

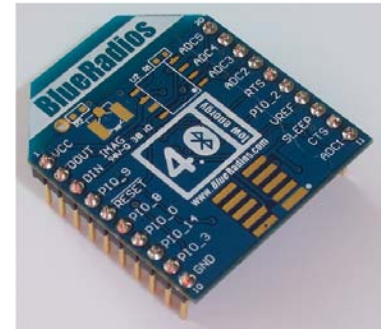
Bluetooth® Class2 DIP Module



BR-XB-C46# XBee® 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, CE, RoHS, 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, PAN, Headset, HFP, eSCO, SCO, Audio Gateway, FTP Client/Server, OBEX, OPP – Push/Pull, GAP, SDP, RFCOMM, and L2CAP protocols.



BR-C46 Radio on Bottom

FEATURES

- The BlueRadios 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
- +10 meter (33 feet) distance
- Low power consumption (50mA TX, 40mA RX, 1.4mA idle mode, and 30uA deep sleep)
- Optional 1Mb serial data Flash for future data storage
- Operating temperature range: -40~+85°C.
- Secure and robust communication link
 - ✓ FHSS (Frequency Hopping Spread Spectrum)
 - ✓ Encryption and 16 alphanumeric Personal Identification Number (PIN)
 - ✓ Error correction schemes



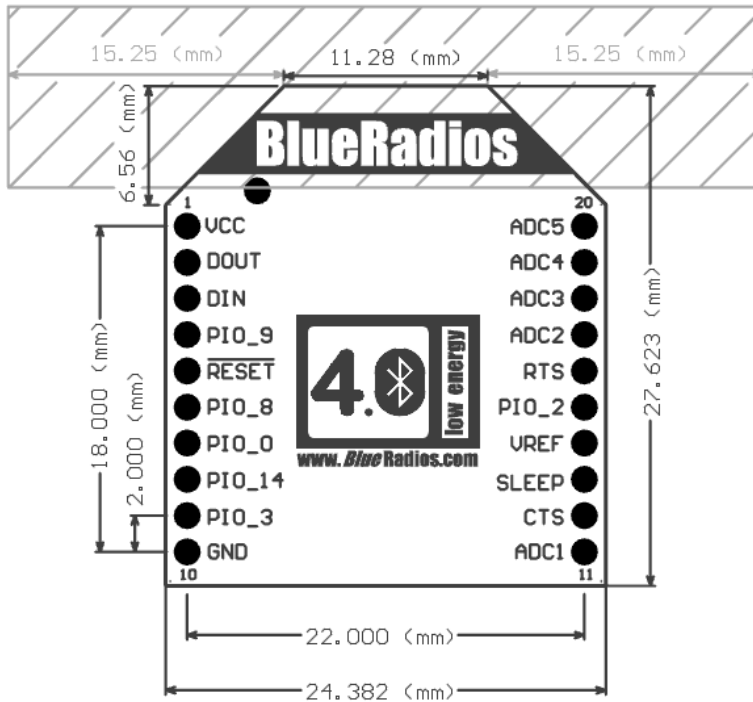
SPECIFICATIONS

| Item | Specifications |
|---------------------------------------|---|
| Frequency | 2402 ~ 2480MHz |
| Modulation | FHSS/GFSK |
| Channel intervals | 1MHz |
| Number of channels | 79CH |
| Power supply voltage (w/o data Flash) | 2.8Vdc ~ 3.4Vdc ± 0.1V and < 10mVp-p noise |
| Current consumption | 60mA worst case peak |
| Transmission rate (over the air) | 721kbps |
| Receive sensitivity | -82dBm typ. |
| Output Power (Class2) | 4dBm max. |
| Dimensions | Without ext. antenna 24.38(W) X 27.62.(L) X 3.89(H)mm |

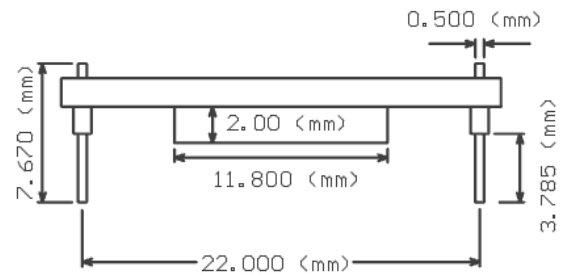
DIMENSIONS

- BR-XB-C46A (with Ceramic Antenna) 2 dBi TDK ANT8030-2R4-01
- BR-XB-C46U (U.FL)
- BR-XB-C46W (Whip Antenna)

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 (2.8-3.6Vdc) | 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-C46 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.

SMD Module Cross Reference Table

| XBee 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

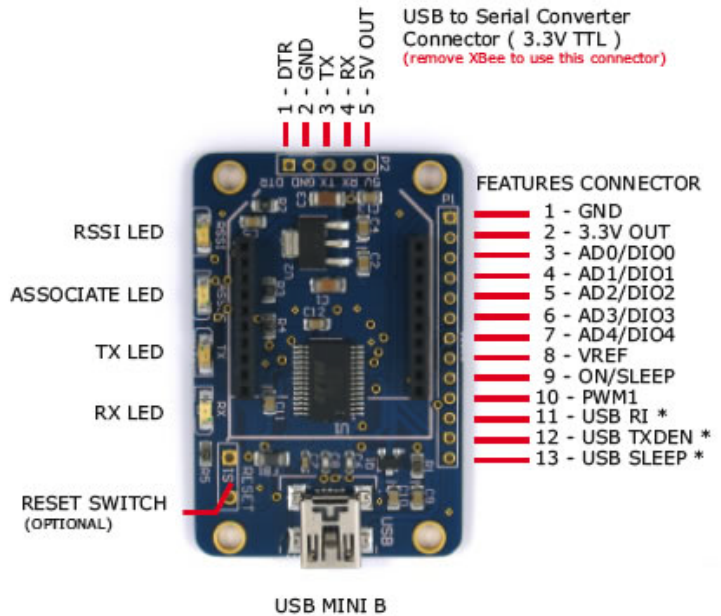
PART NUMBER ORDERING: BR-XB-C46#

BR = BlueRadios
 XB = XBee® foot print
 C46 = *Bluetooth 2.0 Class2*
 # = A (Antenna)
 # = U (U.FL RF Connector)
 # = W (Whip Antenna)

| <u>Part Number</u> | <u>Description</u> |
|-----------------------|---|
| 1) BR-XB-C46 A | <i>Bluetooth 2.0 AT Commands with Ceramic Antenna</i> |
| 2) BR-XB-C46 U | <i>Bluetooth 2.0 AT Commands with U.FL RF Connector</i> |
| 3) BR-XB-C46 W | <i>Bluetooth 2.0 AT Commands with Whip Antenna</i> |

Optional Evaluation Test Board

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



Price and Order information

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