

PARTILINK

Quadview Duo Processor M43-H04H02



User Manual (2020-08 v1.0)

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1. Overview

Partilink M43-H04H02 is a HDMI 2.0 (4K@60Hz 4:4:4) Multiview Processor with 4 HDMI inputs and 2 HDMI outputs. It provides various functions including portrait multiview, landscape multiview, and various types of control method including web UI, Telnet, RS232, RS485, and RS422 to manage the system.

Its compact & robust design, 24/7 reliability, multi-task features, flexibility for either simple digital signage display or chain store represent a perfect partner for system integrator to plan project solution easily.

2. Features

- Fast switching between input channels and combined multiple source images
- Display modes including portrait multiview and landscape multiview
- Supports input resolution and output resolution up to 4K@60Hz 4:4:4 color sampling for each port
- Upscaling up to 4K@60Hz 4:4:4 color sampling and able to downscale
- Supports PiP, PoP, and customized window layout configuration
- Control by web UI, Telnet, RS-232, RS-485 and RS-422
- Full HDCP1.4/2.2 support for input signals and output connections
- HDMI digital audio and HDMI audio de-embedding to analog stereo audio for output
- Firmware upgradeable via USB port
- Built-in power supply

3. Specification

MODEL NO.	M43-H04H02	
INPUT INTERFACE	4 x HDMI 2.0 type A	
INPUT RESOLUTION	640 x 480p@60, 1280 x 720p@60, 1920 x 1080p@60 3840 x 2160p@30, 3840 x 2160p@60	
OUTPUT INTERFACE	2 x HDMI 2.0 type A	
	terminal block 3 pole, stereo	
OUTPUT RESOLUTION	Portrait mode: 720 x 1280p@30, 720 x 1280p@60, 1200 x 1600p@60, 1080 x 1920p@30, 1080 x 1920p@50, 1080 x 1920p@60, 1200 x 1920p@60, 2048 x 2048p@57, 2160 x 3840p@30, 2160 x 3840p@50, 2160 x 3840p@60, 2160 x 4096p@50, 2160 x 4096p@60 Landscape mode: 1280 x 720p@30, 1280 x 720p@60, 1600 x 1200p@60, 1920 x 1080p@30, 1920 x 1080p@50, 1920 x 1080p@60, 1920 x 1200p@60, 2048 x 2048p@57, 3840 x 2160p@30, 3840 x 2160p@50, 3840 x 2160p@60, 4096 x 2160p@50, 4096 x 2160p@60	
OUTPUT COLOR FORMAT	4:4:4, 24 bpp	
HDMI COMPLIANCE	HDMI 1.4 and HDMI 2.0	
BANDWIDTH	18 Gbps	
HDCP COMPLIANCE	HDCP 1.4 and HDCP 2.2	
CONTROL METHODS	RS232	1 x D9 female connector
	RS485 / RS422	5-pole terminal block
	Ethernet	1 x RJ45
FIRMWARE UPGRADE	USB 2.0	
POWER	Power Supply	Built-in power module 100-240ACV (50/60 HZ)
	Power Consumption	32 W
	Redundant Power Supply	no
ENVIRONMENT	Operating Temperature	0°C ~ 40°C
	Operating Humidity	0% ~ 80% RH
	Storage Temperature	-20°C ~ 60°C
DIMENSION	240 x 371 x 88 mm (L x W x H)	
WEIGHT	3.8 KG	
AVAILABLE IN	black	

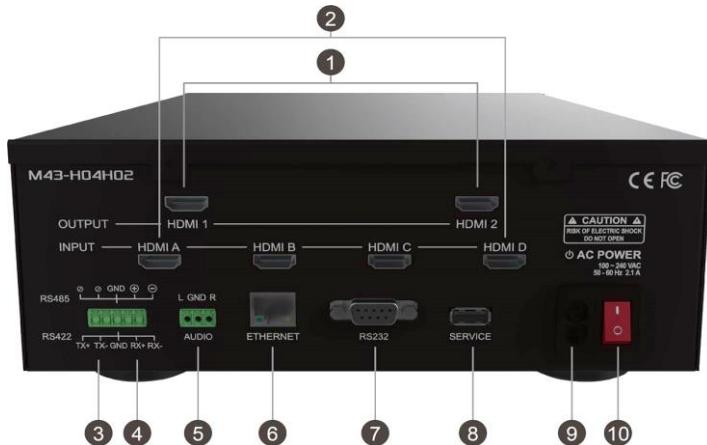
4. Hardware

4.1 Front Panel



No.	Feature	Description
1	Red LED Indicator	Indicate the status of the power. The light is static on when power on but flashes when the hardware is not working properly
2	Green LED Indicator	Indicate the status of fans. The light is static on when fans working normally but flashes to alarm when fans not working properly

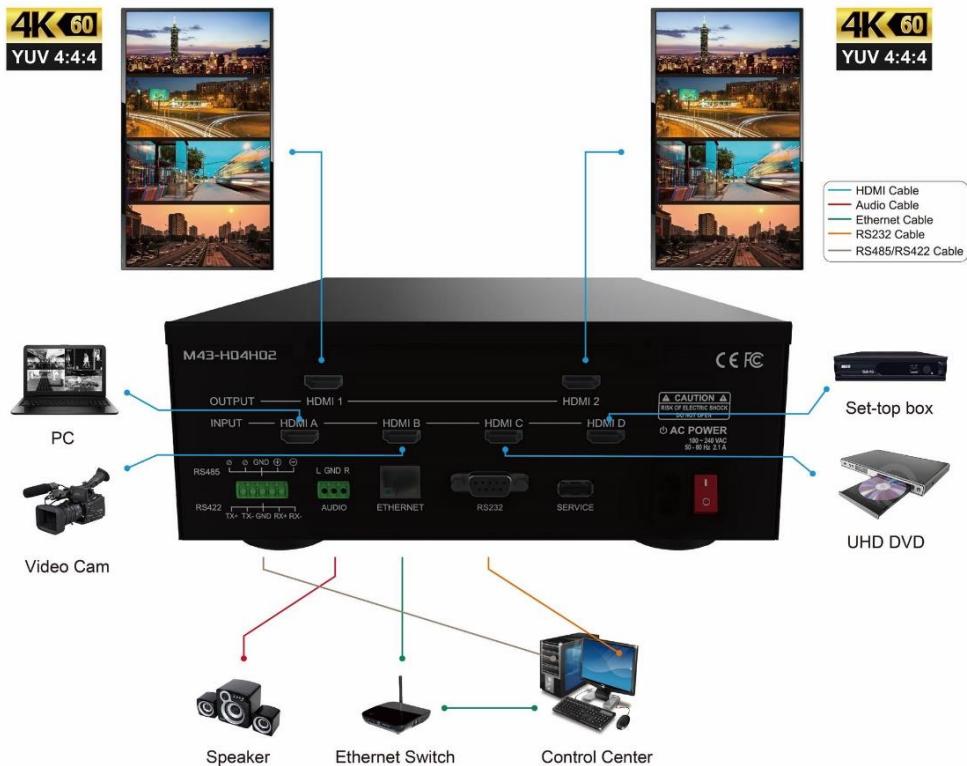
4.2 Rear Panel



No.	Feature	Description
1	Output	Connect to HDMI display devices (HDMI 1 ~ HDMI 2)
2	Input	Connect to HDMI sources (HDMI A ~ HDMI D)
3	RS485	5-pin connector. Connect to PC, NB, or other serial controller through IP network
4	RS482	5-pin connector. Connect to PC, NB, or other serial controller through IP network
5	Audio output	3-pin connector. Connect to the audio amplifier: Left, Ground, Right
6	Ethernet/Telnet	Connect to PC, NB, or other serial controllers through IP network
7	RS232	DB-9 connector. Connect to PC, NB, or other controllers
8	USB	Connect to PC for firmware upgrade
9	Socket	Connect the power cord
10	Power Switch	Turn ON or OFF the unit

5. Installation

5.1 Wiring Configuration



1. Connect up to four HDMI sources to four HDMI input ports of M43-H04H02 via HDMI cable
2. Connect up to two HDMI displays (such as monitor, TV, projector) to the output port of M43-H04H02 via HDMI cable
3. Connect the speaker or amplifier to the stereo audio terminal block connectors of M43-H04H02 via the stereo audio cable

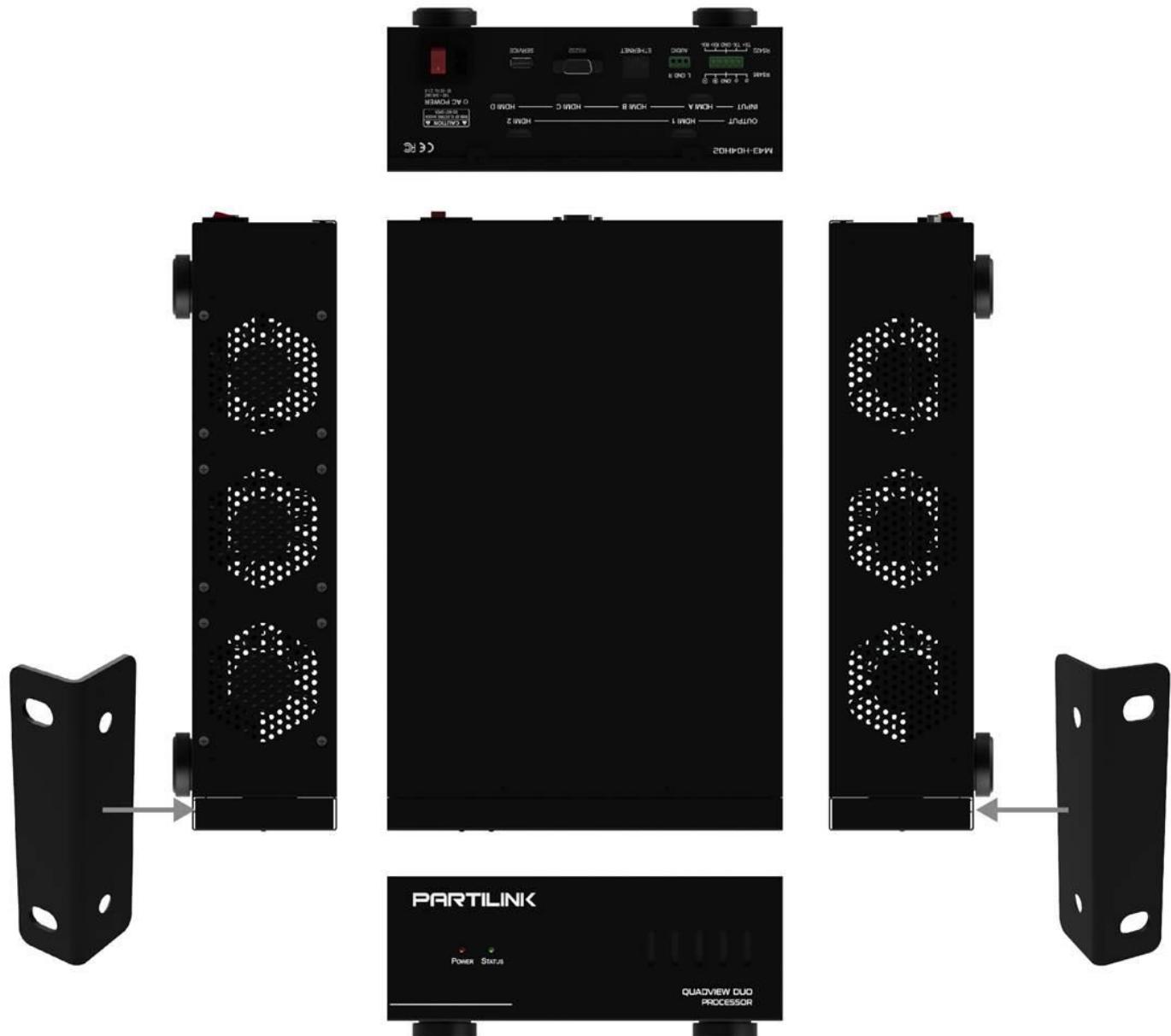


4. Connect the power cord to the power socket
5. Connect PC, network hub, switch or router to Ethernet port of RJ-45 connector with CATx cable for operating via Ethernet
6. Connect PC to RS232 D-sub 9 connector of M43-H04H02 via a 9-wire straight cable for control via RS232
7. Connect PC to RS485 / RS422 connector of M43-H04H02 via a RS232 cable and RS232 to RS485/RS422 adapter



5.2 Rack Mount Installation:

Attach and screw the rack brackets to the right and left side of the 2U chassis



6. System Operation

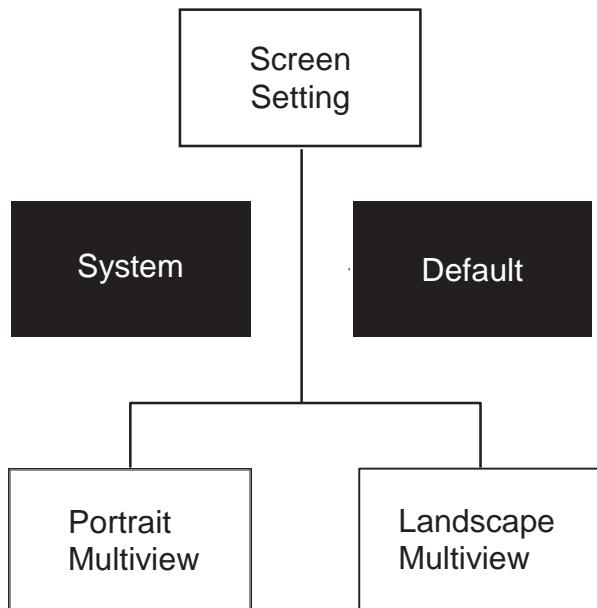
The M43-H04H02 is a multi-function system to apply as follows:

- Portrait Multiviewer
- Landscape Multiviewer

This chapter is system operation guide from screen setting to display mode selection.
Please follow steps below to complete your first-time setup.

<<NOTE>> More detail of web management, please see chapter 7.

Setting System Operation Flow:



Start from Screen Setting because this is a setting for hardware.
In most cases, hardware setting won't be changed frequently.

Two display modes in Multi-View page can be selected:

Portrait Multiview and **Landscape Multiview**.

Users can check the system status or default of the processor system back to **Portrait Multiview** mode any time from **Default** option in Web UI.

7. Web Management

To control the video display system via the web UI, please connect a PC to M43-H04H02 for accessing the web UI via Ethernet directly. You can either connect PC to M43-H04H02 **(a)** via **Ethernet cable** (CATx cable with RJ-45 connector) directly or **(b)** via an **Ethernet hub/Router with CATx cable** between PC and M43-H04H02.

Before running web management or serial port control, please login from web or serial port control.

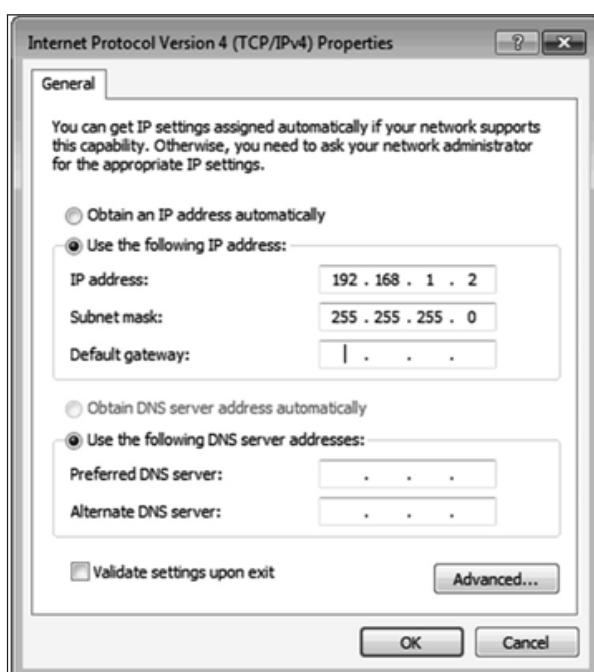
7.1 IP Setting & Web UI Login

Access Web UI via Ethernet able or Ethernet hub/router, please follow steps below to configure your PC Ethernet IP setting FIRST!

- a. Click “Start” > “Control Panel” > “Network and Sharing Center”
- b. Click “Change Adapter Settings”
- c. Highlight the network adapter you want to use for connecting to the device and click “Change Settings” of this connection.

The “Local Area Connection Properties” window for the selected network adapter

- d. Highlight the Internet Protocol Version 4 (TCP/IPv4)
- e. Click “Properties”. The Internet Protocol Properties window is relevant to your IT system
- f. Select “Use the following IP address for static IP address” and fill the details.
For TCP/IPv4 you can use any **IP address within range from 192.168.1.1 to 192.168.1.255 (excluding 192.168.1.203)**
- g. Fill 255.255.255.0 in Subnet mask
- h. Click “OK”
- I. After above steps setting up IP address successfully, please **click into web UI by IP address 192.168.1.203** on IE or Chrome browser



Before running web management or serial port control, please login from web or serial port control first.

Web Management Login	
Username	Input 111111 (default) for initial login
Password	Input 111111 (default) for initial login
Confirm	Click "Confirm" to login after input username and password
<<NOTE>> Use the default username and password to login for the first time. If you want to reset for login, please change the username and password via serial port control ONLY. No access to reset the user name and password from web management.	

The screenshot shows a 'Login' form with the following fields:
- Username: 111111
- Password: *****
A blue 'Confirm' button is positioned to the right of the password field.

7.2 System Setting

After logged into the system, users can access the various configurations via below web page composed by three major tabs:

- System page
- Multi-View page
- Default page

7.2.1 System Page

The screenshot shows the 'System' tab of the PARTILINK web interface. The system information displayed is as follows:

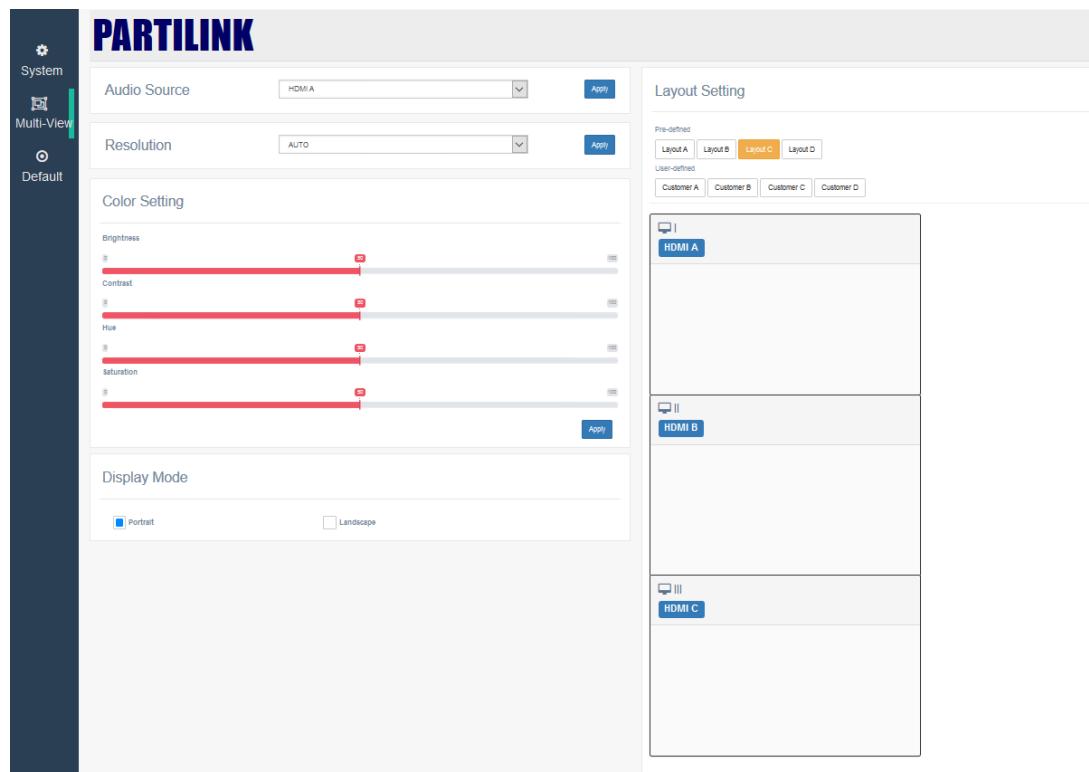
Ethernet Type:	Static
MAC Address:	00:30:4f:bb:dd:0a
IP Address:	192.168.1.203
Unit ID:	0
Fan Speed:	Low Speed
FW Version:	1612.0.1.2

Other visible elements include a 'Readme' download link, a 'FW Select' button, and a 'Logout' button.

System	
Ethernet Type	Select Ethernet type STATIC or DHCP
Mac Address	Indicate the MAC address of the unit
IP Address	Indicate the IP address of the system currently
Unit ID	Indicate the ID of the unit. ID ranges between 00~99
Fan Speed	Indicate the operating fan speed currently. There are two speed modes including "Full Speed" and " Low Speed ". The fan speed is adjusted automatically based on the operating environment.
FW Version	Indicate the firmware version of the unit
FW Select	To update the firmware, please access and select the file of firmware stored in the connected PC which is applied to manage and control this video wall processor system for upgrade.
Click here download readme	Single click to download the command list and save in the desired space of connected PC

7.2.2 Multi-View Page

In Multi-View page, it unified all capable options for easy control. The left session contains the general setting such as audio source, output resolution, color setting. The right session delivers the maximum control to the screen layout to HDMI output.



7.2.2.1 Audio Setting

Audio Source	HDMI A	Apply
--------------	--------	-------

Audio Setting

Audio Source	Select source to output audio: HDMI A, HDMI B, HDMI C, HDMI D and Mute
Apply	Click "Apply" to confirm the setting

7.2.2.2 Resolution Setting

Resolution	AUTO	Apply
------------	------	-------

Output Setting

Resolution	Select output resolution from the resolution table: auto (default) 4096x2160@60Hz, 4096x2160@50Hz, 3840x2160@60Hz, 3840x2160@50Hz, 3840x2160@30Hz 1920x1080@60Hz, 1920x1080@50Hz, 1920x1080@30Hz, 1280x720@60Hz, 1280x720@30Hz, 1600x1200@60Hz, 1920x1200@60Hz, 2048x2048@57Hz
Apply	Click "Apply" to confirm the setting

7.2.2.3 Color Setting

Color Setting	
Brightness	
Contrast	
Hue	
Saturation	
Apply	<input type="button" value="Apply"/>

Color Setting

Brightness	Adjust Brightness value between 0 ~ 100
Contrast	Adjust Contrast value between 0 ~ 100
Hue	Adjust Hue value between 0 ~ 100
Saturation	Adjust Saturation value between 0 ~ 100
Apply	Click "Apply" to confirm the setting

7.2.2.4 Layout Setting

There are 2 display modes applied with M43-H04H02:

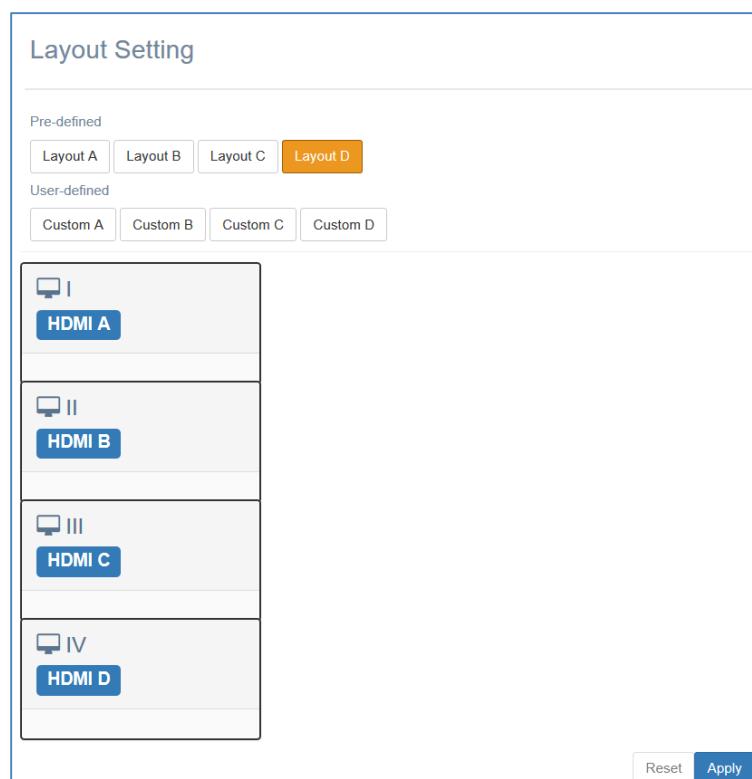
- Portrait Multiview
- Landscape Multiview

Only one mode can be presented at the same time. See instruction for display mode in following session.

The Portrait Multiview mode here means ***the multiview video which presenting portrait multiple windows from maximum 4 sources on the system simultaneously***. The windows can be configured to display across the multi-screen array, resized and repositioned.

Eight screen layouts are available for users in Portrait Multiview mode:

- 4 sets of pre-defined layout modes
- 4 sets of user-defined layout modes



When screen layout in Pre-defined mode, the screen setting will pop up for user to set the output automatically.

Pre-defined				
Layout	Layout A	Layout B	Layout C	Layout D
Layout				
Apply	Click "Apply" to confirm the setting			

When screen layout in User-defined mode, a platform will pop up for user to set the position and size of the windows of each custom screen layout saved from Custom A to Custom D individually.

User-defined	
Layout	Custom A → Four Customized Inputs in Screen
	Custom B → Four Customized Inputs in Screen
	Custom C → Four Customized Inputs in Screen
	Custom D → Four Customized Inputs in Screen
Apply	Click "Apply" to confirm the setting

Layout Setting

Pre-defined

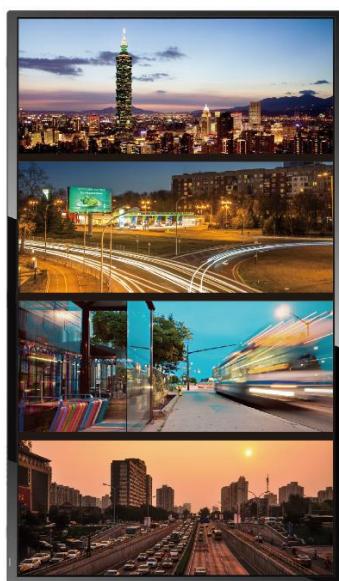
Layout A Layout B Layout C Layout D

User-defined

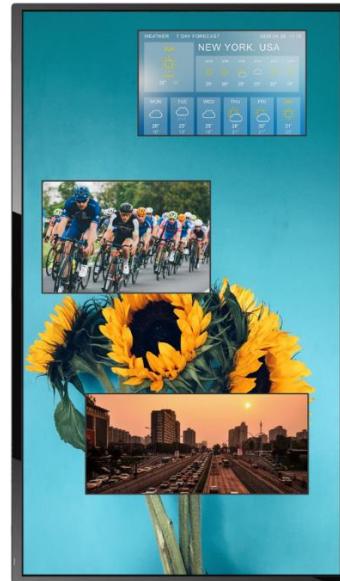
Custom A Custom B Custom C Custom D

Horizontal Position: 0-119
Vertical Position: 0-239
Width Resize: 120-120
Height Resize: 240-240

Reset Apply



Pre-defined Layout



User-defined Layout

The Landscape Multiview mode here means ***the multiview video which presenting landscape multiple windows from maximum 4 sources on the system simultaneously***. The windows can be configured to display across the multi-screen array, resized and repositioned.

Twelve screen layouts are available for users in Landscape Multiview mode:

- 5 sets of pre-defined layout modes
- 7 sets of user-defined layout modes

Pre-defined					
Layout	Layout A	Layout B	Layout C	Layout D	Layout E
<< NOTE >> In this setting, input sources are fixed to the corresponding window.					
Aspect Ratio	Select aspect ratio from the selection table:				
	Fill	Enlarge to full screen size			
	Contain	Keep the original aspect ratio			
	Cover	Keep the original aspect ratio and enlarge to fit the screen automatically either horizontal or vertical dimension			
<< NOTE >> This platform pops up for setting after click on the pre-defined layout					
Border Color	Set the border from the selection table:				
	Disable (default), White, Grey, Yellow, Blue, Green, Red, Purple, Orange, Pink, Black				
	<< NOTE >> This platform pops up for setting after click on the pre-defined layout				
Apply	Click "Apply" to confirm the setting				

Layout Setting

Pre-defined							
<input checked="" type="button"/> Layout A	<input type="button"/> Layout B						
<input type="button"/> Layout C	<input type="button"/> Layout D						
<input type="button"/> Layout E							
User-defined							
<input type="button"/> Customer A	<input type="button"/> Customer B						
<input type="button"/> Customer C	<input type="button"/> Customer D						
<input type="button"/> Customer E	<input type="button"/> Customer F						
<input type="button"/> Customer G							
Aspect ratio							
<input type="button"/> Fill	<input type="button"/>						
Border Color							
<input type="button"/> Disable	<input type="button"/>						
<table border="1"> <tr> <td>HDMI A</td> <td>HDMI B</td> </tr> <tr> <td colspan="2"></td> </tr> <tr> <td colspan="2"></td> </tr> </table>		HDMI A	HDMI B				
HDMI A	HDMI B						
<table border="1"> <tr> <td>HDMI C</td> <td>HDMI D</td> </tr> <tr> <td colspan="2"></td> </tr> <tr> <td colspan="2"></td> </tr> </table>		HDMI C	HDMI D				
HDMI C	HDMI D						
<input type="button"/> Reset <input type="button"/> Apply							

User-defined	
Custom Layout	<p>Maximum 7 sets of custom screen layout can be defined and stored here to select. Users are free to reset and restore the custom screen layout for application.</p> <p><input type="button" value="Custom A"/> <input type="button" value="Custom B"/> <input type="button" value="Custom C"/> <input type="button" value="Custom D"/> <input type="button" value="Custom E"/> <input type="button" value="Custom F"/> <input type="button" value="Custom G"/></p>
	<p>There are two ways to define the custom layout including:</p> <ul style="list-style-type: none"> (a) drag the bar to set up the size and position of the windows individually (b) drag the windows shown in the graphic layout area by mouse to set up the size and position of the windows individually
 Monitor Icon	Click on the icon of monitor showing in the graphic layout area, then the "Quad View Input" platform will pop up for setting the source.
QuadView Input	Setting the source to output for each monitor. Please set up the monitor I, II, III, IV individually setting the source to output for each monitor
Channel	Selection table including HDMI A, HDMI B, HDMI C, HDMI D
Vertical Position	Set the vertical position of selected window by dragging the bar to desired location
Horizontal Position	Set the horizontal position of selected window by dragging the bar to desired location
Width Resize	Set the width of selected window by dragging the bar to desired width
Length Resize	Set the length of selected window by dragging the bar to desired length
<<NOTE>> The Pixel Bar platform pops up for setting in Custom mode only	
Window Tier	Indicate the tier of the overlapped windows with Tier 1 (bottom, i.e. the background layer), Tier 2, Tier 3 and Tier 4 (top). Click on the windows shown in the graphic layout area to adjust the tier individually
Window Enable/ Disable	<p>To enable and disable the windows I/II/III/V individually for each custom layout:</p> <ul style="list-style-type: none"> (a) Click on the icon of each window shown in the bottom of web page to enable/ disable     (b) Or click on the icon "X" of each window shown in the graphic layout area to disable individually <p><<NOTE>> This platform pops up for setting in custom layout mode only</p>
Apply	Click "Apply" to confirm the above setting

Layout Setting

Pre-defined

Layout A Layout B Layout C Layout D Layout E

User-defined

Customer A Customer B Customer C Customer D Customer E Customer F Customer G

Vertical Position Width Resize
Horizontal Position Length Resize

I II III IV

HDMI A Tier1

HDMI B Tier4

HDMI C Tier3

HDMI D Tier2

Tier1(Bottom layer)>Tier2>Tier3>Tier4(Top layer)

Reset Apply

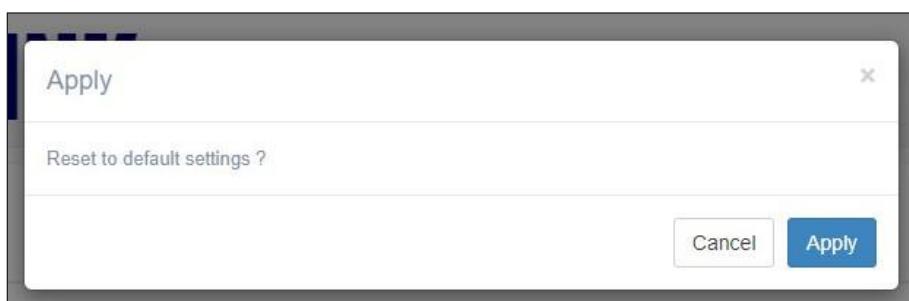


Pre-defined Layout



User-defined Layout

7.2.3 Default Page



Default	
Apply	Click "Apply" to confirm the setting back to default
Cancel	Click "Cancel" to stop the process to default

8. Serial / Telnet Communication

The M43-H04H02 can be operated and controlled by the serial/Telnet commands

Before running web management or serial port control, please login from web or serial port control. Default user name and password: **111111/111111**

User may change user name or password via serial port control.

8.1 Series Port Setting

Please apply following information to set up the serial port communication

- Baud Rate: 115200 bps
- Data Bit: 8 bits
- Parity: None
- Flow Control: None
- Stop Bit: 1

8.2 Telnet Setting

Please follow Chapter 7 to process IP address setting.

TCP port of Telnet: 23

8.3 Command List

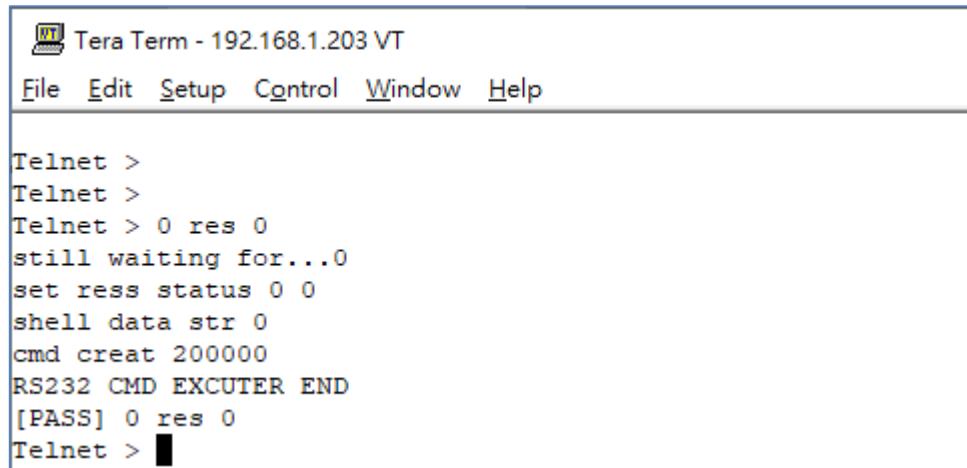
The command is composed by following format and divided by space.

Command Format:

ID	SPACE	COMMAND	SPACE	PARAMETER	ENTER
----	-------	---------	-------	-----------	-------

- ID: The default is 0
- Command: see command list below
- Parameter: see command list below

Example: Set Output resolution to Auto mode.



```
Telnet >
Telnet >
Telnet > 0 res 0
still waiting for...
set ress status 0 0
shell data str 0
cmd creat 200000
RS232 CMD EXCUTER END
[PASS] 0 res 0
Telnet > █
```

COMMAND LIST

Web UI	Action	Command	Parameter	Value	Note
Multiview Setting	Audio Channel	AUDIOCH	N	N: 0~4: 0: MUTE 1: HDMI A 2: HDMI B 3: HDMI C 4: HDMI D	Global
	Set Output Resolution	RES	N	0: Auto (default) 1: 4096*2160@60Hz 2: 4096*2160@50Hz 3: 3840*2160@60Hz 4: 3840*2160@50Hz 5: 3840*2160@30Hz 6: 2048*2048@57Hz 7: 1920*1200@60Hz 8: 1920*1080@60Hz 9: 1920*1080@50Hz 10: 1920*1080@30Hz 11: 1600*1200@60Hz 12: 1280*720@60Hz 13: 1280*720@30Hz	
	Review Output Resolution	RRES	X		
	Color Setting	BRIGHTNESS	N	N:0~100	Global
		CONTRAST	N	N:0~100	
		HUE	N	N:0~100	
		SATURATION	N	N:0~100	

Web UI	Action	Command	Parameter	Value	Note
Multiview Setting	Portrait Layout	PMODE	N M	N=1: Pre-defined layout M=1~4: Pre-defined layout A~D N=2: User-defined layout M=1~4: Custom layout A~D	
	Window Size/ Position	PWINSIZE	S X Y N M	S: 1~4 X: 0~119 Y: 0~239 N: 0~120 M: 0~240	S: window 1~4 X: window's horizontal position Y: window's vertical position M: window's width N: window's height
	Input Channel of Window	PWININPUT	S T U V	S: 1~4 T: 1~4 U: 1~4 V: 1~4	Available on Customer layout S: 1~4, input channel for Window I T: 1~4, input channel for Window II U: 1~4, input channel for Window III V: 1~4, input channel for Window IV
	Custom Layout reset	PLAYOUTRESET	X	X:1~4	Reset Custom layout A~D
	Landscape Layout	LMODE	N M	N=1: Pre-defined layout M=1~5: Pre-defined layout A~E N=2: User-defined layout M=1~7: Custom layout A~G	
	Aspect Ratio	MVASP	N	N: 1~3 1: Fill 2: Contain 3: Cover	
	Border Color	BORDERC	N	N: 0~10 0 white 1 gray 2 yellow 3 blue 4 green 5 red 6 purple 7 orange 8 pink 9 black 10 disable	Working on Pre-layout mode only
	Window Size/ Position	WINSIZE	S X Y N M	X: 0~239 Y: 0~119 N: 0~240 M: 0~120	X: window's horizontal position Y: window's vertical position M: window's width N: window's height
	Input Channel of Window	WININPUT	S T U V	S: 1~4 T: 1~4 U: 1~4 V: 1~4	Available on Customer layout S: 1~4, input channel for Window I T: 1~4, input channel for Window II U: 1~4, input channel for Window III V: 1~4, input channel for Window IV
	Layer Priority	LAYER	X Y Z	X: 2~4 Y: 2~4 Z: 2~4	Tier1(Background) > Tier 2 > Tier 3 > Tier 4(Top) Tier 1 (Background): Window I (Fix) X: Tier 2, Window II/Window III/Window IV Y: Tier 3, Window II/Window III/Window IV Z: Tier 4 (Top), Window II/Window III/Window IV
	Custom Layout reset	CLAYOUTRESET	X	X:1~7	Reset Custom layout A~G

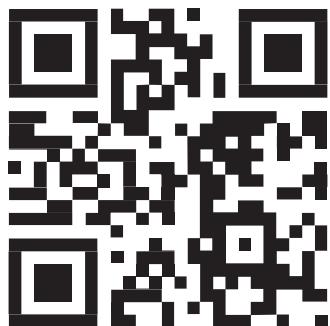
Web UI	Action	Command	Parameter	Value	Note
Others	Setup HDCP	HDCP	N	N: 0: HDCP Off N: 1: HDCP On	
	IP Mode	IPMODE	X	X: 0, Static X: 1, DHCP	
	IP Address	IPADD	S.T.U.V	S, T, U, V: 0~255	Ex: IPADD 192.168.1.22
	Subnet MASK	MAADD	S.T.U.V	S, T, U, V: 0~255	Ex: MAADD 255.255.255.0
	Gateway	GATEWAY	S T U V S T U V		
	IP Configuration	IPCONFIG			Show IP/MAC/Gateway address
	Unit ID	UID	N	N: 0~99	
	Firmware Version	RFW			Display firmware version
	OSD	OSD	N	N: 0: always OFF N: 1, always ON N: 2, show 10 seconds	
	Export Data	EXDATA			Export setting to USB drive
	Import Data	IMDATA			Import setting to USB drive
	Login	login	See the note	username: 111111 (default) password: 111111 (default)	Promptly input username and password
	Username Change	SUSR	N		6 digits in total and it can be numeral or English letter (case sensitive)
	Password Change	SPWD	N		6 digits in total and it can be numeral or English letter (case sensitive)
	Logout	LOGOUT			Logout from all the control management platforms including serial port, Telnet and web UI.

9. Package Contents

The M43-H04H02 package includes following items.

- 1) The Quadview Duo processor unit x 1 piece
- 2) Power cords including US x 1 piece and EU standard x 1 piece
- 3) Rack mount bracket x 1 set
- 4) M4 x 6mm screws x 10 pieces
- 5) Foot pad x 4 pieces
- 6) User manual x 1 piece

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