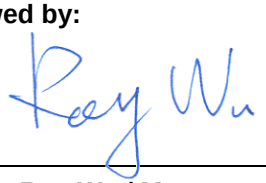
FCC RF Test Report

APPLICANT	:	Brightstar Corporation
EQUIPMENT	:	Access Point
BRAND NAME	:	Avvio
MODEL NAME	:	HT851W
FCC ID	:	WVBHT851W
STANDARD	:	FCC Part 15 Subpart C §15.247
CLASSIFICATION	:	Digital Transmission System (DTS)

The product was received on Mar. 19, 2011 and completely tested on Apr. 09, 2011. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (KUNSHAN) INC., the test report shall not be reproduced except in full.

Reviewed by:



Roy Wu / Manager

SPORTON INTERNATIONAL (KUNSHAN) INC.
No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR131909	Rev. 01	Initial issue of report	May 11, 2011

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	A8.2(a)	6dB Bandwidth	≥ 0.5MHz	Pass	-
3.2	15.247(b)	A8.4	Power Output	≤ 30dBm	Pass	-
3.3	15.247(d)	A8.5	Frequency Band Edges	≤ 20dBc	Pass	-
3.4	15.247(d)	A8.5	Spurious Emission	< 20 dBc	Pass	-
3.5	15.247(e)	A8.2(b)	Power Spectral Density	≤ 8dBm	Pass	-
3.6	15.207	Gen 7.2.2	AC Conducted Emission	15.207(a)	Pass	Under limit 12.45 dB at 0.42 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 3.92 dB at 34.59 MHz
3.8	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Brightstar Corporation
9725 NW 117th Ave., Miami, Florida, United States

1.2 Manufacturer

Shanghai Longcheer 3g Technology Co., Ltd.
No. 1, Building 5, 299 Bisheng Rd., Zhangjiang Hi-Tech Park, Pudong, Shanghai, P.R. China

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Access Point
Brand Name	Avvio
Model Name	HT851W
FCC ID	WVBHT851W
Tx/Rx Frequency Range	2400 MHz ~ 2483.5 MHz
Number of Channels	11
Carrier Frequency of Each Channel	2412+(n-1)*5 MHz; n=1~11
Channel Spacing	5 MHz
Maximum Output Power to Antenna	802.11b : 17.97 dBm (0.063 W) 802.11g : 15.32 dBm (0.034 W) 802.11n (BW 20MHz) : 15.38 dBm (0.035 W) 802.11n (BW 40MHz) : 14.72 dBm (0.030 W)
Antenna Type	Chip Antenna with gain 1 dBi
HW Version	L0AM092A4-2
SW Version	V1.1
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Identical Prototype

Remark:

1. For other wireless features of this EUT, test report will be issued separately.
2. This test report recorded only product characteristics and test results of Digital Transmission System (DTS).
3. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.	
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C. TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958	
Test Site No.	Sporton Site No.	
	CO01-KS	03CH01-KS

1.5 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 (Measurement Guidelines of DTS)
- ANSI C63.4-2003
- IC RSS-210 Issue 8

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B (DoC), recorded in a separate test report.

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	GW	GPC-60300	N/A	N/A	Unshielded, 1.8 m
3.	USB	Toshiba	ULP1	N/A	N/A	N/A
4.	Phone	BBK	HCD007(6082)TSD	N/A	N/A	N/A
5.	Router	Linksys	WRT600N	Q87-WRT60NV11	N/A	AC I/P: Unshielded, 1.8m DC O/P: Shielded, 1.8m

2 Test Configuration of Equipment Under Test

2.1 RF Power

Preliminary tests were performed in different data rate and recorded the RF power output in the following table:

Channel	Frequency	2.4GHz 802.11b RF Power (dBm)			
		DSSS Data Rate			
		1 Mbps	2 Mbps	5.5 Mbps	11 Mbps
CH 01	2412 MHz	17.82	17.92	17.94	**17.97**
CH 06	2437 MHz	17.84	17.87	17.89	17.95
CH 11	2462 MHz	17.21	17.33	17.16	17.36

Channel	Frequency	2.4GHz 802.11g RF Power (dBm)							
		OFDM Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 01	2412 MHz	**15.32**	15.31	15.28	15.26	15.21	15.17	15.18	15.12
CH 06	2437 MHz	15.08	15.13	15.11	15.16	15.08	15.04	15.06	15.07
CH 11	2462 MHz	14.41	14.39	14.44	14.35	14.42	14.38	14.38	14.36

Channel	Frequency	2.4GHz 802.11n (BW 20MHz) RF Power (dBm)							
		OFDM Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 01	2412 MHz	15.35	**15.38**	15.36	15.31	15.34	15.34	15.32	15.29
CH 06	2437 MHz	15.33	15.32	15.28	15.26	15.20	15.22	15.18	15.26
CH 11	2462 MHz	14.71	14.68	14.65	14.68	14.66	14.63	14.57	14.56

Channel	Frequency	2.4GHz 802.11n (BW 40MHz) RF Power (dBm)							
		OFDM Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 03	2422 MHz	**14.72**	14.66	14.65	14.62	14.54	14.51	14.58	14.55
CH 06	2437 MHz	14.62	14.51	14.45	14.52	14.58	14.45	14.38	14.51
CH 09	2452 MHz	14.28	14.27	14.34	14.31	14.19	14.25	14.28	14.28

Remark:

1. The data rates of WLAN 802.11b/g/n were set in 11Mbps for 802.11b, 6Mbps for 802.11g, MCS1 for 802.11n (BW 20MHz), and MCS0 for 802.11n (BW 40MHz) for all the test cases due to the highest RF output power.
2. The EUT is programmed to transmit signals continuously for all testing.

2.2 Test Mode

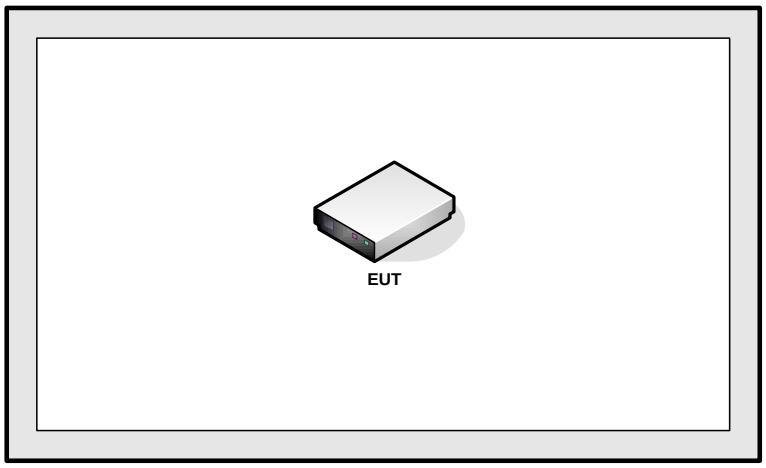
The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 kHz to 30 MHz), radiated emission (30 MHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

Pre-scanned tests were conducted to determine the final configuration from all possible combinations. The following tables are showing the test modes as the worst cases and recorded in this report.

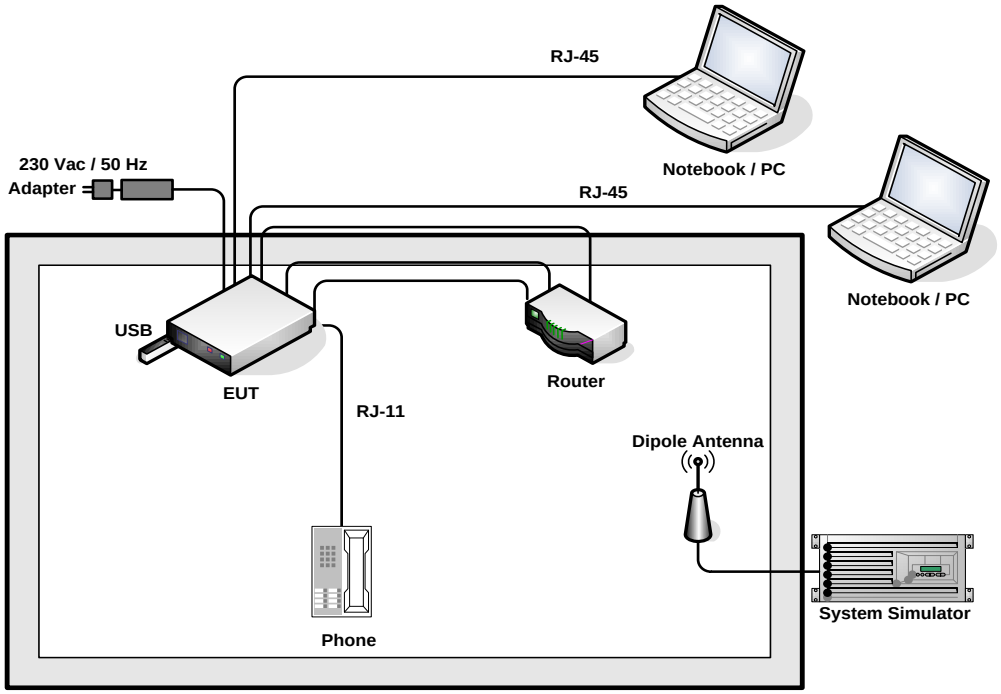
Test Cases		
Test Item	**802.11b (Modulation : DSSS)**	**802.11g/n (Modulation : OFDM)**
Conducted TCs	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b CH06_2437 MHz Mode 3 : 802.11b CH11_2462 MHz	Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz Mode 7: 802.11n (BW 20M)_CH01_2412 MHz Mode 8: 802.11n (BW 20M)_CH06_2437 MHz Mode 9: 802.11n (BW 20M)_CH11_2462 MHz Mode 10: 802.11n (BW 40M)_CH03_2422 MHz Mode 11: 802.11n (BW 40M)_CH06_2437 MHz Mode 12: 802.11n (BW 40M)_CH09_2452 MHz
Radiated TCs	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b CH06_2437 MHz Mode 3 : 802.11b CH11_2462 MHz	Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz Mode 7: 802.11n (BW 20M)_CH01_2412 MHz Mode 8: 802.11n (BW 20M)_CH06_2437 MHz Mode 9: 802.11n (BW 20M)_CH11_2462 MHz Mode 10: 802.11n (BW 40M)_CH03_2422 MHz Mode 11: 802.11n (BW 40M)_CH06_2437 MHz Mode 12: 802.11n (BW 40M)_CH09_2452 MHz
AC Conducted Emission	Mode 1 ： GSM850 Idle + WLAN Link + Adapter + RJ-11 + RJ-45 + USB Link	

2.3 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.4 RF Utility

The programmed RF utility “RT3052QA” is installed in EUT to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testing. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

3 Test Result

3.1 6dB Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

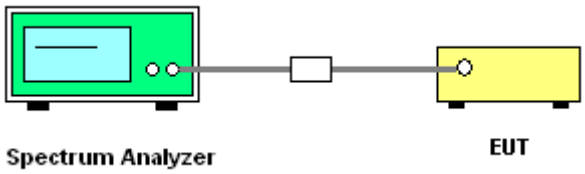
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW. The 6 dB bandwidth must be greater than 500 kHz.
4. The marker-delta reading at this point is the 6 dB bandwidth of the emission.

3.1.4 Test Setup

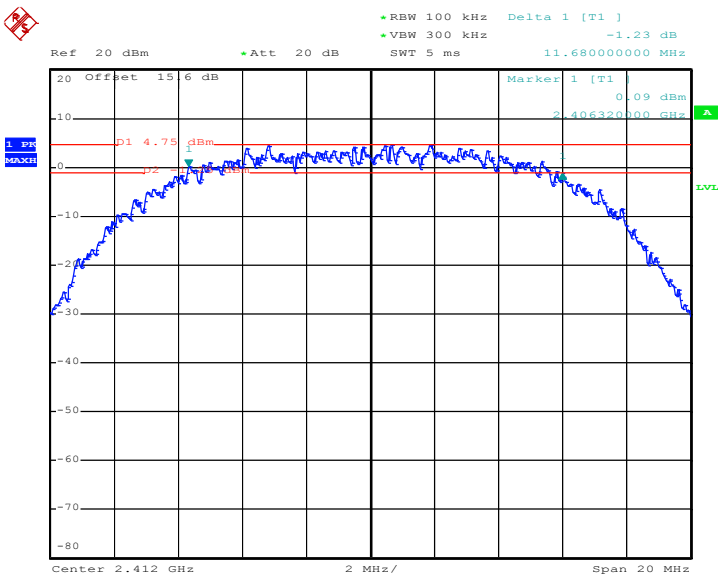


3.1.5 Test Result of 6dB Bandwidth

Test Mode :	Mode 1, 2, 3	Temperature :	20~21℃
Test Engineer :	Fly Chen	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	11.68	0.5	Pass
06	2437	11.52	0.5	Pass
11	2462	11.52	0.5	Pass

Mode 1 : 6 dB Bandwidth Plot on 802.11b Channel 01



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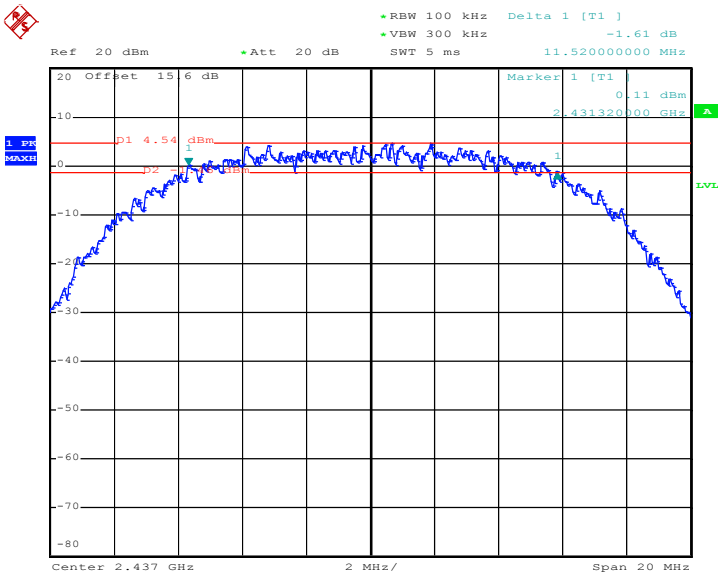
Mode 2 : 6 dB Bandwidth Plot on 802.11b Channel 06



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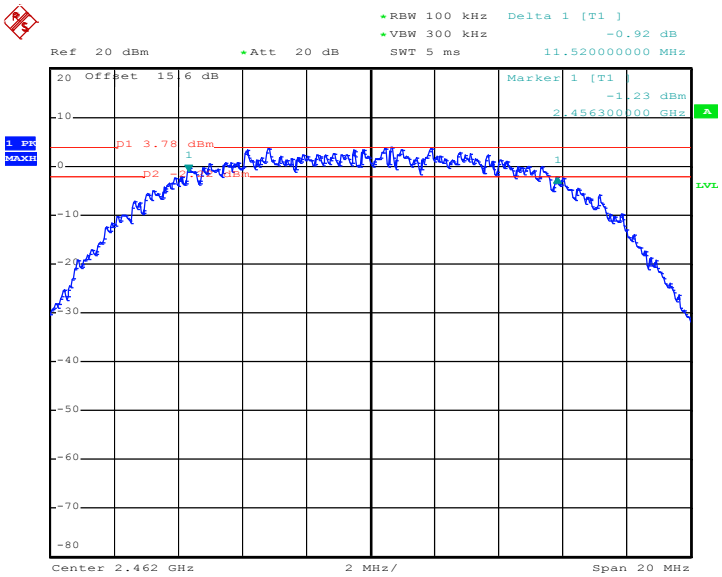
Mode 3 : 6 dB Bandwidth Plot on 802.11b Channel 11



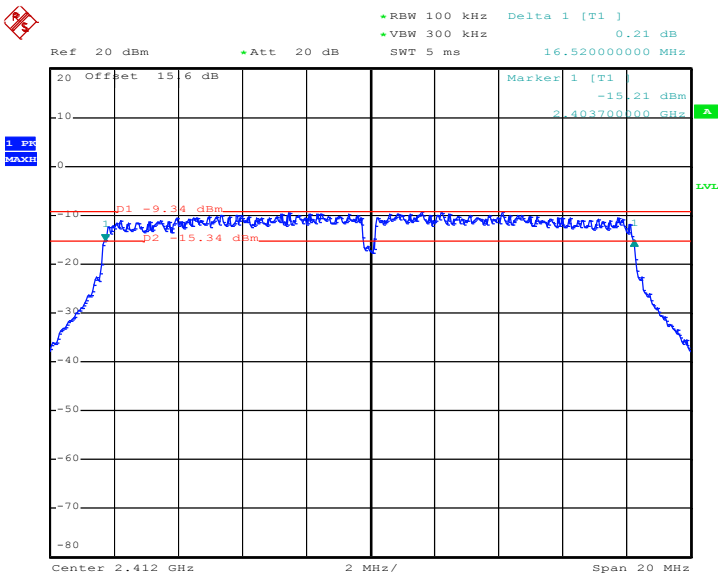
TH-01

Date: 9.APR.2011 19:01:15

Test Mode :	Mode 4, 5, 6	Temperature :	20~21℃
Test Engineer :	Fly Chen	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	16.52	0.5	Pass
06	2437	16.48	0.5	Pass
11	2462	16.48	0.5	Pass

Mode 4 : 6 dB Bandwidth Plot on 802.11g Channel 01



TH-01

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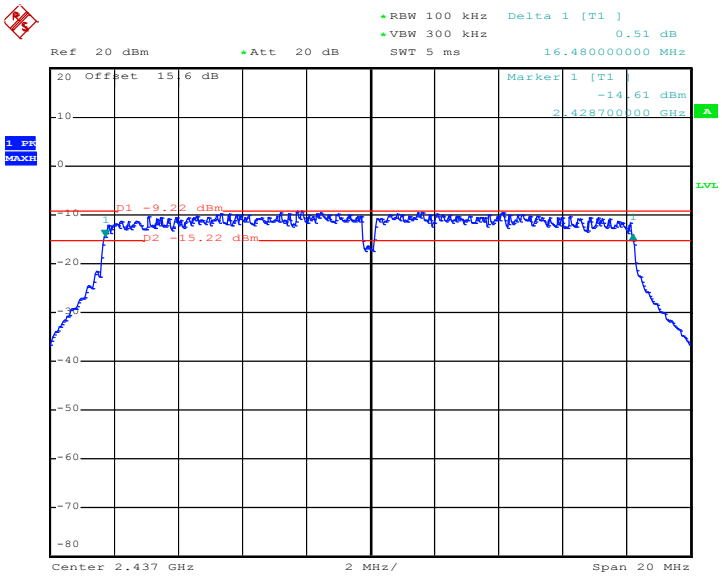
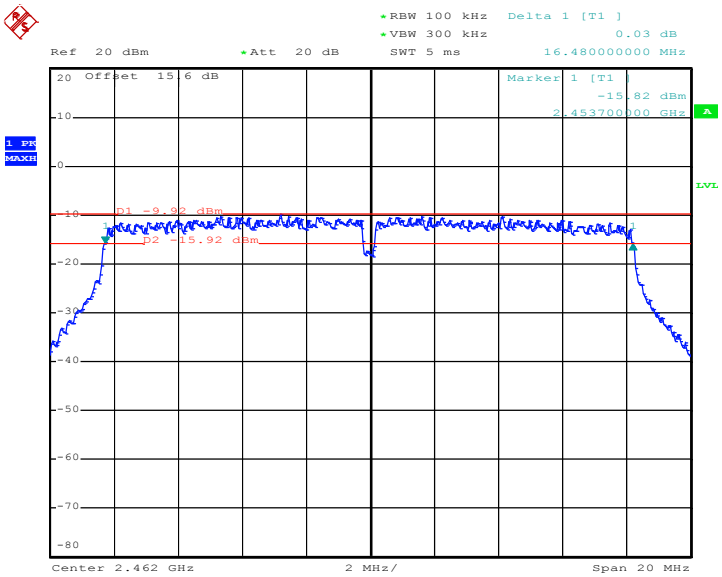
Mode 5 : 6 dB Bandwidth Plot on 802.11g Channel 06



TH-01

Date: 9.APR.2011 19:30:03

Mode 6 : 6 dB Bandwidth Plot on 802.11g Channel 11



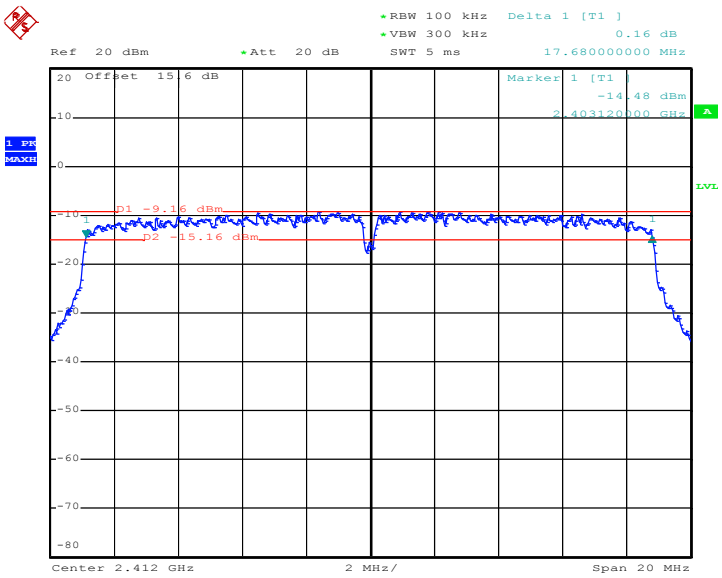
TH-01

Date: 9.APR.2011 19:41:33

Test Mode :	Mode 7, 8, 9	Temperature :	20~21℃
Test Engineer :	Fly Chen	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11n (BW 20MHz) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	17.68	0.5	Pass
06	2437	17.68	0.5	Pass
11	2462	17.68	0.5	Pass

Mode 7 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 01



TH-01

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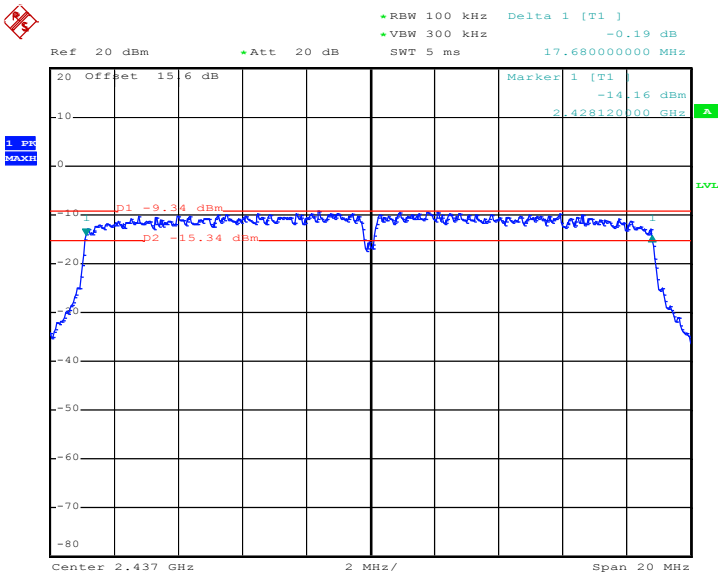
Mode 8 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 06



TH-01

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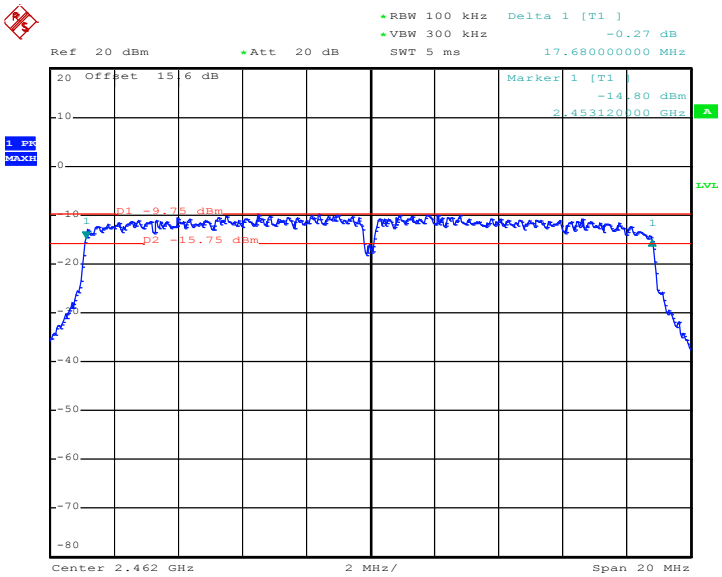
Mode 9 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 11



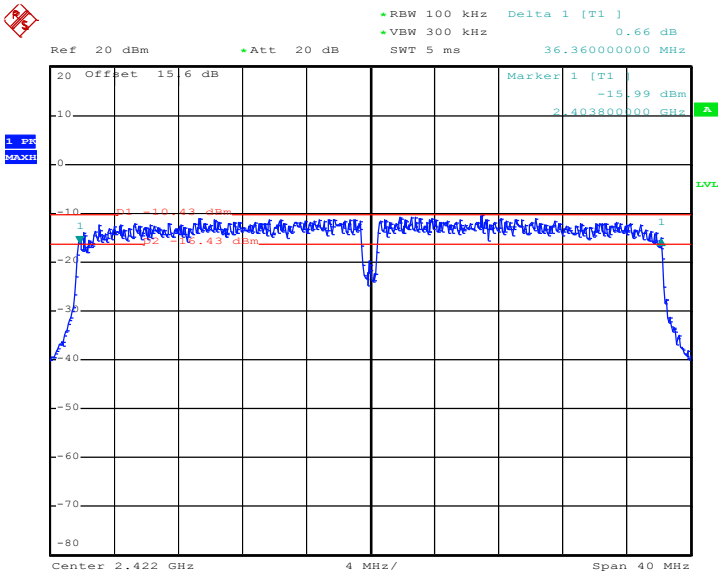
TH-01

Date: 9.APR.2011 20:21:39

Test Mode :	Mode 10, 11, 12	Temperature :	20~21℃
Test Engineer :	Fly Chen	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11n (BW 40MHz) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
03	2422	36.36	0.5	Pass
06	2437	36.32	0.5	Pass
09	2452	36.32	0.5	Pass

Mode 10 : 6 dB Bandwidth Plot on 802.11n(BW 40MHz) Channel 03



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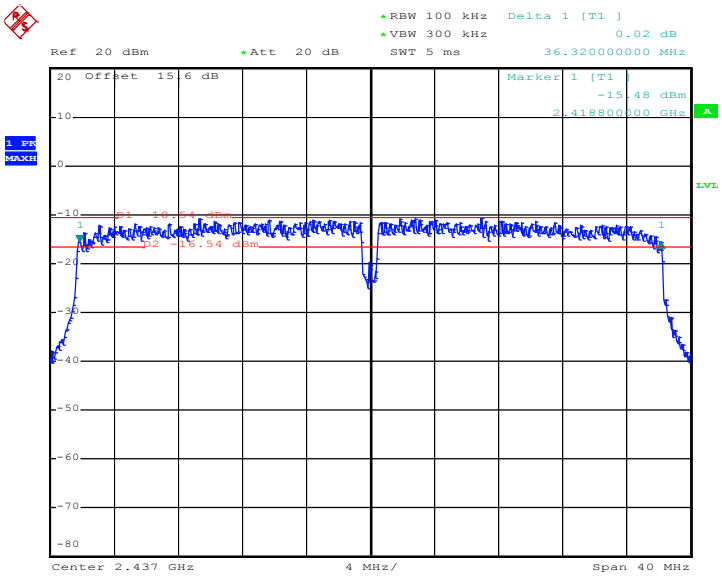
Mode 11 : 6 dB Bandwidth Plot on 802.11n(BW 40MHz) Channel 06



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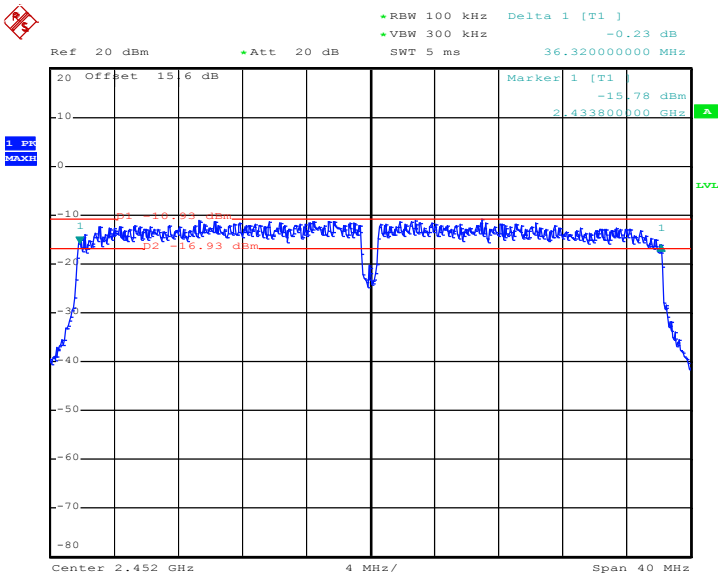
Date: 9.APR.2011 20:50:00

Mode 12 : 6 dB Bandwidth Plot on 802.11n(BW 40MHz) Channel 09



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Date: 9.APR.2011 21:03:54

3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna of directional gain greater than 6dBi are used the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

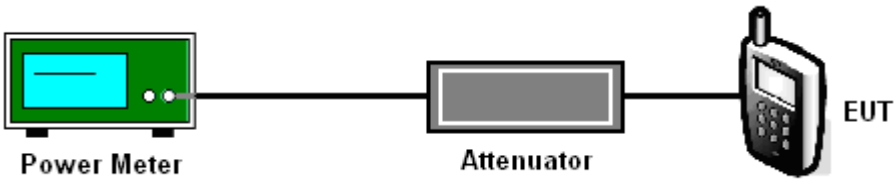
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. The RF output of EUT was connected to the power meter by a low loss cable.
3. Measure the power by power meter.

3.2.4 Test Setup



3.2.5 Test Result of Output Power

Test Mode :	Mode 1, 2, 3	Temperature :	20~21℃
Test Engineer :	Fly Chen	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11b Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	17.97	30	Pass
06	2437	17.95	30	Pass
11	2462	17.36	30	Pass

Test Mode :	Mode 4, 5, 6	Temperature :	20~21℃
Test Engineer :	Fly Chen	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11g Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	15.32	30	Pass
06	2437	15.08	30	Pass
11	2462	14.41	30	Pass

Test Mode :	Mode 7, 8, 9	Temperature :	20~21℃
Test Engineer :	Fly Chen	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	15.38	30	Pass
06	2437	15.32	30	Pass
11	2462	14.68	30	Pass

Test Mode :	Mode 10, 11, 12	Temperature :	20~21
Test Engineer :	Fly Chen	Relative Humidity :	40~41

Channel	Frequency (MHz)	802.11n (BW 40MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
03	2422	14.72	30	Pass
06	2437	14.62	30	Pass
09	2452	14.28	30	Pass

3.3 Band Edges Measurement

3.3.1 Limit of Band Edges

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB.

3.3.2 Measuring Instruments

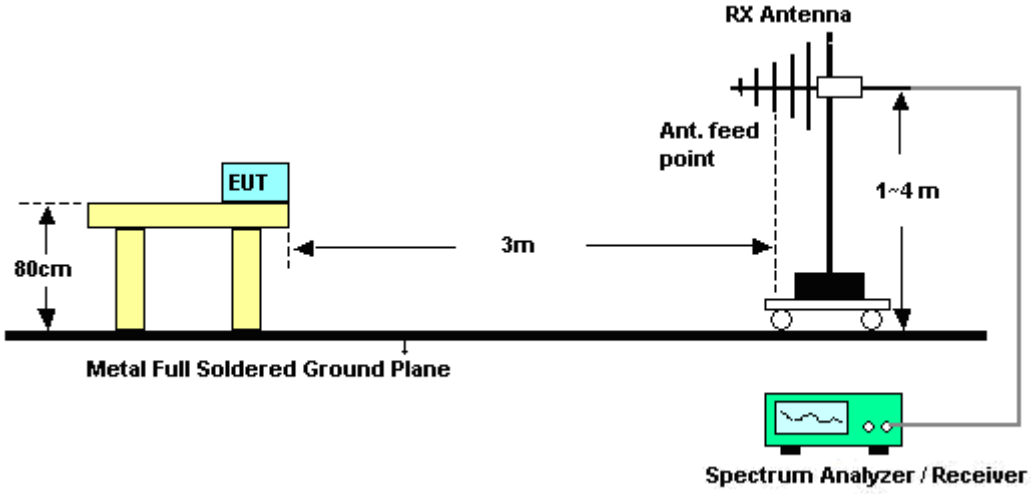
See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. The testing follows the guidelines in ANSI C63.4-2003 and FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Conducted emission test: Set RBW = 100 kHz, Video bandwidth (VBW) ≥ RBW. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW. Note: If the device complies with the use of power option 2 the attenuation under this paragraph shall be 30 dB instead of 20 dB.
3. Radiated emission test: Apply to band edge emissions that fall in the restricted bands listed in FCC Section 15.205. The maximum permitted average field strength is listed in FCC Section 15.209. A pre-amp is necessary for this measurement. For measurements above 1 GHz, set RBW = 1MHz, VBW = 10 Hz, Sweep=Auto. If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation as in FCC Section 15.35(b) and (c).

3.3.4 Test Setup

<Radiated Band Edges>



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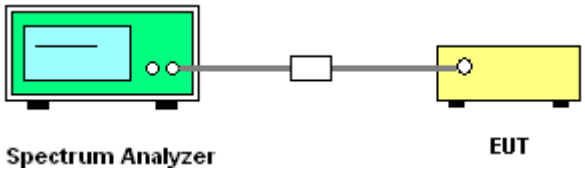


3.3.5 Test Result of Radiated Band Edges

Test Mode :	Mode 1	Temperature :	21~23℃
Test Band :	802.11b	Relative Humidity :	41~43%
Test Channel :	01	Test Engineer :	Cloud Peng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2385.05	53.95	-20.05	74	51.71	32.83	3.42	34.01	100	272	Peak
2385.05	45.54	-8.46	54	43.3	32.83	3.42	34.01	100	272	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2385.24	55.63	-18.37	74	53.39	32.83	3.42	34.01	100	218	Peak
2385.24	45.33	-8.67	54	43.09	32.83	3.42	34.01	100	218	Average

Test Mode :	Mode 3	Temperature :	21~23℃
Test Band :	802.11b	Relative Humidity :	41~43%
Test Channel :	11	Test Engineer :	Cloud Peng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	56.58	-17.42	74	54.09	33.01	3.68	34.2	100	253	Peak
2483.5	47.92	-6.08	54	45.43	33.01	3.68	34.2	100	253	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	57.72	-16.28	74	55.23	33.01	3.68	34.2	100	239	Peak
2483.5	46.29	-7.71	54	43.8	33.01	3.68	34.2	100	239	Average

Test Mode :	Mode 4	Temperature :	21~23℃
Test Band :	802.11g	Relative Humidity :	41~43%
Test Channel :	01	Test Engineer :	Cloud Peng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.8	58.47	-15.53	74	56.19	32.86	3.47	34.05	100	355	Peak
2389.8	46.21	-7.79	54	43.93	32.86	3.47	34.05	100	355	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.61	57.27	-16.73	74	54.99	32.86	3.47	34.05	100	37	Peak
2389.61	43.32	-10.68	54	41.04	32.86	3.47	34.05	100	37	Average

Test Mode :	Mode 6	Temperature :	21~23℃
Test Band :	802.11g	Relative Humidity :	41~43%
Test Channel :	11	Test Engineer :	Cloud Peng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2486.32	53.35	-20.65	74	50.86	33.01	3.68	34.2	100	335	Peak
2486.32	37.19	-16.81	54	34.7	33.01	3.68	34.2	100	335	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2488.41	52.45	-21.55	74	49.91	33.05	3.72	34.23	100	33	Peak
2488.41	39.99	-14.01	54	37.45	33.05	3.72	34.23	100	33	Average

Test Mode :	Mode 7	Temperature :	21~23℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	41~43%
Test Channel :	01	Test Engineer :	Cloud Peng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2359.97	54.56	-19.44	74	52.35	32.81	3.38	33.98	100	16	Peak
2359.97	44.31	-9.69	54	42.1	32.81	3.38	33.98	100	16	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2359.78	52.08	-21.92	74	49.87	32.81	3.38	33.98	100	132	Peak
2359.78	41.81	-12.19	54	39.6	32.81	3.38	33.98	100	132	Average

Test Mode :	Mode 9	Temperature :	21~23℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	41~43%
Test Channel :	11	Test Engineer :	Cloud Peng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	50.82	-23.18	74	48.33	33.01	3.68	34.2	100	189	Peak
2483.5	41.89	-12.11	54	39.4	33.01	3.68	34.2	100	189	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	50.45	-23.55	74	47.96	33.01	3.68	34.2	100	13	Peak
2483.5	42.49	-11.51	54	40	33.01	3.68	34.2	100	13	Average

Test Mode :	Mode 10	Temperature :	21~23℃
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	41~43%
Test Channel :	03	Test Engineer :	Cloud Peng

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2388.66	51.84	-22.16	74	49.56	32.86	3.47	34.05	100	243	Peak
2388.66	43.28	-10.72	54	41	32.86	3.47	34.05	100	243	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	50.78	-23.22	74	48.5	32.86	3.47	34.05	100	17	Peak
2390	42.28	-11.72	54	40	32.86	3.47	34.05	100	17	Average

Test Mode :	Mode 12	Temperature :	21~23℃
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	41~43%
Test Channel :	09	Test Engineer :	Cloud Peng

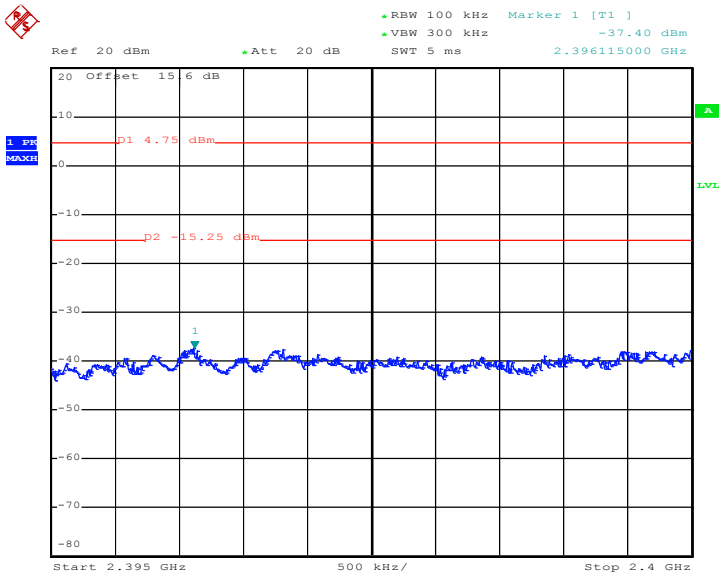
ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.23	54.43	-19.57	74	51.94	33.01	3.68	34.2	100	180	Peak
2484.23	43.66	-10.34	54	41.17	33.01	3.68	34.2	100	180	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2487.08	53.16	-20.84	74	50.67	33.01	3.68	34.2	100	12	Peak
2487.08	42.49	-11.51	54	40	33.01	3.68	34.2	100	12	Average

3.3.6 Test Plots of Conducted Band Edges

Test Mode :	Mode 1 and 3	Temperature :	20~21℃
Test Band :	802.11b	Relative Humidity :	40~41%
Test Channel :	01 and 11	Test Engineer :	Fly Chen

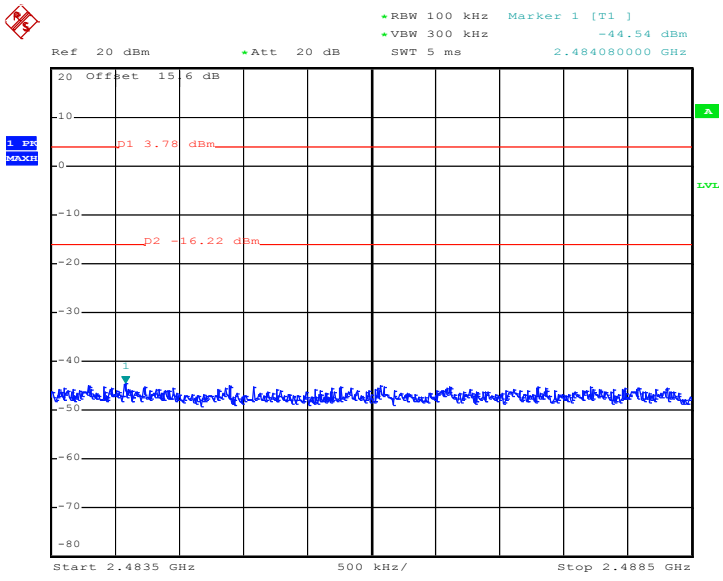
Low Band Edge Plot on 802.11b Channel 01



TH-01

Date: 9.APR.2011 18:33:30

High Band Edge Plot on 802.11b Channel 11

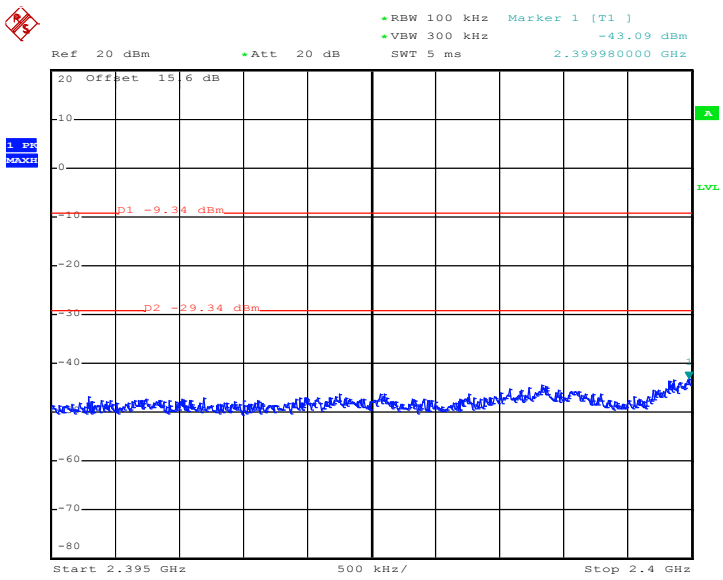


TH-01

Date: 9.APR.2011 19:02:25

Test Mode :	Mode 4 and 6	Temperature :	20~21℃
Test Band :	802.11g	Relative Humidity :	40~41%
Test Channel :	01 and 11	Test Engineer :	Fly Chen

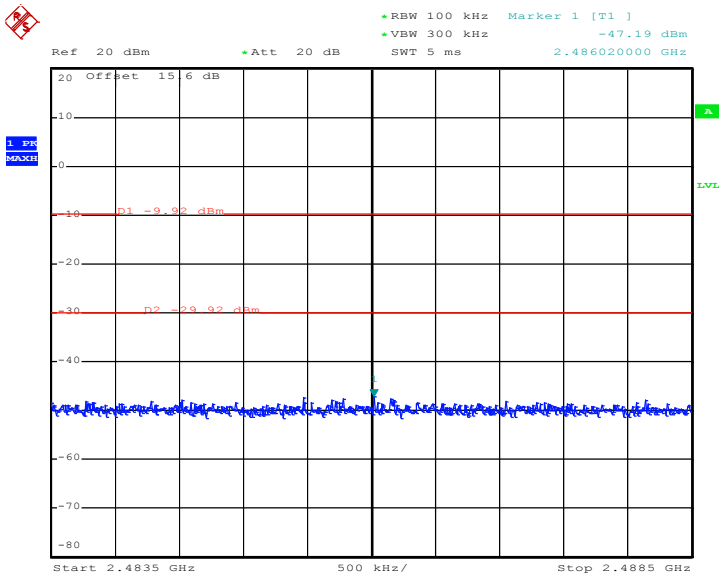
Low Band Edge Plot on 802.11g Channel 01



TH-01

Date: 9.APR.2011 19:17:24

High Band Edge Plot on 802.11g Channel 11

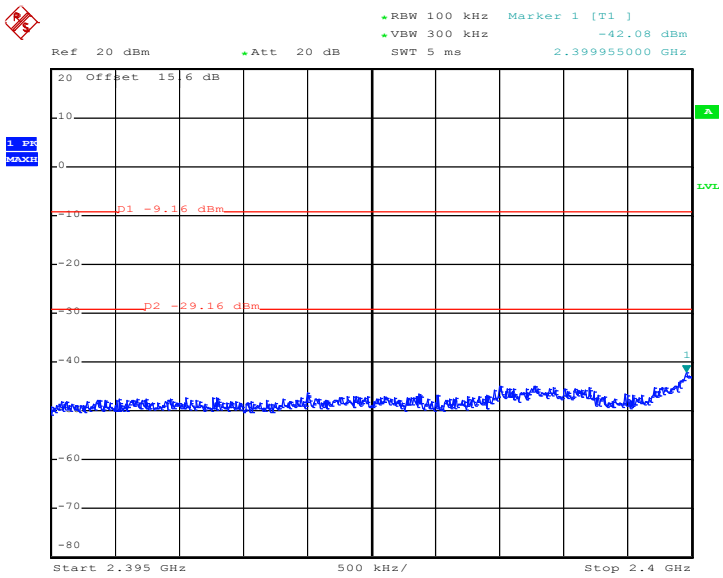


TH-01

Date: 9.APR.2011 19:42:21

Test Mode :	Mode 7 and 9	Temperature :	20~21℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	40~41%
Test Channel :	01 and 11	Test Engineer :	Fly Chen

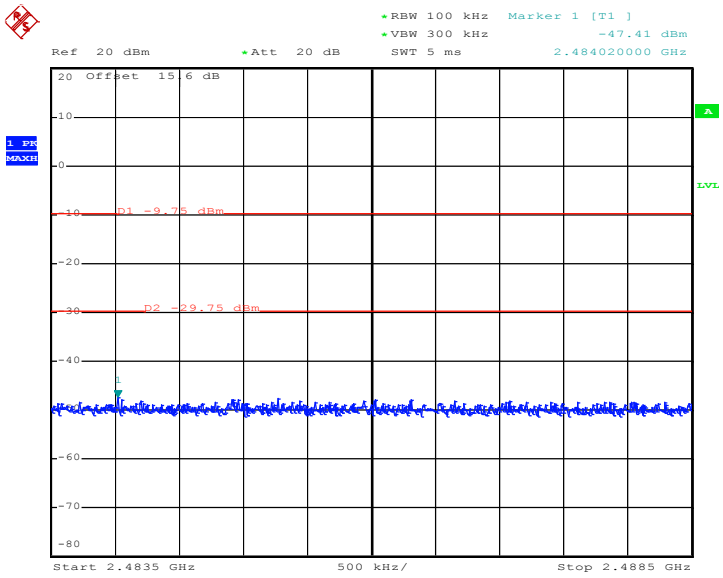
Low Band Edge Plot on 802.11n (BW 20MHz) Channel 01



TH-01

Date: 9.APR.2011 19:55:56

High Band Edge Plot on 802.11n (BW 20MHz) Channel 11

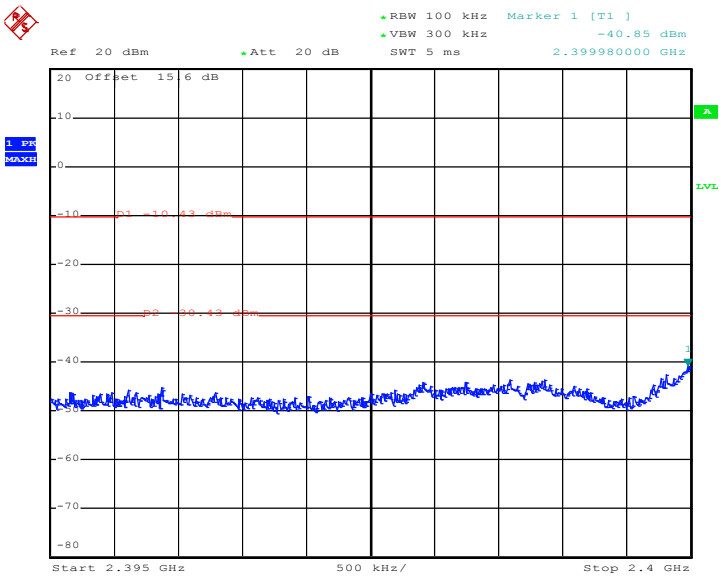


TH-01

Date: 9.APR.2011 20:22:27

Test Mode :	Mode 10 and 12	Temperature :	20~21℃
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	40~41%
Test Channel :	03 and 09	Test Engineer :	Fly Chen

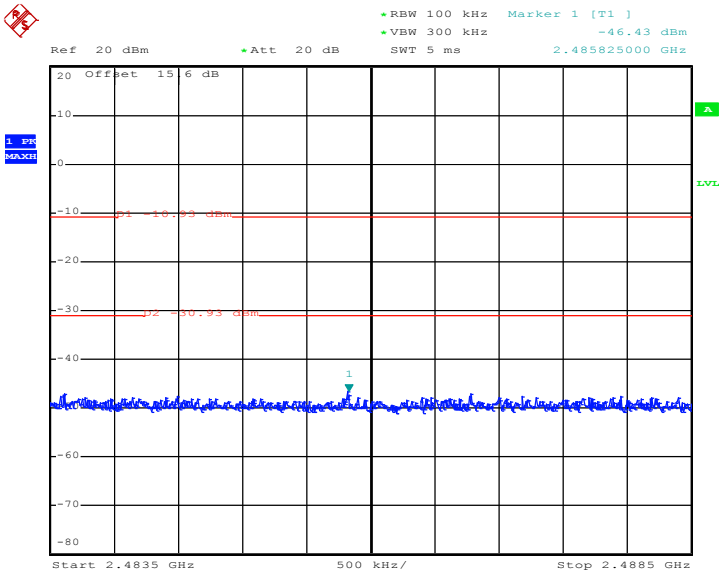
Low Band Edge Plot on 802.11n (BW 40MHz) Channel 03



TH-01

Date: 9.APR.2011 20:36:38

High Band Edge Plot on 802.11n (BW 40MHz) Channel 09



TH-01

Date: 9.APR.2011 21:04:21

3.4 Spurious Emission Measurement

3.4.1 Limit of Spurious Emission Measurement

All harmonics/spurious must be at least 20 dB down from the highest emission level within the authorized band.

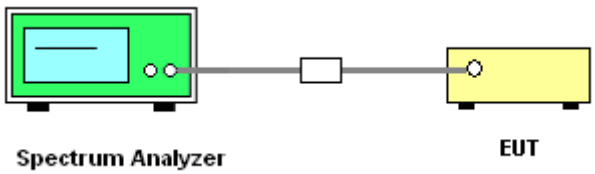
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedure

1. The transmitter output was connected to the spectrum analyzer via a low lose cable.
2. Set RBW = 100 kHz, Video bandwidth (VBW) ≥ RBW, scan up through 10th harmonic. All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW.

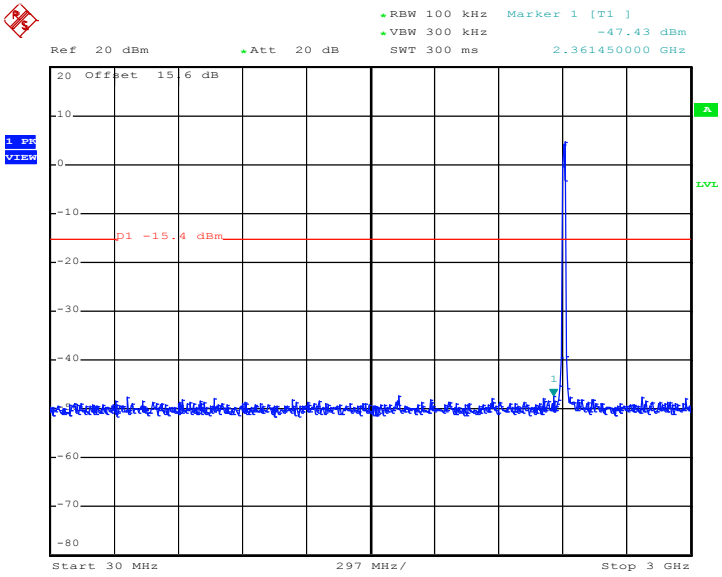
3.4.4 Test Setup



3.4.5 Test Plots of Spurious Emission

Test Mode :	Mode 1	Temperature :	20~21℃
Test Band :	802.11b	Relative Humidity :	40~41%
Test Channel :	01	Test Engineer :	Fly Chen

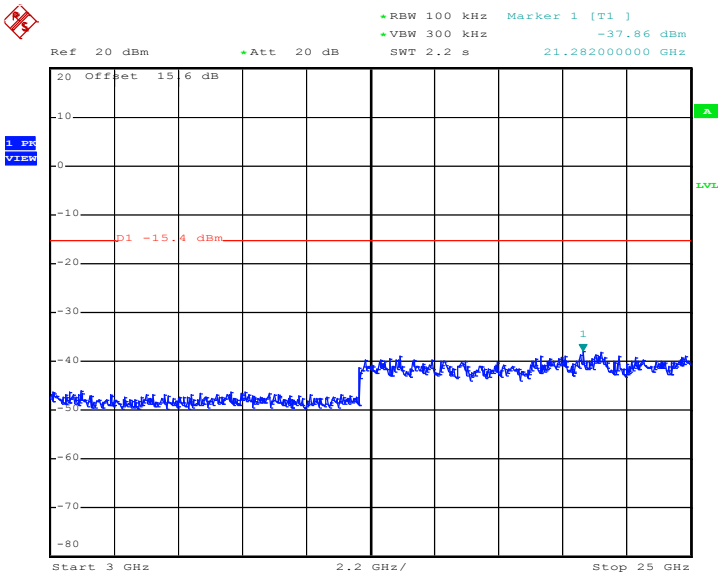
Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



TH-01

Date: 9.APR.2011 18:35:48

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

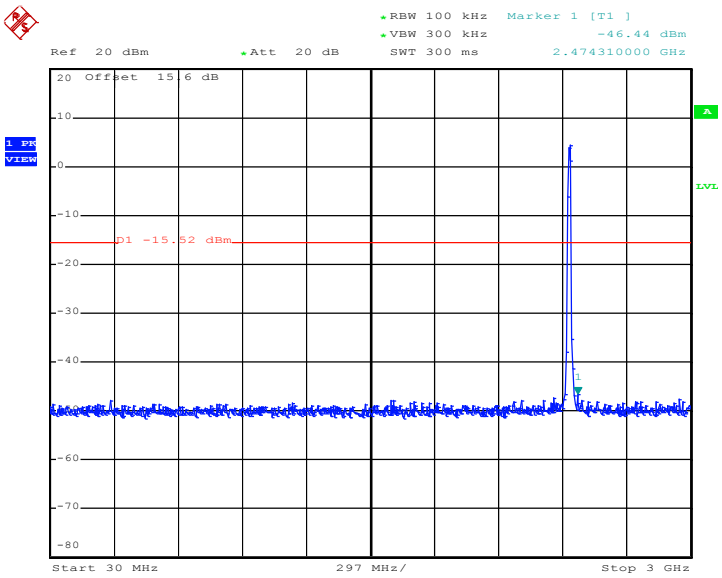


TH-01

Date: 9.APR.2011 18:36:05

Test Mode :	Mode 2	Temperature :	20~21℃
Test Band :	802.11b	Relative Humidity :	40~41%
Test Channel :	06	Test Engineer :	Fly Chen

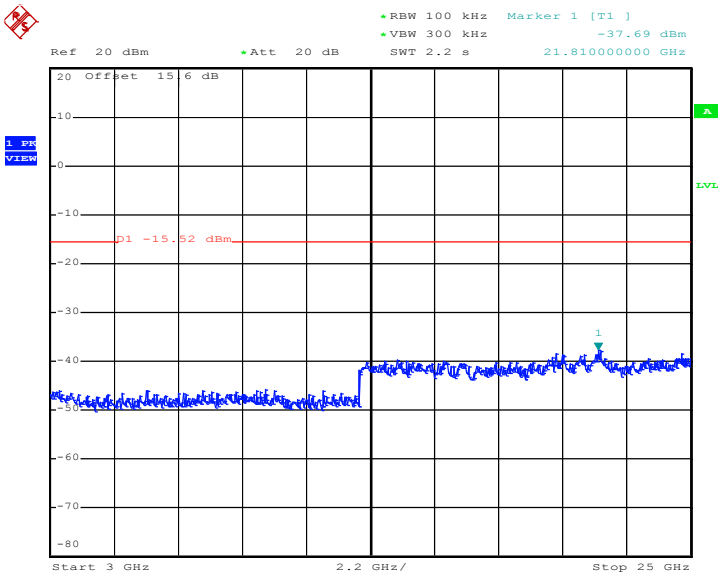
Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



TH-01

Date: 9.APR.2011 18:50:07

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

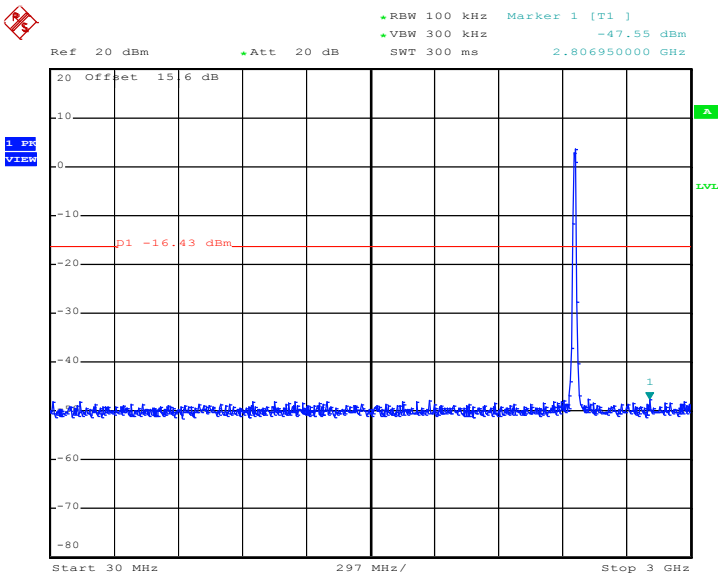


TH-01

Date: 9.APR.2011 18:50:24

Test Mode :	Mode 3	Temperature :	20~21℃
Test Band :	802.11b	Relative Humidity :	40~41%
Test Channel :	11	Test Engineer :	Fly Chen

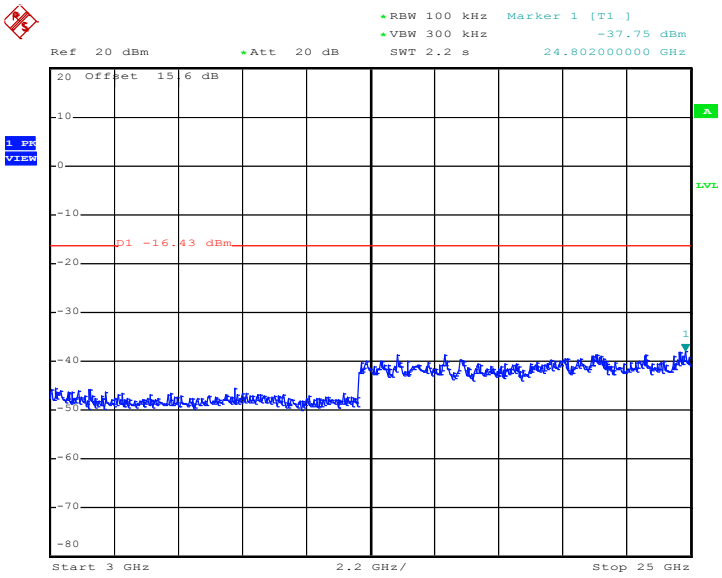
Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



TH-01

Date: 9.APR.2011 19:03:18

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

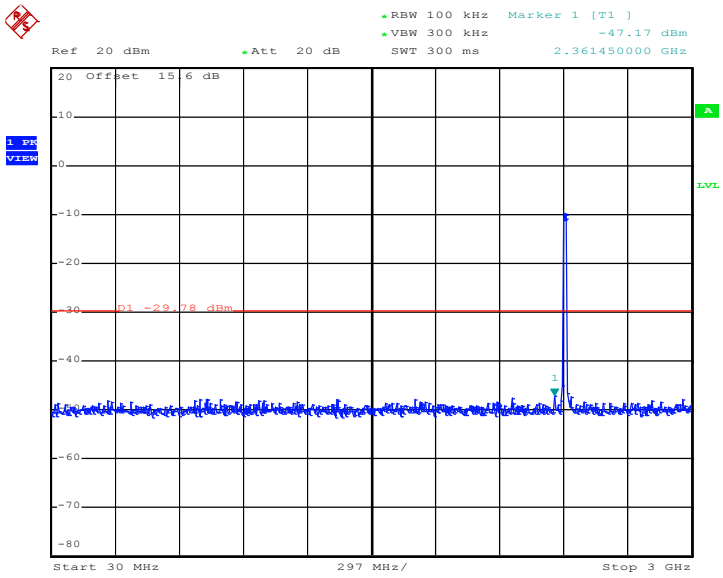


TH-01

Date: 9.APR.2011 19:03:35

Test Mode :	Mode 4	Temperature :	20~21℃
Test Band :	802.11g	Relative Humidity :	40~41%
Test Channel :	01	Test Engineer :	Fly Chen

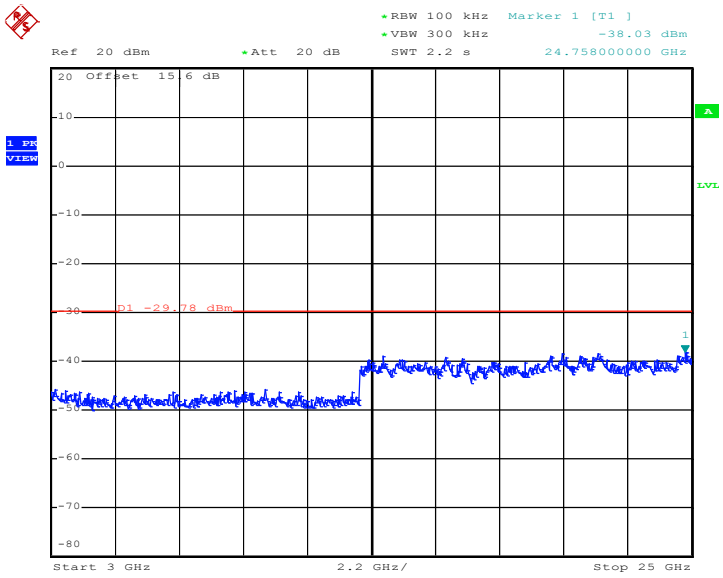
Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



TH-01

Date: 9.APR.2011 19:18:50

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

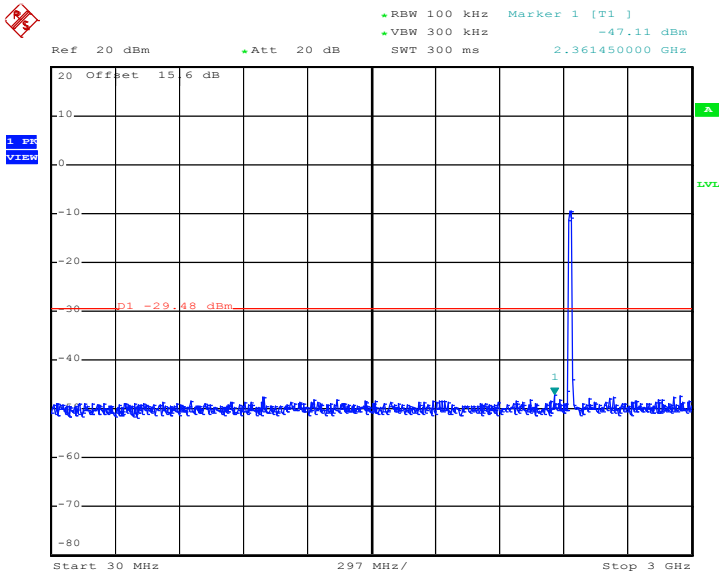


TH-01

Date: 9.APR.2011 19:19:08

Test Mode :	Mode 5	Temperature :	20~21
Test Band :	802.11g	Relative Humidity :	40~41
Test Channel :	06	Test Engineer :	Fly Chen

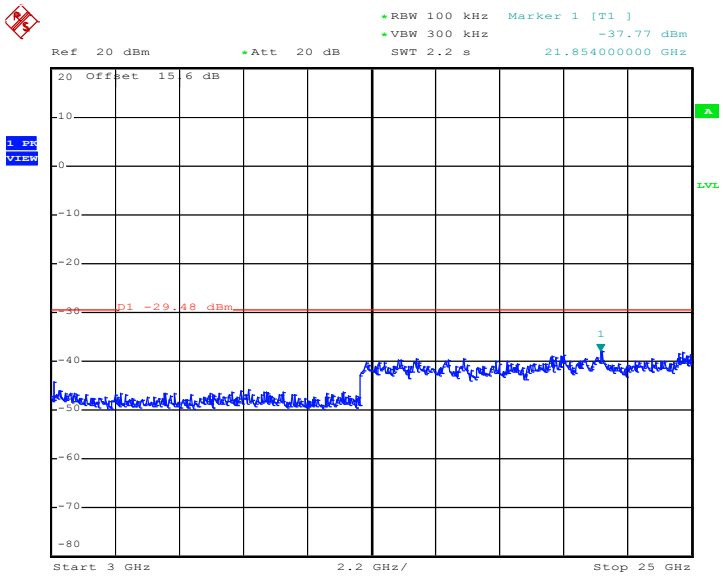
Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



TH-01

Date: 9.APR.2011 19:30:55

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

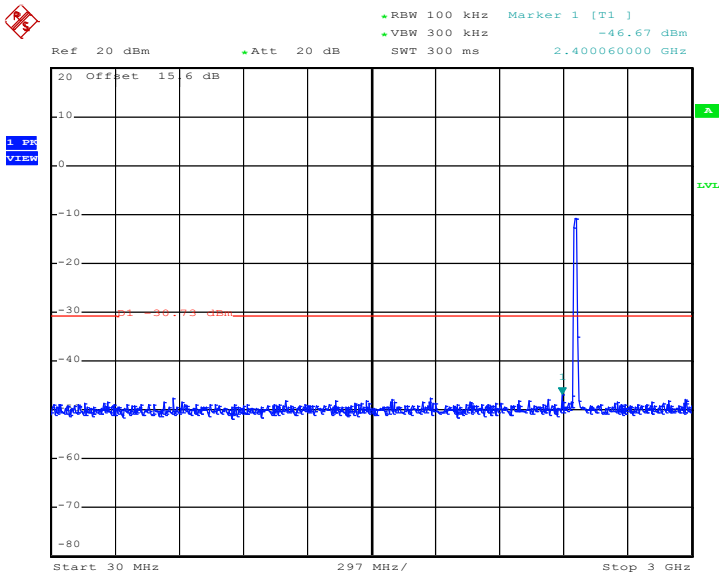


TH-01

Date: 9.APR.2011 19:31:12

Test Mode :	Mode 6	Temperature :	20~21℃
Test Band :	802.11g	Relative Humidity :	40~41%
Test Channel :	11	Test Engineer :	Fly Chen

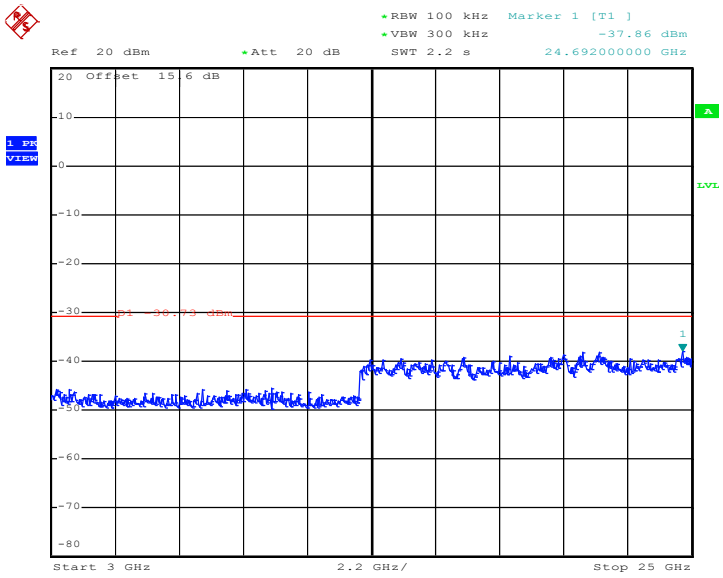
Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



TH-01

Date: 9.APR.2011 19:43:14

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

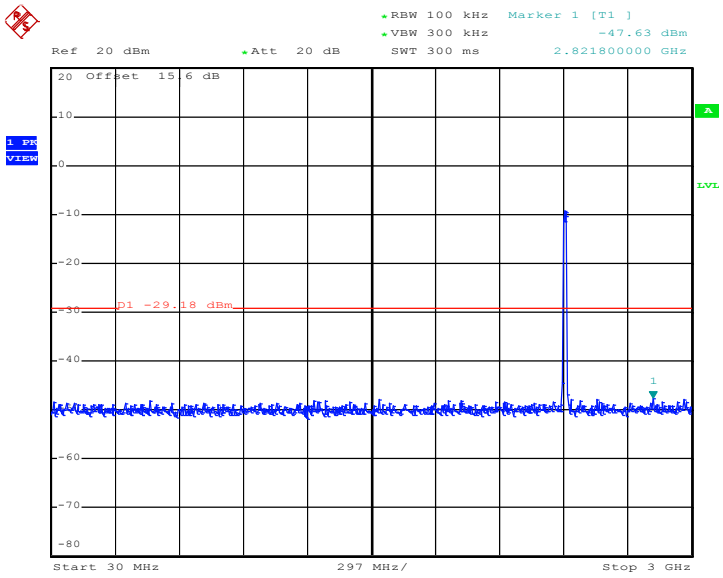


TH-01

Date: 9.APR.2011 19:43:31

Test Mode :	Mode 7	Temperature :	20~21℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	40~41%
Test Channel :	01	Test Engineer :	Fly Chen

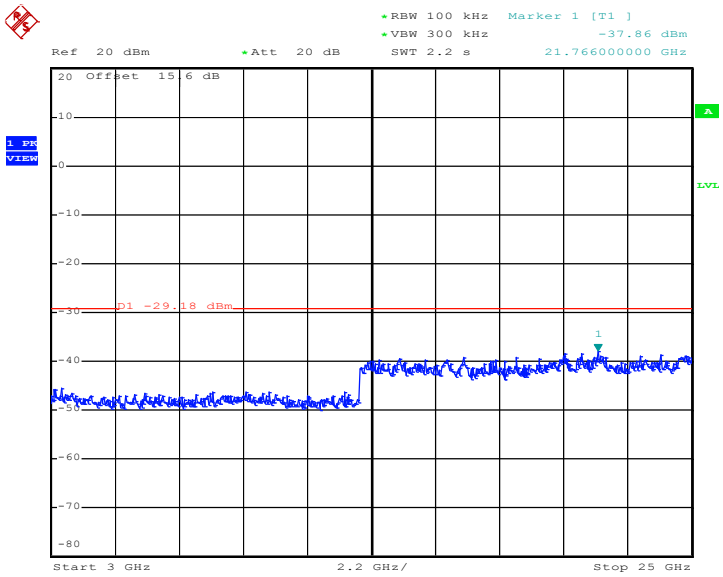
Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



TH-01

Date: 9.APR.2011 19:57:30

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

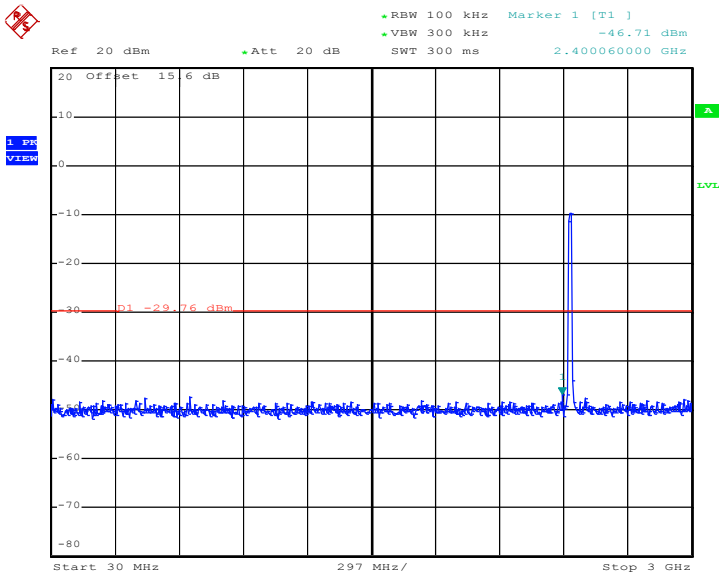


TH-01

Date: 9.APR.2011 19:57:47

Test Mode :	Mode 8	Temperature :	20~21℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	40~41%
Test Channel :	06	Test Engineer :	Fly Chen

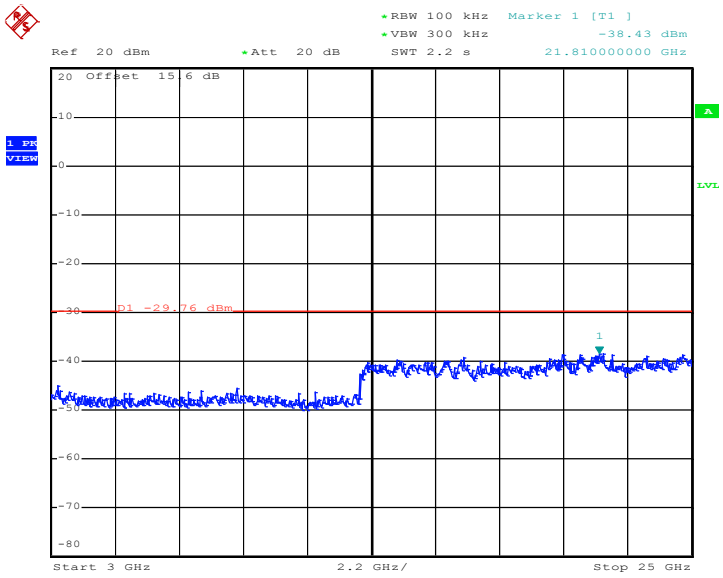
Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



TH-01

Date: 9.APR.2011 20:11:01

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

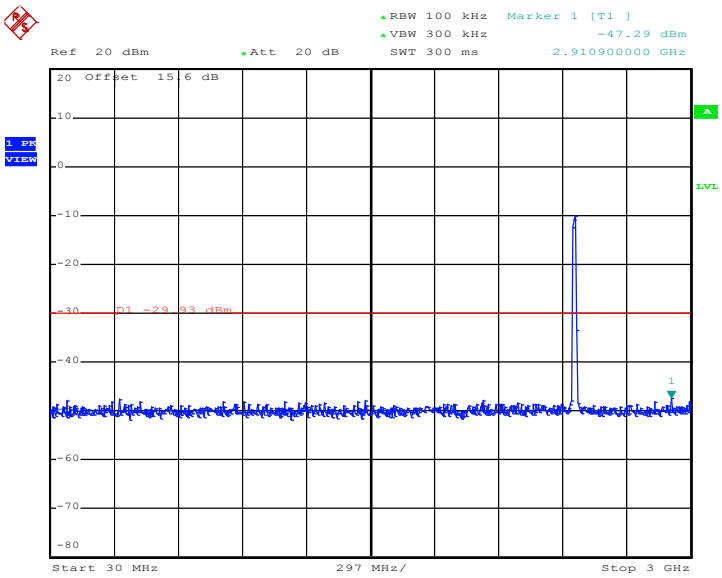


TH-01

Date: 9.APR.2011 20:11:18

Test Mode :	Mode 9	Temperature :	20~21℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	40~41%
Test Channel :	11	Test Engineer :	Fly Chen

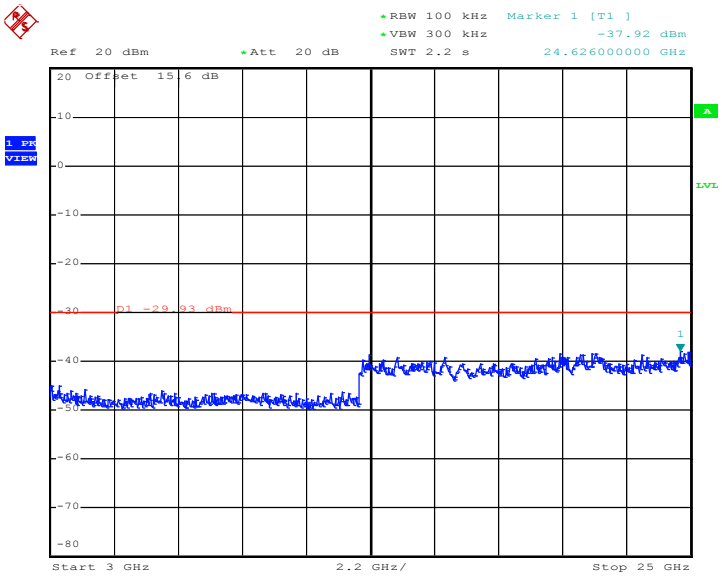
Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



TH-01

Date: 9.APR.2011 20:24:29

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

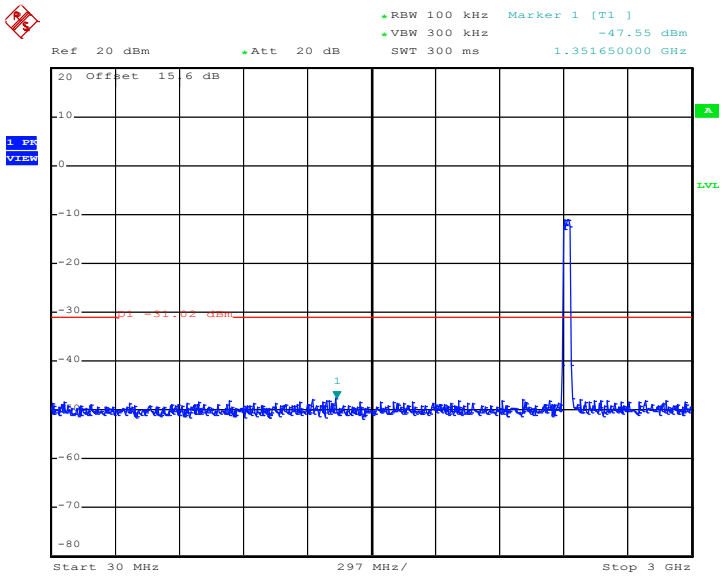


TH-01

Date: 9.APR.2011 20:24:46

Test Mode :	Mode 10	Temperature :	20~21℃
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	40~41%
Test Channel :	03	Test Engineer :	Fly Chen

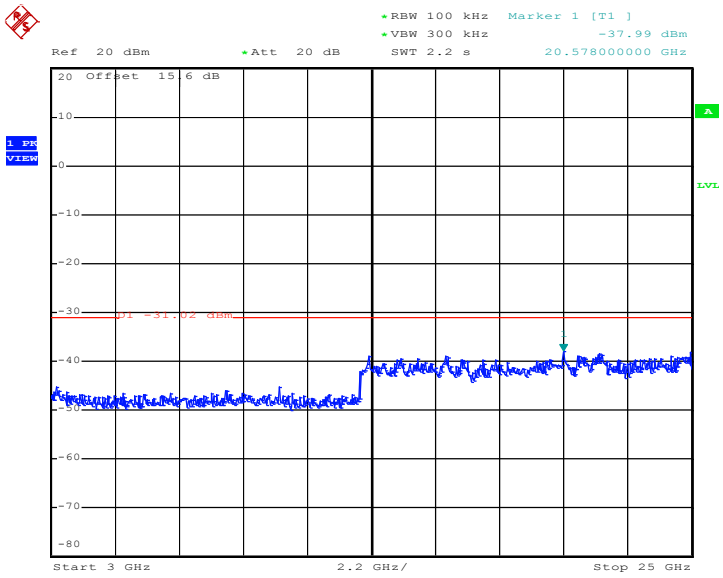
Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



TH-01

Date: 9.APR.2011 20:37:43

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

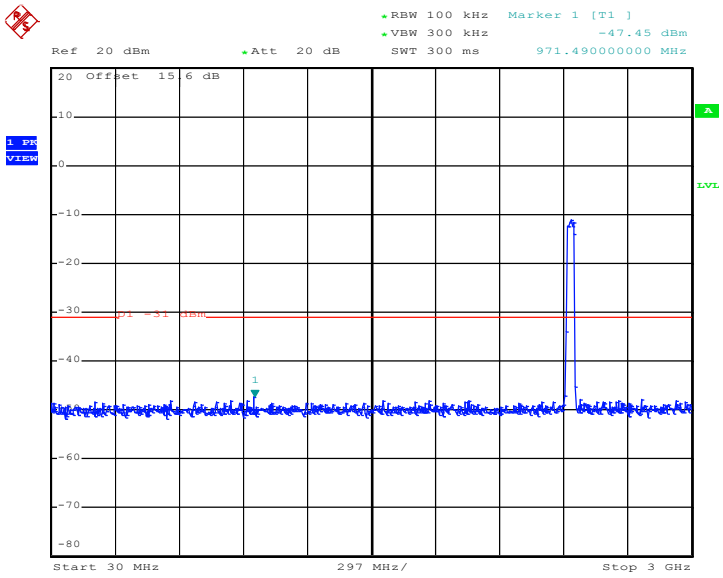


TH-01

Date: 9.APR.2011 20:38:00

Test Mode :	Mode 11	Temperature :	20~21℃
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	40~41%
Test Channel :	06	Test Engineer :	Fly Chen

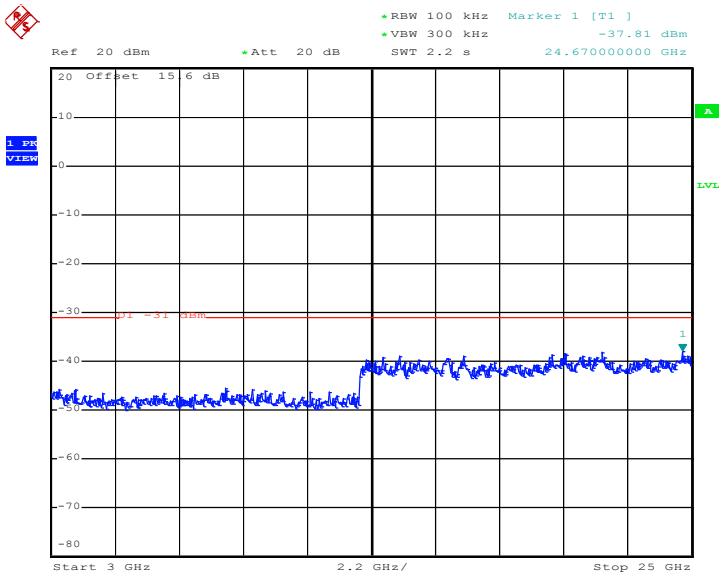
Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



TH-01

Date: 9.APR.2011 20:51:41

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

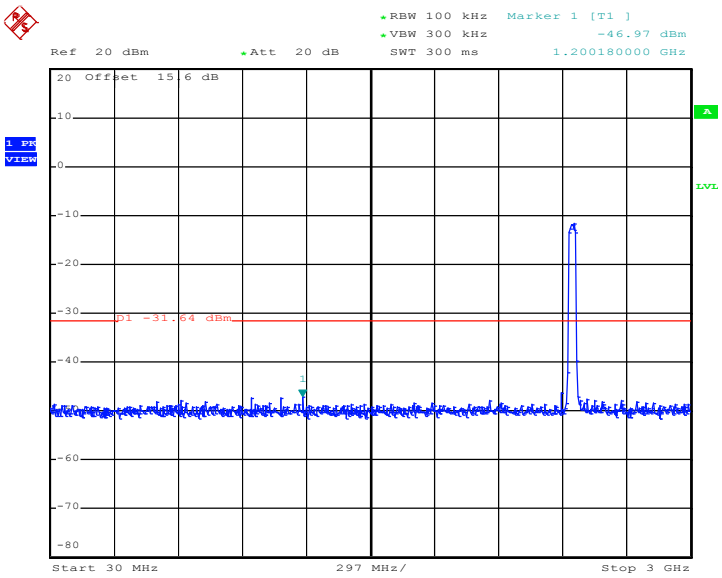


TH-01

Date: 9.APR.2011 20:52:00

Test Mode :	Mode 12	Temperature :	20~21℃
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	40~41%
Test Channel :	09	Test Engineer :	Fly Chen

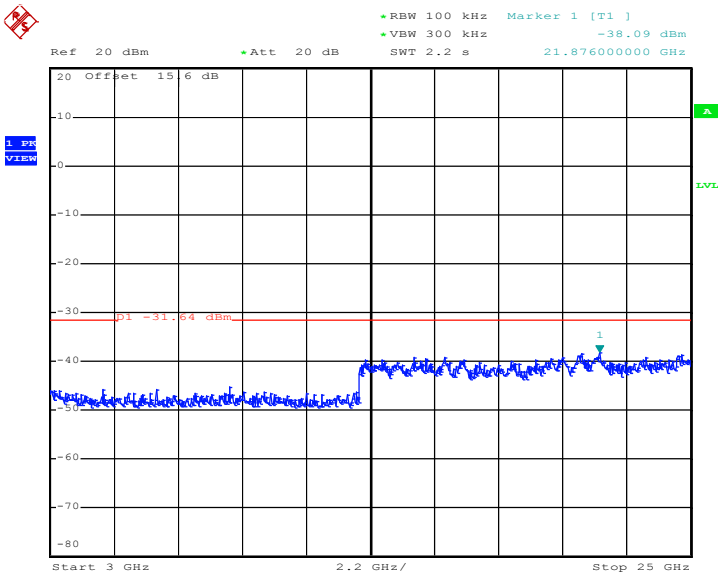
Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



TH-01

Date: 9.APR.2011 21:06:10

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



TH-01

Date: 9.APR.2011 21:06:28

3.5 Power Spectral Density Measurement

3.5.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

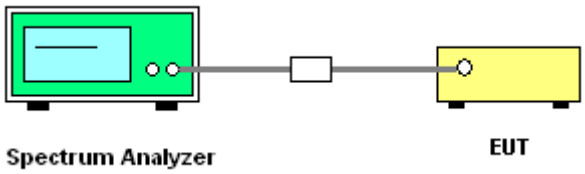
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

1. The test follows FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Take the measured data from spectrum analyzer.

3.5.4 Test Setup

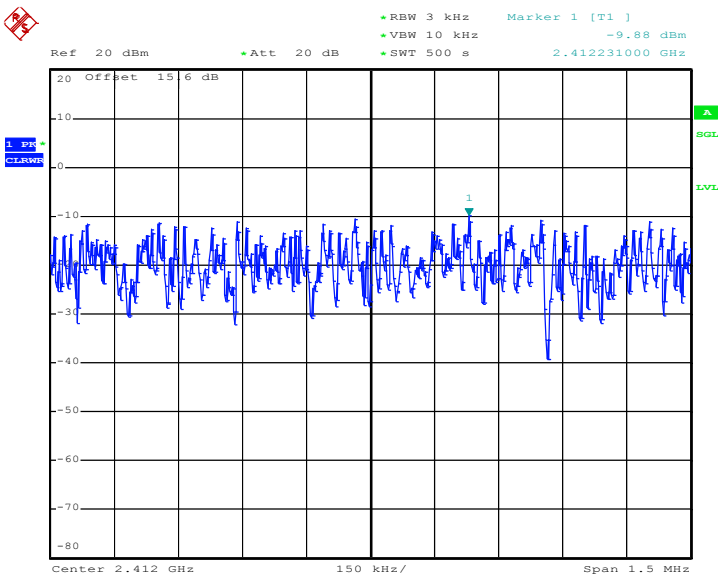


3.5.5 Test Result of Power Spectral Density

Test Mode :	Mode 1, 2, 3	Temperature :	20~21℃
Test Engineer :	Fly Chen	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11b Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-9.88	8	Pass
06	2437	-9.91	8	Pass
11	2462	-10.59	8	Pass

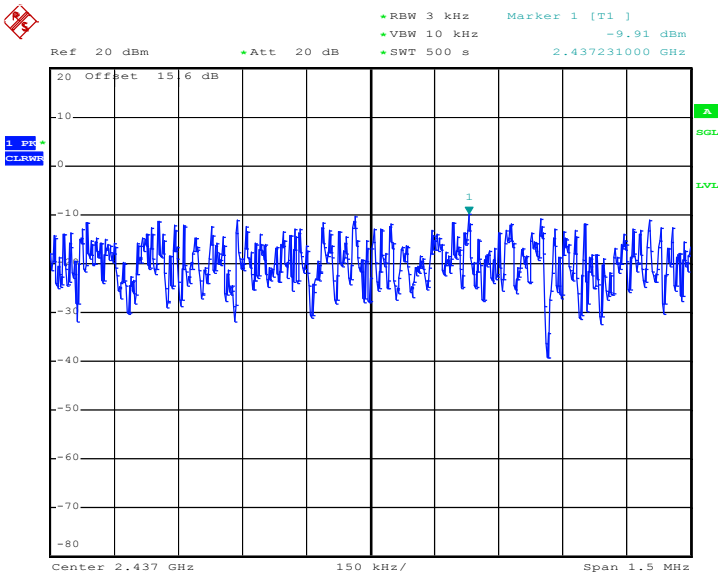
Mode 1 : PSD Plot on 802.11b Channel 01



TH-01

Date: 9.APR.2011 18:46:33

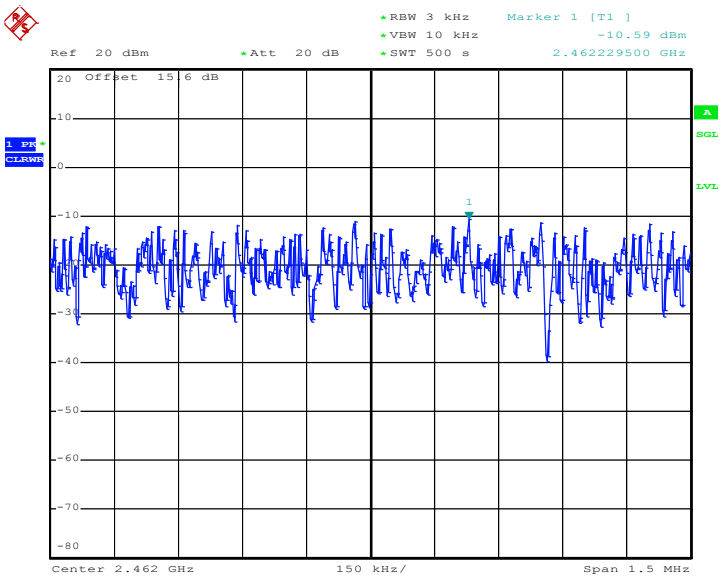
Mode 2 : PSD Plot on 802.11b Channel 06



TH-01

Date: 9.APR.2011 18:59:09

Mode 3 : PSD Plot on 802.11b Channel 11



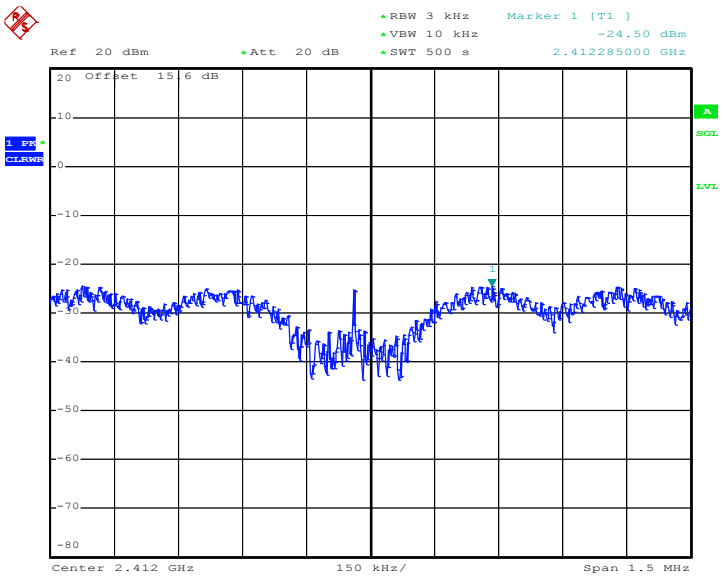
TH-01

Date: 9.APR.2011 19:12:23

Test Mode :	Mode 4, 5, 6	Temperature :	20~21℃
Test Engineer :	Fly Chen	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11g Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-24.50	8	Pass
06	2437	-24.41	8	Pass
11	2462	-25.30	8	Pass

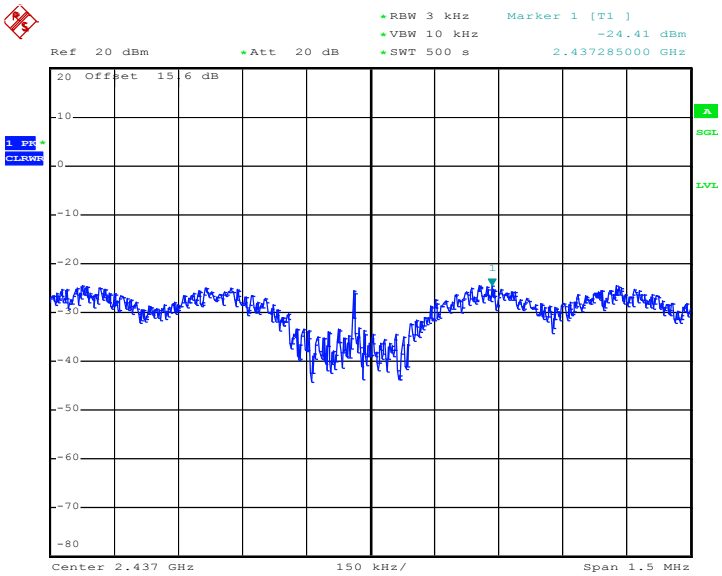
Mode 4 : PSD Plot on 802.11g Channel 01



TH-01

Date: 9.APR.2011 19:28:10

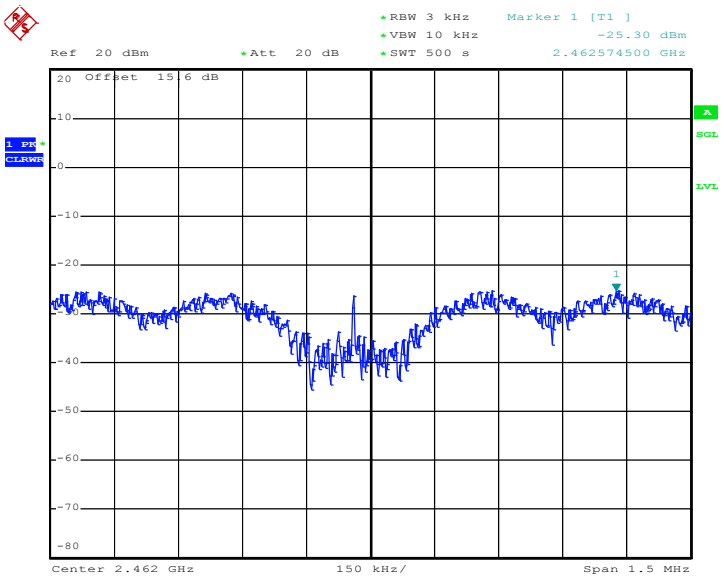
Mode 5 : PSD Plot on 802.11g Channel 06



TH-01

Date: 9.APR.2011 19:39:59

Mode 6 : PSD Plot on 802.11g Channel 11



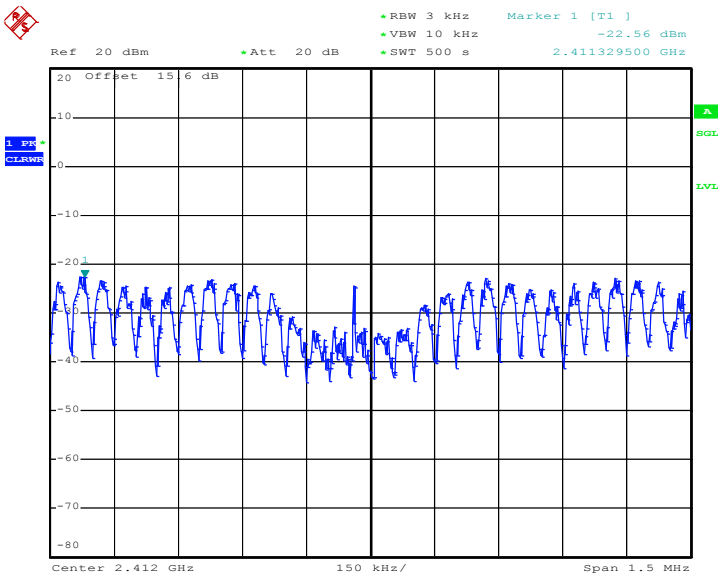
TH-01

Date: 9.APR.2011 19:52:25

Test Mode :	Mode 7, 8, 9	Temperature :	20~21℃
Test Engineer :	Fly Chen	Relative Humidity :	40~41%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-22.56	8	Pass
06	2437	-22.51	8	Pass
11	2462	-23.08	8	Pass

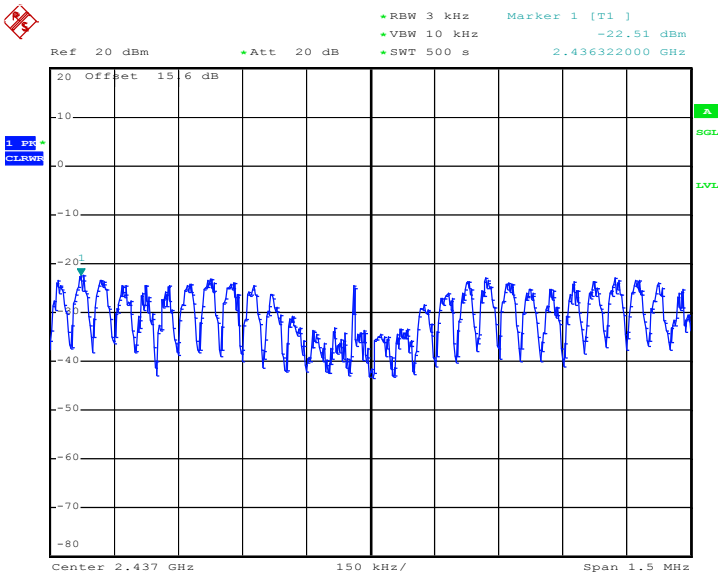
Mode 7 : PSD Plot on 802.11n (BW 20MHz) Channel 01



TH-01

Date: 9.APR.2011 20:06:42

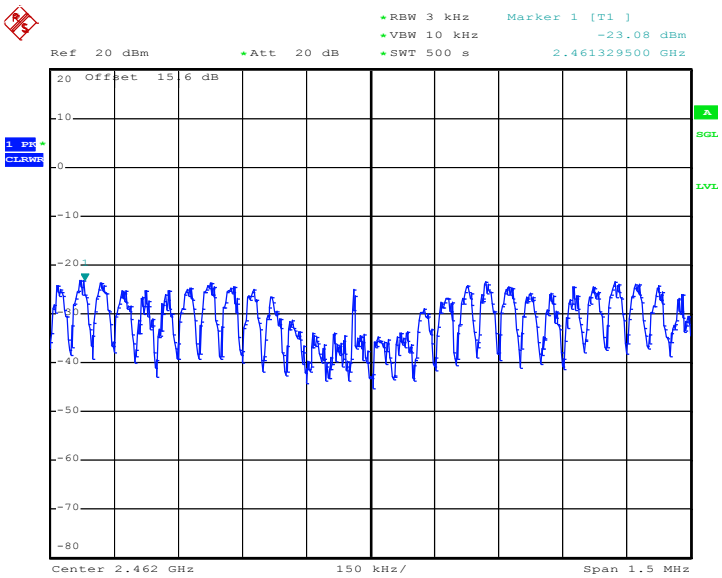
Mode 8 : PSD Plot on802.11n (BW 20MHz) Channel 06



TH-01

Date: 9.APR.2011 20:20:15

Mode 9 : PSD Plot on 802.11n (BW 20MHz) Channel 11



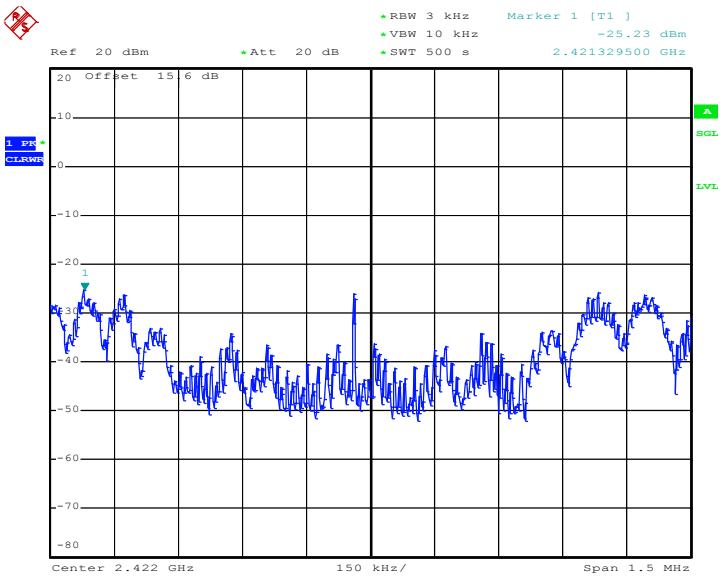
TH-01

Date: 9.APR.2011 20:33:30

Test Mode :	Mode 10, 11, 12	Temperature :	20~21
Test Engineer :	Fly Chen	Relative Humidity :	40~41

Channel	Frequency (MHz)	802.11n (BW 40MHz) Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
03	2422	-25.23	8	Pass
06	2437	-25.21	8	Pass
09	2452	-25.67	8	Pass

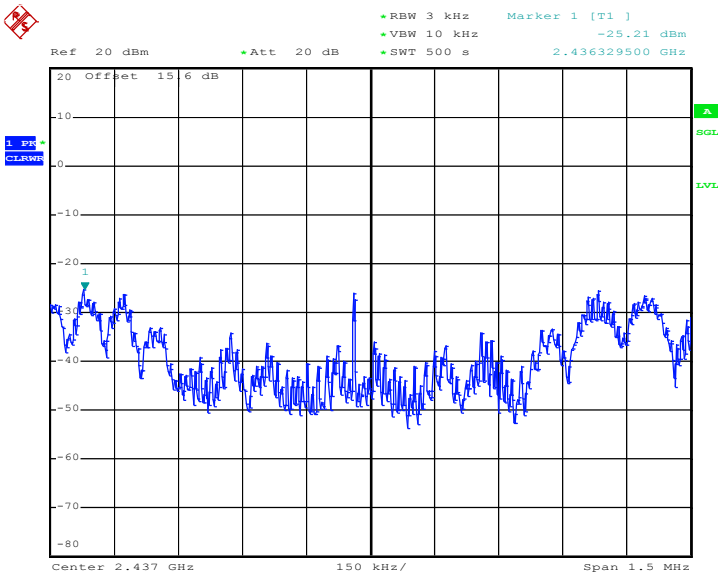
Mode 10 : PSD Plot on 802.11n (BW 40MHz) Channel 03



TH-01

Date: 9.APR.2011 20:46:55

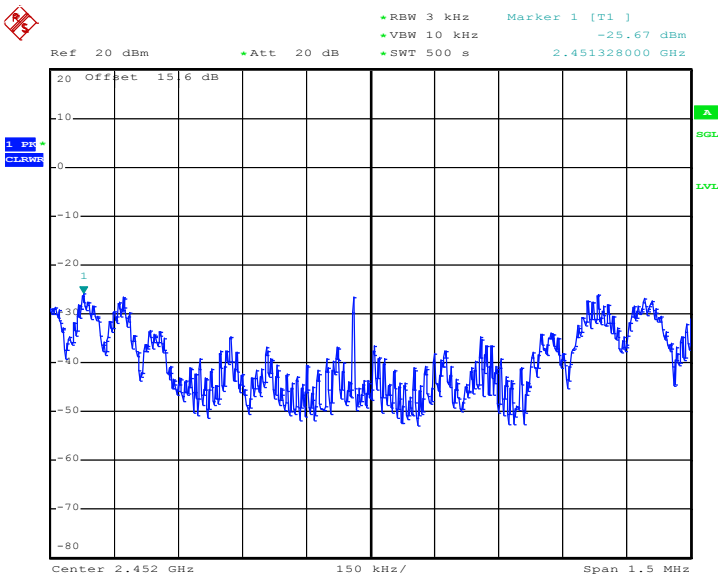
Mode 11 : PSD Plot on802.11n (BW 40MHz) Channel 06



TH-01

Date: 9.APR.2011 21:01:50

Mode 12 : PSD Plot on 802.11n (BW 40MHz) Channel 09



TH-01

Date: 9.APR.2011 21:15:20

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

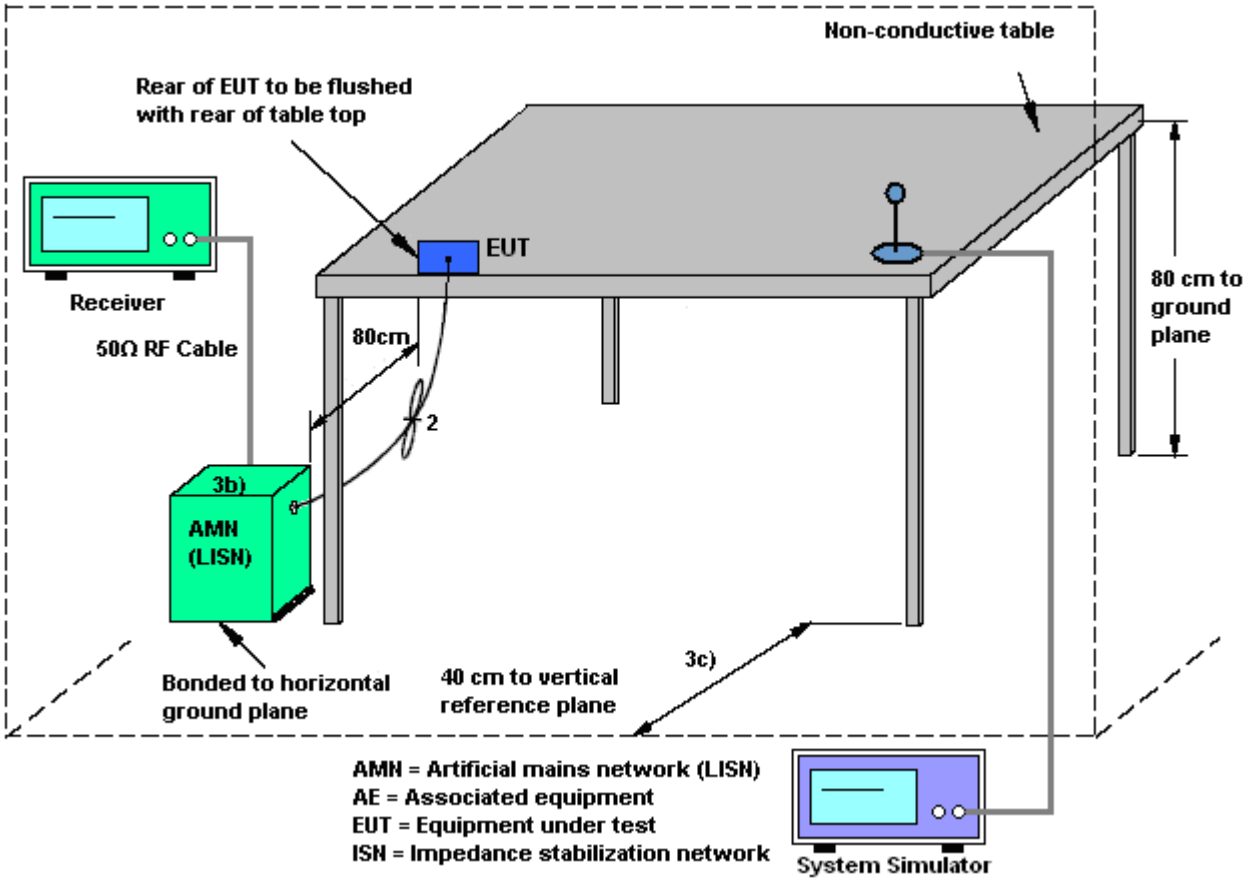
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

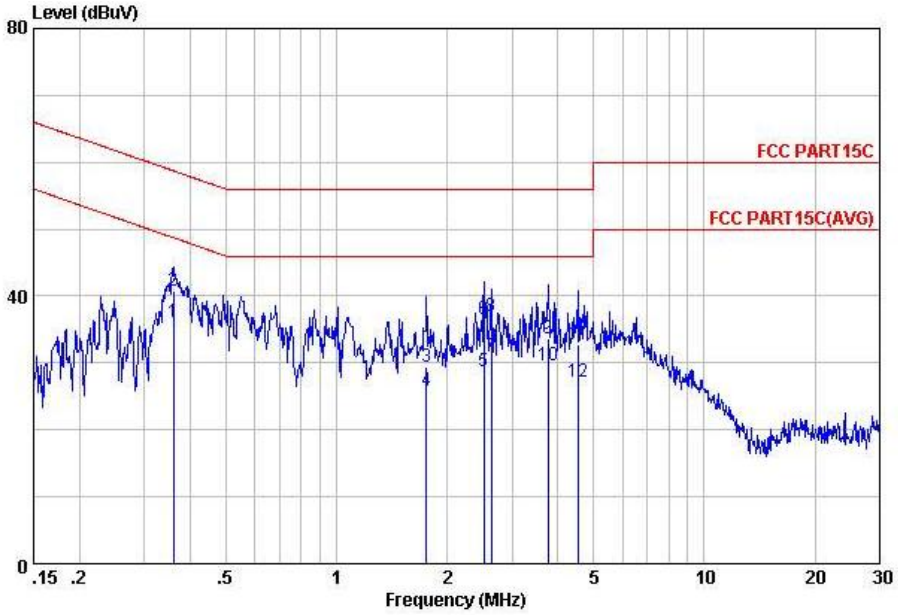
1. The testing follows the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All the support units are connecting to the other LISN.
5. The LISN provides 50 ohm coupling impedance for the measuring instrument.
6. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
7. Both sides of AC line were checked for maximum conducted interference.
8. The frequency range from 150 kHz to 30 MHz was searched.
9. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	21~23℃
Test Engineer :	Allen Chang	Relative Humidity :	41~43%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + WLAN Link + Adapter + RJ-11 + RJ-45 + USB Link		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

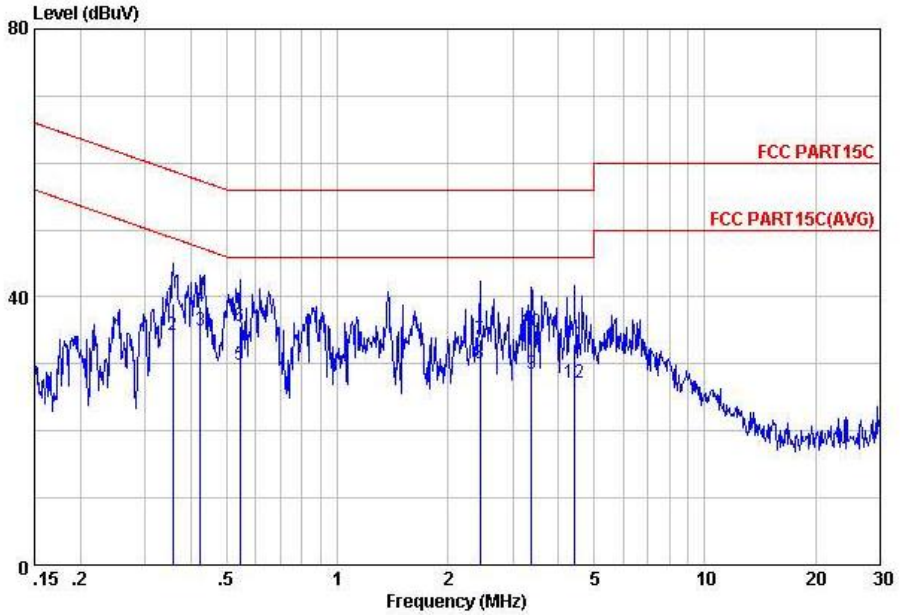


Site : C001-KS
Condition: FCC PART15C LISN-100807 LINE

Mode : mode 1

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.36	36.21	-12.53	48.74	26.11	-0.08	10.18	Average
2	0.36	40.81	-17.93	58.74	30.71	-0.08	10.18	QP
3	1.75	29.41	-26.59	56.00	19.20	-0.11	10.32	QP
4	1.75	25.81	-20.19	46.00	15.60	-0.11	10.32	Average
5	2.51	28.84	-17.16	46.00	18.60	-0.11	10.35	Average
6	2.51	36.64	-19.36	56.00	26.40	-0.11	10.35	QP
7	2.64	30.94	-15.06	46.00	20.69	-0.11	10.36	Average
8	2.64	37.04	-18.96	56.00	26.79	-0.11	10.36	QP
9	3.76	33.56	-22.44	56.00	23.31	-0.13	10.38	QP
10	3.76	29.56	-16.44	46.00	19.31	-0.13	10.38	Average
11	4.53	32.86	-23.14	56.00	22.60	-0.13	10.39	QP
12	4.53	27.26	-18.74	46.00	17.00	-0.13	10.39	Average

Test Mode :	Mode 1	Temperature :	21~23℃
Test Engineer :	Allen Chang	Relative Humidity :	41~43%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + WLAN Link + Adapter + RJ-11 + RJ-45 + USB Link		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : C001-KS
Condition: FCC PART15C LISN-100807 NEUTRAL

Mode : mode 1

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.36	39.11	-19.67	58.78	29.01	-0.08	10.18	QP
2	0.36	34.41	-14.37	48.78	24.31	-0.08	10.18	Average
3	0.42	34.92	-12.45	47.37	24.80	-0.08	10.20	Average
4	0.42	38.52	-18.85	57.37	28.40	-0.08	10.20	QP
5	0.54	29.93	-16.07	46.00	19.80	-0.08	10.21	Average
6	0.54	35.73	-20.27	56.00	25.60	-0.08	10.21	QP
7	2.45	33.74	-22.26	56.00	23.50	-0.11	10.35	QP
8	2.45	30.14	-15.86	46.00	19.90	-0.11	10.35	Average
9	3.38	28.45	-17.55	46.00	18.19	-0.12	10.38	Average
10	3.38	34.75	-21.25	56.00	24.49	-0.12	10.38	QP
11	4.43	33.06	-22.94	56.00	22.80	-0.13	10.39	QP
12	4.43	27.16	-18.84	46.00	16.90	-0.13	10.39	Average

3.7 Radiated Emission Measurement

3.7.1 Limit of Radiated Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.7.2 Measuring Instruments

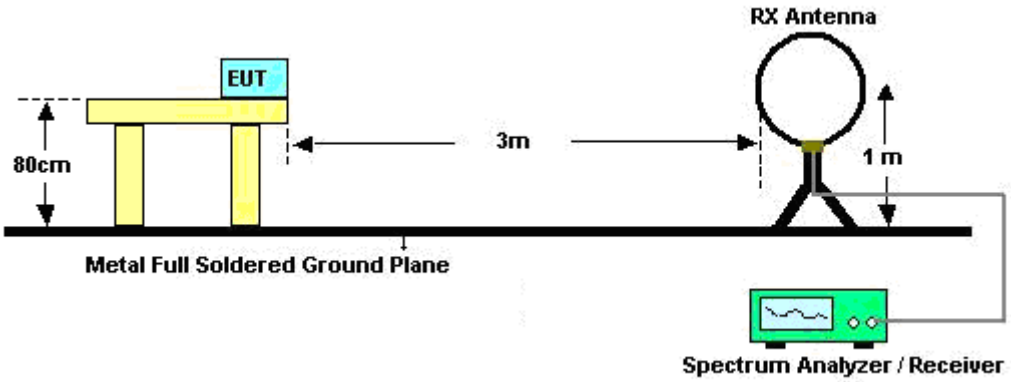
See list of measuring instruments of this test report.

3.7.3 Test Procedures

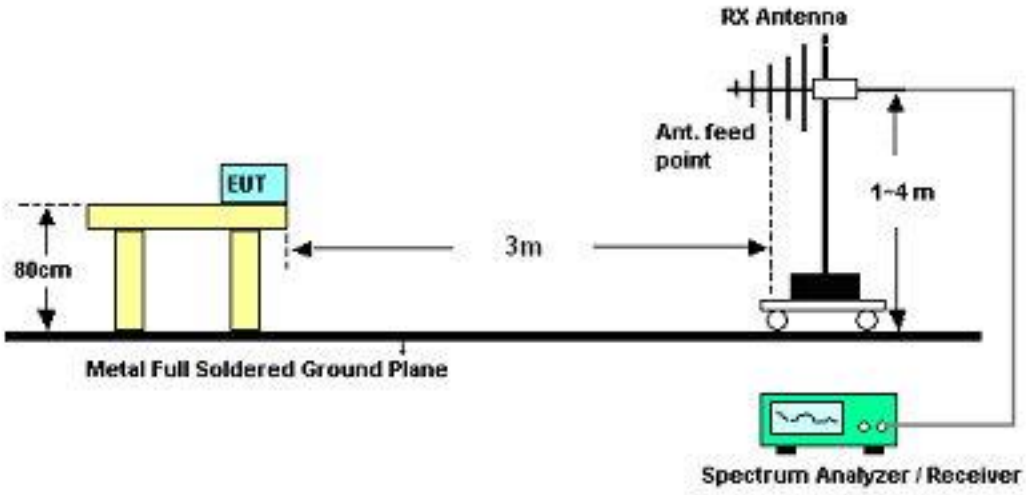
1. The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Use the following spectrum analyzer settings:
   (1) Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold.
   (2) Above 18 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1m.
   Distance extrapolation factor = 20 log (specific distance [3m] / test distance [1m]) (dB)
3. Follow the guidelines in ANSI C63.4-2003 with respect to maximizing the emission by rotating the EUT, measuring the emission for three EUT orthogonal planes, and adjusting the measurement antenna height and polarization. A pre-amp and a high pass filter are used for this test in order to get the good signal level.

3.7.4 Test Setup

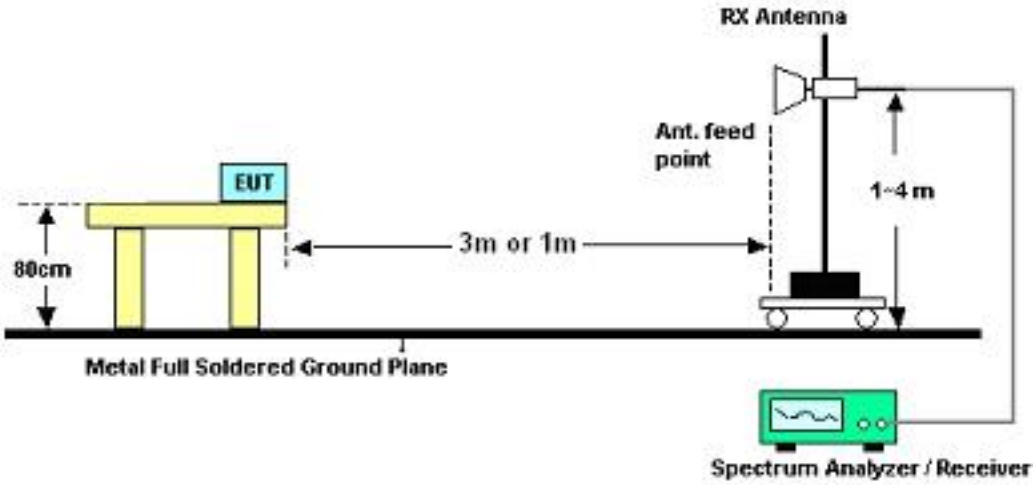
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.7.5 Test Results of Radiated Emissions (9 kHz ~ 30 MHz)

Test Engineer :	Cloud Peng	Temperature :	21~23℃
		Relative Humidity :	41~43%

Frequency (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

3.7.6 Test Result of Radiated Emission (30 MHz ~ 10th Harmonic)

Test Mode :	Mode 1	Temperature :	21~23℃
Test Channel :	01	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Horizontal
Remark :	2412 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.59	35.61	-4.39	40	50.37	15.1	0.23	30.09	100	0	Peak
125.04	37.85	-5.65	43.5	55.62	11.75	0.46	29.98	-	-	Peak
250.05	37.93	-8.07	46	55.1	12	0.67	29.84	-	-	Peak
883.1	32.3	-13.7	46	40.07	20.47	1.29	29.53	-	-	Peak
894.3	34.5	-11.5	46	42.24	20.46	1.3	29.5	-	-	Peak
911.8	33.18	-12.82	46	40.86	20.5	1.31	29.49	-	-	Peak
2385.05	53.95	-20.05	74	51.71	32.83	3.42	34.01	100	272	Peak
2385.05	45.54	-8.46	54	43.3	32.83	3.42	34.01	100	272	Average
2412	98.52	-	-	96.19	32.89	3.52	34.08	100	246	Average
2412	104.75	-	-	102.42	32.89	3.52	34.08	100	246	Peak
2489.17	50.58	-23.42	74	48.04	33.05	3.72	34.23	100	286	Peak
2489.17	40.26	-13.74	54	37.72	33.05	3.72	34.23	100	286	Average

Test Mode :	Mode 1	Temperature :	21~23℃
Test Channel :	01	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Vertical
Remark :	2412 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.59	36.08	-3.92	40	50.84	15.1	0.23	30.09	-	-	Peak
106.68	36.11	-7.39	43.5	54.22	11.43	0.42	29.96	-	-	Peak
125.04	37.83	-5.67	43.5	55.6	11.75	0.46	29.98	100	205	QP
884.5	32.44	-13.56	46	40.21	20.47	1.29	29.53	-	-	Peak
894.3	35.54	-10.46	46	43.28	20.46	1.3	29.5	-	-	Peak
946.8	33.12	-20.88	54	40.61	20.72	1.33	29.54	-	-	Peak
2385.24	55.63	-18.37	74	53.39	32.83	3.42	34.01	100	218	Peak
2385.24	45.33	-8.67	54	43.09	32.83	3.42	34.01	100	218	Average
2412	99.65	-	-	97.32	32.89	3.52	34.08	100	262	Average
2412	106.9	-	-	104.57	32.89	3.52	34.08	100	262	Peak
2484.04	54.56	-19.44	74	52.07	33.01	3.68	34.2	100	258	Peak
2484.04	40.9	-13.1	54	38.41	33.01	3.68	34.2	100	258	Average

Test Mode :	Mode 2	Temperature :	21~23℃
Test Channel :	06	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Horizontal
Remark :	2437 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
104.79	25.69	-17.81	43.5	44.08	11.15	0.42	29.96	-	-	Peak
125.04	35.55	-7.95	43.5	53.32	11.75	0.46	29.98	100	360	Peak
250.05	35.67	-10.33	46	52.84	12	0.67	29.84	-	-	Peak
374.9	31.9	-14.1	46	45.7	15.25	0.83	29.88	-	-	Peak
892.9	36.88	-9.12	46	44.62	20.46	1.3	29.5	-	-	Peak
946.8	33.46	-20.54	54	40.95	20.72	1.33	29.54	-	-	Peak
2382.77	52.17	-21.83	74	49.93	32.83	3.42	34.01	100	250	Peak
2382.77	40.64	-13.36	54	38.4	32.83	3.42	34.01	100	250	Average
2437	100.32	-	-	97.92	32.95	3.6	34.15	100	247	Average
2437	106.48	-	-	104.08	32.95	3.6	34.15	100	247	Peak
2491.64	53.76	-20.24	74	51.22	33.05	3.72	34.23	100	247	Peak
2491.64	41.29	-12.71	54	38.75	33.05	3.72	34.23	100	247	Average

Test Mode :	Mode 2	Temperature :	21~23℃
Test Channel :	06	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Vertical
Remark :	2437 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.59	35.41	-4.59	40	50.17	15.1	0.23	30.09	100	0	Peak
125.04	37.81	-5.69	43.5	55.58	11.75	0.46	29.98	-	-	Peak
250.05	38.1	-7.9	46	55.27	12	0.67	29.84	-	-	Peak
374.9	27.38	-18.62	46	41.18	15.25	0.83	29.88	-	-	Peak
880.3	36.85	-9.15	46	44.63	20.47	1.29	29.54	-	-	Peak
946.8	32.61	-21.39	54	40.1	20.72	1.33	29.54	-	-	Peak
2359.78	50.55	-23.45	74	48.34	32.81	3.38	33.98	100	252	Peak
2359.78	38.92	-15.08	54	36.71	32.81	3.38	33.98	100	252	Average
2437	96.88	-	-	94.48	32.95	3.6	34.15	100	262	Average
2437	104.69	-	-	102.29	32.95	3.6	34.15	100	262	Peak
2491.26	52.91	-21.09	74	50.37	33.05	3.72	34.23	100	244	Peak
2491.26	40.03	-13.97	54	37.49	33.05	3.72	34.23	100	244	Average

Test Mode :	Mode 3	Temperature :	21~23℃
Test Channel :	11	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Horizontal
Remark :	2462 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
94.26	23.47	-20.03	43.5	43.39	9.66	0.4	29.98	-	-	Peak
125.04	35.56	-7.94	43.5	53.33	11.75	0.46	29.98	100	360	Peak
250.05	34.86	-11.14	46	52.03	12	0.67	29.84	-	-	Peak
374.9	31.73	-14.27	46	45.53	15.25	0.83	29.88	-	-	Peak
915.3	33.12	-12.88	46	40.78	20.53	1.31	29.5	-	-	Peak
946.8	33.29	-20.71	54	40.78	20.72	1.33	29.54	-	-	Peak
2384.48	51.85	-22.15	74	49.61	32.83	3.42	34.01	100	231	Peak
2384.48	39.86	-14.14	54	37.62	32.83	3.42	34.01	100	231	Average
2462	101.12	-	-	98.67	32.98	3.64	34.17	100	253	Average
2462	107.2	-	-	104.75	32.98	3.64	34.17	100	253	Peak
2483.5	56.58	-17.42	74	54.09	33.01	3.68	34.2	100	253	Peak
2483.5	47.92	-6.08	54	45.43	33.01	3.68	34.2	100	253	Average

Test Mode :	Mode 3	Temperature :	21~23℃
Test Channel :	11	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Vertical
Remark :	2462 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
94.26	35.02	-8.48	43.5	54.94	9.66	0.4	29.98	-	-	Peak
125.04	38.93	-4.57	43.5	56.7	11.75	0.46	29.98	100	360	Peak
250.05	37.96	-8.04	46	55.13	12	0.67	29.84	-	-	Peak
374.9	27.18	-18.82	46	40.98	15.25	0.83	29.88	-	-	Peak
902.7	35.8	-10.2	46	43.52	20.46	1.3	29.48	-	-	Peak
939.1	33	-13	46	40.52	20.68	1.33	29.53	-	-	Peak
2359.97	50.54	-23.46	74	48.33	32.81	3.38	33.98	100	277	Peak
2359.97	38.62	-15.38	54	36.41	32.81	3.38	33.98	100	277	Average
2462	99.59	-	-	97.14	32.98	3.64	34.17	100	279	Average
2462	108.38	-	-	105.93	32.98	3.64	34.17	100	279	Peak
2483.5	57.72	-16.28	74	55.23	33.01	3.68	34.2	100	239	Peak
2483.5	46.29	-7.71	54	43.8	33.01	3.68	34.2	100	239	Average

Test Mode :	Mode 4	Temperature :	21~23℃
Test Channel :	01	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Horizontal
Remark :	2412 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
84.54	22.55	-17.45	40	44.67	7.53	0.37	30.02	-	-	Peak
125.04	35.73	-7.77	43.5	53.5	11.75	0.46	29.98	100	337	Peak
250.32	34.92	-11.08	46	52.09	12	0.67	29.84	-	-	Peak
374.9	31.77	-14.23	46	45.57	15.25	0.83	29.88	-	-	Peak
746.6	27.9	-18.1	46	36.39	19.88	1.18	29.55	-	-	Peak
911.8	34.15	-11.85	46	41.83	20.5	1.31	29.49	-	-	Peak
2389.8	58.47	-15.53	74	56.19	32.86	3.47	34.05	100	355	Peak
2389.8	46.21	-7.79	54	43.93	32.86	3.47	34.05	100	355	Average
2412	95.92	-	-	93.59	32.89	3.52	34.08	100	12	Average
2412	103.59	-	-	101.26	32.89	3.52	34.08	100	12	Peak
2485.75	52.33	-21.67	74	49.84	33.01	3.68	34.2	100	116	Peak
2485.75	38.99	-15.01	54	36.5	33.01	3.68	34.2	100	116	Average

Test Mode :	Mode 4	Temperature :	21~23℃
Test Channel :	01	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Vertical
Remark :	2412 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.59	35.88	-4.12	40	50.64	15.1	0.23	30.09	100	124	Peak
125.04	38.89	-4.61	43.5	56.66	11.75	0.46	29.98	-	-	Peak
250.05	36.81	-9.19	46	53.98	12	0.67	29.84	-	-	Peak
533.1	24.88	-21.12	46	35.44	18.14	0.99	29.69	-	-	Peak
588.4	23.86	-22.14	46	33.85	18.58	1.06	29.63	-	-	Peak
902.7	30.83	-15.17	46	38.55	20.46	1.3	29.48	-	-	Peak
2389.61	57.27	-16.73	74	54.99	32.86	3.47	34.05	100	37	Peak
2389.61	43.32	-10.68	54	41.04	32.86	3.47	34.05	100	37	Average
2412	95.57	-	-	93.24	32.89	3.52	34.08	100	4	Average
2412	103.95	-	-	101.62	32.89	3.52	34.08	100	4	Peak
2490.88	41.74	-12.26	54	39.2	33.05	3.72	34.23	100	155	Average
2490.88	54.44	-19.56	74	51.9	33.05	3.72	34.23	100	155	Peak

Test Mode :	Mode 5	Temperature :	21~23℃
Test Channel :	06	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Horizontal
Remark :	2437 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
104.79	25	-18.5	43.5	43.39	11.15	0.42	29.96	-	-	Peak
125.04	35.43	-8.07	43.5	53.2	11.75	0.46	29.98	100	38	Peak
250.05	34.64	-11.36	46	51.81	12	0.67	29.84	-	-	Peak
319.6	25.81	-20.19	46	41.45	13.55	0.76	29.95	-	-	Peak
374.9	32.04	-13.96	46	45.84	15.25	0.83	29.88	-	-	Peak
746.6	27.07	-18.93	46	35.56	19.88	1.18	29.55	-	-	Peak
2359.97	51.1	-22.9	74	48.89	32.81	3.38	33.98	100	122	Peak
2359.97	44.01	-9.99	54	41.8	32.81	3.38	33.98	100	122	Average
2437	102.3	-	-	99.9	32.95	3.6	34.15	100	0	Peak
2437	95	-	-	92.6	32.95	3.6	34.15	100	0	Average
2489.93	52.81	-21.19	74	50.27	33.05	3.72	34.23	100	204	Peak
2489.93	36.74	-17.26	54	34.2	33.05	3.72	34.23	100	204	Average

Test Mode :	Mode 5	Temperature :	21~23℃
Test Channel :	06	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Vertical
Remark :	2437 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.59	35.41	-4.59	40	50.17	15.1	0.23	30.09	100	0	Peak
125.04	38.5	-5	43.5	56.27	11.75	0.46	29.98	-	-	Peak
250.05	37.3	-8.7	46	54.47	12	0.67	29.84	-	-	Peak
374.9	28.05	-17.95	46	41.85	15.25	0.83	29.88	-	-	Peak
746.6	27.12	-18.88	46	35.61	19.88	1.18	29.55	-	-	Peak
904.8	33.65	-12.35	46	41.36	20.47	1.3	29.48	-	-	Peak
2359.97	50.97	-23.03	74	48.76	32.81	3.38	33.98	100	166	Peak
2359.97	43.51	-10.49	54	41.3	32.81	3.38	33.98	100	166	Average
2437	95.9	-	-	93.5	32.95	3.6	34.15	100	346	Average
2437	103.41	-	-	101.01	32.95	3.6	34.15	100	346	Peak
2489.55	53.8	-20.2	74	51.26	33.05	3.72	34.23	100	331	Peak
2489.55	39.84	-14.16	54	37.3	33.05	3.72	34.23	100	331	Average

Test Mode :	Mode 6	Temperature :	21~23℃
Test Channel :	11	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Horizontal
Remark :	2462 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
94.26	23.97	-19.53	43.5	43.89	9.66	0.4	29.98	-	-	Peak
125.04	35.54	-7.96	43.5	53.31	11.75	0.46	29.98	100	248	Peak
250.05	36.88	-9.12	46	54.05	12	0.67	29.84	-	-	Peak
374.9	27.22	-18.78	46	41.02	15.25	0.83	29.88	-	-	Peak
746.6	26.27	-19.73	46	34.76	19.88	1.18	29.55	-	-	Peak
860	25.28	-20.72	46	33.13	20.5	1.28	29.63	-	-	Peak
2360.16	43.15	-10.85	54	40.94	32.81	3.38	33.98	100	106	Average
2360.16	51.93	-22.07	74	49.72	32.81	3.38	33.98	100	106	Peak
2462	95.73	-	-	93.28	32.98	3.64	34.17	100	107	Average
2462	102.93	-	-	100.48	32.98	3.64	34.17	100	360	Peak
2486.32	37.19	-16.81	54	34.7	33.01	3.68	34.2	100	335	Average
2486.32	53.35	-20.65	74	50.86	33.01	3.68	34.2	100	335	Peak

Test Mode :	Mode 6	Temperature :	21~23℃
Test Channel :	11	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Vertical
Remark :	2462 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.59	35.5	-4.5	40	50.26	15.1	0.23	30.09	100	77	Peak
42.96	33.88	-6.12	40	53.23	10.48	0.26	30.09	-	-	Peak
125.04	38.29	-5.21	43.5	56.06	11.75	0.46	29.98	-	-	Peak
374.9	28.29	-17.71	46	42.09	15.25	0.83	29.88	-	-	Peak
533.1	25.18	-20.82	46	35.74	18.14	0.99	29.69	-	-	Peak
746.6	27.26	-18.74	46	35.75	19.88	1.18	29.55	-	-	Peak
2359.59	50.74	-23.26	74	48.53	32.81	3.38	33.98	100	171	Peak
2359.59	42.71	-11.29	54	40.5	32.81	3.38	33.98	100	171	Average
2462	102.85	-	-	100.4	32.98	3.64	34.17	100	211	Peak
2462	94.95	-	-	92.5	32.98	3.64	34.17	100	211	Average
2488.41	39.99	-14.01	54	37.45	33.05	3.72	34.23	100	33	Average
2488.41	52.45	-21.55	74	49.91	33.05	3.72	34.23	100	33	Peak

Test Mode :	Mode 7	Temperature :	21~23℃
Test Channel :	01	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Horizontal
Remark :	2412 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
62.94	18.29	-21.71	40	42.84	5.25	0.32	30.12	-	-	Peak
125.04	28.56	-14.94	43.5	46.33	11.75	0.46	29.98	-	-	Peak
250.05	37.99	-8.01	46	55.16	12	0.67	29.84	100	221	Peak
319.6	26.43	-19.57	46	42.07	13.55	0.76	29.95	-	-	Peak
374.9	30.03	-15.97	46	43.83	15.25	0.83	29.88	-	-	Peak
880.3	34.96	-11.04	46	42.74	20.47	1.29	29.54	-	-	Peak
2359.97	54.56	-19.44	74	52.35	32.81	3.38	33.98	100	16	Peak
2359.97	44.31	-9.69	54	42.1	32.81	3.38	33.98	100	16	Average
2412	95.42	-	-	93.09	32.89	3.52	34.08	100	179	Average
2412	103.91	-	-	101.58	32.89	3.52	34.08	100	179	Peak
2483.66	52	-22	74	49.51	33.01	3.68	34.2	100	20	Peak
2483.66	36.69	-17.31	54	34.2	33.01	3.68	34.2	100	20	Average

Test Mode :	Mode 7	Temperature :	21~23℃
Test Channel :	01	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Vertical
Remark :	2412 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.59	33.34	-6.66	40	48.1	15.1	0.23	30.09	-	-	Peak
74.01	33.18	-6.82	40	57.22	5.68	0.34	30.06	-	-	Peak
125.04	39.27	-4.23	43.5	57.04	11.75	0.46	29.98	100	81	Peak
533.1	26.75	-19.25	46	37.31	18.14	0.99	29.69	-	-	Peak
746.6	25.01	-20.99	46	33.5	19.88	1.18	29.55	-	-	Peak
880.3	35.68	-10.32	46	43.46	20.47	1.29	29.54	-	-	Peak
2359.78	52.08	-21.92	74	49.87	32.81	3.38	33.98	100	132	Peak
2359.78	41.81	-12.19	54	39.6	32.81	3.38	33.98	100	132	Average
2412	94.92	-	-	92.59	32.89	3.52	34.08	100	168	Average
2412	103.14	-	-	100.81	32.89	3.52	34.08	100	168	Peak
2492.4	53.02	-20.98	74	50.48	33.05	3.72	34.23	100	77	Peak
2492.4	38.84	-15.16	54	36.3	33.05	3.72	34.23	100	77	Average

Test Mode :	Mode 8	Temperature :	21~23℃
Test Channel :	06	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Horizontal
Remark :	2437 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.54	21.1	-18.9	40	33.64	17.29	0.25	30.08	-	-	Peak
125.04	27.72	-15.78	43.5	45.49	11.75	0.46	29.98	-	-	Peak
250.05	37.12	-8.88	46	54.29	12	0.67	29.84	100	153	Peak
319.6	25.82	-20.18	46	41.46	13.55	0.76	29.95	-	-	Peak
374.9	28.65	-17.35	46	42.45	15.25	0.83	29.88	-	-	Peak
902.7	33.48	-12.52	46	41.2	20.46	1.3	29.48	-	-	Peak
2384.67	52.16	-21.84	74	49.92	32.83	3.42	34.01	100	196	Peak
2384.67	39.84	-14.16	54	37.6	32.83	3.42	34.01	100	196	Average
2437	93.1	-	-	90.7	32.95	3.6	34.15	100	221	Average
2437	100.82	-	-	98.42	32.95	3.6	34.15	100	221	Peak
2490.5	53.47	-20.53	74	50.93	33.05	3.72	34.23	100	106	Peak
2490.5	37.04	-16.96	54	34.5	33.05	3.72	34.23	100	106	Average

Test Mode :	Mode 8	Temperature :	21~23℃
Test Channel :	06	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Vertical
Remark :	2437 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.59	33.06	-6.94	40	47.82	15.1	0.23	30.09	100	194	Peak
94.26	31.19	-12.31	43.5	51.11	9.66	0.4	29.98	-	-	Peak
145.29	31.67	-11.83	43.5	50.79	10.37	0.5	29.99	-	-	Peak
533.1	24.78	-21.22	46	35.34	18.14	0.99	29.69	-	-	Peak
746.6	25.7	-20.3	46	34.19	19.88	1.18	29.55	-	-	Peak
897.1	35.6	-10.4	46	43.34	20.45	1.3	29.49	-	-	Peak
2384.86	51.11	-22.89	74	48.87	32.83	3.42	34.01	100	266	Peak
2384.86	37.44	-16.56	54	35.2	32.83	3.42	34.01	100	266	Average
2437	92.7	-	-	90.3	32.95	3.6	34.15	100	0	Average
2437	101.87	-	-	99.47	32.95	3.6	34.15	100	0	Peak
2488.22	55.24	-18.76	74	52.7	33.05	3.72	34.23	100	177	Peak
2488.22	41.14	-12.86	54	38.6	33.05	3.72	34.23	100	177	Average

Test Mode :	Mode 9	Temperature :	21~23℃
Test Channel :	11	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Horizontal
Remark :	2462 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.54	21.1	-18.9	40	33.64	17.29	0.25	30.08	-	-	Peak
125.04	27.72	-15.78	43.5	45.49	11.75	0.46	29.98	-	-	Peak
250.05	35.12	-10.88	46	52.29	12	0.67	29.84	100	153	Peak
374.9	27.84	-18.16	46	41.64	15.25	0.83	29.88	-	-	Peak
533.1	24.03	-21.97	46	34.59	18.14	0.99	29.69	-	-	Peak
902.7	33.74	-12.26	46	41.46	20.46	1.3	29.48	-	-	Peak
2359.97	50.9	-23.1	74	48.69	32.81	3.38	33.98	100	218	Peak
2359.97	43.21	-10.79	54	41	32.81	3.38	33.98	100	218	Average
2462	90.01	-	-	87.56	32.98	3.64	34.17	100	242	Average
2462	98.63	-	-	96.18	32.98	3.64	34.17	100	242	Peak
2483.5	50.82	-23.18	74	48.33	33.01	3.68	34.2	100	189	Peak
2483.5	41.89	-12.11	54	39.4	33.01	3.68	34.2	100	189	Average

Test Mode :	Mode 9	Temperature :	21~23℃
Test Channel :	11	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Vertical
Remark :	2462 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
125.04	38.81	-4.69	43.5	56.58	11.75	0.46	29.98	100	360	Peak
143.4	32.52	-10.98	43.5	51.46	10.55	0.5	29.99	-	-	Peak
250.05	30.75	-15.25	46	47.92	12	0.67	29.84	-	-	Peak
533.1	24.71	-21.29	46	35.27	18.14	0.99	29.69	-	-	Peak
746.6	26.68	-19.32	46	35.17	19.88	1.18	29.55	-	-	Peak
897.8	31.57	-14.43	46	39.3	20.45	1.3	29.48	-	-	Peak
2359.78	50.03	-23.97	74	47.82	32.81	3.38	33.98	100	360	Peak
2359.78	44.21	-9.79	54	42	32.81	3.38	33.98	100	360	Average
2462	90.45	-	-	88	32.98	3.64	34.17	100	12	Average
2462	99.15	-	-	96.7	32.98	3.64	34.17	100	12	Peak
2483.5	50.45	-23.55	74	47.96	33.01	3.68	34.2	100	13	Peak
2483.5	42.49	-11.51	54	40	33.01	3.68	34.2	100	13	Average

Test Mode :	Mode 10	Temperature :	21~23℃
Test Channel :	03	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Horizontal
Remark :	2422 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
125.04	27.88	-15.62	43.5	45.65	11.75	0.46	29.98	-	-	Peak
155.55	15.78	-27.72	43.5	35.41	9.8	0.52	29.95	-	-	Peak
250.32	35.99	-10.01	46	53.16	12	0.67	29.84	100	360	Peak
374.9	28.16	-17.84	46	41.96	15.25	0.83	29.88	-	-	Peak
533.1	25.04	-20.96	46	35.6	18.14	0.99	29.69	-	-	Peak
902.7	31.75	-14.25	46	39.47	20.46	1.3	29.48	-	-	Peak
2388.66	51.84	-22.16	74	49.56	32.86	3.47	34.05	100	243	Peak
2388.66	43.28	-10.72	54	41	32.86	3.47	34.05	100	243	Average
2422	86.36	-	-	84	32.92	3.56	34.12	100	243	Average
2422	94.99	-	-	92.63	32.92	3.56	34.12	100	243	Peak
2489.17	50.35	-23.65	74	47.81	33.05	3.72	34.23	100	0	Peak
2489.17	42.54	-11.46	54	40	33.05	3.72	34.23	100	0	Average

Test Mode :	Mode 10	Temperature :	21~23℃
Test Channel :	03	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Vertical
Remark :	2422 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
73.74	33.36	-6.64	40	57.4	5.68	0.34	30.06	-	-	Peak
125.04	38.8	-4.7	43.5	56.57	11.75	0.46	29.98	100	0	Peak
250.05	31.76	-14.24	46	48.93	12	0.67	29.84	-	-	Peak
533.1	25.27	-20.73	46	35.83	18.14	0.99	29.69	-	-	Peak
746.6	26.04	-19.96	46	34.53	19.88	1.18	29.55	-	-	Peak
946.8	32.78	-21.22	54	40.27	20.72	1.33	29.54	-	-	Peak
2390	50.78	-23.22	74	48.5	32.86	3.47	34.05	100	17	Peak
2390	42.28	-11.72	54	40	32.86	3.47	34.05	100	17	Average
2422	85.86	-	-	83.5	32.92	3.56	34.12	100	13	Average
2422	95.19	-	-	92.83	32.92	3.56	34.12	100	13	Peak
2486.51	50.23	-23.77	74	47.74	33.01	3.68	34.2	100	360	Peak
2486.51	42.49	-11.51	54	40	33.01	3.68	34.2	100	360	Average

Test Mode :	Mode 11	Temperature :	21~23℃
Test Channel :	06	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Horizontal
Remark :	2437 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
94.26	19.67	-23.83	43.5	39.59	9.66	0.4	29.98	-	-	Peak
125.04	27.62	-15.88	43.5	45.39	11.75	0.46	29.98	-	-	Peak
250.05	35.4	-10.6	46	52.57	12	0.67	29.84	-	-	Peak
533.1	25.74	-20.26	46	36.3	18.14	0.99	29.69	-	-	Peak
746.6	25.29	-20.71	46	33.78	19.88	1.18	29.55	-	-	Peak
897.8	37.88	-8.12	46	45.61	20.45	1.3	29.48	100	360	Peak
2359.78	51.26	-22.74	74	49.05	32.81	3.38	33.98	100	204	Peak
2359.78	42.21	-11.79	54	40	32.81	3.38	33.98	100	204	Average
2437	88.15	-	-	85.75	32.95	3.6	34.15	100	187	Average
2437	95.4	-	-	93	32.95	3.6	34.15	100	187	Peak
2491.07	50.36	-23.64	74	47.82	33.05	3.72	34.23	100	360	Peak
2491.07	44.14	-9.86	54	41.6	33.05	3.72	34.23	100	360	Average

Test Mode :	Mode 11	Temperature :	21~23℃
Test Channel :	06	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Vertical
Remark :	2437 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
73.74	33.39	-6.61	40	57.43	5.68	0.34	30.06	-	-	Peak
125.04	37.6	-5.9	43.5	55.37	11.75	0.46	29.98	100	360	Peak
250.05	28.52	-17.48	46	45.69	12	0.67	29.84	-	-	Peak
533.1	24.86	-21.14	46	35.42	18.14	0.99	29.69	-	-	Peak
746.6	27.07	-18.93	46	35.56	19.88	1.18	29.55	-	-	Peak
902.7	33.97	-12.03	46	41.69	20.46	1.3	29.48	-	-	Peak
2359.97	50.22	-23.78	74	48.01	32.81	3.38	33.98	100	360	Peak
2359.97	43.21	-10.79	54	41	32.81	3.38	33.98	100	360	Average
2437	87.44	-	-	85.04	32.95	3.6	34.15	100	307	Average
2437	96.02	-	-	93.62	32.95	3.6	34.15	100	307	Peak
2487.27	42.49	-11.51	54	40	33.01	3.68	34.2	100	360	Average
2487.27	51.13	-22.87	74	48.64	33.01	3.68	34.2	100	360	Peak

Test Mode :	Mode 12	Temperature :	21~23℃
Test Channel :	09	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Horizontal
Remark :	2452 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
94.26	19.12	-24.38	43.5	39.04	9.66	0.4	29.98	-	-	Peak
125.04	27.22	-16.28	43.5	44.99	11.75	0.46	29.98	-	-	Peak
250.05	35.47	-10.53	46	52.64	12	0.67	29.84	-	-	Peak
374.9	26.96	-19.04	46	40.76	15.25	0.83	29.88	-	-	Peak
533.1	24.54	-21.46	46	35.1	18.14	0.99	29.69	-	-	Peak
880.3	40.92	-5.08	46	48.7	20.47	1.29	29.54	100	0	Peak
2359.78	51.04	-22.96	74	48.83	32.81	3.38	33.98	100	243	Peak
2359.78	45.21	-8.79	54	43	32.81	3.38	33.98	100	243	Average
2452	95.51	-	-	93.11	32.95	3.6	34.15	100	360	Peak
2452	84.3	-	-	81.9	32.95	3.6	34.15	100	360	Average
2484.23	43.66	-10.34	54	41.17	33.01	3.68	34.2	100	180	Average
2484.23	54.43	-19.57	74	51.94	33.01	3.68	34.2	100	180	Peak

Test Mode :	Mode 12	Temperature :	21~23℃
Test Channel :	09	Relative Humidity :	41~43%
Test Engineer :	Cloud Peng	Polarization :	Vertical
Remark :	2452 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
73.74	33.42	-6.58	40	57.46	5.68	0.34	30.06	-	-	Peak
125.04	37.81	-5.69	43.5	55.58	11.75	0.46	29.98	100	0	Peak
250.05	31.25	-14.75	46	48.42	12	0.67	29.84	-	-	Peak
374.9	22.71	-23.29	46	36.51	15.25	0.83	29.88	-	-	Peak
533.1	24.98	-21.02	46	35.54	18.14	0.99	29.69	-	-	Peak
894.3	38.92	-7.08	46	46.66	20.46	1.3	29.5	-	-	Peak
2360.16	50.69	-23.31	74	48.48	32.81	3.38	33.98	100	360	Peak
2360.16	44.21	-9.79	54	42	32.81	3.38	33.98	100	360	Average
2452	85.05	-	-	82.65	32.95	3.6	34.15	100	306	Average
2452	96.18	-	-	93.78	32.95	3.6	34.15	100	306	Peak
2487.08	53.16	-20.84	74	50.67	33.01	3.68	34.2	100	12	Peak
2487.08	42.49	-11.51	54	40	33.01	3.68	34.2	100	12	Average

3.8 Antenna Requirements

3.8.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

3.8.2 Antenna Connected Construction

The antennas type used in this product is Chip Antenna without connector and it is considered to meet antenna requirement.

3.8.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Jan. 07, 2011	Jan. 06, 2012	Conducted (TH01-KS)
Power Meter	Agilent	E4416A	MY45101555	N/A	Aug. 24, 2010	Aug. 23, 2011	Conducted (TH01-KS)
Power Sensor	Agilent	E9327A	MY44421198	N/A	Aug. 24, 2010	Aug. 23, 2011	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	N/A	Dec. 28, 2010	Dec. 27, 2011	Conducted (TH01-KS)
DC Power Supply	TOPWARD	3306D	N/A	N/A	N/A	N/A	Conducted (TH01-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz	Jun. 22, 2010	Jun. 21, 2011	Conduction (CO01-KS)
LISN	MessTec	AN3016	60103	9kHz~30MHz	Jan. 07, 2011	Jan. 06, 2012	Conduction (CO01-KS)
LISN	MessTec	AN3016	60105	9kHz~30MHz	Jan. 07, 2011	Jan. 06, 2012	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	N/A	Nov. 10, 2010	Nov. 09, 2011	Conduction (CO01-KS)
System Simulator	R&S	CMU200	837587/066	Full-Band	Jan. 07, 2011	Jan. 06, 2012	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 16, 2010	Nov. 15, 2011	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Jan. 07, 2011	Jan. 06, 2012	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Dec. 07, 2010	Dec. 06, 2011	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	00075959	1GHz~18GHz	Jan. 07, 2011	Jan. 06, 2012	Radiation (03CH01-KS)
Amplifier	Wireless	FPA-6592G	060004	30MHz~2GHz	Dec. 09, 2010	Dec. 08, 2011	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Jan. 07, 2011	Jan. 06, 2012	Radiation (03CH01-KS)
Actice hore antenna	com-power	AHA-118	701023	1G-18GHz	Nov. 09, 2010	Nov. 08, 2011	Radiation (03CH01-KS)
Signal Generator	R&S	SMR40	100455	10MHz~40GHz	Jan. 06, 2011	Jan. 05, 2012	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15-40GHz	Oct. 15, 2010	Oct. 14, 2011	Radiation (03CH01-KS)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz~30 MHz	Jul. 29, 2010	Jul. 28, 2011	Radiation (03CH01-KS)

5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.10	Normal (k=2)	0.05
Cable Loss	0.10	Normal (k=2)	0.05
AMN Insertion Loss	2.50	Rectangular	0.63
Receiver Specification	1.50	Rectangular	0.43
Site Imperfection	1.39	Rectangular	0.80
Mismatch	+0.34 / -0.35	U-Shape	0.24
Combined Standard Uncertainty Uc(y)	**1.13**		
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.26**		

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.41	Normal (k=2)	0.21
Antenna Factor Calibration	0.83	Normal (k=2)	0.42
Cable Loss Calibration	0.25	Normal (k=2)	0.13
Pre-Amplifier Gain Calibration	0.27	Normal (k=2)	0.14
RCV/SPA Specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site Imperfection	1.43	Rectangular	0.83
Mismatch	+0.39 / -0.41	U-Shape	0.28
Combined Standard Uncertainty Uc(y)	**1.27**		
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.54**		

Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Contribution	Uncertainty of X_i		$u(X_i)$	C_i	$C_i * u(X_i)$
	dB	Probability Distribution			
Receiver Reading	±0.10	Normal (k=2)	0.10	1	0.10
Antenna Factor Calibration	±1.70	Normal (k=2)	0.85	1	0.85
Cable Loss Calibration	±0.50	Normal (k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site Imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR Γ1 = 0.197 Antenna VSWR Γ2 = 0.194 Uncertainty = 20Log(1-Γ1*Γ2)	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty Uc(y)	**2.36**				
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.72**				

Appendix A. Photographs of EUT

Please refer to Sporton report number EP131909 as below.