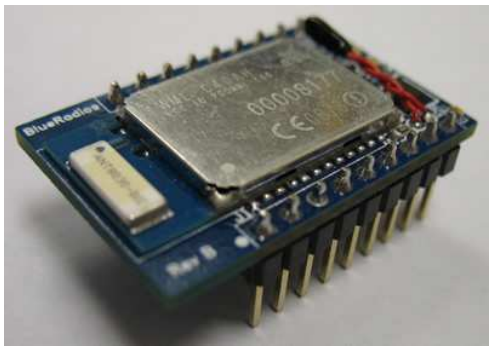
Secure, Versatile and Award Winning Network Radio Devices.

Mega *Blue*Stamp® 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 *Blue*Stamp 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"x0.25" overall**
- **Fully user configurable Application Protocol Interface (API)**
- **Temp Readings from -40 to +70ºC +/- 1.0ºC**
- **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	20.3(W) X 31.8(L) X 5.0(H)mm

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Mega *Blue*Stamp® Module

PIN DEFINITIONS

BR-MSC40A-T (With Antenna)

The digital I/O of the Mega *Blue*Stamp 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.

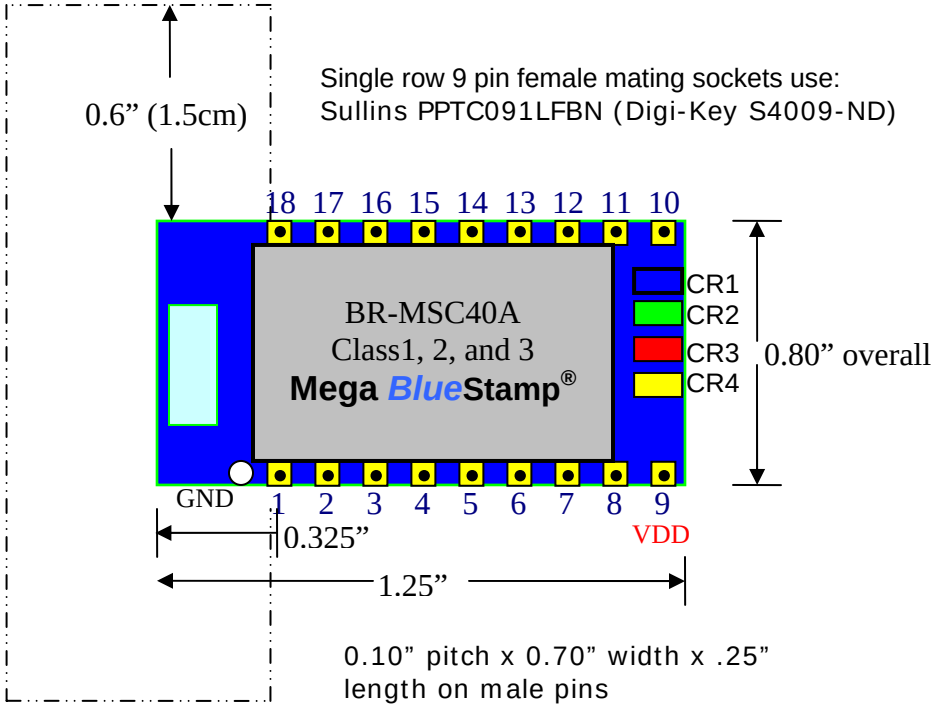
Mega *Blue*Stamp® Module

STANDARD PIN DIMENSIONS

- **BR-MSC40A (With Antenna)**

The **Mega *Blue*Stamp®** design already includes a RF ground plane.

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



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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