Avenview

Control Your Video

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

Control Command Set

4K ULTRA HD | HDMI | AUDIO | IR | WUXGA 1920x1200 | HDMI HDCP | HD ready 1080p | RoHS Compliant | FC CE

Model #: MODULAR AVXWALL

ABOUT THIS DOCUMENT

This document outlines the control commands and the recommended steps to create commands to allow third party control systems to communicate with the Avenview AVXWALL

CS Version v2.3.6.1
The control software versions listed in this document have been tested and is compatible with AVXwall Series to control Matrix and Videowall functions and are fully supported by Avenview.

It is recommended that users read this entire document before attempting to operate the device

REV 1.1 26/02/2015
This document was last updated

- Report any bug issues to:- support@avenview.com

WARNING –Do not turn off power during upgrade processing, otherwise it may cause damage to the device.

GENERAL INSTRUCTIONS

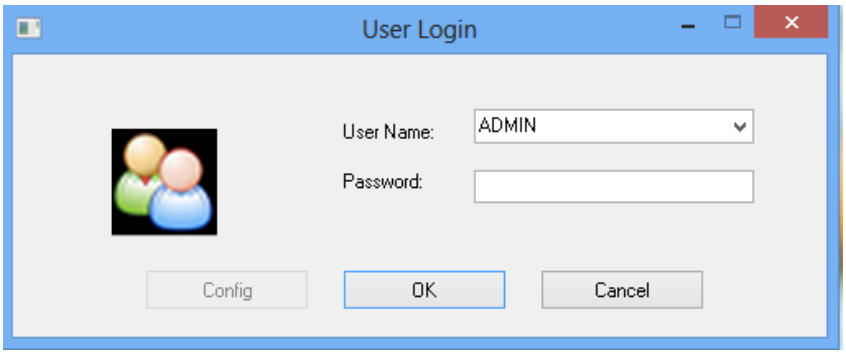
1. Before you begin operation of the unit ensure all devicea are connected to AC power, your Control device or your PC via RS232 or Ethernet.
2. PC Requirements for the Control Software-Windows® XP/Windows Vista®/Windows® 7/Windows® 8

4.1 Operation and Configuration

(1)Operation and connection

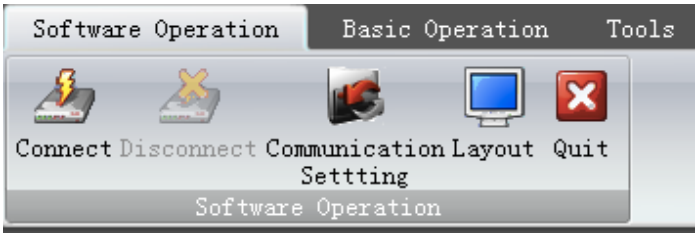
Please install the Control Software provided with the AVXWALL unit

The User Login window will pop up, using the 'ADMIN' as user name and left the password blank, then click 'OK'.

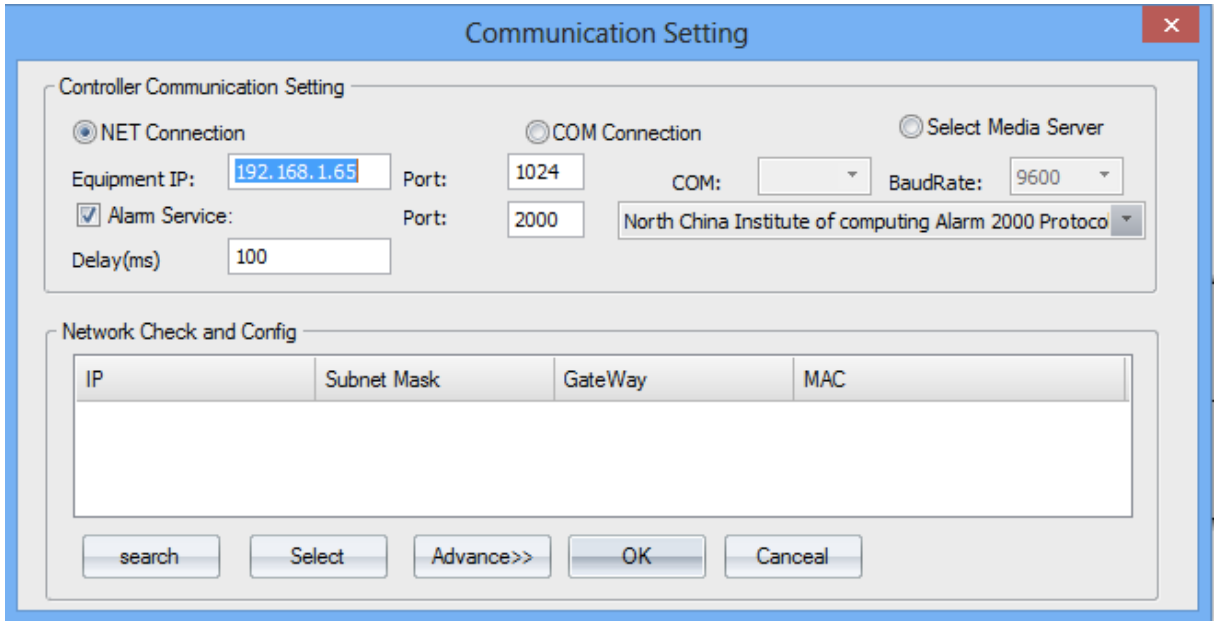


The Control Software menu consists of three modules which are the 'Software Operation', 'Basic Operation', and 'Tools'.

STEP 1: Click 'Communication Setting' in the 'Software Operation' tab.



Connection configuration window will pop up.
If the 'NET Connection' has been chosen, the default IP address and port number of the processor are '192.168.1.65' and '1024'.
If the 'COM Connection' has been chose, select the correct COM port, and make sure the baud rate is 9600 Data -bit 8 Stop bit 1 and No Parity Check bit.
Please OK to save the settings and then proceed with communication to the device.



Net Connection

RS-232 Connection

SERIAL PORT SETTING

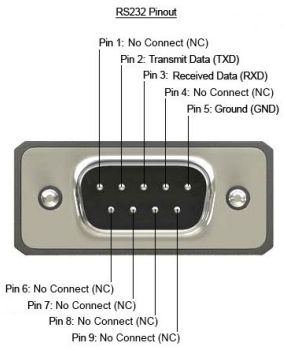
- Baud Rate: 9600bps -
Data Bit: 8 bits
- Parity: None
- Flow Control: None
- Stop Bit: 1

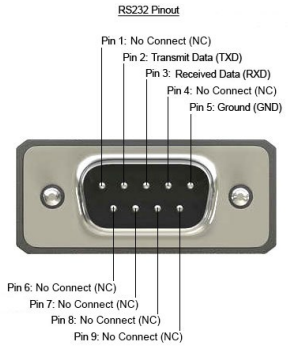
RS-232 Wiring (Straight Cable Connection)

PIN	Assignment
1	NC
2	TxD
3	RxD
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

➔
➔

PIN	Assignment
1	NC
2	TxD
3	RxD
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC





Please ensure when writing the Commands the **< in the beginning and > to close the statement and Comma ,** is necessary but a space is not critical for the command to work.

1. Set the layout of video-wall

Instruction Format	<wmod, screen_id, hnum, vnum, hgap, vgap>	
Function	To set the screens' layout of the video-wall	
Parameters	Screen_ID	The video-wall ID (0 indicates video-wall 1, 1 indicates video-wall 2, 2 indicates video-wall 3, 3 indicates video-wall 4,)
	hnum	The amount of displays in a row
	vnum	The amount of displays in a column
	hgap	The gap between horizontal adjacent displays
	vgap	The gap between vertical adjacent displays

【Example】 <wmod,0,3,2,15,15>
Indicates the video-wall 1 is combined in a 3*2 layout, the horizontal and vertical gaps between adjacent displays are both 15 pixels.

2. Set the display resolution

Instruction Format	<sset, Screen_ID, total_line, total_pix, act_vpos, act_vsize, act_hpos, act_hsize, hs_width, vs_width, dis_freq_h, dis_freq_l, hsync_pol, vsync_pol>	
Function	To set the output resolution to one single display on the video-wall	
Parameters	Screen_ID	The video-wall ID
	Total_line	Total lines of one frame
	Total_pix	Total pixel clocking of one line
	Act_vpos	The vertical starting point of the active line
	Act_vsize	Total number of active lines of one frame
	Act_hpos	The horizontal starting point of the active pixel
	Act_hsize	Total number of active pixel of one line
	Hs_width	Width of horizontal synchronization
	Vs_width	Height of vertical synchronization
	Dis_freq_h	the integer part of pixel clock frequency
	Dis_freq_l	the fractional part of pixel clock frequency
	Hsync_pol	The polarity of horizontal polarity
	Vsync_pol	The polarity of vertical polarity

【Examples】

1.<sset,0,806,1344,35,768,296,1024,136,6,65,0,1,1> //1024x768
2.<sset,0,1066,1688,41,1024,360,1280,112,3,108,0,0,0> //1280x1024
3.<sset,0,795,1792,24,768,368,1360,112,3,85,32768,0,0> //1360x768
4.<sset,0,1089,1864,36,1050,378,1400,144,4,121,49152,0,0> //1400x1050
5.<sset,0,934,1904,31,900,384,1440,152,6,106,46622,0,0> //1440x900
6.<sset,0,1250,2160,48,1200,496,1600,192,3,162,0,0,0> //1600x1200
7.<sset,0,1089,2240,35,1050,456,1680,176,6,146,0,0,0> //1680x1050
8.<sset,0,1125,2200,41,1080,192,1920,44,5,148,32768,0,0> //1920x1080
9.<sset,0,1235,2080,31,1200,118,1920,32,6,154,0,0,0> //1920x1200
10.<sset,0,750,1650,25,720,260,1280,40,5,74,16384,0,0> //1280x720

3. Creating a window

Instruction format	<open, Screen_ID, W_ID, SourceCh, src_hstart, src_hsize, src_vstart, src_vsize, x0,.y0, x1,y1 >	
Function	To create a new window of the specified video-wall	
Parameters	Screen_ID	The video-wall ID
	W_ID	The ID of the window to be created
	SourceCh	The input channel which used as the signal source of the window
	src_hstart	The horizontal starting pixel of the signal source
	src_hsize	The horizontal ending pixel of the signal source . If the value is 0, means the original horizontal size of the signal source, and the src_hstart is useless
	src_vstart	The vertical starting pixel of the signal source
	src_vsize	The vertical ending pixel of the signal source . If the value is 0, means the original vertical size of the signal source, and the src_vstart is useless
	x0	The horizontal starting pixel of the window on video-wall
	y0	The horizontal ending pixel of the window on video-wall
	x1	The vertical starting pixel of the window on video-wall
	y1	The vertical ending pixel of the window on video-wall
Returning Value	WIN_ID_ERR	The window ID has already been taken
	NET_OK	Succeed

【Example 1】 <open, 1, 0, 1, 0, 0, 0, 0, 0, 0, 1365, 767>
To create a window with ID 0 on video-wall 2, the input channel 1 is used as signal source, and no cropping has been processed.

【Example2】 <open,0,1,2, 0,512,0,512, 0,0,1365,767>
To create a window with ID 1 on video-wall 1, the input channel 2 is used as signal source, and crops the 512*512 section of the left-top corner to displaying on window.

4. Moving the window

Instruction Format	<move, W_ID, SourceCh, src_hstart, src_hsize, src_vstart, src_vsize, x0, y0, x1 , y1 >
Function	To move the window to a specified position
Parameters	See at instruction 3

5. Switching the signal source of window

Instruction Format	<icha, w_id, SourceCh, src_hstart, src_hsize, src_vstart, src_vsize>	
Function	To switch the signal source of a specified window	
Parameters	w_id	window ID
	SourceCh	source channel ID
	src_hstart	The horizontal starting pixel of the signal source
	src_hsize	The horizontal ending pixel of the signal source . If the value is 0, means the original horizontal size of the signal source, and the src_hstart is useless
	src_vstart	The vertical starting pixel of the signal source
	src_vsize	The vertical ending pixel of the signal source . If the value is 0, means the original vertical size of the signal source, and the src_vstart is useless

【Example】 <icha, 1, 3, 0, 0, 0, 0>
To switch the input channel 3 to window 1 as signal source, and no cropping has been processed.

6. Saving the scenes

Instruction Format	<save, Scene_id, Wall_id>	
Function	To save the current display status of the specified video-wall	
Parameters	Scene_id	The scene ID (0-39) to save the displaying status(0-22 for 22U and above)
	Wall_id	Video-wall ID
Returning Values	Scene_id_error	This scene id exceed the range
	OK	Succeed

【Example】 <save,2,2>
To save the current displaying status of video-wall 3 to scene 3

7. Loading the scenes

Instruction Format	<call, Scene_id, Wall_id>	
Function	To load a saved scene on the specified video-wall	
Parameters	Scene_id	The scene ID (0-39) which need to be loaded(0-22 for 22U and above)
	Wall_id	The screen wall ID
Returning Values	Scene_id_error	This scene id exceed the range
	No Scene	This scene does not exist.
	OK	Succeed

【Example】 <call, 5,1>
To load the 6th scene of video-wall 2

8. Setting to top/bottom of the window

Instruction Formant	<Torb, W_ID, Z>	
Function	To set the window to top/bottom	
Parameters	W_ID	Window ID
	Z	0: Set to top 1: Set to bottom

【Example】 <Torb,1,0>
To set the window 1 to top.

9. Closing all windows

Instruction Format	<rset, Screen_ID>	
Function	To close all windows on a video-wall	
Parameters	Screen_ID	The ID of video-wall on which all the windows need to be closed

【Examples】 <rset, 0>
To close all windows of video-wall 1

10. Closing the window

Instruction Format	<shut, W_ID>	
Function	To close the specified window	
Parameters	W_ID	The window ID which need to be closed

【Example】 <shut, 3>
To close the specified window.

11. Reading the input channel parameters

Instruction Format	<rcpm, SourceChl>	
Function	To read the parameter of specified input channel	
Parameters	SourceChl	Input channel ID
Parameters	contrast	
	brightness	
	freq	Sampling frequency
	phase	
	de_left,	Left side starting point
	de_right	Right side ending point
	de_top	Top starting point
	de_bottom	Bottom Ending point

【Example】 <rcpm, 4>
To read the parameters of input channel 4

12. Modifying the input channel parameters

Instruction Format	<wcpm, SourceChl, contrast, brightness, freq, phase, de_left, de_right, de_top, de_bottom>	
Function	To modify the input channel parameters	
Parameters	SourceChl	The input channel, begins from 1.
	contrast	
	brightness	
	freq	Sampling frequency
	phase	
	de_left,	Left side starting point
	de_right	Right side ending point
	de_top	Top starting point
	de_bottom	Bottom Ending point

【example】 <wcpm, 4, 128, 128, 1904, 0014, 0384, 1824, 0031, 0931>
To modify the parameters of input channel 4, contrast is 128, brightness is 128, sampling frequency is 1904, left starting point is 0014, right ending points is 1824, top starting point is 0031, and bottom ending point is 0931.

13. Factory reset of VGA input channel

Instruction Format	<scpm, SourceChl>	
Function	Factory reset the VGA input channel	
Parameters	SourceChl	The input channel, begins from 1.

【Example】 <scpm, 4>
To facotory set the input channel 4

14. Setting the output displaying mode

Instruction	<tmod, Screen_ID, Mode, grid, R, G, B>	
Function	To set the output displaying mode among normal mode, grid mode, and color test mode.	
Parameters	Screen_ID	The video-wall ID
	Mode	0: normal displaying mode 1:grid mode 2: pure colour mode
	Grid	The spacing between adjacent lines in grid mode
	R, G, B	The RGB color space value of the pure colour mode

15. Enabling the video-wall

Instruction Format	<sena, Screen_id, Screen_en>	
Function	Enabling or disabling the video-wall	
Parameters	Screen_ID	The video-wall ID
	Screen_en	1: video-wall enabling 0: video-wall disabling

【Example】 <sena,1,1>
Enabling the video-wall 2.

16. Inquiring the information of video-wall

Instruction Format	<winf, Screen_ID>	
Function	Inquiring the information of video-wall	
Parameters	Screen_ID	The video-wall iD

Returning Value	For example, sending <winf, 0>, the returning could be: <The valid window ID is : 0, hnum is 2 vnum is 2 hgap is 0 vgap is 0 hsize is 1280 vsize is 1024 backgroud_pic_en is 1 backgroud_pic_addr is 3072 backgroud_pic_hsize is 1920 backgroud_pic_vsize is 1200 backgroud_pic_hpos is 0 backgroud_pic_vpos is 0 backgroud_pic_hnum is 4 backgroud_pic_vnum is 2 screen_en is 1 The current out_table for 0 is : 0 : 1,1 : 2,2 : 3,3 : 4,>

17. Inquiring current input status

Instruction Format	<vinf>
Function	To inquire all the input information of the device
Returning Value	The valid Input is : SRC TYPE SIGNAL 01 VGA 1 02 VGA 0 03 VGA 1 04 VGA 1 Note: SRC is the input channel number, signal = 1 means the signal is detected, signal=0 means no signal detected.

18. Inquiring the window information

Instruction Format	<widf, W_ID>	
Function	To inquire the specified window information, including the cropping status of the input source	
Parameters	W_ID	window ID

Returning Values	source	Input source number
	hstart	Horizontal starting pixel
	hend	Horizontal ending pixel
	vstart	Vertical starting pixel
	vend	Vertical ending pixel

19. Setting the synchronization mode

Instruction Format	<smod, Screen_id, sync_mode>	
Function	To set the synchronization mode of video-wall	
Parameters	Screen_ID	The video-wall ID
	Sync_mode	0:async mode 1: sync mode

20. Setting the output channel mapping

Instruction Format	<ocov, Screen_id, Logic_ch, Phy_ch>	
Function	To set the channel mapping of output connection port	
Parameters	Screen_id	The video-wall ID
	Logic_ch	The logical output channel, corresponding to the layout of screen-wall, the channel number(begins from 0) increases from left to right, then top to bottom.
	Phy_ch	The physical port on the device

21. Inquiring the IP address information of device

Instruction Format	<QIPR>
Function	To inquire the ip address of device

22. Modifying the network parameters of device

Instruction Format	<mipr, ip[4], mac[6], mask[4], gar[4], port[2]>	
Function	To modify the network parameters of the device	
Parameters	ip[4]	IP address (4 decimal number)
	mac[6]	MAC address (6 decimal number)
	mask[4]	Subnet mask (4 decimal number)
	gar[4]	Gateway (4 decimal number)
	port[2]	Port number (2 port)
Notice	A. The format of MAC address should be convert into the decimal format B. This instruction only supports to be used via ethernet connection.	

【Example】 <mipr,192,168,1,65,0,8,14,0,16,8,255,255,255,0,192,168,1,1,1024,1025>
To set the ip as 192.168.1.65, mac address as 00-08-0E-00-10-08, subnet mask as 255.255.255.0, gateway as 192.168.1.1, port number as 1024 and 1025 (only the first one is used).

23. Setting character superimposition

Instruction Format	<font, SourceChl, hstart, vstart, Mode, front_color_R, front_color_G, front_color_B, back_color_R, back_color_G, back_color_B>	
Function	To set character superimposition of the specified input channel	
Parameters	SourceChl	The ID of input channel to set character superimposition
	hstart	The horizontal starting point of the character zone
	vstart	The vertical starting point of the character zone
	Mode	The mode of character superimposition, the last bit is 0 means no superimposition , the last 2 bits is 01 means the character is front color and background is the original image, the last 2 bit is 11 means character is the front color and the background is the background color.
	Front_color	Front color
	Back_color	Background color
Note	The size of character zone is fixed to 512*32. The buffer of character zone is 2028 byte, each bit represents one pixel, totally 512*32 pixel	

24. Setting the date and time of device

Instruction Format	<tset, Second, Minute, Hour, Day, Date, Month, Year, Century>	
Function	To set the time and date	
parameters	Second	
	Minute	
	Hour	
	Day	1 for Monday, 2 for Tuesday..., 6 for Saturday, 7 for Sunday
	Date	
	Month	
	Year	The last two digits of the year
	Century	The first two digits of the year
【Example】 <tset, 56, 12, 16, 5, 21, 11, 11, 20> Set the time and date to16:12:56, Fri, 2011.11.21,		

25. Returning the time of device

Instruction Format	<trea>
Function	Returns the time of the device.

【Example】 <trea>
<Year : 2012
month : 2
date: 14
day: 2
hour: 17
minute: 44
second: 35>

26. Setting the background image enabling

Instruction Format	<bken, Screen_id, Bk_en, Flash_base, Pic_hsize, Pic_vsize>	
Function	To set the enabling of the background image and the displaying range of the background image	
Parameters	Screen_id	The video-wall number
	Bk_en	0:Disabling background image 1:Enabling background image
	Flash_base	The storage 'page' address of background image on flash, one page is 2048 byte.
	Pic_hsize	The horizontal width of the background image
	Pic_vsize	The vertical height of the background image

27. Setting the format of input signal

Instruction Format	<imod, In_ch, Mode>	
Function	To set the format of input signal(apply to VGA/YPbPr input card)	
Parameters	In_ch	Input channel number
	Mode	Value equals to '0' indicates VGA signal input, value equals to '1' or '2' indicates YPbPr signal input.

AV Connectivity, Distribution And Beyond...

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