



FCC RF Test Report

APPLICANT : Okakopa LLC
EQUIPMENT : Tablet Device
MODEL NAME : D01400
FCC ID : ZEV-1229
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : Digital Transmission System (DTS)

The product was received on Jul. 02, 2011 and completely tested on Jul. 08, 2011. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the compliance with the applicable technical standards.

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

Reviewed by:

Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.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 14.9 dB at 1.038 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 3.31 dB at 2483.66 MHz
3.8	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

Okakopa LLC

1 Civic Center Plaza 1260 Broadway, Suite 2090 Denver, CO 80202-5180

1.2 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Tablet Device
Model Name	D01400
FCC ID	ZEV-1229
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 : 18.53 dBm (0.071 W) 802.11g : 25.39 dBm (0.346 W) 802.11n (BW 20MHz) : 25.3 dBm (0.339 W)
Antenna Type	PIFA Antenna with gain 0.6 dBi
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

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.

1.3 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	CO05-HY	03CH07-HY	722060/4086B-1

1.4 Applied Standards

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

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

Remark:

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

1.5 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
2.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
3.	Notebook	Dell	Vostro 1510	FCC Doc	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	18.53	18.52	18.28	18.27
CH 06	2437 MHz	18.44	-	-	-
CH 11	2462 MHz	18.21	-	-	-

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	25.14	-	-	-	-	-	-	-
CH 06	2437 MHz	25.39	25.37	25.30	25.34	24.87	24.65	23.66	23.38
CH 11	2462 MHz	24.96	-	-	-	-	-	-	-

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	25.01	-	-	-	-	-	-	-
CH 06	2437 MHz	25.30	25.23	25.21	24.52	24.62	23.60	22.29	22.32
CH 11	2462 MHz	24.68	-	-	-	-	-	-	-

Remark:

1. The data rates of WLAN 802.11b/g/n were set in 1Mbps for 802.11b, 6Mbps for 802.11g, and 6.5Mbps for 802.11n (BW 20MHz) for all the test cases due to the highest RF output power.
2. The EUT is programmed to transmit signals continuously for all testing.
3. Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports.

2.2 Test Mode

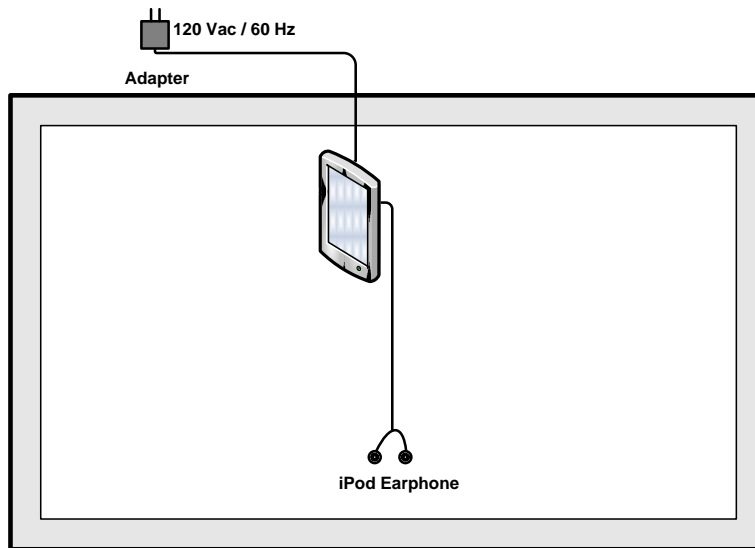
The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 kHz to 30 MHz), radiated emission (30 MHz to the 10th harmonic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

Pre-scanned tests, X, Y, Z in three orthogonal panels, were conducted to determine the final configuration from all possible combinations, laptop / tablet modes.

The following tables are showing the test modes as the worst cases (Y panel) 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
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
AC Conducted Emission	Mode 1 : WLAN Link + Earphone + Adapter Mode 2 : WLAN Link + Earphone + Adapter	
Remark: The worst case of conducted emission is mode 1; only the test data of it was reported.		

2.3 Connection Diagram of Test System



2.4 RF Utility

Programmed RF utility, "ADB Command" installed in the EUT provides functions like channel selection and power level for transmitting and receiving signals continuously.

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.

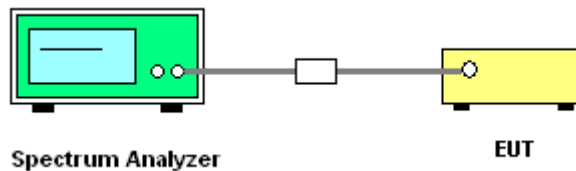
3.1.2 Measuring Instruments

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



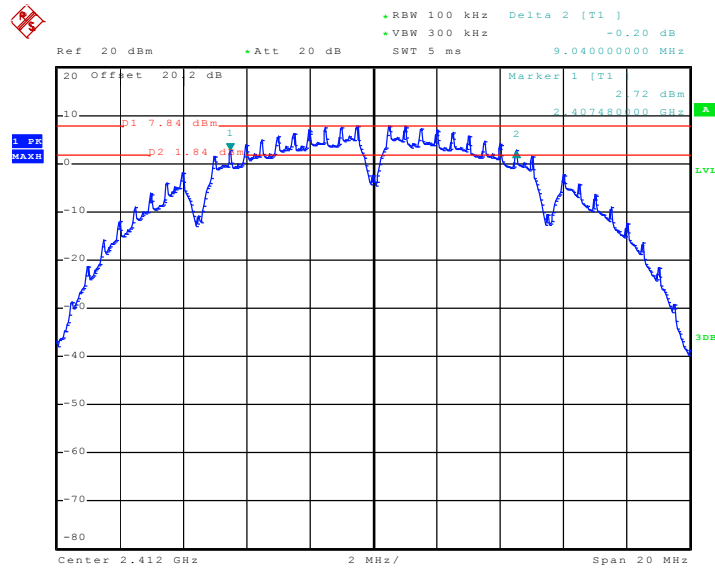


3.1.5 Test Result of 6dB Bandwidth

Test Mode :	Mode 1, 2, 3	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

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

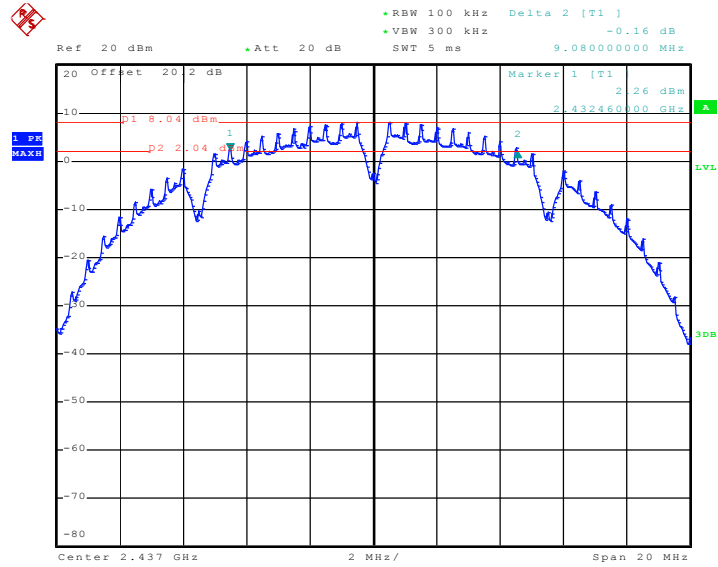
Mode 1 : 6 dB Bandwidth Plot on 802.11b Channel 01



Date: 7.JUL.2011 16:20:53

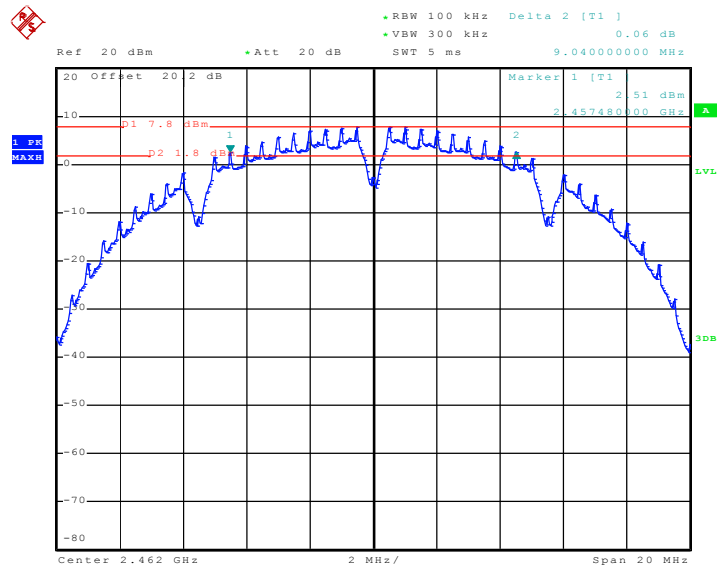


Mode 2 : 6 dB Bandwidth Plot on 802.11b Channel 06



Date: 7.JUL.2011 17:08:31

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



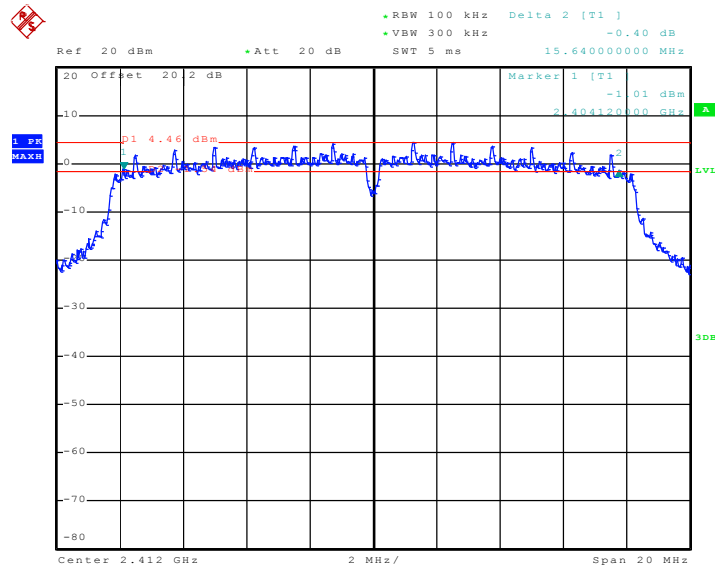
Date: 7.JUL.2011 17:27:54



Test Mode :	Mode 4, 5, 6	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	15.64	0.5	Pass
06	2437	15.64	0.5	Pass
11	2462	15.44	0.5	Pass

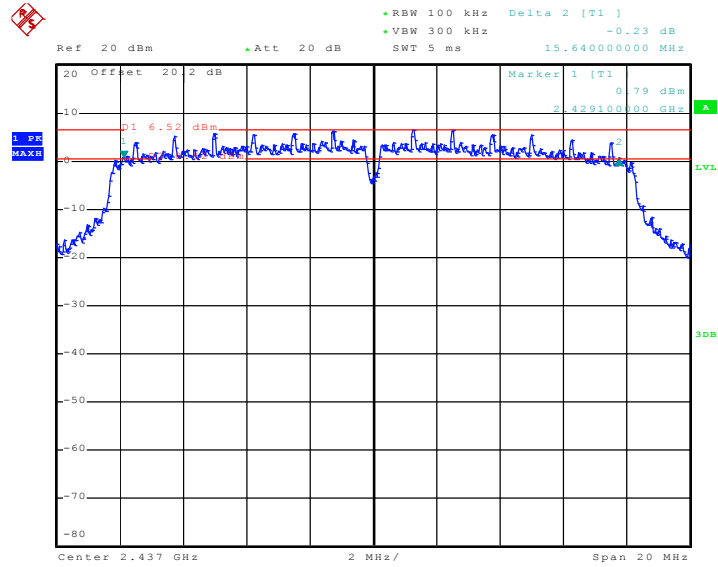
Mode 4 : 6 dB Bandwidth Plot on 802.11g Channel 01



Date: 7.JUL.2011 18:07:05

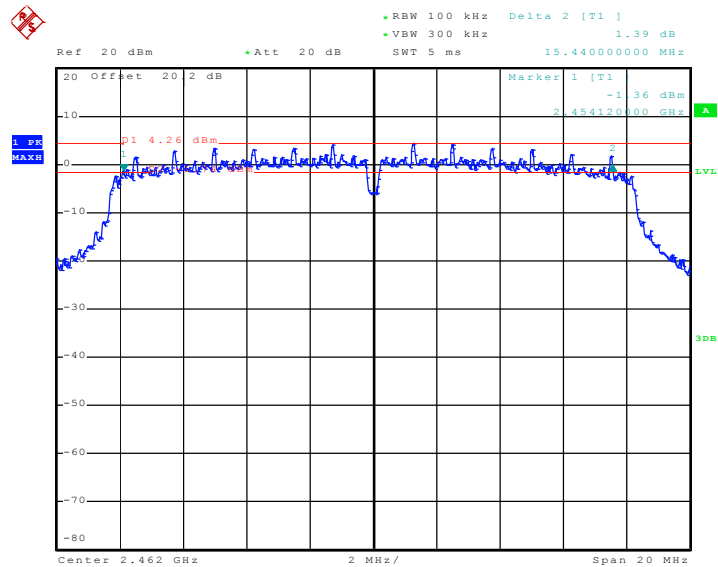


Mode 5 : 6 dB Bandwidth Plot on 802.11g Channel 06



Date: 7.JUL.2011 18:21:12

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



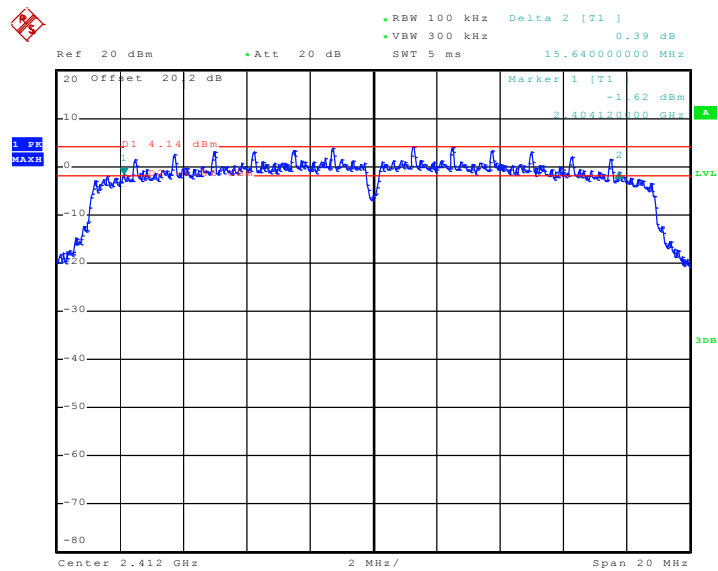
Date: 7.JUL.2011 17:49:44



Test Mode :	Mode 7, 8, 9	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11n (BW 20MHz) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	15.64	0.5	Pass
06	2437	15.32	0.5	Pass
11	2462	15.44	0.5	Pass

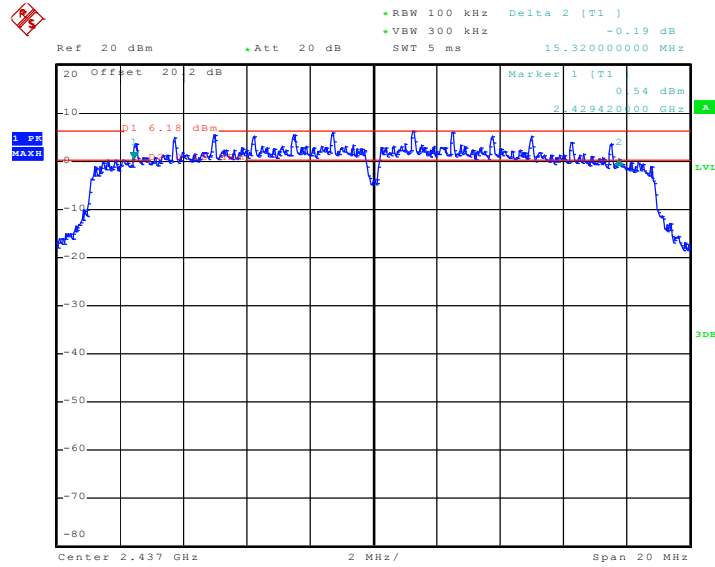
Mode 7 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 01



Date: 8.JUL.2011 15:29:34

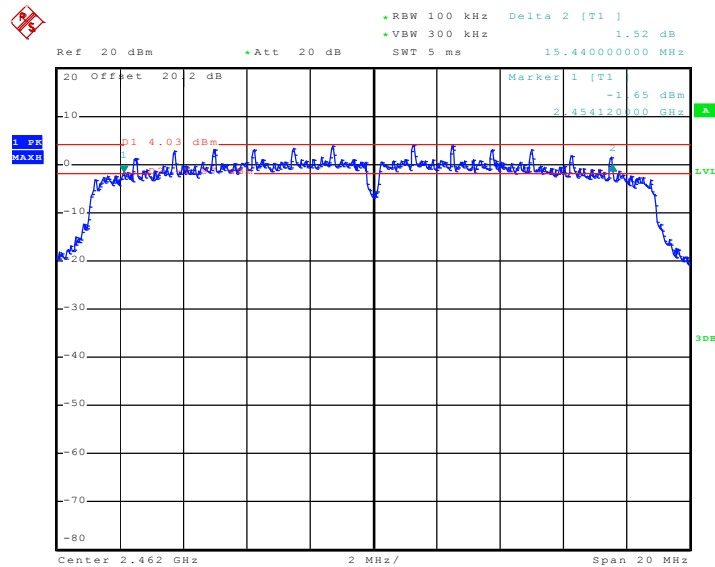


Mode 8 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 06



Date: 8.JUL.2011 15:46:44

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



Date: 8.JUL.2011 16:02:23

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.

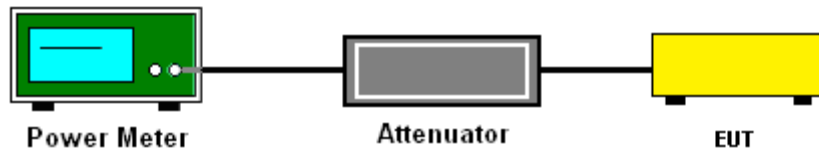
3.2.2 Measuring Instruments

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 :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	18.53	30	Pass
06	2437	18.44	30	Pass
11	2462	18.21	30	Pass

Test Mode :	Mode 4, 5, 6	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	25.14	30	Pass
06	2437	25.39	30	Pass
11	2462	24.96	30	Pass

Test Mode :	Mode 7, 8, 9	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	25.01	30	Pass
06	2437	25.3	30	Pass
11	2462	24.68	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

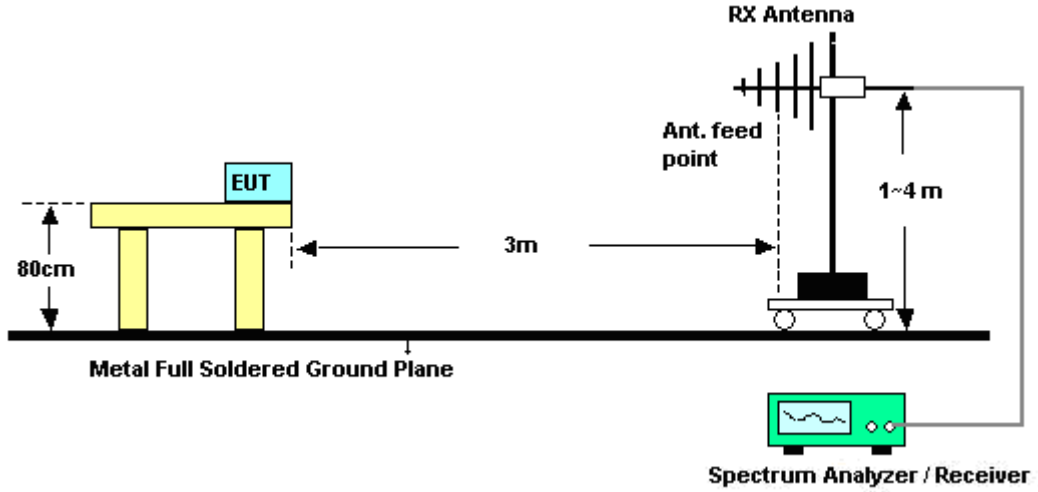
See list of measuring instruments of this test report.

3.3.3 Test Procedures

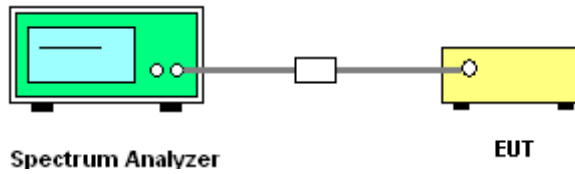
1. The testing follows the guidelines in ANSI C63.4-2003 and FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Conducted emission test: Set RBW = 100 kHz, Video bandwidth (VBW) \geq RBW. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized 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 :	22~24°C
Test Band :	802.11b	Relative Humidity :	47~49%
Test Channel :	01	Test Engineer :	David Yang

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
2382.58	53.06	-20.94	74	48.72	32.16	6.03	33.85	100	255	Peak
2382.58	41.75	-12.25	54	37.41	32.16	6.03	33.85	100	255	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
2382.77	49.54	-24.46	74	45.2	32.16	6.03	33.85	100	269	Peak
2382.77	37.61	-16.39	54	33.27	32.16	6.03	33.85	100	269	Average

Test Mode :	Mode 3	Temperature :	22~24°C
Test Band :	802.11b	Relative Humidity :	47~49%
Test Channel :	11	Test Engineer :	David Yang

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
2488.41	54.28	-19.72	74	49.7	32.3	6.18	33.9	128	234	Peak
2488.41	42.54	-11.46	54	37.96	32.3	6.18	33.9	128	234	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
2485.18	51.21	-22.79	74	46.65	32.28	6.18	33.9	148	299	Peak
2485.18	37.76	-16.24	54	33.2	32.28	6.18	33.9	148	299	Average



Test Mode :	Mode 4	Temperature :	22~24°C
Test Band :	802.11g	Relative Humidity :	47~49%
Test Channel :	01	Test Engineer :	David Yang

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	67.37	-6.63	74	63.01	32.18	6.03	33.85	100	255	Peak
2390	47.36	-6.64	54	43	32.18	6.03	33.85	100	255	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	62.6	-11.4	74	58.24	32.18	6.03	33.85	100	269	Peak
2390	42.24	-11.76	54	37.88	32.18	6.03	33.85	100	269	Average

Test Mode :	Mode 6	Temperature :	22~24°C
Test Band :	802.11g	Relative Humidity :	47~49%
Test Channel :	11	Test Engineer :	David Yang

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	67.6	-6.4	74	63.04	32.28	6.18	33.9	100	223	Peak
2483.66	47.9	-6.1	54	43.34	32.28	6.18	33.9	100	223	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
2483.85	62.2	-11.8	74	57.64	32.28	6.18	33.9	143	305	Peak
2483.85	43	-11	54	38.44	32.28	6.18	33.9	143	305	Average



Test Mode :	Mode 7	Temperature :	22~24°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	47~49%
Test Channel :	01	Test Engineer :	David Yang

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	70.15	-3.85	74	65.79	32.18	6.03	33.85	100	253	Peak
2389.99	49.46	-4.54	54	45.1	32.18	6.03	33.85	100	253	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.99	66.17	-7.83	74	61.81	32.18	6.03	33.85	191	279	Peak
2389.99	44.5	-9.5	54	40.14	32.18	6.03	33.85	191	279	Average

Test Mode :	Mode 9	Temperature :	22~24°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	47~49%
Test Channel :	11	Test Engineer :	David Yang

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	70.54	-3.46	74	65.98	32.28	6.18	33.9	156	237	Peak
2483.66	50.69	-3.31	54	46.13	32.28	6.18	33.9	156	237	Average

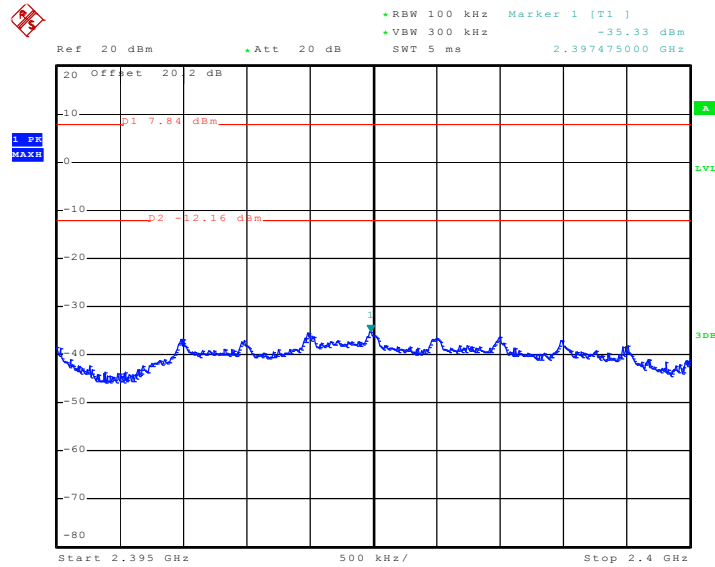
ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.42	62.05	-11.95	74	57.49	32.28	6.18	33.9	177	306	Peak
2484.42	43.99	-10.01	54	39.43	32.28	6.18	33.9	177	306	Average



3.3.6 Test Plots of Conducted Band Edges

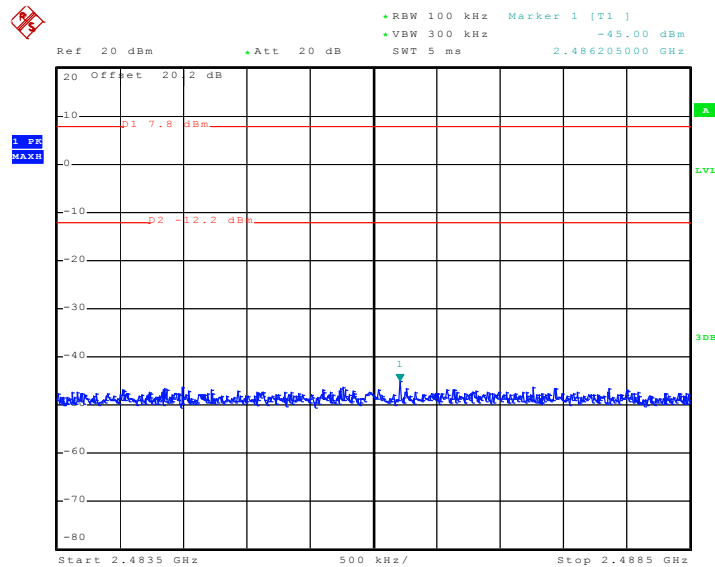
Test Mode :	Mode 1 and 3	Temperature :	24~26°C
Test Band :	802.11b	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Pinkston Tu

Low Band Edge Plot on 802.11b Channel 01



Date: 7.JUL.2011 16:22:05

High Band Edge Plot on 802.11b Channel 11

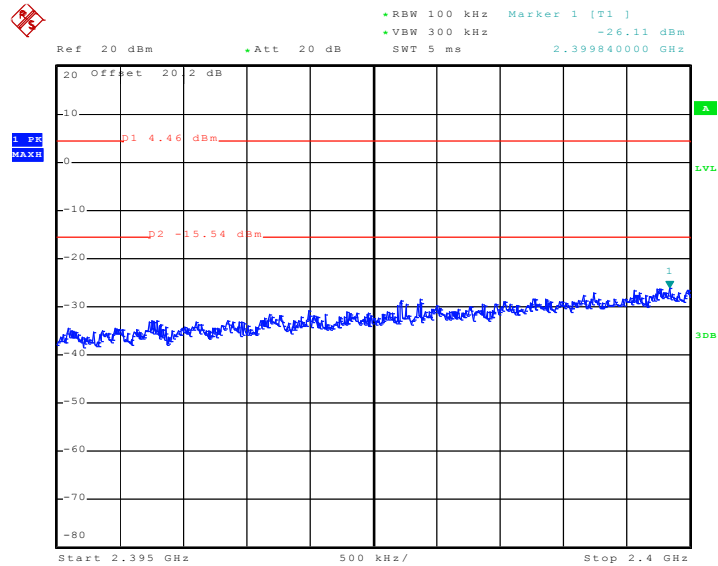


Date: 7.JUL.2011 17:28:42



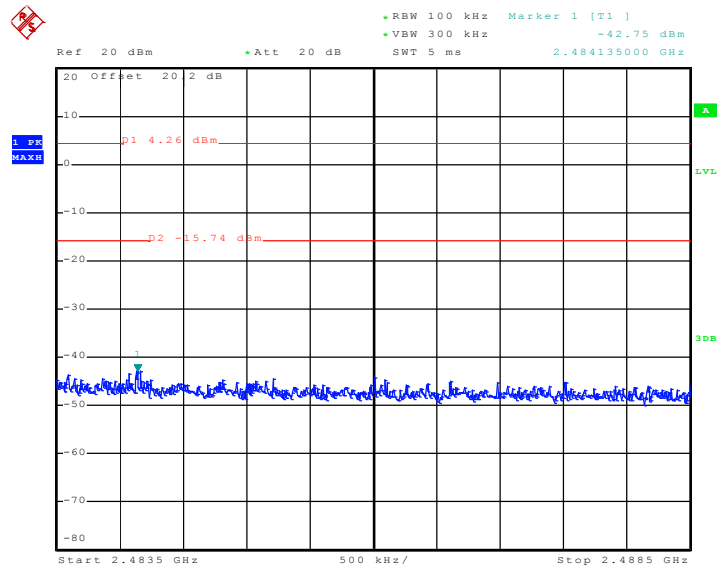
Test Mode :	Mode 4 and 6	Temperature :	24~26°C
Test Band :	802.11g	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Pinkston Tu

Low Band Edge Plot on 802.11g Channel 01



Date: 7.JUL.2011 18:08:17

High Band Edge Plot on 802.11g Channel 11

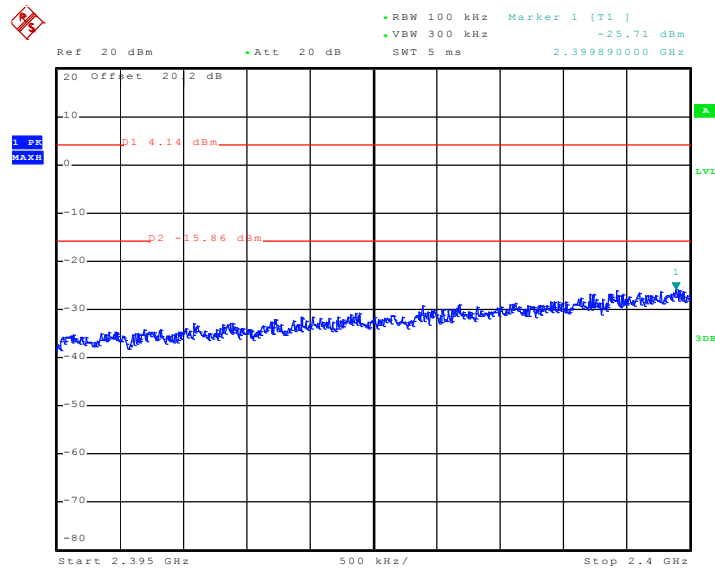


Date: 7.JUL.2011 17:50:33



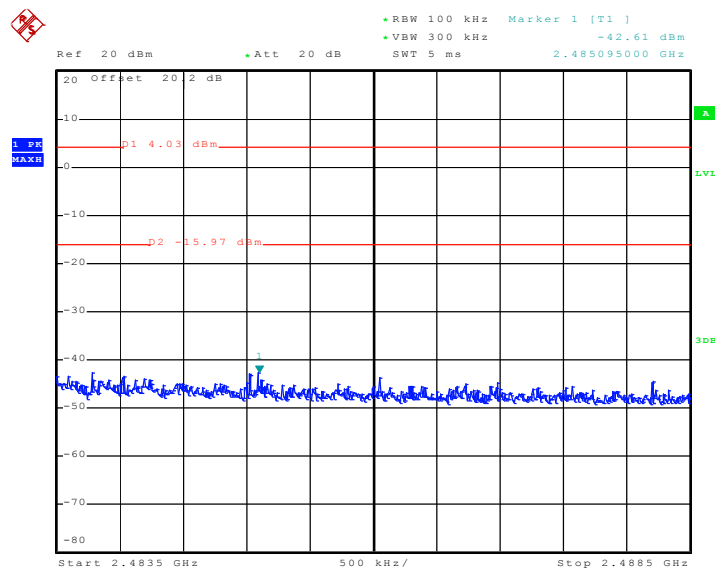
Test Mode :	Mode 7 and 9	Temperature :	24~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Pinkston Tu

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



Date: 8.JUL.2011 15:30:46

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



Date: 8.JUL.2011 16:03:11

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.

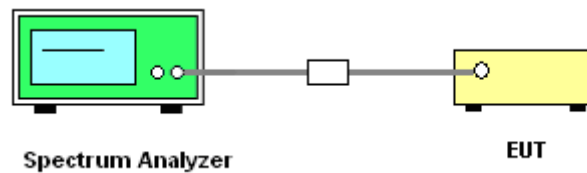
3.4.2 Measuring Instruments

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

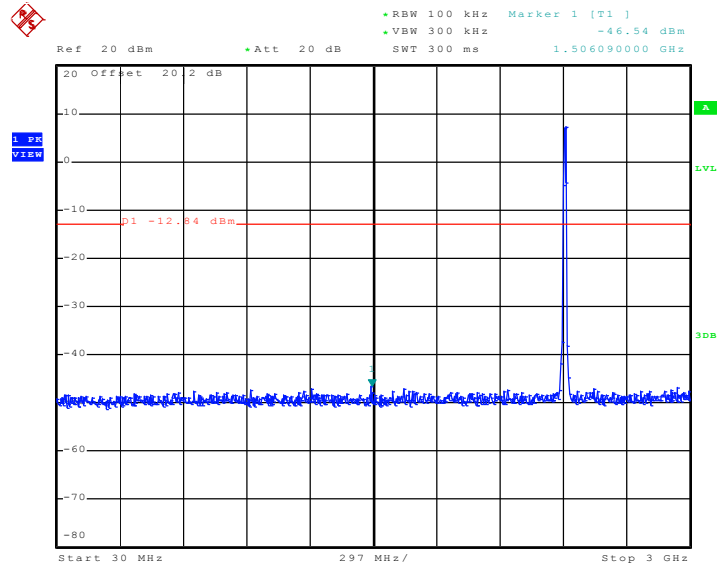




3.4.5 Test Plots of Spurious Emission

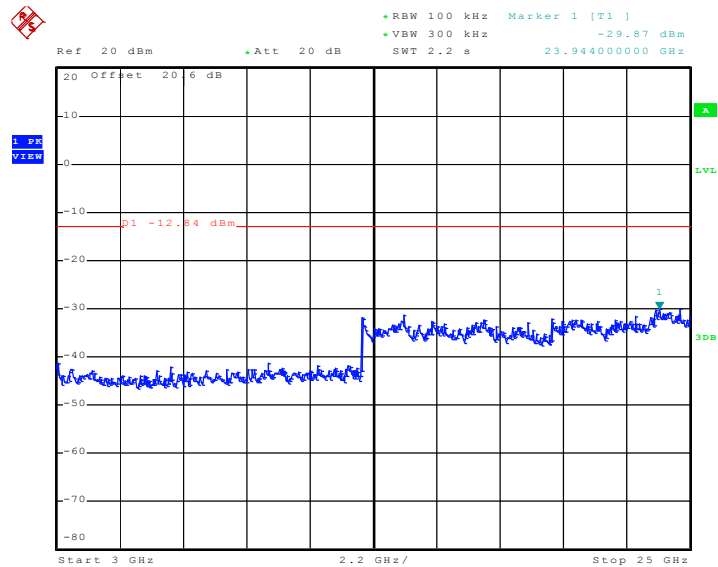
Test Mode :	Mode 1	Temperature :	24~26°C
Test Band :	802.11b	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 7.JUL.2011 17:03:26

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

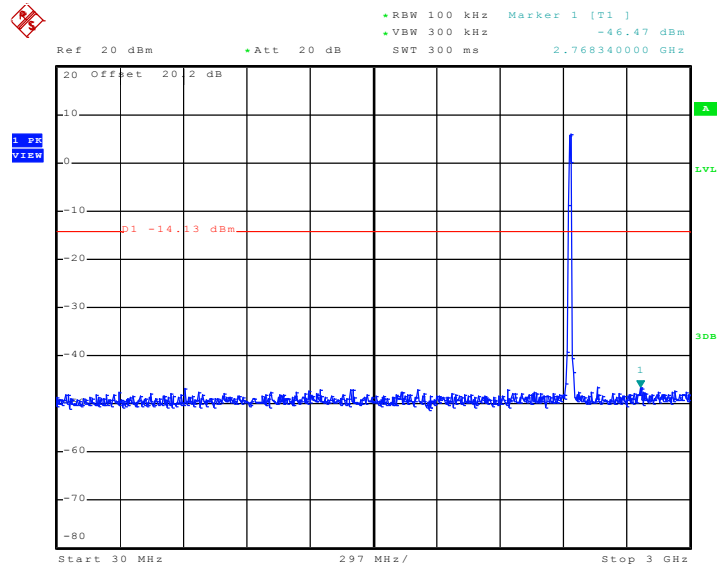


Date: 7.JUL.2011 17:03:44



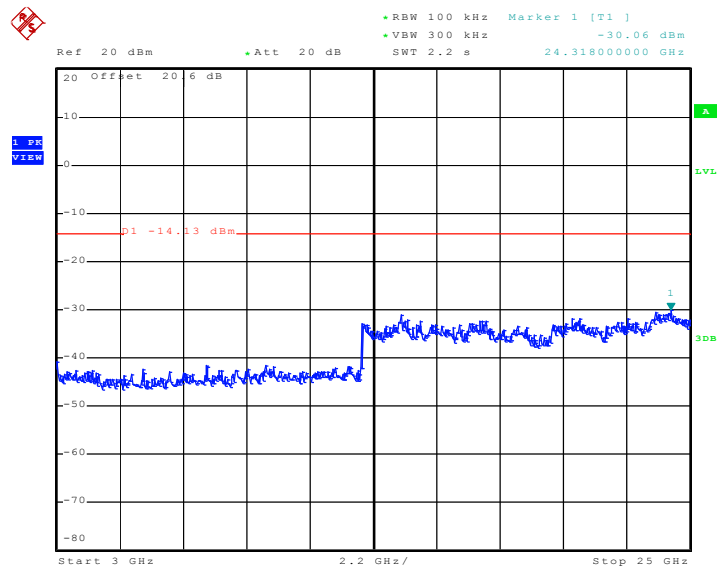
Test Mode :	Mode 2	Temperature :	24~26°C
Test Band :	802.11b	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 7.JUL.2011 17:18:08

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

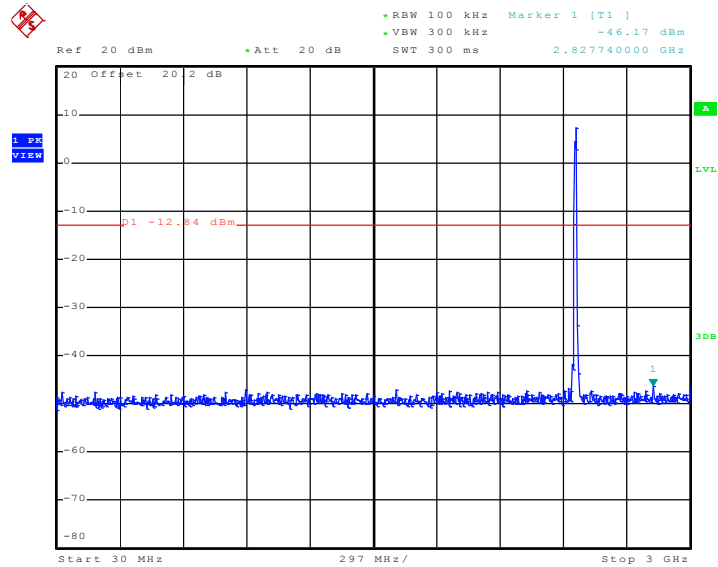


Date: 7.JUL.2011 17:18:26



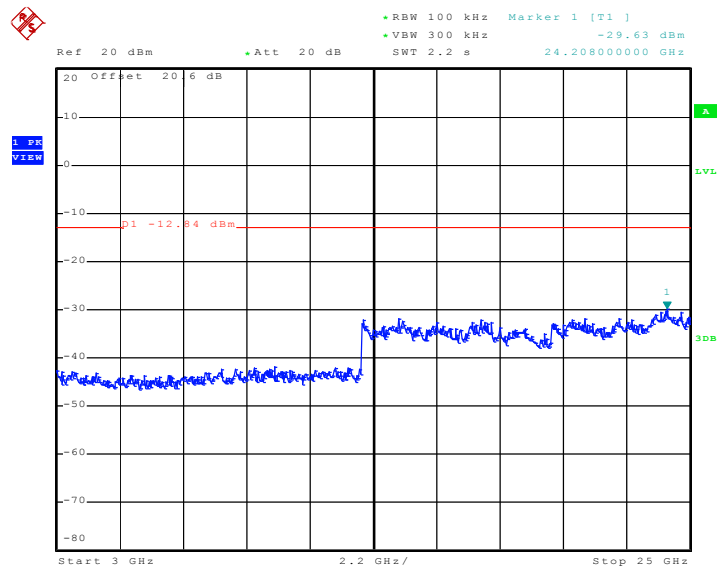
Test Mode :	Mode 3	Temperature :	24~26°C
Test Band :	802.11b	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 7.JUL.2011 17:44:04

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

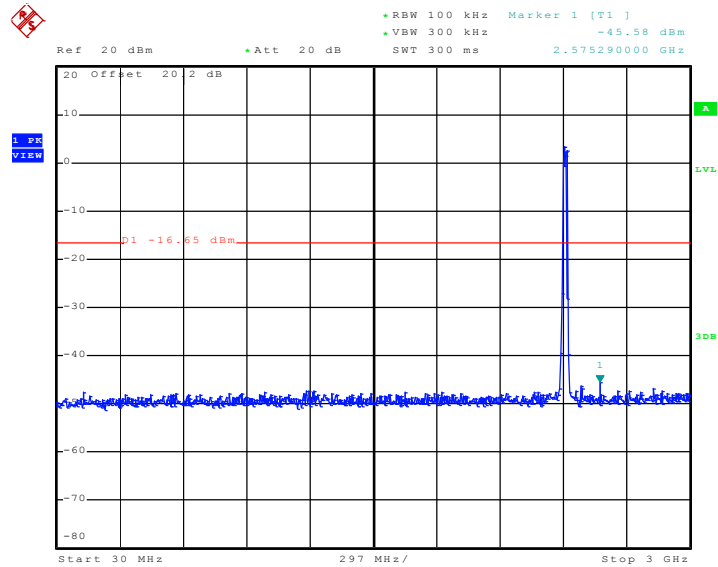


Date: 7.JUL.2011 17:44:22



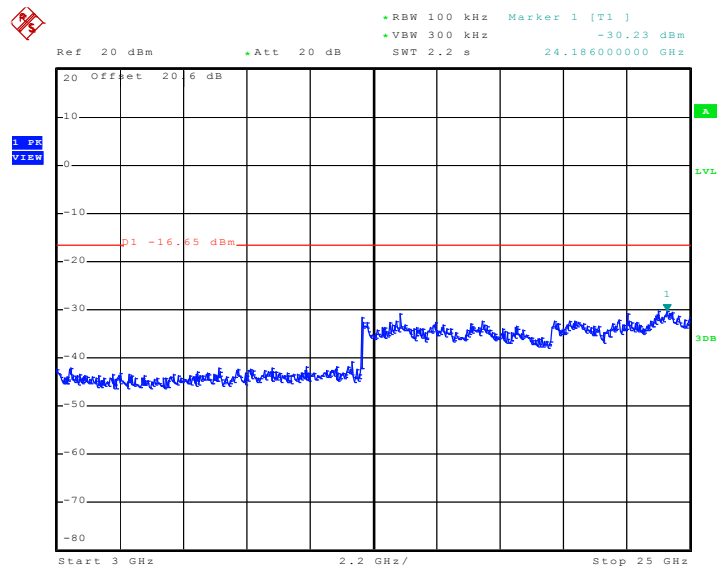
Test Mode :	Mode 4	Temperature :	24~26°C
Test Band :	802.11g	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 7.JUL.2011 18:18:00

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

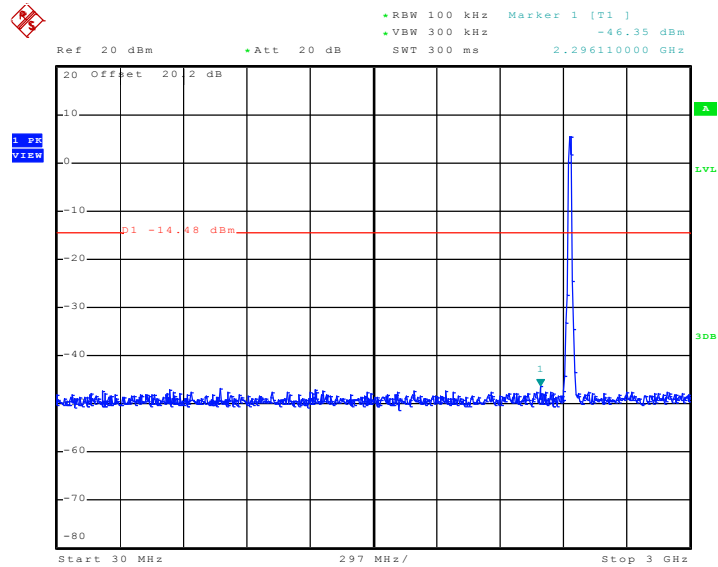


Date: 7.JUL.2011 18:18:18



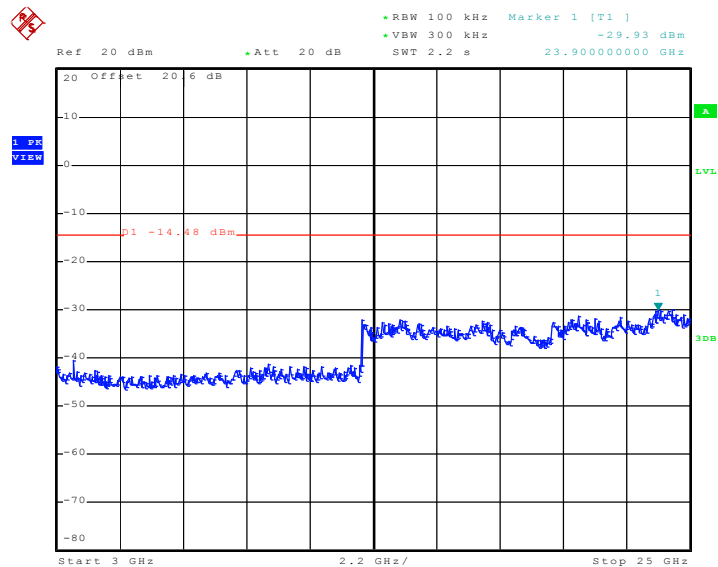
Test Mode :	Mode 5	Temperature :	24~26°C
Test Band :	802.11g	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 7.JUL.2011 18:30:45

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

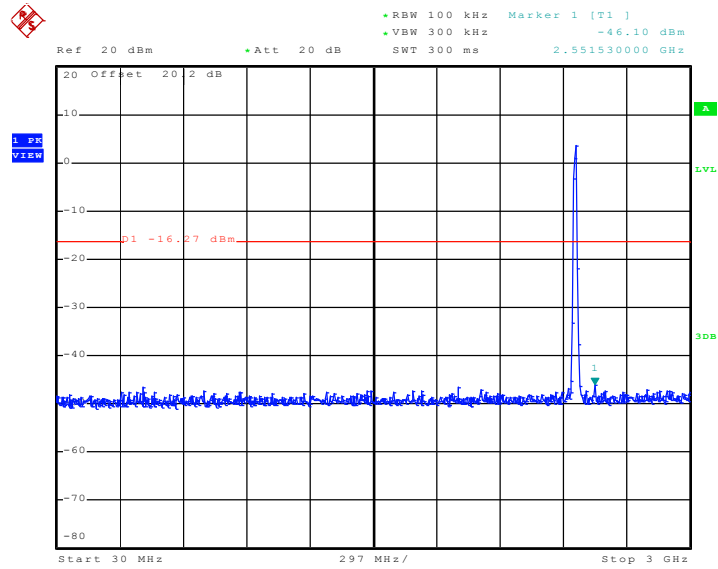


Date: 7.JUL.2011 18:31:03



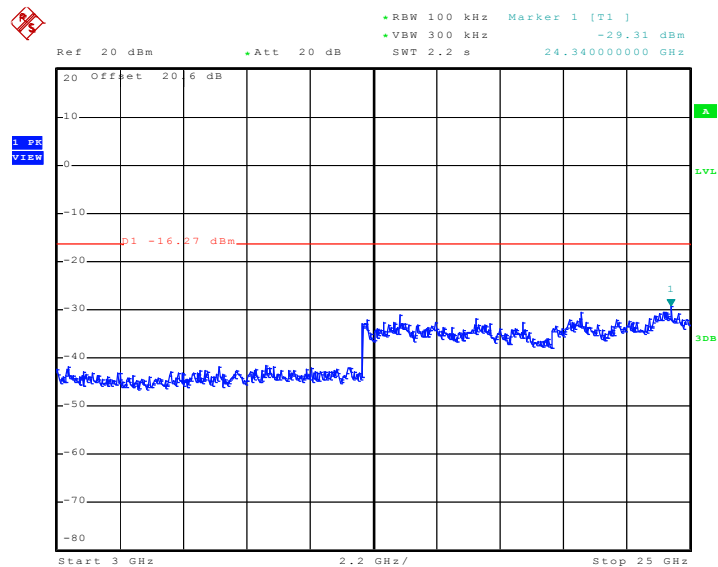
Test Mode :	Mode 6	Temperature :	24~26°C
Test Band :	802.11g	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 7.JUL.2011 18:04:07

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

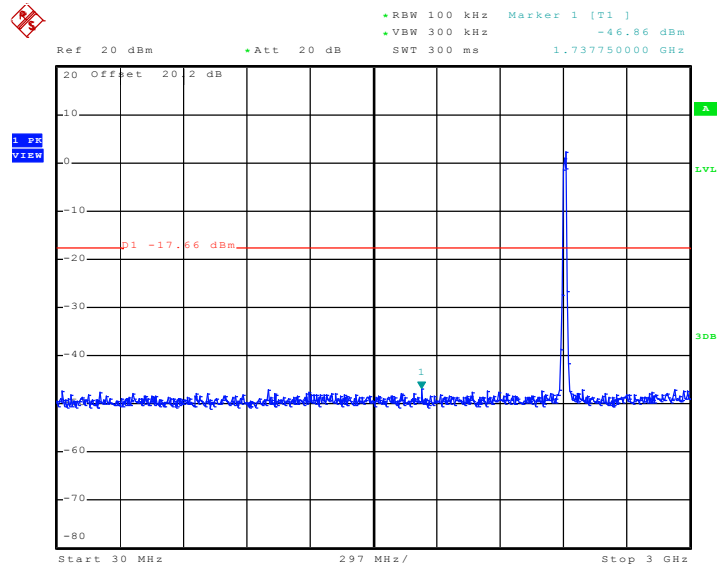


Date: 7.JUL.2011 18:04:25



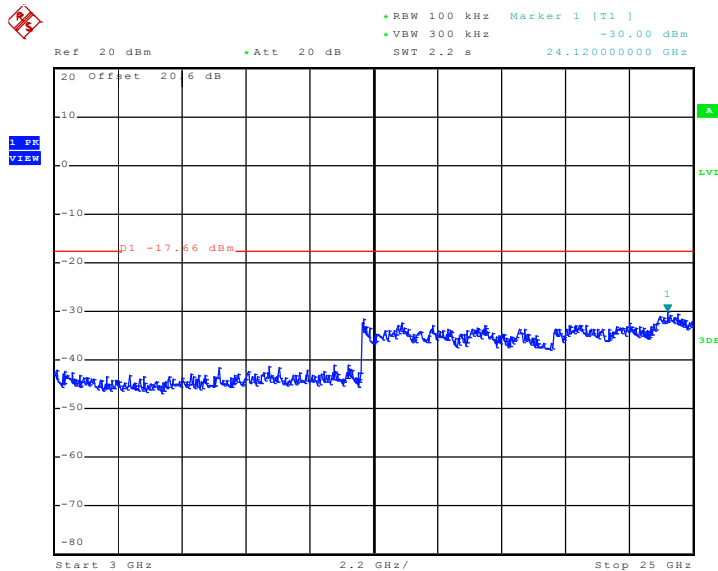
Test Mode :	Mode 7	Temperature :	24~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 8.JUL.2011 15:40:16

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

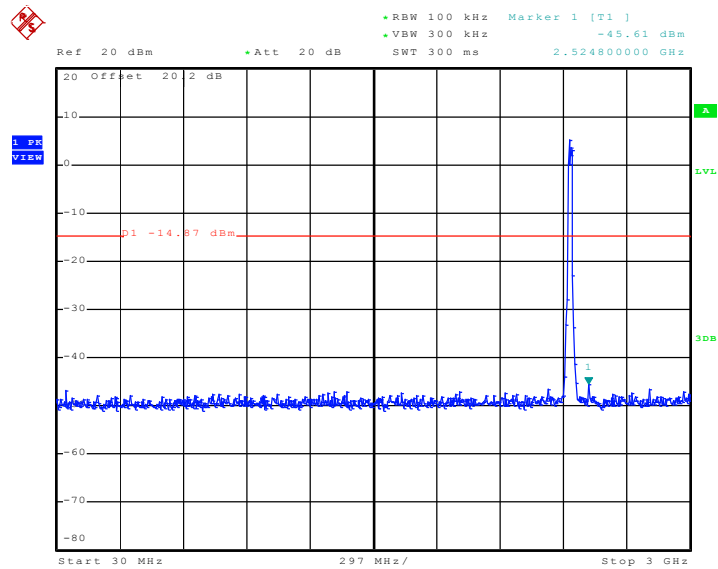


Date: 8.JUL.2011 15:40:34



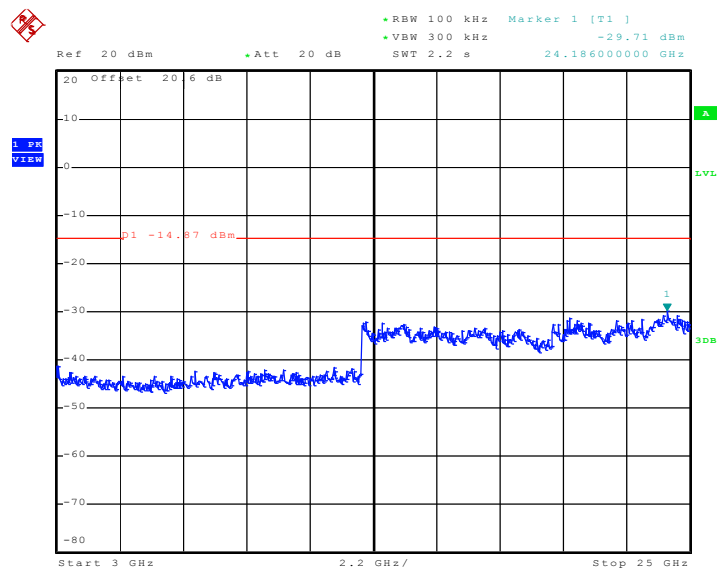
Test Mode :	Mode 8	Temperature :	24~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 8.JUL.2011 15:59:02

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

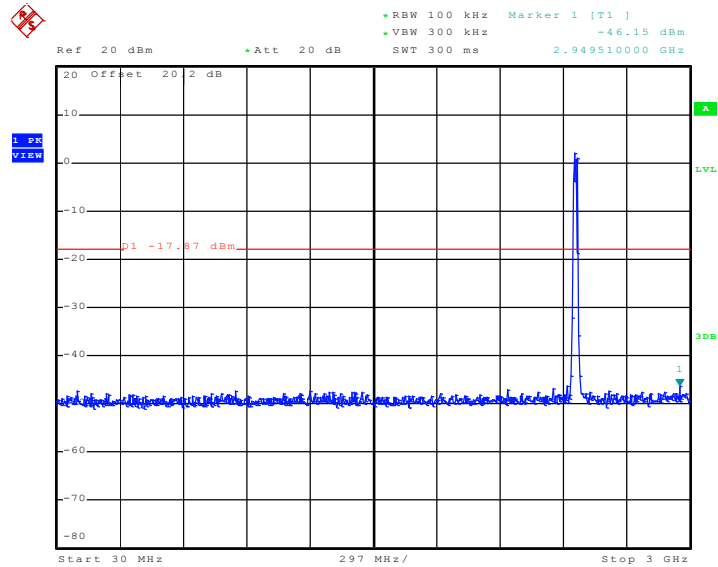


Date: 8.JUL.2011 15:59:20



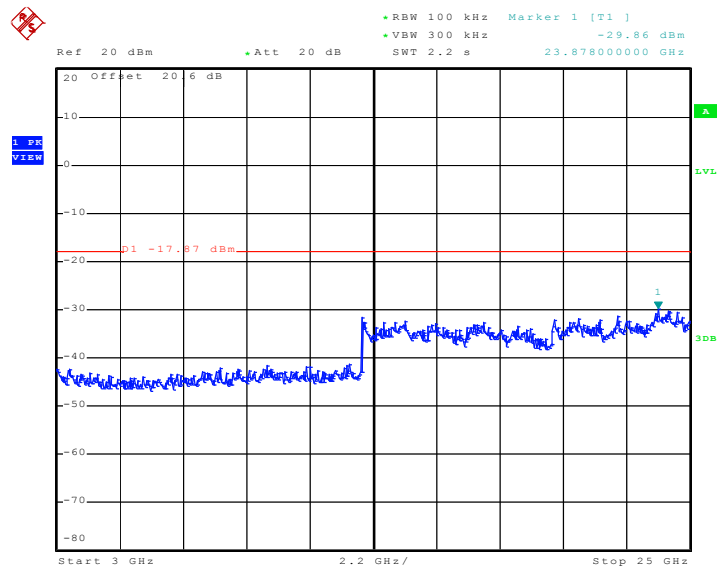
Test Mode :	Mode 9	Temperature :	24~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 8.JUL.2011 16:13:00

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 8.JUL.2011 16:13:18

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.

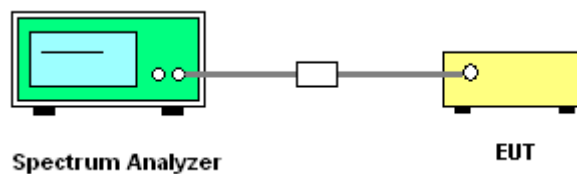
3.5.2 Measuring Instruments

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



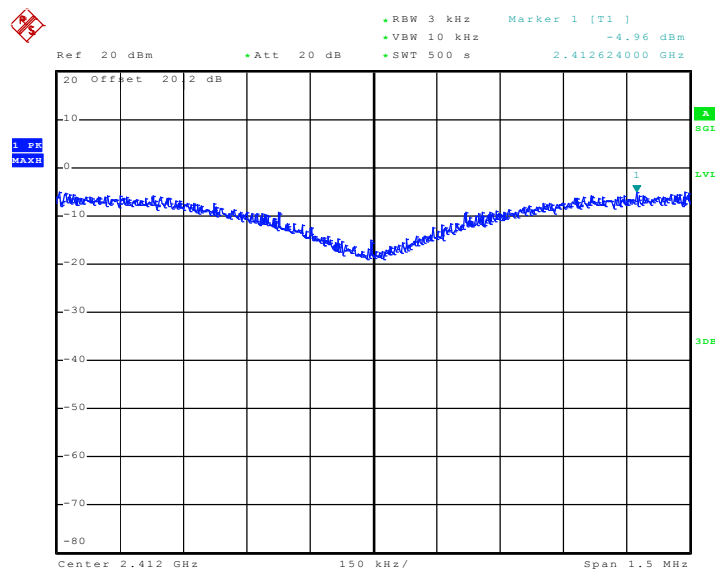


3.5.5 Test Result of Power Spectral Density

Test Mode :	Mode 1, 2, 3	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-4.96	8	Pass
06	2437	-4.88	8	Pass
11	2462	-5.09	8	Pass

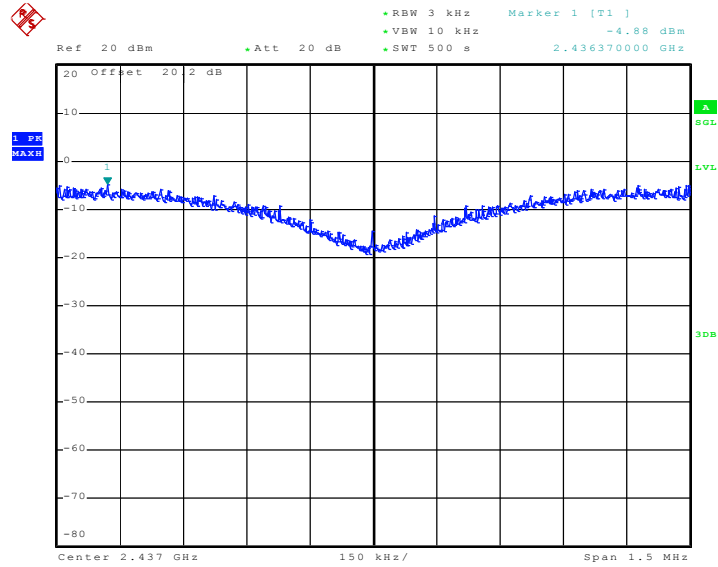
Mode 1 : PSD Plot on 802.11b Channel 01



Date: 7.JUL.2011 16:31:31

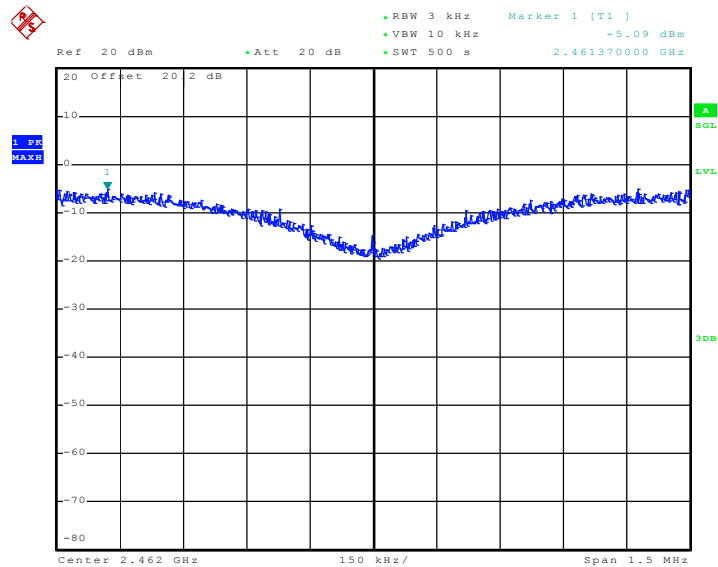


Mode 2 : PSD Plot on 802.11b Channel 06



Date: 7.JUL.2011 17:17:45

Mode 3 : PSD Plot on 802.11b Channel 11



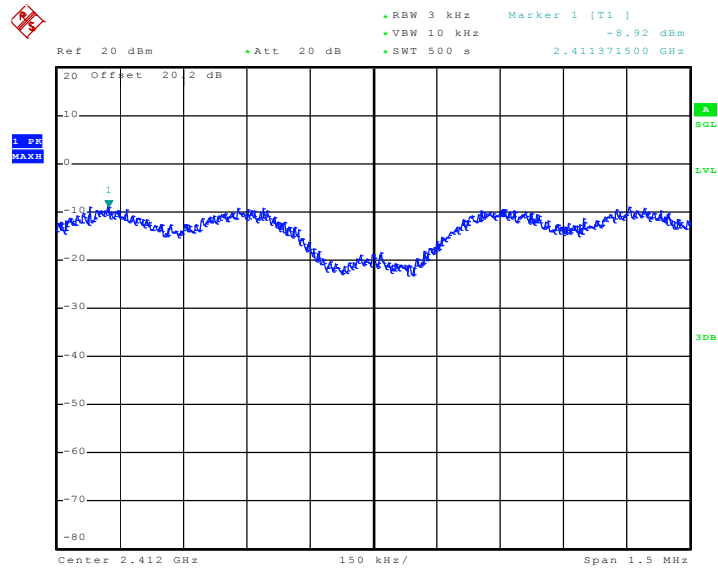
Date: 7.JUL.2011 17:38:14



Test Mode :	Mode 4, 5, 6	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-8.92	8	Pass
06	2437	-6.84	8	Pass
11	2462	-8.64	8	Pass

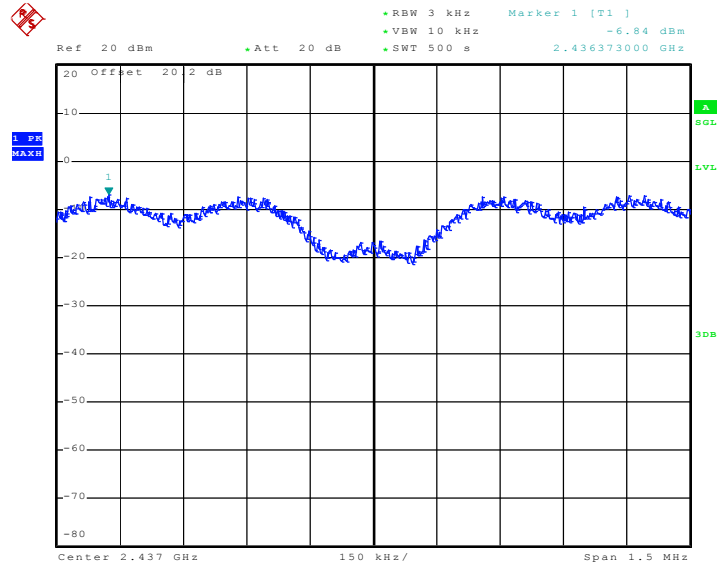
Mode 4 : PSD Plot on 802.11g Channel 01



Date: 7.JUL.2011 18:17:37

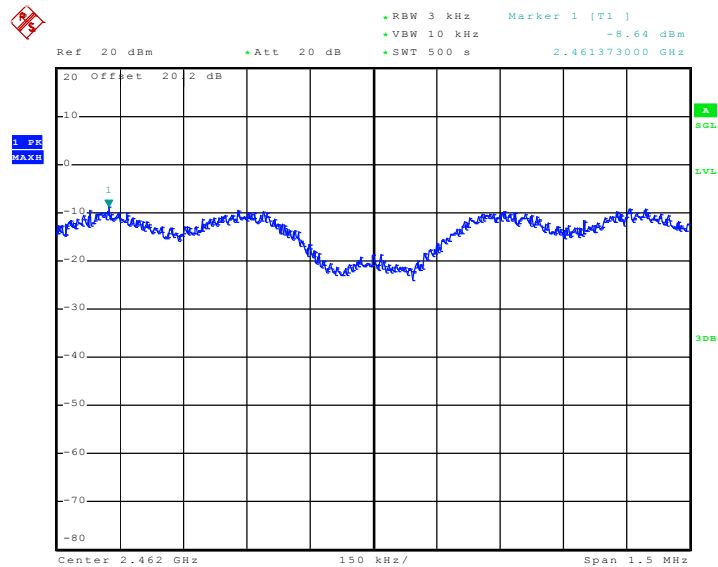


Mode 5 : PSD Plot on 802.11g Channel 06



Date: 7.JUL.2011 18:30:22

Mode 6 : PSD Plot on 802.11g Channel 11



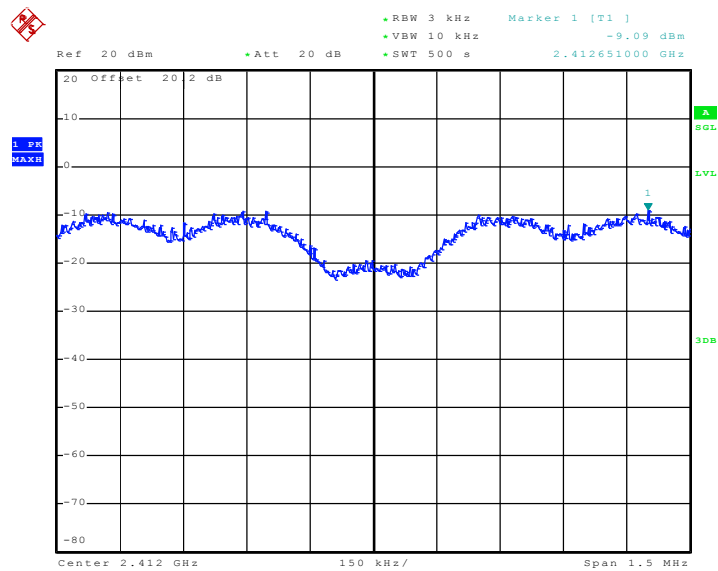
Date: 7.JUL.2011 18:02:27



Test Mode :	Mode 7, 8, 9	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-9.09	8	Pass
06	2437	-7.15	8	Pass
11	2462	-9.00	8	Pass

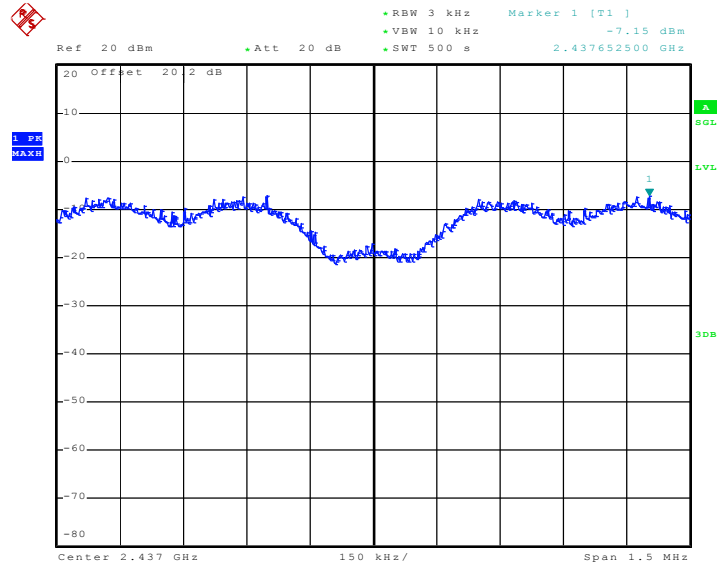
Mode 7 : PSD Plot on 802.11n (BW 20MHz) Channel 01



Date: 8.JUL.2011 15:39:53

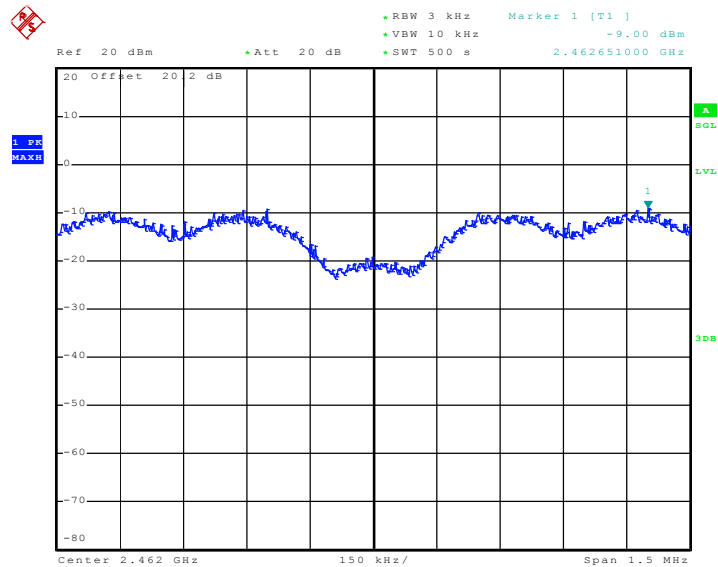


Mode 8 : PSD Plot on 802.11n (BW 20MHz) Channel 06



Date: 8.JUL.2011 15:56:27

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



Date: 8.JUL.2011 16:12:37

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

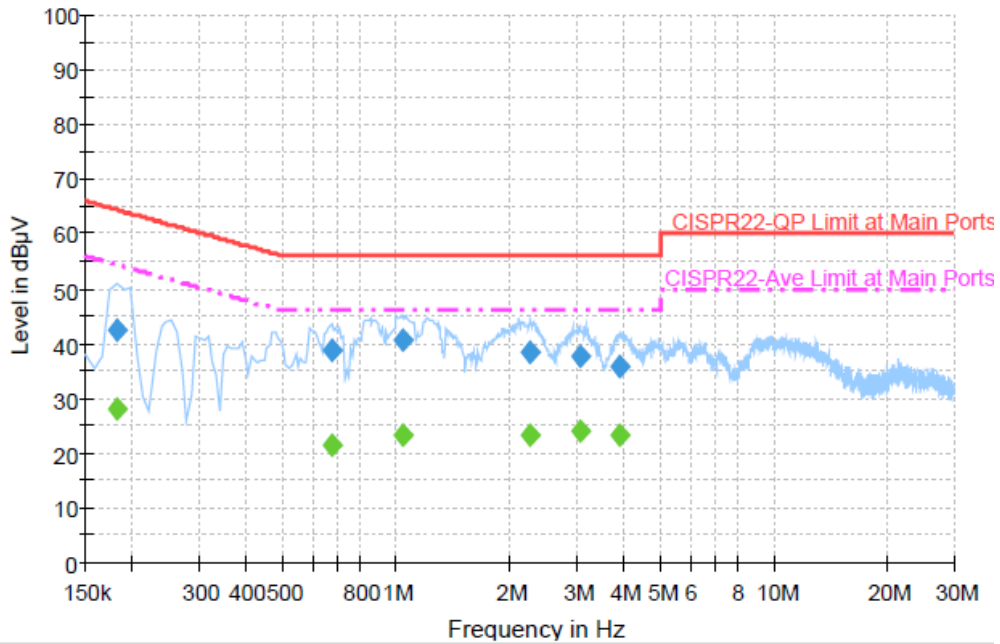
1. The testing follows the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (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 :	20~22°C
Test Engineer :	Novic Chiang	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN Link + Earphone + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



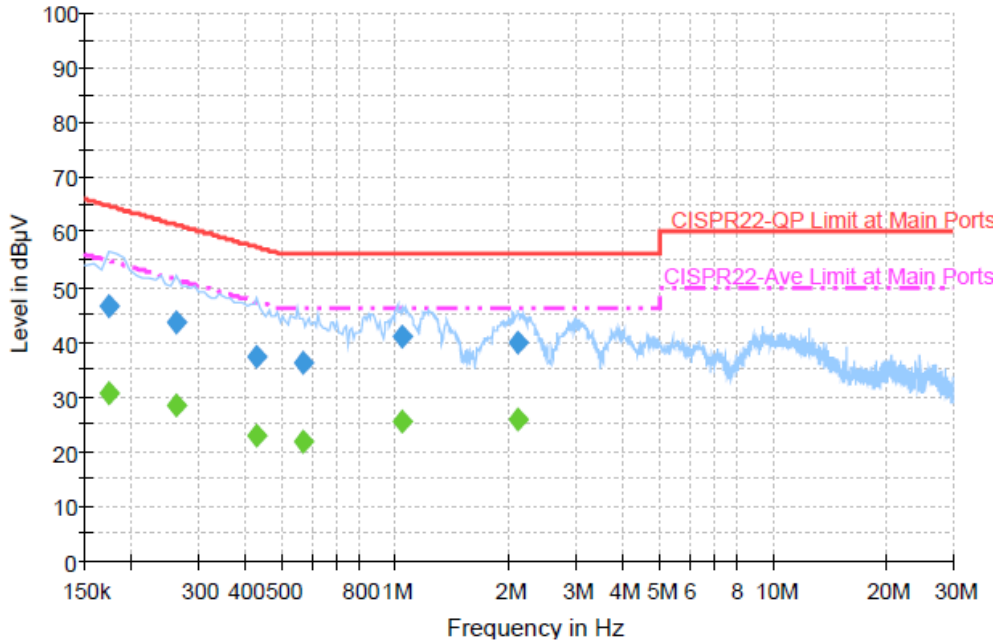
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.182000	42.6	Off	L1	19.4	21.8	64.4
0.678000	38.7	Off	L1	19.4	17.3	56.0
1.046000	40.5	Off	L1	19.4	15.5	56.0
2.246000	38.3	Off	L1	19.5	17.7	56.0
3.070000	37.5	Off	L1	19.5	18.5	56.0
3.902000	35.9	Off	L1	19.5	20.1	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.182000	28.1	Off	L1	19.4	26.3	54.4
0.678000	21.5	Off	L1	19.4	24.5	46.0
1.046000	23.2	Off	L1	19.4	22.8	46.0
2.246000	23.4	Off	L1	19.5	22.6	46.0
3.070000	23.9	Off	L1	19.5	22.1	46.0
3.902000	23.2	Off	L1	19.5	22.8	46.0

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Novic Chiang	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN Link + Earphone + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	46.4	Off	N	19.3	18.4	64.8
0.262000	43.5	Off	N	19.4	17.9	61.4
0.430000	37.2	Off	N	19.4	20.1	57.3
0.566000	36.0	Off	N	19.3	20.0	56.0
1.038000	41.1	Off	N	19.4	14.9	56.0
2.110000	39.8	Off	N	19.5	16.2	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	30.8	Off	N	19.3	24.0	54.8
0.262000	28.5	Off	N	19.4	22.9	51.4
0.430000	22.7	Off	N	19.4	24.6	47.3
0.566000	21.6	Off	N	19.3	24.4	46.0
1.038000	25.5	Off	N	19.4	20.5	46.0
2.110000	25.7	Off	N	19.5	20.3	46.0

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

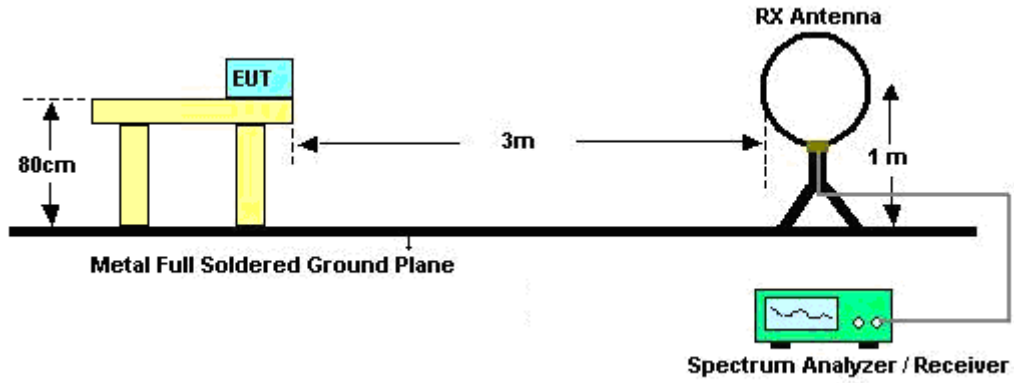
See list of measuring instruments of this test report.

3.7.3 Test Procedures

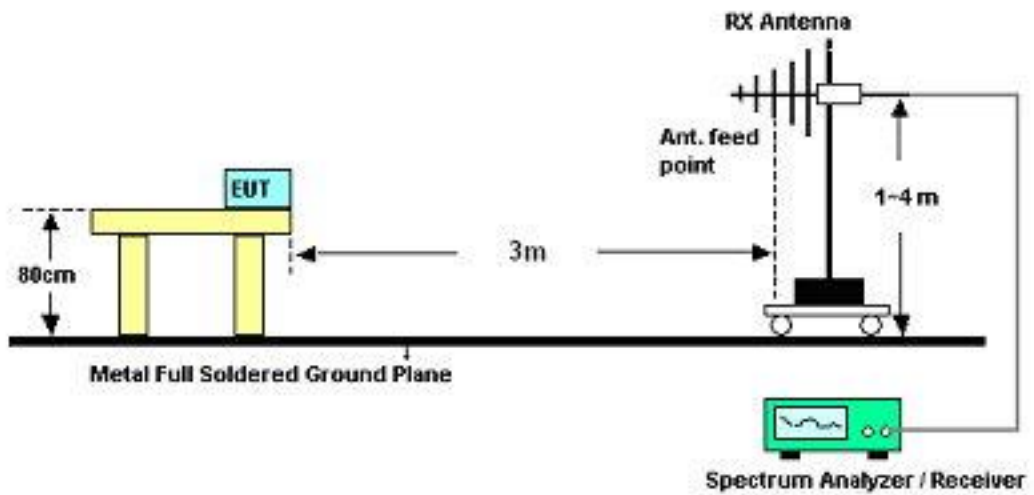
1. The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Use the following spectrum analyzer settings:
 - (1) Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz; VBW \geq RBW; Sweep = 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

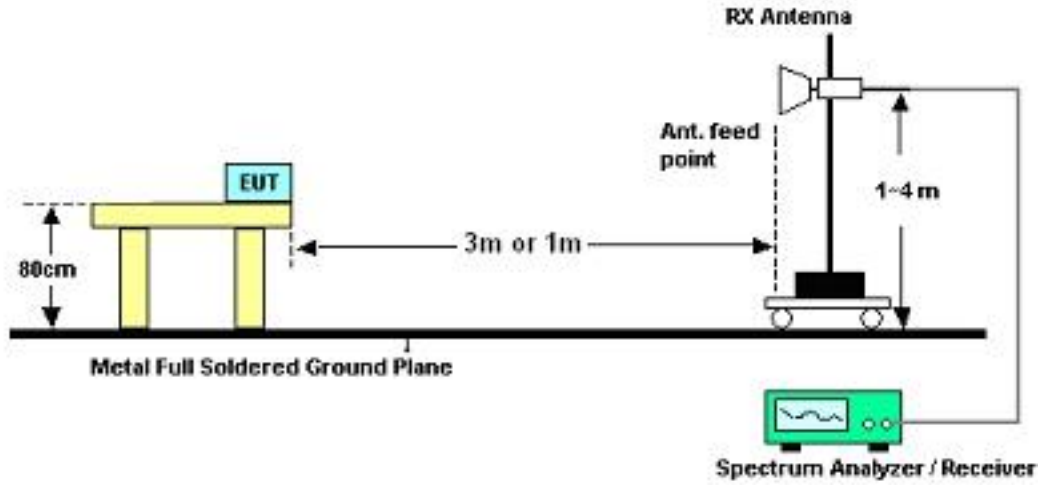
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

Test Engineer :	David Yang	Temperature :	22~24°C	
		Relative Humidity :	47~49%	
Frequency (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

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

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

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



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

Test Mode :	Mode 1	Temperature :	22~24°C
Test Channel :	01	Relative Humidity :	47~49%
Test Engineer :	David Yang	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
160.41	22.09	-21.41	43.5	42.01	10.38	1.22	31.52	-	-	Peak
182.82	30.06	-13.44	43.5	51.27	9.05	1.26	31.52	134	200	Peak
281.37	25.99	-20.01	46	42.53	13.17	1.64	31.35	-	-	Peak
335	29.72	-16.28	46	44.62	14.54	1.87	31.31	-	-	Peak
466.6	26.54	-19.46	46	37.6	17.67	2.34	31.07	-	-	Peak
870.5	28.26	-17.74	46	32.4	23.28	3.3	30.72	-	-	Peak
2382.58	41.75	-12.25	54	37.41	32.16	6.03	33.85	100	255	Average
2382.58	53.06	-20.94	74	48.72	32.16	6.03	33.85	100	255	Peak
2412	106.89	-	-	102.49	32.2	6.07	33.87	100	255	Average
2412	110.76	-	-	106.36	32.2	6.07	33.87	100	255	Peak
2494	49.66	-24.34	74	45.08	32.3	6.18	33.9	100	255	Peak
2494	39.77	-14.23	54	35.19	32.3	6.18	33.9	100	255	Average
2534	59.11	-31.65	90.76	54.51	32.34	6.23	33.97	100	0	Peak



Test Mode :	Mode 1	Temperature :	22~24°C
Test Channel :	01	Relative Humidity :	47~49%
Test Engineer :	David Yang	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
32.97	23.64	-16.36	40	38.75	15.8	0.56	31.47	-	-	Peak
86.97	25.67	-14.33	40	48.04	8.24	0.92	31.53	-	-	Peak
183.09	32.58	-10.92	43.5	53.79	9.05	1.26	31.52	121	274	Peak
338.5	28.68	-17.32	46	43.44	14.66	1.88	31.3	-	-	Peak
480.6	24.62	-21.38	46	35.39	17.91	2.38	31.06	-	-	Peak
799.8	29.04	-16.96	46	34.11	22.47	3.14	30.68	-	-	Peak
2382.77	49.54	-24.46	74	45.2	32.16	6.03	33.85	100	269	Peak
2382.77	37.61	-16.39	54	33.27	32.16	6.03	33.85	100	269	Average
2412	103.1	-	-	98.7	32.2	6.07	33.87	100	269	Peak
2412	99.27	-	-	94.87	32.2	6.07	33.87	100	269	Average
2492	34.49	-19.51	54	29.91	32.3	6.18	33.9	100	269	Average
2492	53.44	-20.56	74	48.86	32.3	6.18	33.9	100	269	Peak
9648	47.98	-35.12	83.1	59	36.65	11.99	59.66	100	0	Peak



Test Mode :	Mode 2	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	47~49%
Test Engineer :	David Yang	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
30.81	19.05	-20.95	40	33.7	16.27	0.54	31.46	-	-	Peak
183.09	30.8	-12.7	43.5	52.01	9.05	1.26	31.52	146	237	Peak
278.13	26.53	-19.47	46	43.12	13.12	1.64	31.35	-	-	Peak
338.5	30.08	-15.92	46	44.84	14.66	1.88	31.3	-	-	Peak
505.8	25.91	-20.09	46	36.19	18.32	2.46	31.06	-	-	Peak
800.5	28.53	-17.47	46	33.6	22.47	3.14	30.68	-	-	Peak
2388	48.87	-25.13	74	44.51	32.18	6.03	33.85	194	242	Peak
2388	37.66	-16.34	54	33.3	32.18	6.03	33.85	194	242	Average
2437	109.38	-	-	104.91	32.24	6.11	33.88	194	242	Peak
2437	105.56	-	-	101.09	32.24	6.11	33.88	194	242	Average
2484	49.96	-24.04	74	45.4	32.28	6.18	33.9	194	242	Peak
2484	38.86	-15.14	54	34.3	32.28	6.18	33.9	194	242	Average



Test Mode :	Mode 2	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	47~49%
Test Engineer :	David Yang	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
86.7	26.17	-13.83	40	48.69	8.1	0.92	31.54	-	-	Peak
154.74	27.65	-15.85	43.5	47.23	10.74	1.22	31.54	-	-	Peak
182.01	34.37	-9.13	43.5	55.59	9.05	1.26	31.53	123	174	Peak
338.5	29.1	-16.9	46	43.86	14.66	1.88	31.3	-	-	Peak
492.5	22.97	-23.03	46	33.52	18.1	2.42	31.07	-	-	Peak
799.8	29.41	-16.59	46	34.48	22.47	3.14	30.68	-	-	Peak
2388	47.41	-26.59	74	43.05	32.18	6.03	33.85	120	305	Peak
2388	35.42	-18.58	54	31.06	32.18	6.03	33.85	120	305	Average
2437	104.59	-	-	100.12	32.24	6.11	33.88	120	305	Peak
2437	100.8	-	-	96.33	32.24	6.11	33.88	120	305	Average
2486	47.46	-26.54	74	42.9	32.28	6.18	33.9	120	305	Peak
2486	36.01	-17.99	54	31.45	32.28	6.18	33.9	120	305	Average
2590	54.19	-30.4	84.59	49.53	32.42	6.28	34.04	100	0	Peak
7311	45.2	-28.8	74	57.82	35.45	10.06	58.13	100	0	Peak
9748	47.28	-37.31	84.59	58.2	36.79	11.94	59.65	100	0	Peak



Test Mode :	Mode 3	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	47~49%
Test Engineer :	David Yang	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
32.97	19.09	-20.91	40	34.2	15.8	0.56	31.47	-	-	Peak
182.82	31.45	-12.05	43.5	52.66	9.05	1.26	31.52	163	177	Peak
278.13	26.69	-19.31	46	43.28	13.12	1.64	31.35	-	-	Peak
338.5	30.47	-15.53	46	45.23	14.66	1.88	31.3	-	-	Peak
467.3	27.29	-18.71	46	38.34	17.68	2.34	31.07	-	-	Peak
867	28.75	-17.25	46	32.93	23.25	3.29	30.72	-	-	Peak
2388	48.83	-25.17	74	44.47	32.18	6.03	33.85	128	234	Peak
2388	37.23	-16.77	54	32.87	32.18	6.03	33.85	128	234	Average
2462	106.82	-	-	102.31	32.26	6.14	33.89	128	234	Average
2462	110.7	-	-	106.19	32.26	6.14	33.89	128	234	Peak
2488.41	54.28	-19.72	74	49.7	32.3	6.18	33.9	128	234	Peak
2488.41	42.54	-11.46	54	37.96	32.3	6.18	33.9	128	234	Average
2588	57.62	-33.08	90.7	52.98	32.4	6.28	34.04	100	0	Peak



Test Mode :	Mode 3	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	47~49%
Test Engineer :	David Yang	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
86.7	26.13	-13.87	40	48.65	8.1	0.92	31.54	-	-	Peak
154.74	28.12	-15.38	43.5	47.7	10.74	1.22	31.54	-	-	Peak
182.82	34.65	-8.85	43.5	55.86	9.05	1.26	31.52	112	45	Peak
341.3	30.09	-15.91	46	44.74	14.75	1.9	31.3	-	-	Peak
486.2	23.95	-22.05	46	34.62	17.99	2.4	31.06	-	-	Peak
799.8	29.86	-16.14	46	34.93	22.47	3.14	30.68	-	-	Peak
2382	46.26	-27.74	74	41.92	32.16	6.03	33.85	148	299	Peak
2382	34.81	-19.19	54	30.47	32.16	6.03	33.85	148	299	Average
2462	100.79	-	-	96.28	32.26	6.14	33.89	148	299	Average
2462	104.57	-	-	100.06	32.26	6.14	33.89	148	299	Peak
2485.18	51.21	-22.79	74	46.65	32.28	6.18	33.9	148	299	Peak
2485.18	37.76	-16.24	54	33.2	32.28	6.18	33.9	148	299	Average
9848	46.78	-37.79	84.57	57.58	36.95	11.88	59.63	100	0	Peak



Test Mode :	Mode 4	Temperature :	22~24°C
Test Channel :	01	Relative Humidity :	47~49%
Test Engineer :	David Yang	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
131.25	26.04	-17.46	43.5	44.88	11.58	1.15	31.57	-	-	Peak
182.82	32.6	-10.9	43.5	53.81	9.05	1.26	31.52	131	100	Peak
277.86	27.07	-18.93	46	43.67	13.12	1.64	31.36	-	-	Peak
338.5	30.27	-15.73	46	45.03	14.66	1.88	31.3	-	-	Peak
467.3	24.91	-21.09	46	35.96	17.68	2.34	31.07	-	-	Peak
757.8	23.62	-22.38	46	29.45	21.8	3.07	30.7	-	-	Peak
2390	67.37	-6.63	74	63.01	32.18	6.03	33.85	100	255	Peak
2390	47.36	-6.64	54	43	32.18	6.03	33.85	100	255	Average
2412	112	-	-	107.6	32.2	6.07	33.87	100	255	Peak
2412	100.23	-	-	95.83	32.2	6.07	33.87	100	255	Average
2492	61.1	-12.9	74	56.52	32.3	6.18	33.9	100	255	Peak
2492	39.69	-14.31	54	35.11	32.3	6.18	33.9	100	255	Average
2534	59.3	-32.7	92	54.7	32.34	6.23	33.97	100	255	Peak
2566	61.05	-30.95	92	56.42	32.38	6.26	34.01	100	255	Peak



Test Mode :	Mode 4	Temperature :	22~24°C
Test Channel :	01	Relative Humidity :	47~49%
Test Engineer :	David Yang	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
86.97	26.38	-13.62	40	48.75	8.24	0.92	31.53	-	-	Peak
182.01	35.21	-8.29	43.5	56.43	9.05	1.26	31.53	105	312	Peak
213.33	24.26	-19.24	43.5	44.29	10.06	1.38	31.47	-	-	Peak
341.3	29.14	-16.86	46	43.79	14.75	1.9	31.3	-	-	Peak
494.6	23.69	-22.31	46	34.2	18.13	2.43	31.07	-	-	Peak
696.9	24.39	-21.61	46	31.42	20.86	2.93	30.82	-	-	Peak
2390	62.6	-11.4	74	58.24	32.18	6.03	33.85	100	269	Peak
2390	42.24	-11.76	54	37.88	32.18	6.03	33.85	100	269	Average
2412	103.95	-	-	99.55	32.2	6.07	33.87	100	269	Peak
2412	92.83	-	-	88.43	32.2	6.07	33.87	100	269	Average
2486	34.09	-19.91	54	29.53	32.28	6.18	33.9	100	269	Average
2486	51.19	-22.81	74	46.63	32.28	6.18	33.9	100	269	Peak



Test Mode :	Mode 5	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	47~49%
Test Engineer :	David Yang	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
31.62	18.83	-21.17	40	33.7	16.04	0.55	31.46	-	-	Peak
182.01	32.71	-10.79	43.5	53.93	9.05	1.26	31.53	144	245	Peak
281.1	27.29	-18.71	46	43.83	13.17	1.64	31.35	-	-	Peak
341.3	30.14	-15.86	46	44.79	14.75	1.9	31.3	-	-	Peak
458.9	25.75	-20.25	46	36.97	17.54	2.32	31.08	-	-	Peak
799.8	28.71	-17.29	46	33.78	22.47	3.14	30.68	-	-	Peak
2390	41.81	-12.19	54	37.45	32.18	6.03	33.85	100	253	Average
2390	55.16	-18.84	74	50.8	32.18	6.03	33.85	100	253	Peak
2437	112.55	-	-	108.08	32.24	6.11	33.88	100	253	Peak
2437	101.15	-	-	96.68	32.24	6.11	33.88	100	253	Average
2484	55.76	-18.24	74	51.2	32.28	6.18	33.9	100	253	Peak
2484	42.38	-11.62	54	37.82	32.28	6.18	33.9	100	253	Average
2516	59.5	-33.05	92.55	54.91	32.32	6.21	33.94	100	0	Peak
2558	57.13	-35.42	92.55	52.5	32.38	6.26	34.01	100	0	Peak
2604	58.61	-33.94	92.55	53.96	32.42	6.31	34.08	100	0	Peak



Test Mode :	Mode 5	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	47~49%
Test Engineer :	David Yang	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
86.7	26.12	-13.88	40	48.64	8.1	0.92	31.54	-	-	Peak
156.9	28.99	-14.51	43.5	48.7	10.6	1.22	31.53	-	-	Peak
182.01	35.21	-8.29	43.5	56.43	9.05	1.26	31.53	114	108	Peak
344.1	28.85	-17.15	46	43.38	14.84	1.92	31.29	-	-	Peak
491.8	23.31	-22.69	46	33.87	18.09	2.42	31.07	-	-	Peak
778.1	25.12	-20.88	46	30.59	22.12	3.1	30.69	-	-	Peak
2390	48.65	-25.35	74	44.29	32.18	6.03	33.85	152	278	Peak
2390	36.4	-17.6	54	32.04	32.18	6.03	33.85	152	278	Average
2437	108.17	-	-	103.7	32.24	6.11	33.88	152	278	Peak
2437	96.81	-	-	92.34	32.24	6.11	33.88	152	278	Average
2492	36.13	-17.87	54	31.55	32.3	6.18	33.9	152	278	Average
2492	48.62	-25.38	74	44.04	32.3	6.18	33.9	152	278	Peak
2518	55.3	-18.7	74	50.71	32.32	6.21	33.94	152	278	Peak
7311	45.77	-28.23	74	58.39	35.45	10.06	58.13	100	0	Peak
9748	46.18	-41.99	88.17	57.1	36.79	11.94	59.65	100	0	Peak



Test Mode :	Mode 6	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	47~49%
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	2462 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.54	18.87	-21.13	40	33.52	16.27	0.54	31.46	-	-	Peak
182.01	31.78	-11.72	43.5	53	9.05	1.26	31.53	124	100	Peak
280.29	27.4	-18.6	46	43.96	13.15	1.64	31.35	-	-	Peak
338.5	30.28	-15.72	46	45.04	14.66	1.88	31.3	-	-	Peak
458.9	27.62	-18.38	46	38.84	17.54	2.32	31.08	-	-	Peak
799.8	27.47	-18.53	46	32.54	22.47	3.14	30.68	-	-	Peak
2382	51.72	-22.28	74	47.38	32.16	6.03	33.85	100	223	Peak
2382	39.76	-14.24	54	35.42	32.16	6.03	33.85	100	223	Average
2462	100.46	-	-	95.95	32.26	6.14	33.89	100	223	Average
2462	111.25	-	-	106.74	32.26	6.14	33.89	100	223	Peak
2483.66	67.6	-6.4	74	63.04	32.28	6.18	33.9	100	223	Peak
2483.66	47.9	-6.1	54	43.34	32.28	6.18	33.9	100	223	Average



Test Mode :	Mode 6	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	47~49%
Test Engineer :	David Yang	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
86.7	26.72	-13.28	40	49.24	8.1	0.92	31.54	-	-	Peak
182.01	35.06	-8.44	43.5	56.28	9.05	1.26	31.53	106	31	Peak
272.46	24.12	-21.88	46	40.81	13.03	1.64	31.36	-	-	Peak
335.7	29.39	-16.61	46	44.25	14.57	1.87	31.3	-	-	Peak
458.9	23.6	-22.4	46	34.82	17.54	2.32	31.08	-	-	Peak
799.8	30.6	-15.4	46	35.67	22.47	3.14	30.68	-	-	Peak
2382	46.2	-27.8	74	41.86	32.16	6.03	33.85	143	305	Peak
2382	33.96	-20.04	54	29.62	32.16	6.03	33.85	143	305	Average
2462	94.8	-	-	90.29	32.26	6.14	33.89	143	305	Average
2462	106.66	-	-	102.15	32.26	6.14	33.89	143	305	Peak
2483.85	43	-11	54	38.44	32.28	6.18	33.9	143	305	Average
2483.85	62.2	-11.8	74	57.64	32.28	6.18	33.9	143	305	Peak
2542	54.39	-32.27	86.66	49.77	32.36	6.23	33.97	143	305	Peak
2582	54.77	-31.89	86.66	50.13	32.4	6.28	34.04	143	305	Peak
2620	55.58	-31.08	86.66	50.92	32.44	6.33	34.11	143	305	Peak



Test Mode :	Mode 7	Temperature :	22~24°C
Test Channel :	01	Relative Humidity :	47~49%
Test Engineer :	David Yang	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
2389.99	70.15	-3.85	74	65.79	32.18	6.03	33.85	100	253	Peak
2389.99	49.46	-4.54	54	45.1	32.18	6.03	33.85	100	253	Average
2412	111.29	-	-	106.89	32.2	6.07	33.87	100	253	Peak
2412	99.55	-	-	95.15	32.2	6.07	33.87	100	253	Average
2492	58.3	-15.7	74	53.72	32.3	6.18	33.9	100	253	Peak
2492	37.86	-16.14	54	33.28	32.3	6.18	33.9	100	253	Average
2534	58.56	-32.73	91.29	53.96	32.34	6.23	33.97	100	0	Peak
2572	60.86	-30.43	91.29	56.24	32.38	6.28	34.04	100	0	Peak



Test Mode :	Mode 7	Temperature :	22~24°C
Test Channel :	01	Relative Humidity :	47~49%
Test Engineer :	David Yang	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
2389.99	66.17	-7.83	74	61.81	32.18	6.03	33.85	191	279	Peak
2389.99	44.5	-9.5	54	40.14	32.18	6.03	33.85	191	279	Average
2412	93.28	-	-	88.88	32.2	6.07	33.87	191	279	Average
2412	105.04	-	-	100.64	32.2	6.07	33.87	191	279	Peak
2494	34.44	-19.56	54	29.86	32.3	6.18	33.9	191	279	Average
2494	52.91	-21.09	74	48.33	32.3	6.18	33.9	191	279	Peak
2540	49.85	-35.19	85.04	45.23	32.36	6.23	33.97	100	0	Peak



Test Mode :	Mode 8	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	47~49%
Test Engineer :	David Yang	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
2388	55.18	-18.82	74	50.82	32.18	6.03	33.85	125	248	Peak
2388	39.73	-14.27	54	35.37	32.18	6.03	33.85	125	248	Average
2437	100.1	-	-	95.63	32.24	6.11	33.88	125	248	Average
2437	111.75	-	-	107.3	32.22	6.11	33.88	125	248	Peak
2486	42.45	-11.55	54	37.89	32.28	6.18	33.9	125	248	Average
2486	55.31	-18.69	74	50.75	32.28	6.18	33.9	125	248	Peak
2516	62.32	-29.43	91.75	57.73	32.32	6.21	33.94	100	0	Peak
2558	61.02	-30.73	91.75	56.39	32.38	6.26	34.01	100	0	Peak
2596	61.45	-30.3	91.75	56.79	32.42	6.28	34.04	100	0	Peak



Test Mode :	Mode 8	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	47~49%
Test Engineer :	David Yang	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
2390	50.02	-23.98	74	45.66	32.18	6.03	33.85	180	302	Peak
2390	37.29	-16.71	54	32.93	32.18	6.03	33.85	180	302	Average
2437	96.1	-	-	91.63	32.24	6.11	33.88	180	302	Average
2437	107.69	-	-	103.22	32.24	6.11	33.88	180	302	Peak
2484	37.46	-16.54	54	32.9	32.28	6.18	33.9	180	302	Average
2484	51.82	-22.18	74	47.26	32.28	6.18	33.9	180	302	Peak
2516	56.23	-31.46	87.69	51.64	32.32	6.21	33.94	100	0	Peak
2550	54.29	-33.4	87.69	49.68	32.36	6.26	34.01	100	0	Peak
2596	53.56	-34.13	87.69	48.9	32.42	6.28	34.04	100	0	Peak



Test Mode :	Mode 9	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	47~49%
Test Engineer :	David Yang	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
2382	36.1	-17.9	54	31.76	32.16	6.03	33.85	156	237	Average
2382	48.6	-25.4	74	44.26	32.16	6.03	33.85	156	237	Peak
2462	99.94	-	-	95.43	32.26	6.14	33.89	156	237	Average
2462	111.74	-	-	107.23	32.26	6.14	33.89	156	237	Peak
2483.66	50.69	-3.31	54	46.13	32.28	6.18	33.9	156	237	Average
2483.66	70.54	-3.46	74	65.98	32.28	6.18	33.9	156	237	Peak
2542	58.43	-33.31	91.74	53.81	32.36	6.23	33.97	100	0	Peak
2588	56.82	-34.92	91.74	52.18	32.4	6.28	34.04	100	0	Peak
2620	58.7	-33.04	91.74	54.04	32.44	6.33	34.11	100	0	Peak



Test Mode :	Mode 9	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	47~49%
Test Engineer :	David Yang	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
2382	46.35	-27.65	74	42.01	32.16	6.03	33.85	177	306	Peak
2382	34.94	-19.06	54	30.6	32.16	6.03	33.85	177	306	Average
2462	106.37	-	-	101.86	32.26	6.14	33.89	177	306	Peak
2462	95.15	-	-	90.64	32.26	6.14	33.89	177	306	Average
2484.42	43.99	-10.01	54	39.43	32.28	6.18	33.9	177	306	Average
2484.42	62.05	-11.95	74	57.49	32.28	6.18	33.9	177	306	Peak
2540	54.31	-32.06	86.37	49.69	32.36	6.23	33.97	100	0	Peak
2582	51.58	-34.79	86.37	46.94	32.4	6.28	34.04	100	0	Peak
2620	51.52	-34.85	86.37	46.86	32.44	6.33	34.11	100	0	Peak



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 PIFA 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	FSP30	101329	9kHz~30GHz	May. 03, 2011	May. 02, 2012	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	0932001	N/A	Sep. 13, 2010	Sep. 12, 2011	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	0846202	N/A	Sep. 14, 2010	Sep. 13, 2011	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D35P	TBN-930701	N/A	Jul. 30, 2010	Jul. 29, 2011	Conducted (TH02-HY)
EMI Test Receive	R&S	ESCS 30	100356	9KHz – 2.75GHz	Aug. 16, 2010	Aug. 15, 2011	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz – 30MHz	Dec. 03, 2010	Dec. 02, 2011	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz – 30MHz	Dec. 01, 2010	Nov. 30, 2011	Conduction (CO05-HY)
AC Power Source	APC	APC-1000 W	N/A	N/A	N/A	N/A	Conduction (CO05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 31, 2010	Oct. 30, 2011	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP	101067	9KHz ~ 30GHz	Dec. 03, 2010	Dec. 02, 2011	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 19, 2010	Aug. 18, 2011	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 18, 2010	Oct. 17, 2011	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Dec. 06, 2010	Dec. 05, 2011	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz.32 dB.GAIN	Mar. 29, 2011	Mar. 28, 2012	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz~30 MHz	Jul. 29, 2010	Jul. 28, 2011	Radiation (03CH07-HY)

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				