

# 2.4 GHz Radio Board Module

## Operations Guide



**CRESTRON**

This document was prepared and written by the Technical Documentation department at:



## 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 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

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.

### 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

All brand names, product names and trademarks are the property of their respective owners.

# Crestron CWDCAMEO2

## 2.4 GHz Radio Board Module

### Operations Guide

©Crestron Electronics, Inc.

# Contents

<b>2.4 GHz Radio Board Module: CWDCAMEO2 .....</b>	<b>1</b>
Functions and Features.....	1
Specifications .....	2
Labeling .....	3
Documentation.....	4

# 2.4 GHz Radio Board Module: CWDCAMEO2

## Functions and Features

The CWDCAMEO2 (hereafter referred to as “module”) 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
- Operates on one of sixteen available channels to establish optimal signal quality

## Specifications

The table below is a summary of specifications for the

CWDCAMEO2

SPECIFICATION	DETAILS
Power Requirements	2.0 Watts (4VDC @ 0.5A)
Operating Frequency	2400 MHz to 2483.5 MHz (802.15.4 compliant)
Operating Ranges <sup>1</sup>	
Minimum Distance	3 ft
Maximum Distance Indoors (without repeater device)	50 ft
Available Channels	16
RF Output Power	3.5dBm
Dimensions	Width: 1.64 in (4.1 cm) Height: 3.54 in (9.0 cm) Depth: 0.78 in (2.0 cm)
Antenna	Antenna: PCB Trace Frequency Range: 2.4 GHz Gain: 2 dBi max. Type: PC Board,

1. 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.

# Labeling

## Federal Communications Commission FCC

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: EROCWDCA1E02” or “Contains FCC ID: EROCWDCA1E02.” Any similar wording that expresses the same meaning may be used.

## ISED Canada (IC)

If the IC 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 IC: 5683C-CWDCAMEO2” or “Contains IC: 5683C-CWDCAMEO2.” Any similar wording that expresses the same meaning may be used.

Si le numéro d'identification du CI n'est pas visible lorsque le module est installé dans un autre appareil, l'extérieur de l'appareil dans lequel le module est installé doit également afficher une étiquette faisant référence au module inclus. Cette étiquette extérieure peut utiliser les libellés suivants: «Contient le module de transmetteur IC: 5683C-CWDCAMEO2» ou «Contient le IC: 5683C-CWDCAMEO2». Tout libellé similaire exprimant le même sens peut être utilisé.

---

## 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 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.

## In-Wall Dimmers, Switches, and Keypads With Wireless Remote

### Getting Started

Scan the QR code for product documentation.



The original language version of this document is U.S. English.

All other languages are a translation of the original document.

### Certification and 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.

To satisfy FCC RF Exposure requirements for mobile and base station transmission devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance, operation at closer than this distance is not recommended. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

#### Industry Canada (IC) Compliance Statement

RSS-247

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.

**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.

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.

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 (e.i.r.p.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

This product is listed to applicable UL® Standards and requirements tested by Intertek® services.

Ce produit est homologué selon les normes et les exigences UL applicables par Intertek Prestations deservice.



## Legal

The product warranty can be found at [www.crestron.com/warranty](http://www.crestron.com/warranty).

The specific patents that cover Crestron products are listed online at [www.crestron.com/legal/patents](http://www.crestron.com/legal/patents).

Certain Crestron products contain open source software. For specific information, please visit [www.crestron.com/opensource](http://www.crestron.com/opensource).

Crestron, the Crestron logo are either trademarks or registered trademarks of Crestron Electronics, Inc. in the United States and/or other countries. Intertek is either a trademark or registered trademark of Intertek Group in the United States and/or other countries. The ETL logo is either a trademark or a registered trademark of Intertek Testing Services NA in the United States and/or other countries. UL is either a trademark or a registered trademark of Underwriters Laboratories, Inc. in the United States and/or other countries. Other trademarks, registered trademarks, and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Crestron disclaims any proprietary interest in the marks and names of others. Crestron is not responsible for errors in typography or photography.

©2023 Crestron Electronics, Inc.

## Crestron Electronics, Inc.

15 Volvo Drive, Rockleigh, NJ 07647  
Tel: 888.CRESTRON  
Fax: 201.767.7656  
[www.crestron.com](http://www.crestron.com)

## <Regulatory notice to host manufacturer according to KDB 996369 D03 OEM Manual v01>

### **List of applicable FCC rules**

This module has been granted modular approval as below listed FCC rule parts.

-FCC Rule parts 15C (15.247)

### **Summarize the specific operational use conditions**

-The OEM integrator should use equivalent antennas which is the same type and equal or less gain then an antenna listed in 2.7 in this instruction manual.

### **RF exposure considerations**

The module has been certified for integration into products only by OEM integrators under the following condition:

- The antenna(s) must be installed such that a minimum separation distance of at least 20 cm is maintained between the radiator (antenna) and all persons at all times.

-The transmitter module must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures.

-Mobile use

As long as the three conditions above are met, further transmitter testing will not be required.

OEM integrators should provide the minimum separation distance to end users in their end-product manuals.

### **Antennas list**

This module is certified with the following integrated antenna.

-Type: Chip antenna (Internal Antenna)

- Max. peak Antenna gain 2.0 dBi

Any new antenna type, higher gain than listed antenna should be met the requirements of FCC rule 15.203 and 2.1043 as permissive change procedure.

### **Label and compliance information**

#### **End Product Labeling**

The module is labeled with its own FCC ID and IC Certification Number. If the FCC ID and IC Certification Number are 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. In that case, the final end product must be labeled in a visible area with the following:

FCC ID: EROCWDCA02

IC: 5683C-CWDCA02

### **Information on test modes and additional testing requirements**

-OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, additional transmitter in the host, etc.).

### **Additional testing, Part 15 Subpart B disclaimer**

-The final host product also requires Part 15 subpart B compliance testing with the modular transmitter installed to be properly authorized for operation as a Part 15 digital device.