

CreatIdea Bluetooth Mesh and Beacon User Manual



CreatIdea Inc.

1. Operation Mode Selection

The device can be operated and selected as Bluetooth Mesh Node, Bluetooth Relay Node, Bluetooth Gateway Node or Beacon. A operation mode switch can be used to select as below:



Switch to right position to set device to be Mesh Node Relay Node 、 or Gateway Node



Switch to left position to set device to be Beacon

2. Start to Device Operation

After selecting operation mode, User can click RESET button to start the device operation function.



RESET button

3. The operation function of Mesh Node

The mesh node is usually to put on higher position such as ceiling, so therefore a high capacity battery or using AC adaptor is to supply power to mesh node.

When power is switched on, this node is ready to receive a packet signal with same specific UUID from a beacon. If signal is received a green LED light will be lit on shortly to represent a packet received, meanwhile a mesh packet message will be sent out to the other mesh node, relay node or gateway node.

It is noted that this mesh node is without battery charging function.

4. The operation function of Relay Node

If the mesh packet message can not be propagated to far distance Gateway Node. A Relay Node is necessary to be used between mesh node and gateway node for the purpose of message long distance propagation.

When relay node receive a mesh packet message with a same group and device address, it will lit on green LED light shortly and send this message to the other mesh node, relay node or gateway node repeatedly.

Since relay node is also located on the higher position, the high capacity battery or using AC adaptor is to supply power to relay node. It is noted that this mesh node is without battery charging function

5. The operation function of Gatyeway Node

When this gateway node received a mesh packet message from some mesh node or relay node and green LED is flash for a while. It represent that the positioning transition communication is finished.

At the same time, this gateway node will send this received information to PC or micro controller. The following test diagram is depicted the whole communication construction.



6. The operation function of Beacon

When this device is set to be Beacon. The beacon will send out beacon message to mesh node in every specific time slot. After sending out message, green LED is flash for a while to indicate a message is transmitted.

Since a battery is built in this beacon, so when battery power is low, a yellow LED is flashed. User can plug in 5V power to micro USB port, and a yellow LED will always lit on till battery power charging full.

In addition, if beacon is long time no moving, a built in sensor will detect and enforce beacon to entry sleep mode to save battery power, and when a sleep time out, beacon will be wake up and continue to sending message.

6. The operation function of Beacon

A special function of this beacon is with emergency calling, if user need to help, just clicking emergency button to notify control center to deal with the special case, at that time, a red LED will be lit on, till user click emergency button again.



Emergency
button

7. FCC Statement

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.

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.

7. FCC Statement

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 party responsible for compliance could void the user's authority to operate the equipment.

8. Specification

Device name	Bluetooth Mesh/Beacon
Brand	Creatidea Inc.
Model No.	CI-BLE MESH
Manufacturer	Creatidea Inc.
Equipment type	BLE
Frequency of operation	2402-2480MHz
Channel Spacing	2MHz
Channel Number	40 channels
Type of modulation	GFSK
Operating voltage	3.3V or 3.7V battery
Beacon Operation Time	1 month using 1300mAH/3.7V battery
Antenna Type	Chip Antenna
Antenna Gain	-1 dBi
Output power	-8 dBm