FCC RF Test Report

APPLICANT	:	Honeywell International Inc.
EQUIPMENT	:	99EX Mobile computer
BRAND NAME	:	Honeywell
MODEL NAME	:	99EX
FCC ID	:	HD599EXLG
STANDARD	:	FCC Part 15 Subpart C §15.247
CLASSIFICATION	:	Digital Transmission System (DTS)

The product was received on Dec. 06, 2010 and completely tested on Dec. 31, 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 INC., the test report shall not be reproduced except in full.

Reviewed by:

Anderson Chiu

Anderson Chiu / Deputy Manager

Testing Laboratory
1190

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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APPENDIX A. PHOTOGRAPHS OF EUT

APPENDIX B. SETUP PHOTOGRAPHS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR0D0904B	Rev. 01	Initial issue of report	Jan. 31, 2011
FR0D0904B	Rev. 02	Update report for revising address of applicant and manufacturer	Feb. 18, 2011

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	A8.2(a)	6dB Bandwidth	≥ 0.5MHz	Pass	-
3.1	-	Gen 4.4.1	99% Bandwidth	-	Pass	-
3.2	15.247(b)	A8.4	Power Output Measurement	≤ 30dBm	Pass	-
3.3	15.247(d)	A8.5	Frequency Band Edges	≤ 20dBc	Pass	-
3.4	15.247(d)	A8.5	Spurious Emission	< 20 dBc	Pass	-
3.5	15.247(e)	A8.2(b)	Power Spectral Density	≤ 8dBm	Pass	-
3.6	15.207	Gen 7.2.2	AC Conducted Emission	15.207(a)	Pass	Under limit 17.7 dB at 0.342 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 7.11 dB at 30.54 MHz
3.8	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Honeywell International Inc.
9680 Old Bailes Road, Fort Mill, SC 29707 USA

1.2 Manufacturer

Honeywell International Inc.
9680 Old Bailes Road, Fort Mill, SC 29707 USA

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	99EX Mobile computer
Brand Name	Honeywell
Model Name	99EX
FCC ID	HD599EXLG
Tx/Rx Frequency Range	802.11b/g/n : 2400 MHz ~ 2483.5 MHz 802.11a/n : 5725 MHz ~ 5850 MHz
Channel Spacing	802.11b/g : 5 MHz 802.11a : 20 MHz
Maximum Output Power to Antenna	**<2400 MHz ~ 2483.5 MHz>** 802.11b : 19.67 dBm (0.093 W) 802.11g : 24.06 dBm (0.255 W) 802.11n (BW 20MHz) : 24.10 dBm (0.257 W) **<5725 MHz ~ 5850 MHz>** 802.11a : 22.69 dBm (0.186 W) 802.11n (BW 20MHz) : 22.65 dBm (0.184 W)
Antenna Type	802.11b/g/n : PIFA Antenna with gain 2.5 dBi 802.11a/n : PIFA Antenna with gain 3.5 dBi
HW Version	5
SW Version	26.02
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Production Unit

Remark:

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

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1st 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	03CH07HY	722060/4086B-1

1.5 Applied Standards

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

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

Remark:

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

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	GPS Station	T&E	GS-50	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
4.	Bluetooth Earphone	Nokia	BH-102	PYAHS-107W	N/A	N/A
5.	Notebook	DELL	Vostro 1510	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
6.	LCD Monitor	Lenovo	6135-AB1	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
7.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
8.	Cradle	Honeywell	99EX-HB	N/A	N/A	N/A
9.	Adapter	ENG	3A-902DB12	N/A	N/A	N/A
10.	USB Cable	N/A	N/A	N/A	N/A	N/A

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	802.11b RF Power (dBm)			
		1 Mbps	2 Mbps	5.5 Mbps	11 Mbps
CH 01	2412 MHz	19.55	-	-	-
CH 06	2437 MHz	**19.67**	19.65	19.41	19.41
CH 11	2462 MHz	19.61	-	-	-

Channel	Frequency	802.11g RF Power (dBm)							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 01	2412 MHz	21.65	-	-	-	-	-	-	-
CH 06	2437 MHz	**24.06**	24.04	24.01	23.99	23.54	23.54	22.62	22.75
CH 11	2462 MHz	22.52	-	-	-	-	-	-	-

Channel	Frequency	802.11n (BW 20MHz) RF Power (dBm)							
		6.5 Mbps	13 Mbps	19.5 Mbps	26 Mbps	39 Mbps	52 Mbps	58.5 Mbps	65 Mbps
CH 01	2412 MHz	21.18	-	-	-	-	-	-	-
CH 06	2437 MHz	**24.10**	23.92	23.94	23.52	23.20	23.38	22.77	21.59
CH 11	2462 MHz	21.59	-	-	-	-	-	-	-

Channel	Frequency	802.11a RF Power (dBm)							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH149	5745 MHz	**22.69**	22.62	22.48	22.30	22.10	21.98	21.51	21.68
CH157	5785 MHz	22.50	22.41	22.24	22.21	22.37	22.14	21.55	21.78
CH165	5825 MHz	22.39	22.31	22.23	22.08	22.10	22.03	21.54	21.24

Channel	Frequency	802.11n (BW 20MHz) RF Power (dBm)							
		6.5 Mbps	13 Mbps	19.5 Mbps	26 Mbps	39 Mbps	52 Mbps	58.5 Mbps	65 Mbps
CH149	5745 MHz	**22.65**	22.60	22.33	22.17	22.04	22.00	21.39	20.70
CH157	5785 MHz	22.50	22.30	22.37	22.06	22.07	22.07	21.35	21.18
CH165	5825 MHz	22.32	22.14	22.00	21.72	22.09	21.93	21.47	21.17

Remark: 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).

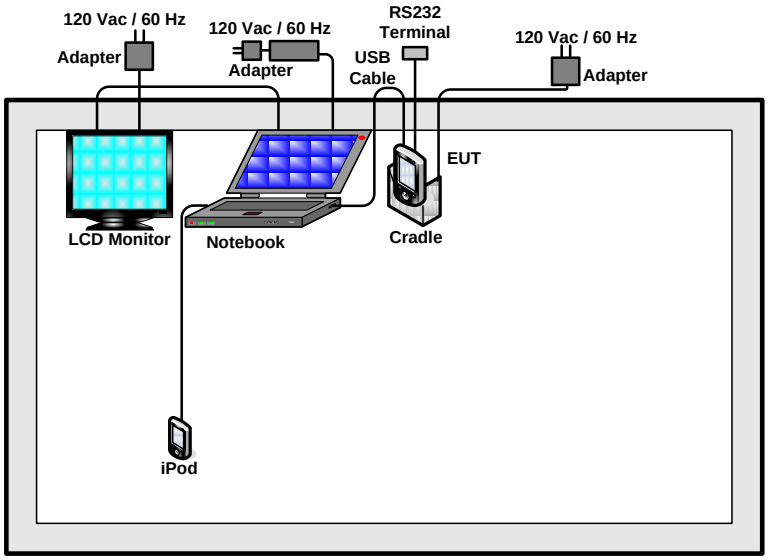
Pre-scanned tests were conducted to determine the final configuration from all possible combinations.

The following table is showing the total pre-scanned test modes, and the worst modes are recorded in this report only.

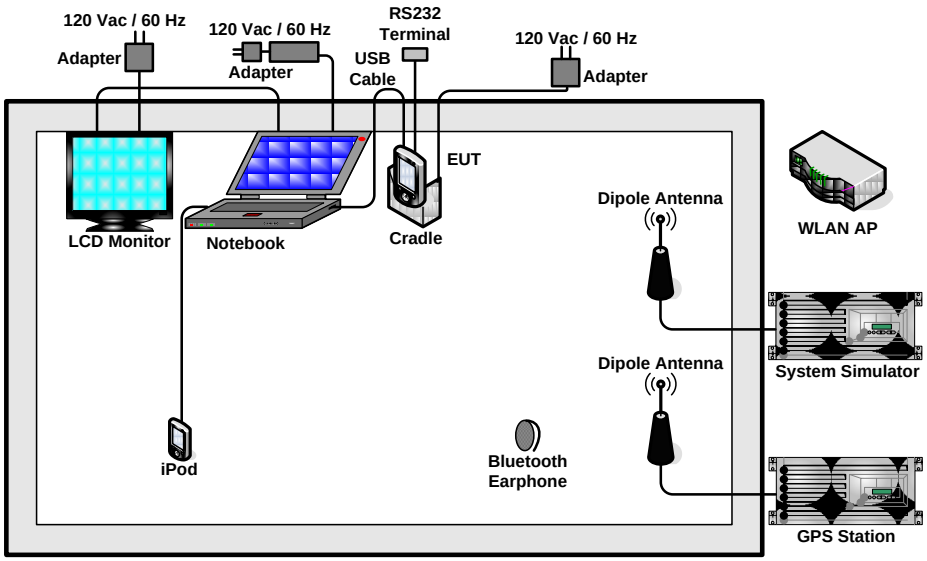
Test Cases		
Test Item	**802.11b (Modulation : DSSS)** **802.11g/n (Modulation : OFDM)**	**802.11a/n (Modulation : OFDM)**
Conducted TCs	Mode 1: 802.11b_CH01_2412 MHz Mode 2: 802.11b_CH06_2437 MHz Mode 3: 802.11b_CH11_2462 MHz Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz Mode 7: 802.11n_CH01_2412 MHz (BW 20M) Mode 8: 802.11n_CH06_2437 MHz (BW 20M) Mode 9: 802.11n_CH11_2462 MHz (BW 20M)	Mode 10: 802.11a_CH149_5745 MHz Mode 11: 802.11a_CH157_5785 MHz Mode 12: 802.11a_CH165_5825 MHz Mode 13: 802.11n_CH149_5745 MHz (BW 20M) Mode 14: 802.11n_CH157_5785 MHz (BW 20M) Mode 15: 802.11n_CH165_5825 MHz (BW 20M)
Radiated TCs	Mode 1: 802.11b_CH01_2412 MHz + TC Mode 2: 802.11b_CH06_2437 MHz + TC Mode 3: 802.11b_CH11_2462 MHz + TC Mode 4: 802.11g_CH01_2412 MHz + TC Mode 5: 802.11g_CH06_2437 MHz + TC Mode 6: 802.11g_CH11_2462 MHz + TC Mode 7: 802.11n_CH01_2412 MHz (BW 20M) + TC Mode 8: 802.11n_CH06_2437 MHz (BW 20M) + TC Mode 9: 802.11n_CH11_2462 MHz (BW 20M) + TC	Mode 10: 802.11a_CH149_5745 MHz + TC Mode 11: 802.11a_CH157_5785 MHz + TC Mode 12: 802.11a_CH165_5825 MHz + TC Mode 13: 802.11n_CH149_5745 MHz (BW 20M) + TC Mode 14: 802.11n_CH157_5785 MHz (BW 20M) + TC Mode 15: 802.11n_CH165_5825 MHz (BW 20M) + TC
AC Conducted Emission	Mode 1 : WCDMA Band II Idle + Bluetooth Link + WLAN (2.4G) Link + GPS Rx + Scanner + Cradle + Adapter + RS232 Terminal + USB Cable (Link with Notebook)	
Remark: TC stands for Test Configuration, and consists of USB cable, RS232 terminal, cradle, and adapter.		

2.3 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.4 RF Utility

The programmed RF utility “TI1273 WLAN FCC” is installed in EUT to provide channel selection, power level, data rate and the application type. RF utility can send transmitting signal for all testing. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

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

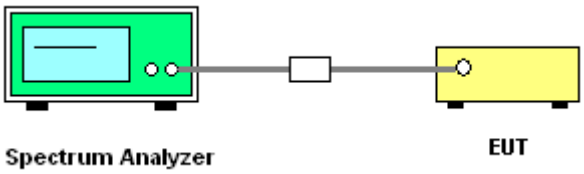
3.1.2 Measuring Instruments

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 1~3	**Temperature :**	22~24℃
Test Engineer :	Ken Hsu	**Relative Humidity :**	40~43%

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

Test Mode :	Mode 4~6	**Temperature :**	22~24℃
Test Engineer :	Ken Hsu	**Relative Humidity :**	40~43%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	15.64	0.5	Pass
06	2437	15.66	0.5	Pass
11	2462	15.66	0.5	Pass

Test Mode :	Mode 7~9	**Temperature :**	22~24℃
Test Engineer :	Ken Hsu	**Relative Humidity :**	40~43%

Channel	Frequency (MHz)	802.11n (BW 20MHz) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	15.80	0.5	Pass
06	2437	16.50	0.5	Pass
11	2462	15.32	0.5	Pass

Test Mode :	Mode 10~12	Temperature :	22~24℃
Test Engineer :	Ken Hsu	Relative Humidity :	40~43%

Channel	Frequency (MHz)	802.11a 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
149	5745	15.65	0.5	Pass
157	5785	15.50	0.5	Pass
165	5825	15.30	0.5	Pass

Test Mode :	Mode 13~15	Temperature :	22~24℃
Test Engineer :	Ken Hsu	Relative Humidity :	40~43%

Channel	Frequency (MHz)	802.11n (BW 20MH) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
149	5745	15.30	0.5	Pass
157	5785	15.60	0.5	Pass
165	5825	15.15	0.5	Pass

3.1.6 Test Result of 99% Occupied Bandwidth

Test Mode :	Mode 1~3	**Temperature :**	22~24℃
Test Engineer :	Ken Hsu	**Relative Humidity :**	40~43%

Channel	Frequency (MHz)	802.11b 99% Occupied Bandwidth (MHz)	Pass/Fail
01	2412	14.08	Pass
06	2437	14.12	Pass
11	2462	14.16	Pass

Test Mode :	Mode 4~6	**Temperature :**	22~24℃
Test Engineer :	Ken Hsu	**Relative Humidity :**	40~43%

Channel	Frequency (MHz)	802.11g 99% Occupied Bandwidth (MHz)	Pass/Fail
01	2412	18.72	Pass
06	2437	19.00	Pass
11	2462	18.68	Pass

Test Mode :	Mode 7~9	**Temperature :**	22~24℃
Test Engineer :	Ken Hsu	**Relative Humidity :**	40~43%

Channel	Frequency (MHz)	802.11n (BW 20MHz) 99% Occupied Bandwidth (MHz)	Pass/Fail
01	2412	19.76	Pass
06	2437	19.92	Pass
11	2462	19.68	Pass

Test Mode :	Mode 10~12	**Temperature :**	22~24℃
Test Engineer :	Ken Hsu	**Relative Humidity :**	40~43%

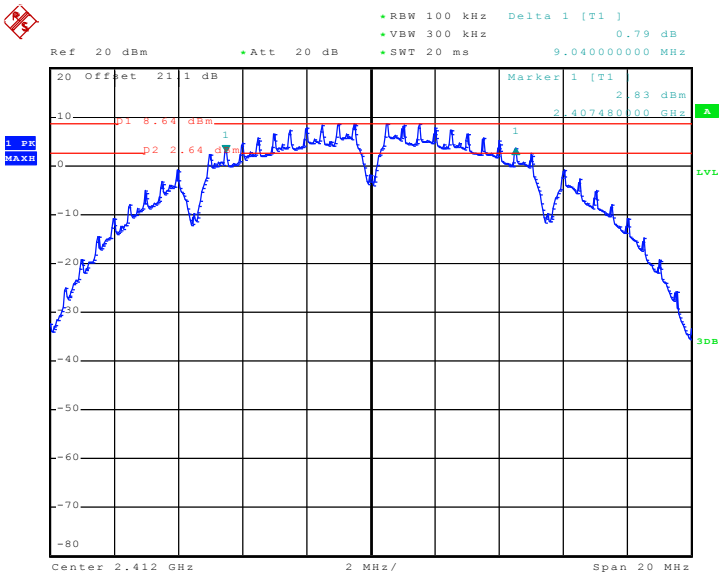
Channel	Frequency (MHz)	802.11a 99% Occupied Bandwidth (MHz)	Pass/Fail
149	5745	19.30	Pass
157	5785	19.25	Pass
165	5825	19.40	Pass

Test Mode :	Mode 13~15	**Temperature :**	22~24℃
Test Engineer :	Ken Hsu	**Relative Humidity :**	40~43%

Channel	Frequency (MHz)	802.11n (BW 20MHz) 99% Occupied Bandwidth (MHz)	Pass/Fail
149	5745	20.35	Pass
157	5785	20.35	Pass
165	5825	20.35	Pass

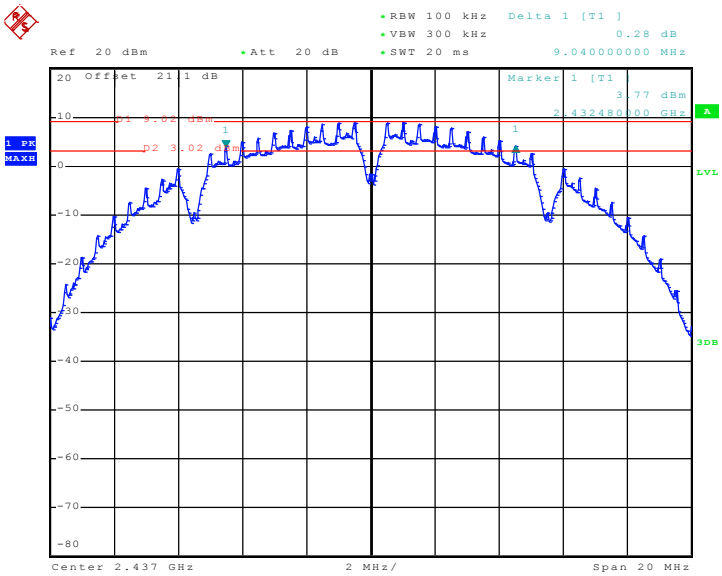
3.1.7 Test Result of 6dB Bandwidth Plots

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



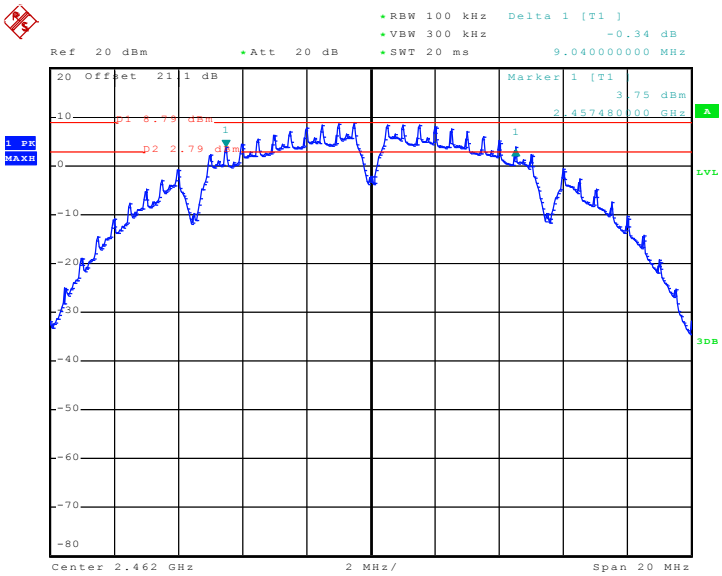
Date: 9.DEC.2010 11:11:03

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



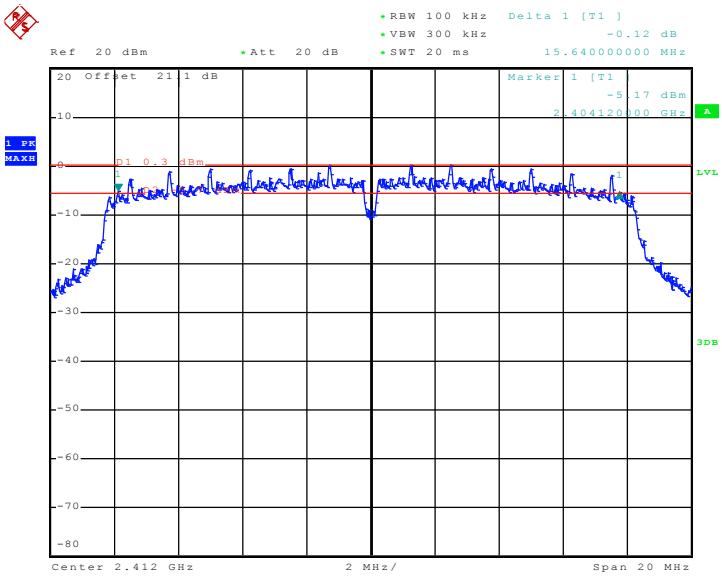
Date: 9.DEC.2010 11:26:06

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



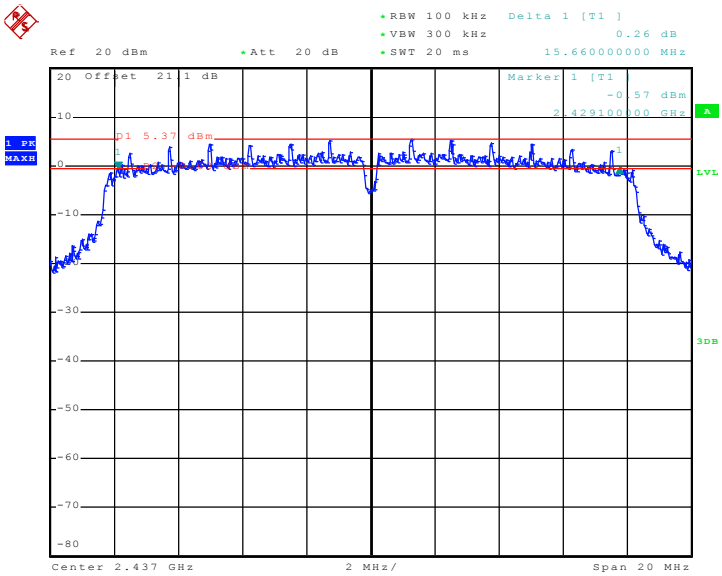
Date: 9.DEC.2010 11:37:38

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



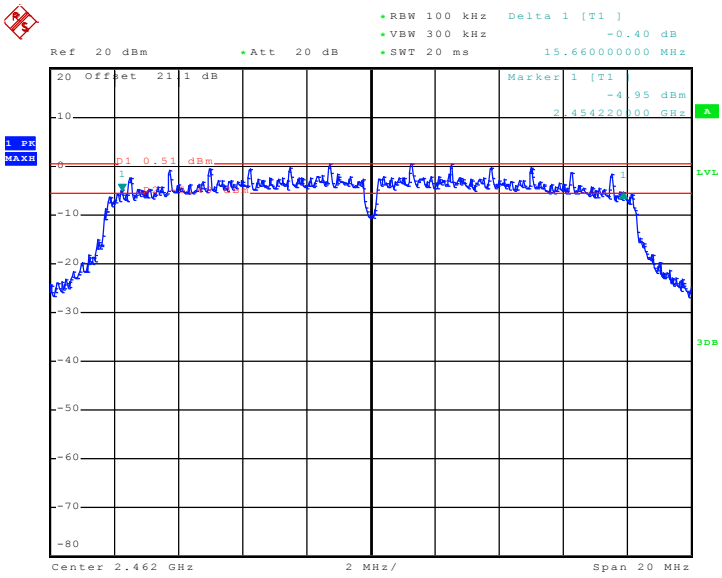
Date: 9.DEC.2010 11:59:48

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



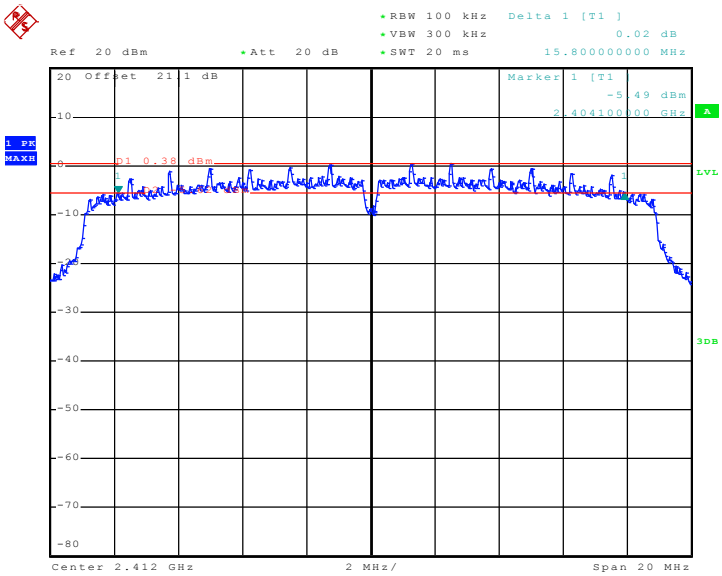
Date: 9.DEC.2010 12:34:46

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



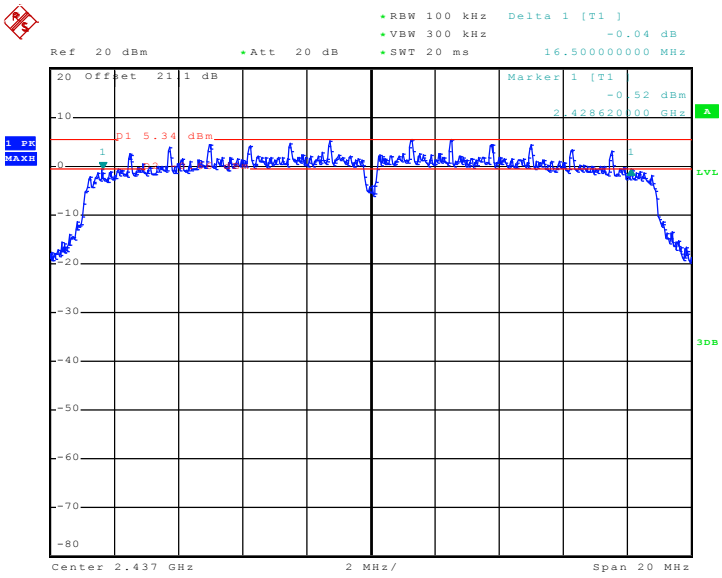
Date: 9.DEC.2010 14:30:36

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



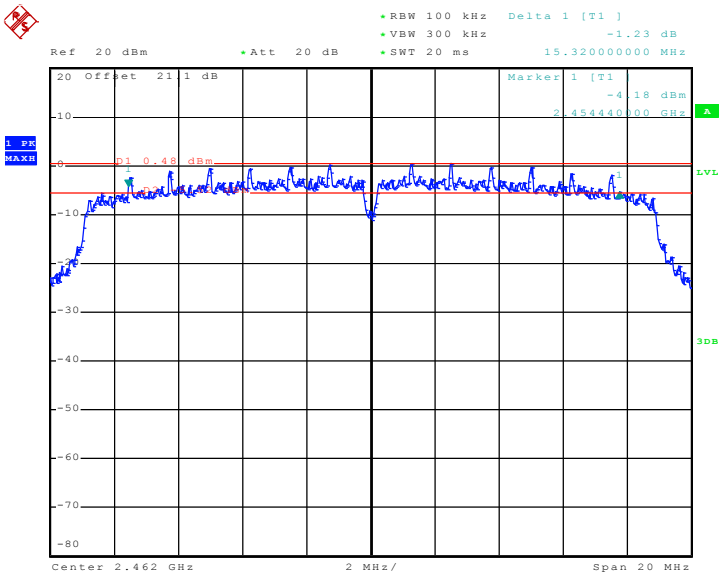
Date: 9.DEC.2010 13:45:56

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



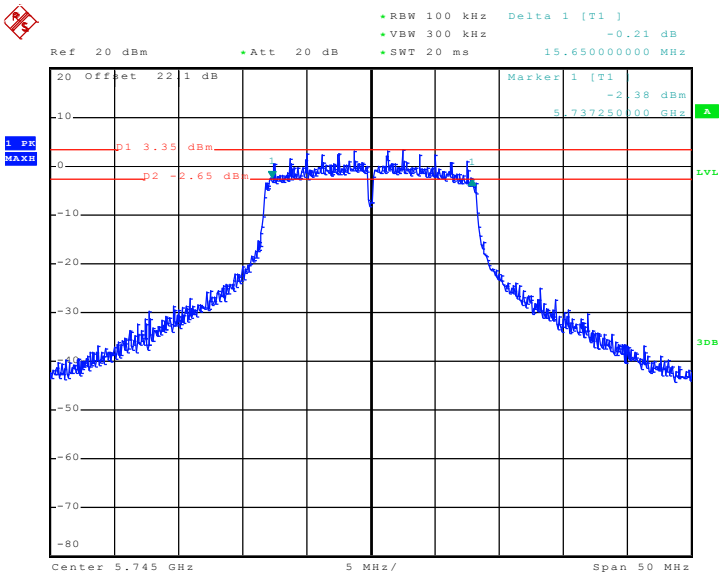
Date: 9.DEC.2010 14:03:13

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



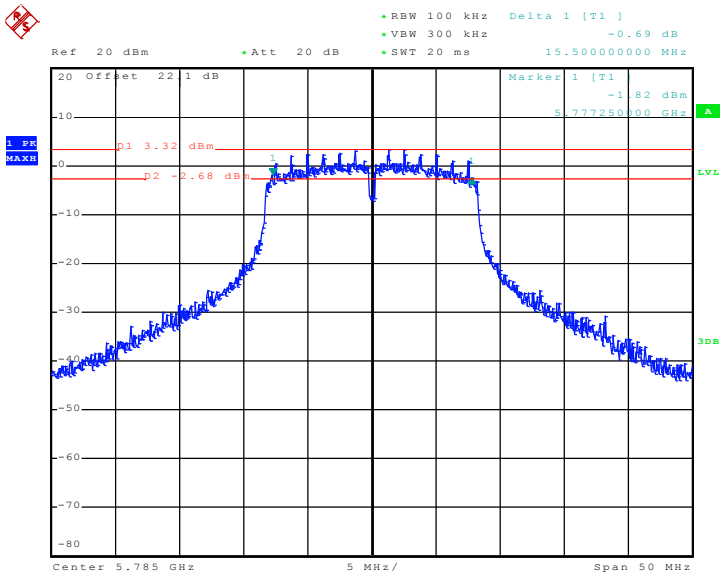
Date: 9.DEC.2010 14:10:52

Mode 10: 6 dB Bandwidth Plot on 802.11a Channel 149



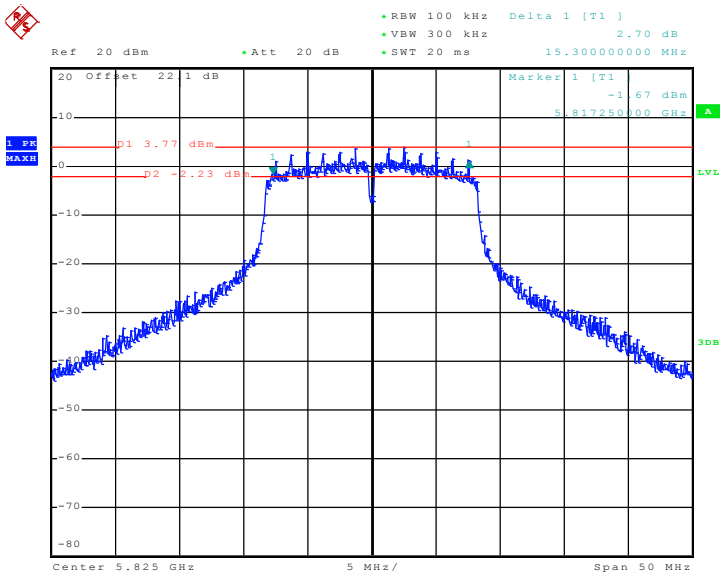
Date: 9.DEC.2010 14:51:29

Mode 11: 6 dB Bandwidth Plot on 802.11a Channel 157



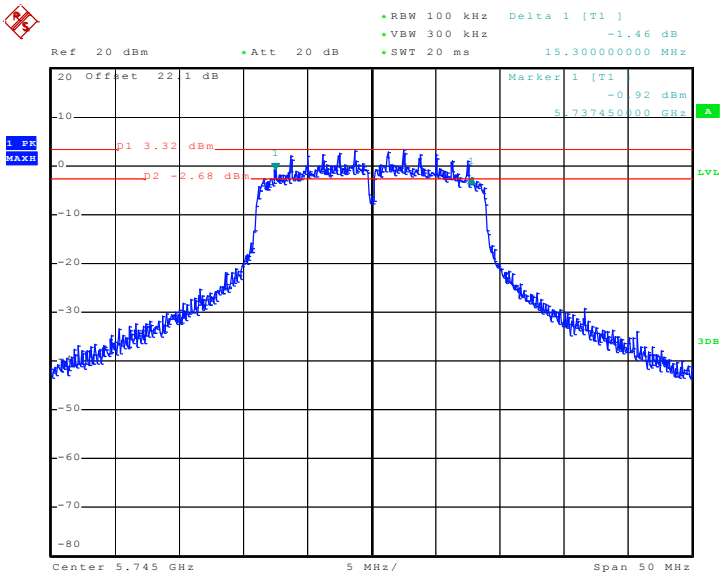
Date: 9.DEC.2010 15:13:36

Mode 12: 6 dB Bandwidth Plot on 802.11a Channel 165



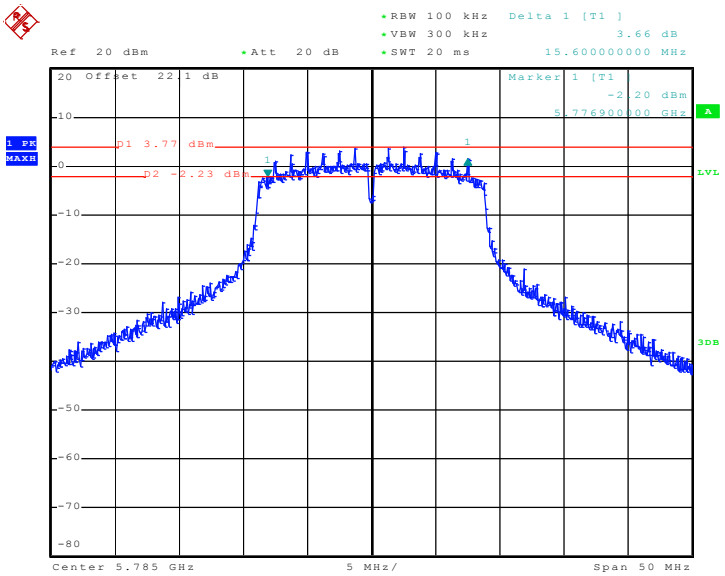
Date: 9.DEC.2010 15:26:14

Mode 13: 6 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 149



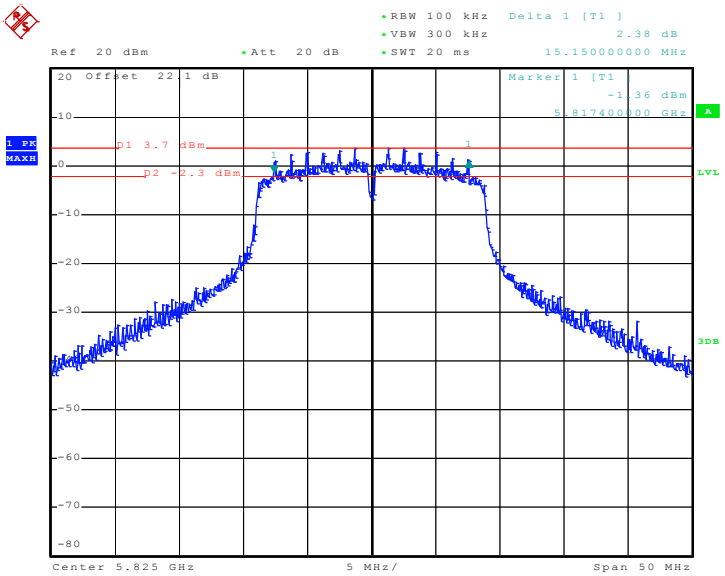
Date: 9.DEC.2010 15:39:46

Mode 14: 6 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 157



Date: 9.DEC.2010 15:43:23

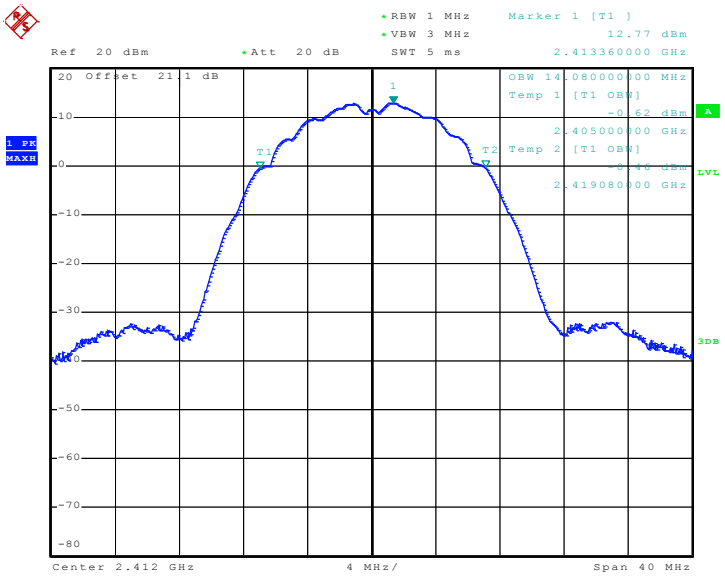
Mode 15: 6 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 165



Date: 9.DEC.2010 15:46:34

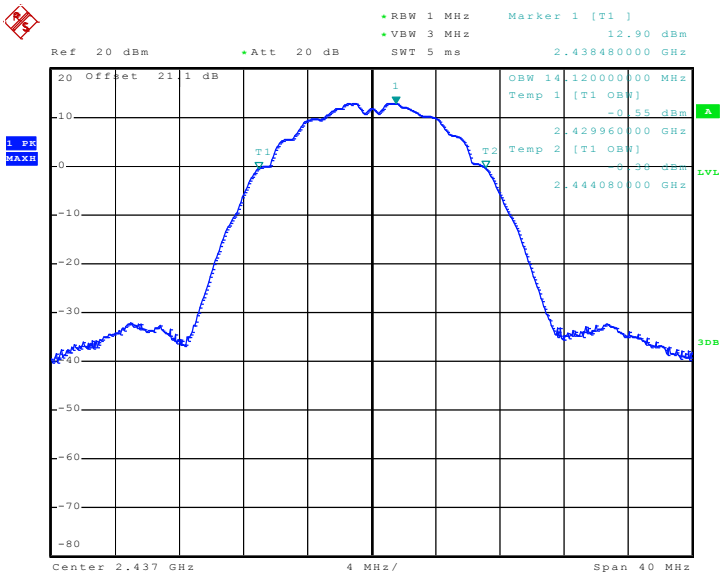
3.1.8 Test Result of 99% Bandwidth Plots

Mode 1 : 99% Occupied Bandwidth Plot on 802.11b Channel 01



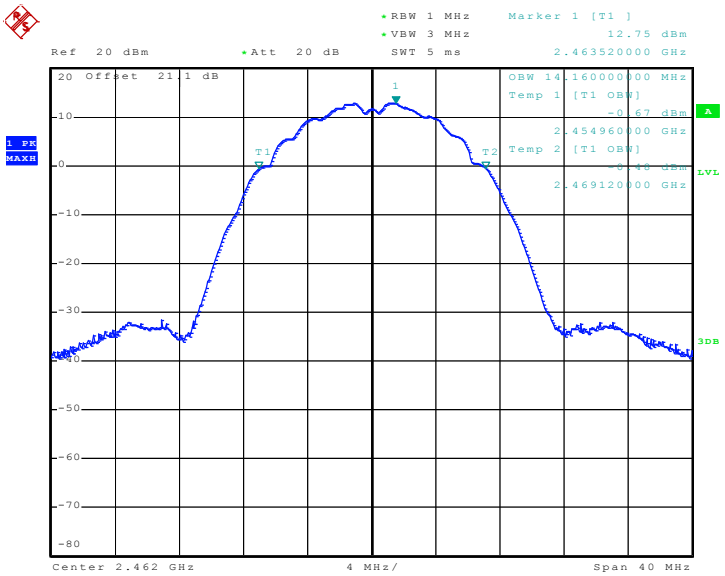
Date: 9.DEC.2010 11:13:19

Mode 2 : 99% Occupied Bandwidth Plot on 802.11b Channel 06



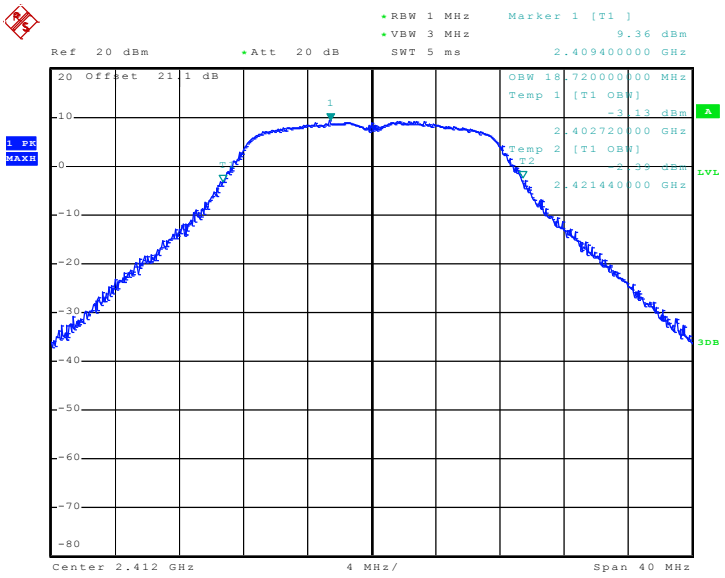
Date: 9.DEC.2010 11:26:37

Mode 3 : 99% Occupied Bandwidth Plot on 802.11b Channel 11



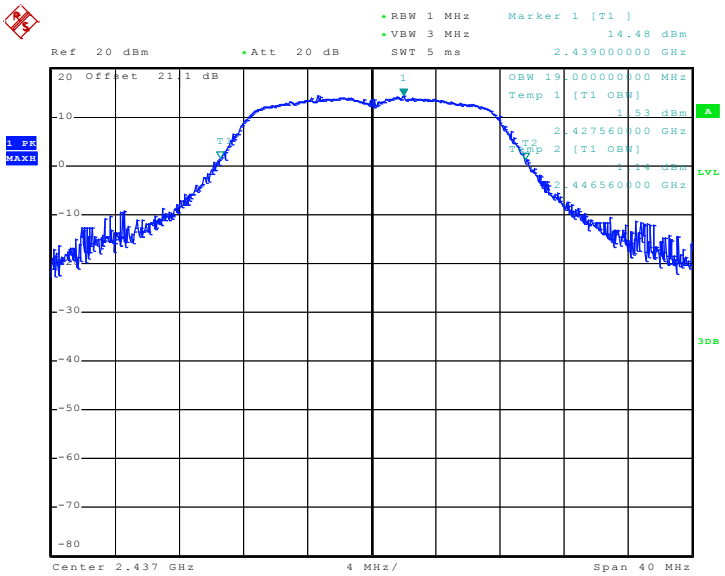
Date: 9.DEC.2010 11:39:02

Mode 4 : 99% Occupied Bandwidth Plot on 802.11g Channel 01



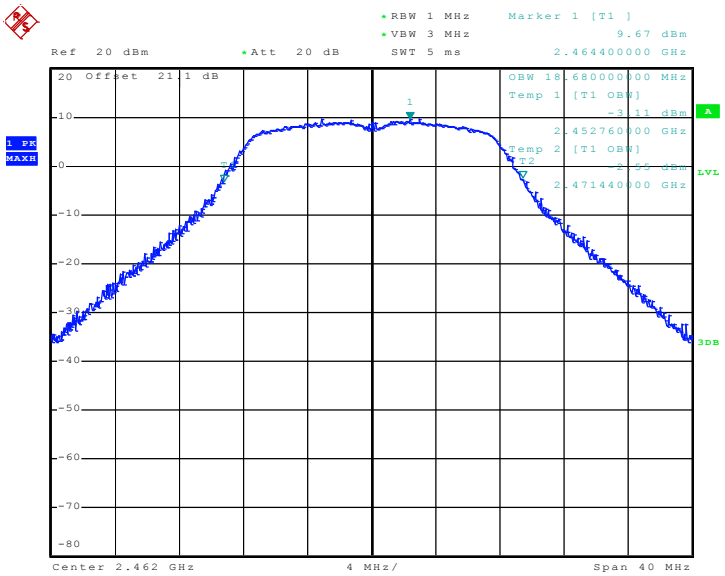
Date: 9.DEC.2010 12:01:39

Mode 5 : 99% Occupied Bandwidth Plot on 802.11g Channel 06



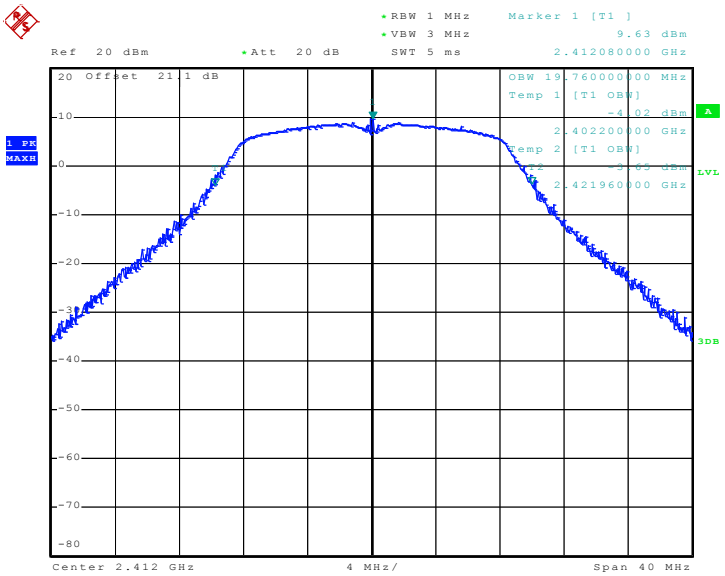
Date: 9.DEC.2010 12:35:29

Mode 6 : 99% Occupied Bandwidth Plot on 802.11g Channel 11



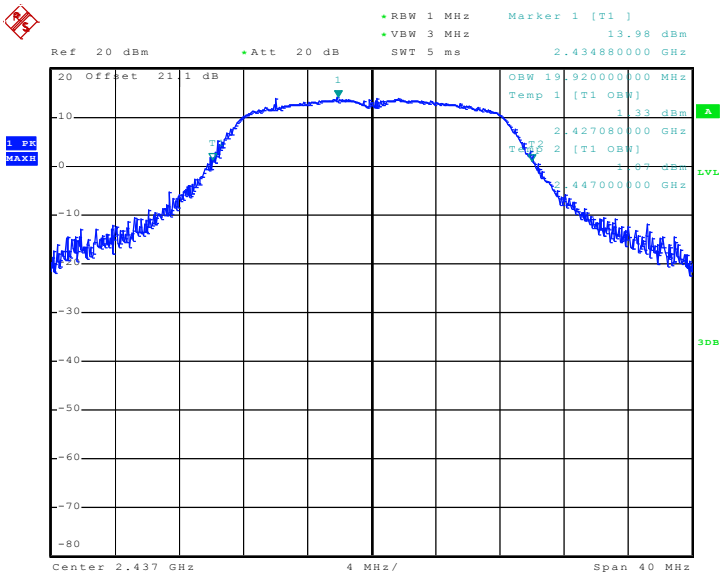
Date: 9.DEC.2010 13:32:39

Mode 7 : 99% Occupied Bandwidth Plot on 802.11n (BW 20MHz) Channel 01



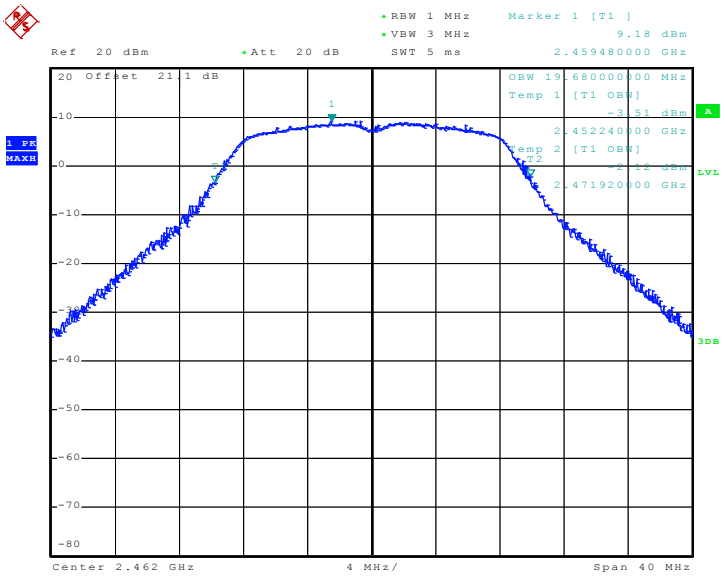
Date: 9.DEC.2010 13:47:58

Mode 8 : 99% Occupied Bandwidth Plot on 802.11n (BW 20MHz) Channel 06



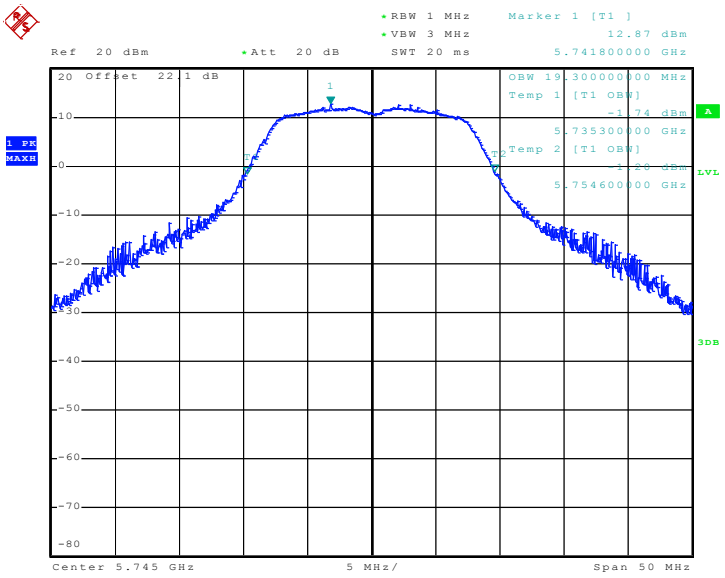
Date: 9.DEC.2010 14:08:22

Mode 9 : 99% Occupied Bandwidth Plot on 802.11n (BW 20MHz) Channel 11



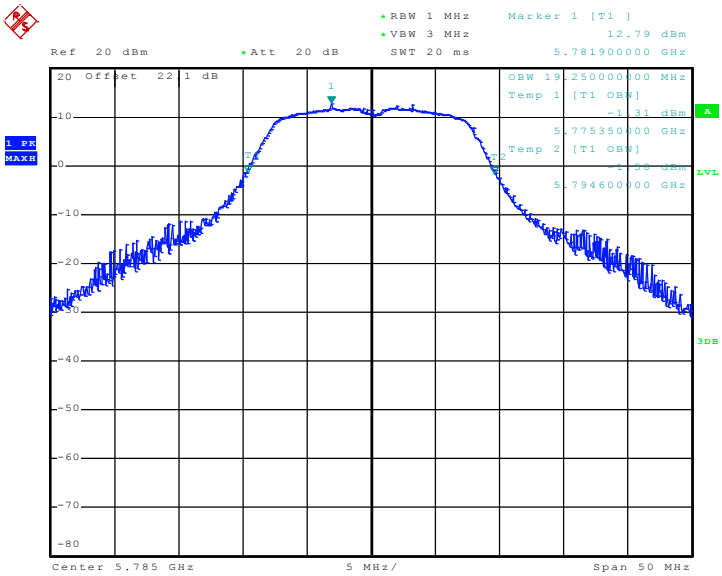
Date: 9.DEC.2010 14:11:22

Mode 10: 99% Occupied Bandwidth Plot on 802.11a Channel 149



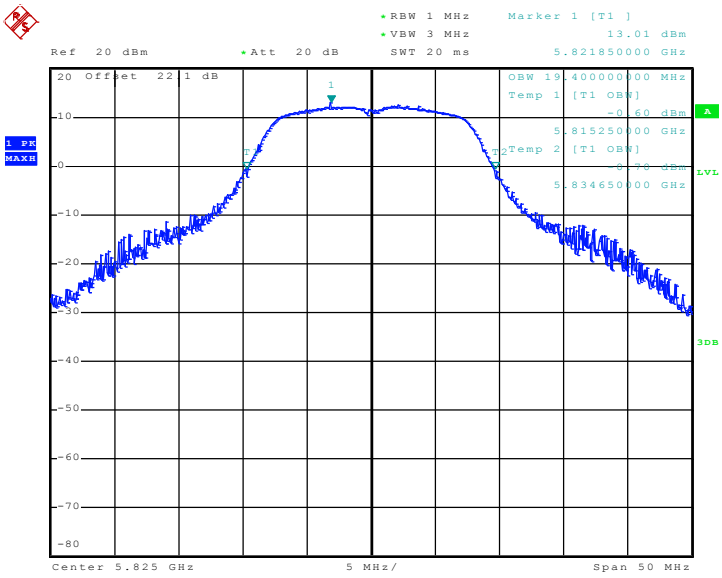
Date: 9.DEC.2010 14:53:56

Mode 11: 99% Occupied Bandwidth Plot on 802.11a Channel 157



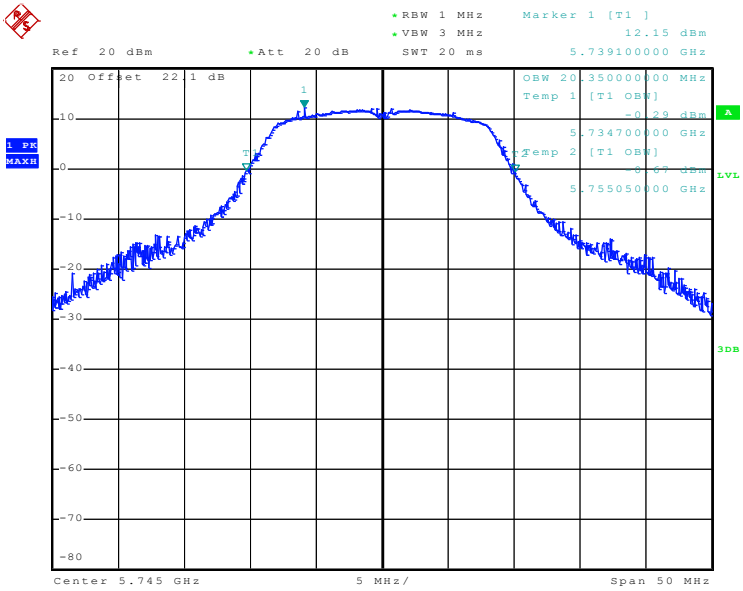
Date: 9.DEC.2010 15:14:18

Mode 12: 99% Occupied Bandwidth Plot on 802.11a Channel 165



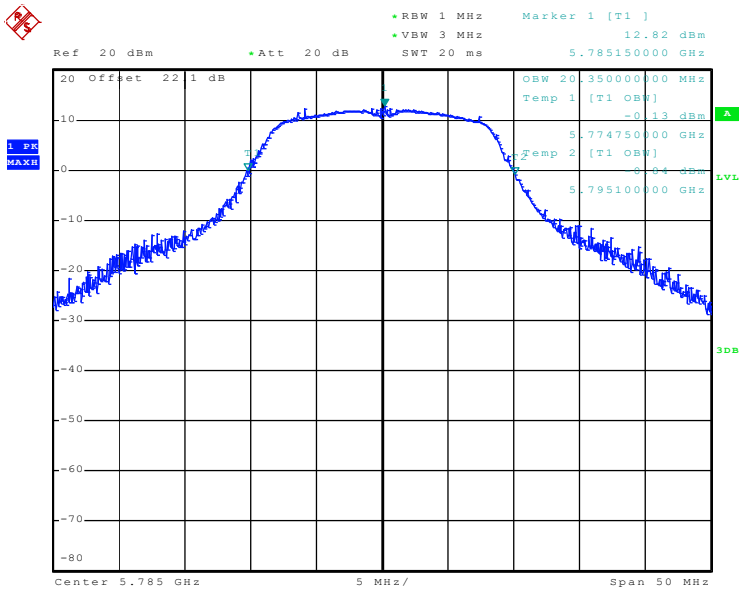
Date: 9.DEC.2010 15:27:22

Mode 13: 99% Occupied Bandwidth Plot on 802.11n (BW 20MHz) Channel 149



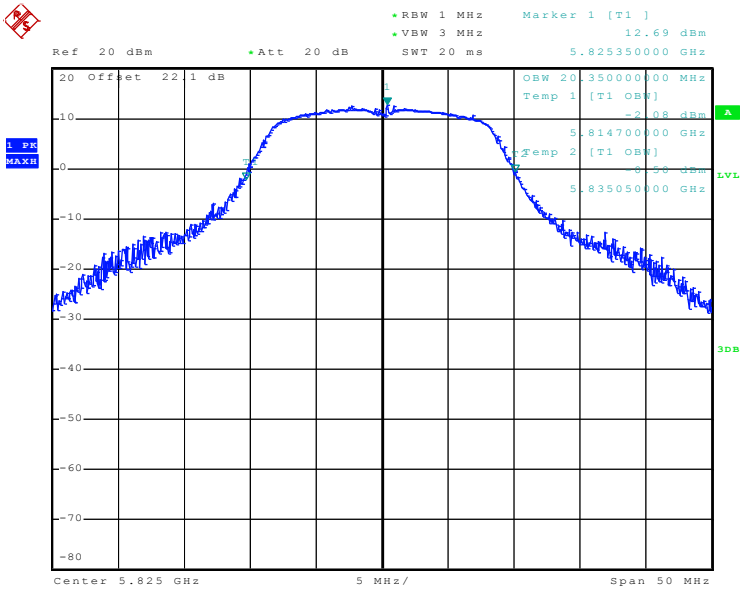
Date: 9.DEC.2010 15:40:46

Mode 14: 99% Occupied Bandwidth Plot on 802.11n (BW 20MHz) Channel 157



Date: 9.DEC.2010 15:43:54

Mode 15: 99% Occupied Bandwidth Plot on 802.11n (BW 20MHz) Channel 165



Date: 9.DEC.2010 15:47:33

3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz and 5725-5850MHz, 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.

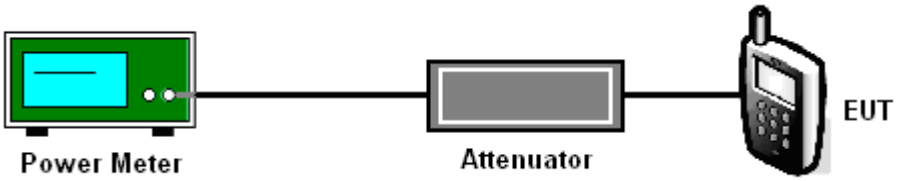
3.2.2 Measuring Instruments

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 1~3	Temperature :	22~24℃
Test Engineer :	Ken Hsu	Relative Humidity :	40~43%

Channel	Frequency (MHz)	802.11b Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	19.55	30	Pass
06	2437	19.67	30	Pass
11	2462	19.61	30	Pass

Test Mode :	Mode 4~6	Temperature :	22~24℃
Test Engineer :	Ken Hsu	Relative Humidity :	40~43%

Channel	Frequency (MHz)	802.11g Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	21.65	30	Pass
06	2437	24.06	30	Pass
11	2462	22.52	30	Pass

Test Mode :	Mode 7~9	Temperature :	22~24℃
Test Engineer :	Ken Hsu	Relative Humidity :	40~43%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	21.18	30	Pass
06	2437	24.10	30	Pass
11	2462	21.59	30	Pass

Test Mode :	Mode 10~12	**Temperature :**	22~24℃
Test Engineer :	Ken Hsu	**Relative Humidity :**	40~43%

Channel	Frequency (MHz)	802.11a Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
149	5745	22.69	30	Pass
157	5785	22.50	30	Pass
165	5825	22.39	30	Pass

Test Mode :	Mode 13~15	**Temperature :**	22~24℃
Test Engineer :	Ken Hsu	**Relative Humidity :**	40~43%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
149	5745	22.65	30	Pass
157	5785	22.50	30	Pass
165	5825	22.32	30	Pass

3.3 Band Edges Measurement

3.3.1 Limit of Band Edges

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

3.3.2 Measuring Instruments

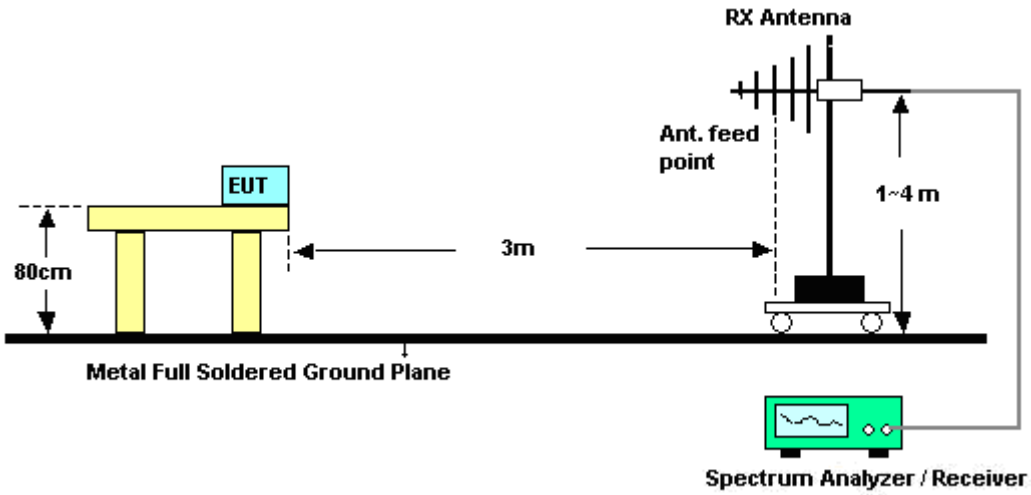
See list of measuring instruments of this test report.

3.3.3 Test Procedures

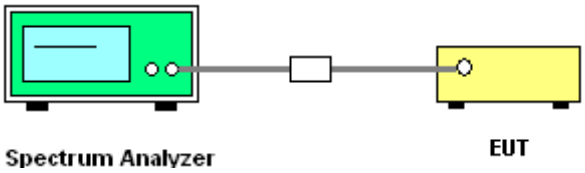
1. The testing follows the guidelines in ANSI C63.4-2003 and FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Conducted emission test: Set RBW = 100 kHz, Video bandwidth (VBW) > RBW. Band edge emissions must be at least 20 dB below the highest emission level within the authorized band as measured with a 100 kHz RBW. Note: If the output power of this device was measured by power meter, 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 :**	23~25°C
Test Band :	802.11b	**Relative Humidity :**	48~50%
Test Channel :	01	**Test Engineer :**	Ivan Jiang

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
2387.14	51.69	-22.31	74.00	47.33	32.18	6.03	33.85	101	3	Peak
2387.14	41.14	-12.86	54.00	36.78	32.18	6.03	33.85	101	3	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2385.05	47.66	-26.34	74.00	43.32	32.16	6.03	33.85	129	67	Peak
2385.05	34.73	-19.27	54.00	30.39	32.16	6.03	33.85	129	67	Average

Test Mode :	Mode 3	**Temperature :**	23~25°C
Test Band :	802.11b	**Relative Humidity :**	48~50%
Test Channel :	11	**Test Engineer :**	Ivan Jiang

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
2489.93	51.56	-22.44	74.00	46.98	32.30	6.18	33.90	100	46	Peak
2489.93	39.41	-14.59	54.00	34.83	32.30	6.18	33.90	100	46	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2488.98	49.74	-24.26	74.00	45.16	32.30	6.18	33.90	126	10	Peak
2488.98	38.47	-15.53	54.00	33.89	32.30	6.18	33.90	126	10	Average

Test Mode :	Mode 4	**Temperature :**	23~25°C
Test Band :	802.11g	**Relative Humidity :**	48~50%
Test Channel :	01	**Test Engineer :**	Ivan Jiang

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	50.00	-24.00	74.00	45.64	32.18	6.03	33.85	101	3	Peak
2389.99	35.78	-18.22	54.00	31.42	32.18	6.03	33.85	101	3	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
2331.85	46.64	-27.36	74.00	42.45	32.09	5.92	33.82	127	130	Peak
2331.85	33.38	-20.62	54.00	29.19	32.09	5.92	33.82	127	130	Average

Test Mode :	Mode 6	**Temperature :**	23~25°C
Test Band :	802.11g	**Relative Humidity :**	48~50%
Test Channel :	11	**Test Engineer :**	Ivan Jiang

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
2483.85	58.97	-15.03	74.00	54.41	32.28	6.18	33.90	128	47	Peak
2483.85	41.74	-12.26	54.00	37.18	32.28	6.18	33.90	128	47	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
2483.50	53.95	-20.05	74.00	49.39	32.28	6.18	33.90	126	10	Peak
2483.50	38.41	-15.59	54.00	33.85	32.28	6.18	33.90	126	10	Average

Test Mode :	Mode 7	**Temperature :**	23~25°C
Test Band :	802.11n (BW 20MHz)	**Relative Humidity :**	48~50%
Test Channel :	01	**Test Engineer :**	Ivan Jiang

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	51.20	-22.80	74.00	46.84	32.18	6.03	33.85	100	360	Peak
2389.61	36.79	-17.21	54.00	32.43	32.18	6.03	33.85	100	360	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
2389.42	47.46	-26.54	74.00	43.10	32.18	6.03	33.85	100	129	Peak
2389.42	34.26	-19.74	54.00	29.90	32.18	6.03	33.85	100	129	Average

Test Mode :	Mode 9	**Temperature :**	23~25°C
Test Band :	802.11n (BW 20MHz)	**Relative Humidity :**	48~50%
Test Channel :	11	**Test Engineer :**	Ivan Jiang

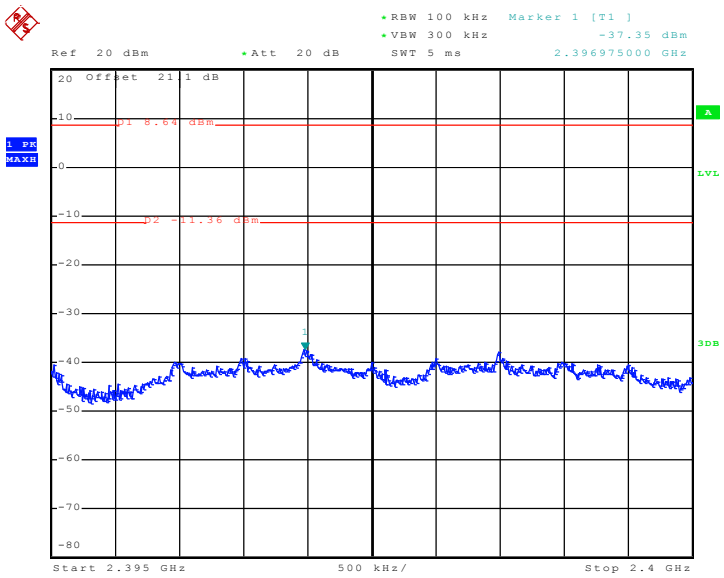
ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.85	58.42	-15.58	74.00	53.86	32.28	6.18	33.90	127	48	Peak
2483.85	42.17	-11.83	54.00	37.61	32.28	6.18	33.90	127	48	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	53.13	-20.87	74.00	48.57	32.28	6.18	33.90	127	11	Peak
2483.66	37.91	-16.09	54.00	33.35	32.28	6.18	33.90	127	11	Average

3.3.7 Test Result of Conducted Band Edges

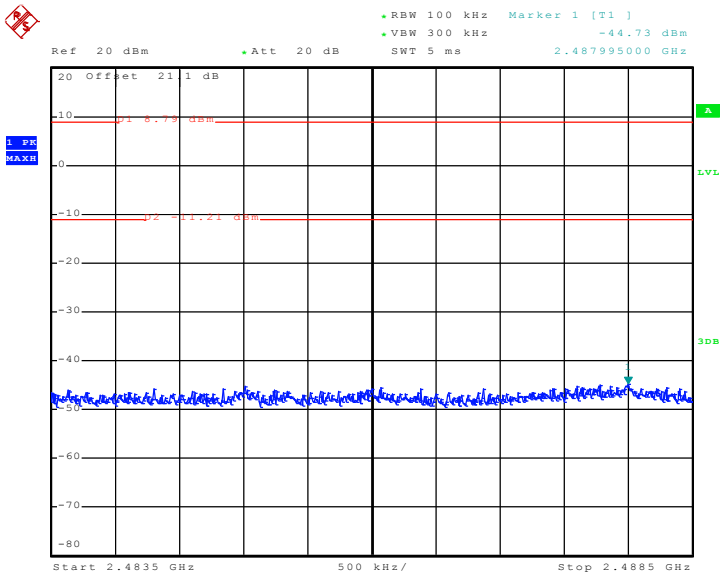
Test Mode :	Mode 1 and 3	**Temperature :**	22~24℃
Test Band :	802.11b	**Relative Humidity :**	40~43%
Test Channel :	01 and 11	**Test Engineer :**	Ken Hsu

Low Band Edge Plot on 802.11b Channel 01



Date: 9.DEC.2010 11:12:27

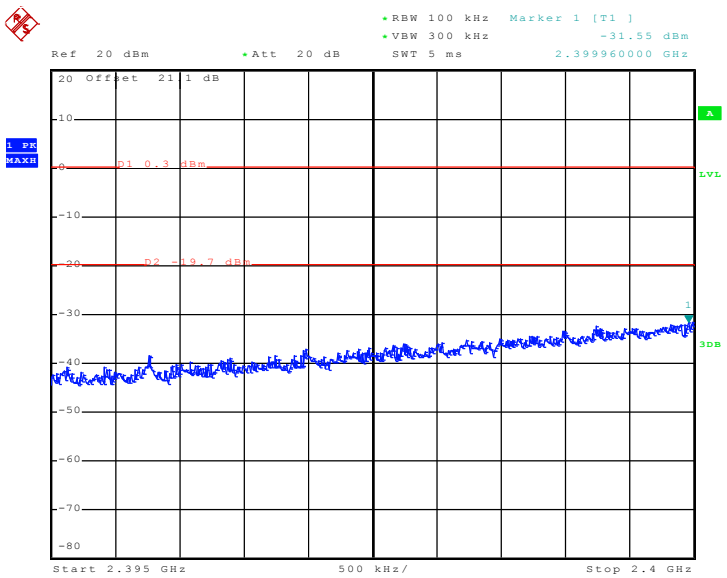
High Band Edge Plot on 802.11b Channel 11



Date: 9.DEC.2010 11:38:36

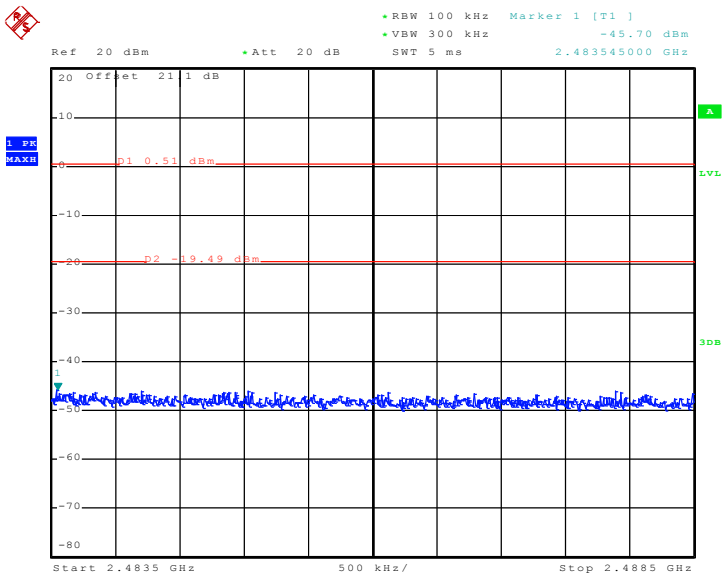
Test Mode :	Mode 4 and 6	**Temperature :**	22~24℃
Test Band :	802.11g	**Relative Humidity :**	40~43%
Test Channel :	01 and 11	**Test Engineer :**	Ken Hsu

Low Band Edge Plot on 802.11g Channel 01



Date: 9.DEC.2010 12:01:13

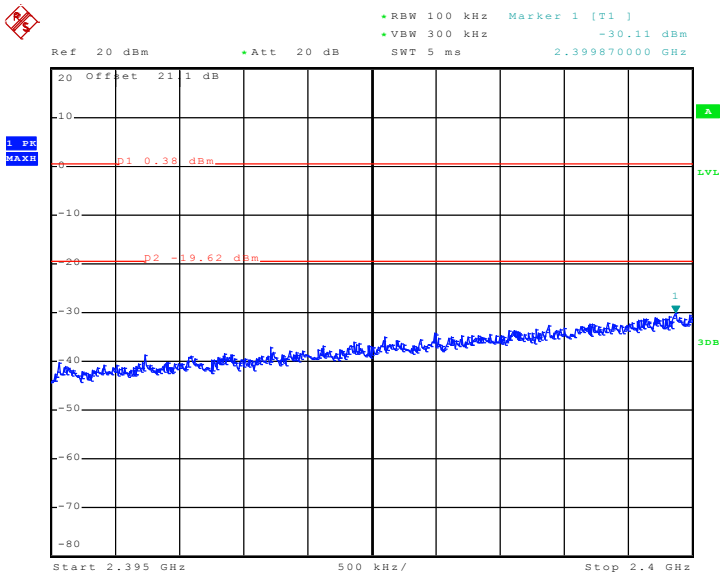
High Band Edge Plot on 802.11g Channel 11



Date: 9.DEC.2010 14:31:27

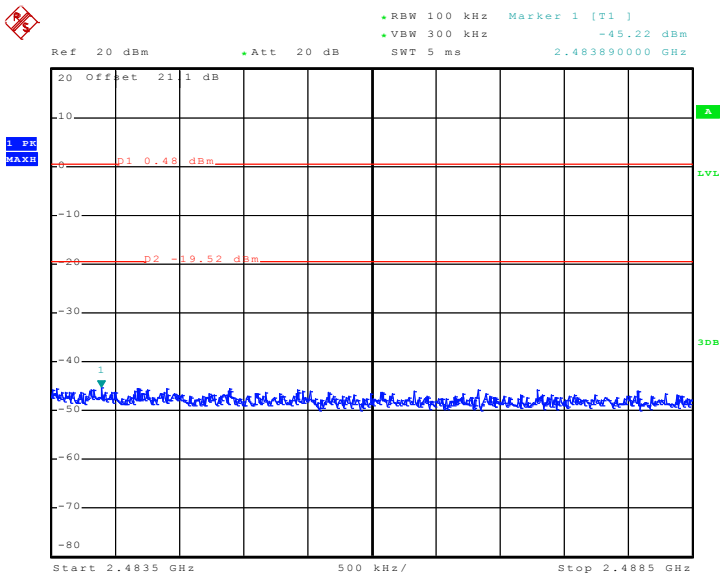
Test Mode :	Mode 7 and 9	**Temperature :**	22~24℃
Test Band :	802.11n (BW 20MHz)	**Relative Humidity :**	40~43%
Test Channel :	01 and 11	**Test Engineer :**	Ken Hsu

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



Date: 9.DEC.2010 13:47:31

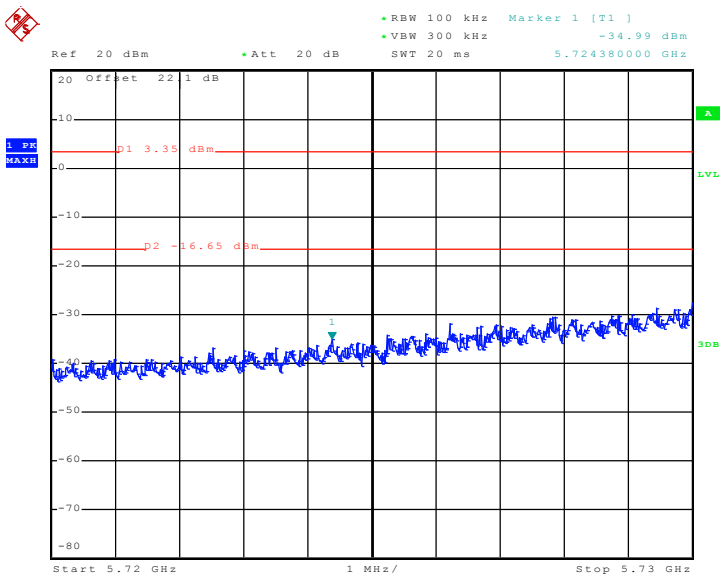
High Band Edge Plot on 802.11n (BW 20MHz) Channel 11



Date: 9.DEC.2010 14:12:07

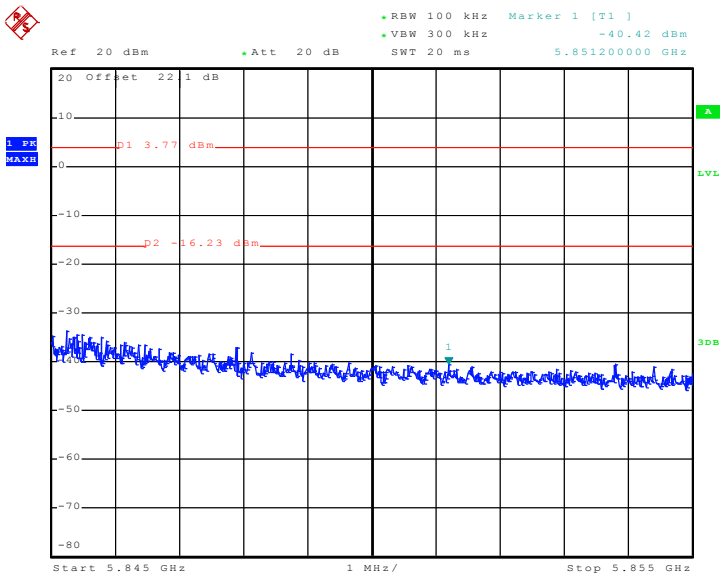
Test Mode :	Mode 10 and 12	**Temperature :**	22~24℃
Test Band :	802.11a	**Relative Humidity :**	40~43%
Test Channel :	149 and 165	**Test Engineer :**	Ken Hsu

Low Band Edge Plot on 802.11a Channel 149



Date: 9.DEC.2010 14:51:58

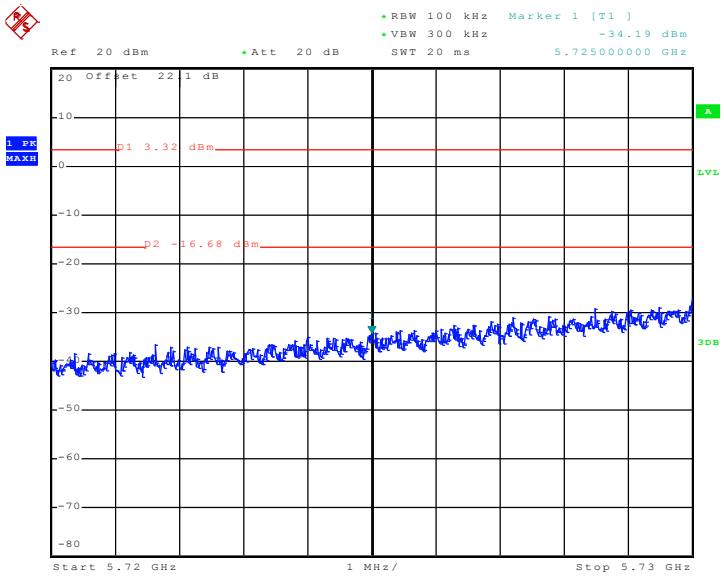
High Band Edge Plot on 802.11a Channel 165



Date: 9.DEC.2010 15:26:56

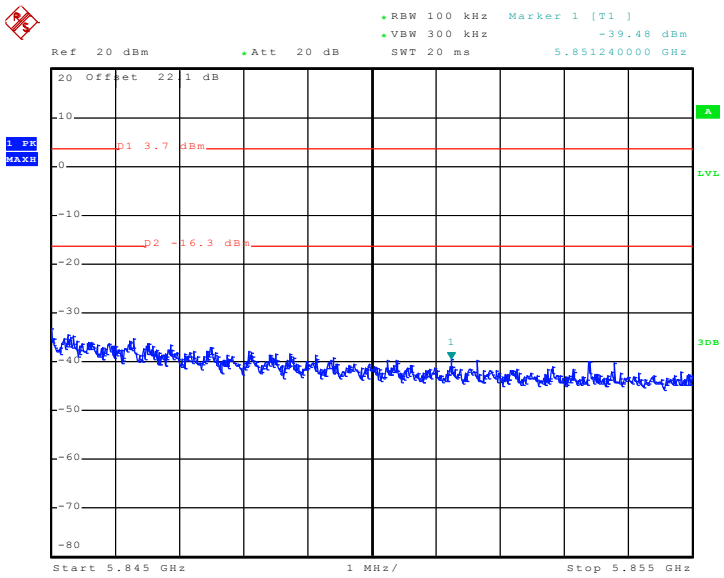
Test Mode :	Mode 13 and 15	**Temperature :**	22~24℃
Test Band :	802.11n (BW 20MHz)	**Relative Humidity :**	40~43%
Test Channel :	149 and 165	**Test Engineer :**	Ken Hsu

Low Band Edge Plot on 802.11n (BW 20MHz) Channel 149



Date: 9.DEC.2010 15:40:20

High Band Edge Plot on 802.11n (BW 20MHz) Channel 165



Date: 9.DEC.2010 15:47:07

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

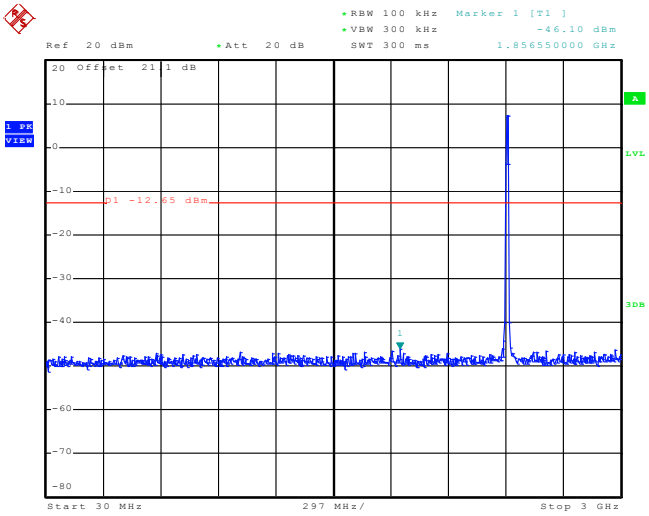
1. The transmitter output was connected to the spectrum analyzer via a low lose cable.
2. Set RBW = 100 kHz, Video bandwidth (VBW) > RBW, scan up through 10th harmonic. All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz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

3.4.4 Test Setup

3.4.5 Test Result

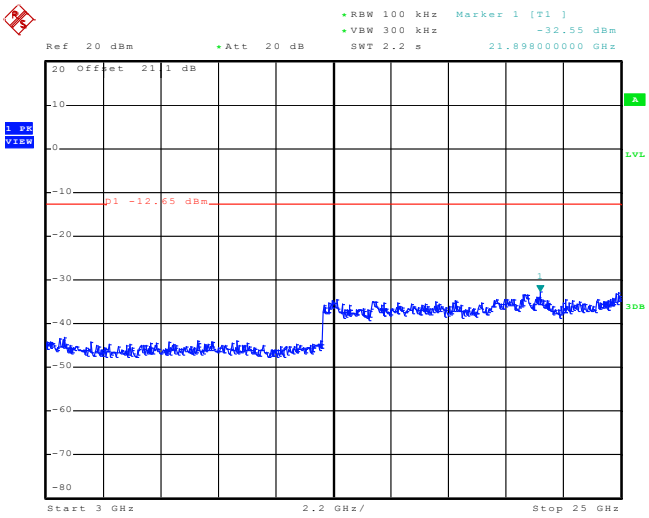
Test Mode :	Mode 1~3	**Temperature :**	22~24℃
Test Band :	802.11b	**Relative Humidity :**	40~43%
Test Channel :	01, 06, 11	**Test Engineer :**	Ken Hsu

Mode 1: Conducted Spurious Emission Plot on 802.11b between 30 MHz~3 GHz



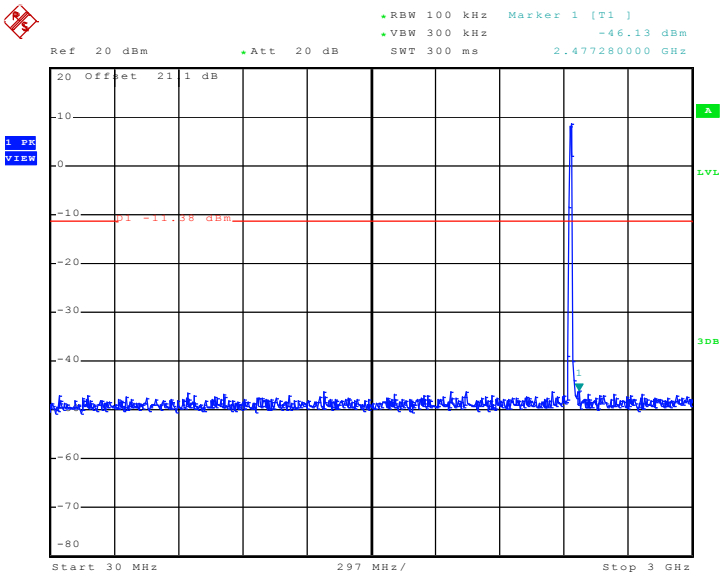
Date: 9.DEC.2010 14:23:20

Mode 1: Conducted Spurious Emission Plot on 802.11b between 3 GHz ~25 GHz



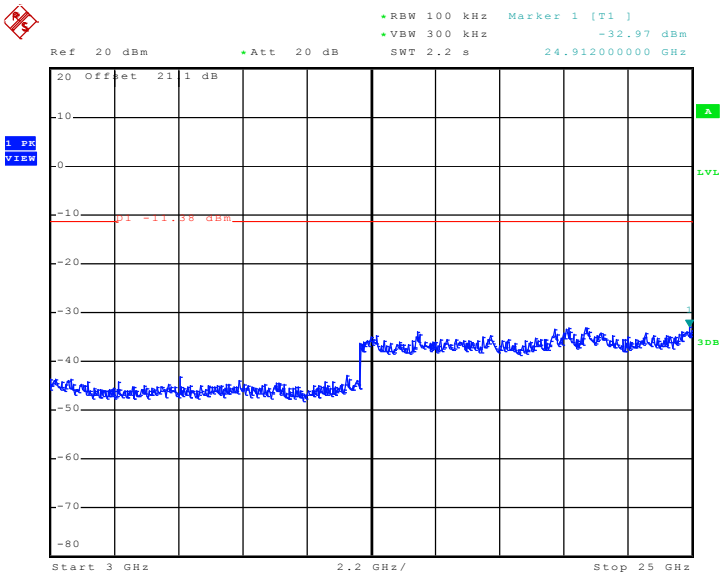
Date: 9.DEC.2010 14:23:38

Mode 2: Conducted Spurious Emission Plot on 802.11b between 30 MHz~3 GHz



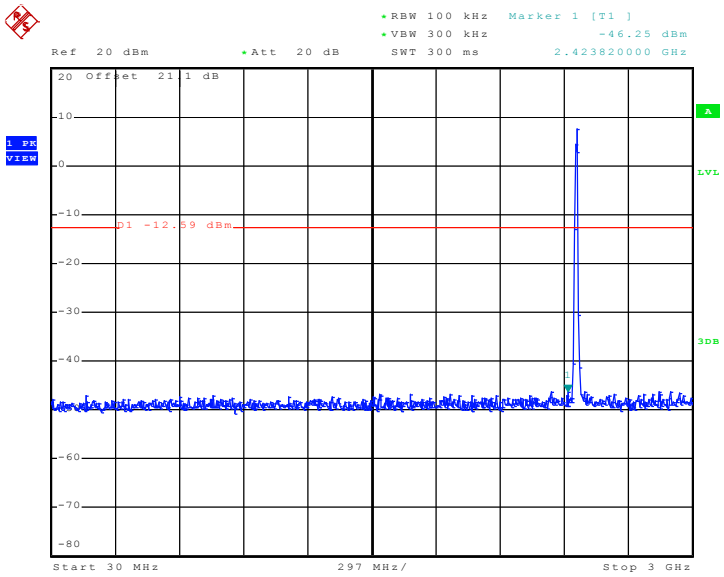
Date: 9.DEC.2010 14:24:10

Mode 2: Conducted Spurious Emission Plot on 802.11b between 3 GHz ~ 25 GHz



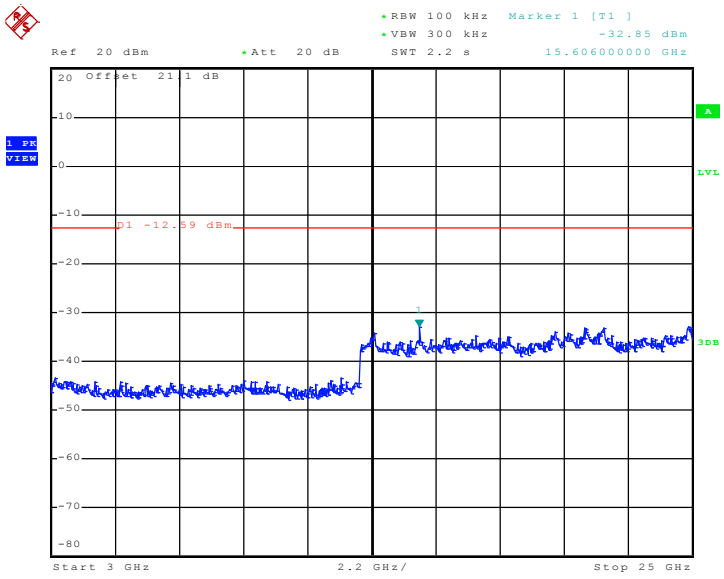
Date: 9.DEC.2010 14:24:27

Mode 3: Conducted Spurious Emission Plot on 802.11b between 30 MHz~3 GHz



Date: 9.DEC.2010 14:25:01

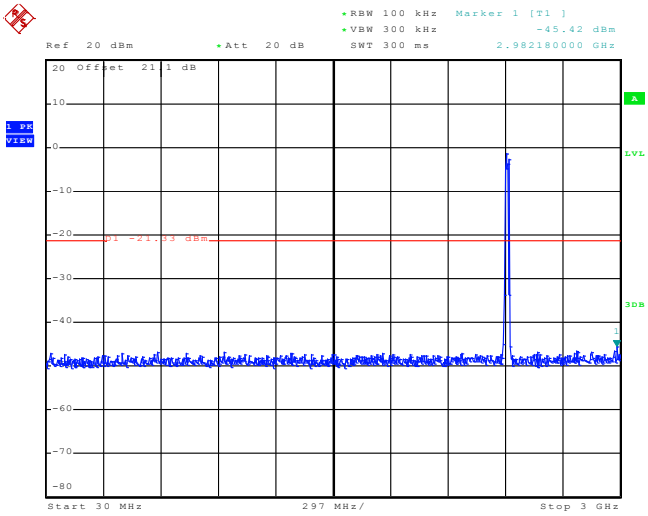
Mode 3: Conducted Spurious Emission Plot on 802.11b between 3 GHz ~25 GHz



Date: 9.DEC.2010 14:25:18

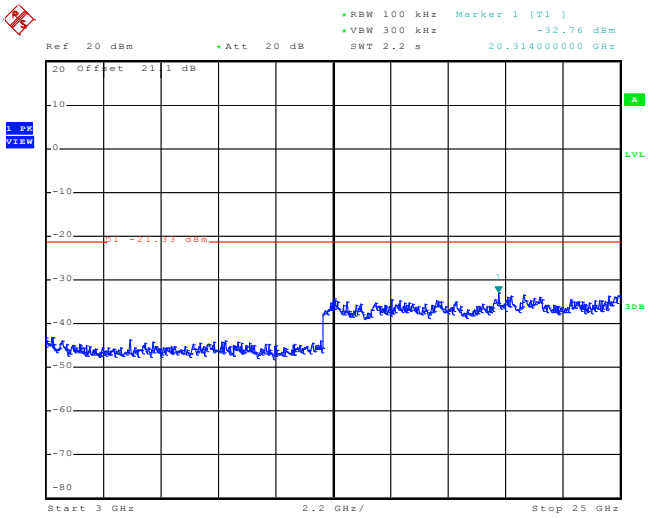
Test Mode :	Mode 4~6	**Temperature :**	22~24℃
Test Band :	802.11g	**Relative Humidity :**	40~43%
Test Channel :	01, 06, 11	**Test Engineer :**	Ken Hsu

Mode 4: Conducted Spurious Emission Plot on 802.11g between 30 MHz~3 GHz



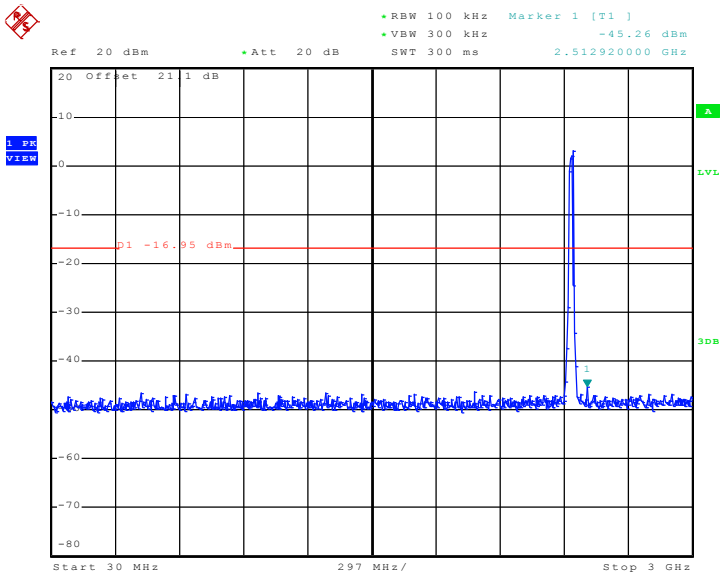
Date: 9.DEC.2010 14:26:40

Mode 4: Conducted Spurious Emission Plot on 802.11g between 3 GHz ~ 25 GHz



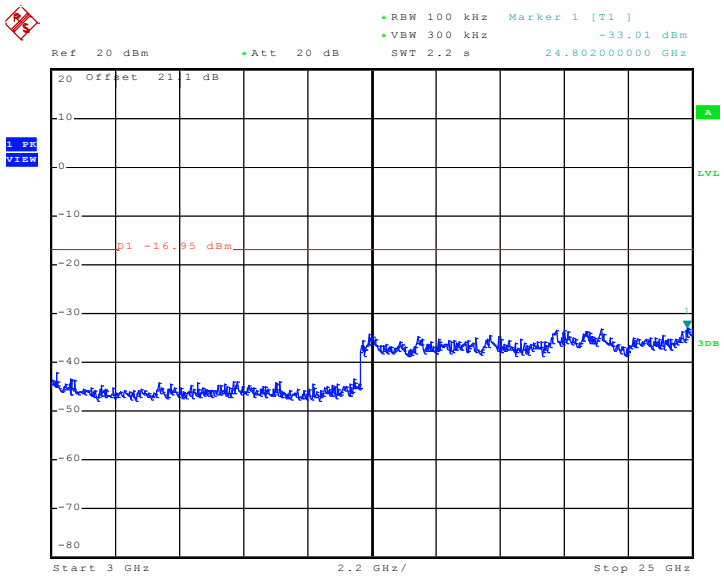
Date: 9.DEC.2010 14:26:57

Mode 5: Conducted Spurious Emission Plot on 802.11g between 30 MHz~3 GHz



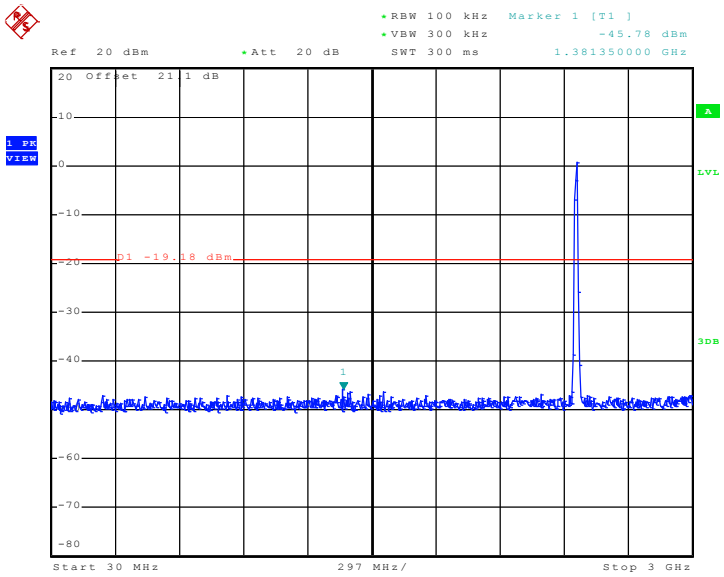
Date: 9.DEC.2010 14:27:52

Mode 5: Conducted Spurious Emission Plot on 802.11g between 3 GHz ~ 25 GHz



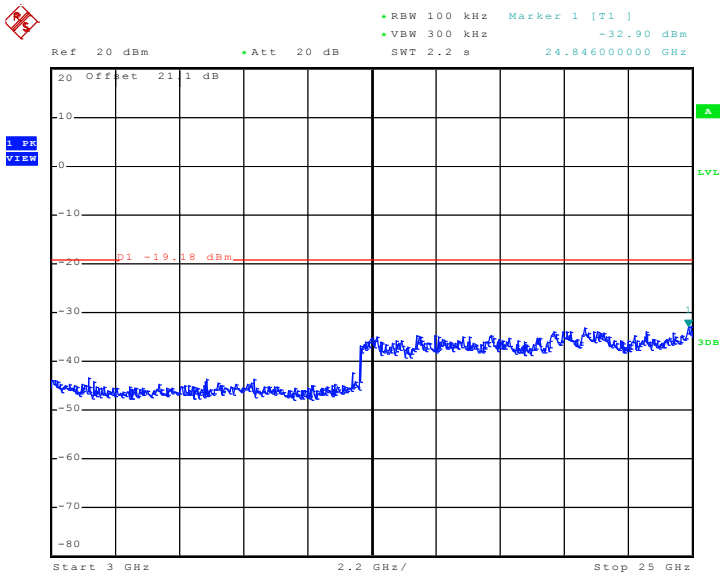
Date: 9.DEC.2010 14:28:09

Mode 6: Conducted Spurious Emission Plot on 802.11g between 30 MHz~3 GHz



Date: 9.DEC.2010 14:28:47

Mode 6: Conducted Spurious Emission Plot on 802.11g between 3 GHz ~ 25 GHz

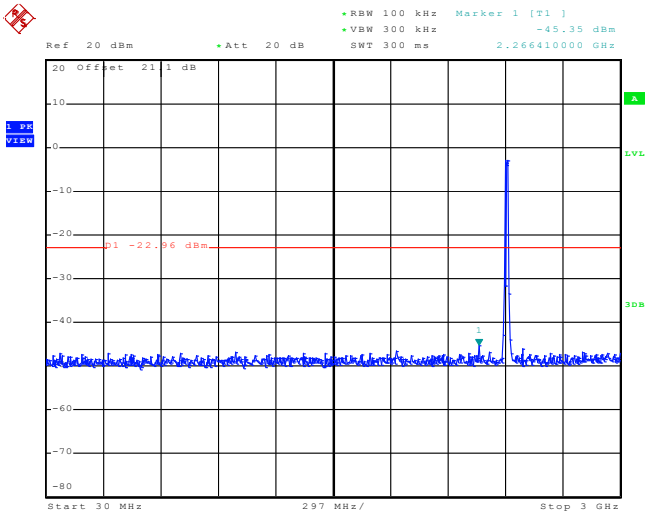


Date: 9.DEC.2010 14:29:04

Test Mode :	Mode 7~9	**Temperature :**	22~24℃
Test Band :	802.11n (BW 20HMz)	**Relative Humidity :**	40~43%
Test Channel :	01, 06, 11	**Test Engineer :**	Ken Hsu

Mode 7: Conducted Spurious Emission Plot on

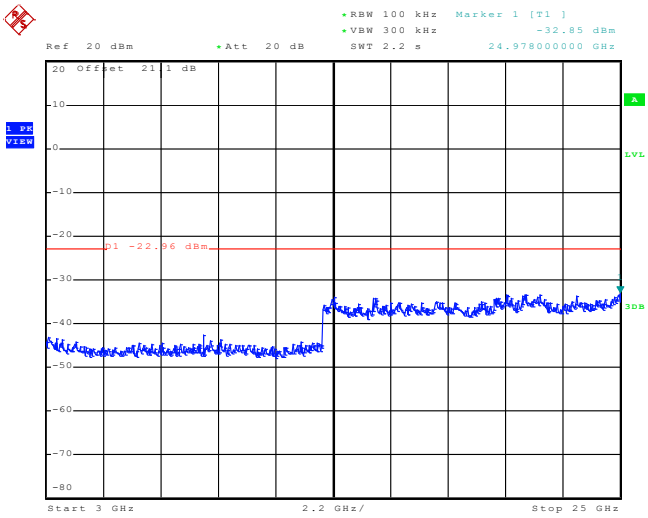
802.11n (BW 20HMz) between 30 MHz~3 GHz



Date: 9.DEC.2010 14:33:32

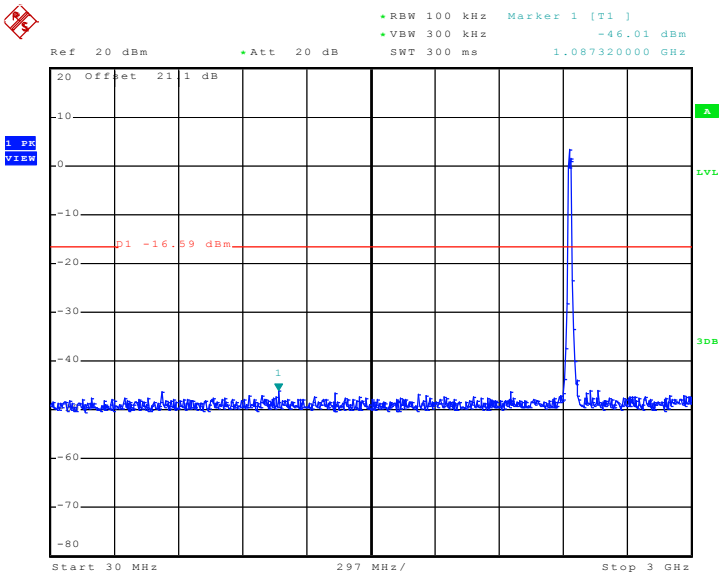
Mode 7: Conducted Spurious Emission Plot on

802.11n (BW 20HMz) between 3 GHz ~ 25 GHz



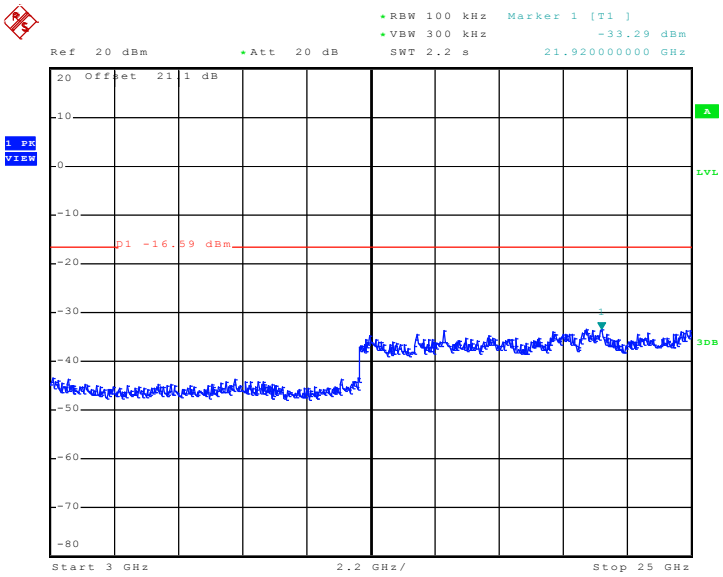
Date: 9.DEC.2010 14:33:49

Mode 8: Conducted Spurious Emission Plot on 802.11n (BW 20HMz) between 30 MHz~3 GHz



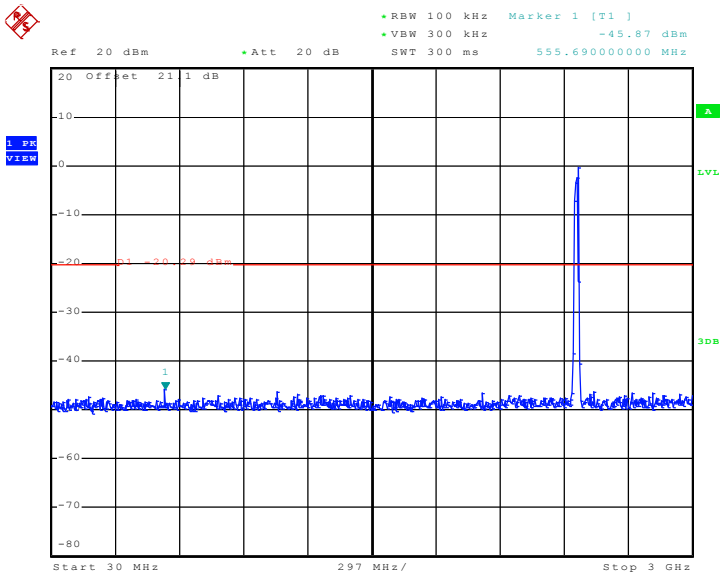
Date: 9.DEC.2010 14:36:18

Mode 8: Conducted Spurious Emission Plot on 802.11n (BW 20HMz) between 3 GHz ~ 25 GHz



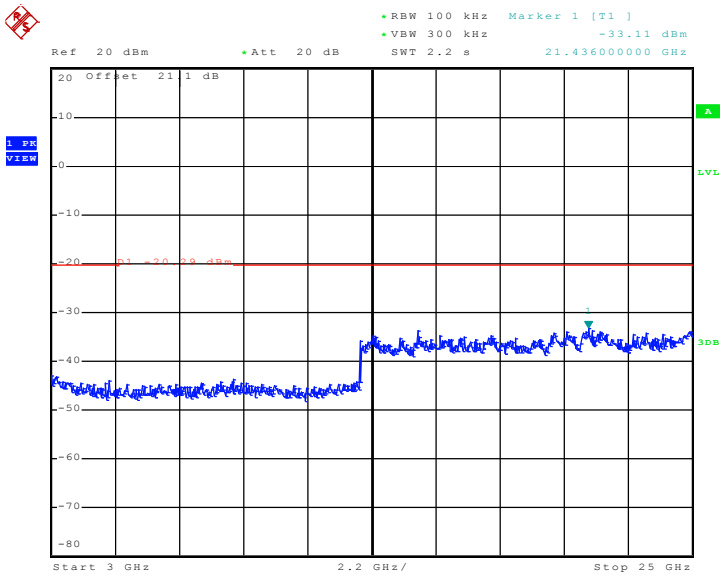
Date: 9.DEC.2010 14:36:35

Mode 9: Conducted Spurious Emission Plot on 802.11n (BW 20HMz) between 30 MHz~3 GHz



Date: 9.DEC.2010 14:35:03

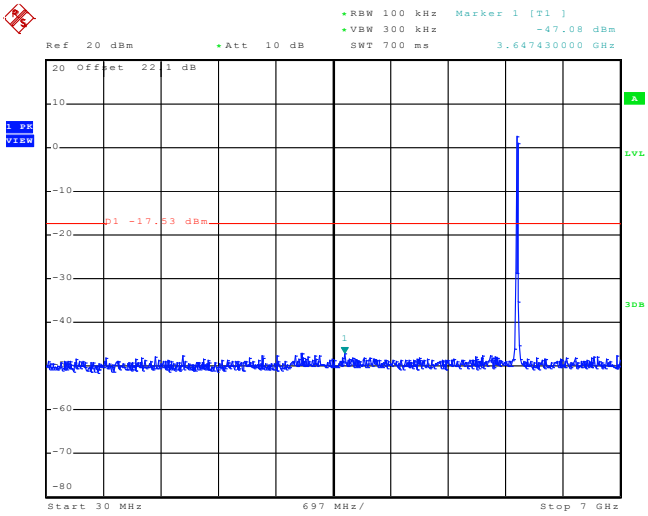
Mode 9: Conducted Spurious Emission Plot on 802.11n (BW 20HMz) between 3 GHz ~ 25 GHz



Date: 9.DEC.2010 14:35:21

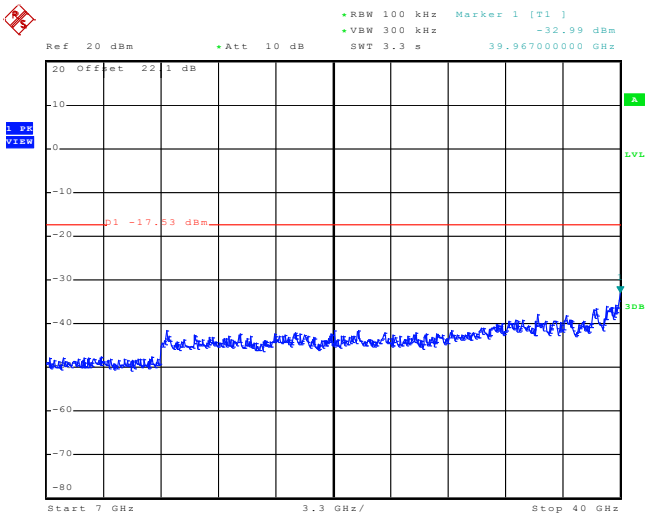
Test Mode :	Mode 10~12	**Temperature :**	22~24℃
Test Band :	802.11a	**Relative Humidity :**	40~43%
Test Channel :	149, 157, 165	**Test Engineer :**	Ken Hsu

Mode 10: Conducted Spurious Emission Plot on 802.11a between 30 MHz~7 GHz



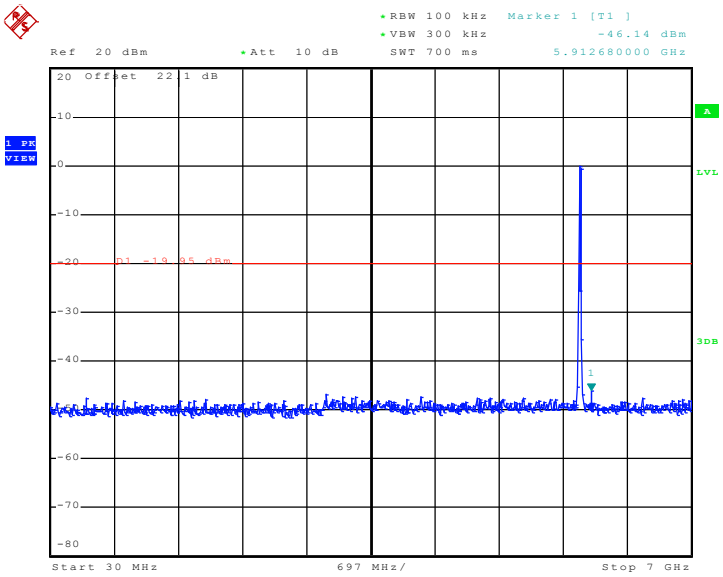
Date: 9.DEC.2010 15:11:20

Mode 10: Conducted Spurious Emission Plot on 802.11a between 7 GHz ~ 40GHz



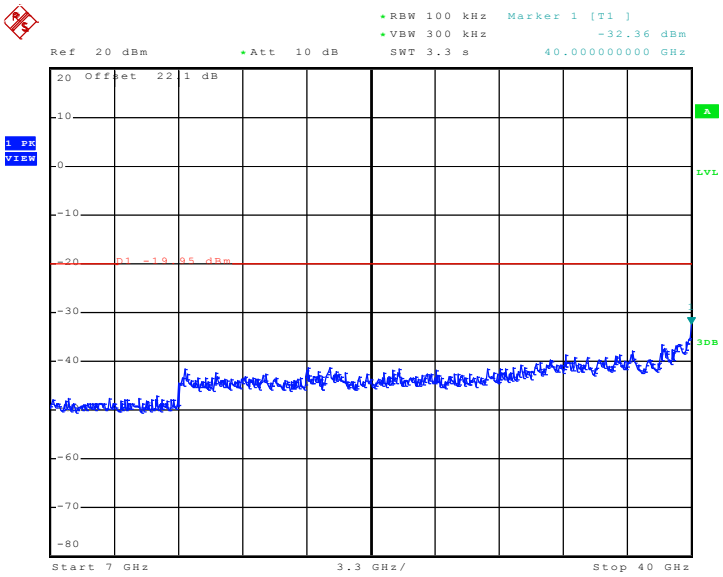
Date: 9.DEC.2010 15:11:37

Mode 11: Conducted Spurious Emission Plot on 802.11a between 30 MHz~7 GHz



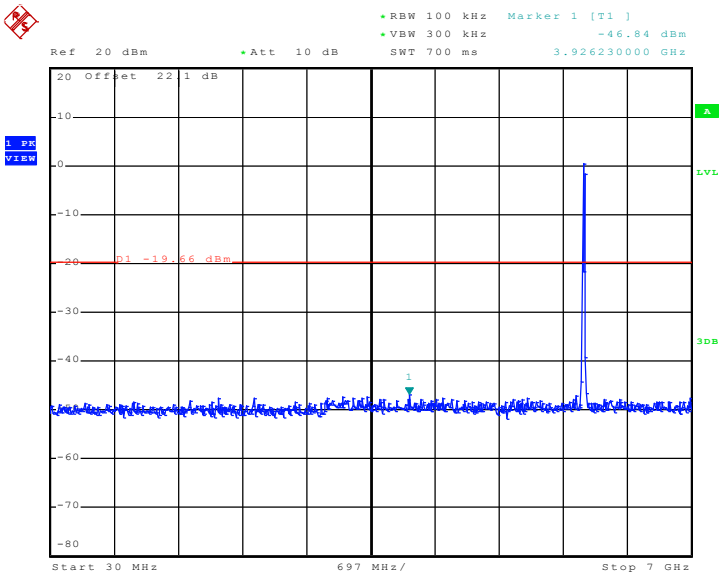
Date: 9.DEC.2010 15:14:39

Mode 11: Conducted Spurious Emission Plot on 802.11a between 7 GHz ~ 40GHz



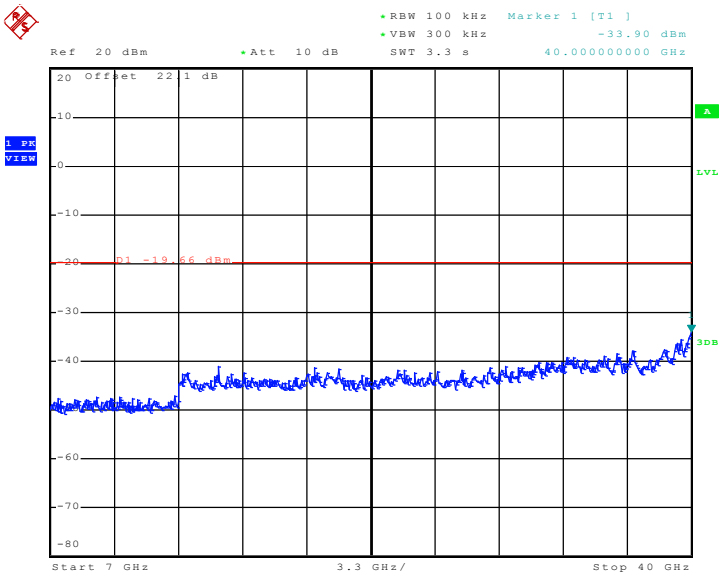
Date: 9.DEC.2010 15:14:57

Mode 12: Conducted Spurious Emission Plot on 802.11a between 30 MHz~7 GHz



Date: 9.DEC.2010 15:27:44

Mode 12: Conducted Spurious Emission Plot on 802.11a between 7 GHz ~ 40GHz

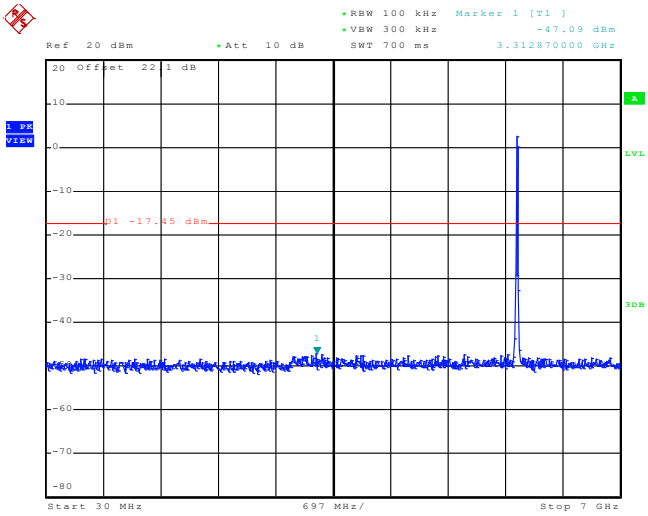


Date: 9.DEC.2010 15:28:02

Test Mode :	Mode 13~15	**Temperature :**	22~24℃
Test Band :	802.11n (BW 20MHz)	**Relative Humidity :**	40~43%
Test Channel :	149, 157, 165	**Test Engineer :**	Ken Hsu

Mode 13: Conducted Spurious Emission Plot on

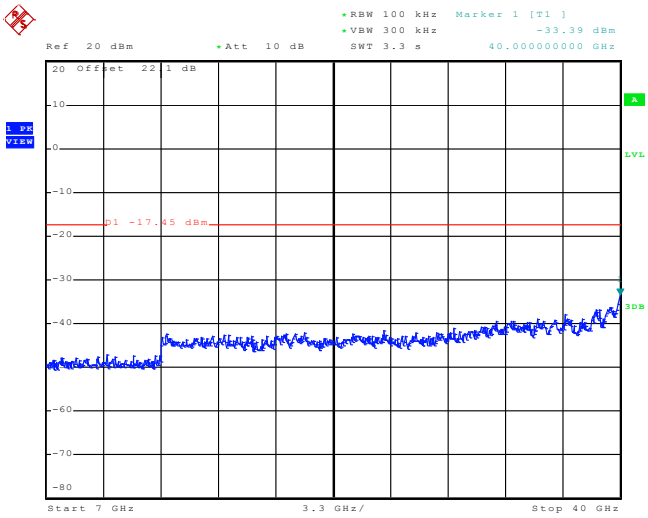
802.11n (BW 20MHz) between 30 MHz~7 GHz



Date: 9.DEC.2010 15:41:08

Mode 13: Conducted Spurious Emission Plot on

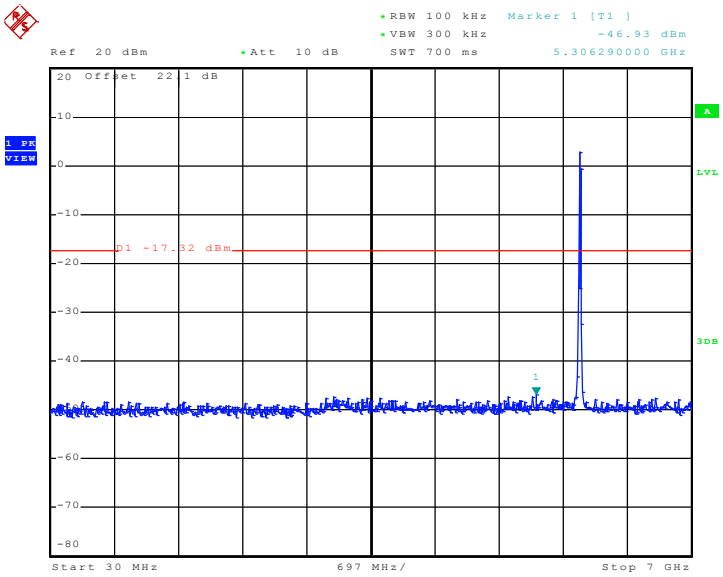
802.11n (BW 20MHz) between 7 GHz ~ 40GHz



Date: 9.DEC.2010 15:41:25

Mode 14: Conducted Spurious Emission Plot on

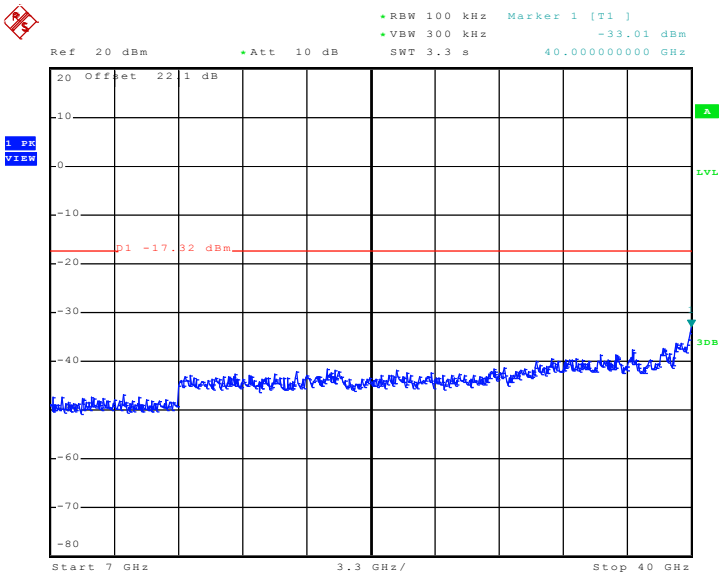
802.11n (BW 20MHz) between 30 MHz~7 GHz



Date: 9.DEC.2010 15:44:16

Mode 14: Conducted Spurious Emission Plot on

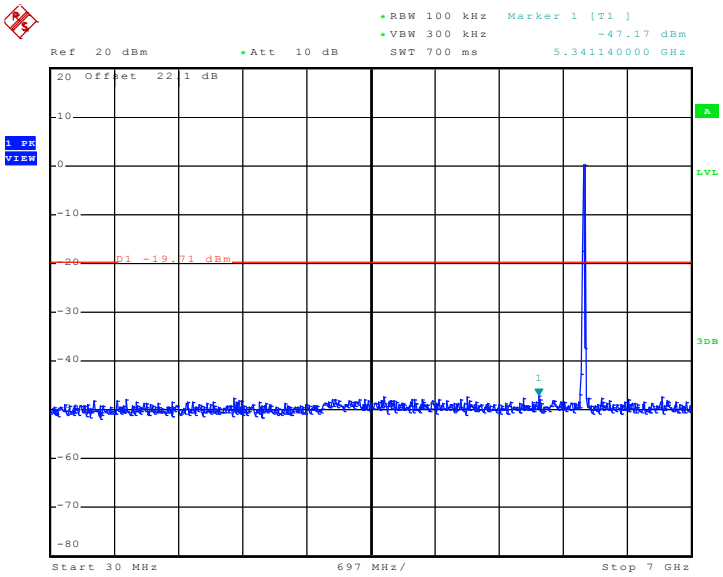
802.11n (BW 20MHz) between 7 GHz ~ 40GHz



Date: 9.DEC.2010 15:44:33

Mode 15: Conducted Spurious Emission Plot on

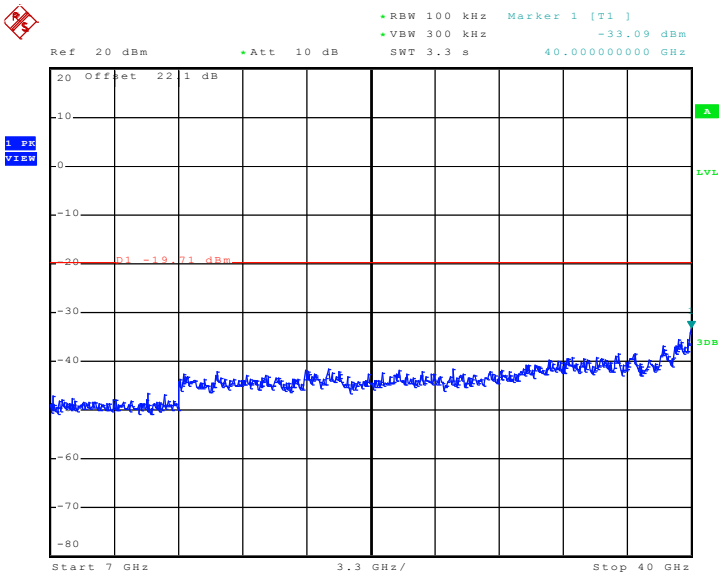
802.11n (BW 20MHz) between 30 MHz~7 GHz



Date: 9.DEC.2010 15:47:55

Mode 15: Conducted Spurious Emission Plot on

802.11n (BW 20MHz) between 7 GHz ~ 40GHz



Date: 9.DEC.2010 15:48:12

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.

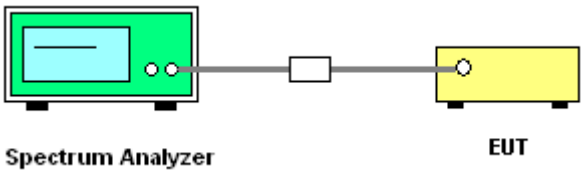
3.5.2 Measuring Instruments

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 1~3	Temperature :	22~24℃
Test Engineer :	Ken Hsu	Relative Humidity :	40~43%

Channel	Frequency (MHz)	802.11b Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-3.99	8	Pass
06	2437	-3.80	8	Pass
11	2462	-4.14	8	Pass

Test Mode :	Mode 4~ 6	Temperature :	22~24℃
Test Engineer :	Ken Hsu	Relative Humidity :	40~43%

Channel	Frequency (MHz)	802.11g Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-13.07	8	Pass
06	2437	-8.08	8	Pass
11	2462	-13.00	8	Pass

Test Mode :	Mode 7~9	Temperature :	22~24℃
Test Engineer :	Ken Hsu	Relative Humidity :	40~43%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-12.87	8	Pass
06	2437	-7.93	8	Pass
11	2462	-12.75	8	Pass

Test Mode :	Mode 10~12	Temperature :	22~24℃
Test Engineer :	Ken Hsu	Relative Humidity :	40~43%

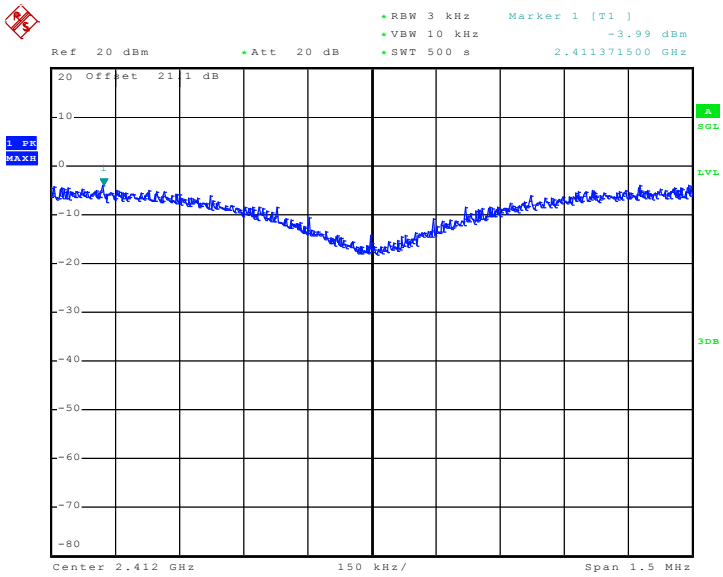
Channel	Frequency (MHz)	802.11a Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
149	5745	-10.24	8	Pass
157	5785	-10.31	8	Pass
165	5825	-9.93	8	Pass

Test Mode :	Mode 13~15	Temperature :	22~24℃
Test Engineer :	Ken Hsu	Relative Humidity :	40~43%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
149	5745	-9.99	8	Pass
157	5785	-9.45	8	Pass
165	5825	-9.60	8	Pass

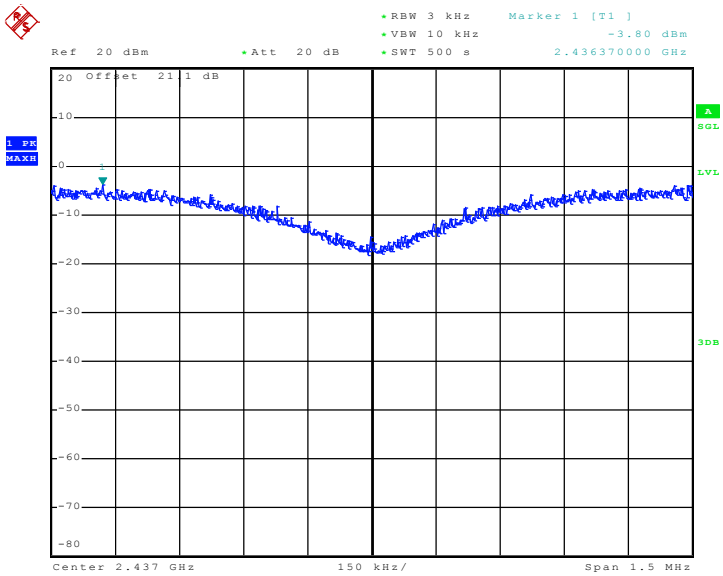
3.5.6 Test Result of Power Spectral Density Plots

Mode 1 : PSD Plot on 802.11b Channel 01



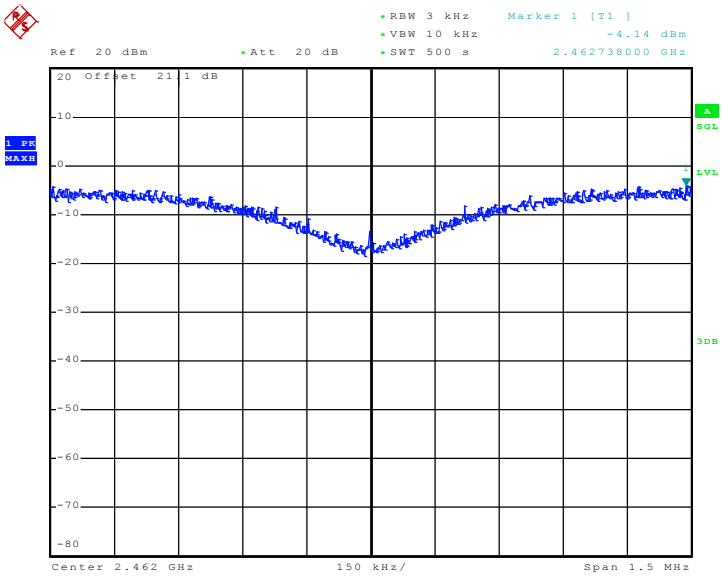
Date: 9.DEC.2010 11:22:47

Mode 2 : PSD Plot on 802.11b Channel 06



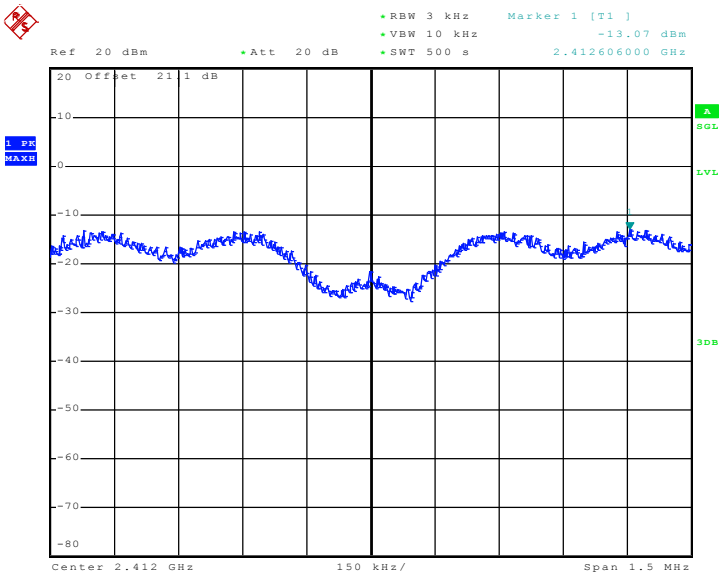
Date: 9.DEC.2010 11:35:51

Mode 3 : PSD Plot on 802.11b Channel 11



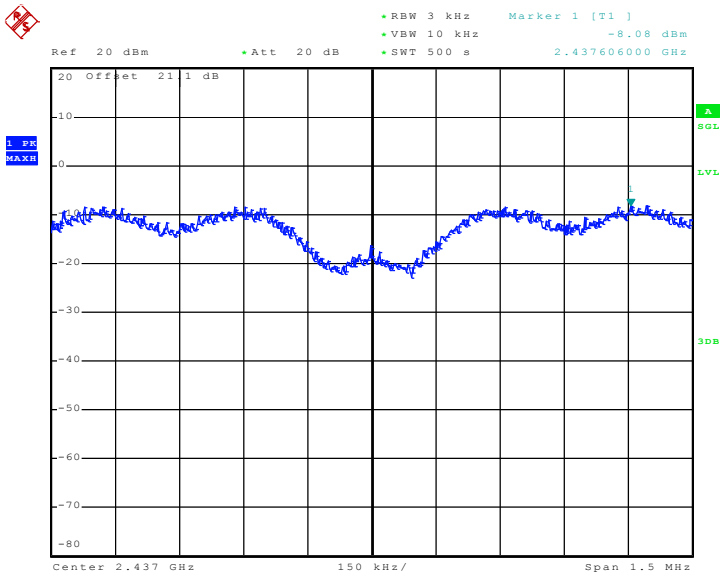
Date: 9.DEC.2010 11:47:48

Mode 4 : PSD Plot on 802.11g Channel 01



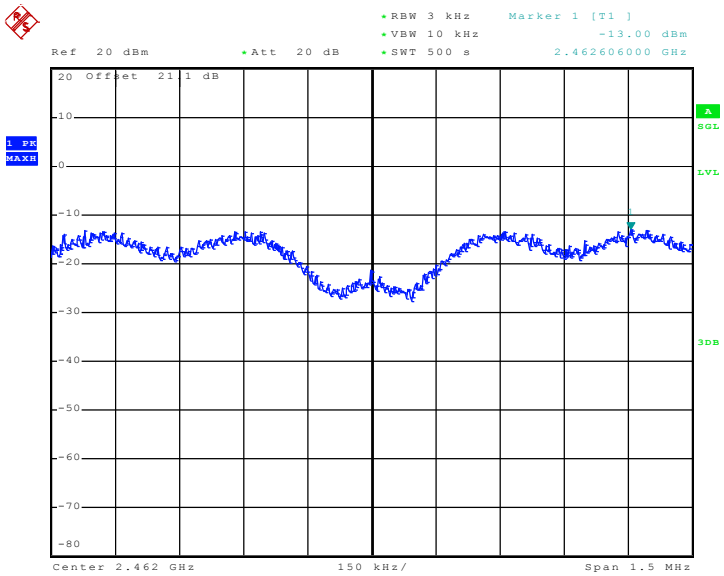
Date: 9.DEC.2010 12:31:37

Mode 5 : PSD Plot on 802.11g Channel 06



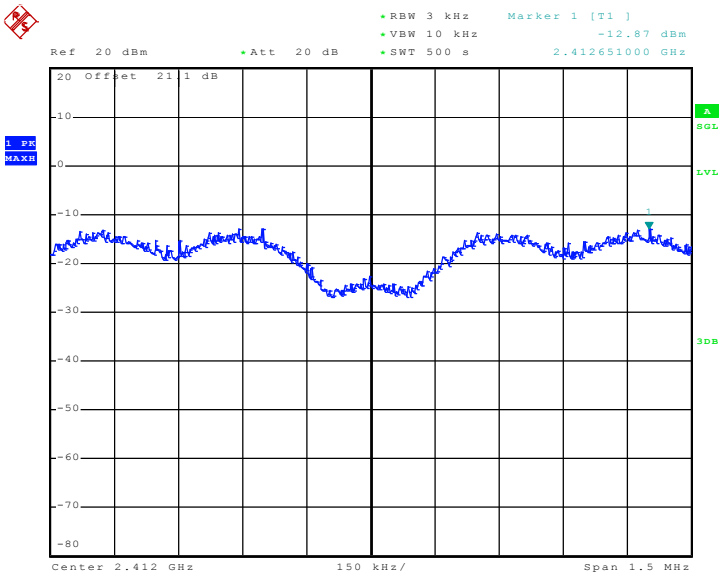
Date: 9.DEC.2010 13:11:11

Mode 6 : PSD Plot on 802.11g Channel 11



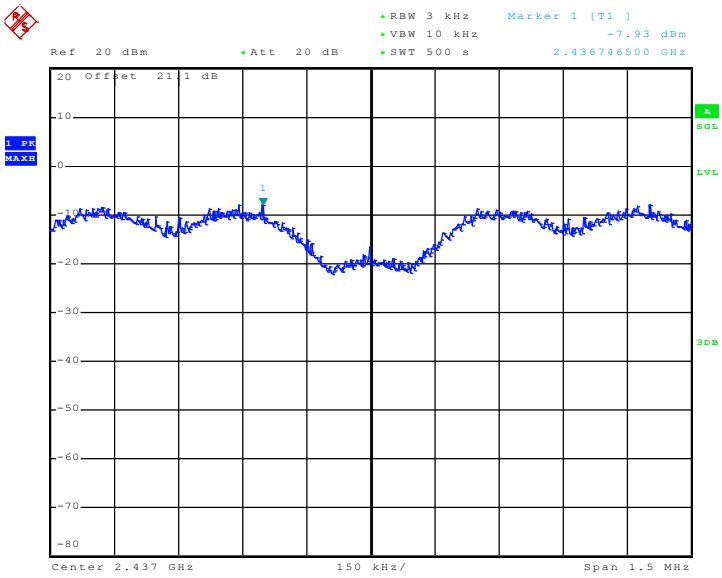
Date: 9.DEC.2010 13:30:32

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



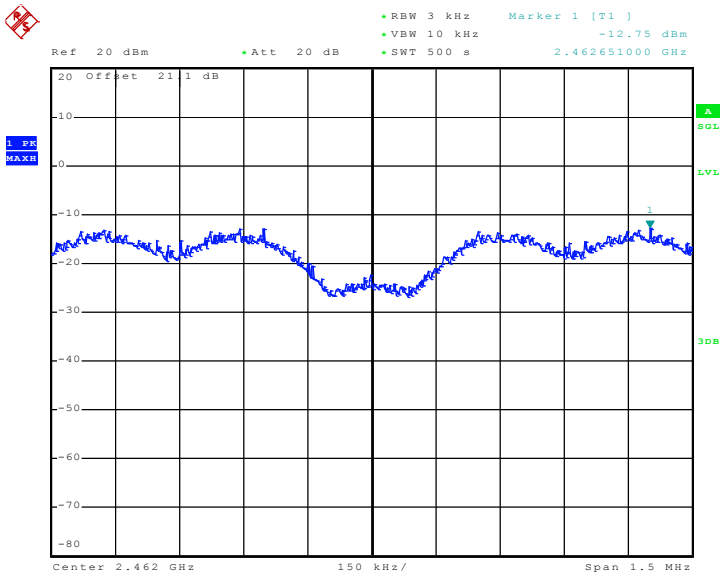
Date: 9.DEC.2010 13:56:32

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



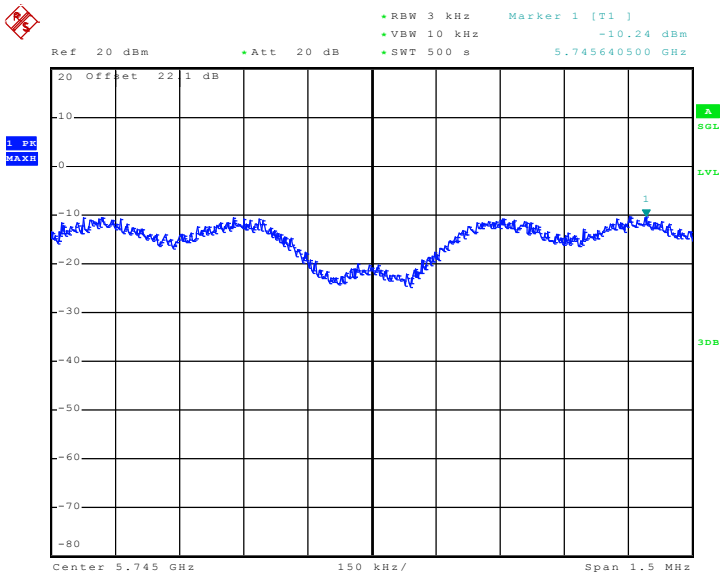
Date: 9.DEC.2010 14:47:13

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



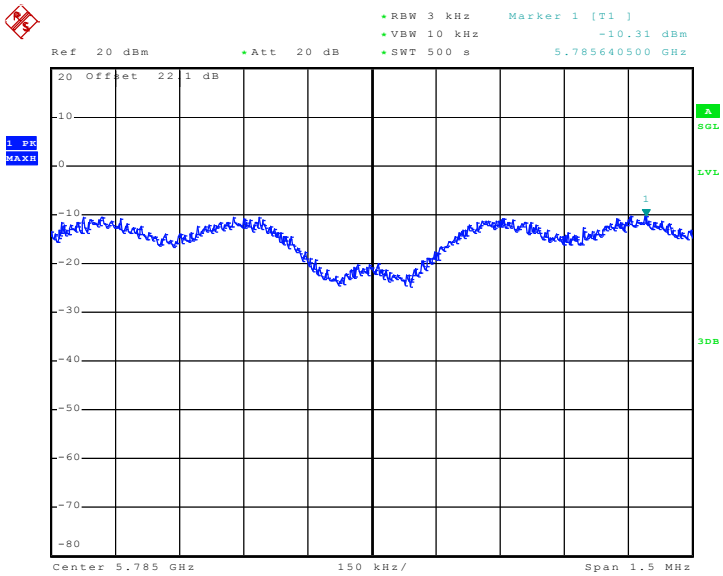
Date: 9.DEC.2010 14:21:25

Mode 10: PSD Plot on 802.11a Channel 149



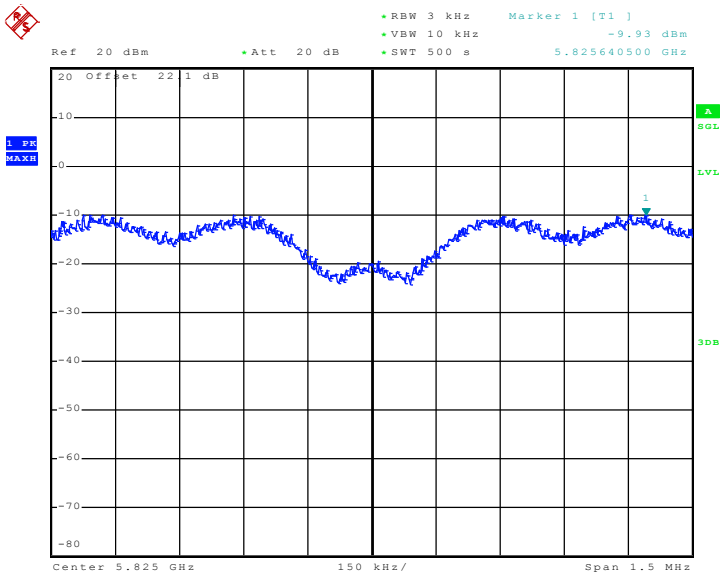
Date: 9.DEC.2010 15:04:40

Mode 11: PSD Plot on 802.11a Channel 157



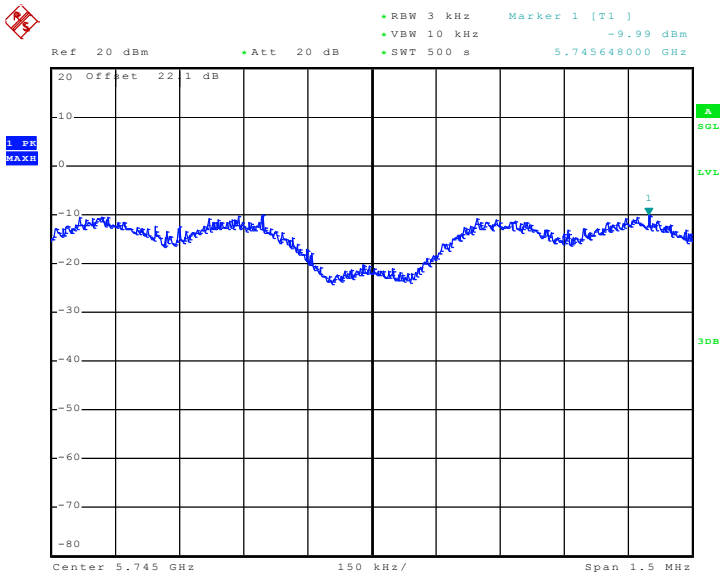
Date: 9.DEC.2010 15:24:26

Mode 12: PSD Plot on 802.11a Channel 165



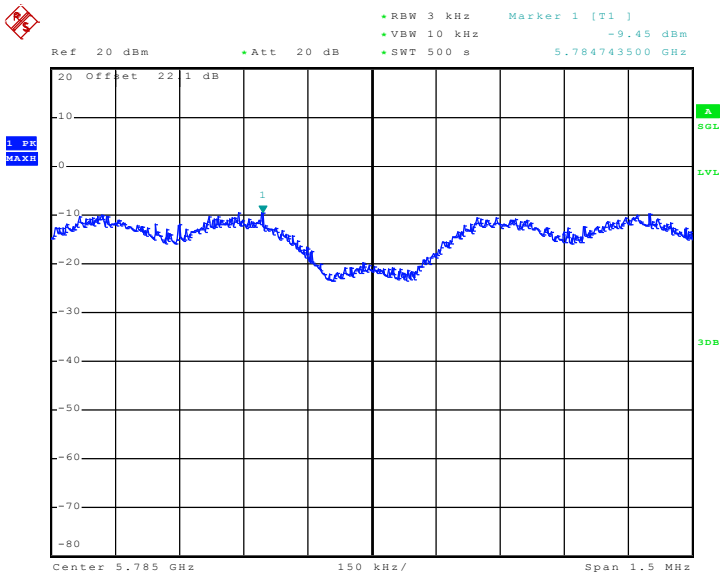
Date: 9.DEC.2010 15:36:55

Mode 13: PSD Plot on 802.11n (BW 20HMz) Channel 149



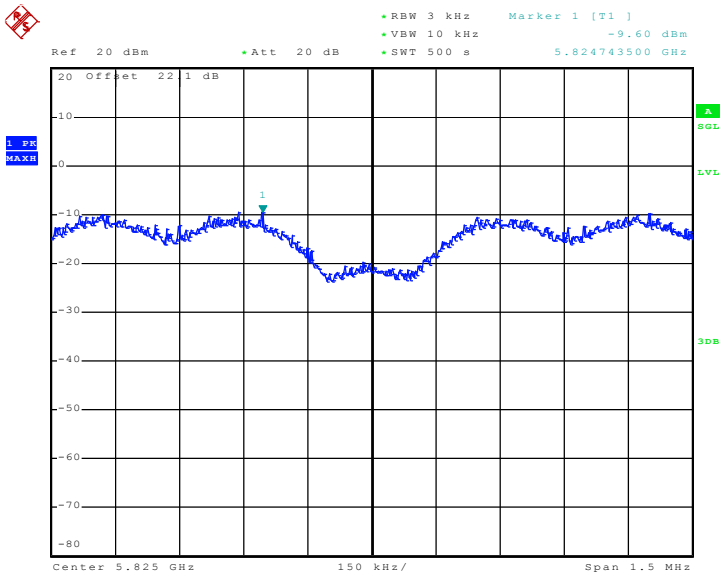
Date: 9.DEC.2010 15:57:19

Mode 14: PSD Plot on 802.11n (BW 20HMz) Channel 157



Date: 9.DEC.2010 16:06:20

Mode 15: PSD Plot on 802.11n (BW 20HMz) Channel 165



Date: 9.DEC.2010 16:16:27

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.

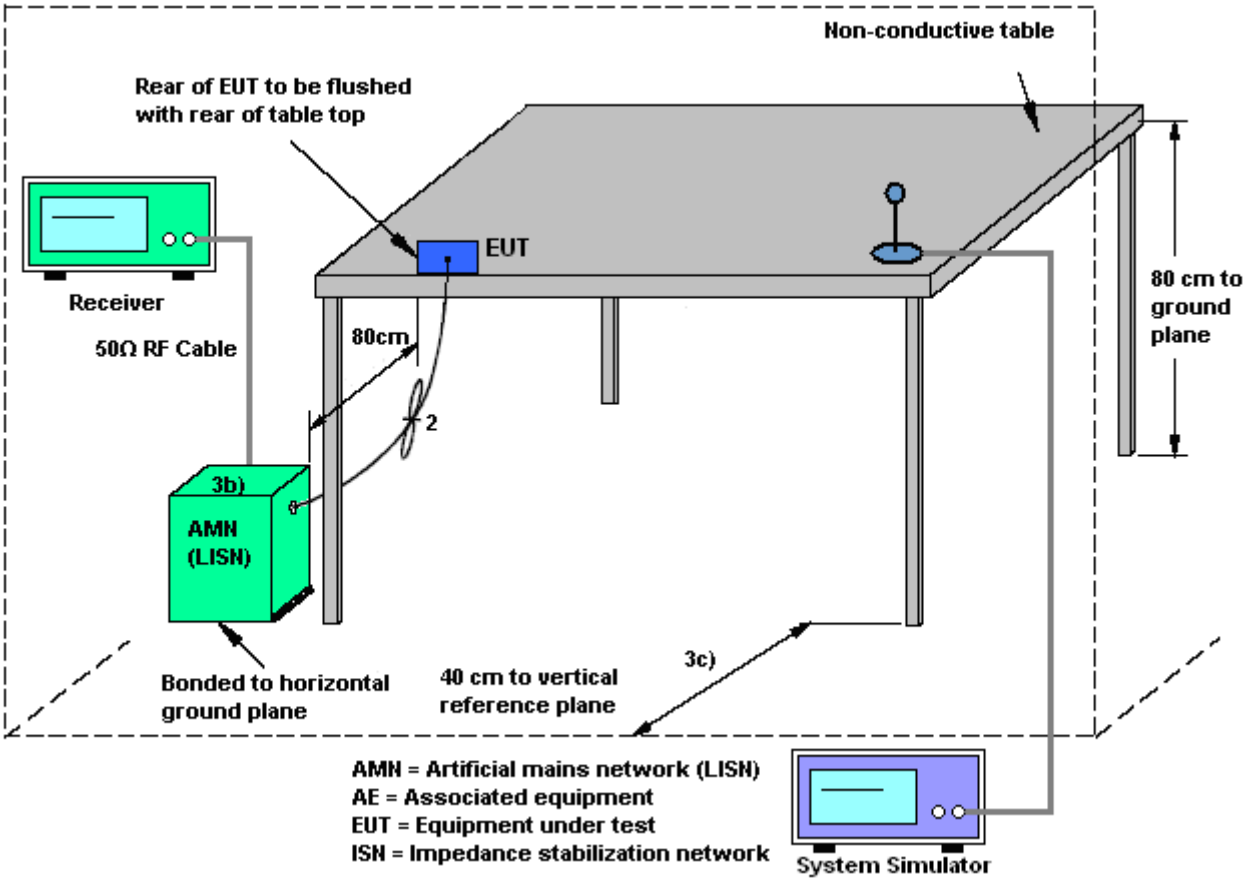
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

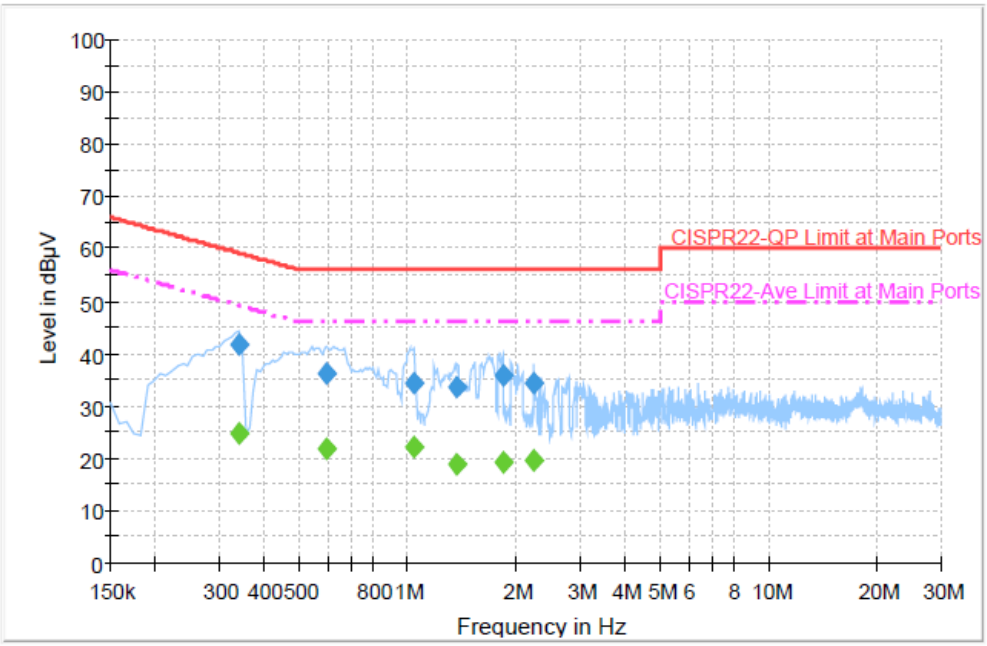
4. The testing follows the guidelines in ANSI C63.4-2003.
5. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
6. Connect EUT to the power mains through a line impedance stabilization network (LISN).
7. All the support units are connecting to the other LISN.
8. The LISN provides 50 ohm coupling impedance for the measuring instrument.
9. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
10. Both sides of AC line were checked for maximum conducted interference.
11. The frequency range from 150 kHz to 30 MHz was searched.
12. 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℃
Test Engineer :	Cona Huang	**Relative Humidity :**	43~48%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	WCDMA Band II Idle + Bluetooth Link + WLAN (2.4G) Link + GPS Rx + Scanner + Cradle + Adapter + RS232 Terminal + USB Cable (Link with Notebook)		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



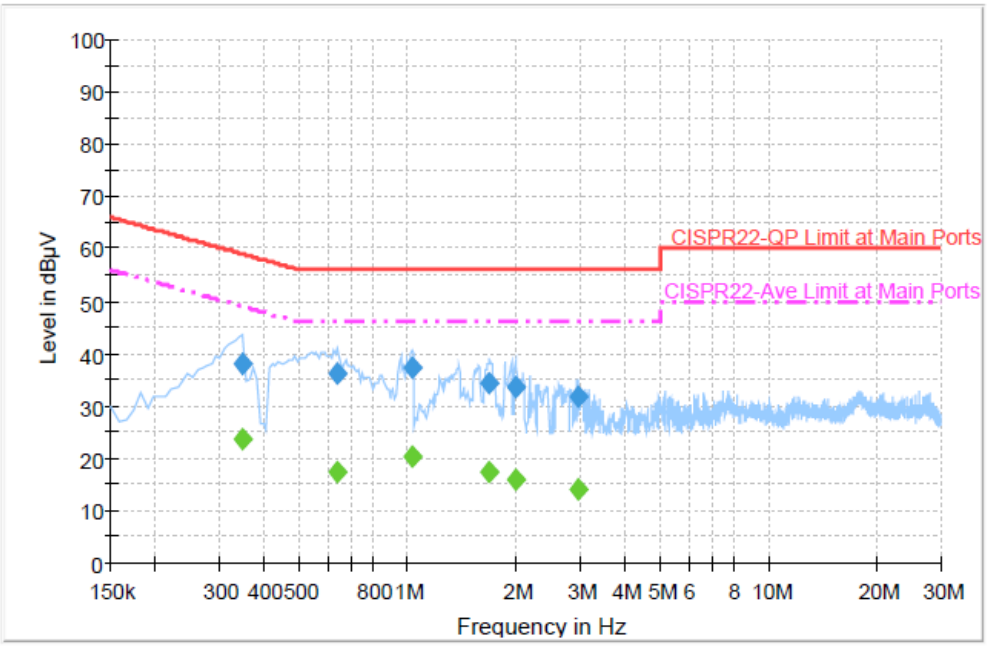
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.342000	41.5	Off	L1	19.3	17.7	59.2
0.598000	36.1	Off	L1	19.4	19.9	56.0
1.046000	34.5	Off	L1	19.4	21.5	56.0
1.374000	33.4	Off	L1	19.4	22.6	56.0
1.830000	35.8	Off	L1	19.5	20.2	56.0
2.230000	34.2	Off	L1	19.5	21.8	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.342000	24.6	Off	L1	19.3	24.6	49.2
0.598000	21.7	Off	L1	19.4	24.3	46.0
1.046000	22.2	Off	L1	19.4	23.8	46.0
1.374000	18.8	Off	L1	19.4	27.2	46.0
1.830000	19.1	Off	L1	19.5	26.9	46.0
2.230000	19.4	Off	L1	19.5	26.6	46.0

Test Mode :	Mode 1	**Temperature :**	20~22℃
Test Engineer :	Cona Huang	**Relative Humidity :**	43~48%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Function Type :	WCDMA Band II Idle + Bluetooth Link + WLAN (2.4G) Link + GPS Rx + Scanner + Cradle + Adapter + RS232 Terminal + USB Cable (Link with Notebook)		
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)
0.350000	37.9	Off	N	19.3	21.1	59.0
0.638000	36.0	Off	N	19.4	20.0	56.0
1.030000	37.4	Off	N	19.4	18.6	56.0
1.678000	34.2	Off	N	19.5	21.8	56.0
1.982000	33.5	Off	N	19.5	22.5	56.0
2.966000	31.8	Off	N	19.5	24.2	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.350000	23.6	Off	N	19.3	25.4	49.0
0.638000	17.5	Off	N	19.4	28.5	46.0
1.030000	20.4	Off	N	19.4	25.6	46.0
1.678000	17.2	Off	N	19.5	28.8	46.0
1.982000	16.0	Off	N	19.5	30.0	46.0
2.966000	14.1	Off	N	19.5	31.9	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

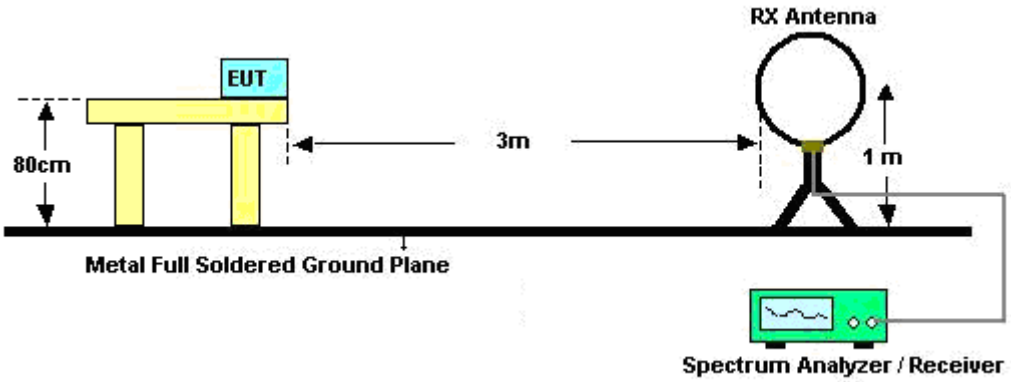
See list of measuring instruments of this test report.

3.7.3 Test Procedures

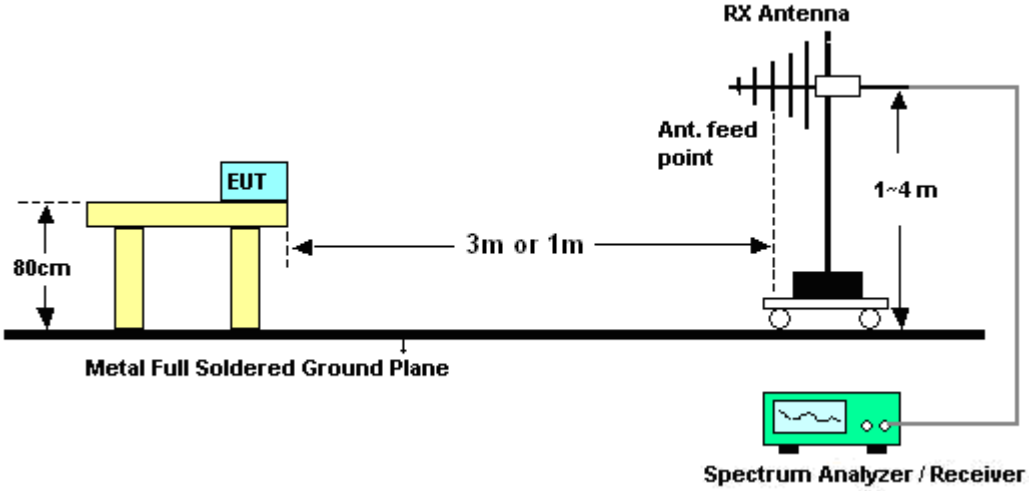
1. The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Use the following spectrum analyzer settings:
   (1) Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto;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

3.7.4 Test Setup

For radiated emissions below 30MHz



For radiated emissions above 30MHz



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

Test Engineer :	Ivan Jiang	**Temperature :**	23~25°C
		Relative Humidity :	48~50%

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 (30MHz ~ 10th Harmonic)

Test Mode :	Mode 1	**Temperature :**	23~25°C
Test Channel :	01	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**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
188.22	23.93	-19.57	43.50	45.11	9.06	1.27	31.51	-	-	Peak
237.09	29.69	-16.31	46.00	47.90	11.71	1.51	31.43	-	-	Peak
296.49	32.21	-13.79	46.00	48.38	13.41	1.75	31.33	-	-	Peak
312.60	35.35	-10.65	46.00	51.03	13.85	1.79	31.32	112	84	Peak
797.70	28.21	-17.79	46.00	33.33	22.42	3.14	30.68	-	-	Peak
898.50	30.34	-15.66	46.00	34.09	23.61	3.34	30.70	-	-	Peak
2387.14	41.14	-12.86	54.00	36.78	32.18	6.03	33.85	101	3	Average
2387.14	51.69	-22.31	74.00	47.33	32.18	6.03	33.85	101	3	Peak
2412.00	108.61	-	-	104.21	32.20	6.07	33.87	101	3	Peak
2412.00	104.71	-	-	100.31	32.20	6.07	33.87	101	3	Average
2492.00	35.03	-18.97	54.00	30.45	32.30	6.18	33.90	101	3	Average
2492.00	46.59	-27.41	74.00	42.01	32.30	6.18	33.90	101	3	Peak

Test Mode :	Mode 1	**Temperature :**	23~25°C
Test Channel :	01	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**Polarization :**	Vertical
Remark :	2412 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.54	32.89	-7.11	40.00	47.54	16.27	0.54	31.46	100	204	Peak
72.66	29.31	-10.69	40.00	53.47	6.54	0.85	31.55	-	-	Peak
134.22	27.93	-15.57	43.50	46.74	11.58	1.17	31.56	-	-	Peak
416.20	24.90	-21.10	46.00	37.03	16.83	2.20	31.16	-	-	Peak
918.10	29.82	-16.18	46.00	33.23	23.86	3.38	30.65	-	-	Peak
1000.00	33.22	-20.78	54.00	35.40	24.89	3.51	30.58	-	-	Peak
2385.05	34.73	-19.27	54.00	30.39	32.16	6.03	33.85	129	67	Average
2385.05	47.66	-26.34	74.00	43.32	32.16	6.03	33.85	129	67	Peak
2412.00	100.65	-	-	96.25	32.20	6.07	33.87	129	67	Peak
2412.00	96.91	-	-	92.51	32.20	6.07	33.87	129	67	Average
2486.00	33.64	-20.36	54.00	29.08	32.28	6.18	33.90	129	67	Average
2486.00	45.38	-28.62	74.00	40.82	32.28	6.18	33.90	129	67	Peak

Test Mode :	Mode 2	**Temperature :**	23~25°C
Test Channel :	06	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**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
42.69	24.01	-15.99	40.00	43.28	11.59	0.64	31.50	-	-	Peak
241.14	29.90	-16.10	46.00	47.74	12.05	1.53	31.42	-	-	Peak
296.22	32.26	-13.74	46.00	48.45	13.40	1.74	31.33	-	-	Peak
332.90	33.90	-12.10	46.00	48.87	14.48	1.86	31.31	100	106	Peak
397.30	33.25	-12.75	46.00	45.80	16.50	2.14	31.19	-	-	Peak
867.00	29.78	-16.22	46.00	33.96	23.25	3.29	30.72	-	-	Peak
2364.00	46.68	-27.32	74.00	42.40	32.13	5.99	33.84	100	6	Peak
2364.00	34.68	-19.32	54.00	30.40	32.13	5.99	33.84	100	6	Average
2437.00	109.12	-	-	104.65	32.24	6.11	33.88	100	6	Peak
2437.00	105.09	-	-	100.62	32.24	6.11	33.88	100	6	Average
2500.00	48.92	-25.08	74.00	44.34	32.30	6.18	33.90	100	6	Peak
2500.00	36.51	-17.49	54.00	31.93	32.30	6.18	33.90	100	6	Average

Test Mode :	Mode 2	**Temperature :**	23~25°C
Test Channel :	06	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**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
31.89	31.31	-8.69	40.00	46.18	16.04	0.55	31.46	100	233	Peak
73.74	26.90	-13.10	40.00	50.96	6.63	0.85	31.54	-	-	Peak
287.58	27.82	-18.18	46.00	44.20	13.27	1.68	31.33	-	-	Peak
397.30	29.76	-16.24	46.00	42.31	16.50	2.14	31.19	-	-	Peak
576.50	26.70	-19.30	46.00	35.63	19.40	2.62	30.95	-	-	Peak
918.10	29.97	-16.03	46.00	33.38	23.86	3.38	30.65	-	-	Peak
2380.00	45.84	-28.16	74.00	41.50	32.16	6.03	33.85	155	9	Peak
2380.00	33.95	-20.05	54.00	29.61	32.16	6.03	33.85	155	9	Average
2437.00	105.59	-	-	101.12	32.24	6.11	33.88	155	9	Peak
2437.00	101.79	-	-	97.32	32.24	6.11	33.88	155	9	Average
2486.00	46.23	-27.77	74.00	41.67	32.28	6.18	33.90	155	9	Peak
2486.00	34.02	-19.98	54.00	29.46	32.28	6.18	33.90	155	9	Average

Test Mode :	Mode 3	**Temperature :**	23~25°C
Test Channel :	11	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**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
48.90	28.76	-11.24	40.00	50.53	9.08	0.68	31.53	-	-	Peak
228.45	30.71	-15.29	46.00	49.52	11.16	1.47	31.44	-	-	Peak
287.85	31.29	-14.71	46.00	47.67	13.27	1.68	31.33	-	-	Peak
330.10	35.48	-10.52	46.00	50.55	14.39	1.85	31.31	100	165	Peak
374.90	31.78	-14.22	46.00	45.13	15.81	2.09	31.25	-	-	Peak
996.50	29.98	-24.02	54.00	32.21	24.84	3.51	30.58	-	-	Peak
2388.00	33.92	-20.08	54.00	29.56	32.18	6.03	33.85	100	46	Average
2388.00	45.81	-28.19	74.00	41.45	32.18	6.03	33.85	100	46	Peak
2462.00	105.16	-	-	100.65	32.26	6.14	33.89	100	46	Average
2462.00	109.15	-	-	104.64	32.26	6.14	33.89	100	46	Peak
2489.93	39.41	-14.59	54.00	34.83	32.30	6.18	33.90	100	46	Average
2489.93	51.56	-22.44	74.00	46.98	32.30	6.18	33.90	100	46	Peak

Test Mode :	Mode 3	**Temperature :**	23~25°C
Test Channel :	11	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**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
32.70	32.16	-7.84	40.00	47.27	15.80	0.56	31.47	122	313	Peak
72.93	27.85	-12.15	40.00	52.01	6.54	0.85	31.55	-	-	Peak
134.49	27.74	-15.76	43.50	46.54	11.59	1.17	31.56	-	-	Peak
332.20	26.81	-19.19	46.00	41.78	14.48	1.86	31.31	-	-	Peak
399.40	28.32	-17.68	46.00	40.80	16.56	2.14	31.18	-	-	Peak
974.10	30.31	-23.69	54.00	32.84	24.56	3.48	30.57	-	-	Peak
2388.00	45.19	-28.81	74.00	40.83	32.18	6.03	33.85	126	10	Peak
2388.00	33.52	-20.48	54.00	29.16	32.18	6.03	33.85	126	10	Average
2462.00	105.03	-	-	100.52	32.26	6.14	33.89	126	10	Peak
2462.00	101.16	-	-	96.65	32.26	6.14	33.89	126	10	Average
2488.98	38.47	-15.53	54.00	33.89	32.30	6.18	33.90	126	10	Average
2488.98	49.74	-24.26	74.00	45.16	32.30	6.18	33.90	126	10	Peak

Test Mode :	Mode 4	**Temperature :**	23~25°C
Test Channel :	01	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**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
48.90	28.28	-11.72	40.00	50.05	9.08	0.68	31.53	-	-	Peak
241.14	29.52	-16.48	46.00	47.36	12.05	1.53	31.42	-	-	Peak
293.25	31.76	-14.24	46.00	48.02	13.35	1.71	31.32	-	-	Peak
335.70	35.16	-10.84	46.00	50.02	14.57	1.87	31.30	100	95	Peak
833.40	30.01	-15.99	46.00	34.64	22.85	3.23	30.71	-	-	Peak
895.70	29.96	-16.04	46.00	33.76	23.57	3.33	30.70	-	-	Peak
2389.99	35.78	-18.22	54.00	31.42	32.18	6.03	33.85	101	3	Average
2389.99	50.00	-24.00	74.00	45.64	32.18	6.03	33.85	101	3	Peak
2412.00	103.71	-	-	99.31	32.20	6.07	33.87	101	3	Peak
2412.00	93.66	-	-	89.26	32.20	6.07	33.87	101	3	Average
2492.00	33.68	-20.32	54.00	29.10	32.30	6.18	33.90	101	3	Average
2492.00	49.45	-24.55	74.00	44.87	32.30	6.18	33.90	101	3	Peak

Test Mode :	Mode 4	**Temperature :**	23~25°C
Test Channel :	01	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**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
31.89	31.55	-8.45	40.00	46.42	16.04	0.55	31.46	120	100	Peak
133.41	27.29	-16.21	43.50	46.10	11.58	1.17	31.56	-	-	Peak
295.41	28.34	-17.66	46.00	44.53	13.40	1.74	31.33	-	-	Peak
399.40	34.31	-11.69	46.00	46.79	16.56	2.14	31.18	-	-	Peak
749.40	27.41	-18.59	46.00	33.38	21.67	3.06	30.70	-	-	Peak
1000.00	33.90	-20.10	54.00	36.08	24.89	3.51	30.58	-	-	Peak
2331.85	33.38	-20.62	54.00	29.19	32.09	5.92	33.82	127	130	Average
2331.85	46.64	-27.36	74.00	42.45	32.09	5.92	33.82	127	130	Peak
2412.00	95.73	-	-	91.33	32.20	6.07	33.87	127	130	Peak
2412.00	85.35	-	-	80.95	32.20	6.07	33.87	127	130	Average
2494.00	32.99	-21.01	54.00	28.41	32.30	6.18	33.90	127	130	Average
2494.00	45.28	-28.72	74.00	40.70	32.30	6.18	33.90	127	130	Peak

Test Mode :	Mode 5	**Temperature :**	23~25°C
Test Channel :	06	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**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
48.90	28.15	-11.85	40.00	49.92	9.08	0.68	31.53	-	-	Peak
242.49	30.04	-15.96	46.00	47.81	12.12	1.53	31.42	-	-	Peak
299.73	31.70	-14.30	46.00	47.80	13.46	1.77	31.33	-	-	Peak
332.20	34.95	-11.05	46.00	49.92	14.48	1.86	31.31	100	244	Peak
377.00	33.29	-12.71	46.00	46.57	15.87	2.09	31.24	-	-	Peak
828.50	29.23	-16.77	46.00	33.93	22.80	3.21	30.71	-	-	Peak
2332.00	45.12	-28.88	74.00	40.91	32.09	5.95	33.83	150	3	Peak
2332.00	33.51	-20.49	54.00	29.30	32.09	5.95	33.83	150	3	Average
2437.00	104.71	-	-	100.24	32.24	6.11	33.88	150	3	Peak
2437.00	94.31	-	-	89.84	32.24	6.11	33.88	150	3	Average
2486.00	45.93	-28.07	74.00	41.37	32.28	6.18	33.90	150	3	Peak
2486.00	34.54	-19.46	54.00	29.98	32.28	6.18	33.90	150	3	Average

Test Mode :	Mode 5	**Temperature :**	23~25°C
Test Channel :	06	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**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
31.89	32.29	-7.71	40.00	47.16	16.04	0.55	31.46	105	199	Peak
71.85	27.81	-12.19	40.00	52.06	6.46	0.84	31.55	-	-	Peak
134.49	27.76	-15.74	43.50	46.56	11.59	1.17	31.56	-	-	Peak
307.70	28.15	-17.85	46.00	43.99	13.70	1.79	31.33	-	-	Peak
427.40	25.54	-20.46	46.00	37.41	17.03	2.24	31.14	-	-	Peak
923.00	29.82	-16.18	46.00	33.14	23.92	3.40	30.64	-	-	Peak
2334.00	45.10	-28.90	74.00	40.89	32.09	5.95	33.83	102	10	Peak
2334.00	33.31	-20.69	54.00	29.10	32.09	5.95	33.83	102	10	Average
2437.00	101.62	-	-	97.15	32.24	6.11	33.88	102	10	Peak
2437.00	91.51	-	-	87.04	32.24	6.11	33.88	102	10	Average
2494.00	46.47	-27.53	74.00	41.89	32.30	6.18	33.90	102	10	Peak
2494.00	33.59	-20.41	54.00	29.01	32.30	6.18	33.90	102	10	Average

Test Mode :	Mode 6	**Temperature :**	23~25°C
Test Channel :	11	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**Polarization :**	Horizontal
Remark :	2462 MHz are 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
48.90	25.70	-14.30	40.00	47.47	9.08	0.68	31.53	-	-	Peak
223.86	28.34	-17.66	46.00	47.53	10.82	1.44	31.45	-	-	Peak
298.38	31.70	-14.30	46.00	47.83	13.44	1.76	31.33	-	-	Peak
312.60	34.73	-11.27	46.00	50.41	13.85	1.79	31.32	116	153	Peak
808.90	29.57	-16.43	46.00	34.53	22.57	3.16	30.69	-	-	Peak
897.80	30.50	-15.50	46.00	34.25	23.61	3.34	30.70	-	-	Peak
2332.00	45.81	-28.19	74.00	41.60	32.09	5.95	33.83	128	47	Peak
2332.00	33.75	-20.25	54.00	29.54	32.09	5.95	33.83	128	47	Average
2462.00	106.77	-	-	102.26	32.26	6.14	33.89	128	47	Peak
2462.00	95.27	-	-	90.76	32.26	6.14	33.89	128	47	Average
2483.85	41.74	-12.26	54.00	37.18	32.28	6.18	33.90	128	47	Average
2483.85	58.97	-15.03	74.00	54.41	32.28	6.18	33.90	128	47	Peak

Test Mode :	Mode 6	**Temperature :**	23~25°C
Test Channel :	11	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**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
32.70	32.23	-7.77	40.00	47.34	15.80	0.56	31.47	100	284	Peak
73.74	27.33	-12.67	40.00	51.39	6.63	0.85	31.54	-	-	Peak
283.26	27.57	-18.43	46.00	44.06	13.20	1.65	31.34	-	-	Peak
340.60	28.08	-17.92	46.00	42.77	14.72	1.89	31.30	-	-	Peak
817.30	29.57	-16.43	46.00	34.41	22.67	3.19	30.70	-	-	Peak
996.50	32.38	-21.62	54.00	34.61	24.84	3.51	30.58	-	-	Peak
2382.00	33.73	-20.27	54.00	29.39	32.16	6.03	33.85	126	10	Average
2382.00	46.04	-27.96	74.00	41.70	32.16	6.03	33.85	126	10	Peak
2462.00	90.39	-	-	85.88	32.26	6.14	33.89	126	10	Average
2462.00	100.98	-	-	96.47	32.26	6.14	33.89	126	10	Peak
2483.50	38.41	-15.59	54.00	33.85	32.28	6.18	33.90	126	10	Average
2483.50	53.95	-20.05	74.00	49.39	32.28	6.18	33.90	126	10	Peak

Test Mode :	Mode 7	**Temperature :**	23~25°C
Test Channel :	01	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**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
186.33	23.71	-19.79	43.50	44.90	9.06	1.27	31.52	-	-	Peak
226.02	29.75	-16.25	46.00	48.79	10.95	1.46	31.45	-	-	Peak
296.49	31.97	-14.03	46.00	48.14	13.41	1.75	31.33	-	-	Peak
332.20	35.51	-10.49	46.00	50.48	14.48	1.86	31.31	141	100	Peak
794.20	28.86	-17.14	46.00	34.03	22.38	3.13	30.68	-	-	Peak
934.20	30.07	-15.93	46.00	33.20	24.06	3.42	30.61	-	-	Peak
2389.61	36.79	-17.21	54.00	32.43	32.18	6.03	33.85	100	360	Average
2389.61	51.20	-22.80	74.00	46.84	32.18	6.03	33.85	100	360	Peak
2412.00	103.41	-	-	99.01	32.20	6.07	33.87	100	360	Peak
2412.00	93.19	-	-	88.79	32.20	6.07	33.87	100	360	Average
2492.00	34.00	-20.00	54.00	29.42	32.30	6.18	33.90	100	360	Average
2492.00	50.75	-23.25	74.00	46.17	32.30	6.18	33.90	100	360	Peak

Test Mode :	Mode 7	**Temperature :**	23~25°C
Test Channel :	01	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**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
32.70	32.66	-7.34	40.00	47.77	15.80	0.56	31.47	120	322	Peak
72.12	27.57	-12.43	40.00	51.82	6.46	0.84	31.55	-	-	Peak
134.49	27.34	-16.16	43.50	46.14	11.59	1.17	31.56	-	-	Peak
399.40	28.87	-17.13	46.00	41.35	16.56	2.14	31.18	-	-	Peak
699.00	28.07	-17.93	46.00	35.07	20.88	2.94	30.82	-	-	Peak
875.40	28.00	-18.00	46.00	32.05	23.35	3.31	30.71	-	-	Peak
2389.42	34.26	-19.74	54.00	29.90	32.18	6.03	33.85	100	129	Average
2389.42	47.46	-26.54	74.00	43.10	32.18	6.03	33.85	100	129	Peak
2412.00	94.82	-	-	90.42	32.20	6.07	33.87	100	129	Peak
2412.00	84.83	-	-	80.43	32.20	6.07	33.87	100	129	Average
2486.00	33.57	-20.43	54.00	29.01	32.28	6.18	33.90	100	129	Average
2486.00	45.85	-28.15	74.00	41.29	32.28	6.18	33.90	100	129	Peak

Test Mode :	Mode 8	**Temperature :**	23~25°C
Test Channel :	06	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**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
48.90	24.29	-15.71	40.00	46.06	9.08	0.68	31.53	-	-	Peak
240.06	30.63	-15.37	46.00	48.54	11.98	1.53	31.42	-	-	Peak
288.66	31.34	-14.66	46.00	47.68	13.29	1.69	31.32	-	-	Peak
312.60	34.57	-11.43	46.00	50.25	13.85	1.79	31.32	111	136	Peak
391.00	32.61	-13.39	46.00	45.41	16.29	2.12	31.21	-	-	Peak
996.50	31.67	-22.33	54.00	33.90	24.84	3.51	30.58	-	-	Peak
2390.00	51.85	-22.15	74.00	47.49	32.18	6.03	33.85	100	5	Peak
2390.00	35.20	-18.80	54.00	30.84	32.18	6.03	33.85	100	5	Average
2437.00	109.62	-	-	105.15	32.24	6.11	33.88	100	5	Peak
2437.00	99.16	-	-	94.69	32.24	6.11	33.88	100	5	Average
2494.00	52.00	-22.00	74.00	47.42	32.30	6.18	33.90	100	5	Peak
2494.00	36.61	-17.39	54.00	32.03	32.30	6.18	33.90	100	5	Average

Test Mode :	Mode 8	**Temperature :**	23~25°C
Test Channel :	06	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**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
31.89	32.09	-7.91	40.00	46.96	16.04	0.55	31.46	100	259	Peak
71.85	27.71	-12.29	40.00	51.96	6.46	0.84	31.55	-	-	Peak
134.49	28.24	-15.26	43.50	47.04	11.59	1.17	31.56	-	-	Peak
436.50	25.46	-20.54	46.00	37.15	17.17	2.27	31.13	-	-	Peak
710.90	26.31	-19.69	46.00	33.07	21.06	2.97	30.79	-	-	Peak
945.40	29.62	-16.38	46.00	32.55	24.20	3.45	30.58	-	-	Peak
2390.00	51.45	-22.55	74.00	47.09	32.18	6.03	33.85	155	11	Peak
2390.00	33.95	-20.05	54.00	29.59	32.18	6.03	33.85	155	11	Average
2437.00	105.00	-	-	100.53	32.24	6.11	33.88	155	11	Peak
2437.00	94.89	-	-	90.42	32.24	6.11	33.88	155	11	Average
2484.00	46.67	-27.33	74.00	42.11	32.28	6.18	33.90	155	11	Peak
2484.00	33.99	-20.01	54.00	29.43	32.28	6.18	33.90	155	11	Average

Test Mode :	Mode 9	**Temperature :**	23~25°C
Test Channel :	11	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**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
187.41	24.70	-18.80	43.50	45.89	9.06	1.27	31.52	-	-	Peak
240.06	29.36	-16.64	46.00	47.27	11.98	1.53	31.42	-	-	Peak
288.93	31.46	-14.54	46.00	47.80	13.29	1.69	31.32	-	-	Peak
337.80	36.26	-9.74	46.00	51.05	14.63	1.88	31.30	100	215	Peak
397.30	28.92	-17.08	46.00	41.47	16.50	2.14	31.19	-	-	Peak
934.20	29.74	-16.26	46.00	32.87	24.06	3.42	30.61	-	-	Peak
2380.00	33.60	-20.40	54.00	29.26	32.16	6.03	33.85	127	48	Average
2380.00	45.52	-28.48	74.00	41.18	32.16	6.03	33.85	127	48	Peak
2462.00	94.61	-	-	90.10	32.26	6.14	33.89	127	48	Average
2462.00	104.90	-	-	100.39	32.26	6.14	33.89	127	48	Peak
2483.85	42.17	-11.83	54.00	37.61	32.28	6.18	33.90	127	48	Average
2483.85	58.42	-15.58	74.00	53.86	32.28	6.18	33.90	127	48	Peak

Test Mode :	Mode 9	**Temperature :**	23~25°C
Test Channel :	11	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**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
31.89	32.00	-8.00	40.00	46.87	16.04	0.55	31.46	152	116	Peak
134.49	26.81	-16.69	43.50	45.61	11.59	1.17	31.56	-	-	Peak
288.66	27.63	-18.37	46.00	43.97	13.29	1.69	31.32	-	-	Peak
332.20	28.52	-17.48	46.00	43.49	14.48	1.86	31.31	-	-	Peak
391.00	27.10	-18.90	46.00	39.90	16.29	2.12	31.21	-	-	Peak
923.00	30.75	-15.25	46.00	34.07	23.92	3.40	30.64	-	-	Peak
2342.00	33.38	-20.62	54.00	29.15	32.11	5.95	33.83	127	11	Average
2342.00	45.21	-28.79	74.00	40.98	32.11	5.95	33.83	127	11	Peak
2462.00	89.57	-	-	85.06	32.26	6.14	33.89	127	11	Average
2462.00	99.81	-	-	95.30	32.26	6.14	33.89	127	11	Peak
2483.66	37.91	-16.09	54.00	33.35	32.28	6.18	33.90	127	11	Average
2483.66	53.13	-20.87	74.00	48.57	32.28	6.18	33.90	127	11	Peak

Test Mode :	Mode 10	**Temperature :**	23~25°C
Test Channel :	149	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**Polarization :**	Horizontal
Remark :	5745 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
45.93	28.21	-11.79	40.00	48.79	10.27	0.66	31.51	-	-	Peak
109.92	30.97	-12.53	43.50	50.85	10.62	1.05	31.55	-	-	Peak
284.61	31.53	-14.47	46.00	48.00	13.21	1.66	31.34	-	-	Peak
323.80	36.57	-9.43	46.00	51.85	14.21	1.83	31.32	100	122	Peak
397.30	35.38	-10.62	46.00	47.93	16.50	2.14	31.19	-	-	Peak
926.50	31.32	-14.68	46.00	34.59	23.96	3.40	30.63	-	-	Peak
5745.00	108.17	-	-	96.63	34.84	9.91	33.21	169	241	Peak
5745.00	97.90	-	-	86.36	34.84	9.91	33.21	169	241	Average

Test Mode :	Mode 10	**Temperature :**	23~25°C
Test Channel :	149	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**Polarization :**	Vertical
Remark :	5745 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	31.49	-8.51	40.00	46.36	16.04	0.55	31.46	124	196	Peak
133.41	28.31	-15.19	43.50	47.12	11.58	1.17	31.56	-	-	Peak
299.73	27.89	-18.11	46.00	43.99	13.46	1.77	31.33	-	-	Peak
399.40	27.52	-18.48	46.00	40.00	16.56	2.14	31.18	-	-	Peak
911.80	30.39	-15.61	46.00	33.91	23.78	3.37	30.67	-	-	Peak
998.60	32.63	-21.37	54.00	34.82	24.88	3.51	30.58	-	-	Peak
5745.00	112.75	-	-	101.21	34.84	9.91	33.21	101	11	Peak
5745.00	101.34	-	-	89.80	34.84	9.91	33.21	101	11	Average

Test Mode :	Mode 11	**Temperature :**	23~25°C
Test Channel :	157	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**Polarization :**	Horizontal
Remark :	5785 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
48.90	27.49	-12.51	40.00	49.26	9.08	0.68	31.53	-	-	Peak
240.06	29.29	-16.71	46.00	47.20	11.98	1.53	31.42	-	-	Peak
284.61	32.01	-13.99	46.00	48.48	13.21	1.66	31.34	-	-	Peak
340.60	35.18	-10.82	46.00	49.87	14.72	1.89	31.30	110	254	Peak
455.40	24.98	-21.02	46.00	36.27	17.49	2.31	31.09	-	-	Peak
996.50	30.64	-23.36	54.00	32.87	24.84	3.51	30.58	-	-	Peak
5785.00	109.54	-	-	97.99	34.88	9.90	33.23	101	271	Peak
5785.00	99.18	-	-	87.63	34.88	9.90	33.23	101	271	Average

Test Mode :	Mode 11	**Temperature :**	23~25°C
Test Channel :	157	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**Polarization :**	Vertical
Remark :	5785 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
31.89	32.60	-7.40	40.00	47.47	16.04	0.55	31.46	125	271	Peak
134.49	27.18	-16.32	43.50	45.98	11.59	1.17	31.56	-	-	Peak
227.10	27.63	-18.37	46.00	46.60	11.02	1.46	31.45	-	-	Peak
394.50	24.33	-21.67	46.00	36.98	16.41	2.13	31.19	-	-	Peak
895.00	29.58	-16.42	46.00	33.38	23.57	3.33	30.70	-	-	Peak
996.50	30.85	-23.15	54.00	33.08	24.84	3.51	30.58	-	-	Peak
5785.00	112.92	-	-	101.37	34.88	9.90	33.23	100	10	Peak
5785.00	102.89	-	-	91.34	34.88	9.90	33.23	100	10	Average

Test Mode :	Mode 12	**Temperature :**	23~25°C
Test Channel :	165	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**Polarization :**	Horizontal
Remark :	5825 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
50.25	23.40	-16.60	40.00	45.96	8.28	0.70	31.54	-	-	Peak
228.45	29.89	-16.11	46.00	48.70	11.16	1.47	31.44	-	-	Peak
278.13	31.29	-14.71	46.00	47.88	13.12	1.64	31.35	-	-	Peak
318.20	35.02	-10.98	46.00	50.50	14.03	1.81	31.32	131	144	Peak
382.60	29.96	-16.04	46.00	43.03	16.05	2.11	31.23	-	-	Peak
828.50	31.62	-14.38	46.00	36.32	22.80	3.21	30.71	-	-	Peak
5825.00	110.91	-	-	99.39	34.93	9.88	33.29	100	269	Peak
5825.00	100.75	-	-	89.23	34.93	9.88	33.29	100	269	Average

Test Mode :	Mode 12	**Temperature :**	23~25°C
Test Channel :	165	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**Polarization :**	Vertical
Remark :	5825 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
32.70	32.50	-7.50	40.00	47.61	15.80	0.56	31.47	144	229	Peak
134.49	28.17	-15.33	43.50	46.97	11.59	1.17	31.56	-	-	Peak
286.77	27.66	-18.34	46.00	44.05	13.26	1.68	31.33	-	-	Peak
559.00	23.77	-22.23	46.00	33.04	19.13	2.57	30.97	-	-	Peak
797.00	25.88	-20.12	46.00	31.00	22.42	3.14	30.68	-	-	Peak
996.50	32.25	-21.75	54.00	34.48	24.84	3.51	30.58	-	-	Peak
5825.00	114.57	-	-	103.05	34.93	9.88	33.29	122	20	Peak
5825.00	103.60	-	-	92.08	34.93	9.88	33.29	122	20	Average

Test Mode :	Mode 13	**Temperature :**	23~25°C
Test Channel :	149	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**Polarization :**	Horizontal
Remark :	5745 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
188.22	24.35	-19.15	43.50	45.53	9.06	1.27	31.51	-	-	Peak
242.22	29.20	-16.80	46.00	46.97	12.12	1.53	31.42	-	-	Peak
299.46	31.63	-14.37	46.00	47.73	13.46	1.77	31.33	-	-	Peak
312.60	35.08	-10.92	46.00	50.76	13.85	1.79	31.32	101	182	Peak
803.30	30.79	-15.21	46.00	35.82	22.50	3.15	30.68	-	-	Peak
917.40	30.96	-15.04	46.00	34.38	23.85	3.38	30.65	-	-	Peak
5745.00	108.19	-	-	96.65	34.84	9.91	33.21	100	241	Peak
5745.00	97.98	-	-	86.44	34.84	9.91	33.21	100	241	Average

Test Mode :	Mode 13	**Temperature :**	23~25°C
Test Channel :	149	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**Polarization :**	Vertical
Remark :	5745 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
32.70	32.38	-7.62	40.00	47.49	15.80	0.56	31.47	150	193	Peak
65.10	27.89	-12.11	40.00	52.65	5.98	0.80	31.54	-	-	Peak
134.49	27.89	-15.61	43.50	46.69	11.59	1.17	31.56	-	-	Peak
397.30	31.76	-14.24	46.00	44.31	16.50	2.14	31.19	-	-	Peak
561.80	24.37	-21.63	46.00	33.59	19.17	2.58	30.97	-	-	Peak
716.50	25.17	-20.83	46.00	31.82	21.15	2.98	30.78	-	-	Peak
5745.00	111.69	-	-	100.15	34.84	9.91	33.21	120	3	Peak
5745.00	101.51	-	-	89.97	34.84	9.91	33.21	120	3	Average

Test Mode :	Mode 14	**Temperature :**	23~25°C
Test Channel :	157	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**Polarization :**	Horizontal
Remark :	5785 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
50.25	25.05	-14.95	40.00	47.61	8.28	0.70	31.54	-	-	Peak
240.06	29.93	-16.07	46.00	47.84	11.98	1.53	31.42	-	-	Peak
284.61	31.04	-14.96	46.00	47.51	13.21	1.66	31.34	-	-	Peak
338.50	35.59	-10.41	46.00	50.35	14.66	1.88	31.30	126	174	Peak
399.40	30.45	-15.55	46.00	42.93	16.56	2.14	31.18	-	-	Peak
862.10	31.78	-14.22	46.00	36.02	23.19	3.29	30.72	-	-	Peak
5785.00	109.39	-	-	97.84	34.88	9.90	33.23	101	272	Peak
5785.00	99.41	-	-	87.86	34.88	9.90	33.23	101	272	Average

Test Mode :	Mode 14	**Temperature :**	23~25°C
Test Channel :	157	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**Polarization :**	Vertical
Remark :	5785 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	32.63	-7.37	40.00	47.28	16.27	0.54	31.46	100	63	Peak
74.01	27.78	-12.22	40.00	51.84	6.63	0.85	31.54	-	-	Peak
134.49	28.12	-15.38	43.50	46.92	11.59	1.17	31.56	-	-	Peak
330.10	28.10	-17.90	46.00	43.17	14.39	1.85	31.31	-	-	Peak
582.10	25.23	-20.77	46.00	34.04	19.49	2.64	30.94	-	-	Peak
869.80	29.33	-16.67	46.00	33.47	23.28	3.30	30.72	-	-	Peak
5785.00	113.95	-	-	102.40	34.88	9.90	33.23	122	18	Peak
5785.00	103.25	-	-	91.70	34.88	9.90	33.23	122	18	Average

Test Mode :	Mode 15	**Temperature :**	23~25°C
Test Channel :	165	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**Polarization :**	Horizontal
Remark :	5825 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
46.74	30.30	-9.70	40.00	51.27	9.87	0.67	31.51	100	209	Peak
187.14	25.82	-17.68	43.50	47.01	9.06	1.27	31.52	-	-	Peak
294.06	31.93	-14.07	46.00	48.16	13.37	1.72	31.32	-	-	Peak
318.90	34.52	-11.48	46.00	49.97	14.06	1.81	31.32	-	-	Peak
856.50	30.07	-15.93	46.00	34.40	23.12	3.28	30.73	-	-	Peak
996.50	30.10	-23.90	54.00	32.33	24.84	3.51	30.58	-	-	Peak
5825.00	110.69	-	-	99.17	34.93	9.88	33.29	100	269	Peak
5825.00	100.36	-	-	88.84	34.93	9.88	33.29	100	269	Average

Test Mode :	Mode 15	**Temperature :**	23~25°C
Test Channel :	165	**Relative Humidity :**	48~50%
Test Engineer :	Ivan Jiang	**Polarization :**	Vertical
Remark :	5825 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
31.89	32.58	-7.42	40.00	47.45	16.04	0.55	31.46	119	102	Peak
71.58	27.83	-12.17	40.00	52.08	6.46	0.84	31.55	-	-	Peak
134.49	27.08	-16.42	43.50	45.88	11.59	1.17	31.56	-	-	Peak
399.40	28.05	-17.95	46.00	40.53	16.56	2.14	31.18	-	-	Peak
699.00	29.69	-16.31	46.00	36.69	20.88	2.94	30.82	-	-	Peak
998.60	33.25	-20.75	54.00	35.44	24.88	3.51	30.58	-	-	Peak
5825.00	113.26	-	-	101.74	34.93	9.88	33.29	100	4	Peak
5825.00	102.82	-	-	91.30	34.93	9.88	33.29	100	4	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 PIFA Antenna 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	Apr. 26, 2010	Apr. 25, 2011	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)
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-1000W	N/A	N/A	N/A	N/A	Conduction (CO05-HY)
System Simulator	R&S	CMU200	117997	N/A	May 14, 2009	May 13, 2011	Conduction (CO05-HY)
GPS Station	T&E	GS-50	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. 27, 2010	Mar. 26, 2011	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 (150kHz ~ 30MHz)

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

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

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

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

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

Appendix A. Photographs of EUT

Please refer to Sporton report number EP0D0904 as below.