XR829 Validation Report

Revision 1.0

June. 6, 2018

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Revision History

Version	Data	Summary of Changes
1.0	2018-6-6	Initial Version

Table 1- 1 Revision History

Contents

Tables

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1 Introduction

This document is the RF validation report of the XR829, a fully integrated 2.4GHz WLAN and Bluetooth SoC. The key RF performance test results, such as TX power, RX sensitivity and Power test etc. are shown in this document.

2 Summary of Test Result

2.1 Current Consumption

Section	Test Item	Status
3	Current Consumption	Excellent

Table 2-1 Summary Test Result of Current Consumption

2.2 WLAN TX Performance

Section	Test Item	Status
4	Transmit Power	Pass

Table 2-2 Summary Test Result of WLAN TX Test

2.3 WLAN RX Performance

Section	Test Item	Status
5.1	Receiver Sensitivity	Pass
5.2	Receiver Maximum Input Level	Pass
5.3	Adjacent channel rejection	Pass
5.4	Nonadjacent channel rejection	Pass

Table 2-3 Summary Test Result of WLAN RX Test

2.4 WLAN Field Trial Test

Section	Test Item	Status
6	Throughput in Shielding Room	Pass

Table 2-4 Summary Test Result of WLAN Field Trial Test

2.5 BlueTooth TX Performance

Section	Test Item	Status
7.1	Output Power	**Pass**
7.2	Adjacent Channel Power	**Pass**
7.3	Carrier Frequency Drift	**Pass**
7.4	EDR Relative Transmit Power	**Pass**
7.5	EDR Carrier Frequency Stability and Modulation Accuracy	**Pass**
7.6	EDR In-Band Spurious Emissions	**Pass**
7.7	BLE Output Power	**Pass**
7.8	BLE In-Band Emissions	**Pass**
7.9	BLE Modulation Characteristics	**Pass**
7.10	BLE Carrier Frequency Offset and Drift	**Pass**

Table 2-5 Summary Test Result of BT TX Test

2.6 BlueTooth RX Performance

Section	Test Item	Status
8.1	Receiver Sensitivity	**Pass**
8.2	Maximum Input Level	**Pass**
8.3	Adjacent Channel Rejection	**Pass**

Table 2-6 Summary Test Result of BT RX Test

3 Current Consumption

Test Results:

State (at normal condition) Mode: DCDC	VCC（3.6V）		Unit
	Test	Max.	
RX (WLAN Active, 2.4 GHz, 1M DSSS/CCK)	29	-	mA
RX (WLAN Active, 2.4 GHz, 11M DSSS/CCK)	29.9	-	mA
RX (WLAN Active, 2.4 GHz, 20M Mode MCS0)	32.4	-	mA
RX (WLAN Active, 2.4 GHz, 20M Mode MCS7)	34.2	-	mA
RX (WLAN Active, 2.4 GHz, 40M Mode MCS0)	37.6	-	mA
RX (WLAN Active, 2.4 GHz, 40M Mode MCS7)	40.8	-	mA
TX (WLAN Active, 2.4 GHz, 16dBm, 11M DSSS/CCK)	141.8	-	mA
TX (WLAN Active, 2.4 GHz, 15dBm,20M Mode MCS0)	134.8	-	mA
TX (WLAN Active, 2.4 GHz, 14dBm,20M Mode MCS7)	127.3	-	mA
TX (WLAN Active, 2.4 GHz, 15dBm,40M Mode MCS0)	136.4	-	mA
TX (WLAN Active, 2.4 GHz, 14dBm,40M Mode MCS7)	124.7	-	mA
RX(BT Active,5dBm,DH1)	17.9	-	mA
RX(BT Active,5dBm,2DH3)	18.9	-	mA
RX(BT Active,5dBm,3DH5)	18.9	-	mA
TX(BT Active,5dBm,DH1)	40.5	-	mA
TX(BT Active,5dBm,2DH3)	40.8	-	mA
TX(BT Active,5dBm,3DH5)	41.2	-	mA

Table 3-1 Test Result of Current Consumption

4 WLAN TX Performance

4.1 11b Mode

Test Results:

Mode: 11b		Bandwidth: 20MHz						Data Rate: 11Mbps				Temperature: 30℃			
Items(Unit)	Spec.	Channel													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Output Power (dBm)	16±2	16.6	16.8	16.3	16.2	16.4	16.3	16.4	15.7	15.6	15.6	15.9	15.6	15.7	16
EVM (dB)	<-9	-32	-32	-32	-32	-32	-33	-32	-33	-32	-32	-32	-32	-32	-32
Mask	-	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass
Freq. Error (KHz)	±60	-11.2	-11.2	-11.2	-11.2	-11.3	-11.5	-11.6	-11.5	-11.7	-11.7	-11.7	-11.5	-11.6	-11.5
Symbol Clock Error (ppm)	±25	-5.24	-5.03	-4.93	-5.02	-5.21	-5.39	-5.34	-5.39	-5.48	-5.57	-5.6	-5.37	-5.45	-5.51

Table 4-1 Test Result of TX Performance in 802.11b Mode

Pass Criteria:

Follow the 802.11b criterions which are marked in “red color” in the table.

The mask criterion of 802.11b mode is shown in Figure 4-1.

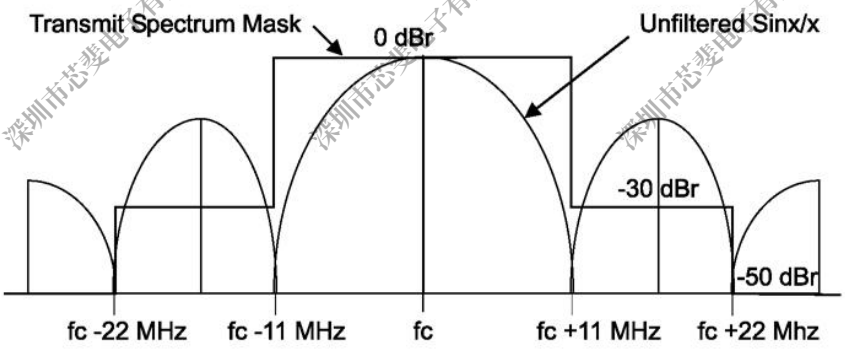

Figure 4-1 11b Mode Transmit Spectrum Mask

4.2 11g Mode

Test Results:

Mode: 11g		Bandwidth: 20MHz				Data Rate: 54Mbps				Temperature: 30℃					
Items(Unit)	Spec.	Channel													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Output Power (dBm)	15±2	15.1	15.2	15.2	15.1	15	14.8	15	14.6	14.5	14.5	14.4	14.5	14.5	14.9
EVM (dB)	<-25	-31	-30	-30	-30	-30	-30	-30	-30	-30	-30	-30	-30	-30	-31
Mask	-	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass
Freq. Error (KHz)	±48	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11	-12	-11
Symbol Clock Error (ppm)	±20	-4.7	-4.8	-5.1	-4.8	-4.8	-4.7	-4.6	-4.8	-4.5	-4.3	-4.7	-4.7	-5	-4.6

Table 4-2 Test Result of TX Performance in 802.11g Mode

Pass Criteria:

Follow the 802.11g criterions which are marked in “red color” in the table.

The mask criterion of 802.11g mode is shown in Figure 4-2.

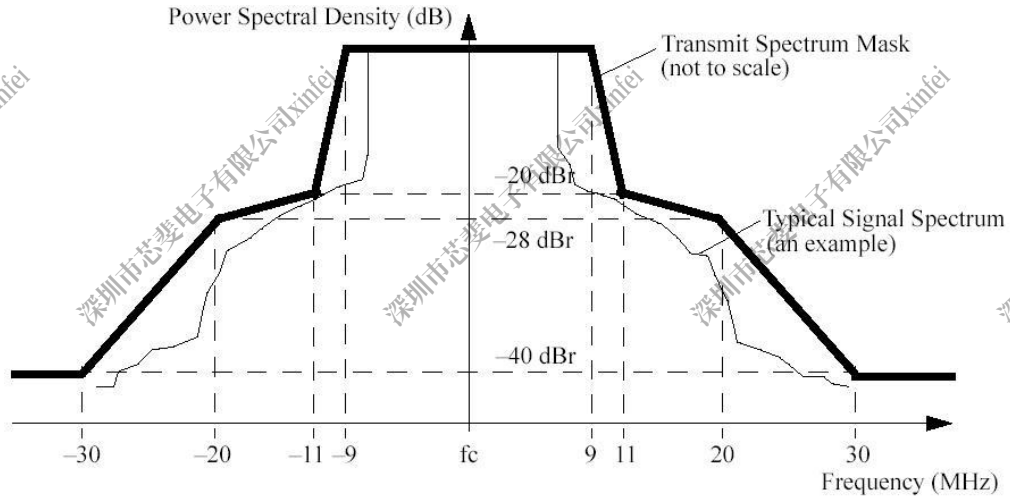

Figure 4-2 11g Mode Transmit Spectrum Mask

4.3 11n Mode

Test Results:

Mode: 11n		Bandwidth: 20MHz				Data Rate: 65Mbps				Temperature: 30℃					
Items(Unit)	Spec.	Channel													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Output Power (dBm)	14±2	14.4	14.1	14.1	14	13.8	13.7	13.9	13.5	13.4	13.3	13.4	13.4	13.7	13.9
EVM (dB)	<-28	-31	-30	-30	-30	-30	-30	-30	-30	-30	-30	-30	-30	-30	-31
Mask	-	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass
Freq. Error (KHz)	±48	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11
Symbol Clock Error (ppm)	±20	-4	-4.1	-3.3	-4.3	-3.8	-4.5	-3.8	-3.6	-3.8	-3.6	-3.4	-3.3	-3.2	-3.5

Table 4-3 Test Result of TX Performance in 802.11n Mode

Pass Criteria:

Follow the 802.11n criterions which are marked in “red color” in the table.

The mask criterion of 802.11n mode is shown in Figure 4-3.

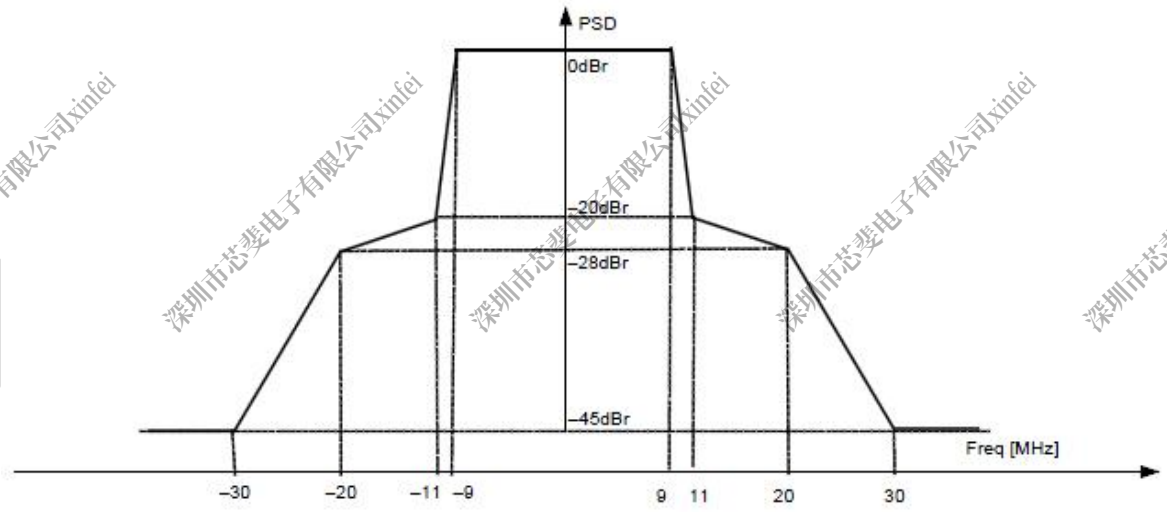

Figure 4-3 11n Mode Transmit Spectrum Mask

5 WLAN RX Performance

5.1 RX Sensitivity

Test Results:

Bandwidth: 20MHz		Temperature: 30℃													
Rate	Spec.	Channel													Unit
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
11b@ 11Mbps	<-85	-89	-89	-89	-89	-89	-89	-89	-89	-89	-89	-89	-89	-89	-90	dBm
11g@ 54Mbps	<-70	-75	-75	-75	-74	-75	-75	-75	-75	-75	-75	-75	-75	-75	-75	dBm
11n@ mcs7	<-69	-71	-71	-71	-71	-71	-71	-71	-71	-71	-71	-71	-71	-71	-71	dBm

Table 5-1 Test Result of RX Sensitivity

Pass Criteria:

Follow the criterions which are marked in “red color” in the table.

5.2 RX Maximum Input Level

Test Results:

Bandwidth: 20MHz		Temperature: 30℃													
Rate	Spec.	Channel													Unit
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
11b@ 11Mbps	>-10	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	dBm
11g@ 54Mbps	>-20	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	dBm
11n@ mcs7	>-20	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	dBm

Table 5-2 Test Result of RX Maximum Input Level

Pass Criteria:

Follow the 802.11 criterions which are marked in “red color” in the table.

5.3 Adjacent Channel Rejection

Test Results:

Bandwidth: 20MHz	Temperature: 30℃				
Rate	Spec.	Channel			Unit
		1	7	13	
11b @ 11Mbps(dB)	>35	35.2	35.2	35.1	dB
11g @ 54Mbps(dB)	>-1	18.9	19.2	19.4	dB
11n @ mcs7(dB)	>-2	10.2	10.2	10.2	dB

Table 5-3 Test Result of Adjacent Channel Rejection

Pass Criteria:

Follow the 802.11 criterions which are marked in “red color” in the table.

5.4 Nonadjacent Channel Rejection

Test Results:

Bandwidth: 20MHz	Temperature: 30℃				
Rate	Spec.	Channel			Unit
		1	7	13	
11g @ 54Mbps	>15	23.2	23.2	23.2	dB
11n @ mcs7	>14	19.2	19.2	19.2	dB

Table 5-4 Test Result of Nonadjacent Channel Rejection

Pass Criteria:

Follow the 802.11 criterions which are marked in “red color” in the table.

6 WLAN Field Trial Test

Test Equipment:

PC with Pentium 4 CPU inside or better equipment

Shielding room

Chariot v5.0 or later version or Iperf

Test Results:

Bandwidth: 20/40MHz		Distance: 1m				Mode: TCP			Temperature: 30℃					
Item(Unit)	Spec	Channel												
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
UpLink TX-20M(Mbps)	>40	44.8	44.5	44.6	44.8	44.7	44.4	44.8	44.7	44.3	44.8	44.5	44.4	43.7	43.9
DownLink RX-20M(Mbps)	>40	46.1	45.1	46.2	46.1	45.5	43.2	41.9	41.6	46.1	43.1	41.6	45.5	43.8	41.3
UpLink TX-40M(Mbps)	>75	77.4	77.8	78.3	76	79.1	77.8	77.3	78	77.2	77.5	78.5	77.9	78.4	77.6
DownLink RX-40M(Mbps)	>70	72.5	80.7	81.3	71	82	79.9	70.8	71	82.6	83.5	84	80.8	77.5	78.5

Table 6-1 Test Result of Throughput in Shielding Room

Pass Criteria:

Follow the criterions which are marked in “red color” in the table.

7 BlueTooth TX Performance

7.1 Output Power

Test Results:

Mode: Loopback Hooping: On Rate: DH5					
Item	Spec.	Channel			Unit
		0	39	78	
Average Power	-6~20	7.4	7.32	7.28	dBm
Peak Power	<23	7.9	7.8	7.73	dBm

Table 7-1 Test Result of BT Output Power

Pass Criteria:

Follow the criterions which are marked in “red color” in the table.

7.2 Adjacent Channel Power

Test Results:

Mode: Loopback Hooping: Off Rate: Longest DH1					
Item	Spec.	CH0	CH39	CH78	Unit
Max PTx(f) F = F0 + 2 MHz	≦20	-44.63	-44.32	-44.29	dBm
Max PTx(f) F = F0 - 2 MHz	≦20	-44.55	-44.56	-44.29	dBm
Max PTx(f) F = F0 + 3 MHz	≦40	-48.09	-48.16	-47.4	dBm
Max PTx(f) F = F0 - 3 MHz	≦40	-48.14	-48.17	-47.64	dBm
Exceptions frequency count	≦3	0	0	0	dBm
Exceptions count if > -20dBm	=0	0	0	0	dBm

Table 7-2 Test Result of BT Adjacent Channel Power

Pass Criteria:

1. PTx(f) ≦ -20 dBm for |M-N| = 2 (M: Tx Channel, N: Adjacent Channel)
2. PTx(f) ≦ -40 dBm for |M-N| ≧ 3 (M: Tx Channel, N: Adjacent Channel)

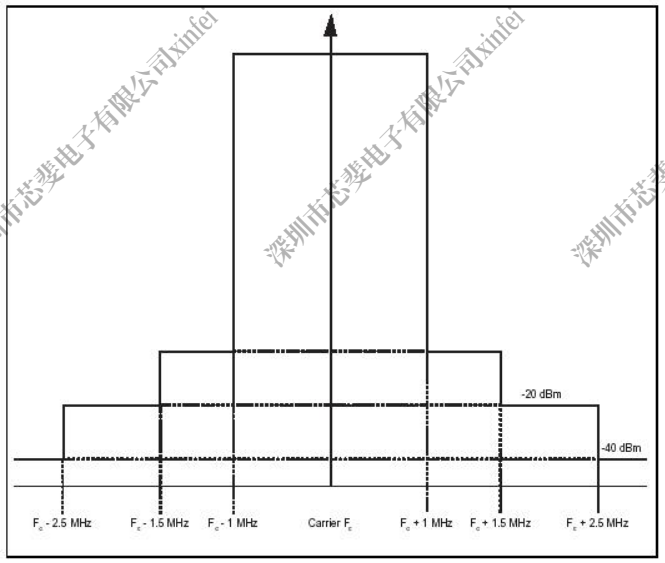

Figure 7-1 The limit definition of the BR output power

7.3 Carrier Frequency Drift

Test Results:

Mode: Loopback with whitening off Or Tx Hooping: On Rate: Longest DH1/3/5					
Item	Spec.	CH0	CH39	CH78	Unit
Frequency Drift - Maximum, DH1	≦±25	5.9	6.99	6.1	KHz
Frequency Drift - Maximum, DH3	≦±40	6.5	5.8	6.08	KHz
Frequency Drift - Maximum, DH5	≦±40	6.91	6.75	8.12	KHz
Max Drift Rate (per 50 μs), DH1	≦±20	2.05	2.01	-1.99	KHz
Max Drift Rate (per 50 μs), DH3	≦±20	-2.95	-1.89	-2.24	KHz
Max Drift Rate (per 50 μs), DH5	≦±20	2.27	2.7	2.42	KHz

Table 7-3 Test Result of BT Carrier Frequency Drift

Pass Criteria:

1. Frequency drift ≦ ± 25KHz for One-slot packet
2. Frequency drift ≦ ± 40KHz for Three-slot packet
3. Frequency drift ≦ ± 40KHz for Five-slot packet
4. Maximum drift rate ≦ 20KHz/50us

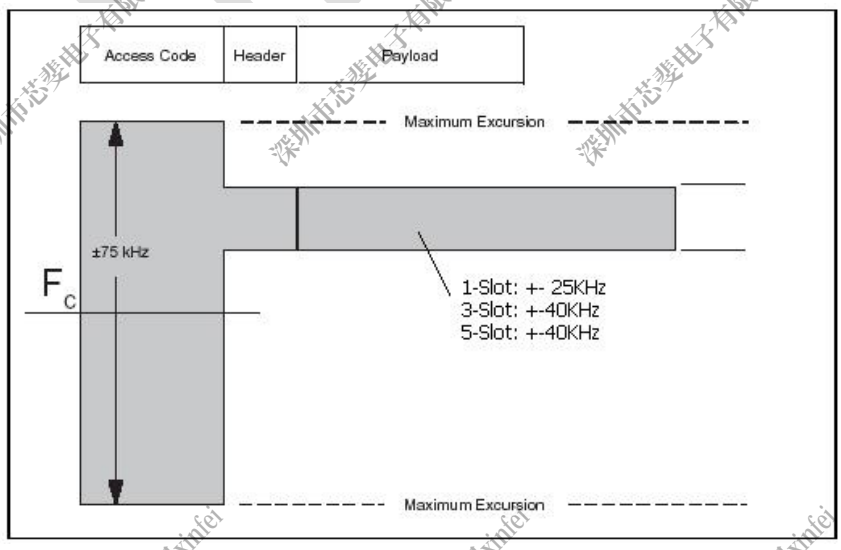

Figure 7-2 The limits of the initial carrier frequency drift test

7.4 EDR Relative Transmit Power

Test Results:

Mode: Loopback Or Tx Hooping: Off Rate: 2-DH5/3-DH5 with PRBS9					
Item	Spec.	CH0	CH39	CH78	Unit
GFSK Power, 2-DH5	-	6.61	6.59	6.6	dBm
DPSK Power, 2-DH5	-	6.03	6	6.01	dBm
DPSK Power - GFSK Power, 2-DH5	-4~1	-0.58	-0.59	-0.59	dBm
GFSK Power, 3-DH5	-	6.62	6.6	6.6	dBm
DPSK Power, 3-DH5	-	6.12	6.1	6.11	dBm
DPSK Power - GFSK Power, 3-DH5	-4~1	-0.5	-0.5	-0.49	dBm

Table 7-4 Test Result of BT EDR transmit maximum output Power

Mode: Loopback Or Tx Hooping: Off Rate: 2-DH5/3-DH5 with PRBS9					
Item	Spec.	CH0	CH39	CH78	Unit
GFSK Power, 2-DH5	-	-19.61	-19.77	-19.89	dBm
DPSK Power, 2-DH5	-	-20.14	-20.3	-20.42	dBm
DPSK Power - GFSK Power, 2-DH5	-4~1	-0.53	-0.53	-0.53	dBm
GFSK Power, 3-DH5	-	-19.61	-19.77	-19.89	dBm
DPSK Power, 3-DH5	-	-20.19	-20.19	-20.31	dBm
DPSK Power - GFSK Power, 3-DH5	-4~1	-0.42	-0.42	-0.42	dBm

Table 7-5 Test Result of BT EDR transmit minimum output Power

Pass Criteria:

1. (PeakGFSK - 4dB) < PeakDPSK < (PeakGFSK+ 1dB)

7.5 EDR Carrier Frequency Stability and Modulation Accuracy

Test Results:

Mode: Loopback Or Tx with whitening off Hooping: Off Rate: 2-DH5/3-DH5 with PRBS9					
Item	Spec.	CH0	CH39	CH78	Unit
Initial Frequency Error-2DH5	-75~75	4.96	4.34	4.9	KHz
Frequency Error-2DH5	-10~10	-0.61	0.35	-0.2	KHz
Block Frequency Error-2DH5	-75~75	4.81	4.86	4.94	KHz
RMS DEVM-2DH5	≦20	7	6	6	%
Peak DEVM-2DH5	≦35	13	13	14	%
99% DEVM-2DH5	≦30	11	11	11	%
Initial Frequency Error-3DH5	-75~75	4.27	4.88	3.86	KHz
Frequency Error-3DH5	-10~10	0.46	-0.4	1.12	KHz
Block Frequency Error-3DH5	-75~75	4.85	4.86	4.98	KHz
RMS DEVM-3DH5	≦13	6	6	6	%
Peak DEVM-3DH5	≦25	15	14	14	%
99% DEVM-3DH5	≦20	12	11	12	%

Table 7-6 Test Result of BT EDR Carrier Frequency Stability and Modulation Accuracy

Pass Criteria:

1. Carrier frequency stability: (ωi- Initial frequency error; ω0 - frequency error in payload)

   -75KHz ≦ ωi ≦ +75KHz for all packets

   -75KHz ≦ (ωi +ωo) ≦ +75KHz for all blocks

   -10KHz ≦ ωo ≦ +10KHz for all blocks

2. RMS DEVM ≦ 0.2 for all Π/4-DQPSK blocks

   RMS DEVM ≦ 0.13 for all 8DPSK blocks

3. Peak DEVM ≦ 0.35 for all Π/4-DQPSK symbols

Peak DEVM ≦ 0.25 for all 8DPSK symbols

4. 99% DEVM ≦ 0.3 for all Π/4-DQPSK symbols

   99% DEVM ≦ 0.2 for all 8DPSK symbols

7.6 EDR In-band Spurious Emissions

Test Results:

Mode: Loopback Or Tx with whitening off Hooping: Off Rate: 2-DH5/3-DH5 with PRBS9					
Channel	Spec.	CH0	CH39	CH78	Unit
Tx Power Difference for M-N = +1(dBm)-2DH5	≦-22.2	-31.75	-32.18	-32.33	dBm
Tx Power Difference for M-N = -1 (dBm)-2DH5	≦-22.2	-31.44	-32.24	-32.16	dBm
Tx Power for M-N ≧ +3 (dBm)-2DH5	≦-40	-41.58	-41.91	-41.37	dBm
Tx Power for M-N = +2(dBm)-2DH5	≦-20	-31.26	-32.31	-31.75	dBm
Tx Power for M-N = -2(dBm)-2DH5	≦-20	-31.43	-31.98	-32.09	dBm
Tx Power for M-N ≦ -3 (dBm)-2DH5	≦-40	-41.85	-41.89	-41.16	dBm
Exceptions frequency count-2DH5	≦3	0	0	0	/
Exceptions count if > -20dBm-2DH5	=0	0	0	0	/
Tx Power Difference for M-N = +1(dBm)-3DH5	≦-22.2	-31.92	-32.49	-32.64	dBm
Tx Power Difference for M-N = -1 (dBm)-3DH5	≦-22.2	-31.59	-32.18	-32.19	dBm
Tx Power for M-N ≧ +3 (dBm)-3DH5	≦-40	-41.68	-41.95	-40.87	dBm
Tx Power for M-N = +2(dBm)-3DH5	≦-20	-31.36	-31.98	-32	dBm
Tx Power for M-N = -2(dBm)-3DH5	≦-20	-31.46	-31.78	-31.85	dBm
Tx Power for M-N ≦ -3 (dBm)-3DH5	≦-40	-41.75	-41.57	-41.22	dBm
Exceptions frequency count-3DH5	≦3	0	0	0	/
Exceptions count if > -20dBm-3DH5	=0	0	0	0	/

Table 7-7 Test Result of BT EDR In-band spurious emissions

Pass Criteria:

1. PTX-26dB(f) ≦ PTXref - 26dB for |M-N| = 1 (M: Tx Channel, N: Adjacent Channel)
2. PTX(f) ≦ -20dBm for |M-N| = 2 (M: Tx Channel, N: Adjacent Channel)
3. PTX(f) ≦ -40dBm for |M-N| ≧ 3 (M: Tx Channel, N: Adjacent Channel)

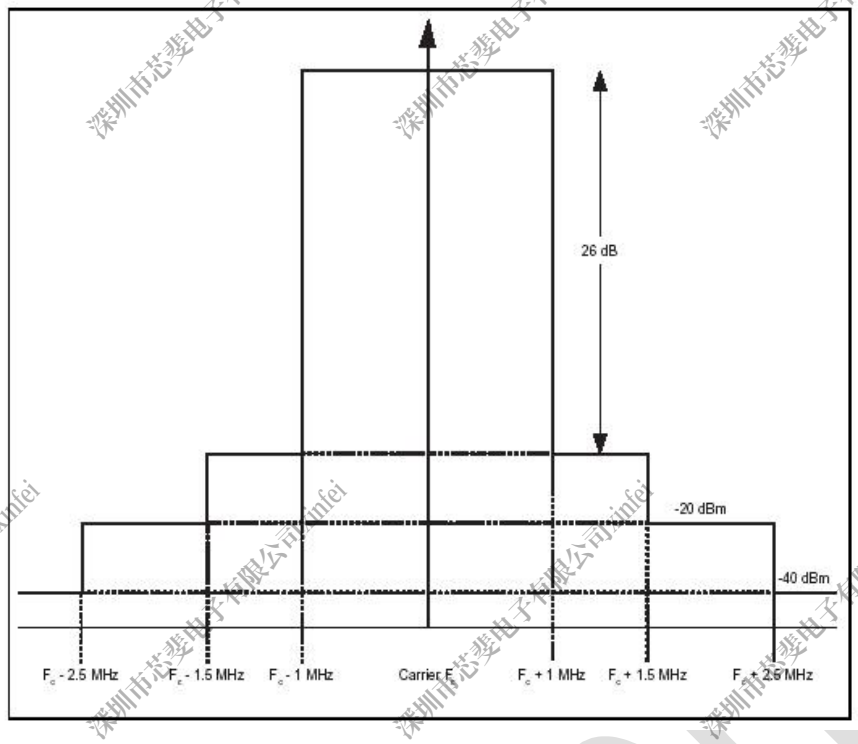

Figure 7-3 The EDR in-band spurious limits definition

7.7 BLE Output Power

Test Results:

Mode: Direct Tx with Whitening off Hooping: Off Packet type: PRBS9(37 octets)					
Channel	Spec.	CH0	CH19	CH39	Unit
Average Power	-20~+10	7.35	7.22	7.22	dBm
Peak Power	-20~+10	8.02	7.81	7.78	dBm

Table 7-8 Test Result of BLE Output Power

Pass Criteria:

1. -20 dBm ≤ P_{AVG} ≤ +10 dBm
2. -20 dBm ≤ P_{PK} ≤ +10dBm

7.8 BLE In-Band Emissions

Test Results:

Mode: Direct Tx with whitening off Hooping: Off Packet Type: PRBS9(37octets)					
Channel	Spec.	Ch3	Ch19	CH37	Unit
PTX(f) for f = N	-	7.34	7.24	7.12	dBm
Tx Power for M-N ≧ +3	≦-30	-46.87	-46.38	-47.07	dBm
Tx Power for M-N = +2	≦-20	-43.79	-43.54	-43.9	dBm
Tx Power for M-N = -2	≦-20	-43.79	-43.54	-44.32	dBm
Tx Power for M-N ≦ -3	≦-30	-47.06	-43.54	-43.9	dBm
Exceptions frequency count	≦3	0	0	0	dBm
Exceptions count if > -20dBm	=0	0	0	0	dBm

Table 7-9 Test Result of BT BLE In-Band Emissions

Pass Criteria:

1. PTX ≤ -20 dBm for (fTX ± 2 MHz)
2. PTX ≤ -30 dBm for (fTX ± [3 + n] MHz]); where n=0,1,2…

7.9 BLE Modulation Characteristics

Test Results:

Mode: Direct Tx with whitening off Hooping: Off Packet Type: PRBS9(37octets)					
Channel	Spec.	0	19	39	Unit
Frequency Deviation df1 Average	225~275	254.97	254.74	254.53	kHz
Frequency Deviation df2 99.9%	≧185	207.44	209.14	206.94	kHz
Frequency Deviation df2 Average / df1 Average	≧0.8	0.9	0.9	0.91	/

Table 7-10 Test Result of BLE Modulation Characteristics

Pass Criteria:

1. 225 kHz ≤ Δf1avg ≤ 275 kHz
2. At least 99.9% of all Δf2max frequency values recorded over 10 test packets must be greater than 185 kHz
3. $\triangle f2_{avg} / \triangle f1_{avg} \geqq 0.8$

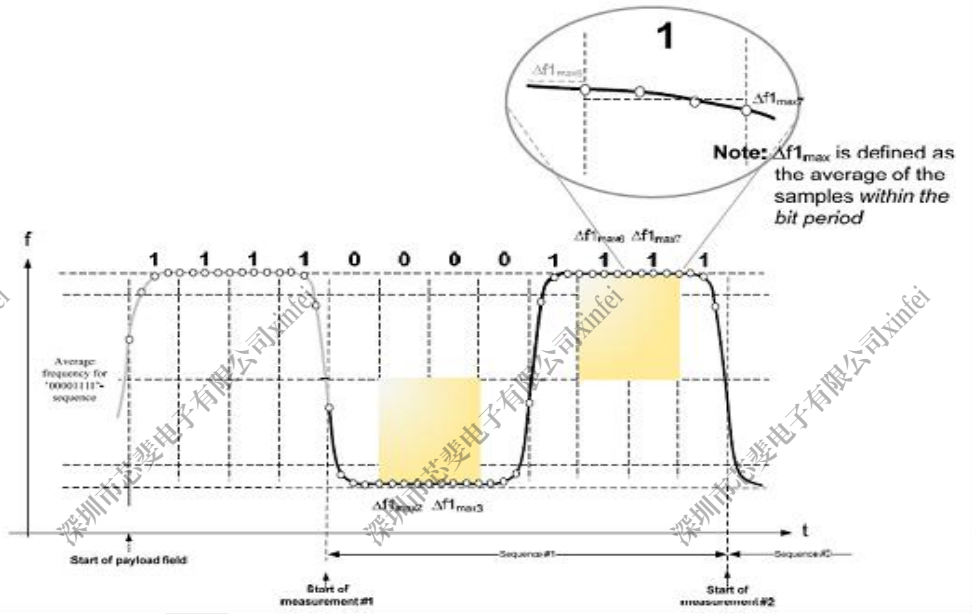

Figure 7-4 TheΔf1 definition of the BLE Modulation Characteristics test

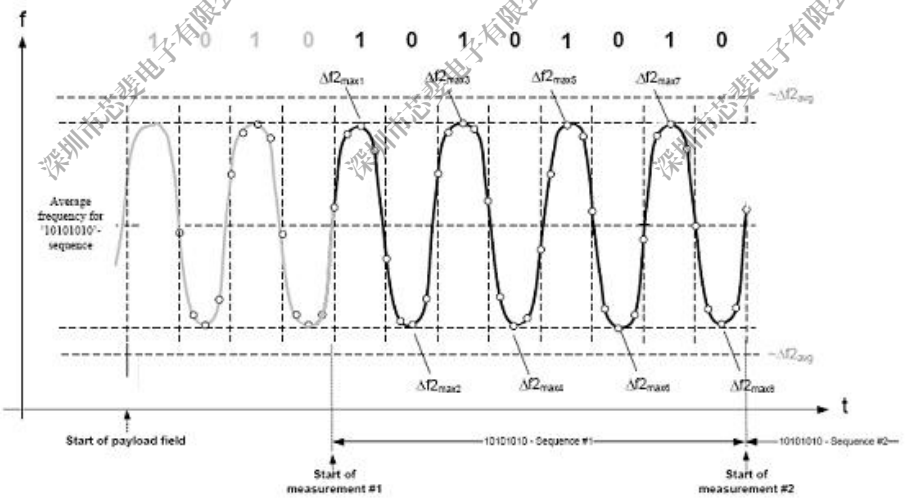

Figure 7-5 TheΔf2 definition of the BLE Modulation Characteristics test

7.10 BLE Carrier Frequency Offset and Drift

Test Results:

Mode: Direct Tx with whitening off Hooping: Off Packet Type: PRBS9(37octets)					
Channel	Spec.	0	19	39	Unit
Frequency Accuracy	-150~+150	-14.39	-14.55	-14.6	KHz
Frequency Offset	-150~+150	-14.39	-14.55	-14.6	KHz
Frequency Drift	-50~+50	2.66	2.45	2.34	KHz
Max Drift Rate/ 50us	-20~+20	-1.22	-1.48	-1.88	KHz
Initial Frequency Drift	-20~+20	3.74	3.31	3.75	/

Table 7-11 Test Result of BLE Carrier Frequency Offset and Drift

Pass Criteria:

1. $f_{TX} - 150\ kHz \le f_n \le f_{TX} + 150\ kHz$
2. $|f_0 - f_n| \le 50\ kHz$ where n=2,3,4…k
3. $|f_1 - f_0| \le 20\ kHz$ and $|f_n - f_{n-5}| \le 20\ kHz$

8 BlueTooth RX Performance

8.1 Receiver Sensitivity

Test Results:

Mode: Loopback with Dirty-Tx on Hooping: On/Off Packet Type: PRBS9					
Rate	Spec.	CH0	CH39	CH78	Unit
DH1	≦-85	-90	-90	-90	dBm
DH3	≦-85	-90	-90	-90	dBm
DH5	≦-85	-90	-90	-90	dBm
2-DH1	≦-87	-92	-92	-92	dBm
2-DH3	≦-87	-92	-92	-92	dBm
2-DH5	≦-87	-92	-92	-91	dBm
3-DH1	≦-80	-84	-84	-84	dBm
3-DH3	≦-80	-84	-84	-84	dBm
3-DH5	≦-80	-83	-83	-83	dBm
BLE	≦-87	-93	-92	-93	dBm

Table 8-1 Test Result of BT Rx Sensitivity

Pass Criteria:

1. (DHx): BER ≦ 0.1% (minimum number of samples, 1600000 returned payload bits)
2. (2-DHx/3-DHx):

   ① . BER ≦ $7*10^{-5}$ (minimum number of samples, 1600000 returned payload bits)

   ② . If Criterion-1 fail then BER ≦ 10^{-4} (minimum number of samples, 16000000 returned payload bits)
3. (BLE):PER better than 30.8% for a minimum of 1500 packets transmitted by the tester.

8.2 RX Maximum Input Level

Test Results:

Mode: Loopback with Dirty-Tx on Hooping: On/Off Packet Type: PRBS9					
Rate	Spec.	CH3	CH39	CH78	Unit
DH1	≥-20	>0	>0	>0	dBm
DH3	≥-20	>0	>0	>0	dBm
DH5	≥-20	>0	>0	>0	dBm
2-DH1	≥-20	>0	>0	>0	dBm
2-DH3	≥-20	>0	>0	>0	dBm
2-DH5	≥-20	>0	>0	>0	dBm
3-DH1	≥-20	>0	-0.5	-0.5	dBm
3-DH3	≥-20	>0	-0.5	-0.5	dBm
3-DH5	≥-20	>0	-0.5	-0.5	dBm
BLE	≥-10	>0	>0	>0	dBm

Table 8-2 Test Result of RX Maximum Input Level

Pass Criteria:

1. (DHx): BER ≦ 0.1% (minimum number of samples, 1600000 returned payload bits)
2. (2-DHx/3-DHx):
   ① BER ≦ $7*10^{-5}$ (minimum number of samples, 1600000 returned payload bits)
   ② If Criterion-1 fail then BER ≦ 10^{-4} (minimum number of samples, 16000000 returned payload bits)
3. (BLE):PER better than 30.8% for a minimum of 1500 packets transmitted by the tester.

8.3 Adjacent Channel Rejection

Test Results:

Mode: Loopback with Dirty-Tx on Hooping: On/Off Packet Type: PRBS9						
Rate	Item	Spec.	CH3	CH39	CH78	Unit
BR	$C/I_{co\text{-}channel}$	≦11	8	8	9	dB
	C/I_{+1MHz}	≦0	-5	-5	-5	dB
	C/I_{-1MHz}	≦0	-3	-3	-3	dB
	C/I_{+2MHz}	≦-30	-35	-34.2	-34	dB
	C/I_{-2MHz}	≦-30	-22	-20	-19	dB
	C/I_{+3MHz}	≦-40	-41	-41	-41	dB
	C/I_{-3MHz}	≦-40	-32	-36	-31	dB
EDR 2Mbps	$C/I_{co\text{-}chnnel}$	≦13	11	11	11	dB
	C/I_{+1MHz}	≦0	-10	-10	-10	dB
	C/I_{-1MHz}	≦0	-10	-8	-8	dB
	C/I_{+2MHz}	≦-30	-35	-34	-34	dB
	C/I_{-2MHz}	≦-30	-17	-18	-17	dB
	C/I_{+3MHz}	≦-40	-41	-40	-40	dB
	C/I_{-3MHz}	≦-40	-30	-29	-29	dB
EDR 3Mbps	$C/I_{co\text{-}channel}$	≦21	19	19	19	dB
	C/I_{+1MHz}	≦5	-3	-5	-3	dB
	C/I_{-1MHz}	≦5	-3	-4	-3	dB
	C/I_{+2MHz}	≦-25	-33	-34	-33	dB
	C/I_{-2MHz}	≦-25	-9	-9	-9	dB
	C/I_{+3MHz}	≦-33	-36	-36	-36	dB
	C/I_{-3MHz}	≦-33	-32	-31	-30	dB
BLE	$C/I_{co\text{-}channel}$	≦21	4	5	5	dB
	C/I_{+1MHz}	≦15	-7	-9	-9	dB
	C/I_{-1MHz}	≦15	-7	-8	-8	dB
	C/I_{+2MHz}	≦-17	-35	-36	-36	dB

	C/I_{-2MHz}	≦-17	-26	-25	-25	dB
	C/I_{+3MHz}	≦-27	-41	-41	-41	dB
	C/I_{-3MHz}	≦-27	-29	-31	-30	dB

Table 8-3 Test Result of Adjacent Channel Rejection

Pass Criteria:

1. BR: BER ≦ 0.1% (minimum number of samples, 1600000 returned payload bits)
2. EDR:
   ① BER ≦ $7*10^{-5}$ (minimum number of samples, 1600000 returned payload bits)
   ② If Criterion-1 fail then BER ≦ 10^{-4} (minimum number of samples, 16000000 returned payload bits)
3. BLE: PER better than 30.8% for a minimum of 1500 packets transmitted by the tester.

