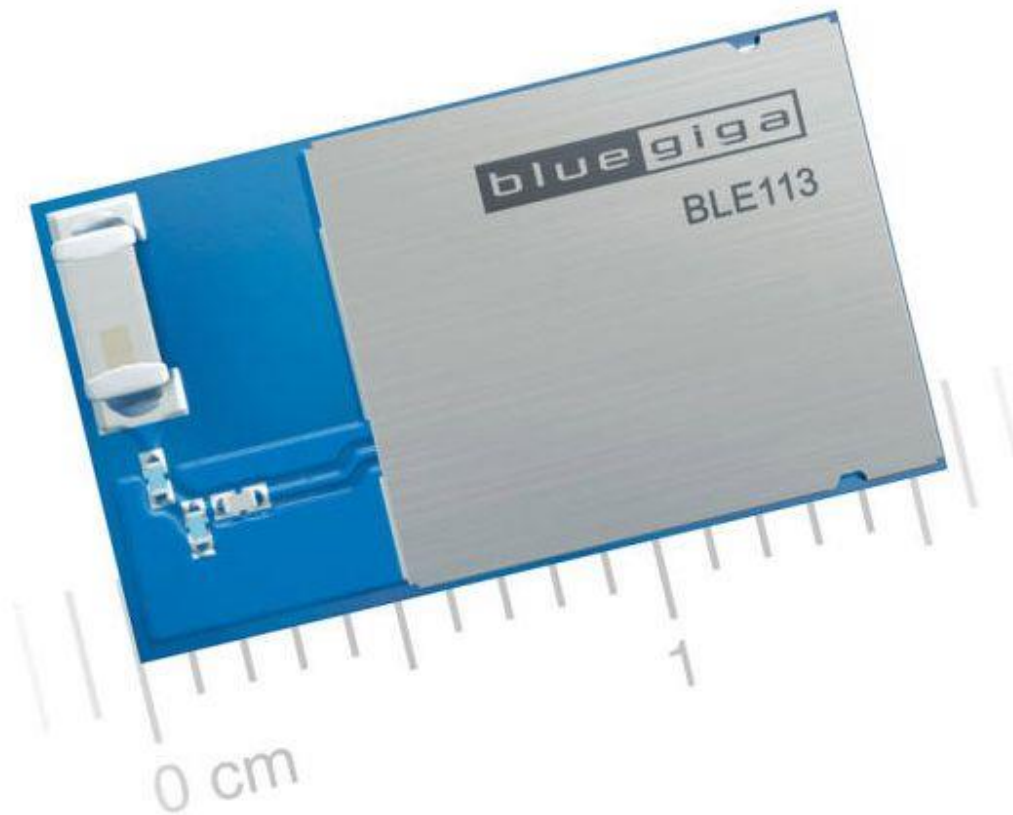




Bluegiga BLE113 Bluetooth® Smart Module

**Description: Small, Low Power Bluetooth Smart Module**

Part Number: BLE113-A-V1



The BLE113 is a Bluetooth Smart module targeted for small and low-power sensors and accessories. It integrates all features required for a Bluetooth Smart application, including Bluetooth radio, software stack, and GATT-based profiles. The BLE113 Bluetooth Smart module can also host end-user applications, which means no external microcontroller is required in size or price constrained devices. Moreover, it has flexible hardware interfaces to connect to different

peripherals and sensors and can be powered directly from a standard 3 V coin cell battery or a pair of AAA batteries. In the lowest power sleep mode it merely consumes 500 nA and will wake up within a few hundred microseconds. The BLE113 Bluetooth Smart module consumes approximately 30% less power and is smaller than the BLE112 Bluetooth Smart Module.

## Module Benefits

### Fully integrated Bluetooth Smart solution:

- Integrated Bluetooth Radio, microcontroller and software stack
- Fast time-to-market
- Low development risks

### Flash-based:

- Firmware is field upgradeable
- Application data can be stored on the flash
- Settings can be stored on the flash

### Application hosting capabilities:

- All application code can be executed on the BLE113
- No need for external micro controller
- Lower cost and smaller size

### Good radio performance:

- Long range and robust connections
- Software programmable TX power

### Bluetooth, CE, FCC, IC, Japan, and South Korea qualified:

- Proven interoperability
- Minimal qualification costs

## Module Specifications

### Bluetooth:

- Bluetooth Smart (low energy) support
- L2CAP, ATT, GATT, GAP and Security Manager
- Bluetooth Smart profiles
- Client and master mode

- Up to 8 connections in master mode
- 100 kbps+ throughput
- Over-the-Air firmware upgrade

### **Hardware Features:**

- UART host interface
- SPI, I2C, PWM, UART, GPIO peripheral interfaces
- 12-bit ADCs
- Temperature range: -40°C to +85°C
- Dimensions: 15.75 mm x 9.15 mm x 1.9 mm
- Power supply: 2.0 - 3.6 V

### **Radio:**

- Bluetooth 4.0 low energy radio
- Transmit power: +0 dBm
- Receiver sensitivity: -93 dBm
- Integrated antenna
- TX peak current: 18.2 mA
- TX peak current: 18.2 mA (with DC/DC)
- RX peak current: 14.3 mA
- Sleep mode current: 0.4uA
  
- Sleep mode current: 0.4uA

### **MCU Features:**

- 8051 microcontroller
- 8 kB RAM
- 128 kB or 256 kB Flash

### **Software Features:**

- [Embedded Bluegiga Bluetooth Smart Stack](#)
- BGAPI™ host protocol
- Bluegiga BGScript™ programming for standalone applications
- Standalone applications can be created with ANSI C and IAR Embedded Workbench SDK
- Bluegiga Profile Toolkit™ for developing Bluetooth Smart profiles

### **Qualifications:**

- Bluetooth
- CE
- FCC

- IC
- Japan
- South Korea