



Infrared Distribution System

Installation Instructions

8050EJ	Emitter Junction Box
8050TJ	Target Junction Box
8050FT	Flat IR Target
8050ST	Shelf Top IR Target
8050TT	Tube IR Target
8050LD	IR Emitter Lead, Single
8050/2LD	IR Emitter Lead, Dual



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1.0 Product Range

8050EJ	Emitter Junction Box
8050TJ	Target Junction Box
8050FT	Flat IR Target
8050ST	Shelf Top IR Target
8050TT	Tube IR Target
8050LD	IR Emitter Lead, Single
8050/2LD	IR Emitter Lead, Dual

2.0 Description

The 8050 series products form a flexible, cost effective Infrared (IR) Distribution System which compliments centrally based audio/video distribution systems. The products allow IR controllable equipment in a central location (such as an equipment rack or cabinet) to be controlled from multiple locations within a building.

3.0 System Connection

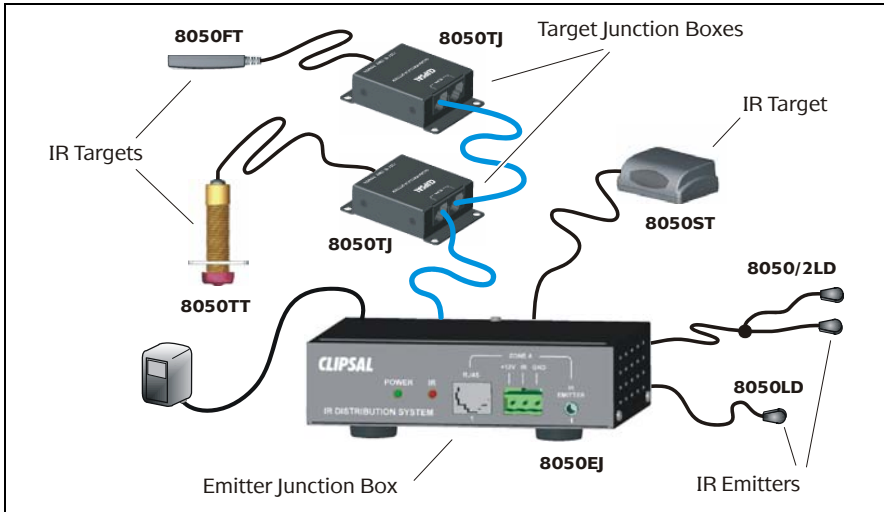


Figure 1 – IR Distribution System key components

The key components of the IR Distribution System are shown in Figure 1. The heart of the system is the 8050EJ Emitter Junction Box. This unit receives signals from various IR Targets and transmits them to IR Emitters.

IR Targets are positioned at appropriate locations throughout a building and connected to the 8050EJ Emitter Junction Box via 8050TJ Target Emitter Junction Boxes. Up to ten IR targets may be connected in total. If only one IR target is to be present in a zone, it may be connected to the 8050EJ Emitter Junction Box directly via the three pin Zone connector.

A connection from an 8050EJ to an 8050TJ unit is made by a run of Cat-5 cable, which terminates in an RJ45 socket on each unit. Each 8050TJ provides a second RJ45 socket so that additional Target Junction Boxes (and IR Targets) can be connected to the IR Distribution System.

IR emitter leads (8050LD or 8050/2LD) are connected to the 8050EJ and run to IR controllable appliances (such as DVD players, Radio Receivers and Digital Television (DTV) set top boxes). The head of the lead is positioned over or near the appliance's IR receiver.

The system can be expanded to have more IR targets and emitters as required. Figure 2 shows the components which may be included in an installation.

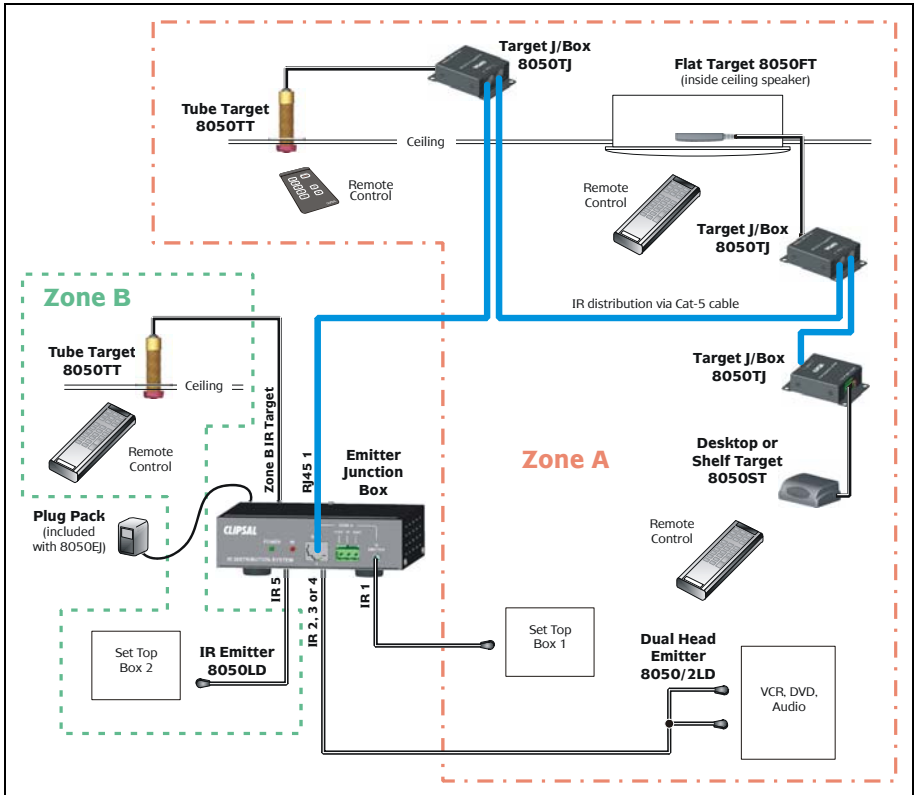


Figure 2 – Components which may be included in an installation

3.1 Multiple Zones

Two zones are supported to allow IR controls to be separated. This is useful when duplicate IR controllable appliances (such as two DTV set top boxes of the same model) exist side by side. In this case IR Emitters for each set top box are connected to different Zones. Separate IR Targets are connected to Zones A and B. Remote control codes sent through a Zone A IR Target control one set top box and codes sent through a Zone B Target control the other.

This allows different appliances to be controlled from specific rooms, such as one set top box from a child's room and another from the adults'. Appliances whose IR Emitters are connected to both zones, (the Zone A+B connections on the 8050EJ Emitter Junction Box), can be controlled from any IR Target. The diagram in Figure 3 illustrates how zones work. The examples in Figures 4 and 5 show how multiple zones may be utilised.

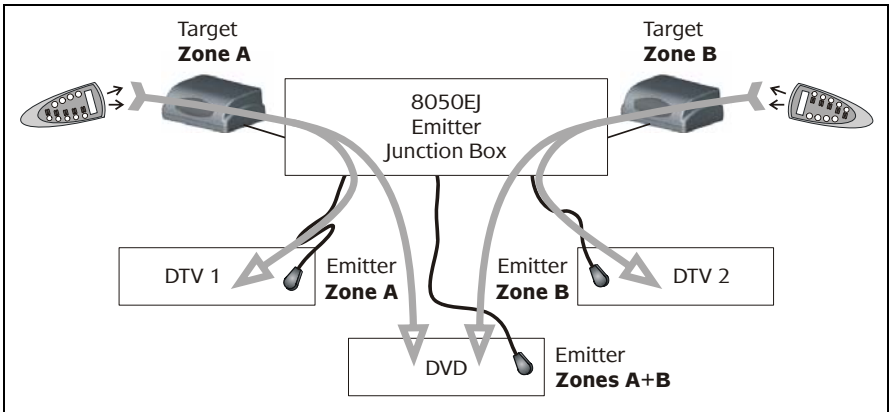


Figure 3 – The IR Distribution System supports multiple zones

In the home installation in Figure 4, separate Digital Television (DTV) units are provided for the parents and child. The child's DTV can be controlled from the child's room (via an IR Tube Target) and the study (via an IR Shelf Target (ST)). The parents' DTV can be controlled from the parents' room (via an IR Tube Target) and the lounge (via an IR Flat Target (FT)). Since the IR Emitter linked to the DVD is connected to Zones A+B, the DVD can be controlled from any room (either Zone).

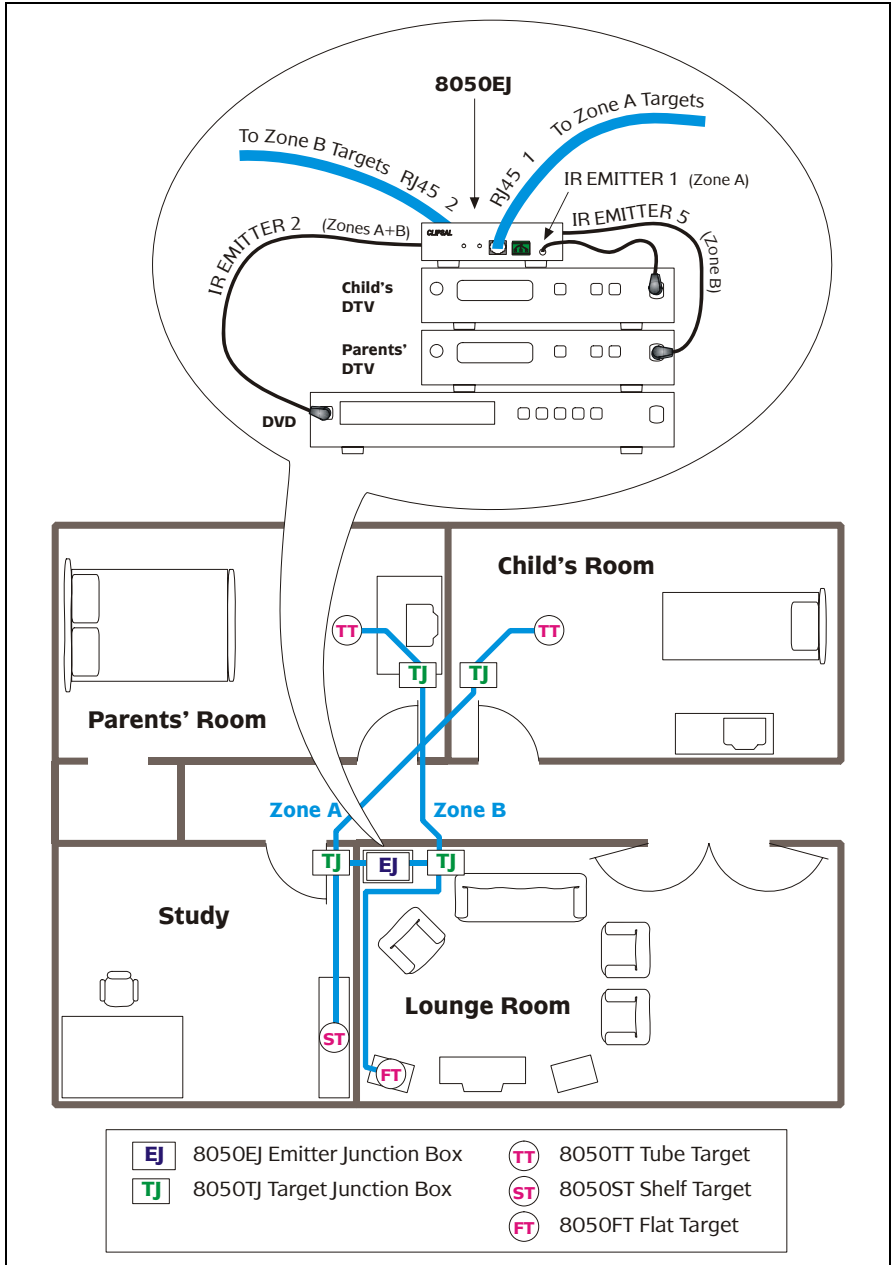


Figure 4 - Example of a home installation

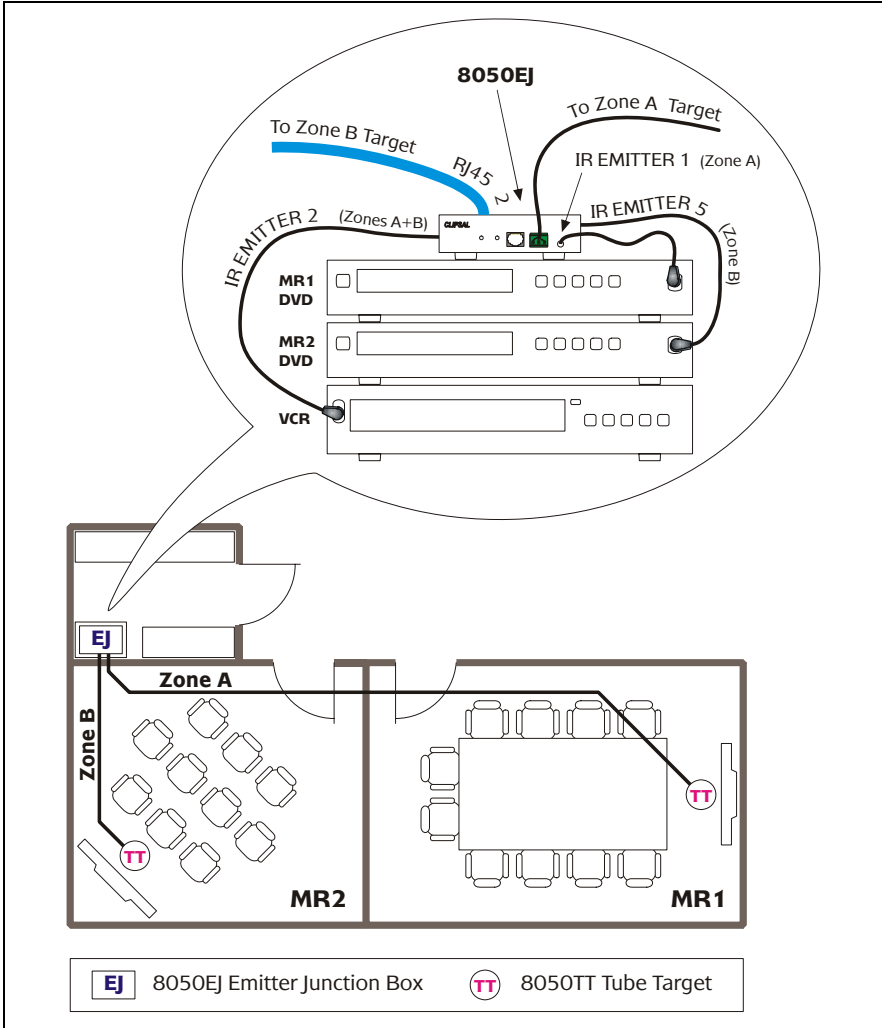


Figure 5 – Example of a business installation

Figure 5 shows a business installation with two separate meeting rooms. Each meeting room has its own DVD unit and a shared VCR (located in a separate room). The IR Tube Target (TT) in MR2 is connected to Zone B. This allows an IR remote to control the VCR and MR2 DVD. The Tube Target in front of the monitor in MR1 is connected to Zone A, allowing an IR remote to control the VCR and MR1 DVD.

4.0 Emitter Junction Box

The 8050EJ Emitter Junction Box is designed to sit near or on top of AV equipment. It is the main distribution hub of the IR Distribution System. The unit is powered by a 12 V DC Plug pack. Its features are identified in Figure 6.

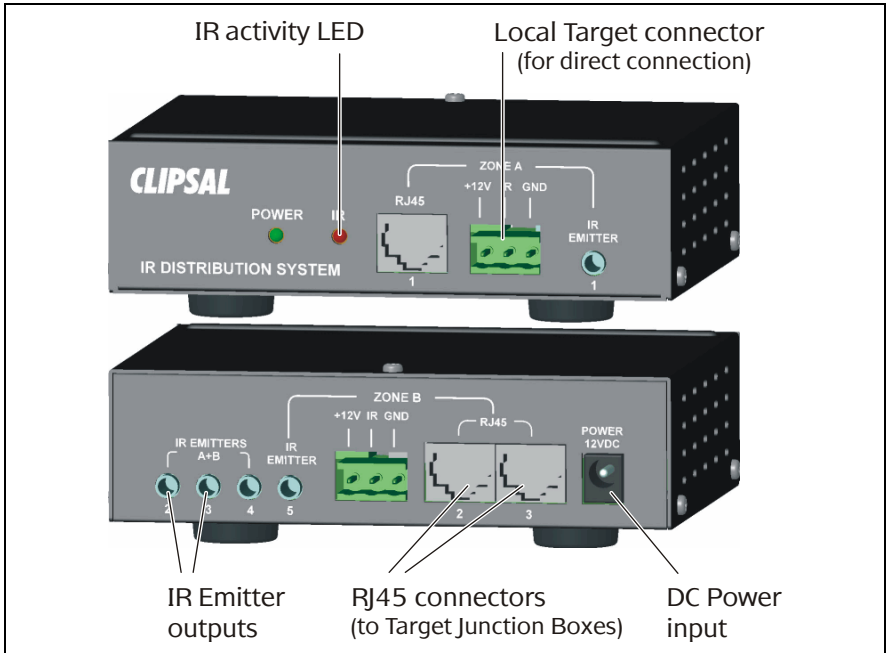


Figure 6 – Front and back views of the 8050EJ Emitter Junction Box

4.1 Unit Connections

IR Emitter Outputs

Five IR Emitter outputs are provided on the Emitter Junction Box. Each may be connected to a single or dual head IR Emitter Lead (8050LD or 8050/2LD). Outputs 1 and 5 are dedicated for Zones A and B respectively. The remaining three outputs are linked to both Zones.

RJ45 Inputs

The RJ45 inputs are used to connect 8050TJ Target Junction Boxes to the Emitter Junction Box. Input 1 connects to Zone A, while inputs 2 and 3 connect to Zone B. Up to five Target Junction Boxes may be connected to each Zone (five to input 1 and five distributed between inputs 2 and 3).

Local Target Connections

Zones A and B each have the ability to power one locally placed target directly.

DC Power Input

The output of the 12 V DC Plug pack (supplied with the Emitter Junction Box) is connected here.

5.0 Target Junction Box



Figure 7 – The 8050TJ Target Junction Box

The 8050TJ (Figure 7) acts as a termination point between an IR Target and the 8050EJ. Target Junction Boxes may be cascaded in series to support multiple IR Targets (as in Figure 2). Up to ten Target Junction Boxes may be connected to the 8050EJ. This could be 10 × 8050TJs connected to RJ45 #1 and none to the others, 2 × 8050TJs connected to RJ45 #1 and 4 each to RJ45s #2 and #3, or another combination.

The unit is typically mounted on a ceiling rafter or joist. It may also be wall mounted behind a Clipsal Wall Plate (such as the 2000, Classic or Eclipse series). This is convenient when an 8050TT Tube IR Target is mounted in an adjacent Clipsal Wall Plate.

6.0 IR Targets

Three IR Target models are available for use with the IR Distribution system (refer to Figure 8 and Table 1). Each contains an infrared receiver array designed to receive and relay IR data from the Target to the Emitter Junction Box. Installing IR Targets in multiple rooms enables a user to control audio/visual equipment from various locations within a building.



Figure 8 – IR Targets

Catalogue Number	Description	Suitability
8050FT	Flat IR Target	In grills or vents
8050ST	Shelf Top IR Target	On top of a television or inside a stereo cabinet
8050TT	Tube IR Target	Mounted on a wall or ceiling

Table 1 – IR Target types

7.0 IR Emitter Leads

Two types of IR Emitter Leads are available for use with the IR Distribution System. Each is supplied with transparent adhesive stickers so you can fix the emitter head to the IR receiver of an appliance.



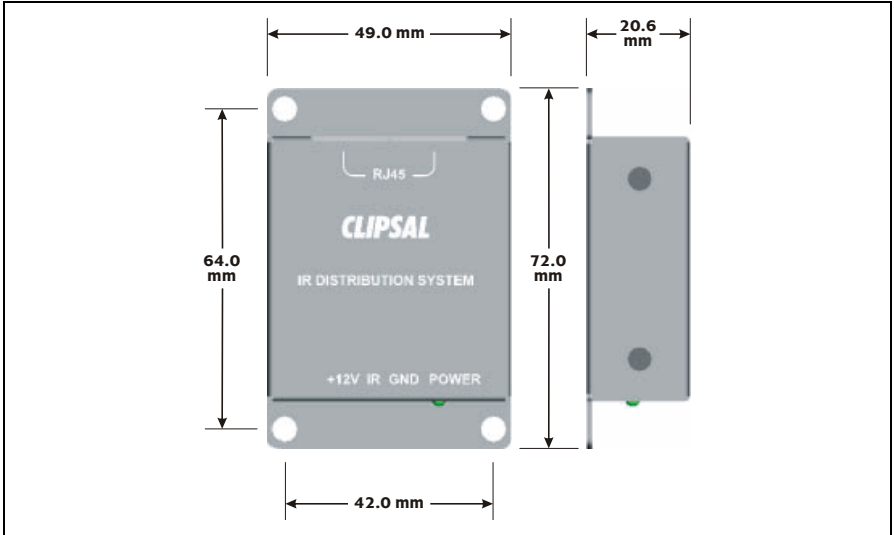
Figure 9 – IR Emitter Leads (Single and Dual)

8.0 Electrical Specifications

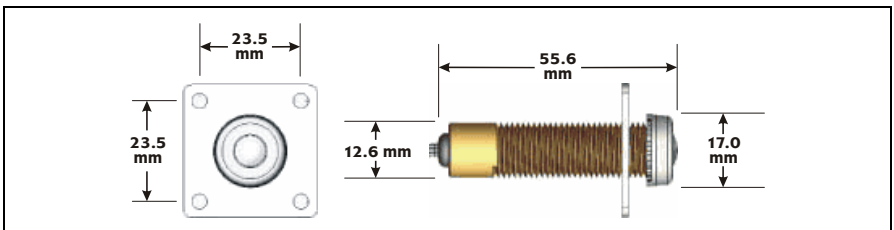
Parameter	Description
Infrared modulation bandwidth	30 to 100 kHz
IR Target reception range	up to 10 m
IR Target reception angle	55° off axis (50% range reduction)
Power supply	12 V DC, 500 mA
EJ Box power consumption	150 mA maximum
Target power consumption	3 mA (standby), 15 mA (activated)
Cable requirement (for RJ45 connectors)	Cat-5e
Number of Target Junction Boxes	10 (total maximum)
Maximum distance of Target from Emitter Junction Box	100 m
Maximum distance of Emitter from Emitter Junction Box	2 m
Maximum total Cat-5e length	100 m

9.0 Mechanical Specifications

9.1 8050TJ Target Junction Box



9.2 8050TT Tube IR Target



10.0 Limited Warranty

The 8050 Series IR Distribution System units carry a two year warranty against manufacturing defects (refer to Warranty Statement).



Technical Support and Troubleshooting

For further assistance in using this product, consult your nearest Clipsal Integrated Systems Sales Representative or Technical Support Officer.

Technical Support Hotline: 1300 722 247 (Australia)
0800 888 219 (New Zealand)

Technical Support Email: techsupport.cis@clipsal.com.au

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A list of worldwide contacts, additional product information and technical resources is provided at <http://www.clipsal.com/cis/>

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