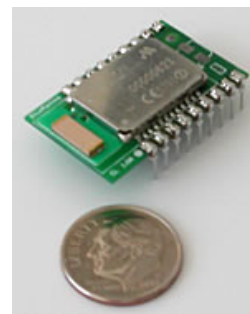


## BlueStamp® Module

# BR-SC30A Class1, 2, and 3 Bluetooth® ver1.2

## 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* v1.2.
- With ceramic RF chip antenna provided.
- FCC, CE, Industry Canada, and *Bluetooth*® certified ISM 2.4GHz band module.
- 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, PAN, Headset, Audio Gateway, FTP, GAP SDP, RFCOMM, and L2CAP protocols.



## FEATURES

- The *BlueStamp* 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
- +100 meter (330 feet) distance
- Software adjustable transmitter power from short to long range applications
- Low power consumption (*120mA TX, 40mA RX, 2mA idle mode, and 90uA deep sleep*)
- Small-form factor 18 Pin DIP radio modem package (0.1" pitch X 0.8" socket width)
- Self-discovery and network equipped multi-points
- Operating temperature range: -40~+70°C.
- 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

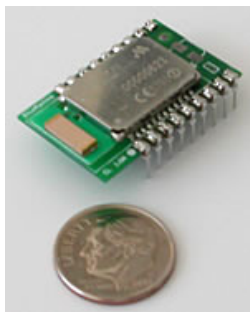
## SPECIFICATIONS

Item		Specifications
Frequency		2402 ~ 2480MHz
Modulation		FHSS/GFSK
Channel intervals		1MHz
Number of channels		79CH
Power supply voltage		3.3Vdc ± 0.1V and 10mVp-p max. noise
Current consumption		120mA worst case peak
Transmission rate (over the air)		721kbps
Receive sensitivity		-80dBm typ.
Output level (variable)		20dBm max.
Dimensions		
	With Antenna	20.3(W) X 31.8(L) X 5.0(H)mm

## BlueStamp® Module

### PIN DEFINITIONS

#### BR-SC30A (With Antenna)



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

### Firmware Options

- AT Command
- HCI
- Repeater
- Multi-Slave
- Custom

BR-SC30A (DIP) <i>BlueStamp</i>	BR-C30A (SMT) <i>BlueRadios</i>	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.

**BlueStamp® Module**

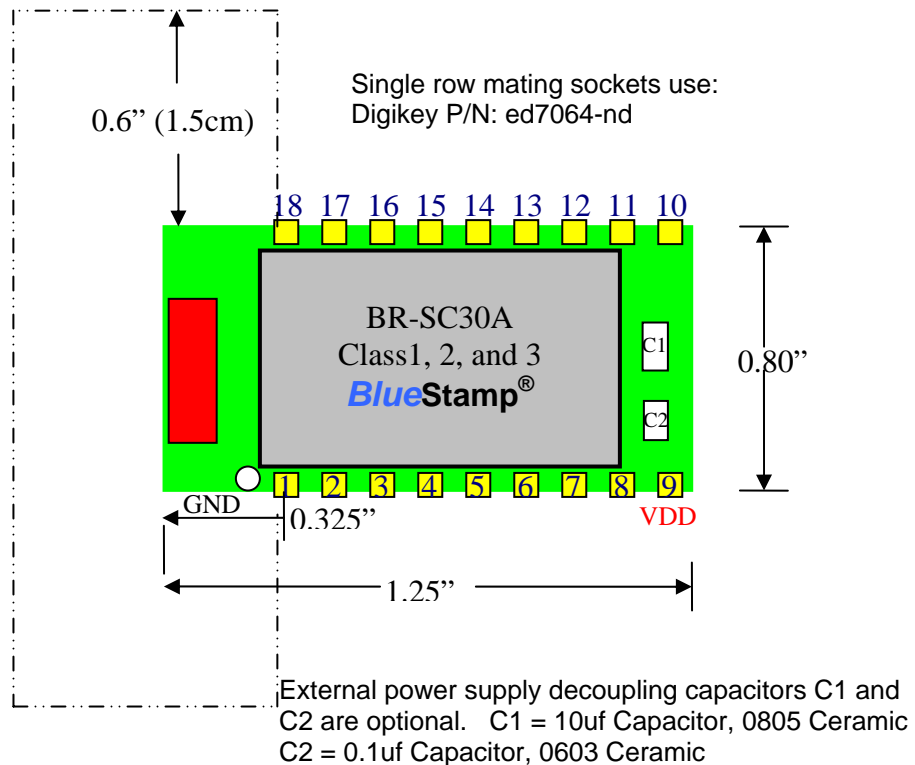
**STANDARD PIN DIMENSIONS**

**BR-SC30A (With Antenna)**

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

The **BlueStamp®** design already includes a RF ground plane.

**Note:** Keep metallic components, connectors, copper traces, internal layers, and ground planes away from the antenna area in 3D space!



**Power-up Sequence**

The unit must be reset with terminal 3 "RESET" after turning on the power supply VDD. Reset terminal should be high for >5 msec. to cause a reset incase of electrical "brown-out" or poor input supplied VDD. Unit will not initially boot-up reliably if the VDD ramp rate is in milliseconds. Allow 500msec for module to fully reboot.

Please refer to BlueRadios Specification BR-AT\_COMMANDS-100 hardware and software interface definition.