Avenview
Control Your Video

4X1 HDMI 2.0 SWITCHER W/IR/RS232/ETHERNET/ 4K/UHD SUPPORT

Model #: SW-HDM2-T4K-4X1

Product Application & Market Sectors

Corporate

House Of Worship

Military

Residential

Education

Industrial

Medical

Aviation

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SECTION 1: GETTING STARTED

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<tr><td>1.1</td><td>IMPORTANT SAFEGUARDS</td></tr>
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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.

<table>
<tr><td>1.2</td><td>SAFETY INSTRUCTIONS</td></tr>
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The **Avenview SW-HDM2-T4K-4X1** HDMI Switcher set has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the SW-HDM2-T4K-4X1 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.

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
	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.
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

Avenview **4x1 HDMI 4K@60 Switcher** allows the transmission of video and multi-channel digital audio at 4K resolution. It allows the transmission of 18Gbps HDMI signal from any of its four HDMI 2.0 source inputs to one HDMI 2.0 with HDCP 2.2 support connected display. With supports 4K2K@60, 48-bit Deep Color, HDR (High Dynamic Range) audio and other features defined by HDMI 2.0 specifications. This device can be operated and controlled easily through front panel buttons, IR remote control, RS-232, Telnet or Web GUI controls.

Video Signals: 4K@60/UHD (Ultra HD) and Full HD 1080p@60 Hz/48-bit color depth.

Audio signals: PCM 2/5.1/7.1CH, Dolby Digital 2~5.1CH, DTS 2~5.1CH, Dolby Digital Plus, Dolby TrueHD,

Dolby Atmos and DTS-HD Master Audio

Data Signals: Bi-Directional IR signals 30 KHz to 50 KHz.

FEATURES

- HDMI 2.0 (with HDR and 4K@60/UHD supported) and HDCP 2.2 compliant;

- Select any one of four HDMI 2.0 sources and display on a HDTV display with fast switching between sources;

- Supports HD resolutions up to UHD (3840x2160@24/25/30/50/60 & 4K (4096x2160 @24/25/30/50/60Hz)

- Supports HDR (10 bit 4:2:0)

- Supports HDMI 2.0 data rate from 18Gbps and 'Deep Color' up to 1080p/48-bit

- Supports selection of Standard (Fixed) or TV (Downstream) EDID settings

- Supports Audio pass-through of High-definition Audio formats PCM 2/5.1/7.1CH, Dolby Digital 2~5.1CH, DTS 2~5.1CH, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos and DTS-HD Master Audio

- Supports IR Remote, Telnet, WebGUI control and RS-232

Displaying HDMI 4K/HD resolution requires the standard High Speed HDMI cable and display for accurate results.

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

1	4X1 HDMI 2.0 Switcher	1x	
2	IR EXTENDER	1x	
3	IR REMOTE	1x	
4	Power Adapter (5V/2.6A DC)	x1	
5	User's Manual		

- Put the product on 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℃), too low temperature (under 0℃) or high humidity.
  Use the DC power adapter with correct specifications and supplied with the unit. If improper power supply is used the unit may malfunctionand cause a fire.

| 2.3 | CABLE SPECIFICATION |

To achieve best results we highly recommend using a high quality 26 or 24 AWG HDMI cable with the below specifications to maintain signal integrity and distances.

Features

- Full UHD 4K/ 60 to 18Gbps High Speed at up to 48 Bit Deep Color
- UHD 4K/60 to 10.2 Gbps High Speed Deep Color up to 50ft (Active Series), 25ft Passive
- Full HD Up to 1080p/60 up to 75ft
- True Professional grade heavy-duty 24 or 26 gauge oxygen-free construction
- ProGrip connector utilizes up to 16 lbs of retention force to help keep connector in place
- SureLength length indicators on the connector heads make it easy to organize for installations
- Available in 7 colors for easy cable identification
- Up to 32 audio channels and 21:9 aspect ratio

- Simultaneous delivery of dual video and audio streams to multiple users
- Pro Grade Triple Shielding with 2x 100% coverage and 85% Premium Tinned Copper Braid construction
- Ethernet Capable
- 3D Ready
- Supports Deep Color and x.v. Color (Up to 48 Bit)
- 5.1/7.1 Lossless Dolby TrueHD and DTS-HD Surround Sound
- Audio Return Channel & Lip-sync
- ATC Certified
- 99.9% High Purity Copper Center Conductor
- Molded 24k Gold Plated HDMI male connectors on each end
- X-tra Flex CL3 rated jacket for easy installation
- RoHS Certified
- Lifetime Warranty

HDMI Premium Certified Cable label
This label ensures that the product was tested under the Premium HDMI Cable Certification Program

SECURE QR Code
Encrypted data in the QR code to identify the product with the Premium HDMI Cable app

SECURE fingerprint
Random elements in the hologram are recognized by the Premium HDMI Cable app, thus each label has its unique "fingerprint" and ensure the authenticity and quality of the product

SW-HDM2-T4K-4X1

4K@60(4096x2160/3840x2160 = 5m (16 feet) **HDMI 2.0**
1080p = 15m (50 feet) **HDMI 1.4**

LAYOUT 1

CABLE INDEX

HDMI CABLE
INPUT SOURCE
EDID MODE

1080p   48bit

HDMI Source 4

HDMI Source 3

HDMI Source 2

HDMI Source 1

Max 5 m
4K@60 4:4:4

3.1 FRONT PANEL (SW-HDM2-T4K-4X1)
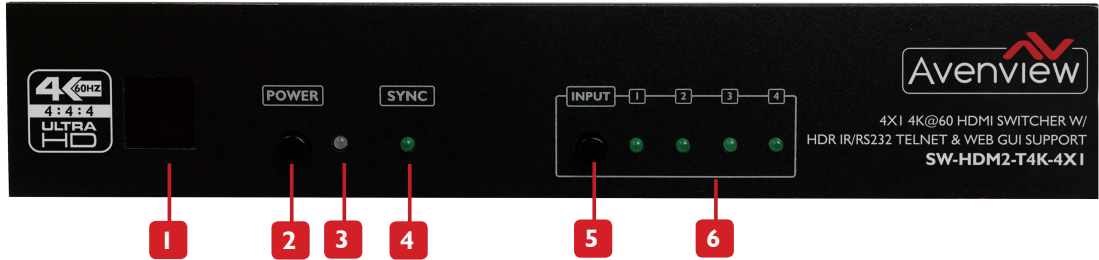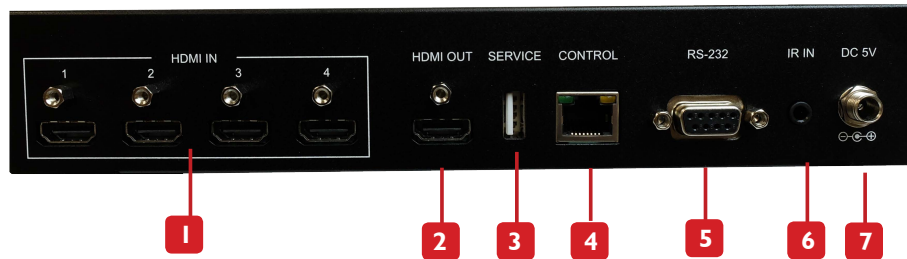

1. **IR Window:** IR receiver window receives remote control signals from the supplied IR Remote	2. **Power Button:** Powers the device ON or OFF. LED illuminate when the device is powered ON
3. **Power Indicator:** Illuminate Red when device is in Stand by mode, Illuminates green when device is ON.	4. **SYNC:** Illuminates green when connected to sink device.
5. **Input:** Select preferred source to display 1~4.	6. **Input Source LED Indicator:** Illuminates green when each source port is selected.

HDMI CABLE LENGTH (MAX)			
8-bit 1080p		12-bit 1080p	
Input	Output	Input	Output
10M	10M	10M	10M

HI SPEED 4K2K CABLE LENGTH (MAX)		
4K2K	HDMI In	HDMI Out
3840x2160p24	5m	5m
3840x2160p60	5m	5m

3.2 REAR PANEL (SW-HDM2-T4K-4X1)


1. **HDMI IN:** Connect input sources such as DVD/ Blu-ray players with HDMI cables.	2. **HDMI Out:** Connect to HDMI TV's/displays or monitors for both audio and video signal transmission.
3. **USB 2.0:** Service Slot for firmware update Please use a USB drive to update firmware.	4. **LAN Control:** Connect to an active network to be controlled via PC/Laptop for WEB GUI and Telnet control.
5. **RS 232:** Connect to PC or laptop with D-Sub 9-pin male cable for the transmission of RS-232 commands.	6. **IR IN:** Connect the IR Receiver cable supplied for receiving IR signal from the IR remote.
7. **Power DC 5V:** Connect the 5V DC 2.6A power supply included in the package. The power LED indicator on front panel will illuminate RED once connecting AC power.	

Ethernet : Connect to an LAN network. The green LED will illuminate once connected to network and the yellow LED will blink during data transmission.
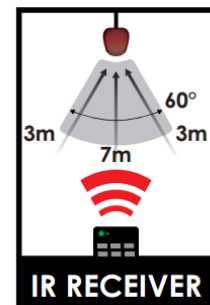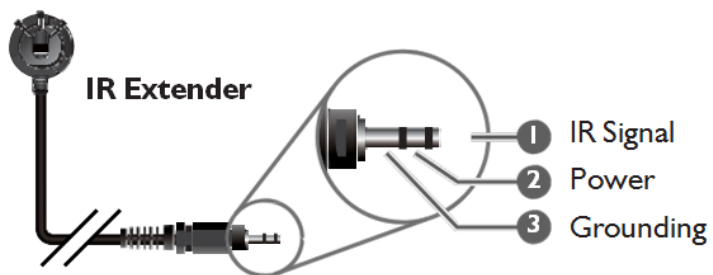
REMOTE CONTROL
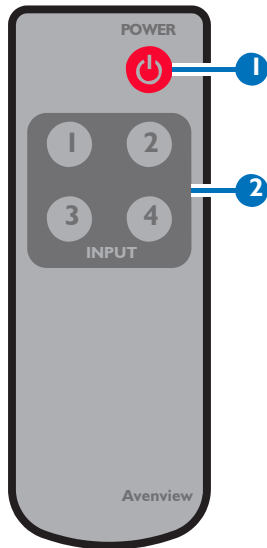
① **POWER:** Press to switch on the device or off to standby mode.

② **Input 1-4**: Press 1-4 to select the coressponding input port.

① IR Signal
② Power
③ Grounding

IR Extender

IR RECEIVER

60°
3m   3m
7m

IR Socket

IR EXTENDER: plug in the IR Extender into the rear of the unit to receive all IR command signals from the supplied IR Remote control.

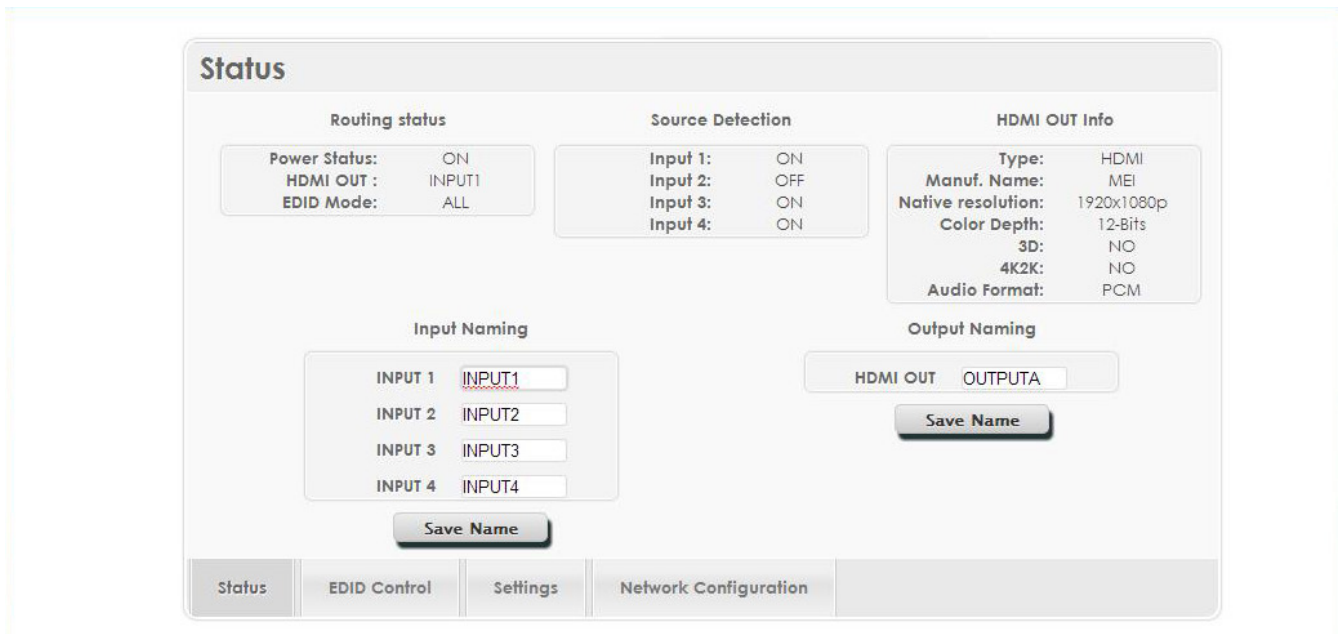| SW-HDM2-T4K-4X1		Third Party RS-232 Controller	
PIN	Definition	PIN	Definition
1	NC	1	NC
2	TxD	2	TxD
3	RxD	3	RxD
4	NC	4	NC
5	GND	5	GND
6	NC	6	NC
7	NC	7	NC
8	NC	8	NC
9	NC	9	NC

Baud Rate: 19200bps

Data Bit: 8 bits

Parity: None

Stop Bit: 1

Flow Control: None

On a PC/Laptop that is connected to the same active network as the SW-HDM2-T4K-4X1, open a web browser and type device IP address (can be identified from RS-232's help command or use the default IP: 192.168.1.50) on the web address entry bar. The browser will display the device status, control and User settings.

All functions, controls and settings can be selected/modified from a single web page allowing easy access and user friendly experience to all features.

Status

Routing status		Source Detection		HDMI OUT Info	
Power Status:	ON	Input 1:	ON	Type:	HDMI
HDMI OUT :	INPUT1	Input 2:	OFF	Manuf. Name:	MEI
EDID Mode:	ALL	Input 3:	ON	Native resolution:	1920x1080p
		Input 4:	ON	Color Depth:	12-Bits
				3D:	NO
				4K2K:	NO
				Audio Format:	PCM

Input Naming

INPUT 1	INPUT1
INPUT 2	INPUT2
INPUT 3	INPUT3
INPUT 4	INPUT4

Save Name

Output Naming

| HDMI OUT | OUTPUTA |

Save Name

| Status | EDID Control | Settings | Network Configuration |

6.1 Source Detection

Selected Input source will display 'ON' when corresponding port is selected.

INPUT1: OFF
INPUT2: OFF
INPUT3: OFF
INPUT4: OFF
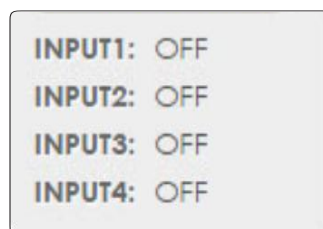
6.2 EDID

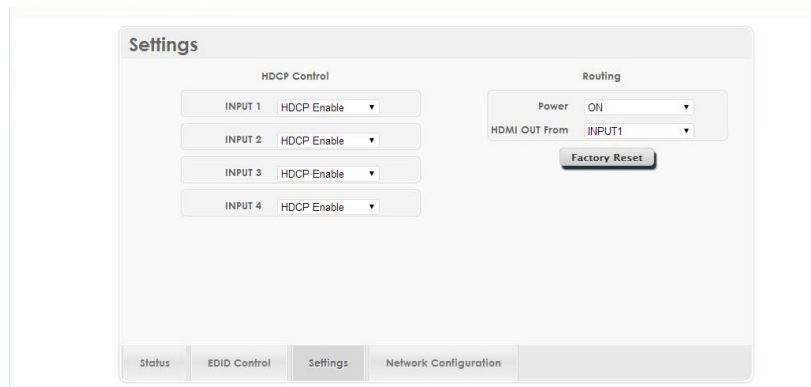Click on EDID Control for EIDID selections.
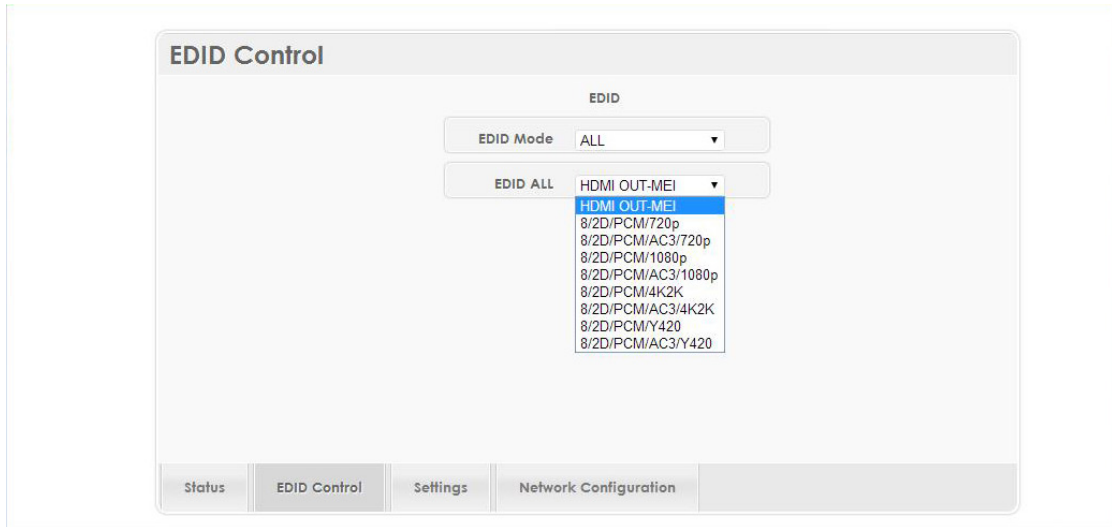
6.3 HDCP CONTROL

Two HDCP modes are available: **Enable and Disable**

Enable mode is required when using all other devices connected to the unit.

Disable mode is required when using Apple brand products.

6.4 CUSTOM HDMI INPUT LABEL

The user can easily rename the four HDMI inputs to allow easy identification of what source is connected to manage the switching .
Please click SAVE button to complete the process when finished.

6.5 HDMI OUTPUT INFO

This info tab displays the information of the HDMI output:-
Type, Manufacturer name, native resolution, color depth, 3D/4K Support Yes/No
Also audio format.

6.6 NETWORK SETTINGS

Within this TAB the user can set their preferred Network IP mode :-

DHCP, STATIC, IP Address, Net Mask, Gateway, HTTP Port and Telnet port

Please follwo the steps to use telnet control,

STEP1 Please ensure that both the unit and the PC/Laptop are connected to the same active network.

To access Telnet in Windows 7, click on the "Start" menu and type

"cmd" in the search field, then press "Enter".

Under Windows XP go to the "Start" menu, click on "Run", type "cmd" then press "Enter".

Under Mac OS X, go to Go→Applications→Utilities→Terminal

See below for reference.
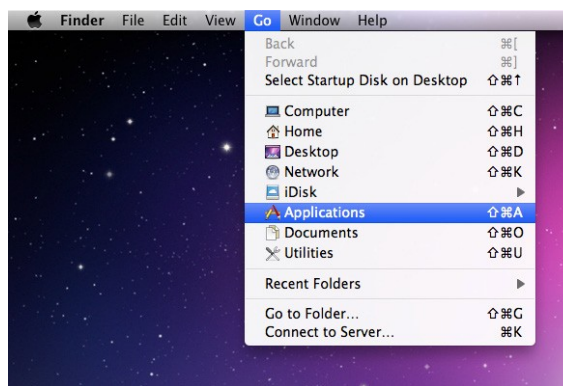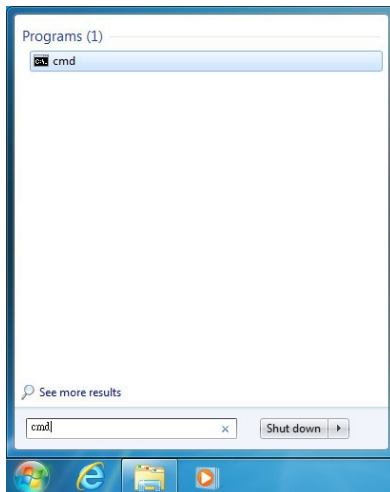
As the below caption when the command prompt type "telnet", then the IP

address, and hit enter.

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\Administrator>telnet 192.168.XX.XX 23
```

Type "Help" or "?" then hit enter to bring up all available commands.

COMMAND NAME	DESCRIPTION	DESCRIPTION OF PARAMETER
P0	Power Off (Standby)	NONE
P1	Power On	NONE
A N	Select Input N	N=1-4
IPCONFIG	Display The Current IP Configure	NONE
SIPADDR XXX.XXX. XXX.XXX	Set Ethernet IP Address	XXX=0~255
SNETMASK XXX.XXX. XXX.XXX	Set Ethernet Net Mask	XXX=0~255
SGATEWAY XXX.XXX. XXX.XXX	Set Ethernet Gateway	XXX=0~255
HTTPPORT N	Set Http Port Number	N=0~65535
RSTIP	IP Configuration Reset To <DHCP>	NONE
EDIDMODE	Show EDID Mode	NONE
EDIDMODE N	Set EDID Mode	N=0(Appoint), 1(All)
EDIDALL	Show EDID Mode Source For All	NONE
EDIDALL N	Set EDID Mode Source For All	N=1-9 (ref. EDID All)
EDIDIN	Show Input EDID Source	NONE
EDIDIN N1	Show Input N1 EDID Source	N1=1-4
EDIDIN N1 N2	Set Input N1 EDID Source	N1=1-4 N2=1-9 (ref. EDID All)
HDCPIN	Input HDCP Status	NONE
HDCPIN N1	Show Input N1 HDCP Status	N1=1-4

COMMAND NAME	DESCRIPTION	DESCRIPTION OF PARAMETER
HDCPIN N1 N2	Set Input N1 HDCP On/Off*	N1=1-4 N2=0(OFF), 1(ON)
SOURCEDET	Show All Inputs Signal	NONE
SOURCEDET N1	Show Input N1 Signal	N1=1-4
SINKINFO	Show Output Information	NONE
INNAME	Show Input Name	NONE
INNAME N1 N2	Set Input Name	N1=1-4 N2=ABCDEFGH(Max Length=8)
OUTNAME	Show Output Name	NONE
OUTNAME A N1	Set HDMI Output Name	N1=ABCDEFGH(Max Length=8)
VER	Show Unit Firmware Version	NONE
REBOOT	System Reboot	NONE
HELP (?)	Show Command List	NONE
HELP N	Show Descript Of Command	N : COMMAND NAME
FADEFAULT	All Configure Set To Factory Default	NONE

Note:

1. *All the RS-232 command will be not executed unless followed with a carriage return. Commands are case-sensitive.*
2. **HDCP ON/OFF equivalent to HDCP standard and Apple mode.*
3. *IP address's default setting is on static 192.168.1.50*

	Mode	Selection	Description
EDID Mode	**EDID All**	HDMI Output(TV)	HDMI Output display EDID
		8/2D/PCM/720p	Build-In EDID, Deep color/2D3D/audio/native resolution
		8/2D/PCM/ AC3/720p	Same as above
		8/2D/PCM/1080p	Same as above
		8/2D/PCM/ AC3/1080p	Same as above
		8/2D/PCM/4K2K	Same as above
		8/2D/PCM/ AC3/4K2K	Same as above
		8/2D/PCM/Y420	Same as above
		8/2D/PCM/AC3/ Y420	Same as above
	EDID Appoint	EDID IN1	Input 1's EDID
		EDID IN2	Input 2's EDID
		EDID IN3	Input 3's EDID
		EDID IN4	Input 4's EDID

Note:
1. *EDID function only selectable under RS-232 and WebGUI control.*
2. *Power cycling the device will set the EDID mode to EDID All- HDMI OUTPUT.*

10. INSTALLATION (SW-HDM2-T4K-4X1)

To setup Avenview SW-HDM2-T4K-4X1 please follow these steps for connecting to a device:

1. Turn off all devices including monitors / TV
2. Connect the four sources with HDMI cables to the switcher's inputs labelled HDMI IN
3. Connect the display with HDMI cable to the switcher's output labelled HDMI OUT
4. (Optional) Connect an Ethernet cable to the port labelled CONTROL to control the unit via WEB GUI
5. (Optional) Connect a RS-232 cable to the port labelled RS-232 to control the unit via PC/Third Party system
6. Plug the supplied power adapter into the DC 5V labelled port DC5V then plug the other end into the power outlet
7. Press the Power Switch located on the front panel to power on the unit (LED will illuminate Green)

Avenview SW-HDM2-T4K-4X1 is supplied with an IR Extension cable to allow the uni to be placed with a cabinet or rack and be controlled from a distance with the IR Remote.
NOTE: If using the IR remote control, the preferred IR distance is within 23 feet (7 meters)

11. GENERAL TROUBLESHOOTING

PROBLEM	SOLUTION
NO IMAGE	• Check if connection to the source and the display are correct. • Ensure that display device supports the following resolutions up 480 to UHD(3840x2160@24/25/30/50/60 and • 4096x2160 @24/25/30/50/60Hz) • Ensure premium quality 26 or 24 AWG HDMI cables are used and the distance is within 10 Meters (30 Feet) • Please use the supplied power supply-DC5V/2.6A DC
NO RESPONSE	• If the switch fails to respond to commands from the RS232, IR, or the front panel, contact Customer Support.
Apple TV NO IMAGE	• Please see the Section HDCP Control to set the unit to APPLE Mode via RS232 or WEB GUI.

DVI and HDMI Supported Resolutions	Input	Output
640x480@60	V	V
640x480@72	V	V
640x480@75	V	V
720x480@60	V	V
720x576p@50	V	V
800x600@60	V	V
800x600@72	V	V
800x600@75	V	V
1024x768@60	V	V
1024x768@70	V	V
1024x768@75	V	V
1280x720@50	V	V
1280x720@60	V	V
1280x720p@60	V	V
1280x768@60	V	V
1280x800@60	V	V
1280x1024@60	V	V
1360x768@60	V	V
1600x1200@60	V	V
1920x1080i@50	V	V
1920x1080i@60	V	V
1920x1080p@24	V	V
1920x1080p@25	V	V
1920x1080p@30	V	V
1920x1080p@50	V	V
1920x1080p@60	V	V
1920x1200@60(RB)	V	V
3840x2160@24/25/30, 50/60 Y420	V	V
4096x2160@24/,50/60 Y420	V	V

ITEM	DESCRIPTION
UNITS	**SW-HDM2-T4K-4X1**
UNIT DESCRIPTION	4X1 4K@60/UHD HDMI Switcher with IR/RS-232/ Support
HDCP	YES
VIDEO BANDWIDTH	600 MHz (6 Gbps)
SUPPORTED RESOLUTIONS	480i~UHD (3840x2160@24/25/30/50/60 & 4K (4096x2160@24/25/30/50/60Hz)
AUDIO SUPPORT	PCM 2/5.1/7.1CH, Dolby Digital 2~5.1CH, DTS 2~5.1CH, Dolby Digital Plus, Dolby TrueHD,Dolby Atmos and DTS-HD Master Audio
ESD PROTECTION	Human body model — ± 12kV (air-gap discharge) & ±8kV (contact discharge)
INPUT	4×HDMI 1X IR 1X RS 232 1X ETHERNET 1X USB (Factory use)
OUTPUT	1X HDMI
HDMI CONNECTOR	Type A (19 pin female) Sampling Rate 32kHz ~ 192 kHz
IR FREQUENCY	38kHz
DIMENSIONS (L X W X H)	9.4" x 4.0" x 1.7" 240 mm (L)× 104 mm (W)× 43mm (H)
WEIGHT	0.79kg /1.74lbs
POWER SUPPLY	5VDC /2.6A (US/EU standards, CE/FCC/UL certified)
POWER CONSUMPTION	5.83W Stanby Mode (1.1W)
ENVIRONMENTAL	
OPERATING TEMPERATURE	32° ~ 104°F (0° to 40°C)
STORAGE TEMPERATURE	-4° ~ 140 °F (-20° ~ 60° C)
RELATIVE HUMIDITY	20~90 % RH (non-condensing)

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.

NOT COVERED BY THIS WARRANTY

This warranty does not apply to any non-Avenview branded product(s); non-registered Avenview product(s). This warranty does not apply: (a) to cosmetic damage, including but not limited to scratches, dents and broken cords; (b) to damage caused by use with another product; (c) to damage caused by accident, abuse, misuse, liquid contact, fire, earthquake or other external cause; (d) to damage caused by operating the Avenview product(s) outside Avenview's manuals or guidelines; (e) to damage caused by service performed by anyone who is not a representative of Avenview or an Avenview authorized personnel; (f) to defects caused by normal wear and tear or otherwise due to the normal aging of the Avenview product(s), or (g) if any serial number has been removed or defaced from the Avenview product(s).

AVENVIEW IS NOT LIABLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY, INCLUDING BUT NOT LIMITED TO LOSS OF USE; LOSS OF REVENUE; LOSS OF ACTUAL OR ANTICIPATED PROFITS (INCLUDING LOSS OF PROFITS ON CONTRACTS); LOSS OF THE USE OF MONEY; LOSS OF ANTICIPATED SAVINGS; LOSS OF BUSINESS; LOSS OF OPPORTUNITY; LOSS OF GOODWILL; LOSS OF REPUTATION; LOSS OF, DAMAGE TO, COMPROMISE OR CORRUPTION OF DATA; OR ANY INDIRECT OR CONSEQUENTIAL LOSS OR DAMAGE REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER.

Some states do not allow the inclusion or limitation of incidental or consequential damages, or allow limitations on duration implements of the Warranty Period; therefore the above limitations or exclusions may not be applicable to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

Avenview

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TECHNICAL SUPPORT