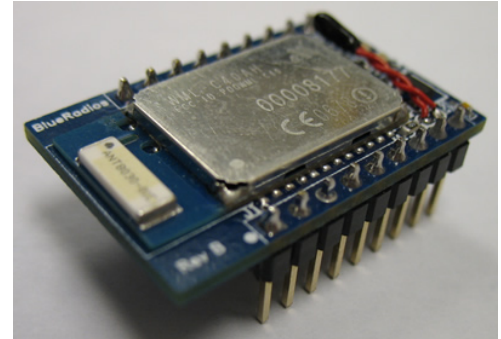


Mega *BlueStamp*® Wireless Temperature Module BR-MSC40A-TMP Class1, 2, and 3 *Bluetooth*® ver2.0

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 *Bluetooth* v2.0 platform.
- With ceramic RF chip antenna provided.
- FCC, IC, CE, and *Bluetooth*® certified ISM 2.4GHz band module.
- UART data interface (2-wire or 4-wire with CTS/RTS).
- Includes integrated software stack, profiles SPP, FTP, and DUN Client profiles and AT modem like commands.
- Master event driven or Slave connectable



FEATURES

- The Mega *BlueStamp* Wireless Temperature module can be configured, commanded, and controlled through simple ASCII strings over the *Bluetooth* RF link or directly through the hardware serial UART.
- Real Time Clock (RTC) and time stamping: 2006:01:01T00:00:00
- Store up to 8064 readings in Celsius, Fahrenheit, and Kelvin (1792 w/time stamps)
- XML and raw data formats
- UART baud rate speeds: 2400bps up to 230.4Kbps, and customizable
- +100 meter (330 feet) distance
- Software adjustable transmitter power for short to long range applications
- Low power consumption modes (80mA TX, 40mA RX, 5mA idle mode, and 10uA deep sleep)
- Small-form factor 18 Pin DIP package (0.1" pitch X 0.8" socket width) 1.25" x 0.7" x 0.25" overall
- Fully user configurable Application Protocol Interface (API)
- Temp Readings from -40 to +70°C +/- 1.0°C
- Secure and robust communication link
- Firmware upgradeable in the field

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 | |
| | With Antenna |

Mega *BlueStamp*® Module

PIN DEFINITIONS

BR-MSC40A-T (With Antenna)

The digital I/O of the Mega *BlueStamp* operates at 0 and 3.33 Volts. Exceeding 3.33V on any of the pins may permanently damage the module.

IMPORTANT: Placing 3.33V DC into the PIO's while they are set as outputs will permanently damage the radio module. The failure mode is caused by a short between power and ground.

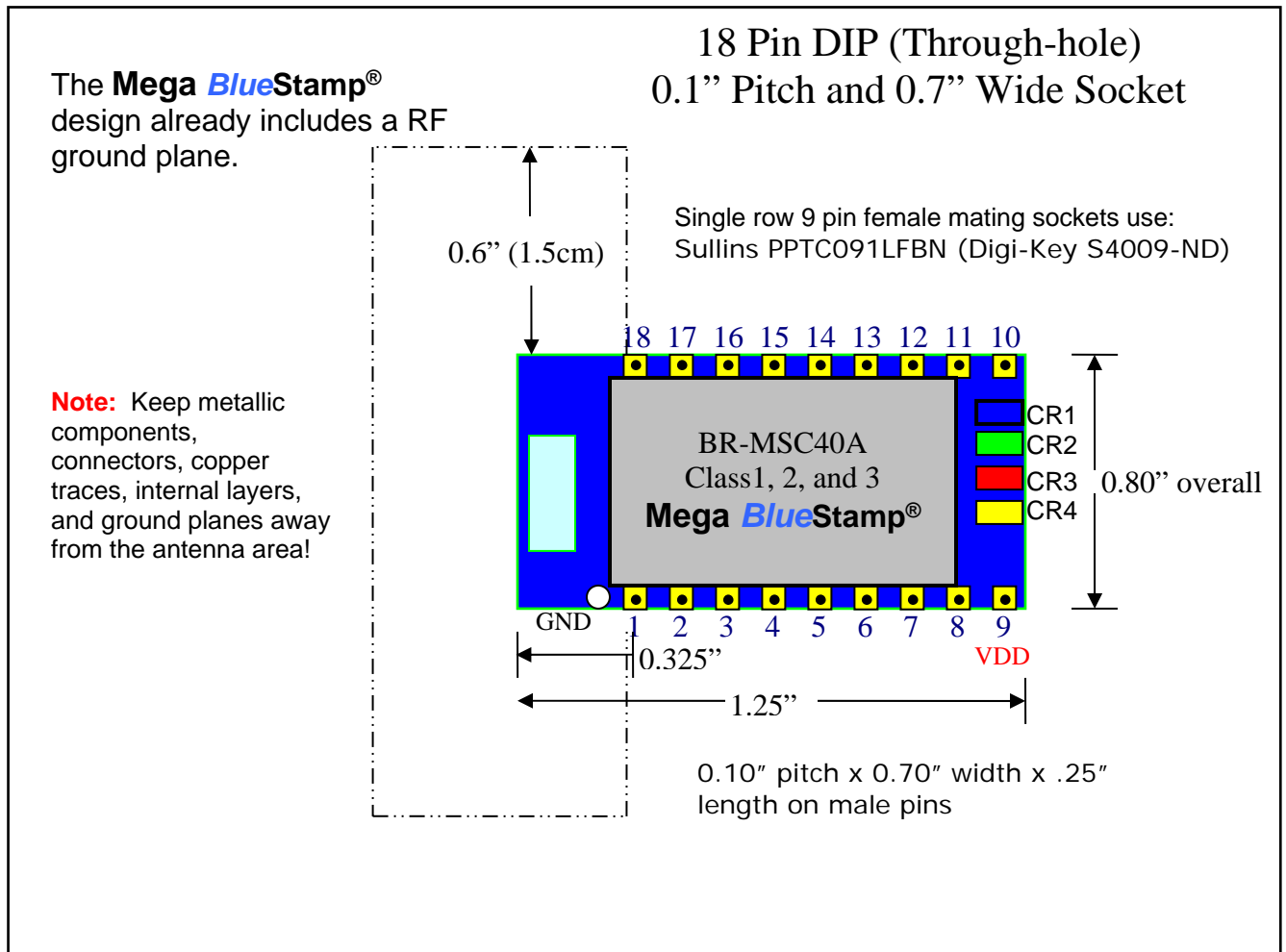
| Pin | I/O | Signal Name | Signal Description |
|-----|-----|----------------------|---|
| 1 | O | GND | Power Ground |
| 2 | I | ANALOG_IN | This input can be used to connect an external sensor to the MBS. It is not functional in the temperature sensor firmware build. Contact BlueRadios for more information on custom firmware modules for external sensors. |
| 3 | I | RESET | Active low – pulled high by MBS. Pull low for > 1.5us to reset MBS |
| 4 | - | Reserved | Do not connect |
| 5 | I | PAUSE_UNPAUSE | Active low – pulled high by MBS. Pull low for > 5ms to pause the MBS, see Pausing in ATM Commands Section for more information. |
| 6 | O | ALARM_SIGNAL | User configurable output, see Data Limits Section for more information. |
| 7 | I/O | BR_PIO6_CH02 | Radio module user configurable I/O. |
| 8 | I/O | BR_PIO7_CH03 | Radio module user configurable I/O. |
| 9 | I | VCC | Power In = +3.3 V (+/- .1V) |
| 10 | I | UART_RX | MBS local UART receive |
| 11 | O | UART_TX | MBS local UART transmit |
| 12 | I | UART_RTS | MBS local UART RTS. |
| 13 | O | UART_CTS | MBS local UART CTS. |
| 14 | O | BR_PIO2_CH00 | Indicates a Bluetooth connection. 0V = Not Connected, 3.3V = Connected |
| 15 | O | BR_PIO5_CH01 | 1Hz output signal while discoverable in slave mode or while connecting. |
| 16 | I | SCALED_INPUT_VOLTAGE | The MBS uses this signal to read the input voltage for battery powered applications. The signal must be scaled to 1/5 of the actual input voltage. If the ability to read the input voltage is not needed this pin can be left unconnected. |
| 17 | NC | Reserved | - |
| 18 | NC | Reserved | - |

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

Mega BlueStamp® Module

STANDARD PIN DIMENSIONS

BR-MSC40A (With Antenna)



Temperature Thermistor – p/n: RL0503-5820-97-MS max wire length of ~50 feet or less than 10 ohms resistance drop. If distances are greater use twisted pair and shielded cable to maintain less than 10 ohms.

Reference document BR-ATM_COMMANDS Rev 1.0.0-T, contains the detail specification and user guide instructions for using this product.

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