

Crestron CWD7134
Two-Way RF Transceiver Module

Operations Guide



Regulatory Compliance

Federal Communications Commission (FCC) Compliance Statement

CAUTION: Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Industry Canada (IC) Compliance Statement

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

This radio transmitter, IC: 5683C-CWD7134, has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Antenna Type: SMD, Maximum permissible antenna gain: 1.8 dBi, Impedance: 50 Ohms

Industrie Canada (IC) Déclaration de conformité

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Le présent émetteur radio, IC: 5683C-CWD7134, a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Type d'antenne: SMD, Gain admissible maximal: 1.8 dBi, Impédance: 50 Ohms

To satisfy RF exposure requirements, this device and its antenna must operate with a separation distance of at least 20 centimeters from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

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Two-Way RF Transceiver Module: CWD7134

Functions and Features

The CWD7134 (hereafter referred to as “module”), with an external SMD antenna assembly or an integrated SMD antenna, is a two-way radio frequency (RF) module that utilizes the 2.4 GHz frequency band to communicate with other devices.

The module operates according to the IEEE 802.15.4 specification and can be configured to minimize the possibility of interference with other devices.

The module receives RF signals from one or more Crestron devices and can transmit these signals over the air for further processing (depending on the application).

Functional Summary

- 2.4 GHz frequency band, IEEE 802.15.4 specification
- Range from 3 feet to 550 feet
- Operates on one of sixteen available channels to establish optimal signal quality

Specifications

The table below is a summary of specifications for the CWD7134.

Specifications of the CWD7134

SPECIFICATION	DETAILS
Power Requirements	1.3 watts (5 Vdc @ 0.26 A)
Operating Frequency	2400 MHz to 2483.5 MHz (802.15.4 compliant)
Operating Ranges*	
Minimum Distance	3 feet
Maximum Distance Indoors (without repeater device)	550 feet
Available Channels	16 (numbered 11 through 26 per 802.15.4)
External Antenna (Crestron Model CSA-ANT-EXTRNL-QMT50-W)	Max. Gain: 1.8 dBi Average Gain: -1.9 dBi Type: SMD Frequency: 2.4 GHz to 2.5 GHz Connector Type: MMCX Plug Reverse Polarity Connector with SPDT RF Switch
Internal Antenna**	Max. Gain: 2.1 dBi Average Gain: -1.2 dBi Type: SMD Frequency: 2.4 GHz to 2.5 GHz
Dimensions	Width: 2.10 in (5.33 cm) Height: 2.20 in (5.58 cm) Depth: 0.60 in (1.52 cm)

* The location and orientation of the module are important factors in the RF performance. With the unit located outside of any metal enclosures, the antenna is adjusted to achieve the best range. The range is dependent on its placement and the building in which it is used. The construction of the building, obstructions, and RF interference from other devices are factors determining the effective range of the unit. To prevent unit-to-unit RF interference, multiple modules operating at the same frequencies should not be installed within 3 – 5 feet of each other.

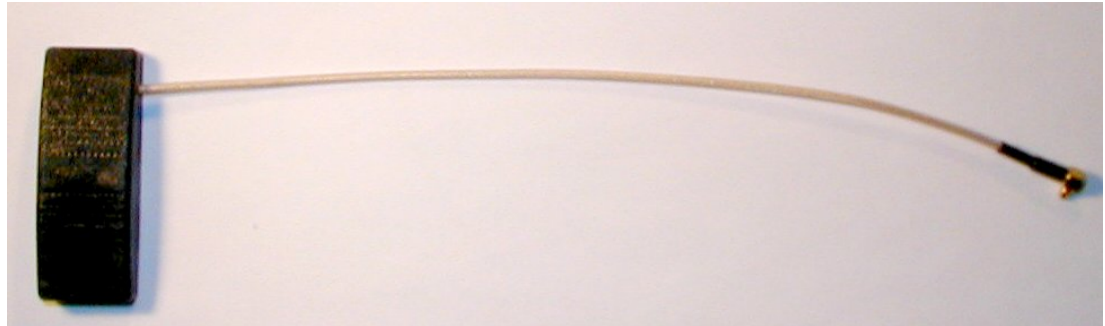
** The internal antenna is automatically disconnected when an external antenna is connected to MMCX antenna port.

Physical Description – CWD7134 with External Antenna

The module, shown below, consists of various components attached to a printed circuit board. The circuit board attaches an intended SMD mounting antenna. A MMCX reverse polarity female antenna port is located at the edge of the circuit board for attaching an optional SMD antenna assembly while a 8-pin single row male connector and a 4-pin single row male connector are provided for the application-specific installation.

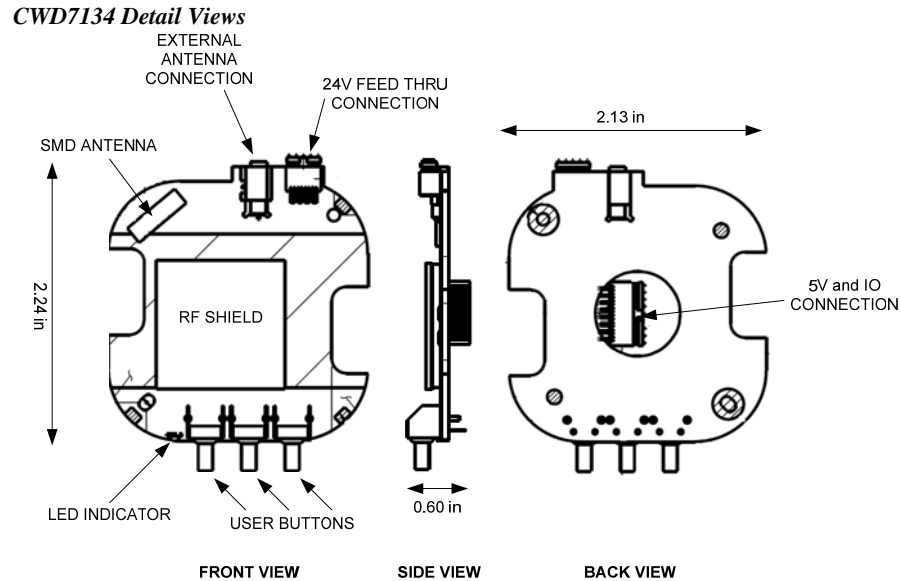
The reverse polarity MMCX antenna port includes a SPDT switch that disconnects the internal SMD antenna when the external SMD antenna assembly is connected.

Physical View of External Antenna Assembly CSA-ANT-EXTRNL-QMT50-W



Physical View of CWD7134





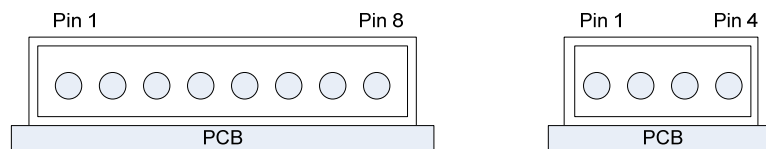
Ports

The module contains a 4-pin male header for application power and a 8-pin male header for application I/O. A 10-pin debug header is also provided. Refer to the diagrams and descriptions that follow.

Power/I-O

The 8-pin male connector provides power to the module as well as the communication between the module and wired devices. Refer to the following table for pin assignments of the module interface connector.

The 4-pin male connector provides power connections for the wired devices connected to the module.



NOTE: Pins 3 and 4 on the 8-pin connector provide power to the module.

NOTE: Pins 1 and 4 on the 4-pin connector are connected to pins 1 and 2 on the 8-pin connector through protection circuitry. These pins act as a pass through for power to be supplied to the wired devices.

Power/I-O Pinout Signals

8-Pin Connector			
Pin #	Signal	Pin #	Signal
1	24V	5	PB1/TXD
2	GND	6	PB2/RXD
3	GND	7	PC7 OUTPUT
4	5V	8	PC6 INPUT

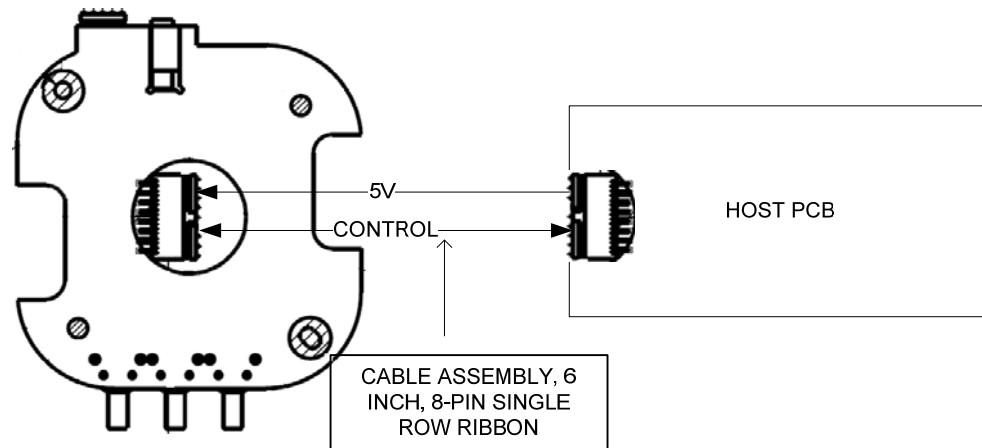
4-Pin Connector	
Pin #	Signal
1	24V
2	No Connect
3	No Connect
4	GND

Setup

Refer to the hookup diagram below, which shows the connections made to the module. Complete the connections in any order.

NOTE: To prevent unit-to-unit RF interference, multiple modules operating at the same frequencies should not be installed within 3 to 5 feet of each other.

Hardware Hookup



Labeling

If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains Transmitter Module FCC ID: EROCWD7134" or "Contains FCC ID: EROCWD7134." Any similar wording that expresses the same meaning may be used.

Documentation

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user manual of the end product.

The user manual for OEM integrators must include the following information in a prominent location.

“IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.”



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Specifications subject to
change without notice.