Avenview

Control Your Video

SCALER PRO
ULTIMATE 4K60 SCALER

HDMI 2.0a Re-Timer / EDID Recorder
With HDCP 2.2 Support

HDMI | HDMI 2.0 | HDCP 2.2 | 4K 60HZ 4:4:4 ULTRA HD | RoHS Compliant | FC CE

Model #: SC-HDM2-T4KHD

Product Application & Market Sectors

Corporate		House Of Worship	
Military		Residential	
Education		Industrial	
Medical		Aviation	

TABLE OF CONTENTS

I   IMPORTANT SAFEGUARDS

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

What the warranty does not cover

- Any product, on which the serial number has been defaced, modified or removed.
- Damage, deterioration or malfunction resulting from:
- Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
- Repair or attempted repair by anyone not authorized by us.
- Any damage of the product due to shipment.
- Removal or installation of the product.
- External causes to the product, such as electric power fluctuation or failure.
- u se 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 INSTRUCTIONS

The Avenview SC-HDM2-T4KHD, 4K60 Scaler with HDCP 2.2 function has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the SC-HDM2-T4KHD 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
- ⚠ k eep 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 EI ECTRICAI PARTS. THIS MAY RESULTS 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

The **SC-HDM2-T4KHD scaler with HDMI 2.0a and HDCP 2.2 Support** is a device that can solve EDID (Extended Display Identification Data) information problems within any system design when different devices with varying resolutions are connected. With its own control software supplied the user can simply store and recall a default EDID information, also supporting EDID Re-timer / EDID Recorder setting in non-volatile memory and supports HDCP handshaking.

SC-HDM2-T4KHD allows your HDMI source to boot directly from EDID Reader/Writer/Re-timer mode. This feature allows the user to easily remove the monitor at any time while installing SC-HDM2-T4KHD between HDMI source and monitor. Also using the control software user can read, store and modify the EDID of any HDMI/DVI display upload the modified EDID to displays.

Bonus Feature -Has the abilty to handle many differnt chroma sampling such as 4:2:0, 4:2:2 and 4:4:4

NOTE
PC SOFTWARE MUST BE USED FOR THE FIRST TIME TO ASSIGN HDMI PORTS TO SCALE OR BYPASS

Extended Display Identification Data (EDID) is a standard data format that contains basic information about a monitor and its capabilities, including vendor information, maximum image size, color characteristics, factory pre-set timings, frequency range limits, and character strings for the monitor name and serial number.

The information is stored in the display and is used to communicate with the system through a Display Data Channel (DDC), which sites between the monitor and the PC graphics adapter. The system uses this information for configuration purposes, so the monitor and system can work together.

3. FEATURES

- HDMI 2.0a compliant
- Supports 4K2K or 1080p or 720p bypass
- Supports 4K downscale to 1080p or upscale 1080p to 4K
- Supports 4K2K@60 4:4:4 8bits
- Supports HDR*, which is 4K2K@60 4:2:0 10bits**
- HDCP 2.2 compliant
- Supports resolution upscaling from 1080p to 4K2K or downscaling from 4K2K to 1080p (No frame rate conversion)
- Supports HDMI signal bypass
- Simultaneous HDMI output
- Able to read and store the EDID of displays (monitors or projectors)
- Able to overwrite the EDID into the EDID Reader/Re-timer or the HDMI displays
- Built-in default EDID
- Able to maintain HDMI/DVI video resolution
- Re-synthesizes input HDMI stream and maintains or improves signal integrity.

HDR = High Dynamic Range.

** The video bandwidth of 4K2K@60 4:2:0 10bits (HDR) is 384 MHz, and the 4K2K@60 4:4:4 8bits is 594MHz.

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

I	SC-HDM2-T4KHD MOUNTING BRACKET	X 1 X 2	
2	INTERNATIONAL POWER ADAPTER 5V 1.2A	X1	
3	PC CONTROL SOFTWARE CD	X 1	
4	USER'S MANUAL	X 1	

We highly recommend achieving best results with our SC-HDM2-T4KHD you acquire a high quality 24 or 26 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
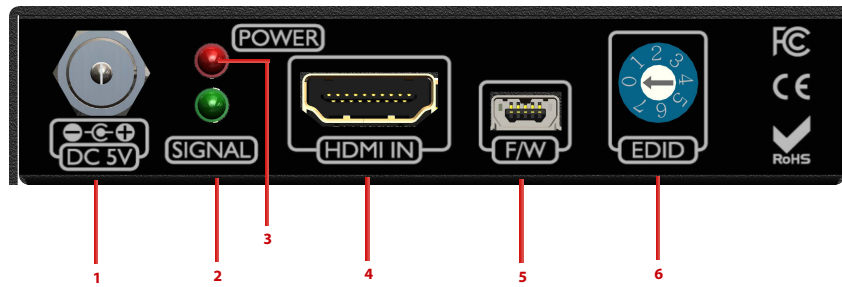Encrypted data in the QR code to identify the product with the Premium HDMI Cable app

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

6. PANEL DESCRIPTION

Front Panel

1. +5V DC: Connect to a 5V power supply unit	2. Green LED: Green light means the signal detect.
3. Red LED: Power on/off indicator	4. SOURCE: Link to a HDMI source in order to be the bridge between HDMI source and display
5. Mini-USB: Connect to a host device for software operation	6. **MODE:** Decide which mode SC-HDM2-T4KHD is currently working at. MODE: 0 = User define mode 1 - EDID Ultra-HD(4K2K@60) - 24bit 2D video & 7.1ch audio 2 - EDID Ultra-HD(4K2K@60) - 24bit 2D video & 2ch audio 3 - EDID Ultra-HD(4K2K@30) - 24bit 2D video & 7.1ch audio 4 - EDID Full-HD(1080p@60) - 24bit 2D video & 7.1ch audio 5 - EDID Full-HD(1080p@60) - 24bit 2D video & 2ch audio 6 - EDID HD(1080p@30)(1080i@60)(720p@60) - 24bit 2D video & 2ch audio (bypass only) 7 = [Manual Mode] – Learning EDID from HDMI DISPLAY PORT 1 to HDMI input manually

Rear Panel
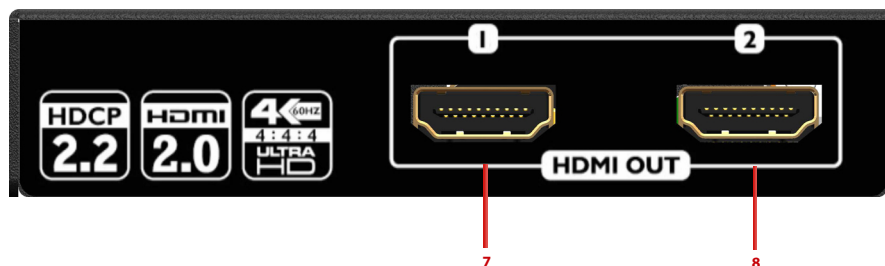
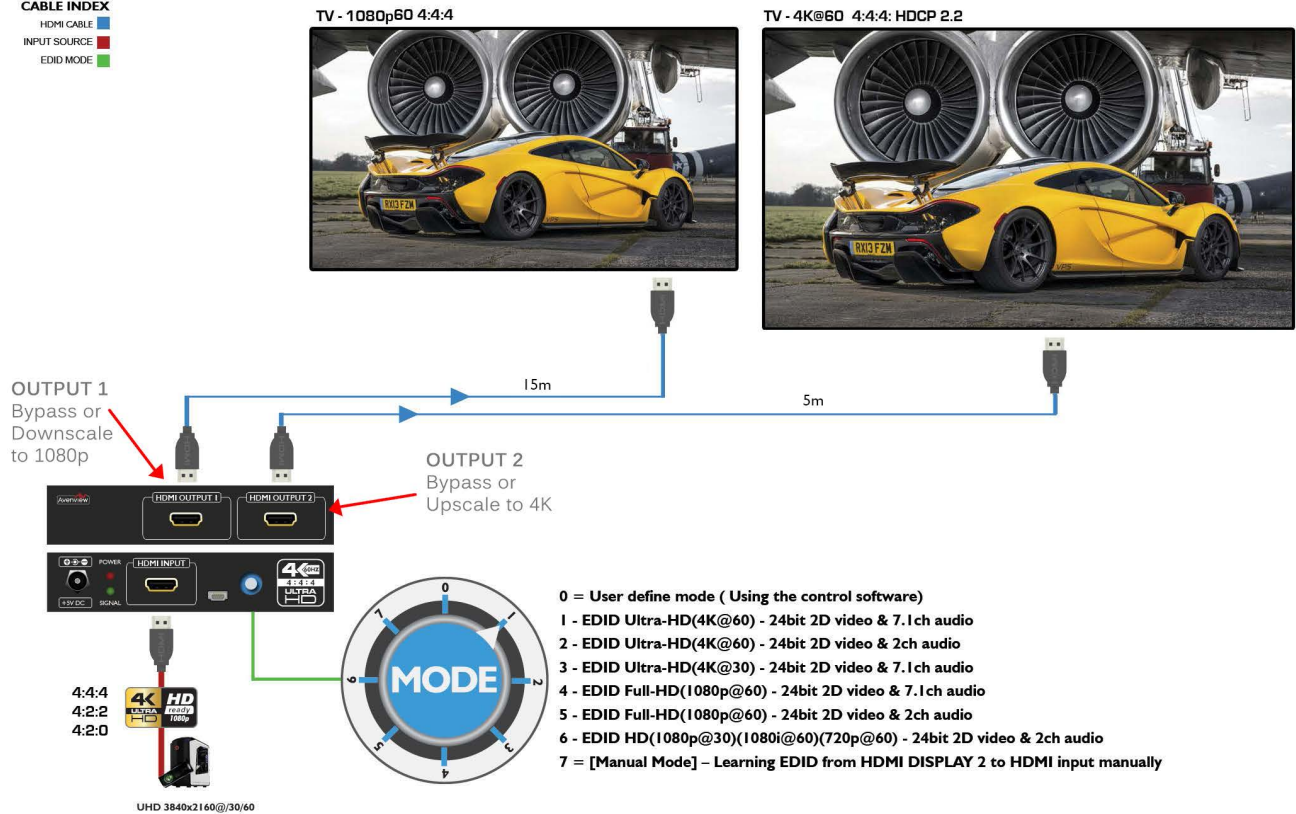|	
7. **HDMI 1:** Connect to a HDMI display 1	8. **HDMI 2 :** Connect to a HDMI display 2

SC-HDM2-T4KHD

1080p = 15m (50 feet) **HDMI 1.4**
3840x2160 UHD = 5m (16 feet) **HDMI 2.0**
LAYOUT 1

CABLE INDEX
HDMI CABLE
INPUT SOURCE
EDID MODE

TV - 1080p60 4:4:4

TV - 4K@60 4:4:4: HDCP 2.2

OUTPUT 1
Bypass or
Downscale
to 1080p

15m

5m

OUTPUT 2
Bypass or
Upscale to 4K

HDMI OUTPUT 1   HDMI OUTPUT 2

POWER   HDMI INPUT

4:4:4
4:2:2
4:2:0

UHD 3840x2160@/30/60

MODE

0 = User define mode (Using the control software)
1 - EDID Ultra-HD(4K@60) - 24bit 2D video & 7.1ch audio
2 - EDID Ultra-HD(4K@60) - 24bit 2D video & 2ch audio
3 - EDID Ultra-HD(4K@30) - 24bit 2D video & 7.1ch audio
4 - EDID Full-HD(1080p@60) - 24bit 2D video & 7.1ch audio
5 - EDID Full-HD(1080p@60) - 24bit 2D video & 2ch audio
6 - EDID HD(1080p@30)(1080i@60)(720p@60) - 24bit 2D video & 2ch audio
7 = [Manual Mode] – Learning EDID from HDMI DISPLAY 2 to HDMI input manually

8. INSTALLATION

1. Learn the EDID from a HDMI display to the HDMI input manually

1. Connect the display device to the EDID Recorder via **HDMI DISPLAY 2**.

2. Plug in the 5V DC power supply unit.

3. Set SC-HDM2-T4KHD to the mode 7.

4. The unit can remain at mode 7 until the next EDID learn from another monitor.

2. Recall the EDID from a HDMI display or user defined EDID data via software

1. Set SC-HDM2-T4KHD to mode 0.

2. Connect the display device to the EDID Recorder via **HDMI** on the **Display**.

3. Plug in the 5V DC power supply unit.

4. Connect the SC-HDM2-T4KHD to PC via USB cable

5. Click on "Read EDID from Monitor 1" or "Read EDID from Monitor 2" button or load the user defined EDID data.

6. Click on "Write EDID into Device", the EDID from display will be written to SC-HDM2-T4KHDdevice on mode 0.

7. Hold the mode at 0 until next update the EDID process.

Getting Started:

Computer's System Requirements:

The software supports Windows XP consistently. Both Windows7 and Windows 8 are supported after manually configuring the compatibility properties.

Windows7 and Windows 8: Please configure the compatibility properties manually.

Step1. Right-click the link for the software that you want to configure, and then click Contents. **Step2.**

On the Compatibility tab, click Run this program in compatibility mode.

Start Software:
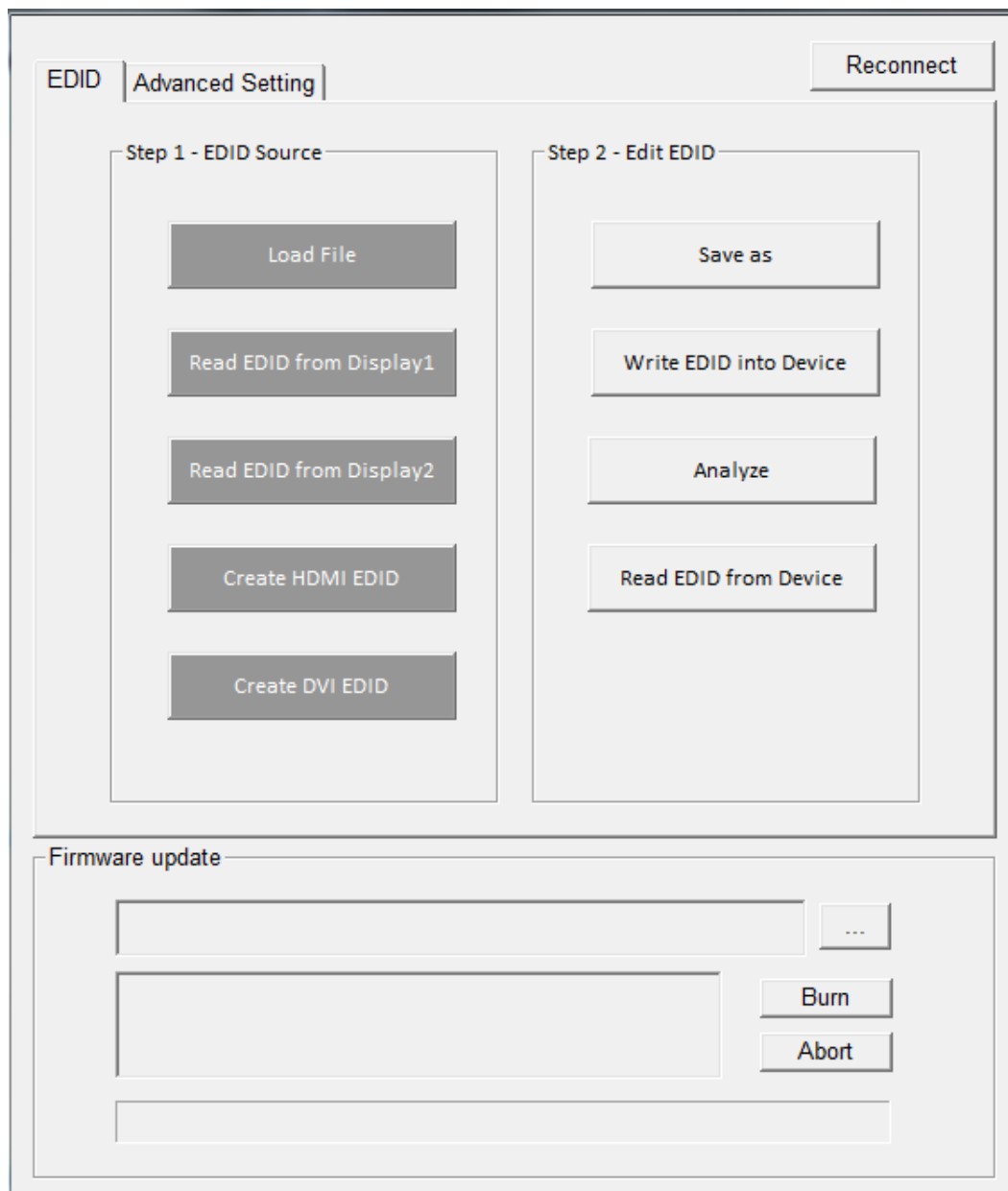
EDID

a) **Step 1: Select EDID Source**

Load File : To select EDID source by loading the file you saved.

Read EDID from Display1 / **Read EDID from Display2** : To read EDID info from the connected display.

Create HDMI EDID / **Create DVI EDID** : To create EDID source which users are capable of monitoring or modifying.

ⓘ The selected EDID source will be highlighted in red

b) Step 2: Edit EDID

Save as : To save the EDID information to computer for future use.

Write EDID into Device : To write EDID information into the SC-HDM2-T4KHD device

Analyze : To make a quick analysis of EDID information you process, which users are capable of monitoring or modifying.
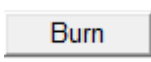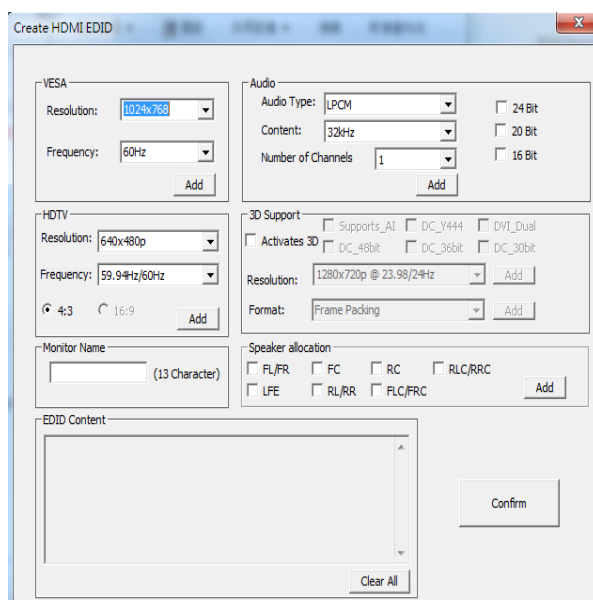
Read EDID from Device : To read the EDID that is currently used in SC-HDM2-T4KHD

c) Firmware update

Update FW to the device

a. Click **...** to load the FW and update it to SC-HDM2-T4KHDdevice

b. Click **Burn** , then re-cycle power to start the FW update process

Create HDMI EDID

1. Click **Create HDMI EDID** to pop-up the HDMI EDID edition page, which users are capable of monitoring or modifying HDMI EDID here.

2. Please click "Add" button for your chosen.

3. Finally please click "Confirm" button to generate EDID and then you will see the success message.


Create DVI EDID

1.Click **Create DVI EDID** to pop-up the DVI EDID edition page, which users are capable of monitoring or modifying DVI EDID here.

2.Please click "Add" button for your chosen.

3.Finally please click "Confirm" button to generate EDID and then you will see the success message.

Analyze

1. Click **Analyze** to make a quick analysis on the EDID information you process.

   View Detail: To make a quick analysis on the EDID information.

   Edit: users are capable of monitoring or modifying EDID information.
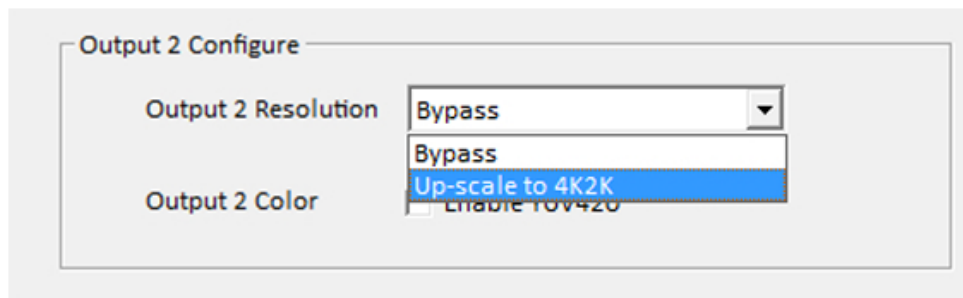
Advanced Settings
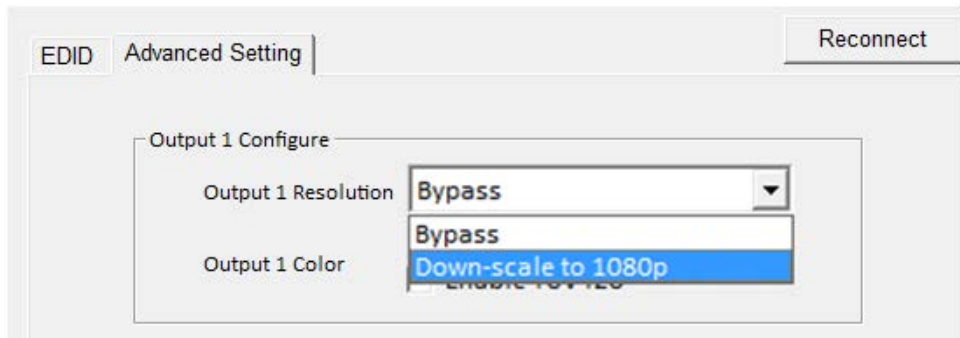
1. **Downscale Resolution**

   a.- Select Output 2 to choose bypass or downscale to 1080p

   b.- This will enable YUV from 4:4:4: to 4:2:0, this can only enabled when your resolution is

   4K@60Hz/UHD.
   c. When option b is not checked YUV4:2:2 will be changed to 4:4:4
   This will be the best option for 1080p

2. **Upscale Resolution**

   a.- Select Output 1 to choose bypass or upscale to 4K/UHD

   b.- This will enable YUV from 4:4:4: to 4:2:0, this can only enabled when your resolution is

   4K@60Hz/UHD.
   c. When option b is not checked YUV4:2:2 will be changed to 4:4:4

Model Name		SC -HDM2-T4KHD
Technical		
HDMI compliance		HDMI 2.0a
HDCP compliance		HDCP 2.2
Video bandwidth		Single-link 600MHz [18Gbps]
Video support		HDR 4K2K@60 (4:2:0 10bits) / 4K2K@60 (4:4:4 8bits) / 1080p@60
Input		1x HDMI 1x mini-USB
Output		2x HDMI
HDMI connector		Type A [19-pin female]
USB connector		Type mini-USB
Flash EEPROM		256 byte [non-volatile]
Mechanical		
Housing		Metal enclosure
Dimensions [L x W x H]	Model	95 x 82 x 25mm [3.7" x 3.2" x 1"]
	Package	198 x 137 x 74mm [7.8" x 5.4" x 2.9"]
	Carton	420 x 400 x 300mm [1'4" x 1'3" x 11.8"]
Weight	Model	269g [9.4oz]
	Package	780g [0.9 lbs]
Fixedness		Wall-mounting case with screws
Power supply		5V 2A DC
Power consumption		4 Watt [max]
Operation temperature		0~40°C [32~104°F]
Storage temperature		-20~60°C [-4~140°F]
Relative humidity		20~90% RH [no condensation]

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).

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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.

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Control Your Video

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