

FCC RF Test Report

APPLICANT : CT Asia
EQUIPMENT : GSM mobile phone
BRAND NAME : BLU
MODEL NAME : Dash
FCC ID : YHLBLUDASH
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : Digital Transmission System (DTS)

The product was received on Mar. 16, 2012 and completely tested on Apr. 05, 2012. We, SPORTON INTERNATIONAL (KUNSHAN) 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:



Jones Tsai / 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
FR231606B	Rev. 01	Initial issue of report	Apr. 06, 2012

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.2	15.247(b)	Power Output	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(d)	Frequency Band Edges	$\leq 20\text{dBc}$	Pass	-
3.4	15.247(d)	Spurious Emission	$< 20\text{ dBc}$	Pass	-
3.5	15.247(e)	Power Spectral Density	$\leq 8\text{dBm}$	Pass	-
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 10.38 dB at 2.69 MHz
3.7	15.247(d)	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 3.49 dB at 41.64 MHz for peak Under limit 3.03 dB at 39.7 MHz for Quasi-Peak
3.8	15.203 & 15.247(b)	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

CT Asia

RMA2011, 20/F, GOLDEN CENTRAL TOWER, NO.3037# JINTIAN ROAD, FUTIAN DISTRICT

1.2 Manufacturer

Telacom INT'L Limited (Shenzhen) Office

Office Tower 28/F, the Pavilion Hotel, Hua Qiang Bei Road 4002, Futian District, 518028, Shenzhen, PRC

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	GSM mobile phone
Brand Name	BLU
Model Name	Dash
FCC ID	YHLBLUDASH
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 : 19.54 dBm (0.090 W) 802.11g : 24.18 dBm (0.262 W) 802.11n (BW 20MHz) : 24.28 dBm (0.268 W) 802.11n (BW 40MHz) : 23.82 dBm (0.241 W)
Antenna Type	Dipole Antenna with gain 1.6 dBi
HW Version	WMABa
SW Version	TL-BR-BLU-DASH-Q15D-E300-V1.0.11
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Production Unit

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.		
	TH01-KS	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

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 (Certification), recorded in a separate test report.

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	DC Power Supply	GW	GPS-30300	N/A	N/A	Unshielded, 1.8 m
2.	System Simulator	Agilent	E5515C	N/A	N/A	Unshielded, 1.8 m
3.	Notebook	DELL	VOSTRO 1440	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
4.	Bluetooth Earphone	Nokia	BH-108	N/A	N/A	N/A
5.	Router	Hometek	NW616	N/A	N/A	Unshielded, 1.8 m

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	19.48	19.41	18.26	18.35
CH 06	2437 MHz	19.54	19.47	18.59	18.62
CH 11	2462 MHz	19.46	19.38	18.17	18.32

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	24.18	23.96	24.06	24.09	24.12	24.07	24.11	24.04
CH 06	2437 MHz	23.88	23.81	23.78	23.84	23.76	23.68	23.81	23.86
CH 11	2462 MHz	23.63	23.76	23.56	23.61	23.57	23.51	23.56	23.61

Channel	Frequency	2.4GHz 802.11n (BW 20MHz) RF Power (dBm)							
		OFDM Data Rate							
		MCS=0	MCS=1	MCS=2	MCS=3	MCS=4	MCS=5	MCS=6	MCS=7
		6.5 Mbps	13 Mbps	19.5 Mbps	26 Mbps	39 Mbps	52 Mbps	58.5 Mbps	65 Mbps
CH 01	2412 MHz	24.27	24.16	24.26	24.24	24.21	24.16	24.25	24.28
CH 06	2437 MHz	23.88	23.84	23.76	23.86	23.91	23.89	23.92	23.96
CH 11	2462 MHz	24.08	24.09	24.08	24.06	24.08	24.01	24.06	24.11

Channel	Frequency	2.4GHz 802.11n (BW 40MHz) RF Power (dBm)							
		OFDM Data Rate							
		MCS=0	MCS=1	MCS=2	MCS=3	MCS=4	MCS=5	MCS=6	MCS=7
		6.5 Mbps	13 Mbps	19.5 Mbps	26 Mbps	39 Mbps	52 Mbps	58.5 Mbps	65 Mbps
CH 03	2422 MHz	23.82	22.86	22.81	22.89	22.76	22.68	22.56	22.74
CH 06	2437 MHz	23.69	22.76	22.68	22.85	22.68	22.61	22.46	22.66
CH 09	2452 MHz	23.58	22.58	22.46	22.82	22.59	22.58	22.46	22.48

Remark:

1. The data rates of WLAN 802.11b/g/n were set in 1Mbps for 802.11b, 6Mbps for 802.11g, 65Mbps for 802.11n (BW 20MHz), and 6.5Mbps 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).

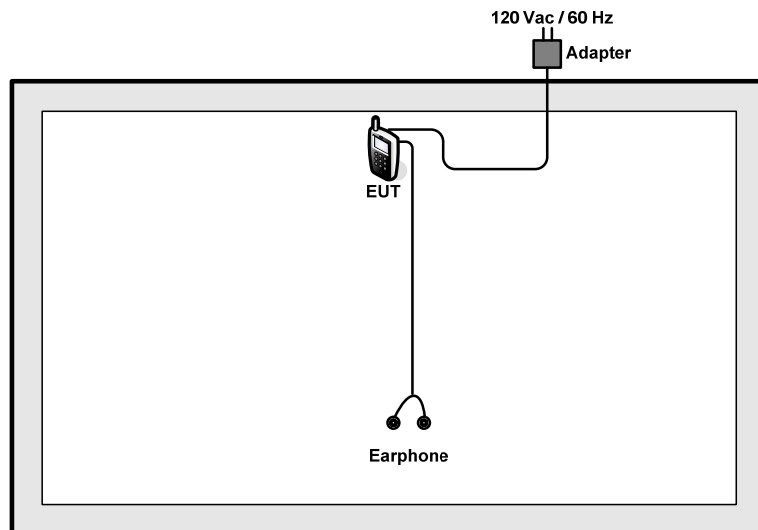
Pre-scanned tests were conducted to determine the final configuration from all possible combinations. The following tables are showing the test modes as the worst cases (H plane) and recorded in this report.

The following tables are showing the test modes as the worst cases and recorded in this report.

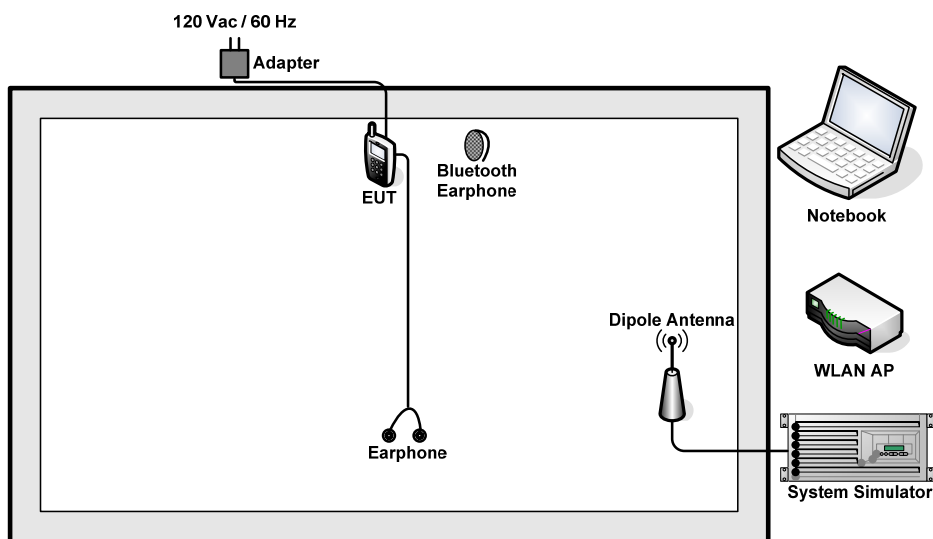
Test Cases		
Test Item	802.11b (Modulation : DSSS)	802.11g/n (Modulation : OFDM)
Conducted TCs	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b CH06_2437 MHz Mode 3 : 802.11b CH11_2462 MHz	Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz Mode 7: 802.11n (BW 20M)_CH01_2412 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 + Bluetooth Link + WLAN Link + Adapter + Earphone + Camera	

2.3 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.4 RF Utility

The programmed RF utility “* # * # 3646633 # * # *” 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.

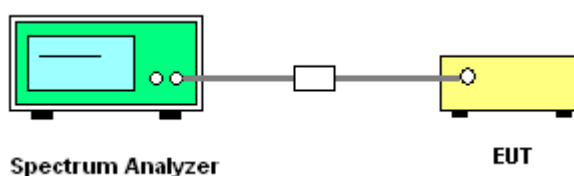
3.1.2 Measuring Instruments

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

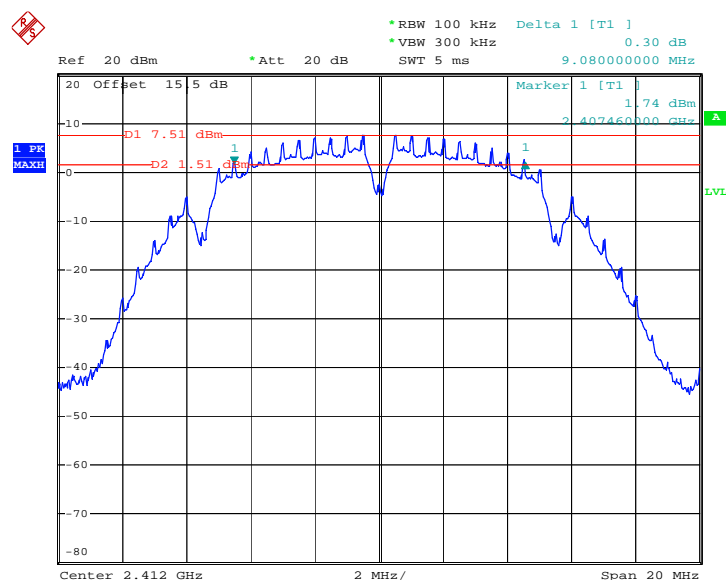


3.1.5 Test Result of 6dB Bandwidth

Test Mode :	Mode 1, 2, 3	Temperature :	23~24℃
Test Engineer :	Zhi Lu	Relative Humidity :	47~48%

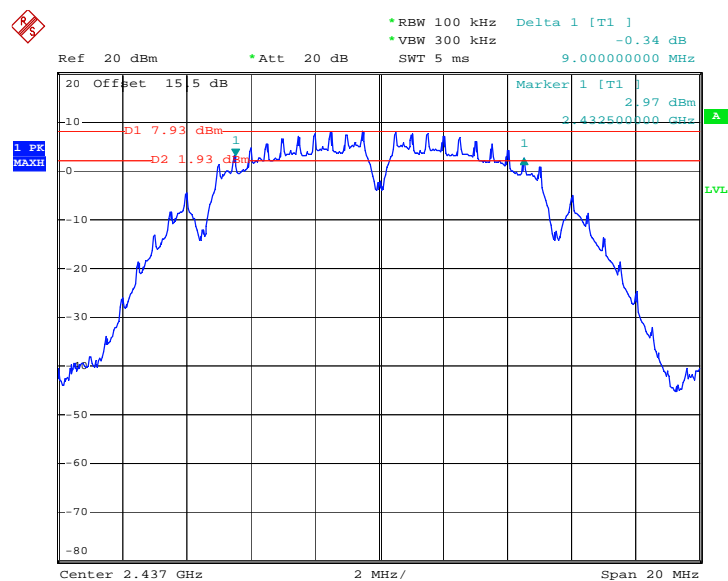
Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	9.08	0.5	Pass
06	2437	9.00	0.5	Pass
11	2462	9.04	0.5	Pass

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



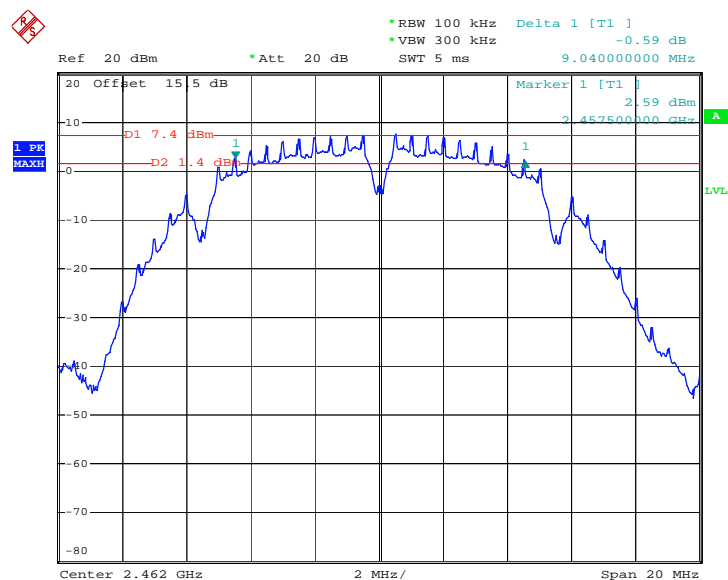
Date: 31.MAR.2012 08:14:44

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



Date: 31.MAR.2012 08:35:09

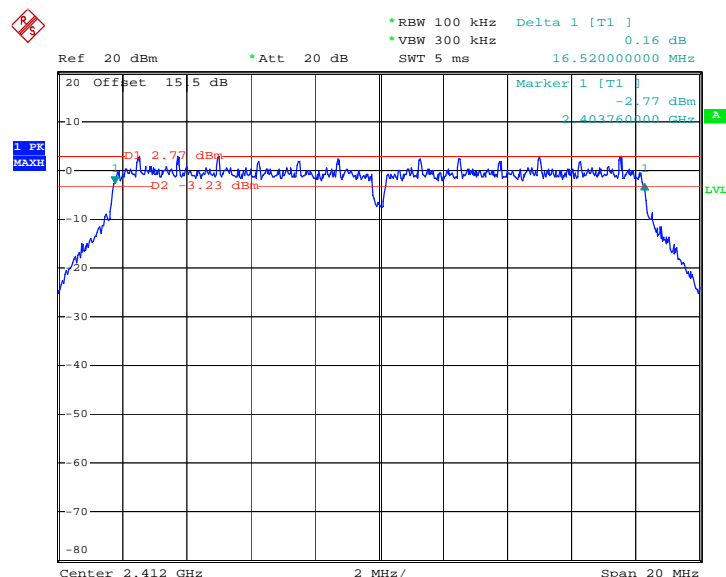
Mode 3 : 6 dB Bandwidth Plot on 802.11b Channel 11



Date: 31.MAR.2012 08:48:56

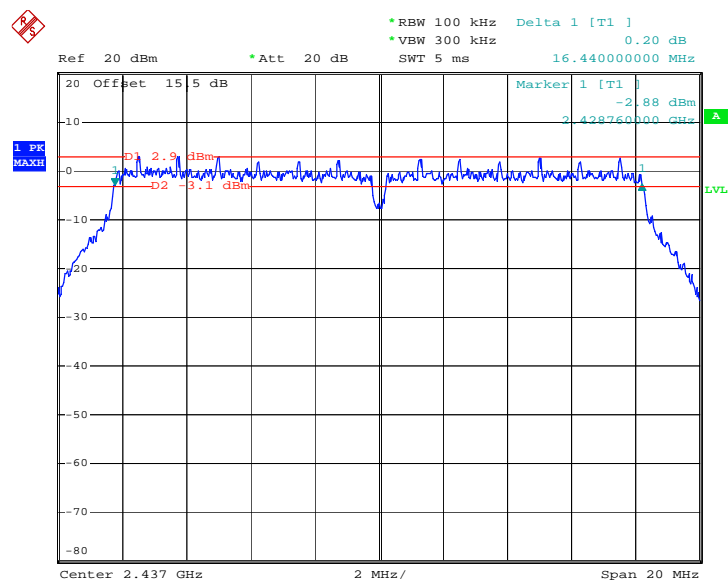
Test Mode :	Mode 4, 5, 6	Temperature :	23~24°C
Test Engineer :	Zhi Lu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	16.52	0.5	Pass
06	2437	16.44	0.5	Pass
11	2462	16.48	0.5	Pass

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


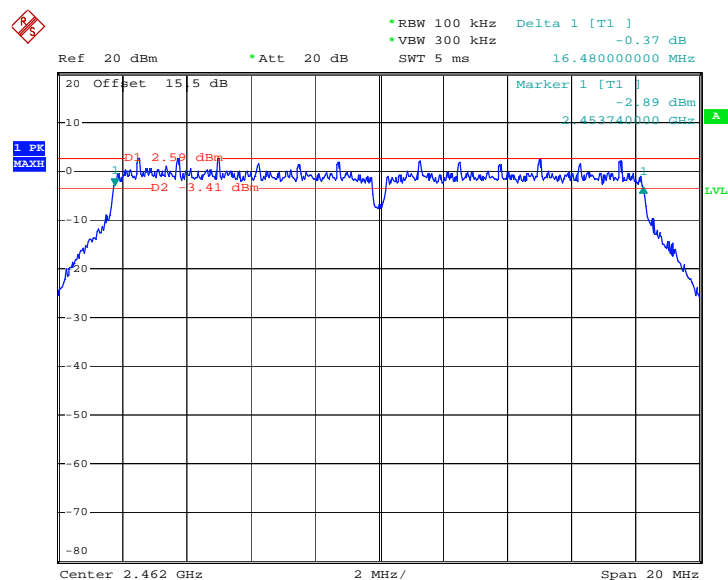
Date: 31.MAR.2012 09:06:40

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



Date: 31.MAR.2012 09:23:46

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



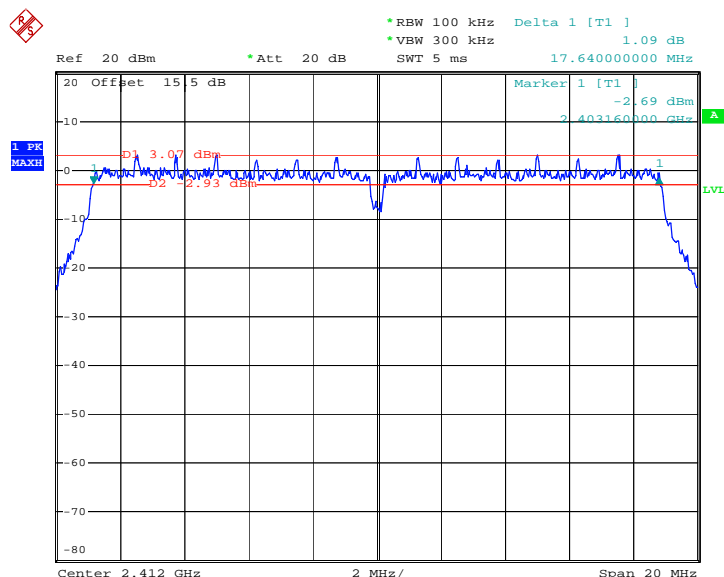
Date: 31.MAR.2012 09:39:55



Test Mode :	Mode 7, 8, 9	Temperature :	23~24°C
Test Engineer :	Zhi Lu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11n (BW 20MHz) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	17.64	0.5	Pass
06	2437	17.76	0.5	Pass
11	2462	17.76	0.5	Pass

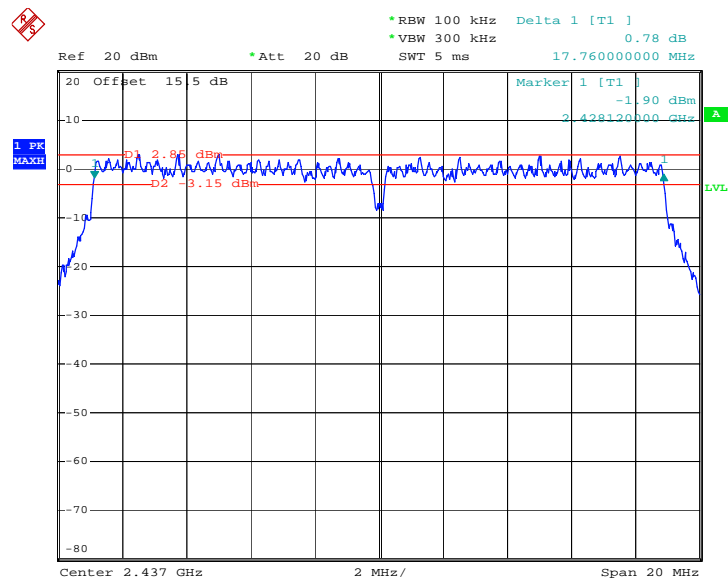
Mode 7 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 01



Date: 31.MAR.2012 09:59:08

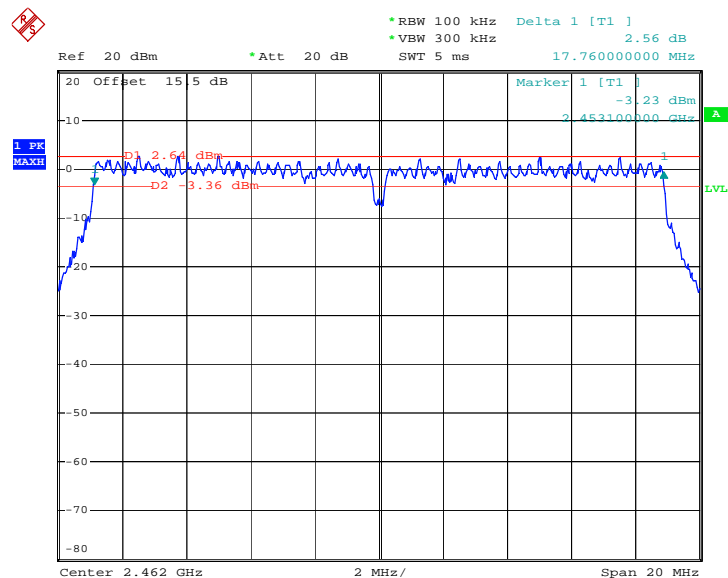


Mode 8 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 06



Date: 31.MAR.2012 10:38:15

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



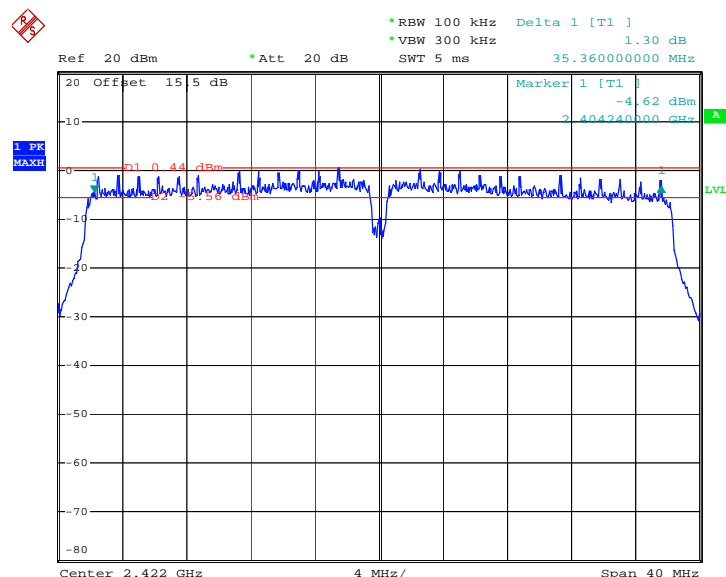
Date: 31.MAR.2012 10:53:24



Test Mode :	Mode 10, 11, 12	Temperature :	23~24°C
Test Engineer :	Zhi Lu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11n (BW 40MHz) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
03	2422	35.36	0.5	Pass
06	2437	35.52	0.5	Pass
09	2452	35.44	0.5	Pass

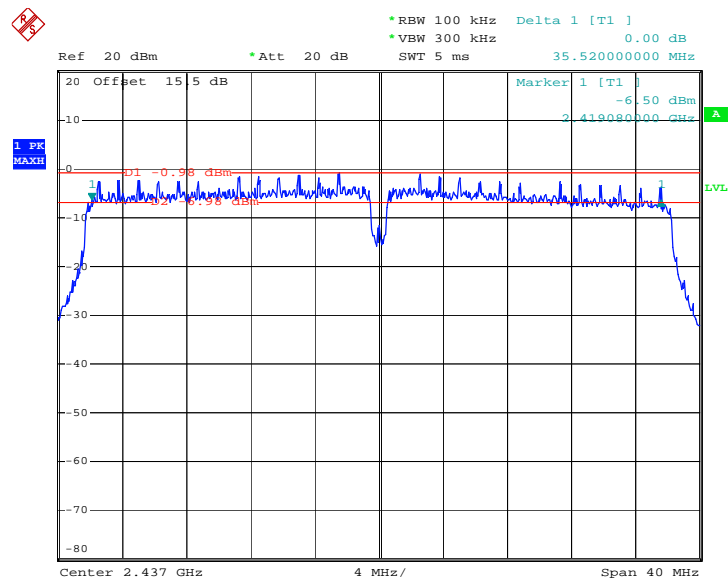
Mode 10 : 6 dB Bandwidth Plot on 802.11n(BW 40MHz) Channel 03



Date: 31.MAR.2012 11:19:48

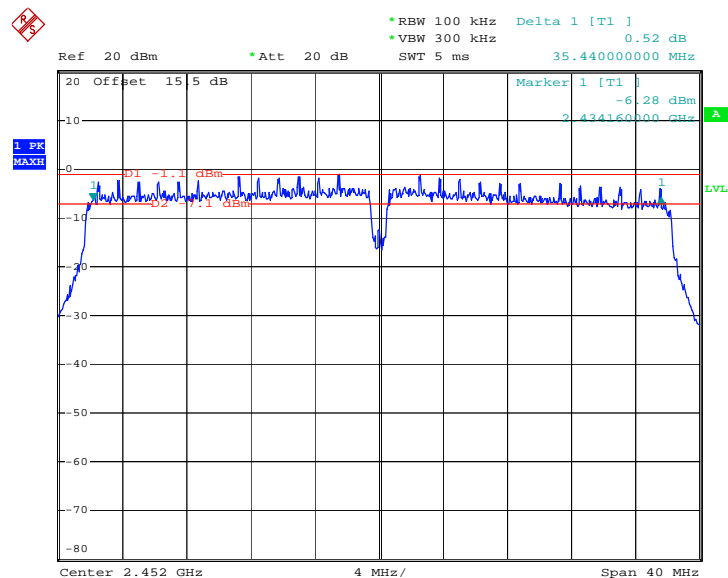


Mode 11 : 6 dB Bandwidth Plot on 802.11n(BW 40MHz) Channel 06



Date: 31.MAR.2012 11:40:20

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



Date: 31.MAR.2012 11:59:50

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.

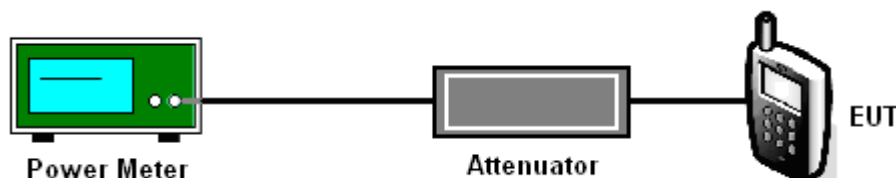
3.2.2 Measuring Instruments

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 :	23~24℃
Test Engineer :	Zhi Lu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11b Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	19.48	30	Pass
06	2437	19.54	30	Pass
11	2462	19.46	30	Pass

Test Mode :	Mode 4, 5, 6	Temperature :	23~24℃
Test Engineer :	Zhi Lu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	24.18	30	Pass
06	2437	23.88	30	Pass
11	2462	23.63	30	Pass

Test Mode :	Mode 7, 8, 9	Temperature :	23~24℃
Test Engineer :	Zhi Lu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	24.28	30	Pass
06	2437	23.96	30	Pass
11	2462	24.11	30	Pass

Test Mode :	Mode 10, 11, 12	Temperature :	23~24
Test Engineer :	Zhi Lu	Relative Humidity :	47~48

Channel	Frequency (MHz)	802.11n (BW 40MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
03	2422	23.82	30	Pass
06	2437	23.69	30	Pass
09	2452	23.58	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

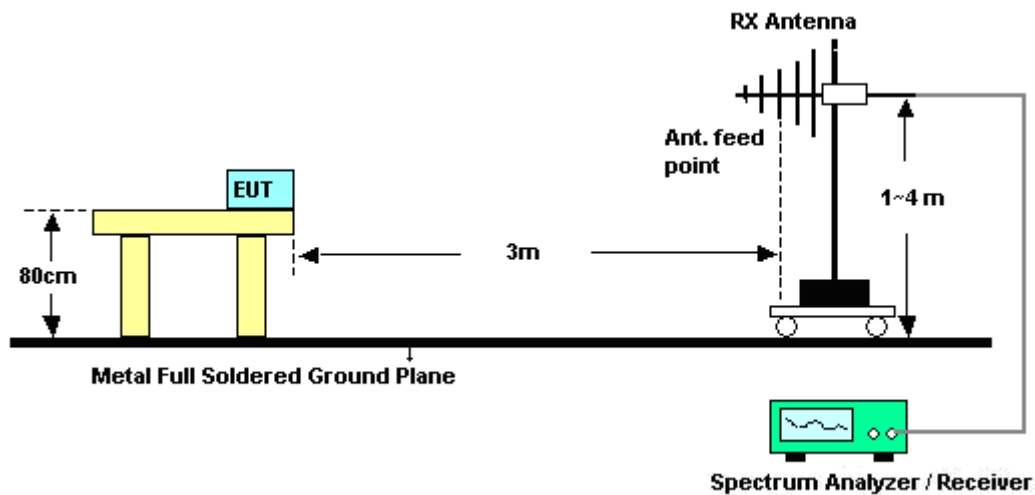
See list of measuring instruments of this test report.

3.3.3 Test Procedures

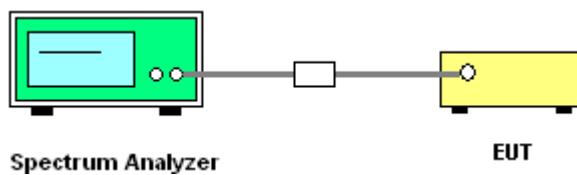
1. The testing follows the guidelines in ANSI C63.4-2003 and FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Conducted emission test: Set RBW = 100 kHz, Video bandwidth (VBW) \geq RBW. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized 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>



<Conducted Band Edges>



3.3.5 Test Result of Radiated Band Edges

Test Mode :	Mode 1	Temperature :	21~22℃
Test Band :	802.11b	Relative Humidity :	41~42%
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
2388	45.91	-28.09	74	43.63	32.86	3.47	34.05	105	33	Peak
2388	38.34	-15.66	54	36.06	32.86	3.47	34.05	105	33	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
2388	48.09	-25.91	74	45.81	32.86	3.47	34.05	100	0	Peak
2388	43.05	-10.95	54	40.77	32.86	3.47	34.05	100	0	Average

Test Mode :	Mode 3	Temperature :	21~22℃
Test Band :	802.11b	Relative Humidity :	41~42%
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
2484	46.14	-27.86	74	43.65	33.01	3.68	34.2	129	37	Peak
2484	38.12	-15.88	54	35.63	33.01	3.68	34.2	129	37	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
2484	40.44	-33.56	74	37.95	33.01	3.68	34.2	115	46	Peak
2484	49.07	-4.93	54	46.58	33.01	3.68	34.2	115	46	Average



Test Mode :	Mode 4	Temperature :	21~22°C
Test Band :	802.11g	Relative Humidity :	41~42%
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
2390	47.64	-26.36	74	45.36	32.86	3.47	34.05	100	0	Peak
2390	36.93	-17.07	54	34.65	32.86	3.47	34.05	100	0	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	53.97	-20.03	74	51.69	32.86	3.47	34.05	100	0	Peak
2390	38.98	-15.02	54	36.7	32.86	3.47	34.05	100	0	Average

Test Mode :	Mode 6	Temperature :	21~22°C
Test Band :	802.11g	Relative Humidity :	41~42%
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
2484	50.88	-23.12	74	48.39	33.01	3.68	34.2	128	0	Peak
2484	36.41	-17.59	54	33.92	33.01	3.68	34.2	128	0	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
2484	56.38	-17.62	74	53.89	33.01	3.68	34.2	116	0	Peak
2484	41.28	-12.72	54	38.79	33.01	3.68	34.2	116	0	Average



Test Mode :	Mode 7	Temperature :	21~22℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	41~42%
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
2389.61	59.24	-14.76	74	56.96	32.86	3.47	34.05	199	330	Peak
2389.61	44.51	-9.49	54	42.23	32.86	3.47	34.05	199	330	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
2389.99	55.17	-18.83	74	52.89	32.86	3.47	34.05	179	322	Peak
2389.99	40.45	-13.55	54	38.17	32.86	3.47	34.05	179	322	Average

Test Mode :	Mode 9	Temperature :	21~22℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	41~42%
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
2484.42	54.77	-19.23	74	52.28	33.01	3.68	34.2	200	333	Peak
2484.42	39.96	-14.04	54	37.47	33.01	3.68	34.2	200	333	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
2484.61	53.95	-20.05	74	51.46	33.01	3.68	34.2	142	317	Peak
2484.61	38.75	-15.25	54	36.26	33.01	3.68	34.2	142	317	Average



Test Mode :	Mode 10	Temperature :	21~22℃
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	41~42%
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
2382.2	54.1	-19.9	74	51.86	32.83	3.42	34.01	165	340	Peak
2382.2	42.47	-11.53	54	40.23	32.83	3.42	34.01	165	340	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
2381.82	53.82	-20.18	74	51.58	32.83	3.42	34.01	100	262	Peak
2381.82	40.83	-13.17	54	38.59	32.83	3.42	34.01	100	262	Average

Test Mode :	Mode 12	Temperature :	21~22℃
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	41~42%
Test Channel :	09	Test Engineer :	Cloud Peng

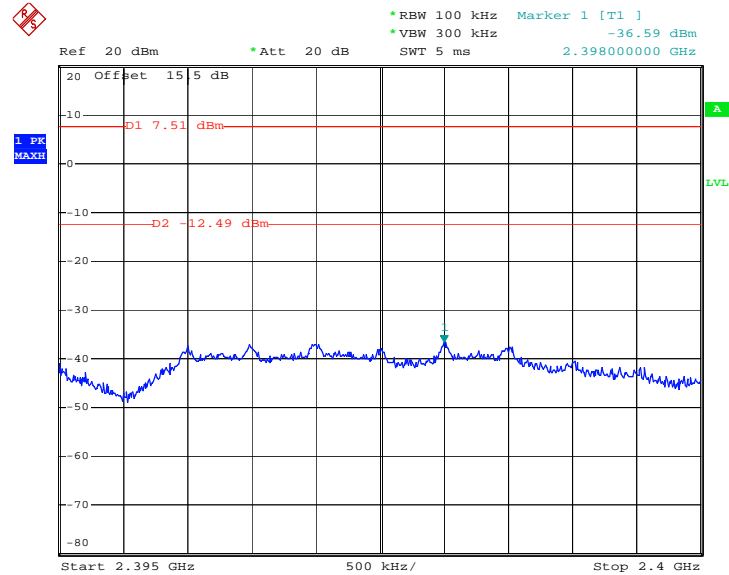
ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2487.27	54.13	-19.87	74	51.64	33.01	3.68	34.2	200	309	Peak
2487.27	40.81	-13.19	54	38.32	33.01	3.68	34.2	200	309	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	49.61	-24.39	74	47.12	33.01	3.68	34.2	118	360	Peak
2483.5	40.79	-13.21	54	38.3	33.01	3.68	34.2	118	360	Average

3.3.6 Test Plots of Conducted Band Edges

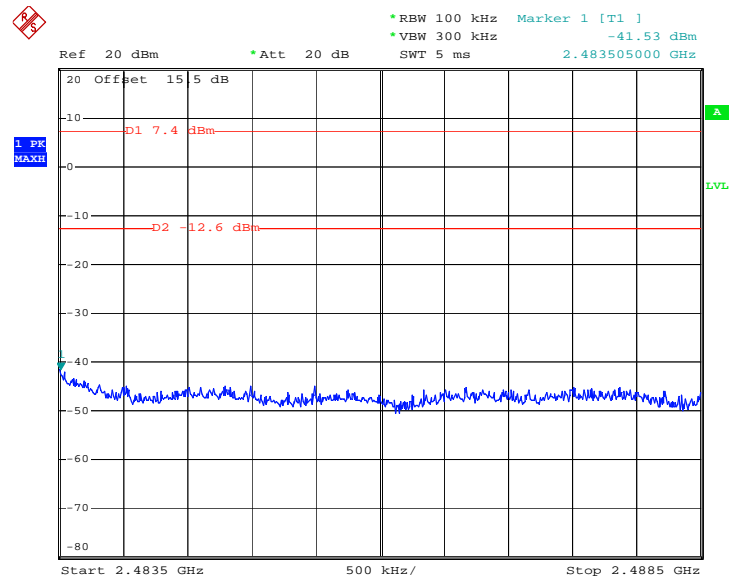
Test Mode :	Mode 1 and 3	Temperature :	23~24°C
Test Band :	802.11b	Relative Humidity :	47~48%
Test Channel :	01 and 11	Test Engineer :	Zhi Lu

Low Band Edge Plot on 802.11b Channel 01



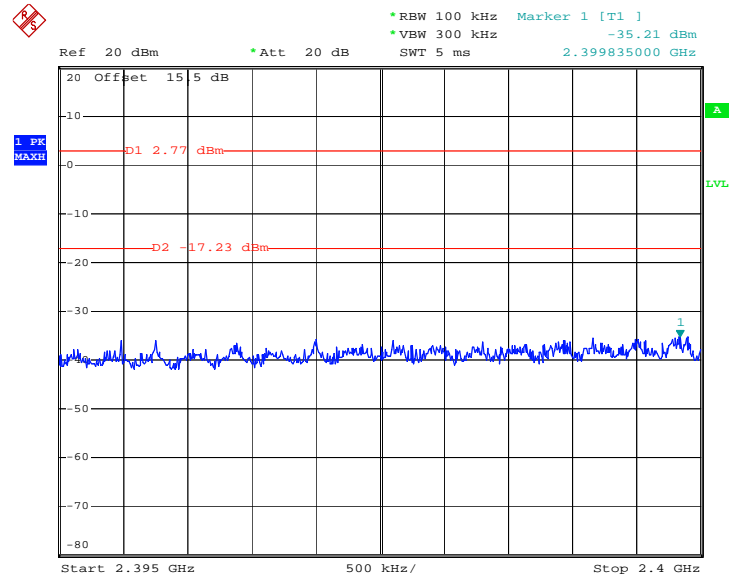
Date: 31.MAR.2012 08:15:52

High Band Edge Plot on 802.11b Channel 11

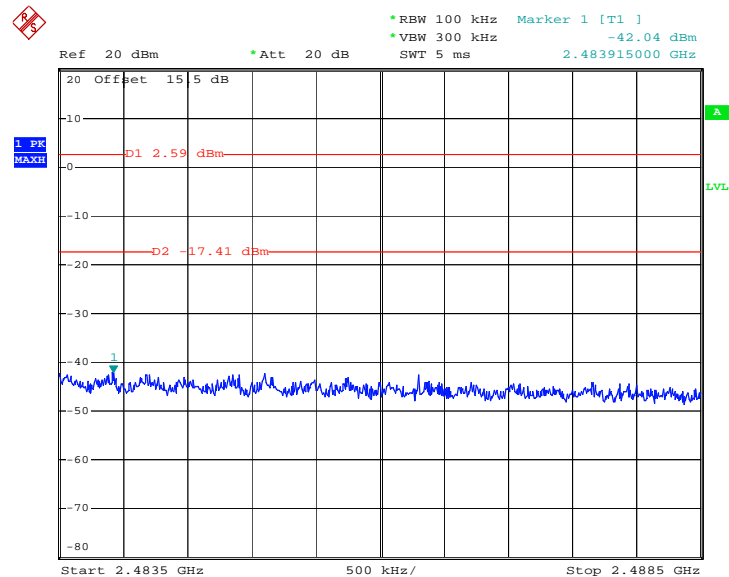


Date: 31.MAR.2012 08:49:42

Test Mode :	Mode 4 and 6	Temperature :	23~24℃
Test Band :	802.11g	Relative Humidity :	47~48%
Test Channel :	01 and 11	Test Engineer :	Zhi Lu

Low Band Edge Plot on 802.11g Channel 01


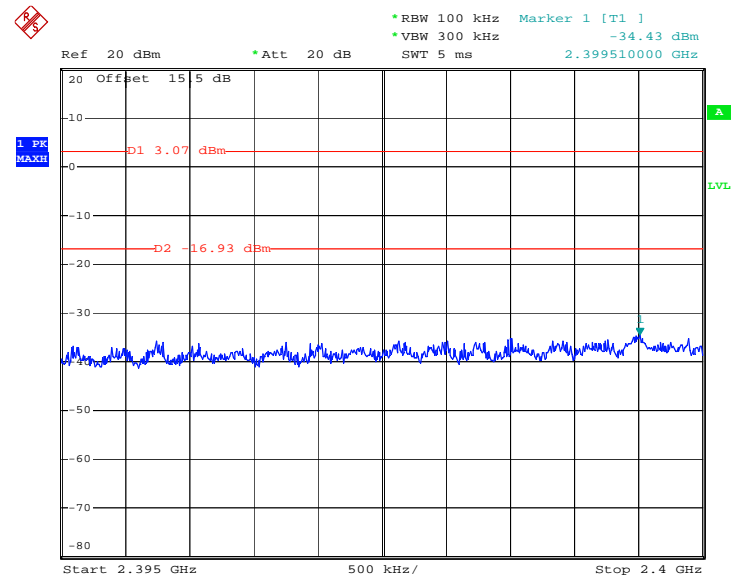
Date: 31.MAR.2012 09:07:48

High Band Edge Plot on 802.11g Channel 11


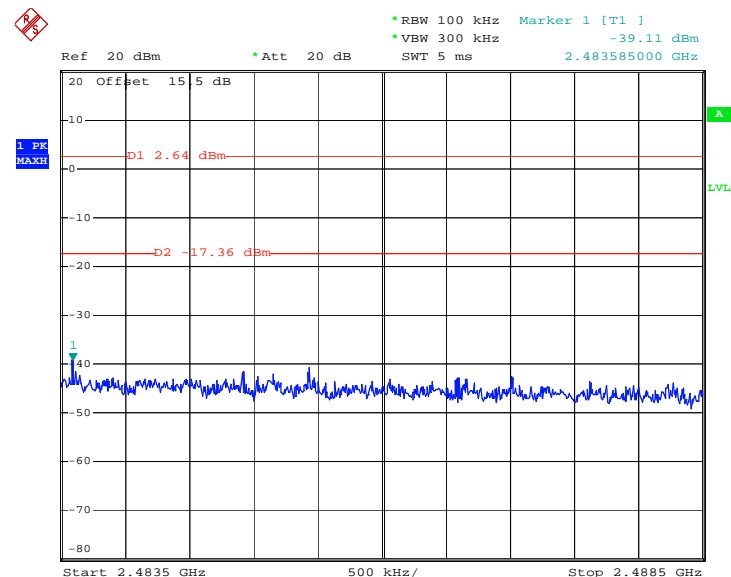
Date: 31.MAR.2012 09:40:47



Test Mode :	Mode 7 and 9	Temperature :	23~24℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	47~48%
Test Channel :	01 and 11	Test Engineer :	Zhi Lu

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

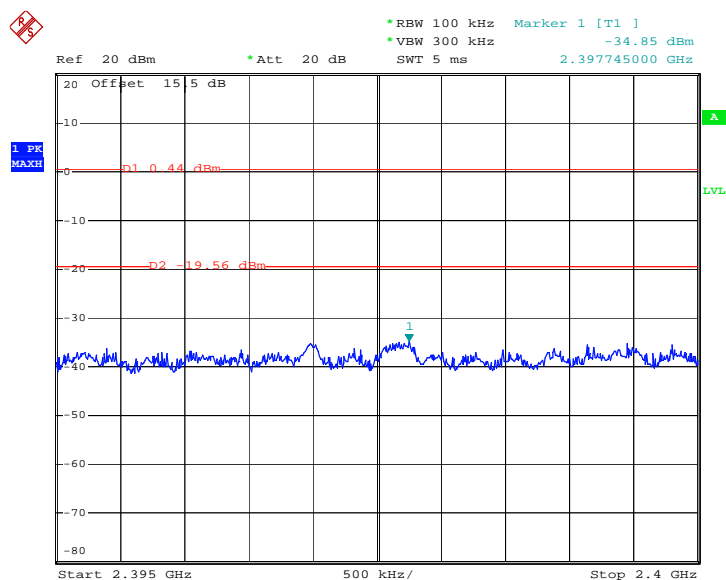
Date: 31.MAR.2012 10:00:15

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

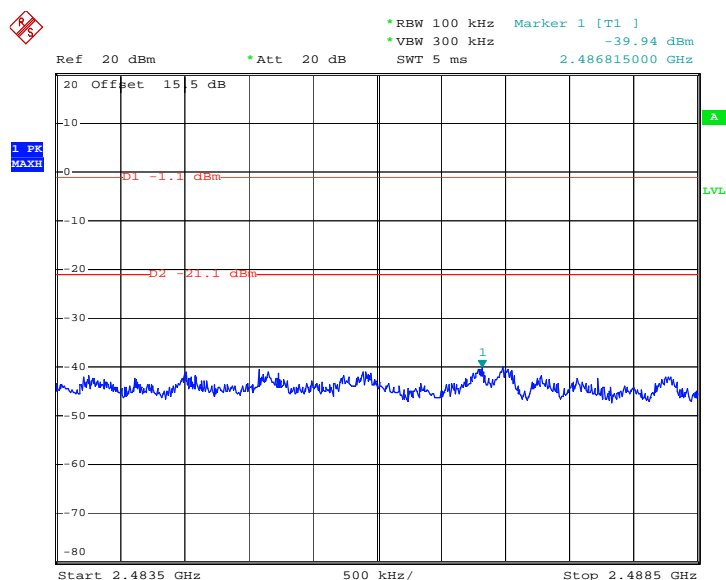
Date: 31.MAR.2012 10:54:13



Test Mode :	Mode 10 and 12	Temperature :	23~24℃
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	47~48%
Test Channel :	03 and 09	Test Engineer :	Zhi Lu

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

Date: 31.MAR.2012 11:21:10

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

Date: 31.MAR.2012 12:00:20

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.

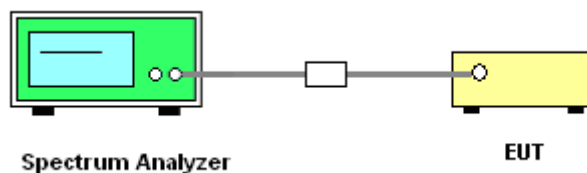
3.4.2 Measuring Instruments

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) \geq 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.

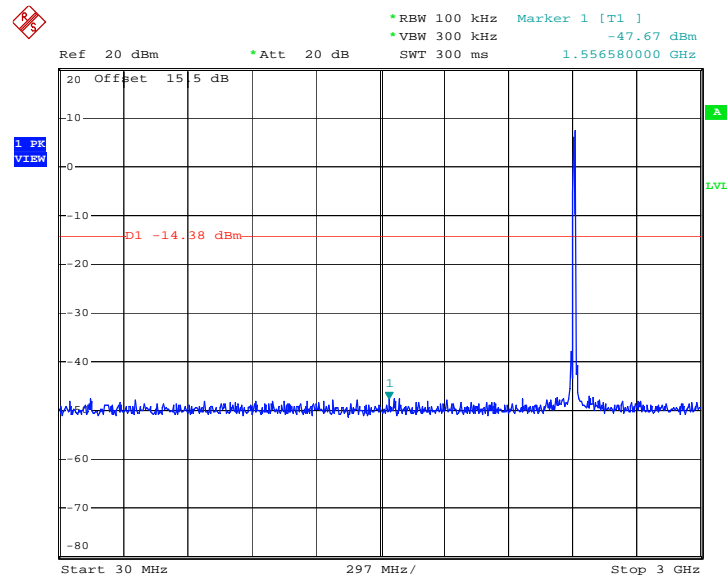
3.4.4 Test Setup



3.4.5 Test Plots of Spurious Emission

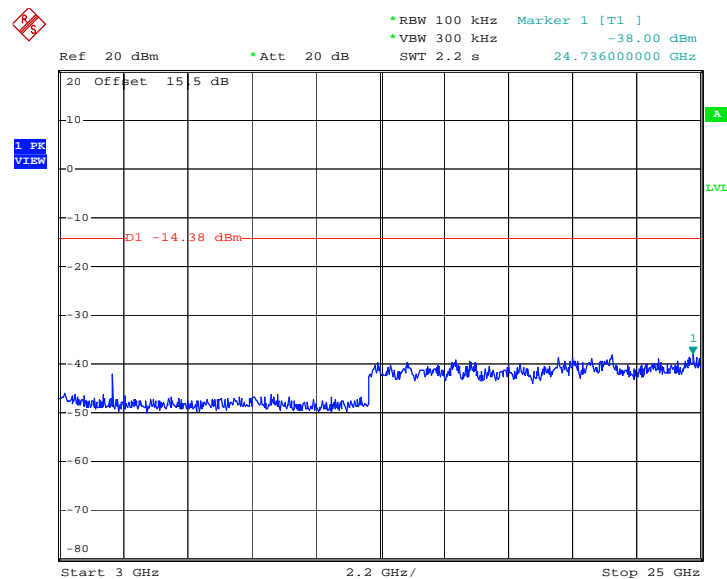
Test Mode :	Mode 1	Temperature :	23~24°C
Test Band :	802.11b	Relative Humidity :	47~48%
Test Channel :	01	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 31.MAR.2012 08:21:59

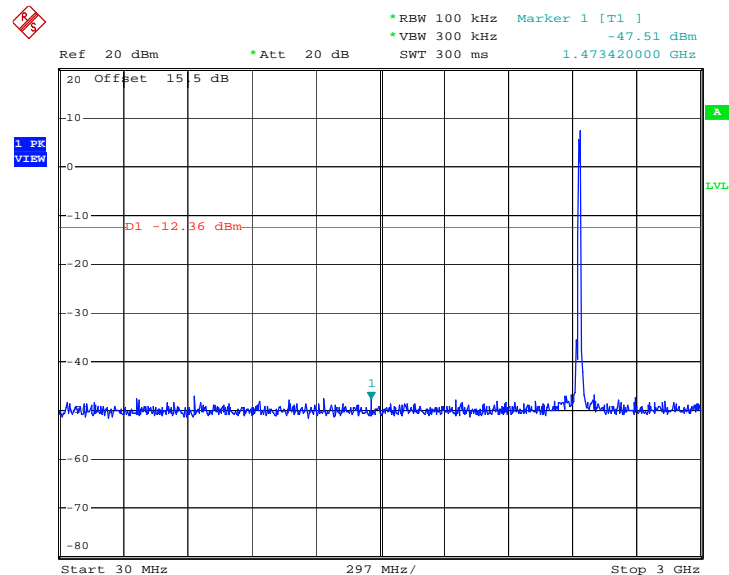
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



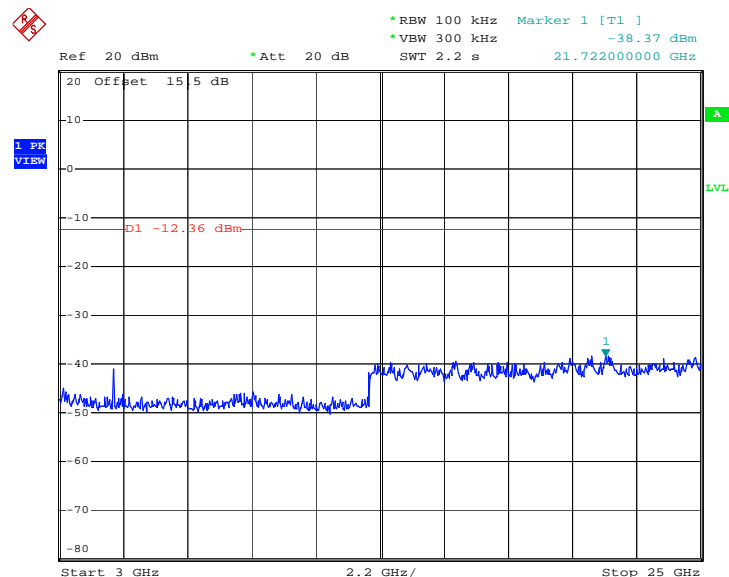
Date: 31.MAR.2012 08:21:02



Test Mode :	Mode 2	Temperature :	23~24℃
Test Band :	802.11b	Relative Humidity :	47~48%
Test Channel :	06	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz

Date: 31.MAR.2012 08:37:55

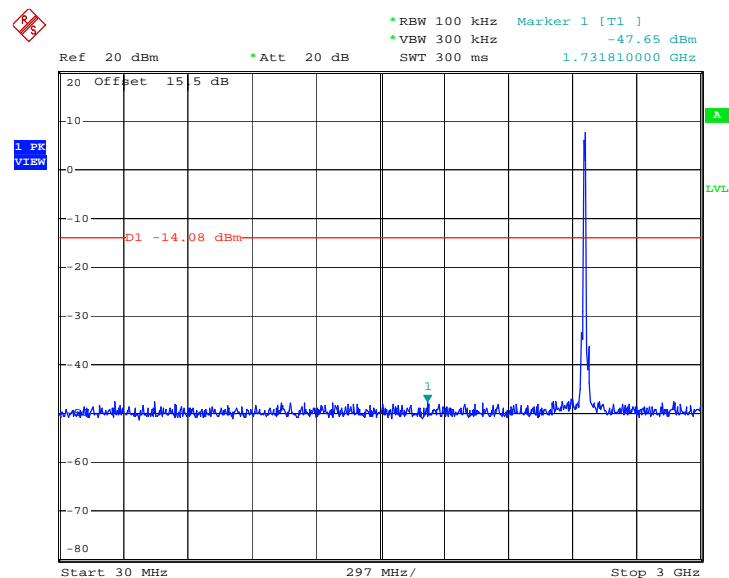
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

Date: 31.MAR.2012 08:36:17



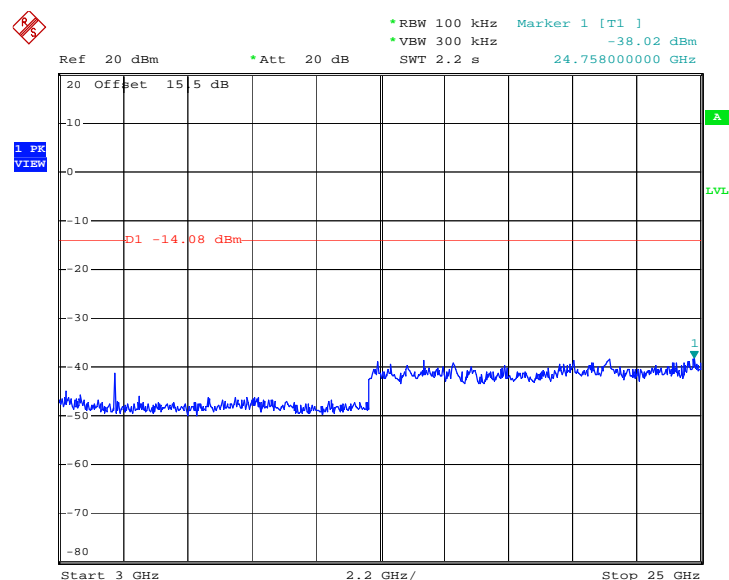
Test Mode :	Mode 3	Temperature :	23~24℃
Test Band :	802.11b	Relative Humidity :	47~48%
Test Channel :	11	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



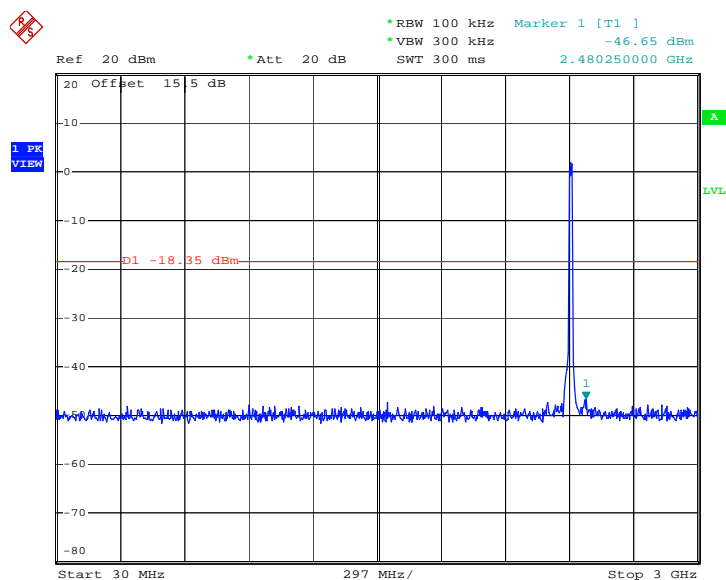
Date: 31.MAR.2012 08:53:01

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

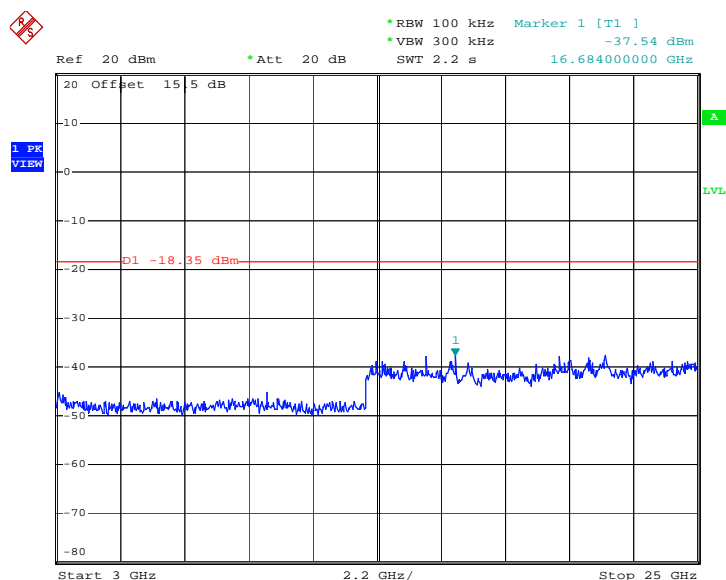


Date: 31.MAR.2012 08:51:33

Test Mode :	Mode 4	Temperature :	23~24℃
Test Band :	802.11g	Relative Humidity :	47~48%
Test Channel :	01	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz


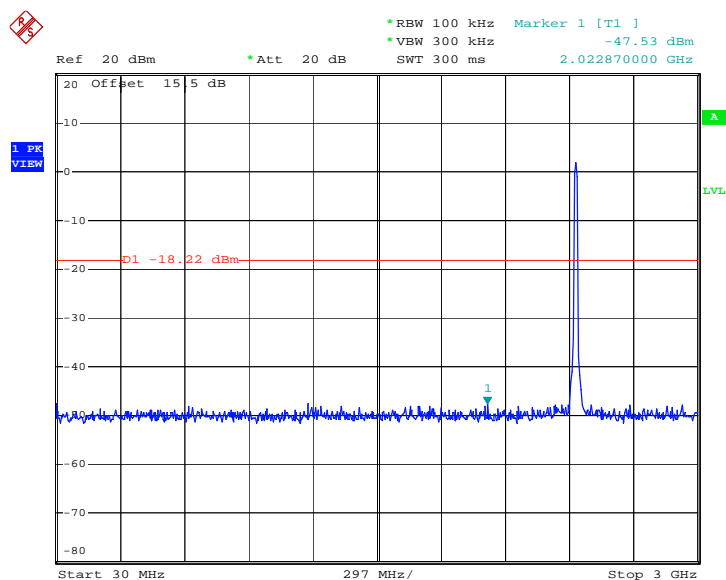
Date: 31.MAR.2012 09:11:23

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz


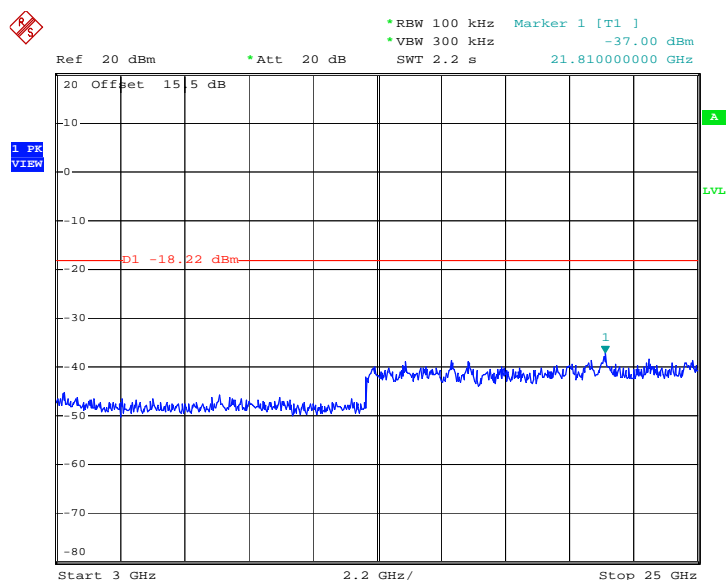
Date: 31.MAR.2012 09:11:40



Test Mode :	Mode 5	Temperature :	23~24
Test Band :	802.11g	Relative Humidity :	47~48
Test Channel :	06	Test Engineer :	Zhi Lu

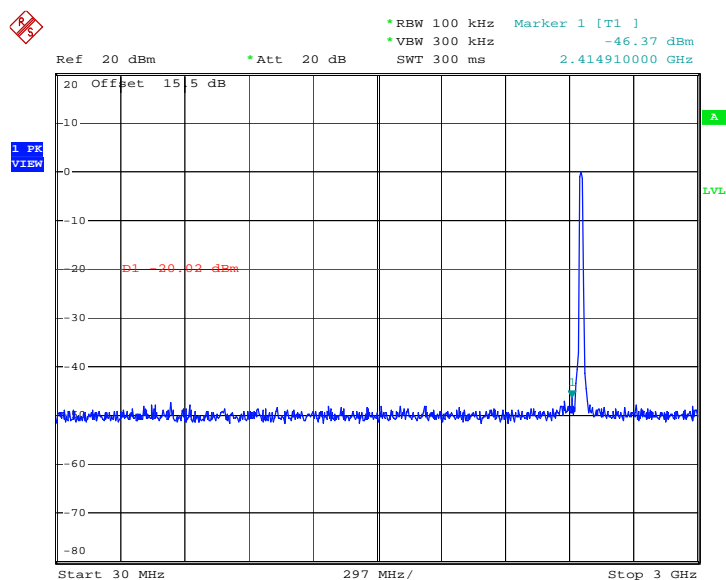
Conducted Spurious Emission Plot between 30MHz ~ 3 GHz

Date: 31.MAR.2012 09:25:57

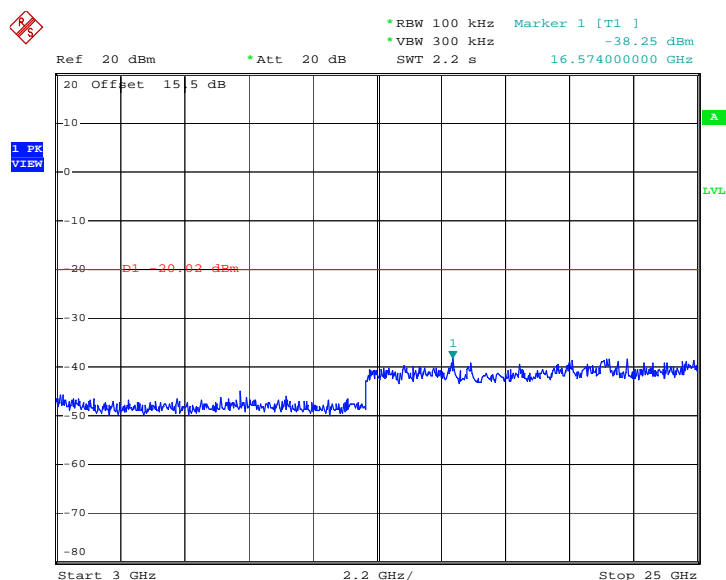
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

Date: 31.MAR.2012 09:26:14

Test Mode :	Mode 6	Temperature :	23~24℃
Test Band :	802.11g	Relative Humidity :	47~48%
Test Channel :	11	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz


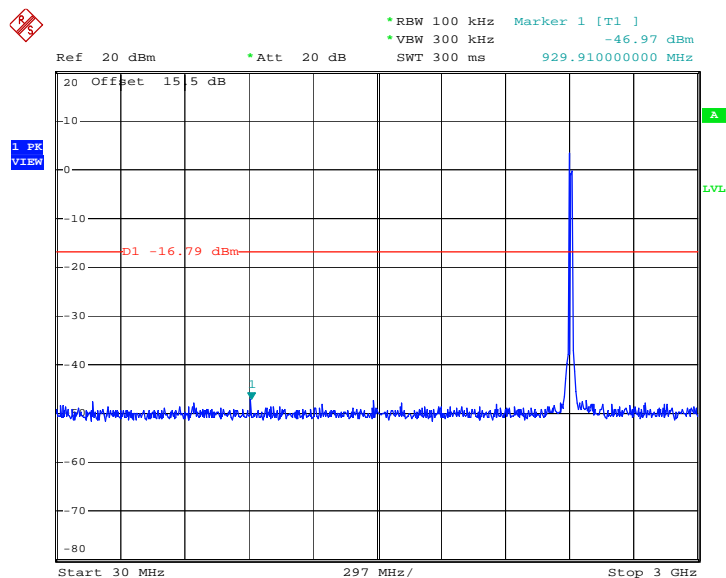
Date: 31.MAR.2012 09:44:45

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz


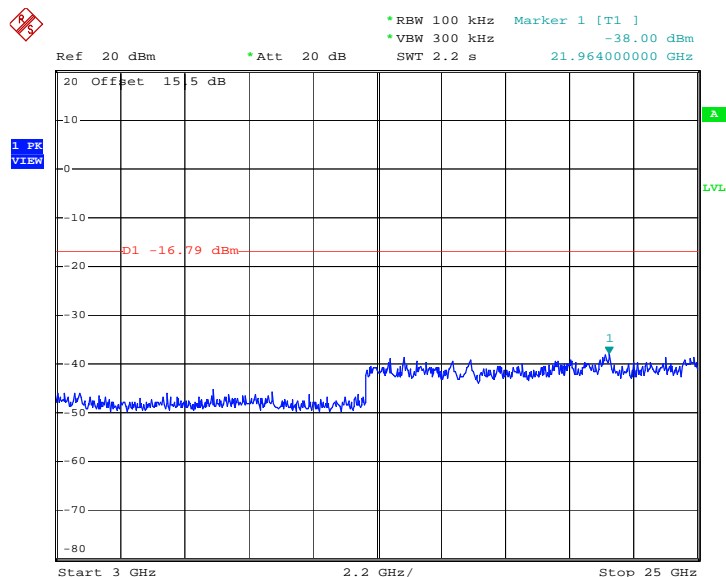
Date: 31.MAR.2012 09:45:02



Test Mode :	Mode 7	Temperature :	23~24℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	47~48%
Test Channel :	01	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz

Date: 31.MAR.2012 10:02:54

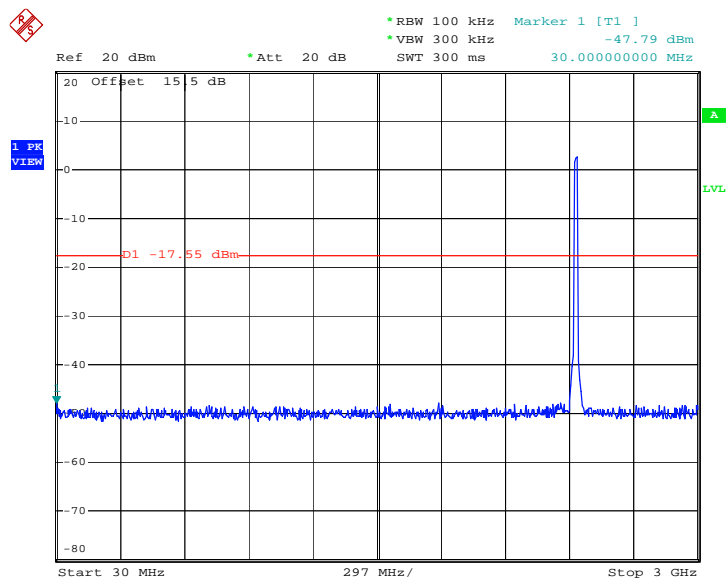
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

Date: 31.MAR.2012 10:03:11



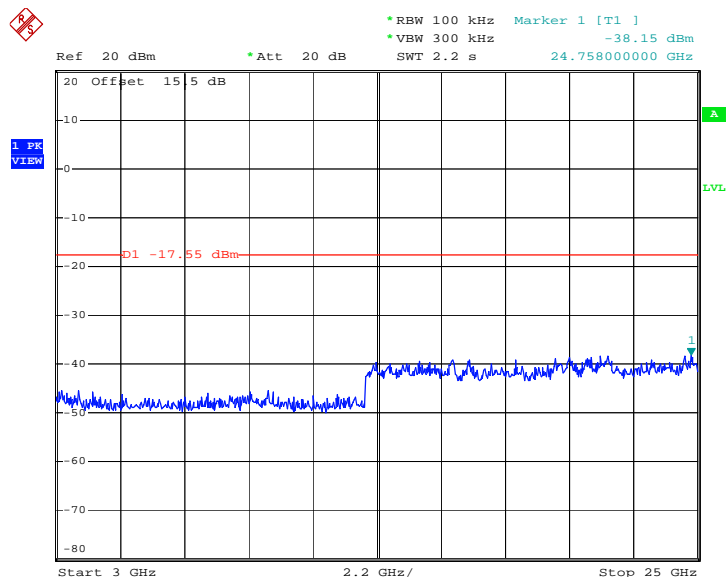
Test Mode :	Mode 8	Temperature :	23~24℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	47~48%
Test Channel :	06	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 31.MAR.2012 10:41:46

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

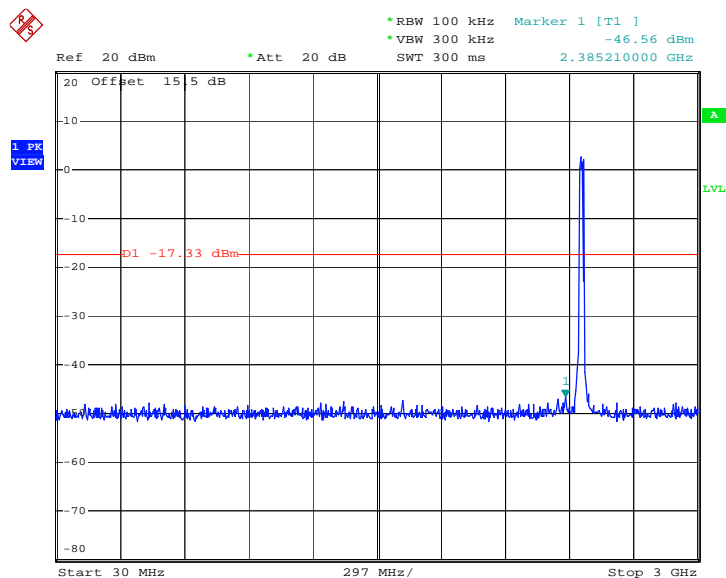


Date: 31.MAR.2012 10:42:03



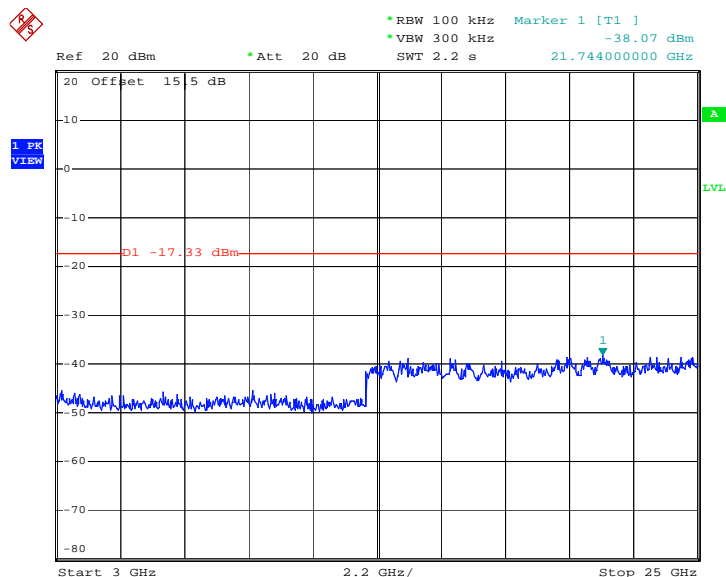
Test Mode :	Mode 9	Temperature :	23~24℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	47~48%
Test Channel :	11	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



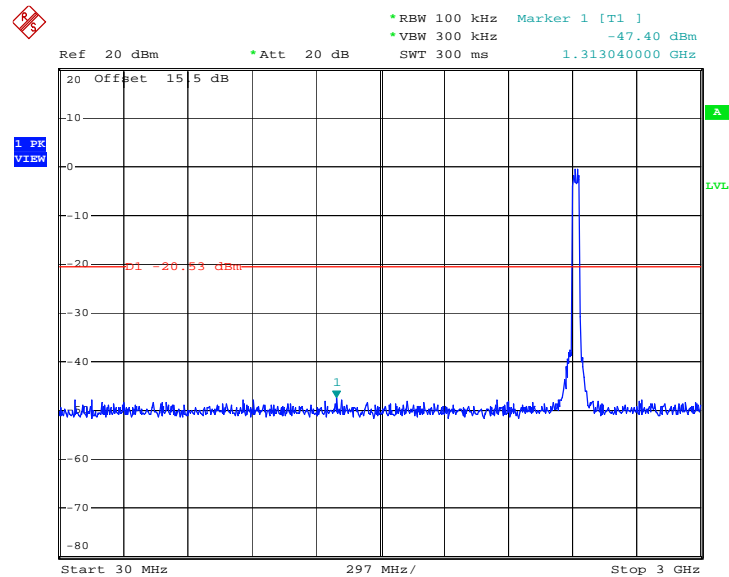
Date: 31.MAR.2012 10:55:34

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

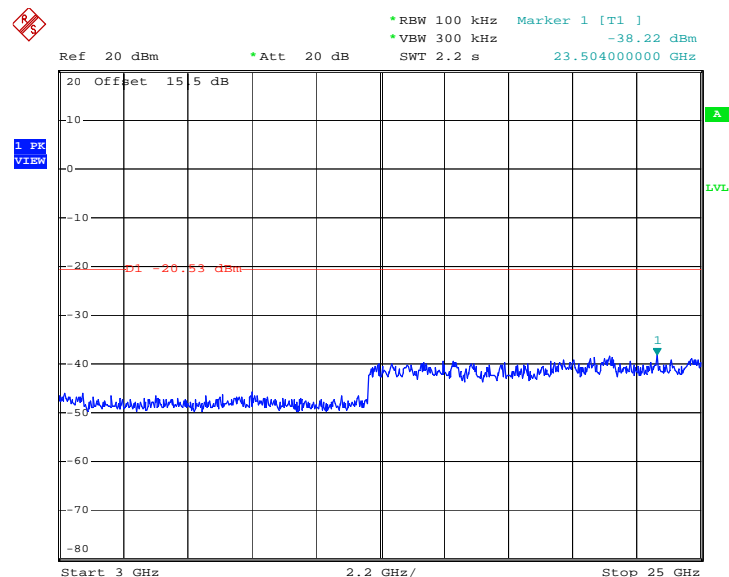


Date: 31.MAR.2012 10:55:51

Test Mode :	Mode 10	Temperature :	23~24℃
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	47~48%
Test Channel :	03	Test Engineer :	Zhi Lu

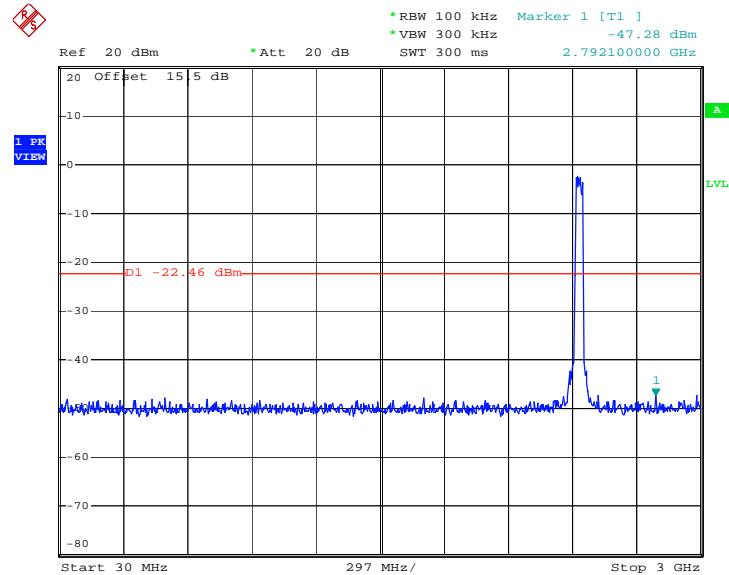
Conducted Spurious Emission Plot between 30MHz ~ 3 GHz


Date: 31.MAR.2012 11:24:15

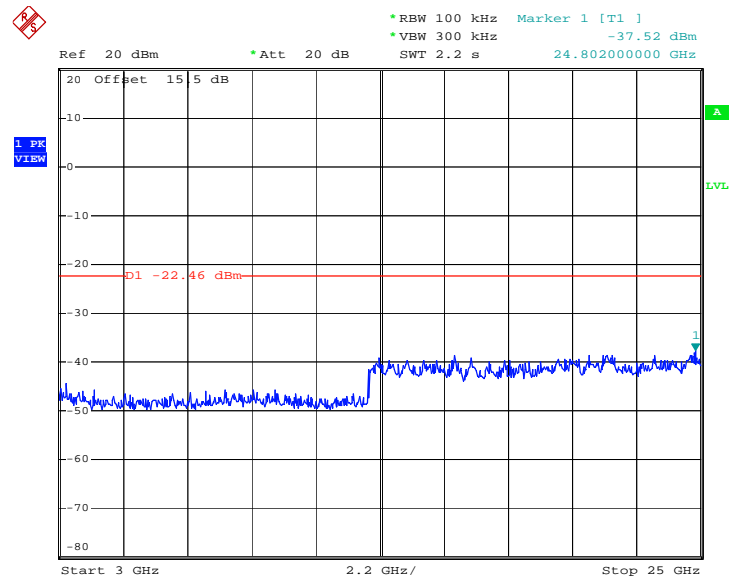
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz


Date: 31.MAR.2012 11:24:32

Test Mode :	Mode 11	Temperature :	23~24℃
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	47~48%
Test Channel :	06	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz


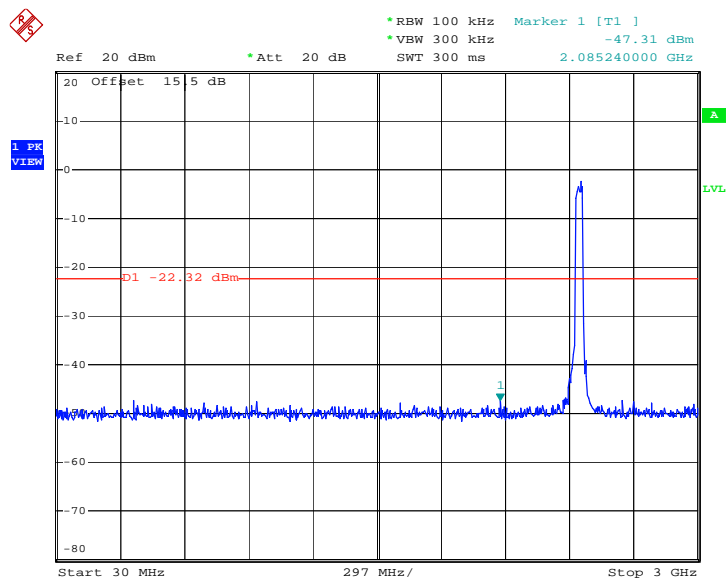
Date: 31.MAR.2012 11:42:52

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz


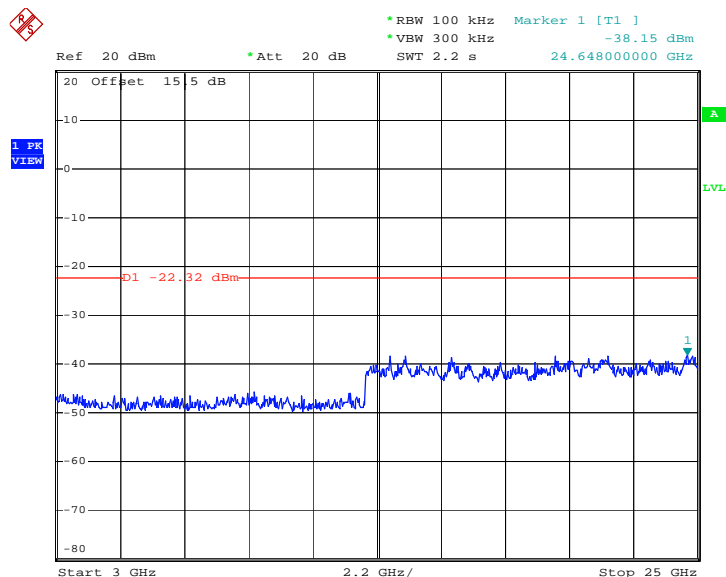
Date: 31.MAR.2012 11:43:09



Test Mode :	Mode 12	Temperature :	23~24℃
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	47~48%
Test Channel :	09	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz

Date: 31.MAR.2012 12:02:52

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

Date: 31.MAR.2012 12:03:09

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.

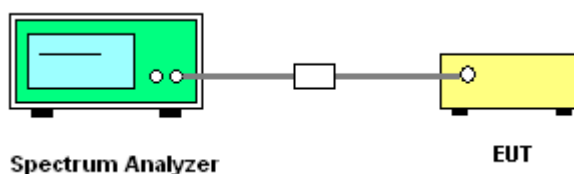
3.5.2 Measuring Instruments

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

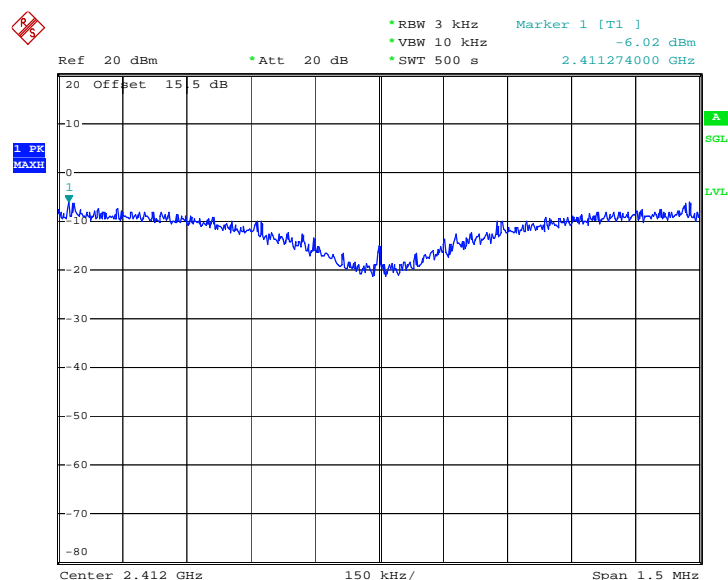


3.5.5 Test Result of Power Spectral Density

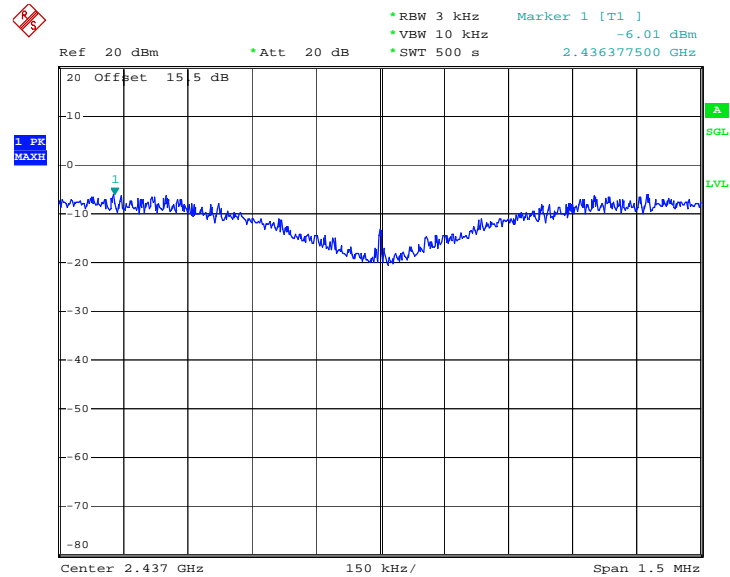
Test Mode :	Mode 1, 2, 3	Temperature :	23~24℃
Test Engineer :	Zhi Lu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11b Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-6.02	8	Pass
06	2437	-6.01	8	Pass
11	2462	-5.97	8	Pass

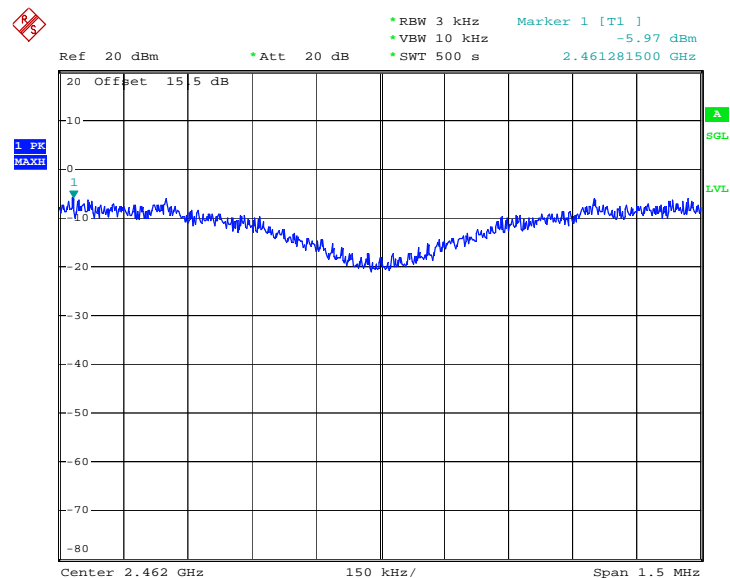
Mode 1 : PSD Plot on 802.11b Channel 01



Date: 31.MAR.2012 08:32:25

Mode 2 : PSD Plot on 802.11b Channel 06


Date: 31.MAR.2012 08:47:00

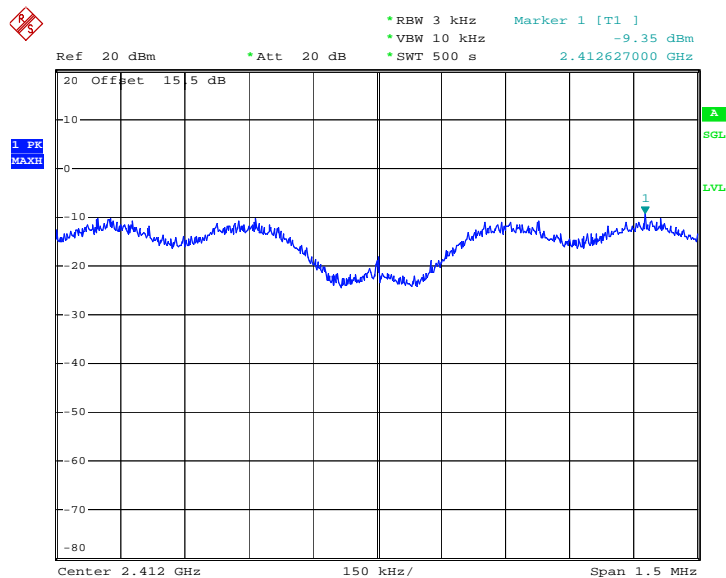
Mode 3 : PSD Plot on 802.11b Channel 11


Date: 31.MAR.2012 09:01:57



Test Mode :	Mode 4, 5, 6	Temperature :	23~24℃
Test Engineer :	Zhi Lu	Relative Humidity :	47~48%

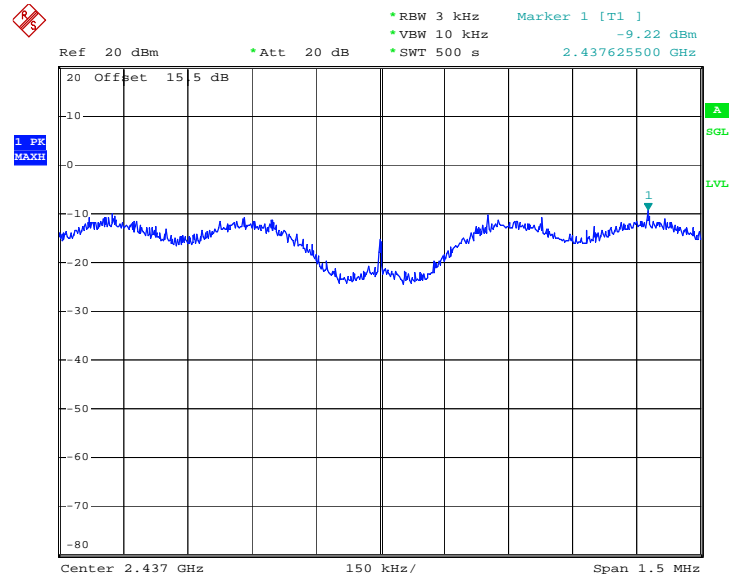
Channel	Frequency (MHz)	802.11g Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-9.35	8	Pass
06	2437	-9.22	8	Pass
11	2462	-10.59	8	Pass

Mode 4 : PSD Plot on 802.11g Channel 01

Date: 31.MAR.2012 09:21:49

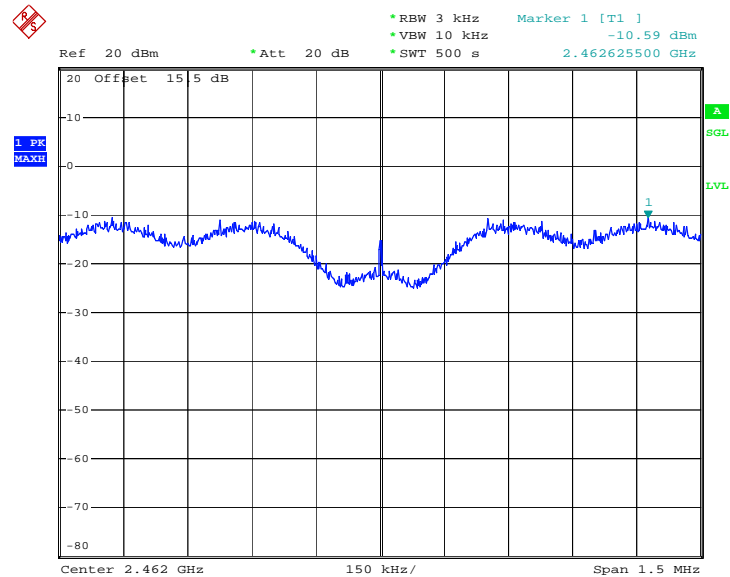


Mode 5 : PSD Plot on 802.11g Channel 06



Date: 31.MAR.2012 09:35:57

Mode 6 : PSD Plot on 802.11g Channel 11



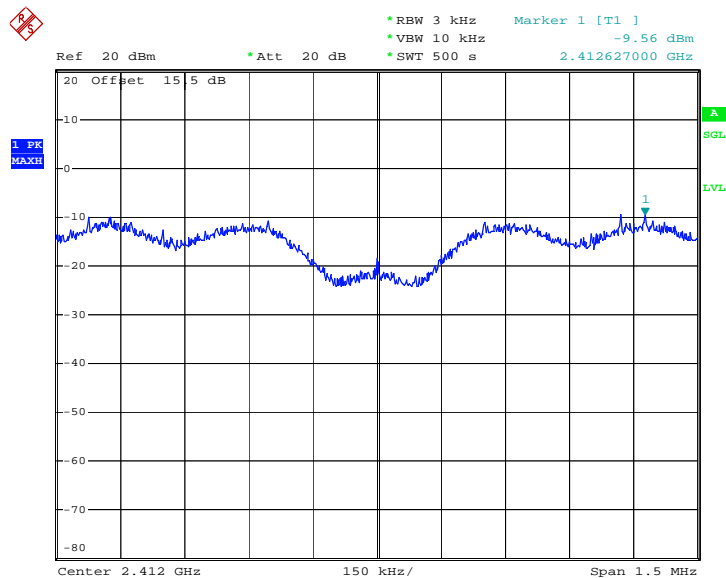
Date: 31.MAR.2012 09:56:55



Test Mode :	Mode 7, 8, 9	Temperature :	23~24℃
Test Engineer :	Zhi Lu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-9.56	8	Pass
06	2437	-12.62	8	Pass
11	2462	-12.58	8	Pass

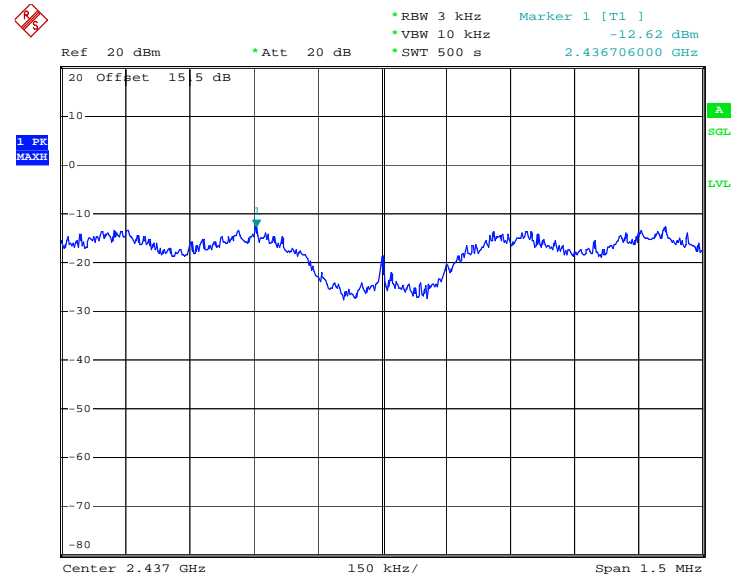
Mode 7 : PSD Plot on 802.11n (BW 20MHz) Channel 01



Date: 31.MAR.2012 10:15:54

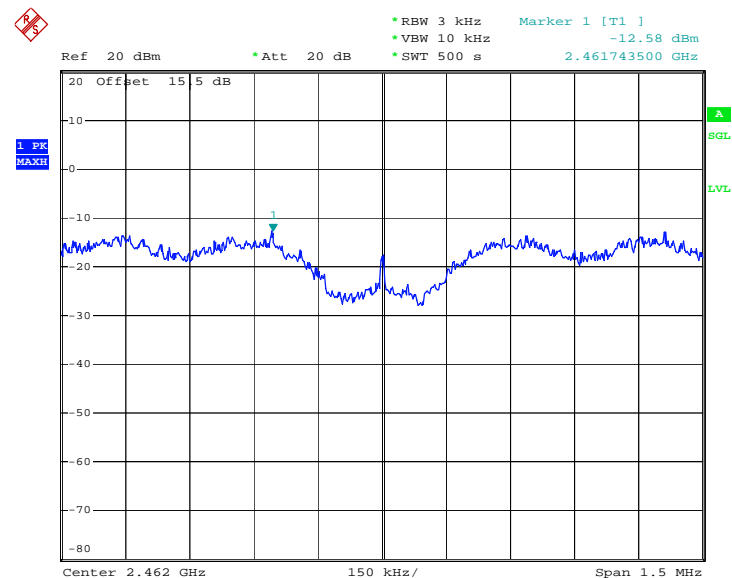


Mode 8 : PSD Plot on 802.11n (BW 20MHz) Channel 06



Date: 31.MAR.2012 10:51:27

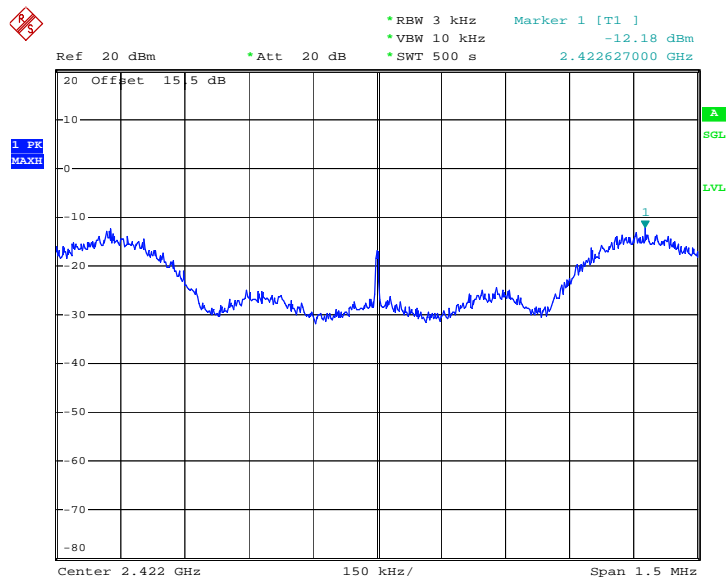
Mode 9 : PSD Plot on 802.11n (BW 20MHz) Channel 11



Date: 31.MAR.2012 11:07:43

Test Mode :	Mode 10, 11, 12	Temperature :	23~24
Test Engineer :	Zhi Lu	Relative Humidity :	47~48

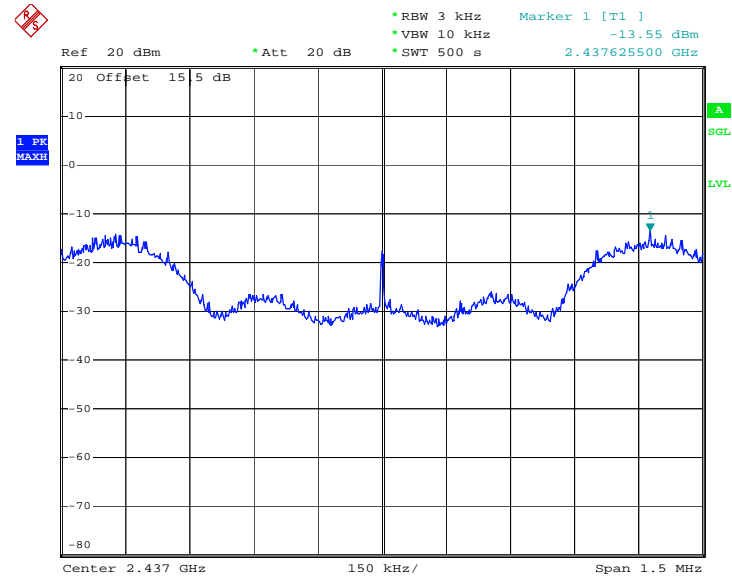
Channel	Frequency (MHz)	802.11n (BW 40MHz) Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
03	2422	-12.18	8	Pass
06	2437	-13.55	8	Pass
09	2452	-14.56	8	Pass

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


Date: 31.MAR.2012 11:35:21

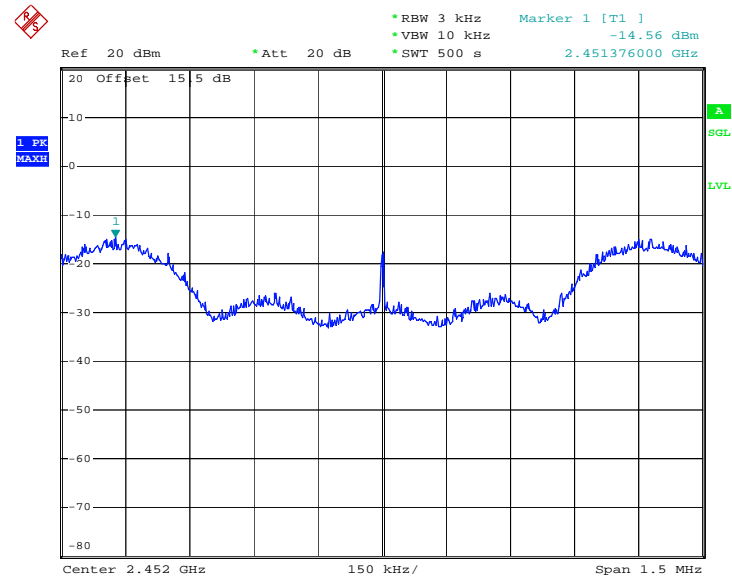


Mode 11 : PSD Plot on 802.11n (BW 40MHz) Channel 06



Date: 31.MAR.2012 11:54:09

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



Date: 31.MAR.2012 12:13:11

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.

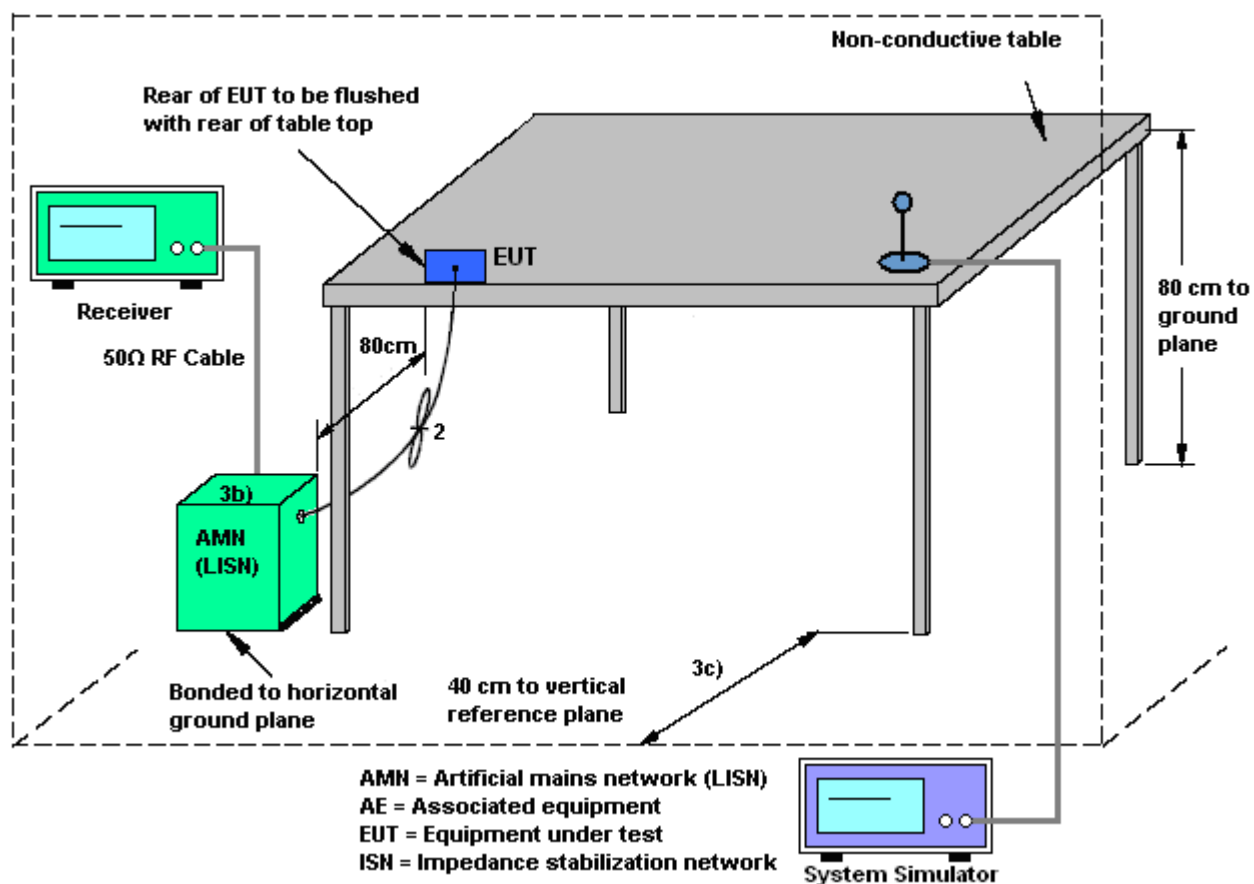
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

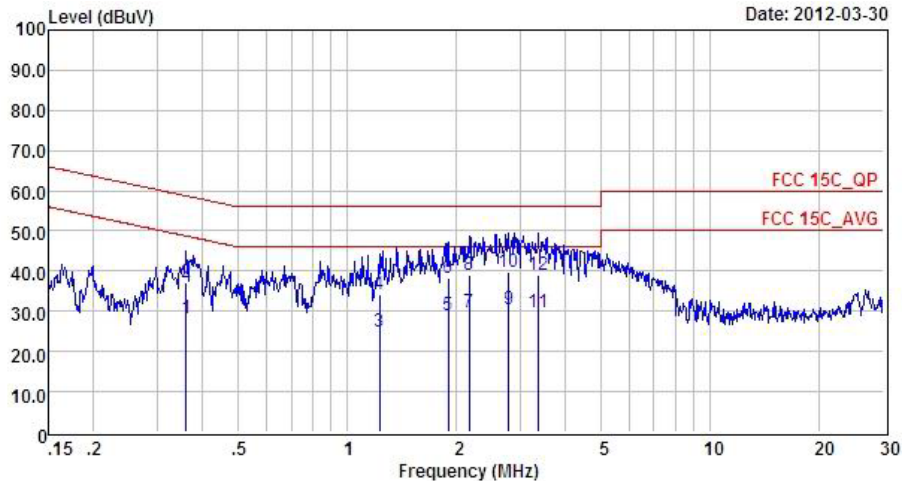
1. The testing follows the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (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

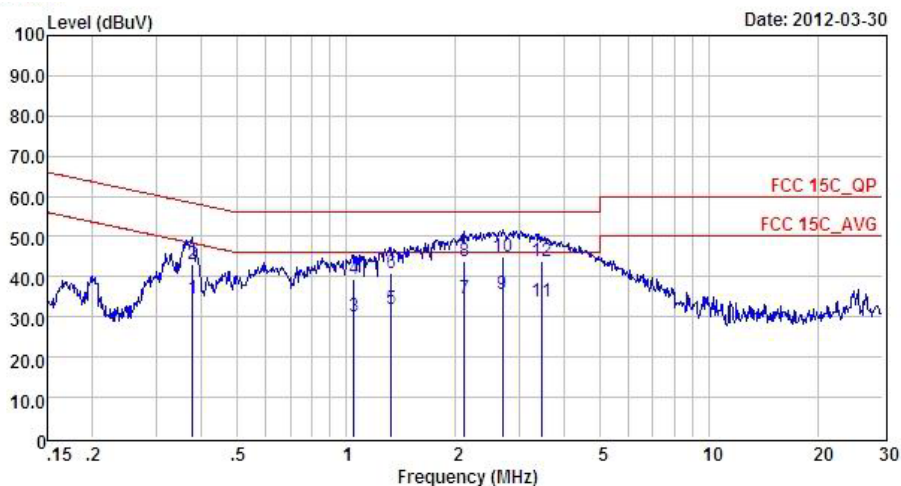
Test Mode :	Mode 1	Temperature :	22~23°C
Test Engineer :	Neaps Wang	Relative Humidity :	44~46%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link + Adapter + Earphone + Camera		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-SZ
 Condition: FCC 15C_QP LISN_L_2000601 LINE
 Project : (FR)231606
 Mode : Model

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.36	28.29	-20.45	48.74	18.20	0.02	10.07	Average
2	0.36	36.99	-21.75	58.74	26.90	0.02	10.07	QP
3	1.23	25.05	-20.95	46.00	14.90	0.03	10.12	Average
4	1.23	34.15	-21.85	56.00	24.00	0.03	10.12	QP
5	1.90	28.98	-17.02	46.00	18.80	0.03	10.15	Average
6	1.90	38.28	-17.72	56.00	28.10	0.03	10.15	QP
7	2.17	29.90	-16.10	46.00	19.70	0.04	10.16	Average
8	2.17	39.20	-16.80	56.00	29.00	0.04	10.16	QP
9	2.78	30.62	-15.38	46.00	20.40	0.04	10.18	Average
10	2.78	39.92	-16.08	56.00	29.70	0.04	10.18	QP
11	3.36	29.74	-16.26	46.00	19.50	0.05	10.19	Average
12	3.36	39.14	-16.86	56.00	28.90	0.05	10.19	QP

Test Mode :	Mode 1	Temperature :	22~23°C
Test Engineer :	Neaps Wang	Relative Humidity :	44~46%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link + Adapter + Earphone + Camera		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-SZ
 Condition: FCC 15C_QP LISN_N_2000601 NEUTRAL
 Project : (FR)231606
 Mode : Model1

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.38	34.69	-13.65	48.34	24.60	0.02	10.07	Average
2	0.38	43.29	-15.05	58.34	33.20	0.02	10.07	QP
3	1.05	30.04	-15.96	46.00	19.90	0.02	10.12	Average
4	1.05	39.44	-16.56	56.00	29.30	0.02	10.12	QP
5	1.33	31.85	-14.15	46.00	21.71	0.02	10.12	Average
6	1.33	41.05	-14.95	56.00	30.91	0.02	10.12	QP
7	2.12	34.49	-11.51	46.00	24.30	0.03	10.16	Average
8	2.12	43.89	-12.11	56.00	33.70	0.03	10.16	QP
9	2.69	35.62	-10.38	46.00	25.40	0.04	10.18	Average
10	2.69	45.02	-10.98	56.00	34.80	0.04	10.18	QP
11	3.47	33.84	-12.16	46.00	23.60	0.05	10.19	Average
12	3.47	43.94	-12.06	56.00	33.70	0.05	10.19	QP

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

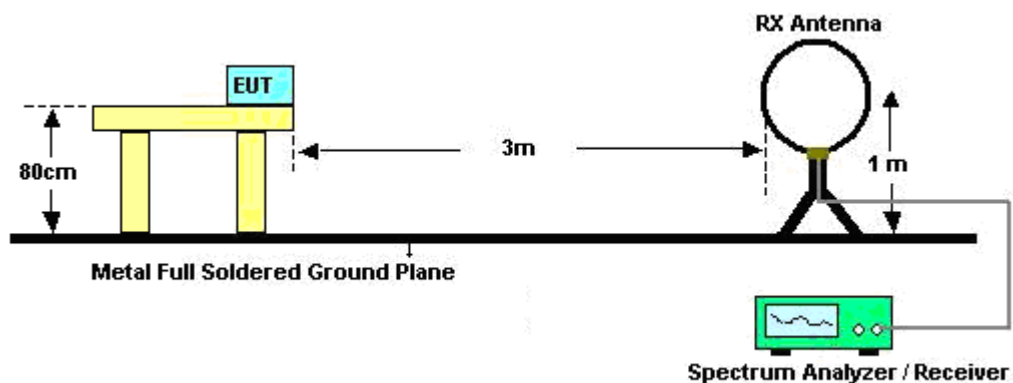
See list of measuring instruments of this test report.

3.7.3 Test Procedures

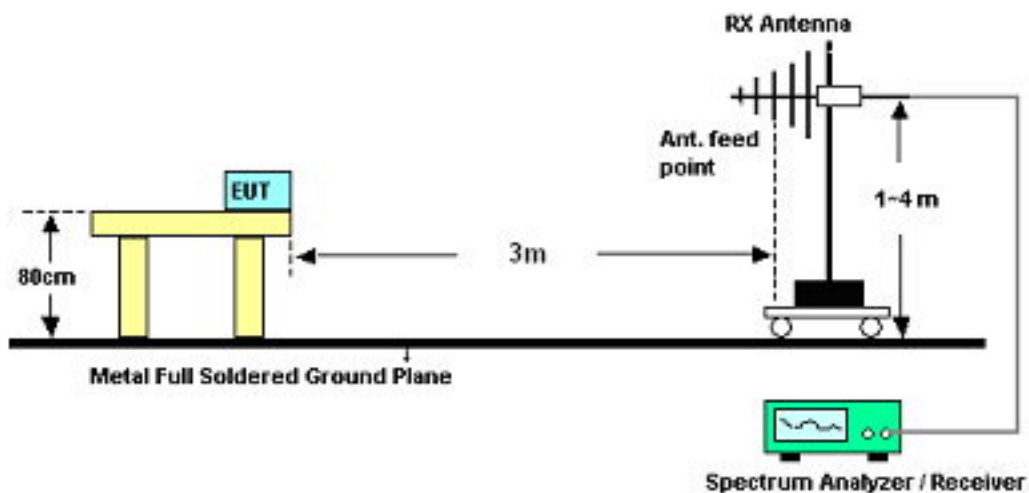
- The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
- Use the following spectrum analyzer settings:
 - Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz; VBW \geq RBW; Sweep = auto; Detector function = peak; Trace = max hold.
 - 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 = $20 \log (\text{specific distance [3m]} / \text{test distance [1m]})$ (dB)
- 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

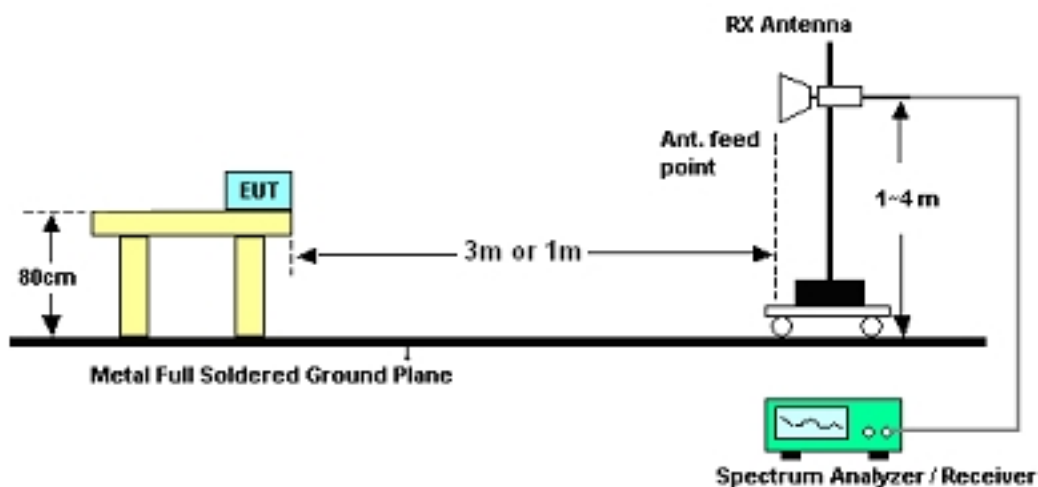
For radiated emissions below 30MHz



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 :	21~22℃	
		Relative Humidity :	41~42%	

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 = $40 \log (\text{specific distance} / \text{test distance})$ (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 :	21~22℃
Test Channel :	01	Relative Humidity :	41~42%
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
39.7	33.07	-6.93	40	50.54	12.3	0.25	30.02	200	0	Peak
65.89	30.09	-9.91	40	54.64	5.22	0.33	30.1	-	-	Peak
106.63	24.48	-19.02	43.5	42.59	11.43	0.42	29.96	-	-	Peak
320.03	30.09	-15.91	46	45.73	13.55	0.76	29.95	-	-	Peak
480.08	30.76	-15.24	46	42.7	16.87	0.94	29.75	-	-	Peak
800.18	29.8	-16.2	46	38.29	19.85	1.25	29.59	-	-	Peak
2388	38.34	-15.66	54	36.06	32.86	3.47	34.05	105	33	Average
2388	45.91	-28.09	74	43.63	32.86	3.47	34.05	105	33	Peak
2412	97.6	-	-	95.27	32.89	3.52	34.08	105	0	Peak
2412	94.66	-	-	92.33	32.89	3.52	34.08	105	0	Average
2492	34.54	-19.46	54	32	33.05	3.72	34.23	105	33	Average
2492	45.58	-28.42	74	43.04	33.05	3.72	34.23	105	33	Peak
4824	47.24	-6.76	54	39.37	35.17	4.97	32.27	100	0	Average
4824	57.44	-16.56	74	49.57	35.17	4.97	32.27	100	0	Peak

Test Mode :	Mode 1	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	41~42%
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
39.7	36.97	-3.03	40	54.44	12.3	0.25	30.02	100	328	QP
250.19	24.25	-21.75	46	41.42	12	0.67	29.84	-	-	Peak
320.03	34.15	-11.85	46	49.79	13.55	0.76	29.95	-	-	Peak
480.08	33.93	-12.07	46	45.87	16.87	0.94	29.75	-	-	Peak
800.18	31.66	-14.34	46	40.15	19.85	1.25	29.59	-	-	Peak
944.18	28.75	-25.25	54	36.24	20.71	1.33	29.53	-	-	Peak
2388	43.05	-10.95	54	40.77	32.86	3.47	34.05	100	0	Average
2388	48.09	-25.91	74	45.81	32.86	3.47	34.05	100	0	Peak
2412	102.27	-	-	99.94	32.89	3.52	34.08	100	0	Peak
2412	96.97	-	-	94.64	32.89	3.52	34.08	100	0	Average
2492	35.12	-18.88	54	32.58	33.05	3.72	34.23	100	0	Average
2492	45.43	-28.57	74	42.89	33.05	3.72	34.23	100	0	Peak
4824	44.39	-9.61	54	36.52	35.17	4.97	32.27	280	0	Average
4824	59.11	-14.89	74	51.24	35.17	4.97	32.27	280	0	Peak

Test Mode :	Mode 2	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	41~42%
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
39.7	34.88	-5.12	40	52.35	12.3	0.25	30.02	116	0	Peak
143.49	25.88	-17.62	43.5	44.82	10.55	0.5	29.99	-	-	Peak
320.03	30.61	-15.39	46	46.25	13.55	0.76	29.95	-	-	Peak
480.08	31.35	-14.65	46	43.29	16.87	0.94	29.75	-	-	Peak
800.18	31.44	-14.56	46	39.93	19.85	1.25	29.59	-	-	Peak
983.51	26.35	-27.65	54	33.48	21	1.4	29.53	-	-	Peak
2370	33.49	-20.51	54	31.25	32.83	3.42	34.01	110	360	Average
2370	43.95	-30.05	74	41.71	32.83	3.42	34.01	110	360	Peak
2437	95.9	-	-	93.5	32.95	3.6	34.15	110	0	Peak
2437	90.14	-	-	87.74	32.95	3.6	34.15	110	0	Average
2492	33.83	-20.17	54	31.29	33.05	3.72	34.23	110	360	Average
2492	44.72	-29.28	74	42.18	33.05	3.72	34.23	110	360	Peak
4875	56.65	-17.35	74	48.76	35.18	4.98	32.27	100	0	Peak
4875	44.52	-9.48	54	36.63	35.18	4.98	32.27	100	0	Average

Test Mode :	Mode 2	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	41~42%
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
39.7	36.37	-3.63	40	53.84	12.3	0.25	30.02	100	340	QP
159.98	24.42	-19.08	43.5	44.23	9.6	0.53	29.94	-	-	Peak
320.03	33.22	-12.78	46	48.86	13.55	0.76	29.95	-	-	Peak
480.08	33.21	-12.79	46	45.15	16.87	0.94	29.75	-	-	Peak
800.18	31.24	-14.76	46	39.73	19.85	1.25	29.59	-	-	Peak
949.56	29.29	-24.71	54	36.77	20.73	1.33	29.54	-	-	Peak
2384	34.17	-19.83	54	31.93	32.83	3.42	34.01	150	0	Average
2384	45.32	-28.68	74	43.08	32.83	3.42	34.01	150	0	Peak
2437	100.59	-	-	98.19	32.95	3.6	34.15	150	0	Peak
2437	94.9	-	-	92.5	32.95	3.6	34.15	150	0	Average
2496	34.1	-19.9	54	31.56	33.05	3.72	34.23	150	0	Average
2496	45.88	-28.12	74	43.34	33.05	3.72	34.23	150	0	Peak
4875	57.2	-16.8	74	49.31	35.18	4.98	32.27	280	0	Peak
4875	46.69	-7.31	54	38.8	35.18	4.98	32.27	280	0	Average

Test Mode :	Mode 3	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	41~42%
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
39.7	30.21	-9.79	40	47.68	12.3	0.25	30.02	100	20	Peak
60.07	28.83	-11.17	40	53.36	5.3	0.31	30.14	-	-	Peak
320.03	32.85	-13.15	46	48.49	13.55	0.76	29.95	-	-	Peak
480.08	31.82	-14.18	46	43.76	16.87	0.94	29.75	-	-	Peak
800.18	34.95	-11.05	46	43.44	19.85	1.25	29.59	-	-	Peak
900.09	27.11	-18.89	46	34.84	20.45	1.3	29.48	-	-	Peak
2386	32.78	-21.22	54	30.5	32.86	3.47	34.05	130	37	Average
2386	44.1	-29.9	74	41.82	32.86	3.47	34.05	130	37	Peak
2462	96.2	-	-	93.75	32.98	3.64	34.17	129	37	Peak
2462	92.81	-	-	90.36	32.98	3.64	34.17	129	37	Average
2484	38.12	-15.88	54	35.63	33.01	3.68	34.2	129	37	Average
2484	46.14	-27.86	74	43.65	33.01	3.68	34.2	129	37	Peak
4923	44.48	-9.52	54	36.56	35.19	4.99	32.26	280	0	Average
4923	56.88	-17.12	74	48.96	35.19	4.99	32.26	280	0	Peak

Test Mode :	Mode 3	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	41~42%
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
39.7	35.17	-4.83	40	52.64	12.3	0.25	30.02	100	175	QP
144.46	28.26	-15.24	43.5	47.3	10.45	0.5	29.99	-	-	Peak
250.19	22.55	-23.45	46	39.72	12	0.67	29.84	-	-	Peak
320.03	33.81	-12.19	46	49.45	13.55	0.76	29.95	-	-	Peak
480.08	33.43	-12.57	46	45.37	16.87	0.94	29.75	-	-	Peak
800.18	31.83	-14.17	46	40.32	19.85	1.25	29.59	-	-	Peak
2384	33.75	-20.25	54	31.51	32.83	3.42	34.01	115	46	Average
2384	44.89	-29.11	74	42.65	32.83	3.42	34.01	115	46	Peak
2462	100.6	-	-	98.15	32.98	3.64	34.17	115	46	Peak
2462	94.76	-	-	92.31	32.98	3.64	34.17	115	46	Average
2484	49.07	-4.93	54	46.58	33.01	3.68	34.2	115	46	Average
2484	40.44	-33.56	74	37.95	33.01	3.68	34.2	115	46	Peak
4923	48.5	-5.5	54	40.58	35.19	4.99	32.26	280	360	Average
4923	59.09	-14.91	74	51.17	35.19	4.99	32.26	280	360	Peak

Test Mode :	Mode 4	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	41~42%
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
39.7	33.05	-6.95	40	50.52	12.3	0.25	30.02	100	0	Peak
65.89	29.06	-10.94	40	53.61	5.22	0.33	30.1	-	-	Peak
159.98	22.94	-20.56	43.5	42.75	9.6	0.53	29.94	-	-	Peak
320.03	30.74	-15.26	46	46.38	13.55	0.76	29.95	-	-	Peak
480.08	31.09	-14.91	46	43.03	16.87	0.94	29.75	-	-	Peak
800.18	29.74	-16.26	46	38.23	19.85	1.25	29.59	-	-	Peak
2390	36.93	-17.07	54	34.65	32.86	3.47	34.05	100	0	Average
2390	47.64	-26.36	74	45.36	32.86	3.47	34.05	100	0	Peak
2412	97.35	-	-	95.02	32.89	3.52	34.08	100	360	Peak
2412	83.7	-	-	81.37	32.89	3.52	34.08	100	360	Average
2498	33.06	-20.94	54	30.52	33.05	3.72	34.23	100	0	Average
2498	44.86	-29.14	74	42.32	33.05	3.72	34.23	100	0	Peak
4824	43.76	-10.24	54	35.89	35.17	4.97	32.27	150	360	Average
4824	55.54	-18.46	74	47.67	35.17	4.97	32.27	150	360	Peak

Test Mode :	Mode 4	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	41~42%
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
39.7	35.07	-4.93	40	52.54	12.3	0.25	30.02	168	0	QP
145.43	26.25	-17.25	43.5	45.37	10.37	0.5	29.99	-	-	Peak
320.03	33.94	-12.06	46	49.58	13.55	0.76	29.95	-	-	Peak
480.08	33.5	-12.5	46	45.44	16.87	0.94	29.75	-	-	Peak
800.18	31.54	-14.46	46	40.03	19.85	1.25	29.59	-	-	Peak
988.36	28.8	-25.2	54	35.89	21.03	1.4	29.52	-	-	Peak
2390	38.98	-15.02	54	36.7	32.86	3.47	34.05	100	0	Average
2390	53.97	-20.03	74	51.69	32.86	3.47	34.05	100	0	Peak
2412	100.25	-	-	97.92	32.89	3.52	34.08	100	360	Peak
2412	86.55	-	-	84.22	32.89	3.52	34.08	100	360	Average
2484	33.85	-20.15	54	31.36	33.01	3.68	34.2	280	360	Average
2484	45.49	-28.51	74	43	33.01	3.68	34.2	280	360	Peak
4824	43.76	-10.24	54	35.89	35.17	4.97	32.27	100	0	Average
4824	55.27	-18.73	74	47.4	35.17	4.97	32.27	100	0	Peak

Test Mode :	Mode 5	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	41~42%
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
30.97	27.8	-12.2	40	40.34	17.29	0.25	30.08	200	100	Peak
159.98	22.11	-21.39	43.5	41.92	9.6	0.53	29.94	-	-	Peak
320.03	25.89	-20.11	46	41.53	13.55	0.76	29.95	-	-	Peak
480.08	26.1	-19.9	46	38.04	16.87	0.94	29.75	-	-	Peak
839.95	24.44	-21.56	46	32.4	20.41	1.28	29.65	-	-	Peak
897.18	23.87	-22.13	46	31.61	20.45	1.3	29.49	-	-	Peak
2344	33.48	-20.52	54	31.31	32.78	3.33	33.94	100	0	Average
2344	44.19	-29.81	74	42.02	32.78	3.33	33.94	100	0	Peak
2437	97.55	-	-	95.15	32.95	3.6	34.15	100	360	Peak
2437	83.31	-	-	80.91	32.95	3.6	34.15	100	360	Average
2498	33.84	-20.16	54	31.3	33.05	3.72	34.23	100	0	Average
2498	45.57	-28.43	74	43.03	33.05	3.72	34.23	100	0	Peak
4875	56.13	-17.87	74	48.24	35.18	4.98	32.27	280	360	Peak
4875	44.13	-9.87	54	36.24	35.18	4.98	32.27	280	360	Average

Test Mode :	Mode 5	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	41~42%
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
39.7	35.11	-4.89	40	52.58	12.3	0.25	30.02	100	0	Peak
65.89	29.93	-10.07	40	54.48	5.22	0.33	30.1	-	-	Peak
142.52	26.96	-16.54	43.5	45.82	10.64	0.49	29.99	-	-	Peak
320.03	29.61	-16.39	46	45.25	13.55	0.76	29.95	-	-	Peak
480.08	33.24	-12.76	46	45.18	16.87	0.94	29.75	-	-	Peak
800.18	29.29	-16.71	46	37.78	19.85	1.25	29.59	-	-	Peak
2390	34.81	-19.19	54	32.53	32.86	3.47	34.05	100	0	Average
2390	44.82	-29.18	74	42.54	32.86	3.47	34.05	100	0	Peak
2437	100.84	-	-	98.44	32.95	3.6	34.15	100	360	Peak
2437	88.23	-	-	85.83	32.95	3.6	34.15	100	360	Average
2500	35.27	-18.73	54	32.73	33.05	3.72	34.23	100	0	Average
2500	45.17	-28.83	74	42.63	33.05	3.72	34.23	100	0	Peak
4875	56.09	-17.91	74	48.2	35.18	4.98	32.27	280	360	Peak
4875	44.19	-9.81	54	36.3	35.18	4.98	32.27	280	360	Average

Test Mode :	Mode 6	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	41~42%
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
39.7	36.48	-3.52	40	53.95	12.3	0.25	30.02	100	360	Peak
65.89	29.32	-10.68	40	53.87	5.22	0.33	30.1	-	-	Peak
146.4	25.15	-18.35	43.5	44.34	10.29	0.5	29.98	-	-	Peak
320.03	29.47	-16.53	46	45.11	13.55	0.76	29.95	-	-	Peak
480.08	32.36	-13.64	46	44.3	16.87	0.94	29.75	-	-	Peak
800.18	29	-17	46	37.49	19.85	1.25	29.59	-	-	Peak
2340	34.25	-19.75	54	32.08	32.78	3.33	33.94	128	0	Average
2340	44.05	-29.95	74	41.88	32.78	3.33	33.94	128	0	Peak
2462	95.33	-	-	92.88	32.98	3.64	34.17	128	360	Peak
2462	81.55	-	-	79.1	32.98	3.64	34.17	128	360	Average
2484	36.41	-17.59	54	33.92	33.01	3.68	34.2	128	0	Average
2484	50.88	-23.12	74	48.39	33.01	3.68	34.2	128	0	Peak
4923	44.64	-9.36	54	36.72	35.19	4.99	32.26	280	0	Average
4923	56.93	-17.07	74	49.01	35.19	4.99	32.26	280	0	Peak

Test Mode :	Mode 6	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	41~42%
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
41.64	36.51	-3.49	40	55.38	10.95	0.26	30.08	100	0	Peak
159.98	24.48	-19.02	43.5	44.29	9.6	0.53	29.94	-	-	Peak
320.03	34.69	-11.31	46	50.33	13.55	0.76	29.95	-	-	Peak
480.08	33.7	-12.3	46	45.64	16.87	0.94	29.75	-	-	Peak
800.18	32.06	-13.94	46	40.55	19.85	1.25	29.59	-	-	Peak
988.36	29.49	-24.51	54	36.58	21.03	1.4	29.52	-	-	Peak
2380	33.87	-20.13	54	31.63	32.83	3.42	34.01	116	360	Average
2380	44.39	-29.61	74	42.15	32.83	3.42	34.01	116	360	Peak
2462	100.71	-	-	98.26	32.98	3.64	34.17	116	360	Peak
2462	87.5	-	-	85.05	32.98	3.64	34.17	116	360	Average
2484	41.28	-12.72	54	38.79	33.01	3.68	34.2	116	0	Average
2484	56.38	-17.62	74	53.89	33.01	3.68	34.2	116	0	Peak
4923	57.07	-16.93	74	49.15	35.19	4.99	32.26	200	0	Peak
4923	44.94	-9.06	54	37.02	35.19	4.99	32.26	200	0	Average

Test Mode :	Mode 7	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	41~42%
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
32.91	25.1	-14.9	40	38.91	16.04	0.24	30.09	100	36	Peak
235.64	21.88	-24.12	46	39.79	11.29	0.65	29.85	-	-	Peak
328.76	20	-26	46	35.25	13.91	0.78	29.94	-	-	Peak
432.55	21.56	-24.44	46	34.27	16.21	0.88	29.8	-	-	Peak
757.5	22.28	-23.72	46	30.75	19.89	1.19	29.55	-	-	Peak
944.71	26.65	-27.35	54	34.15	20.71	1.33	29.54	-	-	Peak
2389.61	59.24	-14.76	74	56.96	32.86	3.47	34.05	199	330	Peak
2389.61	44.51	-9.49	54	42.23	32.86	3.47	34.05	199	330	Average
2412	99.58	-	-	97.25	32.89	3.52	34.08	200	334	Peak
2412	88.61	-	-	86.28	32.89	3.52	34.08	200	334	Average
2496.01	46.44	-27.56	74	43.9	33.05	3.72	34.23	124	79	Peak
2496.01	35.58	-18.42	54	33.04	33.05	3.72	34.23	124	79	Average

Test Mode :	Mode 7	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	41~42%
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
30	21.22	-18.78	40	33.04	18	0.26	30.08	-	-	Peak
134.76	19.99	-23.51	43.5	38.2	11.3	0.48	29.99	-	-	Peak
241.46	20.52	-25.48	46	38.07	11.61	0.66	29.82	-	-	Peak
284.14	20.82	-25.18	46	37.32	12.74	0.71	29.95	-	-	Peak
935.98	27.39	-18.61	46	34.93	20.67	1.32	29.53	100	151	Peak
944.71	28.84	-25.16	54	36.34	20.71	1.33	29.54	-	-	Peak
2389.99	55.17	-18.83	74	52.89	32.86	3.47	34.05	179	322	Peak
2389.99	40.45	-13.55	54	38.17	32.86	3.47	34.05	179	322	Average
2412	94.46	-	-	92.13	32.89	3.52	34.08	101	318	Peak
2412	84.47	-	-	82.14	32.89	3.52	34.08	101	318	Average
2490.88	46.29	-27.71	74	43.75	33.05	3.72	34.23	200	271	Peak
2490.88	35.72	-18.28	54	33.18	33.05	3.72	34.23	200	271	Average

Test Mode :	Mode 8	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	41~42%
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	19.99	-20.01	40	31.81	18	0.26	30.08	-	-	Peak
46.49	17.93	-22.07	40	38.91	8.88	0.27	30.13	-	-	Peak
237.58	21.85	-24.15	46	39.63	11.4	0.65	29.83	-	-	Peak
323.91	20.08	-25.92	46	35.55	13.71	0.77	29.95	-	-	Peak
935.98	26.49	-19.51	46	34.03	20.67	1.32	29.53	100	86	Peak
944.71	27.83	-26.17	54	35.33	20.71	1.33	29.54	-	-	Peak
2384.48	47.19	-26.81	74	44.95	32.83	3.42	34.01	168	331	Peak
2384.48	36.29	-17.71	54	34.05	32.83	3.42	34.01	168	331	Average
2437	97.54	-	-	95.14	32.95	3.6	34.15	199	327	Peak
2437	87.42	-	-	85.02	32.95	3.6	34.15	199	327	Average
2487.65	46.59	-27.41	74	44.05	33.05	3.72	34.23	122	0	Peak
2487.65	36.71	-17.29	54	34.17	33.05	3.72	34.23	122	0	Average

Test Mode :	Mode 8	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	41~42%
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
30.97	20.85	-19.15	40	33.39	17.29	0.25	30.08	100	213	Peak
134.76	20.39	-23.11	43.5	38.6	11.3	0.48	29.99	-	-	Peak
237.58	19.28	-26.72	46	37.06	11.4	0.65	29.83	-	-	Peak
280.26	21.21	-24.79	46	37.8	12.66	0.7	29.95	-	-	Peak
935.98	25.72	-20.28	46	33.26	20.67	1.32	29.53	-	-	Peak
944.71	28.09	-25.91	54	35.59	20.71	1.33	29.54	-	-	Peak
2348.57	46.73	-27.27	74	44.56	32.78	3.33	33.94	133	334	Peak
2348.57	34.66	-19.34	54	32.49	32.78	3.33	33.94	133	334	Average
2437	96.26	-	-	93.86	32.95	3.6	34.15	120	299	Peak
2437	85.4	-	-	83	32.95	3.6	34.15	120	299	Average
2498.29	46.55	-27.45	74	44.01	33.05	3.72	34.23	200	112	Peak
2498.29	34.71	-19.29	54	32.17	33.05	3.72	34.23	200	112	Average

Test Mode :	Mode 9	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	41~42%
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
30.97	20.03	-19.97	40	32.57	17.29	0.25	30.08	-	-	Peak
45.52	15.25	-24.75	40	35.86	9.25	0.27	30.13	-	-	Peak
239.52	21.74	-24.26	46	39.39	11.51	0.66	29.82	-	-	Peak
852.56	22.25	-23.75	46	30.11	20.51	1.28	29.65	-	-	Peak
935.98	27.37	-18.63	46	34.91	20.67	1.32	29.53	100	192	Peak
944.71	29.19	-24.81	54	36.69	20.71	1.33	29.54	-	-	Peak
2373.65	47.06	-26.94	74	44.82	32.83	3.42	34.01	177	201	Peak
2373.65	34.82	-19.18	54	32.58	32.83	3.42	34.01	177	201	Average
2462	98.11	-	-	95.66	32.98	3.64	34.17	200	327	Peak
2462	87.82	-	-	85.37	32.98	3.64	34.17	200	327	Average
2484.42	54.77	-19.23	74	52.28	33.01	3.68	34.2	200	333	Peak
2484.42	39.96	-14.04	54	37.47	33.01	3.68	34.2	200	333	Average

Test Mode :	Mode 9	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	41~42%
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
30.97	21.41	-18.59	40	33.95	17.29	0.25	30.08	100	306	Peak
134.76	20.5	-23	43.5	38.71	11.3	0.48	29.99	-	-	Peak
239.52	19.73	-26.27	46	37.38	11.51	0.66	29.82	-	-	Peak
280.26	20.64	-25.36	46	37.23	12.66	0.7	29.95	-	-	Peak
935.98	26.56	-19.44	46	34.1	20.67	1.32	29.53	-	-	Peak
944.71	29.91	-24.09	54	37.41	20.71	1.33	29.54	-	-	Peak
2361.3	46.76	-27.24	74	44.55	32.81	3.38	33.98	113	124	Peak
2361.3	34.58	-19.42	54	32.37	32.81	3.38	33.98	113	124	Average
2462	94.29	-	-	91.84	32.98	3.64	34.17	101	263	Peak
2462	85.41	-	-	82.96	32.98	3.64	34.17	101	263	Average
2484.61	53.95	-20.05	74	51.46	33.01	3.68	34.2	142	317	Peak
2484.61	38.75	-15.25	54	36.26	33.01	3.68	34.2	142	317	Average

Test Mode :	Mode 10	Temperature :	21~22℃
Test Channel :	03	Relative Humidity :	41~42%
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
30	21.94	-18.06	40	33.76	18	0.26	30.08	122	208	Peak
237.58	22.53	-23.47	46	40.31	11.4	0.65	29.83	-	-	Peak
560.59	22.29	-23.71	46	32.43	18.52	1.01	29.67	-	-	Peak
722.58	23.87	-22.13	46	32.81	19.56	1.15	29.65	-	-	Peak
878.75	22.91	-23.09	46	30.7	20.47	1.29	29.55	-	-	Peak
944.71	30.08	-23.92	54	37.58	20.71	1.33	29.54	-	-	Peak
2382.2	54.1	-19.9	74	51.86	32.83	3.42	34.01	165	340	Peak
2382.2	42.47	-11.53	54	40.23	32.83	3.42	34.01	165	340	Average
2422	77.92	-	-	75.56	32.92	3.56	34.12	168	340	Average
2422	93.6	-	-	91.24	32.92	3.56	34.12	168	340	Peak
2483.5	48.72	-25.28	74	46.23	33.01	3.68	34.2	160	331	Peak
2483.5	38.39	-15.61	54	35.9	33.01	3.68	34.2	160	331	Average

Test Mode :	Mode 10	Temperature :	21~22℃
Test Channel :	03	Relative Humidity :	41~42%
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
37.76	20.41	-19.59	40	36.53	13.7	0.24	30.06	179	13	Peak
239.52	19.73	-26.27	46	37.38	11.51	0.66	29.82	-	-	Peak
280.26	20.64	-25.36	46	37.23	12.66	0.7	29.95	-	-	Peak
935.98	26.56	-19.44	46	34.1	20.67	1.32	29.53	-	-	Peak
944.71	29.91	-24.09	54	37.41	20.71	1.33	29.54	-	-	Peak
960.23	24.49	-29.51	54	31.9	20.79	1.34	29.54	-	-	Peak
2381.82	53.82	-20.18	74	51.58	32.83	3.42	34.01	100	262	Peak
2381.82	40.83	-13.17	54	38.59	32.83	3.42	34.01	100	262	Average
2422	90.97	-	-	88.61	32.92	3.56	34.12	100	263	Peak
2422	74.94	-	-	72.58	32.92	3.56	34.12	100	263	Average
2483.5	48.09	-25.91	74	45.6	33.01	3.68	34.2	100	265	Peak
2483.5	37.39	-16.61	54	34.9	33.01	3.68	34.2	100	265	Average

Test Mode :	Mode 11	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	41~42%
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	20.74	-19.26	40	32.56	18	0.26	30.08	102	291	Peak
46.49	18.86	-21.14	40	39.84	8.88	0.27	30.13	-	-	Peak
236.61	19.95	-26.05	46	37.79	11.35	0.65	29.84	-	-	Peak
898.15	24.16	-21.84	46	31.89	20.45	1.3	29.48	-	-	Peak
935.98	26.57	-19.43	46	34.11	20.67	1.32	29.53	-	-	Peak
944.71	30.34	-23.66	54	37.84	20.71	1.33	29.54	-	-	Peak
2389.99	54.05	-19.95	74	51.77	32.86	3.47	34.05	176	214	Peak
2389.99	37.45	-16.55	54	35.17	32.86	3.47	34.05	176	214	Average
2437	92.67	-	-	90.27	32.95	3.6	34.15	198	337	Peak
2437	76.86	-	-	74.46	32.95	3.6	34.15	198	337	Average
2483.85	52.55	-21.45	74	50.06	33.01	3.68	34.2	115	12	Peak
2483.85	37.83	-16.17	54	35.34	33.01	3.68	34.2	115	12	Average

Test Mode :	Mode 11	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	41~42%
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
30	22.5	-17.5	40	34.32	18	0.26	30.08	115	23	Peak
45.52	20.09	-19.91	40	40.7	9.25	0.27	30.13	-	-	Peak
134.76	20.96	-22.54	43.5	39.17	11.3	0.48	29.99	-	-	Peak
755.56	22.35	-23.65	46	30.8	19.9	1.19	29.54	-	-	Peak
935.98	26.48	-19.52	46	34.02	20.67	1.32	29.53	-	-	Peak
944.71	31.01	-22.99	54	38.51	20.71	1.33	29.54	-	-	Peak
2388.85	52.89	-21.11	74	50.61	32.86	3.47	34.05	113	297	Peak
2388.85	36.85	-17.15	54	34.57	32.86	3.47	34.05	113	297	Average
2437	89.68	-	-	87.28	32.95	3.6	34.15	102	265	Peak
2437	72.85	-	-	70.45	32.95	3.6	34.15	102	265	Average
2483.5	47.67	-26.33	74	45.18	33.01	3.68	34.2	100	360	Peak
2483.5	34.75	-19.25	54	32.26	33.01	3.68	34.2	100	360	Average

Test Mode :	Mode 12	Temperature :	21~22℃
Test Channel :	09	Relative Humidity :	41~42%
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
30	21.74	-18.26	40	33.56	18	0.26	30.08	-	-	Peak
46.49	18.5	-21.5	40	39.48	8.88	0.27	30.13	-	-	Peak
238.55	19.87	-26.13	46	37.58	11.46	0.66	29.83	-	-	Peak
878.75	23.06	-22.94	46	30.85	20.47	1.29	29.55	-	-	Peak
935.98	28.04	-17.96	46	35.58	20.67	1.32	29.53	100	61	Peak
944.71	31.47	-22.53	54	38.97	20.71	1.33	29.54	-	-	Peak
2390	48.96	-25.04	74	46.68	32.86	3.47	34.05	200	310	Peak
2390	38.38	-15.62	54	36.1	32.86	3.47	34.05	200	310	Average
2452	91.64	-	-	89.24	32.95	3.6	34.15	200	308	Peak
2452	76.5	-	-	74.1	32.95	3.6	34.15	200	308	Average
2487.27	54.13	-19.87	74	51.64	33.01	3.68	34.2	200	309	Peak
2487.27	40.81	-13.19	54	38.32	33.01	3.68	34.2	200	309	Average

Test Mode :	Mode 12	Temperature :	21~22℃
Test Channel :	09	Relative Humidity :	41~42%
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
32.91	20.29	-19.71	40	34.1	16.04	0.24	30.09	-	-	Peak
46.49	19.36	-20.64	40	40.34	8.88	0.27	30.13	-	-	Peak
134.76	20.72	-22.78	43.5	38.93	11.3	0.48	29.99	-	-	Peak
771.08	22.74	-23.26	46	31.21	19.88	1.21	29.56	-	-	Peak
935.98	28.57	-17.43	46	36.11	20.67	1.32	29.53	100	15	Peak
944.71	30.58	-23.42	54	38.08	20.71	1.33	29.54	-	-	Peak
2390	48.27	-25.73	74	45.99	32.86	3.47	34.05	120	0	Peak
2390	36.48	-17.52	54	34.2	32.86	3.47	34.05	120	0	Average
2452	88.58	-	-	86.18	32.95	3.6	34.15	118	0	Peak
2452	73.65	-	-	71.25	32.95	3.6	34.15	118	0	Average
2483.5	49.61	-24.39	74	47.12	33.01	3.68	34.2	118	360	Peak
2483.5	40.79	-13.21	54	38.3	33.01	3.68	34.2	118	360	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 Dipole 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	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 30, 2011	Mar. 31, 2012	Dec. 29, 2012	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	N/A	Dec. 30, 2011	Mar. 31, 2012	Dec. 29, 2012	Conducted (TH01-KS)
DC Power Supply	TOPWARD	GPS-30300	E1884515	N/A	Aug. 23, 2011	Mar. 31, 2012	Aug. 22, 2012	Conducted (TH01-KS)
AC LISN	ETS-LINDGREN	3816/2SH	00103912	0.1MHz~108MHz	Feb. 27, 2012	Mar. 30, 2012	Feb. 26, 2013	Conduction (CO01-SZ)
AC LISN	ETS-LINDGREN	3816/2SH	00103892	0.1MHz~108MHz	Feb. 27, 2012	Mar. 30, 2012	Feb. 26, 2013	Conduction (CO01-SZ)
ESCIO TEST Receiver	R&S	1142.8007.03	100724	9K-3GHz	Mar. 07, 2012	Mar. 30, 2012	Mar. 06, 2013	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	616020000891N/A	N/A	Oct. 12, 2011	Mar. 30, 2012	Oct. 11, 2012	Conduction (CO01-SZ)
AC LISN	SCHWARZBECK	NNLK 8121	8121370	10KHz-30MHz	Jun. 13, 2011	Mar. 30, 2012	Jun. 12, 2012	Conduction (CO01-SZ)
System Simulator	Agilent	E5515C	MY50264168	GSM/WCDMA /CDMA2000	Mar. 13, 2012	Mar. 30, 2012	Mar. 12, 2013	Conduction (CO01-SZ)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 09, 2011	Apr. 06, 2012	Nov. 08, 2012	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 30, 2011	Apr. 06, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Dec. 08, 2011	Apr. 06, 2012	Dec. 07, 2012	Radiation (03CH01-KS)
Loop Antenna	R&S	HFH2-Z2	860004/00	9 kHz~30 MHz	Jul. 28, 2011	Apr. 06, 2012	Jul. 27, 2012	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	00075959	1GHz~18GHz	Jan. 06, 2012	Apr. 06, 2012	Jan. 05, 2013	Radiation (03CH01-KS)
Amplifier	Wireless	FPA-6592G	060004	30MHz~2GHz	Dec. 30, 2011	Apr. 06, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Dec. 30, 2011	Apr. 06, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701023	1GHz~18GHz	Nov. 07, 2011	Apr. 06, 2012	Nov. 06, 2012	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Oct. 11, 2011	Apr. 06, 2012	Oct. 10, 2012	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 $U_c(y)$	1.13		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	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 $U_c(y)$	1.27		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	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 $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20\text{Log}(1-\Gamma_1*\Gamma_2)$	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty $U_c(y)$	2.36				
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.72				



Appendix A. Photographs of EUT

Please refer to Sporton report number EP231606 as below.