# CIHOLAS MU202 UWB Module User Manual



Contents



## CIHOLAS MU202 UWB Module

The MU202 is part of a wireless system that relies on ultra-wideband (UWB) pulses and time-stamp information to determine real-time location tracking data. The MU202 transmits UWB beacons and co-exists with other devices on a UWB network. The MU202 devices are used in an object of interest within the operational area in order to locate and track that object. The MU202 receives power from its host device. The MU202 module is small and versatile, and can be utilized in a variety of hosts.

### Main System Components

- Micro-controller: Decawave DW1000 Ultra Wideband (UWB) IEEE802.15.4-2011
- RF Transceiver: Decawave DW1000 Ultra Wideband (UWB) IEEE802.15.4-2011

### Mechanical

- Width: 28.0 mm
- Depth: 75.5 mm
- Height: 3.7 mm
- Weight: 6.5 g

### RF Characteristics

- UWB IEEE802.15.4-201
- Data Rate: 6.81Mbps
- Channel: 5, PRF 16 MHz
- Bandwidth (Values in GHz):
    - fM The highest emission peak
    - fL 10 dB below the highest peak
    - fH 10 dB above the highest peak
- Antenna: 0.0 dBi Omnidirectional

**United States (FCC) Regulatory Information FCC ID: 2ALIR-MU202**

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 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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. The OEM integrator is responsible for compliance testing to Part 15 Subpart B with the module installed and for compliance to any other FCC rules that apply to the host not covered by the module grant of certification.To fulfill FCC Certification requirements, an OEM manufacturer must comply with the following regulations: 1. The modular transmitter must be labeled with its own FCC ID number, and, if the FCC ID 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:
**IMPORTANT:** Contains FCC ID: 2ALIR-MU202. This equipment 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 (FCC 15.19). Applicable rules: FCC 15.250

**Canada (ISED) Regulatory Information IC:26788-MU202 CAN ICES-3 (B)/NMB-3(B)**
This device complies with Industry Canada's licence-exempt RSSs. 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.

**CAUTION**: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. The 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, etc.). This Module is labelled with its own IC ID. If the IC ID Certification Number is not visible while installed inside another device, then the device should display the label on it referring to the enclosed module. In that case, the final end product must be labelled in a visible area with the following: **"Contains Transmitter Module IC:26788-MU202"** This radio transmitter (IC:26788-MU202) has been approved by ISED Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.  Manufacturer Model Type Peak Gain (dBi) Ciholas Inc Embedded PCB

Trace Omnidirectional 0.0

## Radiation Exposure Statement

The device has been found to be compliant to the requirements set forth in CFR 47 Sections 2.1091 and Industry Canada RSS-102 for an uncontrolled environment. The antenna(s) 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. This device is intended only for OEM integrators under the following conditions: The transmitter module may not be co-located with any other transmitter or antenna. As long as the condition above is met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed. Important Note: In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the Canada authorization is no longer considered valid and the IC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product(including the transmitter) and obtaining a separate Canada authorization.

## Documents / Resources

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|  | CIHOLAS MU202 UWB Module [pdf] User Manual<br>MU202, 2ALIR-MU202, 2ALIRMU202, MU202 UWB Module, MU202, UWB Module |