

Excellent Integrated System Limited

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[Microchip Technology](#)

[RN-31](#)

For any questions, you can email us directly:

sales@integrated-circuit.com

1.1 RN-31 Pin List and Description

Pin No.	Name	Type	Note	Pin No.	Name	Type	SPP use
1	Ground			34	Ground		
2	NC			33	RF_OUT	Out	
3	Ground			32	Ground		
4	TestA		Analog AD0	31	PIO0	In/Out	available
5	TestB		Analog AD1	30	PIO1	In/Out	available
6	Reset	Input	Active HIGH	29	PIO2	In/Out	connect
7	SPI_MISO		programming	28	PIO3	In/Out	Auto-pair
8	SPI_CSB		programming	27	PIO4	In/Out	Factory reset
9	SPI_CLK		programming	26	PIO5	In/Out	Status LED
10	SPI_MOSI		programming	25	PIO6	In/Out	Auto master
11	UART_CTS	Input		24	PIO7	In/Out	baudrate
12	UART_TX	Out		23	USB-	In/Out	
13	UART_RTS	Out		22	USB+	In/Out	
14	UART_RX	Input		21	PCM_CLK	In/Out	
15	VCC_1.8V	Out		20	PCM_IN	In	
16	VCC_3.3V	Input		19	PCM_SYNC	In/Out	
17	Ground			18	PCM_OUT	Out	
35	PIO8	In/Out		37	PIO10	In/Out	
36	PIO9	In/Out		38	PIO11	In/Out	

Audio Interface

Pin No.	Name	Type	Note	Pin No.	Name	Type	Note
39	SPKR-RP	OUT		43	MIC2-P	IN	
40	SPKR-RN	OUT		44	MIC2-N	IN	
41	SPKR-LN	OUT		45	MIC1-N	IN	
42	SPKR-LP	OUT		46	MIC1-P	IN	

Fig. 1.2 RN-31 Mechanical Specification

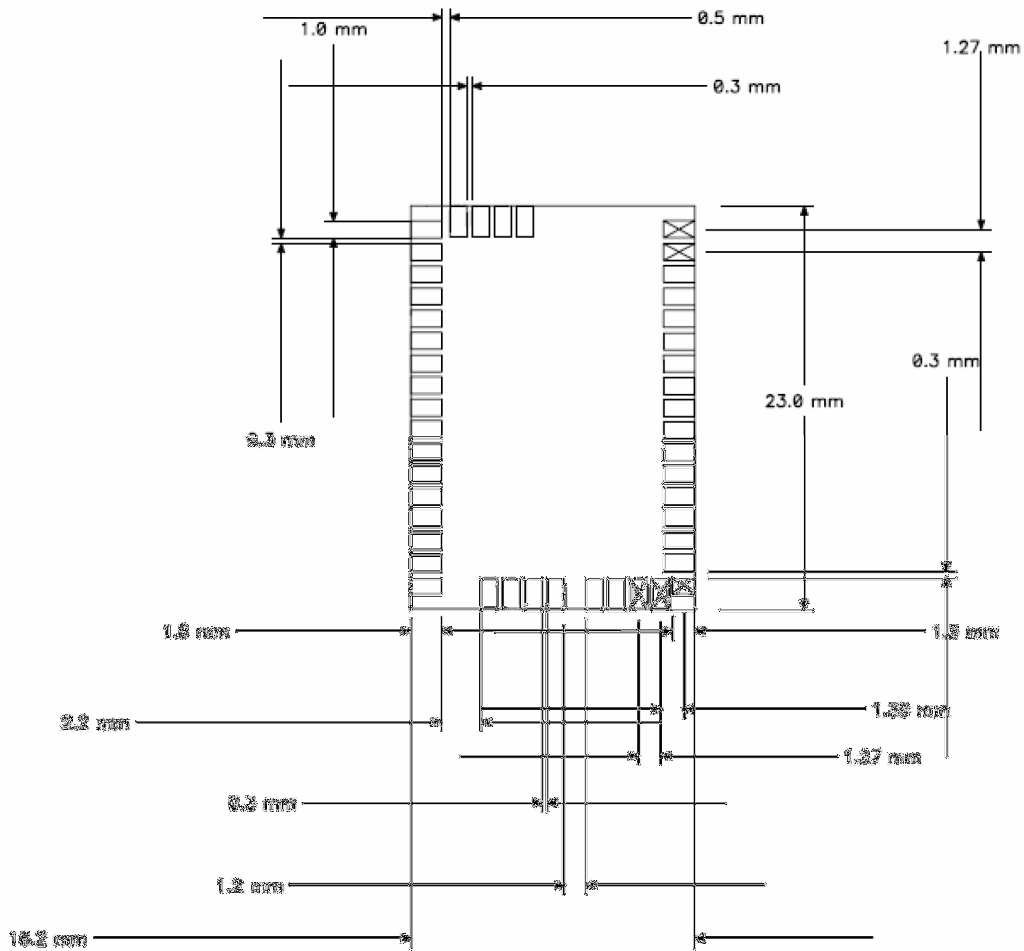
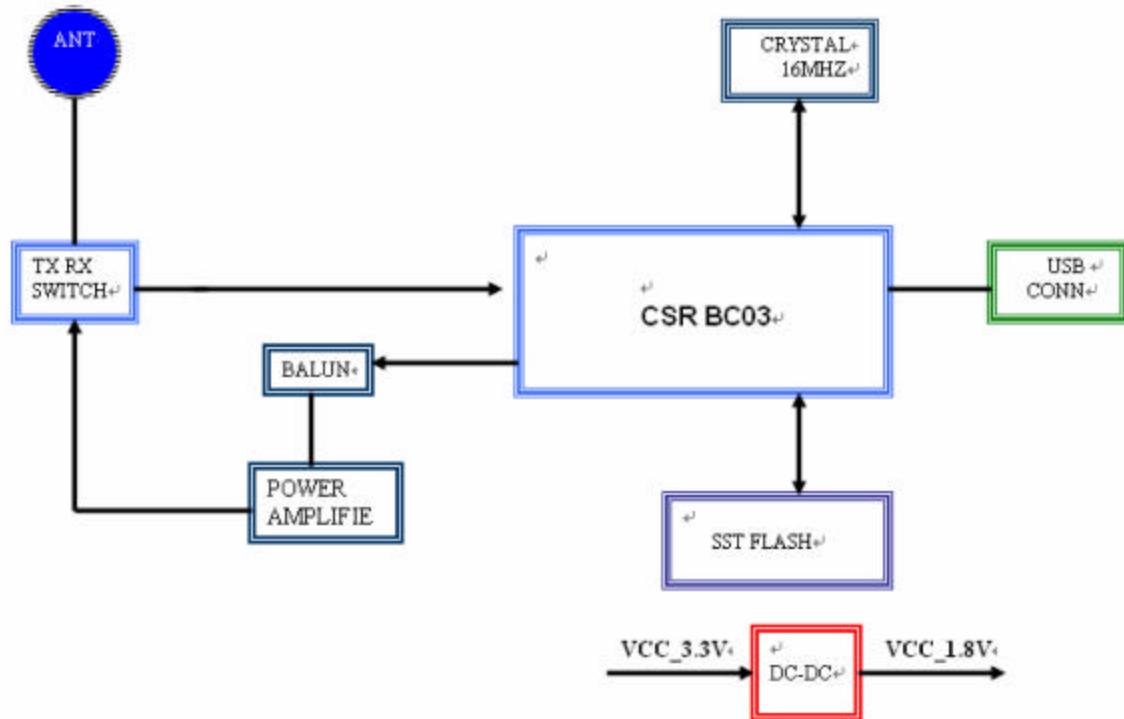


Fig 1.3 RN-31 Block Diagram





1.4 RN-31 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	-	65	75	mA
Idle Supply Current	-	1	-	mA
Sleep Supply Current	-	90	-	uA
Storage Temperature	-20	-	+85	°C

1.4.2 RN-31 Operating Conditions

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

1.5 RN-31 Radio Characteristics

	Freq(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
Δf _{avg} "Maximum Modulation"	2.402GHz	140	165	175	140 < Δf _{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



RN31 Draft 1.0 1/3/2007

3. Packing & Label Information

Fig 3.1.1 RN-31 PCBA Label

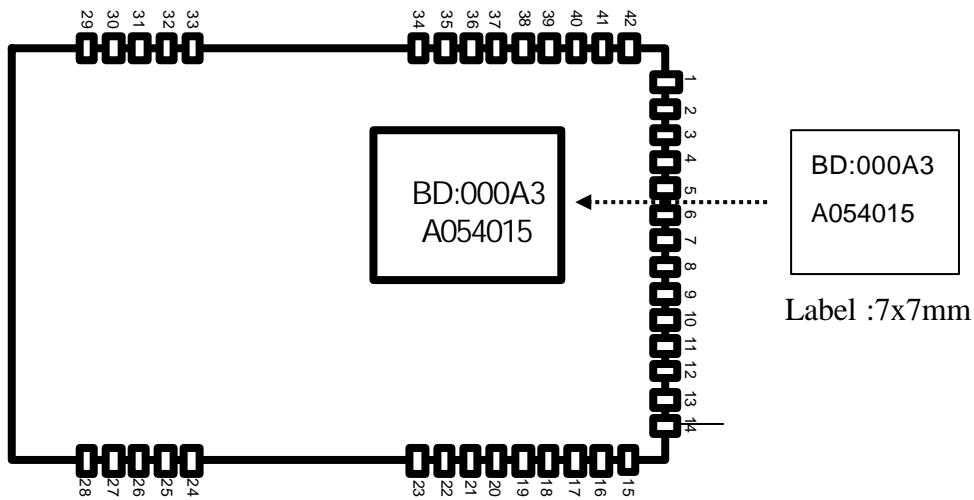


Fig 3.1.2 RN31 Carton Label

Manufacturer : Roving Networks	
P/O No.:	940321001 ←..... <u>Order Number</u> ..→
P/N :	RN31
Spec.:	Class2 BT v1.2 module
Q'ty:	1000pcs ←..... <u>Shipment Q'ty</u> ..→

Dimension :102x102mm

3.2 Packaging

