# XT-HDMI-SM-4K18G

User Manual

Introduction

Our XT-HDMI-SM-4K18G HDMI Signal Manager has been designed to help solve HDMI compatibility, HDCP2.2, clock stretching, EDID and handshaking issues that are becoming common problems when distributing HDMI signals. The XT-HDMI-SM-4K18G also features de-embedding or embedding audio within the HDMI signal path, allowing you to breakout up to 7.1 channel audio signals. The XT-HDMI-SM-4K18G supports full HDMI 2.0 and HDCP 2.2 with video resolutions up to and including 4K @ 60Hz 4:4:4.

Key Features

- Can help to solve most common HDMI EDID, HDCP handshaking issues
- Supports 4K UHD video (up to 4K @60Hz 4:4:4)
- HDMI audio de-embedded to both Analog L/R audio and coaxial digital outputs concurrently (Analog audio supports 2CH PCM only)
- Embed Audio onto the HDMI signal path from Analog L/R (Analog audio supports 2CH PCM only)
- Supports all known HDMI audio formats including Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio Transmission
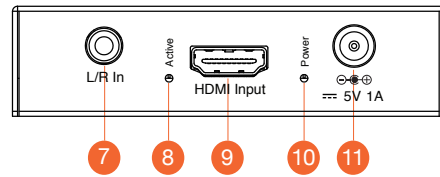- Advanced EDID management
- HDCP 2.2

Panel Description

Front Panel
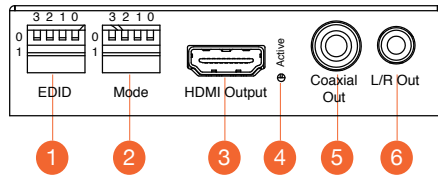
Rear Panel

1. EDID DIP switch
2. Mode DIP switch
3. HDMI output - connect to a HDMI display
4. HDMI output link status LED
5. Coaxial digial audio output (RCA)
6. Analog L/R audio output - 3.5mm stereo audio jack, Supports 2 channel PCM only

7. L/R analogue audio input - 3.5mm stereo jack
8. HDMI input indicator LED
9. HDMI input - connect to a HDMI source
10. Power indicator LED - lit when unit is powered on
11. Power port - use supplied 5V 1A DC adaptor

Specifications:

Audio Input Connectors: 1x Analog left/right audio (3.5mm stereo jack)

Audio Output Connectors: 1x RCA (SPDIF) & 1x Analog left/right audio (3.5mm stereo jack)

Video Input Connectors: 1x HDMI Type A, 19-pin, female

Video Output Connectors: 1x HDMI Type A, 19-pin, female

Casing Dimensions (W x H x D): 104mm x 87mm x 22mm

Dimensions Including Connections (W x H x D): 104mm x 115mm x 22mm

Shipping Weight: 0.5kg

Operating Temperature: 32°F to 104°F (0°C to 40°C)

Storage Temperature : -4°F to 140°F (-20°C to 60°C)

Package Contents:

• 1x XT-HDMI-SM-4K18G

• 1x 5V/1A DC power supply

• 1x Mounting kit

• 1x Quick reference guide

Maintenance:

Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner or benzene to clean this unit.

Do not substitute or use any other power supply other than the enclosed unit, or a Xantech approved replacement.

Do not disassemble the unit for any reason. Doing so will void the manufacturer's warranty.

Adjusting The EDID Settings

EDID (Extended Display Identification Data) is the data structure used between a display and a source. This data is used by the source to find out what audio and video resolutions are supported by the display, from this information the source will discover the best audio and video resolutions to be outputted. While the objective of EDID is to make connecting a digital display to a source a simple plug and play procedure, issues can arise when multiple displays or video matrix switching is introduced due to the increased number of variables. By pre-determining the video resolution and audio format of the source and display device you can reduce the time needed for EDID hand shaking thus making switching quicker and more reliable. Configuration of extender EDID settings can be achieved using the product dip-switches on the rear panel.

Note: You must power cycle the product after making EDID changes. For some sources it may be necessary to power cycle the source after EDID changes have been made for the source to update its video & audio output settings.
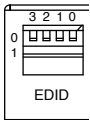
[DIP]=0000: HDMI 1080p@60Hz, Audio 2ch PCM
[DIP]=0001: HDMI 1080p@60Hz, Audio 5.1ch PCM/DTS/DOLBY
[DIP]=0010: HDMI 1080p@60Hz, Audio 7.1ch PCM/DTS/DOLBY/HD
[DIP]=0011: HDMI 1080i@60Hz, Audio 2ch PCM
[DIP]=0100: HDMI 1080i@60Hz, Audio 5.1ch PCM/DTS/DOLBY
[DIP]=0101: HDMI 1080i@60Hz, Audio 7.1ch PCM/DTS/DOLBY/HD
[DIP]=0110: HDMI 4K@60Hz 4:2:0 + 4K@30Hz 4:4:4, Audio 2ch PCM
[DIP]=0111: HDMI 4K@60Hz 4:2:0 + 4K@30Hz 4:4:4, Audio 5.1ch PCM/DTS/DOLBY
[DIP]=1000: HDMI 4K@60Hz 4:2:0 + 4K@30Hz 4:4:4, Audio 7.1ch PCM/DTS/DOLBY/HD
[DIP]=1001: HDMI 4K@60Hz 4:4:4, Audio 2ch PCM
[DIP]=1010: HDMI 4K@60Hz 4:4:4, Audio 5.1ch PCM/DTS/DOLBY
[DIP]=1011: HDMI 4K@60Hz 4:4:4, Audio 7.1ch PCM/DTS/DOLBY/HD
[DIP]=1100: DVI 1280x1024@60Hz, Audio None
[DIP]=1101: DVI 1920x1080@60Hz, Audio None
[DIP]=1110: DVI 1920x1200@60Hz, Audio None
[DIP]=1111: Software Control EDID

Mode DIP Switch Settings
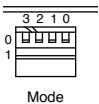
The XT-HDMI-SM-4K18G can be configured to perform various tasks using the MODE dip-switches.

Note: You must power cycle the product after making MODE changes.

Dip-switch 3 - Hotplug detect ON / OFF
When Hotplug detect is turned OFF the XT-HDMI-SM-4K18G will use the HPD of the connected display on the HDMI output.
When Hotplug detect is turned ON the XT-HDMI-SM-4K18G will complete the HPD back to the source connected to the HDMI input, no longer requiring a HPD from a connected display.
Turning on HPD in the XT-HDMI-SM-4K18G can be beneficial in 2 ways:-
1) Audio de-embedding is required but no display is available. The XT-HDMI-SM-4K18G will act as the HDMI end-point completing the necessary HDMI handshake, allowing the HDMI source to output a signal.
2) The XT-HDMI-SM-4K18G will act as the HDMI end-point completing the necessary HDMI handshake which can help resolve any handshake issues that may be associated with the display connected to the HDMI output of the XT-HDMI-SM-4K18G.
   Position = 0 (up) - HPD (hot plug detect) off
   Position = 1 (down) - HPD on

Dip-switch 2 - Audio embedding and de-embedding
The XT-HDMI-SM-4K18G can be used to de-embed or embed audio to and from the HDMI signal.
Position = 0 (up) - audio de-embedding (audio extracted from the HDMI signal input)
Note - Source input must be PCM 2ch audio for analogue audio outputs to work. The XT-HDMI-SM-4K18G does not down-mix multi-channel audio signals
Position = 1 (down) - audio embedding (2CH L/R audio input added to the HDMI video out)
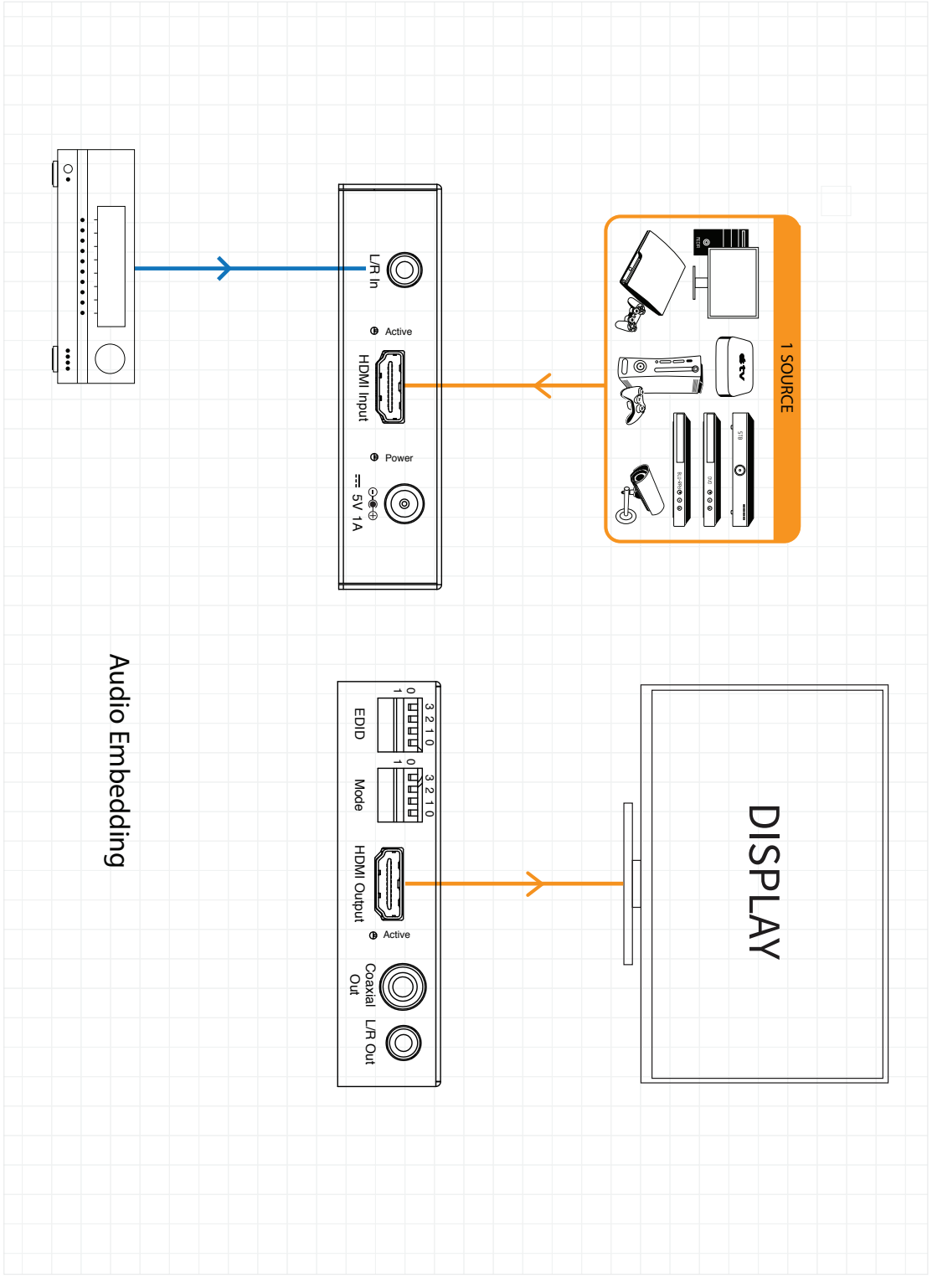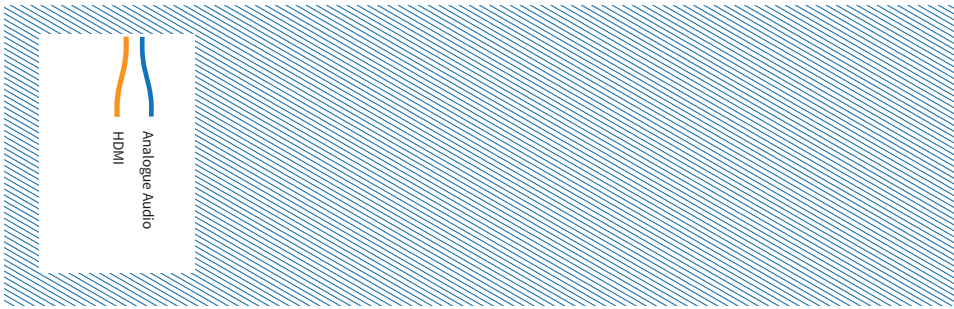
Dip-switch 1 - Advanced Installer Mode
Reserved - leave in '0' position

Dip-switch 0:
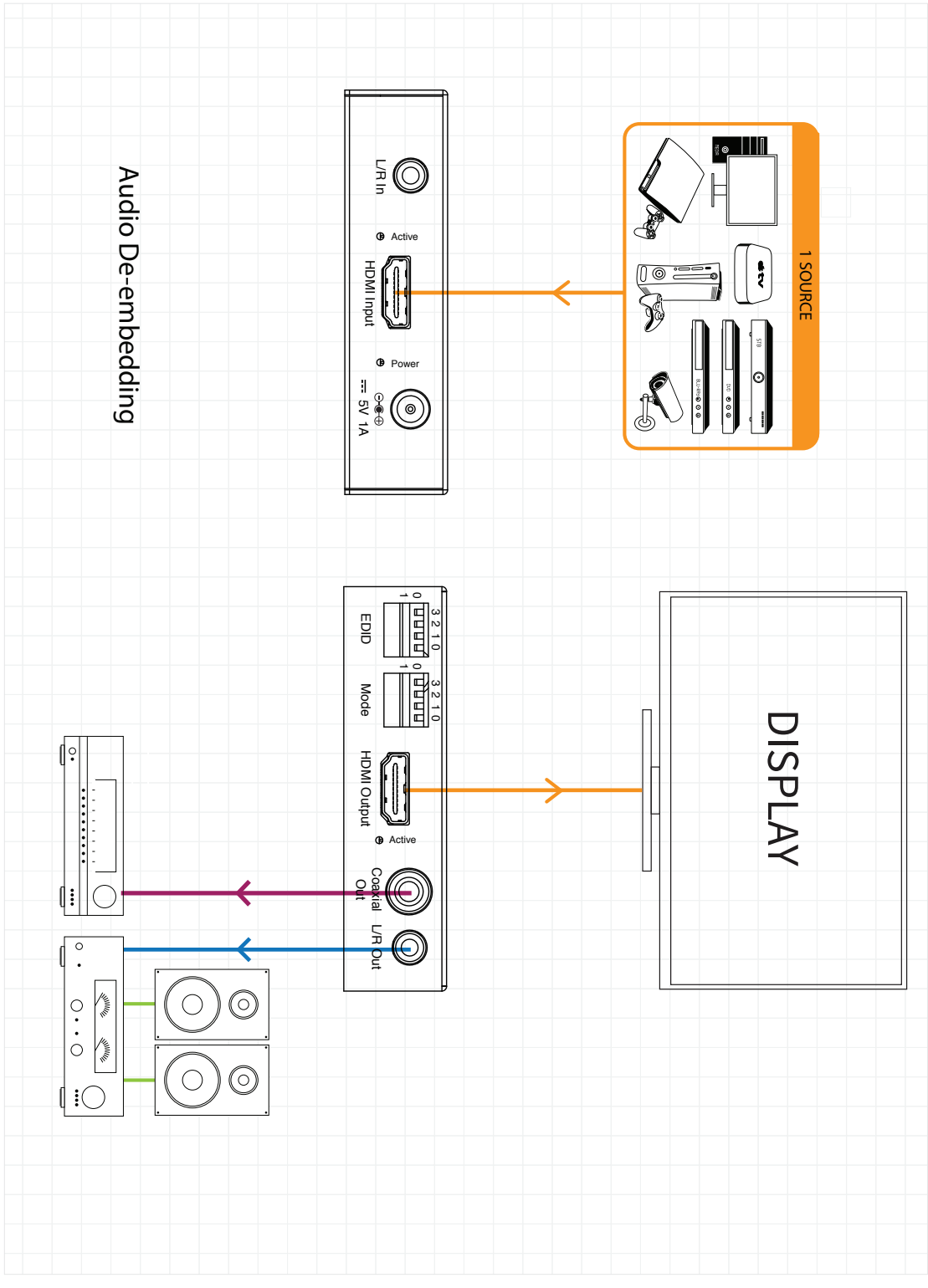Reserved / not in use - leave in '0' position

Example Schematic
XT-HDMI-SM-4K18G

Analogue Audio
HDMI

1 SOURCE

L/R In

Active

HDMI Input

Power

5V 1A

Audio Embedding

EDID
3 2 1 0

Mode
3 2 1 0

HDMI Output

Active

Coaxial Out

L/R Out

DISPLAY

Example Schematic
XT-HDMI-SM-4K18G

Analogue Audio
Digital Audio
HDMI
Speaker Cable

Audio De-embedding

L/R In

Active
HDMI Input

Power
5V 1A

1 SOURCE

EDID
Mode
HDMI Output
Active
Coaxial Out
L/R Out

DISPLAY
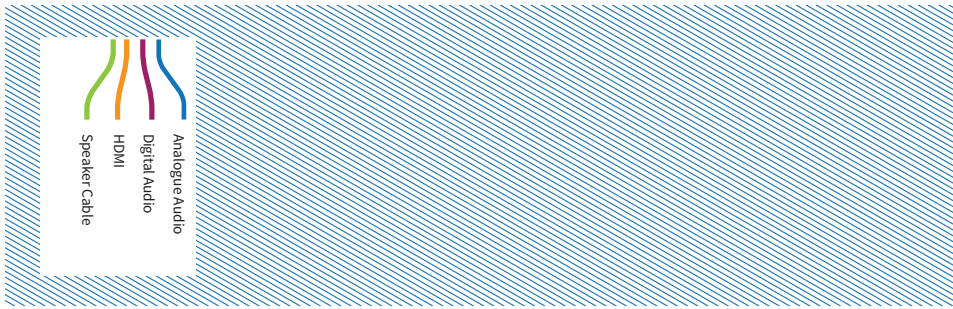
Certifications

FCC Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION - changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CANADA, INDUSTRY CANADA (IC) NOTICES

This Class B digital apparatus complies with Canadian ICES-003.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

CORRECT DISPOSAL OF THIS PRODUCT

This marking indicates that this product should not be disposed with other household wastes. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmentally safe recycling.

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