8 x 8 IR Matrix
ID # 604

Operation Manual

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Introduction

The Bi-directional Infrared Matrix is designed to work alongside the 8×8 HDMI matrix, providing control of up to 8 source devices from up to 8 display locations. Using the original or programmable remote controls, source devices such as DVD/Blu-ray players or satellite/set-top boxes can be controlled from any location.

Applications

- Control multiple sources and displays via bi-directional Infrared signals
- Extending the range of existing systems
- Long distance Infrared control

System Requirements

IR controllable Source equipment (e.g. DVD or Blu-ray players), IR controllable Display/ TV/monitors and HDMI/video matrix devices

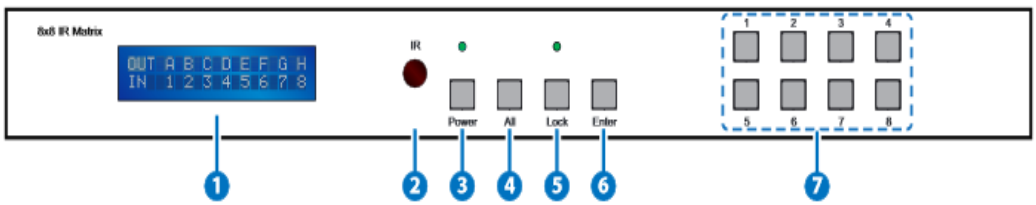
Features

- Supports independent IR input and output selection and control
- Supports an IR frequency range of 30 kHz~50 kHz
- Use your existing remote controls or programmable/universal remote controls
- Supports bi-directional IR from input and output locations
- Supports RS-232 control, IR remote control and on-panel control
- 1U size design

Note:

1. This device does not support the sending of audio/video signals, it only transmits and receives infra-red signals.
2. Both the IR Extender and Blaster support a frequency of 30~50kHz

Operation Controls and Functions



1 **LCM:** Displays the setting information of each input and output setting.
2 **IR:** IR Receiver window (accepts the remote control signal of this device only).

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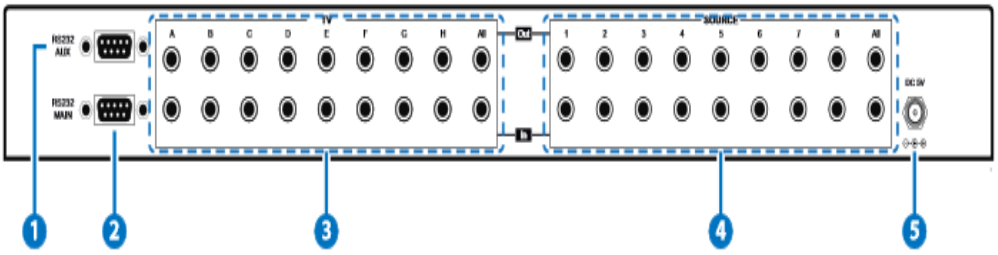
3 **Power:** Press this button to power the device on/off. The LED will illuminate green when the power is on, red when it is in 'Standby' mode.
4 **All:** Press this button to select all IR output with one IR input signal. The sequence should be: ALL → Number Key → ENTER.
5 **Lock:** Press this button to lock all the buttons on the panel; press again to unlock. The LED will illuminate green when locked.
6 **Enter:** Press this button to confirm when changing a setting. If this button is not pressed within 20 seconds the selection is cancelled.
7 **1~8/A~H:** Use these buttons to select which source is selected for control in each output location. Press a number key to select from TV A to TV H channels and press a number key again to select from Source 1 to Source 8 channels. Press 'Enter' to confirm the selection.
Note: *Press 'All', 'Enter' and '1' together to switch the RS-232 baud rate to 9600 bps or press 'All', 'Enter' and '2' together to switch baud rate to 19200 bps. The LCM will display the current baud rate setting for few seconds*



1 **RS-232 AUX:** Connect to a device that can be controlled (via D-Sub 9-pin male cable) by RS-232 commands e.g. the 8x8 HDMI Matrix.
2 **RS-232 MAIN:** Connect to a PC or control system with D-Sub 9-pin male cable for the transmission of RS-232 commands.
3 **TV In A~H:** Connect to the supplied IR extender cables for IR signal reception, the signal will be relayed to the designated source device via the IR Blaster. Ensure that the remote being used is within the direct line-of-sight of the IR extenders.
TV In All: Connect to a single IR extender cable for IR signal reception, the signal will be relayed to all Source outputs (1~8) at the same time. Ensure that the remote being used is within the direct line-of-sight of the IR extender.
TV Out A~H: Connect to the supplied IR blaster cables for IR signal transmission, IR signals will be relayed from the designated Source IR extender. Place the IR blasters in direct line-of-sight of the equipment to be controlled.
TV Out All: Connect to a single IR blaster cable for IR signal transmission, IR signals will be relayed from all Source inputs (1~8) at the same time. Place the IR blaster in direct line-of-sight of the equipment to be controlled.
4 **Source In 1~8:** Connect to the supplied IR extender cables for IR signal reception, the signal will be relayed to the designated TV output device via the IR Blaster. Ensure that the remote being used is within the direct line-of-sight of the IR extenders.
Source In All: Connect to a single IR extender cable for IR signal reception, the signal will be relayed to all TV outputs (A~H) at the same time. Ensure that the remote being used is within the direct line-of-sight of the IR extender.

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Source Out 1~8: Connect to the supplied IR blaster cables for IR signal transmission, IR signals will be relayed from the designated TV output IR extender. Place the IR blasters in direct line-of-sight of the equipment to be controlled.
Source Out All: Connect to a single IR blaster cable for IR signal transmission, IR signals will be relayed from all TV outputs (A~H) at the same time. Place the IR blaster in direct line-of-sight of the equipment to be controlled.
5 **DC 5V:** Plug the 5V DC power supply into the unit and connect the adaptor to an AC outlet.

Remote Control

The remote control's settings can be controlled with the four DIP switches on the back of the unit (under the battery compartment cover). When all the DIP switches are set to ON (↑ ↑ ↑ ↑) the remote control is able to control all the input settings for all outputs. For example, to set Output A to relay commands from Input 5 press Button A to select Output A and then press Button 5 to select Input 5, Output A will switch to Input 5. The Remote Control can also be set to limit the Input selection to only one Output, allowing different remote control units to perform input selection individually for each output port i.e. a single zone (refer to IR Custom codes Section and DIP Switch Settings Section for details). For example, when all DIP switches are set to OFF (↓ ↓ ↓ ↓), this setting limits input selections to only Output A. Therefore, when setting Output A to input 3 only Button 3 needs to be pressed to switch to that input.

Custom IR Codes

No.	Custom Code	No.	Custom Code
1	88	A	8A
2	8C	B	8E
3	90	C	92
4	85	D	C6
5	C2	E	99
6	9C	F	98
7	D8	G	84
8	87	H	97

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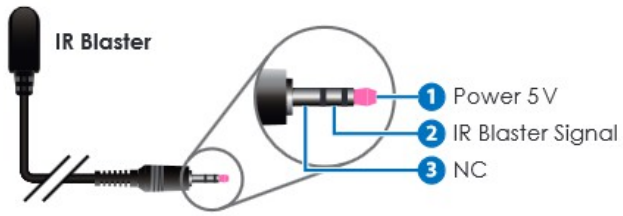
Dip Switch Settings

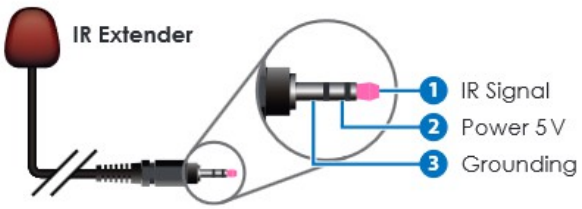
Output Selection	Dip Switch	Custom Code
Output A	↓ ↓ ↓ ↓	807F
Output B	↑ ↓ ↓ ↓	807B
Output C	↓ ↑ ↓ ↓	8077
Output D	↑ ↑ ↓ ↓	8073
Output E	↓ ↓ ↑ ↓	803F
Output F	↑ ↓ ↑ ↓	803B
Output G	↓ ↑ ↑ ↓	8037
Output H	↑ ↑ ↑ ↓	8033

IR Cable Pin Assignments

IR MATRIX			REMOTE CONTROL CONSOLE	
PIN	**Assignment**		**PIN**	**Assignment**
1	NC		1	NC
2	Tx	→	2	RX
3	Rx		3	Tx
4	NC		4	NC
5	GND		5	GND
6	NC		6	NC
7	NC	←	7	NC
8	NC		8	NC
9	NC		9	NC

Baud Rate: 19200 bps/A or 9600bps/B
Data Bit: 8-bit
Parity: None
Stop Bit: 1-bit
Flow Control: None





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RS-232 Commands A

COMMAND	DESCRIPTION
A1~A8	Switch output A to 1~8
B1~B8	Switch output B to 1~8
C1~C8	Switch output C to 1~8
D1~D8	Switch output D to 1~8
E1~E8	Switch output E to 1~8
F1~F8	Switch output F to 1~8
G1~G8	Switch output G to 1~8
H1~H8	Switch output H to 1~8
ABCD...1~ABCD...8	Switch output ABCD... To 1~8 at the same Time
P0	Power off
P1	Power on
I1~I8	Switch all the output to 1~8
ST	Display the current matrix status and f/w version
RS	System reset to A1, B2, C3, D4, E5, F6, G7, H8
?	Display all available commands

RS-232 Commands B

COMMAND	ACTION
POWER 00	Power Off (standby)
POWER 01	Power On
PORT 11~18	Output A select Input 1~8
PORT 21~28	Output B select Input 1~8
PORT 31~38	Output C select Input 1~8
PORT 41~48	Output D select Input 1~8
PORT 51~58	Output E select Input 1~8
PORT 61~68	Output F select Input 1~8
PORT 71~78	Output G select Input 1~8
PORT 81~88	Output H select Input 1~8

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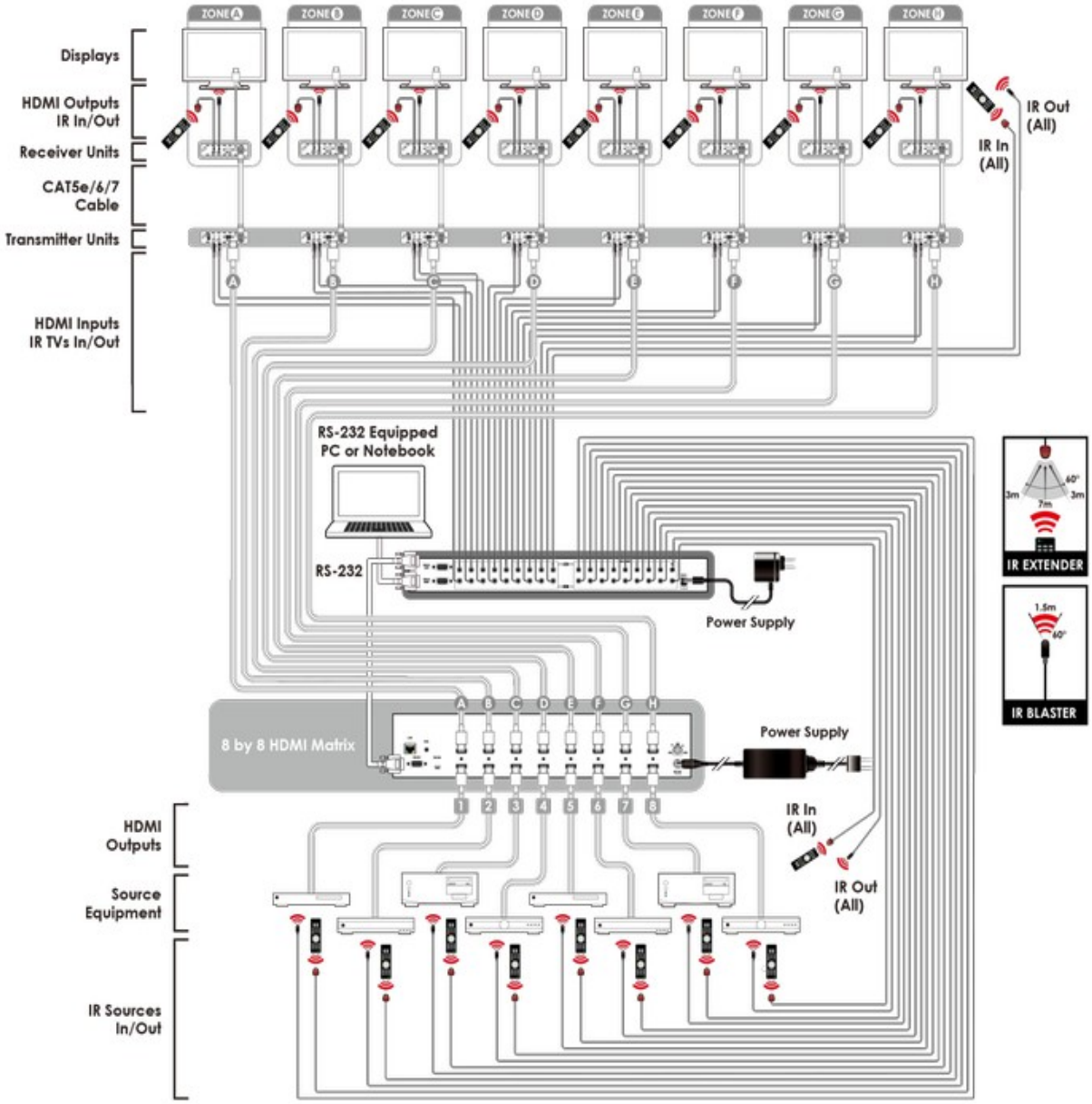
Connections



Specifications

IR Frequency	30 kHz to 50 kHz
Source Ports	8×Independent IR Extenders, 1×All IR Extender Control, 8×Independent IR Blasters, 1×All IR Blaster Control
TV Ports	8×Independent IR Extenders, 1×All IR Extender Control, 8×Independent IR Blasters, 1×All IR Blaster Control
Power Supply	5 V/2.6 A DC (US/EU standards, CE/FCC/UL certified)
ESD Protection	Human body model: ±8kV (air-gap discharge) ±4kV (contact discharge)
Dimensions	432 mm (W)×174 mm (D)×44 mm (H)
Weight	2,206 g
Chassis Material	Aluminum
Silkscreen Color	Black
Operating Temperature	0℃~40℃/32℉~104℉
Storage temperature	−20℃~60℃/−4℉~140℉
Relative Humidity	20~90% RH (non-condensing)
Power Consumption	1 W

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