

蓝牙 2.0 串口传输模块 (BT20_U)



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功能:

CSR,BC417143 B-IRN-E4

Rev.2.0

July. 2006

- * 蓝牙2.0 +EDR兼容
- * Class 2 输出功率
- * 全速蓝牙操作
- * 3.3V 供电
- * 少量的外围元件
- * RoHS 兼容

产品描述:

BT20_U 模块主要用于蓝牙2.0的通讯, 其用于其他2.0 蓝牙主机通讯,如手机, 平板.

应用场合

- * Bluetooth carkit
- * PCs
- * Personal Digital Assistants (PDAs)
- * Computer Accessories (compact Flash Cards, PCMCIA Cards, SD Cards and USB Dongles)
- * Access Points
- * Digital Cameras

规格

Operating Frequency Band	2.4GHz -2.48GHz unlicensed ISM band
Bluetooth Specification	V2.0+EDR
Output Power Class	Class 2
Operating Voltage	3.3V
Host Interface	USB 1.1/2.0 or UART
Audio Interface	PCM and Analog interface
Flash Memory Size	8Mbit
Dimension	26.9mm (L) x 13 (W) mm x 2.2mm (H)

* Specifications are subject to change without prior notice

电子参数

Absolute Maximum Ratings		
Rating	Min	Max
Storage temperature	-40°C	+150°C
Supply voltage: VBAT	-0.4V	5.6V
Other terminal voltages	VSS-0.4V	VDD+0.4V

Recommended Operating Conditions		
Operating Condition	Min	Max
Operating temperature range	-40°C	+150°C
Guaranteed RF performance range ^(a)	-40°C	+150°C
Supply voltage: VBAT	2.2V	4.2V ^(b)

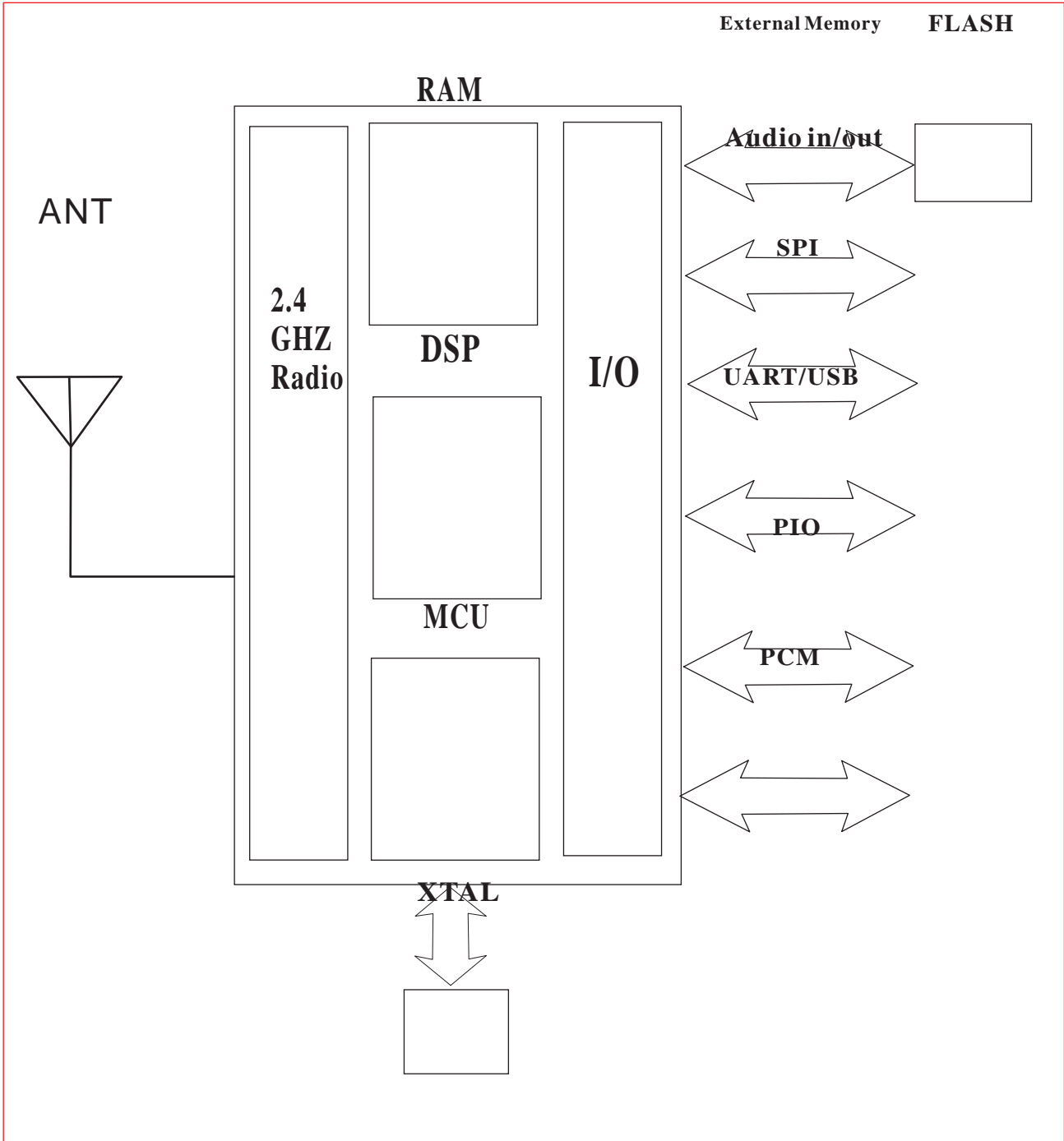
* Typical figures are given for RF performance between -40°C and +105°C.

功耗

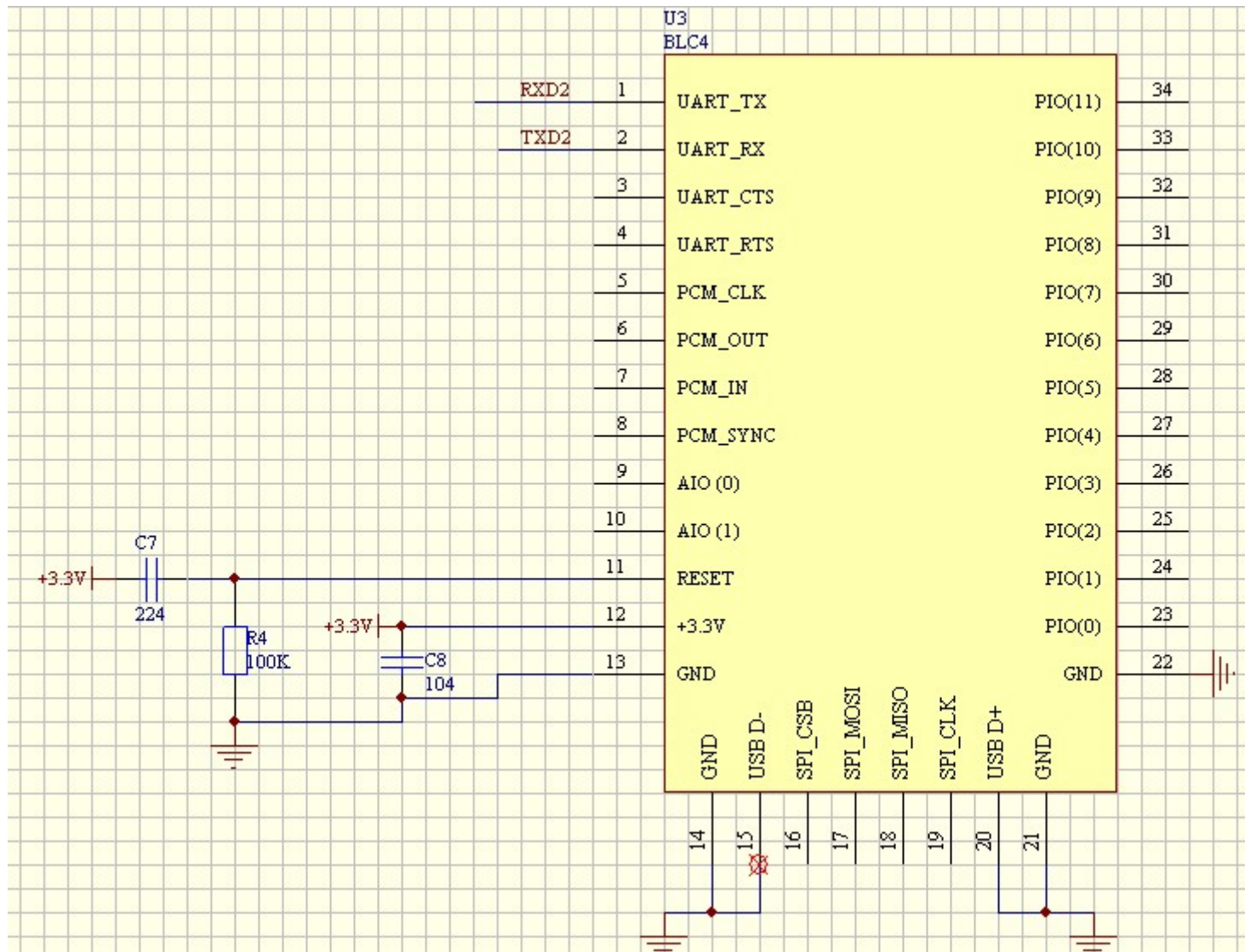
Operation Mode	Connection Type	UART Rate (kbps)	Average	Unit
Page scan	-	115.2	0.42	mA
ACL No traffic	Master	115.2	4.60	mA
ACL With file transfer	Master	115.2	10.3	mA
ACL 1.28s sniff	Master	38.4	0.37	mA
ACL 1.28s sniff	Slave	38.4	0.42	mA
SCO HV3 30ms sniff	Master	38.4	19.8	mA
SCO HV3 30ms sniff	Slave	38.4	19.0	mA
Standby Host connection ^(a)	-	38.4	40	µA

* Low power mode on the linear regulator is entered and exited automatically when the chip enters/leaves Deep Sleep mode. For more information about the electrical characteristics of the linear regulator, see section 4 in this document.

方块图

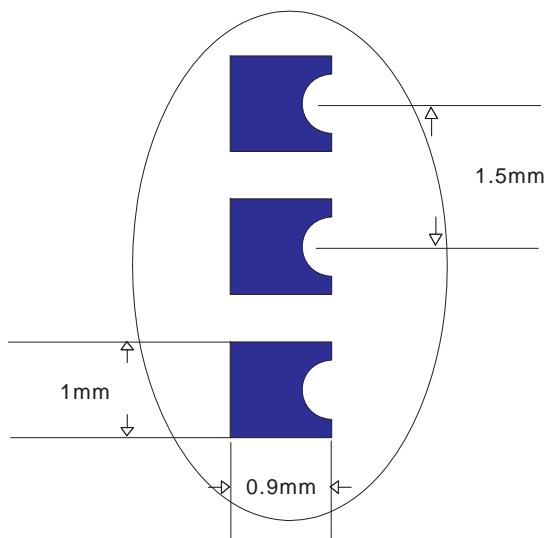
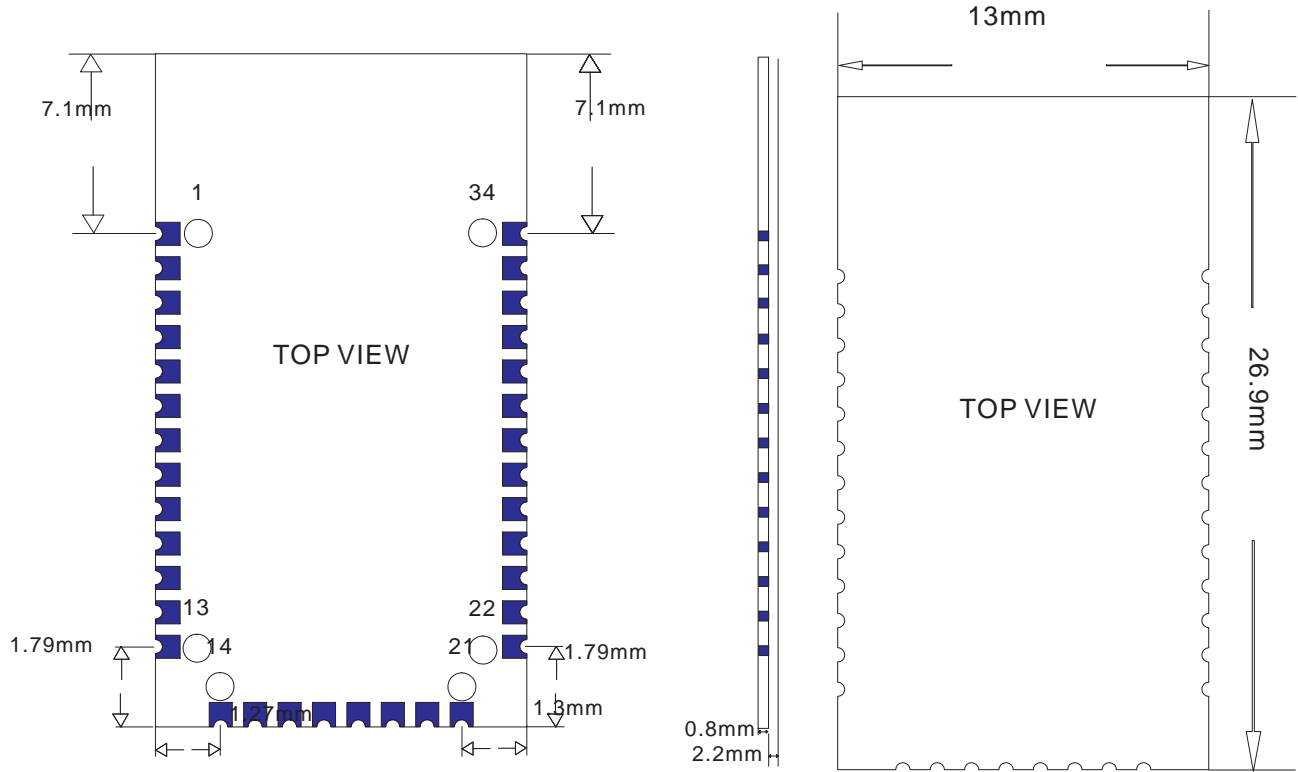


应用原理图



尺寸

BC4 Module



NO	PIN NAME	NO	PIN NAME
1	UART-TX	18	SPI-MISO
2	UART-RX	19	SPI-CLK
3	UART-CTS	20	USB D+
4	UART-RTS	21	GND
5	PCM-CLK	22	GND
6	PCM-OUT	23	PIO(0)
7	PCM-IN	24	PIO(1)
8	PCM-SYNC	25	PIO(2)
9	AIO(0)	26	PIO(3)
10	AIO(1)	27	PIO(4)
11	RESET	28	PIO(5)
12	3.3V	29	PIO(6)
13	GND	30	PIO(7)
14	GND	31	PIO(8)
15	USB D-	32	PIO(9)
16	SPI-CSB	33	PIO(10)
17	SPI-MOSI	34	PIO(11)

管教配置

PIN NO.	NAME	TYPE	FUNCTION	RE-MARK
1	UART-TX	CMOS Output	UART Data Output	串口输出
2	UART-RX	CMOS Input	UART Data Input	串口输入
3	UART-CTS	CMOS Input	UART Clear To Send Active Low	
4	UART-RTS	CMOS Output	UART Request To Send Active Low	
5	PCM-CLK	Bi-directional	Synchronous Data Clock	
6	PCM-OUT	CMOS Output	Synchronous Data Output	
7	PCM-IN	CMOS Input	Synchronous Data Input	
8	PCM-SYNC	Bi-directional	Synchronous Data Sync	
9	AIO(0)	Bi-directional	Programmable Input/Output Line	
10	AIO(1)	Bi-directional	Programmable Input/Output Line	
11	RESETB	CMOS Input	Reset if low. Input debounced so must be low for >5ms to cause a reset	
12	3.3V	POWER	+3.3V Supply	For 3.3V Version
13	GND	GND	Ground	
14	GND	GND	Ground	
15	USB D-	Bi-directional	USB Data Minus	
16	SPI-CSB	CMOS Input	Chip Select For Synchronous Serial Interface	
17	SPI-MOSI	CMOS Input	Serial Peripheral Interface Data Input	
18	SPI-MISO	CMOS Output	Serial Peripheral Interface Data Output	
19	SPI-CLK	CMOS Input	Serial Peripheral Interface Clock	
20	USB D+	Bi-directional	USB Data Plus with selectable internal 1.5K Ω	
21	GND	GND	Ground	
22	GND	GND	Ground	
23	PIO(0)	Bi-directional with programmable strength	Control output for external LNA (if fitted)	
24	PIO(1)	Bi-directional with programmable strength	Control output for external PA (if fitted)	
25	PIO(2)	Bi-directional	Programmable Input/Output Line	
26	PIO(3)	Bi-directional	Programmable Input/Output Line	
27	PIO(4)	Bi-directional with programmable strength	Programmable Input/Output Line or optional BT Priority/CH Clk output for co-	
28	PIO(5)	Bi-directional with programmable strength	Programmable Input/Output Line or optional BT Active output for co-existence	
29	PIO(6)	Bi-directional with programmable strength	Programmable Input/Output Line or optional WLAN Active/Ch Data input for co-	
30	PIO(7)	Bi-directional	Programmable Input/Output Line	
31	PIO(8)	Bi-directional	Programmable Input/Output Line	
32	PIO(9)	Bi-directional	Programmable Input/Output Line	
33	PIO(10)	Bi-directional	Programmable Input/Output Line	
34	PIO(11)	Bi-directional	Programmable Input/Output Line	



Anritsu 蓝牙测试报告

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Anritsu BlueTest2 Test Report

Test Set Serial Number: 6K00004754
EUT Bluetooth Address: 00025B00A5B7

Date: 2006-7-15
Time: 13:53:45

Overall Result: PASS

TRM/CA/01/C (Output Power)

Packet Length Tested: DH5

Hopping ON	Low	Med	High	Limits
Average Power	3.14 dBm	3.47 dBm	3.39 dBm	
Max Power	3.20 dBm	3.53 dBm	3.47 dBm	< 20.00 dBm
Min Power	3.11 dBm	3.42 dBm	3.35 dBm	> -6.00 dBm
Peak Power	3.31 dBm	3.65 dBm	3.60 dBm	< 23.00 dBm
Total Packets Failed	0	0	0	
Total Packets Tested	10	10	10	
Result	Pass	Pass	Pass	

TRM/CA/02/C (Power Control)

Packet Length Tested: DH1

Hopping OFF	Low	Med	High	Limits
Max Power	3.10 dB	3.40 dB	3.30 dB	
Min Power	-25.60 dB	-24.70 dB	-25.00 dB	
Max Power Step	4.80 dB	4.50 dB	4.60 dB	<= 8.00 dB
Min Power Step	3.80 dB	3.80 dB	3.80 dB	>= 2.00 dB
Total Packets Failed	0	0	0	
Total Packets Tested	14	14	14	
Result	Pass	Pass	Pass	

TRM/CA/08/C (Initial Carrier)

Packet Length Tested: DH1

Hopping ON	Low	Med	High	Limits
Average Offset	3.1 kHz	6.6 kHz	5.8 kHz	
Max Offset	9.8 kHz	12.5 kHz	16.6 kHz	<= 75 kHz
Min Offset	-2.2 kHz	-3.9 kHz	-4.0 kHz	<= 75 kHz
Total Packets Failed	0	0	0	
Total Packets Tested	10	10	10	
Result	Pass	Pass	Pass	

TRM/CA/09/C (Carrier Drift)

Hopping On - Low Channel	DH1	DH3	DH5	Limits
Drift Rate / 50 μ s	3.92 kHz	-5.53 kHz	-7.66 kHz	+/- 20 kHz
Max Drift	15 kHz	24 kHz	25 kHz	DH1: +/- 25kHz
Average Drift	5 kHz	9 kHz	7 kHz	DH3: +/- 40kHz
Total Packets Failed	0	0	0	DH5: +/- 40kHz
Total Packets Tested	10	10	10	
Overall Result	Pass	Pass	Pass	

Hopping On - Med Channel	DH1	DH3	DH5	Limits
Drift Rate / 50 μ s	4.51 kHz	-6.31 kHz	5.87 kHz	+/- 20 kHz
Max Drift	10 kHz	17 kHz	19 kHz	DH1: +/- 25kHz
Average Drift	0 kHz	6 kHz	4 kHz	DH3: +/- 40kHz
Total Packets Failed	0	0	0	DH5: +/- 40kHz
Total Packets Tested	10	10	10	
Overall Result	Pass	Pass	Pass	

Hopping On - High Channel	DH1	DH3	DH5	Limits
Drift Rate / 50 μ s	-5.26 kHz	6.23 kHz	-6.76 kHz	+/- 20 kHz
Max Drift	-10 kHz	15 kHz	18 kHz	DH1: +/- 25kHz
Average Drift	-2 kHz	2 kHz	1 kHz	DH3: +/- 40kHz
Total Packets Failed	0	0	0	DH5: +/- 40kHz
Total Packets Tested	10	10	10	
Overall Result	Pass	Pass	Pass	

TRM/CA/07/C (Modulation Characteristic)

Packet Length Tested: DH5

Hopping OFF	Low	Med	High	Limits
'F1avg'	163.4 kHz	164.2 kHz	162.7 kHz	140kHz < F1 < 175kHz
'F1max'	167.6 kHz	167.8 kHz	167.5 kHz	
F1 Packets Failed	0	0	0	
'F2avg'	165.4 kHz	165.0 kHz	165.0 kHz	
'F2max'	156.8 kHz	157.6 kHz	155.7 kHz	>= 115 kHz
'F2max' Pass Rate	100.00%	100.00%	100.00%	
F1/F2 Ratio	1.01	1.00	1.01	>= 0.8
Total Packets Tested	20	20	20	
Result	Pass	Pass	Pass	

RCV/CA/02/C (Single Sensitivity)

Power Level: -71 dBm, Dirty Tx Status: OFF

Hopping ON	Any	Limits
Overall BER	0.00%	<= 0.1%
Overall FER	0.00%	<= 100%
Packets Sent	7408	
Total Packets Tested	7408	
Total Packets Failed	0	
Bit Errors	0	
CRC Errors	0	
Length Errors	0	
Lost Packets	0	
Result	Pass	

Hopping OFF	Low	Med	High	Limits
Overall BER	0.00%	0.00%	0.00%	<= 0.1%
Overall FER	0.04%	0.00%	0.00%	<= 100%
Packets Sent	7408	7408	7408	
Total Packets Tested	7405	7408	7408	
Total Packets Failed	0	0	0	
Bit Errors	3	0	0	
CRC Errors	0	0	0	
Length Errors	0	0	0	
Lost Packets	3	0	0	
Result	Pass	Pass	Pass	

RCV/CA/01/C (Multi Slot Sensitivity)

Power Level: -71 dBm, Dirty Tx Status: OFF, Packet Length Tested: DH5

Hopping ON	Any	Limits
Overall BER	0.02%	<= 0.1%
Overall FER	1.36%	<= 100%
Packets Sent	590	
Total Packets Tested	590	
Total Packets Failed	367	
Bit Errors	8	
CRC Errors	8	
Length Errors	1	
Lost Packets	0	
Result	Pass	

Hopping OFF	Low	Med	High	Limits
Overall BER	0.01%	0.03%	0.02%	<= 0.1%
Overall FER	0.85%	4.24%	0.85%	<= 100%
Packets Sent	590	590	590	
Total Packets Tested	590	590	590	
Total Packets Failed	213	467	283	
Bit Errors	5	25	5	
CRC Errors	5	25	5	
Length Errors	0	0	0	
Lost Packets	0	0	0	
Result	Pass	Pass	Pass	

RCV/CA/02/C (Max Input Level)

Power Level: -19dBm

Hopping OFF	Low	Med	High	Limits
Overall BER	0.00%	0.00%	0.00%	<= 0.1%
Overall FER	0.00%	0.00%	0.00%	<= 100%
Packets Sent	7408	7408	7408	
Total Packets Tested	7408	7408	7408	
Total Packets Failed	0	0	0	
Bit Errors	0	0	0	
CRC Errors	0	0	0	
Length Errors	0	0	0	
Lost Packets	0	0	0	
Result	Pass	Pass	Pass	

---- Report End ----