

Overview:

- CSR BlueCore04 Chip/8Mb flash
 - Bluetooth v2.0 Compliant.
- (also compatible with 1.2/1.1)
- Secure and robust link, FHSS, 128 bit encryption, error correction and guaranteed packet delivery.
 - UART,USB, PCM interfaces
 - UART baudrates from 1200 to 921K.
 - Low power: 90ua sleep, 1ma discoverable, 40ma connected, 5ma SNIFF)
 - Supports HCI / SPP/ HID and voice profiles.
 - Built in stack/applications, auto-discovery, auto-connect, and instant cable modes.
 - Class1, up to 15dBm(RN21) (100meters)
 - Class2, up to 4dBm(RN22) (10 meters)
 - Dimension: 21.8x12.5x2mm(RN21/RN22)

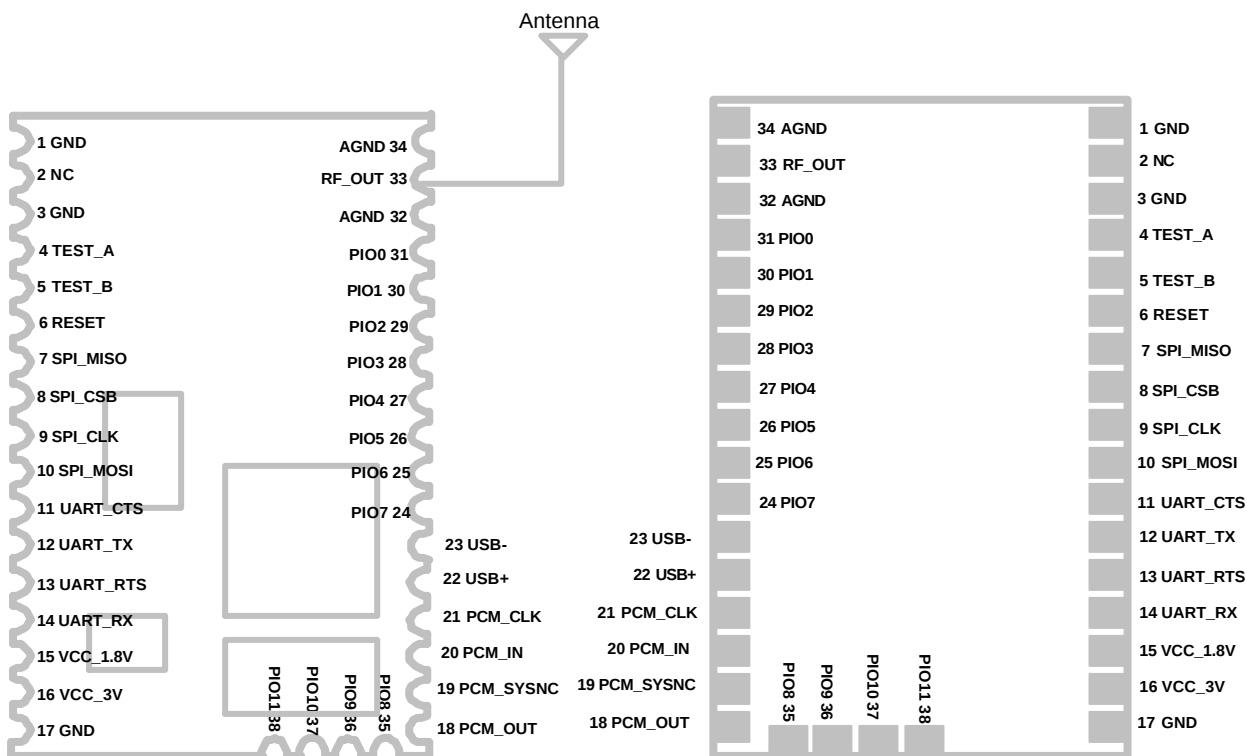
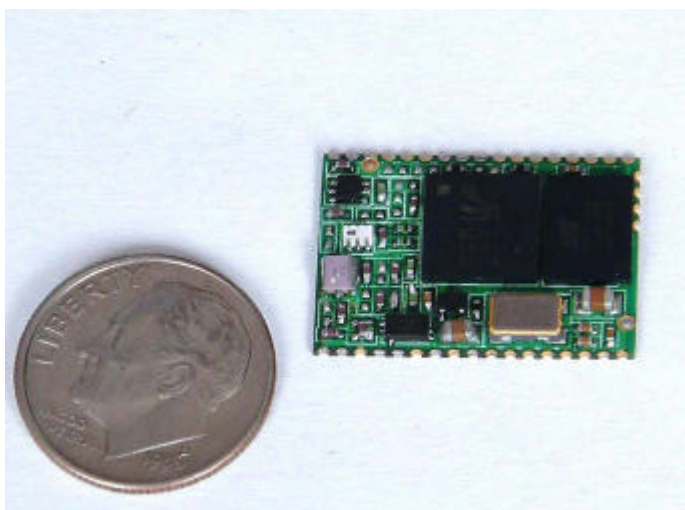
Bluetooth 2.0/EDR Module

Product Specification

Model# : RN21 / RN22

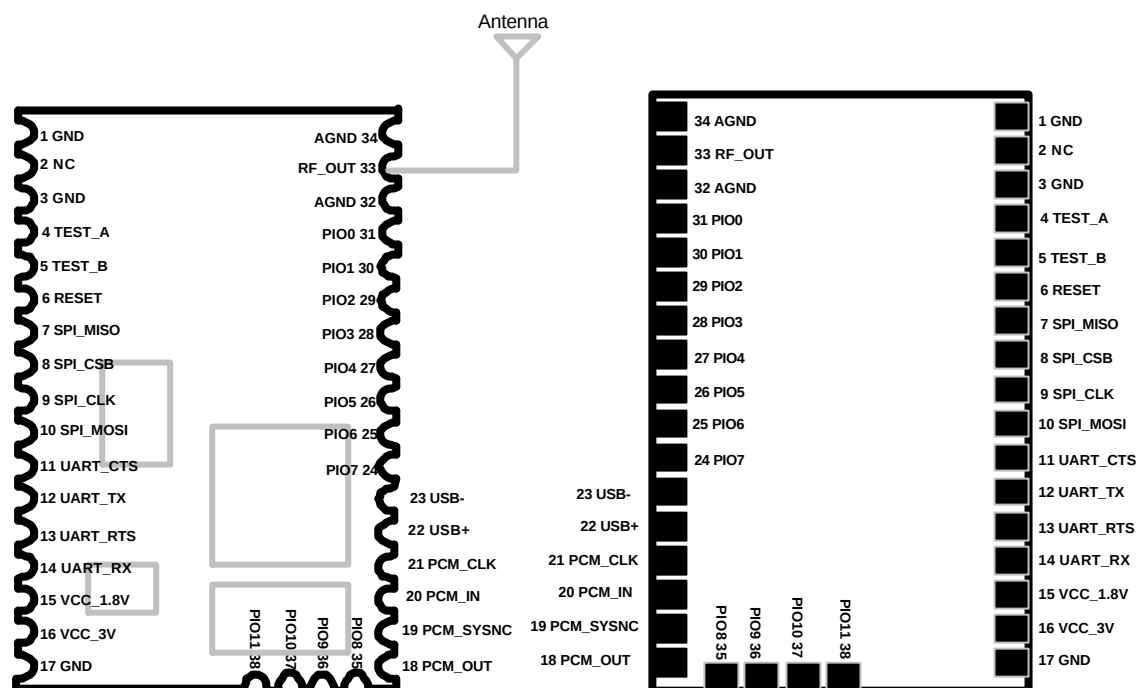
Description:

Bluetooth v2.0 Class1 / Class2 Module



1. Hardware & Technical Information

1.1 Pin definition

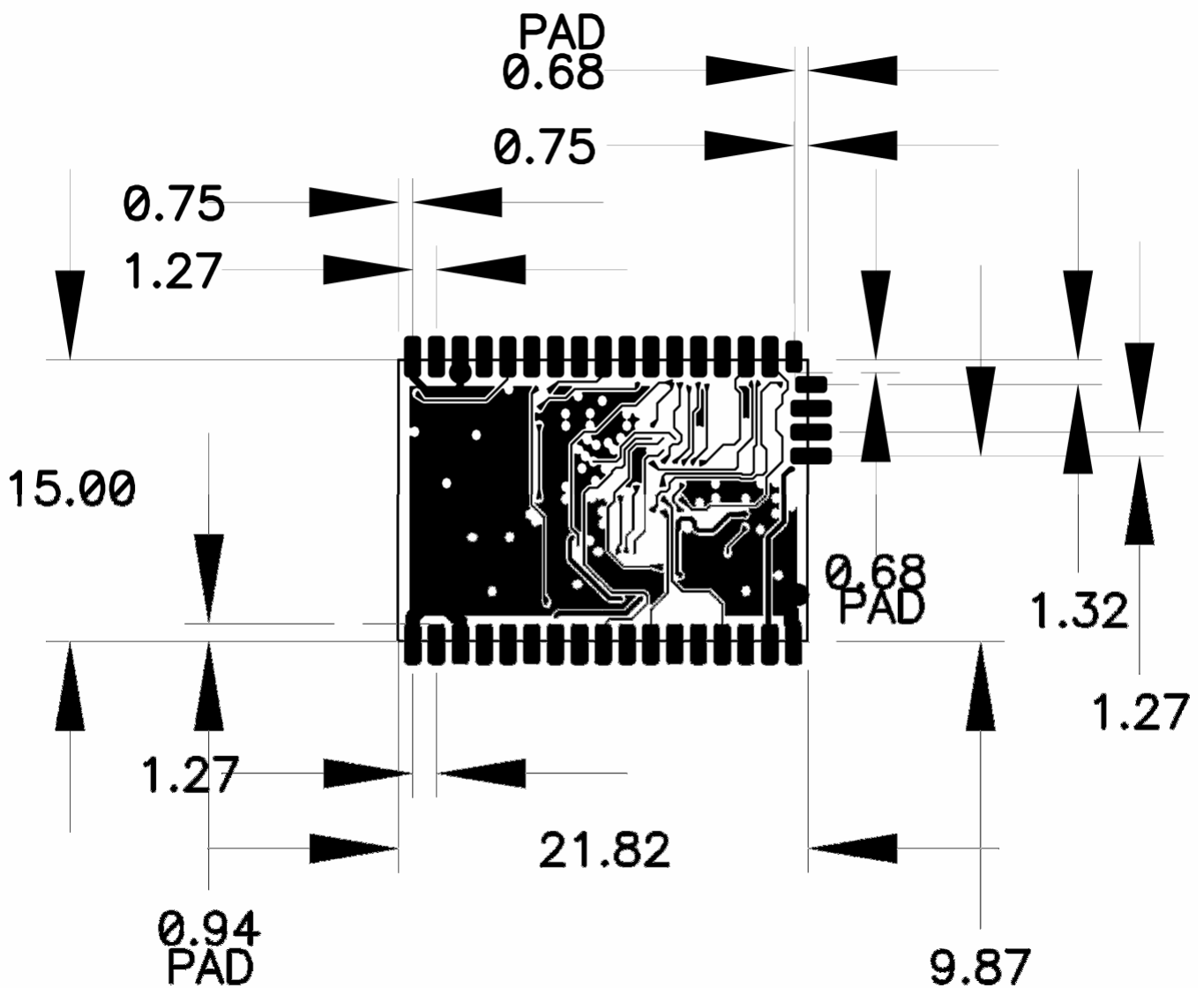


Pin No.	Name	Type	Note	Pin No.	Name	Type	SPP use
1	Ground			34	Ground		
2	NC			33	RF_OUT	Out	
3	Ground			32	Ground		
4	TestA		Analog AD0	31	PIO0	In/Out	RN22 only
5	TestB		Analog AD1	30	PIO1	In/Out	RN22 only
6	Reset	Input	Active HIGH	29	PIO2	In/Out	connect
7	SPI_MISO		programming	28	PIO3	In/Out	Auto-pair
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	

Pin No.	Name	Type	Note	Pin No.	Name	Type	Note
35	PIO8	In/Out		37	PIO10	In/Out	
36	PIO9	In/Out		38	PIO11	In/Out	

1.2 Mechanical Specification

Fig. 1.2.1 RN21 / RN22 Mechanical Specification



1.3 Block Diagram

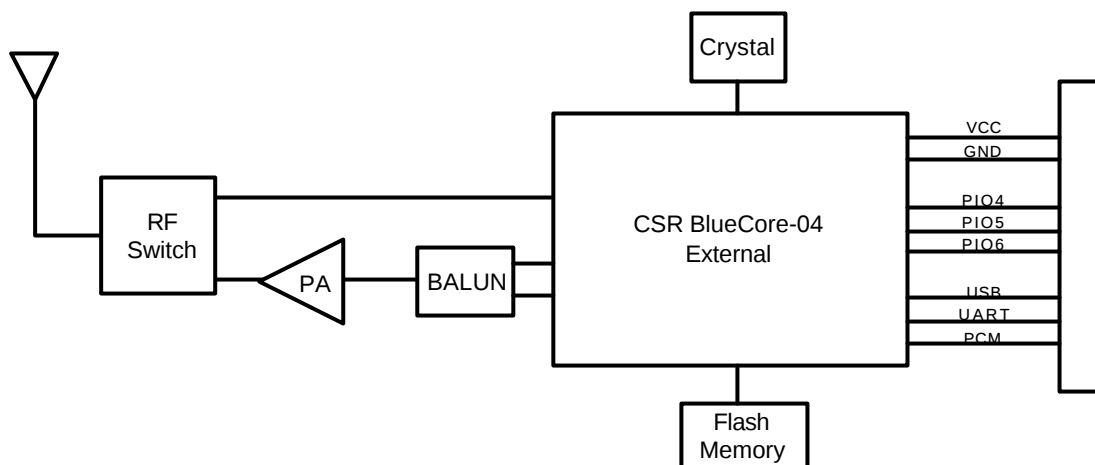


Fig 1.3.1 RN21 Class1 Module Block Diagram

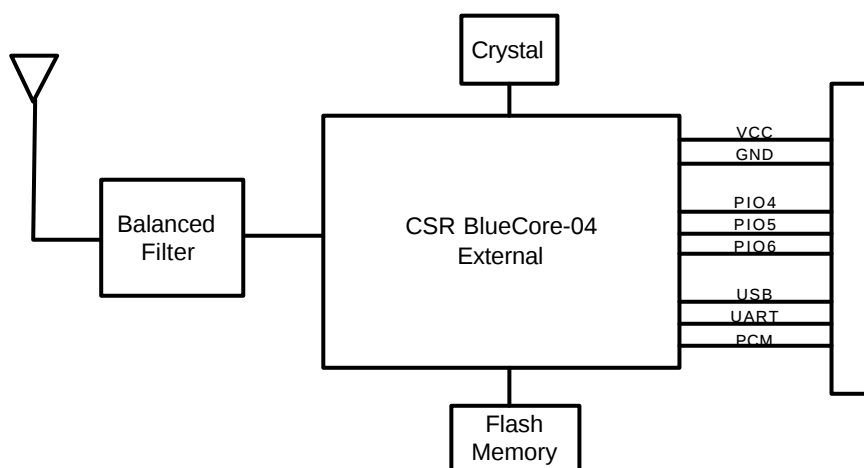


Fig 1.3.2 RN22 Class2 Module Block Diagram

1.4 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)	2.5	4	-	mA
Connected(normal mode)		40		mA
Connected(low power Sniff)		15		mA

! Operating and Environmental Conditions

Operating Temperature Range	-40 °C ~ 85 °C
Storage Temperature Range	-40 °C ~ 85 °C
Relative Humidity (Operating)	≤90%
Relative Humidity (Storage)	≤90%

1.5 Radio Characteristics

1 RN21 Class1 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	15.0	16.0		≤ 15	dBm
	2.441	15.0	16.0			dBm
	2.480	15.0	16.0			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

RN22 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
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	2.441GHz	115	190	-		kHz
	2.480GHz	115	190	-		kHz

3. Packing & Label Information

3.1 Label Information

| PCB Label

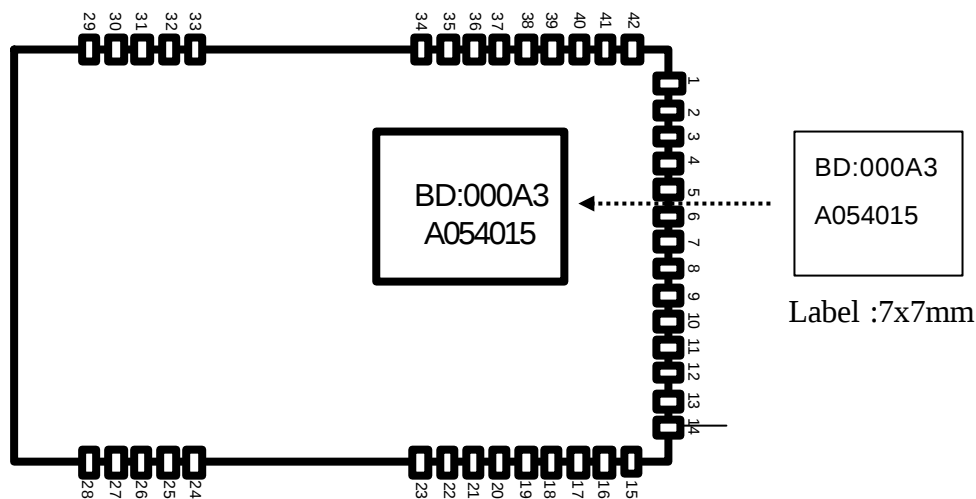
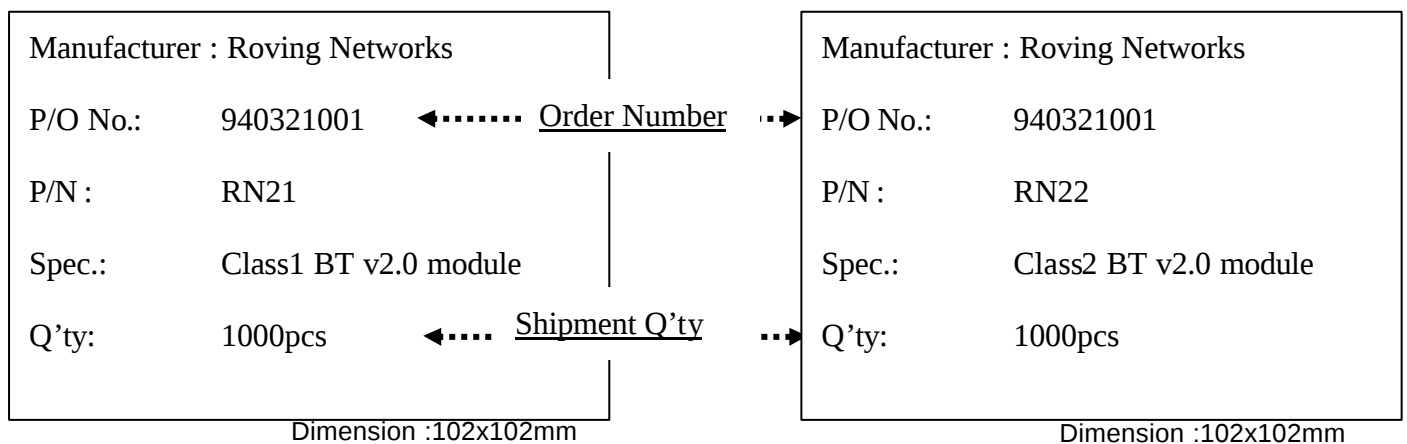


Fig 3.1.1 RN21/RN22 PCBA Label

Fig 3.1.2 RN21 Carton Label

Fig 3.1.3 RN22 Carton Label

| Carton Label



3.2 Packaging

