ROOBUCK Belt Tag - RBT6A-WB/RPT6A-WB

User Manual

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Acronyms/Key Phrases

Acronym/Key Phrases	Explanation
BLE	Bluetooth Low Energy
RFID	Radio-Frequency Identification
NFC	Near Field Communication
Short Press	Press the PUSH button*
Long Press	Press and hold the PUSH button for at least 5 sec*

*Configurable from the Roobuck Internet of Things Configurator (only accessible by authorised personnel from the control centre). Refer to: Configuring Devices in the “Roobuck Internet of Things Configurator User Guide”.

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Overview

1.1 Scope

This manual covers functional, operational and technical specifications of Roobox Belt Tag products.

1.2 Connectivity

The basic Belt Tag supports (Wi-Fi) and Bluetooth Low Energy (BLE) for communication and location tracking.

Users should be familiar with the operations of their Belt Tags, in particular, the two-way communication signals between the Control Centre and Belt Tag users.

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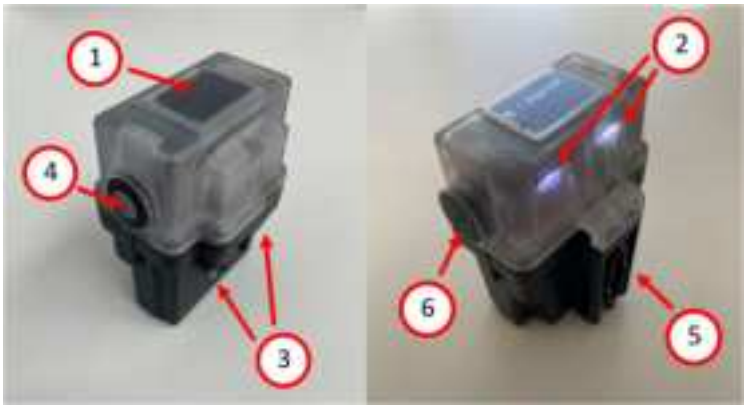
Functions and Features

2.1 Features

The Roobuck Wireless Belt Tag has several features:

- OLED Screen with multiple menus/functionality
- Two-way communication between Belt Tag users and Control Centre
- LED flashing patterns to indicate emergency alerts, pages or acknowledgements
- Simple one button operations
- Charging Indicator
- Multiple sensors to monitor RWCL user's working condition
- Device reboot functionality

2.2 Key component locations



1. OLED Screen
2. LED Indicators
3. Charging Connector
4. PUSH Button
5. Belt Attachment Loop
6. Speaker
7. NFC Tag Location (Underside of Belt Tag)

2.2.1 OLED Screen

The OLED screen can be used to visually traverse through the primary menu and the secondary menu and select the desirable option as required.

2.2.2 LED Indicators

The Belt Tag contains two LED indicators near the OLED screen on the belt attachment side that flash when the device is paged from the control centre. This is used for signaling the user to check the device. The beams are not focused.

2.2.3 Charging Connectors

The two metallic elements on the opposite side to the belt attachment are the end-point connectors that are used for charging the Roobuck Belt Tags.

2.2.4 PUSH Button

The PUSH button is the only button on the Belt Tag. It can be used for:

- Proceeding from one page to the next on the Primary Menu and the Secondary Menu.
- Sending Emergency Alerts to Control Centre.
- Acknowledging Emergency Alerts and Pages sent by Control Centre.
- Triggering a device reset.

Details on performing each of the above functions are explained throughout this manual.

2.2.5 Belt Attachment

This section of the Belt Tag is used to secure the device to the user by locking the holster securely to the user's belt.

2.2.6 Side Speaker

The Belt Tag employs a speaker on the side as an audio indicator for when the device is paged from the control centre. This will allow for the user to detect and acknowledge the alert sent by the control centre.

2.2.7 NFC Tag

The NFC tag on the underside of the Belt Tag device allows for quality assurance purposes as well as BLE Configuration. (See BLE Configuration Guide for more details)

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Operations

3.1 Navigating the Primary Menu:

3.1.1 Main Page:

3.1.2 Wi-Fi/BLE/MQTT Connectivity Icons:

1. BLE
2. MQTT
3. Wi-Fi

3.1.3 On Charging Dock Information:

3.1.4 Battery Indication:

3.1.5 BLE Pairing:

3.1.6 Send Emergency Alert:

3.1.7 Inbox List:

See Section 3.2.1 for secondary menu items.

3.1.8 Send Message:

See Section 3.2.2 for secondary menu items.

3.1.9 Check Device Information:

See Section 3.2.3 for secondary menu items.

3.1.10 Reboot/Restart Device:

3.2 Navigating the Secondary Menu:

3.2.1 Inbox Items:

Empty inbox -

Inbox with sample message –

3.2.2 Outbox Message Options:

By default, there are three pre-set message options to send to the control centre. However, the device can be configured to customize the pre-set messages and include more messages as desired.

Option 1: Is it safe to come up now?

Option 2: Where should I go?

Option 3: When will I be picked up?

Option 4: Back to Primary Menu.

3.2.3 Device Information:

SSID	Wi-Fi Mac Address
Broker IP	Serial Number
Broker Hostname	Firmware Version
APN (Access Point Name)	

To change these configurations, please refer to the BLE Configuration Guide and follow the steps indicated.

3.3 Receiving Emergency Alerts

The Control Centre can send an emergency alert to all Belt Tag users using the RIoTC dashboard (See RIoTC User Guide). Upon receiving the alert, the Belt Tags will continuously fast flash. A single short press of the PUSH button will acknowledge the alert and stop the flashing. Immediately proceed to the closest evacuation point.

Important

The user MUST acknowledge the emergency alert. Otherwise, control centre will assume the user did not see the alert and may send help to

3.4 Receiving Pages

The Control Centre can page a single user or group of users to request a call back using the RIoTC dashboard. (See RIoTC User Guide) Upon receiving the page, the Belt Tag will flash in short bursts. A single short press of the PUSH button will “acknowledge” the page and the LEDs will stop flashing. Contact control centre immediately to clarify the nature of the call.

3.5 Sending Emergency Alerts

Belt Tag users can send a duress signal to the Control Centre in emergency situations by selecting the Emergency Alert page as shown in Section 3.1.6 and performing a long press of the PUSH button. The Control Centre will receive the duress call and must acknowledge on the RIoTC dashboard which will let the Belt Tag user know that the Control Centre has acknowledged their duress call. (See RIoTC User Guide for more details)

3.5 Receiving Text Messages

The Control Centre is able to send messages to a single user or a group of users using the RIoTC dashboard (See RIoTC User Guide) and the user can check these messages by selecting the INBOX item and holding the PUSH button while on the primary menu. The user can then scroll through the messages with a single press of the PUSH button.

3.6 Send Messages

This feature allows for the wearer to promptly send messages to the Control Centre for instructions to follow using a pre-set list of message options. One short press of the PUSH button will cycle through the existing options and one long press of the PUSH button will either send a message to the control centre or return to the primary menu depending on the selected option. The Control Centre will be able to see a list of submitted messages on the RIoTC dashboard. (See RIoTC User Guide)

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Maintenance and Troubleshooting

4.1 Rebooting to Resolve Wi-Fi Connectivity Issues

While it is unlikely for the device to be disconnected from the network when it is in range of a Wi-Fi access point, if the issue occurs, the user may try rebooting the device by selecting the “REBOOT” option on the primary menu to force reboot and consequently force reconnect to the network.

4.2 Updating Firmware

Device firmware can be updated over-the-air (OTA) . The device must be put on a charging dock and made sure it can connect to the network in order to allow control centre to update the firmware remotely via the Roobuck RIoTC Software. Please refer to RIoTC User Guide for more details.

4.3 Updating Configurations

There are two methods to update configurations on the device.

1) Update via Wi-Fi

   The device must be connected to the network, and this will allow control centre to update configurations remotely via the Roobuck RIoTC Software. Please refer to RIoTC User Guide for more details.

2) Update via BLE

   The device can be configured using a Bluetooth capable mobile phone. Please refer to BLE Configuration Guide for more details.

4.4 Self-Recovery

Self-recovery is an important feature of this product. Comprehensive protection methods are implemented to safeguard the product including processor supervisor, watchdog, TVS protection, both software & hardware resets, user warning and chassis banding. Self-recovery, as a key protection, can bring the product back to normal operation in various unexpected adverse events such as current-surge, large electrical static discharge, overheat, extreme networking conditions and mechanical impact.

4.5 Contact

For further technical support, please contact Roobuck.

Phone: + 61 2 9938 1550

Email: info@roobuck.com.au

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Technical Specifications

5.1 General Specifications

- Operating time: >30 hours
- Charging time: 14 hours
- Battery: 6.5AH, 3.7 VDC.
- Battery lifetime: 80% after 500 full charging cycles.
- Weight: Approx 160g
- Operating temperature: -20°C to +40°C
- Warranty: 1-year repair or replacement

5.2 Wireless Protocols

- IEEE 802.11b/g/n
- Frequency: 2.4GHz
- Certifications: TBC
- Programmability: (OTA) Over-The-Air Firmware upgradable

FCC Regulations

- 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.
- 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.
- Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Radio Frequency (RF) Energy

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End user must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. The portable device is designed to meet the requirements for exposure to radio waves established by the Federal Communications Commission (USA). These requirements set a SAR limit of 1.6 W/kg averaged over one gram of tissue. The highest SAR value reported under this standard during product certification for use when properly worn on the extremity, with 0 mm separation. SAR compliance for body-worn operating configurations is limited to the specific configurations tested for this filing. Body-worn operations are restricted to belt-clips, holsters or similar accessories that have no metallic component in the assembly and must provide at least 15mm separation between the device and the body of the user. End-users must be informed of the body-worn operating requirements for satisfying RF exposure compliance. The highest reported SAR for body-worn accessory use conditions is 0.247W/kg.

About ROOBUCK

ROOBUCK is a leading provider of Cap Lamps, Safety Signal Lights, other Explosion-proof Products and MineIoT Solutions.

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