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TAGLINK BRIDGE TECHNICAL MANUAL

Release 1.3

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1. Product Description

The TagLINK Bridge is designed as an Automotive Bluetooth Bridge for Wiliot pixel passive tags.

The TagLINK Bridge key features:

- Bluetooth v4.2 transceiver
- Embedded 360° RF antennas
- Internal backup battery – Optional
- 4 Pin automotive connector and Micro USB for external power
- Firmware & configuration update Over-The-Air (OTA)

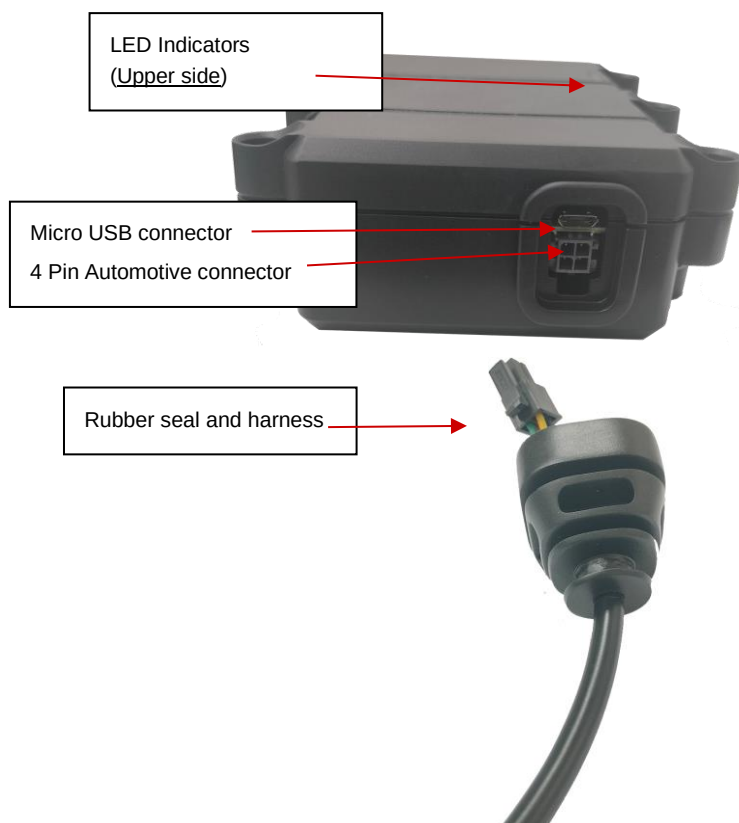
1.1 Technical Specifications

Communication	BLE 4.2 module + Optimized antenna
Connectors	4-pin Molex connector, Micro USB
Power Supply	9-32VDC / USB
Backup battery	Optional - Rechargeable, 3.6V, 750mAh (Li-Poly or Li-ion)
Configuration/ Firmware Update	OTA
Operating temperature	0 to 45°C
Storage temperature	-20 to 80°C
Dimensions	10.8cm x 3.9cm x 8.7cm
Weight (NET)	65g
Durability	IP65
Max. relative humidity	90+/-5%



2. Installation

1. Unwrap the device wire harness but do not connect it to the device yet. Refer to the following picture of the TagLINK Bridge connectors when performing connections in the subsequent steps of this procedure.



2. If using the automotive type harness:
 - Connect the red wire (pin #1) to positive 12/24v power (when installation is in Vehicle - via a 3A fuse to the vehicle battery (+30)).
 - *In a vehicle installation, make sure this positive feed remains live even when the Ignition switch is turned OFF and when starting the engine. The fuse must be removed from the fuse housing during installation.*
 - Connect the black wire (pin #5) to the ground (-) power (in vehicle installation – to the vehicle chassis or any grounded part of the vehicle).
 - *Make sure the connection is free of paint or dirt to assure a good conductive ground connection*
3. If using a Micro USB cable:
 - Connect the Micro USB cable to the plug and the other side to a USB power source.



4. To finalize the installation, Identify the desired location in which to install the device. Installation location should be clean, free of water, heat, and large metallic objects. For the best reception, install the TagLINK Bridge in an elevated position than the monitored elements.
5. Place the device in the selected location but do not affix it yet.
6. Secure the device in its preferred location. Remember, the flat bottom side opposite the LEDs can be attached to any surface. Choose your mounting method from the following options:
 - a. **Double-sided adhesive sticker:** This is the easiest option for smooth, clean surfaces.
 - b. **Cable ties:** Thread cable ties through the designated holes (if available) and fasten them securely to a suitable anchor point.
 - c. **Screws:** Use screws if a permanent and sturdy mounting is necessary. Remember to choose screws appropriate for the surface material and ensure they don't damage the device.
 - Make sure the surface is clean and dry before using adhesive stickers.
 - For optimal signal reception, avoid mounting the device directly on metal surfaces.
 - Double-check that the device is level and securely attached before use.



3. Safety Instructions



Personal safety is of paramount importance. Please follow all safety instructions when installing ERM products

In a vehicle implementation:

- *Always disconnect power when performing installation by removing the negative connection of the vehicle battery. Never work when power is connected.*
- *Always connect the positive wire using a 3A fuse.*
- *Reconnect the external power only after the installation is fully completed, making sure all wires are safely insulated.*
- *Use appropriate work tools.*
- *Maintain good ventilation and lighting in the work area.*
- *Never leave bare wires. Trim all wires not in use in such a way that no bare conductors remain, and fix them securely in place.*
- *Perform installation in a dry environment.*
- *Install ERM devices away from any heat sources.*
- *Do not install ERM devices in the engine compartment or on the vehicle's exterior.*
- *Install ERM devices away from large metallic bodies and never install them in small gaps between metallic objects.*

4. Troubleshooting

1. Device is Not Powering ON (No LED Indicator):

- Check Power Connection: Ensure the device is correctly connected to the power source.
- Inspect Power Supply: Confirm the wires are properly connected: black wire to GND, red wire to +12/24V, and green wire to IGN.
- If there's no voltage, consider using an alternate power source.
- Inspect for Damage: Verify the device does not show any signs of physical damage.

2. LED Indications:

Follow the below indications to better understand the situation:





Blue LED (Echo LED) has the following blink patterns:

MODE	LED Activity	Description
Advertising Mode	First 30 seconds from waking up	Bridge is advertising
Echoing Mode	Blinking, single speed	Indicates the bridge has a tags packet in its buffer (transmission queue). It means that the bridge received Wiliot packets and forwards them on.
Keep Alive Mode	Two fast blinks in a row	Indicates the bridge is alive (sends beacons management packets). When there is no energizing and no packets to echo.

Red LED (Energizing LED) has the following blink patterns:

MODE	LED Activity	Description
Energizing Mode	ON, if energizing is configured	Indicates the bridge pattern includes energizing mode.
OFF		Indicates the current pattern used does not include energizing.
Dual Band & Energies Energizing Mode	Continuous	This mode will only be active if energizing with Sub-1G.

Green LED (Firmware Upgrade LED) has the following blink patterns:

MODE	LED Activity	Description
Upgrade Mode	ON	Indicates the bridge firmware is being upgraded.



5. ERM Contact Information

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FCC warning statements:

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.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your 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.

The device has been evaluated to meet general RF exposure requirement 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.