

This document is designed to provide general information for use of the Bluetooth Audio Module WBT1012. This module is to be used only for OEM installations and limited to mobile or fixed installations.

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

EMI/EMC Compliance Guidelines

FCC Compliance

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.

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

IC Compliance

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

When integrating the WBT1012 module into your own product, you must:

1. Use only the provided Chip antenna.

2. Operate the module according to the specifications listed in this data sheet.
3. Include a label clearly visible on the exterior of the product which states: "Contains FCC ID: WUO-WBT1012 / IC: 7985A-WBT1012".
4. It is mandatory that you consult all FCC and IC documentation for use of a modular approved product, and comply with all listed guidelines and additional testing that may be required.
5. The OEM integrators is responsible to not provide information to the end user about removal or installation of this module.
6. Separate approval is required for configuring this module in way not covered by the certification tests.
7. The Host manufacturer is responsible to ensure compliance of the final product incorporating this module with FCC part 15B for unintentional radiators. Sonavox will provide guidance for the integration in order to ensure compliance with FCC part 15B.

Specifications

RF Circuit

The module consists of BlueNRG Bluetooth Low Energy SoC, Band-pass filter, antenna / optional connector and matching circuits.

RF Performance and Antenna configuration:

- Outdoor range: 10m.
- Maximum Transmitting RF Power: 8 dBm.
- Receiving Sensitivity: -88 dBm.
- Frequency: ISM 2.402 - 2.480 GHz.
- Operation mode: Bluetooth Energy Compliant.
- Antenna: chip antenna.

Physical Dimensions (Fig.1)

- L x W x H = 1050 x 785 x 200[thou]
- Standard 100th LS connector

PCB Material and layout considerations

The PCB material for the base PCB should be FR4 glass epoxy.

The VCC pin should be connected to 3.3V and have decoupling electrolytic capacitor and ferrite bead positioned as close to the supply pin as possible.

No components or traces should be located close to the antenna. Recommended minimum distance is 15[mm] from any metal part in the final assembly or PCB component.

Communications

External micro-controller (uC) can control the module by using SPI interface.

Firmware

Sonavox can provide customized configuration of the module for its customers.

Other features

The module is RoHS compliant.

The module is FCC, IC and CE approved.

Pinout:

- | | |
|-------------|----------------------|
| 1. 3.3V | - Vcc |
| 2. GND | - ground |
| 3. RESET | - reset (active low) |
| 4. SPI_CS | - SPI chip select |
| 5. SPI_MISO | - SPI MISO |
| 6. SPI_MOSI | - SPI MOSI |
| 7. SPI_CLK | - SPI clock |
| 8. IRQ | - interrupt pin |