



## VLMX-862HT70

8x6+2 HDMI 2.0 Matrix over HDBaseT 70m 18Gbps



**User Manual**

**VER 1.02**

## Thank you for purchasing this product

Please read these instructions carefully for optimum performance and safety before connecting, operating, or adjusting this product. Please keep this manual for future reference.

## A surge protection device recommended

This product contains sensitive electrical components that electrical spikes may damage, surges, electric shock, lightning strikes, etc. The use of surge protection systems is highly recommended to protect and extend the life of your equipment.

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## 1. Introduction

The HDBaseT™ 8x8 Matrix Switcher supports the transmission of video (up to 4K2K@60Hz YUV4:4:4, 8-bit, 18Gbps, HDCP 2.2) and multi-channel digital audio such as LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD Master audio from 8 HDMI sources to 6 HDBaseT™ outputs and 2 independent HDMI outputs. The HDBaseT™ outputs allow video, audio, and control transmission via a single Cat6/6a cable up to 230ft/70m. The matrix can be controlled via the front panel button, IR remote control, RS-232, TCP/IP, or Web GUI.

## 2. Features

- ☆ HDMI 2.0b, HDCP 2.2, and HDCP 1.4 compliant
- ☆ Up to 4K2K@60Hz (4:4:4) on all HDMI and HDBaseT ports
- ☆ Supports pass-through audio up to 7.1 channels of High-Definition audio (LPCM, Dolby TrueHD, and DTS-HD Master Audio)
- ☆ Digital and analog audio extractor from any one of the outputs (Configurable)
- ☆ HDR and smart EDID management supported
- ☆ 24V PoC on all HDBaseT ports
- ☆ Control is via on-panel Button, IR, RS-232, LAN, and Web UI
- ☆ 1U rack mounted design size

## 3. Package Contents

- ① 1x HDBaseT™ 8x8 Matrix Switcher
- ② 6x HDBT Receivers
- ③ 1x IR Remote Control (Matrix)
- ④ 1x RS-232 serial cable
- ⑤ 7x Phoenix connectors
- ⑥ 1x 100~240V AC 50/60Hz Power Cable
- ⑦ 16x Wideband IR receiver cables
- ⑧ 15x Wideband IR blaster cables
- ⑨ 12x Mounting Ears (Receiver)
- ⑩ 2x Mounting Ears (Matrix)
- ⑪ 1x User Manual

## 4. Specifications

Technical	
Video Bandwidth	600MHz[18Gbps]
Video Resolution	480i, 576i, 480p, 576p, 720p, 1080i, 1080p24/30/50/60, 4Kx2K@30, 4Kx2K@60 (4:4:4)
Matrix	Input Ports: 8xHDMI Type A [19-pin female] 9xIR input [3.5mm Stereo Mini-jack] 1xRS-232 [Phoenix connector] 1xLAN [RJ45 connector]  Output Ports: 2xHDMI Type A [19-pin female] 6xHDBaseT Out [RJ45] 9xIR output [3.5mm Stereo Mini-jack] 1xOptical audio [S/PDIF] 1xStereo audio [3.5mm Stereo Mini-jack]
Receiver	Input ports: 1xHDBaseT In [RJ45] 1xIR In [3.5mm Stereo Mini-jack] Output ports: 1xHDMI Type A [19-pin female] 1xIR Out [3.5mm Stereo Mini-jack] 1xRS-232 [Phoenix connector]
ESD Protection	Human body model — $\pm 8kV$ (Air-gap discharge), $\pm 4kV$ (Contact discharge)
Chassis Material	Metal
Silkscreen Color	Black
Weight	TX: 3kg, RX: 206g
Dimensions	TX: 440mm(W)*320mm(D)*44.5mm(H) RX: 115mm(W)*65mm(D)*17mm(H)
Power Supply	100~240V AC 50/60Hz
Power Consumption	74W
Storage Temperature	-20°C ~ 60°C / -4°F ~ 140°F
Relative Humidity	20~90% RH (Non-condensation)
Operating Temperature	0°C ~ 40°C / 32°F ~ 104°F

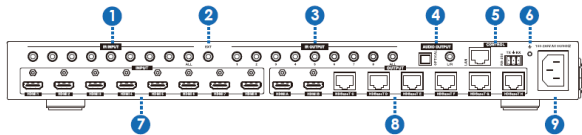
## 5. Operation Controls and Functions

### 5.1 Front panel



Number	Name	Function description
1	Standby LED	Standby indicator light. The LED will illuminate red when the unit is on standby status. If the unit is working, the LED light will not shine.
2	IR	IR receiver window.
3	Nixie tube	Display information for each input channel from OUT A-OUT H button input.
4	POWER button	Device power button. Press button 3s and the unit will enter standby mode; if pressed again, the unit will work.
5	OUTPUT button	A-H output channel button.

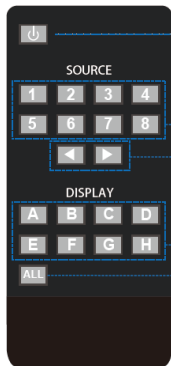
### 5.2 Rear panel



Number	Name	Function description
1	IR INPUT	IR INPUT interface. For further details, please refer to the IR control system introduction.
2	EXT	If the panel sensor is obstructed or the unit is installed in a closed area out of the infrared line of sight, the IR receiver included can be inserted into the EXT port at the rear to extend the IR sensor range and enable local control of the matrix.
3	IR OUTPUT	IR OUTPUT interface. For further details, please refer to the IR control system introduction.

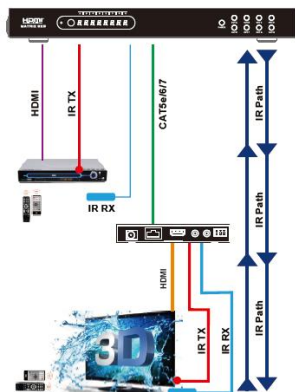
4	Audio OUTPUT		De-embedded audio output ports. By default, it outputs HDMI out A audio. But the user can select other output ports audio via Web GUI. NOTE: Optical port can support PCM and compressed audio formats, but the L/R port only supports PCM audio.
5	CONTR OL	LAN	This port is the TCP/IP control link, connecting to an active Ethernet link with an RJ45 terminated cable.
		RS-232	Connect to a PC or control system with a phoenix jack for transmission of RS-232 commands.
6	GND		Connect the Housing to the ground.
7	HDMI INPUT		Connect to the HDMI input source devices such as a DVD player or a Set-top Box with an HDMI cable.
8	HDMI/HDBas eTOUTPUT		The HDMI OUTPUT connects to HDMI-equipped TVs or monitors, and the HDBT OUTPUT connects to the HDBT Receiver.
9	AC POWER INPUT		Connect to AC power with AC power cable.

## 6. Remote control



- ① Press the key to open the power of the matrix or set it to standby mode.
- ② Press the DISPLAY A, B, C, D, E, F, G, or H button to select output firstly, then corresponding press the SOURCE 1, 2, 3, 4, 5, 6, 7, or 8 buttons to select the input source.
- ③ Press the DISPLAY A, B, C, D, E, F, G, or H button to select output first, then press the left or the right button to choose the last or the next input source.
- ④ Press the 'ALL' key to select all output first, then select only one input source. At this moment, The left and the right keys have no function.

## 7. IR Control system (IR Call-back of Matrix and Source Devices)



The matrix is not only a switcher and extender of multiple HDMI signals to multiple HDMI receivers located remotely, but it also passes IR control signals through the IR call-back system to the matrix and HDMI sources for full, independent control of all connected inputs from output locations.

Two-way IR Call-back Between matrix, Sources, and Displays from Multiple Locations.

A vital feature of the matrix is discrete IR control of the matrix, sources, and displays from any location – so inputs at the matrix end can be controlled at a display location, and displays can be controlled at the matrix location. This is accomplished by placing a series of IR

Emitters on devices to control IR Receivers at all locations you wish to control from enable the IR signal to travel both ways via the single Cat5e/6/7 cable.



**IR control is divided into two kinds of control ways as below.**

Insert the 3.5mm IR receiver cable into the IR INPUT ports at the rear of the matrix. At the same time, insert the 3.5mm IR blaster cable into the IR OUTPUT

ports at the back of the matrix. At the display, the user connects the HDBT Receiver device at the matrix HDBaseT ports. Afterward, insert the 3.5mm IR receiver cable and IR blaster cable into the HDBT Receiver device.

① At Matrix end: When the user controls the output device by remote control. The matrix IR INPUT and the HDBT IR output match. The way of IR control

is following a video switch to change. The HDMI input source is switched to the HDBT receiver output, and the IR control will switch to the following output and select the

corresponding input source.

*Attention: The matrix has two location HDMI outputs. If the HDMI input source is switched to the two location HDMI outputs, the IR control will have no function.*

② At display end: The matrix has two location HDMI outputs and six HDBT outputs. The location HDMI output has no IR control function. The six HDBT outputs connect to the HDBT receiver. The HDBT IR INPUT and the matrix IR OUPUT match. The way of IR control is following a video switch to change. The mean is that the output selects the corresponding input source, and the IR control will switch to the following output and selects the connected input source.

### IR BLASTER (TX)

To control the source: Plug the IR Blaster into the IR OUT port of the transmitter unit; place the blaster in front of the IR eye of the source.

To control the display: Plug the IR Blaster into the IR OUT port of the receiver unit; place the blaster in front of the IR eye of the display.

### IR RECEIVER (RX)

To control the source: Plug IR Receiver into the IR IN port of the receiver unit; place the receiver at or near the display.

To control the display: Plug IR Receiver into IR IN port of transmitter unit; place receiver in the position where it can receive remote signals.

IR BLASTER

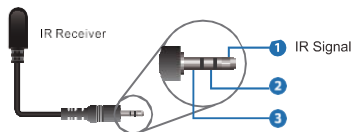
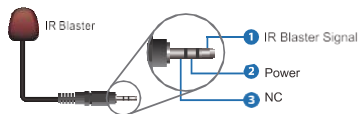


IR RECEIVER



Power

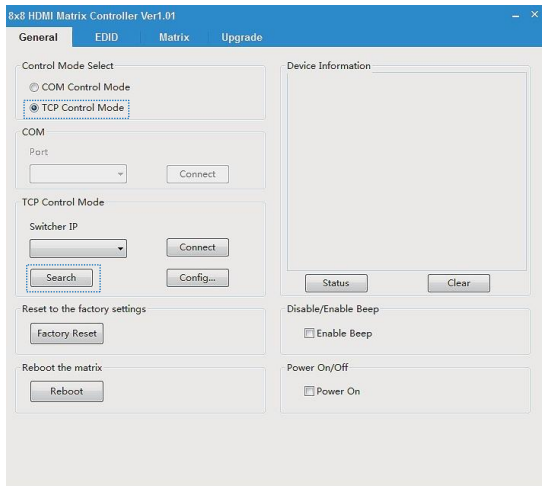
Grounding





## 8. Web GUI User Guide

The Matrix can be controlled via Web GUI through LAN port. You must know the current Matrix IP address. The static IP address is 192.168.1.100. You can connect PC Web GUI through a dynamic IP address. You can get the IP address in this unit via the PC Controller. Firstly, open Matrix PC Controller software on the following page:



Then select the "TCP Control Mode" port, and click the "Search" button. At this moment, you can get current IP address. You can set the IP address to your PC/laptop/mobile Internet Explorer and click "Search" to enter the Web GUI page. The Web GUI likes below:

## General page

The screenshot shows the 'General' page of a device interface. On the left is a navigation menu with 'General' selected. The main content area is titled 'Connection Status' and includes 'Device Ver:1.24' and 'Web Ver: 11.1'. It features an 8x2 grid for 'INPUT' and 'OUTPUT' ports, with 'Yes' in green and 'No' in red. Below the grid are four controls: 'Power' (toggle), 'Beep' (toggle), 'Reboot' (button), and 'Factory Reset' (button). Blue dashed boxes and numbered callouts (1-5) highlight these elements.

		1	2	3	4	5	6	7	8
INPUT	Yes	No	No	No	No	No	No	No	No
OUTPUT	Yes	No	No	No	No	No	No	No	No

Power  Beep  Reboot Factory Reset

- ① Display currently the Matrix input and output port status. The "yes" has a connected input or output source, and the "no" represents no connection.
- ② Power switch. The Matrix will work when opening this switch; otherwise, the Matrix will stand by.
- ③ Beep switch. Open this switch, and press the Matrix on-panel button will have a voice. Close this switch; it will mute.
- ④ Click this button will reboot the device.
- ⑤ Click this button will set it to factory reset.

## Control page

The screenshot shows the 'Control' page of the device interface. On the left is a navigation menu with 'Control' selected. The main content area is titled 'Device Ver:1.24' and 'Web Ver: 11.1'. It features an 8x8 matrix for 'IN' and 'OUT' ports. The matrix cells contain connection indicators like '1->1', '2->2', etc. Below the matrix is an 'Audio Set' row with options A through H. Blue dashed boxes and numbered callouts (1-2) highlight these elements.

IN \ OUT	1	2	3	4	5	6	7	8
1	1->1	2->1	3->1	4->1	5->1	6->1	7->1	8->1
2	1->2	2->2	3->2	4->2	5->2	6->2	7->2	8->2
3	1->3	2->3	3->3	4->3	5->3	6->3	7->3	8->3
4	1->4	2->4	3->4	4->4	5->4	6->4	7->4	8->4
5	1->5	2->5	3->5	4->5	5->5	6->5	7->5	8->5
6	1->6	2->6	3->6	4->6	5->6	6->6	7->6	8->6
7	1->7	2->7	3->7	4->7	5->7	6->7	7->7	8->7
8	1->8	2->8	3->8	4->8	5->8	6->8	7->8	8->8
Audio Set	A	B	C	D	E	F	G	H

- ① Select the input source to the output port.
- ② Select the output port audio.

## EDID page

Device Ver:1.24 Web Ver: 11.1

General  
Control  
**EDID**  
Status  
Upgrade

Set EDID Mode 1080P Stereo Audio 2.0 to IN 1 Set

Copy EDID From HDMI OUT A to IN 1 Set

Open EDID File Open file... to IN 1 Set

IN 1: 4K2k60\_444 HD Audio 7.1  
IN 2: 4K2k60\_444 HD Audio 7.1  
IN 3: 4K2k60\_444 HD Audio 7.1  
IN 4: 4K2k60\_444 HD Audio 7.1  
IN 5: 4K2k60\_444 HD Audio 7.1  
IN 6: 4K2k60\_444 HD Audio 7.1  
IN 7: 4K2k60\_444 HD Audio 7.1  
IN 8: 4K2k60\_444 HD Audio 7.1

Status

- ① Set EDID mode to the input source, then click the "Set" button.
- ② Copy EDID from the HDMI output port to the input source, then click the "Set" button.
- ③ Open the EDID file to the input source, then click the "Set" button.
- ④ Click the "Refresh" button to refresh the current EDID mode. It will display the currently input source EDID mode status.

## Status page

Device Ver:1.24 Web Ver: 11.1

General  
Control  
EDID  
**Status**  
Upgrade

**1 Network Configuration**

DHCP  Net Status

IP 192 . 168 . 40 . 101

Subnet 255 . 255 . 255 . 0

Gate 192 . 168 . 40 . 1

Save Changes

**2 Status Log**

DHCP ON  
IP: 192.168.40.101  
Subnet: 255.255.255.0  
GateWAY: 192.168.40.1  
Mac: 14:22:32:44:52:88

### ① Network Configuration

- ◆ In DHCP open status:

HDCCP switch: Obtain the network configuration information, including IP address, Subnet, Gate. Then click the "Save Changes" button to save the DHCP status.

◆ In DHCP close status:

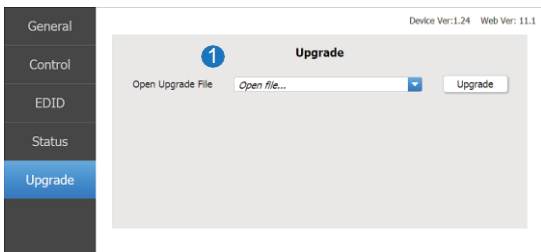
HDPC switch: If the DHCP switch has been closed, the user can set IP, Subnet, and Gate address. At this moment, click the "Save Change" button to save current status information. (Attention: If the user has set the IP address, click the "Save Change" button. At this moment, the user needs to set the IP address again to your PC/laptop/mobile Internet Explorer and click "Search" to enter the Web GUI page.)

Net Status button: Click this button will refresh the current network configuration information to display in Status Log.

In this unit, the Mac address can check only; you cannot set it.

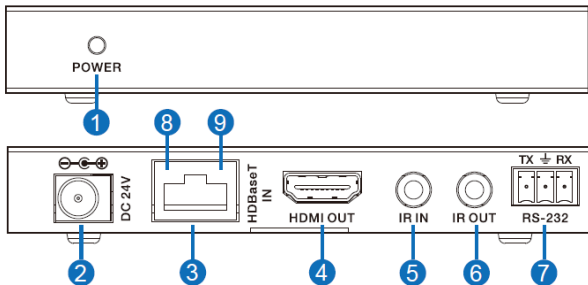
② Display the network configuration information.

## Upgrade page



① Open the upgrade file to upgrade.

## 9. HDBT Receiver



Number	Name	Function description
1	POWER	This LED illuminates when the device is connected to a power supply.
2	DC 24V	Plug the 24V DC power supply into the unit. (If the device connects to the matrix, the receiver doesn't need a local power supply due to PoC from the matrix.)
3	HDBaseT IN	Standard HDBaseT signal input port. Connect to Matrix HDBaseT output with a UTP cable.
4	HDMI OUT	HDMI output port. This slot is where you connect the HDTV or monitor with an HDMI cable.
5	IR IN	Channel 1 IR Receiver. Connect with Wideband IR Rx.
6	IR OUT	Channel 2 IR Transmitter. Connect with Wideband IR Tx.
7	RS-232	Connect to a PC or control system with phoenix jack for transmission of RS-232 commands.
8	Connection Signal Indicator Lamp	<ul style="list-style-type: none"> <li>※Illuminate: The Transmitter and Receiver are in good connection status.</li> <li>※Flashing: The Transmitter and Receiver are in poor connection status.</li> <li>※Dark: The Transmitter and Receiver are not connected.</li> </ul>
9	Data Signal Indicator Lamp	<ul style="list-style-type: none"> <li>※Illuminate: The HDMI signal with HDCP.</li> <li>※Flashing: The HDMI signal without HDCP.</li> <li>※Dark: No HDMI signal.</li> </ul>

## 10. Application Example

