

APPB1.01 SGW8130 BLE Sensor Tag MSD Advertising Mode

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Introduction

The SGW8130 is a Bluetooth Low Energy (BLE) sensor tag with different sensor options. This document provides technical information on its Manufacturer Specific Data (MSD) advertising mode, which enables the broadcast of temperature and humidity sensing data.

The SGW8130 Tag is powered by a standard CR-2032 cell battery to enable portability.

Advertising Packet Structure

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

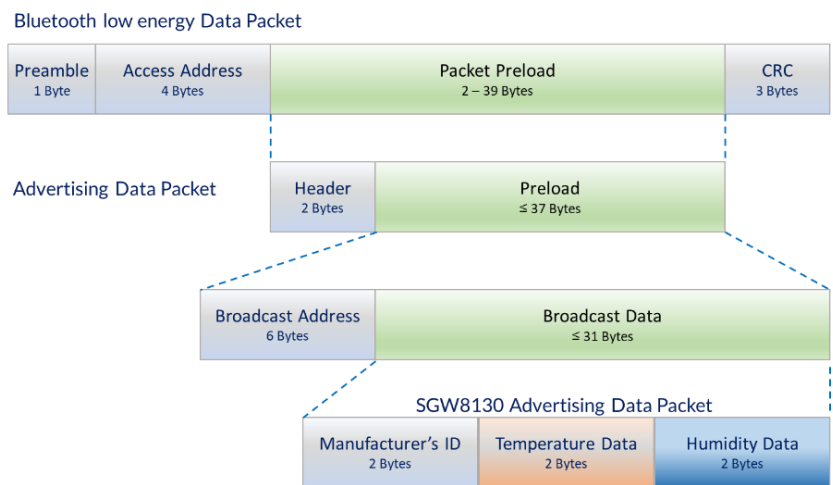


Figure 1: SGW8130 MSD Data Packet

Table 1: SGW8130 MSD 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 |
| Broadcast Address | 6 bytes | Sensor tag MAC address |
| Manufacturer ID | 2 Bytes | Manufacturer ID = 0x0059 |
| Temperature Data | 2 Bytes | Temperature in 0.01°C, byte in little endian, HEX format |
| Humidity Data | 2 Bytes | Humidity in 0.01%, byte in little endian, HEX format |

Advertising Interval

In advertising mode, the SGW8130 Tag is under non-connectable broadcasting, and does not activate any receiving capabilities. 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 MSD Advertising Mode is one second.

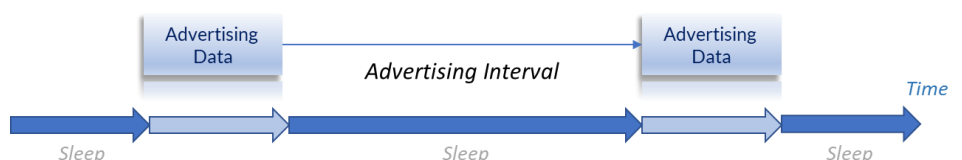


Figure 2: SGW8130 Advertising Interval

Revision History

| Revised | Version | Description |
|-------------|---------|--|
| 09-Dec-2019 | 1.0 | Initial document release |
| 03-Apr-2020 | 1.1 | 'Advertising Packet Structure' and formatting update |

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