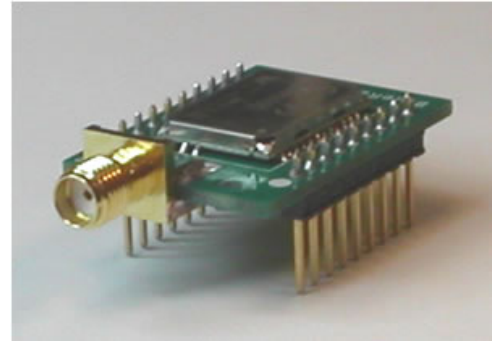**Bluetooth™**

BlueStamp® Module
BR-SC40N Class1, 2, and 3 *Bluetooth*® ver2.0

OUTLINE

- *AT HOME. AT WORK. ON THE ROAD.* **USING BLUETOOTH WIRELESS TECHNOLOGY MEANS TOTAL FREEDOM FROM THE CONSTRAINTS AND CLUTTER OF WIRES IN YOUR LIFE.**

- **Wireless communications module certified to *Bluetooth*® ver2.0.**

- **With Female Reverse SMA RF board connector. Optional male SMA 1/2 wave coaxial dipole external swivel antenna available.**

- **Conforms to FCC, IC, CE, and EMI standards of each country.**

- **UART data interface (2-wire or 4-wire with CTS/RTS).**

- **13-bit PCM, 8k samples/s, synchronous bidirectional audio interface**

- **Includes integrated software stack, profiles, and AT modem like commands.**

- **Embedded *Bluetooth* Stack Profiles Included *(requires no host MCU stack)*:**
  SPP, DUN, LAN, Headset, HFP, Audio Gateway, FTP Client/Server, OBEX, OPP – Push/Pull, GAP, SDP, RFCOMM, and L2CAP protocols.

FEATURES

- **The *Blue*Stamp serial radio modems can be configured, commanded, and controlled through simple ASCII strings over the *Bluetooth* RF link or directly through the hardware serial UART.**
- **Dedicated PCM voice channel for audio applications**
- **UART baud rate speeds: 1200bps up to 921.6Kbps, and customized**
- **+200 meter (660 feet) distance**
- **Software adjustable transmitter power from short to long range applications**
- **Low power consumption *(80mA TX, 40mA RX, 1.4mA idle mode, and 30uA deep sleep)***
- **Small-form factor 18 Pin DIP radio modem package (0.1" pitch X 0.8" socket width)**
- **Operating temperature range: -40~+70ºC.**
- **Secure and robust communication link**
    - ✓ **FHSS (Frequency Hopping Spread Spectrum)**
    - ✓ **Encryption and 16 alphanumeric Personal Identification Number (PIN)**
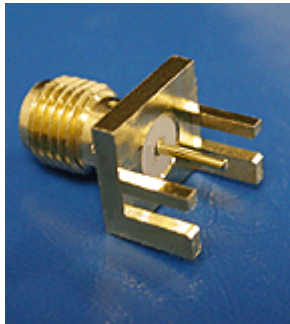   - ✓ **Error correction schemes for guaranteed packet delivery**

SPECIFICATIONS

Item		Specifications
Frequency		2402 ~ 2480MHz
Modulation		FHSS/GFSK
Channel intervals		1MHz
Number of channels		79CH
Power supply voltage		3.3Vdc $\pm$ 0.1V and 10mVp-p max. noise
Current consumption		120mA worst case peak
Transmission rate (over the air)		721kbps
Receive sensitivity		-83dBm typ.
Output level (variable)		12dBm max.
Dimensions	Main PCB	24.13(W) X 33.65(L) X 6.50(H)mm

*Blue*Stamp® Module

█ PIN DEFINITIONS

🔵 **BR-SC40N (With External SMA Antenna)** *make from BR-C40N*

BR-RF-SMA (Available from *Blue*Radios)

Note: SPI is for BlueRadios internal use only.
Part is not 5Vdc tolerant.
Reset is active **low**; pulse >5msec.
PIO Sink Current is 4mA max.
Unused pins can float accept for PIO(4), tie
to ground if not used or disable via software.

Firmware Options

🔵 **AT Command**
  - **Multi-point**
  - **Point-to-point**
  - **Repeater**
🔵 **HCI or BCSP**
🔵 **Custom**

BR-SC40N (DIP) *Blue*Stamp	BR-C40N (SMT) *Blue*Radios	Misc. Info.
1. GND	1. GND	**All Connected**
2. SPI_MOSI	2. SPI_MOSI	**Reserved**
NC	3. PIO[6]	
NC	4. PIO[7]	
3. RESET	5. RESET	
4. SPI_CLK	6. SPI_CLK	**Reserved**
5. PCM_CLK	7. PCM_CLK	
6. PCM_SYNC	8. PCM_SYNC	
7. PCM_IN	9. PCM_IN	
8. PCM_OUT	10. PCM_OUT	
9. VDD (3.3Vdc)	11. VDD (3.3Vdc)	±0.1Vdc, max. 10mVpp ripple
GND	12. GND	
10. UART_RX	13. UART_RX	**0-3.3Vdc logic levels**
11. UART_TX	14. UART_TX	**0-3.3Vdc logic levels**
12. UART_RTS	15. UART_RTS	**0-3.3Vdc logic levels**
13. UART_CTS	16. UART_CTS	**0-3.3Vdc logic levels**
NC	17. Not Used	**USB_D+**
NC	18. Not Used	**USB_D-**
14. PIO[2]	19.PIO[2]	**Bluetooth Connection**
NC	20.PIO[3]	
15. PIO[5]	21. PIO[5]	**Radio Status**
16. PIO[4]	22. PIO[4]	**Factory Default Reset**
17. SPI_CSB	23. SPI_CSB	**Reserved**
18. SPI_MISO	24. SPI_MISO	**Reserved**
GND	25. GND	
NC	26. NC	
1.	27. GND	
1.	28. GND	
1.	29. GND	

*For technical details of the products in this page, refer to Sales Dept., BlueRadios, Inc.
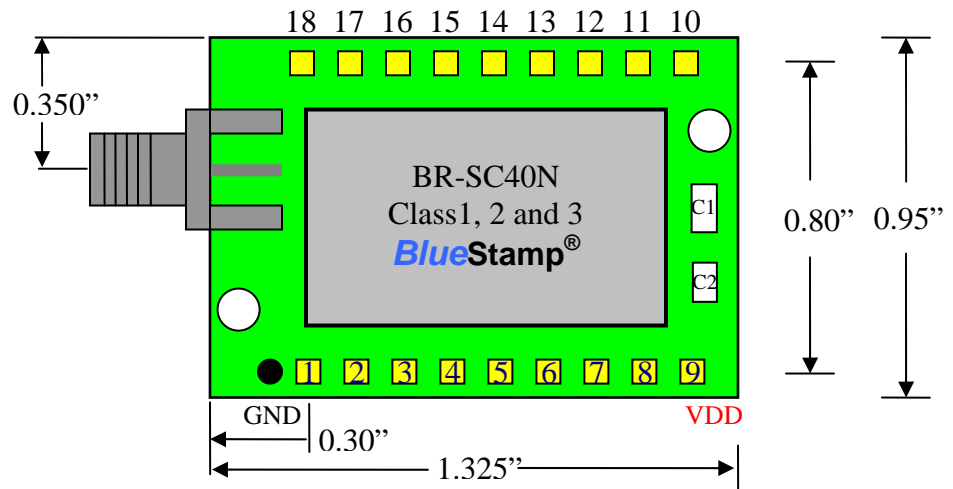
*Blue*Stamp™ Module

STANDARD PIN DIMENSIONS

BR-SC40N (With External SMA Antenna) *make from BR-C40N*

The *Blue*Stamp® design already includes a RF ground plane and female SMA board edge PCB RF Connector.

18 Pin DIP (Through-hole) 0.1" Pitch and 0.8" Wide Socket

Note: Keep metallic components and connectors from the antenna area.

External power supply decoupling capacitors C1 and C2 are optional. C1 = 10uf Capacitor, 0805 Ceramic
C2 = 0.1uf Capacitor, 0603 Ceramic

Power-up Sequence

The unit must be reset with pin 3 "RESET" after turning on the power supply VDD. Reset terminal should be **low** for >5 msec. to cause a reset incase of electrical "brown-out" or poor input supplied VDD. Allow 1sec for module to fully reboot. Unit will not initially boot-up reliably if the VDD ramp rate is in milliseconds.

Please refer to BlueRadios Specification BR-AT_COMMANDS-100 hardware and software interface definition.

*Blue*Stamp® Module

▌BOARD SCHEMATIC

🔵 **BR-SC40N (With External SMA Antenna)** *make from BR-C40N*