

# BLE Link

# User Manual

## Contents

1. GENERAL WARNING .....	2
1.1 PRODUCT DISPOSAL WEE .....	2
1.2 PRODUCT NOTICE .....	2
1.3 TECHNICIAN USE ONLY .....	3
1.4 FCC Rules .....	3
2. Description .....	4

# 1. GENERAL WARNING



- Symbol warns the user about the presence of non-insulated "dangerous voltage" inside the product area, which may cause electric shock.



- Symbol warns the user that the device is static sensitive.
- The product generates radio frequency (RF) power. When using the product, care must be taken on safety issues related to RF interference as well as regulations of RF equipment. Do not use this product in aircraft, hospitals, petrol stations or in places where using cellular products is prohibited. Be sure that the product will not be interfering with nearby equipment. For example: pacemakers or medical equipment. Always keep the product with minimum safety distance of 20cm or more from human body.
- Emerson reserves the right to modify this manual without prior notice.
- This manual is part of the product and must always be kept near the device for easy and quick reference.
- Verify that the power supply voltage is correct before connecting the device. Warning: disconnect all the electric connections before performing maintenance.
- The customer shall bear full responsibility and risk for product configuration to achieve the results pertaining to installation and/or final equipment/system.
- It is good practice to bear the following in mind for the product:
  - Prevent the electronic circuits from getting wet as contact made with water, humidity or any other type of liquid can damage them. Comply with the temperature and humidity limits specified in the manual to store the product correctly.
  - The device must not be installed in environments where temperatures are out of the temperature and humidity limits specified in the manual.
  - Do not clean the device with corrosive chemical products, solvents or aggressive detergents.
  - The device must not be used in applications that differ from that specified in the following material.

## 1.1 PRODUCT DISPOSAL WEE

With reference to the DIRECTIVE 2012/19 / UE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on Waste Electrical and Electronic Equipment (WEEE), and to the relevant national implementation regulations, we inform you that users of EEE in households:

There is an obligation not to dispose of WEEE as mixed urban waste and to separate waste collection of WEEE. Public or private collection systems required by local laws must be used for disposal. It is also possible, at the end of its life, to return the equipment to the distributor in case of purchase of a new one. This equipment may contain hazardous substances; improper use or incorrect disposal could have negative effects on human health and the environment.



The symbol shown on the product or on the packaging indicates that the product must be treated with separate waste.

In case of incorrect disposal, sanctions can be applied as established by the local laws on waste disposal.

## 1.2 PRODUCT NOTICE

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## 1.3 TECHNICIAN USE ONLY

This unit must be installed by a suitably qualified technician who will install this unit in accordance with these instructions and the standards in their industry/country.

Operators of the unit should be aware of the regulations and standards in their industry/country for the operation of this unit. These notes are only intended as a guide and the manufacturer bears no responsibility for the installation or operation of this unit. Failure to install and operate the unit in accordance with these instructions and with industry guidelines may cause serious injury including death and the manufacturer will not be held responsible in this regard.

## 1.4 FCC Rules

This device complies with Part 15 of the FCC Rule. Operation is subject to the following two conditions:

1. This device may not cause harmful interference
2. This device must accept any interference received, including interference that may cause undesired operation.

This device 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.

FCC Radiation Exposure Statement:

This device complies with FCC's and IC's RF radiation exposure limits set forth for an uncontrolled environment under the following conditions:

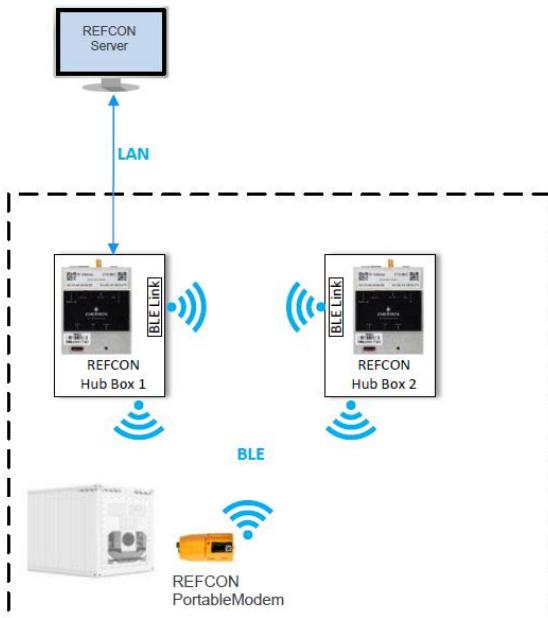
1. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## 2. Description

BLE Link is a Bluetooth LE (BLE) device which can be used as a bridge for wireless communications.

It connects to the non-wireless device through RS232 or USB and provides BLE communication for external BLE enabled interfaces. In the application shown below the BLE Link creates a link between Hubs and data will flow to the REFCON Server System.

The BLE Link device can be provided with external antenna or internal antenna configuration. The BLE Link has a color LED to indicate different states during operation. (See table below) The BLE Link can be mounted with strips or adhesive pads in a junction box. BLE Link includes temperature and vibration sensors for future options.



The BLE link module has a color LED to describe the different states it can be in depending on how it is connected to other nodes. It will alternate between its upstream and downstream states every 500 ms.

Direction	Upstream	Downstream
No connections	Yellow	Yellow
1 connection	Green	Cyan
2 or more connections	Blue	White
Timeout	Red	Magenta

E.g. if a node has 1 upstream and 1 downstream connection, the LED will flash respectively green and cyan. If it loses its upstream connection, it will flash respectively red and cyan. The first node in the chain (the root node) should in normal operation flash yellow and green, and the last node in the chain should flash cyan and yellow.