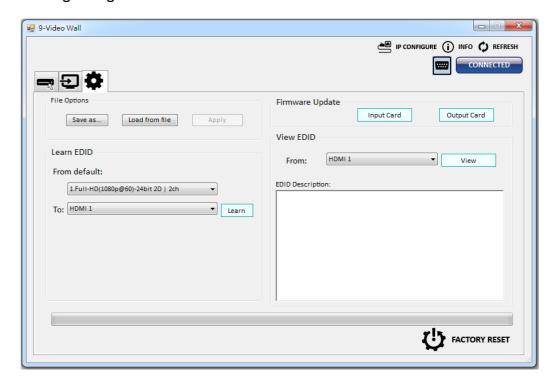
TV. (3) Contrast/Brightness

In here, user can adjust the brightness and contrast of output.

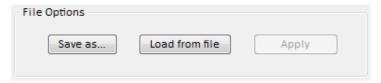




4. Advancing setting



(I) File Options

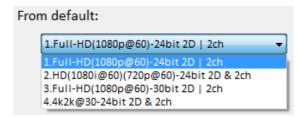


User can click the Save as... button to save all configuration for future use.

The Load from file button is for loading and to read configuration settings from existing files.

(2) Learn EDID

Select Default EDID (1-4 default EDID).

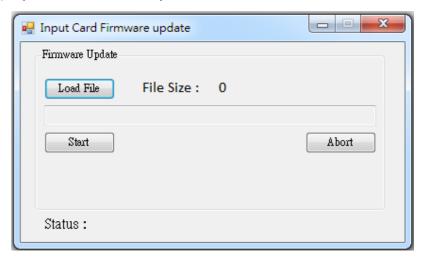


(The default EDID of 4K2K only suit for HDMI 2)

- Select Input.
- Click the Learn button to learn default EDID.



- (3) View EDID content
 - Select the EDID input source (HDMI 1, HDMI 2).
 - Click View button to read the EDID description and analysis.
- (4) Input Card firmware update

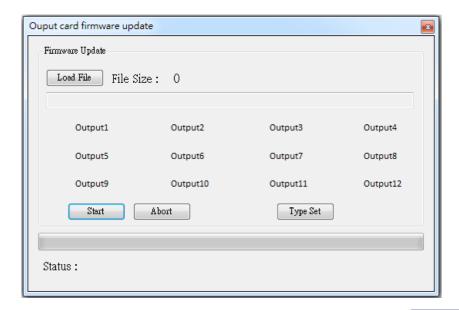


Make sure your USB is connecting and the connecting status is

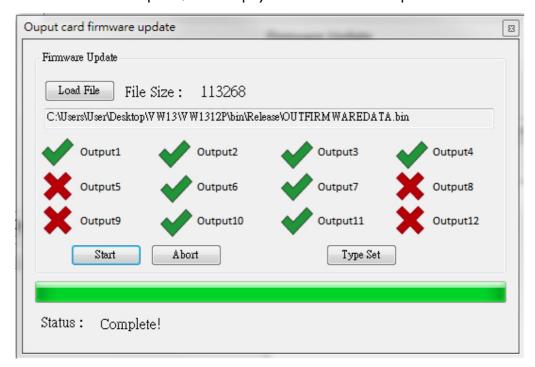


- Click the Input Card button to enter the interface.
- Click Load File button to select the firmware file which you want to update.
- Click Start button and the firmware will start to update.

(5) Output Card firmware update



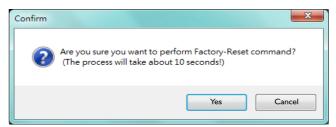
- Make sure your USB is connecting and the connecting status is
- CONNECTED
- Click the Output Card button to enter the interface.
- Click Load File outton to select the firmware file which you want to update.
- > Click Start button and the firmware will start to update.
- After firmware update, it will display the status of each output card.





(6) Factory Reset

- This default reset process will take approximately 10 seconds.

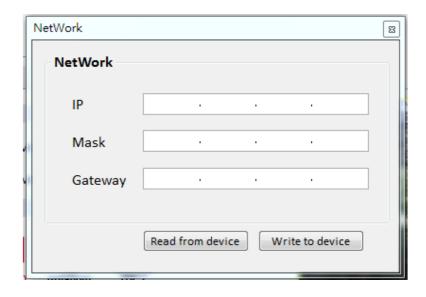


After a dialog complete box pops up, please restart the machine.



5. IP Configure

You also can use the Ethernet to control software program. First, click the PCONFIGURE button to setup network. Next, you can read the Ethernet setting from device or manually set to device. After the step of IP configuration, please restart the machine.





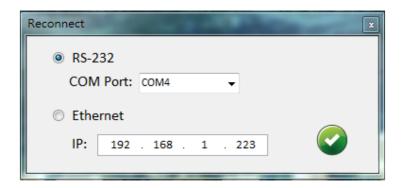
6. Info

Read the software and firmware version.



7. Refresh

This function not only can refresh the information of setting but can also reconnect the device. You can click the REFRESH button to update the control connection. After selecting this button, a popup "ReConnect" window will allow you to select the type of connection required for this device.



6. EDID LEARNING

The EDID learning function is only necessary when you encounter any display on the HDMI output port that cannot play audio and video properly. Because the HDMI sources and displays may have various level of capability in playing audio and video, the general principle is that the source will output the lowest standards in terms of audio format and video resolutions to be commonly acceptable among all HDMI displays. In this case, a 720p stereo HDMI signal output would probably be the safest choice. Nevertheless, the user can force the matrix to learn the EDID of the lowest capable HDMI display among others to make sure all displays are capable to play the HDMI signals normally.

There is a method to do EDID Learning as below Software Control: Please refer to the Operation Approach/Software Control through RS232 port (Page 12~13.)

There are four embedded default EDIDs as below:

- I. Full-HD(1080p@60)-24bit 2D | 2ch
- 2. Full-HD(1080i@60)(720p@60)-24bit 2D & 2ch
- 3. Full-HD(1080p@60)-30bit 2D | 2ch



SECTION 7: SPECIFICATIONS

Model Name		DVI-PROWALL-9X		
Technical				
Role of usage		Video Wall Processor		
HDCP compl	iance	Yes		
Output Disp	olays	Up to 12		
Video bandw	idth	DVI [Single-link 4.95Gbps],HDMI [2.25G to 6.75Gbps],Component [30MHz],VGA		
Video suppor	rt	Up to 1920x1200@60		
Video loop-	out	Optional		
Audio suppor	rt	No		
Input Forma	t Support	HDMI/DVI / VGA / Component		
ESD protection		Human body model — ± 19 kV [air-gap discharge] & ± 12 kV [contact discharge		
Input		2x DVI/HDMI + Ix VGA + Ix Component + Ix RS-232 + Ix RJ-45		
Output		9x DVI-D/HDMI		
Control		RS-232 / Ethernet		
Input TMDS signal		I.2 Volts [peak-to-peak]		
DVI connec	tor	DVI-D [29-pin female, digital only]		
RS-232 Con	nector	DE-9 [9-pin D-sub female]		
RJ-45 connec	tor	WE/SS 8P8C		
Enclo	sure	Metal case		
	Model	438mm x 438mm x 89mm [17.25" x 17.25" x 3.5"]		
Dimensions (L x W x H)	Package	494 x 494 x 100mm [19.4" x 19.4" x 3.9"]		
	Carton	510 x 510 x 252mm [20" x 20" x 10"]		
Weight	Model	13.6kg [30lbs]		
	Package	14.5kg [32lbs]		
Fixedness		IU rack-mount with ears and Wall hanging holes		
Power supply		AC Power 100-240V		
Power Consumption		60 W (max)		
Operation temperature		0~40°C [32~104°F]		
Storage temperature		-20~60°C [-4~140°F]		
Relative humidity		20~90% RH [no condensation]		



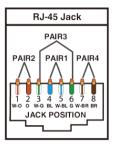


NOTE: Incorrect placement of IR Blaster and IR Extender into the extender may result in the failure of the IR extenders.

Please check carefully before plugging in the IR extender to the respective IR sockets. It is marked clearly with IR I: IR EXTENDER /IR 2: IR BLASTER

WARRANTY WILL NOT COVER THE DAMAGE

Data Link TIA/EIA-568-B				
PIN	Color	Function		
1	◎ W-O	TX0-		
2	0	TX0+		
3	₩-G	TX1-		
4	BL	TX2-		
5	◎ W-BL	TX2+		
6	9 G	TX1+		
7	◎ W-BR	TXC-		
8	● BR	TXC+		



NOTE

The QUALITY and TRANSMISSION of the video signals depends on the characteristics and quality of the UTP cables. Higher resolutions and longer transmission distances require low skew cables (<25ns/upto 300m) for best performance.



Unshielded CAT6 with metal RJ-45 connectors is recommended.



NOTICE

- 1. All HDMI over UTP transmission distances are measured using Belden CAT6A (625MHz), 4-Pair, U/UTP-Unshielded, Riser-CMR, Premise Horizontal Cable, 23 AWG Solid Bare Copper Conductors, Polyolefin Insulation, Patented Double-H spline, Ripcord, PVC Jacket using Quantum 980 signal HDMI Video Generator Module Video Pattern Testing.
- 2. The transmission length is largely affected by the type of category cables, also the type of HDMI sources, and the type of HDMI display. The testing result shows solid UTP cables (usually in the form of 300m or 1000ft bulk cable) can transmit a lot longer signals than stranded UTP cables (usually in the form of patch cords). Shielded STP connectors are better suit than unshielded UTP connectors. A solid UTP CAT5e cable shows longer transmission length than stranded STP CAT6 cable. For long extension users, solid cables are your only choice.
- 3. EIA/TIA-568-B termination (T568B) for category cables is recommended for better performance.
- 4. To reduce the interference among the unshielded twisted pairs of wires in category cable, you can use shielded STP cables with shielded connector to improve EMI problems, which occurs in long transmission.
- 5. Because the quality of the category cables has the major effects in how long transmission distance will be made and how good is the received display, the actual transmission length is subject to your category cables. For resolution greater than 1080i or 1280x1024, a solid CAT6 cable is the only viable choice.

PERFORMANCE GUIDE FOR HDMI OVER CATEGORY CABLE TRANSMISSION

PERFORMANCE RATING		TYPE OF CATEGORY CABLE		
WIRING	SHIELDING	CAT5e	CAT6	CAT6A/7
SOLID	UNSHIELDED (UTP)	***	****	****
SOLID	SHIELDED (STP)	***	***	***
STRANDED	UNSHIELDED (UTP)	*	**	**
STRANDED	SHIELDED (STP)	**	*	**
TE	RMINATION	PLEASE USE EIA/TIA-568-B TERMINATION (T568B) AT ANY TIME		



Hvenview Warranty Certificate

AVENVIEW CORP. ("Avenview") warrants Avenview-branded product(s) contained in the original packaging against defects in materials and workmanship when used normally in accordance with Avenview's enclosed manual guidelines for a period of THREE (3) YEARS from the date of original retail purchase - Warranty Period. Avenview's published guidelines include but are not limited to information contained in technical specifications, user manuals and service communications.

LABOR: During the Warranty Period of THREE (3) YEARS, Avenview will repair or replace the product(s) at no cost using new or used parts equivalent to novel performance and reliability if the product(s) is determined to have abide by Avenview's published guidelines. Cost of Labor applicable to product(s) after Warranty Period. For labor costs, please contact support@avenview.com.

PARTS: During the Warranty Period of of THREE (3) YEARS, Avenview will supply new or rebuilt replacements in exchange for defective parts of the product(s) at no cost if the product(s) is determined to have abide by Avenview's published guidelines. Cost of Parts applicable to product(s) after Warranty Period. For part(s) costs, please contact support@avenview.com.

To obtain Warranty: (a) proof of purchase in the form of a bill of sale or receipted invoice reflecting that the registered product(s) is within warranty period must be presented to obtain warranty service; (b) product(s) must be registered at time of purchase. Failure to do so will result in applicable parts and labor charges. Returning product(s) must be shipped in Avenview's original packaging or in packaging equal degree of protection to Avenview's. Both Avenview and purchaser are responsible for freight charges and brokerages when shipping the product(s) to the receiver.

NOT COVERED BY THIS WARRANTY

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