TRIAX

HMX 4x4L
Matrix 4 x 4 Kit

Part No. 310020

HDBTASE ®

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 4x4L model.

Dear Triax customer

Thank you for purchasing the **TRIAX HMX 4x4L 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.

Contents

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 4X4L 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 4X4L also is compatible with 3D content and can be displayed on a 3DTV, a 3D Source will be required. The HMX 4X4L allows four HDMI sources to be independently controlled and distributed to four Sink (TV's) displays up to 70 meters away along with HDMI Extender over single CAT5e/6 incorporating IR signals.

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 4x4L HDMI Matrix Switcher over CAT5e/6/7 x 1
- IR Emitter x 4
- 24V/2.7A DC adaptor x 1
- Remote control x 1
- HES Lite Extender Set (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 70 meters through CAT5e/6/7
- 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
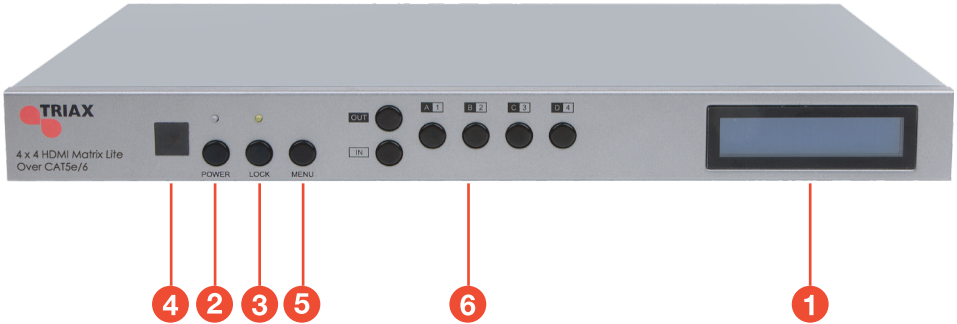
1. **LCD Display:**

   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 4X4L 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 4x4L 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.

   1. 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
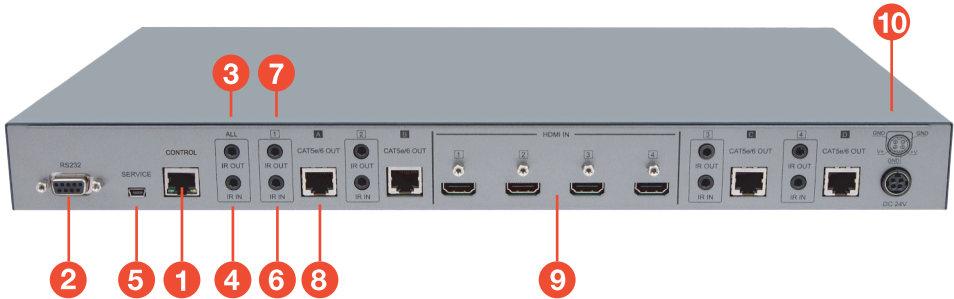
1. **Control**
   Connect to an active net work for Telnet and web GUI control.

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 blasted across all "Sources". NOTE if more than 1 SKY Receiver is used a Directional "IR" emitter is required. "IR Digital eye" included.

4. **All IR Inputs**
   IR extender 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.

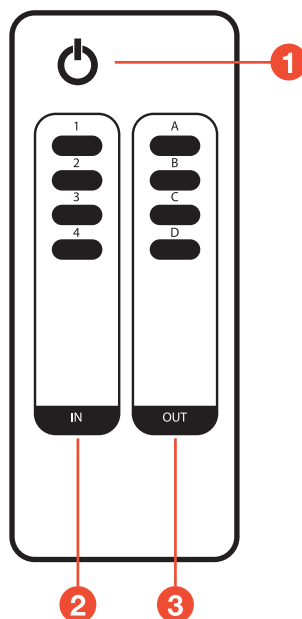10. **Mains Adaptor 24V DC**

Remote Control

1. Standby

Switches Matrix in to Standby Mode
Hold down for 5 sec

2. Input Selector

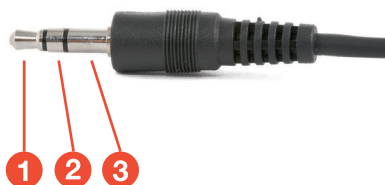Select 1-4 to choose required Source

3. Output Selector

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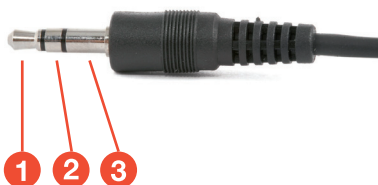to Sink / Room

IR Cable Pin Assignment

IR Emitter connection

1. Power 5V
2. IR Blaster Signal
3. NC

IR Digital Eye

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

RS-232 Pin Assignment

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

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

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

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
ABCD....1 - ABCD....4	Switch output ABCD....to 1-4 at the same time
P0	POWER OFF
P1	POWER ON
I1-I4	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
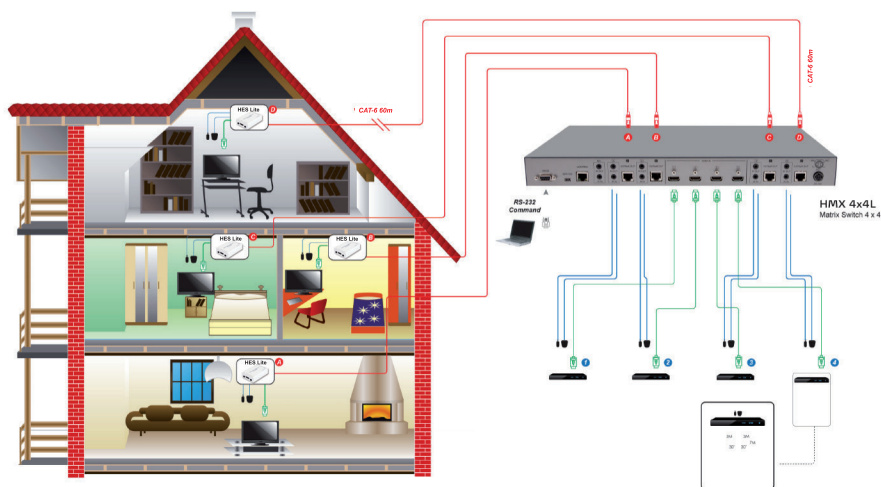
Specifications

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 Blaster
ESD Protection	Human Body Model: ±8kV (air gap discharge), ±4kV (contact discharge)
Power Supply	DC 24V 2.7 A (US/EU Standards, CE/FCC/UL Certified)
Dimensions (mm)	438 (W) x 255 (D) x 93 (H)
Weight (g)	3300g
Chassis Material	Steel - RAL 7035
Silkscreen Colour	Black
Operating Temperature	0-40°C
Storage Temperature	-20°C - 60°C
Relative Humidity	20-90% RH (non-condensing)
Power Consumption (W)	31W

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
LPCM	Linear Pulse-code modulation, Method of encoding uncompressed audio

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Issue 2

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