Press Release

April 11, 2011

New integrated radio modules for long range wireless remote control

Circuit Design, Inc. has announced the release of the CDT-TX-02M-R / CDT-RX-02M-R, an embedded low power radio transmitter and receiver suitable for long-range On/Off remote control.
The modules incorporate highly reliable radio components and input and output processing circuitry, enabling simple communication with up to six contacts.

MSK modulation and high receiver sensitivity (-120 dBm 12 dB SINAD) ensures good noise immunity and stable communication, while the battery operable 10 mW transmitter has a line-of-sight range over 1 km.

You can select from four preprogrammed frequencies using the onboard DIP switches, allowing simultaneous use in the same area. The frequencies take third-order intermodulation into account and are programmed to have little impact on each other.

Each transmitter module has a specific 32-bit ID to prevent errors caused by receiving signals from other transmitters operating on the same frequency. The safety of this system is amply demonstrated by Circuit Design's remote control units where this system is being used in more than 1 million units.

A total of up to 100 transmitter IDs can be registered in the receiver. This ensures that control of the receiver from multiple transmitters, or control of multiple receivers from one transmitter can be performed without any concern about malfunction.

The interface for the output port of the receiver uses photo MOSFET, enabling direct drive with loading of up to AC/DC48 V/100 mA. In addition, you can select from four operation modes (continuous, toggle, switching, and one shot) depending on the requirements. In the continuous mode, the output port is active while the unit is receiving a signal from the transmitter. In the other modes, the status of the output port being controlled can be changed according to the mode setting when the unit receives momentary signals from the transmitter. When output from the transmitter is of short duration, the impact on other equipment using the same frequency can be minimized. The radio waves are used more efficiently and the transmitter consumes less power.

The technical features and applications ofCDT-TX-02M-R / CDT-RX-02M-R are as follows.

Technical features

- Stable operation with MSK (FM) narrow band radio transmission 25 kHz span
- Long distance communication (1 km line of sight) thanks to high receiver sensitivity of -120 dBm and MSK modulation
- Transmitter output 10 mW, standby current less than 1 uA
- 6 switch inputs and outputs
- Direct drive is possible with relay loading etc. (Max. AC/DC48 V/100 mA)
- Select from 4 operation modes (continuous, toggle, switching, and one shot) depending on the requirements
- The receiver is equipped with a SAW filter with sharp filtering characteristics to prevent radio interference
- All units have a unique 32-bit ID

Main specifications

- Relevant standard EN300220
- Frequency band 434 MHz
- Number of channels 4 fixed channels
- Output 10 mW
- Operating temperature range -20 to +60°C
- Operating voltage Transmitter 2.2 V to 12 V Receiver 3.0 V to 12 V
- Operating current Transmitter 27 mA Receiver 16 mA (when off) 50 mA (when on)
- Size Transmitter 36 × 26 × 8 mm Receiver 53 × 35 × 12 mm (excluding protrusions)

Applications

- Transmission of a variety of switch signals
- Remote control of industrial equipment
- Emergency stopping devices, revolving lights, and various kinds of warning devices
- Control of traffic signals at building sites and factories
- Summoning devices for shopping centres, restaurants etc.
- Remote sensing and monitoring devices

Unit price

Samples Transmitter 10,000 yen Receiver 20,000 yen

Download the image

www.cdt21.com/dl2/pr/index.asp

About Circuit Design

Circuit Design, Inc. designs and supplies low power radio modules for various application fields such as telecontrol, telemetry, alarms, serial data transmission and audio. The products comply with European ETSI, US FCC and Japanese ARIB standard.

Quality is assured with an ISO9001-certified design and manufacturing process based in Japan.

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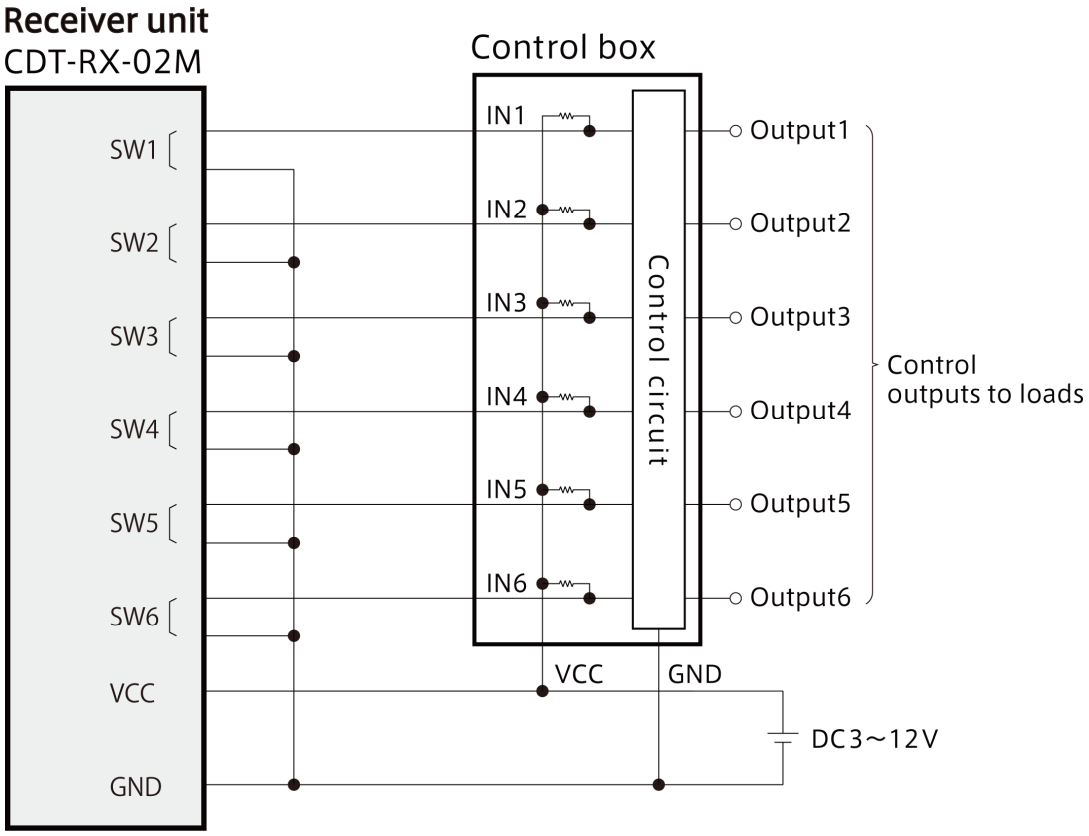
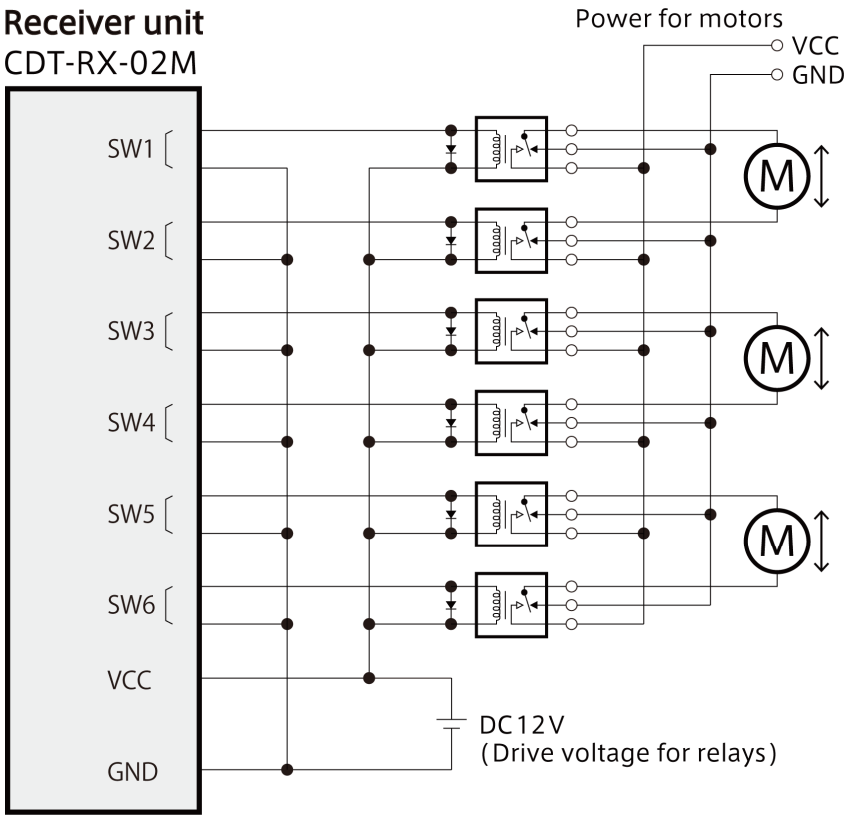
Reference <Receiver unit connection example>





Receiver unit
CDT-RX-02M