

Bluetooth Beacon Broadcast Device

CMP-9304BC01



《Supplier》	
Company Name: C-MAX Asia Ltd.,	
Address:	Unit 117, Liven House, 61-63 King Yip Street, Kwun Tong, Kowloon, Hong Kong SAR
Tel:	+852-2798-5182
Fax:	+852-2798-5379

1 Description

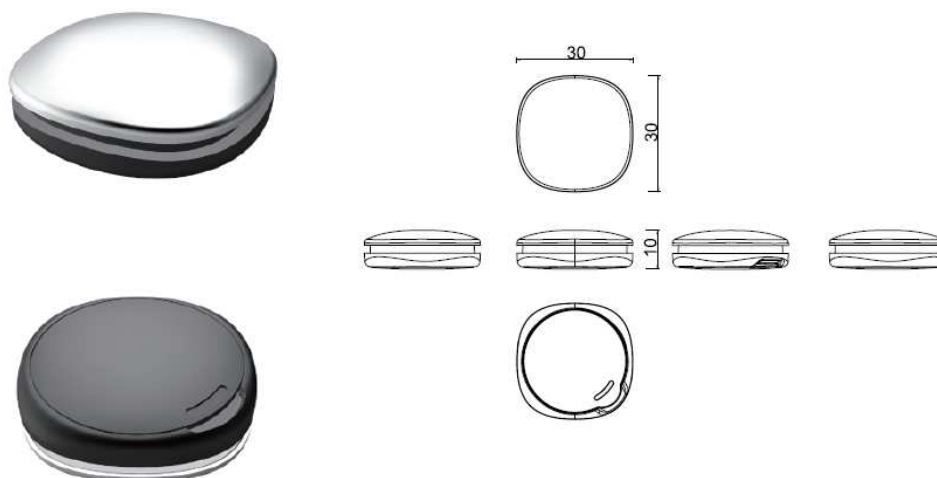
The CMP-9304BC01 is a Bluetooth Low-Energy proximity beacon suitable for mass deployment by system integrators. The module advertises ID data that is compatible with common beacon standards (UUID, Major ID, and Minor ID).

An supervisor mobile APP is also available from C-MAX for over-the-air beacon settings to configure parameters such as UUID, Major ID, Minor ID, advertising intervals, measured power levels and measured power at 1 meter.

1.1 Features

- ❖ ID packet format includes:
 - UUID, Major ID, and Minor ID
 - Output power information
- ❖ IPX4 water resistant
- ❖ Beacon interval programmable via mobile APP for flexible power consumption management. Default interval is 1 second.
- ❖ Output power programmable via mobile APP for flexible communication distance utilization. Default upon first time use is 0.4 dBm.
- ❖ UUID programmable via mobile APP.
- ❖ Major and Minor IDs programmable via mobile APP to suit user's self-customization.
- ❖ Measured power at 1 meter programmable via mobile APP to configure the reference RSSI at 1 meter distance

1.2 Dimensions (designations in mm)



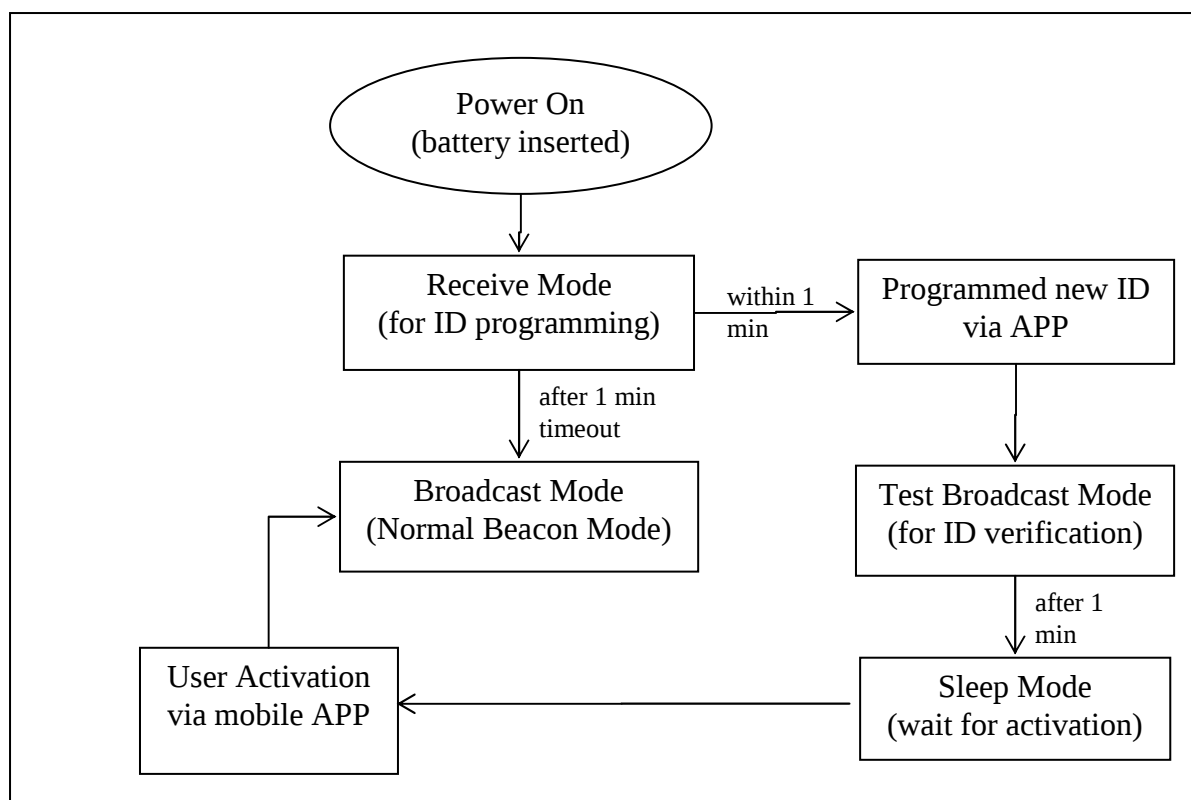
1.3 Bluetooth Address

Bluetooth Address: 0C:F3:EE:XX:XX:XX

2. Operation Manual

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

2.1 Operational Flow

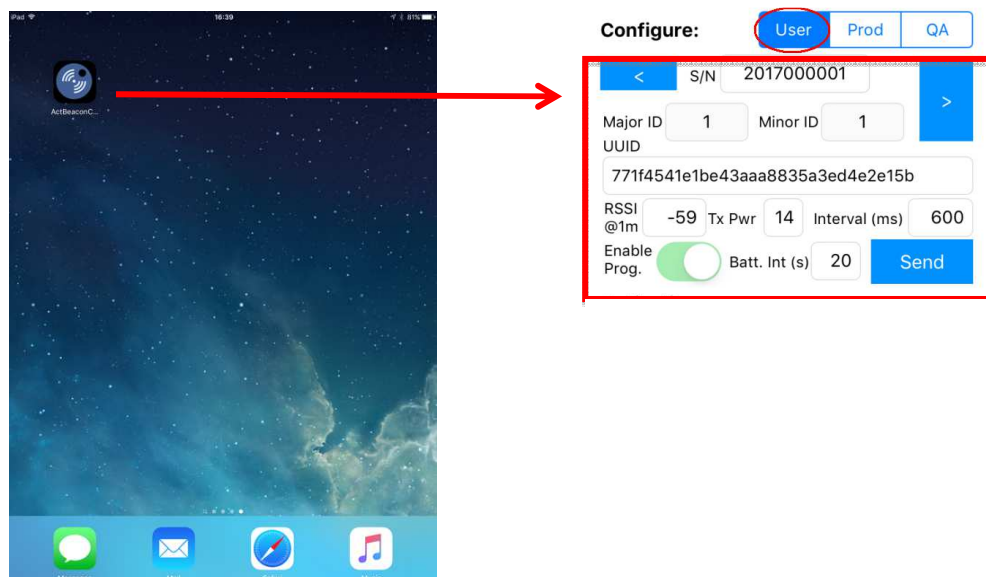


2.2 Initial Activation

Upon first use or after new ID is programmed into the beacon device, the beacon will be in standby activation mode. The C-MAX Supervisor mobile APP has to be used to activate the beacon into normal active broadcast mode. Upon launching the APP, selecting USER mode, input the serial number of the beacon to be activated and then a simple click on "Activate" will activate the beacon which should be placed next to the Apple mobile device.

If after battery is replaced, the device will remain in receive mode for 1 minute waiting for new ID to be programmed, if no new ID is programmed, the device will go into normal beacon mode, without the need for activation.

APP configurable device settings



2.3 iBeacon Broadcast

The normal Beacon Advertisement packet will be broadcasted every 1 second or at an interval set by the user between 100 milliseconds and 10 seconds. The broadcasting packet is according to the following standard Apple iBeacon format:

Byte	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Type	Apple's fixed iBeacon advertising prefix									iBeacon UUID																Major ID		Minor ID		RSSI as at 1m

The packet consists of :

- ❖ UUID (16 bytes or 32 hexadecimal characters). By default it is set to C-MAX's UUID: E2C56DB5-DFFB-48D2-B060-D0F5A71096E0.
- ❖ Major ID (2 bytes or 4 hexadecimal characters). By default, it is set to a value of 10000, unless C-MAX has a list of specific major IDs to be pre-programmed for the customer upon product shipment.
- ❖ Minor ID (2 bytes or 4 hexadecimal characters). By default, it is set to a value of 10, unless C-MAX has a list of specific minor IDs to be pre-programmed for the customer upon product shipment.
- ❖ RSSI as at 1m. As adjusted by measured power level at 1 metre distance. This parameter can be used by a mobile APP for distance computation.

Receive: s/n: 2017000001 -35 dbm
 Major ID: 1 Minor ID: 1
 UUID:
 771f4541 e1be43aa a8835a3e d4e2e15b

E2C56DB5-DFFB-48D2-B060-D0F5A71096E0

2.4 Battery Level Broadcast

An additional supplement advertisement packet will be broadcasted every 5 mins by default or at an interval specified by the user within the range of 1 seconds and 3600 seconds. This allows the mobile APP to check for the battery voltage and alert for battery low conditions.

Batt. Int.: 20 s Batt: 3.0 V

2.5 Beacon Settings Customization

If the Beacon is configured as “ENABLE PROGRAMMING”, the user can customise his own beacon parameters including the following:

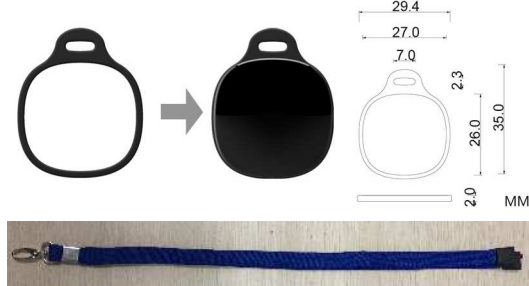
- Programmable UUID
 - o 16 bytes, each byte ranging from 0x00 to 0xFF
 - o Default set = E2C56DB5-DFFB-48D2-B060-D0F5A71096E0
- Programmable Major ID
 - o Range from 0x0001 to 0xFFFF
 - o Default set = 10000
- Programmable Minor ID
 - o Range from 0x0001 to 0xFFFF
 - o Default set = 10
- Programmable Advertising Interval
 - o Input range from 600 milliseconds to 10000 milliseconds
- Programmable TX Power Level
 - o Input range from 2 to 17 with definition as follows:
 - 2 = - 17.9 dBm
 - 3 = - 16.4 dBm
 - 4 = - 14.6 dBm
 - 5 = - 13.1 dBm
 - 6 = - 11.4 dBm
 - 7 = - 9.9 dBm
 - 8 = - 8.4 dBm
 - 9 = - 6.9 dBm
 - 10 = - 5.5 dBm
 - 11 = - 4.0 dBm
 - 12 = - 2.6 dBm
 - 13 = - 1.4 dBm
 - 14 = + 0.4 dBm (default)
 - 15 = + 2.5 dBm
 - 16 = + 4.6 dBm
 - 17 = + 6.2 dBm

- Battery Level Broadcast Interval
 - o Input range from 1 second to 3600 seconds
 - o Default set = 300 seconds (that is, 5 minutes)
- Programmable Measured Power at 1 meter
 - o 2's complement of the calibrated TxPower, from 0x00 to 0xFF
 - o Default set = 0xC5 = -59dBm

3. Electrical Characteristics

Specification	Min	Typ	Max	Units	Condition
Operating Voltage	2.3	3.0	3.3		Lithium Coin cell CR2032 battery, 25 °C , 50% humidity
Battery Lifetime (Before Activation)			50	months	CR2032 battery with 220 mAh @ 80% capacity
Battery Lifetime (After Activation) (0.6 msec broadcast interval)			14	months	CR2032 battery with 220 mAh @ 80% capacity, Beacon broadcast interval = 0.6 msec, Output power = 0.3dBm, 25 °C , 50% humidity
Battery Lifetime (After Activation) (1 sec broadcast interval)			18	months	CR2032 battery with 220 mAh @ 80% capacity, Beacon broadcast interval = 1 sec, Output power = 0.3dBm, 25 °C , 50% humidity
Beacon Interval		1		sec	Default
Output Power Level		+0.4		dBm	Default
Average Current (Before Activation)		5		uA	Scanning for activation
Average Current (After Activation)		18		uA	0.6 seconds iBeacon broadcast interval + 20 seconds Battery Level Advertisement Interval
Range (0dBm)		30		m	At default broadcast output power and interval, 25 °C , 50% humidity
Operating Temperature	-20		+60	°C	3V operating voltage

4. Accessories

Accessories Description	Colours Available	Image
Silicone Wrist Band (CMP-9304BC01-WB)	Black / White Wristband (-BK / -WH)	
Plastic Keyfob + Neck Strap (CMP-9304BC01-KF)	Black Keyfob + Blue strap (-BL)	

5. Important 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 circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

5. 1 Important Note

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

6. FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limit set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

Disclaimer of Warranty

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C-MAX Asia Ltd

Unit 117, 1/F.,
Liven House,
61-63 King Yip Street,
Kwun Tong, Kowloon, HK SAR
Tel.: +852-2798-5182
Fax: +852-2798-5379
e-mail: enquiry@c-max.com.hk

C-MAX Technology Ltd (Shenzhen)

Unit 33H,33/F.,
International Trade Commercial Building,
3005 Nanhu Road,
Luohu District, Shenzhen, PR China,
Tel: +86-755-25181858
Fax: +86-755-25181859
email: mandy@c-max.com.cn