Crestron **CWD7787**
Two-Way RF Transceiver
Operations Guide

CRESTRON

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Regulatory Compliance

Federal Communications Commission (FCC) Compliance Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following conditions:
(1) This device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

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 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 if the followingmeasures:

- 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 isconnected
- Consult the dealer or an experienced radio/TV technician for help

ISED Canada (IC) Compliance Statement

This device contains license-exempt transmitter/receiver that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(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.

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 colocated or operating in conjunction with any other antenna or transmitter.

Déclaration de conformité à ISDE Canada (IC) Cet appareil contient un émetteur / récepteur exempt de licence conforme aux RSS (ou aux RSS) de Innovation, Sciences et Développement économique Canada. Le fonctionnement est soumis aux deux conditions suivantes:
1.Cet appareil ne doit pas causer d'interférences, et2.Cet appareil doit accepter toutes les interférences, y compris celles pouvant entraîner un fonctionnement non souhaité du dispositif.
Pour satisfaire aux exigences en matière d'exposition aux radiofréquences, cet appareil et son antenne doivent fonctionner à une distance de séparation d'au moins 20 centimètres de toute personne et ne doivent pas être situés dans un même lieu ni être utilisés avec toute autre antenne ou émetteur.
Tout

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Two-Way RF Transceiver: CWD7787

Functions and Features

The CWD7787 (hereafter referred to as "transceiver") is a two-way radio frequency (RF) transceiver that utilizes the 2.4 GHz frequency band to communicate with other devices.

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

The transceiver 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 500 ft.
- Operates on one of sixteen available channels to establish optimal signal quality

Specifications

The table below is a summary of specifications for the

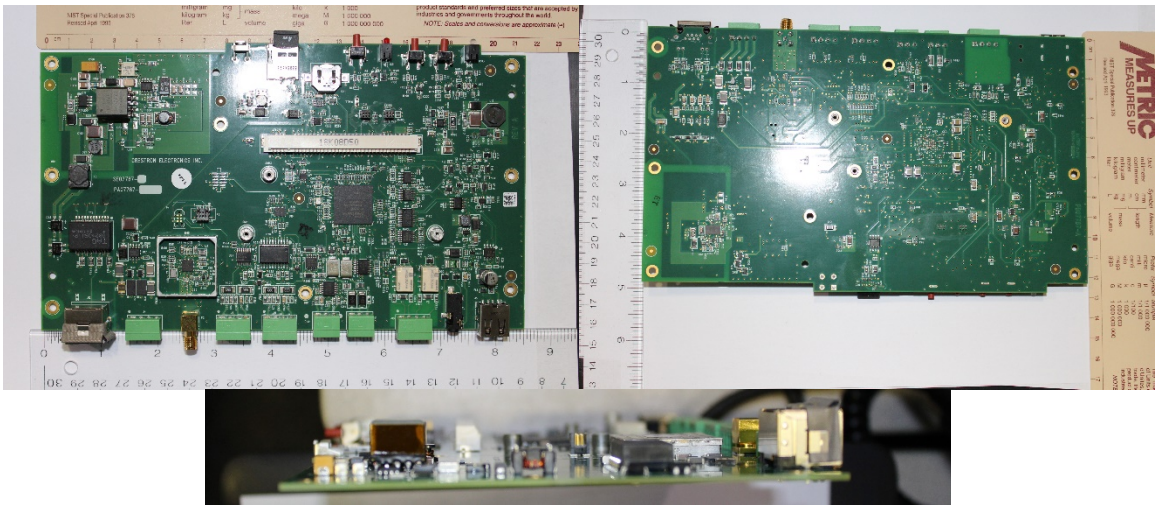
CWD7787. ***Specifications of the CWD7787***

SPECIFICATION	DETAILS
Power Requirements	2.0 Watts (4VDC @ 0.5A)
Operating Frequency	2400 MHz to 2483.5 MHz (802.15.4 compliant)
Operating Ranges[1]	
Minimum Distance	3 ft
Maximum Distance Indoors (without repeater device)	50 ft
Available Channels	16 (numbered 11 through 26 per 802.15.4)
RF Output Power	89.1mW (19.5dBm)
Dimensions	Width: 4.72 in (12 cm) Length: 8.46 in (21.50cm) Height: 0.39 in (1.0 cm)
Antenna	Antenna: Kunshan Wavelink model HX-100 Frequency Range: 2.4-2.5GHz Gain: 3 dBi max. Type: Patch VSWR: <3

1. The location and orientation of the Antenna are important factors in the RF performance. 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 transceivers operating at the same frequencies should not be installed within 3-5 feet of each other.

Physical Description

The transceiver, shown below, consists of various components attached to a printed circuit board.

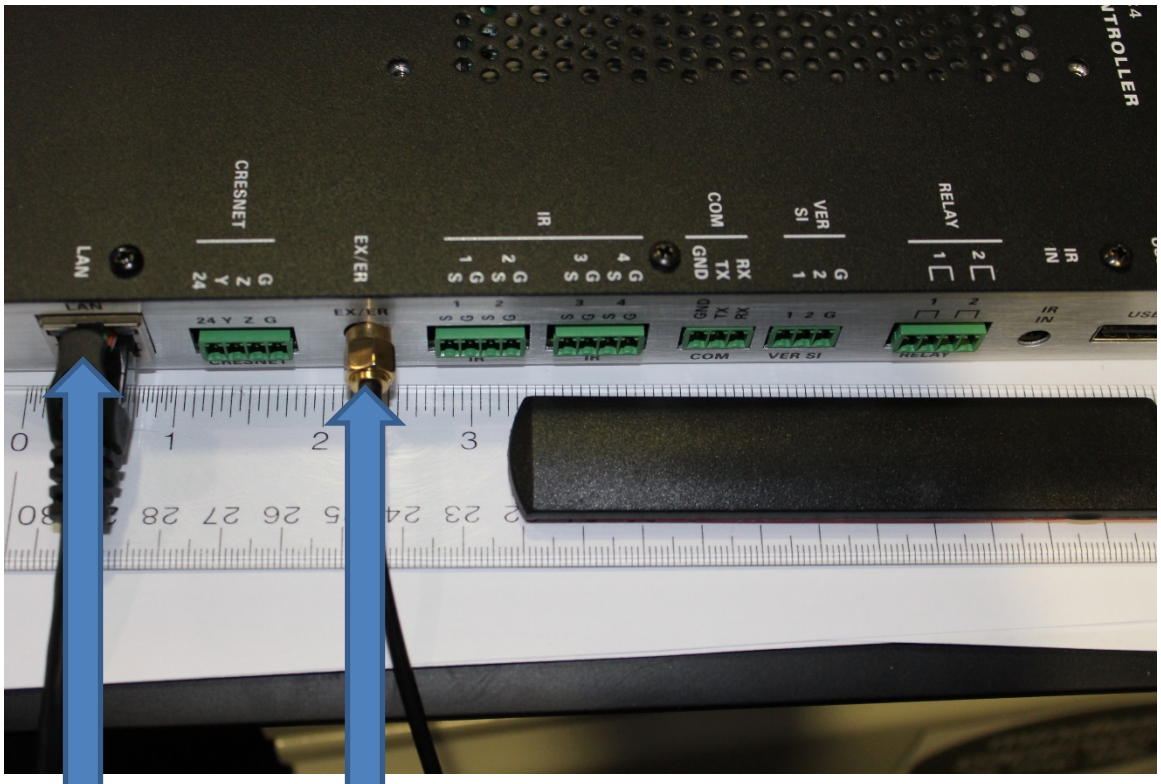


Physical View of CWD7787 Ttop, Bottom, Side)

Ports

The RF Circuitry is powered through the MC4 which is connected to a PoE Power over Ethernet connector.

Antenna connection is made via a reverse SMA connector. Refer to the pictures that follow for PoE and antenna connections



PoE connection Antenna Connection

Setup

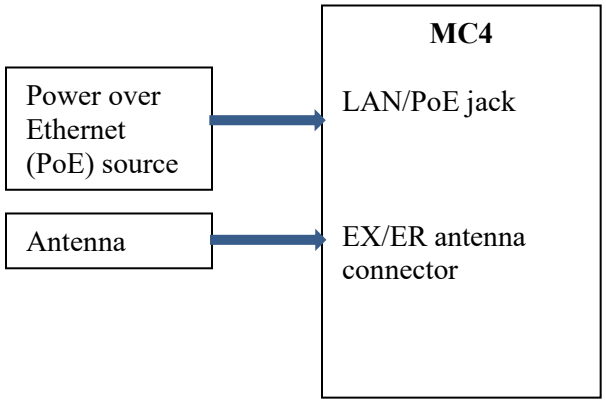
Hardware Hookup

Refer to the hookup diagram below, which shows the connections made to the transceiver. Complete the connections in the following order;

1) CONNECT ANTENNA TO MC4

2) CONNECT PoE SOURCE.

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



Labeling

Federal Communications Commission FCC

If the FCC identification number is not visible when the transceiver is installed inside another device, then the outside of the device into which the transceiver is installed must also display a label referring to the enclosed transceiver. This exterior label can use wording such as the following: “Transceiver FCC ID: EROCWD7787” or FCC ID: EROCWD7787.” Any similar wording that expresses the same meaning may be used.

ISED Canada (IC)

If the IC identification number is not visible when the transceiver is installed inside another device, then the outside of the device into which the transceiver is installed must also display a label referring to the enclosed transceiver. This exterior label can use wording such as the following: “Transmitter Transceiver IC: 5683C-CWD7787” or “IC: 5683C-CWD7787.” Any similar wording that expresses the same meaning may be used.

Si le numéro d'identification du CI n'est pas visible lorsque le transceiver est installé dans un autre appareil, l'extérieur de l'appareil dans lequel le transceiver est installé doit également afficher une étiquette faisant référence au transceiver inclus. Cette étiquette extérieure peut utiliser les libellés suivants:
« le transceiver de transmetteur IC: 5683C-CWD7787» ou « le IC: 5683C-CWD7787». Tout libellé similaire exprimant le même sens peut être utilisé.

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

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

IMPORTANT NOTE: To comply with ISED CANADA and 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.

REMARQUE IMPORTANTE: Pour être conforme aux exigences de conformité d'ISED CANADA et de la FCC en matière d'exposition aux radiofréquences, l'antenne utilisée pour cet émetteur doit être installée de manière à assurer une distance de séparation d'au moins 20 cm de toutes les personnes. toute autre antenne ou émetteur.

FCC Warning:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

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.

Please note that any modifications to the device software or configuration, including but not limited to the init file(s), can cause device performance to vary beyond the scope of the currently referenced FCC authorization. Accordingly, if any user modifications are sought to be made to the device software or configuration, the user may be required to independently seek fresh FCC and other regulatory authorizations as relevant prior to distributing or marketing the devices or products incorporating the same.

ISED Canada:

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:
1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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