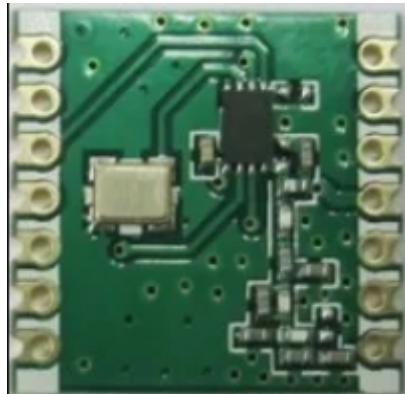




# ALERT LABS ALARM001 Sub 1GHz Radio Module User Manual

[Home](#) » [ALERT LABS](#) » ALERT LABS ALARM001 Sub 1GHz Radio Module User Manual 

## ALERT LABS ALARM001 Sub 1GHz Radio Module User Manual



### Contents

- [1 Overview](#)
- [2 Label](#)
- [3 Module Integration](#)
- [4 FCC COMPLIANCE NOTICE](#)
  - [4.1 IC COMPLIANCE NOTICE](#)
- [5 Antenna](#)
- [6 RF Circuit](#)
- [7 Support](#)
- [8 Documents / Resources](#)
  - [8.1 References](#)
- [9 Related Posts](#)

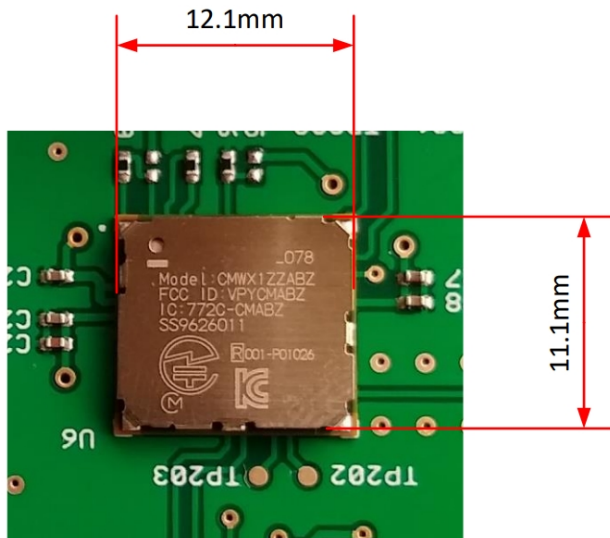
## Overview

The Alert Labs Inc. ALRM001 module is based on the Murata CMWX1ZZABZ Sub G Module with the addition of a helical antenna printed on the carrier PCB. The Alert Labs ALRM001 module itself is identical to the Murata CMWX1ZZABZ, and as a result, has all the same electrical and mechanical details specified in the

CMWX1ZZABZ datasheet. The Alert Labs ALRM001 is intended for use only in Alert Labs Inc. products. Users of Alert Labs products do not have access to the module firmware meaning that a user cannot inadvertently change the radio operation so as to invalidate regulatory approvals.

## Label

The labelling area of the ALRM001 is on the top surface of the module can whose dimensions are 12.1 mm x 11.1 mm, as **shown in Figure 1**. It is not possible to print a label such that the regulatory rules for legibility, font size, and formatting the complete regulatory identifiers on one line are all simultaneously met. As a result, the Alert Labs module model number, FCC, and IC identifiers are included in this manual. Further, when the Alert Labs ALRM001 module is integrated into a product, the product literature must indicate the module model number and regulatory identifiers.



**Figure 1: Potential labelling area**

## FCC and IC Identifiers

- Model Number: ALRM001
- FCC ID: 2AKXF-ALB080
- IC: 22365-ALB080

## Module Integration

Integration of the Alert Labs ALRM001 module into an Alert Labs product will make the module inaccessible to a user. This will avoid confusion regarding the regulatory identifiers of the module. Alert Labs products made available for sale in Canada and the USA must themselves be labelled and must use the following text:

- Contains FCC ID: 2AKXF-ALB080, IC: 22365-ALB080

Further, the following regulatory warning statements must be included in a prominent location in the Alert Labs product literature. For example, in an insert in the product package or in the product user manual:

## FCC COMPLIANCE NOTICE

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.

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.

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

#### **IC COMPLIANCE NOTICE**

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, and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

This Class B digital apparatus complies with Canadian ICES 003.

**RF EXPOSURE COMPLIANCE:** This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm during normal operation.

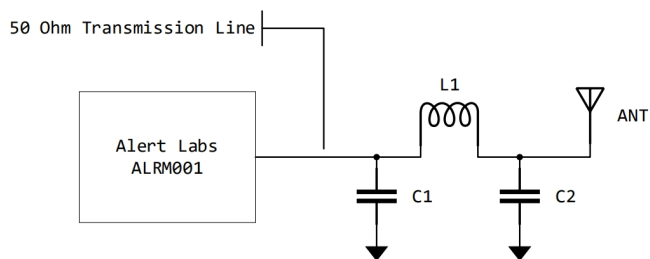
#### **Antenna**

The Alert Labs ALRM001 can use an antenna described in the Murata CMWX1ZZABZ and a PCB printed helical antenna. The PCB printed helical antenna has the dimensions specified in Texas Instruments Design Note DN038 (doc # SWRA416), page 3. The performance of this antenna in the 902 to 928MHz band is specified of the design note. Notably:

- Peak Gain: 0.01dBi

#### **RF Circuit**

The RF connection from the ALRM001 to the antenna is shown in Figure 2. The helical antenna is not a 50 Ohm antenna so a matching network is required. Components L1, C1, and C2 will be populated, as required, with values that optimize the match to 50 Ohms. The matching will be done on an Alert Labs product basis and will remain the same for all instances of a product.



**Figure 2: RF path to antenna**

## Support


2-132 Queen St. S., Kitchener, ON N2G 1V9  
[www.alertlabs.com](http://www.alertlabs.com)



## Documents / Resources

	<p><b><a href="#">ALERT LABS ALARM001 Sub 1GHz Radio Module</a></b> [pdf] User Manual  ALB080, 2AKXF-ALB080, 2AKXFALB080, ALARM001 Sub 1GHz Radio Module, Sub 1GHz Radio Module</p>
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## References

-  [Water Leak Detection & AC Monitoring Systems | Alert Labs](#)
-  [Water Leak Detection & AC Monitoring Systems | Alert Labs](#)