Gefen

4x4 DVI KVM
Matrix
USER MANUAL

4x4 DVI DL
KVM Matrix

Power

ASKING FOR ASSISTANCE

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Thank you for purchasing the 4x4 DVI DL KVM Matrix.

Now you can easily switch four cross-platform DVI Dual Link computers to four DVI Dual Link displays. Our 4x4 Dual Link DVI KVM Matrix 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. You also have the option of setting up the four stations locally or extending them with a Gefen extender. When used with computers, USB and Audio matrix control signals follow the DVI Dual Link input for optimal control.

How It Works

The 4x4 DVI Dual Link KVM Matrix has four Dual Link DVI inputs and four Dual Link DVI outputs. You simply connect your four computers' DVI Dual Link video ports to the Switcher's inputs, then connect your four DVI Dual Link displays to the Switcher's outputs. USB keyboard and mouse signals and analog audio, once connected, follow the DVI Dual Link switched input for each computer.

OPERATION NOTES

READ THESE NOTES BEFORE INSTALLING
OR OPERATING THE 4X4 DVI DL KVM MATRIX

- The 4x4 DVI DL KVM Matrix is housed in a metal box for better RF shielding.

- The 4x4 DVI DL KVM Matrix works with all DVI and HDMI displays.

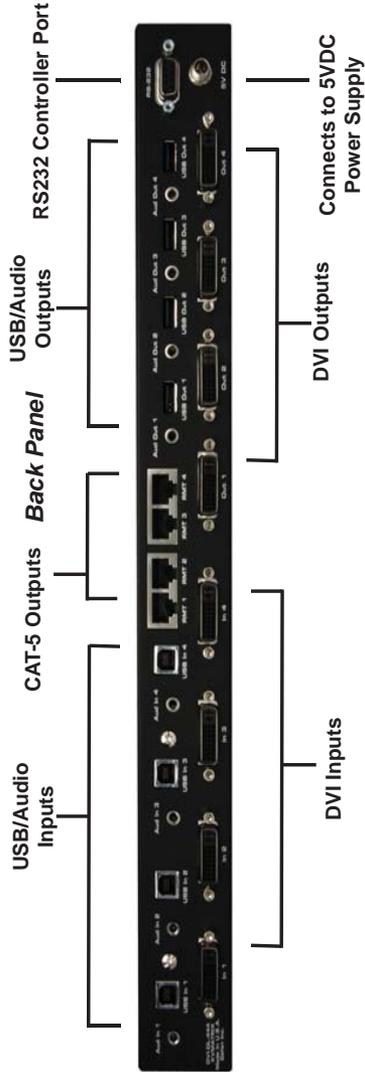- The 4x4 DVI DL KVM Matrix is not HDCP compliant.

Features

- Increases your productivity by providing you with access to four computers from four Dual Link workstations

- Maintains highest resolution digital video with no loss of quality

- Supports either PC or Mac USB keyboards/mice

- USB 1.1 Matrix Switching capabilities

- Supports analog audio matrixing

- Discrete IR remote (included)

- Supports single and dual link resolutions up to 3840x2400

- Supports DDWG standards for DVI monitors

- Includes rack ears

 Includes:

(1) 4x4 DVI DL KVM Matrix
(1) RMT-16IR
(1) 5V Power Supply
(4) 6ft DVI cables
(4) 6ft USB cables
(4) 6ft Audio cables
(1) Set of Rack Ears

Front Panel

Back Panel

Power Indicator

IR Sensor

IR Extender Eye Port

Display 4 Indicator

Display 3 Indicator

Display 2 Indicator

Display 1 Indicator

RS232 Controller Port

Connects to 5VDC Power Supply

USB/Audio Outputs

DVI Outputs

CAT-5 Outputs

USB/Audio Inputs

DVI Inputs
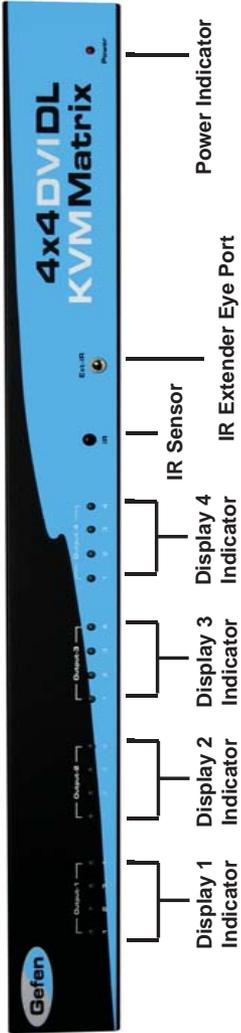
1. Connect all the sources to the DVI, USB, and audio inputs on the 4x4 DVI DL KVM Matrix, using the supplied cables.

2. Connect the HDMI/DVI display, USB, and audio to the outputs on the 4x4 DVI DL KVM Matrix.

3. Connect the 5VDC power supply to the 4x4 DVI DL KVM Matrix.

4. Controlling the 4x4 DVI DL KVM Matrix using the RMT16-IR:

Pressing Buttons...	Switches...
1-4	Display 1 to view Source 1, 2, 3, or 4
5-8	Display 2 to view Source 1, 2, 3, or 4
9-12	Display 3 to view Source 1, 2, 3, or 4
13-16	Display 4 to view Source 1, 2, 3, or 4

*Note for computers connected to the DVIKVM Matrix - When your computer boots up, it looks for an EDID (extended display identification data) from the display to tell it what monitor is connected and what resolution to output. During boot up of the computer you should have ONLY one output selected to one input at a time so that the computer gets the EDID of the display that is selected. If you have multiple outputs selected to one computer, the computer will read the EDID of the last output selected to it. If all your displays are the same, or all displays are
capable of running at the same resolution then this step does not matter.

You can also use a DVI Detective to eliminate the need to have that matrix selected to the computer during bootup.

LED Indicator
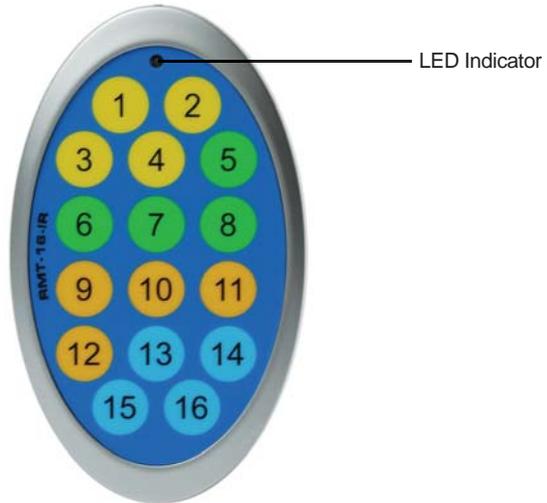
The RMT-16-IR remote control will allow the user to select which source each of the 4 connected displays will be viewing. Each of the 4 displays are assigned a group of 4 buttons that correspond to the 4 source inputs. Please use the information below when selecting the desired source for each display.

RMT-16-IR Button	Display	Source
1	1	1
2	1	2
3	1	3
4	1	4
5	2	1
6	2	2
7	2	3
8	2	4
9	3	1
10	3	2
11	3	3
12	3	4
13	4	1
14	4	2
15	4	3
16	4	4

The 4x4 DVI DL KVM Matrix has a bank of 8 configuration **DIP SWITCHES**. These switches are located underneath the unit. Peeling back the black metallic sticker on the bottom of the 4x4 DVI DL KVM Matrix will reveal the Dip Switch bank. These 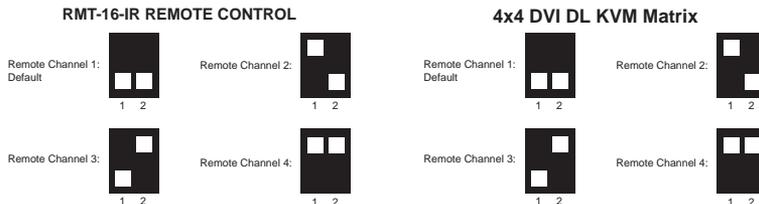service switches are used for a number of configuration options. By default, all Dip Switches are in the OFF position. Each setting is outlined below.
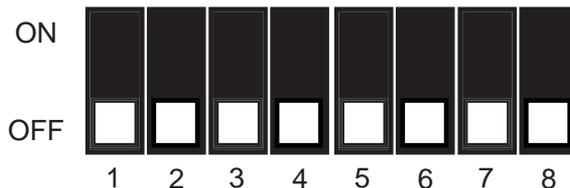
Switch 1	IR Remote Channel Configuration
Switch 2	IR Remote Channel Configuration
Switch 3	Automatic Link Selection \ Dual Link Only Mode
Switch 4	Not Used
Switch 5	Pre-Empahsis For Display Output 1
Switch 6	Pre-Empahsis For Display Output 2
Switch 7	Pre-Empahsis For Display Output 3
Switch 8	Pre-Empahsis For Display Output 4

IR REMOTE CHANNEL CONFIGURATION

Dip Switches 1 and 2 relate to the IR remote control channel that is used by the 4x4 DVI DL KVM Matrix and RMT-16-IR remote control. Dip Switch 1 and 2 on the 4x4 DVI DL KVM Matrix must match Dip Switch 1 and 2 on the RMT-16-IR remote control. Please view the table below to set the channel on 4x4 DVI DL KVM Matrix and IR remote control. The remote channel for the RMT-16-IR is located underneath it's battery cover.

RMT-16-IR REMOTE CONTROL

Remote Channel 1: Default
1 2

Remote Channel 2:
1 2

Remote Channel 3:
1 2

Remote Channel 4:
1 2

4x4 DVI DL KVM Matrix

Remote Channel 1: Default
1 2

Remote Channel 2:
1 2

Remote Channel 3:
1 2

Remote Channel 4:
1 2

AUTOMATIC LINK SELECTION / DUAL LINK ONLY MODE

The 4x4 DVI DL Matrix has the ability to run both Single Link and Dual Link DVI sources. There is a feature that will either automatically select the link mode, or lock the unit in Dual Link mode. By default, Dip Switch 3 is in the OFF position (Automatic Link Selection). Turning Dip Switch 3 to the ON position will lock the unit in Dual Link mode and will only allow Dual Link signals to pass properly.

PRE-EMPHASIS

Pre-Emphasis is used to help extend a signal travel over a distance of cable. When a DVI cable connected to a display is over a long cable, it is recommended that Pre-Emphasis be enabled. Pre-emphasis is enabled by default on all display outputs. For short cables, disable pre-emphasis on each output by turing it's corresponding Dip Switch to the ON position. If any type of extension device, such as a DVI CAT5 Extreme, is used pre-emphasis must be disabled for proper operation.

RMT-MATRIX-444 INSTALLATION (OPTIONAL)

You can use up to 4 RMT-MATRIX-444 units to extend switching functionality to remote locations. Each unit will allow the user to switch their one display between the 4 inputs on the DVIKVM-444N. Follow these steps for each RMT-MATRIX-444 that will be used in your setup.

1. Connect a CAT5/6 cable between the RMT-MATRIX-444 and one of the CAT5 ports on the rear of the DVIKVM-444N. The ports are labeled as RMT A, B, C, and D and correspond with DVI out ports 1, 2, 3, and 4.

2. Use the contact buttons on the RMT-MATRIX-444 to switch between the different inputs connected to the DVIKVM-444N. Optionally, you can use a RMT-4IR (infrared remote) in conjunction with the RMT-MATRIX-444 to switch inputs from a distance.

Input Selection Buttons

IR Sensor
(For use with optional IR remote)

Input Selection LED

IR Sensor Extension Port
(Extension cable not included)

RS-232 Port

CAT5/6 Port

9 Pin Female
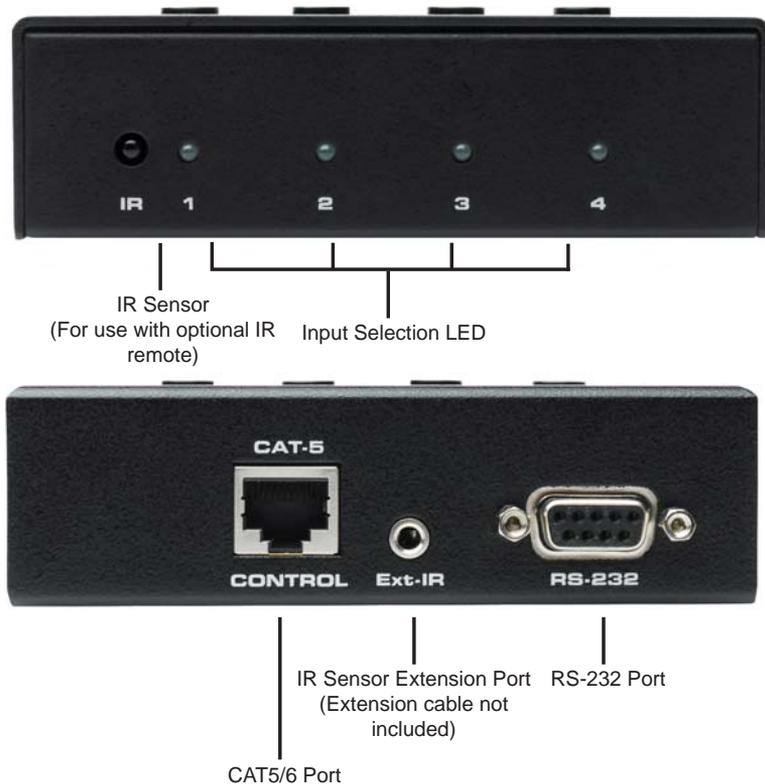
9 Pin Male
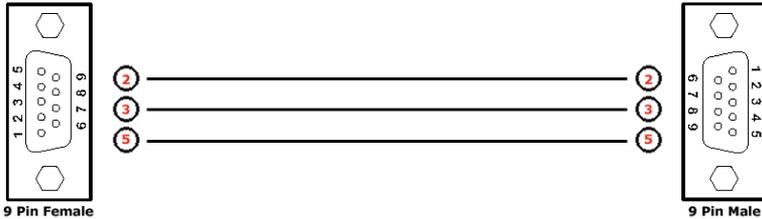
Binary Table

| ASCII	Corresponding RMT16-IR Button	Binary	ASCII	Corresponding RMT16-IR Button	Binary
1	1	0011 0001	9	9	0011 1001
2	2	0011 0010	a	10	0110 0001
3	3	0011 0011	b	11	0110 0010
4	4	0011 0100	c	12	0110 0011
5	5	0011 0101	d	13	0110 0100
6	6	0011 0110	e	14	0110 0101
7	7	0011 0111	f	15	0110 0110
8	8	0011 1000	g	16	0110 0111

RS232 Settings

Bits per second 19200

Data bits 8

Parity .... None

Stop bits 1

Flow Control .... None
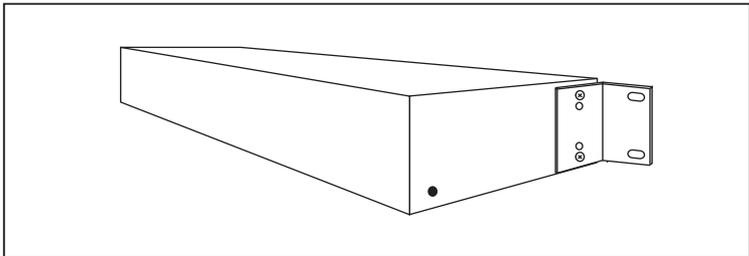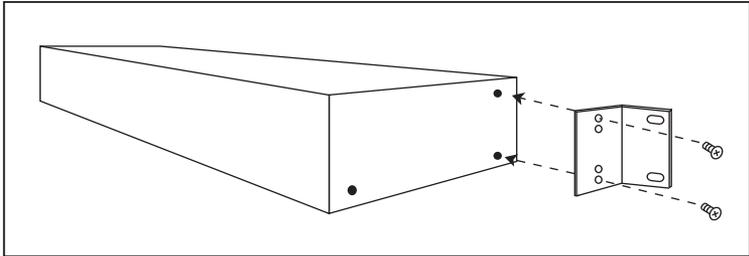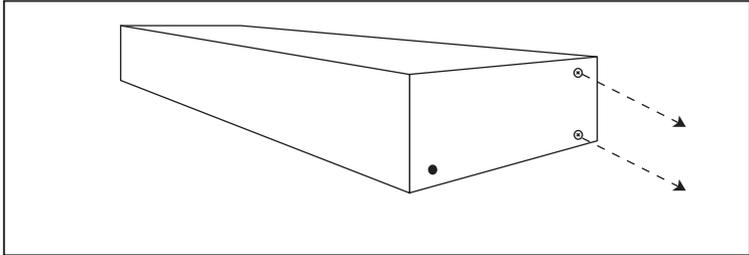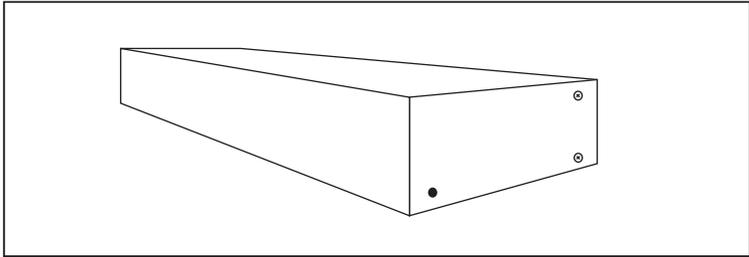
SPECIFICATIONS

Video Amplifier Bandwidth .... 165 MHz x 2

Input Video Signal .... 1.2 Volts p-p

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

Dual Link Maximum Resolution .... 3840x2400 @ 60 Hz

DVI Connector .... DVI-I 29 pin female (digital signal only)

USB Input Connectors .... Type "B"

USB Output Connectors .... Type "A"

Audio Connectors .... 3.5mm mini stereo jack

Power Supply .... 5V DC

Power Consumption .... 40 Watts (max)

Dimensions .... 17"W x 1.75"H x 4.5"D

Rack mountable .... 1U Rack Space

Shipping Weight .... 10 Lbs