

FCC RF Test Report

APPLICANT : ZTE CORPORATION
EQUIPMENT : WIMAX Modem
BRAND NAME : ZTE
MODEL NAME : IX256
FCC ID : Q78-ZTEIX256
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : Digital Transmission System (DTS)

The product was received on Sep. 11, 2010 and completely tested on Oct. 14, 2010. 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:



Anderson Chiu / Deputy Manager



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



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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	$\geq 0.5\text{MHz}$	Pass	-
3.2	15.247(b)	A8.4	Power Output	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(d)	A8.5	Frequency Band Edges	$\leq 20\text{dBc}$	Pass	-
3.4	15.247(d)	A8.5	Spurious Emission	$< 20\text{ dBc}$	Pass	-
3.5	15.247(e)	A8.2(b)	Power Spectral Density	$\leq 8\text{dBm}$	Pass	-
3.6	15.207	Gen 7.2.2	AC Conducted Emission	15.207(a)	Pass	Under limit 13.44 dB at 0.43 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 3.07 dB at 2389.23 MHz
3.8	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

1.2 Manufacturer

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	WIMAX Modem
Brand Name	ZTE
Model Name	IX256
FCC ID	Q78-ZTEIX256
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 : 17.31 dBm (0.054 W) 802.11g : 24.16 dBm (0.261 W) 802.11n (BW 20MHz) : 24.01 dBm (0.252 W) 802.11n (BW 40MHz) : 24.01 dBm (0.252 W)
Antenna Type	PCB Antenna with gain 4 dBi
Type of Antenna Connector	N/A
HW Version	fe8A
SW Version	CR_IX256V1.0.0B05
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. 03CH01-KS ; CO01-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 7

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.	Notebook	DELL	P08S	QDS-BRCM1030	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
2.	Notebook	DELL	PP42L	N/A	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	Notebook	Acer	TravelMate 2413Lci	QDS-BRCM1016	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	Router	D-Link	DL-504	N/A	N/A	Unshielded, 1.8 m

2 Test Configuration of Equipment Under Test

2.1 Pre-Scanned 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)			
		At DSSS Data Rate			
		1 Mbps	2 Mbps	5.5 Mbps	11 Mbps
CH 01	2412 MHz	17.20	17.24	17.17	17.31
CH 06	2437 MHz	17.30	17.18	17.27	17.28
CH 11	2462 MHz	17.18	17.10	17.23	17.29

Channel	Frequency	2.4GHz 802.11g RF Power (dBm)							
		At OFDM Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 01	2412 MHz	23.57	23.43	23.32	23.25	23.63	23.05	23.25	24.00
CH 06	2437 MHz	23.71	23.45	23.70	22.98	23.39	23.14	23.12	24.16
CH 11	2462 MHz	23.31	23.03	23.17	22.73	23.15	23.12	23.40	23.73

Channel	Frequency	2.4GHz 802.11n (BW 20MHz) RF Power (dBm)							
		At OFDM Data Rate							
		MCS=0	MCS=1	MCS=2	MCS=3	MCS=4	MCS=5	MCS=6	MCS=7
CH 01	2412 MHz	23.77	23.43	23.67	23.60	23.34	23.24	23.66	23.57
CH 06	2437 MHz	24.01	23.62	23.72	23.77	23.78	23.45	23.89	23.50
CH 11	2462 MHz	23.62	23.27	23.44	23.42	23.15	23.13	23.35	23.32

Channel	Frequency	2.4GHz 802.11n (BW 40MHz) RF Power (dBm)							
		At OFDM Data Rate							
		MCS=0	MCS=1	MCS=2	MCS=3	MCS=4	MCS=5	MCS=6	MCS=7
CH 03	2422 MHz	21.80	21.93	21.77	22.03	22.08	22.25	22.44	21.85
CH 06	2437 MHz	23.64	23.54	23.28	23.55	23.62	23.72	24.01	23.36
CH 09	2452 MHz	21.02	21.09	21.15	21.41	21.55	21.68	22.07	21.41

Remark:

1. The data rates of 802.11b/g were set in 11Mbps for 802.11b, 54Mbps for 802.11g, MCS=0 for 802.11n (BW 20MHz), and MCS=6 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.

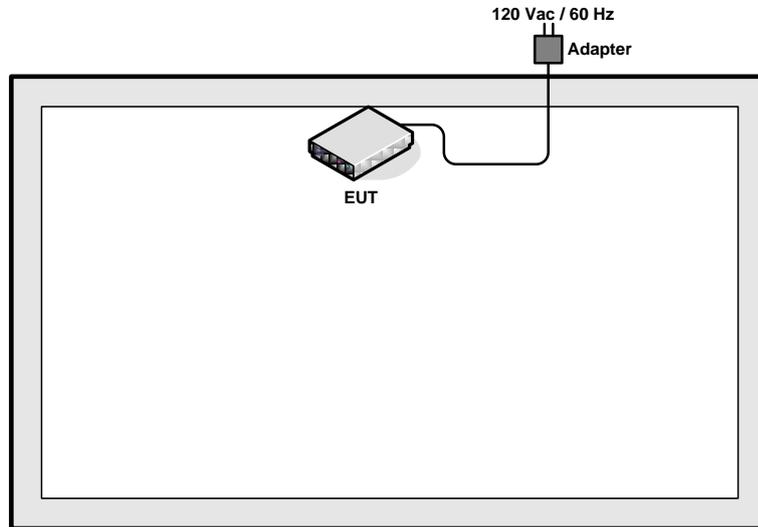
2.2 Test Mode

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.

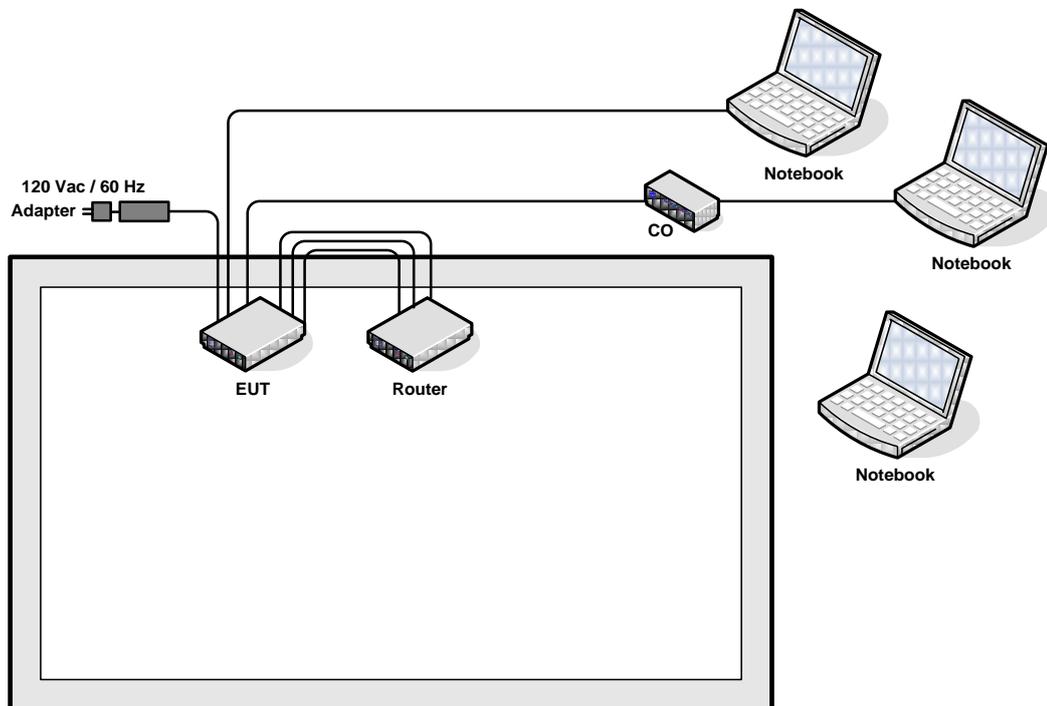
Test Cases		
Test Item	802.11b	802.11g/n
Conducted TCs	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b CH06_2437 MHz Mode 3 : 802.11b CH11_2462 MHz	Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz Mode 7: 802.11n (BW 20M)_CH01_2412 MHz Mode 8: 802.11n (BW 20M)_CH06_2437 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 :WLAN Link + Adapter + TC	
Remark: TC stands for Test Configuration, and consists of Router, Notebook, RJ-11, and RJ-45.		

2.3 Connection Diagram of Test System

<WLAN Tx Mode>



<EUT with Adapter Mode>





2.4 RF Utility

The programmed RF utility is installed in notebook 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.

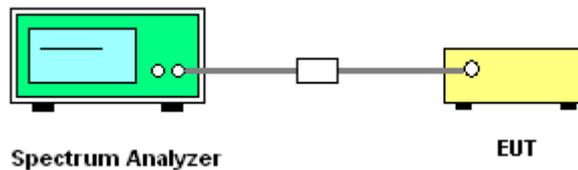
3.1.2 Measuring Instruments

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

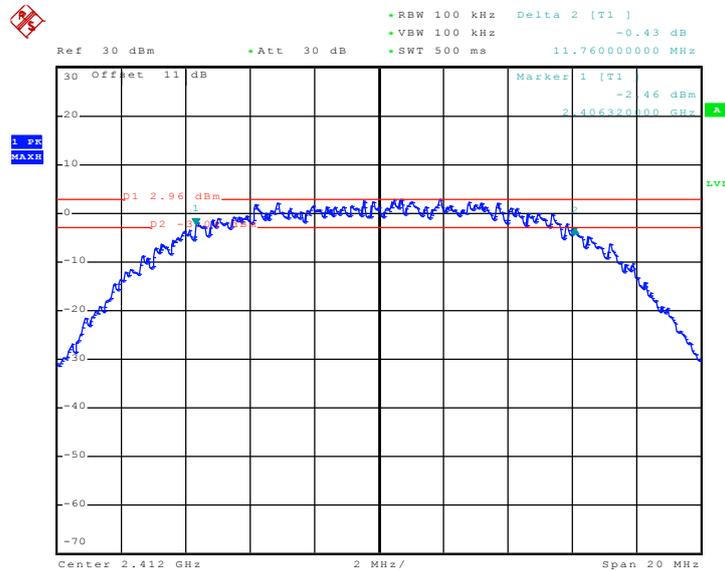


3.1.5 Test Result of 6dB Bandwidth

Test Mode :	Mode 1, 2, 3	Temperature :	22~23°C
Test Engineer :	Sky Liu	Relative Humidity :	43~44%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	11.76	0.5	Pass
06	2437	11.52	0.5	Pass
11	2462	11.28	0.5	Pass

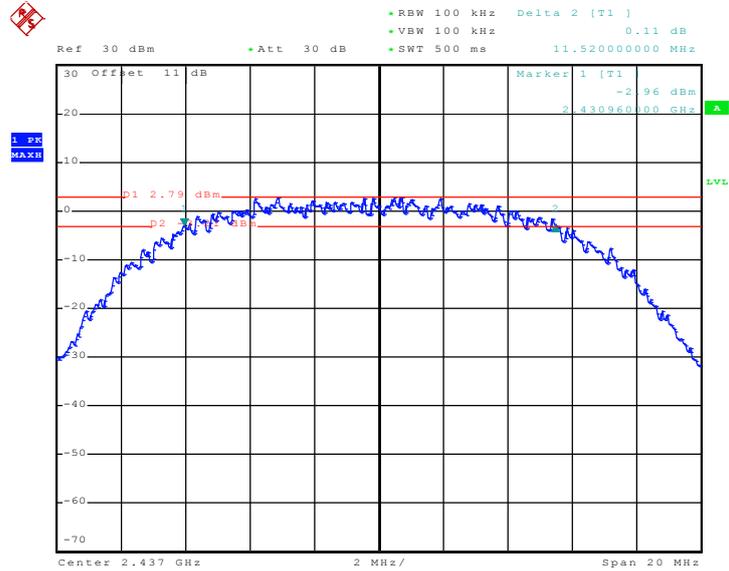
Mode 1 : 6 dB Bandwidth Plot on 802.11b Channel 01



Date: 21.SEP.2010 10:00:45

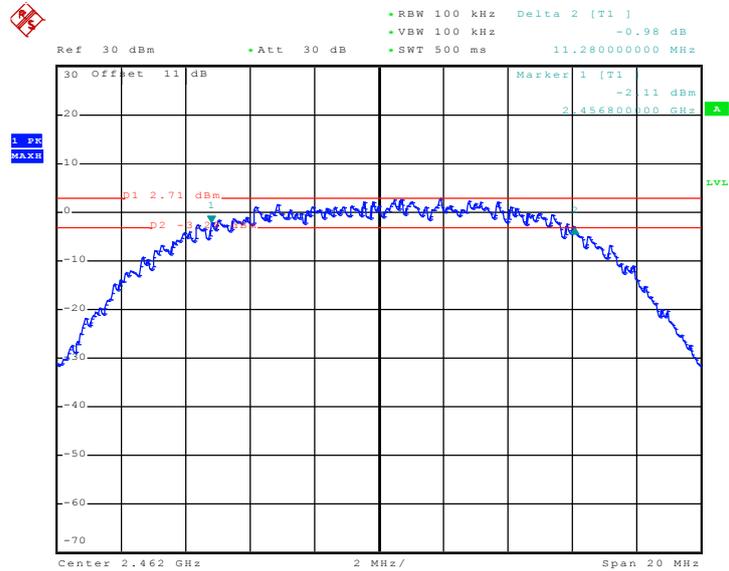


Mode 2 : 6 dB Bandwidth Plot on 802.11b Channel 06



Date: 21.SEP.2010 10:06:24

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



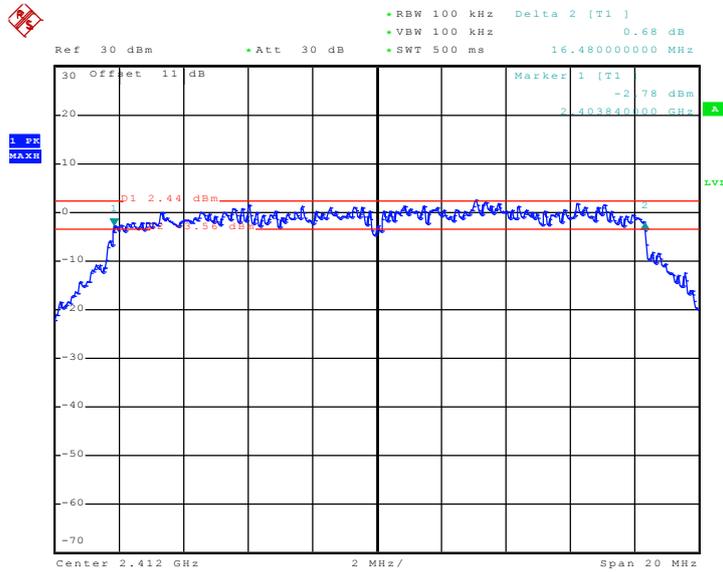
Date: 21.SEP.2010 10:08:41



Test Mode :	Mode 4, 5, 6	Temperature :	22~23°C
Test Engineer :	Sky Liu	Relative Humidity :	43~44%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	16.48	0.5	Pass
06	2437	16.44	0.5	Pass
11	2462	16.28	0.5	Pass

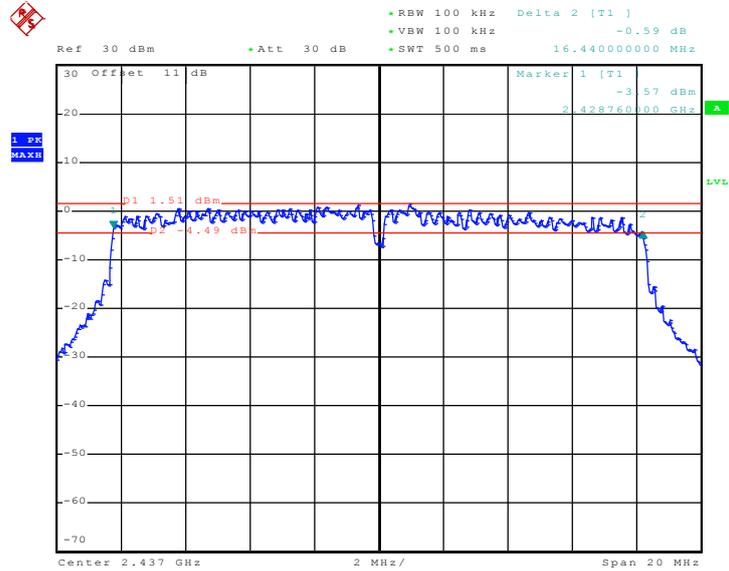
Mode 4 : 6 dB Bandwidth Plot on 802.11g Channel 01



Date: 21.SEP.2010 11:11:25

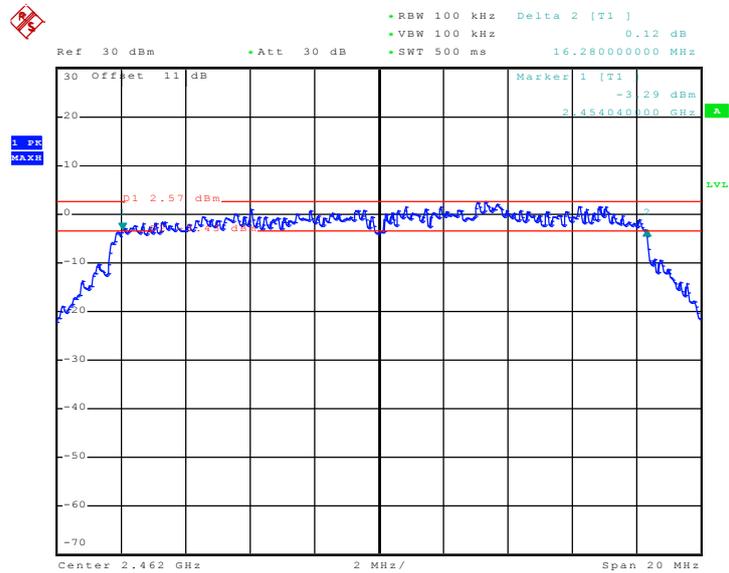


Mode 5 : 6 dB Bandwidth Plot on 802.11g Channel 06



Date: 21.SEP.2010 10:37:56

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



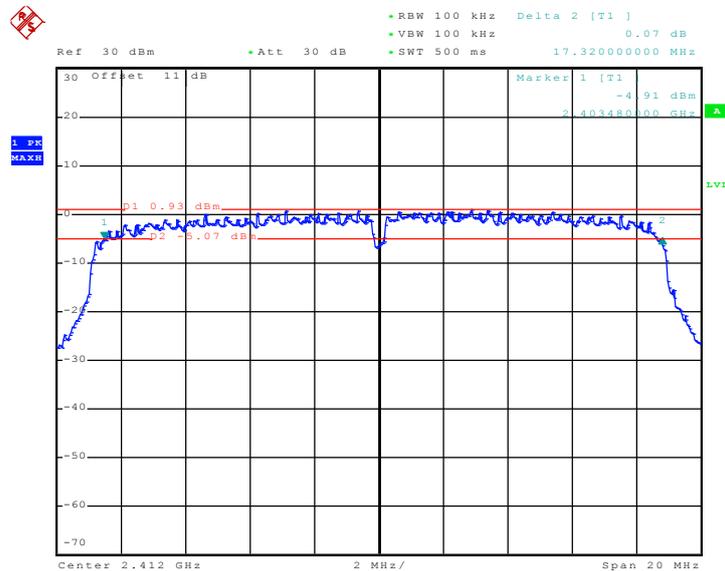
Date: 21.SEP.2010 10:40:40



Test Mode :	Mode 7, 8, 9	Temperature :	22~23°C
Test Engineer :	Sky Liu	Relative Humidity :	43~44%

Channel	Frequency (MHz)	802.11n (BW 20MHz) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	17.32	0.5	Pass
06	2437	16.96	0.5	Pass
11	2462	17.08	0.5	Pass

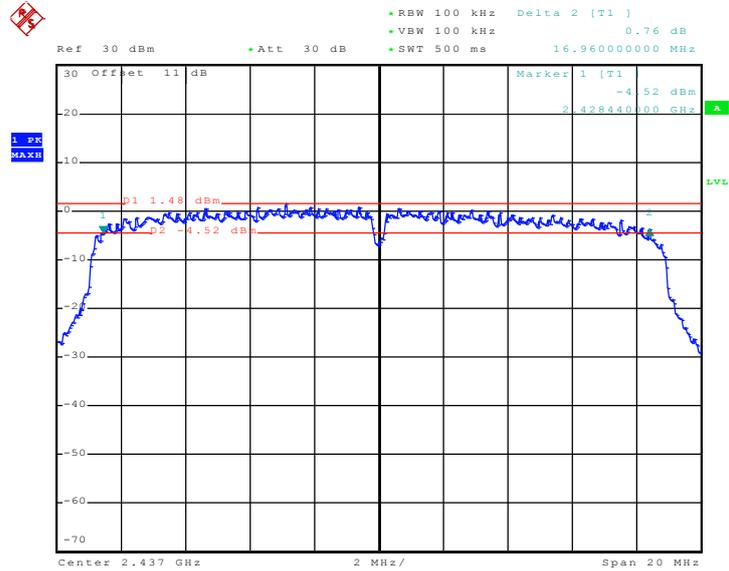
Mode 7 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 01



Date: 13.OCT.2010 03:41:19

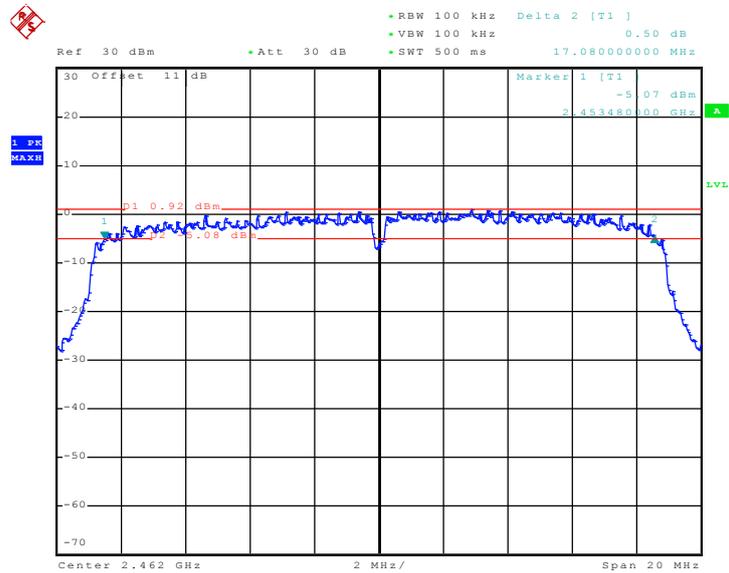


Mode 8 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 06



Date: 13.OCT.2010 03:34:43

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



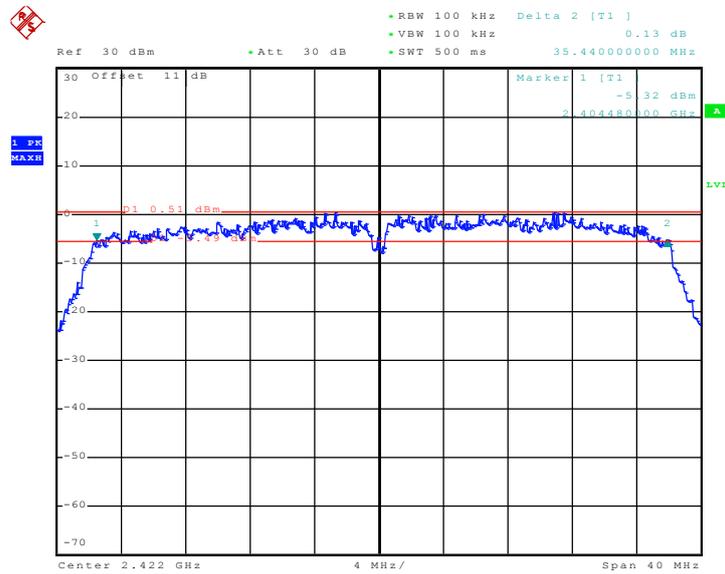
Date: 13.OCT.2010 03:38:05



Test Mode :	Mode 10, 11, 12	Temperature :	22~23°C
Test Engineer :	Sky Liu	Relative Humidity :	43~44%

Channel	Frequency (MHz)	802.11n (BW 40MHz) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
03	2422	35.44	0.5	Pass
06	2437	34.32	0.5	Pass
09	2452	36.16	0.5	Pass

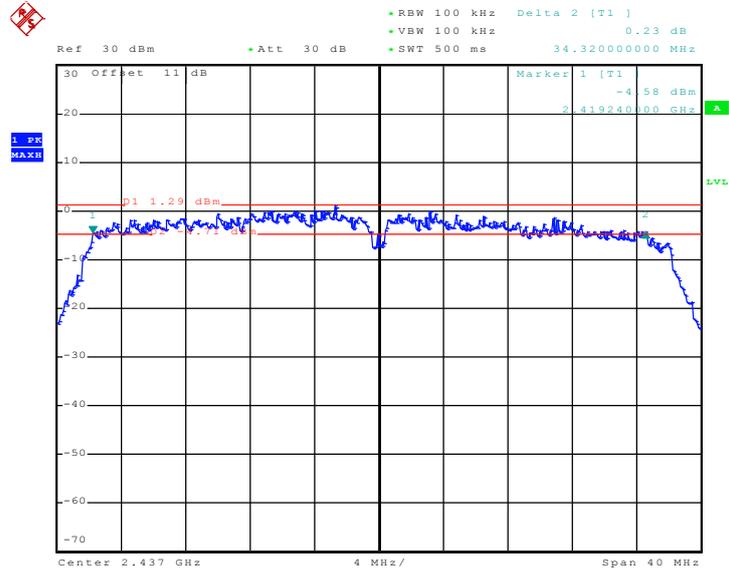
Mode 10 : 6 dB Bandwidth Plot on 802.11n(BW 40MHz) Channel 03



Date: 13.OCT.2010 03:46:48

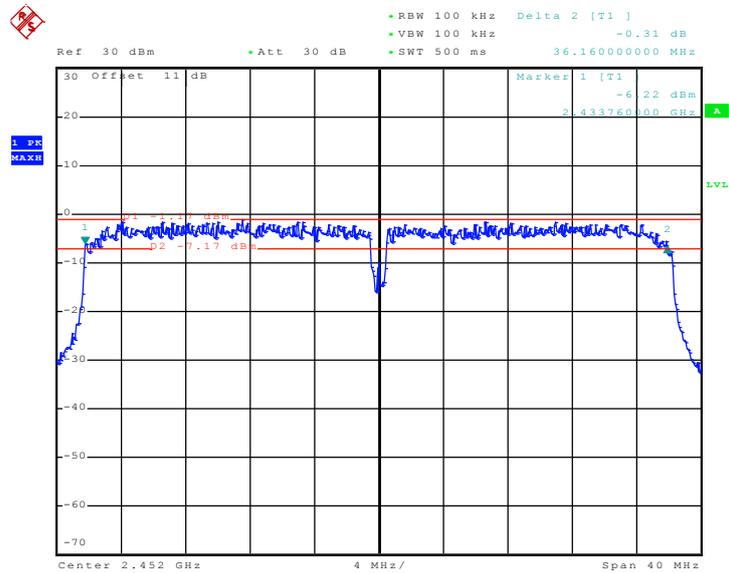


Mode 11 : 6 dB Bandwidth Plot on 802.11n(BW 40MHz) Channel 06



Date: 13.OCT.2010 03:49:24

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



Date: 13.OCT.2010 03:52:15

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.

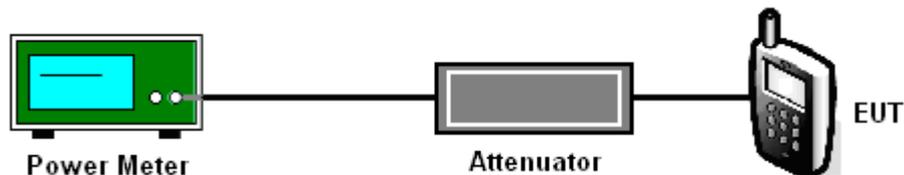
3.2.2 Measuring Instruments

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 :	22~23°C
Test Engineer :	Sky Liu	Relative Humidity :	43~44%

Channel	Frequency (MHz)	802.11b Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	17.31	30	Pass
06	2437	17.28	30	Pass
11	2462	17.29	30	Pass

Test Mode :	Mode 4, 5, 6	Temperature :	22~23°C
Test Engineer :	Sky Liu	Relative Humidity :	43~44%

Channel	Frequency (MHz)	802.11g Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	24.00	30	Pass
06	2437	24.16	30	Pass
11	2462	23.73	30	Pass

Test Mode :	Mode 7, 8, 9	Temperature :	22~23°C
Test Engineer :	Sky Liu	Relative Humidity :	43~44%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	23.77	30	Pass
06	2437	24.01	30	Pass
11	2462	23.62	30	Pass

Test Mode :	Mode 10, 11, 12	Temperature :	22~23
Test Engineer :	Sky Liu	Relative Humidity :	43~44

Channel	Frequency (MHz)	802.11n (BW 40MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
03	2422	22.44	30	Pass
06	2437	24.01	30	Pass
09	2452	22.07	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

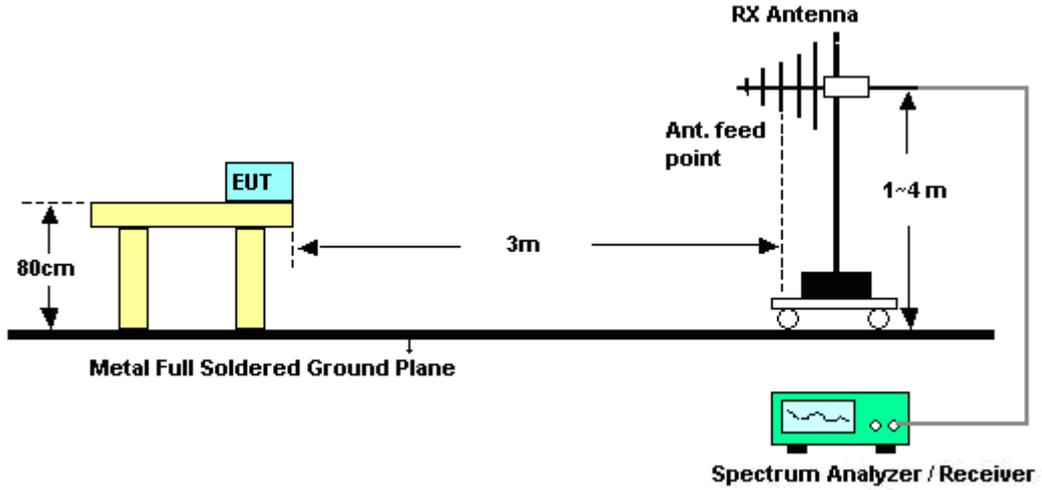
See list of measuring instruments of this test report.

3.3.3 Test Procedures

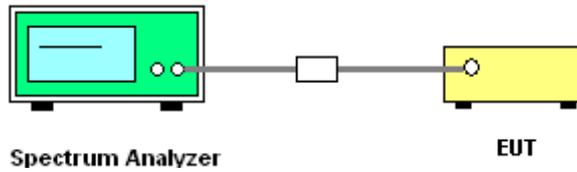
1. The testing follows the guidelines in ANSI C63.4-2003 and FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Conducted emission test: Set RBW = 100 kHz, Video bandwidth (VBW) \geq RBW. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized 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°C
Test Band :	802.11b	Relative Humidity :	43~44%
Test Channel :	01	Test Engineer :	Haitao Yin

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	56.94	-17.06	74	55.92	32.86	3.13	34.97	100	15	Peak
2389.61	44.06	-9.94	54	43.04	32.86	3.13	34.97	100	15	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	50.12	-23.88	74	49.1	32.86	3.13	34.97	100	235	Peak
2389.61	37.5	-16.5	54	36.48	32.86	3.13	34.97	100	235	Average

Test Mode :	Mode 3	Temperature :	21~22°C
Test Band :	802.11b	Relative Humidity :	43~44%
Test Channel :	11	Test Engineer :	Haitao Yin

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
2483.51	53.99	-20.01	74	52.72	33.01	3.2	34.94	177	0	Peak
2483.51	42.33	-11.67	54	41.06	33.01	3.2	34.94	177	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
2489.17	35.43	-18.57	54	34.12	33.05	3.2	34.94	141	270	Peak
2489.17	49.02	-24.98	74	47.71	33.05	3.2	34.94	141	270	Average



Test Mode :	Mode 4	Temperature :	21~22°C
Test Band :	802.11g	Relative Humidity :	43~44%
Test Channel :	01	Test Engineer :	Haitao Yin

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	62.47	-11.53	74	61.45	32.86	3.13	34.97	188	7	Peak
2389.61	40.13	-13.87	54	39.11	32.86	3.13	34.97	188	7	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
2389.23	50.44	-23.56	74	49.42	32.86	3.13	34.97	145	26	Peak
2389.23	37.58	-16.42	54	36.56	32.86	3.13	34.97	145	26	Average

Test Mode :	Mode 6	Temperature :	21~22°C
Test Band :	802.11g	Relative Humidity :	43~44%
Test Channel :	11	Test Engineer :	Haitao Yin

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
2483.51	55.8	-18.2	74	54.53	33.01	3.2	34.94	100	9	Peak
2483.51	38.27	-15.73	54	37	33.01	3.2	34.94	100	9	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
2497.91	48.65	-25.35	74	47.32	33.05	3.21	34.93	120	28	Peak
2497.91	35.46	-18.54	54	34.13	33.05	3.21	34.93	120	28	Average



Test Mode :	Mode 7	Temperature :	21~22°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	43~44%
Test Channel :	01	Test Engineer :	Haitao Yin

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
2389.23	66.47	-7.53	74	65.45	32.86	3.13	34.97	150	0	Peak
2389.23	50.93	-3.07	54	49.91	32.86	3.13	34.97	150	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
2389.99	56.44	-17.56	74	55.41	32.86	3.15	34.98	100	90	Peak
2389.99	39.13	-14.87	54	38.1	32.86	3.15	34.98	100	90	Average

Test Mode :	Mode 9	Temperature :	21~22°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	43~44%
Test Channel :	11	Test Engineer :	Haitao Yin

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
2483.66	66.6	-7.4	74	65.33	33.01	3.2	34.94	100	4	Peak
2483.66	46.39	-7.61	54	45.12	33.01	3.2	34.94	100	4	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
2483.66	52.08	-21.92	74	50.81	33.01	3.2	34.94	118	211	Peak
2483.66	38.38	-15.62	54	37.11	33.01	3.2	34.94	118	211	Average



Test Mode :	Mode 10	Temperature :	21~22°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	43~44%
Test Channel :	03	Test Engineer :	Haitao Yin

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
2389.99	63.78	-10.22	74	62.75	32.86	3.15	34.98	100	0	Peak
2389.99	50.73	-3.27	54	49.7	32.86	3.15	34.98	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
2389.99	52.45	-21.55	74	51.42	32.86	3.15	34.98	120	230	Peak
2389.99	39.23	-14.77	54	38.2	32.86	3.15	34.98	120	230	Average

Test Mode :	Mode 12	Temperature :	21~22°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	43~44%
Test Channel :	09	Test Engineer :	Haitao Yin

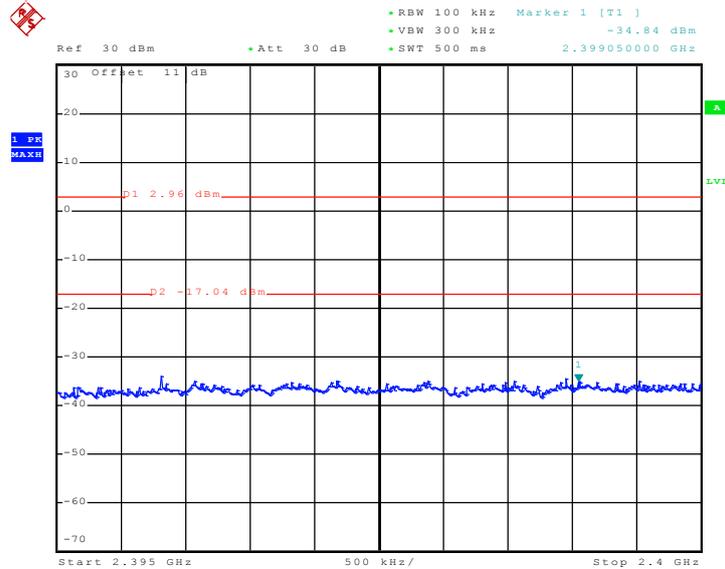
ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.51	62.39	-11.61	74	61.12	33.01	3.2	34.94	178	0	Peak
2483.51	48.98	-5.02	54	47.71	33.01	3.2	34.94	178	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
2484.23	46.99	-27.01	74	45.72	33.01	3.2	34.94	102	85	Peak
2484.23	38.48	-15.52	54	37.21	33.01	3.2	34.94	102	85	Average

3.3.6 Test Plots of Conducted Band Edges

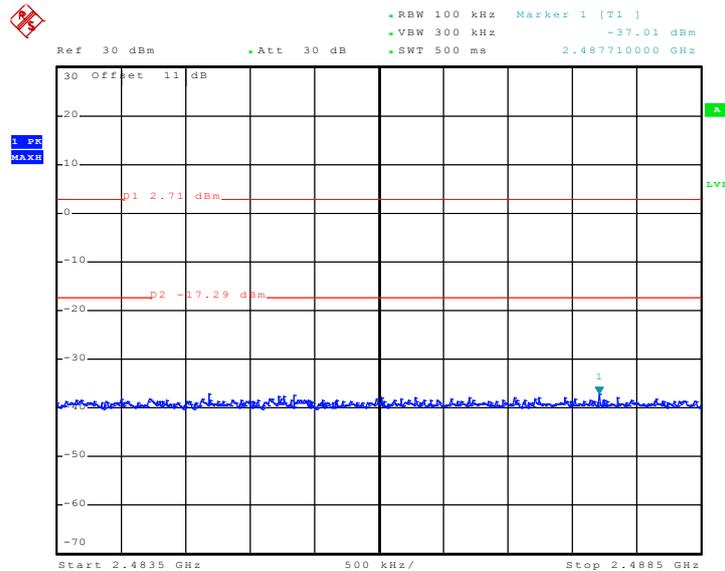
Test Mode :	Mode 1 and 3	Temperature :	22~23°C
Test Band :	802.11b	Relative Humidity :	43~44%
Test Channel :	01 and 11	Test Engineer :	Sky Liu

Low Band Edge Plot on 802.11b Channel 01



Date: 21.SEP.2010 10:24:27

High Band Edge Plot on 802.11b Channel 11

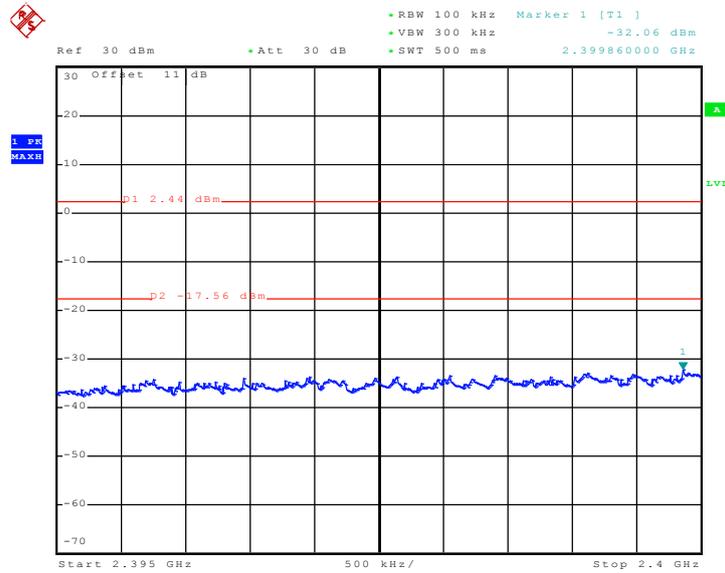


Date: 21.SEP.2010 10:26:31



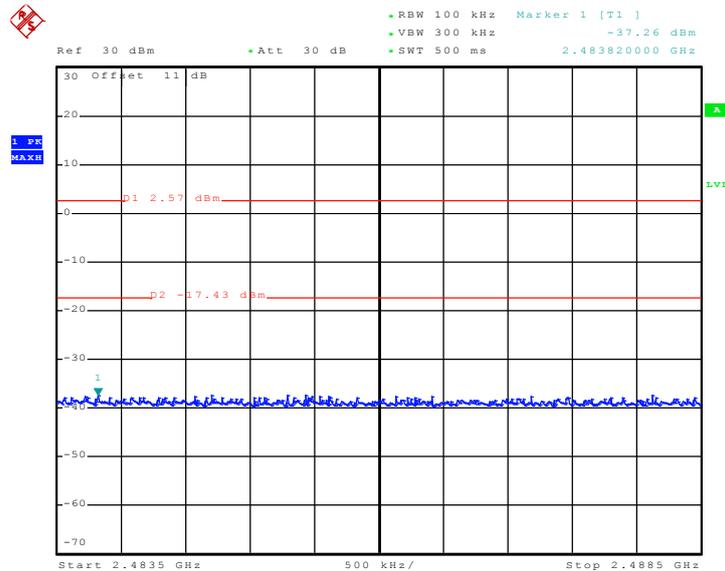
Test Mode :	Mode 4 and 6	Temperature :	22~23°C
Test Band :	802.11g	Relative Humidity :	43~44%
Test Channel :	01 and 11	Test Engineer :	Sky Liu

Low Band Edge Plot on 802.11g Channel 01



Date: 21.SEP.2010 11:13:55

High Band Edge Plot on 802.11g Channel 11

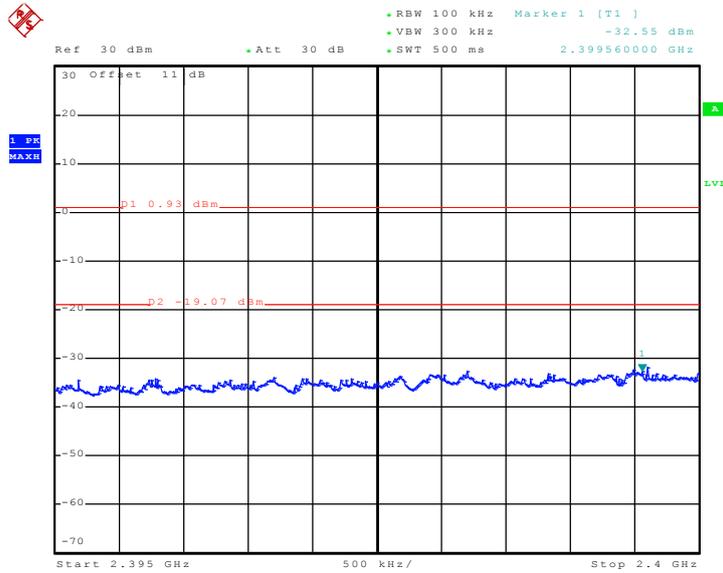


Date: 21.SEP.2010 10:43:43



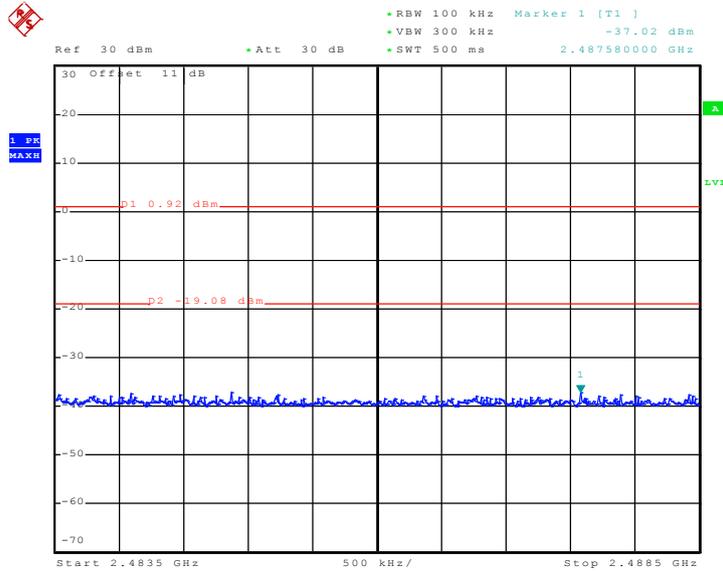
Test Mode :	Mode 7 and 9	Temperature :	22~23°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	43~44%
Test Channel :	01 and 11	Test Engineer :	Sky Liu

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



Date: 13.OCT.2010 04:21:43

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

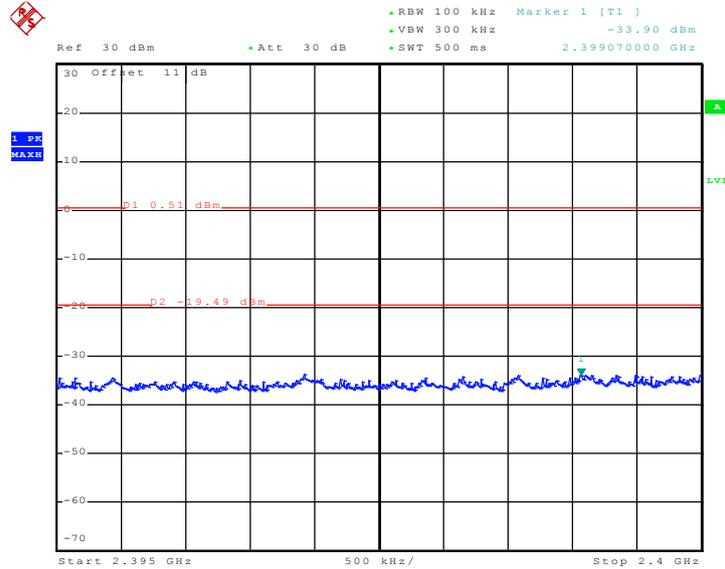


Date: 13.OCT.2010 04:27:03



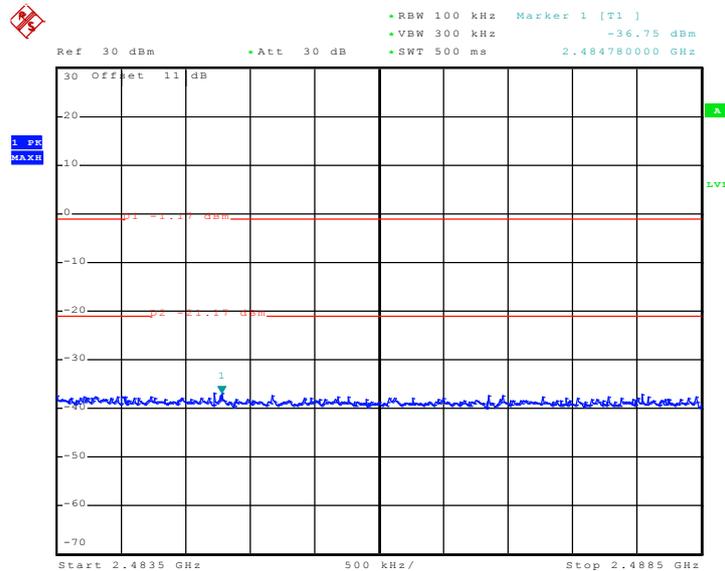
Test Mode :	Mode 10 and 12	Temperature :	22~23°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	43~44%
Test Channel :	03 and 09	Test Engineer :	Sky Liu

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



Date: 13.OCT.2010 04:35:36

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



Date: 13.OCT.2010 04:41:36

3.4 Spurious Emission Measurement

3.4.1 Limit of Spurious Emission Measurement

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

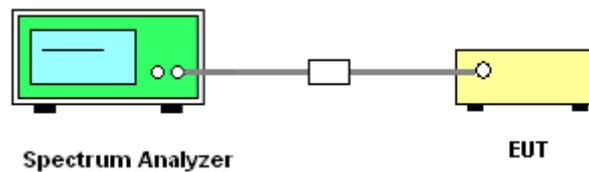
3.4.2 Measuring Instruments

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.

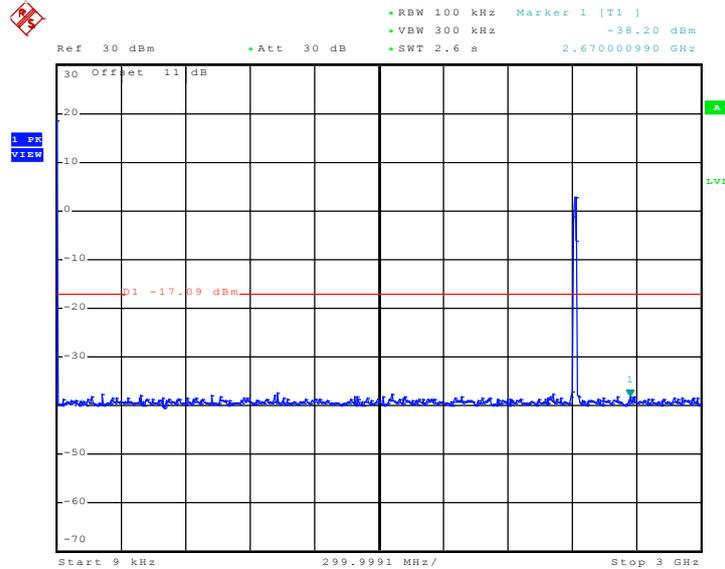
3.4.4 Test Setup



3.4.5 Test Plots of Spurious Emission

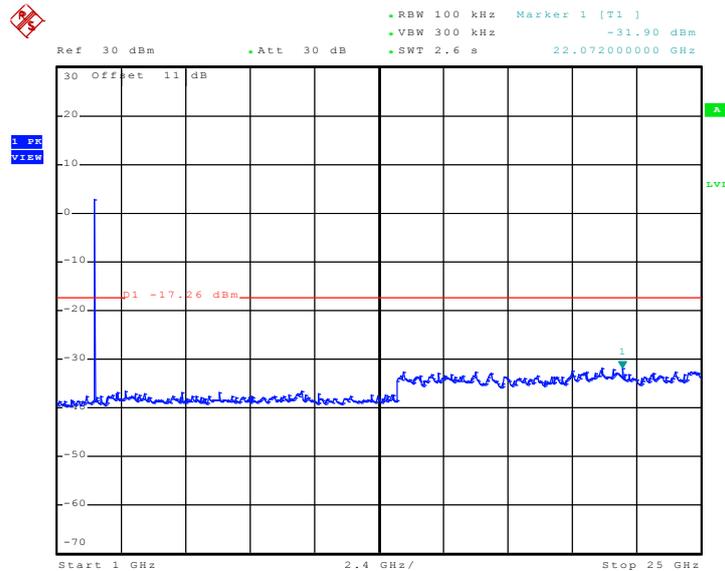
Test Mode :	Mode 1	Temperature :	22~23°C
Test Band :	802.11b	Relative Humidity :	43~44%
Test Channel :	01	Test Engineer :	Sky Liu

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 21.SEP.2010 11:46:59

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

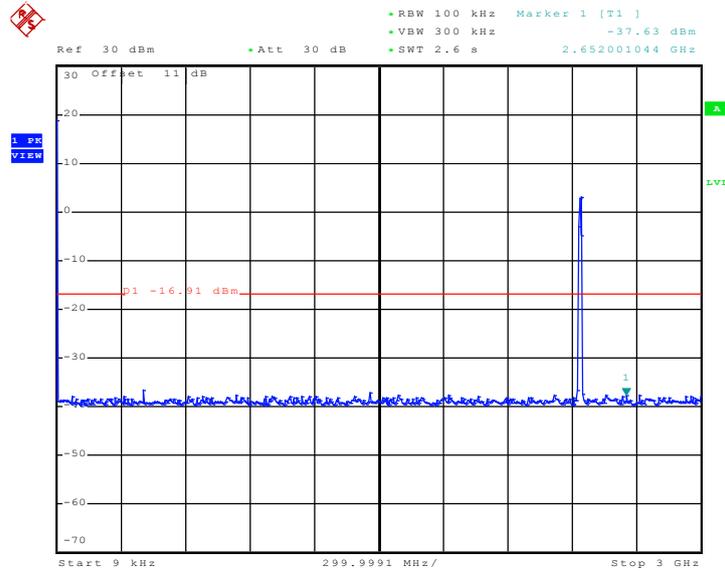


Date: 21.SEP.2010 11:50:45



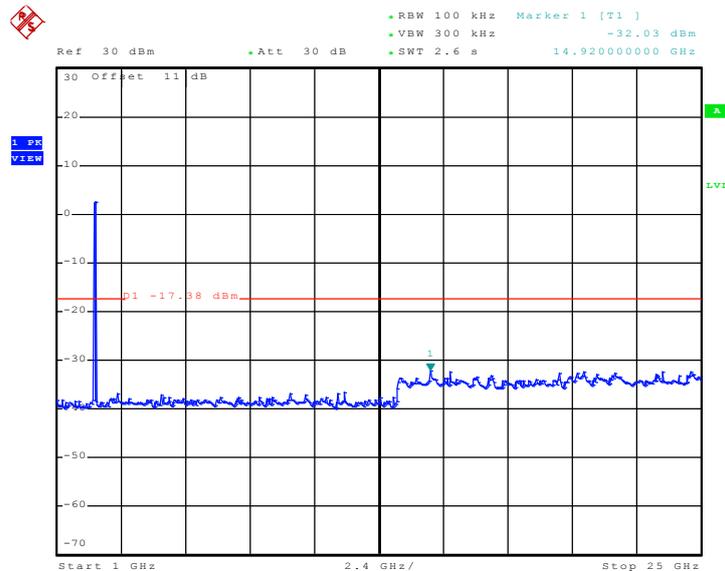
Test Mode :	Mode 2	Temperature :	22~23°C
Test Band :	802.11b	Relative Humidity :	43~44%
Test Channel :	06	Test Engineer :	Sky Liu

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 21.SEP.2010 11:44:52

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

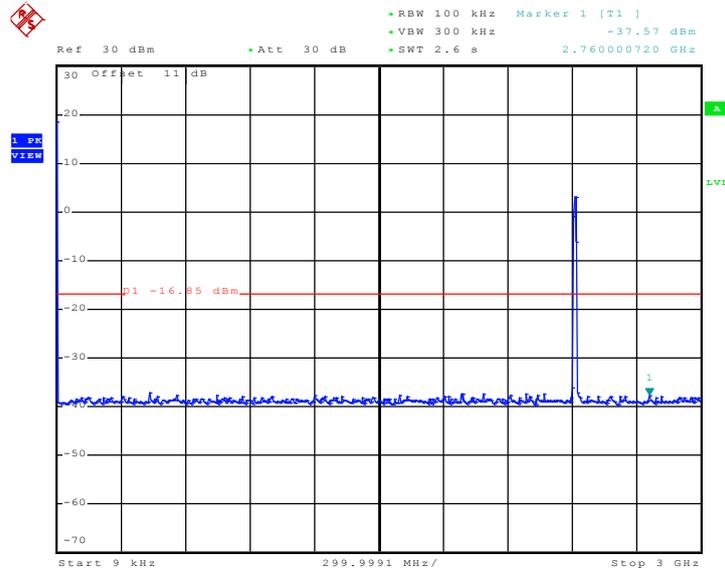


Date: 21.SEP.2010 11:52:17



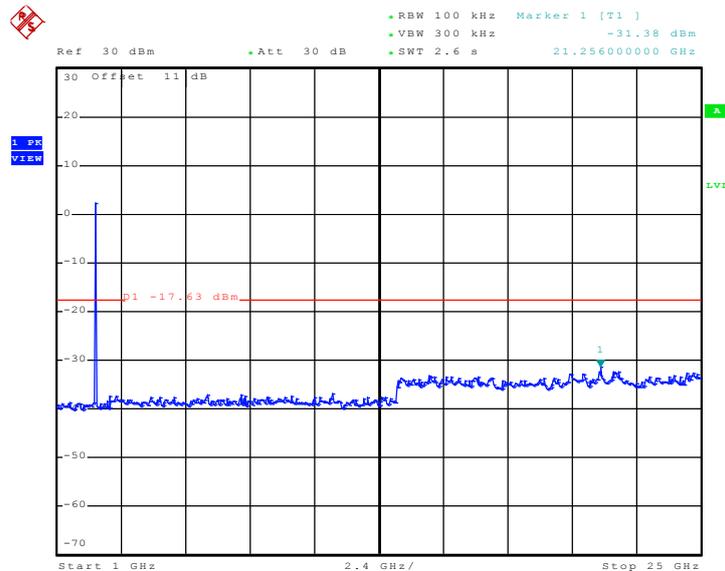
Test Mode :	Mode 3	Temperature :	22~23°C
Test Band :	802.11b	Relative Humidity :	43~44%
Test Channel :	11	Test Engineer :	Sky Liu

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 21.SEP.2010 11:39:43

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

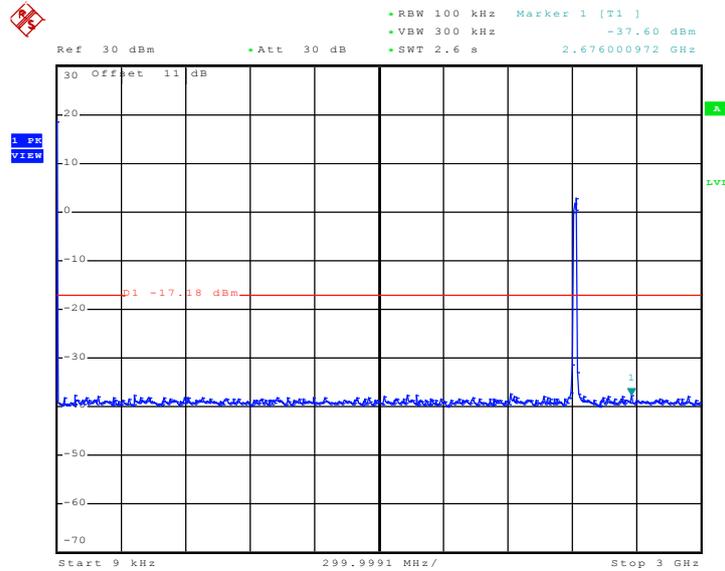


Date: 21.SEP.2010 11:53:48



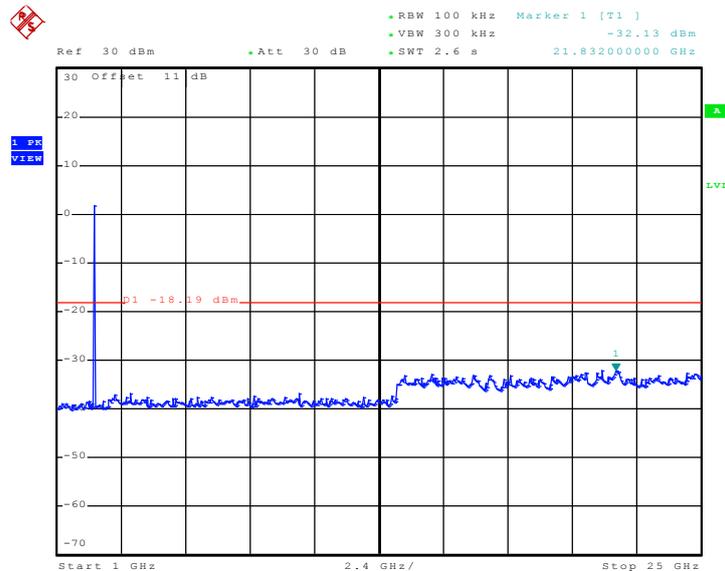
Test Mode :	Mode 4	Temperature :	22~23°C
Test Band :	802.11g	Relative Humidity :	43~44%
Test Channel :	01	Test Engineer :	Sky Liu

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 21.SEP.2010 11:58:29

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

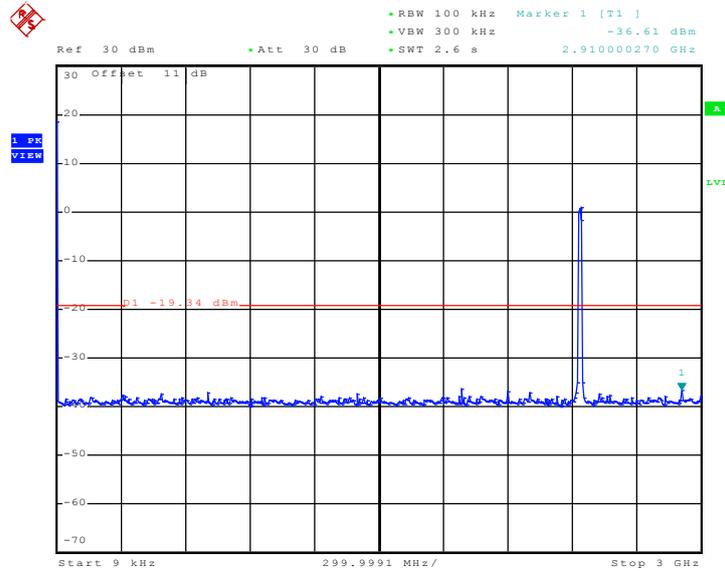


Date: 21.SEP.2010 12:09:28



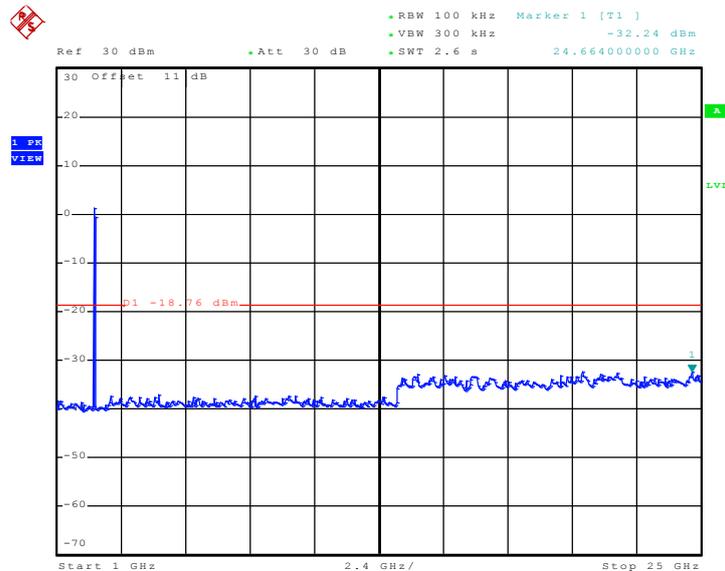
Test Mode :	Mode 5	Temperature :	22~23°C
Test Band :	802.11g	Relative Humidity :	43~44%
Test Channel :	06	Test Engineer :	Sky Liu

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 21.SEP.2010 12:01:44

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

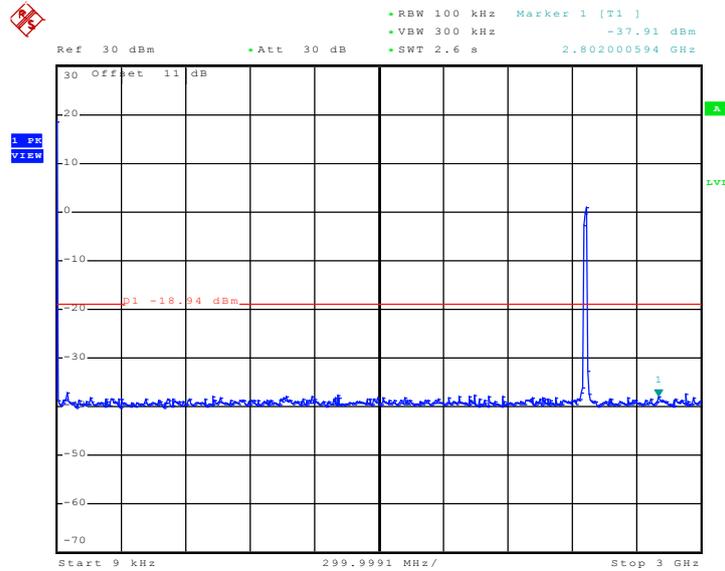


Date: 21.SEP.2010 12:07:25



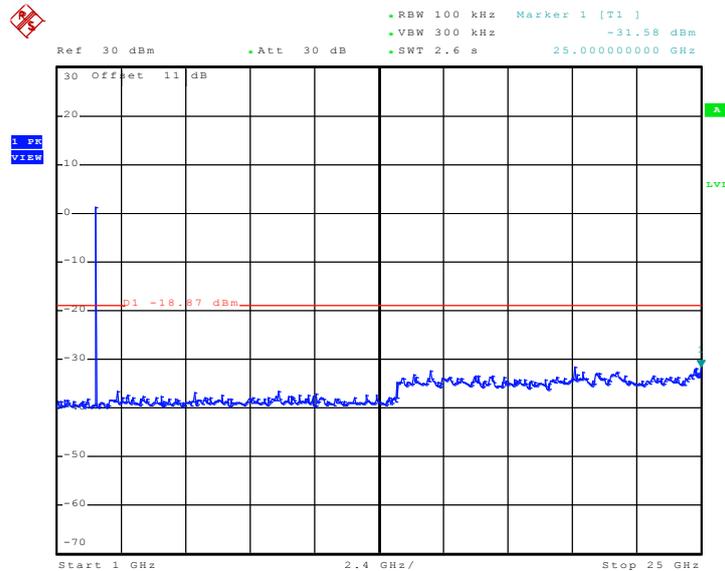
Test Mode :	Mode 6	Temperature :	22~23°C
Test Band :	802.11g	Relative Humidity :	43~44%
Test Channel :	11	Test Engineer :	Sky Liu

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 21.SEP.2010 12:03:08

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

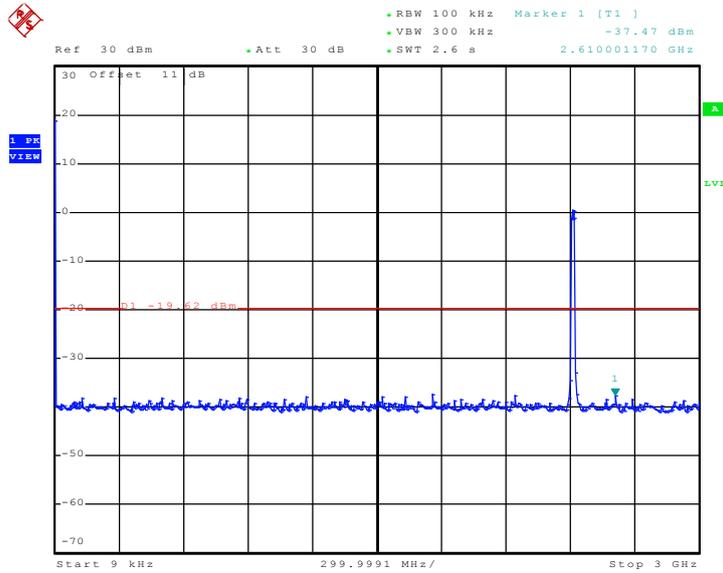


Date: 21.SEP.2010 12:06:17



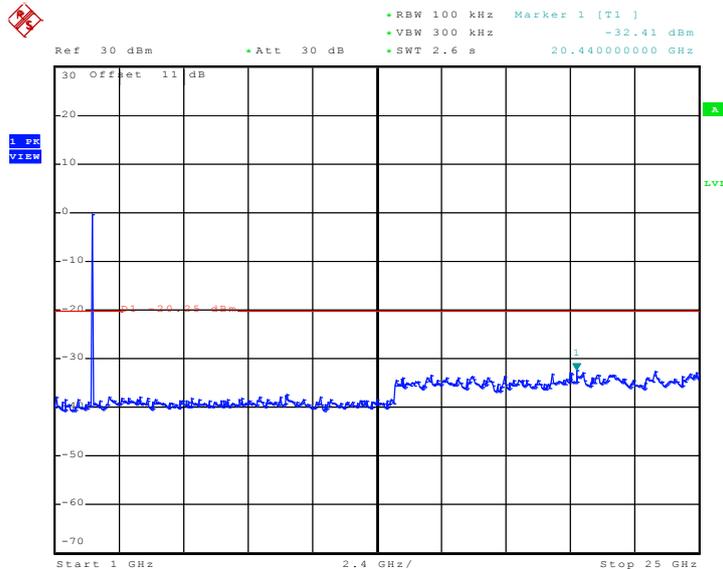
Test Mode :	Mode 7	Temperature :	22~23°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	43~44%
Test Channel :	01	Test Engineer :	Sky Liu

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 13.OCT.2010 05:23:08

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

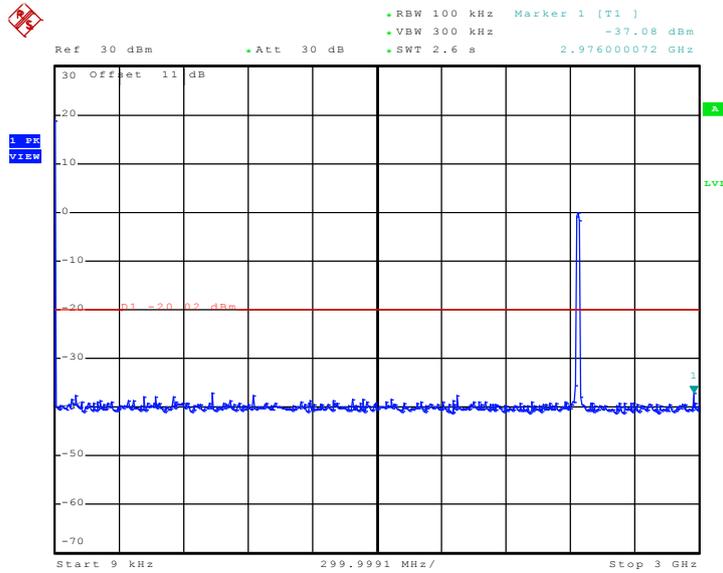


Date: 13.OCT.2010 05:10:15



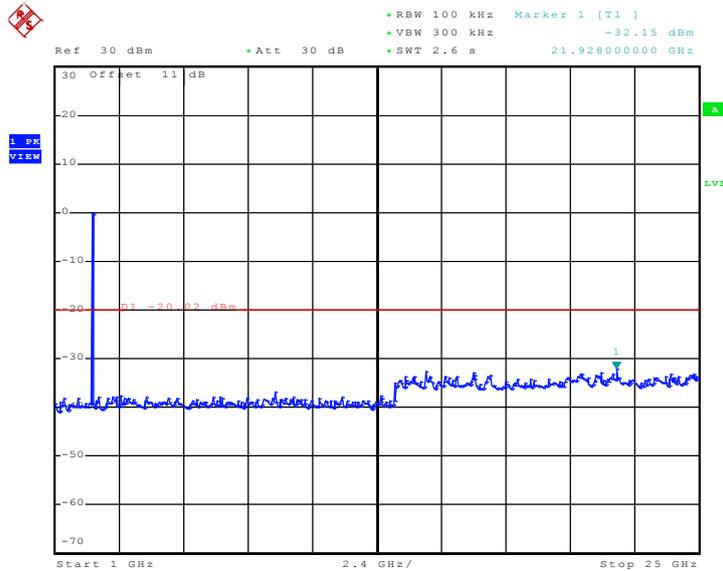
Test Mode :	Mode 8	Temperature :	22~23°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	43~44%
Test Channel :	06	Test Engineer :	Sky Liu

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 13.OCT.2010 05:20:42

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

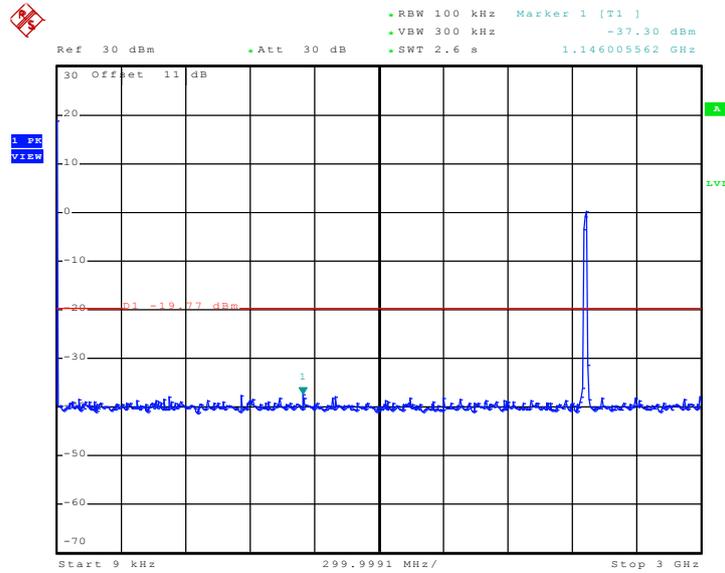


Date: 13.OCT.2010 05:12:40



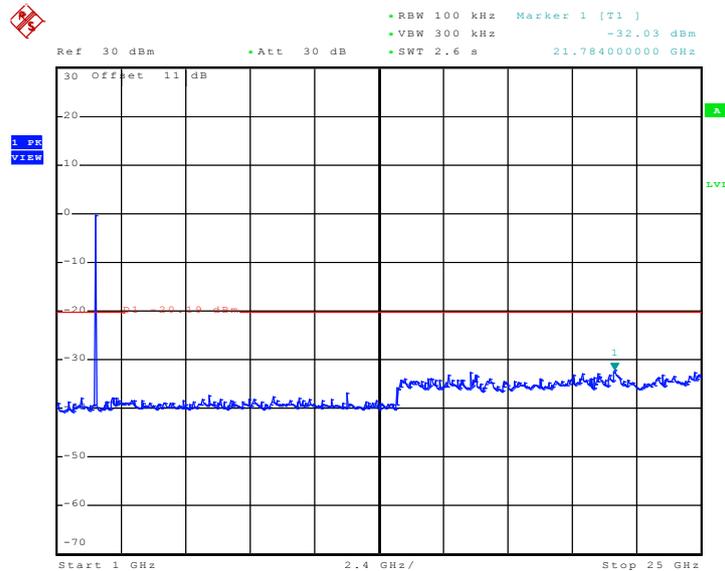
Test Mode :	Mode 9	Temperature :	22~23°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	43~44%
Test Channel :	11	Test Engineer :	Sky Liu

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 13.OCT.2010 05:18:15

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

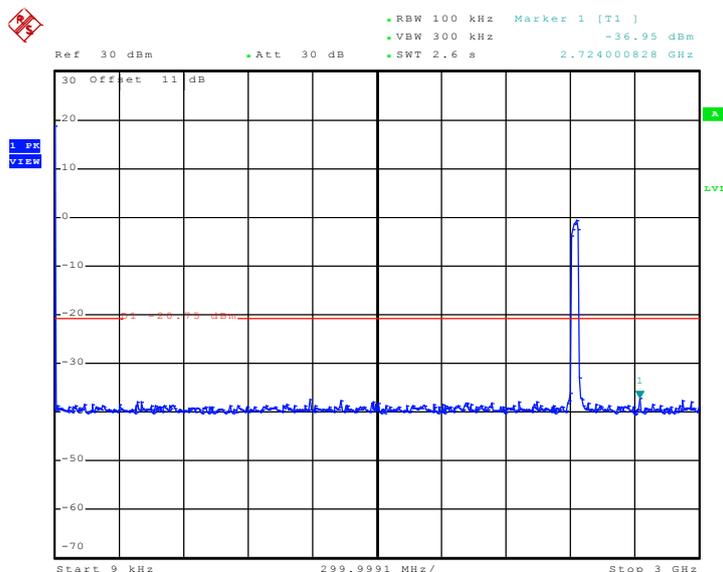


Date: 13.OCT.2010 05:14:27



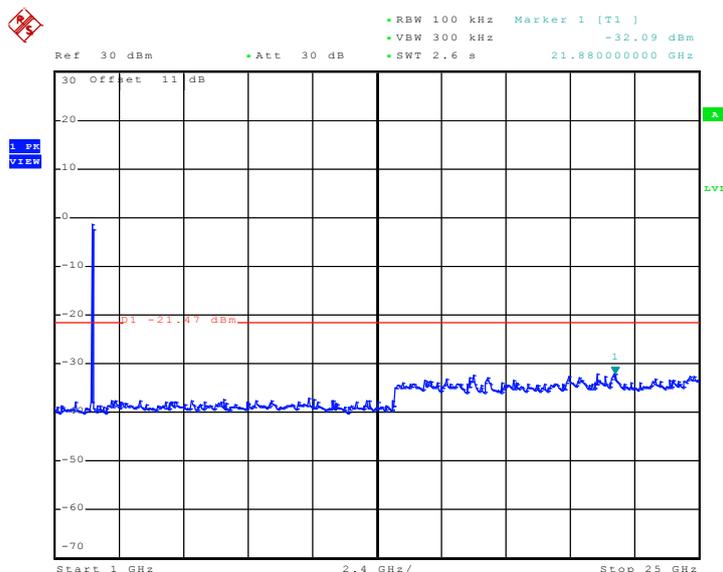
Test Mode :	Mode 10	Temperature :	22~23°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	43~44%
Test Channel :	03	Test Engineer :	Sky Liu

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 13.OCT.2010 05:01:55

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

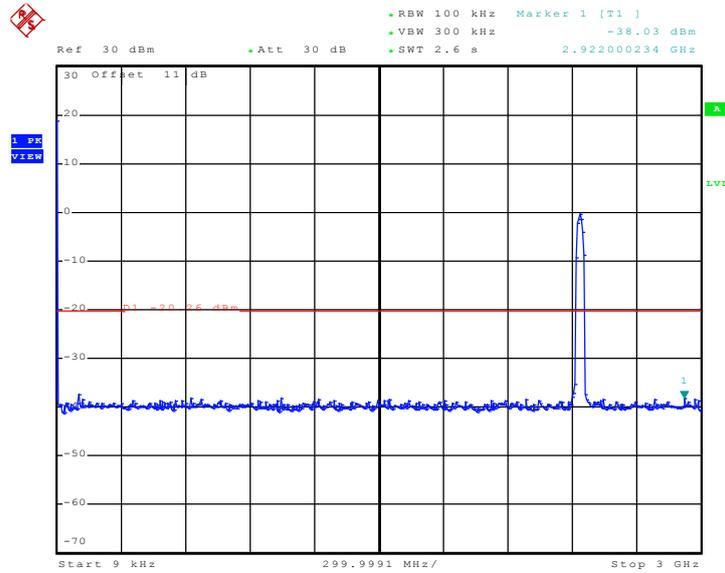


Date: 13.OCT.2010 04:58:45



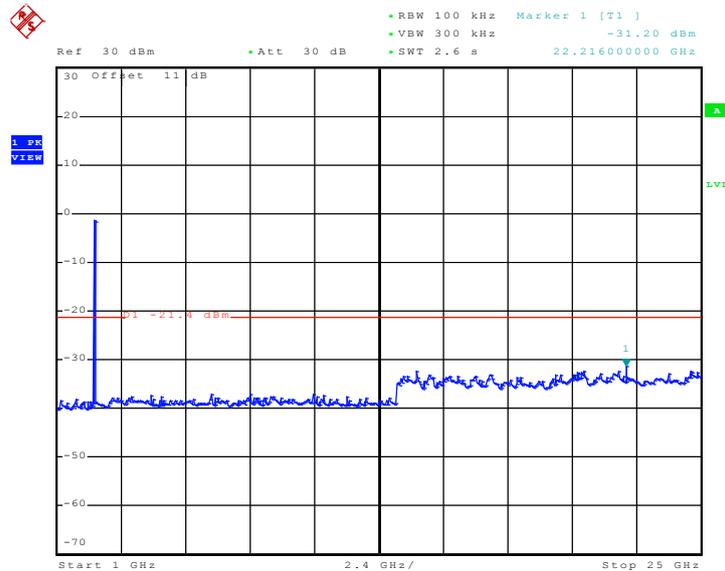
Test Mode :	Mode 11	Temperature :	22~23°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	43~44%
Test Channel :	06	Test Engineer :	Sky Liu

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 13.OCT.2010 05:05:41

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

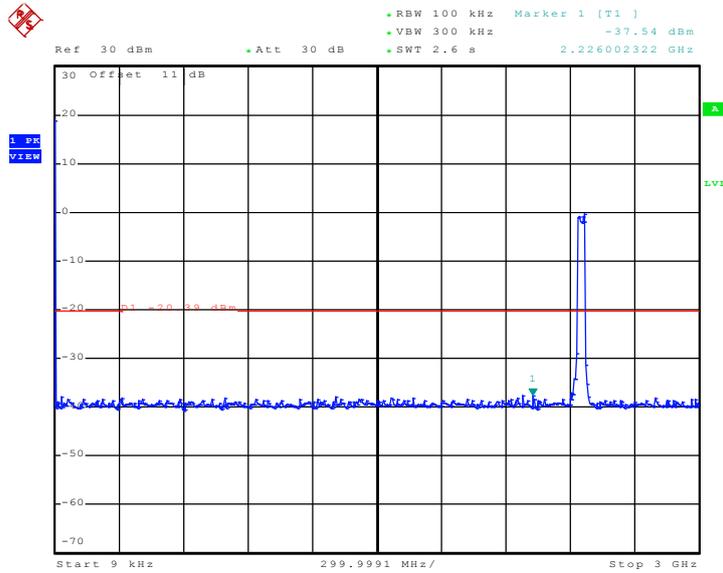


Date: 13.OCT.2010 04:56:40



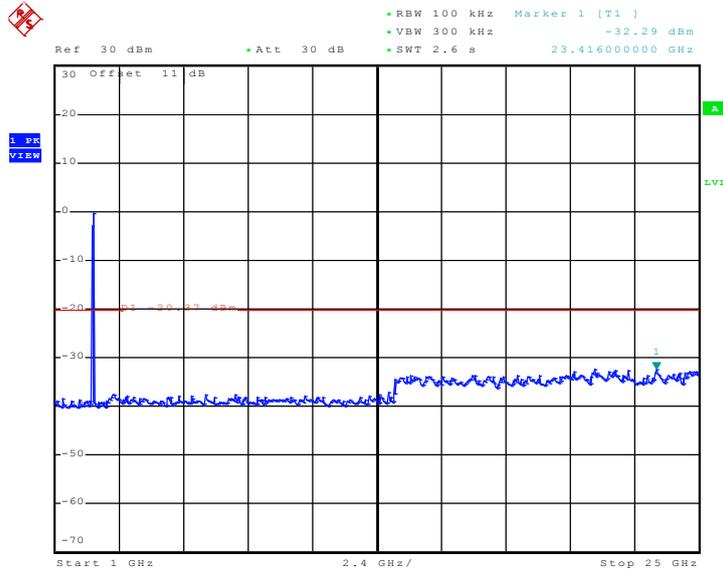
Test Mode :	Mode 12	Temperature :	22~23°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	43~44%
Test Channel :	09	Test Engineer :	Sky Liu

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 13.OCT.2010 05:07:56

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz



Date: 13.OCT.2010 04:54:00

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.

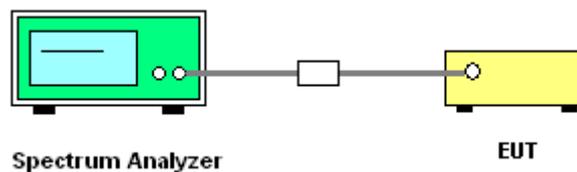
3.5.2 Measuring Instruments

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



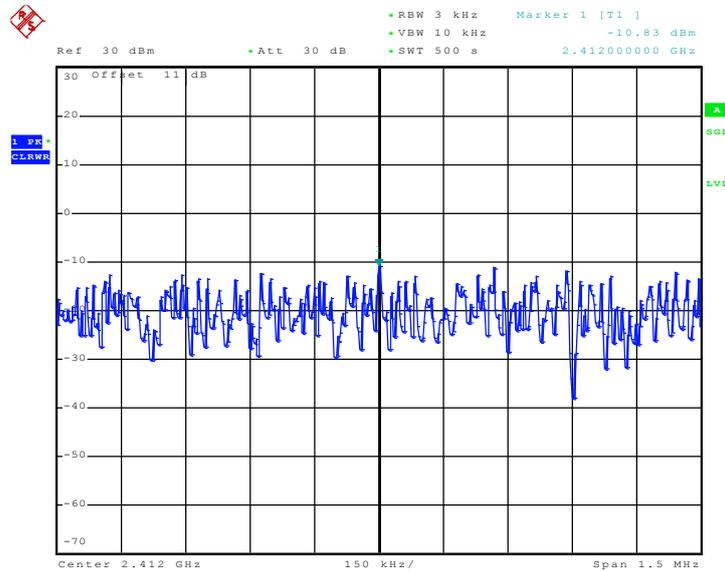


3.5.5 Test Result of Power Spectral Density

Test Mode :	Mode 1, 2, 3	Temperature :	22~23°C
Test Engineer :	Sky Liu	Relative Humidity :	43~44%

Channel	Frequency (MHz)	802.11b Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-10.83	8	Pass
06	2437	-10.84	8	Pass
11	2462	-11.32	8	Pass

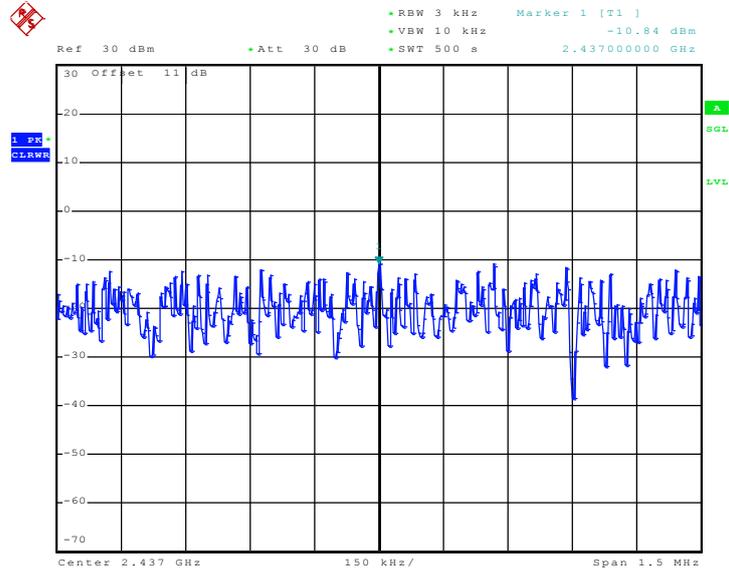
Mode 1 : PSD Plot on 802.11b Channel 01



Date: 21.SEP.2010 13:29:14

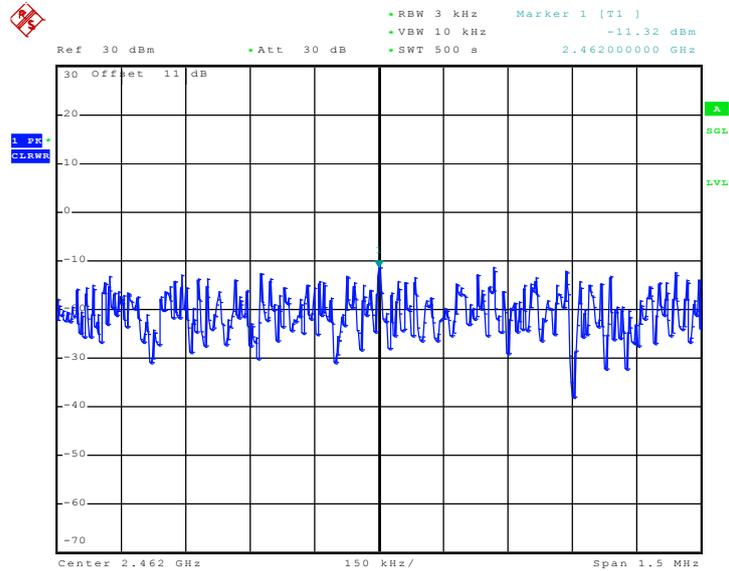


Mode 2 : PSD Plot on 802.11b Channel 06



Date: 21.SEP.2010 13:19:00

Mode 3 : PSD Plot on 802.11b Channel 11



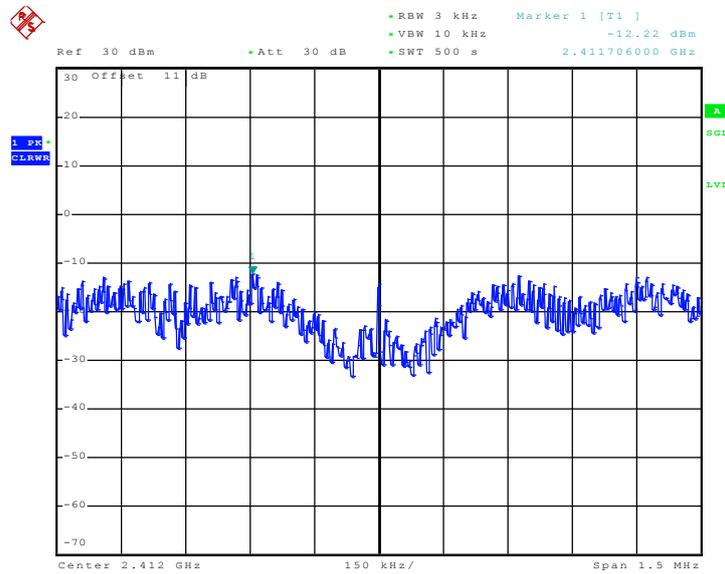
Date: 21.SEP.2010 13:08:09



Test Mode :	Mode 4, 5, 6	Temperature :	22~23°C
Test Engineer :	Sky Liu	Relative Humidity :	43~44%

Channel	Frequency (MHz)	802.11g Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-12.22	8	Pass
06	2437	-12.09	8	Pass
11	2462	-12.47	8	Pass

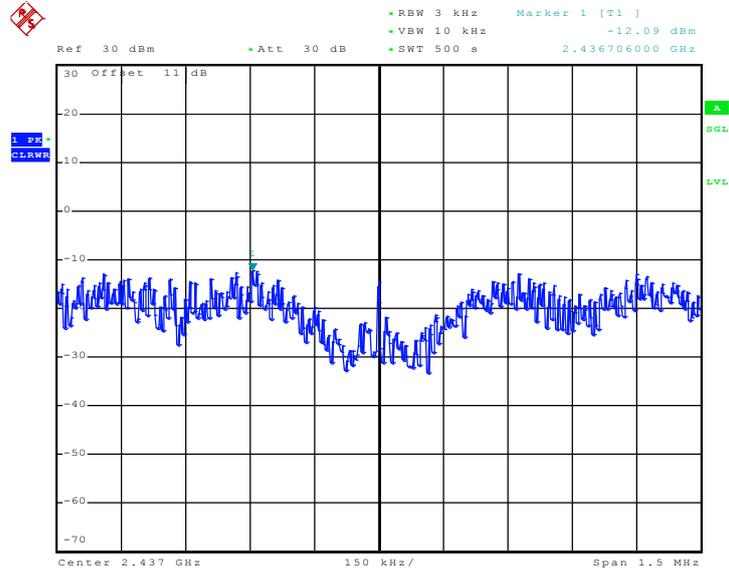
Mode 4 : PSD Plot on 802.11g Channel 01



Date: 21.SEP.2010 12:38:44

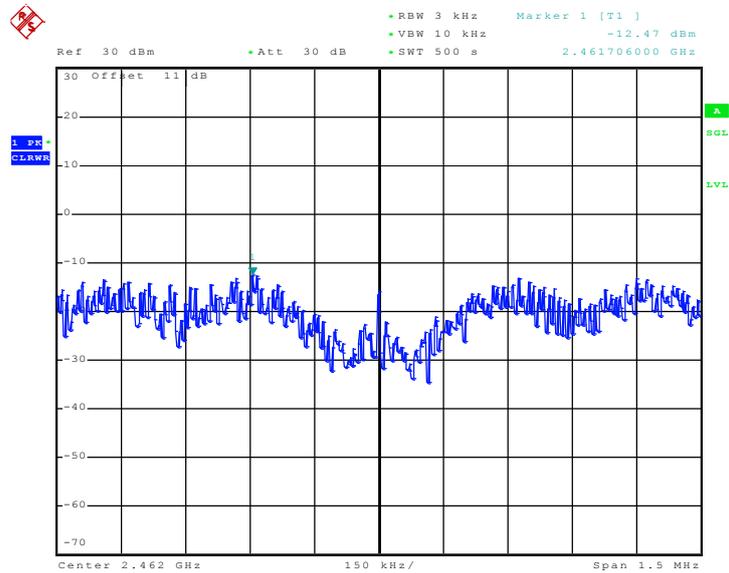


Mode 5 : PSD Plot on 802.11g Channel 06



Date: 21.SEP.2010 12:48:30

Mode 6 : PSD Plot on 802.11g Channel 11



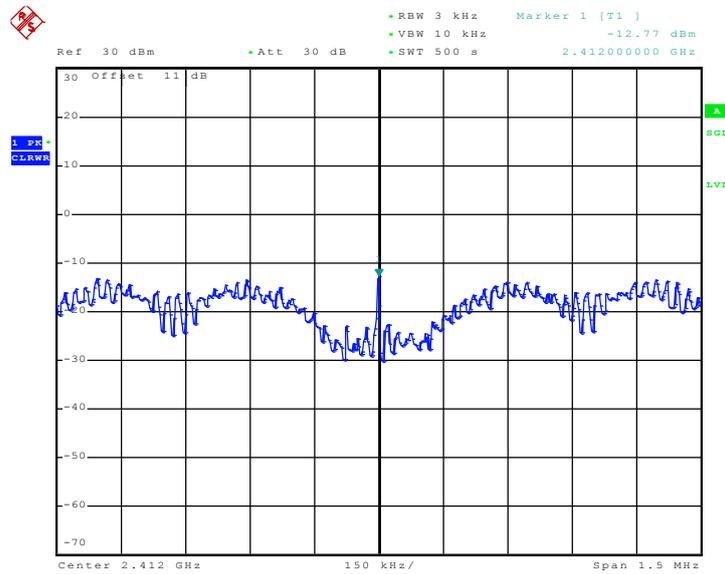
Date: 21.SEP.2010 12:58:32



Test Mode :	Mode 7, 8, 9	Temperature :	22~23°C
Test Engineer :	Sky Liu	Relative Humidity :	43~44%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-12.77	8	Pass
06	2437	-13.32	8	Pass
11	2462	-12.03	8	Pass

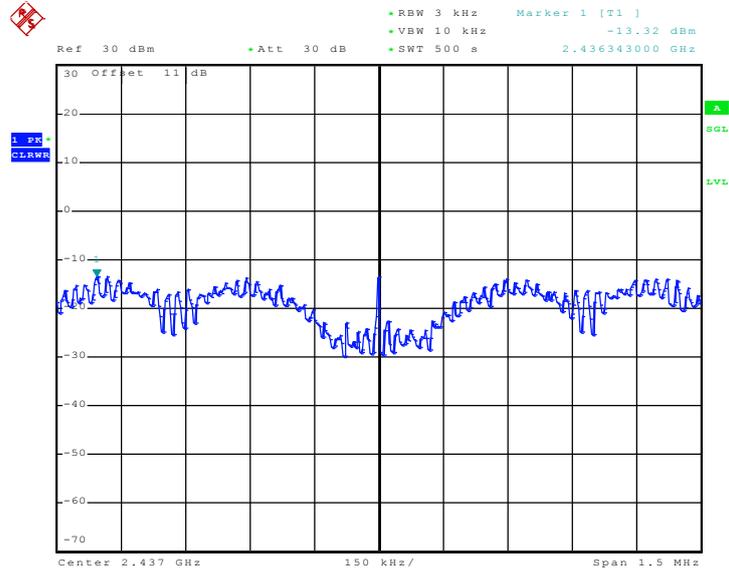
Mode 7 : PSD Plot on 802.11n (BW 20MHz) Channel 01



Date: 12.OCT.2010 15:29:21

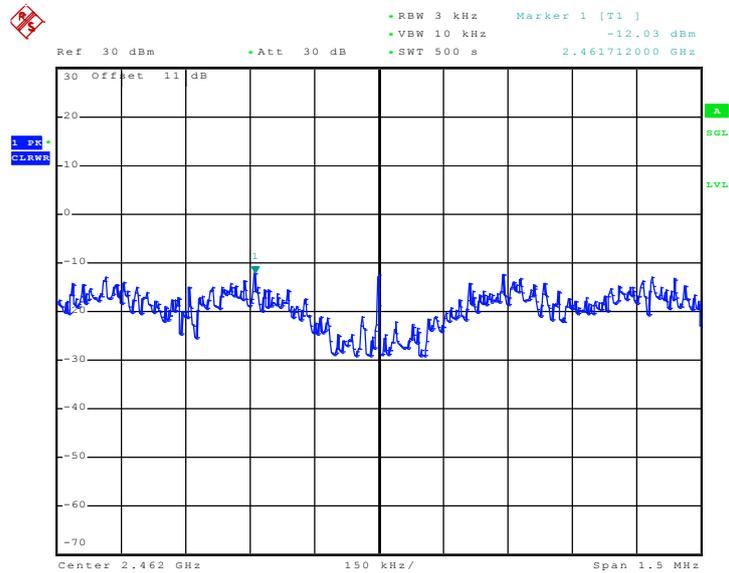


Mode 8 : PSD Plot on 802.11n (BW 20MHz) Channel 06



Date: 12.OCT.2010 15:39:53

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



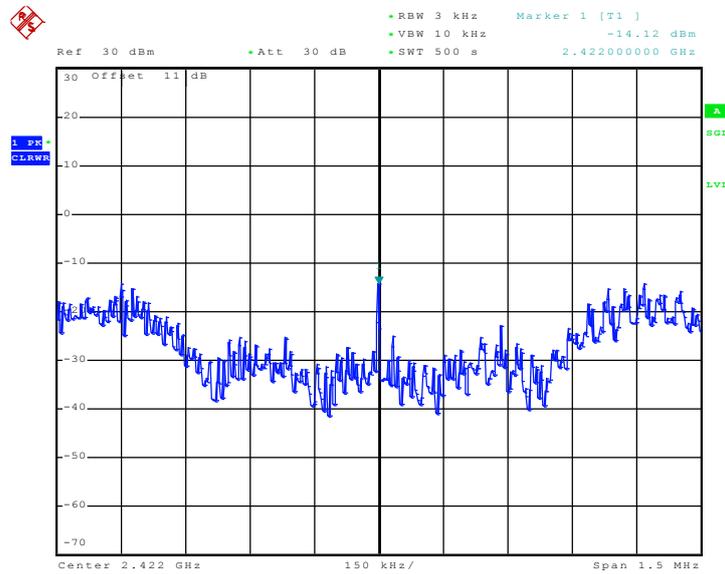
Date: 12.OCT.2010 15:49:42



Test Mode :	Mode 10, 11, 12	Temperature :	22~23
Test Engineer :	Sky Liu	Relative Humidity :	43~44

Channel	Frequency (MHz)	802.11n (BW 40MHz) Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
03	2422	-14.12	8	Pass
06	2437	-13.94	8	Pass
09	2452	-14.03	8	Pass

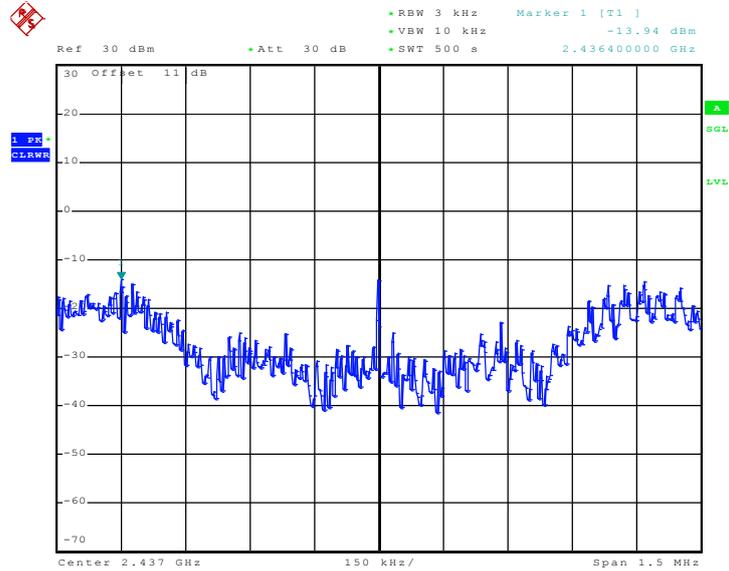
Mode 10 : PSD Plot on 802.11n (BW 40MHz) Channel 03



Date: 12.OCT.2010 16:00:14

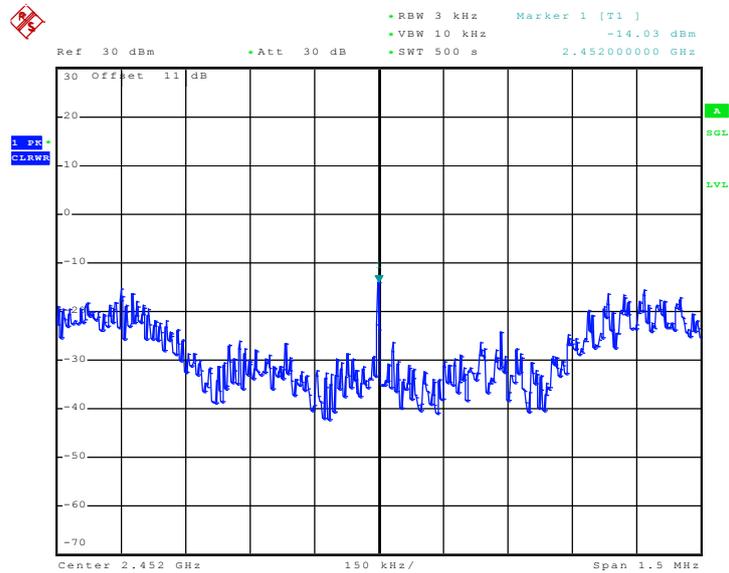


Mode 11 : PSD Plot on 802.11n (BW 40MHz) Channel 06



Date: 12.OCT.2010 16:10:29

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



Date: 12.OCT.2010 16:20:02

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.

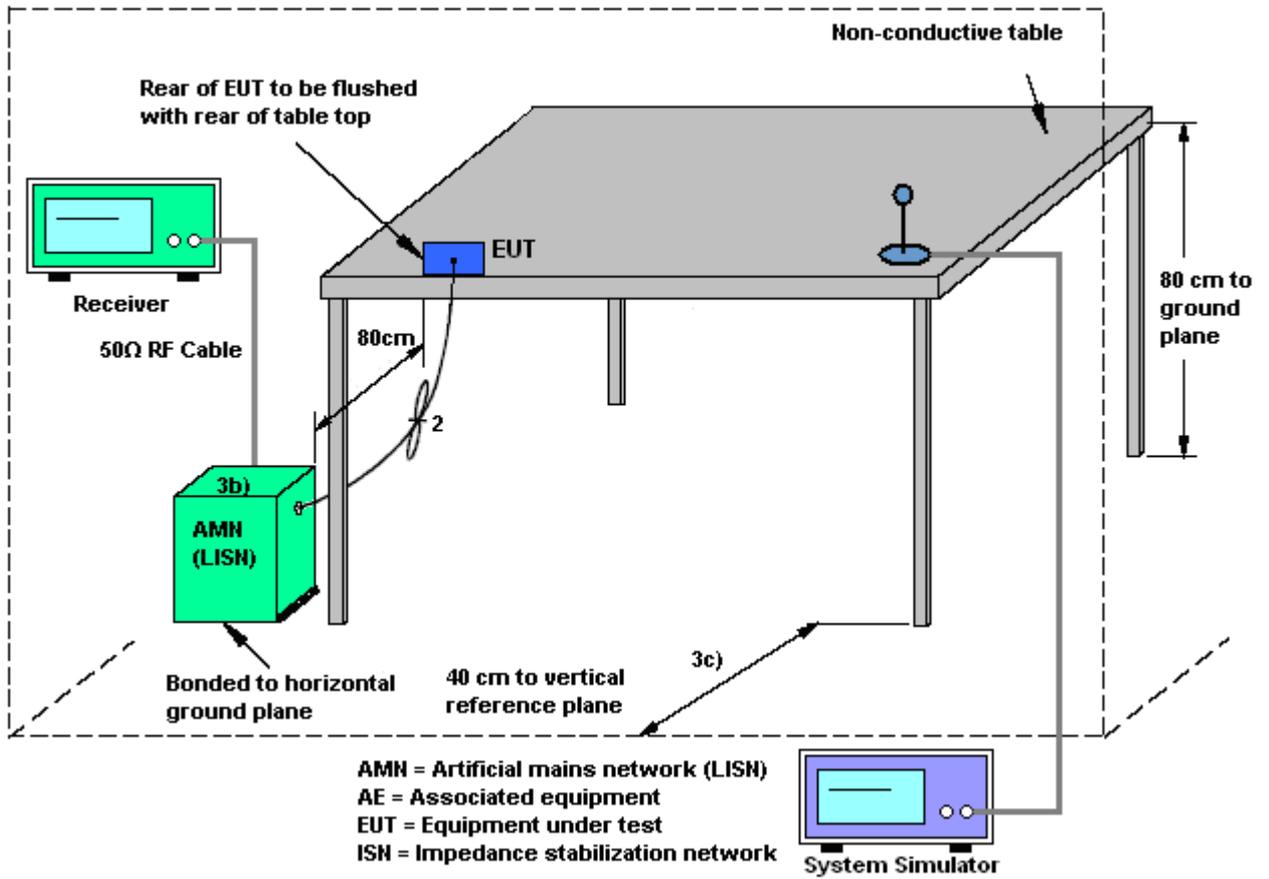
3.6.2 Measuring Instruments

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.

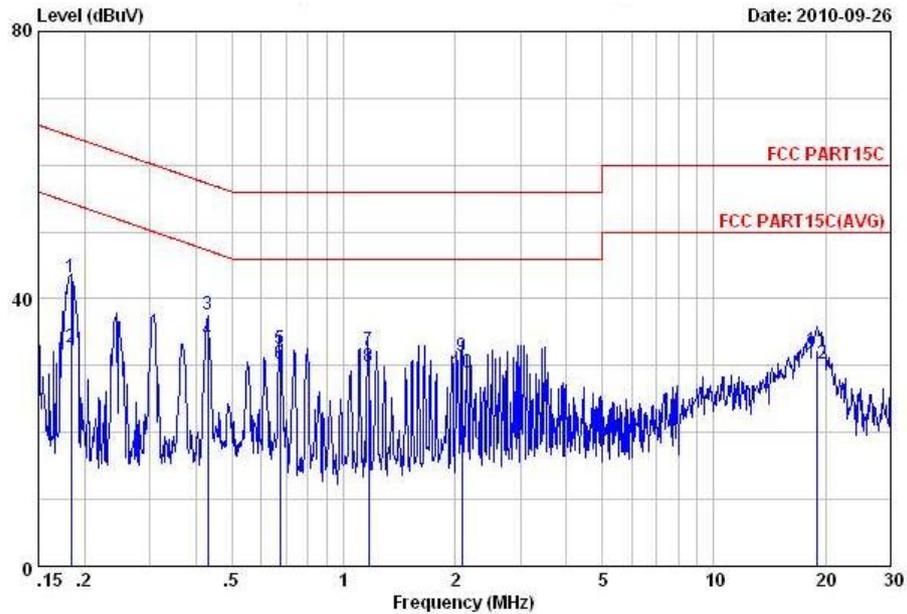
3.6.4 Test Setup





3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	21~22°C
Test Engineer :	Terry Wang	Relative Humidity :	44~45%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN Link + Adapter + TC		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

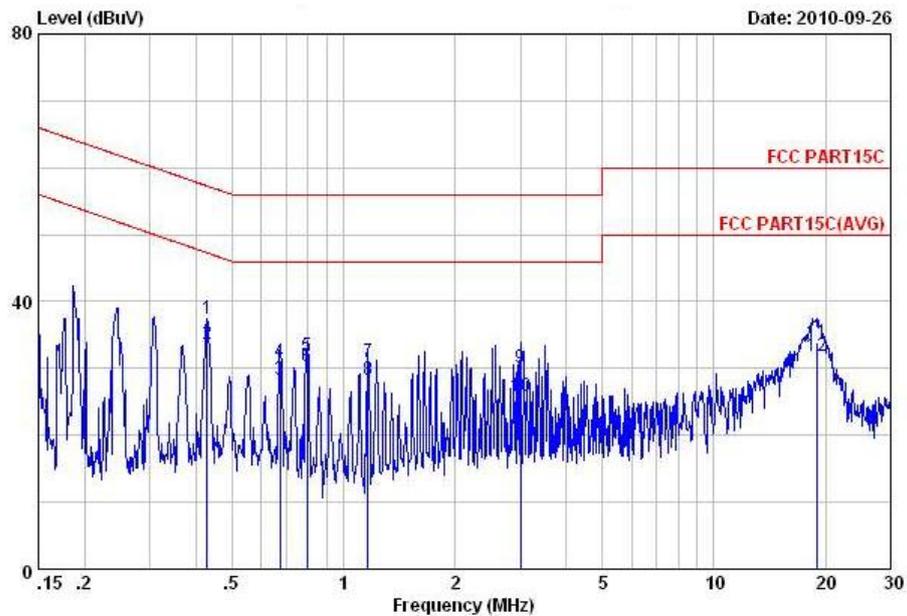


Site : C001-KS
 Condition: FCC PART15C LISN-100807 LINE
 Project : (FR)091101
 mode : mode 1

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.18	43.18	-21.14	64.32	33.10	-0.07	10.15	QP
2	0.18	32.78	-21.54	54.32	22.70	-0.07	10.15	Average
3	0.43	37.62	-19.64	57.26	27.50	-0.08	10.20	QP
4	0.43	33.82	-13.44	47.26	23.70	-0.08	10.20	Average
5	0.68	32.64	-23.36	56.00	22.50	-0.09	10.23	QP
6	0.68	30.34	-15.66	46.00	20.20	-0.09	10.23	Average
7	1.17	32.37	-23.63	56.00	22.19	-0.10	10.28	QP
8	1.17	29.87	-16.13	46.00	19.69	-0.10	10.28	Average
9	2.09	31.52	-24.48	56.00	21.30	-0.11	10.33	QP
10	2.09	29.02	-16.98	46.00	18.80	-0.11	10.33	Average
11	19.02	32.25	-27.75	60.00	21.60	0.10	10.55	QP
12	19.02	30.25	-19.75	50.00	19.60	0.10	10.55	Average



Test Mode :	Mode 1	Temperature :	21~22°C
Test Engineer :	Terry Wang	Relative Humidity :	44~45%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN Link + Adapter + TC		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : C001-KS
 Condition: FCC PART15C LISN-100807 NEUTRAL
 Project : (FR)091101
 mode : mode 1

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.43	37.42	-19.87	57.29	27.30	-0.08	10.20	QP
2	0.43	33.72	-13.57	47.29	23.60	-0.08	10.20	Average
3	0.68	28.25	-17.75	46.00	18.10	-0.08	10.23	Average
4	0.68	31.05	-24.95	56.00	20.90	-0.08	10.23	QP
5	0.80	31.96	-24.04	56.00	21.80	-0.08	10.24	QP
6	0.80	30.26	-15.74	46.00	20.10	-0.08	10.24	Average
7	1.17	30.98	-25.02	56.00	20.79	-0.09	10.28	QP
8	1.17	28.28	-17.72	46.00	18.09	-0.09	10.28	Average
9	3.00	30.05	-25.95	56.00	19.80	-0.12	10.37	QP
10	3.00	25.95	-20.05	46.00	15.70	-0.12	10.37	Average
11	19.02	33.95	-26.05	60.00	23.30	0.10	10.55	QP
12	19.02	31.85	-18.15	50.00	21.20	0.10	10.55	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

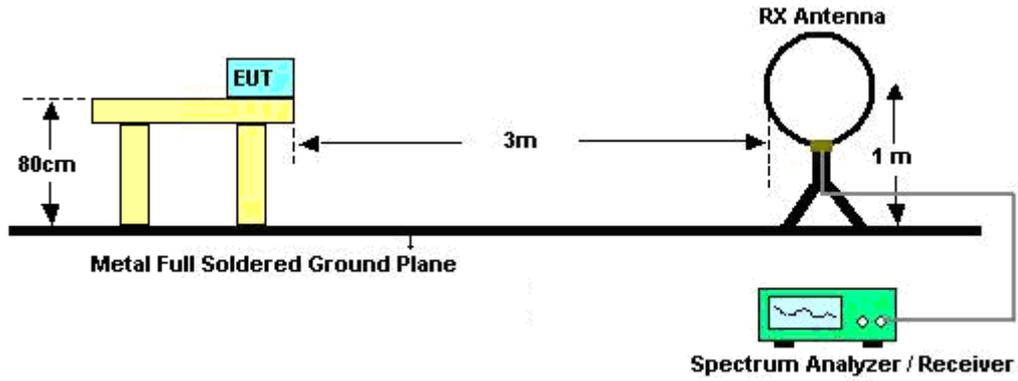
See list of measuring instruments of this test report.

3.7.3 Test Procedures

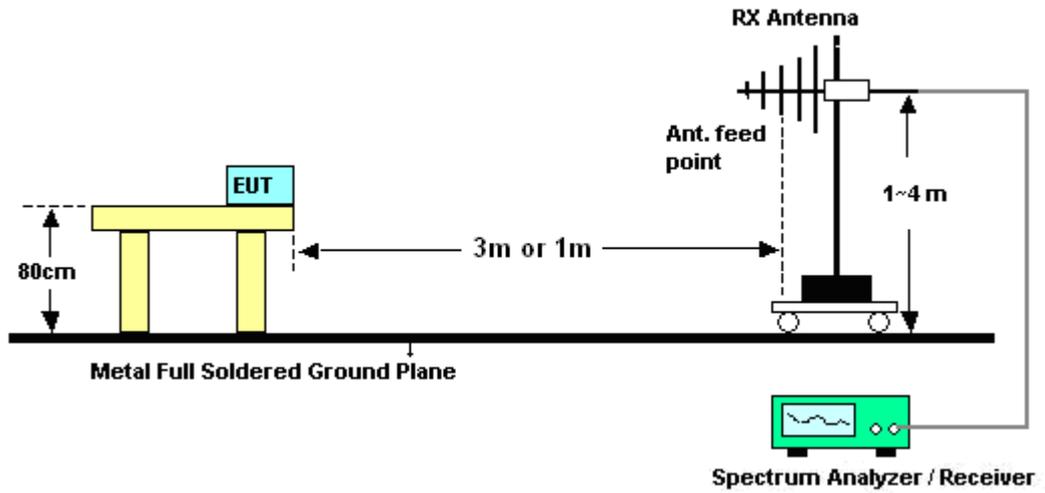
1. The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Use the following spectrum analyzer settings:
 - (1) Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz; VBW \geq RBW; Sweep = 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 = $20 \log(\text{specific distance [3m]} / \text{test distance [1m]})$ (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 above 30MHz





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

Test Engineer :	Haitao Yin	Temperature :	21~22°C
		Relative Humidity :	43~44%

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°C
Test Channel :	01	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
54.03	11.88	-28.12	40	34.31	6.49	0.33	29.25	-	-	Peak
140.97	19.06	-24.44	43.5	37.04	10.82	0.57	29.37	-	-	Peak
250.05	26.18	-19.82	46	43.06	12	0.73	29.61	-	-	Peak
374.9	23.98	-22.02	46	37.65	15.25	0.86	29.78	-	-	Peak
500.2	24.58	-21.42	46	36.35	17.2	0.98	29.95	-	-	Peak
830.6	29.09	-16.91	46	36.17	20.27	1.24	28.59	158	241	Peak
2389.61	56.94	-17.06	74	55.92	32.86	3.13	34.97	100	15	Peak
2389.61	44.06	-9.94	54	43.04	32.86	3.13	34.97	100	15	Average
2412	92.68	-	-	91.62	32.89	3.15	34.98	152	345	Average
2412	111.71	-	-	110.65	32.89	3.15	34.98	152	345	Peak
2483.51	51.59	-22.41	74	50.32	33.01	3.2	34.94	100	351	Peak
2483.51	39.96	-14.04	54	38.69	33.01	3.2	34.94	100	351	Average
4826	50.52	-23.48	74	45.24	35.17	4.68	34.57	-	-	Peak



Test Mode :	Mode 1	Temperature :	21~22°C
Test Channel :	01	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
54.03	27	-13	40	49.43	6.49	0.33	29.25	-	-	Peak
141.51	22.04	-21.46	43.5	40.11	10.73	0.57	29.37	-	-	Peak
250.05	27.46	-18.54	46	44.34	12	0.73	29.61	-	-	Peak
500.2	21.34	-24.66	46	33.11	17.2	0.98	29.95	-	-	Peak
640.2	28.31	-17.69	46	37.99	18.85	1.09	29.62	-	-	Peak
830.6	34.46	-11.54	46	41.54	20.27	1.24	28.59	120	241	Peak
2389.61	50.12	-23.88	74	49.1	32.86	3.13	34.97	100	235	Peak
2389.61	37.5	-16.5	54	36.48	32.86	3.13	34.97	100	235	Average
2412	84.06	-	-	83	32.89	3.15	34.98	189	65	Average
2412	102.14	-	-	101.08	32.89	3.15	34.98	189	65	Peak
2484.42	48.85	-25.15	74	47.58	33.01	3.2	34.94	141	158	Peak
2484.42	36.09	-17.91	54	34.82	33.01	3.2	34.94	141	158	Average



Test Mode :	Mode 2	Temperature :	21~22°C
Test Channel :	06	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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	15.84	-24.16	40	26.86	18	0.25	29.27	-	-	Peak
142.05	19.84	-23.66	43.5	38	10.64	0.57	29.37	-	-	Peak
250.05	27.8	-18.2	46	44.68	12	0.73	29.61	147	125	Peak
384	24.01	-21.99	46	37.35	15.59	0.87	29.8	-	-	Peak
640.2	23.9	-22.1	46	33.58	18.85	1.09	29.62	-	-	Peak
830.6	25.89	-20.11	46	32.97	20.27	1.24	28.59	-	-	Peak
2383.53	51.49	-22.51	74	50.5	32.83	3.13	34.97	131	360	Peak
2383.53	38.86	-15.14	54	37.87	32.83	3.13	34.97	131	360	Average
2437	94.47	-	-	93.32	32.95	3.17	34.97	100	0	Average
2437	114.34	-	-	113.19	32.95	3.17	34.97	100	0	Peak
2484.61	51.3	-22.7	74	50.03	33.01	3.2	34.94	100	0	Peak
2484.61	39.16	-14.84	54	37.89	33.01	3.2	34.94	100	0	Average
4876	50.23	-23.77	74	44.91	35.18	4.71	34.57	-	-	Peak



Test Mode :	Mode 2	Temperature :	21~22°C
Test Channel :	06	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
46.47	22.63	-17.37	40	42.73	8.88	0.3	29.28	-	-	Peak
143.13	23.3	-20.2	43.5	41.55	10.55	0.57	29.37	-	-	Peak
250.05	27.52	-18.48	46	44.4	12	0.73	29.61	-	-	Peak
500.2	21.57	-24.43	46	33.34	17.2	0.98	29.95	-	-	Peak
640.2	28.3	-17.7	46	37.98	18.85	1.09	29.62	-	-	Peak
830.6	32.53	-13.47	46	39.61	20.27	1.24	28.59	200	154	Peak
2310.19	49.27	-24.73	74	48.36	32.73	3.08	34.9	142	25	Peak
2310.19	36.78	-17.22	54	35.87	32.73	3.08	34.9	142	25	Average
2437	103.37	-	-	102.22	32.95	3.17	34.97	185	86	Peak
2437	85.67	-	-	84.52	32.95	3.17	34.97	185	86	Average
2498.29	50.27	-23.73	74	48.94	33.05	3.21	34.93	147	214	Peak
2498.29	35.32	-18.68	54	33.99	33.05	3.21	34.93	147	214	Average



Test Mode :	Mode 3	Temperature :	21~22°C
Test Channel :	11	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
30.27	15.15	-24.85	40	26.17	18	0.25	29.27	-	-	Peak
140.97	19.06	-24.44	43.5	37.04	10.82	0.57	29.37	-	-	Peak
250.05	26.18	-19.82	46	43.06	12	0.73	29.61	152	236	Peak
374.9	21.16	-24.84	46	34.83	15.25	0.86	29.78	-	-	Peak
640.2	22.79	-23.21	46	32.47	18.85	1.09	29.62	-	-	Peak
896.4	23.84	-22.16	46	30.22	20.45	1.29	28.12	-	-	Peak
2389.23	52.62	-21.38	74	51.6	32.86	3.13	34.97	141	21	Peak
2389.23	41.35	-12.65	54	40.33	32.86	3.13	34.97	141	21	Average
2462	93.34	-	-	92.13	32.98	3.18	34.95	100	360	Average
2462	111.76	-	-	110.55	32.98	3.18	34.95	100	360	Peak
2483.51	53.99	-20.01	74	52.72	33.01	3.2	34.94	177	0	Peak
2483.51	42.33	-11.67	54	41.06	33.01	3.2	34.94	177	0	Average
4924	57.1	-16.9	74	51.73	35.19	4.75	34.57	157	335	Peak
4924	44.51	-9.49	54	39.14	35.19	4.75	34.57	157	335	Average



Test Mode :	Mode 3	Temperature :	21~22°C
Test Channel :	11	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
54.03	28	-12	40	50.43	6.49	0.33	29.25	-	-	Peak
142.86	22.92	-20.58	43.5	41.08	10.64	0.57	29.37	-	-	Peak
250.05	28.46	-17.54	46	45.34	12	0.73	29.61	-	-	Peak
500.2	23.34	-22.66	46	35.11	17.2	0.98	29.95	-	-	Peak
640.2	29.31	-16.69	46	38.99	18.85	1.09	29.62	-	-	Peak
831.3	34.95	-11.05	46	42	20.29	1.24	28.58	158	147	Peak
2387.71	49.74	-24.26	74	48.72	32.86	3.13	34.97	150	240	Peak
2387.71	36.64	-17.36	54	35.62	32.86	3.13	34.97	150	240	Average
2462	101.24	-	-	100.03	32.98	3.18	34.95	200	96	Peak
2462	84.61	-	-	83.4	32.98	3.18	34.95	200	96	Average
2489.17	35.43	-18.57	54	34.12	33.05	3.2	34.94	141	270	Average
2489.17	49.02	-24.98	74	47.71	33.05	3.2	34.94	141	270	Peak
4926	54.4	-19.6	74	49.03	35.19	4.75	34.57	128	265	Peak
4926	40.82	-13.18	54	35.45	35.19	4.75	34.57	128	265	Average



Test Mode :	Mode 4	Temperature :	21~22°C
Test Channel :	01	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
30.27	14.87	-25.13	40	25.89	18	0.25	29.27	-	-	Peak
141.51	19.64	-23.86	43.5	37.71	10.73	0.57	29.37	-	-	Peak
250.05	27.01	-18.99	46	43.89	12	0.73	29.61	-	-	Peak
384	22.8	-23.2	46	36.14	15.59	0.87	29.8	-	-	Peak
500.2	25.08	-20.92	46	36.85	17.2	0.98	29.95	-	-	Peak
831.3	28.39	-17.61	46	35.44	20.29	1.24	28.58	120	118	Peak
2389.61	62.47	-11.53	74	61.45	32.86	3.13	34.97	188	7	Peak
2389.61	40.13	-13.87	54	39.11	32.86	3.13	34.97	188	7	Average
2412	65.72	-	-	64.66	32.89	3.15	34.98	156	341	Average
2412	105.42	-	-	104.36	32.89	3.15	34.98	156	341	Peak
2483.85	50.14	-23.86	74	48.87	33.01	3.2	34.94	104	251	Peak
2483.85	35.42	-18.58	54	34.15	33.01	3.2	34.94	104	251	Average



Test Mode :	Mode 4	Temperature :	21~22°C
Test Channel :	01	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
47.55	22.27	-17.73	40	42.72	8.5	0.31	29.26	-	-	Peak
142.05	23.25	-20.25	43.5	41.41	10.64	0.57	29.37	-	-	Peak
250.05	27.96	-18.04	46	44.84	12	0.73	29.61	-	-	Peak
512.1	20.37	-25.63	46	31.87	17.45	0.99	29.94	-	-	Peak
640.2	28.31	-17.69	46	37.99	18.85	1.09	29.62	-	-	Peak
830.6	33.68	-12.32	46	40.76	20.27	1.24	28.59	184	214	Peak
2389.23	50.44	-23.56	74	49.42	32.86	3.13	34.97	145	26	Peak
2389.23	37.58	-16.42	54	36.56	32.86	3.13	34.97	145	26	Average
2412	61.38	-	-	60.32	32.89	3.15	34.98	200	267	Average
2412	96.87	-	-	95.81	32.89	3.15	34.98	200	267	Peak
2492.78	48.32	-25.68	74	46.99	33.05	3.21	34.93	185	264	Peak
2492.78	35.35	-18.65	54	34.02	33.05	3.21	34.93	185	264	Average



Test Mode :	Mode 5	Temperature :	21~22°C
Test Channel :	06	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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	15.07	-24.93	40	26.09	18	0.25	29.27	-	-	Peak
142.05	16.91	-26.59	43.5	35.07	10.64	0.57	29.37	-	-	Peak
250.05	25.25	-20.75	46	42.13	12	0.73	29.61	145	360	Peak
384	23.13	-22.87	46	36.47	15.59	0.87	29.8	-	-	Peak
640.2	20.31	-25.69	46	29.99	18.85	1.09	29.62	-	-	Peak
830.6	25.18	-20.82	46	32.26	20.27	1.24	28.59	-	-	Peak
2389.99	52.73	-21.27	74	51.7	32.86	3.15	34.98	115	284	Peak
2389.99	37.93	-16.07	54	36.9	32.86	3.15	34.98	115	284	Average
2437	108	-	-	106.85	32.95	3.17	34.97	126	0	Peak
2437	66.91	-	-	65.76	32.95	3.17	34.97	126	0	Average
2483.51	50.94	-23.06	74	49.67	33.01	3.2	34.94	187	243	Peak
2483.51	37.26	-16.74	54	35.99	33.01	3.2	34.94	187	243	Average



Test Mode :	Mode 5	Temperature :	21~22°C
Test Channel :	06	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
47.55	23.19	-16.81	40	43.64	8.5	0.31	29.26	157	136	Peak
142.59	21.66	-21.84	43.5	39.82	10.64	0.57	29.37	-	-	Peak
250.05	27.97	-18.03	46	44.85	12	0.73	29.61	-	-	Peak
500.2	18.88	-27.12	46	30.65	17.2	0.98	29.95	-	-	Peak
640.2	26.32	-19.68	46	36	18.85	1.09	29.62	-	-	Peak
830.6	29.12	-16.88	46	36.2	20.27	1.24	28.59	-	-	Peak
2370.8	49.29	-24.71	74	48.3	32.83	3.13	34.97	118	25	Peak
2370.8	35.96	-18.04	54	34.97	32.83	3.13	34.97	118	25	Average
2437	97.06	-	-	95.91	32.95	3.17	34.97	114	291	Peak
2437	61.31	-	-	60.16	32.95	3.17	34.97	114	291	Average
2486.32	49.39	-24.61	74	48.12	33.01	3.2	34.94	200	245	Peak
2486.32	35.29	-18.71	54	34.02	33.01	3.2	34.94	200	245	Average



Test Mode :	Mode 6	Temperature :	21~22°C
Test Channel :	11	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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	15.15	-24.85	40	26.17	18	0.25	29.27	-	-	Peak
142.05	20.69	-22.81	43.5	38.85	10.64	0.57	29.37	-	-	Peak
250.05	24.93	-21.07	46	41.81	12	0.73	29.61	247	352	Peak
384	22.92	-23.08	46	36.26	15.59	0.87	29.8	-	-	Peak
640.2	20.97	-25.03	46	30.65	18.85	1.09	29.62	-	-	Peak
768.3	23.05	-22.95	46	30.94	19.88	1.21	28.98	-	-	Peak
2389.61	51.83	-22.17	74	50.81	32.86	3.13	34.97	147	26	Peak
2389.61	36.15	-17.85	54	35.13	32.86	3.13	34.97	147	26	Average
2462	104.72	-	-	103.51	32.98	3.18	34.95	123	341	Peak
2462	64.72	-	-	63.51	32.98	3.18	34.95	123	341	Average
2483.51	55.8	-18.2	74	54.53	33.01	3.2	34.94	100	9	Peak
2483.51	38.27	-15.73	54	37	33.01	3.2	34.94	100	9	Average
4926	54.25	-19.75	74	48.88	35.19	4.75	34.57	141	287	Peak
4926	44.59	-9.41	54	39.22	35.19	4.75	34.57	141	287	Average



Test Mode :	Mode 6	Temperature :	21~22°C
Test Channel :	11	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
47.82	21.47	-18.53	40	41.92	8.5	0.31	29.26	199	214	Peak
141.78	23.14	-20.36	43.5	41.21	10.73	0.57	29.37	-	-	Peak
250.05	23.54	-22.46	46	40.42	12	0.73	29.61	-	-	Peak
500.2	20.97	-25.03	46	32.74	17.2	0.98	29.95	-	-	Peak
640.2	27.17	-18.83	46	36.85	18.85	1.09	29.62	-	-	Peak
792.1	21.38	-24.62	46	29.19	19.86	1.23	28.9	-	-	Peak
2312.47	49.45	-24.55	74	48.54	32.73	3.08	34.9	147	241	Peak
2312.47	34.47	-19.53	54	33.56	32.73	3.08	34.9	147	241	Average
2462	96.6	-	-	95.39	32.98	3.18	34.95	124	293	Peak
2462	60.24	-	-	59.03	32.98	3.18	34.95	124	293	Average
2497.91	48.65	-25.35	74	47.32	33.05	3.21	34.93	120	28	Peak
2497.91	35.46	-18.54	54	34.13	33.05	3.21	34.93	120	28	Average



Test Mode :	Mode 7	Temperature :	21~22°C
Test Channel :	01	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
76.17	12.02	-27.98	40	34.83	6.06	0.38	29.25	-	-	Peak
147.18	17.65	-25.85	43.5	36.23	10.21	0.58	29.37	-	-	Peak
250.05	26.81	-19.19	46	43.69	12	0.73	29.61	-	-	Peak
374.9	24.16	-21.84	46	37.83	15.25	0.86	29.78	-	-	Peak
500.2	24.69	-21.31	46	36.46	17.2	0.98	29.95	-	-	Peak
640.2	37	-9	46	46.68	18.85	1.09	29.62	100	136	Peak
2389.23	66.47	-7.53	74	65.45	32.86	3.13	34.97	150	0	Peak
2389.23	50.93	-3.07	54	49.91	32.86	3.13	34.97	150	0	Average
2412	110.57	-	-	109.51	32.89	3.15	34.98	154	359	Peak
2412	100.99	-	-	99.93	32.89	3.15	34.98	154	359	Average
2483.85	51.56	-22.44	74	50.29	33.01	3.2	34.94	102	23	Peak
2483.85	39.38	-14.62	54	38.11	33.01	3.2	34.94	102	23	Average



Test Mode :	Mode 7	Temperature :	21~22°C
Test Channel :	01	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
75.63	20.46	-19.54	40	43.41	5.93	0.37	29.25	-	-	Peak
146.37	18.88	-24.62	43.5	37.38	10.29	0.58	29.37	-	-	Peak
250.05	26.5	-19.5	46	43.38	12	0.73	29.61	-	-	Peak
374.9	23.91	-22.09	46	37.58	15.25	0.86	29.78	-	-	Peak
500.2	23.13	-22.87	46	34.9	17.2	0.98	29.95	-	-	Peak
640.2	39.59	-6.41	46	49.27	18.85	1.09	29.62	125	201	Peak
2389.99	56.44	-17.56	74	55.41	32.86	3.15	34.98	100	90	Peak
2389.99	39.13	-14.87	54	38.1	32.86	3.15	34.98	100	90	Average
2412	101.06	-	-	100	32.89	3.15	34.98	191	307	Peak
2412	91	-	-	89.94	32.89	3.15	34.98	191	307	Average
2494.11	48.01	-25.99	74	46.68	33.05	3.21	34.93	102	75	Peak
2494.11	33.44	-20.56	54	32.11	33.05	3.21	34.93	102	75	Average



Test Mode :	Mode 8	Temperature :	21~22°C
Test Channel :	06	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
30.27	15.16	-24.84	40	26.18	18	0.25	29.27	-	-	Peak
146.91	13.86	-29.64	43.5	32.44	10.21	0.58	29.37	-	-	Peak
250.32	23.77	-22.23	46	40.65	12	0.73	29.61	-	-	Peak
374.9	25.23	-20.77	46	38.9	15.25	0.86	29.78	-	-	Peak
500.2	23.29	-22.71	46	35.06	17.2	0.98	29.95	-	-	Peak
640.2	27.03	-18.97	46	36.71	18.85	1.09	29.62	120	257	Peak
2385.43	52.24	-21.76	74	51.25	32.83	3.13	34.97	118	350	Peak
2385.43	39.2	-14.8	54	38.21	32.83	3.13	34.97	118	350	Average
2437	111.63	-	-	110.48	32.95	3.17	34.97	180	359	Peak
2437	102.09	-	-	100.94	32.95	3.17	34.97	180	359	Average
2483.85	53.5	-20.5	74	52.23	33.01	3.2	34.94	152	238	Peak
2483.85	38.79	-15.21	54	37.52	33.01	3.2	34.94	152	238	Average



Test Mode :	Mode 8	Temperature :	21~22°C
Test Channel :	06	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
48.36	19.69	-20.31	40	40.51	8.12	0.31	29.25	-	-	Peak
75.9	16.99	-23.01	40	39.94	5.93	0.37	29.25	-	-	Peak
250.05	20.67	-25.33	46	37.55	12	0.73	29.61	-	-	Peak
374.9	19.69	-26.31	46	33.36	15.25	0.86	29.78	-	-	Peak
500.2	25.09	-20.91	46	36.86	17.2	0.98	29.95	-	-	Peak
640.2	38.22	-7.78	46	47.9	18.85	1.09	29.62	100	154	Peak
2376.5	48.55	-25.45	74	47.56	32.83	3.13	34.97	100	235	Peak
2376.5	36.2	-17.8	54	35.21	32.83	3.13	34.97	100	235	Average
2437	99.65	-	-	98.5	32.95	3.17	34.97	189	327	Peak
2437	90.19	-	-	89.04	32.95	3.17	34.97	189	327	Average
2498.48	48.61	-25.39	74	47.28	33.05	3.21	34.93	103	235	Peak
2498.48	34.88	-19.12	54	33.55	33.05	3.21	34.93	103	235	Average



Test Mode :	Mode 9	Temperature :	21~22°C
Test Channel :	11	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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	15.12	-24.88	40	26.14	18	0.25	29.27	-	-	Peak
109.65	11.71	-31.79	43.5	28.61	11.8	0.45	29.15	-	-	Peak
250.32	21	-25	46	37.88	12	0.73	29.61	-	-	Peak
384	22.16	-23.84	46	35.5	15.59	0.87	29.8	-	-	Peak
640.2	31.87	-14.13	46	41.55	18.85	1.09	29.62	103	145	Peak
768.3	25.04	-20.96	46	32.93	19.88	1.21	28.98	-	-	Peak
2389.99	51.05	-22.95	74	50.02	32.86	3.15	34.98	105	23	Peak
2389.99	39.93	-14.07	54	38.9	32.86	3.15	34.98	105	23	Average
2462	110.39	-	-	109.18	32.98	3.18	34.95	101	4	Peak
2462	100.96	-	-	99.75	32.98	3.18	34.95	101	4	Average
2483.66	66.6	-7.4	74	65.33	33.01	3.2	34.94	100	4	Peak
2483.66	46.39	-7.61	54	45.12	33.01	3.2	34.94	100	4	Average



Test Mode :	Mode 9	Temperature :	21~22°C
Test Channel :	11	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
54.57	19.32	-20.68	40	41.75	6.49	0.33	29.25	-	-	Peak
75.63	17.22	-22.78	40	40.17	5.93	0.37	29.25	-	-	Peak
250.05	18.62	-27.38	46	35.5	12	0.73	29.61	-	-	Peak
500.2	22.66	-23.34	46	34.43	17.2	0.98	29.95	-	-	Peak
512.1	20.56	-25.44	46	32.06	17.45	0.99	29.94	-	-	Peak
640.2	39.18	-6.82	46	48.86	18.85	1.09	29.62	100	301	Peak
2386.19	48.39	-25.61	74	47.37	32.86	3.13	34.97	100	205	Peak
2386.19	37.23	-16.77	54	36.21	32.86	3.13	34.97	100	205	Average
2462	98.3	-	-	97.09	32.98	3.18	34.95	121	248	Peak
2462	89.69	-	-	88.48	32.98	3.18	34.95	121	248	Average
2483.66	52.08	-21.92	74	50.81	33.01	3.2	34.94	118	211	Peak
2483.66	38.38	-15.62	54	37.11	33.01	3.2	34.94	118	211	Average



Test Mode :	Mode 10	Temperature :	21~22°C
Test Channel :	03	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
108.84	12.48	-31.02	43.5	29.52	11.68	0.45	29.17	-	-	Peak
148.26	16.09	-27.41	43.5	34.74	10.14	0.58	29.37	-	-	Peak
250.32	20.54	-25.46	46	37.42	12	0.73	29.61	-	-	Peak
640.2	32.89	-13.11	46	42.57	18.85	1.09	29.62	158	236	Peak
768.3	26.54	-19.46	46	34.43	19.88	1.21	28.98	-	-	Peak
896.4	25.6	-20.4	46	31.98	20.45	1.29	28.12	-	-	Peak
2389.99	63.78	-10.22	74	62.75	32.86	3.15	34.98	100	0	Peak
2389.99	50.73	-3.27	54	49.7	32.86	3.15	34.98	100	0	Average
2422	106.5	-	-	105.38	32.92	3.17	34.97	100	359	Peak
2422	94.29	-	-	93.17	32.92	3.17	34.97	100	359	Average
2483.66	51.04	-22.96	74	49.77	33.01	3.2	34.94	103	351	Peak
2483.66	37.38	-16.62	54	36.11	33.01	3.2	34.94	103	351	Average



Test Mode :	Mode 10	Temperature :	21~22°C
Test Channel :	03	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
48.09	20.12	-19.88	40	40.94	8.12	0.31	29.25	-	-	Peak
76.71	22.21	-17.79	40	45.02	6.06	0.38	29.25	-	-	Peak
147.18	22.51	-20.99	43.5	41.09	10.21	0.58	29.37	-	-	Peak
374.9	18.58	-27.42	46	32.25	15.25	0.86	29.78	-	-	Peak
500.2	22.97	-23.03	46	34.74	17.2	0.98	29.95	-	-	Peak
640.2	40.64	-5.36	46	50.32	18.85	1.09	29.62	110	210	Peak
2389.99	52.45	-21.55	74	51.42	32.86	3.15	34.98	120	230	Peak
2389.99	39.23	-14.77	54	38.2	32.86	3.15	34.98	120	230	Average
2422	94.91	-	-	93.79	32.92	3.17	34.97	161	267	Peak
2422	85.85	-	-	84.73	32.92	3.17	34.97	161	267	Average
2493.73	48.29	-25.71	74	46.96	33.05	3.21	34.93	102	135	Peak
2493.73	36.46	-17.54	54	35.13	33.05	3.21	34.93	102	135	Average



Test Mode :	Mode 11	Temperature :	21~22°C
Test Channel :	06	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
76.71	12.86	-27.14	40	35.67	6.06	0.38	29.25	-	-	Peak
145.56	17.54	-25.96	43.5	35.96	10.37	0.58	29.37	-	-	Peak
250.05	25.3	-20.7	46	42.18	12	0.73	29.61	-	-	Peak
374.9	25.59	-20.41	46	39.26	15.25	0.86	29.78	-	-	Peak
500.2	25.17	-20.83	46	36.94	17.2	0.98	29.95	-	-	Peak
640.2	35.55	-10.45	46	45.23	18.85	1.09	29.62	108	201	Peak
2389.04	65.43	-8.57	74	64.41	32.86	3.13	34.97	100	0	Peak
2389.04	48.58	-5.42	54	47.56	32.86	3.13	34.97	100	0	Average
2437	111.9	-	-	110.75	32.95	3.17	34.97	125	0	Peak
2437	101.73	-	-	100.58	32.95	3.17	34.97	125	0	Average
2483.85	66.91	-7.09	74	65.64	33.01	3.2	34.94	100	0	Peak
2483.85	50.98	-3.02	54	49.71	33.01	3.2	34.94	100	0	Average



Test Mode :	Mode 11	Temperature :	21~22°C
Test Channel :	06	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
76.71	22.37	-17.63	40	45.18	6.06	0.38	29.25	-	-	Peak
146.37	22.93	-20.57	43.5	41.43	10.29	0.58	29.37	-	-	Peak
250.05	24.62	-21.38	46	41.5	12	0.73	29.61	-	-	Peak
374.9	24.71	-21.29	46	38.38	15.25	0.86	29.78	-	-	Peak
500.2	24.66	-21.34	46	36.43	17.2	0.98	29.95	-	-	Peak
640.2	40.58	-5.42	46	50.26	18.85	1.09	29.62	184	135	Peak
2389.99	52.19	-21.81	74	51.16	32.86	3.15	34.98	103	201	Peak
2389.99	39.23	-14.77	54	38.2	32.86	3.15	34.98	103	201	Average
2437	98.78	-	-	97.63	32.95	3.17	34.97	132	255	Peak
2437	89.46	-	-	88.31	32.95	3.17	34.97	132	255	Average
2484.8	50.47	-23.53	74	49.2	33.01	3.2	34.94	112	124	Peak
2484.8	35.5	-18.5	54	34.23	33.01	3.2	34.94	112	124	Average



Test Mode :	Mode 12	Temperature :	21~22°C
Test Channel :	09	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
107.76	13.87	-29.63	43.5	31.04	11.56	0.45	29.18	-	-	Peak
144.21	17.02	-26.48	43.5	35.36	10.45	0.58	29.37	-	-	Peak
250.32	23.71	-22.29	46	40.59	12	0.73	29.61	-	-	Peak
374.9	26.29	-19.71	46	39.96	15.25	0.86	29.78	-	-	Peak
500.2	26.04	-19.96	46	37.81	17.2	0.98	29.95	-	-	Peak
640.2	38.07	-7.93	46	47.75	18.85	1.09	29.62	123	230	Peak
2389.8	50.4	-23.6	74	49.37	32.86	3.15	34.98	100	358	Peak
2389.8	38.93	-15.07	54	37.9	32.86	3.15	34.98	100	358	Average
2452	108.85	-	-	107.67	32.95	3.18	34.95	100	0	Peak
2452	98.5	-	-	97.32	32.95	3.18	34.95	100	0	Average
2483.51	62.39	-11.61	74	61.12	33.01	3.2	34.94	178	0	Peak
2483.51	48.98	-5.02	54	47.71	33.01	3.2	34.94	178	0	Average



Test Mode :	Mode 12	Temperature :	21~22°C
Test Channel :	09	Relative Humidity :	43~44%
Test Engineer :	Haitao Yin	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
75.63	22.55	-17.45	40	45.5	5.93	0.37	29.25	-	-	Peak
147.45	22.21	-21.29	43.5	40.79	10.21	0.58	29.37	-	-	Peak
250.05	23.3	-22.7	46	40.18	12	0.73	29.61	-	-	Peak
374.9	25	-21	46	38.67	15.25	0.86	29.78	-	-	Peak
500.2	22.4	-23.6	46	34.17	17.2	0.98	29.95	-	-	Peak
640.2	40.31	-5.69	46	49.99	18.85	1.09	29.62	100	182	Peak
2377.64	44.92	-29.08	74	43.93	32.83	3.13	34.97	102	56	Peak
2377.64	34.7	-19.3	54	33.71	32.83	3.13	34.97	102	56	Average
2452	97.35	-	-	96.17	32.95	3.18	34.95	191	273	Peak
2452	87.72	-	-	86.54	32.95	3.18	34.95	191	273	Average
2484.23	46.99	-27.01	74	45.72	33.01	3.2	34.94	102	85	Peak
2484.23	38.48	-15.52	54	37.21	33.01	3.2	34.94	102	85	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 PCB 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. 18, 2010	Jan. 17, 2011	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)
EMI Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 17, 2009	Nov. 16, 2010	Conduction (CO01-KS)
LISN	MessTec	AN3016	60103	9kHz~30MHz	Jan. 18, 2010	Jan. 17, 2011	Conduction (CO01-KS)
LISN	MessTec	AN3016	60105	9kHz~30MHz	Jan. 18, 2010	Jan. 17, 2011	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP00000811	N/A	Nov. 26, 2009	Nov. 25, 2010	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESCI	100724	9kHz – 2.75GHz	Mar. 09, 2010	Mar. 08, 2011	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Jan. 18, 2010	Jan. 17, 2011	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Jan. 18, 2010	Jan. 17, 2011	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	00075959	1GHz~18GHz	Jan. 18, 2010	Jan. 17, 2011	Radiation (03CH01-KS)
Amplifier	Wireless	FPA-6592G	060004	30MHz~2GHz	Feb. 02, 2010	Feb. 01, 2011	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Jan. 18, 2010	Jan. 17, 2011	Radiation (03CH01-KS)
Actice hore antenna	com-power	AHA-118	701023	1G-18GHz	Nov. 18, 2009	Nov. 17, 2010	Radiation (03CH01-KS)
Signal Generator	R&S	SMR40	100455	10MHz~40GHz	Jan. 18, 2010	Jan. 17, 2011	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15-40GHz	Oct. 22, 2009	Oct. 21, 2010	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 $U_c(y)$	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 EP091308 as below.