



Whirlpool Corporation • 2000 M-63 • Benton Harbor, MI 49022

# **Bluetooth Sensor Module ALTCHBSM01 (FCC ID: A5UALTCHBSM01) USER GUIDE**





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## **Contents**

<b>Introduction</b>	<b>3</b>
Purpose and scope	3
Revision History	3
<b>Module Overview</b>	<b>4</b>
Module Application	4
Major Part Details for the PCB	5
Compliance Limits	5
Module Features and Operation	5
<b>FCC Compliance Notices</b>	<b>5</b>
OEM Responsibilities to comply with FCC Regulations	6
End Product Labelling	6
<b>Contact Detail</b>	<b>7</b>



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## 1 Introduction

### 1.1 Purpose and scope

The purpose of this document is to provide details regarding the use of the Bluetooth Sensor Module. This document also describes the application and operation of it. Moreover, it declares the FCC compliance notices, too.

### 1.2 Revision History

Date	Change Description	Revision
2-21-2020	Release to Altran	1.0
2-21-2020	Updated FCC ID and communication standard statement	1.1



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## **2 Module Overview**

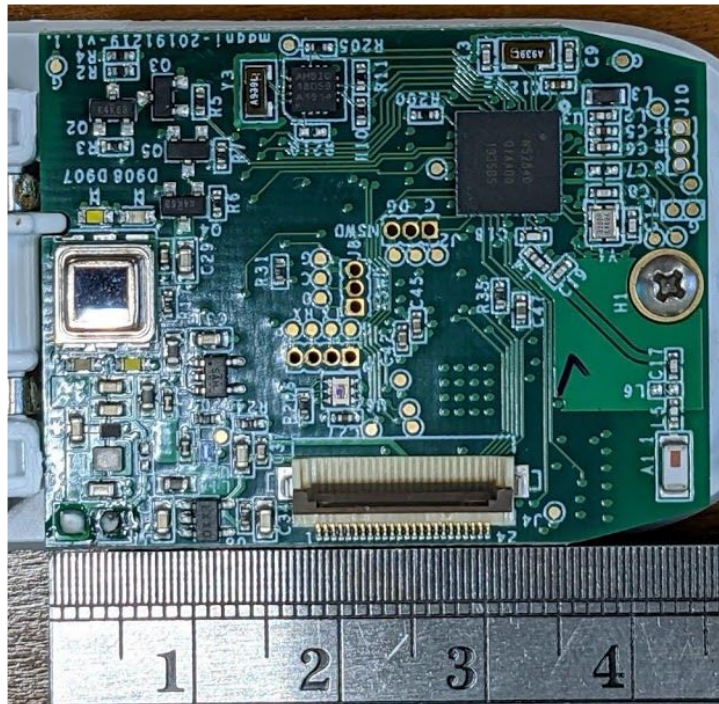
### **2.1 Module Application**

The Bluetooth Sensor Module is the platform which will be used across different applications based on an nRF52 Bluetooth Radio and XR871 sensor capture microcontroller.

The Bluetooth Sensor Module is a Bluetooth ® 5, 2.4 GHz transceiver, utilizing BLE 2Mbit mode. It captures data using an attached sensor and transmits them over bluetooth.

The Bluetooth Sensor Module will be packaged in a small enclosure (no more than 500cm<sup>3</sup>) including batteries to power the device. The device will be placed in locations appropriate to the sensors attached to the bluetooth module to obtain useful data for the consumer.

## 2.2 Major Part Details for the PCB



The Bluetooth Sensor Module consists of the following major components:

- nRF52840
- XR871
- SPI NOR Flash Module
- DC-DC Boost Converter
- Ambient Light Sensor
- PIR - Passive Infrared Sensor
- Onboard Chip Antenna
- Connector for attaching sensor flex cable.
- Solder points for battery power source wires.

## 2.3 Compliance Limits

The register value used for FCC compliance is maximum value and cannot be increased by end user. The RF Output Power configuration is not accessible to End User.



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## 2.4 Module Features and Operation

The Bluetooth Sensor Module intended to operate with 2 x AA batteries (nominal 1.5V) attached to onboard boost power supply of typical voltage **3.3VDC**.

## 3 FCC Compliance Notices

### FCC ID: A5UALTCHBSM01

This rebel module complies with Part 15 of the FCC Rules. The 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.

Under FCC regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by FCC. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotopically radiated power (e.i.r.p.) is not more than that necessary for successful communication. The radio transmitter FCC: A5UALTCHBSM01 has been approved by FCC to operate with the on board antenna.

### FCC Caution!!!

- Changes or modifications not expressly approved by Whirlpool Corporation could void the user's authority to operate the equipment.

Part 15B compliance statements for digital devices:

**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 of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.



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- 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.
- This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

#### The SAR statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

### 3.1 OEM Responsibilities to comply with FCC Regulations

The Bluetooth Sensor Module have been certified for integration into products only by OEM integrators under the following condition:

1. The transmitter module must not be co-located or operating in conjunction with any other antenna or transmitter.

As long as the condition above are met, further transmitter testing will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

**IMPORTANT NOTE:** In the event that these conditions cannot be met (for certain configurations or co-location with another transmitter), then the FCC authorizations are no longer considered valid and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

### 3.2 End Product Labelling

The Bluetooth Sensor Modules are labelled with FCC ID. If the FCC ID is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. In that case, the final end product must be labelled in a visible area or display the following:

**“Contains FCC ID: A5UALTCHBSM01”**

The OEM of the Bluetooth Sensor Modules must only use the approved antenna(s), which have been certified with this module. The OEM integrator has to be aware not to provide



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information to the end user regarding how to install or remove this RF module or change RF related parameters in the user manual of the end product.

#### **4 Contact Detail**

Whirlpool Corporation

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Phone: 1-269-923-6071



## Instructions to the OEM/Integrator:

This module has been granted modular approval for mobile applications. OEM integrators for host products may use the module in their final products without additional FCC certification if they meet the following conditions. Otherwise, Additional FCC approvals must be obtained.

- The OEM must comply with the FCC labeling requirements. If the module's label is not visible when installed, then an additional permanent label must be applied on the outside of the finished product which states: "Contains transmitter module FCC ID: A5UALTCHBSM01". Additionally, the following statement should be included on the label and in the final product's user manual:  
"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 interferences, and (2) this device must accept any interference received, including interference that may cause undesired operation."
- The user's manual for the host product must clearly indicate the operating requirements and conditions that must be observed to ensure compliance with current FCC / IC RF exposure guidelines.
- The final host / module combination may also need to be evaluated against the FCC Part 15B criteria for unintentional radiators in order to be properly authorized for operation as a Part 15 digital device.
- This Module is full modular approval, it is limited to OEM installation ONLY.
- The module is limited to installation in mobile application.
- A separate approval is required for all other operating configurations, including portable configurations with respect to Part 2.1093 and difference antenna configurations.
- The OEM integrator is responsible for ensuring that the end-user has no manual instruction to remove or install module.
- The Grantee will provide guidance to the Host Manufacturer for compliance with the Part 15B requirements if requested.