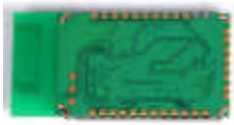
Bluetooth® Module

RN-41 Class 1, 2.0 EDR

OVERVIEW



- Fully Qualified Bluetooth 2.0/1.2/1.1 module, using CSR BC04 External
- Class 1 high power amplifier, on Board ceramic RF chip antenna.
  - Conforms to FCC, CE and the EMI standard of each country.
  - Modular Approval: FCC ID: T9J-RN41, ICS: 6514A-RN41, CE: 0681
- Scatternet support, 802.11 coexistence, RoHS compliance.
- UART, USB, PCM interfaces available to various applications.
- 8MB on board flash, HCI, or SPP software stacks available.
- Embedded Bluetooth stack profiles included *(requires no host MCU stack)*: BCSP, SPP, DUN, LAN, GAP SDP, RFCOMM, and L2CAP protocols.

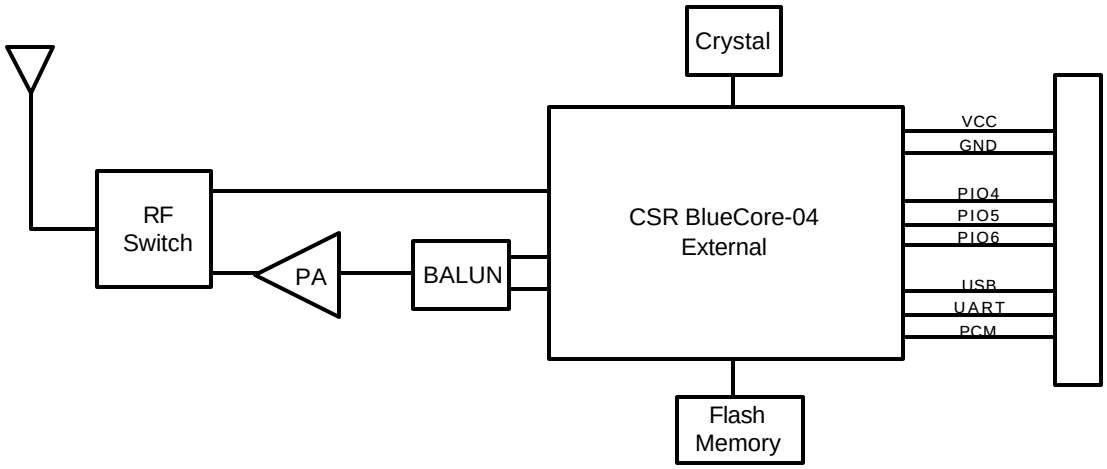
FEATURES

- Baud rate speeds: 1200bps up to 3Mbps
- Class 1 radio, 330' (100m) distance, 15db output transmitter
  - Low power modes 50mA TX, 40mA RX (connected), 10ma (sniff mode), 2ma (idle), 250ua(sleep)
- UART local and over-the-air RF configuration
- Small-form factor SMT radio modem 13mm x 25mm.
- Auto-discovery/pairing requires no software configuration (instant cable replacement).
- Auto-connect master, and character based trigger modes.
- Operating temperature range: -40~+85ºC.
- Secure and robust communication link
  - ✓ FHSS (Frequency Hopping Spread Spectrum)
  - ✓ 128 bit encryption
  - ✓ Error correction schemes for guaranteed packet delivery

SPECIFICATIONS

Item		Specifications
Frequency		2402 ~ 2480MHz
Modulation		FHSS/GFSK
Channel intervals		1MHz
Number of channels		79CH
Transmission rate (over the air)		721kbps-2.0Mpbs
Receive sensitivity		-80dBm typ.
Output level (Class1)		15dBm max.
Dimensions		
	With antenna	13.2(W)X25.8(L)X2.05(H)mm

Block Diagram



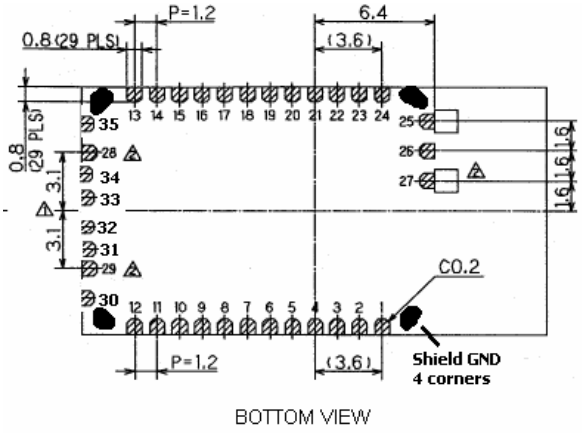
Electrical Characteristics

	Min	Typ.	Max.	Unit
Supply Voltage (DC)	3.0	3.3	3.6	V
RX Supply Current	-	35	60	mA
TX Supply Current	-	65	100	mA
Average power consumption				
Standby/Idle (default settings)	-	25	-	mA
Standby/Idle (lowest power)	250uA	2.5	-	mA
Connected(normal mode)		30		mA
Connected(low power Sniff)		8		mA

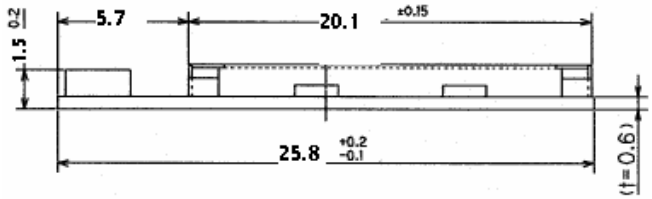
Operating and Environmental Conditions

Operating Temperature Range	-40 ^{o}C ~ 85 ^{o}C
Storage Temperature Range	-40 ^{o}C ~ 85 ^{o}C
Relative Humidity (Operating)	≤90%
Relative Humidity (Storage)	≤90%

DIMENSIONS (mm)



BOTTOM VIEW



SIDE VIEW

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TERMINALS	
1. GND	15. UART_RTS
2. SPI_MOSI	16. UART_CTS
3. PIO[6]	17. USB_D+
4. PIO[7]	18. USB_D-
5. RESET	19.PIO[2]/USB_PULL_UP
6. SPI_CLK	20.PIO[3]/USB_RESUME
7. PCM_CLK	21. PIO[5]
8. PCM_SYNC	22. PIO[4]
9. PCM_IN	23. SPI_CSB
10. PCM_OUT	24. SPI_MISO
11. VDD (3.3Vdc)	25. GND
12. GND	26. NC
13. UART_RX	27. GND
14. UART_TX	28. GND
	29. GND
30 – AIO2	33 – PIO9
31 – PIO11	34 - PIO8
32 – PIO10	35 – AIO1

STANDARD PCB LAYOUT DIMENSIONS (mm)

As indicated, the module should be placed on the board with protruding its antenna part from the customer PWB.

In this area, you should not locate anything parts or GND plane / Patterns on surface or internal layer.