

CSR Bluetooth Modules

MB-C04-SPP

MB-C04-AT



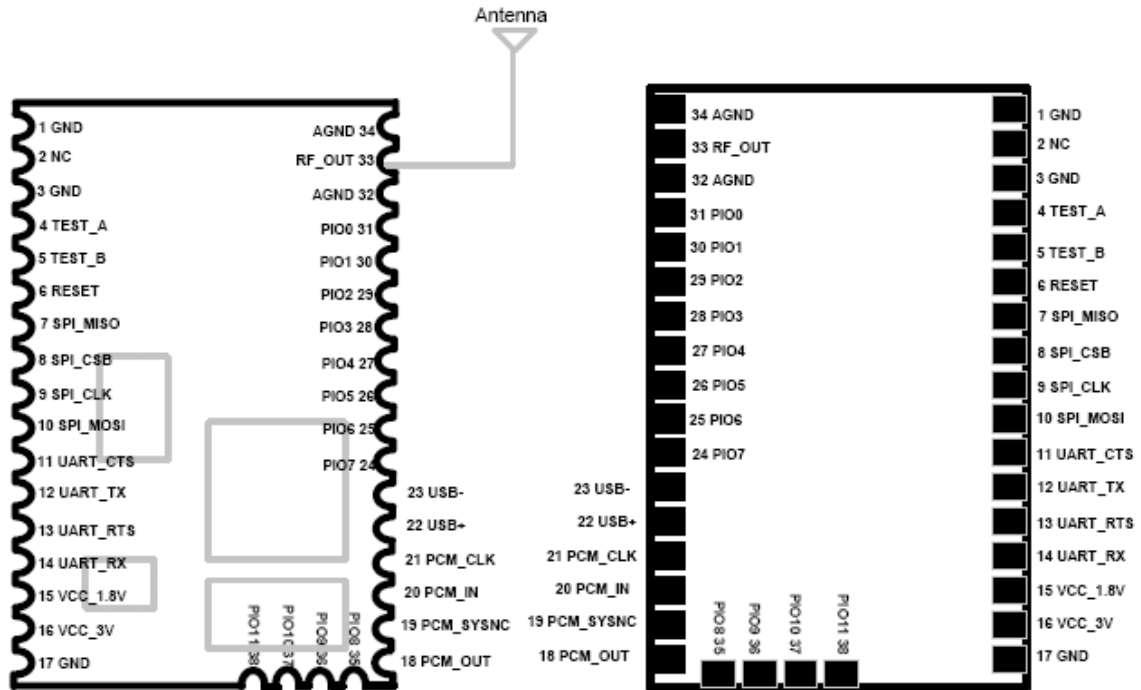
Specification

Version 1.03

15-MAY-09

1. Hardware & Technical Information

1.1 Pin definition

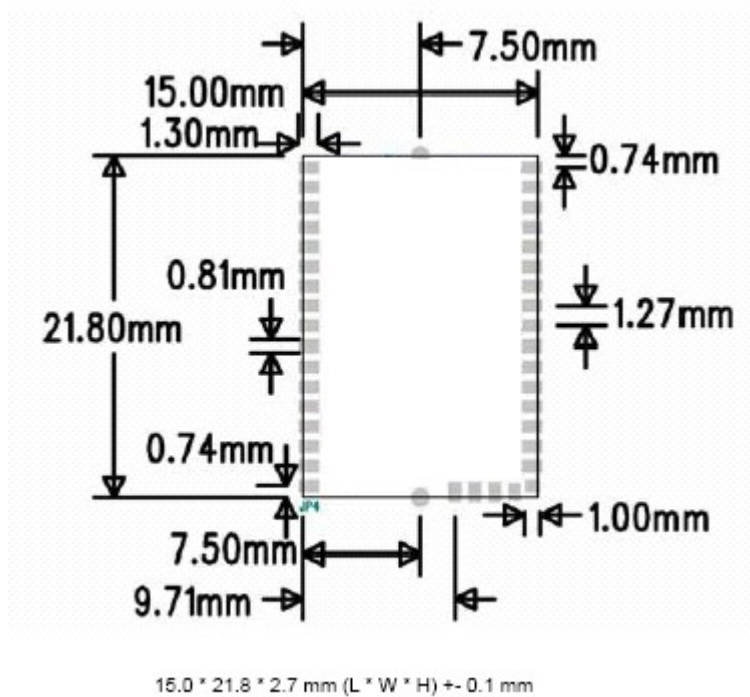


Pin No.	Name	Type	Description	Pin No.	Name	Type	Description
1	GND		Ground connection for digital/analog	34	GND		Ground connection for digital/analog
2	NC		Leave it open	33	RF_OUT	O	RF Output
3	GND		Ground connection for digital/analog	32	GND		Ground connection for digital/analog
4	TestA		Internal test only	31	PIO0	I/O	Programmable input/output line
5	TestB		Internal test only	30	PIO1	I/O	Programmable input/output line
6	Reset	I	Active low for reset. Input debounced so must be high for > 5ms to cause a reset	29	PIO2	I/O	Programmable input/output line
7	SPI_MISO		Serial Peripheral Interface data output	28	PIO3	I/O	Programmable input/output line
8	SPI_CSB		Chip select for Synchronous Serial Interface, active low	27	PIO4	I/O	Programmable input/output line
9	SPI_CLK		Serial Peripheral	26	PIO5	I/O	Programmable

			Interface clock				input/output line
10	SPI_MOSI		Serial Peripheral Interface data input	25	PIO6	I/O	Programmable input/output line
11	UART_CTS	I	UART clear to send active low	24	PIO7	O	
12	UART_TX	O	UART data output	23	USB-		USB data minus(Not implemented)
13	UART_RTS	O	UART request to send active low	22	USB+		USB data plus with selectable internal 1.5 ohm pull-up resistor(Not implemented)
14	UART_RX	I	UART data input	21	PCM_CLK	I/O	Synchronous data clock
15	VCC_1.8V	O	Regulated voltage 1.8V output	20	PCM_IN	I	Synchronous data input
16	VCC_3.3V	I	Voltage supplier from 2.8 to 4V	19	PCM_SYNC	I/O	Synchronous data sync
17	GND		Ground connection for digital/analogy	18	PCM_OUT	O	Synchronous data output

Pin No.	Name	Type	Description	Pin No.	Name	Type	Description
35	PIO8	I/O	Programmable input/output line	37	PIO10	I/O	Programmable input/output line
36	PIO9	I/O	Programmable input/output line	38	PIO11	I/O	Programmable input/output line

1.2 Recommended PCB Layout Outline



Layout Note:

1. Use solid power and ground planes
2. Ensure there is defined returned path for the signals
3. Power plane extent should be within ground plane extent

1.3 Block Diagram

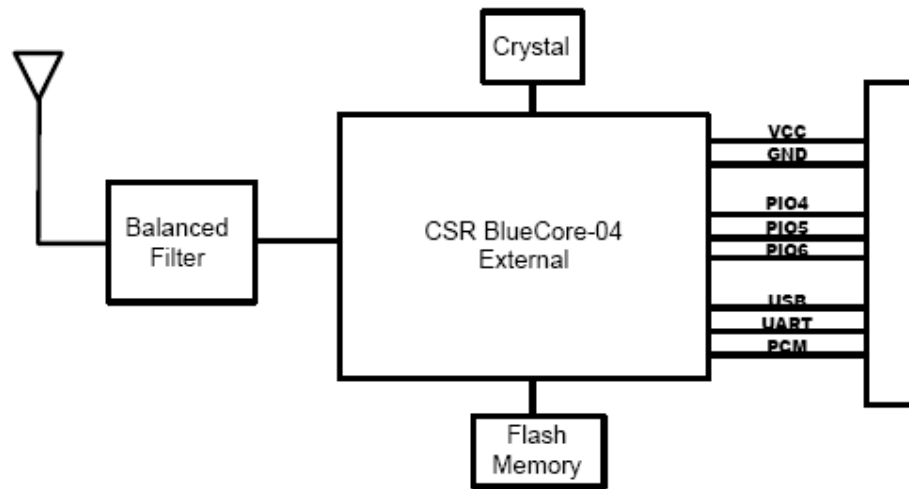


Fig 1.3.1 BT- Class2 Module Block Diagram

1.4 Electrical Characteristics

BT- Class 2

	Min	Typ.	Max.	Unit
Supply Voltage	3.0	3.3	3.6	V
RX Supply Current	-	30	-	mA
TX Supply Current(Normal)	-	40	-	mA
TX Supply Current(Continuous)	-	65	-	mA
Sleep Supply Current	-	1	-	mA
Storage Temperature	-20	-	+85	°C

■ Power Consumption

BT-Class 2

Mode	Avg.
Standby	1mA
Transmit	40mA
Receive	30mA

■ Operating Conditions

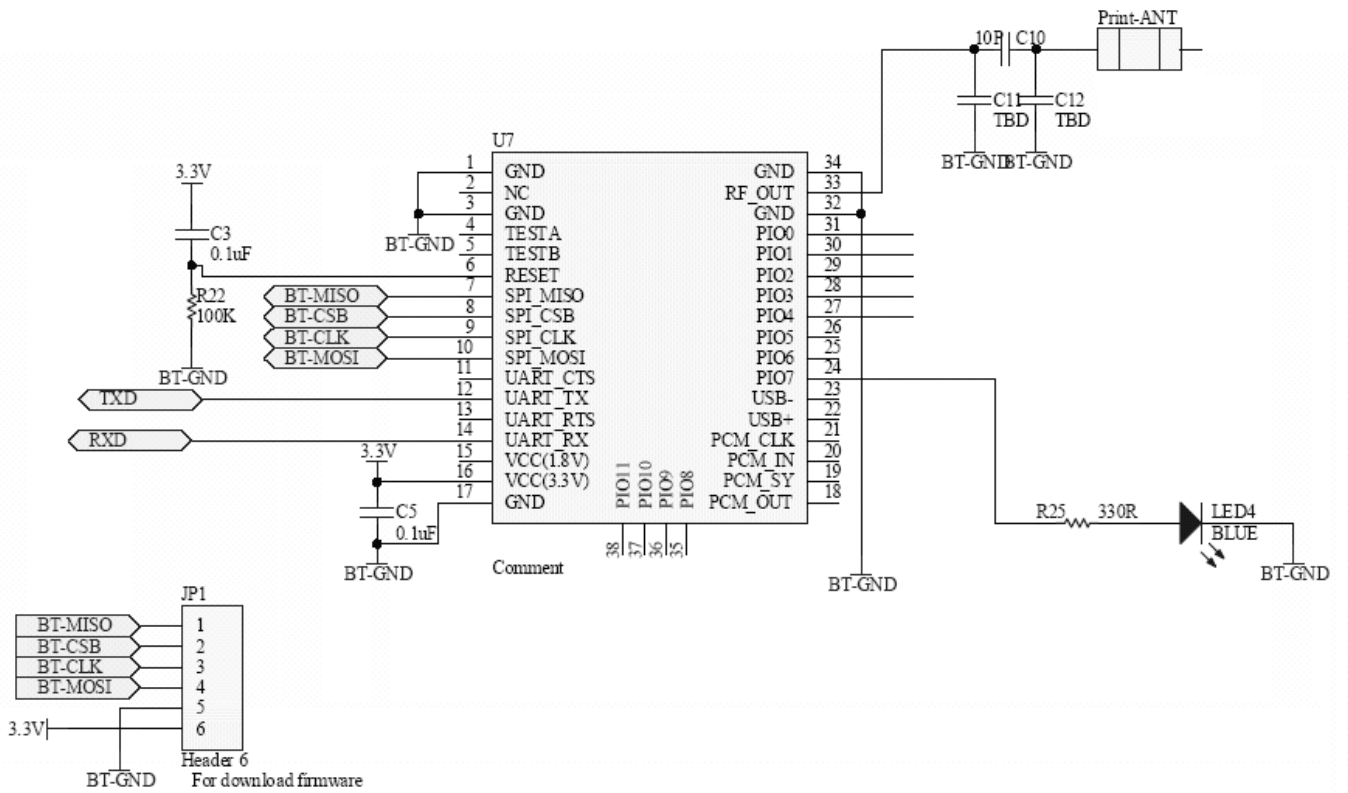
Voltage Range	3.3V±0.3V
Operating Temperature Range	-20 °C ~ 60 °C
Storage Temperature Range	-20 °C ~ 80 °C
Relative Humidity (Operating)	≤90%
Relative Humidity (Storage)	≤90%

1.5 Radio Characteristics

■ BT- Class2 BT2.0 Module

	Frequency (GHz)	Min	Typ	Max	BT Spec.	Unit
Sensitivity at 0.1%BER	2.402	-	-80	-86	≤ -70	dBm
	2.441	-	-80	-86		dBm
	2.480	-	-80	-86		dBm
RF Transmit Power	2.402	-	0	-	≤ 0	dBm
	2.441	-	0	-		dBm
	2.480	-	0	-		dBm
Initial Carrier Frequency Tolerance	2.402	-	5	75	75	kHz
	2.441	-	5	75		kHz
	2.480	-	5	75		kHz
20dB bandwidth for modulated carrier		-	900	1000	≤ 1000	kHz
Drift (Five slots packet)		-	15	-	40	kHz
Drift Rate		-	13	-	20	kHz
$\Delta f_{1\text{avg}}$ "Maximum Modulation"	2.402GHz	140	165	175	$140 < \Delta f_{1\text{avg}}$	kHz
	2.441GHz	140	165	175		kHz
	2.480GHz	140	165	175		kHz
$\Delta f_{2\text{max}}$ "Minimum Modulation"	2.402GHz	115	190	-	115	kHz
	2.441GHz	115	190	-		kHz
	2.480GHz	115	190	-		kHz

Reference Schematics



2. Software / Profile

2.1 MB-C04-SPP Software function

Stack / Profile	BT-Class2 (Class2 BT2.0 Module)
SPP	■

a. Pairing mode

Power on the module and MB-C04-SPP will be stay in pairing mode

b. Connection

Turn on Bluetooth function/Software in master device(like PC with BT dongle) and make a search for Bluetooth device. When master device found Bluetooth device named "SPP", make Bluetooth connection with SPP with pin code "0000". MB-C04-SPP will automatically response itself and established the connection.

c. Data Transmission / Receiving

When the Connection was established, User can input data to UART_RX. MB-C04-SPP will send data out via UART_RX to Master device.

User can get the data sent from Master device as well from UART_RX.

d. AT command

MB-C04-SPP will not response to any AT command send from user. If there is a specified function to implement, we can accept OEM custom f/w.

2.2 MB-C04-AT Software function

a. AT command

MB-C04-AT will act only when you send AT command. You can find the detailed command list in "MBC04 AT command" document.

3. Packing & Label Information

3.1 Label Information

■ PCB Label

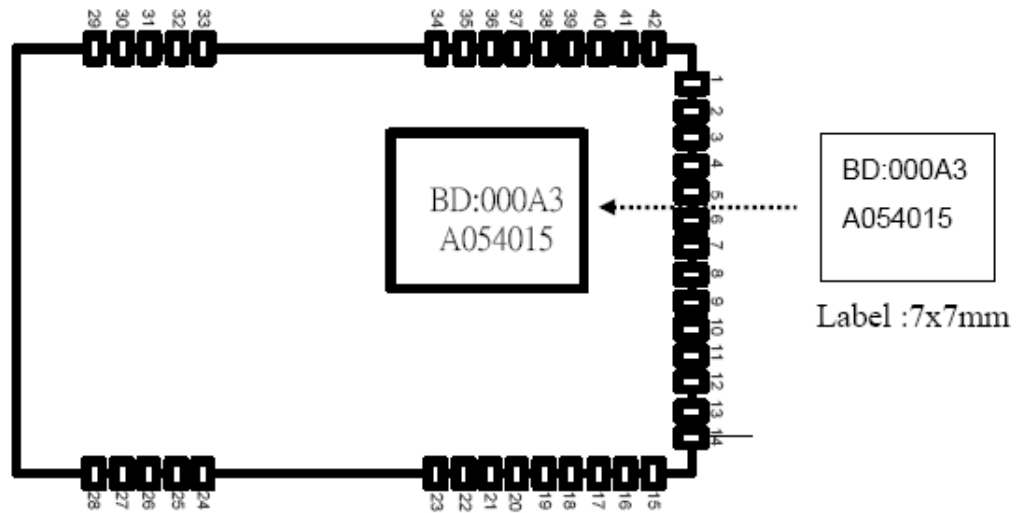
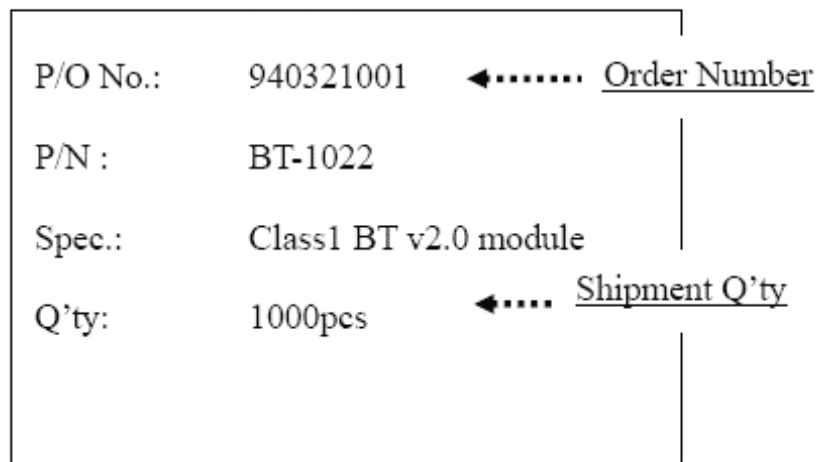


Fig 3.1.1 Class2 BT2.0 Module PCBA Label

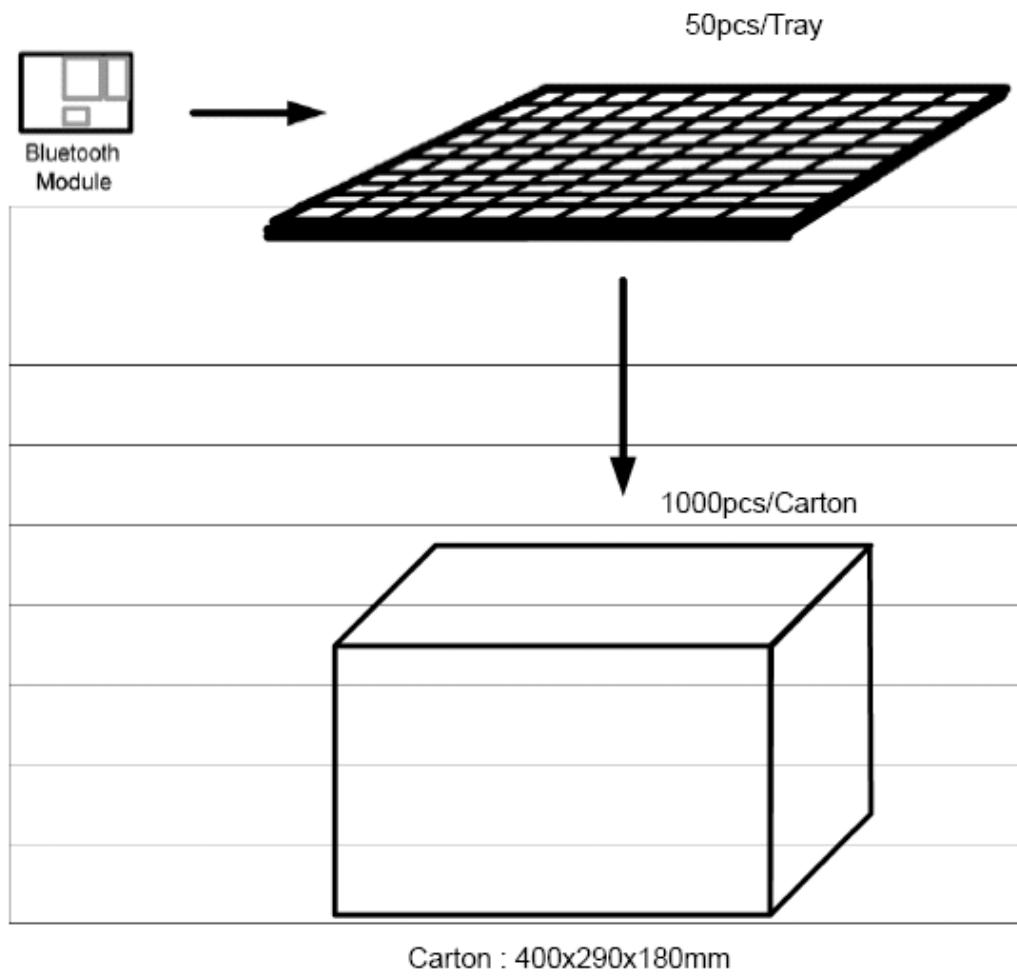
■ Carton Label



Dimension :102x102mm

Fig 3.1.2 Class2 Carton Label

3.2 Packaging



4. Standard Setup Information

	Parameter		Value
1	Part number		MB-C04-SPP
2	Baud Rate		9600
3	Pin Code Prompt		"0000"
4	Local Name		SPP
5	LED PIN24(PIO 7)	Power on	Flash 26 times[ON time frame: 80ms, OFF time frame: 140ms]
		Connect	Flash with ON one time within 1 second,[ON time frame: 35ms]
		Disconnected	Flash with ON one time within 3 seconds,[ON time frame : 35ms]

5. Customization Information

	Parameter		Value
1	Part number		
2	Baud Rate		
3	Pin Code Prompt		
4	Local Name		
5	LED PIN24(PIO 7)	Connected	
		Disconnected	