

Overview

The Keene IR Commander Matrix enables IR control to be used on equipment that is located in positions where your remote wouldn't normally work. For example, equipment placed inside cabinets with closing doors, located on shelves behind you or around a corner, or even in other rooms. The unit is very flexible, allowing for a number of configurations that will solve almost all IR control problems. The IR Commander incorporates the proven technology of the Keene IRBKIT Distribution amplifiers and IR Anywhere modules to provide a greatly expanded number of inputs and outputs and it's matrix routing capability allows commands from specific inputs to be routed to specific outputs. Use of optional expansion modules allow up control of equipment over long cable runs (up to 50m) and also over IP networks and internet.



Key features:

IR inputs

- One built-in Wideband IR receiver (may be disabled if required)
- Four direct inputs for external IR receivers
- Four additional inputs for remote external IR receivers via (optional) expansion module
- 1 wand input jack (to take direct output from other remote extenders e.g. Powermid or similar)
- Virtually unlimited IP addressable inputs (65,000)

IR Outputs

- Six direct outputs for IR emitter wands
- Four additional outputs for remote IR emitter wands via (optional) expansion module

RS232

- Contains a TCP/IP to RS232 server

Routing

- Each IR input may be routed to any or all of the IR outputs

TCPIP

- Can act as a TCP/IP target for IR Anywhere modules
- Built-in support for a dynamic DNS client to cater for non-static IP addresses

Setup and Operation

The IR Commander Matrix can be used as a stand-alone hard-wired IR distribution system and configured and operated with no requirement for network connection or operation. This printed copy of the instructions covers this mode of operation. For network operation, the computer software and full instructions and software are updated regularly and for that reason are not supplied with the unit itself, rather we ask you to download them from the web address below so you will always have the up-to-date version.

The modules have a built in web page that can be accessed by entering the module name or IP address into a browser of a computer connected to the same network. The factory defaults are:

<http://MATRIX> or <http://192.168.1.131>

The default username is "**Keene**" and default password is "**Electronics**" (case sensitive with capital "K" & capital "E")

The built-on web page will allow you to change the mode of operation and IP address. To perform advanced operations such as learning IR code you will need to download and install the advanced configuration software from

<http://www.keene.co.uk/ircommander>

The full set of instructions and help file is on-line is available at

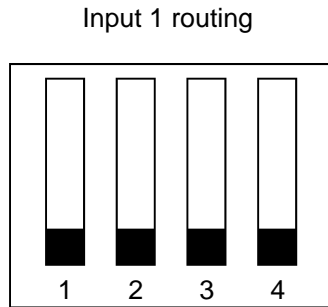
<http://www.keene.co.uk/ircommander>

General Operation

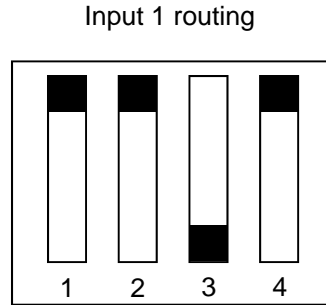
An IR signal can be received either by the built in on-board receiver, or by an external receiver plugged into one of the input sockets or as data via the network connection. The signal once received is then transmitted to an IR wand connected to one or more of the outputs.

Signal routing

One of the IR Commander Matrix features allows IR signal routing such that a signal received from a particular input can be routed to any or all of the outputs. For example:



In this example signals picked up by the receiver connected to input 1 will be sent to emitters on all outputs.



In this example signals picked up by the receiver connected to input 1 will be sent to emitters connected to output 3 only.

Generated Output Routing

Use this dip switch bank to determine which of the four outputs you would like any generated (TCP/IP network) IR commands to be directed to.

Expansion Modules

The IR Commander Matrix may be used with (optional) input and output expansion modules. The modules may be placed up to 50m away from the IR Commander and connected via CAT5 cable.

The input expansion module provides connections for up to four IR receivers. The input number on the expansion module is common with the jack socket input number on the IR Commander Matrix.

The output expansion module provides connections for up to four IR emitter wands and all emitters connected to this module correspond to output number one in the signal routing.

RS232

The IR Commander Matrix implements an RS232 to TCP/IP server. This uses port 9761 to talk to other TCP devices and can be accessed using HyperTerminal on a PC. Send via TCP on port 9761 to the IP address of the IR Commander Matrix **192.168.1.131**

The data format is 8 data 1 stop no parity no flow control.

The port and RS232 data rate can be controlled on the options and configuration pages of built in web pages:

The default IP address is **192.168.1.131**

The default username is "**Keene**" and default password is "**Electronics**"

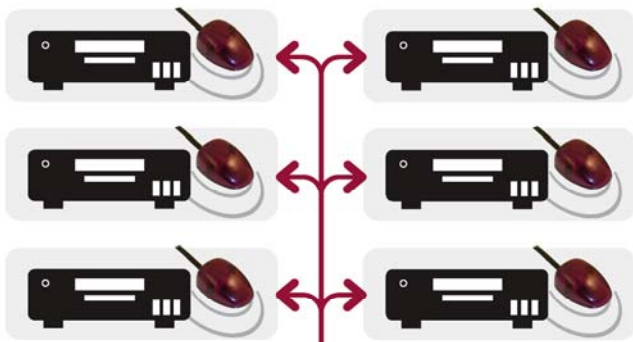
Help files and the advanced java control program which can be accessed at <http://www.keene.co.uk/ircommander>

Reset Button

If you get a problem with the IRCM you can reset the unit in one of two ways;

To perform a power off/power on type reset simply press and hold the reset switch until the acknowledge light comes on. Release the button the unit will reset as if power had been disconnected and reconnected.

If you want to restore to factory default settings then press the reset switch until the acknowledge LED comes on as above, then release and then press again, this time holding the reset button in until the NET IP Activity LED comes on (about 5 seconds) then release. This will return everything to factory defaults.



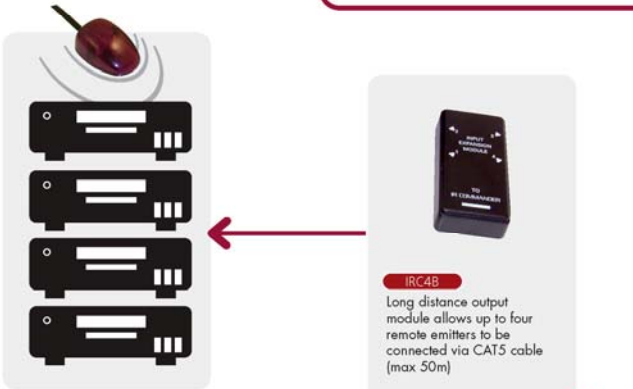
IRLUW
IR Universal Wand. Ideal for general purpose use and can be fascia or shelf mounted. Supplied as standard with an IRBKIT, IRBKITS & IR Commander

IRFSW
(optional) A slim, short range emitter for direct attachment to the equipment fascia IR window

IRLPW
(optional) A short range emitter for attachment to the equipment fascia adjacent to the IR window.

IRHPW
(optional) A very directional high power long range emitter for use where the IRLUW has insufficient range

IRDW
A single jack plug drives a pair of wands that affix directly to the equipment fascia and give a visible flash as the IR signal is emitted



IRC4B
Long distance output module allows up to four remote emitters to be connected via CAT5 cable (max 50m)



IRC4A
Long distance input module allows up to four remote receivers to be connected via CAT5 cable (max 50m)

IR CABLES
Each component is supplied with a 2m cable that can be easily extended if required: 3.5mm plug to socket extension 3.0m [KLD40] 3.5mm plug to socket extension 5.0m [KLD405] 3.5mm to CAT5 adaptors, allow use of a standard CAT5 network cable between the two items at distances of to 100m [KA175]

The main body of the IR Commander Matrix is usually located out of sight or within the AV cabinet. It operates from 7.5 DC allowing for easy integration in marine or travel installations, a mains to 12v adaptor is supplied.

IR OUT 4, **IR OUT 3**, **IR OUT 2**, **IR OUT 1**

OUTPUT EXPANSION MODULE (1), **OUTPUT ACTIVITY**

INPUT EXPANSION MODULE, **WAND INPUT**, **INPUT 4**, **INPUT 3**, **INPUT 2**, **INPUT 1**

DC IN 7.5V, **ON BOARD ACTIVITY**, **INTERNAL IR RECEIVER**, **ACK LED**, **RESET**, **GENERATED OUTPUT ROUTING**, **ON BOARD IR ROUTING**, **WAND INPUT ROUTING**, **INPUT 4 ROUTING**, **INPUT 3 ROUTING**, **INPUT 2 ROUTING**, **INPUT 1 ROUTING**, **IP ON BOARD ACTIVITY**, **WAND**, **ACTIVITY**

Internal IR activity
Built in wideband IR receiver
IP status
Dip switches for precise signal routing
Network Activity
IR activity

There are four jack socket inputs for IR receivers, plus a port for an (optional) four input expansion module and a wand input for direct feed from IR extender or other IR distribution system.

LAN connection will accept IR over IP inputs from Keene IR Anywhere modules or from PC's or handheld devices, local or via internet. RS232 to TCP client operates at 1200 to 115200 baud

IR Signal Input Sources

IRSR The standard IR receiver, supplied with the IRBKITS

IRWBR (optional) wideband IR receiver

IRSP (optional) flush wall mount standard IR receiver. Also available in wideband (IRSPW)

PMID (separate system). Use the output direct from a wireless IR sender such as the Powermid

RF2IR (separate system). Use the output direct from the RF2IR system

CAT5 (separate systems) Use the IR output direct from any of the Keene video over CAT5 systems

IRPMR (optional) Panel mount IR receiver

Network (separate systems) Use IR over IP commands from IR Anywhere modules or other network or internet device

Hints and tips

Any Keene wands whether high power or standard may be used in any emitter output

If wiring up your own extension for the emitters always make all three connections so it will work with either the std or the high power emitters

It is also possible to confuse the IR receiver on the equipment you want to control by having 2 sources of IR. For example having a standard emitter on the front of a VCR and a high power emitter pointed at the same VCR would result in 2 conflicting signals at the VCR and could result in mis-operation.

All the emitter diodes are directional (rather like a narrow torch beam) and this should be borne in mind when positioning the emitters.

CAT5 cable if used should be normally wired EIA568B or natural pairing (NOT network cross-over cable)

Twin wand outputs for routed IR signal number 4

Twin wand outputs for routed IR signal number 3

Twin wand outputs for routed IR signal number 2

Expansion module output for routed IR signal number 1

LED's flash to indicate IR output activity

Input for IR receiver expansion module

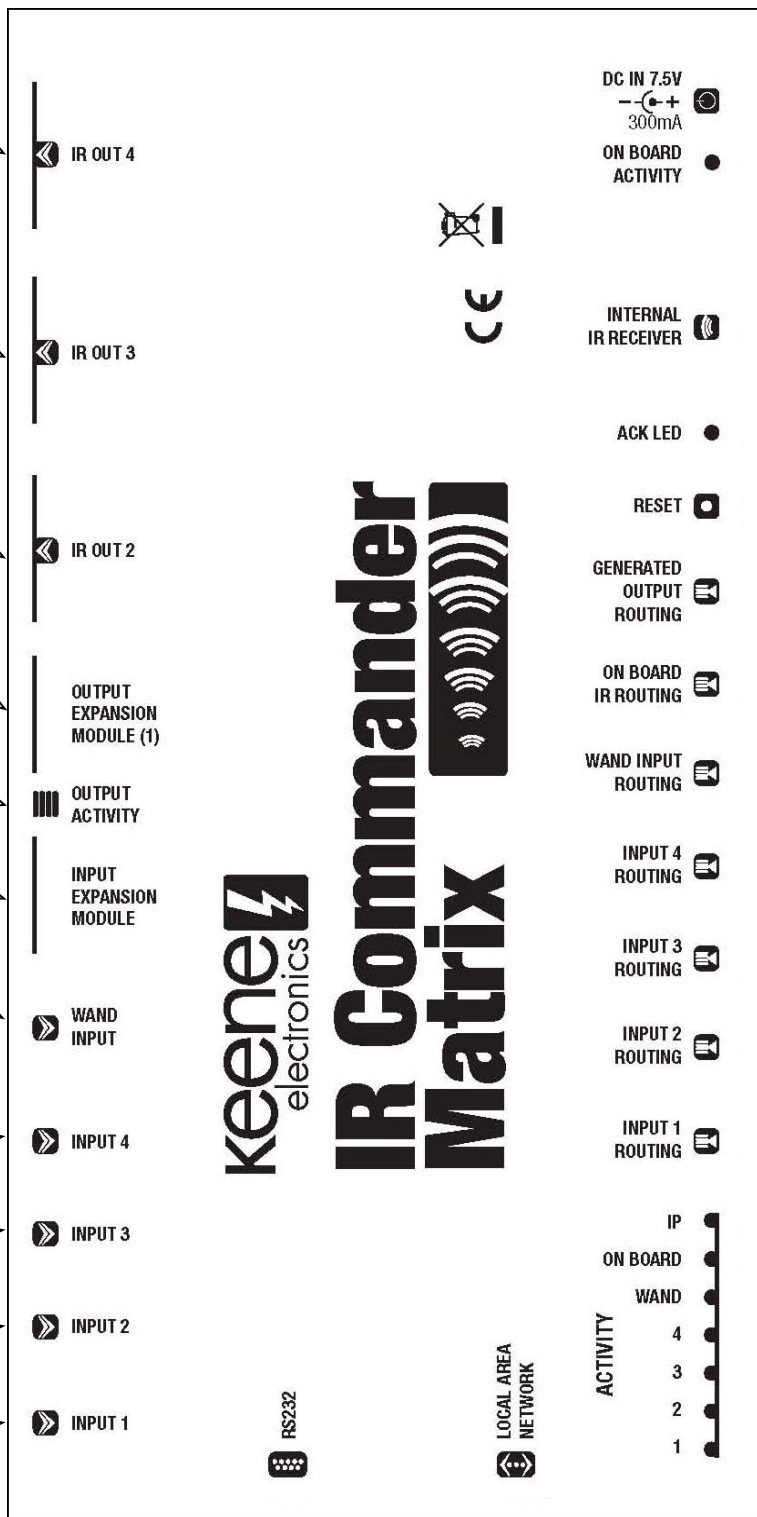
Direct input for other equipment IR wand output

Direct input for IR receiver

Direct input for IR receiver

Direct input for IR receiver

Direct input for IR receiver



DC input 7.5v 300mA

LED flashes for confirmation when the internal IR receiver picks up a signal

Internal wideband IR receiver for 20-120KHz bandwidth

LED flashes to confirm IP command

Reset button (see notes)

Dip switch bank for generated output signal routing

Dip switch bank for internal IR signal routing

Dip switch bank for wand input signal routing

Dip switch bank input 4 signal routing

Dip switch bank input 3 signal routing

Dip switch bank input 2 signal routing

Dip switch bank input 1 signal routing

LED flashes to confirm IP IR command received

LED's flash to confirm IR activity

RS232 port

LAN connector and activity LED's

IR COMMANDER MATRIX

Box contents:

Keene IR Commander Matrix

KT9 mains power adaptor

1 x IRHPW high power emitter wand

Useful product codes

Code	Description
IRUW	Universal IR emitter wand
IRLPW	Low power IR emitter wand
IRHPW	High power IR emitter wand
IRSFW	Side firing IR emitter wand
IRDW	A single jack drives two IR emitter wands that affix directly to the fascia and give a visible confirmation flash as the IR signal is emitted
IRC4B	Output expansion module allows up to four additional emitter wands to be connected via CAT5 cable
IRSR	Standard receiver for most domestic equipment (40KHz)
IRWBR	Wideband IR receiver for equipment up to 100KHz
IRSP	Flush mounted single gang wall plate containing a standard IR receiver
IRSPW	Flush mounted single gang wall plate containing a wideband IR receiver
IRPMR	IR Panel Mount receiver (36-40KHz) black finish
IRPMRW	IR Panel Mount receiver (36-40KHz) white finish
IRC4A	Input expansion module allows for up to four additional IR receivers to be connected via CAT5 cable
KLDE6M	Couples a Powermid IR output directly to the IRCM wand input (3.5mm jack to 3.5mm jack)
KLDE10M	Couples other 2.5mm IR extender outputs directly to the IRCM input (2.5mm jack to 3.5mm jack)
KLD40	3 metre extension lead for input or output
KLD405	5 metre extension lead for input or output
KLD4010	10 metre extension lead for input or output
KA175	A short (25cm) line adaptor with an RJ45 line socket to a 3.5mm stereo jack plug. Allows use of standard CAT5 network cables to extend the distance between the IR receivers and the Keene IRBKIT and IR Commander Matrix systems. Works up to 100m.
KA109	IR input splitter 1 x 3.5mm jack to 2 x 3.5mm sockets for using both cabled feed (Powermid) and in-room IR receiver
KRECA	IR receiver adaptor allows Keene IR receivers to be used with other manufacturers IR distribution equipment
KIRA	IR Anywhere module that can be used as a remote network based IR source
KT9	Mains power adaptor 220-240V to 7.5V 650mA DC
KT9W	Mains power adaptor 110-240V (worldwide interchangeable plugs) to 7.5V 650mA DC

