Bluetooth
Mini Module

BlueTopaz

SMART Modular Technologies' "BlueTopaz" Bluetooth® Mini-Module is a Class 2 type, compliant with Bluetooth specification 1.1, features 8Mb of flash memory for firmware upgradeable via UART, USB or SPI interfaces. "BlueTopaz" is offered with different configurations to meet specific customer applications. The different product variations are: USB or UART version with software stack up to the HCI levels and UART with SPP profile.

"BlueTopaz" provides an RF BGA pin connector to connect to an external antenna. The module has receive sensitivity better than -82dBm and power output of +3dBm (typical), using an external antenna with 0dBi gain. The RF performance of the module is stable within +/- 1dB under the temperature range of –20°C to +95°C and +/- 2dB over +85°C to +95°C.

SMART Modular Technologies' "BlueTopaz" is designed to address small form-factor applications which include: Personal Digital Assistants, Notebook Computers, Cellular Telephones and other applications, it has dimensions of 14.43mmx21.47mmx3.0mm. To complete a total Bluetooth solution, the module requires a host processor and Bluetooth Protocol Stack Software.

SMART Modular Technologies, Inc. is a wholly owned operating company within Solectron Corporation's (NYSE: SLR) 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.

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.

FEATURES

- Size: 14.43 x 21.47mm x 3.0mm
- Class 2 Bluetooth Device
- Receiver Sensitivity: Better than -82 dBm BER 0.1%
- Link control function imple mented in hardware compliant to Bluetooth Specification 1.1
- UART core up to 921.6Kbps.
- USB 1.1 compliant, 2.0 compatible
- PCM Interface
- 12 PIO ports
- 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 (±5%) regulated voltage (or)
  - 3.0V - 3.75v unregulated voltage
- Power Consumption at 3.3V
  - 7mA at standby
  - 53mA (typical), 300µA at deep sleep mode

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

Antenna
- Onboard BGA pin out for direct 50Ω RF trace connection

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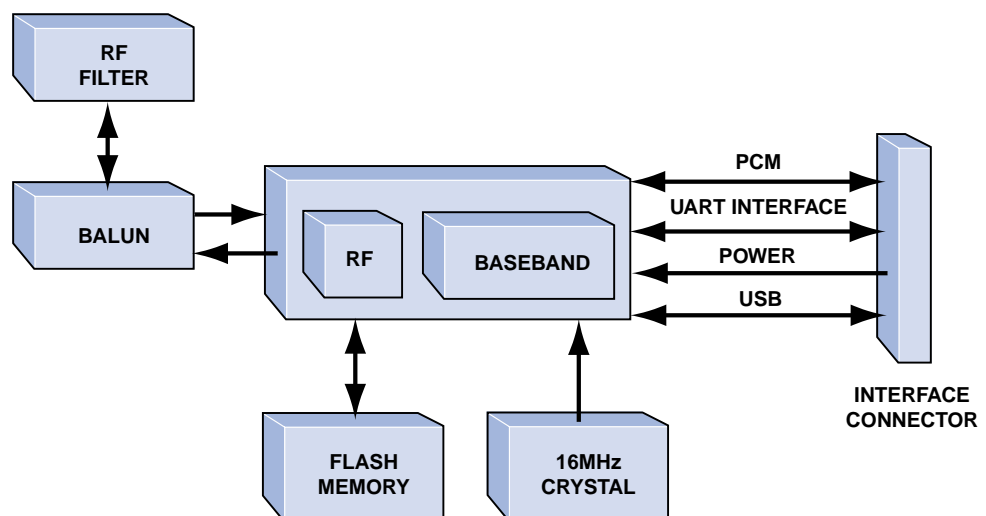- Storage temperature: -40°C to +150°C

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

SMART Part Number
- 90147-1: USB with HCI stack only
- 90147-2: UART with HCI stack only
- 90147-3: UART with SPP profile

Block Diagram-Bluetooth Mini Module

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