



# Honeywell 5800 to LoRaWAN Bridge User Guide

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## 1. QUICK START

To start using your sensor, simply go to:

<https://console.radiobridge.com>

From here you can register your device and immediately start receiving messages.

The sensor configuration, message monitoring, and setting up alerts is usually self-explanatory through the user interface. For further explanations of any sensor features, you may refer to this [user guide](#)

## 2. OVERVIEW

### 2.1. Sensor Overview

The wireless sensors designed and manufactured by Radio Bridge provide full sensor to cloud solutions for Internet of Things (IoT) applications. The Honeywell 5800 to LoRaWAN Bridge translates wireless Honeywell sensor data to LoRaWAN payloads that can be interpreted by the end application. This bridge product uses the proprietary Radio Bridge RBM101-HW5800 module to decode the wireless Honeywell sensor data. More information about the RBM101-HW5800 radio module can be found on the [Radio Bridge website](#).

Features include:

- Built-in radio that talks directly with LoRaWAN wireless networks
- Enclosure tamper detection that will send an alert if the packaging of the sensor itself is opened or broken.
- Over the air sensor configuration in the field
- Automatic low battery reporting and supervisory messages



## 2.2. Revision History

Table 1 Revision History

| Revision | Date          | Description                     |
|----------|---------------|---------------------------------|
| 1.0      | December 2019 | Initial release of the document |
| 1.1      | February 2020 | Updated downlinks section       |

## 2.3. Document Conventions

Table 2 Document Conventions

| Font / Icon                                                                       | Meaning               |
|-----------------------------------------------------------------------------------|-----------------------|
|  | Important notes       |
|  | Warnings and cautions |

## 2.4. Part Numbers

Table 3 Part Numbers

| Part Number      | Rating             | Wireless | Region        |
|------------------|--------------------|----------|---------------|
| RBS306-HW5800-US | Outdoor/Industrial | LoRaWAN  | North America |

# 3. TECHNICAL SPECIFICATIONS

## 3.1. Absolute Maximum Ratings

Table 4 Absolute Maximum Ratings

| Parameter                     | Rating      | Units |
|-------------------------------|-------------|-------|
| Operating ambient temperature | -40 to +70  | °C    |
| Storage ambient temperature   | -40 to +100 | °C    |



## 4. TEST MESSAGES

The device can be triggered to send test messages by placing a magnet next to the side of the enclosure. The location of the magnet is indicated by the triangular notch on the side of RBSx01 and RBSx05 sensors. RBSx04 sensors do not have this capability. There is a small magnetic Hall effect sensor that will detect the presence of a magnet and send a message. This can be used for diagnostic purposes to ensure the sensor is within range and connected to the network.

## 5. MESSAGE PROTOCOL

This section defines the protocol and message definitions for the device.



Radio Bridge provides a web-based console at [console.radiobridge.com](https://console.radiobridge.com) to configure and monitor devices. Usage of this console is highly recommended for most customers rather than implementing the protocols defined in this section.

If the standard Radio Bridge console ([console.radiobridge.com](https://console.radiobridge.com)) is not used, refer to this section to decode the device data and configure the device through downlink messages.

### 5.1. Common Messages

There are common messages across all wireless devices that are defined in the document “Common Sensor Messages” which is available on the Radio Bridge website.



Refer to the document “Common Sensor Messages” for definitions of all common messages. Common messages are not defined in this document.

Common messages include basic error messages, tamper, supervisory, and downlink ack. It is important to refer to that document prior to decoding the messages defined in this section.



## 5.2. Uplink Messages

The uplink message (sensor to web application) specific to the bridge is defined in following table. The common uplink messages are not included in this section (see common messages document).

*Table 5 Uplink Message 0x17: Honeywell Sensor Event*

| Bytes | Description                                                      |
|-------|------------------------------------------------------------------|
| 0-2   | Honeywell Sensor ID (usually located on a sticker on the sensor) |
| 3     | Event identifier                                                 |
| 4-5   | Event payload                                                    |

The events in byte 3 are defined in the following table.

*Table 6 Honeywell Sensor Events*

| Event Identifier | Description         |
|------------------|---------------------|
| 0x00             | Status code         |
| 0x01             | Error code          |
| 0x02             | Sensor data payload |

The Event Payload definitions for status codes, error codes, and sensor data payload are described in the document “Honeywell 5800 BridgeBee User Guide” located on the Radio Bridge website.

## 5.3. Downlink Messages

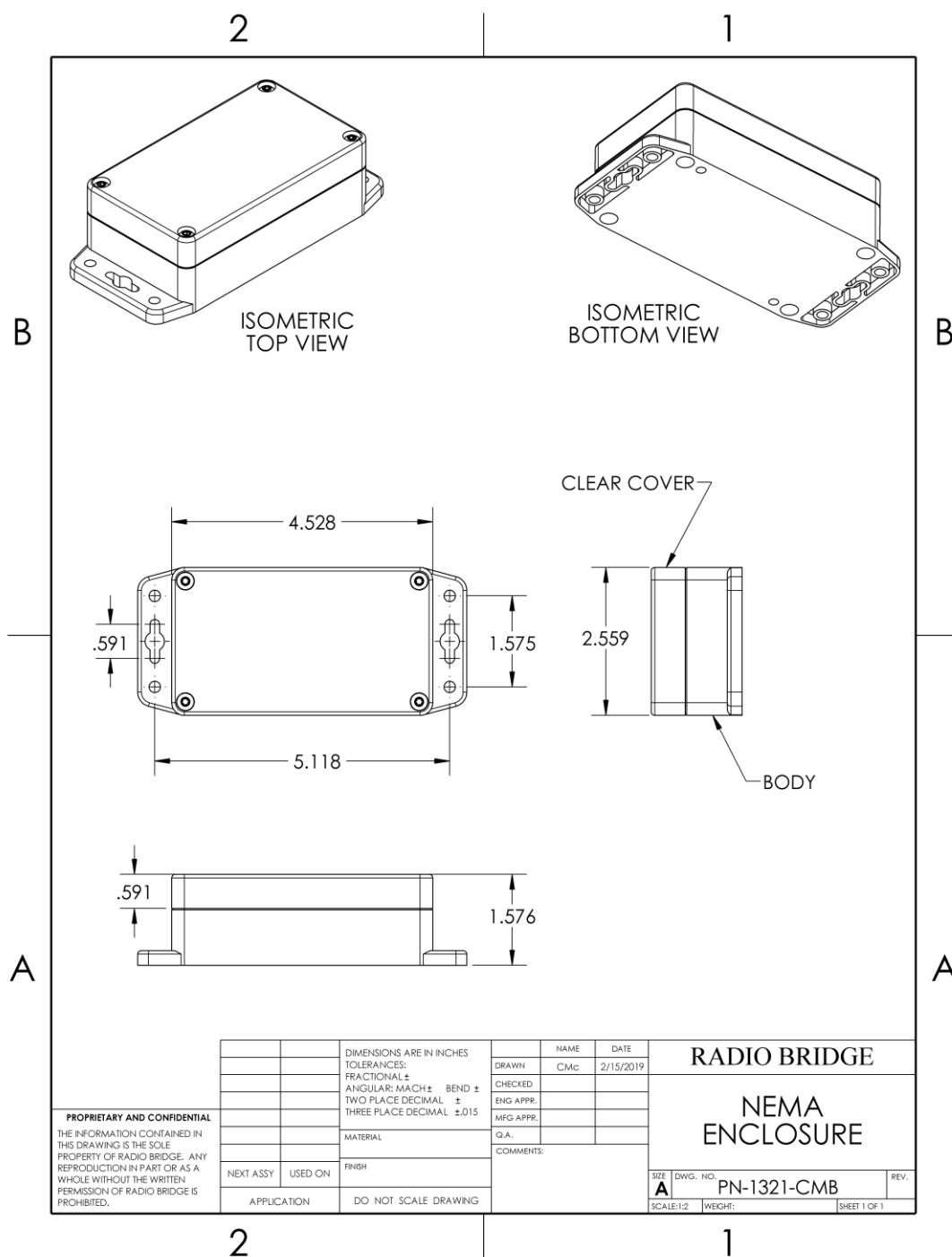
The only downlink messages available for the HW5800 bridge are defined in the common messages document, and are not included in this section.



## 6. MECHANICAL DRAWINGS

The mechanical drawings provided in this section are for the main body of the sensor. All dimensions are inches unless otherwise noted.

## 6.1. ARMORED OUTDOOR/INDUSTRIAL RBSx06 SENSORS



## 7. REGULATORY AND COMPLIANCE

### 7.1. Federal Communications Commission (FCC)

Per FCC 15.19(a)(3) and (a)(4) 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.

Per FCC 15.21, Changes or modifications not expressly approved by Radio Bridge could void authority to operate the devices.

Sigfox RBS101, RBS104, and RBS105 sensors FCC ID: 2APNUSFM10R2

LoRaWAN RBS301, RBS304, and RBS305 sensors FCC ID: 2APNUCMABZ

LoRaWAN RBS306 sensors: This device contains FCC IAU792U13A16858

This device contains equipment certified under IC: 125A-0055

### 7.2. Harmonized Commodity Description (HS Code)

The Harmonized Commodity Description and Coding System generally referred to as “Harmonized System” or simply “HS” is a multipurpose international product nomenclature developed by the World Customs Organization (WCO).

HS Code: 8531.90.9001

### 7.3. Export Control Classification Number (ECCN)

ECCNs are five character alpha-numeric designations used on the Commerce Control List (CCL) to identify dual-use items for export control purposes. An ECCN categorizes items based on the nature of the product, i.e. type of commodity, software, or technology and its respective technical parameters.

ECCN: 5a992.c



## 8. CUSTOMER SUPPORT

Radio Bridge offers free technical support at:

<https://support.radiobridge.com>

Radio Bridge also offers technical support plans and service packages to help our customers get the most out of their Radio Bridge products.

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