

APPB1.02 SGW8130 BLE Sensor Tag iBeacon Mode

May 2020 V1.0

Introduction

SGW8130 is a Bluetooth Low Energy (BLE) sensor tag with different sensor options. This application note provides technical information on its iBeacon mode, which enables identifier broadcast.

The SGW8130 Tag is powered by a standard CR2032 cell battery to enable portability.

Advertising Packet Structure

Data transmitted from the SGW8130 Tag is formatted according to the Apple iBeacon. Part composition and corresponding details are described in Figure 1 and Table 1.

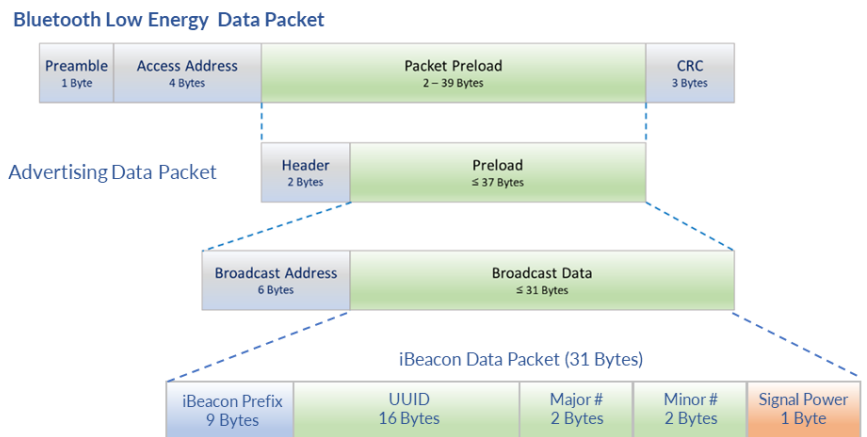


Figure 1: SGW8130 iBeacon Data Packet

Table 1: SGW8130 iBeacon Data Packet Details

Field	Length	Description
Preamble	1 byte	Used for synchronization and timing estimation at the receiver. Broadcast packets are always 0xAA.
Access Address	4 bytes	Fixed broadcast packets with value = 0x8E89BED6
CRC	3 bytes	Cyclic Redundancy Check (CRC) is an error-detecting code used to validate the packets for unwanted alterations.
Header	2 bytes	Packet types information
iBeacon Prefix	9 bytes	Contains hex data: 0x0201061AFF004C0215
UUID	16 bytes	Proximity UUID specific to developers' application and deployment use case
Major Number	2 bytes	Further specifies a specific iBeacon and use case <i>eg. Define for a specific UUID a sub-region within a larger region</i>
Minor Number	2 bytes	Allows further subdivision of region or use case, specified by the application developer
Signal Power	1 byte	Calibrated RSSI value for a distance of 1m away from receiver

Advertising Interval

In advertising mode, the SGW8130 Tag is under non-connectable broadcasting. It achieves the lowest possible power consumption by simply waking up, transmitting data and going back to sleep periodically.

The SGW8130 Tag's default advertising interval setting for iBeacon Mode is one hundred milliseconds.



Figure 1: SGW8130 Advertising Interval

Revision History

Revised	Version	Description
06-May-2020	1.0	Initial document release

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