

# XT-HDMI-MX44-4K18G

## User Manual



## Introduction

Our XT-HDMI-MX44-4K18G 4K HDMI matrix features HDMI 2.0 chipsets with HDCP 2.2 support, allowing distribution of four HDMI sources to four displays. The unit transmits all HDMI resolutions up to and including 4K 60Hz 4:4:4. The 4-Way matrix also includes advanced features such as RS-232 for control and configuration of the matrix, bi-directional IR routing, audio breakout and EDID management.

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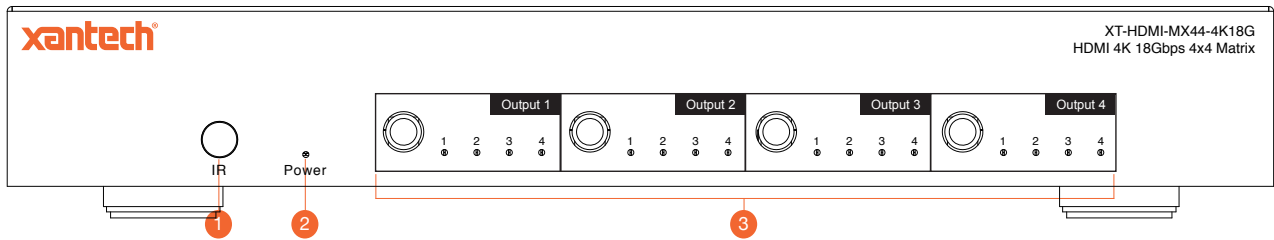
### Key Features

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- Features 4x HDMI inputs which can be independently routed to 4x HDMI outputs
- Supports 4K UHD video (up to 4K @60Hz 4:4:4)
- Supports all known HDMI audio formats including Dolby TrueHD, Dolby Atmos, Dolby Digital Plus and DTS-HD Master Audio Transmission
- Bi-directional IR from all input and output locations
- HDMI audio breakout via analog L/R audio and coaxial digital outputs concurrently
- Advanced EDID management
- HDCP 2.2

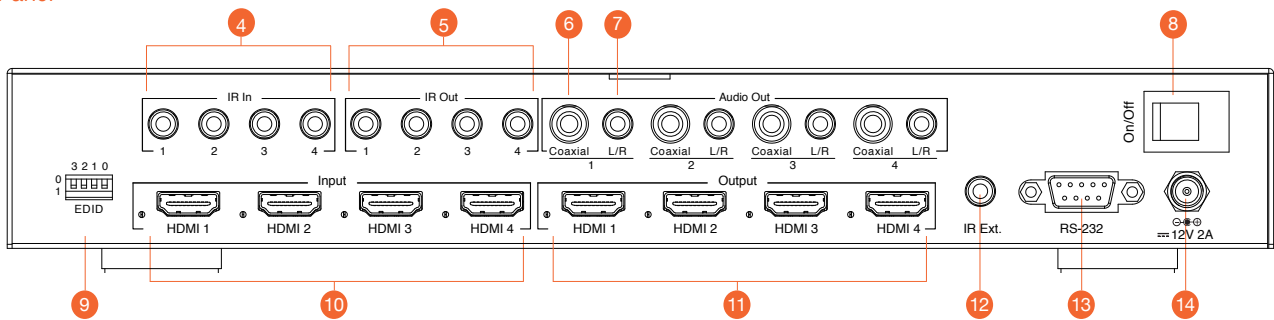
# Panel Description

## Front Panel



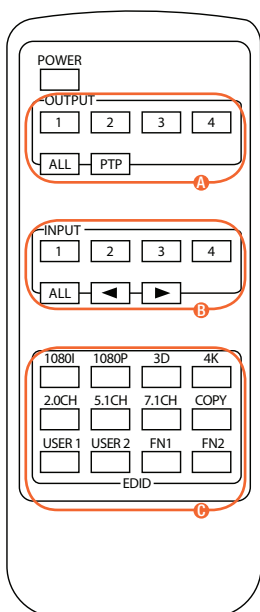
- 1 IR receiver window for matrix control
- 2 Power LED indicator
- 3 HDMI output selection buttons 1-4. Press to scroll through source inputs per HDMI output

## Rear Panel



- 4 IR input - 3.5mm stereo jack provides zone specific routed IR receiver input
- 5 IR output - 3.5mm mono jack provides routed IR emitter output for discrete control of sources
- 6 Coaxial digital audio output - RCA (SPDIF)
- 7 Analog L/R audio output - 3.5mm stereo audio jack, Supports 2 channel PCM only
- 8 Power on/off switch
- 9 EDID DIP switch - Used to manage the video and audio resolution output by the connected source device.
- 10 HDMI inputs - connect to HDMI source devices
- 11 HDMI outputs - connect to HDMI display devices
- 12 IR input for matrix control
- 13 RS-232 Serial port - For control of switcher by third party control devices
- 14 Power port - Use included 12V/2A DC power adaptor

# Remote Control Description



### OUTPUT AND INPUT SELECTION

- A** Selects the zone OUTPUT (1 - 4) you wish to change the source on
- B** Selects the source INPUT (1 - 4) you wish to change on the selected zone

**EXAMPLE:** To switch source 2 to zone 4 you would press Output 4 (A) followed by pressing Input 2 (B).

**ALL button:** The all button selects all the inputs or outputs in its corresponding box. Example: (The "All" button in the Output box selects all the zones so all zones will change to what source input is selected next)

**PTP:** This button will align all zone outputs with the like numbered source inputs. Example: Input 1 to output 1, input 2 to output 2, etc

**NOTE:** BUTTON PRESS SEQUENCE MUST BE FINISHED IN 5 SECONDS, OTHERWISE THE OPERATION IS DISCARDED

### EDID SET UP

The matrix provides a comprehensive range of EDID settings. Below are three examples of how to deploy the desired EDID setting when using the supplied remote.

- A. Fix EDID to an Input or ALL inputs:** Press the desired video resolution button (1080I / 1080P / 3D / 4K), then select the desired audio format (2.0CH / 5.1CH / 7.1CH), then select the source input you want this EDID information allocated to by pressing the INPUT 1 – 4 or the ALL button
- B. Copy EDID of Output-X to an Input or ALL:** Press the COPY button then select the OUTPUT you wish to copy the EDID information from, then select the source input you want to copy this EDID to by selecting the INPUT 1-4 or the ALL button.
- C. User defined EDID to an Input or ALL inputs:** Press USER1 / USER2 button then select the source you wish to assign this EDID to by selecting INPUT 1-4 or the ALL button

## Adjusting The EDID Settings

EDID (Extended Display Identification Data) is a data structure that is 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 what the best audio and video resolutions need to be outputted.

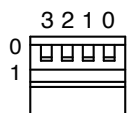
While the objective of EDID is to make connecting a digital display to a source a simple plug and play procedure, issues do arise when multiple displays or video matrix switching is introduced because of the increased number of variables.

By pre-determining the video resolution and audio format of the sources and display device you can reduce the time needed for EDID hand shaking thus making switching quicker and more reliable.

Configuration of EDID settings can be achieved using the product dip-switches on the XT-MX44-4K18G. EDID dip-switch settings are shown below.

**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.

### EDID Dip-switches



EDID

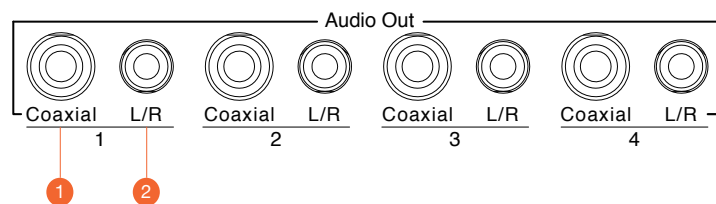
Dip-switch position '0' = Off

Dip-switch position '1' = On

- [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

## Audio Breakout

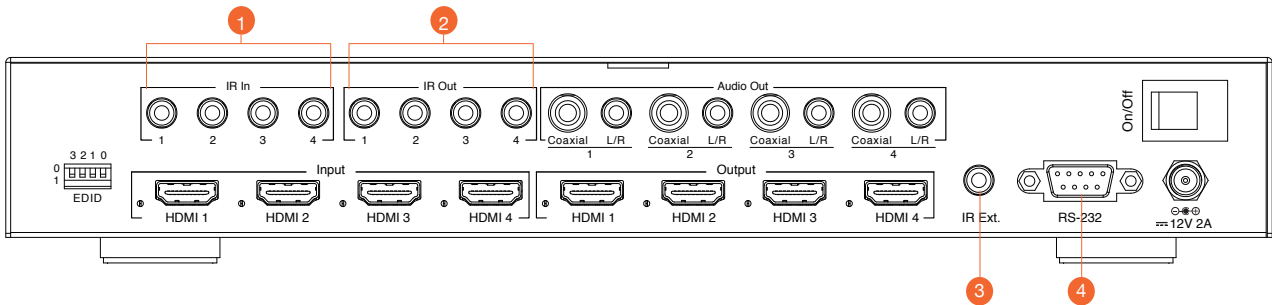
The matrix includes audio breakout from the selected HDMI input to associated analogue L/R audio and coaxial digital outputs. Extracted audio will be concurrent with the corresponding HDMI video output.



1. Coaxial digital output
2. Analogue fixed line level output 3.5mm stereo jack. Note: supports 2 channel PCM only

## Infrared and RS-232 Control

The matrix's main communication ports are located on the rear panel and includes the following connections:-



### Connections:

- 1 IR input - 3.5mm stereo jack provides zone specific routed IR receiver input
- 2 IR output - 3.5mm mono jack provides routed IR emitter
- 3 IR input for matrix control
- 4 RS-232 Serial port - For control of switcher by third party control devices

### RS-232 2-Way

The matrix can be controlled via a 9-pin serial cable.

Details of RS-232 pin assignment and communication are below. Please note that depending on your control device serial port pin configuration you may require either a 'Straight' RS-232 cable or 'Null-modem' type.

**Baud Rate:** 57600 bps

**Data Bit:** 8-bit

**Parity:** None

**Stop Bit:** 1-bit

**Flow Control:** None

XANTECH RS-232		REMOTE CONTROL CONSOLE	
PIN	Assignment	PIN	Assignment
1	NC	1	NC
2	Tx	2	Rx
3	Rx	3	Tx
4	NC	4	NC
5	GND	5	GND
6	NC	6	NC
7	NC	7	NC
8	NC	8	NC
9	NC	9	NC

## RS-232 and Telnet Commands

The matrix can be controlled via serial RS-232. The following page lists all available serial commands for the Matrix.

### Commonly used Serial commands:

There are several commands that are commonly used for control and testing:-

<b>STATUS</b>	Status will give feedback on Matrix such as zones on, type of connection etc
<b>PON</b>	Power on
<b>POFF</b>	Power off
<b>OUTxxFRyy</b>	(xx is the zone out, yy is the input) Example:- OUT01FR04 (This would switch output 1 to source input 4)

### Common Mistakes

- Carriage return – Some programs do not require the carriage return where as other will not work unless sent directly after the string. In the case of some Terminal software the token <CR> is used to execute a carriage return. Depending on the program you are using this token maybe different. Some other examples that other control systems deploy include \r or 0D (in hex)
- Spaces – RS-232 commands do not require space between commands unless specified. Some programs that require spacing in order to work.
  - How the string should look is as follows OUT01FR02
  - How the string may look if spaces are required: OUT{Space}01{Space}FR{Space}02

RS-232 COMMAND	DESCRIPTION
?	Print Help Information
HELP	Print Help Information
STATUS	Print System Status And Port Status
PON	Power On, System Run On Normal Sta
POFF	Power Off, System Run On Power Save State
IRON/OFF	Set System IR Control On Or Off
KEYON/OFF	Set System KEY Control On Or Off
BEEPON/OFF	Set Onboard Beep On Or Off
LEDON/OFF	Set Front Panel LED Always On or Auto Turn Off in Power On State
RESET	Reset System To Default Setting (Should Type "Yes" To Confirm, "No" To Discard)
OUTxxFRON/OFF OUTxxFRyy	Set OUTPUT:xx On or Off Set OUTPUT:xx From INPUT:yy xx=00: Select All OUTPUT Port xx=[01...04]: Select One OUTPUT Port yy=[01...04]: Select One INPUT Port
EDIDxxCPyy EDIDxxDFzz	xx=00: Select All INPUT Port xx=[01...04]: Select One INPUT Port yy=[01...04]: Select One OUTPUT Port zz=00: HDMI 1080p@60Hz, Audio 2CH PCM zz=01: HDMI 1080p@60Hz, Audio 5.1CH DTS/DOLBY zz=02: HDMI 1080p@60Hz, Audio 7.1CH DTS/DOLBY/HD zz=03: HDMI 1080i@60Hz, Audio 2CH PCM zz=04: HDMI 1080i@60Hz, Audio 5.1CH DTS/DOLBY zz=05: HDMI 1080i@60Hz, Audio 7.1CH DTS/DOLBY/HD zz=06: HDMI 1080p@60Hz/3D, Audio 2CH PCM zz=07: HDMI 1080p@60Hz/3D, Audio 5.1CH DTS/DOLBY zz=08: HDMI 1080p@60Hz/3D, Audio 7.1CH DTS/DOLBY/HD zz=09: HDMI 4K@30Hz 4:4:4, Audio 2CH PCM zz=10: HDMI 4K@30Hz 4:4:4, Audio 5.1CH DTS/DOLBY zz=11: HDMI 4K@30Hz 4:4:4, Audio 7.1CH DTS/DOLBY/HD zz=12: DVI 1280x1024@60Hz, Audio None zz=13: DVI 1920x1080@60Hz, Audio None zz=14: DVI 1920x1200@60Hz, Audio None zz=15: User EDID 1 zz=16: User EDID 2 zz=17: GUI Download EDID zz=18: HDMI 4K@60Hz 4:2:0, Audio 2CH PCM zz=19: HDMI 4K@60Hz 4:2:0, Audio 5.1CH DTS/DOLBY zz=20: HDMI 4K@60Hz 4:2:0, Audio 7.1CH DTS/DOLBY/HD zz=21: HDMI 4K@60Hz 4:4:4, Audio 2CH PCM zz=22: HDMI 4K@60Hz 4:4:4, Audio 5.1CH DTS/DOLBY zz=23: HDMI 4K@60Hz 4:4:4, Audio 7.1CH DTS/DOLBY/HD



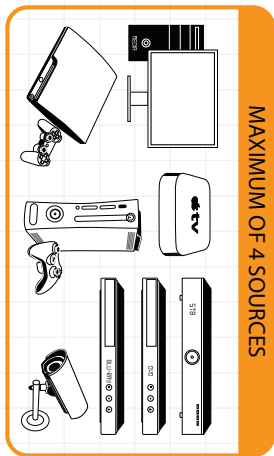
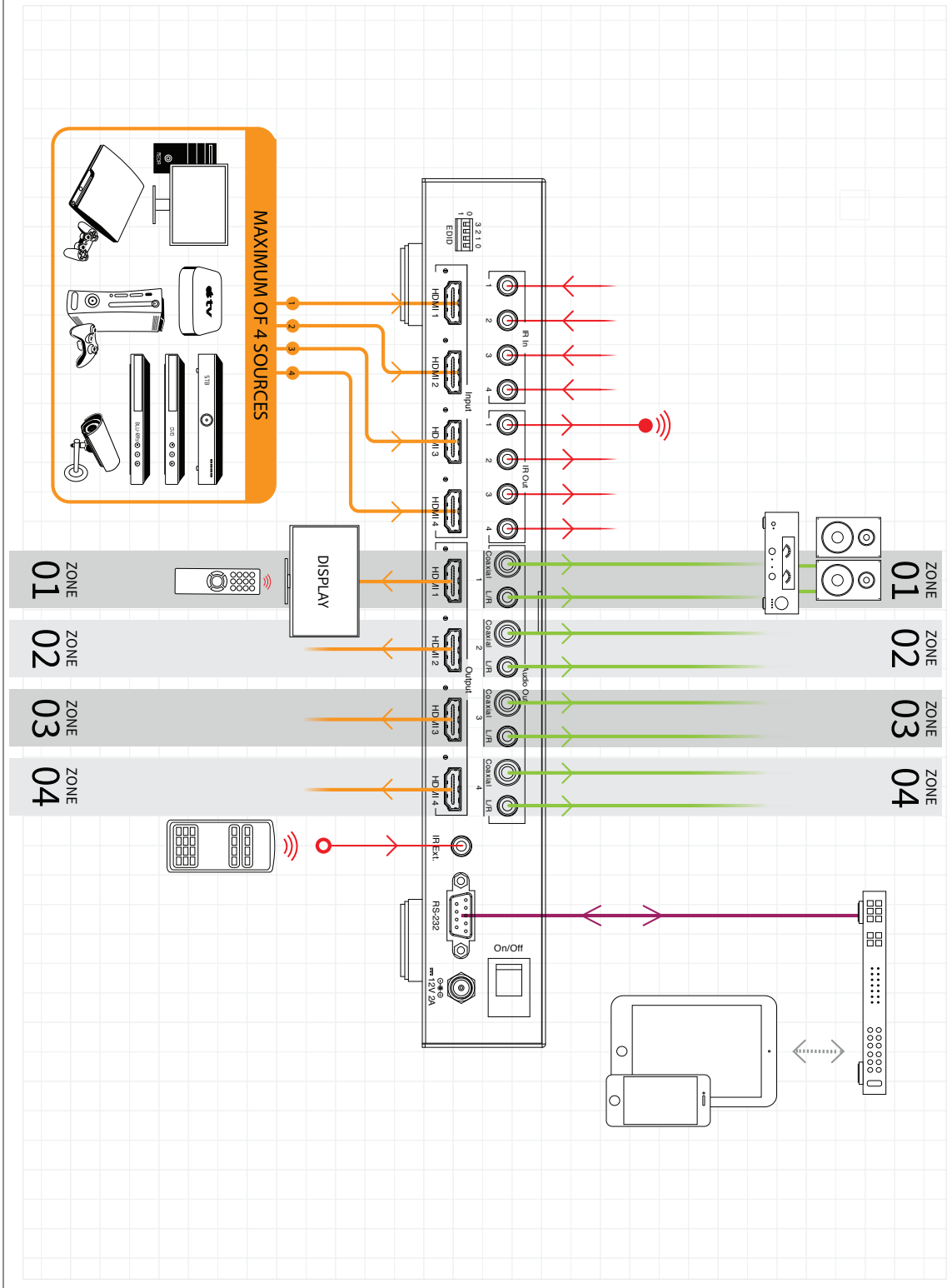
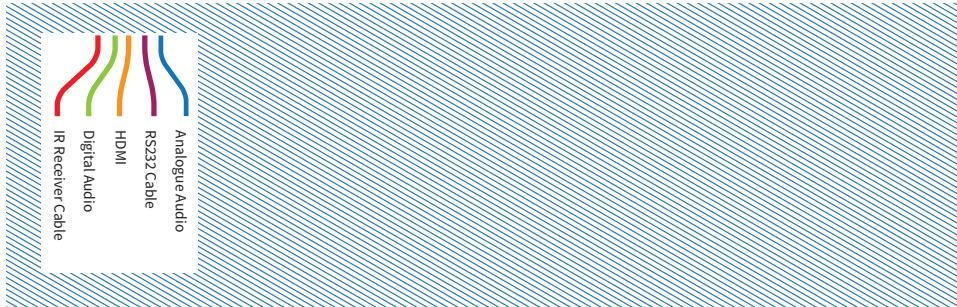
# 4x4 Matrix IR Database

4X4 MATRIX PRODUCTS	NEC IR: CUSTOMER CODE 1898	HEX IR
1080i	18	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
1080P	44	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
3D	0F	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
4K	51	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
2.0CH	0A	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
5.1CH	1E	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
7.1CH	0E	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
COPY	1A	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
USER 1	53	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
USER 2	52	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
USER 3	01	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
USER 4	45	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689





Example Schematic  
XT-HDMI-MX44-4K18G





## Specifications:

**Video Input Connectors:** 4x HDMI Type A, 19-pin, female

**Video Output Connectors:** 4x HDMI Type A, 19-pin, female

**Audio Output Connectors:** 4x RCA (SPDIF), 4x 3.5mm stereo jack (L/R)

**RS-232 Serial Port:** 1x DB-9, female

**IR Input Ports:** 5x 3.5mm stereo jack

**IR Output Ports:** 4x 3.5mm mono jack

**EDID:** 4-Pin DIP switch

**Casing Dimensions (W x D x H):** 313mm x 129mm x 45mm

**Dimensions Inc. Connections (W x D x H):** 313mm x 140mm x 52mm

**Shipping Weight:** 4.7kg

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

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

**Power Supply :** 12V/2A DC

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## Package Contents:

- 1x XT-HDMI-MX44-4K18G
- 1x 12V/2A DC power supply
- 1x Remote control
- 1x Mounting kit
- 1x Quick reference guide

## 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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