



HDMI 4x2 Matrix Switch

UHD-4K

RS232 and IR Commands

500442



SAFETY PRECAUTIONS

To insure the best from the product, please read all instructions carefully before using the device. Save this manual for further reference.

- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water. Keep the product 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.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Using supplies or parts not meeting the product's specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- Install the device in a place with good ventilation to avoid damage due to overheating.
- Unplug the power cord when left unused for a long period of time.
- Do not put any heavy items on the unit or on extension cable.
- Do not remove the housing of the device as you may be exposed to dangerous voltage or other hazards.
- Information on disposal of devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

Contents

- 1. Introduction4
 - 1.1. Introduction to the 5004424
 - 1.2. RS232 Setup4
- 2. RS232 Commands5
 - 2.1. Command Structure5
 - 2.2. Switching input port.....5
 - 2.3. Query to get HPD status5
 - 2.4. Query to get input port status.....6
- 3. IR Code7

1. Introduction

1.1. Introduction to the 500442

The Matrix Switch 500442 may be managed via RS232 commands. Connect a RS232 cable between the command terminal (which may be a PC running terminal emulation software) and the Matrix Switch.

MuxLab also provides at no charge a control software package that may be downloaded from the MuxLab website to send RS232 commands to the Matrix Switch.

When connecting the terminal to the Matrix switch, make sure the RS232 cable has the correct termination on both ends for the devices being connected. Note that the Matrix Switch comes with a 9 Pin D-Sub connector with female sockets (the cable will require a 9-Pin D-Sub connector with male pins).

1.2. RS232 Setup

You may follow these settings to communicate with the unit:

- Baud rate: 19200
- Data width: 8bit
- Parity: none
- Stop: 1bit

2. RS232 Commands

2.1. Command Structure

The RS232 command structure consists of an opcode, identifiers, null values and checksum. Additionally, the package length must be 13 bytes.

2.2. Switching input port

To change the input port, you may follow this command:

\$a5 \$5b \$02 \$03 **Input (1-4)** \$00 **output (1-2)** \$00 \$00 \$00 \$00 \$00 **checksum**

To calculate Checksum: $0x100 - (0xa5 + 0x5b + 0x02 + 0x03 + \text{input port} + 0x00 + \text{output port} + 0x00 + 0x00 + 0x00 + 0x00 + 0x00)$

To switch a new input you may change "input port", "output port" and "checksum"

For example: Setting output 1 from input 2: A5 5B 02 03 02 00 01 00 00 00 00 00 F8

2.3. Query to get HPD status

A query command will send a request, then the 500442 will answer.

For example: To query HPD status of output 1 you may send the following command:

Sent package: A5 5B 01 05 **01** 00 00 00 00 00 00 00 F9

Received package: A5 5B 01 05 01 00 **FF** 00 00 00 00 00 FA

The **01** specifies the output port number, it should be either 1 or 2.

The **FF** means the HPD in output 1 is LOW, if **00** it means is HIGH.

2.4. Query to get input port status

To request input port status of output 1 you may send the following command:

[0xa5+0x5b+0x01+0x04+**output**+0x00+0x00+0x00+0x00+0x00+0x00+0x00+**checksum**]

For example: Querying input 1 status:

Sent package: A5 5B 01 04 **01** 00 00 00 00 00 00 00 FA

Received package: A5 5B 01 04 01 00 **FF** 00 00 00 00 00 FB

The **01** specifies the input port number, it should be either 1 or 4.
The **FF** means port 1 is plugged in while **00** means it is unplugged.

3. IR Code

NEC CODE

#define SYSTEM_CODE 0x00

Function	Code
#define IR_KEY_TX_A_FROM_1	0x14
#define IR_KEY_TX_A_FROM_2	0x57
#define IR_KEY_TX_A_FROM_3	0x41
#define IR_KEY_TX_A_FROM_4	0x46
#define IR_KEY_TX_A_PRE	0x1d
#define IR_KEY_TX_A_NEXT	0x1f
#define IR_KEY_TX_B_FROM_1	0x19
#define IR_KEY_TX_B_FROM_2	0x1b
#define IR_KEY_TX_B_FROM_3	0x11
#define IR_KEY_TX_B_FROM_4	0x15
#define IR_KEY_TX_B_PRE	0x12
#define IR_KEY_TX_B_NEXT	0x59
#define IR_KEY_EDID_INDEX_1	0x5e
#define IR_KEY_EDID_INDEX_2	0x06
#define IR_KEY_EDID_INDEX_3	0x05
#define IR_KEY_EDID_INDEX_4	0x03
#define IR_KEY_EDID_INDEX_5	0x47
#define IR_KEY_EDID_INDEX_6	0x07
#define IR_KEY_EDID_INDEX_7	0x40
#define IR_KEY_EDID_INDEX_8	0x02
#define IR_KEY_EDID_INDEX_9	0x18

#define IR_KEY_EDID_INDEX_10	0x44
#define IR_KEY_EDID_INDEX_11	0x0f
#define IR_KEY_EDID_INDEX_12	0x51
#define IR_KEY_EDID_INDEX_OUT_A	0x0a
#define IR_KEY_EDID_INDEX_OUT_B	0x1e
#define IR_KEY_EDID_AUTO	0x0e
#define IR_KEY_INPUT_1	0x53
#define IR_KEY_INPUT_2	0x52
#define IR_KEY_INPUT_3	0x01
#define IR_KEY_INPUT_4	0x45
#define IR_KEY_INPUT_ALL	0x1a