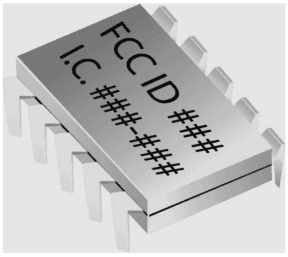


Humax Networks MLBADA Location Bridge User Manual

Rental Bridge
User Manual

Contents

Introduction

The Location Bridge device is designed for scanning in high density 2.4GHz environments. The Location Bridge enables robust indoor asset tracking, including intelligent edge processing for efficient, fast, and accurate location

reporting.

Safety Recommendations

Do not disassemble, dismantle, open, crush or shred the product. If the product envelope is weakened or broken, stop using it immediately. Do not attempt to short-circuit the product or make contact with a conductive object.
Do not expose the product to heat, fire or flame. The device should not be installed and operated closer than 8 inches to a person. Keep out of reach of children. After use, you must dispose of the product in compliance with applicable laws.
Failure to follow these instructions can result in personal injury or property damage, and Manufacturer will have no liability whatsoever for any such injury or damage arising from or in connection with any failure to follow these or other instructions provided to the end user.

Regulatory Notices

This equipment complies with FCC/IC radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
Operation of this device is restricted to indoor use only.

Compliance with 47 CFR Part 15 Regulation Class B Devices

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 product.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a different circuit from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

FCC Interference Notice
Per FCC 15.19(a)(3) and (a)(4) 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.

FCC Part	Frequency Range (MHz)
15C	2412-2462 / 902.3-914.9 / 903-914.2

ISED Notice of Compliance

CAN ICES-003(B) / NMB-3(B)
This Class B digital apparatus complies with Canadian ICES-003. 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:

- This device may not cause interference.
- This device must accept any interference, including interference that may cause undesired operation of the device.

  Notice of compliance with Industry Canada (IC) standards.

Product Description

The product is designed to capture information on its orientation (for example, verticality), its motion (typically acceleration) and its environment (for example, surrounding temperature), and to transmit that information by radio using the LoRaWAN network protocol.
The product supports LoRaWAN class A operation which is a simplex transmission or reception capability. The reception capability is time limited by the LoRaWAN protocol, in order to save battery consumption.

Logical design

Rental Bridge Features and Sensors:

- A LoRa radio transmitting and receiving in the ISM 915MHz frequency band with integrated antenna.
- An integrated 2.4GHz SoC that controls operation of all components.
- Dual RJ45 ports for power daisy-chaining and CAN communication.
- A RGB LED and hall effect sensor for user interaction.
- A multi-purpose mounting bracket for simplified installation.
- Temperature and humidity sensors. The product has the following exterior dimensions: 134mm x 134mm x 34mm.

Back Label

The sticker on the back of the device provides the main product information.

SM: MLBADAAABAAgAK-A
DEVEUL: 2CC407FFFE100028
BT MAC: XX:XX:XX:XX:XX:XX
AT:XXXXXXXXXXXX
4883C7DF3xxxnnnn FYYWW

MODEL: MIS-AD-A
FCC ID: 2AXXQMLBADA
IC:26715-MLBADA
CAN ICES-003(B) / NMB-003(B)

INPUT: 24-48Vdc ⎓ 05-1.0A (RJ45 In), 5Vdc ⎓ 0.5A (USB)
OUTPUT: 24-48 VDC, 0.5-1.0A, 48V Max (RJ45 Out)
Made in Chaina(CI)

c UL us
LISTED
E518644
I.T.E.

The DEVEUI and AT (Activation Token) are necessary to provision the device on the LoRaWAN network. This information is encoded in the QR code.
Do not remove the sticker or other proprietary notices or logos affixed to the device. Do not remove the sticker or other proprietary notices or logos affixed to the device.

Characteristics

Listed below are the main performance characteristics:

Features	*Description*
Use	Indoor Only
Button	One (1), Reed Switch
LED	One (1), RGB
Usage	Continuous
Internal supply	24-48Vdc ⎓ 0.5-1.0A (RJ45 In) SVdc ⎓ 0.5A (USB)
Relative humidity environment	Less than 95% non-condensing humidity
Frequency band	902-928MHz and 2.4-2.5GHz ISM Band
Activation	OTAA and ABP
Max Output power	+22Bm conducted
Operating temperature	From -40°C to +85°C non-condensing, altitude max is 2000m.
Storage temperature	From 0°C to +35°C non condensing
Mechanical dimensions (in millimeters)	L 134 mm x W 134 mm x H 34 mm

Temperature measurement sensor accuracy	+/- 1°C
Temperature	Range: -40°C to + 60°C Precision: +/- 1°C
Humidity	Absolute accuracy tolerance: +/- 3 %RH over 20..80%RH at 25°C

Installing the Bridge

The product is designed to be installed in almost any environment, some of which include; Offices, hallways, closets, kitchens, bathrooms. The Bridge should be mounted to the ceiling using the mounting bracket. And included accessories.

Power Source

1. Power source is identified
2. If using wall outlet, install PoE Injector
   a. PoE injector must be dressed at power source location
3. Install raceway from PoE Injector location to ceiling

Note: This product is intended to be supplied by a UL Listed Power Supply Unit marked “Class 2” or “LPS” or “PS2″ and rated 24-48 VDC, 0.5-1.0A (for PoE Input) 5VD, 0.5A (for micro USB)”.

Bridge `1′ in chain

1. `PoE In’ is supplied to install location
2. Bridge Mounting Bracket is installed based on ceiling layout
3. PoE from power source is connected to `Input’ on Bridge
4. Connect `PoE Out’ to `Output’
5. Latch Bridge onto Mounting Bracket via twisting it onto the locked position.
6. Confirm power by LED activation
7. Confirm Bridge joined the network by Solid Blue LED
8. Proceed with activation process through Asset Track app (Step 4)
9. NOTE: For 1st Bridge in chain, Installer must ensure that jumpers are set

Bridge `2′ in chain

1. `Connect Bridge 1 `PoE Out’ to Bridge 2 `Input’
2. Proceed with mounting process as described in Step 2.
3. Proceed with activation process through Asset Track app (Step 4)
   NOTE: If final Bridge in chain, Installer must ensure that jumpers are set

Activation

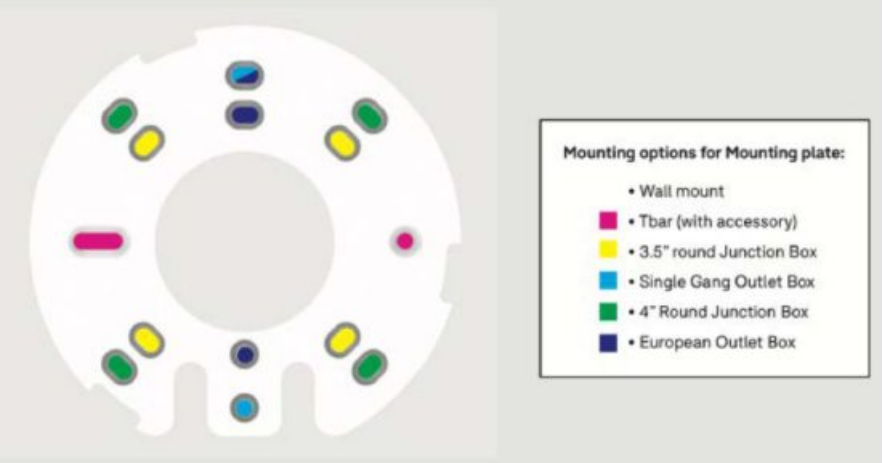
1. Using Asset Track software,
   a. Identify Room
   b. Identify Bridge Installation Location on floor plan
   c. Scan Bridge QR code or manually enter Bridge ID
   d. Confirm successful Bridge / Location pairing by pressing SUBMIT

Accessories

Items	*Qty*	*Description*
Mounting Bracket	1	Assembled and packed with device
Mounting Clips Pack	1	2x clips per pack
Screw Pack	1	2x – M4 screws (7*8 mm) 2x – Hex spacer (7*12 mm) 2x – #8-32 screws (8*26 mm) 2x – Drywall screw (3.5*25.4 mm) 2x – Plastic anchors (3*8*25 mm)

Mounting Options

Mounting Bracket:
The Bracket includes options for:



- Wall mount · T-bar
- 3.5″ round Junction Box
- Single Gang Outlet Box
- 4″ Round Junction Box
- European Outlet Box

Button & LED Behavior

LED Blink Rate:

Fast Blink (0.2 seconds each)	Unrecoverable activity	– – – – – – – – – – – –
Slow Blink (1.0 seconds each)	Activity in progress	— — — — —
Solid	Steady state	——— ——————— ——

Magnetic Reed Switch:

Short Press (Tap)	Less than 3 seconds
Long Press (Hold)	6 seconds

LED **Actions:**

Device Action	LED	**Power**	**Connectivity**	**Reed Switch**
Powered Off	N/A	No	Not Connected	N/A
Working Properly	——— ————— —	Yes	Connected	N/A
Attempting to Join	— — — — —	Yes	Not Connected	N/A
Transmits	— —	Yes	Not Connected	Hold 5 sec
Transmits	— —	Yes	Connected	Hold 5 sec
Reset	– – – – – – – – – – –	Yes	N/A	2 Short Presses 1 Long Press
DFU Mode	– – –	Yes	N/A	4 Short Presses 1 Long Press

Federal Communication Commission Interference Statement
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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate this equipment.

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.

IMPORTANT NOTE:
Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
Country Code selection feature to be disabled for products marketed to the US/CANADA

Industry Canada statement

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

Radiation Exposure Statement:
This equipment complies with Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Documents / Resources

	Humax Networks MLBADA Location Bridge [pdf] User Manual MLBADA, 2AXXQMLBADA, MLBADA Location Bridge, Location Bridge, Bridge