Avenview

Control Your Video

PRODUCT MANUAL
Model: HDM-C6MWIP4K-SET

HDMI 2.0 | HDCP 2.2 | 4K 30HZ 4:2:0 ULTRA HD | HD ready 1080p | CAT 5/6 | AUDIO | RS-232 | RoHS Compliant | FC CE

M-Series - 4K HDMI over IP with Video Wall & Matrix Support Encoder and Decoder

TABLE OF CONTENTS

SECTION 1: GETTING STARTED

1.1	IMPORTANT SAFEGUARDS

Please read all of these instructions carefully before you use the device. Save this manual

for future reference. Avenview warranty certificate please refer to page #18

Warranty does not include:-

- 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.

1.2	SAFETY GUIDELINES

The HDM-C6MWIP4K-SET M-Series - 4K HDMI over IP Encoder and Decoder has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the HDM-C6MWIP4K-SET 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 device away from liquids.

⚠ Spillage onto 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.

⚠ If the unit appears damaged, 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.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Avenview is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment.

Warning symbols	Description
	ONLY USE THE PROVIDED POWER CABIE OR POWER ADAPTER SUPPLIED. DO NOT TAMPER WITH THE ELECTRICAL PARTS. THIS MAY RESULT IN ELECTRICAL SHOCK OR BURN.
	THIS WARNING SYMBOL MEANS DANGER. WHEN THIS SYMBOL IS PLACED, YOU ARE IN AN ENVIROMENT THAT CAN CAUSE BODILY INJURY.
	DO NOT TAMPER WITH THE UNIT. DOING SO WILL VOID THE WARRANTY AND CONTINUED USE OF THE PRODUCT.
BEWARE this unit contains static sensitive devices	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.

⚠ WARNING

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 Avenview HDM-C6MWIP4K-SET, HDMI H.264 IP Videowall and Matrix 4K Decoder/Encoder delivers end-to-end streaming media over IP networks. The HDM-C6MWIP4K-SET is composed of two units a Decoder and an Encoder. The Decoder H.264/MPEG-4 AVC video compression format, it receives the encoded IP signal through LAN port and decodes video/audio signal out through HDMI interface, it also supports stereo de-embeding and streaming resolutions up to 4K@60Hz

FEATURES:

- HDMI 2.0, HDCP compliant
- Flexible PC,WEB GUI iPad control;
- Built in-auto scaler;
- Encoder supports- video stream encoding 480p@60Hz to 3840 x 2160@30;
- Decoder supports- video stream decoding 480p@60Hz to 3840 x 2160@60;
- Supports POE;
- Allows video previewing via iPad App and Windows 7/8/10 software 352x288@5Hz;
- Supports multiple interfaces HDMI, DVI signals over IP networks;
- Supports audio embedding and de-embedding;
- Supports H.264 features baseline profile, main profile and high profile;
- Supports H.264, TCP/IP, Telnet, UDP and IGMP;
- Support Telnet, WEB GUI control and 3rd Party control sytems API commands;
- Supports Auto IP, Zero-configuration networking (zeroconf)
- Seamless switching, no black screen, no frame lock. (Industry standard<500ms)
- Configurable encoding bit rate up to 20 Mbps
- Auto input format detection
- CEC Function on the RX;
- Compatible with other Avenview IP products like the HDM-C6MWIP-SET, HDM-C6MWIPL-R and HDM-C6MVIP-R (1080p only)
- Capable of upscaling 1080p@60Hz content to 4K@60Hz.

- NOTE: The QUALITY and TRANSMISSION of the video signals depends on the characteristics and quality of the STP/UTP cables and Network Infrastructure . We recommend any Network Switches with 1GB POE IGMP v2.0 support . Tested and configured on the below models

Recommended Network Switch for Video over IP applications
Switching capacity: 336 Gbit/s
Models: S5720-28X-PWR-SI-AC, S5720-28X-PWR-SI-DC
S5720-52X-PWR-SI-ACF

2.1 PACKAGE CONTENTS

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

1	HDM-C6MWIP4K-SET QTY (HDM-C6MWIP4K-S) X1 (HDM-C6MWIP4K-R) X1	
2	Power Adapter (+12V DC 1A)+International Adapters QTY X2	
3	Right and Left Ear Rack Sets QTY X2	
5	Phoenix connector (Male, 3.5 mm, 3 pins) QTY x3 Sender X6 x3 Receiver	
6	User Guide QTY X 1	

2.2 BEFORE INSTALLATION

ATTENTION

- Place the product on an even and stable surface. If the product falls, it may cause an injury to a person or malfunction.

- Do not place the product in high temperatures (over 50°C), or 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.

- Take care when connecting units to the electrical power circuit, incase the maximum rated circuit is not overloaded

- Installation of the equipment must comply with local and national electrical codes.

- Do not twist or pull by force ends of the UTP /HDMI cable. It can cause malfunction.

- Keep the device away from water. If the unit becomes wet, power off immediately.

- To prevent airflow restriction, allow clearance around the ventilation openings to be at least: ONE Inch (25.4 mm).

- Unauthorized changes or modifications could void the user's authority to operate the equipment.

- Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.
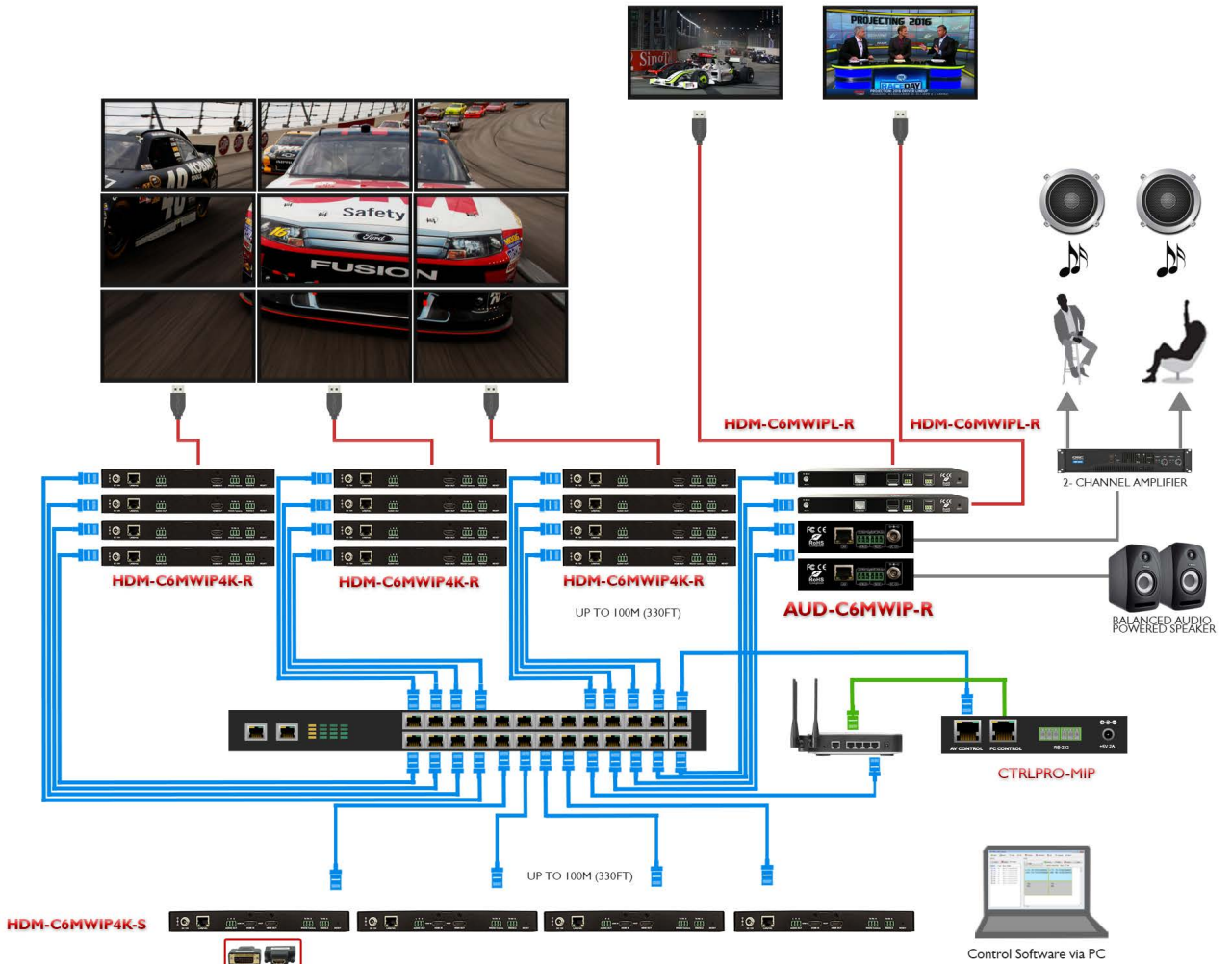
4K HDMI Over IP Encoder/Decoder

SERIES

Application Diagram 2
MULTI SOURCE TO MULTI DISPLAY
4K@30 (3840x2160) = 100m (328 feet) **CAT6**
FHD (1920x1080) = 100m (328 feet) **CAT6**

CABLE INDEX
- Input / Output
- CAT-5e / CAT-6
- AUDIO

HDM-C6MWIPL-R   HDM-C6MWIPL-R

2- CHANNEL AMPLIFIER

HDM-C6MWIP4K-R   HDM-C6MWIP4K-R   HDM-C6MWIP4K-R

UP TO 100M (330FT)

AUD-C6MWIP-R

BALANCED AUDIO
POWERED SPEAKER

CTRLPRO-MIP

UP TO 100M (330FT)

HDM-C6MWIP4K-S

Control Software via PC

HDMI TO DVI ADAPTER
SUPPORTS AUDIO

DVI/HDMI SOURCE
UP TO
640 x 480@60Hz, 800 x 600@60Hz,
1280 x 720p@50Hz, 1280 x 720p@60Hz,
1920 x 1080p@24Hz, 1920 x 1080p@25Hz,
1920 x 1080p@30Hz, 1920 x 1080p@50Hz,
1920 x 1080p@60Hz, 1920 x 1200@60Hz,
3840 x 2160@30Hz

VGA SOURCE
1280 x 1024@60Hz
1280 x 720@60Hz,
1280 x 768@60Hz,
1366 x 768@60Hz
1920 x 1080@60Hz
1920X1200@60

YPbPr SOURCE
1280 x 720p@50/60,
1920x1080@50/60Hz

CVBS SOURCE
480i@60Hz, 576i@50Hz

Compatible with
Windows®7

Control
Matrix Switching and Videowall
with Windows & iPad App
with
LIVE PREVIEW
just add
CTRLPRO-MIP

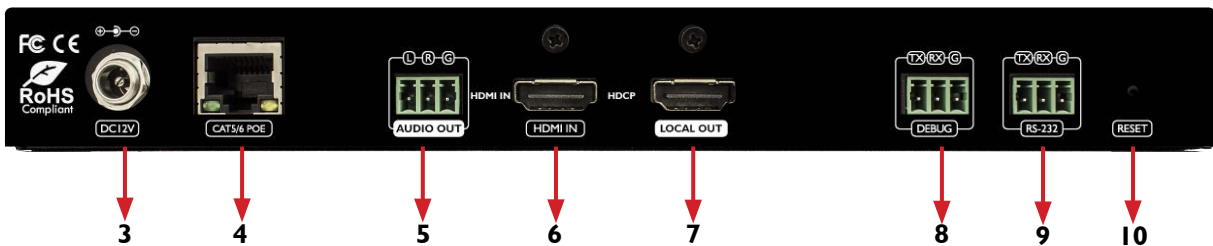AV CONTROL   PC CONTROL   RS-232   +5V 2A

Avenview

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App Store

2.4.1 FRONT PANEL (Sender/Encoder, HDM-C6MWIP4K-S)

1.	Power LED: Indicates if the unit is powered OFF or ON by a RED LED
2.	Status LED: Steady Blue Light ON indicates unit is communicating properly. LED blinking waiting on Source

2.4.2 REAR PANEL (Sender/Encoder, HDM-C6MWIP4K-S)

3. Power Jack: DC 12V 1A		4. CAT5/6: Used for transporting video/audio streams to decoder RX units connected.	
5. Stereo Audio OUT: Connects to an audio output device such as an amplifier for audio de-embedding.		6. HDMI IN: Connect to HDMI/DVI Source.	
7. LOCAL HDMI OUT: Connect to local display for monitoring*		8. RS 232-1: Debug use	
9. RS 232-2: RS-232 Data pass-through port for receiving /sending commands to RS 232 controllers.		10. Reset Button: Reboots the device. Hold down for 5 seconds on power up to restore factory defaults	

Note: Local output will display resolutions beyond the capabilities of the encoder. See Resolution Table for supported encoder resolutions.

2.4.3 FRONT PANEL (Receiver/Decoder, HDM-C6MWIP4K-R)

1.	Power LED: Indicates if the unit is powered OFF or ON by a RED LED.
2.	Status LED: Steady Blue Light ON indicates unit is communicating properly. LED blinking waiting on Encoder.
3.	PUSH Button : To activate the internal ID of the unit to be displayed on the display. For easy Decoder identification

2.4.4 FRONT PANEL (Receiver/Decoder, HDM-C6MWIP4K-R)

4. Power Jack: DC 12V 1A	5. CAT5/6: Used for transporting video/audio streams to decoder RX units connected.
6. Stereo Audio OUT: Connects to an audio output device such as an amplifier for audio de-embedding.	7. HDMI OUT: Connect to display.
8. RS 232-1: Debug use	9. RS 232-2: RS-232 Data pass-through port for receiving /sending commands to RS 232 controllers.
10. Reset Button: Reboots the device. Hold down for 5 seconds on power up to restore factory defaults	

3. INSTALLATION(HDM-C6MWIP4K-SET) POINT to POINT

To setup Avenview HDM-C6MWIP4K-SET please follow these steps for connecting to a device:

1. Turn off all devices including monitors / TV.
2. Connect an HDMI source (such as a Blu-Ray Disc player or PC) to the Encoder HDM-C6MWIP4K-S.
3. Connect CAT5/6 from Encoder to Decoder at the CAT5/6 port.
4. Connect an HDMI out from HDM-C6MWIP4K-R decoder to a Display/Monitor.
5. Connect Audio out to Speakers or Amplifier.
6. Ensure all cable connections are secure and not loose.
7. Plug in 12V DC power (supplied) and connect the HDM-C6MWIP4K-S and HDM-C6MWIP4K-R to power jack respectively. Power on HDMI Source.
8. Power on the HDMI display.

NOTE: For network setup please see the Network switch configuration guide and Network Connection guide to acheive best results.

3.1 IP MATRIX SWITCH GUIDE

TX and RX Guide		Networking Switch Guide	
Distribution Status	Total Quantity	Network Topology	Recommended Switches
Centralized	Less than or equal to 20 TX/RX	Single Switch Networking	Huawei Network Switch for Video over IP applications **Switching capacity:** 336 Gbit/s **Models:** S5720-28X-PWR-SI-AC, S5720-28X-PWR-SI-DC S5720-52X-PWR-SI-ACF
	Less than or equal to 40 TX/RX		Hauwei Network Switch for Video over IP applications **Switching capacity:** 336 Gbit/s **Models:** S5720-52X-PWR-SI-ACF
	More than 40 TX/RX	Cascading Switch Networking	Huawei Switches for Stacking topology Core switches uses 1000 Mbps Ethernet switches. Extended switches use 1000 Mbps Ethernet switches
Distributed	No requirement		

24-Port Single Switch Networking
N+M (No more than 20)
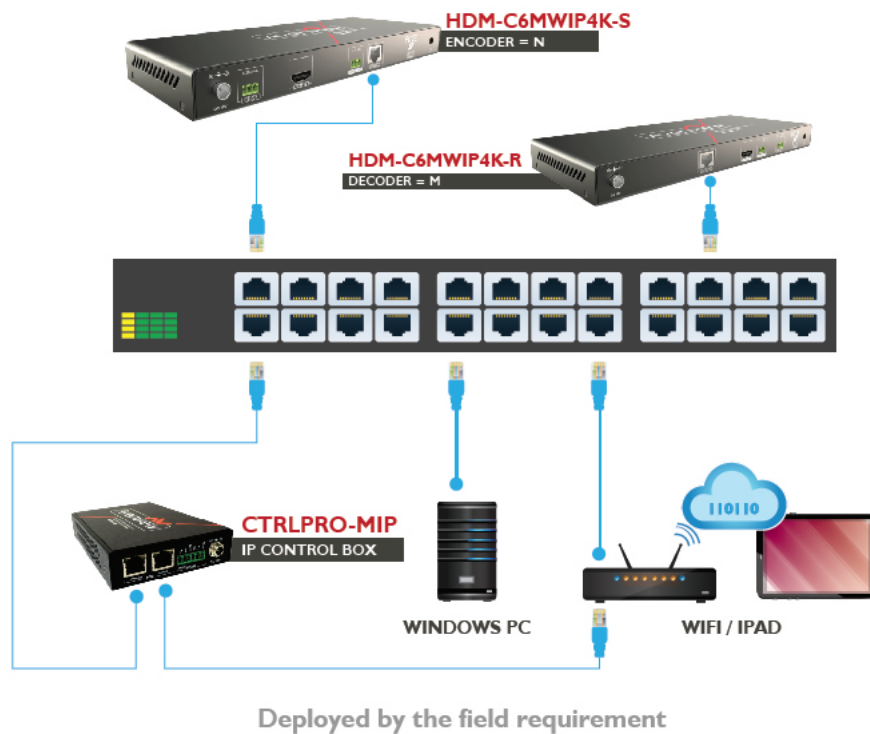
Deployed by the field requirement

The illustration above is an example of how the user can connect using a 24 port network switch. The following brands are recommended and was tested resulting in stable working conditions.

1. HUAWEI brand

   Network Switch for Video over IP applications
   Switching capacity: 336 Gbit/s
   Models: S5720-28X-PWR-SI-AC, S5720-28X-PWR-SI-DC

2. HUAWEI Brand

   Network Switch for Video over IP applications
   Switching capacity: 336 Gbit/s
   Models: S5720-28X-PWR-SI-AC, S5720-28X-PWR-SI-DC
            S5720-52X-PWR-SI-ACF

Avenview M-Series 4K HDMI over IP units can be networked together with a recommended Layer 2 Gigabit Smart Switches. As mentioned previously in section 3 the importance of calculation for the capacity of the switch meets the requirements of the number of encoders/decoders you have on your network. These units can perform well over a standard network infrastructure, however the quality of this infrastructure is critical. We have tested many brands of switches all of which perform well in small system configurations of around 10 Encoders and Decoders. However, for larger installations, Avenview highly recommends using HUAWEI series switches.

3.3.1 Simple Setup Guide for Network switch

M-series should be connected to a Layer 2 managed switch which supports Multicast & IGMP snooping.

Do not connect any units to the switch until all the network switch configuration has been. For recommended switches and PDF configuration guides please see the 'downloads' section of any M-series device at avenview.com.

3.3.2 POE Requirements

It is not necessary to change the IP addresses of the encoders and decoders units – factory default AutoIP is used to configure correct IP addresses to simply work out of the box.

DHCP addresses are not recommended, while Static addresses are for supervised setups and network strict enviroments.

Failure to note the IP settings of any unit changed may result in a complicated reset procedure.

Most M-Series installations use the POE (Power Over Ethernet) function to power the encoder & decoders units.

HDM-C6MWIP & HDM-C6MWIP4K devices are Class 0 rated POE devices, they can require up to 15.4W of power each, but tested their actual power draw is between 5-7W. In order to calculate the number of devices that is recommeneded on a network switch please divide the total POE power capacity of the switch by 15.4.

Please see the example:

CISCO SG300-52P with a POE power output of 375W: 375 / 15.4 = 24.35.From the answer 24 devices can be powered by this switch.

In order to have all ports powered by POE on a network switch, please see this example:

SG300-52MP which provides 740W. 740 / 15.4 = 48. From the answer 48 devices can be powered by this switch.

3.3.3 Data Bandwidth

Each HDM-C6MWIP4K-S encoder will produce up to 50Mb/s of data > therefore 10 x encoders will require 10 x 50Mb/s = 0.5 Gbps.

4.   PC CONFIGURATOR

You can connect multiple HDM-C6MWIP4K-S and the HDM-C6MWIP4K-R H.264 decoder to build a modular IP matrix. With the PC configurator, you can configure and manage this function. For more information, see the user guide of PC configurator on the M-Series product page available here.

Minimum System Requirements for PC Software:

Operating System: Microsoft® Windows® XP, Windows® Vista, Windows® 7 or Windows® 8
CPU: 1.5 GHz
Memory: 1 GB of RAM
HDD: 32 GB of available hard disk space
Network: 10/100 NIC

Products and Versions

Products	Versions
HDM-C6MWIP4K-S	v3.1.1
HDM-C6MWIP4K-R	v3.1.1
HDM-C6MWIP-R	v2.11.4
HDM-C6MWIPL-R	v2.11.4
CTRLPRO-MIP	API V1.3/V7.6.1 (V7.6.0)
M-SERIES PC Console	v8.0.9
Firmware Update Tool	v3.0.2

4.1   SETTING A STATIC IP ON YOUR COMPUTER

Before using the Avenview PC Configurator, please ensure you download the most recent version from the product HDM-C6MWIP4K-S Sender and HDM-C6MWIP4K-R Receiver website link /downloads PC control software. Refer to the chart above for correct version numbers.

All devices must be in the same network segment. To verify and properly control the devices, please set a static IP on your computer. See the instructions below on how to proceed:

The Sender and Receiver units are pre-configured with AutoIP. Upon connecting the units to a stand alone network switch (without router attached), the units will be on IP address range at 169.254.1.1 and subnet mask 255.255.0.0. Set your computer's IP address as 169.254.X.X and subnet mask as 255.255.0.0.
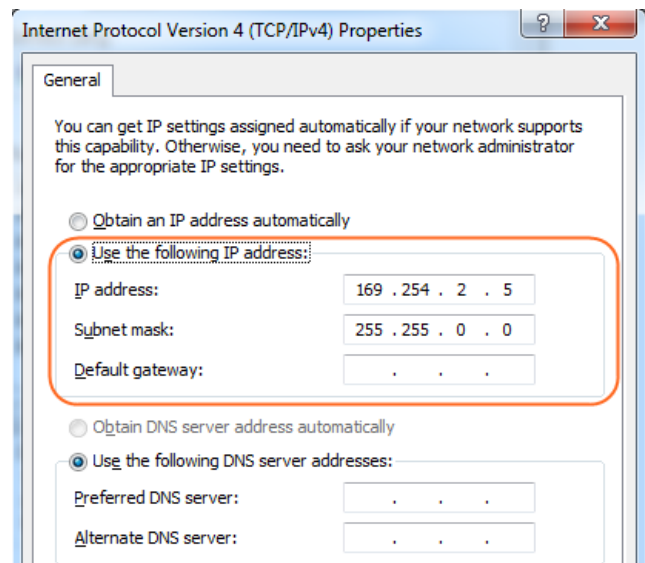
A Windows 7 PC/Laptop is used as an example to configure a static IP address.

1. Click **Start** > Choose Control Panel > Network and Internet > Network and Sharing Center > Change Adapter Settings, right click Local Area Connection, and then choose **Properties**.

2. Double-click **Internet Protocol Version 4 (TCP/IPv4)**.
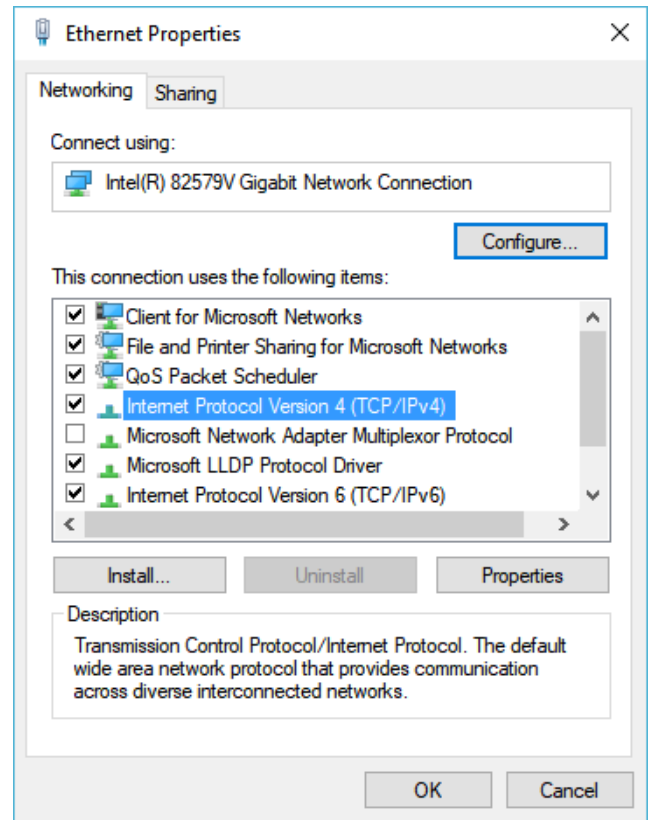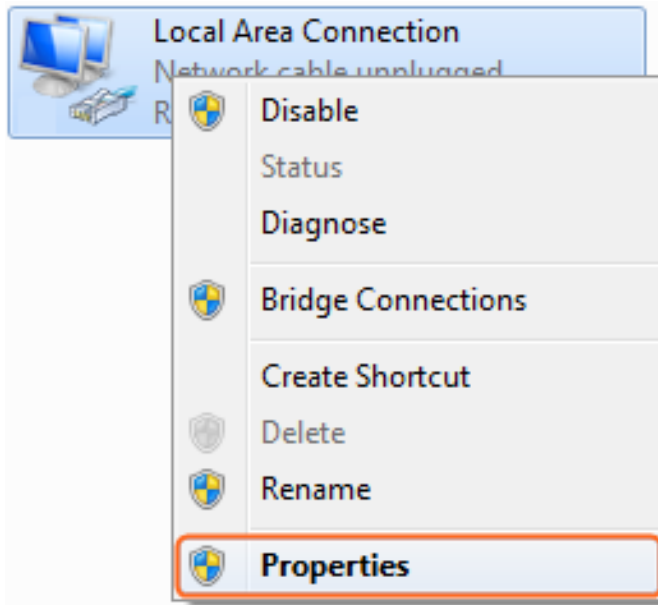
3. Select **Use the following IP address**. After configuring the settings in the following example, click **OK**.

   ➢ **IP address**: 169.254.2.5

   ➢ **Subnet mask**: 255.255.0.0

4. Click **OK**.

Firewall

Your operating system firewall may block some features of PC Configurator and prevent it from communicating with Sender and Receiver. A computer running Windows 7 is used as an example to configure your operating system firewall through either of the following two approaches.

Method 1

You can configure the firewall in the Windows Firewall panel on your computer, for example select both Home/Work (Private) and Public for PC Configurator & Matrix.
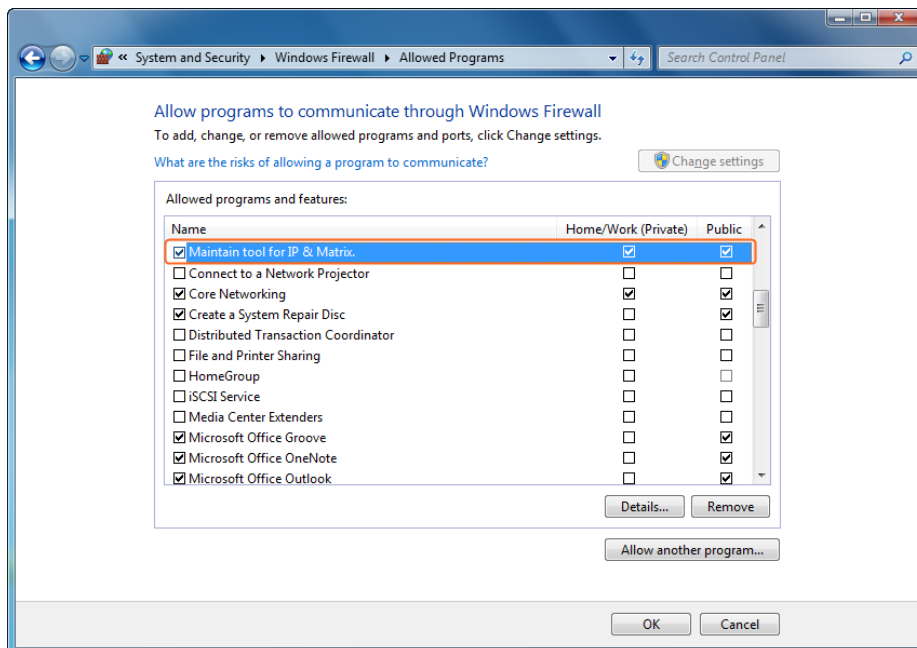
Method 2

You can also configure the firewall in the **Windows Security Alert** window. When starting MaintainTool, the **Windows Security Alert** may display. If so, use the administrator privileges to select a network you allow this software to communicate on, for example select both private and public networks, and then click **Allow access**.
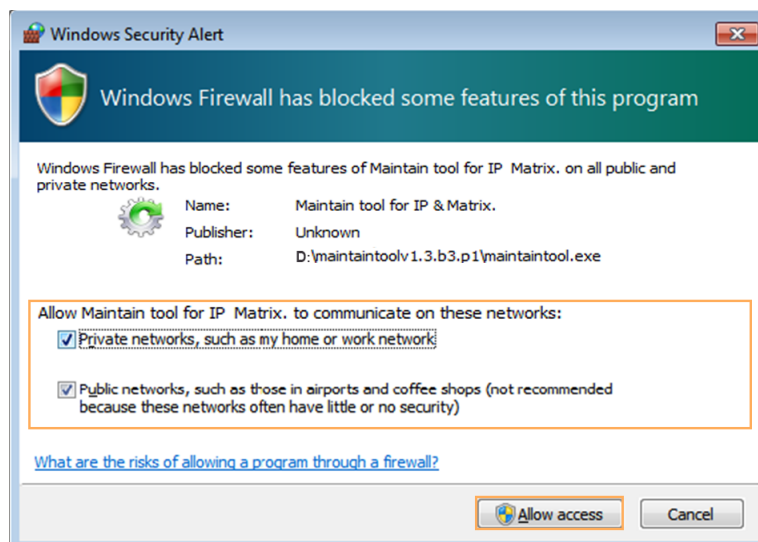
Item	Description	
Units	**HDM-C6MWIP4K-S**	**HDM-C6MWIP4K-R**
Unit Description	HDMI Transmitter/Encoder	HDMI Receiver/Decoder
Input Video Port	1 x HDMI IN	1 x CAT5/6
Input Video Type	HDMI, DVI 1.0	H.264/MPEG-4 AVC
Input Resolution	See resolution table on next page	NA
Input Video Signal	0.5~1.2V p-p	NA
Encoding Data Rate	Up to 20 Mbps, configurable	NA
Output Video Ports	1 x CAT5/6, 1 x HDMI	1 x HDMI
Output Video Type	H.264/MPEG-4 AVC	HDMI 2.0
Output Resolutions	Local HDMI output will mirror whatever resolution is connected to input	See resolution table on next page
Video Impedence	100 Ω	100 Ω
Input DDC Signal	5 V p-p (TTL)	NA
End-to-End Time Latency	About 60ms-90ms (Low latency mode) About 250ms-300ms (High quality mode)* (1080P Signals)	About 60ms-90ms (Low latency mode) About 250ms-300ms (High quality mode)*(1080P Signals)
Input Audio Format	Stereo	Audio embedded in streaming media input
Output Audio Ports	1 x Phoenix connector	1 x Phoenix connector
Output Audio Format	Stereo	Stereo
Control Method	Rear panel CAT5/6 port, PC configurator and RS-232	PC configurator and RS-232
Power Supply	12 V 1 A DC	12 V 1 A DC
Power Consumption	12W (Max.)	12W (Max.)
Shipping Dimensions (L X H X D)	12.2" x 3.0" x 7.1"	12.2" x 3.0" x 7.1"
Product Dimensions (L X H X D)	9.3" x 1.0" x 3.7"	10.5" x 1.0" x 4.4"
Weight	1 lbs	1.3 lbs
ESD Protection	Human body model: -±8kV (air-gap discharge) -±4kV (contact discharge)	Human body model: -±8kV (air-gap discharge) -±4kV (contact discharge)

Environmental

OPERATING TEMPERATURE	32° ~ 104°F (0° to 40°C)	32° ~ 104°F (0° to 40°C)
STORAGE TEMPERATURE	-4° ~ 140°F (-20° ~ 60°C)	-4° ~ 140°F (-20° ~ 60°C)
RELATIVE HUMIDITY	20~90% RH (no condensation)	20~90% RH (no condensation)

Note: See M-Series Latency Summary available here.
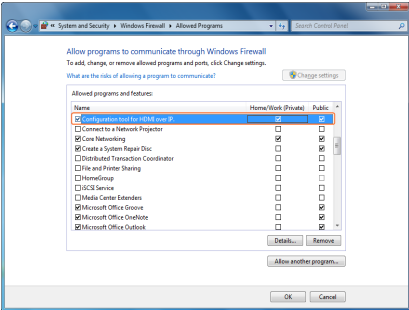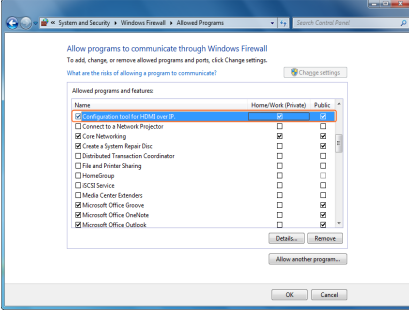
6.1 SUPPORTED ENCODER RESOLUTIONS

Resolution	Chroma Sampling			
	RGB	YCbCr 4:4:4	YCbCr 4:2:2	YCbCr 4:2:0
640 x 480@60Hz	✓	✓	✓	✓
720 x 480p@60Hz	✓	✓	✓	✓
800 x 600@60Hz	✓	✓	✓	✓
720p@50Hz, 60Hz	✓	✓	✓	✓
1024 x 768@60Hz	✓	✓	✓	✓
1360 x 768@60Hz	✓	✓	✓	✓
1366 x 768@60Hz	✓	✓	✓	✓
1280 x 800@60Hz	✓	✓	✓	✓
1440 x 900@60Hz	✓	✓	✓	✓
1280 x 1024@60Hz	✓	✓	✓	✓
1400 x 1050@60Hz	✓	✓	✓	✓
1680 x 1050@60Hz	✓	✓	✓	✓
1080p@24Hz, 25Hz	✓	✓	✓	✓
1080p@30Hz, 50Hz, 60Hz	✓	✓	✓	✓
1920 x 1200@60Hz	✓	✓	✓	✓
3840 x 2160@30Hz	✓	✗	✗	✗
3840 x 2160@60Hz	✗	✗	✗	✗

6.2 SUPPORTED DECODER RESOLUTIONS

Resolution	Chroma Sampling			
	RGB	YCbCr 4:4:4	YCbCr 4:2:2	YCbCr 4:2:0
800 x 600@60Hz	✓	✓	✓	✓
1024 x 768@60Hz	✓	✓	✓	✓
720p@50Hz, 60Hz	✓	✓	✓	✓
1280 x 800@60Hz	✓	✓	✓	✓
1366 x 768@60Hz	✓	✓	✓	✓
1440 x 900@60Hz	✓	✓	✓	✓
1280 x 1024@60Hz	✓	✓	✓	✓
1680 x 1050@60Hz	✓	✓	✓	✓
1080p@24Hz, 25Hz	✓	✓	✓	✓
1080p@30Hz, 50Hz, 60Hz	✓	✓	✓	✓
1600 x 1200@60Hz	✓	✓	✓	✓
1920 x 1200@60Hz	✓	✓	✓	✓
3840 x 2160@30Hz	✓	✗	✗	✗
3840 x 2160@60Hz	✓	✗	✗	✗

Problem	Possible Solution
PC Configurator cannot find devices	1. Check the Windows Firewall. Taking Windows 7 as an example: Click Start menu, go to Control Panel > System and Security > Windows Firewall > Allowed Programs, select Home/Work (Private) and Public for PC configurator. PC Configurator (HDMI over IP) Maintain Tool 2. Check the IP address and subnet mask of your computer. The computer, Sender, Receiver and switch should be in the same network segment. Therefore, set your computer's IP address as 169.254.X.X and subnet mask as 255.255.0.0. For more information, see the description in the networking guide. 3. Check the switch configuration, and that IGMP snooping and all the other functions are enabled.
Display Showing No Picture	1. Check all devices are powered on. 2. Check all cables are securely seated and connected properly. 3. Check the LED STATUS indicators on the Receivers to see if Senders and Receivers are linked correctly. **Blue Steady=OK Blue Blinking=standby** To link the devices use the PC configurator on your PC/Laptop, drag the TX to the RX and click apply. 4. Check that source device is powered on and the HDMI cable is connected. Check the displays are powered on and the correct input selection. Check the HDMI cable is plugged into the correct port.

1. All HDMI over CATx transmission distances are measured using Belden CAT6A (625MHz), 4-Pair,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 with Video Pattern Testing and shielded ends.

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 CAT6A cable shows longer transmission length than solid UTP CAT5E/6E cable.

3. EIA/TIA-568-B termination (T568B) for category cables is recommended.

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 poor wiring environments with unplanned cable runs situated away from EMI interference.

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 signal on the display, the actual transmission length is subject to high quality category cables. For resolution greater than 1080i or 1280x1024, a solid CAT6E 250MHz cable is the only viable choice.

Data Link TIA/EIA-568-B

PIN	Color	Function
1	W-O	TX0-
2	O	TX0+
3	W-G	TX1-
4	BL	TX2-
5	W-BL	TX2+
6	G	TX1+
7	W-BR	TXC-
8	BR	TXC+

RJ-45 Jack
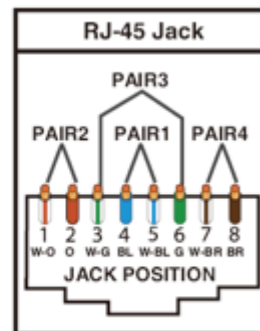
PERFORMANCE GUIDE FOR HDMI OVER CATEGORY CABLE TRANSMISSION

PERFORMANCE RATING		TYPE OF CATEGORY CABLE		
WIRING	SHIELDING	CAT5	CAT5E	CAT6
SOLID	UNSHIEILDED (UTP)	★★★	★★★★	★★★★
	SHIEI DED (STP)	★★★	★★★★	★★★★★
STRANDED	u NSHIEI DED (UTP)	★	★★	★★
	SHIEI DED (STP)	★	★	★★
TERMINATION		PLEASE USE EIA/TIA-568-B TERMINATION (T568B) AT ANY TIME		

Avenview 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 pertaining 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.

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