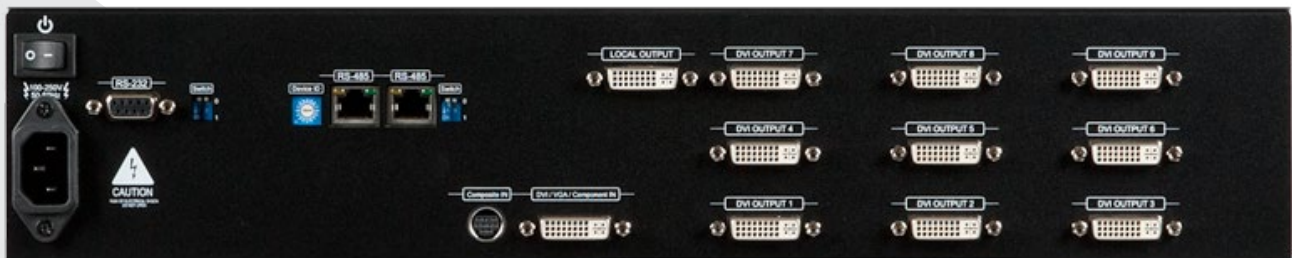




AV Connectivity, Distribution And Beyond...

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

9 Display Dual Image Video Wall Processor



MODEL #: DVI-VIDEOWALL-9X

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SECTION I: GETTING STARTED

I.1 IMPORTANT SAFEGUARDS









Please read all of these 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 Avenview DVI-VIDEOWALL-9X Display Video Wall Processor has been tested for conformity to safety regulations and requirements, and has been certified for international use. However, like all electronic equipment's, the DVI-VIDEOWALL-9X should be used with care. 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.
-  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. If 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.



1.3 REGULATORY NOTICES FEDERAL COMMUNICATIONS COMMISSION (FCC)

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 user's authority to operate this equipment.

Warning symbols	Description
	<p>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.</p>
	<p>DO NOT TAMPER WITH THE UNIT. DOING SO WILL VOID THE WARRANTY AND CONTINUED USE OF THE PRODUCT.</p>
	<p>THE VIDEO BOARDS ARE VERY SENSITIVE TO STATIC. PLEASE ENSURE IF RACK MOUNTED OR INSTALLED ON A SURFACE, IT SHOULD BE IN A GROUNDED ENVIROMENT.</p>

	<p>⚠ WARNING</p> <p>Read & understand user guide before using this device.</p> <p>Failure to follow the proper installation instructions could result in damage to the product and preventing expected results.</p>
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2. INTRODUCTION

The DVI-VIDEOWALL-9X has 9 output ports that are DVI/HDMI Compliant with Local output port to Monitor. This powerful device has real time data/video processor for multiple flat panel displays or projectors. With the most flexibility on the input side, the unit accepts DVI/HDMI, VGA, CVBS, S-Video, and YPbPr and splits the input onto the connected 9 displays.

The DVI-VIDEOWALL-9X can display simultaneously 2 video inputs (1st Digital and 2nd Analog) from the front end Input port together with the supplied Y cable. If you require Multiple Digital Inputs our DVI-SPLITPRO-4x is compatible with this unit. This device handles Thru DVI transmission, the quality of the outcome videos is guaranteed. The output display is grained up to 255 by 255 squares. Virtually any setups for the display layout can be possible by the provided software.

The embedded mixer is an advanced video processor for multimedia presentations. It supports up to four popular types of video inputs, of which two can be outputted simultaneously in Picture-In-Picture (PIP) or Picture-Aside-Picture (PAP) modes. The DVI-VIDEOWALL-9X allows you to manipulate input videos, wherever position and whatever sizes you want for viewing. The embedded scalar converts signals from input sources to match the native resolution of monitors, flat panel displays, projectors as well as user-selectable output settings up to WUXGA (1920x1200).

The DVI-VIDEOWALL-9X sends the resulting mixed video thru DVI interface to the connected monitors/projectors based on the display layout. The layout can be readily modified to fit your applications and optimize visual effects. Typical applications include digital signage, and broadcasting/education/ surveillance systems etc.

- Nine DVI outputs from 640x480 to 1920x1200 with a local loop out for monitoring
- Supports HDMI, DVI, S-Video, CVBS, Component, and VGA input, from 640x480 to 1920x1200, interlaced or progressive
- Advanced video de-interlace for improving 480i and 576i SD video input
- PIP, PAB, Full screen modes and adjustable size& position through software
- Resize, position, flip, zoom output video
- Perfectly as a video screen splitter, a video converter and a video switcher
- Each DVI output has an independent controllable display area
- User-selectable output settings, up to 1920x1200
- Can be cascaded to obtain more displays
- Image parameters and layouts are automatically saved in flash memory of the device and can be recalled for later use
- Several Image parameters and layouts can be saved in computers and can be loaded for later use
- Software control through RS-232/RS-485
- Firmware upgradable for support of new features and technology enhancements
- Built-in factory reset switch
- 2U size

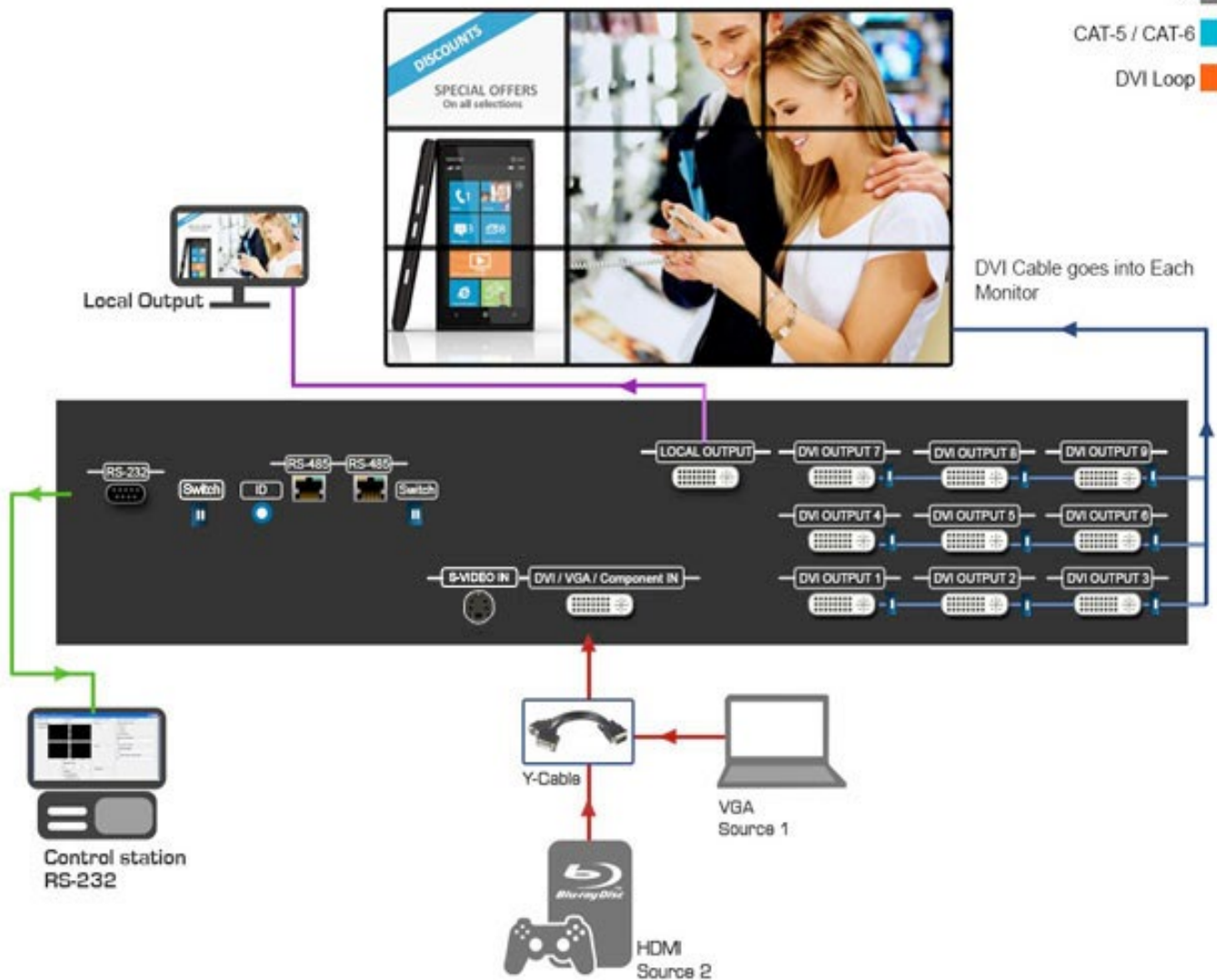


DVI-VIDEOWALL-9X

LAYOUT 2

CABLE INDEX

- Output ■
- Input / Source ■
- S/PDIF ■
- Audio ■
- RS-232 ■
- IR ■
- CAT-5 / CAT-6 ■
- DVI Loop ■



2.1 PACKAGE CONTENTS

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

1	DVI-VIDEOWALL-9X	X 1	
2	Y CABLE –S-VIDEO TO S-VIDEO-CVBS	X 1	
	USER'S MANUAL	X 1	
	INSTALLATION SOFTWARE CD	X 1	
	DVI TO DVI CABLE		
	DVI TO DVI & VGA BREAKOUT CABLE	X 1	
	COMPONENT TO VGA ADAPTER	X 1	
	DVI TO VGA ADAPTER	X 1	
	RS232 TO USB ADAPTER	X 1	
	UL AC POWER CORD	X 1	
	RACK-MOUNTING KIT -2	X 1	

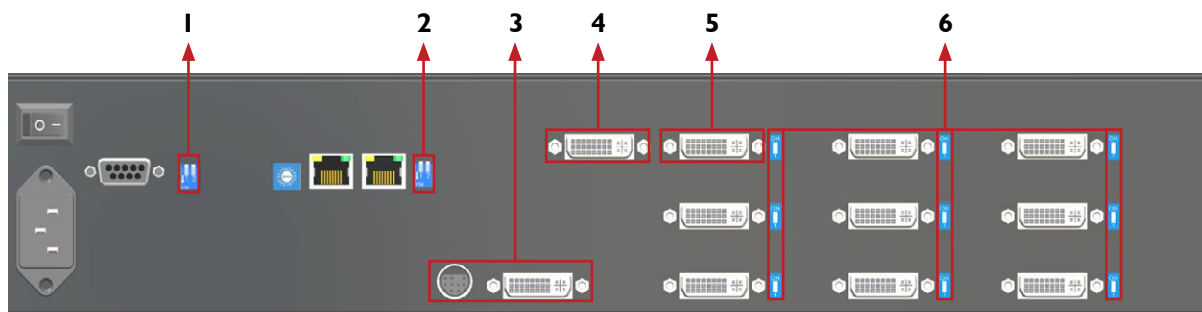


2.2 BEFORE INSTALLATION

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

3. PANEL DESCRIPTION

INPUT PANEL (DVI-VIDEOWALL-9X) REAR



<p>1. DIP Switch: UP- Normal operation mode, DOWN- is firmware update mode.</p>	<p>2. DIP Switch Label 1 : Default Mode (Power on unit move Dip switch 1 up the down to engage factory default mode. DIP Switch Label 2: UP RS232 Mode DOWN RS-485 Mode</p>
<p>3. Input Port: 2 Input Ports DVI/S-Video DVI port is compatible with HDMI S-VIDEO port is compatible with Composite</p>	<p>4. Local Output: DVI/HDMI port to any Monitor</p>
<p>5. Output Port: 1-9 DVI/HDMI ports out to monitor</p>	<p>6. Dip Switch: UP- Normal operation mode DOWN- is firmware update mode ONLY</p>



4. HARDWARE CONECTION

4.1 Unpacking

Remove the DVI-VIDEOWALL-9X from the Packaging and please examine the unit for any signs of shipping damage or missing items (see package contents 2.1). All shipping items should be secured safely for future return for service. Returning the unit for service not in the original box may result in voiding warranty or additional cost.

4.2 Placement

Please place the unit in a secure place and not to block the sides of this device or stack another device on the top or bottom of the DVI-VIDEOWALL-9X.

4.3 System Requirements

The Avenview DVI-VIDEOWALL-9X includes Software Control program can be installed with the following Operating Systems Windows XP / 2000 / Vista / 7 or later.

Connect the provide RS-232 to USB adapter to DVI-VIDEOWALL-9X and USB Port to your Windows based system that will be used to configure the DVI-VIDEOWALL-9X. Once it is connected to USB Port, Windows will look for appropriate drivers. If you are using an older version of Windows, then insert the Installation CD (provided) and have Windows search for drivers (you may need to download latest drivers from Prolific's website if you are using Windows Vista or Windows 7 or later).

4.4 System Connection

- We HIGHLY recommend quality cables for both input and output connections to ensure proper results.
- Power off the DVI-VIDEOWALL-9X and all devices that you want to connect.
- Connect 9 monitors, projectors or other displays that comes with DVI/HDMI inputs by using male-to-male DVI cables or DVI to HDMI or HDMI to DVI to DVI-VIDEOWALL-9X DVI outputs.
- Connect a device equipped with DVI output (such as PC) to the DVI input connector of DVI-VIDEOWALL-9X.
- Switch on all devices connected and then control the display output through RS-232 and software.
- Power up the DVI-VIDEOWALL-9X and you can see Vacuum Fluorescent Display (VFD) on the front panel blinks. Make sure the serial port (RS232) connection is secured.
- Click on the icon Avenview to start the control software
- When Avenview software is launched, let it automatically detect the device response from RS-232 port. The process takes 5 – 15 seconds. If there is no response, a warning window will show up.

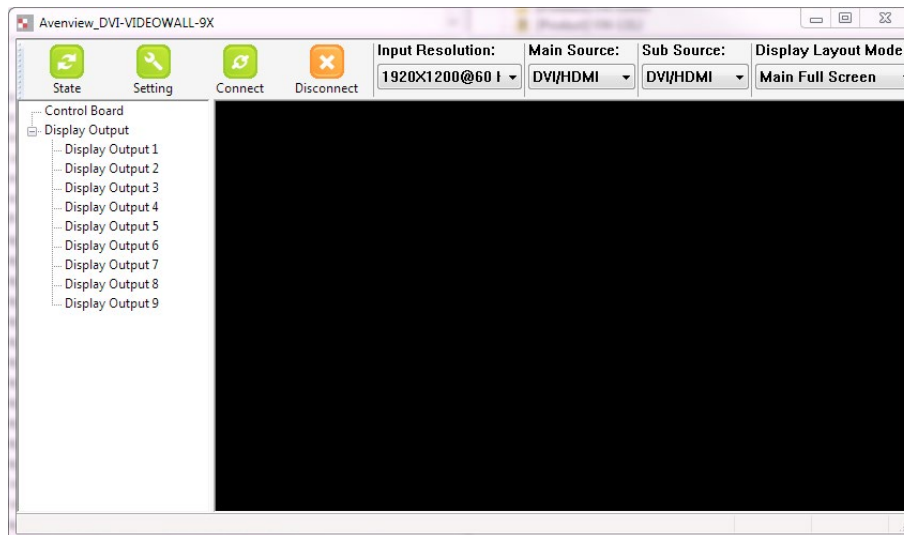


5. SOFTWARE OPERATION

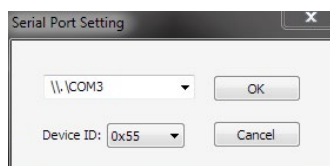


The possible reasons for the above error could be:

- No Power to DVI-VIDEOWALL-9X or it is in sleep state. Please check the power and restart the DVI-VIDEOWALL-9X
- The serial connection is not well established. Please ensure that the Prolific drivers are properly installed and all cables are securely connected. Check device manager, and ensure that RS-232 to USB Adapter is assigned a COM Port # and there is no exclamation mark.



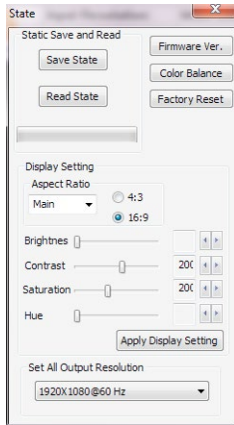
Please click on  to manually chose your COM port # (to verify check Device Manager in your PC)



6. SOFTWARE TOOLBAR



When the State Button is selected the user can perform global functions and configurations within the unit.



Overall State and Format Settings:

1. **Save and Read:** The current layout of the nine outputs can be saved to a file. The file can be uploaded in the future to resume the settings.
2. **Display Setting:** The main and sub sources, both can be adjusted to 16:9 or 4:3 aspect ratio. The brightness and contrast of the mixed video also can be adjusted for different requirement. After adjusting the settings, press Update Setting to save the changes.
3. **Firmware Ver.:** Display the current firmware of the device.
4. **Color Balance:** The color of the video can be automatically adjusted. It only works when the source is Analog and the mode is Full Screen.
5. **Apply Display settings:** This applies the changes selected by the user.



Button Name	Description & Function
State	Please refer to Section 6
Setting	Serial Port Setting –Select the correct COM Port for Connection to device.
Connect	Once the correct COM port selected this button activates connection to device
Disconnect	Disconnects communication to the RS232 port
System	Please refer to section 1.14 (System Control)
Input Resolution	Set the Input Resolution of the source 800x600@60Hz to 1920X1200@60Hz
Main Source	Choose which source will be the MAIN from CVBS\SVIDEO\VGA\DVI HDMI
Sub Source	Choose which source will be the SUB from CVBS\SVIDEO\VGA\DVI HDMI
Display Layout Mode	Choose your OUTPUT Layout Main Full Screen\Sub Full\PIP Mode\Side By side\Custom



Examples of 3 supported Videowall Functions

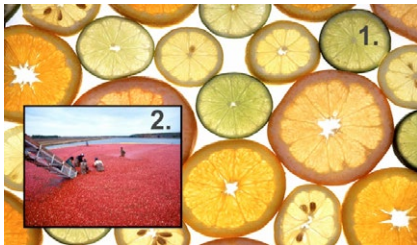
Duplicate



PAP



PIP

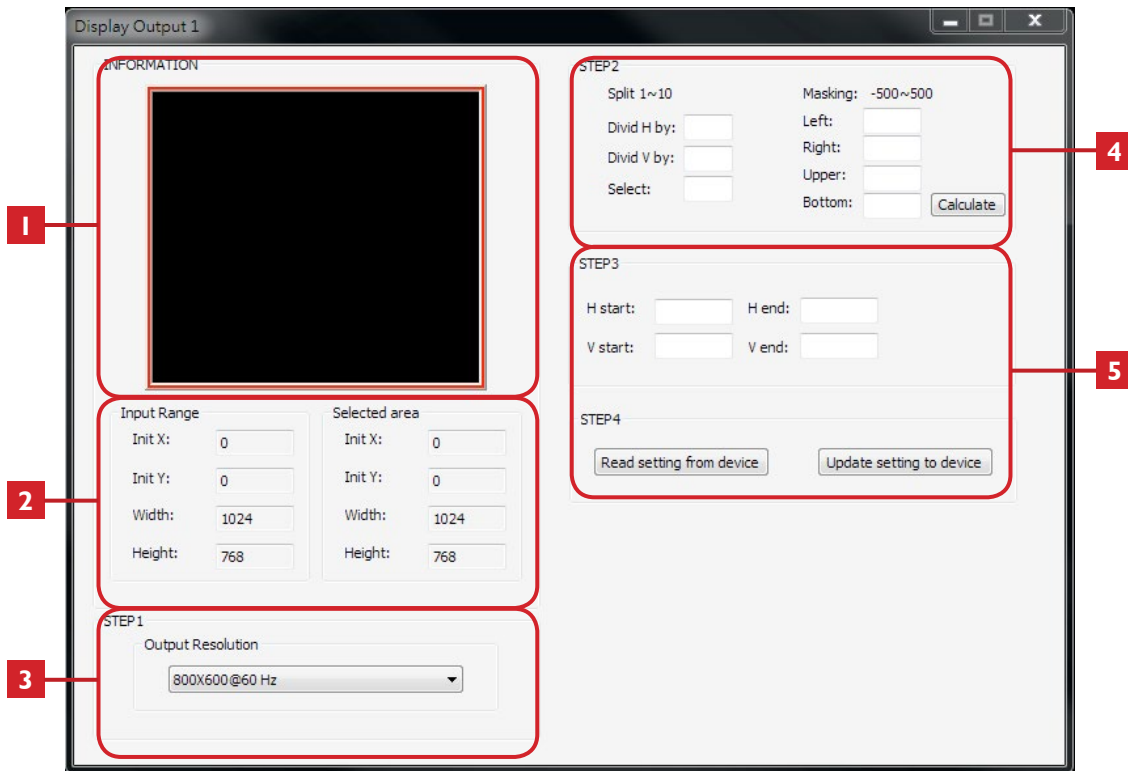


7. OUTPUTCARDS CONFIGURE

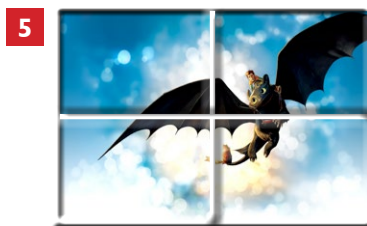
There are totally 9 channel outputs for DVI-VIDEOWALL-9X, and each output can be independently setup to display any area of the input video. Each output can be with different output resolutions to adapt different combinations of monitors or projectors. To select each individual Output to setup with preferable output, please click on the desired Output, and the control dialog windows will show up accordingly.

- Control Board
- Display Output
 - Display Output 1
 - Display Output 2
 - Display Output 3
 - Display Output 4
 - Display Output 5
 - Display Output 6
 - Display Output 7
 - Display Output 8
 - Display Output 9





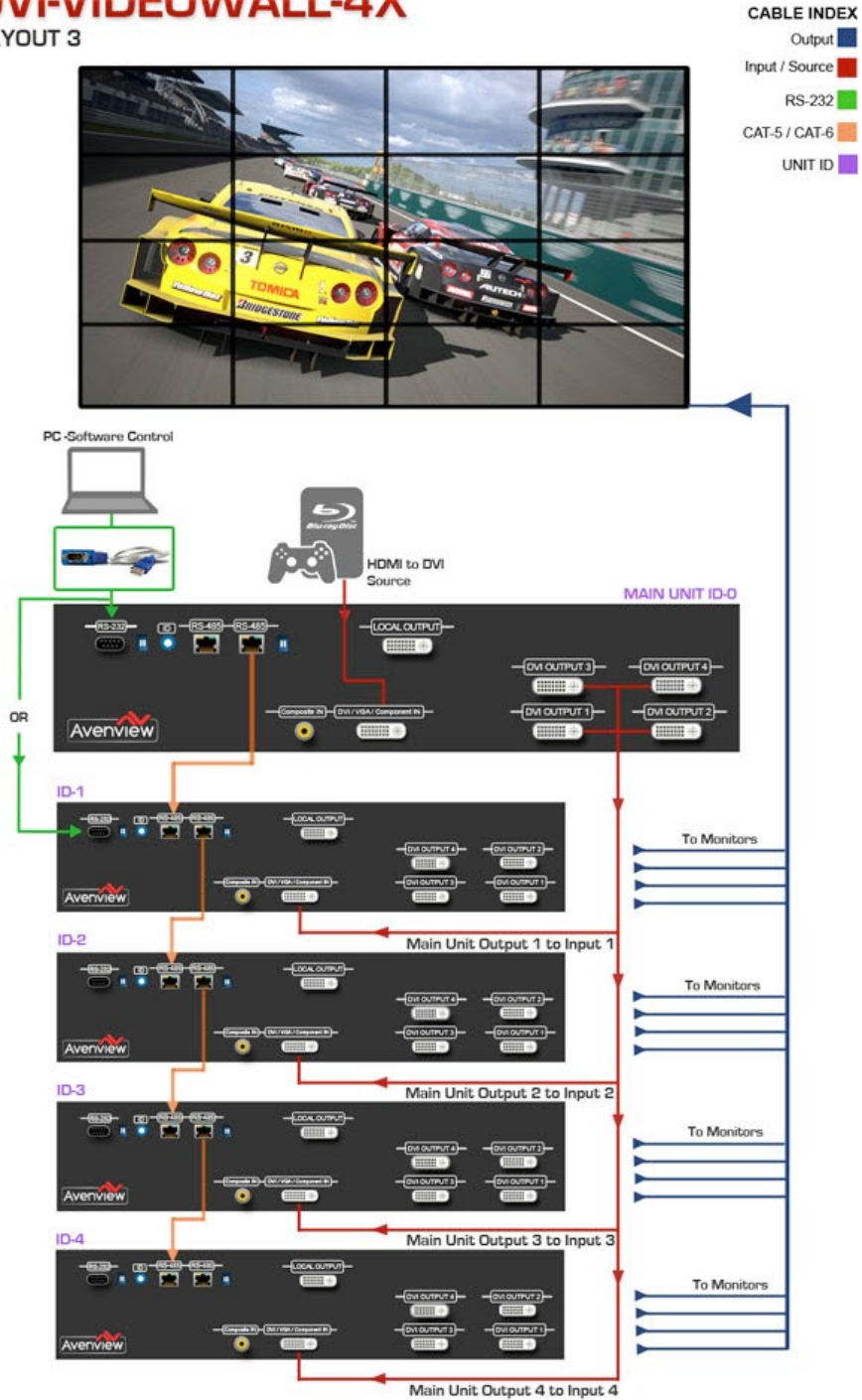
1	This area demonstrates the resulting selection of the Input video to be display for the selected Output Channel.
2	<p>“Input Range” shows the resolution information of the input video to each output channel, and it will vary depending upon the input video.</p> <p>“Selected Area” shows the information of the selected area to be displayed. The numbers will vary according to different settings.</p>
3	“Output Resolution” This section can set the output resolution for individual output channel. Notice that each display can run at different resolutions to adapt more situations coming from different panels
4	<p>The seven of text fields are designed for convenient to setup on Videowall division.</p> <ol style="list-style-type: none"> 1) Please click “Reading setting from device” button to read the initial setting from device. 2) After keying in the value in the text fields, please click on “Calculate” button to update blocks 5 according to the value of the text field in block 4. 3) After clicking “Calculate”, please click on “Updating setting to device” to load settings to device.
5	<p>User can directly configure each text field to set the area to display on the screen.</p> <p>Remark: For each display, users can define which area of the input video is to be displayed. Please define the upper-left (V Start, H Start) and its length (V length, H length) corners for each display channel. The control panel to achieve this goal is as shown.</p>
6	<ol style="list-style-type: none"> 1. “Reading setting from device” to retrieve settings from the device then update the GUI of software “Updating setting to device” to load the current setting to the device



8. CASCADING

The Avenview DVI-VIDEOWALL-9X can be cascaded with as many as 255 DVI-VIDEOWALL-9X devices. Example shows another model (4 Port Videowall) but same setup can be accomplished with 9 Port.

DVI-VIDEOWALL-4X LAYOUT 3



9. SUPPORTED RESOLUTION

DVI-IN

SUPPORTED MODE	RESOLUTION	SUPPORTED MODE	RESOLUTION
480P/525P	720x483 @60Hz	MAC	832x624 @75Hz
480P (16:9)	960x483 @60Hz	VESA	1024x768 @60Hz
576P/625P	720x756 @50Hz	MAC	1024x768 @60Hz
(HDTV) 720p	1280x720 @50Hz	VESA	1024x768 @70Hz
(HDTV) 720p	1280x720 @60Hz	IBM	1024x768 @72Hz
(HDTV) 1080p	1920x1080 @30Hz	VESA	1024x768 @75Hz
VESA	720x400 @85Hz	MAC	1024x768 @75Hz
VESA	640x350 @85Hz	VESA	1024x768 @85Hz
VESA	640x400 @85Hz	VESA	1152x864 @75Hz
IBM	720x400 @70Hz	MAC	1152x870 @75Hz
IBM	720x350 @70Hz	SUN	1152x900 @66Hz
IBM	640x350 @70Hz	SUN	1152x900 @76Hz
IBM	640x400 @70Hz	VESA	1280x960 @60Hz
VESA	640x480 @60Hz	VESA	1280x960 @85Hz
MAC	640x480 @67Hz	VESA	1280x1024 @60Hz
VESA	640x480 @72Hz	HP	1280x1024 @60Hz
VESA	640x480 @75Hz	IBM	1280x1024 @67Hz
VESA	640x480 @85Hz	HP	1280x1024 @72Hz
VESA	800x600 @56Hz	VESA	1280x1024 @75Hz
VESA	800x600 @60Hz	SUN	1280x1024 @76Hz
VESA	800x600 @72Hz	VESA	1600x1200 @60Hz
VESA	800x600 @75Hz	VESA	1920x1200 @60Hz
VESA	800x600 @85Hz		

DVI-OUT

SUPPORTED MODE	RESOLUTION	SUPPORTED MODE	RESOLUTION
(HDTV) 720p	1280x720 @50Hz	VESA	1280x768 @60Hz
(HDTV) 720p	1280x720 @60Hz	VESA	1366x768 @60Hz
(HDTV) 1080p	1920x1080 @60Hz	VESA	1400x1050 @60Hz
VESA	640x480 @60Hz	VESA	1400x1050 @50Hz
VESA	800x600 @60Hz	VESA	1152x864 @75Hz
VESA	1024x768 @60Hz	VESA	1600x1200 @60Hz
VESA	1152x864 @75Hz	VESA	1920x1200 @50Hz
VESA	1280x1024 @60Hz	VESA	1920x1200 @60Hz



10. GENERAL TROUBLESHOOTING

Problem	Possible Solution
No Power	<ul style="list-style-type: none"> • Check if AC Power Cord is firmly plugged into DVI-VIDEOWALL-9X • If you are recovering from Power Outage, leave the device OFF for a while and then power it ON again.
Off-Center Screen Image, Odd Colors or No Picture	<ul style="list-style-type: none"> • Make sure all cables are in good working condition and properly connected DVI-VIDEOWALL-9X. • Configure the Output video resolution so that it doesn't exceed the native supported resolution of TV/Monitor/Projector (Display). Usually a message of "Out of Range" is display on TV/Monitor. • Every time you change the resolution of Input Source, wait 10 – 20 seconds. After the resolution is changed, the selection of Input and the Display layout mode will return to default. Adjust the Input source and Display Layout Mode to your requirements again. • VGA Source can take up to 10 Seconds before it is recognized
Poor Quality Video	<ul style="list-style-type: none"> • We suggest you don't use T-Connectors to split your video source into images displayed on two difference screens. This lowers the Output video quality. Use a distribution amplifier instead of T-Connectors • Make sure the video source is not compressed and maintains the highest native resolution
Wrong Color	<ul style="list-style-type: none"> • Press "Color Balance" key in "State" for auto configuration.
Poor Linking	<ul style="list-style-type: none"> • When the linking of the Serial Control cannot work, reboot DVI-VIDEOWALL-9X to establish the link.



11. SPECIFICATIONS

ITEM	DESCRIPTION
Model	DVI-VIDEOWALL-9X
Unit Description	9 Display Video Wall Processor
Video Format Support	HDMI, DVI, VGA, Component, S-Video, Composite (Only one Digital and one Analog can be input simultaneously)
Dual Output Support	DVI & VGA
Local Output	Yes
Video Bandwidth	DVI (Single Link 4.95Gbps) VGA (165MHz)
Supported Resolutions	Up to 1920x1200@60Hz
Audio Support	No
System Control	RS-232 / RS-485
Cascadable	Yes
Input TMDS Signal	1.2 Volts (peak-to-peak)
Input DDC Signal	5 Volts (peak-to-peak, TTL)
ESD Protection	- Human body model — $\pm 15\text{kV}$ (air-gap discharge) & $\pm 8\text{kV}$ (contact discharge) - Core chipset — $\pm 8\text{kV}$
Input Connectors	DVI x 1 S-Video x 1 RS232 x 1 RS485 x 1
Output Connectors	DVI x 9
HDMI Input Selection	Push Button / IR Remote / RS232 Push Button / IR Remote
RCA Connector	75 Ω female
DVI Connector	DVI-I (29-pin female, digital only)
RJ45 Connector	WE/SS 8P8C with 2 LED indicators
RS232 Connector	DE-9 (9-pin D-sub Female)
Dimensions (L x W x H)	17.75" x 17.25" x 3.5"
Power Supply	AC Power 100~240V
Power Consumption	60 Watt (max)

Environmental

Operating Temperature	32° ~ 104°F (0° to 40°C)
Storage Temperature	-4° ~ 140°F (-20° ~ 60°C)
Relative Humidity	20~90% RH (no condensation)





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