



Users Manual

LP202

FCC ID: 2ALIR-LP202

The LP202 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 LP202 transmits UWB beacons and co-exists with other devices on a UWB network. The LP202 are used in an object of interest within the operational area in order to locate and track the object. The LP202 receives power from its host device. The LP202 is a large format based module.

Main System Components:

Micro-controller: STMicroelectronics STM32H473
RF Transceiver: Decawave DW1000 Ultra Wideband (UWB) IEEE802.15.4-2011
Operating Voltage: 3.3 - 5.5V (5.0V nom.)
Temperature Range: -40-85C

Mechanical

Width: 64.5 mm
Depth: 266 mm
Height: 91 mm
Weight:

RF Characteristics

UWB IEEE802.15.4-2011
Data Rate: 6.81 Mbps

Channel: 5, PRF 16MHz

Bandwidth (Values in GHz):

fM	The highest emission peak	XX
fL	10 dB below the highest peak	XX
fH	10 dB above the highest peak	XX
Bandwidth	Calculated: (fH-fL)	XX

Channel: 5, PRF 64MHz

Bandwidth (Values in GHz):

fM	The highest emission peak	XX
fL	10 dB below the highest peak	XX
fH	10 dB above the highest peak	XX
Bandwidth	Calculated: (fH-fL)	XX

Channel: 3, PRF 16MHz

Bandwidth (Values in GHz):

fM	The highest emission peak	XX
fL	10 dB below the highest peak	XX
fH	10 dB above the highest peak	XX
Bandwidth	Calculated: (fH-fL)	XX

Channel: 3, PRF 64MHz

Bandwidth (Values in GHz):

fM	The highest emission peak	XX
fL	10 dB below the highest peak	XX
fH	10 dB above the highest peak	XX
Bandwidth	Calculated: (fH-fL)	XX

Antenna: 0.0 dBi Omnidirectional

United States (FCC) Regulatory Information
FCC ID: 2ALIR-LP202

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.
- (3)

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.

You may also find helpful the following booklet, prepared by the FCC: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402.

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-LP202. This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two: (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).

Operation on board aircraft or satellites is prohibited. Devices operating under this section may not be employed for the operation of toys. Except for operation onboard a ship or terrestrial transportation vehicle, the use of a fixed outdoor infrastructure is prohibited. A fixed infrastructure includes antennas mounted on outdoor structures, e.g., antennas mounted on the outside of a building or on a telephone pole.

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(f)

Integration Instructions

1. Review operation conditions and limitations before integration of the LP202 module. Failure to follow these guidelines may void the user's authority to operate the equipment.
2. LP202 module-host interface consists of a 2mm 20 pin connector that requires 5.0 V power and offers serial communication. Full electrical and communication specification details available from Ciholas.
3. LP202 module includes mounting holes for mechanical host integration, full specification details are available from Ciholas Inc.
4. LP202 module contains integrated antennas, no modifications or substitutions are allowed
5. 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.
6. To fulfill FCC Certification requirements, an OEM manufacturer must comply with the following regulations:
 - a. 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:
 - i. IMPORTANT: Contains FCC ID: 2ALIR-LP202. This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two: (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).
7. Operation on board aircraft or satellites is prohibited. Devices operating under this section may not be employed for the operation of toys. Except for operation onboard a ship or terrestrial transportation vehicle, the use of a fixed outdoor infrastructure is prohibited. A fixed infrastructure includes antennas mounted on outdoor structures, e.g., antennas mounted on the outside of a building or on a telephone pole.
8. The LP202 may only be operated indoors.