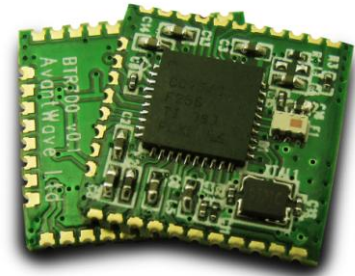


Bluetron™ Low Energy Module BTR700

Key Features

- **Bluetooth® v4.0 low energy technology compliant**
- **Compact size: 14 mm (L) x 14 mm (W) x 2 mm (H)**
- **Class 2, up to 20-meter range**
- **Complete 2.4GHz Bluetooth® System including:**
 - Hardware: Radio, Baseband, Crystal and Programmable Flash
 - Standard Firmware: BLE protocol stack
- **Wide voltage supply range (2.0V to 3.6V)**
- **Accurate digitize received signal strength indicator (RSSI)**
- **Extremely low standby current 0.4µA**
- **Powered directly by standard 3.6V coin cell battery or pair of AAA batteries**
- **Rewritable In-System programmable Flash (128kB/256kB) , 8kB SRAM**
- **Antenna design (External or Internal)**
- **128-bit AES Security coprocessor**
- **Short transition time between operation modes**
- **Surface mount module (stamp type)**
- **Bluetooth® v4.0 qualified**



Description

Bluetron™ BTR700 module is a complete *Bluetooth®* Low Energy (BLE) Technology solution for fast implementation which reducing your product development lead-time. It is a short-range, interoperable and robust solution that can be implemented in any kind of electronic devices. Optimized for devices requiring maximum battery life instead of a high data transfer rate, **Bluetron™ BTR700 module** expands an array of applications in sectors such as healthcare, sports and fitness, security and home entertainment which can be powered with a standard coin cell battery which last typically for a year.

In standard configuration, the module includes a baseband processor with on-board programmable Flash, a radio front-end, supporting circuitry, together with several higher-level BLE software protocols and applications, such as monitoring and sensing algorithms which are resided in the Flash. It enables both BLE master or slave nodes to optimized BOM costs.

Bluetron™ BTR700 series module is a class 2 *Bluetooth®* device, and is in compliance with version 4.0 of the *Bluetooth®* Specification. They are supplied with BLE protocol stack firmware which runs on the internal microprocessor. The module(s) are built on robust MCU core with in-system programmable flash for firmware and application software storage.

Applications

- Mobile phone accessories
- Sports and leisure equipments
- Proximity sensors
- HID (keyboard, mouse & remote control)
- Health care and medical application sensors
- Pedometers
- Blood pressure and glucose meters
- Heart rate sensors
- Watches
- Security tag
- Key fobs
- Baby monitor and alert device
- Gaming devices
- Tyre pressure monitoring systems



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Technical Data

Hardware

- *Bluetooth*® single-mode low energy module (up to 20 meters)
- Nominal output power (Tx) : -23 dBm to +4 dBm
- Nominal sensitivity (Rx): -87 dBm to -93 dBm
- Uses 2.4 GHz ISM band, Freq. Range: 2402 to 2480 MHz
- Host processor interface: UART, USB & SPI
- Firmware and parameter upgrade: SPI interface
- Single supply voltage: 2.0V to 3.6V
- 32MHz crystal osc. and ext/internal 32.768kHz osc.
- Operating temperature : -40°C to +85°C
- Reference designs and antennas available for several architectures

Bluetooth® Low Energy Stack

- GAP, GATT, L2CAP, SMP
- *Bluetooth*® low energy profiles

Electrical Characteristics

Transmit:	27mA (0 dBm)
Receive:	19.6mA
Sleep (timer active):	1.5 uA
Sleep (wake-up pin):	0.4 uA
Operating voltage:	2.0-3.6V

Configuration

The **BTR700** series are based on the scalable **Bluetron™** architecture. This configuration allows embedded stand-alone *Bluetooth*® applications where your target application is embedded within the module, in addition to traditional host-based applications. This possibility is especially useful in portable type applications like mobile phone accessories, low power sensors and medical/sport etc. The variety of external interfaces also makes the **BTR700** series ideally suited for various applications in standard coin cell-based sensing and security systems.

Antenna interface

50Ω *Bluetooth*® ISM Band Antenna (2.4-2.5GHz)

Communication Interface, Peripheral

Communication is carried out using a wide range of external interfaces like high-speed USARTs (Universal Serial Bus). Configurable High resolution ADC channels, comparators, timers and general purpose IOs.

Firmware/Software

- Application specific firmware available
- Possible to design customized firmware

Certifications

- BQE

Development and Evaluation

Bluetron™ on-board evaluation Kit

Software

The standard firmware includes *Bluetooth*® BLE protocol layers up to the high level application layer.

In addition, a variety of *Bluetooth*® stacks for host- and embedded applications with different configuration could be offered. Please contact with our sales representatives at inquiry@avantwave.com or call us directly at 852-2648-9887

