

Crestron **CWDHR**
Two-Way RF Transceiver Module

Operations Guide



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 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.

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.

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.

The specific patents that cover Crestron products are listed at patents.crestron.com.

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Two-Way RF Transceiver Module: CWDHR

Introduction

The CWDHR (hereafter referred to as “module”), with an SMD antenna, is a two-way radio frequency (RF) module that utilizes the 2.4 GHz frequency band to communicate with other devices. There are two versions: PA07414 and PA07424.

The module operates according to the IEEE 802.15.4 specifications.

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).

Features and Functions

- 2.4 GHz frequency band, IEEE 802.15.4 specification
- Range from 3 feet to 550 feet.
- Operates on one of 16 available channels to establish optimal signal quality

Specifications

Specifications for the CWDHR are listed in the following table.

CWDHR Specifications

SPECIFICATIONS	DETAILS
Power Requirements	Four (4) disposable 1.5 V “AAA” alkaline batteries
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)
Serial Communications	SPI, 3.0 Vdc Nominal
Antenna	
Gain	2.5 dBi max. peak
Type	Ceramic chip antenna
Frequency	2.4 GHz to 2.5 GHz
Dimensions (PA07414)	
Height	1.850 in
Width	0.303 in
Depth	7.248 in
Dimensions (PA07424)	
Height	1.850 in
Width	0.303 in
Depth	5.967 in

* The location and orientation of the module are important factors in 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.

Physical Description

The module, shown below, consists of various components attached to a printed circuit board (PCB). The SMD antenna is soldered to the PCB.

Physical View of CWDHR (PA07414)



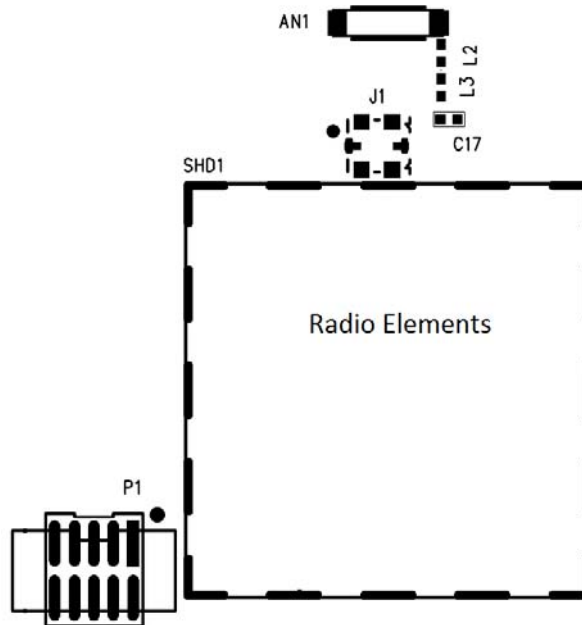
Physical View of CWDHR (PA07424)



Setup

Refer to the following diagram. P1 is the interface port. J1 is the antenna port.

NOTE: 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.



P1 Pin out Signals

Pin #	Signal	Pin #	Signal
1	+3.0V	2	JTDO
3	\RST	4	JTDI
5	AGND	6	JTCK
7	JTMS	8	\RESET
9	PA4 / PTI_EN	10	PA5 / PTI_DATA

Labeling

The host device shall be properly labeled to identify the modules within the host device.

The FCC and Industry Canada certification label of a module shall be clearly visible at all times when installed in the host device. Otherwise the host device must be labeled to display the FCC and Industry Canada certification numbers of the module, preceded by the words “Contains Transmitter Module” or the word “Contains”, or similar wording expressing the same meaning as follows:

Contains FCC ID: EROCWDHR

Contains IC: 5683C-CWDHR

Documentation

The OEM integrator must 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’s 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.

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10.14
Specifications subject to
change without notice.