CLIPSAL

by **Schneider** Electric

**Unit
IR1**

**C-Bus
IR2**

C-Bus Infrared
Transmitter
5034NIRT
Series

TWO YEAR
2
WARRANTY

CE

Installation Instructions

Contents

1.0 Product Range

Catalogue Number	Description
C-Bus Two Channel Infrared Transmitters	
5034NIRT	2000 Series
C5034NIRT	C2000 Series
E5034NIRT	E2000 Series
SC5034NIRT	SC2000 Series
SL5034NIRT	SL2000 Series
Accessory	
5100HSCU	C-Bus USB IR Programming Cable

2.0 Important Notes

- IR Emitter Leads are connected to the 5034NIRT Series' 3.5mm mono jack sockets. These sockets are not isolated from C-Bus and must NOT be grounded or connected to a voltage source.

- The use of any software not provided by Clipsal Integrated Systems (IS) in conjunction with the installation of this product may void any warranties applicable to the hardware.

3.0 Description

The 5034NIRT Series C-Bus Infrared Transmitter provides two channels of infrared (IR) output. It allows C-Bus to send infrared control codes to third party IR controllable devices, such as audiovisual equipment, blinds and air conditioning units.

The C-Bus Infrared Transmitter stores IR commands which are programmed using the CIRCA software (refer to Section 12.3 on Page 9). Up to 200 or more commands can be stored, depending on the command length.

4.0 Installation

Figure 1 shows a typical installation scenario. IR Emitter Leads plug into the 5034NIRT Series unit and are attached to the IR receiver windows of audio/video equipment.
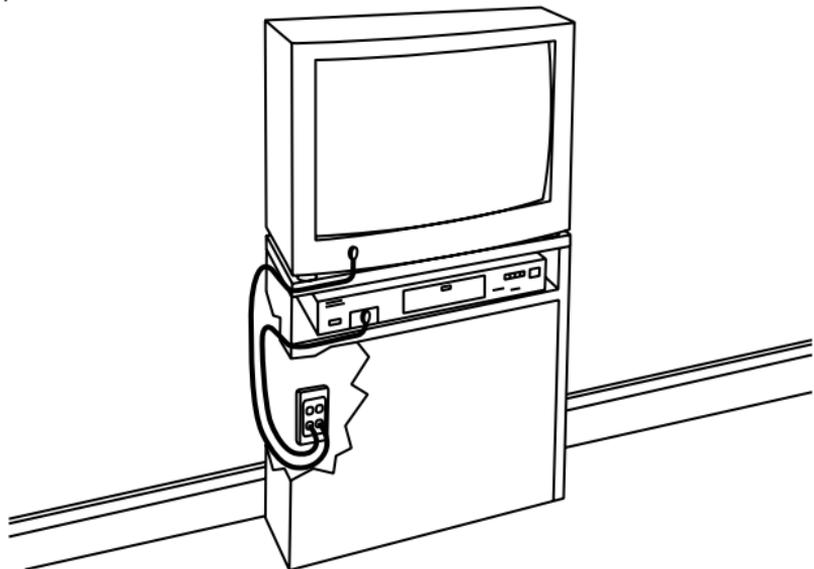

Figure 1 - A typical 5034NIRT installation

The E5034NIRT is a square wall plate unit which is mounted using the Clipsal E157 Wall Box. All other units are mounted using any of the standard centre mounting accessories such as the Clipsal 155 and 157/1.

To ensure a tidy installation, it is recommended you mount the unit close to the floor, behind the control equipment.

4.1 Infrared Emitter Leads

5034NIRT Series units can be used with either single or dual head IR Emitter Leads (8050LD or 8050/2LD). IR Emitter Leads are connected to the 5034NIRT's 3.5 mm mono jack sockets. These sockets are not isolated from C-Bus and should NOT be grounded or connected to a voltage source (leave floating).

The transparent design of the 8050LD and 8050/2LD heads allows the controlled equipment to continue to receive commands from its remote control, when the heads are fitted over the IR receiver window.

An extension lead may be used with an IR emitter lead to provide a total length of up to 50 metres (as long as the cable capacitance does not exceed 10nF).

5.0 C-Bus Network Connection

Installation of a 5034NIRT Series unit on the C-Bus network requires connection to the unshielded twisted pair C-Bus cable. Connection is made using Category 5 (Cat. 5) data cable, Clipsal catalogue number 5005C305B.

Figure 2 and Table 1 identify the connections required between the C-Bus Cat. 5 cable and the C-Bus Infrared Transmitter. The Remote ON and Remote OFF connections are not used.

If multiple C-Bus cables are connected to the 5034NIRT Series unit, it is recommended that the Remote Override (Remote ON/OFF) connections be maintained for correct operation of these services across the C-Bus network.

C-Bus Positive: blue + orange

C-Bus Negative: blue & white + orange & white

Remote OFF: brown + brown & white

Remote ON: green + green & white
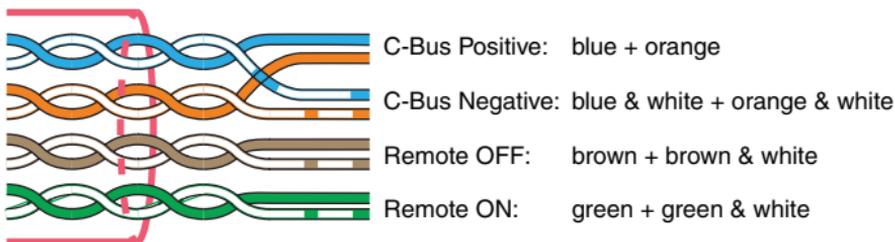
Figure 2 - C-Bus cable conductor assignments

C-Bus Connection	Colour
C-Bus Negative (–)	orange & white
C-Bus Positive (+)	blue
C-Bus Negative (–)	blue & white
C-Bus Positive (+)	orange

Table 1 - C-Bus cable connections

6.0 Status Indicators

6.1 Unit IR1 Indicator

This indicator illuminates when the unit is powered and functional, and flashes when there is C-Bus network traffic.

Indicator Status	Meaning
On	Normal operation
Flashing	C-Bus communication in progress
Off	Unit has no power
Bright flashing*	IR transmission in progress (Channel One)

6.2 C-Bus IR2 Indicator

This indicator shows the status of the C-Bus network at the unit. If sufficient network voltage and a valid C-Bus clock signal are present, the indicator illuminates (as a continuous orange light). If a network is connected, which has a higher current load than the power supply supports, the indicator flashes to show a marginal network voltage. If no C-Bus clock is present, the indicator remains off.

Indicator Status	Meaning
On	Power is on and the network is functional
Flashing	The network voltage is marginal
(15V < voltage < 20V)	Unit has no power
Off	No C-Bus clock signal is present and/or insufficient power to support the network
Bright flashing*	IR transmission in progress (Channel Two)

*This feature can be disabled using the CIRCA software

7.0 C-Bus System Clock

5034NIRT Series units incorporate a software selectable C-Bus system clock. The system clock is used to synchronise data communication over a C-Bus network. At least one active C-Bus system clock is required on each C-Bus network for successful communication. No more than three units on any C-Bus network should have clock circuitry enabled, so this option is normally disabled using the C-Bus Toolkit software.

8.0 C-Bus Network Burden

5034NIRT Series units incorporate a software selectable network burden. The network burden can be enabled using the C-Bus Toolkit software, but only if the C-Bus system clock is enabled.

One network burden is normally required to ensure correct operation of each C-Bus network. The network window of a C-Bus Toolkit project provides a summary of a C-Bus network according to the units added to the database. This can be helpful in determining whether or not a burden is required on a particular network.

9.0 C-Bus Power Requirements

The 5034NIRT Series C-Bus Infrared Transmitter draws 32mA from the C-Bus network.

Adequate C-Bus Power Supply Units must be installed to support connected devices. The network window of a C-Bus Toolkit project provides a summary of a C-Bus network according to the units added to the database. This can be helpful in determining the power supply requirements of a particular network.

10.0 Power Up Load Status

The status of any infrared controlled device may be affected by mains power loss. For example, a television set which was on will lose power, and may not return to the on state after a mains power failure. In such a case the infrared transmitter may be used to turn the device back on, provided there is adequate means of detecting the power loss.

11.0 Megger Testing

Important points when megger testing an electrical installation:

- Only megger test when mains cabling is disconnected from C-Bus output units.
- Do not megger test the C-Bus cable.

12.0 Programming

The 5034NIRT Series C-Bus Infrared Transmitter must be programmed before it will operate correctly. Programming involves:

- configuring the unit using the C-Bus Toolkit software
- connecting the C-Bus USB IR Programming Cable
- transferring the IR codes using the CIRCA software.

12.1 C-Bus Toolkit Software

The C-Bus Infrared Transmitter must be programmed with a unique unit address. This is accomplished using the C-Bus Toolkit software, available from the downloads section of the Clipsal Integrated Systems website (http://www.clipsal.com/cis). C-Bus Toolkit is also used to enable the C-Bus system clock and burden if required.

12.2 C-Bus USB IR Programming Cable

The 5100HSCU C-Bus USB IR Programming Cable is used to connect the 5034NIRT Series unit to a PC. The 1.5 metre cable plugs into the 4-pin connector on the side of the 5034NIRT Series unit, as well as the PC's USB port. It is available from Clipsal as a separate part.

Observe these precautions when using the 5100HSCU C-Bus USB IR Programming Cable:

- The programming cable contains custom electronics. Do not attempt to extend its length, except by using a USB extension lead (to give a maximum total length of 5 metres). Use a powered USB hub if more distance is required.
- When connecting the 4-pin plug to the 5034NIRT Series' 4-pin connector, align the orange indicators to ensure correct orientation.
- The drivers for the cable are installed by the CIRCA software (V2.4 or higher).
- The custom electronics within the cable are powered by the PC USB port. A green LED within the cable's USB plug flashes when USB power is present. The LED also flashes dimly when connected to the 5034NIRT Series unit only. This is normal.
- A red LED within the cable's USB plug flashes rapidly when data is being transferred. DO NOT disconnect the cable while a transfer is in progress.
- When the cable is connected to the C-Bus Infrared Transmitter, the C-Bus network is effectively grounded. This is generally not recommended, and can seriously affect the operation of the C-Bus network. Do not leave the cable permanently connected.

12.3 CIRCA Software

The C-Bus Infrared Commissioning Application (CIRCA software) is used to transfer IR codes from a PC to the 5034NIRT Series unit. It is also used to assign C-Bus events which trigger the IR codes to be transmitted. The CIRCA software is available from the Downloads section of the Clipsal Integrated Systems website (http://www.clipsal.com/cis).

Refer to the CIRCA Help documentation for information on the application (select contents from CIRCA's Help menu, or press the F1 key from within the application).

13.0 Electrical Specifications

Parameter	Description
C-Bus supply voltage	15 to 36V d.c., 32mA
C-Bus AC input impedance	50 kΩ @ 1kHz
Electrical isolation	3.75kV RMS from C-Bus to mains (provided externally to 5034NIRL Series unit)
Maximum number of units per network	50
Number of IR ports	2
IR port output voltage	5V d.c. maximum
IR port output current	20mA maximum rated continuous output
IR port terminals	2 × 3.5mm mono audio jack
IR code format	IR carrier frequency 0 to 455kHz. Pulsed IR code format (carrierless)
IR transmission delay	200ms maximum (between consecutive commands)
USB comms	USB V1.1
Network clock	Software selectable
Network burden	Software selectable
C-Bus connection	One terminal block to accommodate 0.2 to 1.3mm² (24 to 16 AWG)
Operating temperature range	0 to 45°C
Operating humidity range	10 to 95% RH

14.0 Mechanical Specifications

Parameter	5034NIRT C5034NIRT	SC5034NIRT SL5034NIRT	E5034NIRT
Dimensions (W × H × D)	116 × 76 × 34mm	116 × 76 × 34mm	87 × 87 × 34mm
Protrusion from wall	13mm	4mm	14mm
Mounting centres	84mm	84mm	60.3mm
Weight	5034NIRT: 110g C5034NIRT: 107g	SC5034NIRT: 93g SL5034NIRT: 92g	106g
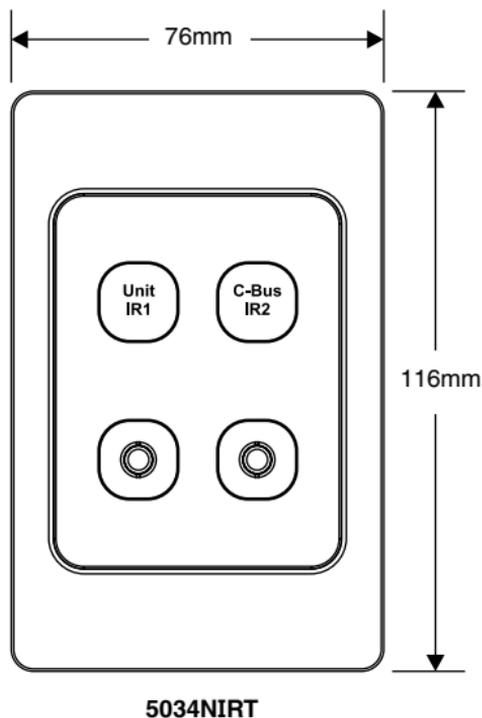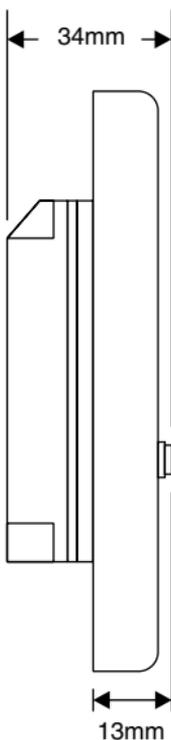
5034NIRT

15.0 Standards Complied

Declarations of Conformity

Australian/New Zealand EMC & Electrical Safety Frameworks and Standards

5034NIRT Series C-Bus Infrared Transmitters comply with the following:

Standard	Title
AS/NZS CISPR22	Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement

European Standards

5034NIRT Series C-Bus Infrared Transmitters comply with the following:

Standard	Title
EN 55022	Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement
EN 55024	Information technology equipment – Immunity characteristics – Limits and methods of measurement

Other International Standards

5034NIRT Series C-Bus Infrared Transmitters comply with the following:

Standard	Title
CISPR 22	Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement
CISPR 24	Information technology equipment – Immunity characteristics – Limits and methods of measurement

16.0 Warranty

The benefits conferred herein are in addition to, and in no way shall be deemed to derogate, either expressly or by implication, any or all other rights and remedies in respect to the Schneider Electric product, which the consumer has in the location where the product is sold.

The warrantor is Schneider Electric with offices worldwide. This Schneider Electric product is guaranteed against faulty workmanship and materials for a period of two (2) years from the date of installation.

Schneider Electric reserves the right, at its discretion, to either repair free of parts and labour charges, replace or offer refund in respect to any article found to be faulty due to materials, parts or workmanship.

This warranty is expressly subject to the Schneider Electric product being installed, wired, tested, operated and used in accordance with the manufacturer's instructions. Any alterations or modifications made to the product without permission of Schneider Electric might void the warranty.

Schneider Electric shall meet all costs of a claim. However, should the product that is the subject of the claim be found to be in good working order, all such costs shall be met by the claimant.

When making a claim, the consumer shall forward the Schneider Electric product to the nearest Schneider Electric office and provide adequate particulars of the defect within 28 days of the fault occurring. The product should be returned securely packed, complete with details of the date and place of purchase, description of load, and circumstances of malfunction.

17.0 Further Information

Technical Support and Troubleshooting

For further assistance, please consult your nearest Clipsal Integrated Systems Sales Representative or Technical Support Officer.

Technical Support Contact Numbers	
Australia	1300 722 247 (CIS Technical Support Hotline)
New Zealand	0800 888 219 (CIS Technical Support Hotline)
Northern Asia	852 2484 4157 (Clipsal Hong Kong)
South Africa	(011) 314 5200 (C-Bus Technical Support)
Southern Asia	603 7665 3555 Ext. 236 or 242 (CIS Malaysia)
United Kingdom	0870 608 8 608 (Schneider Electric Support)

Technical Support email: cis.support@clipsal.com.au

Sales Support Email: sales.cis@clipsal.com.au

Worldwide contacts are provided at http://www.clipsal.com/locations/

Information and resources are provided at http://www.clipsal.com/cis/

Schneider Electric (Australia) Pty Ltd

clipsal.com

Contact us: clipsal.com/feedback

National Customer Care Enquiries:
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