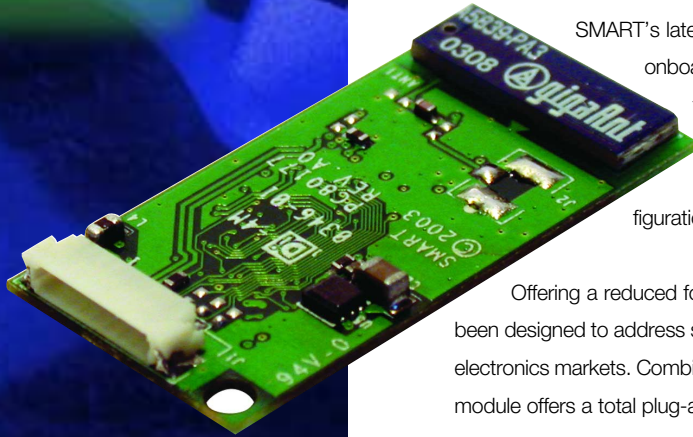


Memory Modules

Flash Products

Communication Products

# Bluetooth™ Mini-Module with Embedded Antenna and Connector

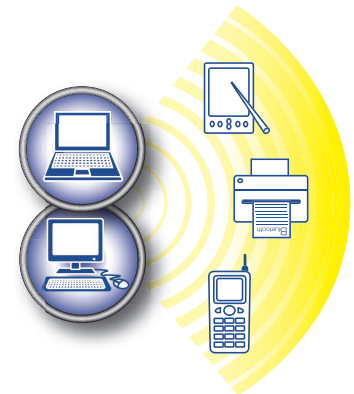


SMART's latest Bluetooth product is a mini-module featuring an onboard antenna, and onboard connector. A Class 2 type compliant with Bluetooth specification 1.1, featuring 8Mb of flash memory for firmware upgradeable via UART, USB or SPI interfaces. SMART's mini-module is offered in USB or UART version with software stack up to the HCI levels and UART with SPP profile configurations to meet specific customer applications.

Offering a reduced footprint, measuring 27.5mmx14.0mmx4.5mm, SMART's mini-module has been designed to address small form-factor applications including: medical, industrial, and consumers electronics markets. Combined with a host processor and Bluetooth protocol stack software, the mini-module offers a total plug-and-play Bluetooth solution to help customers reduce their time-to-market.

SMART Modular Technologies Communications Products Division (CPD) has extensive experience & focus upon leading-edge, client-side personal communication sub-systems for wireless and wired Personal Area, Local Area and Wide-Area Networks.

SMART Modular Technologies, Inc., is a wholly owned operating company within Solectron Corporation's Technology Solutions Business Unit. SMART, a leading independent manufacturer of memory and communication sub-systems offers more than 500 products to premier OEMs in the computer, networking and telecommunications industries. Through its relationship to Solectron, SMART offers customers competitive outsourcing advantages, such as access to advanced manufacturing technologies, shortened product time-to-market, reduced total cost of ownership and more effective asset utilization.



## FEATURES

- Size: 27.5mm x 14mm x 4.5mm
- Class 2 Bluetooth Device
- Onboard Antenna
- Onboard 8 pins connector
- Receiver Sensitivity: Better than 82 dBm (raw BER 0.1% with any compliant transmitter)
- Link control function implemented in hardware compliant to Bluetooth Specification 1.1
- UART core up to 921.6Kbps.
- USB 1.1 compliant 2.0 compatible
- PIO Ports
- 8Mbit external flash
- Serial Parallel Interface (SPI)
- Piconet and scatternet functions, including master/slave switch capabilities
- Power Supply: 3.0V to 3.75V
- 2.65V Regulator on chip

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## Specifications

### General

- Bluetooth Specification 1.1 compliant
- Power Requirement
  - 2.65V ( $\pm 5\%$ ) regulated voltage (or)
  - 3.0V - 3.75v unregulated voltage
- Power Consumption at 3.3V
  - 7mA at standby
  - 53mA (typical) 300 $\mu$ A at deep sleep mode

### Radio

- Frequency Range: 2.402 - 2.480Ghz
- Transmit Power (Tx): +3dBm (typical)
- Receiver Sensitivity (Rx): Better than -82dBm @ 0.1% BER.
- Range: up to 30 meters

### Temperature

- Operating temperature: -20°C to +95°C
- Storage temperature: -40°C to +150°C

### Interfaces

- Full speed HCI UART
- USB v1.1 compliant, USB2.0 compatible
- PIO Ports
- Serial Peripheral Interface (SPI)

### SMART Part Number

- 90177-1: USB with HCI stack only
- 90177-2: UART with HCI stack only
- 90177-3: UART with SPP profile

## Block Diagram-Bluetooth 90177 Mini Module

