
GWBMD0x Bluetooth Low Energy Module

1. General Description

GWBMD0xx is a Bluetooth low energy module based on Nordic Semiconductor's nRF51822 BLE protocol processor. This module has integrated most of the peripheral components as RF matching network, Antenna, 16MHz/32.768KHz Crystal, and DC/DC inductor, thus make it easy to be used in the application circuit without knowing the RF design technics.

This is a pre-approved module. It reduces the work and cost for a range of qualifications and let our customers to delivery their products to market more efficiently.

2. Applications

- Phone accessories
- Computer peripherals
- CE remote controls for TV, STB and media systems
- Beacons
- Proximity and security alert tags
- Sports and fitness sensors
- Healthcare and lifestyle sensors
- Game controllers
- Home Automation
- Smart RF tags for tracking and social interaction

3. Features

- Based on nRF51822, 32bit Cortex-M0 Bluetooth Low Energy Processor
- Plug & play module with integrated Antenna
- Integrated 16MHz / 32768Hz Crystal
- Integrated DC/DC converter
- Small form factor: 15mm x 15mm
- Bluetooth v4.0 compliant Protocol Stack (BLE)
- Support Master and Slave mode
- Excellent link budget (up to 95 dB)
- Programmable output power up to +4 dBm
- Rich and flexible peripheral IOs as UART/I2C/SPI/PWM/RTC/AES etc
- Bluetooth EPL

4. Block Diagram

GWBMD0xx incorporates most of the peripheral components and made it a plug and play BLE module.

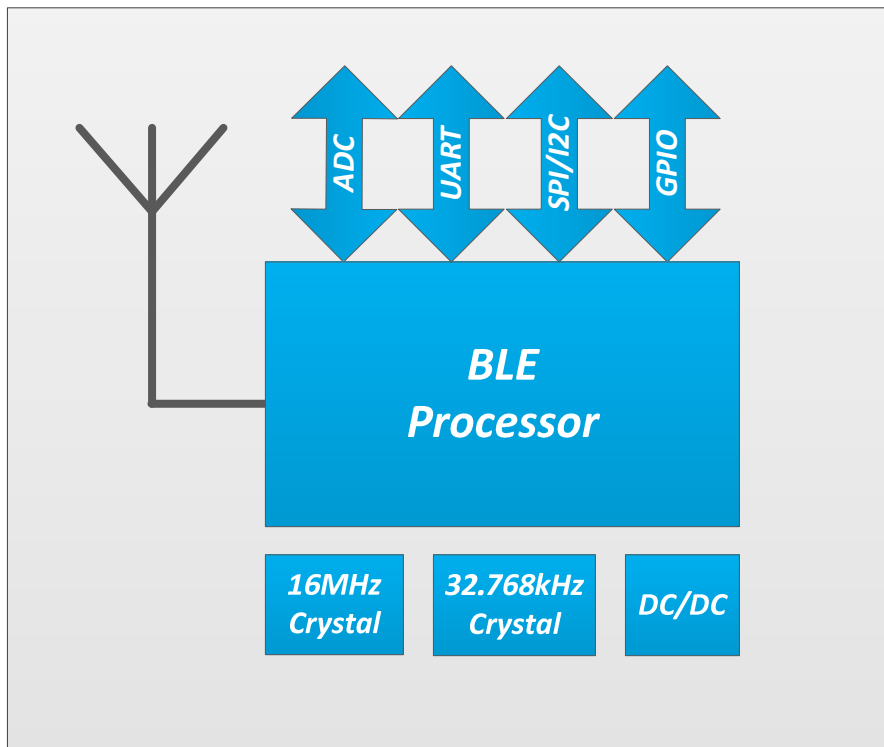


Figure [2]: GWBMD0xx Block Diagram

Attention: Limited Modular Approval - this RF Module may not be sold to the generic public and requires professional installation. Due to the fact that this RF Module is not equipped with an own shielding, the end - product incl. this RF Module has to show compliance to the FCC rules (15B/radiated emissions).

(OEM)Integrator has to assure compliance of the entire end - product incl. the integrated RF Module. Additional measurements (15B) and/ or equipment authorizations (e.g Verification) may need to be addressed depending on co - location or simultaneous transmission issues if applicable.

Integrator is reminded to assure that these installation instructions will not be made available to the end - user of the final host device.

The BT Module must be always marketed as it is mounted on this PCB and itself may not be integrated into any other application without C2P

With the low output power, this RF Module meets the FCC SAR exemption.

The final host device, into which this RF Module is integrated "has to be labeled with an auxiliary label stating the FCC ID of the RF Module, such as" Contains FCC ID:2ABCHWB-8606D

The RF Module is powered by DC ,the antenna is PCB antenna and the antenna gain is 0 dBi.

This device complies with part15 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. "should be placed also on the device or alternatively within a prominent location of the users manual

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

This module is intended for OEM integrator. The OEM integrator is still responsible for the FCC compliance requirement of the end product, which integrates this module. Due to missing shielding the module is strictly limited to integration by the Grantee himself or his dedicated OEM Integrator.

The integration is strictly limited into following host platform(s) that are electrically identical incl. variations that are defined as Class I Permissive Change to the documented and certified samples

-Bluetooth Speakers

under the control of the Grantee.

Additional hosts and/or platforms can be added via Class II Permissive Change by the Grantee.

FCC Statement:

This equipment has been tested and found to comply with the limits for 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 to an outlet on a circuit different from that to which the receiver is connected.

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: Modifications to this product will void the user's authority to operate this equipment.

RF Radiation Exposure Statement:

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

FCC Information to OEM integrator

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user manual of the end product.

The user manual which is provided by OEM integrators for end users must include the following information in a prominent location.

- 1.To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co - located or operating in conjunction with any other antenna or transmitter, except in accordance with FCC multi - transmitter product procedures.
2. Only those antennas with same type and lesser gain filed under this FCC ID number can be used with this device.
3. The regulatory label on the final system must include the statement: "Contains FCC ID: xxxx or using electronic labeling method as documented in KDB 784748.
4. The final system integrator must ensure there is no instruction provided in the user manual or customer documentation indicating how to install or remove the transmitter module except such device has implemented two - ways authentication between module and the host system