BLE Dongle AE OEM - User Manual

Introduction PMN:Barix BLE Receiver

The aim of this document is to guide the user through the functionalities of the BLE (*Bluetooth Low Energy*) Receiver (also referred to as BLE Dongle), an accessory developed specifically to be connected to Audio Enhancement's equipment and operate in Safe Alerts scenarios. It is not a product suitable for stand-alone operations as it is part of Audio Enhancement's Epic system, implementing a specific and tailored communication protocol.

The BLE receiver is specifically used to receive safe alerts from BLE badges, which are wearable/portable devices typically carried by school's personnel. It is not in the scope of this document to describe the entire Safe Alert system and its operations.

Package

The BLE Dongle comes in a wrap bag with its own MAC Address sticker.

Part Number: 2024_9458P_BLE Dongle AE OEM Package

Hardware

The BLE Dongle as follow:

The BLE Dongle is made appositely to be connected to Audio Enhancement's classroom amplifiers or control solutions via the RJ45 "Remote Port". The pin-out of the BLE Dongle RJ45 connection is as follow:

RJ45 Pin-out	
1 (wo)	NC
2 (o)	NC
3 (wg)	RS-232 TxD
4 (b)	+24 VDC

5 (wb)	GND
6 (g)	RS-232 RxD
7 (wbr)	NC
8 (br)	NC

The device communicates via RS232 serial port adopting the following configuration:

- Baud Rate: 9600
- Data Bits: 8
- Parity Bit: None
- Stop Bit: 1

While supporting also **Bluetooth Low Energy v4.2** to communicate with Safe Badges.

Classroom Amplifiers and Control head-ends tested and known to work with the BLE Dongle are:

- MS-700
- MS-500A
- CZ-300 (CZA-1300)
- CZ-301 (MS-775 / MS-720)
- Barionet MAE

The BLE Dongle receives 24VDC power from these devices on the RJ45 pins outlined in the above table.

MS500 amplifiers present a different pin-out compared to others. The BLE Dongle automatically detect the type of device it is connected to by checking Voltage presence on pin 5. This affects also the software function for upstream communication with Epic to forward the data to the correct serial port.

Software Functionality

The BLE Dongle is programmed to startup its firmware at boot and there is no user interaction required after the installation.

The device acts as a BLE receiver that gets alerts from badges and forwards those alerts to Audio Enhancement's Epic system with the aim to provide the user with the most possible accurate location where the alert was triggered from.

Besides the alert messages exchanged with Epic the BLE Dongle keeps a constant status report to Epic of BLE badges "seen" within reach.

Thanks to the "$SSP" functionality, traditionally built-in Audio Enhancement classroom amplifiers and control units, the communication between the BLE Dongle and Epic happens transparently. There is no interaction with the amplifier or control unit where the Dongle is connected.

Firmware Updates

Firmware updates are managed and controlled via Epic through the same serial connection via the classroom amplifier or control unit.

Compliance and further Information

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 device 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.

Safety and precaution recommendations apply. Find them in the download section at www.barix.com

For questions that are extending the documentation, feel free to contact us on:

International: +41 434 33 22 22
USA: +1 866 815 0866
Email: support@barix.com

FCC STATEMENT

1. 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.

(2) This device must accept any interference received, including interference that may cause undesired operation.

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

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 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.

FCC 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

IC warning

IC warning
- English:

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause interference; and
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

- French:
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
(1) l'appareil ne doit pas produire de brouillage, et
(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement."

L'appareil a été évalué pour répondre aux exigences générales en matière d'exposition aux RF. L'appareil peut être utilisé en condition d'exposition portable sans restriction.