



# **Ciholas AN302**

## **Users Manual**

**FCC ID: 2ALIR-AN302  
IC:26788-AN302**

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# Introduction

The Ciholas AN302 is an Ethernet device that relies on ultra-wideband (UWB) pulses and time-stamp information to capture real-time location and sensor data. The AN302 can receive UWB pulses from objects of interest and transmit time-sync data in real time. The AN302 is positioned around an area in which tracking and data collection are desired. The AN302 are easily movable allowing for quick setup and tear-down before and after use.

# Regulatory Information

## United States (FCC) Regulatory Information

**FCC ID: 2ALIR-AN302**

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 Ciholas, Inc. can void your authority to operate this equipment under Federal Communications Commission rules.

**Channel 5 (15.250):**

**Operation on board an aircraft, ship, or a satellite is prohibited. Devices operating under this section may not be employed for the operation of toys. This device is not allowed to be used for fixed outdoor infrastructure.**

**Channel 9 (15.517):**

**This equipment may only be operated indoors. Operation outdoors is in violation of 47 U.S.C 301 and could subject the operator to serious legal penalties.**

Applicable rules: FCC 15.250 + 15.517

## Canada (ISED) Regulatory Information

**IC:26788-AN302**

**CAN ICES-3 (B)/NMB-3(B)**

This device complies with Industry Canada's license-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.

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;
- 2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Applicable rules: RSS-220

## 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.

## Déclaration d'exposition aux radiations:

Le dispositif a été jugé conforme aux exigences énoncées dans les articles 47 CFR 2.1091 et Industrie Canada RSS-102 pour un environnement non contrôlé. L'antenne(s) utilisée pour ce transmetteur doit être installé pour fournir une distance de séparation d'au moins 20 cm de toutes les personnes et ne doit pas être co-localisés ou fonctionner en conjonction avec une autre antenne ou transmetteur.

# Usage Instructions

## Overview

The AN302 receives real-time UWB beacons from tags attached to an object of interest. These beacons are used to calculate the real-time location. The AN302 is capable of receiving real-time data from UWB tags or interfacing with other AN302s placed around the tracking area in order to calculate real-time position and collect sensor data. The AN302 is a standard Ethernet device and is powered via Power over Ethernet (PoE).

## Placement

The AN302 devices should be distributed throughout the desired tracking area. To achieve a higher precision of position tracking within an area, a higher density of AN302s can be used.

The AN302 can be mounted indoors via tripods or a mechanical mounting ring for ceiling mounting.

The AN302 nose cone is intended to be installed pointing toward the floor.

## Use

1. AN302 must be powered via standard compliant PoE switch via Ethernet cable.
2. A PC or server must be running CUWB RTLS software.
3. Once plugged in the AN302 will attempt to gather network parameters using auto-IP parameters and announce its presence using those parameters.
4. The AN302 must be configured in the CUWB RTLS software before the device is able to track other UWB devices.

Please contact Ciholas for additional placement guidance based on the user application and for the CUWB RTLS software. Additional information on how to use the CUWB Real Time Location System available at [CUWB.IO](http://CUWB.IO).

# Product Specifications

## Main System Components

Micro-controller: STM32H723VGT6  
RF Transceiver: Qorvo QM33110W Ultra Wideband (UWB) IEEE802.15.4-2011  
Indicators: 1 Tri-Color LED (Red, Green, Blue)  
I/O: 3 port 10/100Mbps Ethernet Switch  
Power: 48V Nominal PoE  
Operating Voltage: 1.8V and 2V5 Nominal  
Temperature Range: -40 - 85C

## Mechanical

Width: 127 mm  
Depth: 127 mm  
Height: 145.95 mm  
Weight: 239 g