

# HMX 4x4K Matrix 4 x 4 Kit

Part No. 310004



**Operating Manual** 



**TRIAX - your ultimate connection** 

## **Operating Manual**

- The illustrations in this operation manual are for explanation and guidance purposes only.
- The examples used throughout this manual are based on the HMX 4x4K model.

#### **Dear Triax customer**

Thank you for purchasing the **TRIAX HMX 4x4K HDMI to CAT 6 Matrix Switch** To ensure safety and many years of trouble-free operation, please read the **Important Safety Precautions** carefully before using this product.

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### **Important Safety Precautions**

- Cleaning Unplug the AC power from the mains supply before cleaning the product. Use a damp cloth to clean the product. Do not use liquid cleaners or aerosol cleaners.
- Use a soft damp cloth to gently wipe the product when it is dirty. To protect the product, do not use a chemical cloth to clean it. Chemicals may cause damage or cracks in the casing of the product.
- Water and moisture Do not expose the unit to wet or damp conditions.
- Do not place vases or any other water-filled containers on this product. The water may spill onto the product causing fire or electric shock.
- Ventilation The vents and other openings in the casing are designed for ventilation.
   Do not cover or block these vents and openings since insufficient ventilation can cause overheating and/or shorten the life of the product. Do not place the product on a carpet or other similar surface, since they can block ventilation openings. This product is designed for built-in Rack mount, Desk-top installation; ensure proper ventilation is provided and the manufacturer's instructions are adhered to.
- Heat sources Keep the product away from heat sources such as direct sunlight, radiators, heaters, stoves and other heat-generating products (including amplifiers) unless mounted correctly in a Rack.
- To prevent fire, never place any type of candle or naked flames on the top or near the product.
- Servicing Do not attempt to service the product yourself. Removing covers can expose you to
  electric shock and other dangerous conditions. Maintenance should be performed by the
  manufacturer or a suitably qualified person.

### Introduction

The HMX 4X4K is a 4 by 4 HDMI Matrix switch that converts the HDMI source signals to CAT5e/6/7. With resolutions up to 1080p Full HD, 1920x1200@60Hz and multichannel digital audio supplied by up to four High-definition sources to any of the four CAT5e/6/7 outputs. It supports digital audio formats such as LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD. The HMX 4X4K also is compatible with 3D content and can be displayed on a 3DTV, a 3D Source will be required. The HMX 4X4K allows four HDMI sources to be independently controlled and distributed to four Sink (TV's) displays up to 100 meters away along with IR signals and POE to power the Receivers and Ethernet (Internet).

#### **Applications**

- HDMI System controls
- Video/TV wall display and control
- Security surveillance and control
- Commercial Signage advertising, displaying and control
- Lecture room display and control
- Superstores, Supermarket Signage and CEC control
- Residential Markets

### Package Contents

- HMX 4x4K HDMI Matrix Switcher over CAT5e/6/7 x 1
- IR Emitter x 4
- 24V/6.25A DC adaptor x 1
- Remote control x 1
- HRX 1V HDMI Receivers (1 for each zone) x 4
- User manual

#### **System Requirements**

- Input source equipment with HDMI connection
- CAT6 250MHz minimum is recommended for future proofing, backward compatible CAT5e cable
- Output display or audio receiver equipment with HDMI connection cables

### Features

- HDMI, HDCP1.1 and DVI compliant
- Supports HDMI 3D features
- Supports resolutions to VGA ~ WUXGA and 480i~1080p follow by output display's EDID
- Supports extension up to 100 meters through CAT5e/6/7
- Supports POE (Power On Ethernet) TRIAX receivers only
- Supports HDMI input up to 15 meters with 8bits resolution or 10 meters with 12bits resolution
- Supports IR in/out from input and output side
- Supports RS-232, remote control and on panel control
- 1U size design, Desk mount or Rack mount
- Supports external and internal EDID setting
- Supports LPCM 7.1CH, Dolby TrueHD, Dolby digital Plus and DTS-HD Master Audio transmission

Note:

The PoE function is not designed for powering other non-family type devices.

### **Front Panel Overview**



#### 1. LCD Display:

The LCD display shows your configuration settings.

#### 2. Power button and LED Notification:

Power button turns the Matrix Switch "ON" and a Green LED will be illuminated. The Matrix switch is in "Standby" Mode when the Red LED is illuminated

#### 3. Lock button and LED:

Press the "Lock" button to disable the buttons on the front of the panel, to activate them Press and Hold the "Lock" button for 5 seconds.

#### 4. IR Sensor:

The IR sensor only accepts commands from the HMX 4X4K Matrix's RCU. The RCU is designed to configure the Matrix switch only.

#### 5. Menu:

Press this button once to select EDID setting from STD (internal) 1 or TV (external) 2 then press it again to confirm the selection. Press this button every time to confirm and Save the settings.

#### 6. HMX 4x4K Programming:

Press "Out" button first to select the "Output required" i.e. A, Press "IN" button followed by the number button to select the required "Source" accordingly and then press Menu to Store the setting.

For example, outputs A - B wish to select input "Source" 1 and C - D outputs wish to select input "Source" 2.

- Press "Out" →A→B "In"→1→Menu, and then press "Out" →C→D "In"→2→Menu.
- 2. Press "Menu" to confirm and Store Settings.

## **Rear Panel Overview**



#### 1. LAN

Ethernet Connection point from Router allowing Internet

#### 2. RS-232

Used to connect PC, Laptop or notebook to the Matrix for programing, it requires a D-SUB 9 pin cable. (Not supplied).

#### 3. All IR output

"IR Emitter" 3.5mm stereo jack socket, "IR" signals are emitted across all "Sources". NOTE if more than 1 SKY Receiver is used a Directional "IR" Emitter is required. "IR Emitter" included.

#### 4. All IR Inputs

IR Digital Eye 3.5mm Stereo jack socket IR signal receiving from the remote control of this device and the display equipment's.

#### 5. Mini USB

Used for Software firmware update only.

#### 6. IR IN 1-4

The digital eye receiver is connected to the 3.5mm Jack Socket labelled IR IN to send control signals back from the matrix position to the TV Sink. A dedicated emitter is required at the sink device (TV).

#### 7. IR Out 1-4

The emitters are connected to the 3.5mm Jack Sockets to control the HDMI source from the selected zone.

#### 8. CAT5e/6/7 Outputs 1-4

RJ45 CAT5e/6/7 outputs, connect CAT cables then connected to receivers at all locations. EIA/TIA 568B wiring method required.

#### 9. HDMI Inputs 1-4

HDMI Inputs from "Source equipment" such as Blu-ray player, SKY / Freesat HD Receivers. A maximum 4 Sources can be connected and controlled independently.

#### 10. Mains Adaptor 24V DC and PoE 24V

PoE voltage is carried across the CAT5e/6/7 cable, designed to power the Receivers

## **Remote Control**

1. Standby

Switches Matrix in to Standby Mode Hold down for 5 sec

#### 2. Input Selector

Select 1-4 to choose required Source

#### 3. Output Selector

Select A-D, selects required Source and routes to Sink / Room



### **IR Cable Pin Assignment**

IR Emitter connection

- 1. Power 5V
- 2. IR Emitter Signal
- 3. NC



#### IR Digital Eye

- 1. IR Signal
- 2. 5V Power
- 3. Ground



## **RS-232 Pin Assignment**

Baud Rate:	19200bps
Data Bit:	8 bits
Parity:	None
Stop Bit:	1
Flow Control:	None

Pin	Assignment	
1	N/C	
2	ТХ	
3	RX	
4	N/C	$\neg \Longrightarrow$
5	GND	
6	N/C	
7	N/C	
8	N/C	
9	N/C	

Pin	Assignment
1	N/C
2	RX
3	ТХ
4	N/C
5	GND
6	N/C
7	N/C
8	N/C
9	N/C

## **RS-232** Commands

Command (Case Sensitive)	Description
A1-A4	Switch output A to 1-4
B1-B4	Switch output B to 1-4
C1-C4	Switch output C to 1-4
D1-D4	Switch output D to 1-4
ABCD1 - ABCD4	Switch output ABCDto 1-4 at the same time
P0	POWER OFF
P1	POWER ON
11-14	Switch all the output to 1-4
ST	Display the current matrix status and F/W version
RS	System reset to A1, B2, C3, D4

## **Connection and Installation Diagram**



## **Specifications**

Video bandwidth	225MHz/6.75GBps
Input Ports	4 x HDMI, 5 x IR Digital Eyes, 1 x RS-232 1 x Mini USB B-type 9 (use for firmware upgrades only)
Output Ports	4 x CAT5e/6/7, 4 x IR Emitter
ESD Protection	Human Body Model: ±8kV (air gap discharge), ±4kV (contact discharge)
Power Supply	DC 24V 6.25 A (US/EU Standards, CE/FCC/UL Certified)
Dimensions (mm)	438 (W) x 255 (D) x 93 (H)
Weight (g)	3300
Chassis Material	Steel - RAL 9007 + RAL 7016
Silkscreen Colour	Anthracite RAL 7016
Operating Temperature	0-40°C
Storage Temperature	-29°C - 60°C
Relative Humidity	20-90% RH (non-condensing)
Power Consumption (W)	64/TX (Main) / 28 RX (PoE)

## Acronyms

Acronym	Complete Term
DTS	Digital Theatre System
DVI	Digital Visual Interface
EDID	Extended Display Identification Data
HDCP	High-Bandwidth Digital Content Protection
HDMI	High-Definition Multimedia Interface
HDTV	High-Definition Television
LCD	Liquid Crystal Display
USB	Universal Serial Bus
UXGA	Ultra Extended Graphics Array
VGA	Video Graphics Array



## Issue 2



\*Triax reserves the right to change the specifications without prior notification