

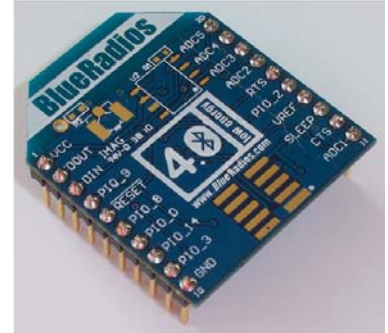
Bluetooth® Class1 DIP Module



BR-XB-C40# XB Foot Print

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.**
- Three types of models: RF chip antenna, whip Antenna, or U.FL connector.
- FCC, IC, CE, and *Bluetooth*® 2.0 certified ISM 2.4GHz band module.
- UART data interface (2-wire or 4-wire with CTS/RTS).
- 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, eSCO, SCO, Audio Gateway, FTP Client/Server, OBEX, OPP – Push/Pull, GAP SDP, RFCOMM, and L2CAP protocols.



BR-C40 Radio on Bottom

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, and eSCO for exceptional audio clarity
- 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 (*80mA TX, 40mA RX, 1.4mA idle mode, and 30uA deep sleep*)
- Optional 1Mb serial data Flash for future data storage
- 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	-83dBm typ.
Output level (variable)	12dBm max.
Dimensions	Without ext. antenna 24.38(W) X 27.62.(L) X 3.89(H)mm

BlueStamp® Module

PIN DEFINITIONS

SMD Module Cross Reference Table

XB Pinout	Pin Name	BR-C40 BT2.0	BR-XX-S1 BLE	BR-C46 BT2.0	BR-XX-S2 BLE
1.	VCC (3.3V)	3.3V	3.3V	3.3V	3.3V
2.	DOUT	UART_TX	UART_TX	UART_TX	UART_TX
3.	DIN	UART_RX	UART_RX	UART_RX	UART_RX
4.	PIO_9	NC	PIO_9	PIO_9	PIO_9
5.	RESET	RESET	RESET	RESET	RESET
6.	PIO_8	NC	PIO_8	PIO_8	PIO_8
7.	PIO_0	PIO_0	PIO_0/ADC0	PIO_0/ADC0	PIO_0/ADC0
8.	PIO_14	NC	NC	NC	PIO_14
9.	PIO_3	PIO_3	PIO_3	PIO_3	PIO_3
10.	GND	GND	GND	GND	GND
11.	ADC1	NC	PIO_1/ADC1	PIO_1/ADC1	PIO_1/ADC1
12.	CTS	UART_CTS	UART_CTS	UART_CTS	UART_CTS
13.	SLEEP	PIO_5	PIO_5	PIO_5	PIO_5
14.	VREF	PIO_6	PIO_6	PIO_6	PIO_6
15.	PIO_2	PIO_2	PIO_2	PIO_2	PIO_2
16.	RTS	UART_RTS	UART_RTS	UART_RTS	UART_RTS
17.	ADC2	SPI_MISO	SPI_MISO / ADC2	SPI_MISO	SPI_MISO / ADC2
18.	ADC3	SPI_MOSI	SPI_MOSI / ADC3	SPI_MOSI	SPI_MOSI / ADC3
19.	ADC4	SPI_CSB	SPI_CSB / ADC4	SPI_CSB	SPI_CSB / ADC4
20.	ADC5	SPI_CLK	SPI_CLK / ADC5	SPI_CLK	SPI_CLK / ADC5

BR-C40 and BR-C46 Firmware Options

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

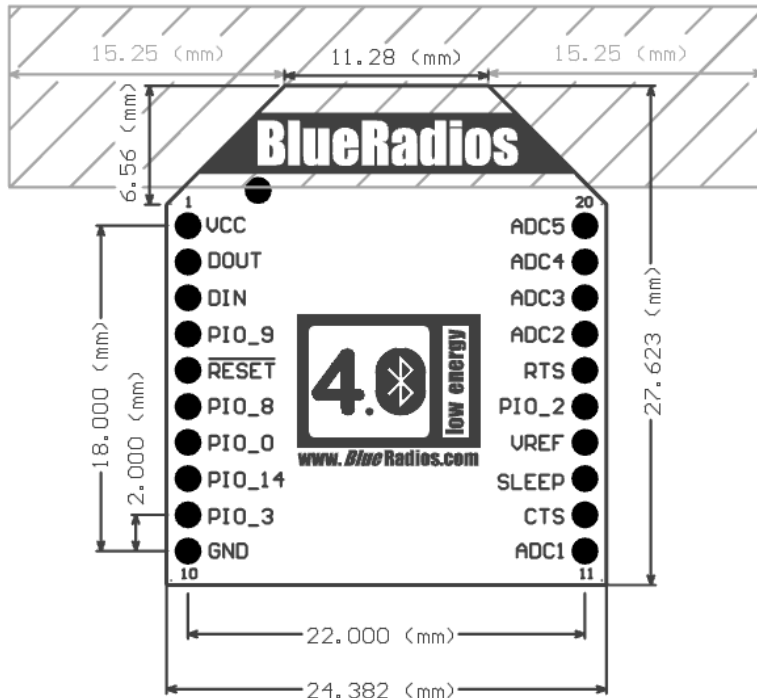
*For technical details of the products in this page, refer to Sales Dept., BlueRadios, Inc.

BlueStamp® Module

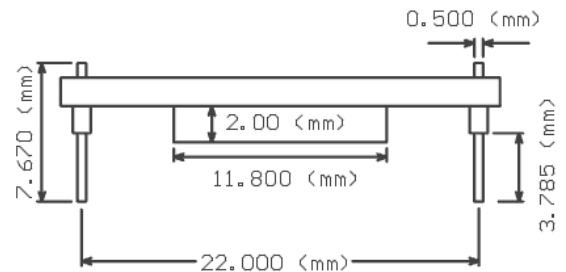
STANDARD PIN DIMENSIONS

- **BR-XB-C40A (with Ceramic Antenna) 2 dBi TDK ANT8030-2R4-01** make from BR-C40A
- **BR-XB-C40U (U.FL)** make from BR-C40N
- **BR-XB-C40W (Whip Antenna)** make from BR-C40N

Keep Out Area. DO NOT
locate any parts or copper
in Keep Out Area on any layer.
(Chip Antenna Configuration Only)



0.062" Board Thickness



Mating Through Hole Connector:

Digikey P/N: S5751-10-ND

Manufacturer: Sullins Connector Solutions

Man. P/N: NPPN101BFCN-RC

Mating Surface Mount Connector:

Digikey P/N: S5901-10-ND

Manufacturer: Sullins Connector Solutions

Man. P/N: NPPN101BFLC-RC

TERMINALS	
1. VCC (2.0-3.6Vdc)	20. ADC5
2. DOUT	19. ADC4
3. DIN	18. ADC3
4. PIO_9	17. ADC2
5. RESET	16. RTS
6. PIO_8	15. PIO_2
7. PIO_0	14. VREF
8. PIO_14	13. SLEEP
9. PIO_3	12. CTS
10. GND	11. ADC1

VCC = 2.8 ~ 3.4Vdc, 10mVp-p max noise

Part is not 5Vdc tolerant. Reset is active **low**; pulse >5msec.

PIO Sink Current is 4mA max

Unused pins can float

BR-XB-C40 Power-up Sequence

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

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

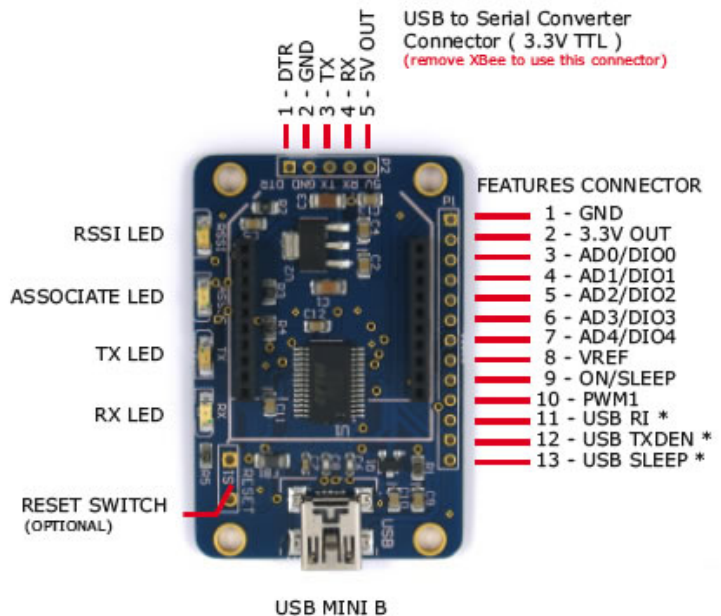
PART NUMBER ORDERING: BR-XB-C40#

- BR = BlueRadios
- XB = XB foot print
- C40 = Bluetooth 2.0 Class1
- # = A (Antenna)
- # = U (U.FL RF Connector)
- # = W (Whip Antenna)

<u>Part Number</u>	<u>Description</u>
1) BR-XB-C40A	Bluetooth v2.0 AT Commands with Ceramic Antenna
2) BR-XB-C40U	Bluetooth v2.0 AT Commands with U.FL RF Connector
3) BR-XB-C40W	Bluetooth v2.0 AT Commands with Whip Antenna

Optional Evaluation Test Board

Part number: **BR-XB-TSB**



Price and Order information

http://www.blueradios.com/orderinfo_new.htm