

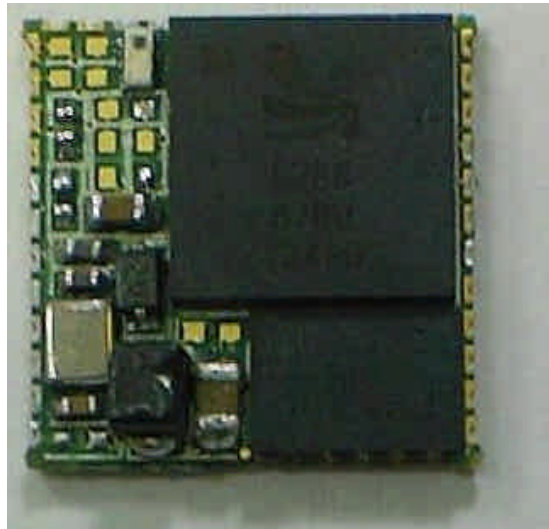
Model RN-51

- CSR BlueCore05 Multi-media, 8MB flash
- Bluetooth v2.1/2.0/1.2/ 1.1 Compliant
- UART,USB, analog speaker/mic interfaces
- UART baudrates from 1200 to 921K.
- Low power: 90ua sleep, 1ma discoverable, 60ma connected, 5ma Sniff)
- On board Li-Poly battery charger!
- 95dB CD-QUALITY coded for streaming.
- Supports HCI / A2DP/HSP/HFP profiles.
- Built in stack/applications, auto-discovery, auto-connect, phone dialer, instant cable.
- Extended - Class2,
up to 6dBm (10-30 meters)
- Ultra small size, 12.5mm x 12.5mm

Bluetooth 2.1 EDR Audio Module

Product Specification

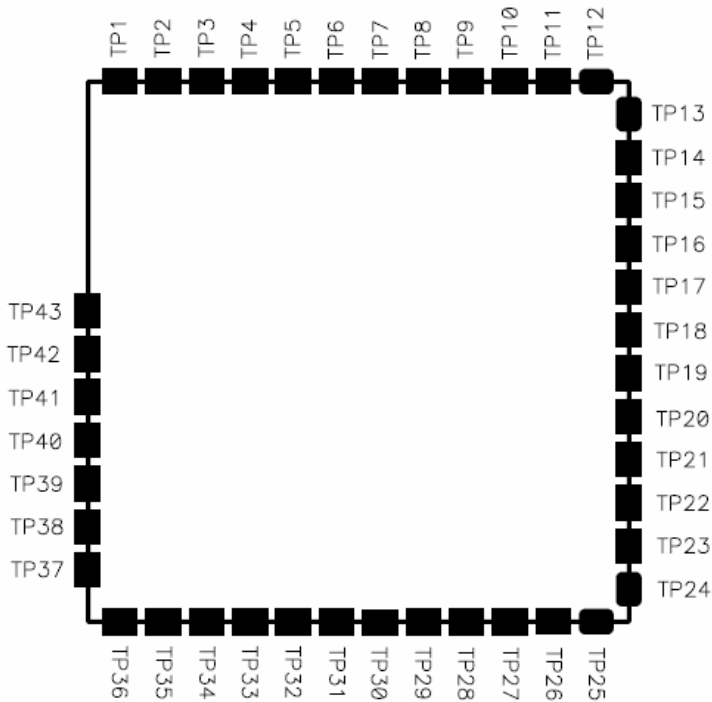
Model# : RN-51



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1.1 RN-51 Pin List and Description



Pin No.	Name	Type	Note	Pin No.	Name	Type	Note
1	VCC3.3V			22	PCM_OUT		
2	AIO0			23	BAT_CHARGEIN		
3	PIO6			24	VDD_BAT		
4	PIO5			25	RESET		
5	PIO4			26	LED1		
6	PIO3			27	LED0		
7	PIO2			28	SPI_MISO		
8	PIO1			29	SPI_CSB		
9	PIO0			30	SPI_CLK		
10	GND			31	SPI_MOSI		
11	RF_OUT			32	UART_RX		
12	GND			33	UART_TX		
13	MIC_BIAS			34	UART_CTS		
14	MIC_A_N			35	UART_RTS		
15	MIC_A_P			36	USB_D-		
16	MIC_B_N			37	USB_D+		
17	MIC_B_P			38	SPKR_B_N		
18	VDD_AUDIO_1.5V			39	SPKR_B_P		
19	PCM_CLK			40	SPKR_A_N		
20	PCM_SYNC			41	SPKR_A_P		
21	PCM_IN			42	GND		
43	VEGENABLE_H						

Fig. 1.2 RN-51 Mechanical Specification

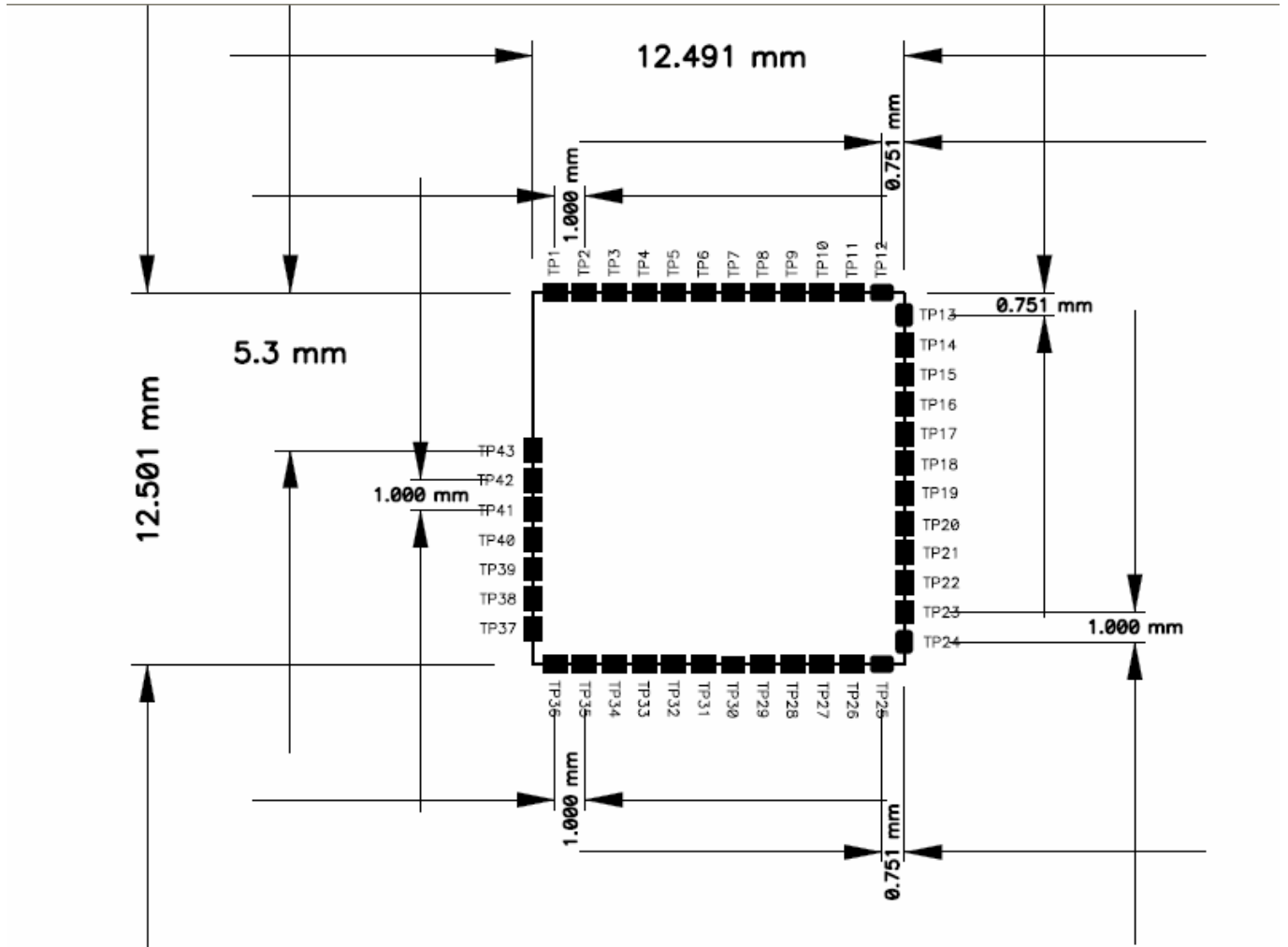
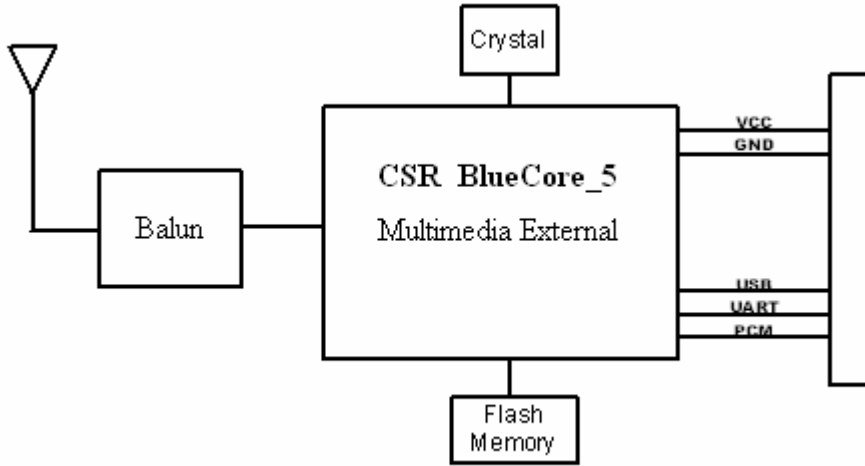


Fig 1.3 RN-51 Block Diagram


1.4 RN-51 Electrical Characteristics

	Min	Typ.	Max.	Unit
Supply Voltage	3.0	3.3	3.6	V
RX Supply Current	20	32	35	mA
TX Supply Current(Continuous)	-	65	75	mA
Sleep/Idle Supply Current	90	250	1000	uA
Storage Temperature	-20	-	+85	°C

Power Consumption

Mode	Avg.
Idle	5mW
Transmit	90mW
Receive	50mW

Operating Conditions

Voltage Range	3.3V±0.3V
Operating Temperature Range	-40 °C ~ 85 °C
Storage Temperature Range	-40 °C ~ 85 °C
Relative Humidity (Operating and Storage)	≤90%

1.5 RN-51 Radio Characteristics

	Frequency (GHz)	Min	Typ	Max	BT Spec.	Unit
Sensitivity at 0.1%BER	2.402	-			≤ -70	dBm
	2.441	-				dBm
	2.480	-				dBm
RF Transmit Power	2.402	-		-	≤ 0	dBm
	2.441	-		-		dBm
	2.480	-		-		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
Δf_{avg} "Maximum Modulation"	2.402GHz	140	165	175	$140 < \Delta f_{avg}$	kHz
	2.441GHz	140	165	175		kHz
	2.480GHz	140	165	175		kHz
Δf_{max} "Minimum Modulation"	2.402GHz	115	190	-	115	kHz
	2.441GHz	115	190	-		kHz
	2.480GHz	115	190	-		kHz

1.6. Packing & Label Information

Fig 1.6 RN-51 PCBA Label

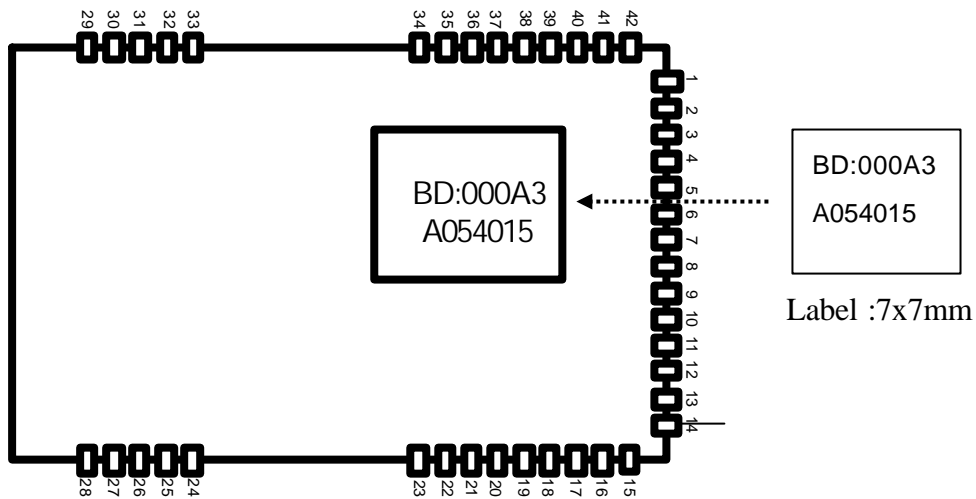


Fig 1.6.2 RN51 Carton Label

Manufacturer : Roving Networks	
P/O No.:	940321001 ←..... <u>Order Number</u> ..→
P/N :	RN51
Spec.:	Class1 BT v2.1 EDR
Q'ty:	1000pcs ←..... <u>Shipment Q'ty</u> ..→

Dimension :102x102mm

1.7 Packaging

