

CROSS-BAND REPEATER INSTALLATION GUIDE



The package includes the repeater and this installation guide.

Description / Product Overview

This guide covers model numbers:

- CBR-CU, Cross-Band Repeater,
Channel A: 315 MHz - Channel B: 902 MHz
- CBR-YU, Cross-Band Repeater,
Channel A: 868 MHz - Channel B: 902 MHz
- CBR-CJ, Cross-Band Repeater,
Channel A: 315 MHz - Channel B: 928 MHz

The CBR repeaters are intended for indoor use only.

The Cross Band repeater (CBR) is used to repeat telegrams from one EnOcean standard frequency to another, bi-directionally. This frequency hopping allows telegrams in one frequency band be received in another, secondary band. The CBR default mode of operation will only repeat original telegrams. Previously repeated telegrams are not repeated. Refer to the section titled “Repeating Modes” to change this operation.

CBR Operation

The cross-band repeater (also referred to as a “repeater” in this guide) will repeat received EnOcean telegrams from one frequency to another.

The repeater has two channels; channel A and channel B. Channel A does not have the same frequency as channel B. When a received telegram on either channel is repeated, it is always transmitted on the channel it was not received on.

The repeater uses the standard EnOcean repeating function, supporting and maintaining the single and dual hop restrictions imposed upon telegram traffic.

If a received telegram on either channel has not been repeated, the CBR will re-transmit the telegram on the second channel and increment the telegrams repeater count to one. If the telegram received has previously been repeated once, the CBR increments the repeater count for the telegram to two after transmitting (see Mode 2 below). Once a telegrams repeater count is two, it cannot be repeated again by any standard EnOcean device.

Uni-directional or Bi-directional Repeating

The repeating function can be enabled or disabled for each channel, A and B.

If channel A has repeating enabled, it will repeat received telegrams on channel B.

If channel B has repeating enabled, it will repeat received telegrams on channel A.

Enabling or Disabling Repeating

Tap the channel’s TX EN/DIS button once to toggle between enabling and disabling the channels repeating function. When the channel repeating function is enabled, the TX/EN green LED will be lit solid. When disabled, this LED will be off.

Repeating Modes

Mode 1 - (default mode) - This mode will only repeat original telegrams. Previously repeated telegrams will not be repeated.

Mode 2 - This mode will repeat original and single hop repeated telegrams. Dual hop repeated telegrams will not be repeated.

Mode 3 - This repeating mode is transparent, it will repeat every telegram and does not increment the repeater counter of the telegrams. This mode should only be used temporarily when broadcasting remote management commands through the repeater.

Changing Repeating Modes

Each radio channel can be individually set into one of the three repeating modes.

To change modes:

1. Disable the channel. Tap the TX EN/DIS button corresponding to the

channel so the TX/EN LED (green) is off.

2. Press and hold the channel's TX EN/DIS button until the TX/EN LED blinks twice, approximately 5 seconds.
3. Once the button is released, the TX/EN LED will blink a repeated pattern of one, two or three blinks corresponding to the current repeater mode. Cycle through the three modes by tapping the channels TX EN/DIS button.
4. Once the desired mode has been selected, press and hold the channels TX EN/DIS button until the TX/EN LED blinks twice, approximately 5 seconds.
5. Enable the channel by tapping the TX EN/DIS button once. The TX/EN LED will be lit solid.

Installation

Mount the CBR using two screws (not supplied). The CBR can be mounted to most surfaces however for best performance, avoid concrete, cement block, brick, and metal surfaces.

NOTE: The antenna wires should not be disturbed - do not cut or cap these wire(s).

Each channel is capable of receiving and transmitting approximately 80' or 24m laterally in commercial office spaces. This range is affected by the building materials and other devices emitting radio interference. Test the repeaters performance before finalizing the installation.

If panel mounting, use a non-metallic panel box. Consult your electrical code requirements.

NOTE: The repeater should only be installed in an indoor location.

Wiring Instructions

The CBR is powered by 9-34VDC or 12-24VAC.

Typical power consumption is 700 mWatt. There are two power input terminals for red (24+) and black (ground) wires. Use only approved wire.

Do not cut or cap the antenna wire(s).

CBR Buttons and LED's

Channels A and B Transmit Enable /Disable Buttons - these buttons are used to enable or disable the channels repeating function. They are also used to select the repeating mode of the channel.

Channels A and B RX LED - each channel has a yellow RX LED that blinks upon reception of a received telegram.

Channels A and B TX/EN LED - each channel has a green TX/EN LED that is lit solid when the channel is enabled.

Channels A and B TX LED - each channel has a red TX LED that blinks when a telegram is transmitted from the channel.

Regulatory Statements

902 MHz

FCC Part 15.231

Contains FCC ID: SZV-STM300U

The enclosed device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- (i.) this device may not cause harmful interference and
- (ii.) this device must accept any interference received, including interference that may cause undesired operation.

IC RSS-210

Contains IC: 5713A-STM300U



315 MHz

FCC Part 15.231

Contains FCC ID: SZV-STM300C

The enclosed device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- (i.) this device may not cause harmful interference and
- (ii.) this device must accept any interference received, including interference that may cause undesired operation.

IC RSS-210

Contains IC: 5713A-STM300C

928 MHz

Japanese Type Approval

ARIB STD-T108



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