



## WCS band Radio Module

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# WRM Product Manual 2.3 GHz WCS band Backhaul Radio Module

**FCC ID RAR20006001**  
**IC: 4674A-20006001**

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## About this Document

This document is a product manual for the B2CC050AA-A 2.3 GHz WCS band Backhaul Radio Module 1, including its limitations on use in any product marketed or offered for sale. It is intended as a supplement to training and documentation by BelAir Networks Inc. or its authorized agents.

## Introduction

The B2CC050AA-A (hereafter referred to as “the module”) is a 2.3 GHz WCS band radio module compatible with the IEEE 802.16 standard for WIMAX operation. The module contains a complete 802.16 radio and Medium Access Control protocol engine.

The module is not intended for stand-alone operation. It will only be marketed as a complete product, in conjunction with a package, DC power supply and antenna (hereafter referred to as “the product” or the “final product”).

Since the module has a BelAir networks proprietary digital interface, it cannot be directly connected to any standard telecommunications or computer devices. It can only be used with final products designed and authorized specifically for that purpose.

## Conditions of Use

### General Conditions of Use

This manual is intended to supplement training provided by BelAir Networks or authorized parties. The module B2CC050AA-A is only intended for use in BelAir Networks products and is not for sale to the general public as a stand-alone module.

Please read this entire document, including the Regulatory Statements section before attempting to install or operate the module.

**Warning:** Any use of B2CC050AA-A in any manner which is not expressly specified within this manual or specifically approved by BelAir Networks or its authorized agents will void the user's right to operate this module, and is expressly forbidden by BelAir Networks. This includes any modification of the module, installation of the module in a configuration or used with an antenna which is not expressly listed in this document or approved by BelAir Networks.

### List of Approved Final Products

The B2CC050AA-A module is only approved for use in the following BelAir Networks products:

- BelAir200. See BelAir200 documentation for complete manufacturing instructions.
- BelAir100. See BelAir100 documentation for complete manufacturing instructions.

Operation of the module within the products expressly listed above is required to ensure compliance to all FCC regulations. Any modification of the module, or its use in any configuration not expressly listed above may void the user's right to operate this module.

## Country of Use

B2CC050AA-A is certified with limited modular approval for use as an Intentional Radiator in the United States as device: FCC ID: RAR20006001 and in Canada as IC:4674A-20006001. Please read all regulatory statements at the end of this document before any attempt to install or operate this module.

The module is only certified for operation in the United States and in Canada. Before attempting to install and operate this module in any other country, contact BelAir Networks for approval.

## Module Labeling

One or more labels are applied to the module during manufacture, including a label which identifies the FCC and Industry Canada identification numbers. Do not attempt to remove any labels from the module.

## Module Installation and Service

### Installation into a Product

The module shall only be installed by a technician trained by BelAir Networks or its authorized agents. It should only be installed into an approved product (see above) following all manufacturing and service procedures for that product. The module should only be installed into a final product in a manufacturing or service depot site.

**Caution:** B2CC050AA-A is an electro-static discharge (ESD) sensitive device. All appropriate ESD measures must be taken when handling the module. Failure to employ appropriate ESD protection may damage the module.

### Module Service

The module is not intended as a field-serviceable unit. It contains no field-replaceable or field-serviceable parts, or any external adjustable mechanisms. The module should only be serviced in a manufacturing or service depot site approved by BelAir Networks or its authorized agents.

## Final Product Requirements

The requirements below apply to any final product in which the B2CC050AA-A module is installed.

### Antenna Usage and Module Transmit Power

B2CC050AA-A module shall only be used in conjunction with the following antenna types:

- BelAir Networks model: BEL10012, 8.0 dBi directional diversity antenna.
- MTI Wireless Edge MT-344014/18 8.5 dBi patch antenna
- MTI Wireless Edge MT-344026 15 dBi
- MaxRad model: MFB24006, 6 dBi omni-directional antenna.
- MaxRad model: MFB24008, 8 dBi omni-directional antenna.
- MaxRad model: WISP 24013, 13 dBi omni-directional antenna.
- MaxRad model: WISP 24018, 18 dBi omni-directional antenna.
- MaxRad model: MFB24025 25 dBi dish antenna

In order to comply with the FCC and Industry Canada rules in the USA and Canada, respectively, it is required to respect the maximum transmit power limits as follows for each of the antenna types.

#### Antenna Models and Maximum Allowable Power Setting

Antenna Model	Manufacturer	Antenna Type	Maximum Transmit Power Setting
BEL10012	BelAir Networks	8.0 dBi directional diversity	+20 dBm (module maximum power)
MT-344014/18	MTI Wireless Edge	8.5 dBi patch antenna	+20 dBm (module maximum power)
MT-344026	MTI Wireless Edge	15dBi patch antenna	+20 dBm (module maximum power)

MFB24008	MAXRAD	8 dBi omni-directional	+20 dBm (module maximum power)
WISP 24013	MAXRAD	13 dBi directional panel	+20 dBm (module maximum power)
WISP 24018	MAXRAD	18 dBi directional panel	+20 dBm (module maximum power)
MFB24025	MAXRAD	25 dBi dish	+20 dBm (module maximum power)

**Note:** 18 dBi and 25 dBi antennas are for outdoor use only

**Warning:** Use of this module in conjunction with any antenna not expressly listed above will void authority to install or operate this equipment.

## Installation

Products which contain B2CC050AA-A shall only be installed by professional installers trained by BelAir Networks or its authorized agents. In addition to normal installation procedures and good installation practice, professional installers are responsible to ensure that:

1. Only an approved antenna (see above) is connected to the module, and,
2. The antenna is mounted in such a manner and in such a location that access to the antenna by the general population is minimized. Access during normal operation to the antenna by the general population should be limited distances as outlined in the Table 1 in the section on RF Exposure Statement.

Adherence to these rules by the professional installer is mandatory. See full installation procedures for the particular product for details.

## Product Labeling

The following permanent label, or one containing equivalent information, must be affixed in a conspicuous location on the exterior of every product containing this module:



This device contains the following:

FCC ID: RAR20006001      IC: 4674A-20006001

## Regulatory Statements

The following regulatory notes apply to the product which contains module B2CC050AA-A.

FCC ID: RAR20006001

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The following sections or equivalent information shall appear in the user-manual of the final product.

## Regulatory Information and Disclaimers

Installation and use of this device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications to this product not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

The manufacturer is not responsible for any interference to radio or television equipment caused by unauthorized modification of this device, or attachment of any antennas or equipment other than those specified by the manufacturer. The manufacturer or its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

## Manufacturer's FCC Conformity Statement

This device complies with Part 27 of the FCC Rules.

## Manufacturer's Industry Canada Conformity Statement

This device has been designed to operate and comply with the Radio Standards Specification RSS-195, with an antenna having a maximum gain of 25 dB. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada.

## RF Exposure Statement

This Wireless radio device has been evaluated under FCC Bulletin OET 65C and found to be compliant to the requirements set forth in CFR 47 Sections 2.1091, 2.1093, and part 27.52 and Industry Canada RSS-102 addressing RF exposure from radio frequency devices.

This device complies with FCC RF radiation exposure limits for an uncontrolled environment. The radiated output power of this Wireless device is below the FCC radio frequency exposure limits. However, this device should still be installed and used in such a manner that the potential for human contact during normal operation is minimized. In order to comply with RF exposure limits, this equipment should be installed and operated at a minimum distance as per the following table between the radiator and a human body.

Table 1

Node	Minimum Safety Distance cm (inches)			
	25 dBi antenna	18 dBi and 15 dBi antenna	13, 8.5, 8, 6 dBi antenna	Radios
BelAir100 BelAir100S BelAir100C	80 (31.5 inches)	36 (14.5 inches)	24 (9.5 inches)	2 x RAR20006001 or 1 RAR20000003 and 1 RAR20006001
BelAir200	115 (45.5 inches)	51 (20.5 inches)	30 (11.8 inches)	4 x RAR20006001 or 1 RAR20000003 and 3x RAR20006001

Note:

The Industry Canada references for the above table are

IC: 4674A-2006001 and IC:4674A-20000003

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