GefenPRO

1080P PROGRESSIVE

dvi digital visual interface

8x8 DVI KVM Dual Link Matrix w/ Push Button Control

GEF-DVIKVM-848DL-PB

User Manual

www.gefenpro.com

ASKING FOR ASSISTANCE

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Technical Support:

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Notice
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any accompanying documentation without prior written notice.

8x8 DVI KVM Dual Link Matrix with Push Button Control
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CONTENTS

Congratulations on your purchase of the 8x8 DVI KVM Dual Link Matrix. Your complete satisfaction is very important to us.

GefenPRO

In the realm of video distribution, certain features are invaluable in a commercial or broadcast environment. Accommodations such as a built-in power supply and flat black rack-mount enclosures set GefenPRO apart from our traditional products. Complex distribution units allow for professional DVI, 3G-SDI, and HDMI signals to be routed and converted easily and seamlessly, while being backed up by a renowned and dependable technical support team. Gefen invites you to explore the GefenPRO product line and hopes that you find the solution that fits your needs.

The GefenPRO 8x8 DVI KVM Dual Link Matrix

Easily switch eight cross-platform DVI Dual Link computers to eight DVI Dual Link displays with our 8x8 DVI KVM Dual Link Matrix. This product provides a simple, reliable and highly effective method of creating multiple computer workstations, with each workstation capable of accessing any one of the computers or sources at any time by remote control. Eight stations can be set up locally or extended with a Gefen extender. When used with computers, USB and Audio matrix control signals follow the DVI Dual Link input for organized signal routing.

How It Works

The 8x8 DVI KVM Dual Link Matrix has eight Dual Link DVI inputs and eight Dual Link DVI outputs. Simply connect eight computers' DVI Dual Link video ports to the Matrix's inputs, then connect eight DVI Dual Link displays to the Matrix's outputs. USB keyboard and mouse signals and analog audio, once connected, follow the selected DVI Dual Link input for each computer.

**READ THESE NOTES BEFORE INSTALLING OR
OPERATING THE 8X8 DVI KVM DUAL LINK MATRIX WITH PUSH
BUTTON CONTROL**

- The 8x8 DVI KVM Dual Link Matrix will not pass HDCP content.

- There is no internal scaling in the 8x8 DVI KVM Dual Link Matrix. All of the attached monitors must be able to display the resolutions output by the source devices. For maximum compatibility it is recommended that only one compatible/common resolution be used by all of the source devices.

- Advanced EDID features and IP configuration features are accessible via the RS-232 serial communication port. See page 24 for more information.

- Routing and EDID features can be accessed via a web browser using the IP control feature, built into the 8x8 DVI KVM Dual Link Matrix.

- **IMPORTANT:** If the unit is installed in a closed or multi-rack assembly, do not block the ventilation holes of the enclosure.

Features

- Supports resolutions up to 2560x1600

- Front panel control buttons for local switching

- Status LCD (shows routing status)

- Advanced EDID management permits uploading of custom internal or external EDID settings

- Serial RS-232 interface for remote control via a computer or control automation devices

- IP Control

- Output masking command

- IR Remote Control

- IR Extender

- Power On/Off switch

- Internal power supply

- Grounding Terminal

- Standby mode

- Supports DDWG standards for DVI

- Rack mountable

Package Includes

(1) GefenPRO 8x8 DVI KVM Dual Link Matrix
(8) 6 ft. DVI Dual Link cables (M-M)
(1) IR Remote Control Unit
(1) AC Power Cord
(1) User Manual

PANEL LAYOUT

Front Panel
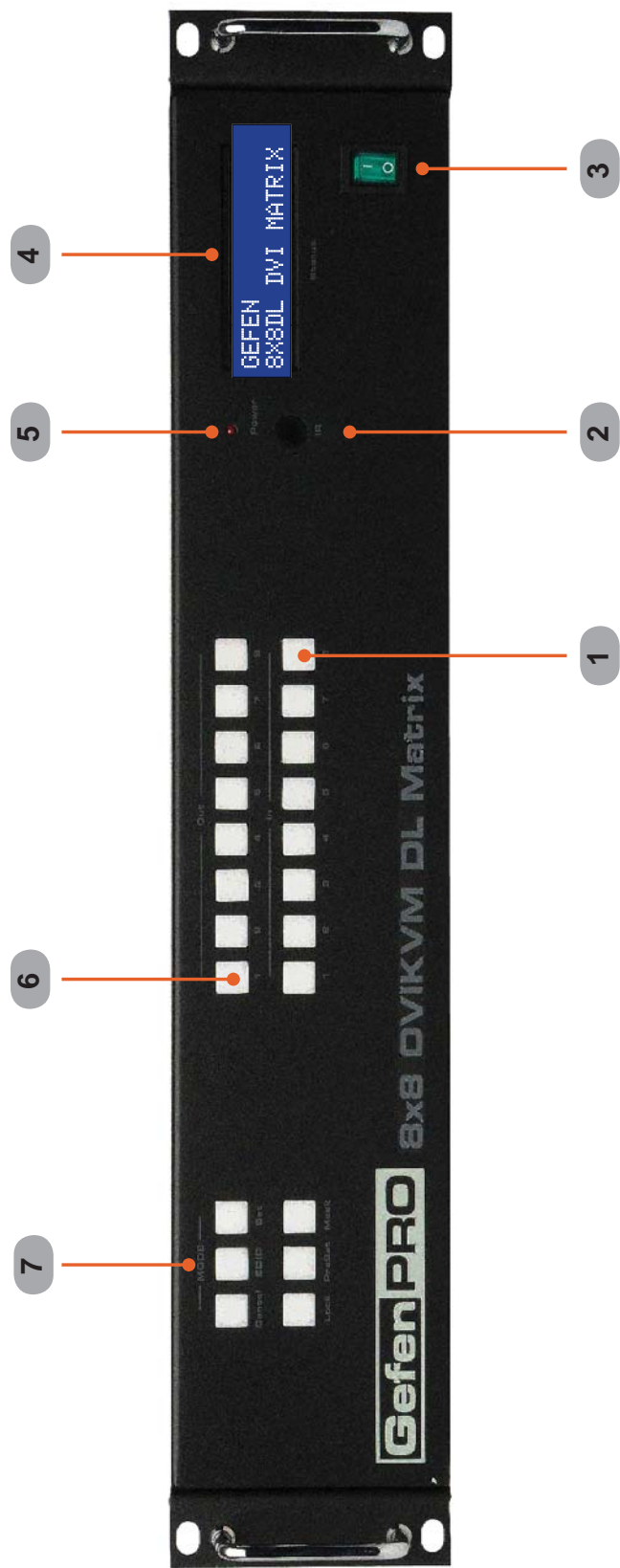
PANEL DESCRIPTIONS

Front Panel

1 *Input Buttons (1 - 8)*
Used for routing an Input to an Output. Each of these buttons represents an Input. See page 14 for more information on routing DVI sources.

2 *IR Window*
Receives signals from the IR Remote Control unit.

3 *Power Switch*
Turn the power on or off using this switch.

4 *LCD Display*
Displays the current routing status of the Matrix and is also used to manage source routing.

5 *Power Indicator*
This LED indicator will glow bright red when the power is turned on.

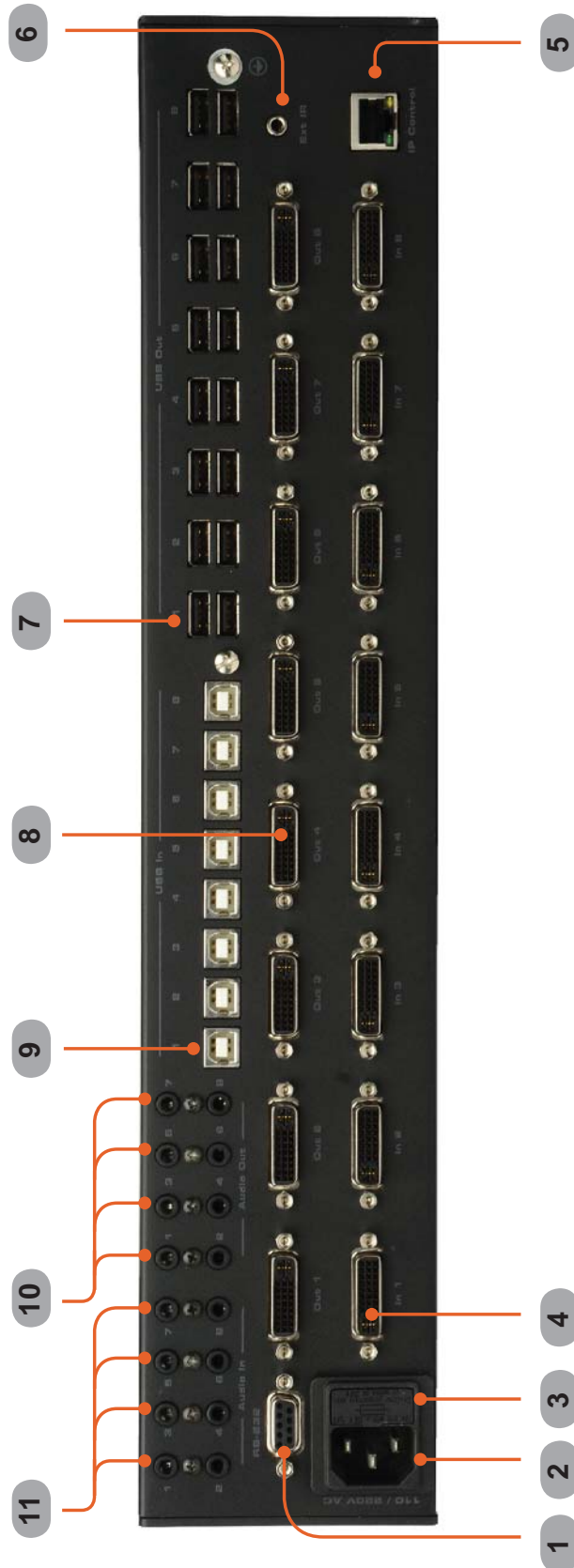**6** *Output Buttons (1 - 8)*
Used for routing an Input to an Output. Each of these buttons represents an Output. See page 14 for more information on routing DVI sources.

7 *Control Buttons*
These buttons are used to control other features on the product. See pages 14 - 22 for details.

Back Panel

Back Panel

1   RS-232 Serial Port
Connects to the RS-232 control device. The 8x8 DVI KVM Dual Link Matrix may be controlled remotely using this port. See pages 23 - 37 for details.

2   AC 110 / 220V (50/60 Hz) Power Cable Receptacle
Connect the included AC power cord from this receptacle to an available electrical outlet.

3   Fuse Drawer
Each power receptacle houses a fuse drawer. Within each fuse drawer are two (2) 250 V fuses. One fuse is active and the other is a spare.

4   DVI Input Ports (1 - 8)
Connect DVI source devices to these ports.

5   IP Control Interface
Connect to this port to control the 8x8 DVI KVM Dual Link Matrix using IP Control. See page 38 for more information.

6   IR Extender Port
Connect an IR extender cable to this port.

7   USB Output Ports (16)
Connect USB devices to these ports (two outputs per channel).

8   DVI Output Ports (1 - 8)
Connect DVI monitors to these ports.

9   USB Input Ports (1 - 8)
Connect USB source devices to these ports

10   Audio Output Connector (3.5 mm Mini-Stereo)
Connect audio devices to these ports using 3.5 mm mini-stereo cables.

11   Audio Input Connectors (3.5 mm Mini-Stereo)
Connect audio output devices to these ports using 3.4 mm mini-stereo cables.

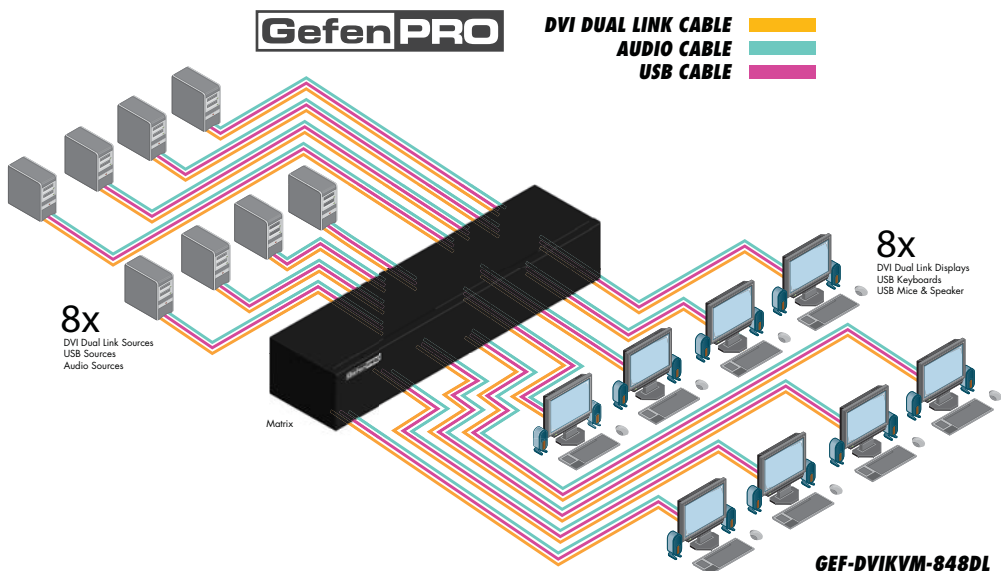**How to Connect the GefenPRO 8x8 DVI KVM Dual Link Matrix**

1. Connect up to 8 DVI source devices to the DVI inputs on the rear panel of the GefenPRO 8x8 DVI KVM Dual Link Matrix using the supplied DVI cables.

2. Connect up to 8 DVI monitor to the DVI outputs on the rear panel of the GefenPRO 8x8 DVI KVM Dual Link Matrix with user-supplied DVI cables.

3. Connect the included AC power cable to the power receptacle on the rear panel of the GefenPRO 8x8 DVI KVM Dual Link Matrix. Connect the opposite end of the cable into an available electrical outlet.

How to Operate the GefenPRO 8x8 DVI KVM Dual Link Matrix

The GefenPRO 8x8 DVI KVM Dual Link Matrix offers a number of control options. The following methods can be used to control basic routing functions of the GefenPRO 8x8 DVI KVM Dual Link Matrix:

1. Front Panel Control Buttons - Pages 14 and 22

2. IR Remote Control - Pages 10 - 13

3. RS-232 Serial Control - Pages 23 - 37

4. IP Control - Pages 38 - 45

Wiring Diagram for the GefenPRO 8x8 DVI KVM Dual Link Matrix

GefenPRO

DVI DUAL LINK CABLE
AUDIO CABLE
USB CABLE

8x
DVI Dual Link Displays
USB Keyboards
USB Mice & Speaker

8x
DVI Dual Link Sources
USB Sources
Audio Sources

Matrix

GEF-DVIKVM-848DL

⚠ **Attention:** This product should always be connected to a grounded electrical socket.

Main Display

The **Main Display** of the GefenPRO 8x8 DVI KVM Dual Link Matrix is a 16 character 2 line display. This display will show the standby screen and will also be used to aid in performing routing commands. When the unit is powered on, the following screen is displayed:
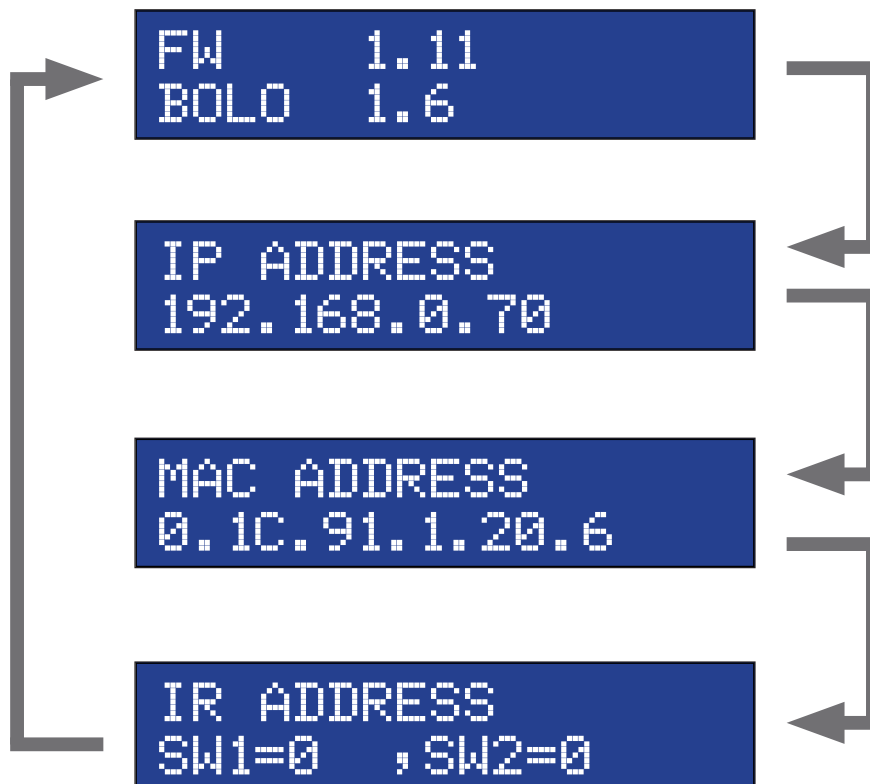
```
EDID LOADING
PLEASE WAIT
```

After a few moments, the Standby Screen is displayed. The Standby Screen is shown below:
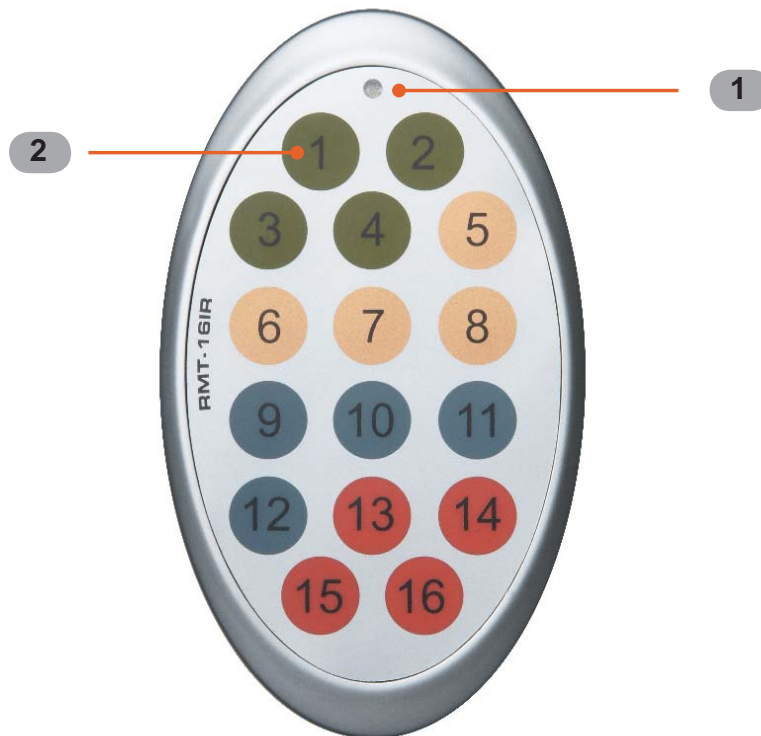
```
GEFEN
8X8DL DVI MATRIX
```

Displaying Additional Information

Pressing the Cancel button, consecutively, will cycle through screens displaying the firmware version and boot loader version, IP address, MAC address, and the IR remote channel:

```
FW     1.11
BOLO   1.6
```

```
IP ADDRESS
192.168.0.70
```

```
MAC ADDRESS
0.1C.91.1.20.6
```

```
IR ADDRESS
SW1=0   ,SW2=0
```

RMT-16IR
Remote Control Unit

1   *Activity Indicator*
    This LED will be activated momentarily each time a button is pressed.

2   *Monitor and Source Selection Buttons (1 - 16)*
    These buttons are used to select which source is routed to a monitor.

See page 13 for information on using the IR Remote Control unit.

IR REMOTE CONTROL UNIT INSTALLATION

Installing the RMT-16IR Battery

1. Remove the battery cover on the back of the IR Remote Control unit.

2. Insert the included battery into the open battery slot. The positive (+) side of the battery should be facing up.

3. Replace the battery cover.

The Remote Control unit ships with two batteries. One battery is required for operation and the other battery is a spare.
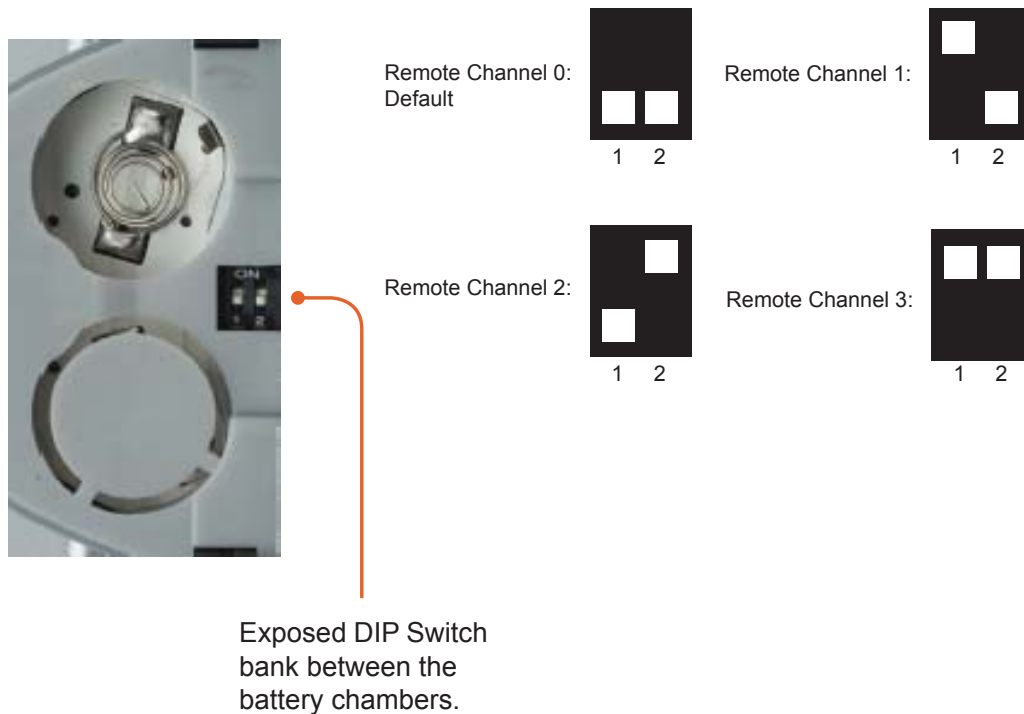
Empty Battery Slot

⚠️ **CAUTION:** Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

How to Resolve IR Code Conflicts

In the event that IR commands from other remote controls interfere with the supplied IR Remote Control unit, changing the IR channel on the IR Remote Control unit will fix the problem. The IR Remote Control unit has a bank of DIP switches used for setting the IR channel.

The DIP switch bank is located underneath the battery cover.

Remote Channel 0:
Default

1   2

Remote Channel 1:

1   2

Remote Channel 2:

1   2

Remote Channel 3:

1   2

Exposed DIP Switch
bank between the
battery chambers.

It is important that the IR channel on the Remote Control unit, matches the IR channel set on the 8x8 DVI KVM Dual Link Matrix.   For example, if both DIP switches on the IR Remote Control unit are set to IR channel 0 (both DIP switches down), then the 8x8 DVI KVM Dual Link Matrix must also be set to IR channel 0. See page 35 on how to change the IR channel on the 8x8 DVI KVM Dual Link Matrix.

USING THE IR REMOTE CONTROL UNIT

IR Remote Control Key Mapping

Each input and output on the 8x8 DVI KVM Dual Link Matrix is represented by a button on the IR Remote Control unit. The table below lists the corresponding inputs and outputs.

Remote Button	Monitor / Source
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8

Routing Sources using the IR Remote Control unit

Issuing a routing command is a two step process. The first step is to select the monitor where the source will be routed. The second step is to select the source.

Example 1
Route the source device connected to In 7 to the monitor connected to Out 3.

1. Press button 3 (monitor 3) on the IR remote control unit.

2. Press button 7 (source 7) on the IR remote control unit.

The source connected to In 7 will be routed to the monitor connected to Out 3.

Example 2
Route the source device connected to In 1 to the monitor connected to Out 1.

1. Press button 1 (monitor 1) on the IR remote control unit.

2. Press button 1 (source 1) on the IR remote control unit.

The source connected to In 1 will be routed to the monitor connected to Out 1.

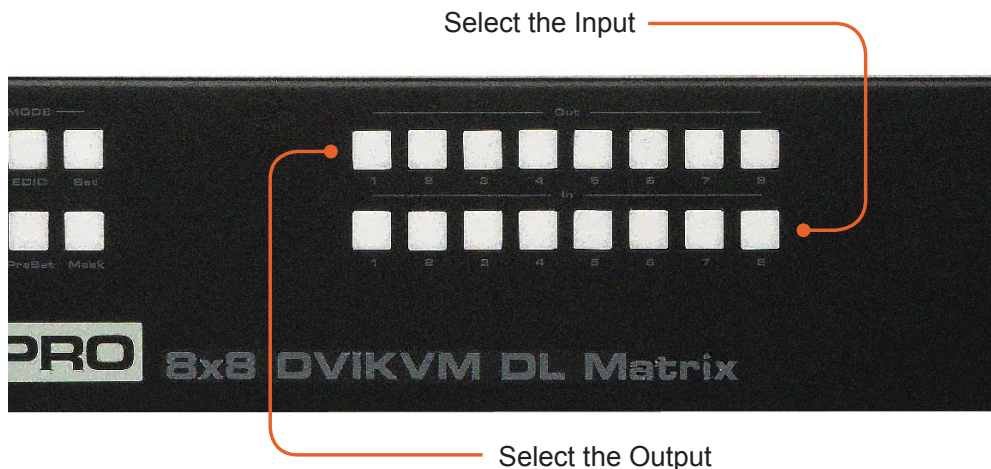## Routing Sources

In order to change current routing state:

1   Press Set Button to activate Routing Mode.

Press the Set button

2   Press any Input on the bottom row of buttons (1 - 8). The system indicates the current routing status.

Select the Input

Select the Output

3   Press the desired Output button. One or more Output buttons may be selected.

4   Press the Set button to complete the operation. The system will remain in Routing Mode.

System Lock Mode

Locking the Matrix prevents changes to any of the Matrix settings. This feature is useful in case any of the front panel buttons are pressed by accident. Locking the Matrix also prevents changes using the IR Remote Control Unit.

1   Press the Lock button to activate System Lock Mode.

Press the Lock button
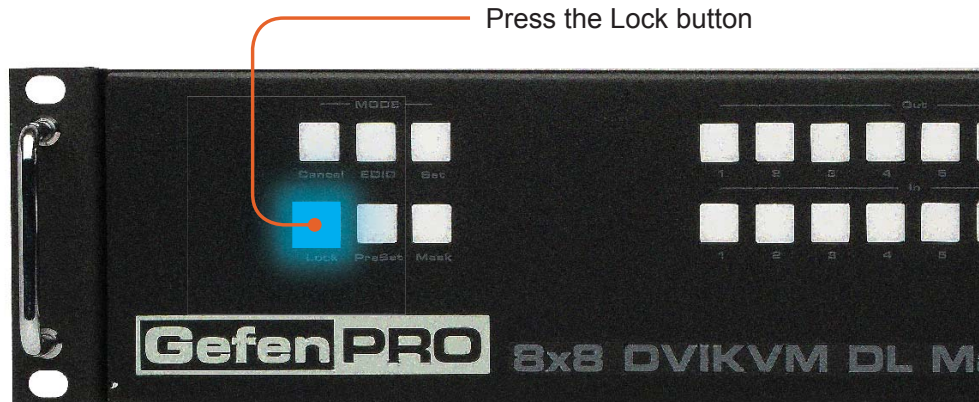
2   Press the Lock button a second time to deactivate System Lock Mode.
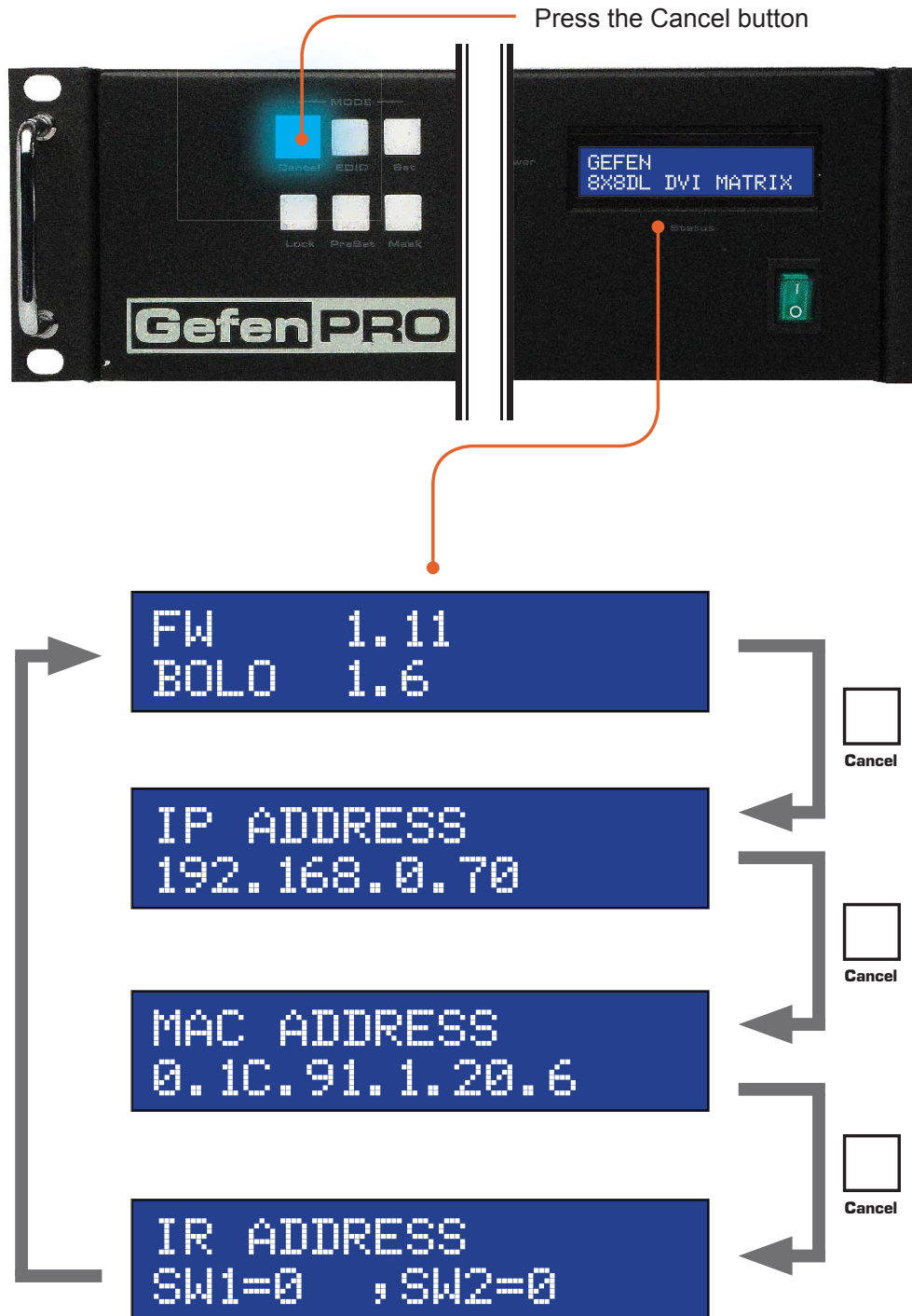
Returning to Standby Mode

Press the Cancel button, while in any mode, to return to the Standby Mode screen.

Press the Cancel button

15

Cycling between Information Screens

Press the Cancel button, while in Status Check Mode, to cycle through the Information Screens.

Press the Cancel button


```
GEFEN
8X8DL DVI MATRIX
```

```
FW      1.11
BOLO    1.6
```
Cancel

```
IP ADDRESS
192.168.0.70
```
Cancel

```
MAC ADDRESS
0.1C.91.1.20.6
```
Cancel

```
IR ADDRESS
SW1=0   ,SW2=0
```

Activating / Deactivating Standby Mode:

Press and hold the Cancel button for 5 seconds to activate or deactivate Standby Mode.

Hold for 5 seconds

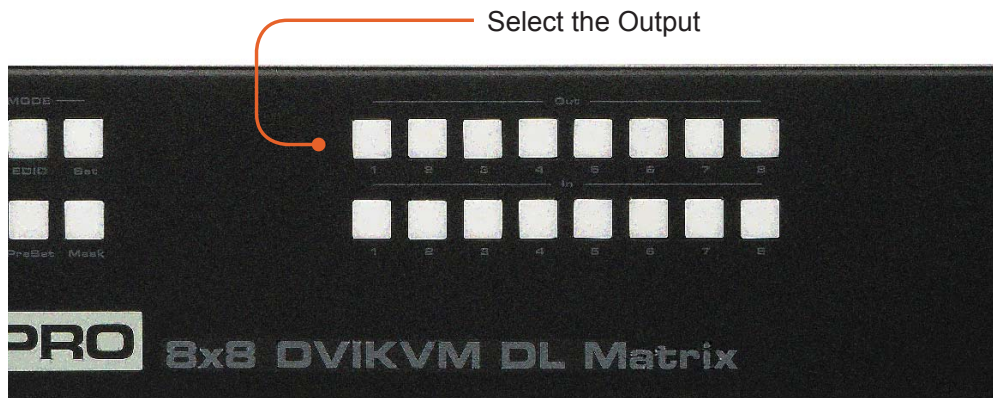

Saving the Downstream EDID to Local Memory:

1   Press EDID button *once* to activate DSTOLO (Downstream To Local) Mode.

Press EDID button *once*

2   Press the Output button to select the EDID data source.

Select the Output

3   Press the Input button to select EDID data destination.

Select the Input
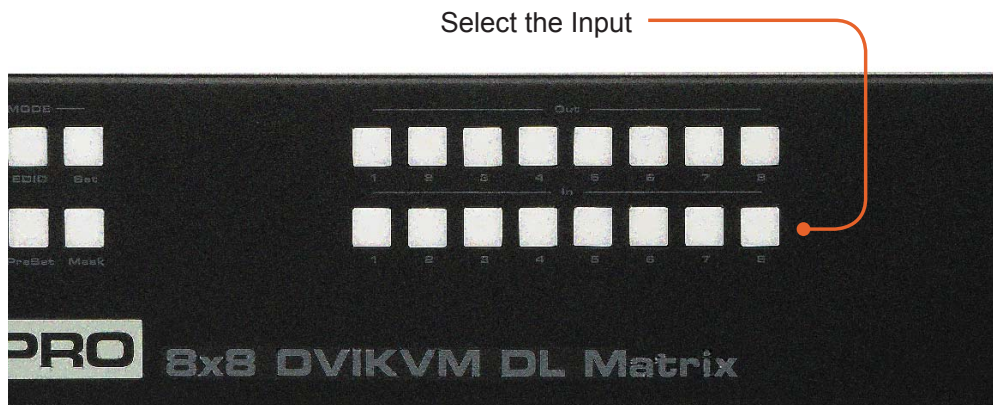
4   Press the Set button to complete the operation. The system will remain in DSTOLO mode.

Press the Set button

Saving the default EDID to Local Memory

1   Press the EDID button *twice* to activate DETOLO (Default EDID To Local)
    Mode.
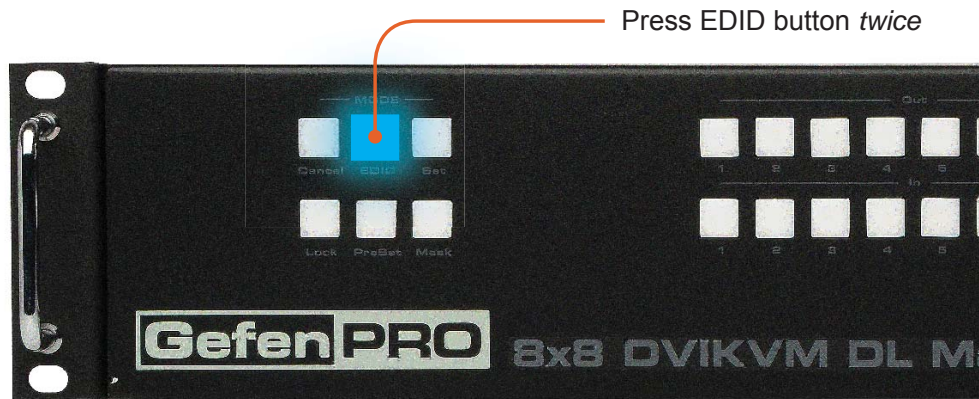
Press EDID button *twice*

2   Press the Input button to select EDID data destination.

Select the Input

3   Press the Set button to complete the operation. The system will remain in
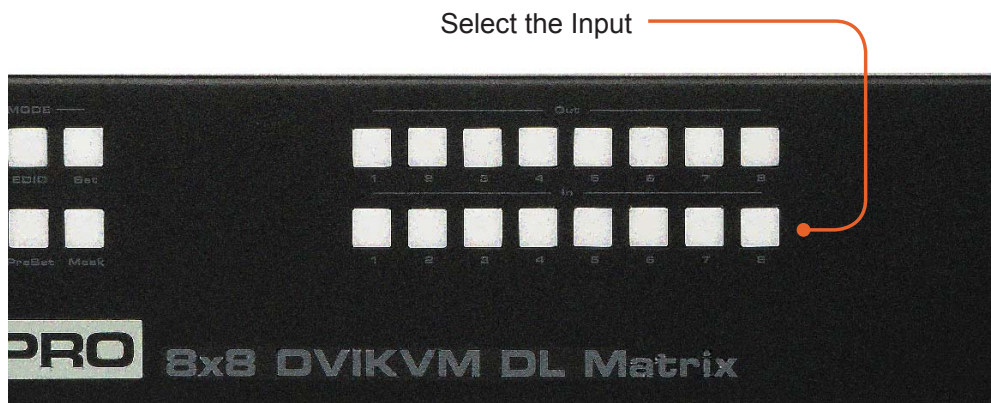   DETOLO mode.

Press the Set button

Saving the current Routing State

1   Set the routing state (see page 14), then press the PreSet button *twice* to activate Preset Mode.

Press PreSet button *twice*
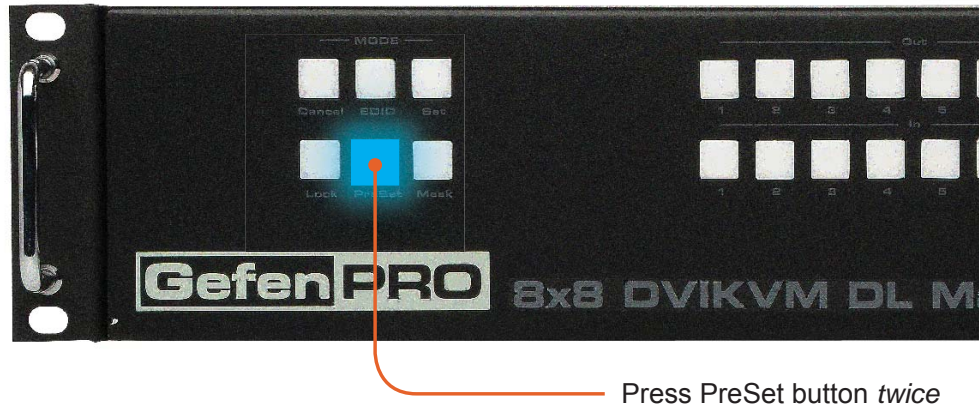
2   Press an Input button (1 - 8) to store the current routing state.
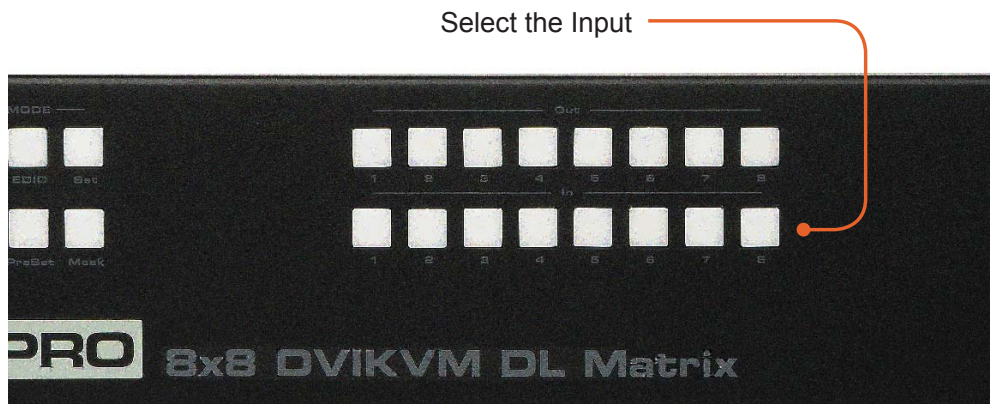
Select the Input

3   Press the Set button to complete the operation. The system will remain in Save Current Preset Mode.

Press the Set button

Recalling a Routing State

1   Press the PreSet button *once* to activate Recall Preset Mode.

Press PreSet button *twice*

2   Press the Input button (1 - 8) of the routing state to be recalled.
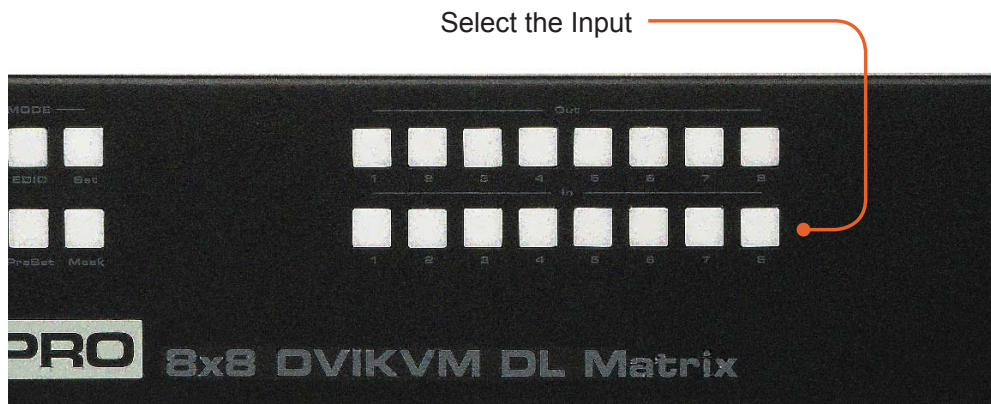
Select the Input

3   Press the Set button to complete the operation. The system will remain in Recall Saved Set Mode.

Press the Set button

Masking Outputs

Masking prevents the output device (display, etc) from receiving an output signal, instead of powering-down the output device. The masking process is identical for masking or unmasking outputs.

1   Press the Mask button to activate Mask Mode.

Press the Mask button

2   Select the Output to be masked.
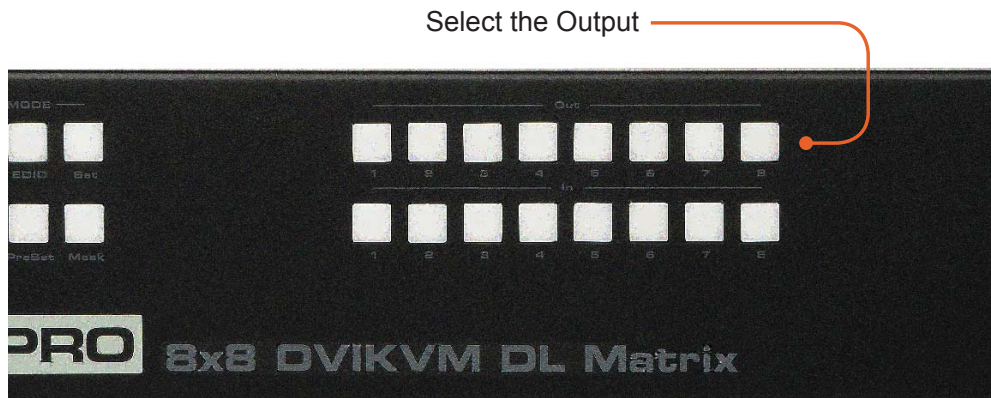
Select the Output

3   Press the Set button to complete the operation. The system will remain in Save Current Preset Mode.

Press the Set button
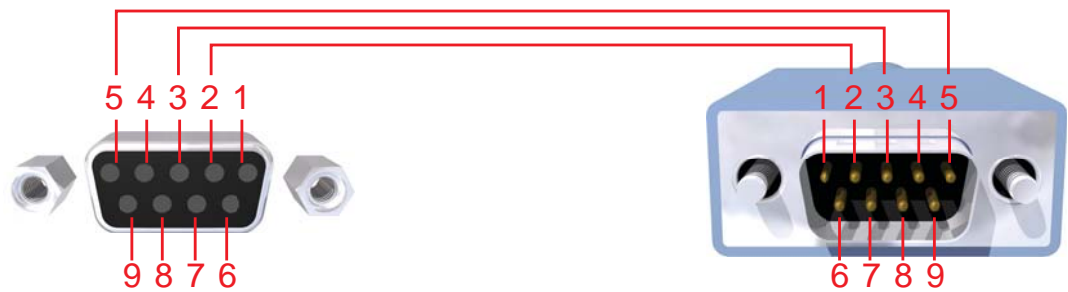
Only Pins 2 (RX), 3 (TX), and 5 (Ground) are used on the RS-232 serial interface

RS232 Settings

Bits per second 19200

Data bits 8

Parity .... None

Stop bits 1

Flow Control .... None

RS-232 Features

RS-232 remote functions are used to control of this product's features. Features include input to output routing, EDID storage, EDID management, etc. These functions are available only through the use of the serial port.

Functions Syntax

The syntax for each function is always the same:

Character as the start flag → Function name → Space (_) as function name end flag → Parameter 1 → Space → Parameter n → Carriage Return (\r) →

Sample:

#FunctionName_param1_param2_param3_param4...\r

Syntax is NOT case sensitive.

EDID Management

Function	Description
#EDIDDSTOLO	Read downstream EDID and stores into a Local EDID
#EDIDDSTOBA	Read downstream EDID and stores in EDID Bank
#EDIDBATOLO	Read downstream EDID and stores in any Local Input
#EDIDDETOLO	Sets Local EDID to Default EDID
#LOCKEDID	Secures Local EDID
#LOEDIDTOLO	Load EDID file using serial port to one of the local memories
#PRLOEDID	Read Input Local EDID and sends to serial port
#PRDSEDID	Read downstream EDID and sends to serial port
#PRBAEDID	Read EDID from an EDID bank and sends to serial port
#PREDIDST	Prints EDID details

#EDIDDSTOLO Function

The #EDIDDSTOLO function reads the downstream EDID and stores it to a Local EDID input.

Syntax:

```
#EDIDDSTOLO param1 param2 [param3...param9]
```

Parameters:

param1	A downstream monitor	[1 - 8]
param2	Input list	[1 - 8]

Notes:

If *param2 = 0*, then the downstream EDID is stored to all 8 DVI inputs.

Examples:

```
#EDIDDSTOLO 2 1 2 3 4 5     inputs 1-5 use display 2 EDID

#EDIDDSTOLO 3 0             all inputs use display 3 EDID
```

#EDIDDSTOBA Function

The #EDIDDSTOBA function reads the downstream EDID and stores it to a specified EDID bank.

Syntax:

```
#EDIDDSTOBA param1 param2
```

Parameters:

param1	A downstream monitor	[1 - 8]
param2	EDID bank offset	[1 - 5]

#EDIDBATOLO Function

The #EDIDBATOLO function reads the downstream EDID and stores it to any local input.

Syntax:

```
#EDIDBATOLO param1 param2 [param3...param9]
```

Parameters:

param1	EDID bank offset	[1 - 5]
param2	Input	[1 - 8]

Notes:

If *param2 = 0*, then the EDID in the specified bank is copied to all eight inputs.

#EDIDDETOLO Function

The #EDIDDETOLO function stores the Default EDID (640x480) in the specified Local EDID inputs.

Syntax:

```
#EDIDDETOLO param1 param2 param3...param9
```

param1	Input	[1 - 8]

Notes:

If *param1 = 0*, then all 8 DVI inputs will be set to the Default EDID.

#LOCKEDID Function

The #LOCKEDID function secures the Local EDID and disables the automatic loading of the downstream EDID after the Matrix is powered on.

Syntax:

```
#LOCKEDID param1
```

Parameters:

param1   Input   [0 - 1]

Value	Meaning
0	Disable
1	Enable

#LOEDIDTOLO Function

The #LOEDIDTOLO function loads an external EDID via RS-232 to any Local EDID input bank.

Syntax:

```
#LOEDIDTOLO param1 param2 param3
```

Parameters:

param1   Input   [1 - 8]

param2   EDID size   [1 - 2]

Value	Meaning
1	128 byte EDID
2	256 byte EDID

param3   eco   [0 - 1]

Notes:

Set *param1* to a value of 0 in order to specify all inputs. When using HyperTerminal, *param3* must be set to 1.

#PRDSEDID Function

The #PRDSEDID function reads the downstream EDID and sends it to the serial port.

Syntax:

```
#PRDSEDID param1
```

Parameters:

param1   A downstream monitor   [1 - 8]

#PRLOEDID Function

The #PRLOEDID function reads the local EDID of a specified input and spools it to the serial port.

Syntax:

```
#PRLOEDID param1
```

Parameters:

param1   A specified Input   [1 - 8]

#PRBAEDID Function

The #PRBAEDID function reads the EDID file from the specified bank and sends to serial port.

Syntax:

```
#PRBAEDID param1
```

Parameters:

param1   Input   [1 - 5]

#PREDIDST Function

The #PREDIDST function reads the downstream EDID. This function displays a table containing details relating to the Local EDID and the monitor name.

Syntax:

```
#PRDSEDID
```

Parameters:

None

IP Configuration

Function	Description
#PRWEBADD	Displays the Web configuration
#RSTIP	Set IP configuration to default
#SIPADD	Specifies a new IP address
#SNETMASK	Specifies a new net mask
#SGATEWAY	Specifies the new gateway
#SPORT	Specifies a new port

#PRWEBADD Function

The #PRWEBADD displays the IP address, net mask, gateway, MAC address, and port on the screen.

Syntax:

```
#PRWEBADD
```

Parameters:

None

#RSTIP Function

The #RSTIP function sets the IP configuration to the default settings.

Syntax:

```
#RSTIP
```

Parameters:

None

Notes:

A reboot is required after restoring the default IP settings.

#SIPADD Function

The #SIPADD function specifies a new IP address.

Syntax:

```
#SIPADD param1 param2 param3 param4
```

Parameters:

param1	IP address	[0 - 255]
param2	IP address	[0 - 255]
param3	IP address	[0 - 255]
param4	IP address	[0 - 255]

Notes:

The default IP address is 192.168.0.70. A reboot is required after the new IP address is set.

#SNETMASK Function

The #SNETMASK function specifies a new subnet mask.

Syntax:

#SNETMASK param1 param2 param3 param4

Parameters:

param1	IP address	[0 - 255]
param2	IP address	[0 - 255]
param3	IP address	[0 - 255]
param4	IP address	[0 - 255]

Notes:

The default subnet mask is 255.255.255.0. A reboot is required after the new subnet mask has been set.

#SGATEWAY Function

Specifies the new IP gateway (router) address.

Syntax:

#SGATEWAY param1 param2 param3 param4

Parameters:

param1	Gateway address	[0 - 255]
param2	Gateway address	[0 - 255]
param3	Gateway address	[0 - 255]
param4	Gateway address	[0 - 255]

Notes:

The default gateway address is 192.168.0.1. A reboot is required after the gateway address has been assigned.

#SPORT Function

Specifies a new port.

Syntax:

```
#SPORT param1
```

Parameters:

param1   Port   [0 - 255]

Notes:

The default port setting is 80. A reboot is required after the new port has been created.

General Functions

Function	Description
#ACTIVEBOLO	Enables the boot loader
#FADEFAULT	Set matrix to default settings
#LOCKPOWER	Toggles the lock power state
#MASKOUT	Blanks selected outputs
#RMTIRADD	Set the remote IR channel
#STBYMODE	Sets the Matrix to Standby Mode

#ACTIVEBOLO Function

The #ACTIVEBOLO function enables the boot loader allowing the Matrix to be updated with firmware using RS-232.

Syntax:

```
#ACTIVEBOLO
```

Parameters:

None

Notes:

The #ACTIVEBOLO *command must be typed twice in order to activate the boot loader.*

#FADEFAULT Function

The #FADEFAULT function sets all Local EDID and routing settings to default, turns off all FO 5V to inputs, sets IR address to 0, and disables #LOCKPOWER, and #LOCKEDID.

Syntax:

```
#FADEFAULT
```

Parameters:

None

#LOCKPOWER Function

The #LOCKPOWER enables/disables the power lock state. Enabling this feature will store the 5V status for each input prior to shutting the unit down. This preserves the 5V state when the Matrix is restarted.

Syntax:

```
#LOCKPOWER param1
```

Parameters:

param1   State   [0 - 1]

Value	Meaning
0	Disable Power Lock
1	Enable Power Lock

#MASKOUT Function

The #MASKOUT function allows blanking of selected outputs.

Syntax:

```
#MASKOUT param1 param2
```

Parameters:

param1   Output   [1 - 8]
param2   Value   [0 - 1]

Value	Meaning
0	Unmask
1	Mask

Notes:

The current masking state will be lost if power is lost.

#RMTIRADD Function

The #RMTIRADD function set the remote IR channel.

Syntax:

```
#RMTIRADD param1
```

Parameters:

param1   IR channel   [0 - 3]

#STBYMODE Function

The #STBYMODE function disables / enables standby power mode.

Syntax:

```
#STBYMODE param1
```

Parameters:

param1   Disable / Enable   [0 - 1]

Value	Meaning
0	Disable Standby Mode
1	Enable Standby Mode

Commands

Command	Description
R	Routing command
S	Routes a single input to all outputs
M	Returns the current routing status of matrix
F	Toggle 5V fiber optic extender feature

R Command

The R command allows specific routing of inputs and outputs.

Syntax:

```
r param1 param2
```

Parameters:

param1	DVI Ouput	[1 - 8]
param2	DVI Input	[1 - 8]

S Command

The S command routes a single input to all 8 DVI outputs.

Syntax:

```
s param1
```

Parameters:

param1	Input	[1 - 8]

Notes:

Setting *param1* to a value of 0 will place the matrix in *one-to-one mode*. This means that Input1 will be routed to Output1, Input2 will be routed to Output2, and so on.

M Command

The M command displays the current routing status of the matrix.

Syntax:

```
m
```

Parameters:

None

F Command

The F command returns the state of pin 14 of the DVI inputs.

Syntax:

```
f param1 param2
```

Parameters:

param1	DVI input	[1 - 8]
param2	State	[0 - 1]

Notes:

"High" is returned if +5V is enabled on the DVI input. "Low" is returned if +5V is disabled on the DVI input.

The 8x8 DVI KVM Dual Link Matrix supports IP-based control using an integrated Web interface. To access this feature, an IP address, subnet, gateway, and port number need to be set on the 8x8 DVI KVM Dual Link Matrix (**Default IP: 192.168.0.70 Subnet: 255.255.255.0 Gateway: 192.168.0.1 Port: 80**). Consult the network administrator to obtain the proper IP address and settings for this product to properly communicate on the network.

The IP control setting can be configured via the RS-232 control interface. Once this has been accomplished, access to the Web Interface is possible.

Simply type the IP address that was assigned to the product in a web browser to access the **Matrix Status Page**. It should look like the image below.

View Matrix Status

The **View Matrix Status** will display the current status and can also be used to create routes.

To create a new route, follow the steps below:

1. Select which outputs will display the source by clicking on each check box.

2. Select the radio button of the input that will be routed to each output.

3. Click the SWITCH button to update the new routing configuration.

This page will automatically refresh every minute. However, at anytime the "Refresh" button can be pressed to refresh the status of the Matrix.

Manage EDID

The **Manage EDID** page is used to see the status of the EDID saved in the local storage location for each input. This section has additional tabs for advanced EDID functions. These tabs are:

• SET INPUT TO DEFAULT EDID

• UPLOAD EDID (Future Implementation)

• DOWNLOAD EDID (Future Implementation)

• COPY EDID

• EDID LOCK STATE

This page will automatically refresh every minute. However, at anytime the REFRESH button can be pressed to return the current status of the Matrix.

Manage EDID - Set Input to Default EDID

Pressing the SET INPUT TO DEFAULT EDID button will display additional options. The following page will open.

On this page, local memory locations can be selected to receive the built-in EDID stored in the 8x8 DVI Matrix. To set an input's local memory location to the default EDID follow the steps below.

1. Select any number of inputs by clicking on the desired checkboxes.

2. Click on the **Set Default EDID** button to update the change(s).

Note: After this command is complete the Web Interface will return to the VIEW MATRIX STATUS page.

This page will automatically refresh every minute. However, the REFRESH button can be pressed at any time to return the current status of the Matrix.

Manage EDID - Copy EDID

Pressing the COPY EDID button will display additional options. The following page will open.

On this page, the user can select an EDID from either the local memory locations (Input) or from a monitor that is currently attached to any output and copy that EDID to any other LOCAL memory location. This will permits control of what EDID information will be passed to each source connected to the 8x8 DVI Matrix.

To copy an EDID follow the steps below.

1. Select an EDID from the **Select Source to Copy from** section. An EDID can be selected from a monitor connected to one of the outputs or from an EDID already loaded into one of the local memory locations (Input). It should be noted that only one EDID can be selected for copying.

2. Select the local memory locations that will receive the selected EDID under the **Select Input(s) to Copy** to section. Mulitple local memory locations can be specified during this step.

3. Click on the **Set EDID** button to initiate the change(s).

This page will automatically refresh every minute. However, at anytime the **Refresh** button can be pressed to refresh the status of the Matrix.

NOTICE: UPLOAD EDID and DOWNLOAD EDID features are not supported at the time of this writing.

Manage EDID - EDID Lock State

The 8X8 DVI Dual Link Matrix allows the Local EDID to be preserved after the unit has been powered off. Once enabled, this will function will prevent the 8x8 DVI KVM Dual Link Matrix from reading the EDID of a monitor, when the matrix is powered on.

The EDID Lock State can be enabled (ON) or disabled (OFF). The EDID Lock State is used.

1. Once the Local EDID has been stored, press the EDID LOCK STATE web button.

2. Select the ON radio button from the dialog and press Update EDID Lock State.

The 8x8 DVI KVM Dual Link Matrix can be powered-down and the Local EDID will be preserved. To disable the EDID LOCK STATE feature, select the OFF radio button in the Web interface and press the Update EDID Lock State button. Once the EDID LOCK STATE has been disabled (OFF), the 8x8 DVI KVM Dual Link Matrix will read and use the EDID of the monitor connected to the matrix.

Masking

The **Masking** page is used to hide an output from displaying any video. From this page, all outputs can be set to "Active" or "Mask". When an output is set to "Active", it will function normally. When an output is set to "Mask", it will not output any video. To set the "Active" or "Mask" mode, follow the steps below.

1.   Select either "Active" or "Mask" for any number of desired outputs.

2.   Press the "Submit" button to initiate the change(s).

After this command is complete the user will be returned to the **Main Page**.

This page will automatically refresh every minute, however, at anytime the "Refresh" button can be pressed to refresh the status of the matrix.

NOTE: All masked outputs will become active if the unit is power-cycled.

IP Configuration

The **IP Configuration** page is used to set the IP settings that will be used to access the Web interface. The following items can be configured from this menu.

- IP Address (Default: 192.168.0.70)

- Subnet (Default: 255.255.255.0)

- Gateway (192.168.0.1)

- Port (Default: 80)

To change these settings follow the steps below.

1. Enter the desired network information into the fields provided.

2. Press the "Save" button to initiate the change(s).

Note: After this command is complete the user will be returned to the **Main Page**. Setting made on this page will not take effect until the unit is restarted. Please disconnect power from the unit and reconnect power for changes to take effect.

At anytime, the "Reset" button can be pressed to return the IP settings to their defaults.

Backup / Restore

The **Backup/Restore** page is used to backup and restore complete setup configurations. This feature will be implemented in a future release.

Power Management

The **Power Management** page is used to set optional +5V power when using Gefen Fiber Optic Extenders. The current status of this feature for each input can be viewed on this page. To set this feature for each input follow the steps below.

Select the +5V option, either "On" or "Off" for each desired input.

1.   Click on the "Update" button to initiate the change(s).

Note: After this command is complete the user will be returned to the **Main Page**.

This page will automatically refresh every minute, however, at anytime the "Refresh" button can be pressed to refresh the status of the matrix.

NETWORK CABLE WIRING DIAGRAM
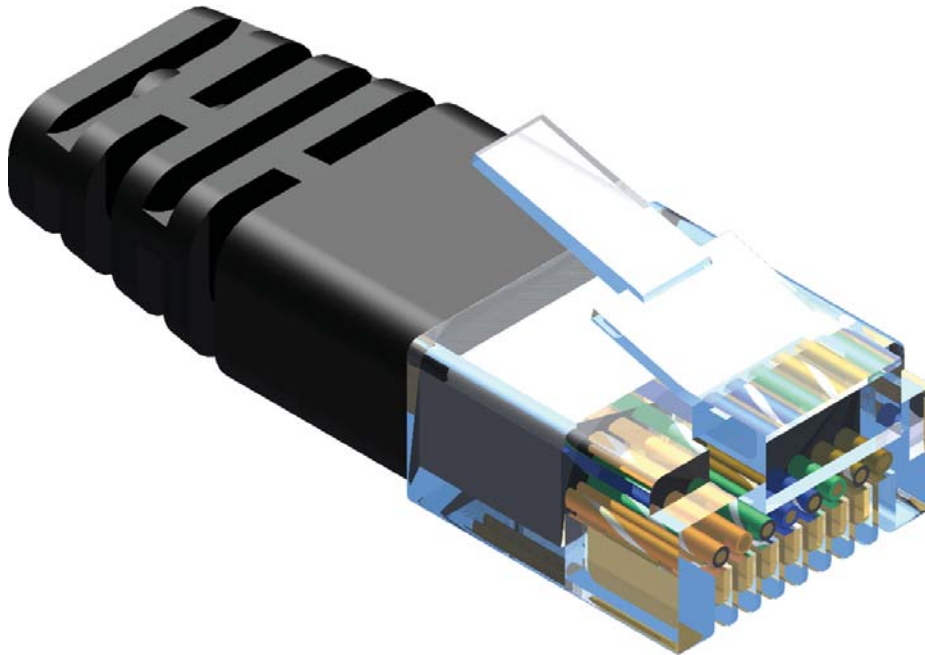
Gefen recommends the TIA/EIA-568-B wiring option. Please adhere to the table below when field-terminating the cable for use with Gefen products.

Pin	Color
1	Orange / White
2	Orange
3	Green / White
4	Blue
5	Blue / White
6	Green
7	Brown / White
8	Brown

Cabling comes in stranded and solid core types. Gefen recommends using solid core cabling.

It is recommended to use one continuous run from one end to the other. Connecting through a patch is not recommended.

Firmware Update

Follow the on-screen instructions to complete the firmware update process:

1. Press [1] on the computer keyboard to begin downloading program to the temporary memory.

2. A message will appear in Hyperterminal:

   ```
   Waiting for the file to be sent ... (press 'a' to abort)
   ```

3. In Hyperterminal, click Transfer > Send File...

4. Click Browse... and select the .BIN file to be uploaded (e.g. DVI8X8_ uIP_1_7.bin)

5. Select Ymodem for the protocol.

6. Press Send on the Send File dialog box.

7. A message will appear in Hyperterminal:

   ```
   Programming Completed Successfully!
   ```

RACK MOUNT SAFETY INFORMATION

a. Maximum recommended ambient temperature: 45 ˚C (104 ˚F).

b. Increase the air flow as needed to maintain the recommended temperature inside the rack.

c. Do not exceed maximum weight loads for the rack. Install heavier equipment in the lower part of the rack to maintain stability.

d. Connect a bonding wire between an approved safety ground and the grounding screw on the chassis.

A

ADC

Apple Display Connector. The ADC interface is a proprietary interface developed by Apple that combines analog and digital signals, USB, and power in a single cable.

C

CAT-5

Category-5 cable, commonly known as Cat-5, is an unshielded twisted pair type cable designed for high signal integrity. The actual standard defines specific electrical properties of the wire, but it is most commonly known as being rated for its Ethernet capability of 100 Mbit/s. Its specific standard designation is EIA/TIA-568. Cat 5 cable typically has three twists per inch of each twisted pair of 24 gauge copper wires within the cable.

CAT-5e

Similar to Cat 5 cable, but is enhanced to support speeds of up to 1000 megabits per second.

CRT

An acronym for Cathode Ray Tube: a common type of computer display hardware.

D

DDC

Short form for Display Data Channel. It is a VESA standard for communication between a monitor and a video adapter. Using DDC, a monitor can inform the video card about its properties, such as maximum resolution and color depth. The video card can then use this information to ensure that the user is presented with valid options for configuring the display.

DDWG

An acronym for Digital Display Working Group. DDWG are the creators of the DVI specification.

Dolby Digital®

This is a digital surround sound technology used in movie theaters and upscale home theater systems that enhances audio. Home theater components with this technology work in conjunction with a "8.1-speaker" system (Eight speakers plus a low-frequency subwoofer) to produce true-to-life audio that draws the listener into the onscreen action.

DTS™

DTS is the acronym for Digital Theater Systems. DTS is a discrete 8.1 channel surround system similar to Dolby Digital. Dolby Digital is the DTV standard, but DTS competes with Dolby on DVD and in the movie theaters.

DVI

The acronym for Digital Visual Interface. DVI is the connection standard developed by Intel for connecting computers to digital monitors such as flat panels and DLP projectors. A consumer electronics version, not necessarily compatible with the PC version, is used as a connection standard for HDTV tuners and displays. Transmits an uncompressed digital signal to the display.

E

EDID

The acronym for Extended Display Identification Data. The EDID is a data structure provided by a digital display to describe its capabilities to a video source device. EDID is defined and standardized by the Video Electronics Standards Association (VESA). Among other things, the EDID includes manufacturer name, ID, serial number, product type, and timings supported by the display.

F

Fiber Optic

Refers to the medium and the technology associated with the transmission of information as light pulses along a glass or plastic wire or fiber. Optical fiber carries much more information than conventional copper wire and is in general not subject to electromagnetic interference and the need to retransmit signals.

H

HDCP

High-Bandwidth Digital Content Protection. Created by Intel, HDCP is used with HDTV signals over DVI and HDMI connections and on D-Theater D-VHS recordings to prevent unauthorized duplication of copy written material.

HDMI

The High-Definition Multimedia Interface (HDMI) is an industry-supported, uncompressed, all-digital audio/video interface. HDMI provides an interface between any compatible digital audio/video source, such as a set-top box, DVD player, and A/V receiver and a compatible digital audio and/or video monitor, such as a digital television (DTV).

HD-SDI

HD-SDI is the acronym for High-Definition Serial Digital Interface. HD-SDI provides a data rate of 1.485 Gb/s for high-definition video and audio.

HDTV

High-Definition Television. The high-resolution subset of our DTV system. The ATSC defines HDTV as a 16:9 image with twice the horizontal and vertical resolution of our existing system, accompanied by 5.1 channels of Dolby Digital audio. The CEA defines HDTV as an image with 720 progressive or 1080 interlaced active (top to bottom) scan lines. 1280 x 720p and 1920 x 1080i are typically accepted as high-definition scan rates.

I

IEEE 1394a

A type of cabling technology for transferring data to and from digital devices at high speed. Some professional digital cameras and memory card readers connect to the computer over FireWire. FireWire card readers are typically faster than those that connect via USB. Also known as IEEE 1394, FireWire was invented by Apple Computer but is now commonly used with Windows-based PCs as well.

IR remote

A type of wireless transmission using infrared light waves.

K

KVM

An acronym for Keyboard / Video / Mouse. A KVM switch is a hardware device that allows control of multiple computers from a single keyboard, video monitor and mouse.

L

LCD

Liquid Crystal Display. A display that consists of two polarizing transparent panels and a liquid crystal surface sandwiched in between. Voltage is applied to certain areas, causing the crystal to turn dark. A light source behind the panel transmits through transparent crystals and is mostly blocked by dark crystals.

N

NTSC

NTSC is an acronym for National Television Systems Committee. NTSC is the current analog television standard used in North America, most of South America, Burma, South Korea, Taiwan, Japan, and the Philippines.

P

PAL

An acronym for Phase Alternate Line. PAL is the analog television display standard that is used in Europe and certain other parts of the world. North America uses the NTSC standard. PAL typically uses 625 scan lines, compared to the NTSC standard of 525 scan lines.

PS/2

A serial interface developed by IBM for the purpose of connecting a keyboard or mouse to a PC. The PS/2 port has a mini DIN plug containing 6 pins. PS/2 ports are used so that the serial port can be used by another device.

R

RS-232

The acronym for Recommended Standard 232. RS-232 is the name for a series of standards for serial data and control signals frequently used by computers serial ports.

S

SDI

SDI is the acronym for Serial Digital Interface. SDI is used for standard definition applications (SMPTE 259M) with bit rates of 270 Mb/s, 360 Mb/s, 143 Mb/s, and 177 Mb/s. 270 Mb/s is the most common. Bit rates below 270 Mb/s were designed for the digital transmission of composite (NTSC or PAL) video.

SMPTE

The acronym for Society of Motion Picture and Television Engineers. SMPTE was founded in 1916 and is an international professional association, based in the U.S. SMPTE has over 400 standards and engineering guidelines for television, motion pictures, digital cinema, as well as audio and medical applications.

S/PDIF

S/PDIF is the acronym for Sony / Philips Digital Interconnect Format but is more commonly known as Sony / Philips Digital Interface. S/PDIF is a digital audio interface used in consumer audio equipment used to carry digital audio signals over a relatively short distance. The digital signal is transmitted over a coaxial cable with RCA connectors.

T

TOSLINK

TOSLINK is an abbreviated format of the two words *Toshiba Link*. TOSLINK is a standardized optical fiber connection system used to transmit digital audio between various pieces of consumer audio equipment. TOSLINK can support several different audio formats including LPCM, Dolby®, and DTS™.

U

USB

USB is an acronym for Universal Serial Bus. USB can connect computer peripherals such as mice, keyboards, digital cameras, printers, personal media players, flash drives, Network Adapters, and external hard drives. For the most part, USB has made interfaces such as serial and parallel ports obsolete.

V

VESA

VESA (Video Electronics Standards Association) is an international standards entity for computer graphics. The initial goal of VESA was to produce a standard for the 800 x 600 SVGA resolution displays. However, the VESA standard has produced several standards which relate to the function of video devices on personal computers. DisplayPort is also a VESA technology that supports connections to digital displays.

VGA

Video Graphics Array (VGA) initially refers to the display hardware which was introduced with the IBM PS/2 line of computers in 1987. However, it is also used to define the 15-pin D-subminiature VGA connector, as well as a resolution of 640 x 480.

SPECIFICATIONS

Video Amplifier Bandwidth..2 x 165 MHz

Input Video Signal...1.2 volts p-p

Input DDC Signal..5 volts p-p (TTL)

DVI Input Connectors.. (8) DVI-I 29 pin female

DVI Output Connectors.. (8) DVI-I 29 pin female

USB Input Connectors...(8) USB 2.0 type "B"

USB Output Connectors..(16) USB 2.0 type "A"

Audio Output Connectors...(8) 3.5 mm mini-stereo

Audio Input Connectors..(8) 3.5 mm mini-stereo

Frequency Response.. < 0.1dB 20Hz - 100 kHz

THD..0.002% @ 20 kHz

IR Extender...3.5 mm mini-stereo

RS-232 Interface...DB-9 female

IP Interface...RJ-45

Power Supply...100 ~ 240 V AC (IEC connector)

Power Consumption...70 Watts (max.)

Operating Temperature..0 ˚C ~ 45 ˚C / 32 ˚F ~ 113 ˚F

Storage Temperature...-20 ˚C ~ 60 ˚C / -4 ˚F ~ 140 ˚F

Humidity Range..20% ~ 90% RH (no condensation)

Power Consumption (Standby Mode)...600 mW

Rack Size...2U

Dimensions...19.0" W x 3.5" H x 4.2" D

Shipping Weight..28.1 lbs.

WARRANTY

Gefen warrants the equipment it manufactures to be free from defects in material and workmanship.

If equipment fails because of such defects and Gefen is notified within two (2) years from the date of shipment, Gefen will, at its option, repair or replace the equipment, provided that the equipment has not been subjected to mechanical, electrical, or other abuse or modifications. Equipment that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for ninety (90) days from the day of reshipment to the Buyer.

This warranty is in lieu of all other warranties expressed or implied, including without limitation, any implied warranty or merchantability or fitness for any particular purpose, all of which are expressly disclaimed.

1. Proof of sale may be required in order to claim warranty.

2. Customers outside the US are responsible for shipping charges to and from Gefen.

3. Copper cables are limited to a 30 day warranty and cables must be in their original condition.

The information in this manual has been carefully checked and is believed to be accurate. However, Gefen assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Gefen be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. The technical information contained herein regarding the features and specifications is subject to change without notice.

For the latest warranty coverage information, please visit Gefen's Warranty web page at http://www.gefen.com/kvm/aboutus/warranty.jsp

PRODUCT REGISTRATION

Please register your product online by visiting Gefen's web site at http://www.gefen.com/kvm/Registry/Registration.jsp

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MA-GEF-DVIKVM-848DL-PB

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