

# HDBaseT™ 4x4 MATRIX SELECTOR SWITCH (230ft/70m)



Vanco Part Number  
EVMX4004

HDBaseT 4x4 Matrix  
Selector Switch  
(230ft/70m)

**EVOLUTION**  
BY  **VANCO**  
ADVANCING DIGITAL CONNECTIVITY

[www.vanco1.com](http://www.vanco1.com) • 800.626.6445

## DEAR CUSTOMER

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

This product is 100% inspected and tested in the United States to verify HDMI performance parameters.

## WARNING

1. Do not expose this unit to water, moisture, or excessive humidity.
2. Do not install or place this unit in a built-in cabinet, or other confined space without adequate ventilation.
3. To prevent risk of electrical shock or fire hazard, due to overheating do not obstruct unit's ventilation openings.
4. Do not install near any source of heat, including other units that may produce heat.
5. Do not place unit near flames.
6. Only clean unit with a dry cloth.
7. Unplug unit during lightening storms or when not used for an extended period of time. A surge protector is strongly recommended.
8. Protect the power cord from being walked on or pinched, particularly at the plugs.
9. Use unit only with accessories specified by the manufacturer.
10. Refer all servicing to qualified personnel.

## CAUTION

HDMI is a very complex technology requiring continuous authentication of the signal and the same video resolution and audio settings on all electronic equipment in the system. When there are multiple sources and displays, the video resolution and audio setting on all connected units must be adjusted to correspond with that of the display having the lowest video and audio capability.

## INTRODUCTION

The Evolution by Vanco EVMX4004 4x4 Matrix with HDBaseT Technology, Wide-band IR, and PoE is an HD switching and extension system that comprises of a 4 input/4 output matrix unit. Have 4 sources displayed simultaneously on any display or have a single source duplicated on multiple displays, flexibility for the perfect solution. Features HDBaseT (70m/230ft) technology, which allows for audio, 1080p video, IR, and Power over Cable to be transferred over a single Cat5e/6/7 cable up to 230 feet. Also features Power over Ethernet (PoE) Technology which transmits power over Cat5e/6, allowing for Receiver unit to be powered without the use of a power supply. The result is an easy and plug and play solution that allows each output with the ability to extend HDMI over long distances in conjunction with the Evolution by Vanco HDBaseT (70m/230ft) receiver EVRX3000 (sold separately). Features additional HDMI output per HDBaseT output for flexibility or mirroring capability, able to handle up to 8 displays. With an output bandwidth of 6.75 Gbps, the EVMX4004 is capable of high definition video and multi-channel audio distribution with simple control using the front panel or remotely via IR Receivers at display locations. Includes RS-232 connectivity for third party integration for control and switching, as well as IP control along with LAN connectivity for IP control and switching remotely, using a smartphone or tablet. Also features EDID management system, which allows and encourages device communication compatibility for seamless integration. For longer length applications with full flexibility for control, the EVMX4004 is a great solution.

### HDBaseT 4x4 Matrix Selector Switch (230ft./70m)

#### Part # EVMX4004

- Allows up to 4 HDMI sources to be distributed simultaneously to up to 4 displays
- 4 additional HDMI outputs for flexibility or mirroring capability; allows for connection of up to 8 displays or the ability to create a larger distribution system by cascading or daisy chaining
- HDBaseT Technology that supports HDMI Deep Color, 3D, and up to 1080p High Definition resolution
- Supports Power Over Ethernet (PoE) which integrates power into the Cat5e/Cat6 cable, requiring no power supply for Receiving unit
- Transmission Range: Extends 1080p resolutions up to 230ft (70m)
- Features EDID management which supports default HDMI EDID and has the ability to learn the EDID of display equipment for any "handshake" issues via RS-232 connectivity
- Receivers (sold separately) feature LED indicators for clear power and video signal selection
- HDCP Compliant
- Supports HDMI Deep Color and 3D
- Supports 7.1 channel digital audio
- Wideband IR pass-through (20kHz to 60 kHz)
- Choose from 5 switching modes – front panel buttons, Local remote control, RS-232 control, IR call-back (dedicated IR extension cable connected to IR extension port, and IR emitters on sources required), and IP control utilizing smartphone or tablet via LAN
- 24V 3.75A DC, UL Listed Power supply for 4x4 matrix
- 4x4 Matrix Dimensions: 17.32"(440mm) W x 1.69"(43mm) H x 7.96"(202.3mm) D

## SPECIFICATIONS

### TECHNICAL SPECS

HDCP Compliance .....	Yes
Video Bandwidth .....	Single-link 340Mhz [10.2 Gbps]
Video Support .....	480i/480p/720p/1080i/1080p @60 36-bit color
Audio Support .....	Surround Sound (up to 7.1 ch) or stereo digital audio
ESD Protection .....	[1] Human body model — $\pm 19\text{kV}$ [air-gap discharge] & $\pm 12\text{kV}$ [contact discharge] [2] Core chipset — $\pm 8\text{kV}$
PCB stack-up .....	4-layer board [impedance control — differential 100 $\Omega$ ; single 50 $\Omega$ ]
Input .....	4x HDMI / 1x RS-232 / 1x RJ-45 for IP Control / 5x IR for IR receivers
Output .....	4x RJ-45 (HDBaseT) / 4x HDMI / 5x IR for IR blasters
HDMI connector .....	Type A 19 pin female
RJ-45 connector .....	WE/SS 8P8C with 2 LED indicators
RS-232 connector .....	DE-9 [9-pin D-sub female]
3.5mm connector .....	Earphone jack for IR blaster; [All IR Out] IR signal from all outputs; [IR1 ~IR4] IR control on individual source device; Earphone jack for IR receiver; [System IR] Receives IR commands from remote control; [IR1 ~IR4] Receives IR commands from individual remote control

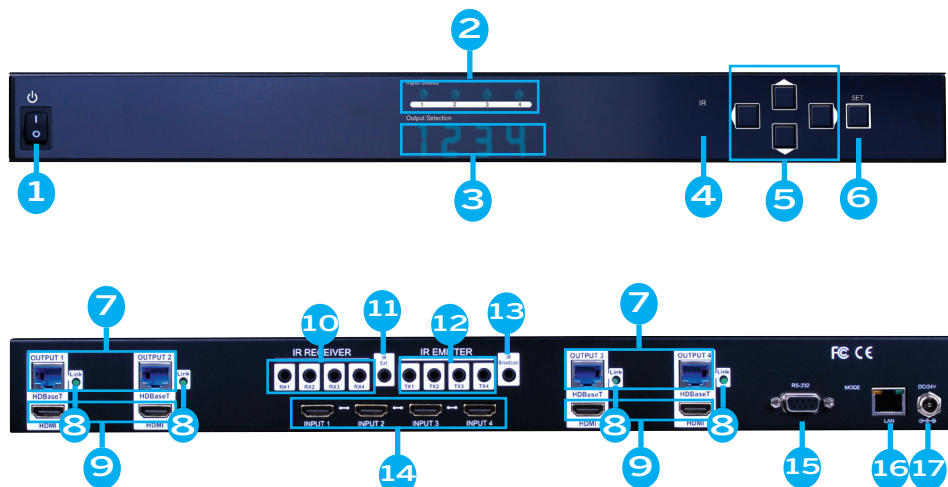
### MECHANICAL SPECS

Housing .....	Metal enclosure
Fixedness .....	1RU rack-mount with ears
Power supply .....	24V 3.75A DC
Power consumption .....	120 Watts [max]
Operation temperature .....	32-104 degrees F
Storage temperature .....	-4 - 140 degrees F
Relative humidity .....	20-90% RH (no condensation)

## PACKAGE CONTENTS

- (1) EVMX4004 HDBaseT 4x4 Matrix Selector Switch
- (5) IR Receiver (RX)
- (4) IR Blaster (TX)
- (1) DC 24V3.75A power supply
- (1) Rack-mounting ear set
- (1) Installation software CD
- (1) IR remote control
- (1) User Manual

# PANEL DESCRIPTIONS



1. Power Switch
2. Source Status: Input source indicator LED
3. 7-segment LED: for output 1-4 status
4. IR SENSOR: IR sensor for receiving the IR commands from IR remote
5. Push Button: Select the output and input
6. Push Button: Enter Button
7. RJ-45: HDBaseT output port 1-4
8. LED: Link indicator
9. HDMI Local Loopout Port 1-4: Local loopout HDMI outputs for each output channel
10. IR Receiver 1-4: Infrared 3.5mm socket for plugging in the extension cable of IR receiver
11. System IR Receiver: Ext. IR receiver
12. IR Blaster 1-4: 3.5mm IR blaster socket for individual HDMI source control
13. All IR Output: 3.5mm IR blaster socket for HDMI source control on all 4 inputs
14. INPUT 1-4: HDMI inputs
15. RS-232: RS-232 control port
16. Ethernet: Ethernet control port
17. +24V DC: 24V DC power jack

## RECEIVER (Sold Separately)



1. 24V DC: Connect to 24V DC power supply (optional)
2. LED: Power indicator
3. HDMI OUT: Connects to an HDMI display with an HDMI male-male cable
4. IR Blaster: Infrared 3.5mm socket for plugging in the extension cable of IR blaster
5. IR Receiver: Infrared 3.5mm socket for plugging in the extension cable of IR receiver
6. Mini-USB: For firmware updates
7. LED: TX/RX link indicator
8. RJ-45: Plug in for Cat5e or Cat6 Cable

## EDID

EDID management allows for EDID learning or to pre-set an EDID to encourage a "handshake" between the display and source.

The EDID learning function is only necessary whenever any display on the HDMI output port is not outputting audio and video properly. Because the HDMI source devices and displays may have various level of capability in playing audio and video, the general principle is that the source device will output the lowest standards in audio format and video resolutions to be acceptable among all HDMI displays connected. In this case, a 720p stereo HDMI signal output would be probably the safest choice. The EDID function can also force the matrix to learn the EDID of the lowest capable HDMI display among others to make sure all displays are capable to play the HDMI signals normally.

There are two methods for EDID Learning as shown below:

1. IR Remote Control: Please refer to the Operation Control – IR Remote Control section
2. Software Control: Please refer to the Operation Control - Software Control through RS-232 and LAN port

# EDID

EDID Settings:

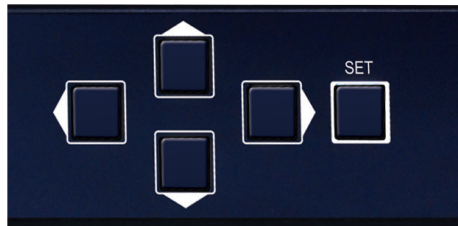
There are nine embedded default EDID settings as shown below:

1. Full-HD(1080p@60)-24bit 2D & 2ch & Dolby 5.1ch (factory setting)
2. Full-HD(1080p@60)-24bit 2D & 7.1ch
3. Full-HD(1080p@60)-24bit 3D & 2ch
4. Full-HD(1080p@60)-24bit 3D & 7.1ch
5. HD(1080i@60)(720p@60)-24bit 2D & 2ch
6. HD(1080i@60)(720p@60)-24bit 2D & 7.1ch
7. Full-HD(1080p@60)-36bit 2D & 2ch
8. Full-HD(1080p@60)-36bit 2D & 7.1ch
9. Full-HD(1080p@60)-24bit 2D & 2ch

## OPERATION CONTROL - FRONT PANEL

### 1. INPUT/OUTPUT MAPPING

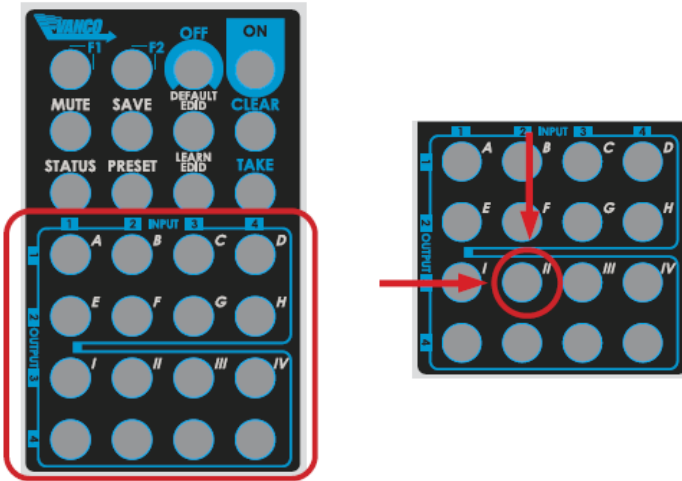
- Use the "LEFT" or "RIGHT" push button to select the output desired to switch sources to.
- Use the "UP" or "DOWN" push button to select the specific source.
- Press "SET" to confirm



# OPERATION CONTROL - IR REMOTE CONTROL

1. INPUT/OUTPUT Switch - Push the corresponding button on the remote to select Input & Output port.

Ex: Select Input 2 to Output 3 - The button highlighted in the red circle button shown below to select Input 2 to Output 3



2. Function Key

Button	Function
OFF	Standby mode
ON	Power on the matrix switcher
STATUS	Preset output status
SAVE	Save current mapping mode
PRESET	Preset mapping mode
DEFAULT EDID	Begin default EDID selection
LEARN EDID	Begin EDID learning from one output
CLEAR	Clear the previous IR operation procedure
TAKE	Trigger the previous setting
F1	Reserved
F2	Reserved



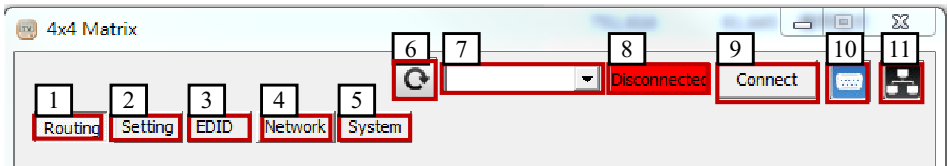
Operation	Procedure	7-Segment LED
<b>Output Status</b>	<b>Status + A~D(Output 1~4) + Take</b>	
Ex: Output 4 (Input 2)	1.Press "STATUS" button 2.Press number key "D" to select Output 4 3.Press "TAKE" button	- - 4 - 4
<b>Save Current Mapping</b>	<b>Save + A~H(1-8 storage site) + Take</b>	
Ex: Save current mapping to 5	1.Press "SAVE" button 2.Press number key "E" to select the storage site 5 3.Press "TAKE" button	d - d 5
<b>Preset Mapping</b>	<b>Preset + A~H(1-8 storage site) + Take</b>	
Ex: Preset saved mapping from 5	1.Press "PRESET" button 2.Press number key "E" to select the storage site 5 3.Press "TAKE" button	P - P 5
<b>Learn default EDID</b>	<b>Default EDID + A~H(1-8 default EDID) + □~□(input 1~4) + Take</b>	
Ex: Default EDID 2 Input 3	1.Press "DEFAULT EDID" button 2.Press number key "B" to select default EDID 2 3.Press number key "□" to select Input 3 4.Press "TAKE" button	E d 2 d 2 3 0 0 (success) F F(fail)
<b>Learn EDID Port EDID</b>	<b>Learn + D(EDID Port) + □~□(input 1~4) + Take</b>	
Ex: Learn EDID Port Input 3	1.Press "LEARN" button 2.Press number key "D" to select EDID Port 3. Press number key "□" to select Input 3 4.Press "TAKE" button	E L 4 L 4 3 0 0 (success) F F(fail)

# OPERATION CONTROL - SOFTWARE CONTROL THROUGH RS-232 AND LAN PORT

## 1. System Requirement

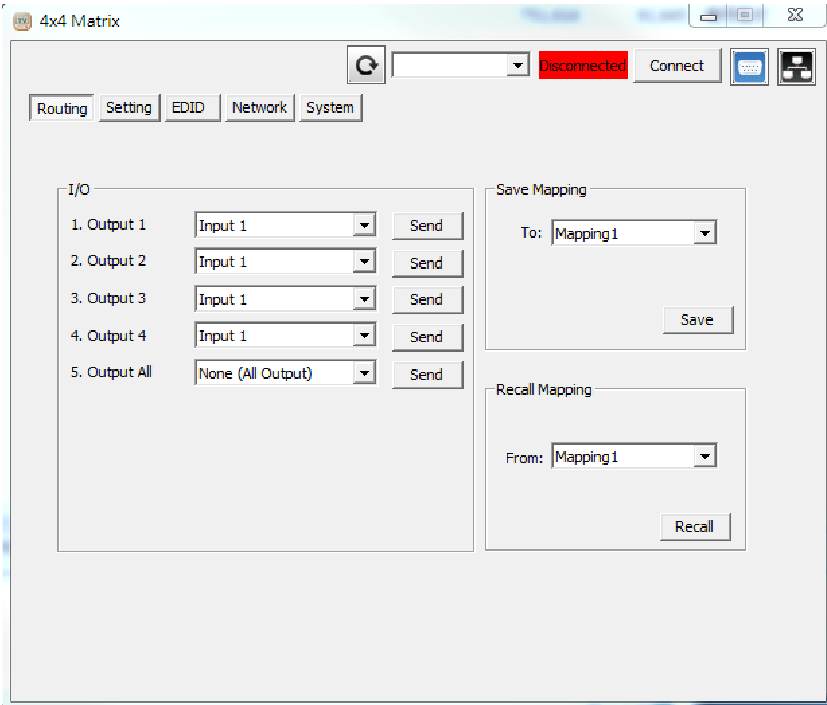
- 1) OS Information: MS WinXP/7
- 2) Baud rates: 9600
- 3) Software size: 3 MB
- 4) Minimum RAM requirement: 256 MB

## OPERATION CONTROL – Software control through RS-232



1. I/O Routing Button
2. Rename I/O Button
3. EDID Button
4. Network Button
5. F/W Update & Default Reset Button
6. Refresh COM Port
7. COM Port Selection
8. Connection Status
9. Connect/Disconnect Button
10. Control SW via RS-232
11. Control SW via Network

# 1. Input Selection and Mapping



I/O:

Select the input

Click "Send" to change the I/O setting

Save Mapping:

Select Mapping(1-8)

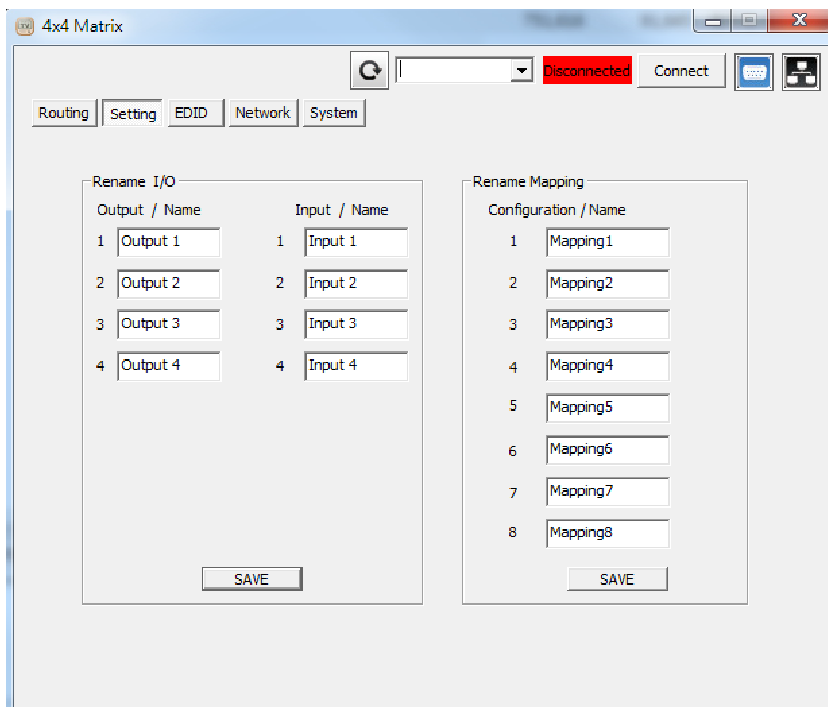
Click "Save" button to save current mapping

Preset Mapping:

Select Mapping(1-8)

Click "Recall" button to recall previous mapping which are saved

## 2. Rename I/O Button



Rename I/O:

Rename output name

Rename input name

Rename Mapping:

Rename Mapping name

### 3. EDID BUTTON

Learn EDID from Default

Select Default EDID(1-8 Default EDID)

Select Input

Click "Send" button to learn default EDID

Learn EDID From Display

Select output

Select Input

Click "Send" button to learn display EDID

Load EDID

File to Input

Select Input

Click "Load" button to select the EDID file

View EDID

Select Input or HDMI output

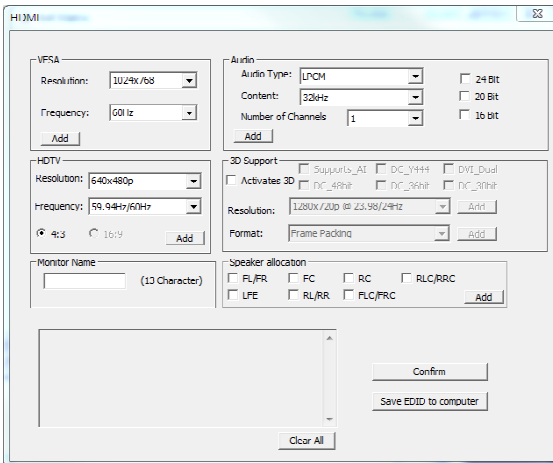
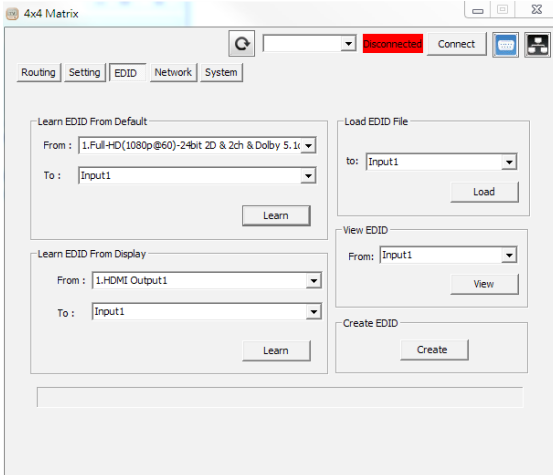
Click "View" button to read the EDID and analysis

Create EDID

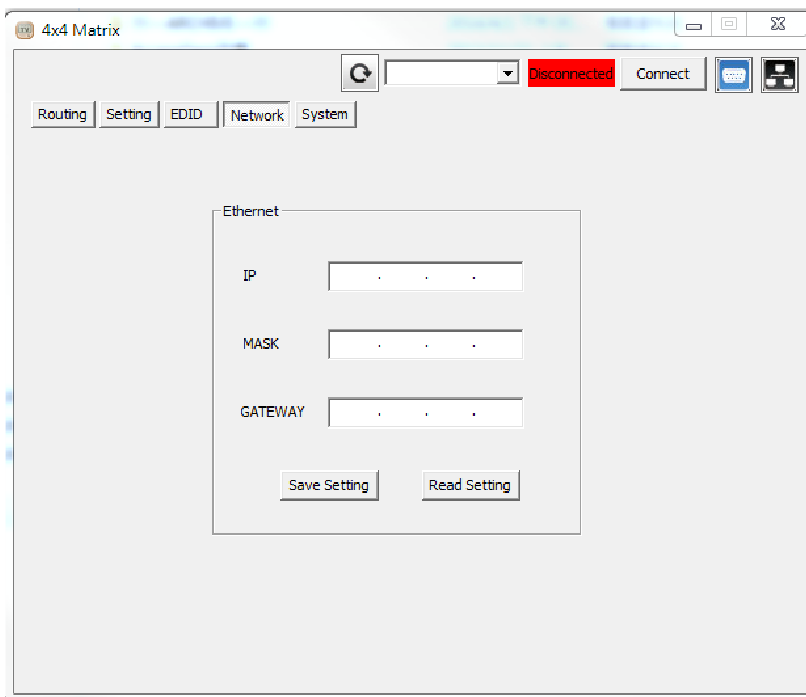
Click "Create" button to create EDID file

Select the EDID content

Click "Save EDID on Computer" to save the generated EDID as a file



## 4. NETWORK



Save Setting

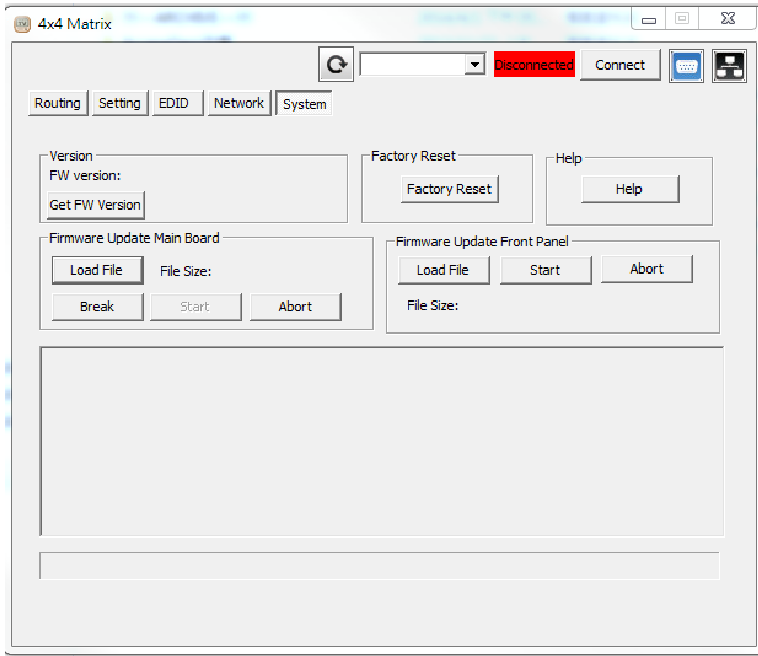
Save the IP address which is manually entered

Read Setting:

Read the IP address from the device

\*\* The default IP address is 192.168.1.111

## 5. SYSTEM BUTTON



### Firmware Update

#### 1) Version:

To get the F/W version information

#### 2) Factory Reset

#### 3) Help:


To view the steps of the firmware update

#### 4) Firmware Update Main Board

#### 5) Firmware Update Web IC

#### 6) Firmware Update Front Panel

## 6. COM PORT SELECTION

Click "  " button to select COM Port

## 7. CONNECTION STATUS

Connected Status:

**Connect**

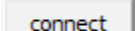
Connecting Status:

**Connecting...**

Disconnected Status:


**Disconnected**

## 8. CONNECT/DISCONNECT

Click this button "  " to change connection status




## 9. RS-232

Click “” button to switch to RS-232 function.



If RS-232 is connected, the button emit to show that RS-232 is connected

## 10. ETHERNET

Click “” button to switch to Ethernet function



If Ethernet is connected, the button will emit to show that ethernet is connected

# OPERATION CONTROL - WEB INTERFACE CONTROL

The default IP address: 192.168.1.111

Account: admin

Password: matrix



1. I/O Routing Button
2. Setting Button
3. EDID Button

## 1) I/O Routing

1) Refresh Mapping



2) I/O:

a) Select the input

3) Save Mapping:

a) Select Mapping(1-8)

b) Click "Save" button to save current mapping

4) Recall Mapping:

a) Select Mapping(1-8)

b) Click "Recall" button to recall previous mapping which are saved

The screenshot shows the VANC0 web interface for the '4x4 Matrix' configuration. At the top, there is a navigation bar with 'ROUTING', 'SETTINGS', and 'EDID' buttons. The 'ROUTING' button is selected. Below the navigation bar, there is a 'Refresh Mapping' button (a square with a circular arrow and 'R'). The main content area is titled 'I/O' and contains five rows of output configurations:

1. Output1	Input1
2. Output2	Input1
3. Output3	Input1
4. Output4	Input1
5. Output All	Input1

Below the table, there are two sections for saving and recalling mappings:

**Save Mapping**

To: Mapping1 [Save]

**Recall Mapping**

From: Mapping1 [Recall]

## 2) Settings

1) Rename I/O:

- a) Rename output name
- b) Rename input name

2) Rename Mapping:

- a) Rename Mapping name

3) Password change: (the password has to be 6 characters)

- a) Key in "old password"
- b) Key in "new password"
- c) Key in "new password" again

The screenshot shows the 'SETTINGS' tab of a control interface. It is divided into three sections:

- Rename I/O:** A table with two columns: 'Output / Name' and 'Input / Name'. It lists four rows, each with an 'Output' field and an 'Input' field (Input1-4). A 'Send' button is at the bottom right.
- Rename Mapping:** A table with one column: 'Configuration / Name'. It lists eight rows, each with a 'Mapping' field (Mapping1-8). A 'Send' button is at the bottom right.
- Password Changing:** Three text input fields labeled 'Old Password', 'New Password', and 'New Password Confirm'. A 'Submit' button is at the bottom right.

## 3) EDID

1) Learn EDID from Default

- a) Select Default EDID(1-8 Default EDID)
- b) Select Input
- c) Click "Send" button to learn default EDID

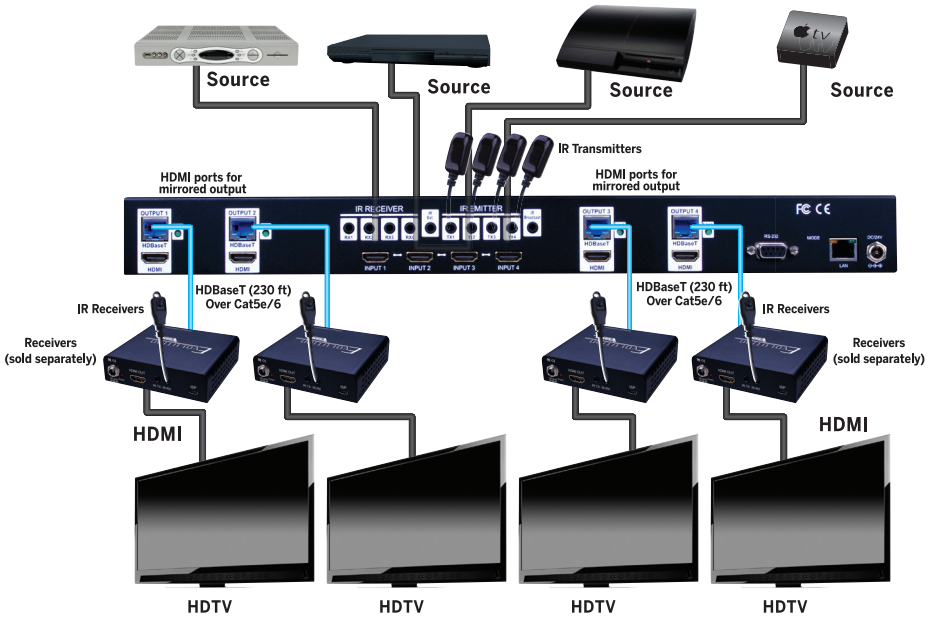
2) Learn EDID From Display

- a) Select output
- b) Select Input
- c) Click "Send" button to learn display EDID

The screenshot shows the 'EDID' tab of a control interface. It contains two sections:

- Learn EDID From Default:** A 'From' dropdown menu set to '1.Full-HD-24bit 2D & 2ch' and a 'To' dropdown menu set to 'Input 1'. A 'Send' button is to the right.
- Learn EDID From Display:** A 'From' dropdown menu set to '1.HDMI Output 1' and a 'To' dropdown menu set to 'Input 1'. A 'Send' button is to the right.

## CONNECTION DIAGRAM



## CONNECT AND OPERATE

1. Connect up to 4 sources such as a Blu-Ray Player, game console, A/V Receiver, Cable or Satellite Receiver, etc. to the HDMI inputs on the unit. Do not hotplug! Insert and extract cables carefully with the power SWITCHED OFF. Connecting and disconnecting while the unit is powered can result in damage to circuitry.
2. Connect the output UTP ports and/or HDMI output ports, starting with output 1, to the included display receivers (using well terminated or pre-terminated Cat5e/6 cables no longer than 230 ft)
3. If utilizing UTP, connect the output HDMI ports of the display receivers to high-definition displays such as an HDTV or HD projector that use HDMI inputs. Note that high-speed HDMI cables are recommended for the distances that are required for each connection.
4. Plug in IR blasters to the back of the Matrix Selector Switcher unit (IR TX), the transmitters are labeled IR TX, place in front of the IR receiver of the source, ensure that each emitter is placed in front of the IR receiver eye. Double-sided adhesive tape provided.
5. Plug in IR receivers to the port of the display receiver baluns (IR RX), the receivers are labeled IR RX, use provided double-sided adhesive tape to stick emitters at each display at a desired place that will receive a remote signal.
6. For power, plug in the source first, followed by the Matrix Selector Switcher (power supply included), followed by each output connected.
7. Power on each device in the same sequence.

At this point each display connected should display the assigned source (input 1 at default when powered on initially), scroll through each of the sources on each display to ensure everything is in working order. Use included IR remote at each display receiver to test switching function between sources and IR function itself. If a display is having difficulty receiving a signal, access the display's menu and adjust the resolution (lowest to highest until signal is displayed). A 24 Hz vertical refresh rate may work better than 60 Hz or higher. If the IR remote function is not responding, check the emitters to ensure they are placed correctly and are plugged into the correct IR jacks on the Matrix Selector Switcher unit.

## IR PASS-THROUGH

IR Extenders



IR Blaster TX



IR Receiver RX

### IR BLASTER (EV-IRTX)

Plug IR Blaster into IR TX port of matrix unit (EVMX4004); place blaster in front of the IR eye of the corresponding source.

### IR RECEIVER (EV-IRRX)

Plug IR Receiver into IR RX port of matrix unit (EVMX4004); place receiver at or near corresponding display.

1. IR Signal
2. Grounding



IR Blaster TX



1. IR Signal 20-60 kHz)
2. Grounding
3. Power



IR Receiver RX



# NOTICE

1. Vanco High Speed HDMI cables are strongly recommended for use with this product to ensure best results.
2. Incorrect placement of IR Blaster and Receiver may result in the failure of the unit. Please check carefully before plugging in the IR accessories into the respective IR sockets.
3. If your HDMI display has multiple HDMI inputs, it is found that the first HDMI input [HDMI input # 1] generally can produce better transmission performance among all HDMI inputs.



## Performance Guide for HDMI over Category Cable Transmission

Performance rating		Type of category cable		
Wiring	Shielding	CAT5	CAT5e	CAT6
Solid	Unshielded (UTP)	***	****	*****
	Shielded (STP)	***	***	****
Stranded	Unshielded (UTP)	*	**	**
	Shielded (STP)	*	*	**
Termination		Please use EIA/TIA-568-B termination (T568B) at any time		

## TROUBLE-SHOOTING

1. Best results are usually achieved when the source and display resolutions are the same. If resolutions differ, the extenders will try to adjust the signal to match the resolution of the HDTV with the lowest resolution. This will result in a picture with a lower resolution on the other HDTV sets.
2. If you do not get audio and video, access the “setup” menu on the TV to adjust the audio and video settings. If the HDMI control circuit cannot establish a handshake, then there usually will be no audio or video in addition to a blue or black screen with a statement similar to “this protocol not supported” or “weak signal”.
3. If the above mentioned messages display, reset the receiver by disconnecting the power supply. You can also disconnect all of the HDMI and power cables, wait 15 minutes for any voltages to decay and then reconnect all of the cables.
4. If you are still encountering issues, attempt the “hot-plug concept. With all of the HDMI cables disconnected, turn on the source and plug in the HDMI cable into its output, then power up the Vanco unit and plug the HDMI cable into its input, finally turn on the display and plug the HDMI cable from the receiver into it. This activates all of the devices in corresponding order and results in a signal being plugged into a device that is on and will attempt to connect the signal.
5. Most of the major source and display manufacturers employ a proprietary control channel to communicate between devices from the same manufacturer. Sometimes this can interfere with the HDMI control circuit or the authentication of the signal. Call the manufacturer if you experience this issue. Sometimes a player, an audio/video receiver, or a cable/satellite box may not have the latest software update, usually this can be downloaded from the manufacturer’s website.
6. If you have problems with the IR control circuit, make sure that the IR RX pigtail is plugged into extender receiver and pointed at the display, and the IR TX pigtail is attached to the extender sender and pointed at the source.



## SAFETY AND NOTICE

The EVMX4004 has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the EVMX4004 should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Follow all instructions and warnings marked on this unit.
- Do not attempt to service this unit yourself, except where explained in this manual.
- Provide proper ventilation and air circulation and do not use near water.
- Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.
- Use only the power adapter and power cords and connection cables designed for this unit.
- Do not use liquid or aerosol cleaners to clean this unit.
- Always unplug the power to the device before cleaning.

## LIMITED WARRANTY

With the exceptions noted in the next paragraph, Vanco warrants to the original purchaser that the equipment it manufactures or sells will be free from defects in materials and workmanship for a period of two years from the date of purchase. Should this product, in Vanco's opinion, prove defective within this warranty period, Vanco, at its option, will repair or replace this product without charge. Any defective parts replaced become the property of Vanco. This warranty does not apply to those products which have been damaged due to accident, unauthorized alterations, improper repair, modifications, inadequate maintenance and care, or use in any manner for which the product was not originally intended.

Items integrated into Vanco products that are made by other manufacturers, notably computer hard drives and liquid crystal display panels, are limited to the term of the warranty offered by the respective manufacturers. Such specific warranties are available upon request to Vanco. A surge protector, power conditioner unit, or an uninterruptible power supply must be installed in the electrical circuit to protect against power surges.

If repairs are needed during the warranty period the purchaser will be required to provide a sales receipt/sales invoice or other acceptable proof of purchase to the seller of this equipment. The seller will then contact Vanco regarding warranty repair or replacement.

## TECHNICAL SUPPORT

In case of problems, please contact Vanco Technical Support by dialing 1-800-626-6445. You can also email technical support issues to [info@vanco1.com](mailto:info@vanco1.com)

When calling, please have the Model Number, Serial Number (affixed to the bottom of the unit) and Invoice available for reference during the call.

Please read this Instruction Manual prior to calling or installing this unit, since it will familiarize you with the capabilities of this product and its proper installation.

All active electronic products are 100% inspected and tested to insure highest product quality and trouble-free installation and operation. The testing process utilizes the types of high-definition sources and displays typically installed for entertainment and home theater applications.

## LIABILITY STATEMENT

Every effort has been made to ensure that this product is free of defects. The manufacturer of this product cannot be held liable for the use of this hardware or any direct or indirect consequential damages arising from its use. It is the responsibility of the user and installer of the hardware to check that it is suitable for their requirements and that it is installed correctly. All rights are reserved. No parts of this manual may be reproduced or transmitted by any form or means electronic or mechanical, including photocopying, recording or by any information storage or retrieval system without the written consent of the publisher.

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