



FCC RF Test Report

APPLICANT : PSION INC.
EQUIPMENT : EP10 Hand-Held Computer
BRAND NAME : **PSION**
MODEL NAME : 7515C
FCC ID : GM37515CA
STANDARD : FCC Part 15 Subpart E
CLASSIFICATION : Unlicensed National Information Infrastructure (UNII)

The product was received on Mar. 10, 2011 and completely tested on Jun. 25, 2011. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown compliance with the applicable technical standards.

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

Reviewed by:

Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.



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SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	26dB Bandwidth	-	Pass	-
3.2	15.407(a)	Maximum Conducted Output Power	$\leq 17, 24, 30$ dBm (depend on band)	Pass	-
3.3	15.407(a)	Power Spectral Density	$\leq 4, 11, 17$ dBm (depend on band)	Pass	-
3.4	15.407(b)	Frequency Band Edges	$\leq -17, -27$ dBm (depend on band)&15.209(a)	Pass	-
3.5	15.407(b)	Spurious Emission	EIRP < -27 dBm/MHz	Pass	-
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 9.5 dB at 0.15 MHz
3.7	15.407(b)	Transmitter Radiated Emission	$\leq -17, -27$ dBm (depend on band)&15.209(a)	Pass	Under limit 3.09 dB at 31.62 MHz
3.8	15.407(b)	Peak Excursion Ratio	≤ 13 dB	Pass	-
3.9	15.407(c)	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.10	15.407(g)	Frequency Stability	Within Operation Band	Pass	-
3.11	15.203 & 15.407(a)	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

PSION INC.

2100 Meadowvale Blvd, Mississauga ON L5N 7J9, CANADA

1.2 Manufacturer

PSION INC.

2100 Meadowvale Blvd, Mississauga ON L5N 7J9, CANADA

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	EP10 Hand-Held Computer
Brand Name	PSION
Model Name	7515C
FCC ID	GM37515UA
Tx/Rx Frequency Range	5150 MHz ~ 5250 MHz 5250 MHz ~ 5350 MHz 5470 MHz ~ 5725 MHz
Maximum Output Power to Antenna	<5150 MHz ~ 5250 MHz> 802.11a : 12.28 dBm / 0.02 W 802.11n (BW 20MHz) : 12.45 dBm / 0.02 W <5250 MHz ~ 5350 MHz> 802.11a : 12.06 dBm / 0.02 W 802.11n (BW 20MHz) : 12.21 dBm / 0.02 W <5470 MHz ~ 5725 MHz> 802.11a : 12.16 dBm / 0.02 W 802.11n (BW 20MHz) : 12.06 dBm / 0.02 W
Antenna Type	PIFA Antenna
Antenna Gain	5150 MHz ~ 5250 MHz : 4.85 dBi 5250 MHz ~ 5350 MHz : 4.86 dBi 5470 MHz ~ 5725 MHz : 4.87 dBi
HW Version	2
SW Version	1.1
Type of Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Identical Prototype

Remark:

1. For other wireless features of this EUT, test report will be issued separately.
2. This test report recorded only product characteristics and test results of Unlicensed National Information Infrastructure (UNII).
3. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
4. The EUT didn't support 5600MHz ~ 5650MHz.

List of Accessory:

Specification of Accessory		
AC Adapter 1	Brand Name	Leader
	Model Name	IU18-2050300-WP
AC Adapter 2	Brand Name	Phihong
	Model Name	PSA15R-050P
Battery	Brand Name	PSION / ETI
	Model Name	RV3010 / BP08-000760
Car Charger	Brand Name	AOEM
	Model Name	C15C-0520CD0-C0
Desktop Charger Cradle (Single Dock)	Brand Name	PSION
	Model Name	RV4000
Desktop Charger Cradle (AC Adapter)	Brand Name	FSP
	Model Name	FSP050-DBAB1
Charger Snap Module 1	Brand Name	PSION
	Model Name	RV4001
Charger Snap Module 2	Brand Name	PSION
	Model Name	RV4002
LCD Panel	Brand Name	Sharp
	Model Name	LS037V7DW01
Pouch	Brand Name	Psion
	Model Name	RV6091

Remark: For accessories equipped with this EUT, please refer to Appendix A.

1.4 Testing Site

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



1.5 Applied Standards

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

- FCC Part 15 Subpart E
- FCC Public Notice DA 02-2138, (Measurement Guidelines of UNII)
- ANSI C63.4-2003

Remark:

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

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
3.	Notebook	DELL	Vostro 1510	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	LCD Monitor	Lenovo	6135-AB1	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
5.	Bluetooth Earphone	Nokia	BH-102	PYAHS-107W	N/A	N/A
6.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A



2 Test Configuration of Equipment Under Test

2.1 Carrier Frequency Channel

802.11a Carrier Frequency Channel							
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
36	5180	40	5200	44	5220	48	5240
52	5260	56	5280	60	5300	64	5320
100	5500	104	5520	108	5540	112	5560
116	5580	132	5660	136	5680	140	5700

802.11n (BW 20MHz) Carrier Frequency Channel							
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
36	5180	40	5200	44	5220	48	5240
52	5260	56	5280	60	5300	64	5320
100	5500	104	5520	108	5540	112	5560
116	5580	132	5660	136	5680	140	5700

2.2 RF Power

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

Channel	Frequency	5GHz 802.11a RF Power (dBm)							
		Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 36	5180 MHz	12.18	12.16	12.17	12.10	12.06	11.98	11.93	11.89
CH 44	5220 MHz	12.23	12.20	12.14	12.14	12.04	11.95	11.97	11.88
CH 48	5240 MHz	12.28	12.21	12.22	12.16	12.08	12.04	12.06	11.99
CH 52	5260 MHz	12.01	12.04	12.10	11.95	11.90	11.75	11.78	11.71
CH 60	5300 MHz	12.02	12.04	12.09	11.88	11.85	11.80	11.71	11.68
CH 64	5320 MHz	12.06	12.00	12.07	11.89	11.84	11.77	11.70	11.64
CH 100	5500 MHz	12.12	12.09	12.08	12.16	12.11	11.79	11.71	11.80
CH 116	5580 MHz	12.16	12.11	12.00	11.98	11.94	11.87	11.85	11.77
CH 140	5700 MHz	12.04	12.01	12.01	11.79	11.70	11.68	11.63	11.53

Channel	Frequency	5GHz 802.11n (BW 20MHz) RF Power (dBm)							
		Data Rate							
		MSC0	MSC1	MSC2	MSC3	MSC4	MSC5	MSC6	MSC7
CH 36	5180 MHz	12.18	12.16	12.14	12.10	12.04	11.97	11.90	11.98
CH 44	5220 MHz	12.23	12.18	12.15	12.11	12.09	11.97	11.92	12.00
CH 48	5240 MHz	12.45	12.38	12.33	12.27	12.19	12.06	12.02	12.08
CH 52	5260 MHz	12.21	12.11	11.90	11.86	11.83	11.80	11.78	11.73
CH 60	5300 MHz	12.20	12.16	11.76	11.73	11.71	11.70	11.68	11.67
CH 64	5320 MHz	12.18	12.20	11.87	11.80	11.79	11.73	11.74	11.69
CH 100	5500 MHz	12.06	12.08	11.79	11.61	12.27	12.13	12.08	12.19
CH 116	5580 MHz	12.02	12.06	11.91	11.93	11.83	11.85	11.81	11.79
CH 140	5700 MHz	12.01	12.00	11.89	11.84	12.40	12.34	12.34	12.07

Remark:

1. The data rates of WLAN 802.11a/n were set in 6Mbps for 802.11a, MSC0 for 802.11n (BW 20MHz) for all the test cases due to the highest RF output power.
2. The EUT is programmed to transmit signal continuously for all testing.

2.3 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: conduction (150 kHz to 30 MHz), radiation (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

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

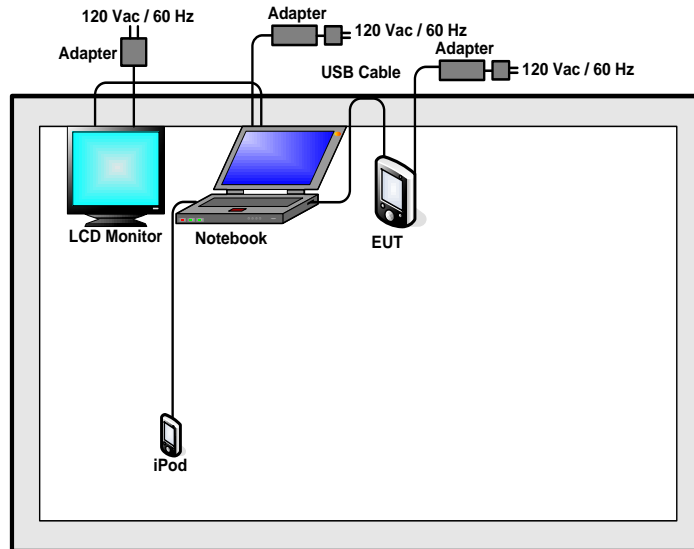
Test Cases	
Test Item	802.11a (Modulation : OFDM)
Conducted TCs	<ul style="list-style-type: none"> ■ Mode 1: 802.11a_CH36_5180 MHz ■ Mode 2: 802.11a_CH44_5220 MHz ■ Mode 3: 802.11a_CH48_5240 MHz ■ Mode 4: 802.11a_CH52_5260 MHz ■ Mode 5: 802.11a_CH60_5300 MHz ■ Mode 6: 802.11a_CH64_5320 MHz ■ Mode 7: 802.11a_CH100_5500 MHz ■ Mode 8: 802.11a_CH116_5580 MHz ■ Mode 9: 802.11a_CH140_5700 MHz ■ Mode 10: 802.11n_CH36_5180 MHz (BW 20M) ■ Mode 11: 802.11n_CH44_5220 MHz (BW 20M) ■ Mode 12: 802.11n_CH48_5240 MHz (BW 20M) ■ Mode 13: 802.11n_CH52_5260 MHz (BW 20M) ■ Mode 14: 802.11n_CH60_5300 MHz (BW 20M) ■ Mode 15: 802.11n_CH64_5320 MHz (BW 20M) ■ Mode 16: 802.11n_CH100_5500 MHz (BW 20M) ■ Mode 17: 802.11n_CH116_5580 MHz (BW 20M) ■ Mode 18: 802.11n_CH140_5700 MHz (BW 20M)



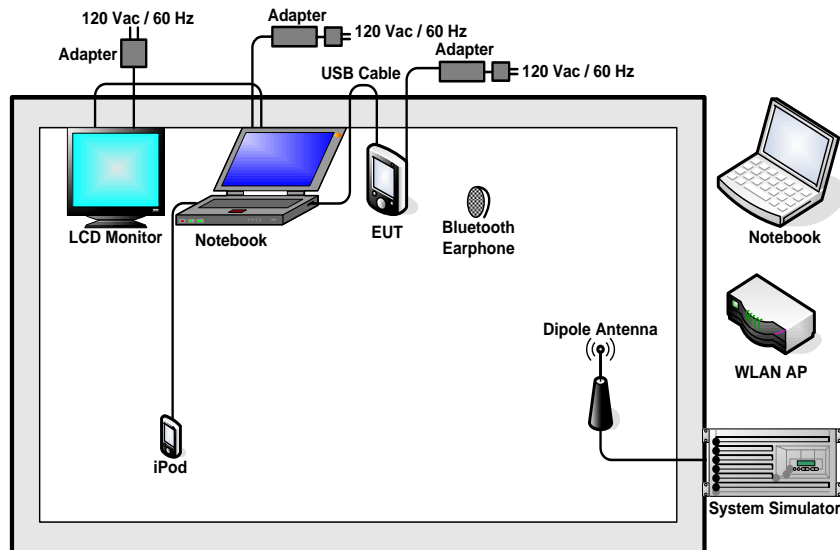
Radiated TCs	<ul style="list-style-type: none">■ Mode 1: 802.11a_CH36_5180 MHz■ Mode 2: 802.11a_CH44_5220 MHz■ Mode 3: 802.11a_CH48_5240 MHz■ Mode 4: 802.11a_CH52_5260 MHz■ Mode 5: 802.11a_CH60_5300 MHz■ Mode 6: 802.11a_CH64_5320 MHz■ Mode 7: 802.11a_CH100_5500 MHz■ Mode 8: 802.11a_CH116_5580 MHz■ Mode 9: 802.11a_CH140_5700 MHz■ Mode 10: 802.11n_CH36_5180 MHz (BW 20M)■ Mode 11: 802.11n_CH44_5220 MHz (BW 20M)■ Mode 12: 802.11n_CH48_5240 MHz (BW 20M)■ Mode 13: 802.11n_CH52_5260 MHz (BW 20M)■ Mode 14: 802.11n_CH60_5300 MHz (BW 20M)■ Mode 15: 802.11n_CH64_5320 MHz (BW 20M)■ Mode 16: 802.11n_CH100_5500 MHz (BW 20M)■ Mode 17: 802.11n_CH116_5580 MHz (BW 20M)■ Mode 18: 802.11n_CH140_5700 MHz (BW 20M)
AC Conducted Emission	CDMA Band V Idle + WLAN Link (5G) + Bluetooth Link + MP3 + Camera + Sleeve (USB Port) + Battery + USB Cable (Link with Notebook) + Adapter 1

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 RF Utility

The programmed RF Utility "cal1273WM", 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 26dB Bandwidth Measurement

3.1.1 Limit of 26dB Bandwidth

There is no restriction limits for bandwidth. The maximum conducted output power can be limited by measured emission bandwidth (B). For the band 5.15~5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log B. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B.

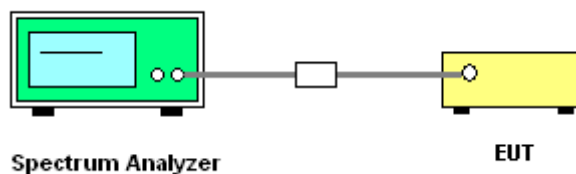
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows FCC Public Notice DA 02-2138 (Measurement Guidelines of UNII).
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Read RBW and repeat measurement as needed until the RBW/BW ratio is approximately 1%.
4. Use a RBW = approximately 1% of the emission bandwidth; Set the VBW > RBW; Use a peak detector.
5. Measure the maximum width of the emission that is 26 dB relative to the peak of the emission and 99% occupied bandwidth.

3.1.4 Test Setup



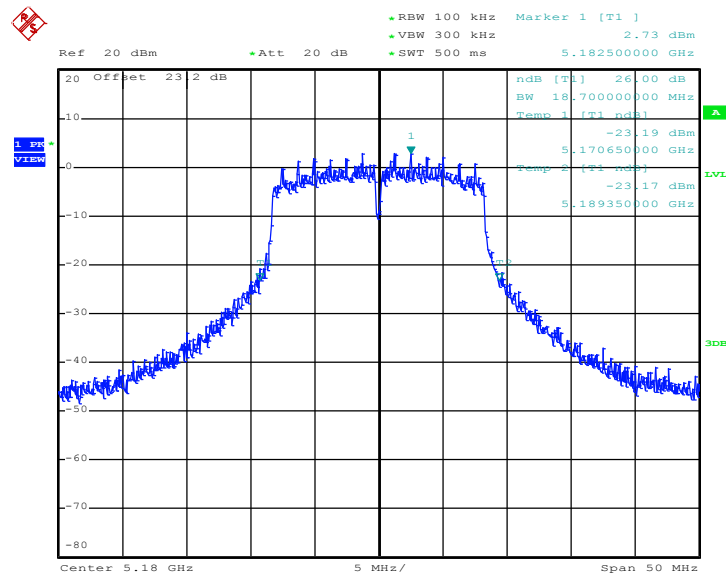


3.1.5 Test Result of 26dB Bandwidth

Test Mode :	Mode 1~9	Temperature :	25~27°C
Test Engineer :	Alan Liu	Relative Humidity :	51~54%

Channel	Frequency (MHz)	802.11a 26dB Bandwidth (MHz)	Pass/Fail
36	5180	18.70	Pass
44	5220	18.70	Pass
48	5240	18.80	Pass
52	5260	18.55	Pass
60	5300	18.55	Pass
64	5320	18.55	Pass
100	5500	18.80	Pass
116	5580	18.85	Pass
140	5700	18.70	Pass

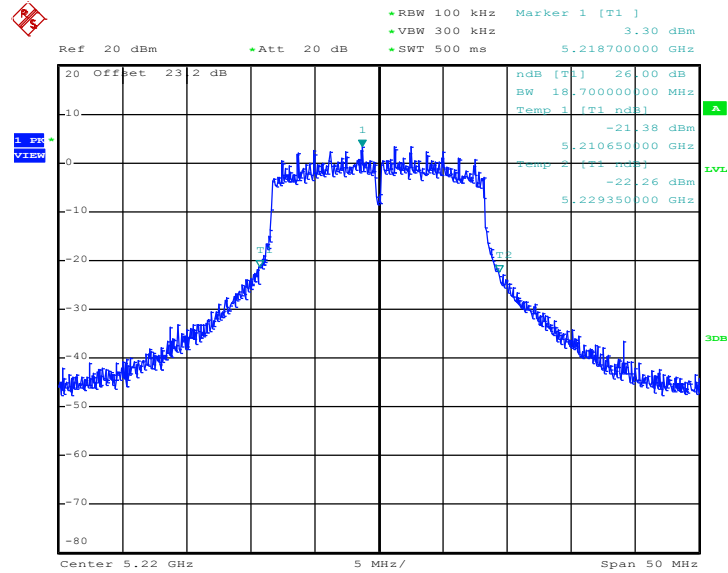
26 dB Bandwidth Plot on 802.11a Channel 36



Date: 19.MAR.2011 13:45:20

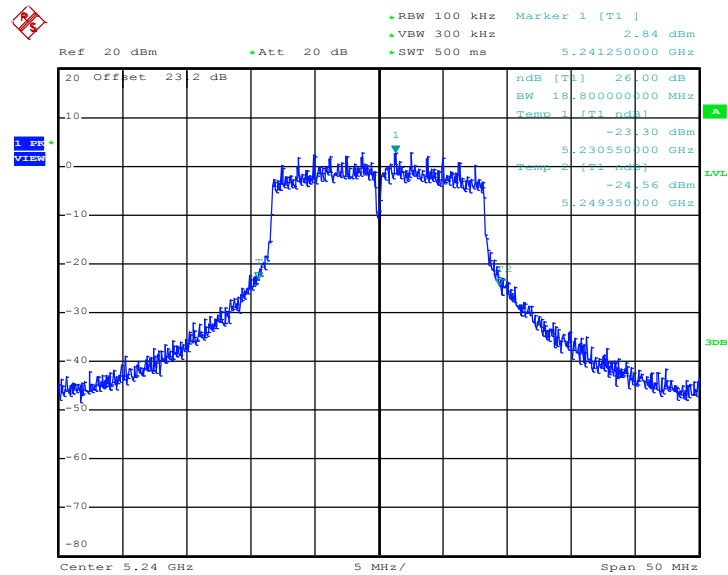


26 dB Bandwidth Plot on 802.11a Channel 44



Date: 19.MAR.2011 14:14:01

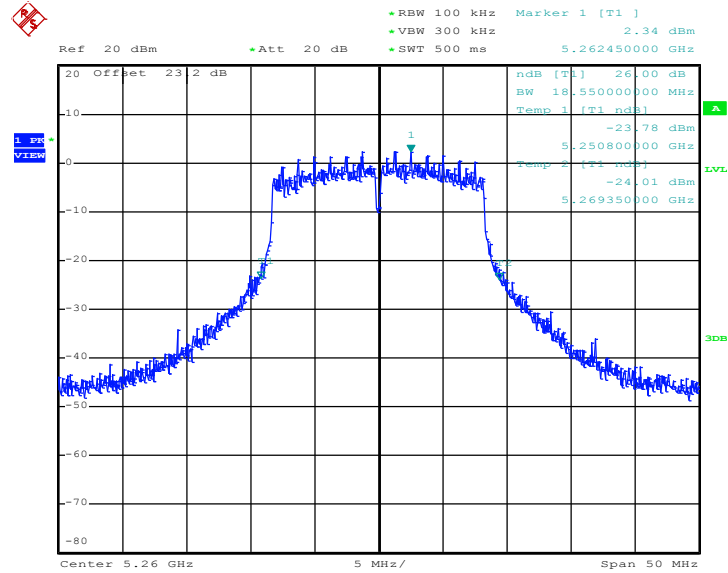
26 dB Bandwidth Plot on 802.11a Channel 48



Date: 19.MAR.2011 14:21:05

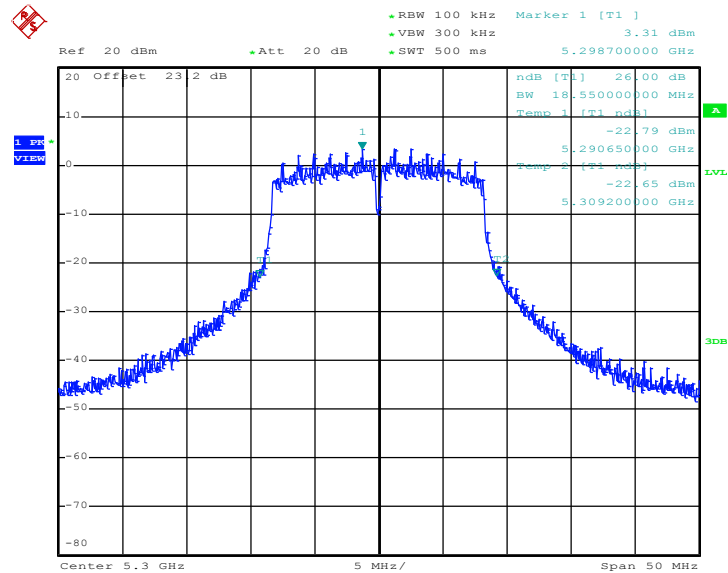


26 dB Bandwidth Plot on 802.11a Channel 52



Date: 19.MAR.2011 14:25:38

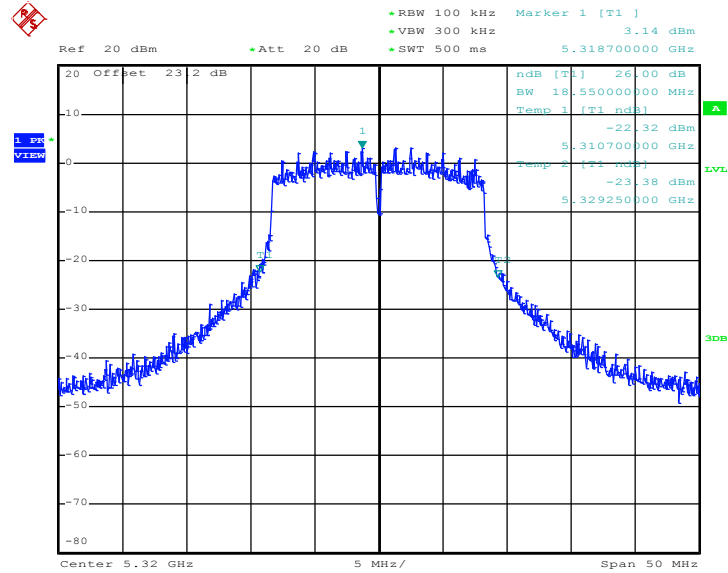
26 dB Bandwidth Plot on 802.11a Channel 60



Date: 19.MAR.2011 14:28:36

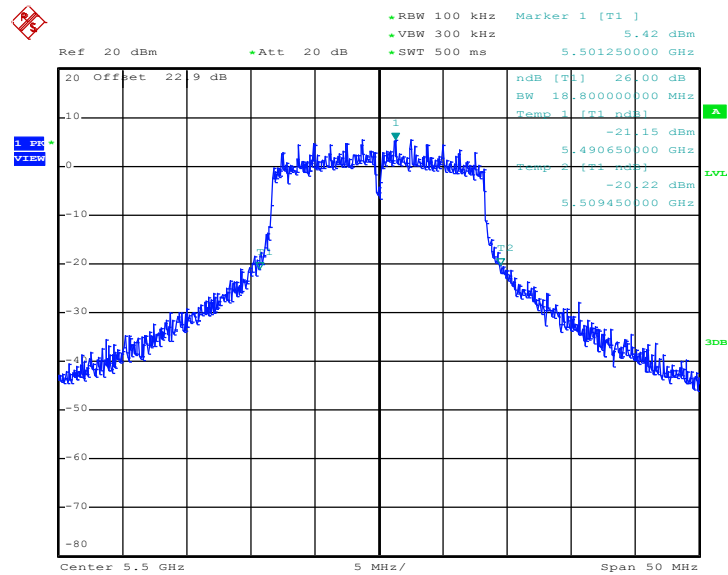


26 dB Bandwidth Plot on 802.11a Channel 64



Date: 19.MAR.2011 14:31:47

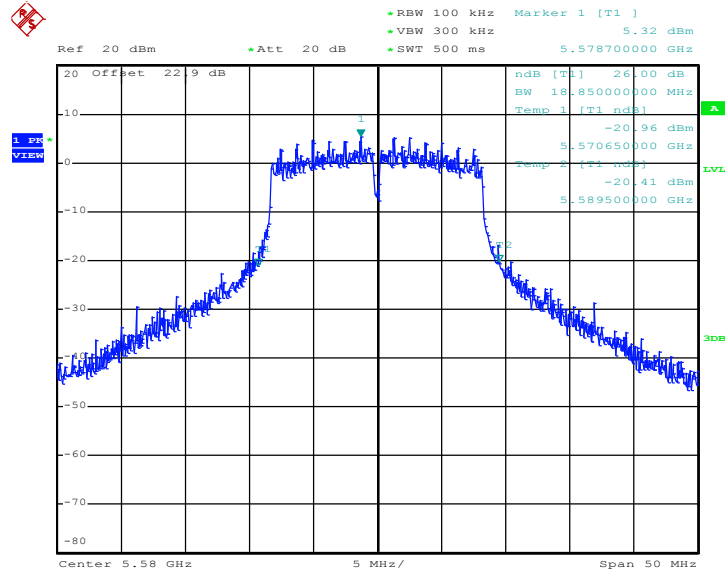
26 dB Bandwidth Plot on 802.11a Channel 100



Date: 19.MAR.2011 15:54:35

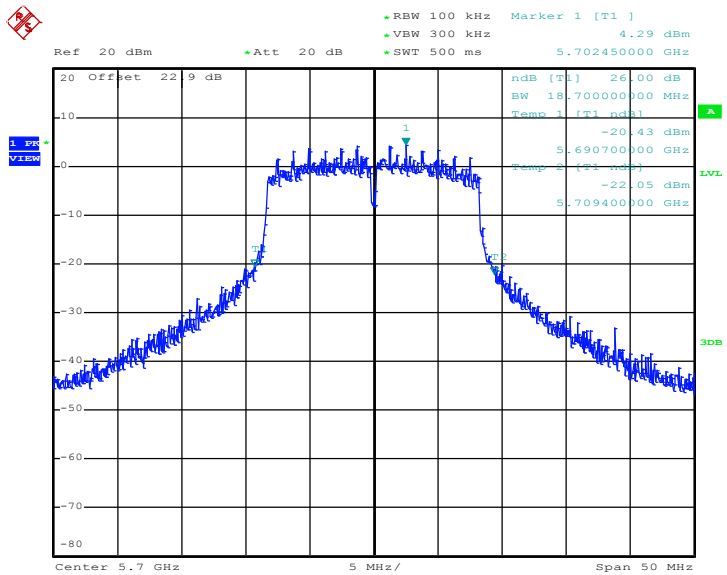


26 dB Bandwidth Plot on 802.11a Channel 116



Date: 19.MAR.2011 15:57:59

26 dB Bandwidth Plot on 802.11a Channel 140



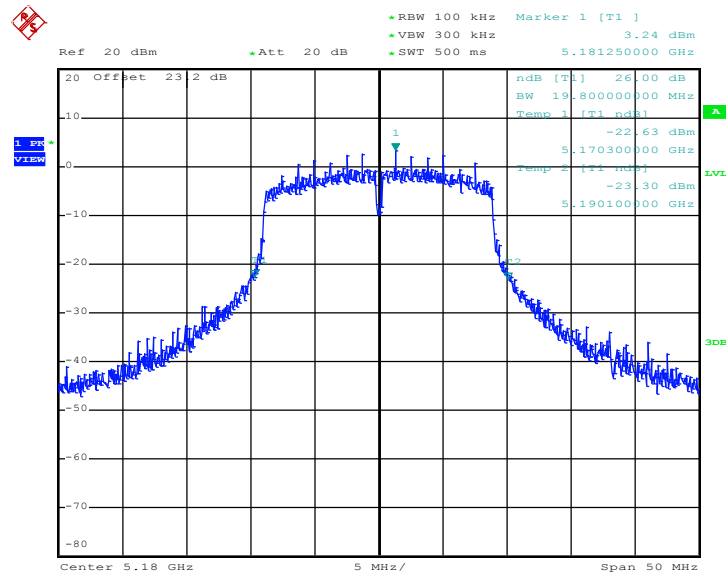
Date: 19.MAR.2011 16:03:20



Test Mode :	Mode 10~18	Temperature :	25~27°C
Test Engineer :	Alan Liu	Relative Humidity :	51~54%

Channel	Frequency (MHz)	802.11n (BW 20MHz) 26dB Bandwidth (MHz)	Pass/Fail
36	5180	19.80	Pass
44	5220	20.00	Pass
48	5240	19.75	Pass
52	5260	19.50	Pass
60	5300	19.60	Pass
64	5320	20.20	Pass
100	5500	19.75	Pass
116	5580	19.90	Pass
140	5700	20.15	Pass

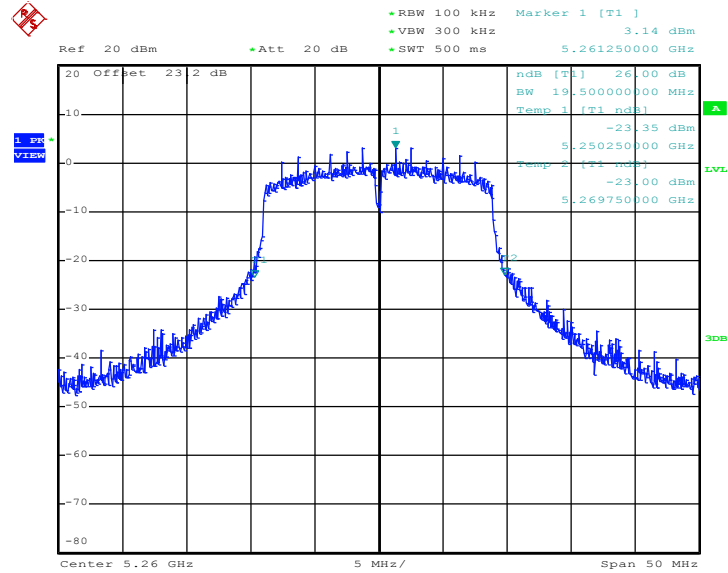
26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 36



Date: 19.MAR.2011 16:46:23

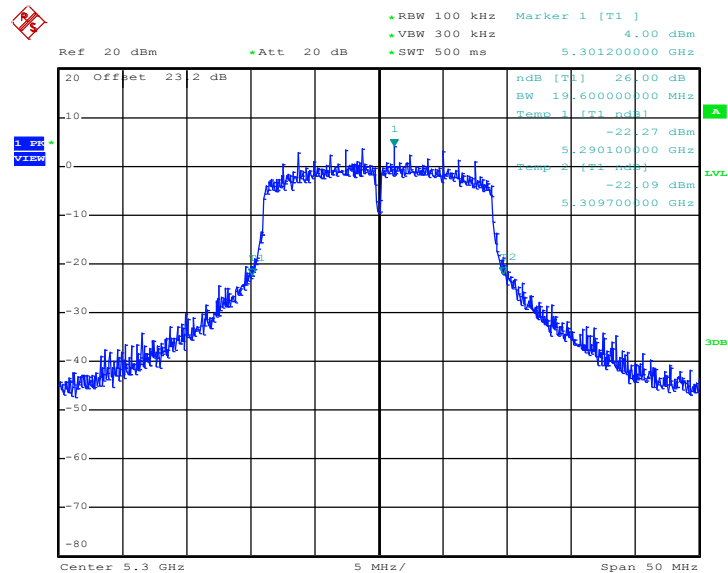


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 52



Date: 19.MAR.2011 17:08:20

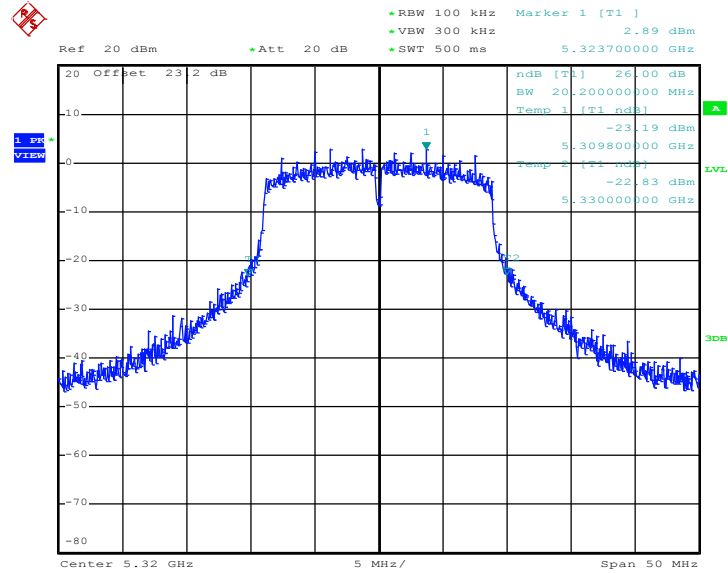
26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 60



Date: 19.MAR.2011 17:11:15

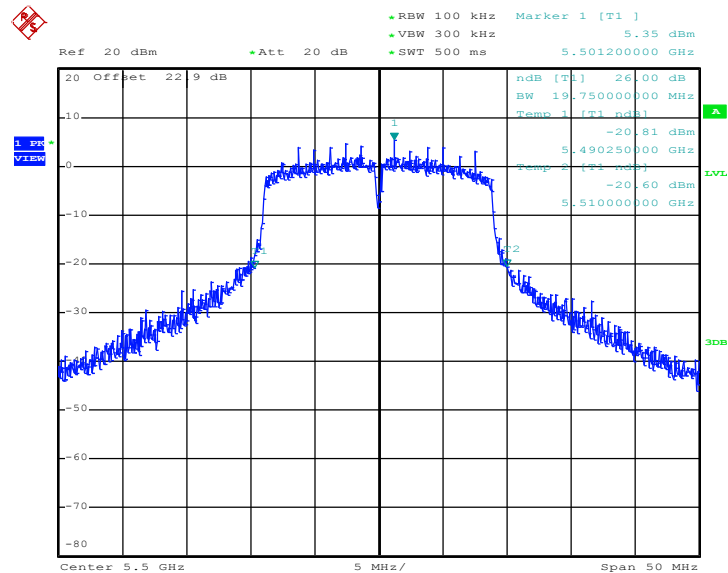


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 64



Date: 19.MAR.2011 17:14:16

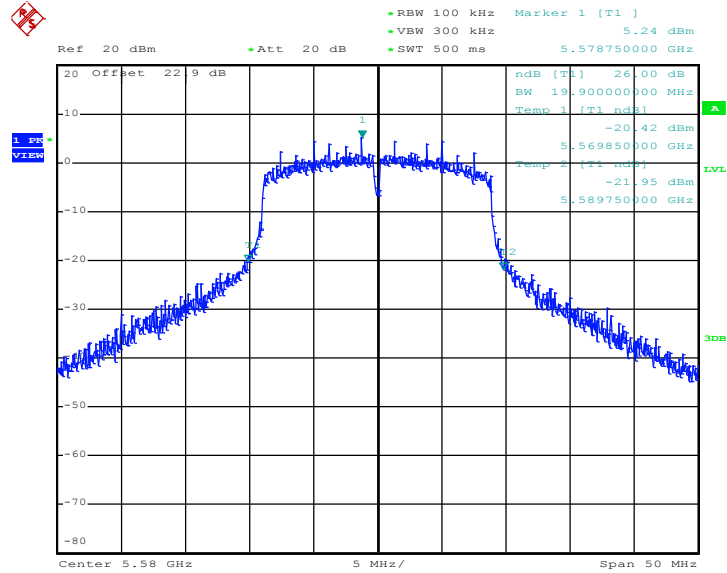
26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 100



Date: 19.MAR.2011 17:17:50

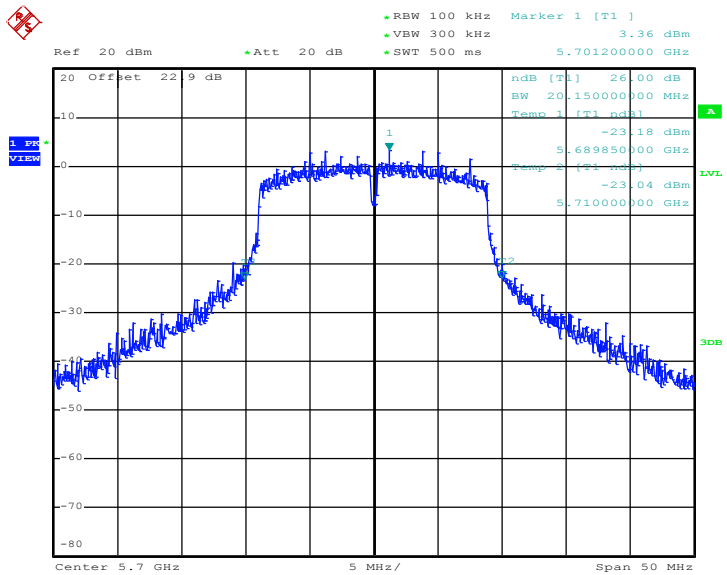


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 116



Date: 19.MAR.2011 17:23:41

26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 140



Date: 19.MAR.2011 17:29:51

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

For the band 5.15~5.25 GHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or $4 \text{ dBm} + 10\log B$, where B is the 26 dB emissions bandwidth in MHz. If transmitting antenna directional gain is greater than 6 dBi, the peak output power and power density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or $11 \text{ dBm} + 10\log B$. If transmitting antenna directional gain is greater than 6 dBi, the peak output power and power density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

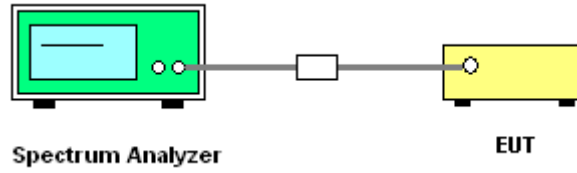
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows FCC Public Notice DA 02-2138 (Measurement Guidelines of UNII).
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 1 MHz.
 - Set VBW \geq 3 MHz.
 - Use sample detector mode
 - Use a video trigger with the trigger level set to enable triggering only on full power pulses.
Transmitter must operate at full control power for entire sweep of every sweep.
 - Trace average 100 traces in power averaging mode.
 - Compute power by integrating the spectrum across the 26 dB EBW of the signal. The integration can be performed using the spectrum analyzer's band power measurement function with band limits set equal to the EBW band edges or by summing power levels in each 1 MHz band in linear power terms. The 1 MHz band power levels to be summed can be obtained by averaging, in linear power terms, power levels in each frequency bin across the 1 MHz.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Measure the power and record it.

3.2.4 Test Setup





3.2.5 Test Result of Maximum Conducted Output Power

Test Mode :	Mode 1~9	Temperature :	25~27°C
Test Engineer :	Alan Liu	Relative Humidity :	51~54%

Channel	Frequency (MHz)	802.11a Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	12.18	16.72	Pass
44	5220	12.23	16.72	Pass
48	5240	12.28	16.74	Pass
52	5260	12.01	23.68	Pass
60	5300	12.02	23.68	Pass
64	5320	12.06	23.68	Pass
100	5500	12.12	23.74	Pass
116	5580	12.16	23.66	Pass
140	5700	12.04	23.72	Pass

Test Mode :	Mode 10~18	Temperature :	25~27°C
Test Engineer :	Alan Liu	Relative Humidity :	51~54%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	12.18	16.97	Pass
44	5220	12.23	17.00	Pass
48	5240	12.45	16.96	Pass
52	5260	12.21	23.90	Pass
60	5300	12.20	23.92	Pass
64	5320	12.18	24.00	Pass
100	5500	12.06	23.96	Pass
116	5580	12.02	24.00	Pass
140	5700	12.01	24.00	Pass

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

For the band 5.15–5.25 GHz, the peak power spectral density shall not exceed 4 dBm in any 1MHz band. For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the peak power spectral density shall not exceed 11 dBm in any 1 MHz band. If transmitting antenna directional gain is greater than 6 dBi, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

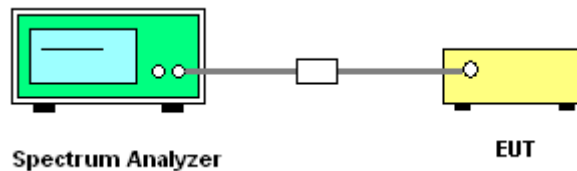
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

The transmitter output is connected to the spectrum analyzer. According to using sample detector and power averaging (not video averaging) mode. Set RBW= 1 MHz, VBW > 1 MHz. The PPSD is the highest level found across the emission in any 1-MHz band after 100 sweeps of averaging.

3.3.4 Test Setup



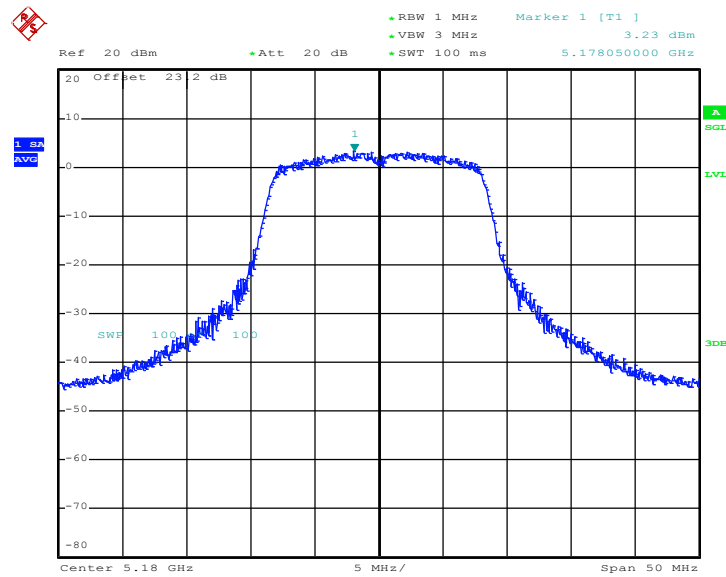


3.3.5 Test Result of Power Spectral Density

Test Mode :	Mode 1~9	Temperature :	25~27°C
Test Engineer :	Alan Liu	Relative Humidity :	51~54%

Channel	Frequency (MHz)	802.11a Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	3.23	4	Pass
44	5220	3.87	4	Pass
48	5240	3.19	4	Pass
52	5260	3.07	11	Pass
60	5300	4.01	11	Pass
64	5320	3.70	11	Pass
100	5500	5.92	11	Pass
116	5580	6.02	11	Pass
140	5700	5.22	11	Pass

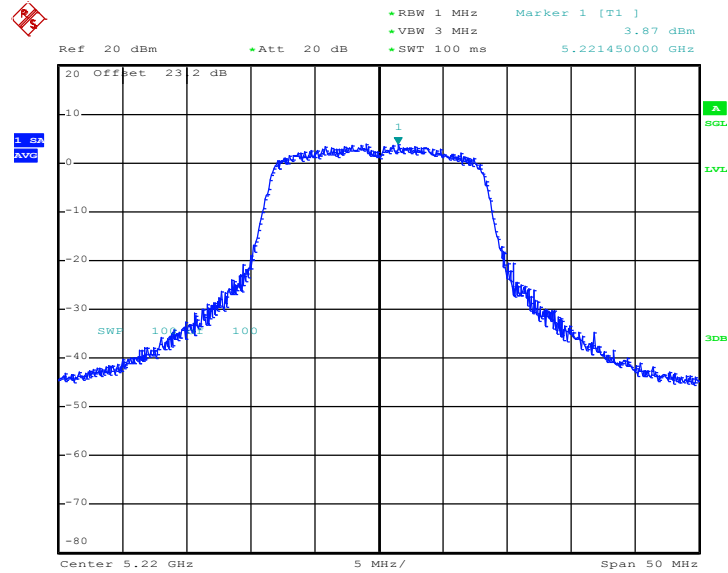
PSD Plot on 802.11a Channel 36



Date: 19.MAR.2011 13:46:05

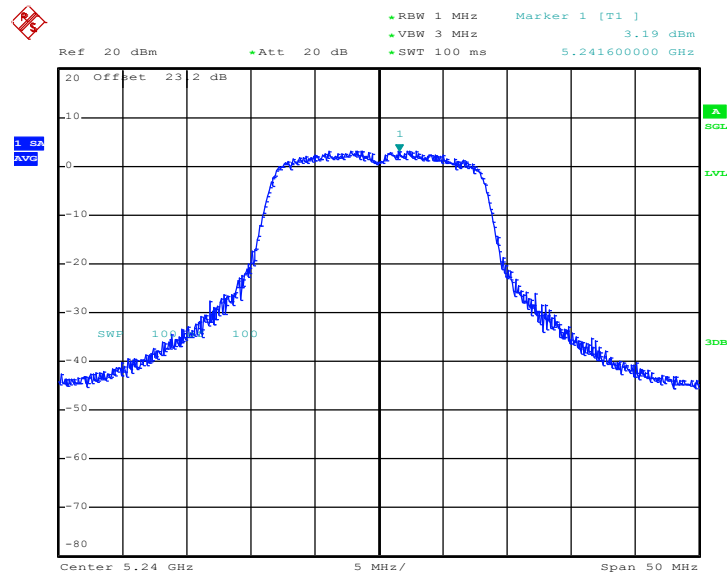


PSD Plot on 802.11a Channel 44



Date: 19.MAR.2011 14:14:30

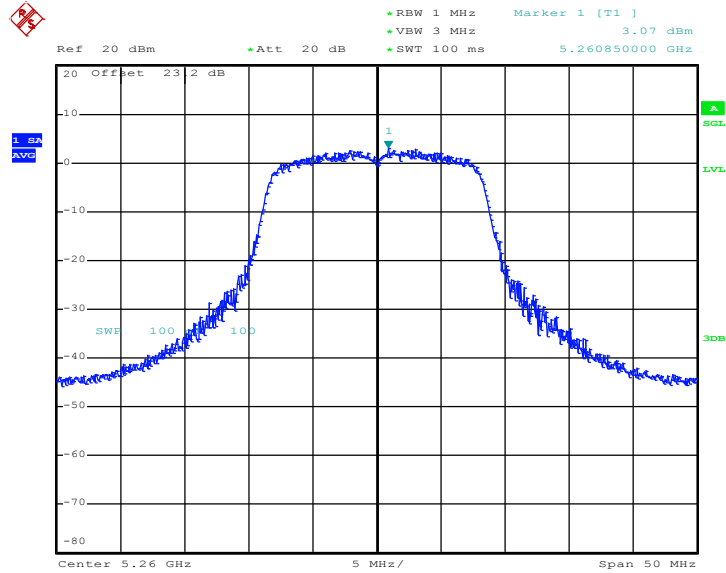
PSD Plot on 802.11a Channel 48



Date: 19.MAR.2011 14:21:36

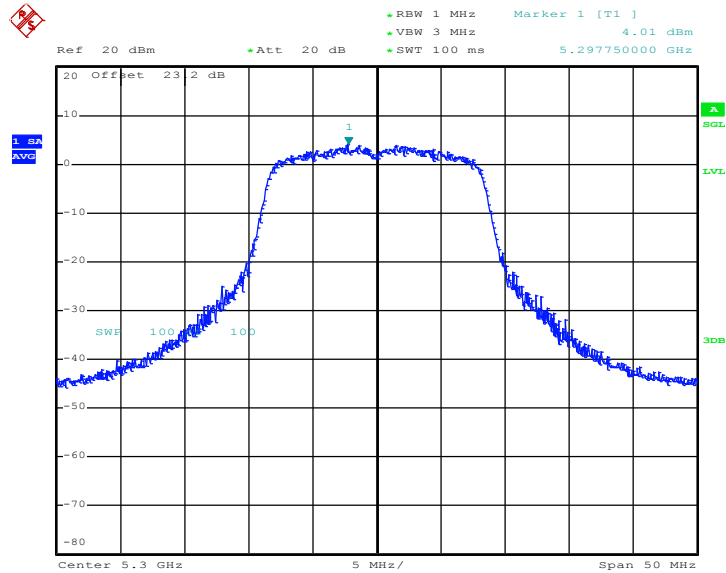


PSD Plot on 802.11a Channel 52



Date: 19.MAR.2011 14:26:06

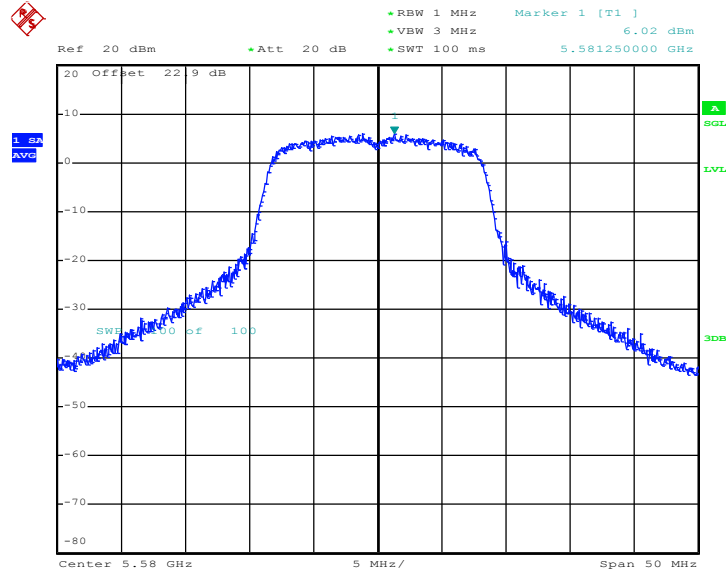
PSD Plot on 802.11a Channel 60



Date: 19.MAR.2011 14:29:06

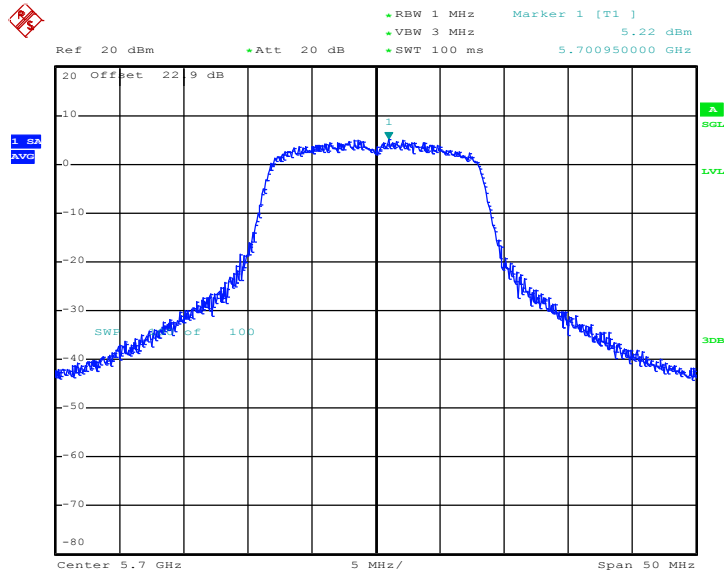


PSD Plot on 802.11a Channel 116



Date: 19.MAR.2011 15:58:27

PSD Plot on 802.11a Channel 140



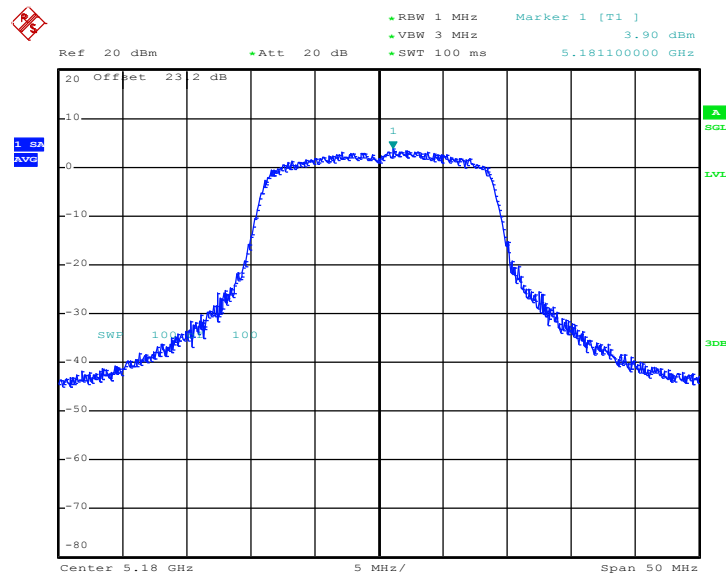
Date: 19.MAR.2011 16:03:49



Test Mode :	Mode 10~18	Temperature :	25~27°C
Test Engineer :	Alan Liu	Relative Humidity :	51~54%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	3.90	4	Pass
44	5220	3.73	4	Pass
48	5240	3.55	4	Pass
52	5260	3.75	11	Pass
60	5300	4.75	11	Pass
64	5320	4.51	11	Pass
100	5500	5.96	11	Pass
116	5580	5.95	11	Pass
140	5700	4.71	11	Pass

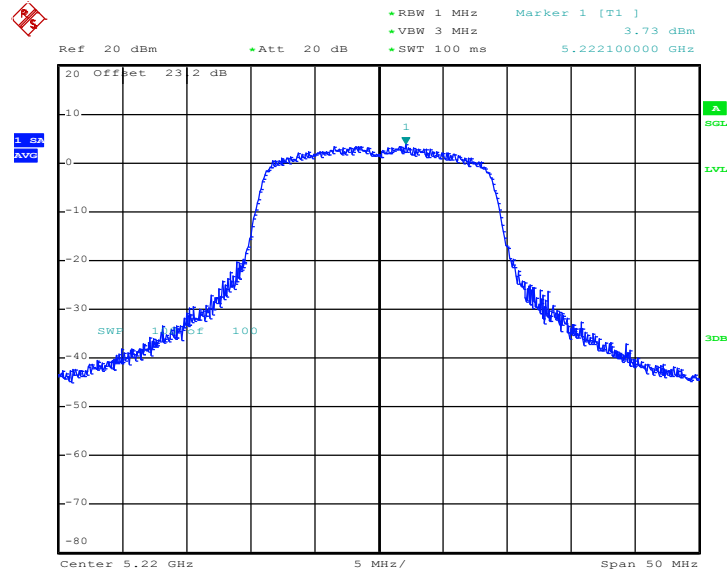
PSD Plot on 802.11n (BW 20MHz) Channel 36



Date: 19.MAR.2011 17:33:37

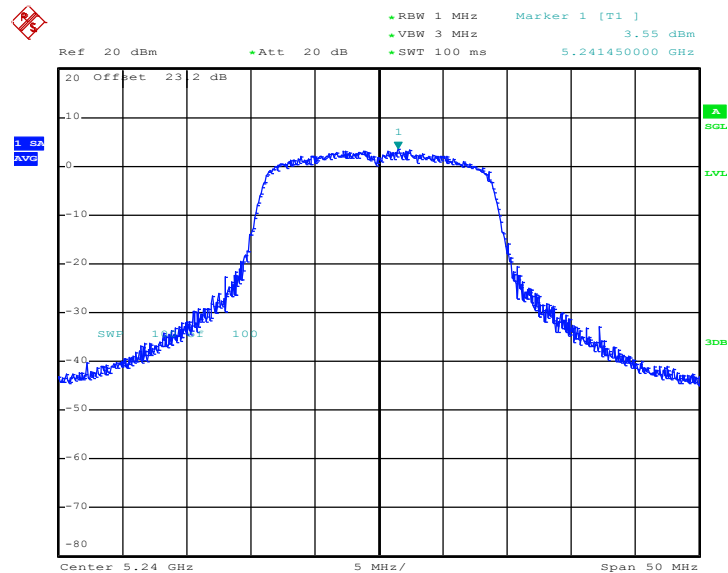


PSD Plot on 802.11n (BW 20MHz) Channel 44



Date: 19.MAR.2011 17:38:44

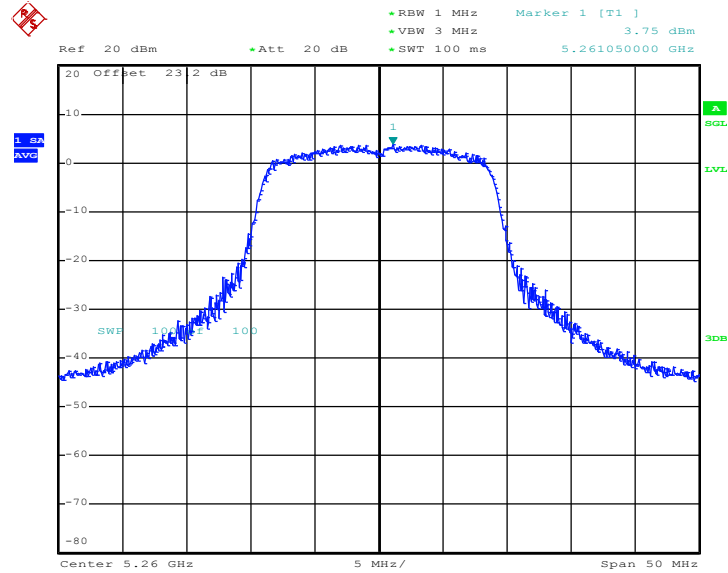
PSD Plot on 802.11n (BW 20MHz) Channel 48



Date: 19.MAR.2011 17:40:05

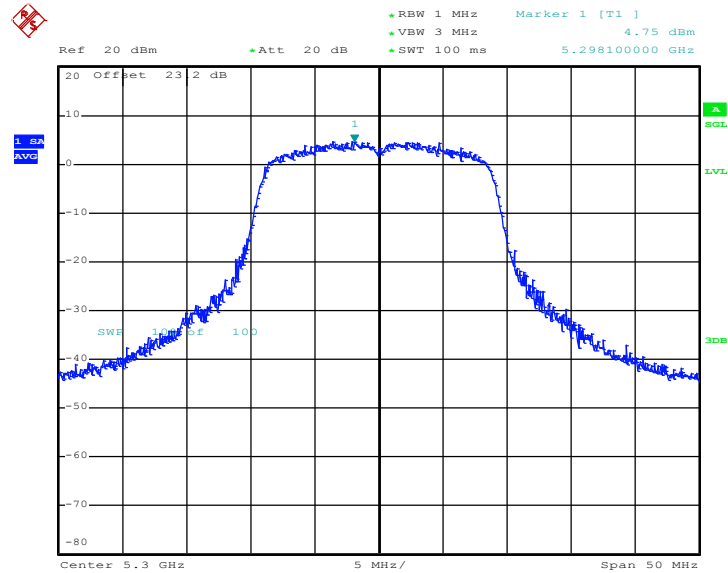


PSD Plot on 802.11n (BW 20MHz) Channel 52



Date: 19.MAR.2011 17:08:48

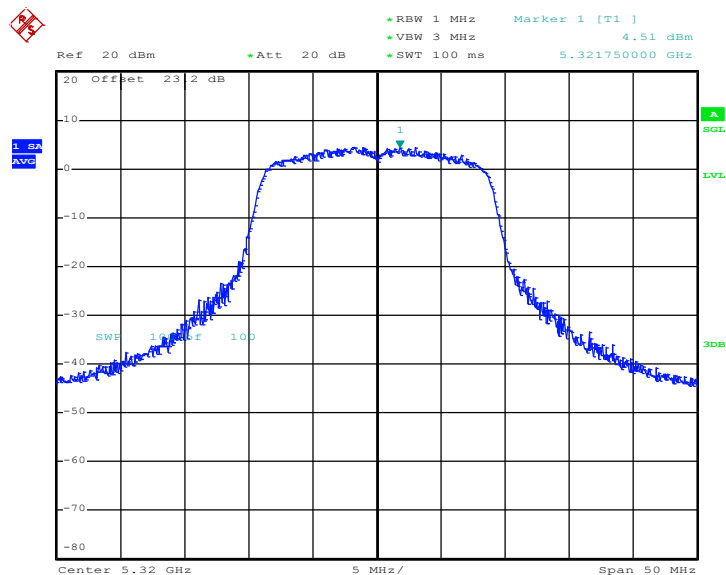
PSD Plot on 802.11n (BW 20MHz) Channel 60



Date: 19.MAR.2011 17:11:44

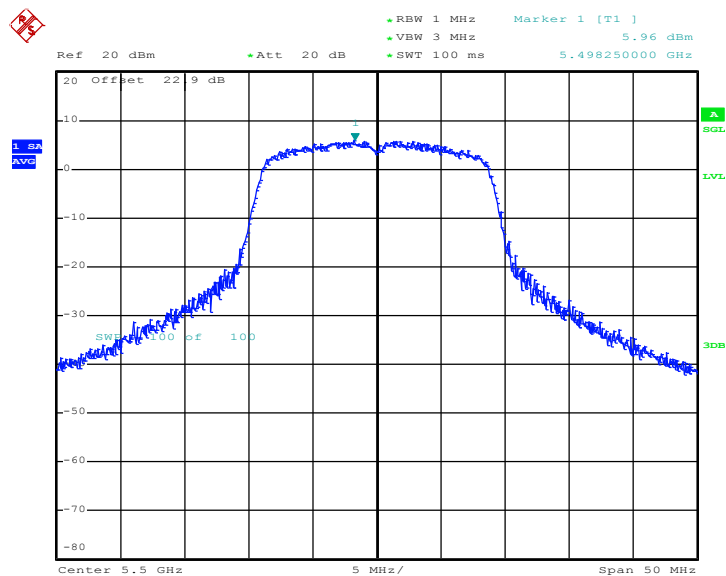


PSD Plot on 802.11n (BW 20MHz) Channel 64



Date: 19.MAR.2011 17:14:45

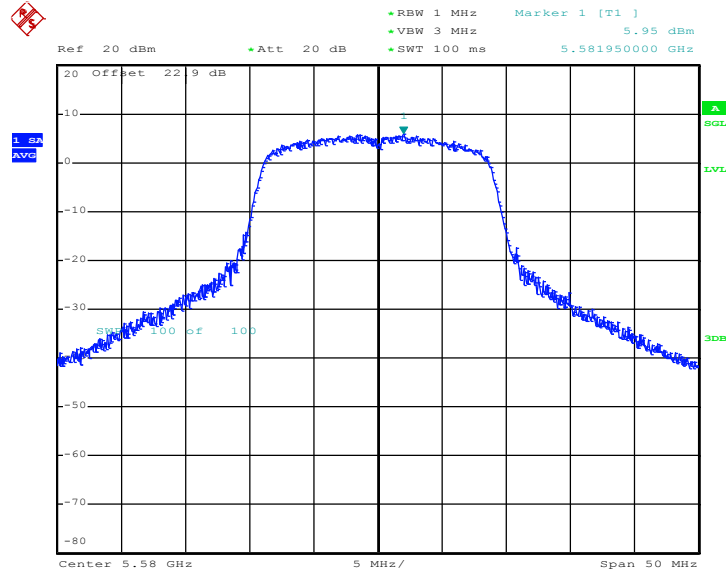
PSD Plot on 802.11n (BW 20MHz) Channel 100



Date: 19.MAR.2011 17:18:20

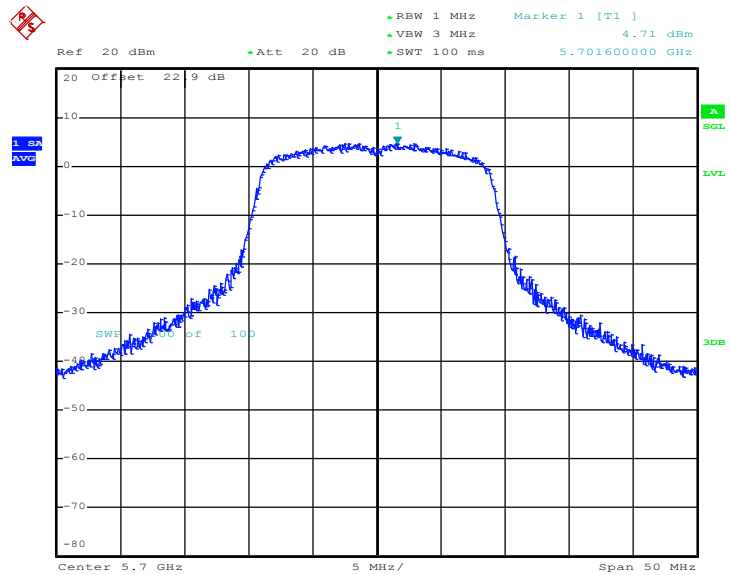


PSD Plot on 802.11n (BW 20MHz) Channel 116



Date: 19.MAR.2011 17:24:09

PSD Plot on 802.11n (BW 20MHz) Channel 140



Date: 19.MAR.2011 17:30:19



3.4 Band Edges Measurement

3.4.1 Limit of Band Edges

- (1) For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz. For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz. Devices operating in the 5.25–5.35 GHz band that generate emissions in the 5.15–5.25 GHz band must meet all applicable technical requirements for operation in the 5.15–5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of –27 dBm/MHz in the 5.15–5.25 GHz band. For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.
- (2) The provisions of Section 15.205 Restricted bands of operation of this part apply to intentional radiators operating under this section.

3.4.2 Measuring Instruments

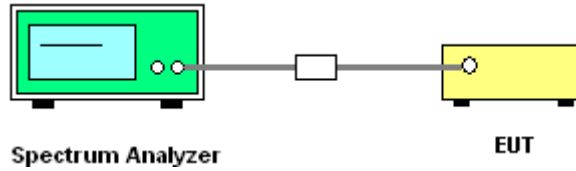
See list of measuring instruments of this test report.

3.4.3 Test Procedures

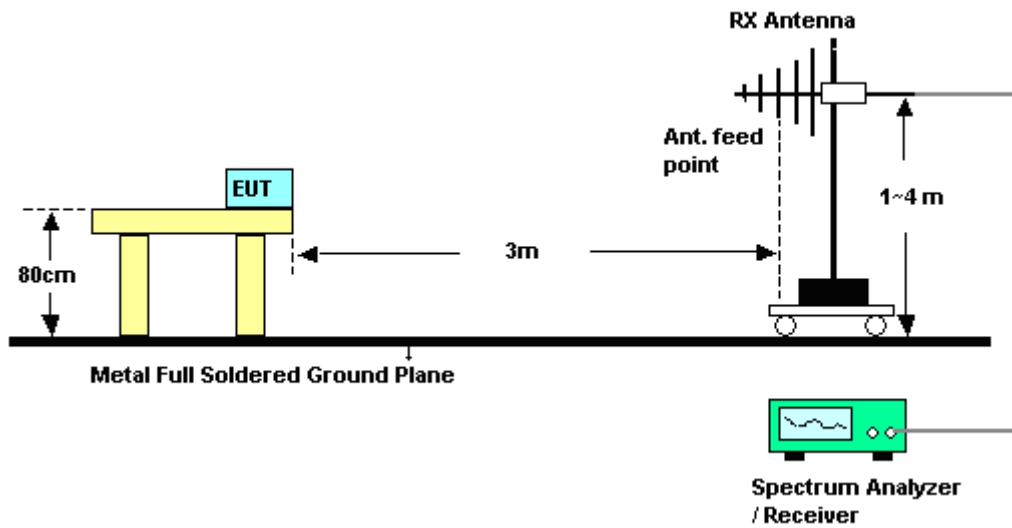
1. Set both RBW / VBW of spectrum analyzer to 1MHz / 3MHz with convenient frequency span including 1MHz bandwidth from band edge.
2. The band edges was measured and recorded.

3.4.4 Test Setup

<Conducted>



<Radiated>

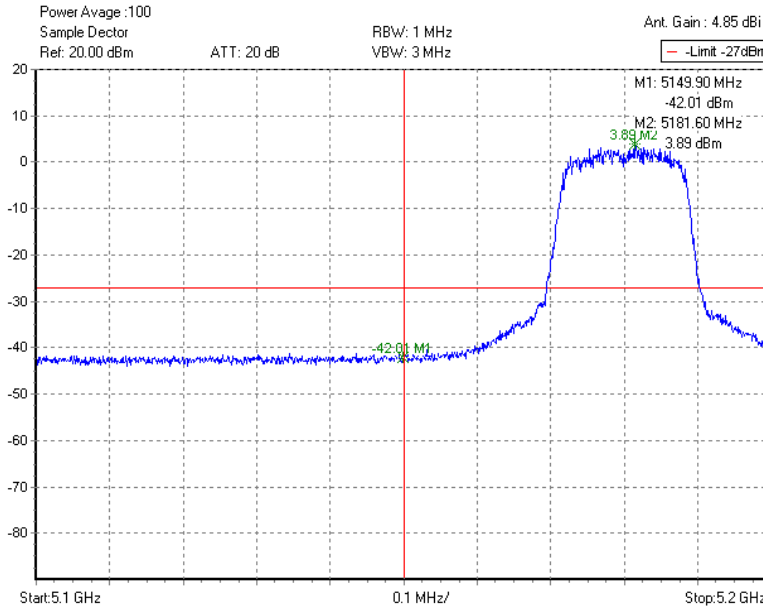




3.4.5 Test Result of Conducted Band Edges

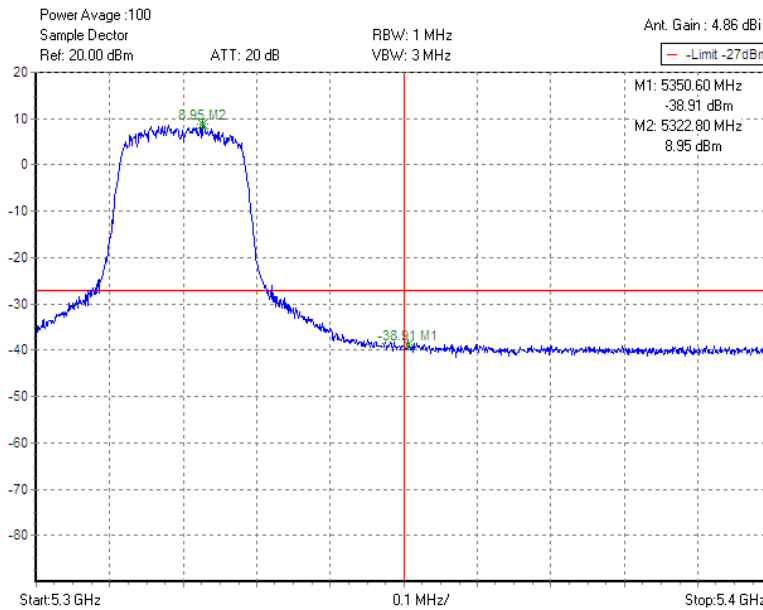
Test Mode :	Mode 1 and 6	Temperature :	25~27°C
Test Engineer :	Alan Liu	Relative Humidity :	51~54%

Low Band Edge Plot on Channel 36



Test result was offsetted with path loss, and antenna gain.

High Band Edge Plot on Channel 64

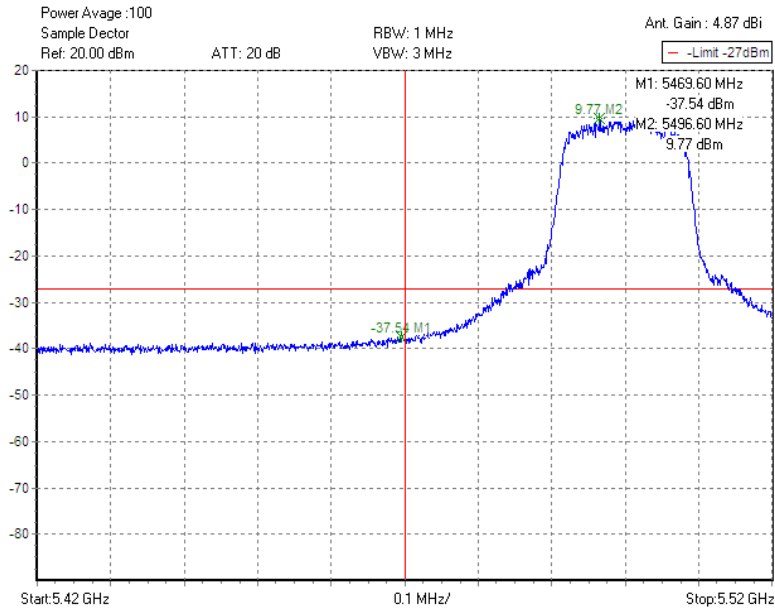


Test result was offsetted with path loss, and antenna gain.



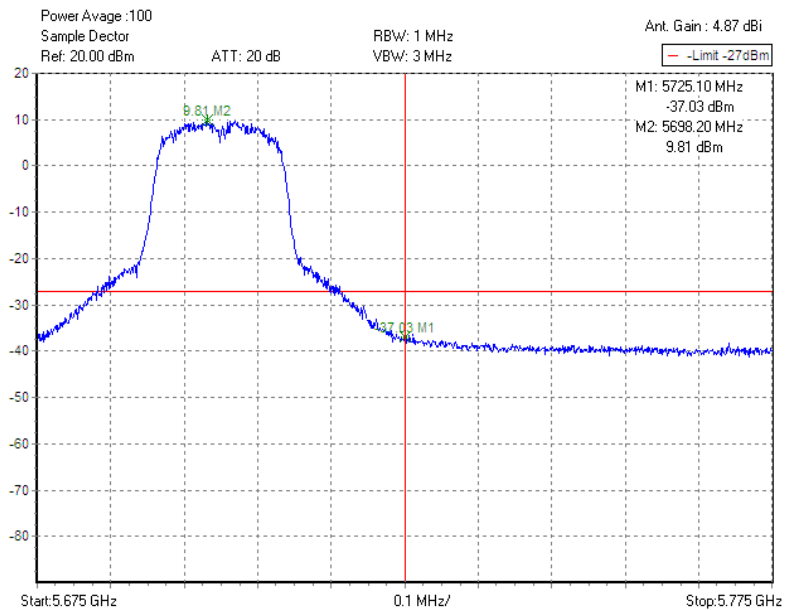
Test Mode :	Mode 7 and 9	Temperature :	25~27°C
Test Engineer :	Alan Liu	Relative Humidity :	51~54%

Low Band Edge Plot on Channel 100



Test result was offsetted with path loss, and antenna gain.

High Band Edge Plot on Channel 140

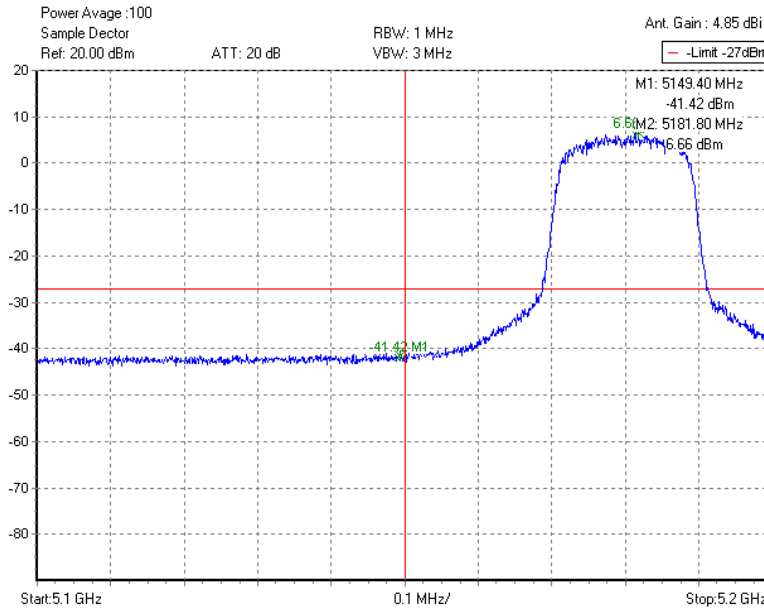


Test result was offsetted with path loss, and antenna gain.



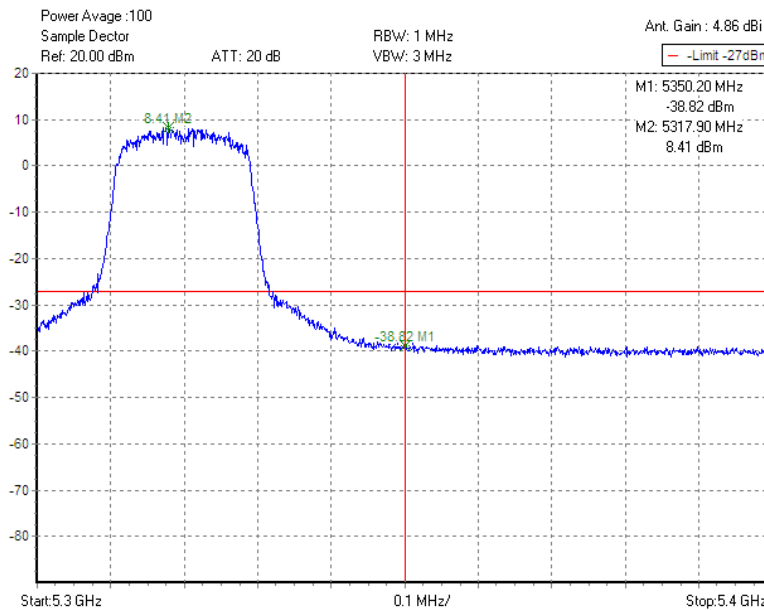
Test Mode :	Mode 10 and 15	Temperature :	25~27°C
Test Engineer :	Alan Liu	Relative Humidity :	51~54%

Low Band Edge Plot on Channel 36



Test result was offsetted with path loss, and antenna gain.

High Band Edge Plot on Channel 64

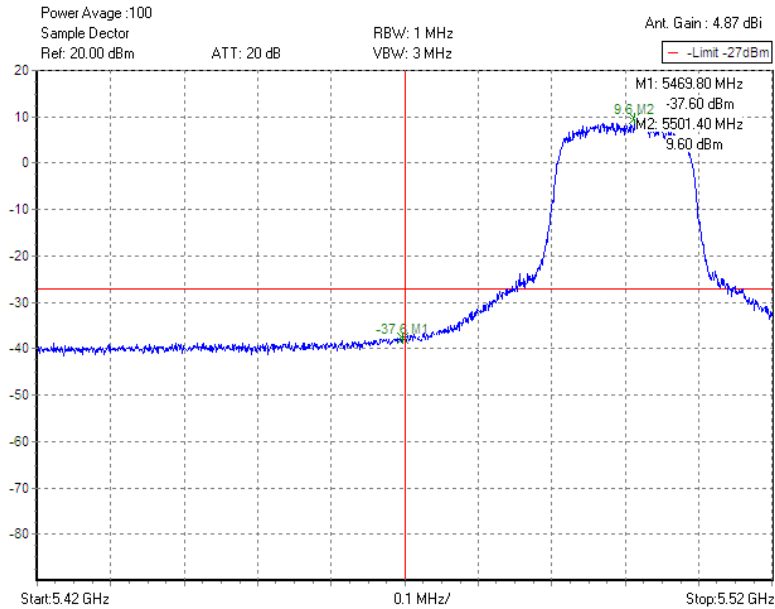


Test result was offsetted with path loss, and antenna gain.



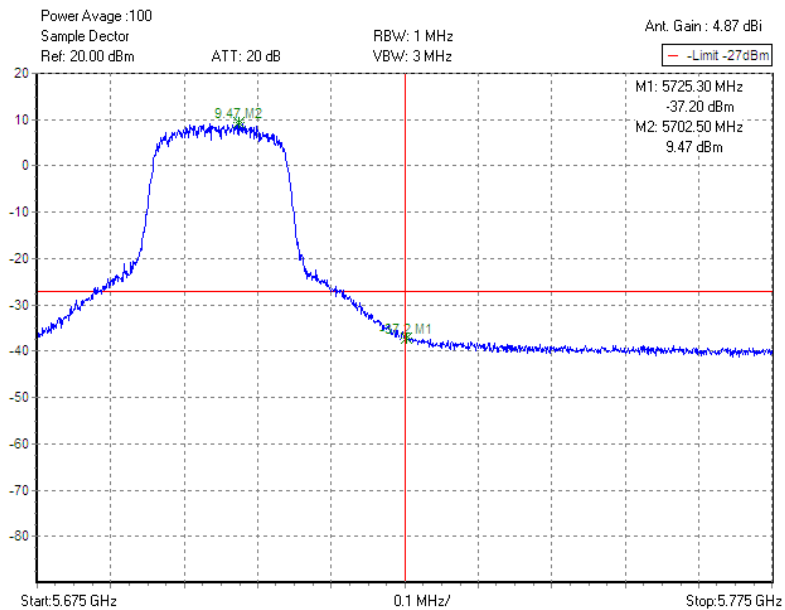
Test Mode :	Mode 16 and 18	Temperature :	25~27°C
Test Engineer :	Alan Liu	Relative Humidity :	51~54%

Low Band Edge Plot on Channel 100



Test result was offsetted with path loss, and antenna gain.

High Band Edge Plot on Channel 140



Test result was offsetted with path loss, and antenna gain.



3.4.6 Test Result of Radiated Band Edges

Test Mode :	Mode 1	Temperature :	21~24°C
Test Band :	802.11a	Relative Humidity :	45~50%
Test Channel :	36	Test Engineer :	David Yang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	60.24	-13.76	74	50.23	34.25	9.41	33.65	100	315	Peak
5150	43.14	-10.86	54	33.13	34.25	9.41	33.65	100	315	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
5150	61.09	-12.91	74	51.08	34.25	9.41	33.65	100	357	Peak
5150	43.99	-10.01	54	33.98	34.25	9.41	33.65	100	357	Average

Test Mode :	Mode 6	Temperature :	21~24°C
Test Band :	802.11a	Relative Humidity :	45~50%
Test Channel :	64	Test Engineer :	David Yang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	59.82	-14.18	74	48.89	34.45	9.74	33.26	100	199	Peak
5350	44.02	-9.98	54	33.09	34.45	9.74	33.26	100	199	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
5350	63.55	-10.45	74	52.62	34.45	9.74	33.26	109	271	Peak
5350	46.92	-7.08	54	35.99	34.45	9.74	33.26	109	271	Average



Test Mode :	Mode 7	Temperature :	21~24°C
Test Band :	802.11a	Relative Humidity :	45~50%
Test Channel :	100	Test Engineer :	David Yang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5470	51.64	-16.66	68.3	40.14	34.57	9.94	33.01	100	79	Peak

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
5470	54.09	-14.21	68.3	42.59	34.57	9.94	33.01	105	262	Peak

Test Mode :	Mode 9	Temperature :	21~24°C
Test Band :	802.11a	Relative Humidity :	45~50%
Test Channel :	140	Test Engineer :	David Yang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	52.91	-15.39	68.3	41.35	34.82	9.92	33.18	100	326	Peak

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
5725	55.76	-12.54	68.3	44.2	34.82	9.92	33.18	111	273	Peak



Test Mode :	Mode 10	Temperature :	21~24°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	45~50%
Test Channel :	36	Test Engineer :	David Yang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	60.19	-13.81	74	50.18	34.25	9.41	33.65	100	17	Peak
5150	42.73	-11.27	54	32.72	34.25	9.41	33.65	100	17	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
5150	62.13	-11.87	74	52.12	34.25	9.41	33.65	111	272	Peak
5150	43.63	-10.37	54	33.62	34.25	9.41	33.65	111	272	Average

Test Mode :	Mode 15	Temperature :	21~24°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	45~50%
Test Channel :	64	Test Engineer :	David Yang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	59.32	-14.68	74	48.39	34.45	9.74	33.26	100	200	Peak
5350	44.11	-9.89	54	33.18	34.45	9.74	33.26	100	200	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
5350	61.76	-12.24	74	50.83	34.45	9.74	33.26	108	271	Peak
5350	47.05	-6.95	54	36.12	34.45	9.74	33.26	108	271	Average



Test Mode :	Mode 16	Temperature :	21~24°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	45~50%
Test Channel :	100	Test Engineer :	David Yang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5470	51.89	-16.41	68.3	40.39	34.57	9.94	33.01	100	271	Peak

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
5470	57.61	-10.69	68.3	46.11	34.57	9.94	33.01	117	272	Peak

Test Mode :	Mode 18	Temperature :	21~24°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	45~50%
Test Channel :	140	Test Engineer :	David Yang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	53.75	-14.55	68.3	42.19	34.82	9.92	33.18	100	328	Peak

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
5725	53.9	-14.4	68.3	42.34	34.82	9.92	33.18	100	269	Peak

3.5 Conducted Spurious Emission

3.5.1 Limit of Spurious Emission Measurement

- (1) For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.
- (2) For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25–5.35 GHz band that generate emissions in the 5.15–5.25 GHz band must meet all applicable technical requirements for operation in the 5.15–5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15–5.25 GHz band.
- (3) For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.

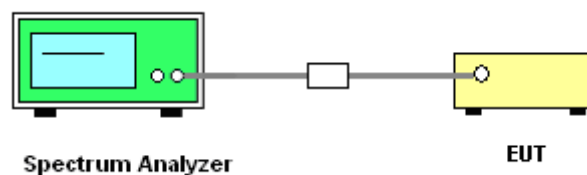
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedure

1. The transmitter output was connected to the spectrum analyzer via a low lose cable.
2. Set RBW = VBW = 1 MHz, Video bandwidth (VBW), scan from 30 MHz to 40 GHz.

3.5.4 Test Setup





3.5.5 Test Result

Test Mode :	Mode 1~9	Temperature :	25~27°C
Test Band :	802.11a	Relative Humidity :	51~54%
Test Channel :	36, 44, 48, 52, 60, 64, 100, 116, 140	Test Engineer :	Alan Liu

<30 MHz ~ 3 GHz>

Channel	Frequency (MHz)	Frequency (MHz)	Level (dBm)	Antenna Gain (dBi)	EIRP Test Result (dBm)	Limit (dBm)
36	5180	1503.12	-49.34	4.85	-44.49	-27
44	5220	2239.68	-49.7	4.85	-44.85	-27
48	5240	2221.86	-49.55	4.85	-44.7	-27
52	5260	2988.12	-49.31	4.86	-44.45	-27
60	5300	1728.84	-41.58	4.86	-36.72	-27
64	5320	2964.36	-49.09	4.86	-44.23	-27
100	5500	2221.86	-49.55	4.87	-44.68	-27
116	5580	2916.84	-49.85	4.87	-44.98	-27
140	5700	2899.02	-49.88	4.87	-45.01	-27

<3 GHz ~ 13.6 GHz>

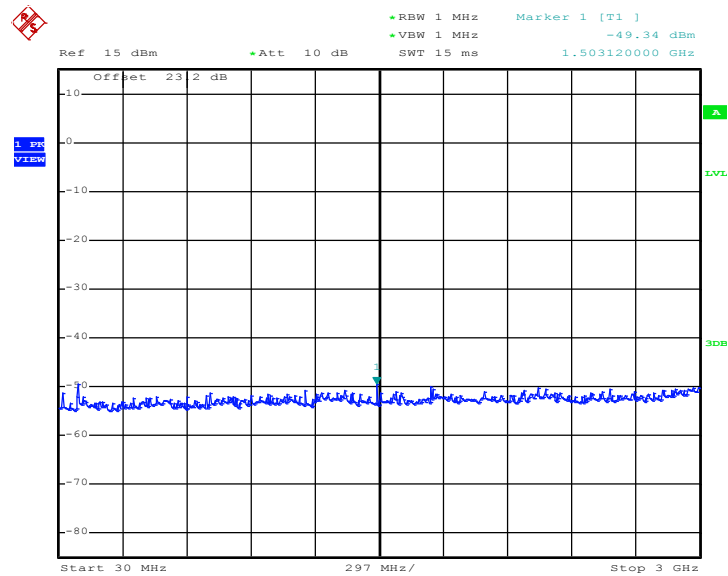
Channel	Frequency (MHz)	Frequency (MHz)	Level (dBm)	Antenna Gain (dBi)	EIRP Test Result (dBm)	Limit (dBm)
36	5180	6900.8	-34.1	4.85	-29.25	-27
44	5220	6879.6	-36.36	4.85	-31.51	-27
48	5240	6879.6	-36.06	4.85	-31.21	-27
52	5260	6879.6	-32.36	4.86	-27.5	-27
60	5300	6900.8	-35.33	4.86	-30.47	-27
64	5320	6879.6	-32.22	4.86	-27.36	-27
100	5500	6900.8	-33.91	4.87	-29.04	-27
116	5580	6879.6	-33.15	4.87	-28.28	-27
140	5700	6900.8	-34.07	4.87	-29.2	-27



<13.6 GHz ~ 40 GHz>

Channel	Frequency (MHz)	Frequency (MHz)	Level (dBm)	Antenna Gain (dBi)	EIRP Test Result (dBm)	Limit (dBm)
36	5180	40000	-32.6	4.85	-27.75	-27
44	5220	40000	-32.64	4.85	-27.79	-27
48	5240	40000	-32.65	4.85	-27.8	-27
52	5260	40000	-32.86	4.86	-28	-27
60	5300	40000	-32.52	4.86	-27.66	-27
64	5320	39947.2	-32.71	4.86	-27.85	-27
100	5500	40000	-32.91	4.87	-28.04	-27
116	5580	40000	-33.07	4.87	-28.2	-27
140	5700	40000	-32.66	4.87	-27.79	-27

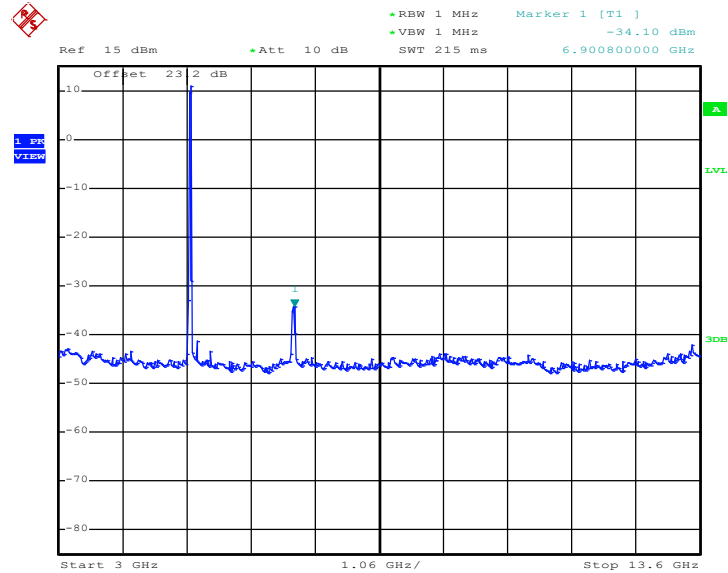
Mode 1 : Conducted Spurious Emission Plot between 802.11a 30 MHz ~ 3 GHz



Date: 19.MAR.2011 18:59:28

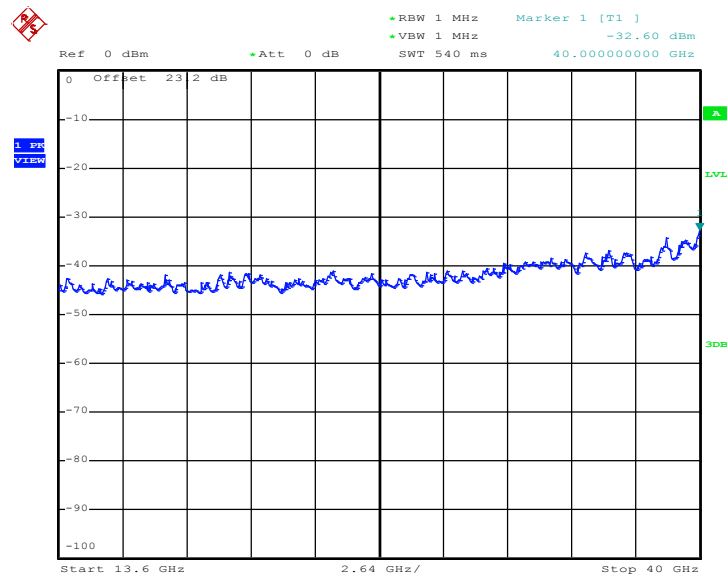


Mode 1 : Conducted Spurious Emission Plot between
802.11a 3 GHz ~ 13.6 GHz



Date: 19.MAR.2011 18:59:40

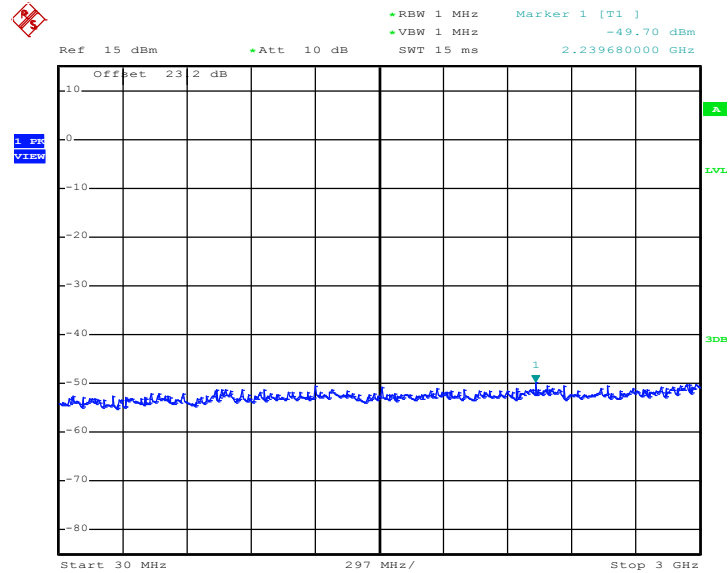
Mode 1 : Conducted Spurious Emission Plot between
802.11a 13.6 GHz ~ 40 GHz



Date: 19.MAR.2011 18:59:52

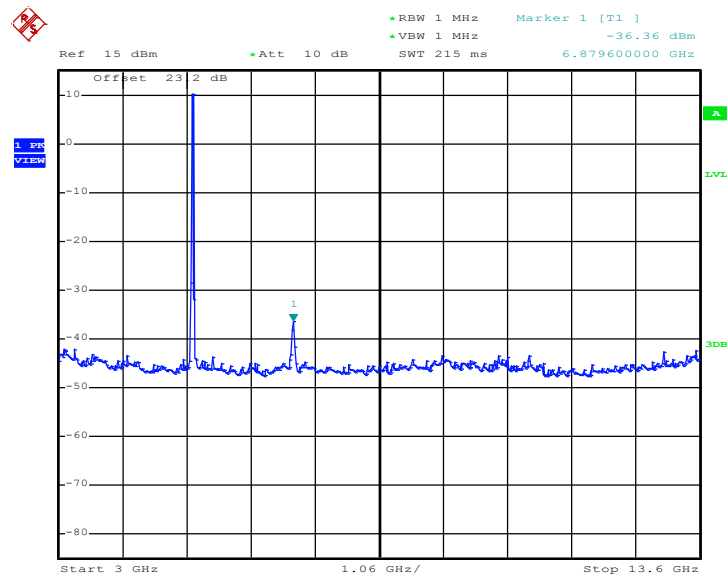


Mode 2 : Conducted Spurious Emission Plot between 802.11a 30 MHz ~ 3 GHz



Date: 19.MAR.2011 18:05:14

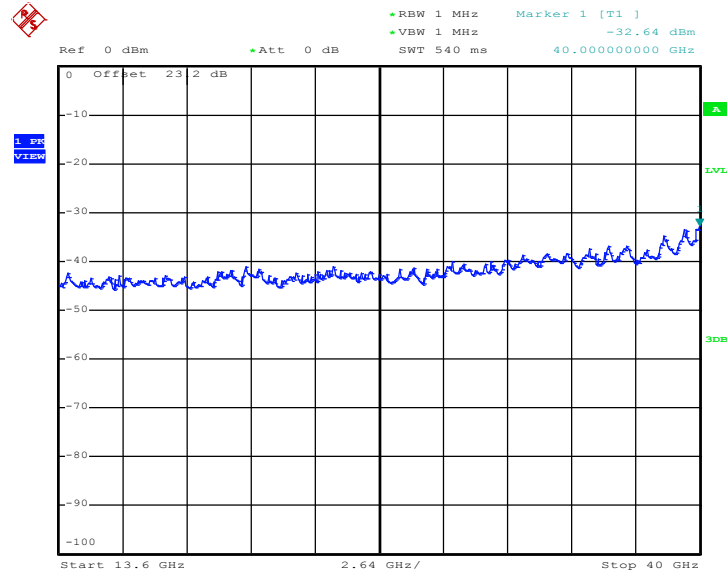
Mode 2 : Conducted Spurious Emission Plot between 802.11a 3 GHz ~ 13.6 GHz



Date: 19.MAR.2011 18:05:26

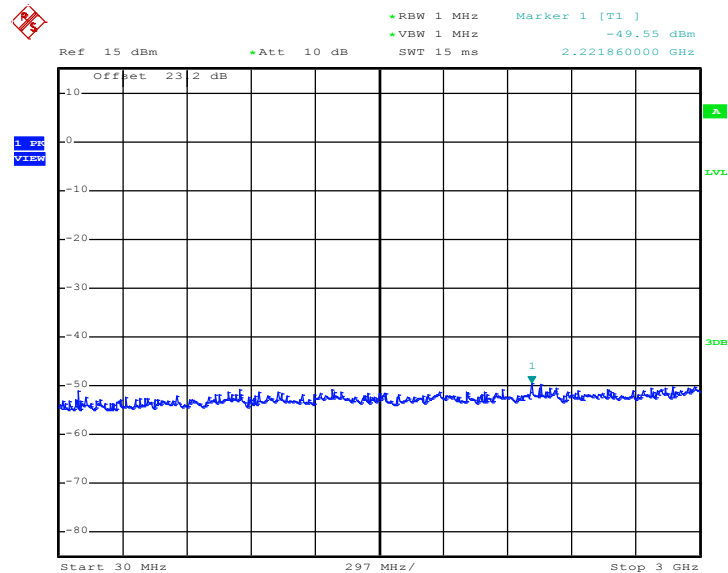


Mode 2 : Conducted Spurious Emission Plot between 802.11a 13.6 GHz ~ 40 GHz



Date: 19.MAR.2011 18:05:38

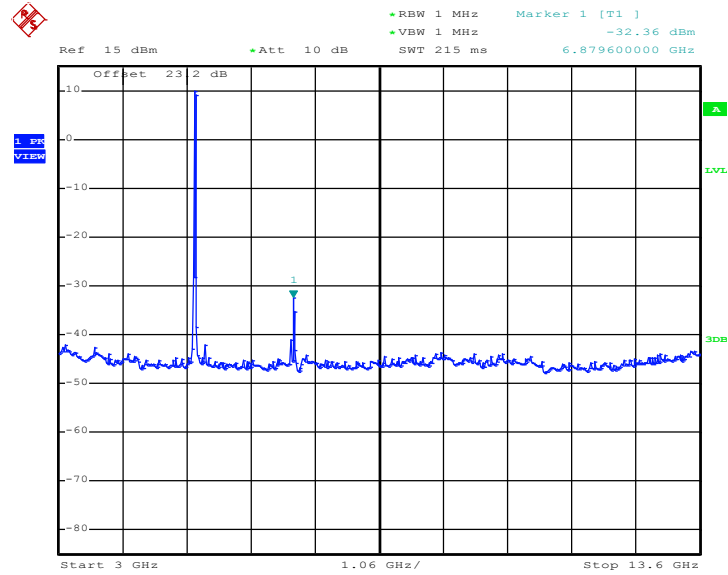
Mode 3 : Conducted Spurious Emission Plot between 802.11a 30 MHz ~ 3 GHz



Date: 19.MAR.2011 18:06:08

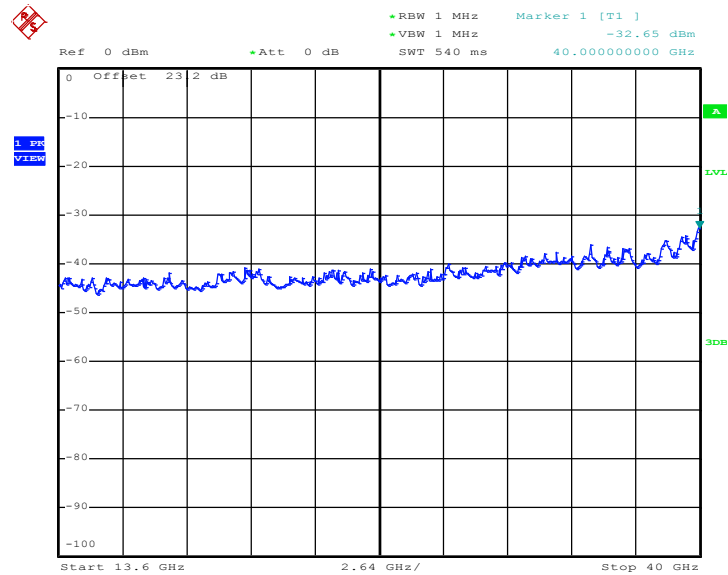


Mode 3 : Conducted Spurious Emission Plot between 802.11a 3 GHz ~ 13.6 GHz



Date: 19.MAR.2011 18:10:05

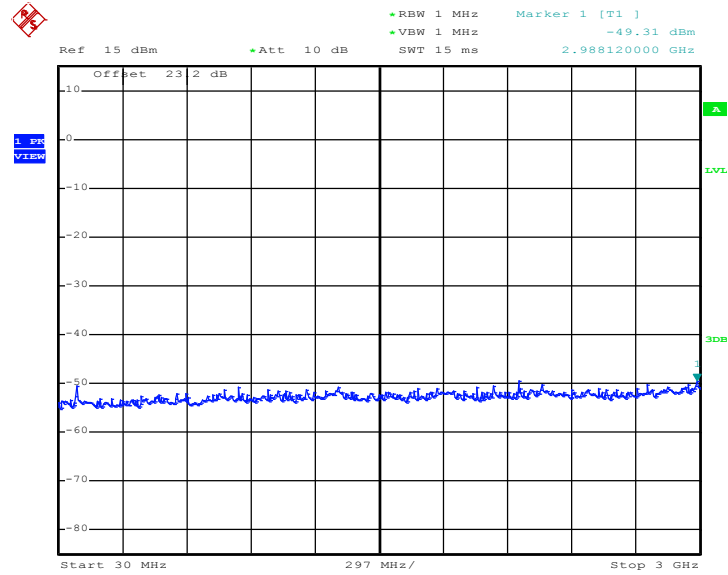
Mode 3 : Conducted Spurious Emission Plot between 802.11a 13.6 GHz ~ 40 GHz



Date: 19.MAR.2011 18:06:31

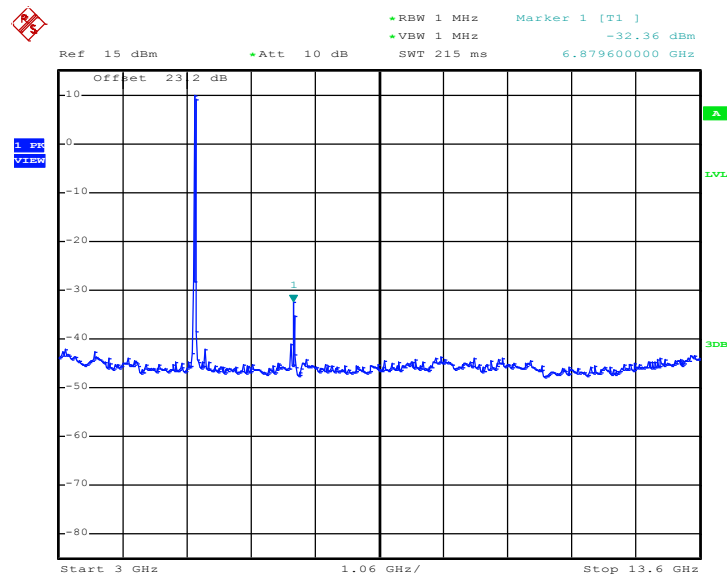


Mode 4 : Conducted Spurious Emission Plot between 802.11a 30 MHz ~ 3 GHz



Date: 19.MAR.2011 18:09:53

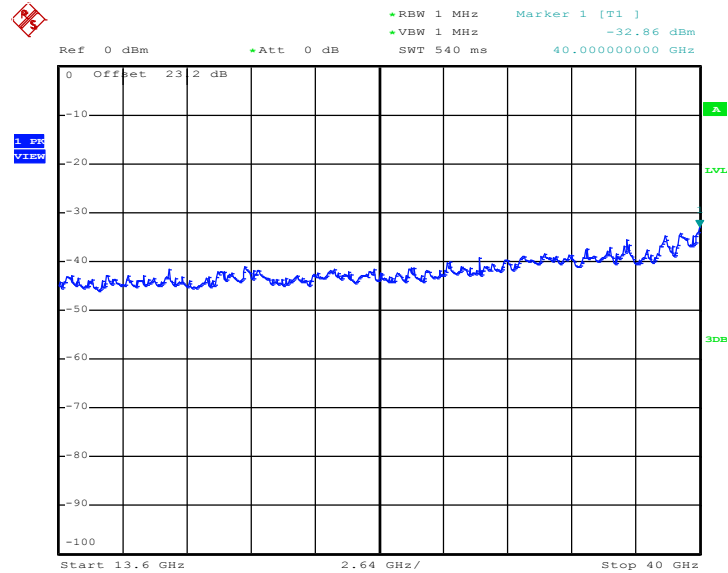
Mode 4 : Conducted Spurious Emission Plot between 802.11a 3 GHz ~ 13.6 GHz



Date: 19.MAR.2011 18:10:05

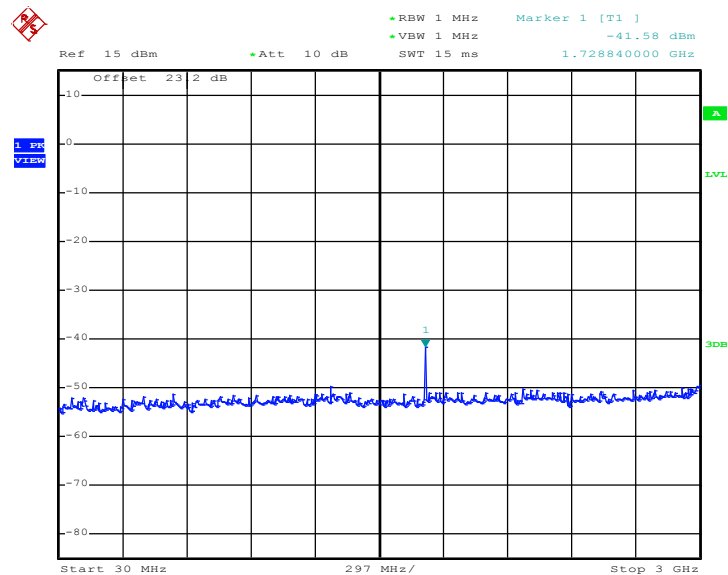


Mode 4 : Conducted Spurious Emission Plot between 802.11a 13.6 GHz ~ 40 GHz



Date: 19.MAR.2011 18:10:17

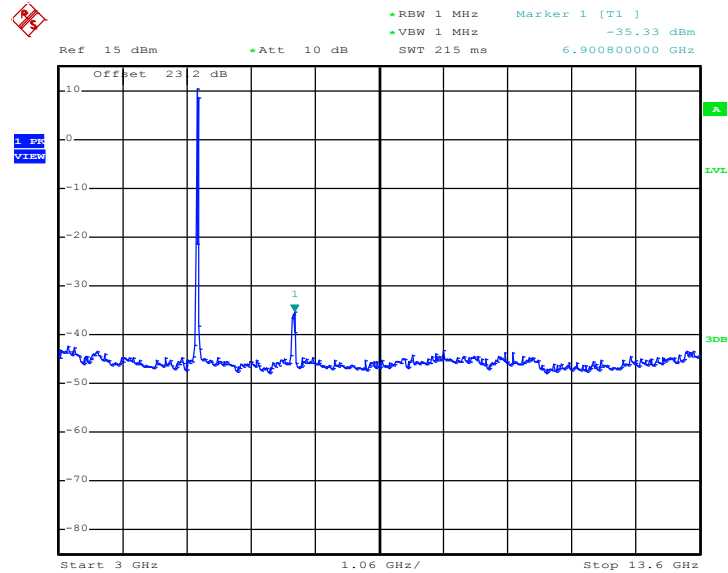
Mode 5 : Conducted Spurious Emission Plot between 802.11a 30 MHz ~ 3 GHz



Date: 19.MAR.2011 18:10:50

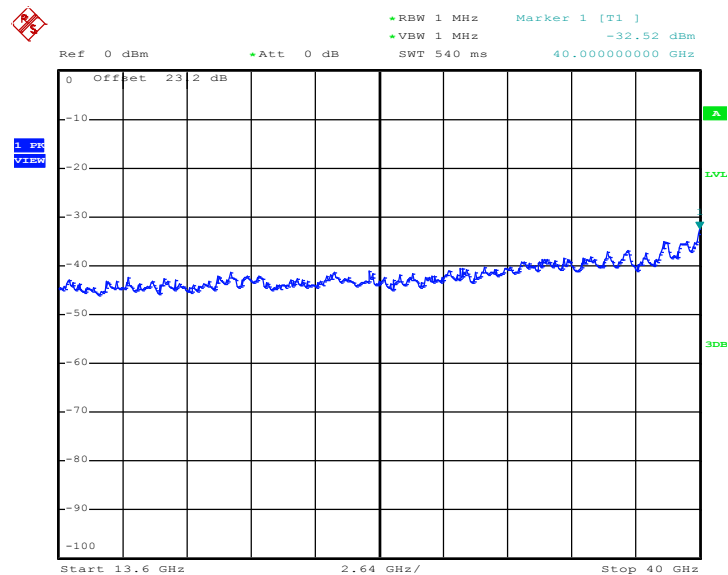


Mode 5 : Conducted Spurious Emission Plot between 802.11a 3 GHz ~ 13.6 GHz



Date: 19.MAR.2011 18:11:02

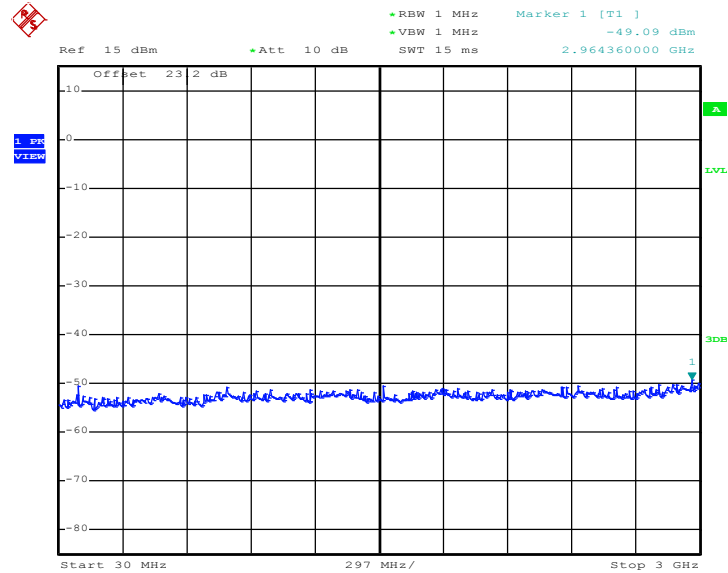
Mode 5 : Conducted Spurious Emission Plot between 802.11a 13.6 GHz ~ 40 GHz



Date: 19.MAR.2011 19:07:57

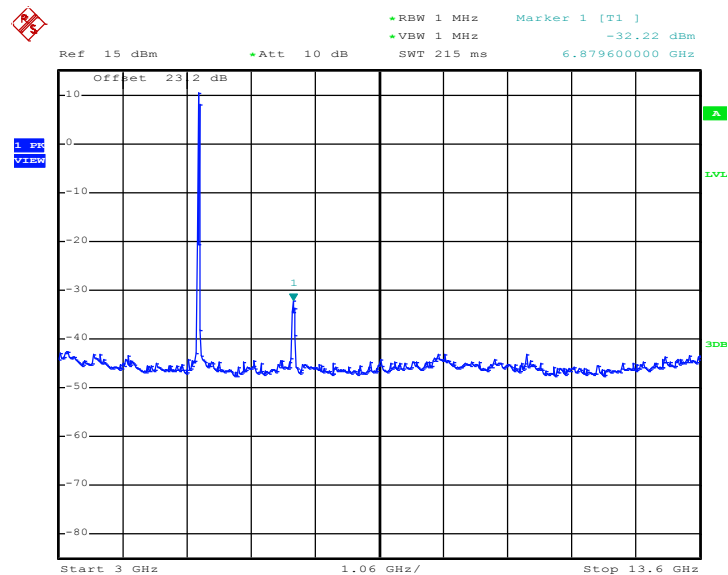


Mode 6 : Conducted Spurious Emission Plot between 802.11a 30 MHz ~ 3 GHz



Date: 19.MAR.2011 18:33:38

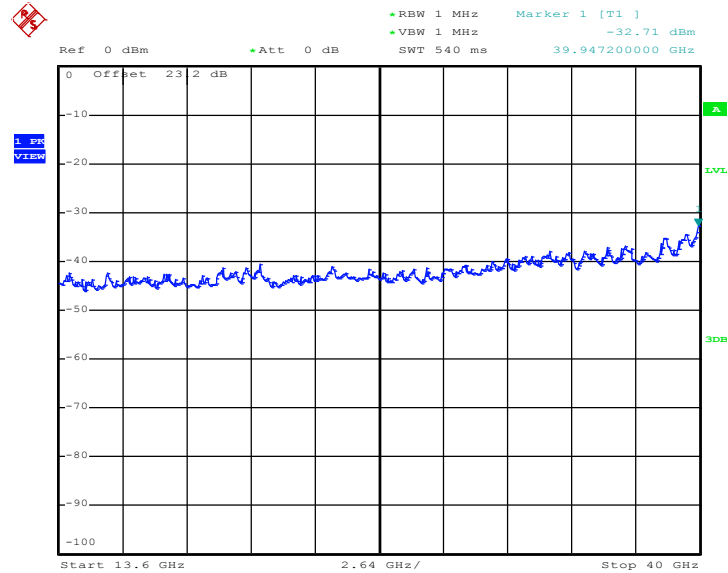
Mode 6 : Conducted Spurious Emission Plot between 802.11a 3 GHz ~ 13.6 GHz



Date: 19.MAR.2011 18:33:50

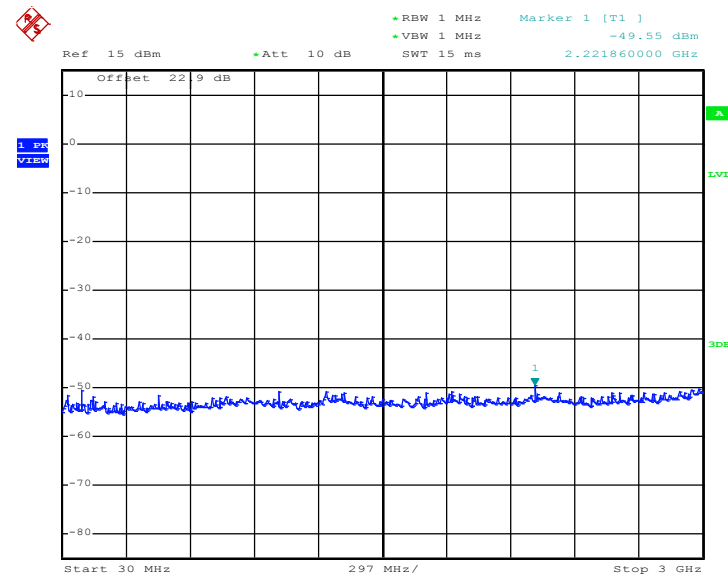


Mode 6 : Conducted Spurious Emission Plot between 802.11a 13.6 GHz ~ 40 GHz



Date: 19.MAR.2011 18:34:02

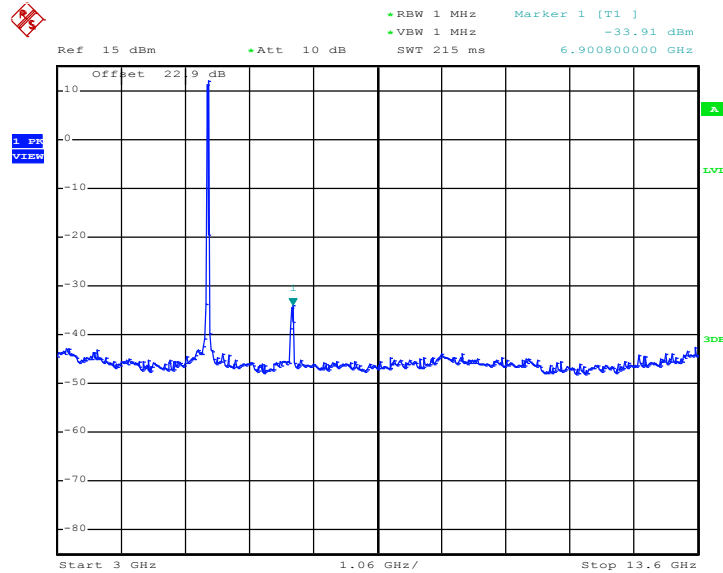
Mode 7 : Conducted Spurious Emission Plot between 802.11a 30 MHz ~ 3 GHz



Date: 19.MAR.2011 18:35:11

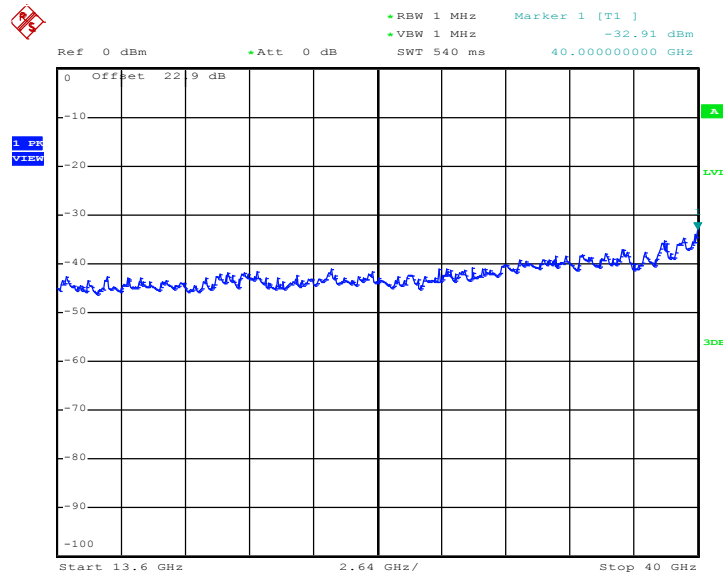


Mode 7 : Conducted Spurious Emission Plot between 802.11a 3 GHz ~ 13.6 GHz



Date: 19.MAR.2011 18:35:23

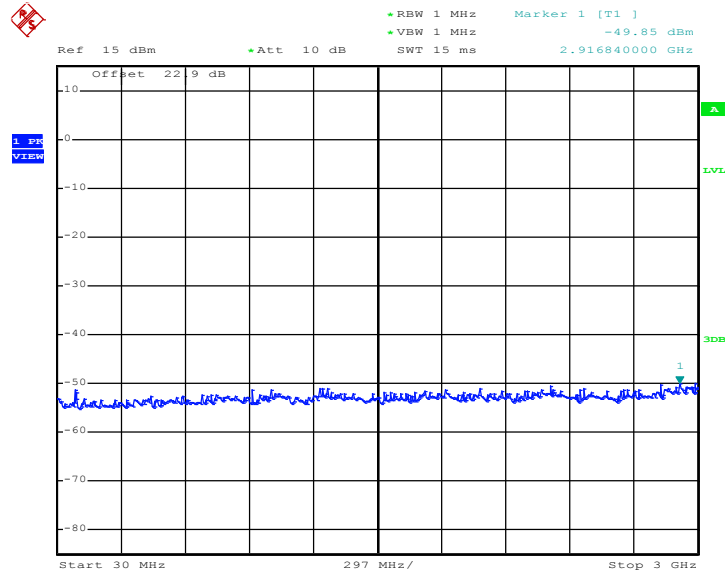
Mode 7 : Conducted Spurious Emission Plot between 802.11a 13.6 GHz ~ 40 GHz



Date: 19.MAR.2011 18:35:35

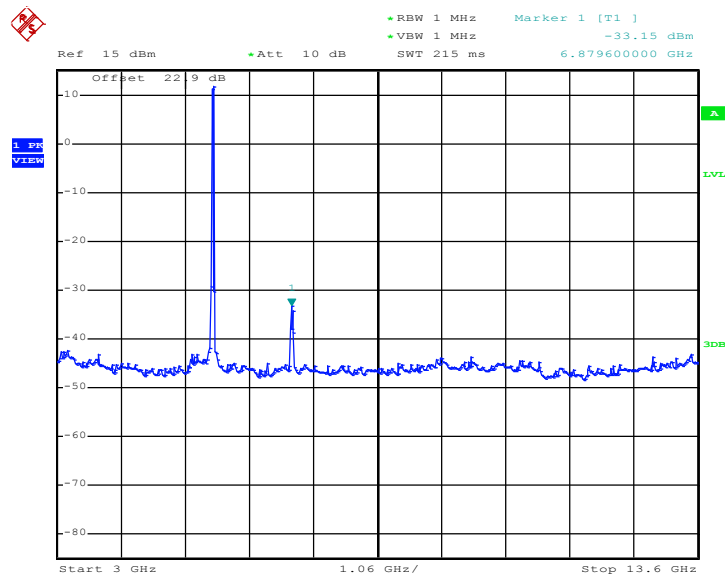


Mode 8 : Conducted Spurious Emission Plot between 802.11a 30 MHz ~ 3 GHz



Date: 19.MAR.2011 18:36:22

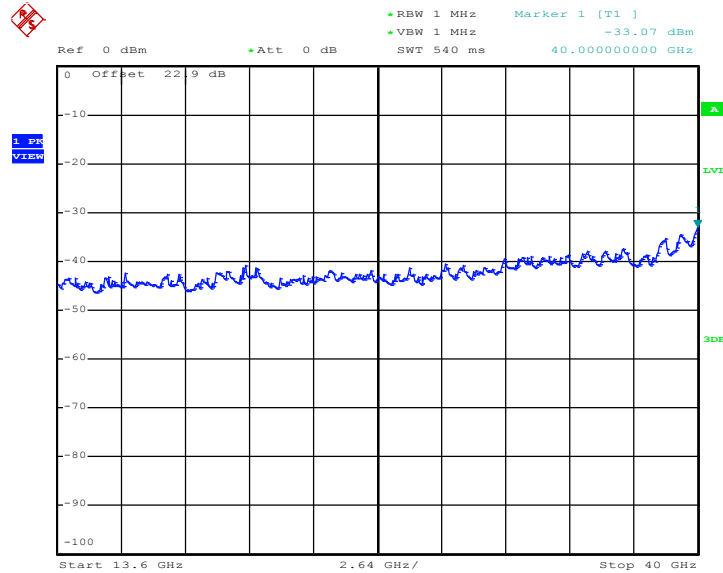
Mode 8 : Conducted Spurious Emission Plot between 802.11a 3 GHz ~ 13.6 GHz



Date: 19.MAR.2011 18:36:34

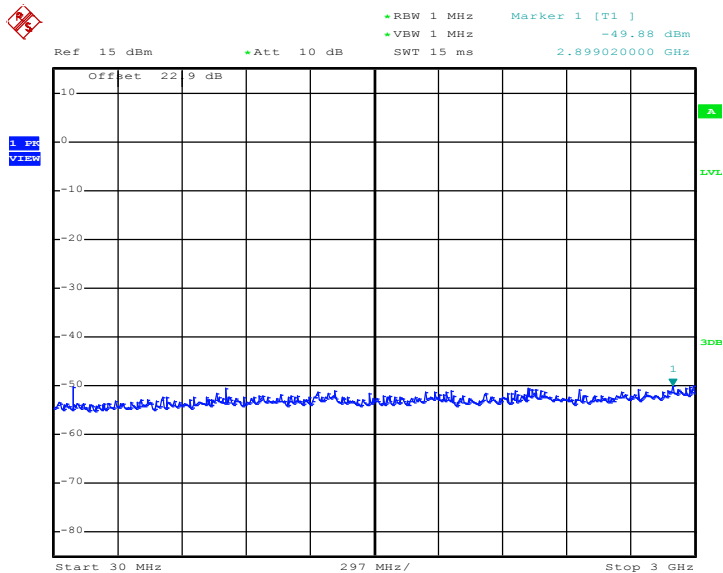


Mode 8 : Conducted Spurious Emission Plot between 802.11a 13.6 GHz ~ 40 GHz



Date: 19.MAR.2011 18:36:46

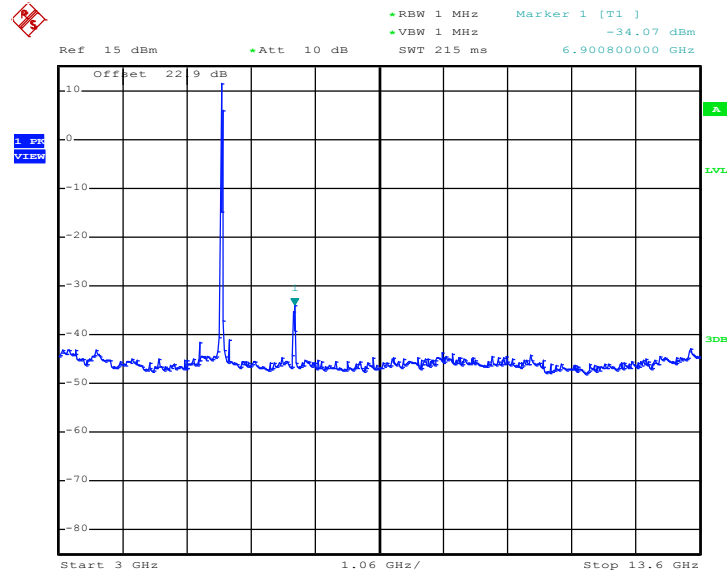
Mode 9 : Conducted Spurious Emission Plot between 802.11a 30 MHz ~ 3 GHz



Date: 19.MAR.2011 18:38:22

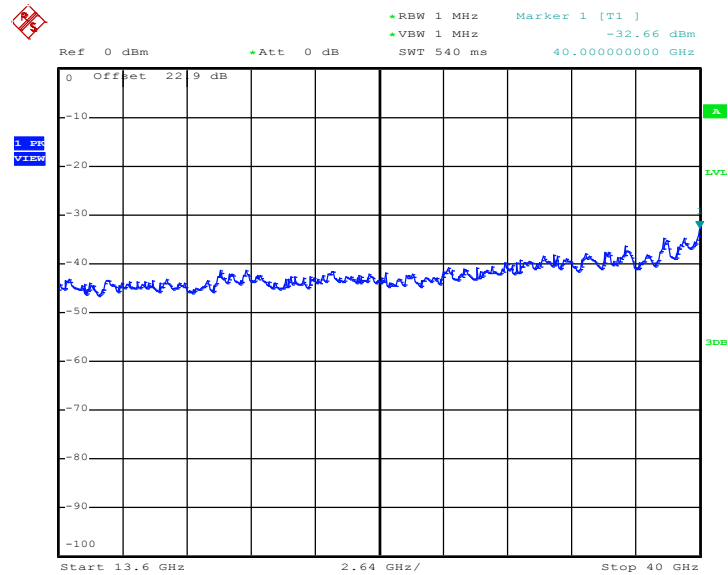


Mode 9 : Conducted Spurious Emission Plot between 802.11a 3 GHz ~ 13.6 GHz



Date: 19.MAR.2011 18:38:34

Mode 9 : Conducted Spurious Emission Plot between 802.11a 13.6 GHz ~ 40 GHz



Date: 19.MAR.2011 18:38:46



Test Mode :	Mode 10~18	Temperature :	25~27°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	51~54%
Test Channel :	36, 44, 48, 52, 60, 64, 100, 116, 140	Test Engineer :	Alan Liu

<30 MHz ~ 3 GHz>

Channel	Frequency (MHz)	Frequency (MHz)	Level (dBm)	Antenna Gain (dBi)	EIRP Test Result (dBm)	Limit (dBm)
36	5180	2970.3	-49.41	4.85	-44.56	-27
44	5220	2994.06	-49.78	4.85	-44.93	-27
48	5240	2798.04	-49.04	4.85	-44.19	-27
52	5260	2887.14	-49.57	4.86	-44.71	-27
60	5300	2988.12	-48.48	4.86	-43.62	-27
64	5320	2643.6	-49.64	4.86	-44.78	-27
100	5500	2928.72	-49.95	4.87	-45.08	-27
116	5580	2916.84	-49.73	4.87	-44.86	-27
140	5700	2976.24	-49.61	4.87	-44.74	-27

<3 GHz ~ 13.6 GHz>

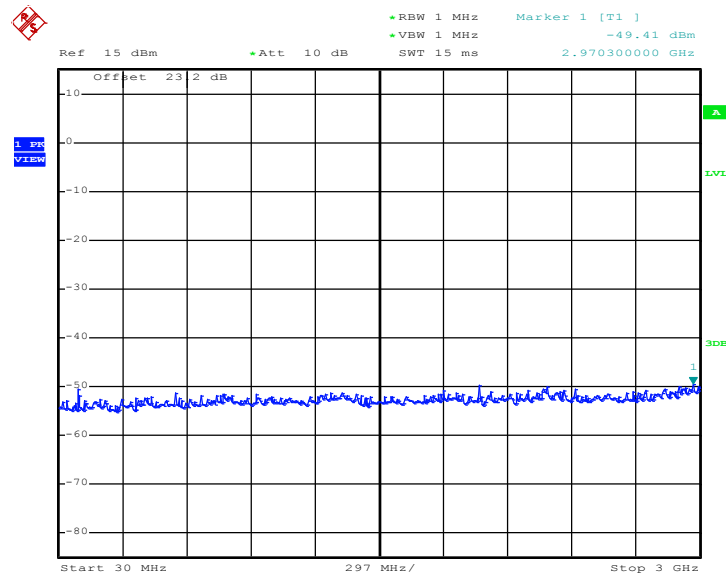
Channel	Frequency (MHz)	Frequency (MHz)	Level (dBm)	Antenna Gain (dBi)	EIRP Test Result (dBm)	Limit (dBm)
36	5180	6879.6	-34.25	4.85	-29.4	-27
44	5220	6879.6	-33.5	4.85	-28.65	-27
48	5240	6879.6	-32.22	4.85	-27.37	-27
52	5260	6900.8	-32.84	4.86	-27.98	-27
60	5300	6879.6	-32.57	4.86	-27.71	-27
64	5320	6879.6	-32.03	4.86	-27.17	-27
100	5500	6900.8	-33.46	4.87	-28.59	-27
116	5580	6900.8	-33.15	4.87	-28.28	-27
140	5700	6900.8	-35.24	4.87	-30.37	-27



<13.6 GHz ~ 40 GHz>

Channel	Frequency (MHz)	Frequency (MHz)	Level (dBm)	Antenna Gain (dBi)	EIRP Test Result (dBm)	Limit (dBm)
36	5180	40000	-32.25	4.85	-27.4	-27
44	5220	39947.2	-32.23	4.85	-27.38	-27
48	5240	40000	-32.96	4.85	-28.11	-27
52	5260	40000	-32.38	4.86	-27.52	-27
60	5300	40000	-32.52	4.86	-27.66	-27
64	5320	40000	-32.36	4.86	-27.5	-27
100	5500	40000	-32.71	4.87	-27.84	-27
116	5580	40000	-32.8	4.87	-27.93	-27
140	5700	40000	-33.32	4.87	-28.45	-27

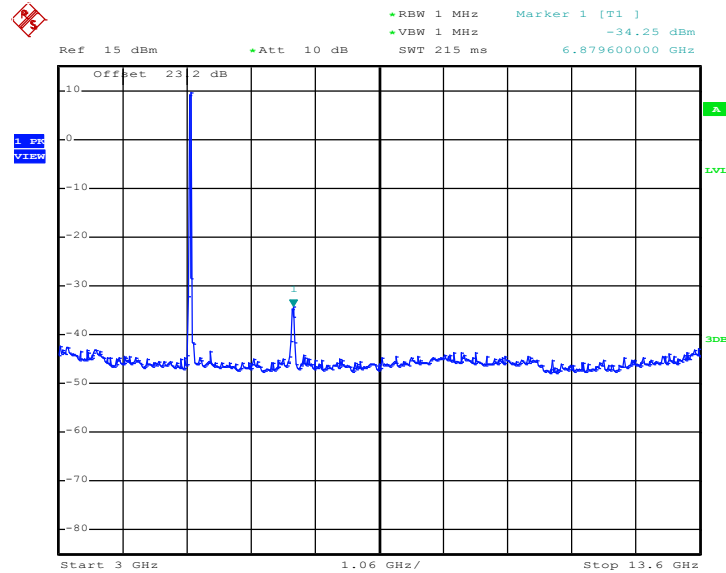
Mode 10 : Conducted Spurious Emission Plot between 802.11n 30 MHz ~ 3 GHz



Date: 19.MAR.2011 19:04:04

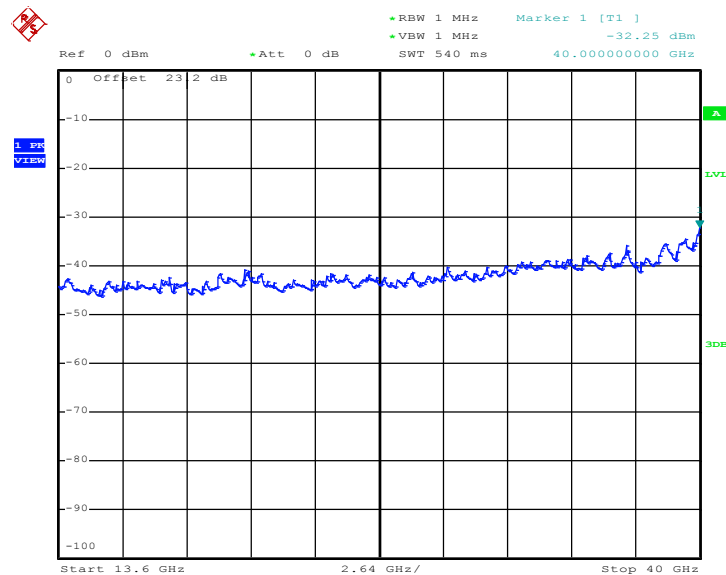


Mode 10 : Conducted Spurious Emission Plot between
802.11n 3 GHz ~ 13.6 GHz



Date: 19.MAR.2011 19:04:16

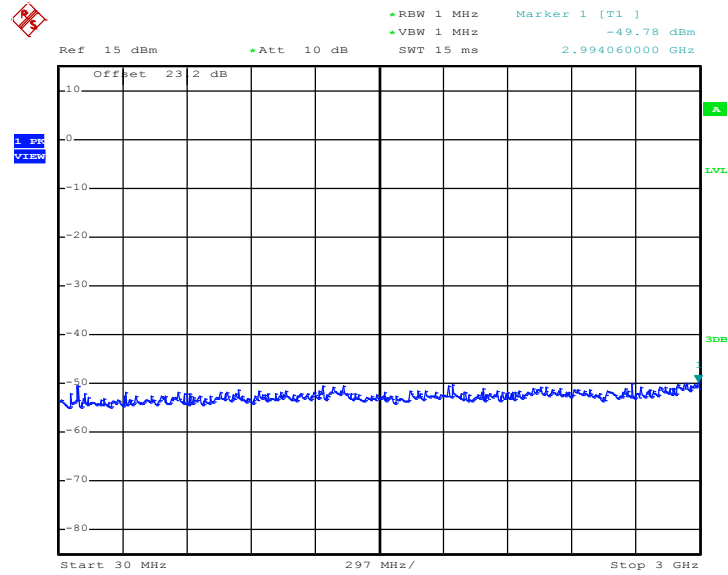
Mode 10 : Conducted Spurious Emission Plot between
802.11n 13.6 GHz ~ 40 GHz



Date: 19.MAR.2011 19:04:28

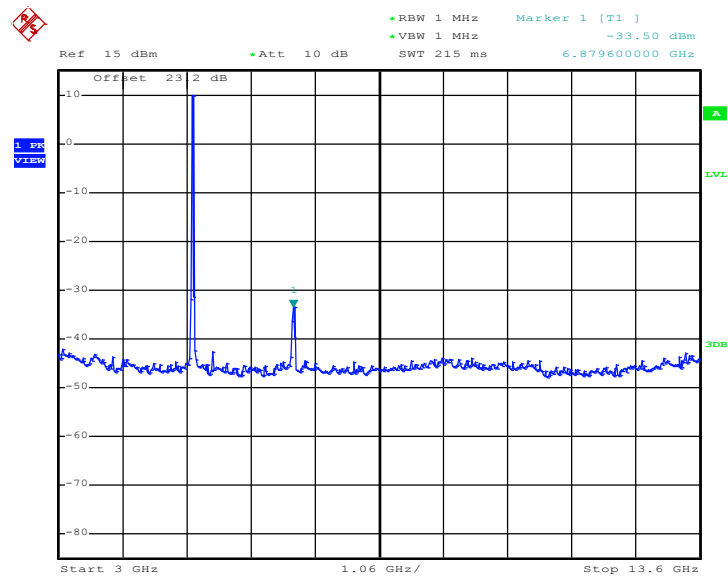


Mode 11 : Conducted Spurious Emission Plot between 802.11n 30 MHz ~ 3 GHz



Date: 19.MAR.2011 19:04:57

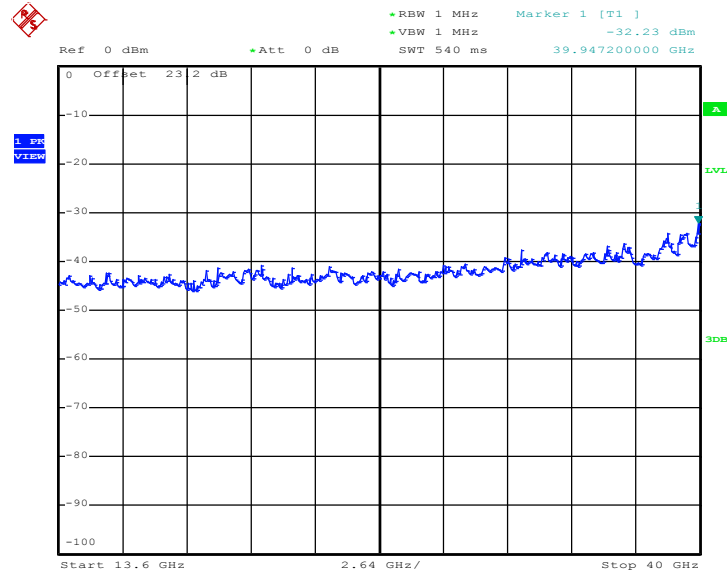
Mode 11 : Conducted Spurious Emission Plot between 802.11n 3 GHz ~ 13.6 GHz



Date: 19.MAR.2011 19:05:09

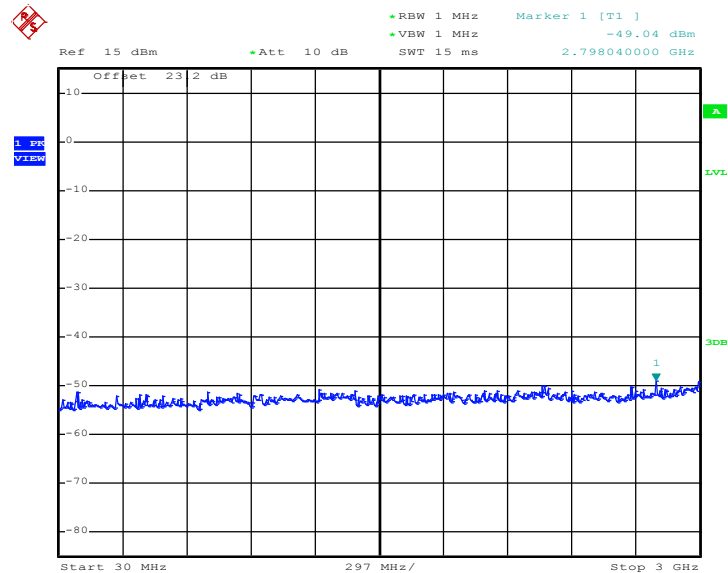


Mode 11 : Conducted Spurious Emission Plot between 802.11n 13.6 GHz ~ 40 GHz



Date: 19.MAR.2011 19:05:21

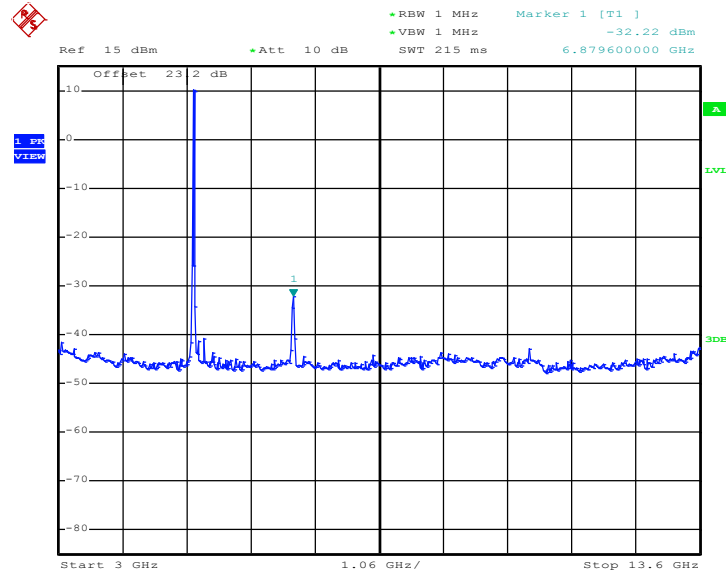
Mode 12 : Conducted Spurious Emission Plot between 802.11n 30 MHz ~ 3 GHz



Date: 19.MAR.2011 19:05:47

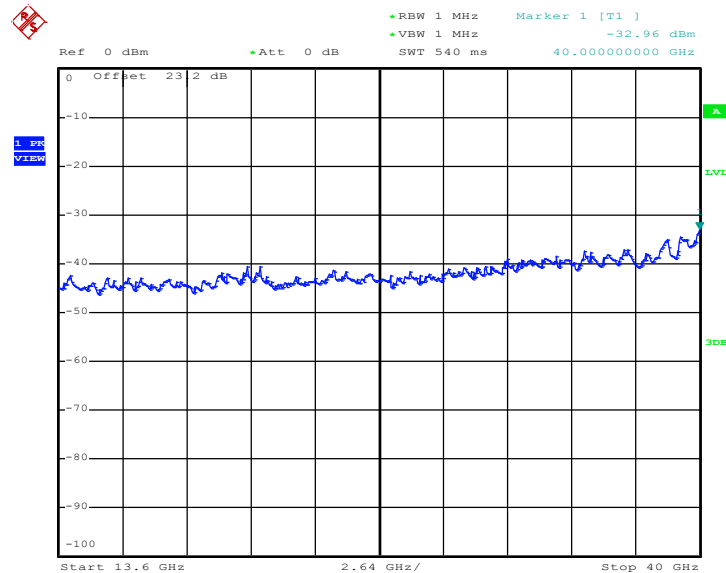


Mode 12 : Conducted Spurious Emission Plot between
802.11n 3 GHz ~ 13.6 GHz



Date: 19.MAR.2011 19:05:58

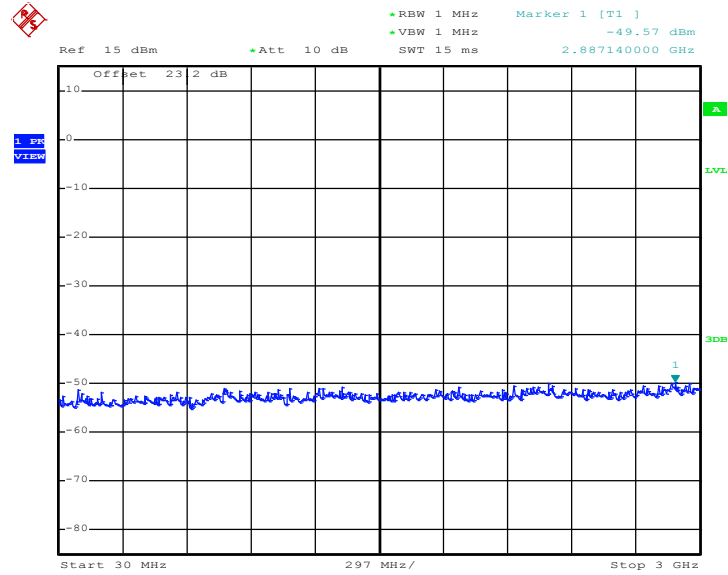
Mode 12 : Conducted Spurious Emission Plot between
802.11n 13.6 GHz ~ 40 GHz



Date: 19.MAR.2011 19:06:10

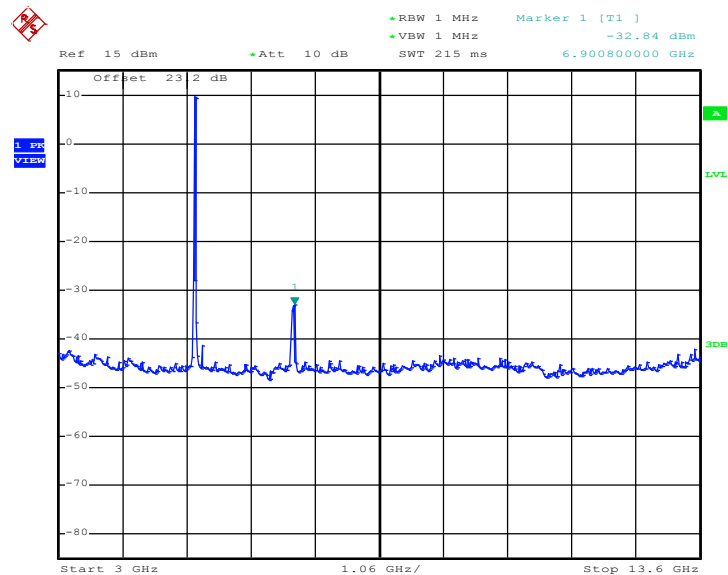


Mode 13 : Conducted Spurious Emission Plot between 802.11n 30 MHz ~ 3 GHz



Date: 19.MAR.2011 19:06:39

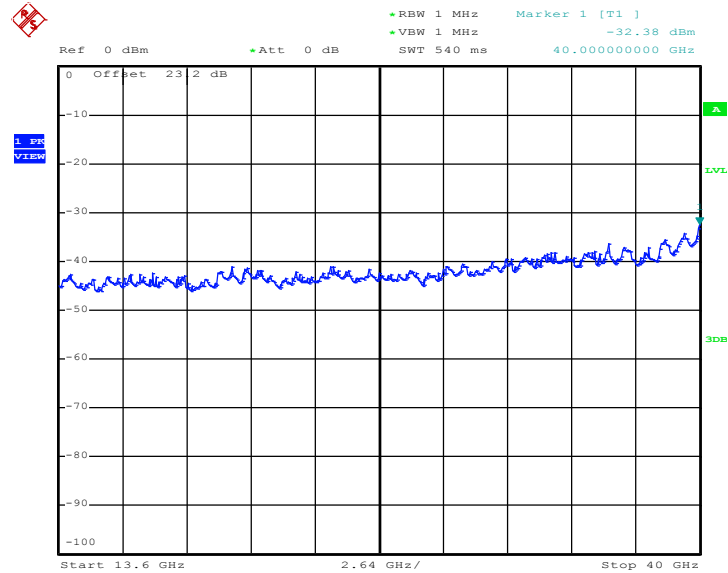
Mode 13 : Conducted Spurious Emission Plot between 802.11n 3 GHz ~ 13.6 GHz



Date: 19.MAR.2011 19:06:51

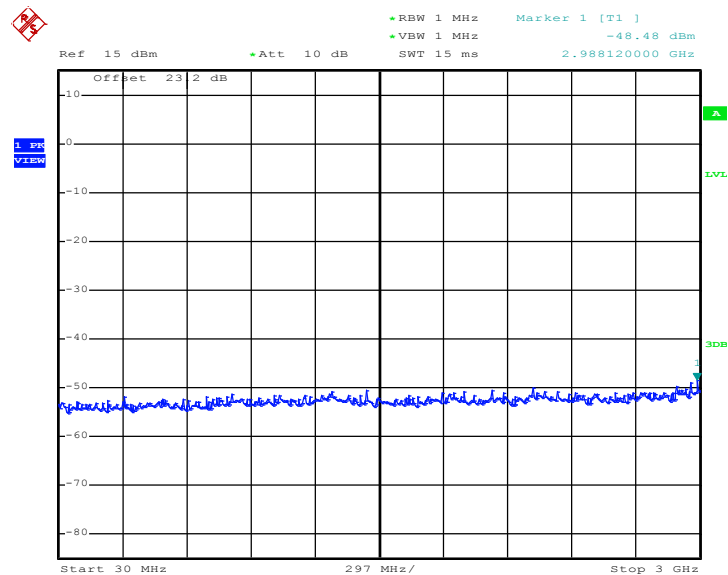


Mode 13 : Conducted Spurious Emission Plot between 802.11n 13.6 GHz ~ 40 GHz



Date: 19.MAR.2011 19:07:03

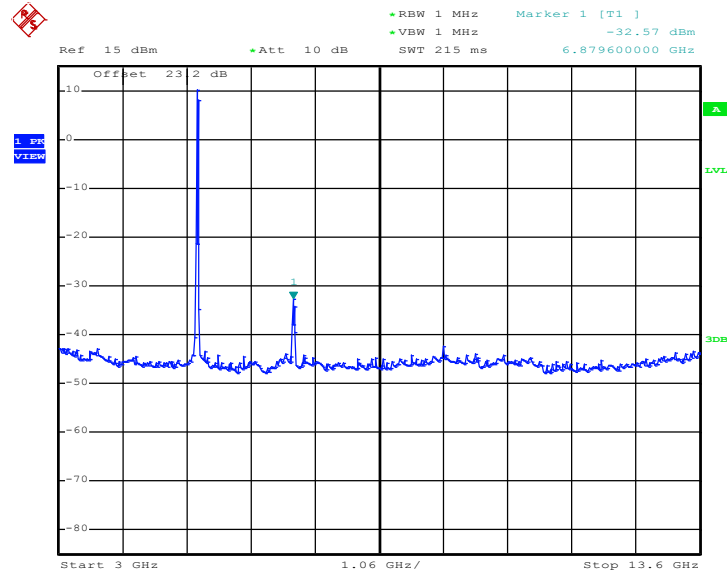
Mode 14 : Conducted Spurious Emission Plot between 802.11n 30 MHz ~ 3 GHz



Date: 19.MAR.2011 19:07:33

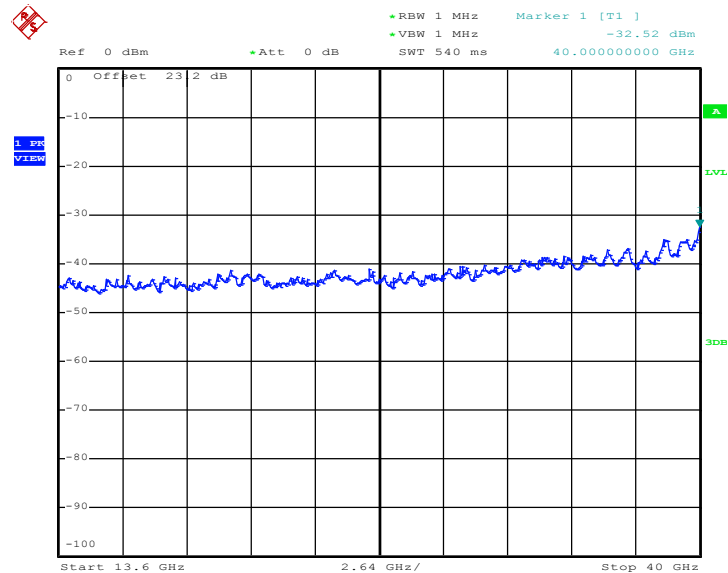


Mode 14 : Conducted Spurious Emission Plot between
802.11n 3 GHz ~ 13.6 GHz



Date: 19.MAR.2011 19:07:45

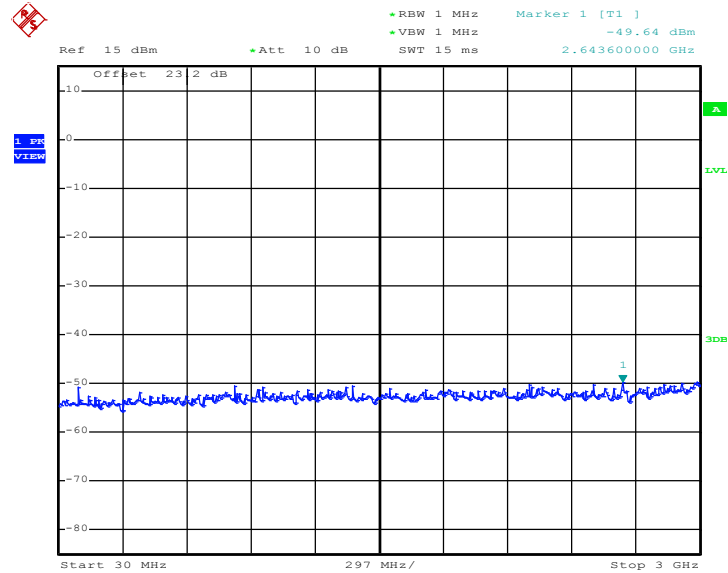
Mode 14 : Conducted Spurious Emission Plot between
802.11n 13.6 GHz ~ 40 GHz



Date: 19.MAR.2011 19:07:57

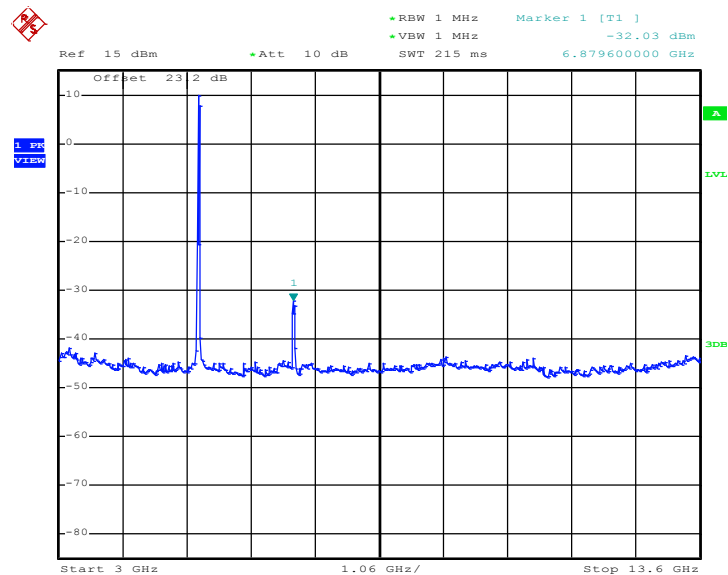


Mode 15 : Conducted Spurious Emission Plot between 802.11n 30 MHz ~ 3 GHz



Date: 19.MAR.2011 19:08:25

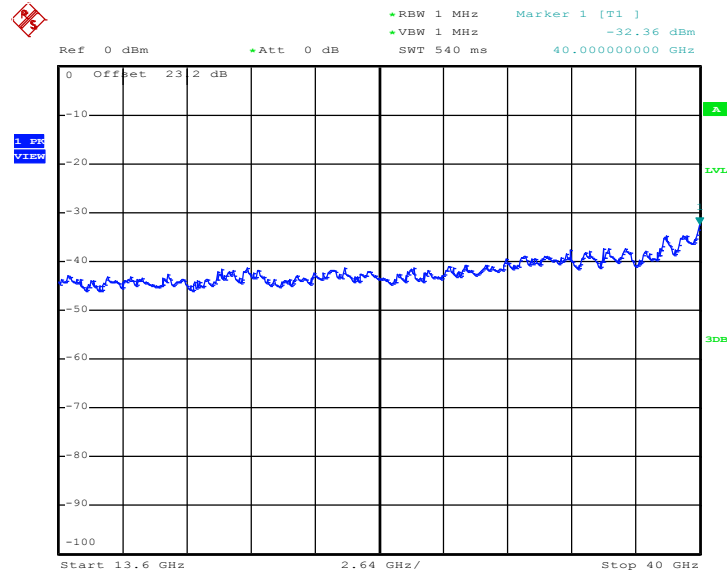
Mode 15 : Conducted Spurious Emission Plot between 802.11n 3 GHz ~ 13.6 GHz



Date: 19.MAR.2011 19:08:37

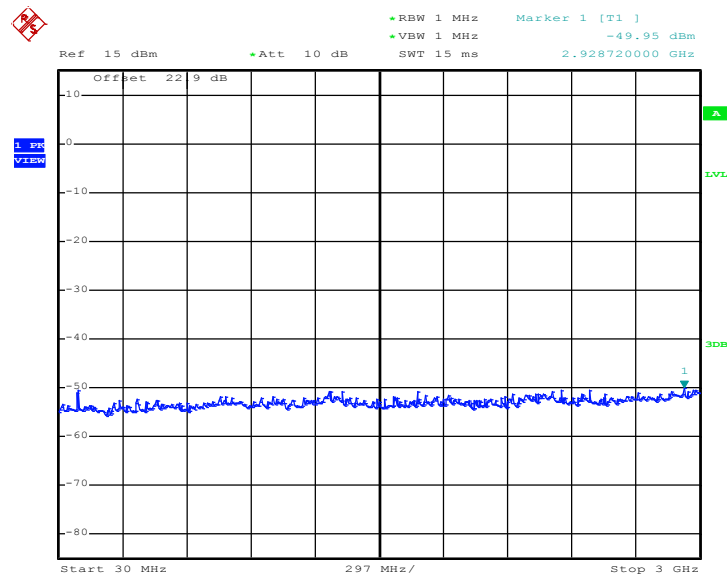


Mode 15 : Conducted Spurious Emission Plot between 802.11n 13.6 GHz ~ 40 GHz



Date: 19.MAR.2011 19:08:48

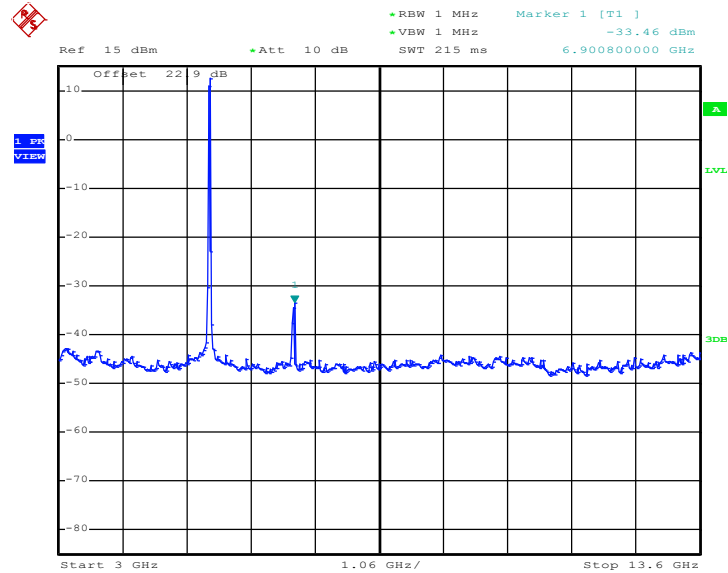
Mode 16 : Conducted Spurious Emission Plot between 802.11n 30 MHz ~ 3 GHz



Date: 19.MAR.2011 19:09:20

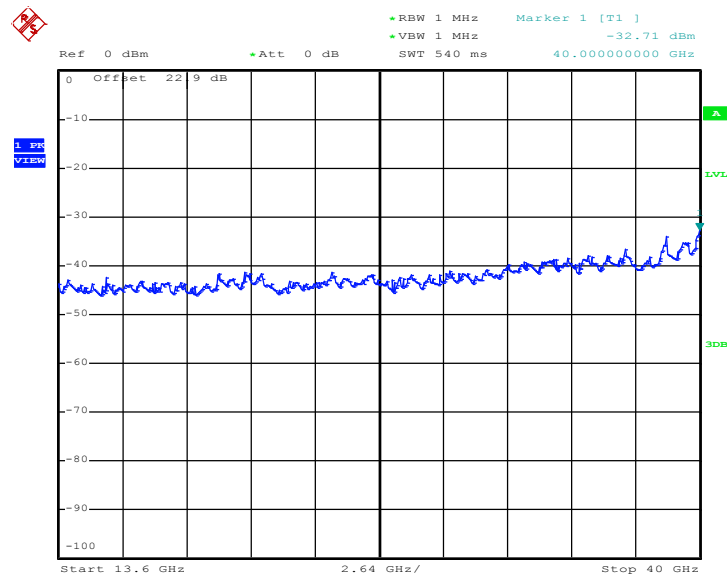


Mode 16 : Conducted Spurious Emission Plot between
802.11n 3 GHz ~ 13.6 GHz



Date: 19.MAR.2011 19:09:32

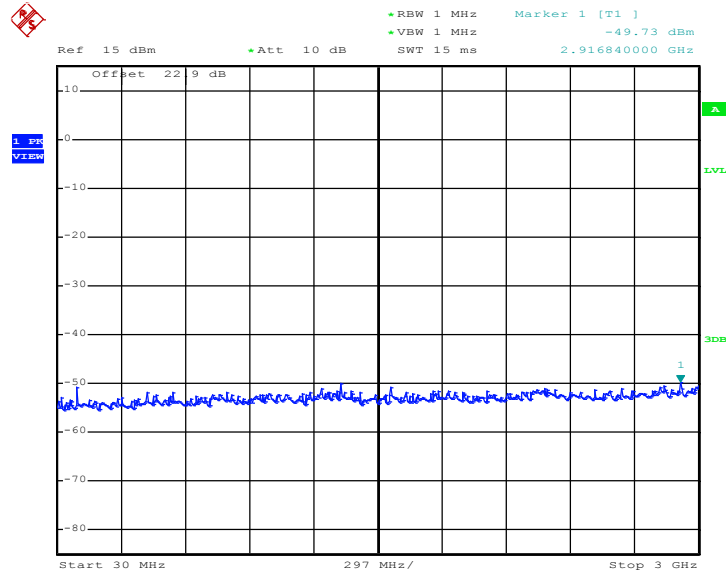
Mode 16 : Conducted Spurious Emission Plot between
802.11n 13.6 GHz ~ 40 GHz



Date: 19.MAR.2011 19:09:44

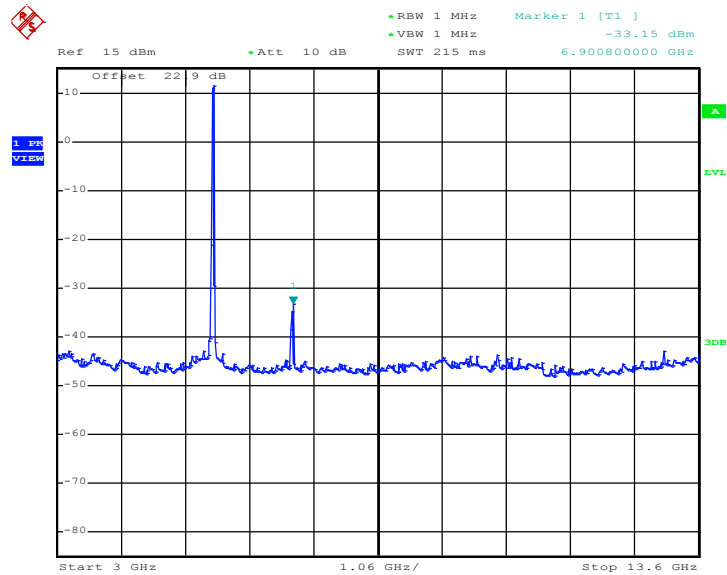


Mode 17 : Conducted Spurious Emission Plot between 802.11n 30 MHz ~ 3 GHz



Date: 19.MAR.2011 19:10:27

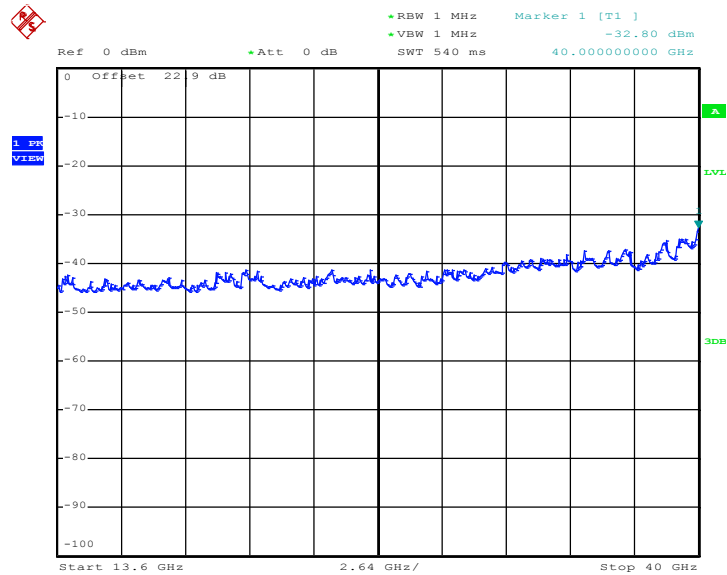
Mode 17 : Conducted Spurious Emission Plot between 802.11n 3 GHz ~ 13.6 GHz



Date: 19.MAR.2011 19:10:39

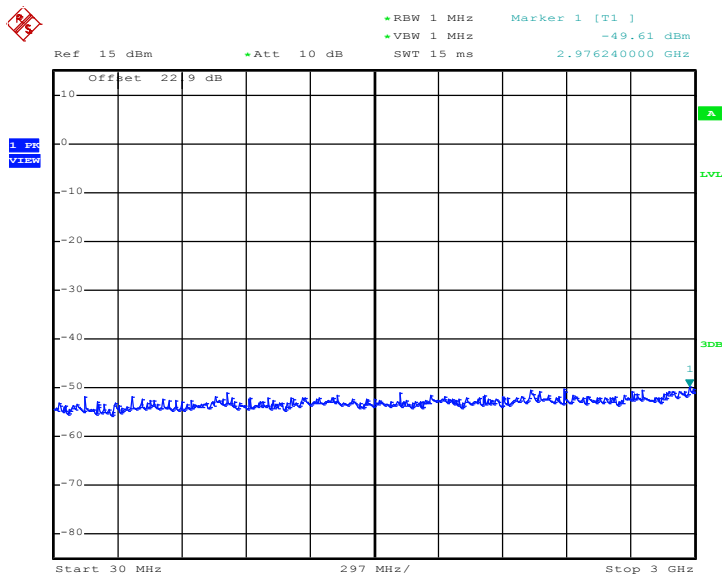


Mode 17 : Conducted Spurious Emission Plot between 802.11n 13.6 GHz ~ 40 GHz



Date: 19.MAR.2011 19:10:51

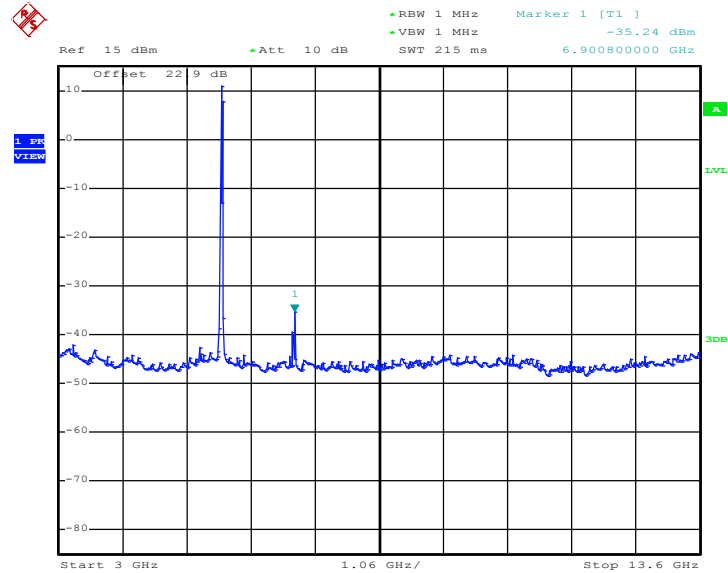
Mode 18 : Conducted Spurious Emission Plot between 802.11n 30 MHz ~ 3 GHz



Date: 19.MAR.2011 19:13:50

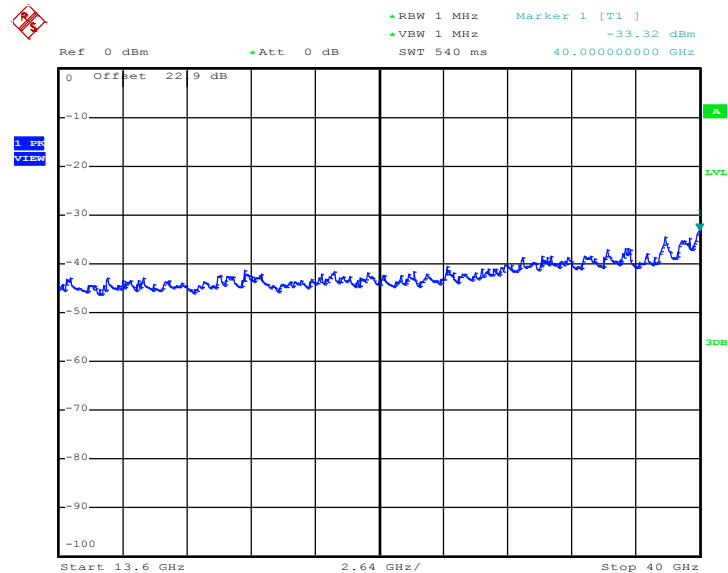


Mode 18 : Conducted Spurious Emission Plot between
802.11n 3 GHz ~ 13.6 GHz



Date: 19.MAR.2011 19:14:02

Mode 18 : Conducted Spurious Emission Plot between
802.11n 13.6 GHz ~ 40 GHz



Date: 19.MAR.2011 19:14:14

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

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

Frequency of emission (MHz)	Conducted limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

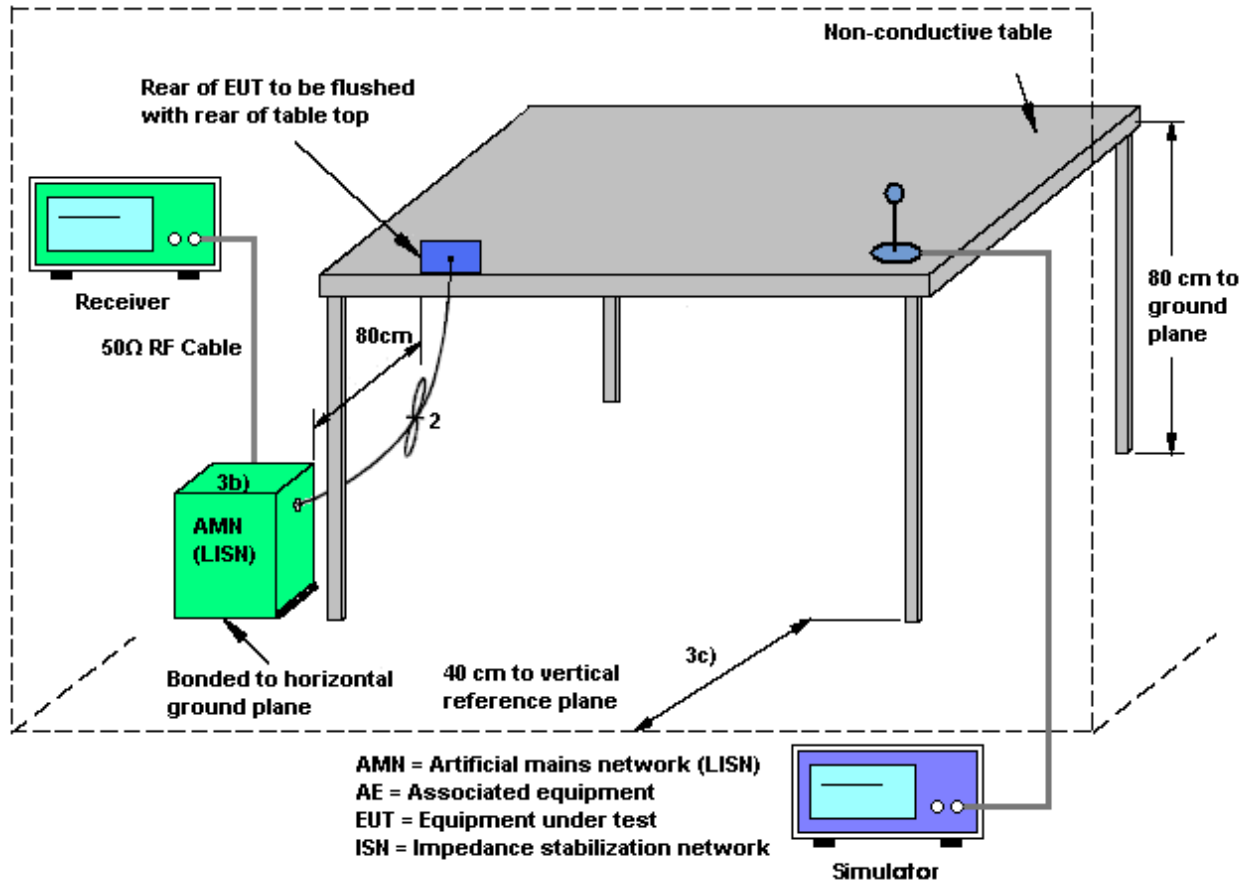
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

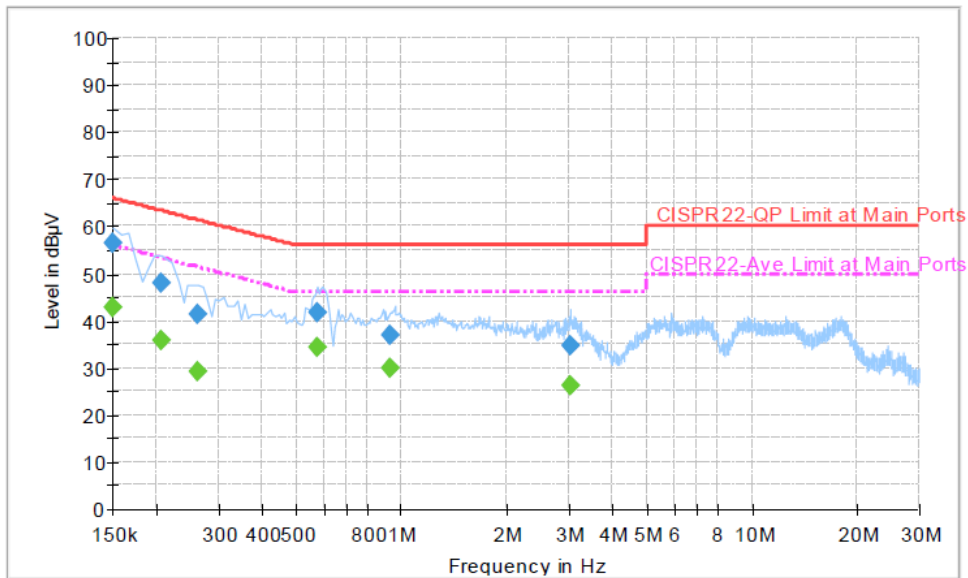
1. Please follow the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All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

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Novic Chaing	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	CDMA Band V Idle + WLAN Link (5G) + Bluetooth Link + MP3 + Camera + Sleeve (USB Port) + Battery + USB Cable (Link with Notebook) + Adapter 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



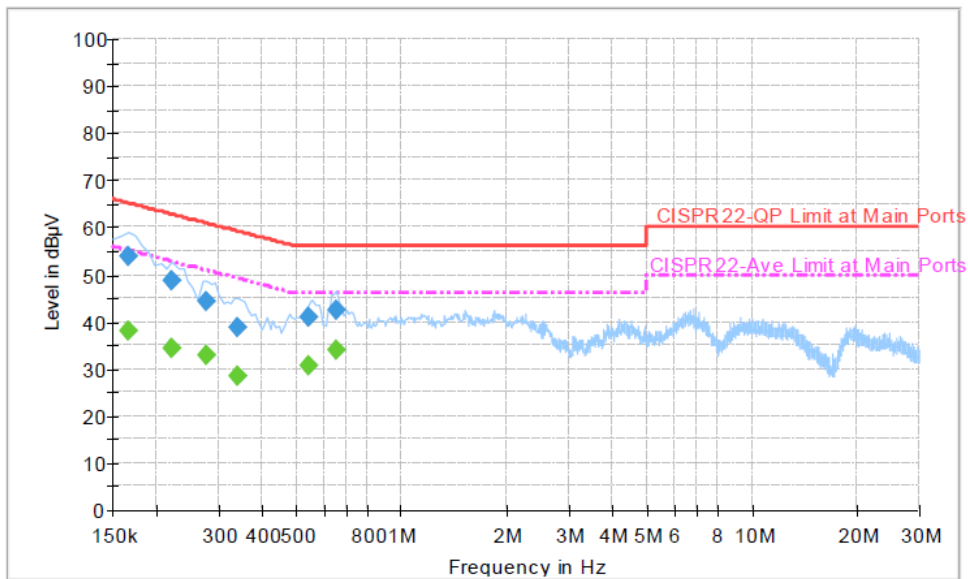
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	56.5	Off	L1	19.4	9.5	66.0
0.206000	48.1	Off	L1	19.4	15.3	63.4
0.262000	41.4	Off	L1	19.4	20.0	61.4
0.574000	41.7	Off	L1	19.4	14.3	56.0
0.926000	36.9	Off	L1	19.4	19.1	56.0
3.038000	34.8	Off	L1	19.5	21.2	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	42.9	Off	L1	19.4	13.1	56.0
0.206000	35.9	Off	L1	19.4	17.5	53.4
0.262000	29.2	Off	L1	19.4	22.2	51.4
0.574000	34.4	Off	L1	19.4	11.6	46.0
0.926000	29.9	Off	L1	19.4	16.1	46.0
3.038000	26.3	Off	L1	19.5	19.7	46.0

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Novic Chaing	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	CDMA Band V Idle + WLAN Link (5G) + Bluetooth Link + MP3 + Camera + Sleeve (USB Port) + Battery + USB Cable (Link with Notebook) + Adapter 1		
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)
0.166000	53.8	Off	N	19.4	11.4	65.2
0.222000	48.8	Off	N	19.4	13.9	62.7
0.278000	44.3	Off	N	19.4	16.6	60.9
0.342000	38.7	Off	N	19.4	20.5	59.2
0.542000	40.8	Off	N	19.4	15.2	56.0
0.654000	42.3	Off	N	19.4	13.7	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	38.1	Off	N	19.4	17.1	55.2
0.222000	34.3	Off	N	19.4	18.4	52.7
0.278000	32.7	Off	N	19.4	18.2	50.9
0.342000	28.4	Off	N	19.4	20.8	49.2
0.542000	30.7	Off	N	19.4	15.3	46.0
0.654000	34.1	Off	N	19.4	11.9	46.0

3.7 Radiated Emission Measurement

3.7.1 Limit of Radiated Emission

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209.

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

- (1) For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz.
- (2) For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz. Devices operating in the 5.25–5.35 GHz band that generate emissions in the 5.15–5.25 GHz band must meet all applicable technical requirements for operation in the 5.15–5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of –27 dBm/MHz in the 5.15–5.25 GHz band.
- (3) For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.
- (4) The provisions of Section 15.205 Restricted bands of operation of this part apply to intentional radiators operating under this section.

Note: The following formula is used to convert the EIRP to field strength.

$$E = \frac{1000000\sqrt{30P}}{3} \text{ } \mu\text{V/m, where P is the eirp (Watts)}$$

EIRP (dBm)	Field Strength at 3m (dBuV/m)
- 27	68.3

3.7.2 Measuring Instruments

See list of measuring instruments of this test report.

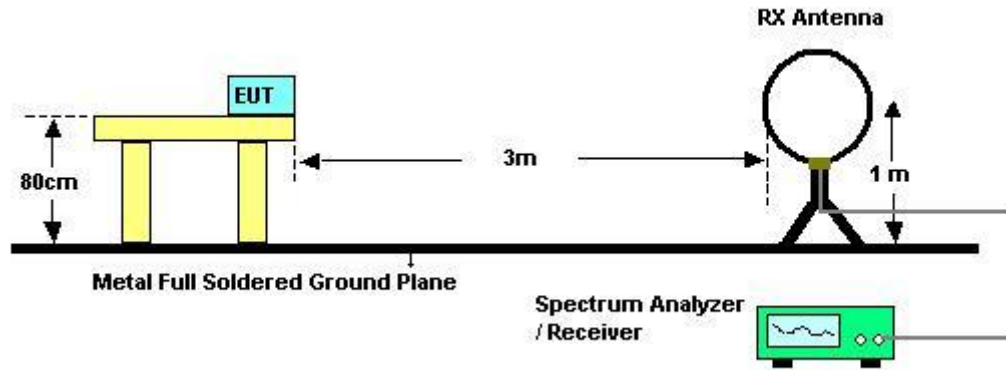


3.7.3 Test Procedures

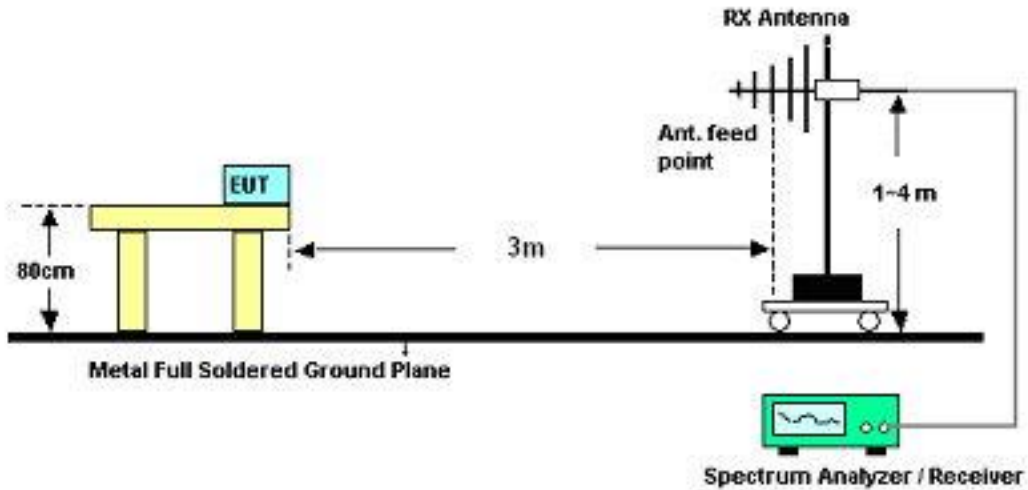
1. The testing follows the guidelines in FCC Public Notice DA 02-2138, (Measurement Guidelines of UNII)
2. The EUT was placed on a rotatable table top 0.8 meter above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest radiation.
5. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
6. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
7. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
8. For testing below 1GHz, If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the quasi-peak method and reported.
9. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.7.4 Test Setup

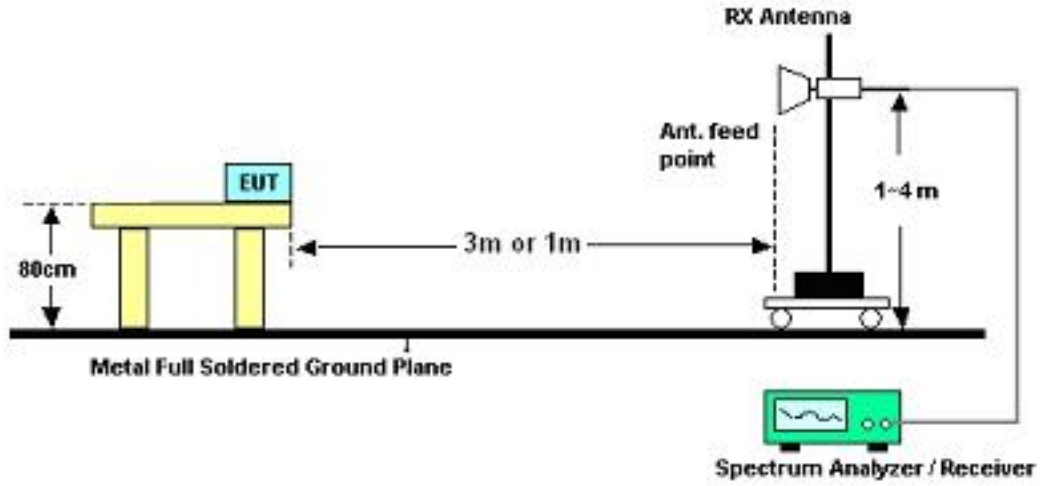
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz





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

Temperature	21~24°C	Humidity	45~50%
Test Engineer	David Yang		

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

Note:

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

Distance extrapolation factor = $40 \log(\text{specific distance} / \text{test distance})$ (dB);

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



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

Test Mode :	Mode 1	Temperature :	21~24°C
Test Channel :	36	Relative Humidity :	45~50%
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	5180 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
32.7	26.71	-13.29	40	41.82	15.8	0.56	31.47	121	145	Peak
42.69	21.66	-18.34	40	40.94	11.59	0.64	31.51	-	-	Peak
299.73	23.7	-22.3	46	39.8	13.46	1.77	31.33	-	-	Peak
478.5	29.32	-16.68	46	40.15	17.86	2.37	31.06	-	-	Peak
539.4	28.02	-17.98	46	37.66	18.83	2.53	31	-	-	Peak
836.2	27.07	-18.93	46	31.67	22.89	3.23	30.72	-	-	Peak
5150	60.24	-13.76	74	50.23	34.25	9.41	33.65	100	315	Peak
5150	43.14	-10.86	54	33.13	34.25	9.41	33.65	100	315	Average
5180	108.36	-	-	98.23	34.28	9.45	33.6	100	315	Peak
5180	97.25	-	-	87.12	34.28	9.45	33.6	100	315	Average
5382	41.09	-12.91	54	29.95	34.48	9.82	33.16	100	315	Average
5382	53.58	-20.42	74	42.44	34.48	9.82	33.16	100	315	Peak



Test Mode :	Mode 1	Temperature :	22~26°C
Test Channel :	36	Relative Humidity :	47~51%
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	5180 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.97	36.51	-3.49	40	51.62	15.8	0.56	31.47	100	332	Peak
43.5	34.51	-5.49	40	54.24	11.13	0.64	31.5	-	-	Peak
155.82	27.08	-16.42	43.5	46.73	10.67	1.22	31.54	-	-	Peak
478.5	32.88	-13.12	46	43.71	17.86	2.37	31.06	-	-	Peak
539.4	33.85	-12.15	46	43.49	18.83	2.53	31	-	-	Peak
598.9	34.1	-11.9	46	42.6	19.74	2.68	30.92	-	-	Peak
5150	61.09	-12.91	74	51.08	34.25	9.41	33.65	100	357	Peak
5150	43.99	-10.01	54	33.98	34.25	9.41	33.65	100	357	Average
5180	108.97	-	-	98.84	34.28	9.45	33.6	100	357	Peak
5180	97.1	-	-	86.97	34.28	9.45	33.6	100	357	Average
5388	41.28	-12.72	54	30.14	34.48	9.82	33.16	100	357	Average
5388	53.83	-20.17	74	42.69	34.48	9.82	33.16	100	357	Peak
6918	64.99	-3.31	68.3	53.68	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 2	Temperature :	22~26°C
Test Channel :	44	Relative Humidity :	47~51%
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	5220 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	28.09	-11.91	40	42.74	16.27	0.54	31.46	-	-	Peak
48.09	29.52	-10.48	40	51.28	9.08	0.68	31.52	121	89	Peak
299.73	23.11	-22.89	46	39.21	13.46	1.77	31.33	-	-	Peak
419	28.03	-17.97	46	40.09	16.88	2.21	31.15	-	-	Peak
478.5	29.71	-16.29	46	40.54	17.86	2.37	31.06	-	-	Peak
539.4	27.43	-18.57	46	37.07	18.83	2.53	31	-	-	Peak
5148	52.44	-21.56	74	42.43	34.25	9.41	33.65	111	17	Peak
5148	40.14	-13.86	54	30.13	34.25	9.41	33.65	111	17	Average
5220	108.71	-	-	98.36	34.32	9.53	33.5	111	17	Peak
5220	97.61	-	-	87.26	34.32	9.53	33.5	111	17	Average
5372	54.49	-19.51	74	43.45	34.47	9.78	33.21	111	17	Peak
5372	41.26	-12.74	54	30.22	34.47	9.78	33.21	111	17	Average
6926	61.02	-7.28	68.3	49.71	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 2	Temperature :	22~26°C
Test Channel :	44	Relative Humidity :	47~51%
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	5220 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
32.16	36.72	-3.28	40	51.59	16.04	0.55	31.46	103	345	Peak
42.69	34.49	-5.51	40	53.77	11.59	0.64	31.51	-	-	Peak
264.9	25.65	-20.35	46	42.53	12.9	1.62	31.4	-	-	Peak
539.4	33.55	-12.45	46	43.19	18.83	2.53	31	-	-	Peak
598.9	34.05	-11.95	46	42.55	19.74	2.68	30.92	-	-	Peak
659.8	33.93	-12.07	46	41.5	20.43	2.86	30.86	-	-	Peak
5148	53.07	-20.93	74	43.06	34.25	9.41	33.65	109	273	Peak
5148	39.94	-14.06	54	29.93	34.25	9.41	33.65	109	273	Average
5220	109.35	-	-	99	34.32	9.53	33.5	109	273	Peak
5220	98.57	-	-	88.22	34.32	9.53	33.5	109	273	Average
5374	58.54	-15.46	74	47.5	34.47	9.78	33.21	109	273	Peak
5374	41.86	-12.14	54	30.82	34.47	9.78	33.21	109	273	Average
6926	62.22	-6.08	68.3	50.91	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 3	Temperature :	22~26°C
Test Channel :	48	Relative Humidity :	47~51%
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	5240 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	30.92	-9.08	40	45.57	16.27	0.54	31.46	136	274	Peak
48.9	28.93	-11.07	40	50.7	9.08	0.68	31.53	-	-	Peak
299.73	22.06	-23.94	46	38.16	13.46	1.77	31.33	-	-	Peak
419	28.63	-17.37	46	40.69	16.88	2.21	31.15	-	-	Peak
478.5	30	-16	46	40.83	17.86	2.37	31.06	-	-	Peak
539.4	27.2	-18.8	46	36.84	18.83	2.53	31	-	-	Peak
5124	51.78	-22.22	74	41.88	34.23	9.37	33.7	111	18	Peak
5124	39.74	-14.26	54	29.84	34.23	9.37	33.7	111	18	Average
5240	107.43	-	-	96.98	34.33	9.57	33.45	111	18	Peak
5240	97.06	-	-	86.61	34.33	9.57	33.45	111	18	Average
5396	57.78	-16.22	74	46.62	34.5	9.82	33.16	111	18	Peak
5396	41.51	-12.49	54	30.35	34.5	9.82	33.16	111	18	Average
6934	58.94	-9.36	68.3	47.63	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 3	Temperature :	22~26°C
Test Channel :	48	Relative Humidity :	47~51%
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	5240 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.81	36.77	-3.23	40	51.42	16.27	0.54	31.46	100	117	Peak
42.69	36.74	-3.26	40	56.02	11.59	0.64	31.51	-	-	Peak
94.26	29.32	-14.18	43.5	50.76	9.12	0.97	31.53	-	-	Peak
478.5	33.4	-12.6	46	44.23	17.86	2.37	31.06	-	-	Peak
539.4	34.16	-11.84	46	43.8	18.83	2.53	31	-	-	Peak
659.8	34.08	-11.92	46	41.65	20.43	2.86	30.86	-	-	Peak
5148	52.45	-21.55	74	42.44	34.25	9.41	33.65	110	270	Peak
5148	39.81	-14.19	54	29.8	34.25	9.41	33.65	110	270	Average
5240	109.37	-	-	99.01	34.33	9.53	33.5	110	270	Peak
5240	98.65	-	-	88.2	34.33	9.57	33.45	110	270	Average
5356	56.99	-17.01	74	45.97	34.45	9.78	33.21	110	270	Peak
5356	41.7	-12.3	54	30.68	34.45	9.78	33.21	110	270	Average
6932	62.69	-5.61	68.3	51.38	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 4	Temperature :	22~26°C
Test Channel :	52	Relative Humidity :	47~51%
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	5260 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	31.81	-8.19	40	46.68	16.04	0.55	31.46	121	178	Peak
47.82	30.9	-9.1	40	52.27	9.48	0.67	31.52	-	-	Peak
299.73	22.34	-23.66	46	38.44	13.46	1.77	31.33	-	-	Peak
419	25.93	-20.07	46	37.99	16.88	2.21	31.15	-	-	Peak
539.4	24.58	-21.42	46	34.22	18.83	2.53	31	-	-	Peak
984.6	27.38	-26.62	54	29.78	24.69	3.49	30.58	-	-	Peak
5148	52.64	-21.36	74	42.63	34.25	9.41	33.65	110	16	Peak
5148	39.87	-14.13	54	29.86	34.25	9.41	33.65	110	16	Average
5260	108.34	-	-	97.76	34.37	9.62	33.41	110	16	Peak
5260	97.35	-	-	86.77	34.37	9.62	33.41	110	16	Average
5420	56.77	-17.23	74	45.5	34.52	9.86	33.11	110	16	Peak
5420	41.81	-12.19	54	30.54	34.52	9.86	33.11	110	16	Average
6926	61.32	-6.98	68.3	50.01	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 4	Temperature :	22~26°C
Test Channel :	52	Relative Humidity :	47~51%
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	5260 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	36.67	-3.33	40	51.54	16.04	0.55	31.46	100	71	Peak
42.69	35.27	-4.73	40	54.55	11.59	0.64	31.51	-	-	Peak
86.7	30.47	-9.53	40	52.99	8.1	0.92	31.54	-	-	Peak
539.4	29.09	-16.91	46	38.73	18.83	2.53	31	-	-	Peak
598.9	28.14	-17.86	46	36.64	19.74	2.68	30.92	-	-	Peak
659.8	28.77	-17.23	46	36.34	20.43	2.86	30.86	-	-	Peak
5148	52.81	-21.19	74	42.8	34.25	9.41	33.65	109	272	Peak
5148	39.74	-14.26	54	29.73	34.25	9.41	33.65	109	272	Average
5260	109.74	-	-	99.16	34.37	9.62	33.41	109	272	Peak
5260	99.02	-	-	88.44	34.37	9.62	33.41	109	272	Average
5412	58.03	-15.97	74	46.76	34.52	9.86	33.11	109	272	Peak
5412	42.45	-11.55	54	31.18	34.52	9.86	33.11	109	272	Average
6932	62.58	-5.72	68.3	51.27	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 5	Temperature :	22~26°C
Test Channel :	60	Relative Humidity :	47~51%
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	5300 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	29.16	-10.84	40	43.81	16.27	0.54	31.46	126	317	Peak
48.09	28.26	-11.74	40	50.02	9.08	0.68	31.52	-	-	Peak
299.73	26.75	-19.25	46	42.85	13.46	1.77	31.33	-	-	Peak
419	24.81	-21.19	46	36.87	16.88	2.21	31.15	-	-	Peak
836.2	27.08	-18.92	46	31.68	22.89	3.23	30.72	-	-	Peak
965	25.57	-28.43	54	28.21	24.45	3.48	30.57	-	-	Peak
5150	52.35	-21.65	74	42.34	34.25	9.41	33.65	100	197	Peak
5150	39.93	-14.07	54	29.92	34.25	9.41	33.65	100	197	Average
5300	106.71	-	-	96.01	34.4	9.66	33.36	100	197	Peak
5300	95.95	-	-	85.25	34.4	9.66	33.36	100	197	Average
5414	55.21	-18.79	74	43.94	34.52	9.86	33.11	100	197	Peak
5414	42.44	-11.56	54	31.17	34.52	9.86	33.11	100	197	Average
6942	57.46	-10.84	68.3	46.14	35.68	9.91	34.27	100	0	Peak



Test Mode :	Mode 5	Temperature :	22~26°C
Test Channel :	60	Relative Humidity :	47~51%
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	5300 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	36.39	-3.61	40	50.81	16.51	0.53	31.46	105	89	Peak
42.69	32.33	-7.67	40	51.61	11.59	0.64	31.51	-	-	Peak
143.94	29.97	-13.53	43.5	48.9	11.42	1.2	31.55	-	-	Peak
478.5	33.4	-12.6	46	44.23	17.86	2.37	31.06	-	-	Peak
539.4	33.75	-12.25	46	43.39	18.83	2.53	31	-	-	Peak
836.2	30.75	-15.25	46	35.35	22.89	3.23	30.72	-	-	Peak
5124	52.88	-21.12	74	42.98	34.23	9.37	33.7	108	273	Peak
5124	39.59	-14.41	54	29.69	34.23	9.37	33.7	108	273	Average
5300	100.6	-	-	89.9	34.4	9.66	33.36	108	273	Average
5300	111.39	-	-	100.69	34.4	9.66	33.36	108	273	Peak
5460	59.11	-14.89	74	47.63	34.55	9.94	33.01	108	273	Peak
5460	45.41	-8.59	54	33.93	34.55	9.94	33.01	108	273	Average
6926	61.79	-6.51	68.3	50.48	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 6	Temperature :	22~26°C
Test Channel :	64	Relative Humidity :	47~51%
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	5320 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	32.4	-7.6	40	46.82	16.51	0.53	31.46	158	193	Peak
48.9	28.8	-11.2	40	50.57	9.08	0.68	31.53	-	-	Peak
299.73	26.61	-19.39	46	42.71	13.46	1.77	31.33	-	-	Peak
300	25.88	-20.12	46	41.98	13.46	1.77	31.33	-	-	Peak
419	25.72	-20.28	46	37.78	16.88	2.21	31.15	-	-	Peak
478.5	25.71	-20.29	46	36.54	17.86	2.37	31.06	-	-	Peak
5142	51.96	-22.04	74	41.95	34.25	9.41	33.65	100	199	Peak
5142	39.94	-14.06	54	29.93	34.25	9.41	33.65	100	199	Average
5320	106.71	-	-	95.9	34.42	9.7	33.31	100	199	Peak
5320	96.11	-	-	85.3	34.42	9.7	33.31	100	199	Average
5350	59.82	-14.18	74	48.89	34.45	9.74	33.26	100	199	Peak
5350	44.02	-9.98	54	33.09	34.45	9.74	33.26	100	199	Average
6934	56.75	-11.55	68.3	45.44	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 6	Temperature :	22~26°C
Test Channel :	64	Relative Humidity :	47~51%
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	5320 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	36.75	-3.25	40	51.17	16.51	0.53	31.46	101	44	Peak
42.69	32.51	-7.49	40	51.79	11.59	0.64	31.51	-	-	Peak
143.94	31.25	-12.25	43.5	50.18	11.42	1.2	31.55	-	-	Peak
419	29.43	-16.57	46	41.49	16.88	2.21	31.15	-	-	Peak
478.5	35.52	-10.48	46	46.35	17.86	2.37	31.06	-	-	Peak
539.4	34.16	-11.84	46	43.8	18.83	2.53	31	-	-	Peak
5148	52.34	-21.66	74	42.33	34.25	9.41	33.65	109	271	Peak
5148	39.68	-14.32	54	29.67	34.25	9.41	33.65	109	271	Average
5320	111.47	-	-	100.66	34.42	9.7	33.31	109	271	Peak
5320	100.87	-	-	90.06	34.42	9.7	33.31	109	271	Average
5350	63.55	-10.45	74	52.62	34.45	9.74	33.26	109	271	Peak
5350	46.92	-7.08	54	35.99	34.45	9.74	33.26	109	271	Average
6926	62.49	-5.81	68.3	51.18	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 7	Temperature :	22~26°C
Test Channel :	100	Relative Humidity :	47~51%
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	5500 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.81	27.75	-12.25	40	42.4	16.27	0.54	31.46	142	156	Peak
48.09	27.49	-12.51	40	49.25	9.08	0.68	31.52	-	-	Peak
299.73	25.48	-20.52	46	41.58	13.46	1.77	31.33	-	-	Peak
419	28.8	-17.2	46	40.86	16.88	2.21	31.15	-	-	Peak
478.5	25.45	-20.55	46	36.28	17.86	2.37	31.06	-	-	Peak
984.6	26.56	-27.44	54	28.96	24.69	3.49	30.58	-	-	Peak
5470	51.64	-16.66	68.3	40.14	34.57	9.94	33.01	100	79	Peak
5500	108.91	-	-	97.2	34.6	10.02	32.91	100	79	Peak
5500	98.47	-	-	86.76	34.6	10.02	32.91	100	79	Average
5725	52.12	-16.18	68.3	40.56	34.82	9.92	33.18	100	79	Peak
6934	57.96	-10.34	68.3	46.65	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 7	Temperature :	22~26°C
Test Channel :	100	Relative Humidity :	47~51%
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	5500 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
32.7	36.62	-3.38	40	51.73	15.8	0.56	31.47	100	21	Peak
42.69	29.92	-10.08	40	49.2	11.59	0.64	31.51	-	-	Peak
106.41	35.44	-8.06	43.5	55.59	10.37	1.03	31.55	-	-	Peak
419	31.56	-14.44	46	43.62	16.88	2.21	31.15	-	-	Peak
478.5	37.71	-8.29	46	48.54	17.86	2.37	31.06	-	-	Peak
539.4	33.4	-12.6	46	43.04	18.83	2.53	31	-	-	Peak
5470	54.09	-14.21	68.3	42.59	34.57	9.94	33.01	105	262	Peak
5500	102.88	-	-	91.17	34.6	10.02	32.91	105	262	Average
5500	113.55	-	-	101.84	34.6	10.02	32.91	105	262	Peak
5725	52.64	-15.66	68.3	41.08	34.82	9.92	33.18	105	262	Peak
6934	62.36	-5.94	68.3	51.05	35.67	9.9	34.26	100	0	Peak
16500	53.85	-14.45	68.3	55.59	41.6	14.06	57.4	100	0	Peak



Test Mode :	Mode 8	Temperature :	22~26°C
Test Channel :	116	Relative Humidity :	47~51%
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	5580 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
240.06	27.7	-18.3	46	45.61	11.98	1.53	31.42	-	-	Peak
275.97	24.29	-21.71	46	40.92	13.09	1.64	31.36	-	-	Peak
287.85	31.06	-14.94	46	47.44	13.27	1.68	31.33	-	-	Peak
310.5	34.5	-11.5	46	50.24	13.79	1.79	31.32	162	123	Peak
419	25.65	-20.35	46	37.71	16.88	2.21	31.15	-	-	Peak
659.8	23.21	-22.79	46	30.78	20.43	2.86	30.86	-	-	Peak
5470	52.72	-15.58	68.3	41.22	34.57	9.94	33.01	100	323	Peak
5580	98.38	-	-	86.72	34.67	9.99	33	100	323	Average
5580	109.69	-	-	98.03	34.67	9.99	33	100	323	Peak
5725	51.69	-16.61	68.3	40.13	34.82	9.92	33.18	100	323	Peak
6902	57.64	-10.66	68.3	46.34	35.66	9.89	34.25	100	0	Peak



Test Mode :	Mode 8	Temperature :	22~26°C
Test Channel :	116	Relative Humidity :	47~51%
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	5580 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
33.78	30.73	-9.27	40	46.06	15.57	0.57	31.47	100	107	Peak
53.76	21.09	-18.91	40	44.42	7.5	0.72	31.55	-	-	Peak
171.21	21.16	-22.34	43.5	41.8	9.65	1.23	31.52	-	-	Peak
335	21.51	-24.49	46	36.41	14.54	1.87	31.31	-	-	Peak
478.5	21.24	-24.76	46	32.07	17.86	2.37	31.06	-	-	Peak
853	24.87	-21.13	46	29.25	23.08	3.27	30.73	-	-	Peak
5470	54.33	-13.97	68.3	42.83	34.57	9.94	33.01	100	274	Peak
5580	104.28	-	-	92.62	34.67	9.99	33	100	274	Average
5580	114.81	-	-	103.15	34.67	9.99	33	100	274	Peak
5725	52.29	-16.01	68.3	40.73	34.82	9.92	33.18	100	274	Peak
6910	60.31	-7.99	68.3	49	35.67	9.89	34.25	100	0	Peak



Test Mode :	Mode 9	Temperature :	22~26°C
Test Channel :	140	Relative Humidity :	47~51%
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	5700 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.81	23.96	-16.04	40	38.61	16.27	0.54	31.46	156	127	Peak
143.94	18.84	-24.66	43.5	37.77	11.42	1.2	31.55	-	-	Peak
300	25.44	-20.56	46	41.54	13.46	1.77	31.33	-	-	Peak
419	28.86	-17.14	46	40.92	16.88	2.21	31.15	-	-	Peak
478.5	26.14	-19.86	46	36.97	17.86	2.37	31.06	-	-	Peak
993	26.83	-27.17	54	29.11	24.8	3.5	30.58	-	-	Peak
5470	52.28	-16.02	68.3	40.78	34.57	9.94	33.01	100	326	Peak
5700	109.82	-	-	98.23	34.81	9.93	33.15	100	326	Peak
5700	99.46	-	-	87.89	34.79	9.93	33.15	100	326	Average
5725	52.91	-15.39	68.3	41.35	34.82	9.92	33.18	100	326	Peak
6934	62.11	-6.19	68.3	50.8	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 9	Temperature :	22~26°C
Test Channel :	140	Relative Humidity :	47~51%
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	5700 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	36.47	-3.53	40	51.34	16.04	0.55	31.46	109	61	Peak
49.17	28.79	-11.21	40	50.95	8.68	0.69	31.53	-	-	Peak
143.94	31.31	-12.19	43.5	50.24	11.42	1.2	31.55	-	-	Peak
419	31.65	-14.35	46	43.71	16.88	2.21	31.15	-	-	Peak
478.5	37.66	-8.34	46	48.49	17.86	2.37	31.06	-	-	Peak
539.4	33.5	-12.5	46	43.14	18.83	2.53	31	-	-	Peak
5470	51.9	-16.4	68.3	40.4	34.57	9.94	33.01	111	273	Peak
5700	114.38	-	-	102.81	34.79	9.93	33.15	111	273	Peak
5700	103.92	-	-	92.35	34.79	9.93	33.15	111	273	Average
5725	55.76	-12.54	68.3	44.2	34.82	9.92	33.18	111	273	Peak
6932	59.8	-8.5	68.3	48.49	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 10	Temperature :	21~24
Test Channel :	36	Relative Humidity :	45~50
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	5180 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	27	-13	40	41.87	16.04	0.55	31.46	129	98	Peak
46.74	22.13	-17.87	40	43.1	9.87	0.67	31.51	-	-	Peak
299.73	25.94	-20.06	46	42.04	13.46	1.77	31.33	-	-	Peak
419	28.83	-17.17	46	40.89	16.88	2.21	31.15	-	-	Peak
478.5	25.81	-20.19	46	36.64	17.86	2.37	31.06	-	-	Peak
976.9	27.16	-26.84	54	29.65	24.6	3.49	30.58	-	-	Peak
5150	60.19	-13.81	74	50.18	34.25	9.41	33.65	100	17	Peak
5150	42.73	-11.27	54	32.72	34.25	9.41	33.65	100	17	Average
5180	106.68	-	-	96.55	34.28	9.45	33.6	100	17	Peak
5180	96.41	-	-	86.28	34.28	9.45	33.6	100	17	Average
5380	40.9	-13.1	54	29.85	34.48	9.78	33.21	100	17	Average
5380	52.86	-21.14	74	41.81	34.48	9.78	33.21	100	17	Peak
6918	59.17	-9.13	68.3	47.86	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 10	Temperature :	21~24
Test Channel :	36	Relative Humidity :	45~50
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	5180 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	36.67	-3.33	40	51.54	16.04	0.55	31.46	112	332	Peak
42.69	29.66	-10.34	40	48.94	11.59	0.64	31.51	-	-	Peak
143.94	29.76	-13.74	43.5	48.69	11.42	1.2	31.55	-	-	Peak
419	31.99	-14.01	46	44.05	16.88	2.21	31.15	-	-	Peak
478.5	37.83	-8.17	46	48.66	17.86	2.37	31.06	-	-	Peak
539.4	33.52	-12.48	46	43.16	18.83	2.53	31	-	-	Peak
5150	62.13	-11.87	74	52.12	34.25	9.41	33.65	111	272	Peak
5150	43.63	-10.37	54	33.62	34.25	9.41	33.65	111	272	Average
5180	108.58	-	-	98.45	34.28	9.45	33.6	111	272	Peak
5180	97.67	-	-	87.54	34.28	9.45	33.6	111	272	Average
5350	41.03	-12.97	54	30.1	34.45	9.74	33.26	111	272	Average
5350	53.64	-20.36	74	42.71	34.45	9.74	33.26	111	272	Peak
6932	62.86	-5.44	68.3	51.55	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 11	Temperature :	21~24
Test Channel :	44	Relative Humidity :	45~50
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	5220 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.81	29.01	-10.99	40	43.66	16.27	0.54	31.46	133	54	Peak
48.09	26.93	-13.07	40	48.69	9.08	0.68	31.52	-	-	Peak
299.73	25.55	-20.45	46	41.65	13.46	1.77	31.33	-	-	Peak
419	28.89	-17.11	46	40.95	16.88	2.21	31.15	-	-	Peak
478.5	26.99	-19.01	46	37.82	17.86	2.37	31.06	-	-	Peak
988.1	27.32	-26.68	54	29.66	24.74	3.5	30.58	-	-	Peak
5124	52.41	-21.59	74	42.51	34.23	9.37	33.7	111	16	Peak
5124	39.9	-14.1	54	30	34.23	9.37	33.7	111	16	Average
5220	108.29	-	-	97.94	34.32	9.53	33.5	111	16	Peak
5220	97.23	-	-	86.88	34.32	9.53	33.5	111	16	Average
5374	54.25	-19.75	74	43.21	34.47	9.78	33.21	111	16	Peak
5374	41.09	-12.91	54	30.05	34.47	9.78	33.21	111	16	Average
6924	60.81	-7.49	68.3	49.5	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 11	Temperature :	21~24
Test Channel :	44	Relative Humidity :	45~50
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	5220 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	36.52	-3.48	40	51.17	16.27	0.54	31.46	101	359	Peak
42.69	29.45	-10.55	40	48.73	11.59	0.64	31.51	-	-	Peak
143.94	30.41	-13.09	43.5	49.34	11.42	1.2	31.55	-	-	Peak
419	31.82	-14.18	46	43.88	16.88	2.21	31.15	-	-	Peak
478.5	37.73	-8.27	46	48.56	17.86	2.37	31.06	-	-	Peak
539.4	33.44	-12.56	46	43.08	18.83	2.53	31	-	-	Peak
5134	52.28	-21.72	74	42.38	34.23	9.37	33.7	110	272	Peak
5134	40.04	-13.96	54	30.14	34.23	9.37	33.7	110	272	Average
5220	108.87	-	-	98.52	34.32	9.53	33.5	110	272	Peak
5220	98.21	-	-	87.86	34.32	9.53	33.5	110	272	Average
5374	59.09	-14.91	74	48.05	34.47	9.78	33.21	110	272	Peak
5374	41.35	-12.65	54	30.31	34.47	9.78	33.21	110	272	Average
6934	63.6	-4.7	68.3	52.29	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 12	Temperature :	21~24
Test Channel :	48	Relative Humidity :	45~50
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	5240 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	31.2	-8.8	40	46.07	16.04	0.55	31.46	131	247	Peak
49.17	27.99	-12.01	40	50.15	8.68	0.69	31.53	-	-	Peak
299.73	25.99	-20.01	46	42.09	13.46	1.77	31.33	-	-	Peak
419	28.88	-17.12	46	40.94	16.88	2.21	31.15	-	-	Peak
478.5	25.66	-20.34	46	36.49	17.86	2.37	31.06	-	-	Peak
956.6	27.37	-18.63	46	30.13	24.34	3.47	30.57	-	-	Peak
5148	52.49	-21.51	74	42.48	34.25	9.41	33.65	109	12	Peak
5148	39.84	-14.16	54	29.83	34.25	9.41	33.65	109	12	Average
5240	96.86	-	-	86.41	34.33	9.57	33.45	109	12	Average
5240	107.48	-	-	97.12	34.33	9.53	33.5	109	12	Peak
5398	57.12	-16.88	74	45.96	34.5	9.82	33.16	109	12	Peak
5398	41.31	-12.69	54	30.15	34.5	9.82	33.16	109	12	Average
6932	60.69	-7.61	68.3	49.38	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 12	Temperature :	21~24
Test Channel :	48	Relative Humidity :	45~50
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	5240 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	36.51	-3.49	40	51.38	16.04	0.55	31.46	100	293	Peak
43.5	29.11	-10.89	40	48.84	11.13	0.64	31.5	-	-	Peak
143.94	29.51	-13.99	43.5	48.44	11.42	1.2	31.55	-	-	Peak
419	31.64	-14.36	46	43.7	16.88	2.21	31.15	-	-	Peak
478.5	37.91	-8.09	46	48.74	17.86	2.37	31.06	-	-	Peak
539.4	33.33	-12.67	46	42.97	18.83	2.53	31	-	-	Peak
5118	52.35	-21.65	74	42.46	34.22	9.37	33.7	108	274	Peak
5118	39.54	-14.46	54	29.65	34.22	9.37	33.7	108	274	Average
5240	109.33	-	-	98.86	34.35	9.57	33.45	108	274	Peak
5240	98.74	-	-	88.29	34.33	9.57	33.45	108	274	Average
5356	60.55	-13.45	74	49.53	34.45	9.78	33.21	108	274	Peak
5356	41.97	-12.03	54	30.95	34.45	9.78	33.21	108	274	Average
6926	62.26	-6.04	68.3	50.95	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 13	Temperature :	21~24
Test Channel :	52	Relative Humidity :	45~50
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	5260 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	30.9	-9.1	40	45.77	16.04	0.55	31.46	131	174	Peak
48.9	28.03	-11.97	40	49.8	9.08	0.68	31.53	-	-	Peak
299.73	26.52	-19.48	46	42.62	13.46	1.77	31.33	-	-	Peak
419	28.78	-17.22	46	40.84	16.88	2.21	31.15	-	-	Peak
478.5	25.23	-20.77	46	36.06	17.86	2.37	31.06	-	-	Peak
990.2	27.01	-26.99	54	29.32	24.77	3.5	30.58	-	-	Peak
5148	52.76	-21.24	74	42.75	34.25	9.41	33.65	111	15	Peak
5148	39.87	-14.13	54	29.86	34.25	9.41	33.65	111	15	Average
5260	107.6	-	-	97.13	34.35	9.57	33.45	111	15	Peak
5260	97.04	-	-	86.46	34.37	9.62	33.41	111	15	Average
5414	54.45	-19.55	74	43.18	34.52	9.86	33.11	111	15	Peak
5414	41.69	-12.31	54	30.42	34.52	9.86	33.11	111	15	Average
6940	60.44	-7.86	68.3	49.13	35.67	9.91	34.27	100	0	Peak



Test Mode :	Mode 13	Temperature :	21~24
Test Channel :	52	Relative Humidity :	45~50
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	5260 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	36.91	-3.09	40	51.78	16.04	0.55	31.46	102	57	Peak
101.82	38.29	-5.21	43.5	58.87	9.96	1	31.54	-	-	Peak
143.94	31.03	-12.47	43.5	49.96	11.42	1.2	31.55	-	-	Peak
478.5	37.98	-8.02	46	48.81	17.86	2.37	31.06	-	-	Peak
539.4	33.59	-12.41	46	43.23	18.83	2.53	31	-	-	Peak
659.8	29.15	-16.85	46	36.72	20.43	2.86	30.86	-	-	Peak
5126	52.38	-21.62	74	42.48	34.23	9.37	33.7	109	273	Peak
5126	39.61	-14.39	54	29.71	34.23	9.37	33.7	109	273	Average
5260	109.6	-	-	99.02	34.37	9.62	33.41	109	273	Peak
5260	98.81	-	-	88.23	34.37	9.62	33.41	109	273	Average
5414	56.74	-17.26	74	45.47	34.52	9.86	33.11	109	273	Peak
5414	42.56	-11.44	54	31.29	34.52	9.86	33.11	109	273	Average
6932	63.47	-4.83	68.3	52.16	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 14	Temperature :	21~24
Test Channel :	60	Relative Humidity :	45~50
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	5300 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
32.7	31.43	-8.57	40	46.54	15.8	0.56	31.47	124	178	Peak
48.9	28.28	-11.72	40	50.05	9.08	0.68	31.53	-	-	Peak
143.94	22.13	-21.37	43.5	41.06	11.42	1.2	31.55	-	-	Peak
419	28.8	-17.2	46	40.86	16.88	2.21	31.15	-	-	Peak
478.5	25.84	-20.16	46	36.67	17.86	2.37	31.06	-	-	Peak
987.4	26.93	-27.07	54	29.28	24.73	3.5	30.58	-	-	Peak
5148	51.52	-22.48	74	41.51	34.25	9.41	33.65	110	17	Peak
5148	39.9	-14.1	54	29.89	34.25	9.41	33.65	110	17	Average
5300	107.92	-	-	97.22	34.4	9.66	33.36	110	17	Peak
5300	97	-	-	86.3	34.4	9.66	33.36	110	17	Average
5374	55.24	-18.76	74	44.2	34.47	9.78	33.21	110	17	Peak
5374	42.85	-11.15	54	31.81	34.47	9.78	33.21	110	17	Average
6926	61.77	-6.53	68.3	50.46	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 14	Temperature :	21~24
Test Channel :	60	Relative Humidity :	45~50
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	5300 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	36.02	-3.98	40	50.44	16.51	0.53	31.46	100	28	Peak
49.98	29.1	-10.9	40	51.66	8.28	0.7	31.54	-	-	Peak
143.94	31.62	-11.88	43.5	50.55	11.42	1.2	31.55	-	-	Peak
419	31.51	-14.49	46	43.57	16.88	2.21	31.15	-	-	Peak
478.5	37.51	-8.49	46	48.34	17.86	2.37	31.06	-	-	Peak
539.4	33.13	-12.87	46	42.77	18.83	2.53	31	-	-	Peak
5140	51.97	-22.03	74	42.05	34.25	9.37	33.7	108	273	Peak
5140	39.67	-14.33	54	29.75	34.25	9.37	33.7	108	273	Average
5300	100.42	-	-	89.72	34.4	9.66	33.36	108	273	Average
5300	110.97	-	-	100.27	34.4	9.66	33.36	108	273	Peak
5460	59.57	-14.43	74	48.09	34.55	9.94	33.01	108	273	Peak
5460	45.64	-8.36	54	34.16	34.55	9.94	33.01	108	273	Average
6926	61.63	-6.67	68.3	50.32	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 15	Temperature :	21~24
Test Channel :	64	Relative Humidity :	45~50
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	5320 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	30.72	-9.28	40	45.59	16.04	0.55	31.46	127	223	Peak
48.9	27.74	-12.26	40	49.51	9.08	0.68	31.53	-	-	Peak
299.73	26.7	-19.3	46	42.8	13.46	1.77	31.33	-	-	Peak
419	28.57	-17.43	46	40.63	16.88	2.21	31.15	-	-	Peak
478.5	25.59	-20.41	46	36.42	17.86	2.37	31.06	-	-	Peak
1000	27.98	-26.02	54	30.16	24.89	3.51	30.58	-	-	Peak
5142	52.05	-21.95	74	42.04	34.25	9.41	33.65	100	200	Peak
5142	39.95	-14.05	54	29.94	34.25	9.41	33.65	100	200	Average
5320	106.21	-	-	95.4	34.42	9.7	33.31	100	200	Peak
5320	95.71	-	-	84.9	34.42	9.7	33.31	100	200	Average
5350	59.32	-14.68	74	48.39	34.45	9.74	33.26	100	200	Peak
5350	44.11	-9.89	54	33.18	34.45	9.74	33.26	100	200	Average
6926	57.03	-11.27	68.3	45.72	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 15	Temperature :	21~24
Test Channel :	64	Relative Humidity :	45~50
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	5320 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	36.46	-3.54	40	51.33	16.04	0.55	31.46	105	99	Peak
42.69	29.31	-10.69	40	48.59	11.59	0.64	31.51	-	-	Peak
143.94	30.96	-12.54	43.5	49.89	11.42	1.2	31.55	-	-	Peak
419	31.32	-14.68	46	43.38	16.88	2.21	31.15	-	-	Peak
478.5	37.99	-8.01	46	48.82	17.86	2.37	31.06	-	-	Peak
539.4	33.25	-12.75	46	42.89	18.83	2.53	31	-	-	Peak
5148	52.1	-21.9	74	42.09	34.25	9.41	33.65	108	271	Peak
5148	39.69	-14.31	54	29.68	34.25	9.41	33.65	108	271	Average
5320	111.46	-	-	100.65	34.42	9.7	33.31	108	271	Peak
5320	100.9	-	-	90.09	34.42	9.7	33.31	108	271	Average
5350	61.76	-12.24	74	50.83	34.45	9.74	33.26	108	271	Peak
5350	47.05	-6.95	54	36.12	34.45	9.74	33.26	108	271	Average
6926	63.83	-4.47	68.3	52.52	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 16	Temperature :	21~24
Test Channel :	100	Relative Humidity :	45~50
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	5500 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	31.06	-8.94	40	45.93	16.04	0.55	31.46	155	230	Peak
48.9	28.07	-11.93	40	49.84	9.08	0.68	31.53	-	-	Peak
299.73	26.17	-19.83	46	42.27	13.46	1.77	31.33	-	-	Peak
419	29.27	-16.73	46	41.33	16.88	2.21	31.15	-	-	Peak
478.5	25.64	-20.36	46	36.47	17.86	2.37	31.06	-	-	Peak
995.8	27.22	-26.78	54	29.45	24.84	3.51	30.58	-	-	Peak
5470	51.89	-16.41	68.3	40.39	34.57	9.94	33.01	100	271	Peak
5500	109.24	-	-	97.53	34.6	10.02	32.91	100	271	Peak
5500	98.34	-	-	86.63	34.6	10.02	32.91	100	271	Average
5725	52.23	-16.07	68.3	40.67	34.82	9.92	33.18	100	271	Peak



Test Mode :	Mode 16	Temperature :	21~24
Test Channel :	100	Relative Humidity :	45~50
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	5500 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	36.57	-3.43	40	51.22	16.27	0.54	31.46	111	127	Peak
42.69	29.43	-10.57	40	48.71	11.59	0.64	31.51	-	-	Peak
143.94	30.94	-12.56	43.5	49.87	11.42	1.2	31.55	-	-	Peak
419	31.28	-14.72	46	43.34	16.88	2.21	31.15	-	-	Peak
478.5	37.58	-8.42	46	48.41	17.86	2.37	31.06	-	-	Peak
539.4	33.19	-12.81	46	42.83	18.83	2.53	31	-	-	Peak
5470	57.61	-10.69	68.3	46.11	34.57	9.94	33.01	117	272	Peak
5500	114.86	-	-	103.15	34.6	10.02	32.91	117	272	Peak
5500	104.12	-	-	92.41	34.6	10.02	32.91	117	272	Average
5725	51.51	-16.79	68.3	39.95	34.82	9.92	33.18	117	272	Peak
6926	58.97	-9.33	68.3	47.66	35.67	9.9	34.26	100	0	Peak
16500	54.26	-14.04	68.3	56	41.6	14.06	57.4	100	0	Peak



Test Mode :	Mode 17	Temperature :	21~24
Test Channel :	116	Relative Humidity :	45~50
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	5580 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
228.18	20.96	-25.04	46	39.84	11.09	1.47	31.44	-	-	Peak
251.94	24.75	-21.25	46	41.92	12.7	1.54	31.41	-	-	Peak
275.97	25.59	-20.41	46	42.22	13.09	1.64	31.36	-	-	Peak
310.5	30.63	-15.37	46	46.37	13.79	1.79	31.32	-	-	Peak
335	32.19	-13.81	46	47.09	14.54	1.87	31.31	131	100	Peak
478.5	24.07	-21.93	46	34.9	17.86	2.37	31.06	-	-	Peak
5470	53.45	-14.85	68.3	41.95	34.57	9.94	33.01	100	323	Peak
5580	108.33	-	-	96.67	34.67	9.99	33	100	323	Peak
5580	98	-	-	86.34	34.67	9.99	33	100	323	Average
5725	52.64	-15.66	68.3	41.08	34.82	9.92	33.18	100	323	Peak



Test Mode :	Mode 17	Temperature :	21~24
Test Channel :	116	Relative Humidity :	45~50
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	5580 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
33.24	29.67	-10.33	40	44.78	15.8	0.56	31.47	107	342	Peak
54.03	20.96	-19.04	40	44.55	7.24	0.72	31.55	-	-	Peak
175.26	21.77	-21.73	43.5	42.66	9.4	1.24	31.53	-	-	Peak
419	20.34	-25.66	46	32.4	16.88	2.21	31.15	-	-	Peak
539.4	21.65	-24.35	46	31.29	18.83	2.53	31	-	-	Peak
780.2	25.04	-20.96	46	30.47	22.15	3.11	30.69	-	-	Peak
5470	53.47	-14.83	68.3	41.97	34.57	9.94	33.01	102	270	Peak
5580	102.83	-	-	91.17	34.67	9.99	33	102	270	Average
5580	114.98	-	-	103.32	34.67	9.99	33	102	270	Peak
5725	52.99	-15.31	68.3	41.43	34.82	9.92	33.18	102	270	Peak
6916	61.32	-6.98	68.3	50.01	35.67	9.89	34.25	100	0	Peak



Test Mode :	Mode 18	Temperature :	21~24
Test Channel :	140	Relative Humidity :	45~50
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	5700 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	32.06	-7.94	40	46.71	16.27	0.54	31.46	124	163	Peak
48.9	27.72	-12.28	40	49.49	9.08	0.68	31.53	-	-	Peak
299.73	26.22	-19.78	46	42.32	13.46	1.77	31.33	-	-	Peak
419	28.99	-17.01	46	41.05	16.88	2.21	31.15	-	-	Peak
478.5	25.37	-20.63	46	36.2	17.86	2.37	31.06	-	-	Peak
985.3	27.54	-26.46	54	29.91	24.71	3.5	30.58	-	-	Peak
5470	52.8	-15.5	68.3	41.3	34.57	9.94	33.01	100	328	Peak
5700	110.45	-	-	98.88	34.79	9.93	33.15	100	328	Peak
5700	99.29	-	-	87.72	34.79	9.93	33.15	100	328	Average
5725	53.75	-14.55	68.3	42.19	34.82	9.92	33.18	100	328	Peak
6934	61.9	-6.4	68.3	50.59	35.67	9.9	34.26	100	0	Peak



Test Mode :	Mode 18	Temperature :	21~24
Test Channel :	140	Relative Humidity :	45~50
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	5700 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	36.25	-3.75	40	51.12	16.04	0.55	31.46	108	107	Peak
43.5	29.59	-10.41	40	49.32	11.13	0.64	31.5	-	-	Peak
143.94	30.92	-12.58	43.5	49.85	11.42	1.2	31.55	-	-	Peak
419	31.64	-14.36	46	43.7	16.88	2.21	31.15	-	-	Peak
478.5	38.24	-7.76	46	49.07	17.86	2.37	31.06	-	-	Peak
539.4	33.53	-12.47	46	43.17	18.83	2.53	31	-	-	Peak
5470	52.01	-16.29	68.3	40.51	34.57	9.94	33.01	100	269	Peak
5700	113.99	-	-	102.42	34.79	9.93	33.15	100	269	Peak
5700	103.53	-	-	91.96	34.79	9.93	33.15	100	269	Average
5725	53.9	-14.4	68.3	42.34	34.82	9.92	33.18	100	269	Peak
6948	61.42	-6.88	68.3	50.1	35.68	9.91	34.27	100	0	Peak

3.8 Peak Excursion Ratio Measurement

3.8.1 Limit of Peak Excursion Ratio

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

3.8.2 Measuring Instruments

See list of measuring instruments of this test report.

3.8.3 Test Procedures

The transmitter output of EUT is connected to the spectrum analyzer, and the cable loss is offset as shown in the test equipment.

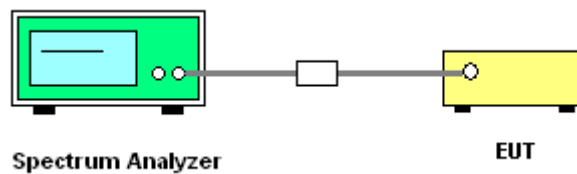
1st Trace :

- Set RBW = 1 MHz, VBW \geq 3 MHz with peak detector and max-hold settings

2nd Trace:

- Set RBW = 1 MHz, VBW \geq 3 MHz, sample detector mode, and 100 sweets of power averaging as same as method 1 of conducted power measurement.

3.8.4 Test Setup

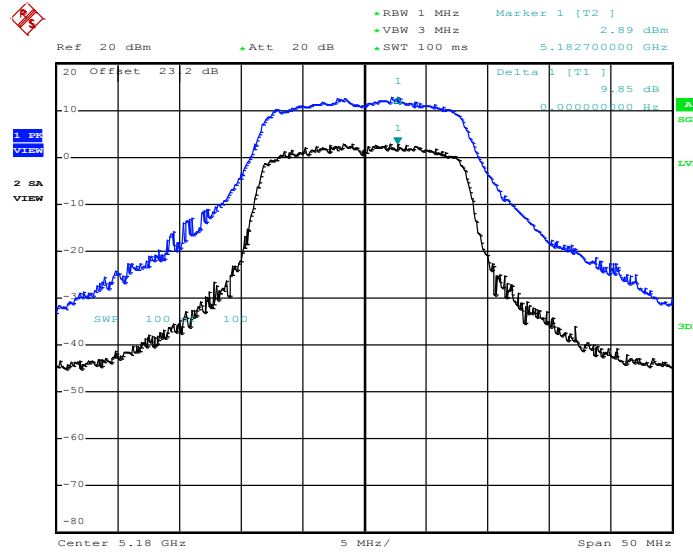




3.8.5 Test Result of Peak Excursion Ratio

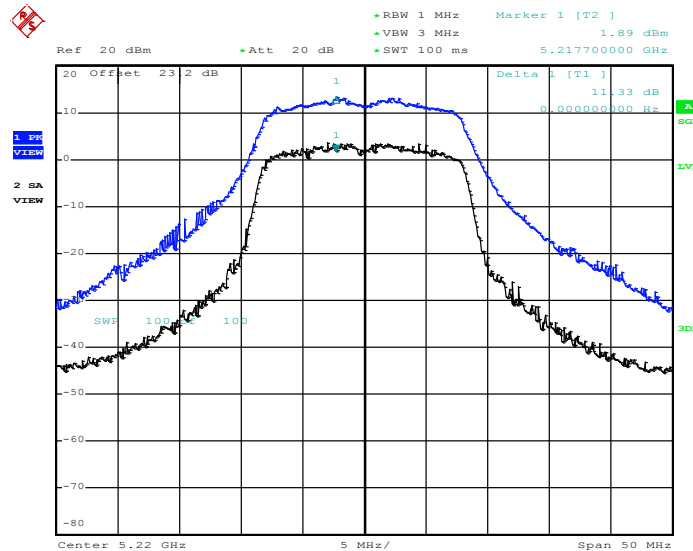
Test Mode :	Mode 1~9	Temperature :	25~27°C
Test Engineer :	Alan Liu	Relative Humidity :	51~54%

Peak Excursion Ratio Plot on 802.11a Channel 36



Date: 19.MAR.2011 13:49:28

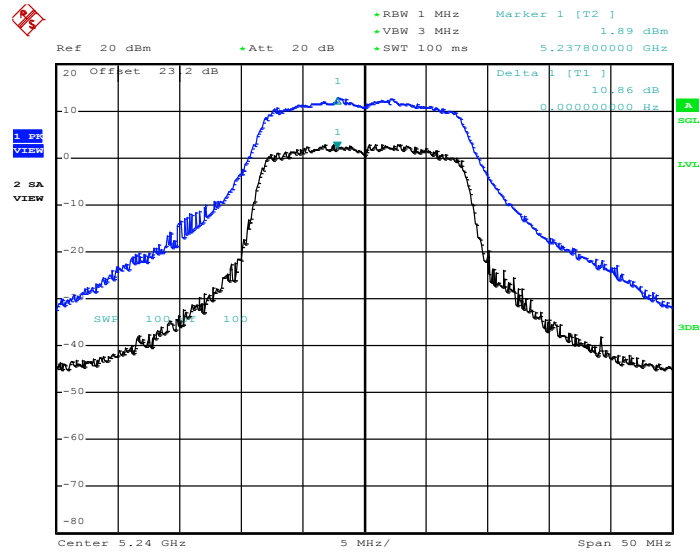
Peak Excursion Ratio Plot on 802.11a Channel 44



Date: 19.MAR.2011 14:14:49

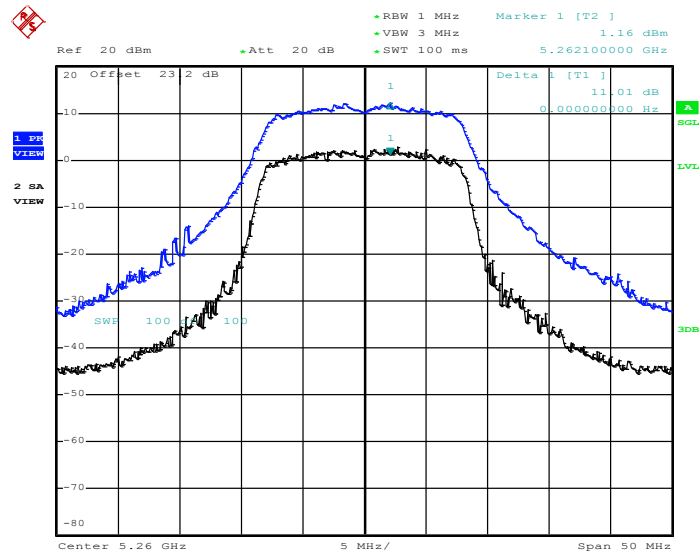


Peak Excursion Ratio Plot on 802.11a Channel 48



Date: 19.MAR.2011 14:22:49

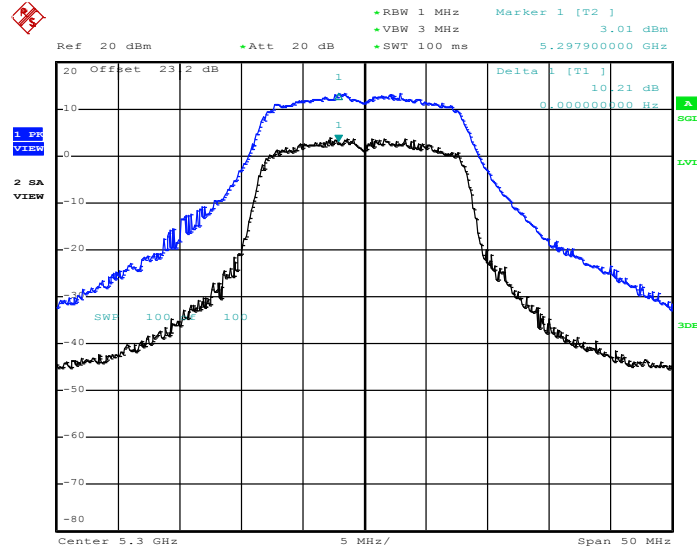
Peak Excursion Ratio Plot on 802.11a Channel 52



Date: 19.MAR.2011 14:26:28

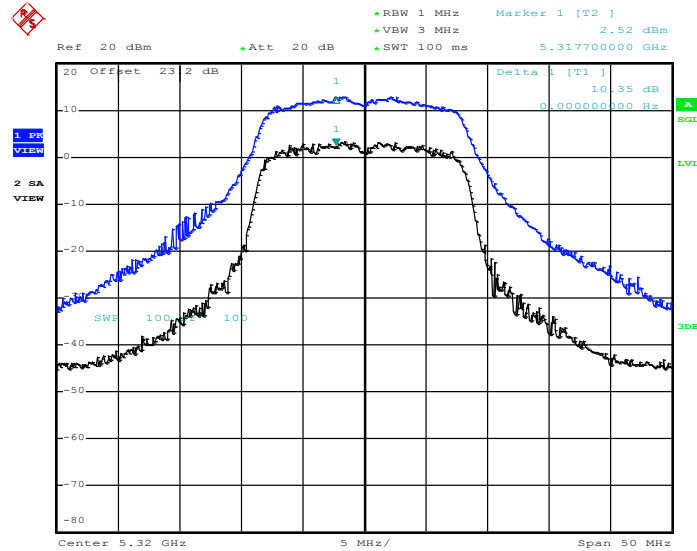


Peak Excursion Ratio Plot on 802.11a Channel 60



Date: 19.MAR.2011 14:29:24

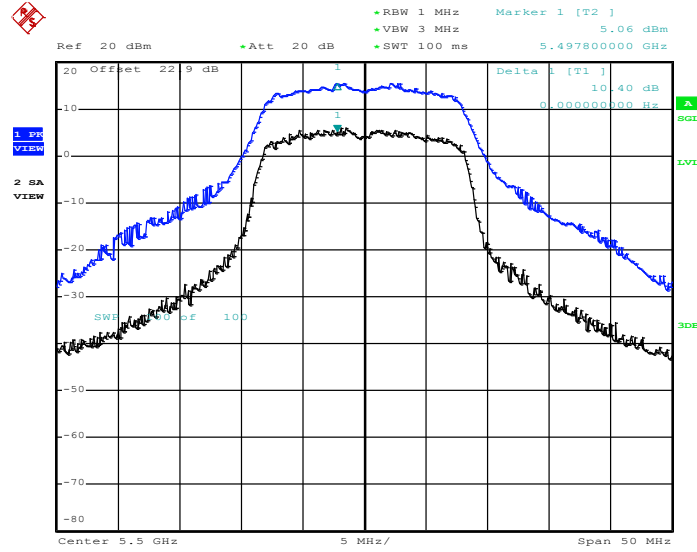
Peak Excursion Ratio Plot on 802.11a Channel 64



Date: 19.MAR.2011 14:32:37

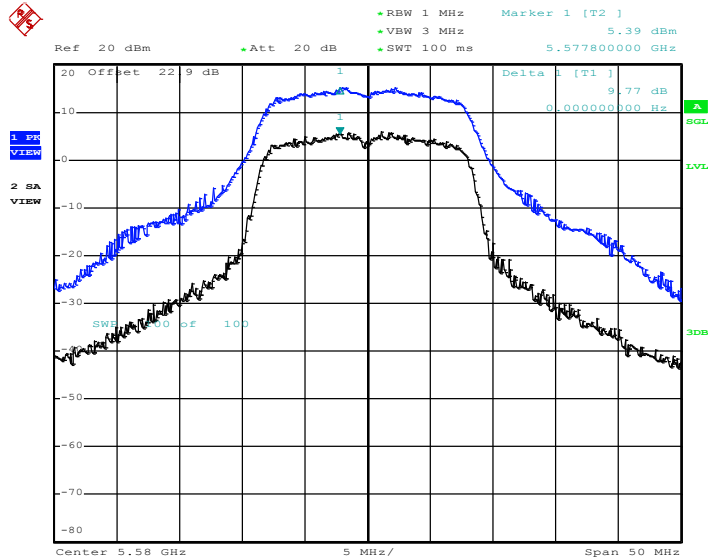


Peak Excursion Ratio Plot on 802.11a Channel 100



Date: 19.MAR.2011 15:55:29

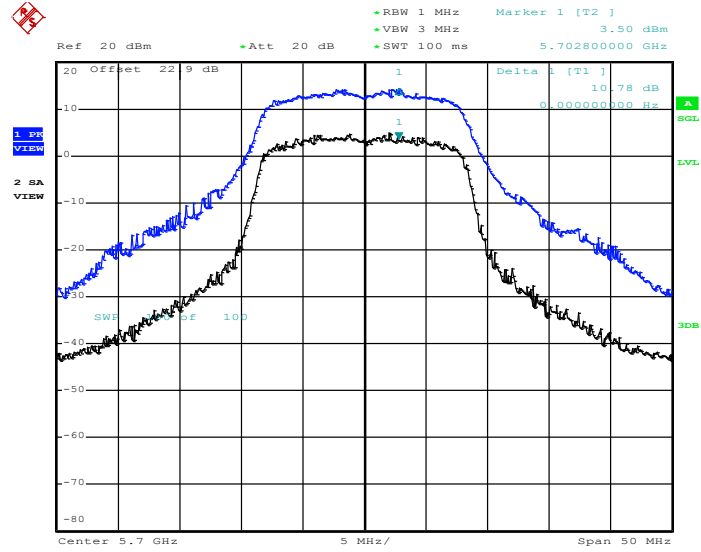
Peak Excursion Ratio Plot on 802.11a Channel 116



Date: 19.MAR.2011 15:58:45



Peak Excursion Ratio Plot on 802.11a Channel 140

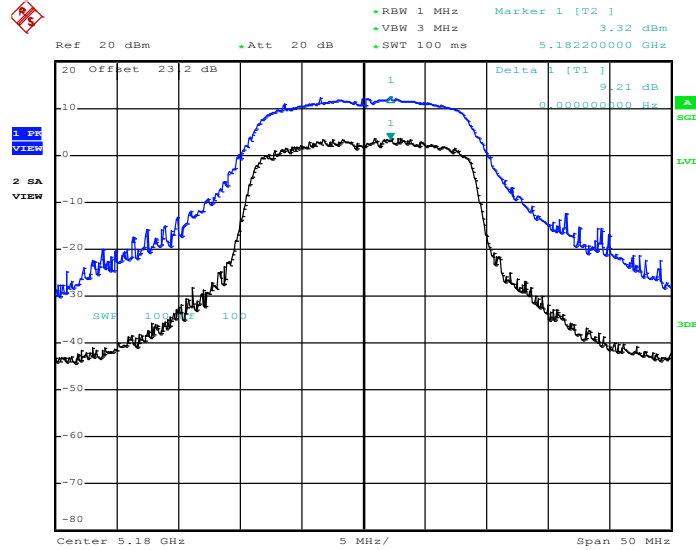


Date: 19.MAR.2011 16:04:07



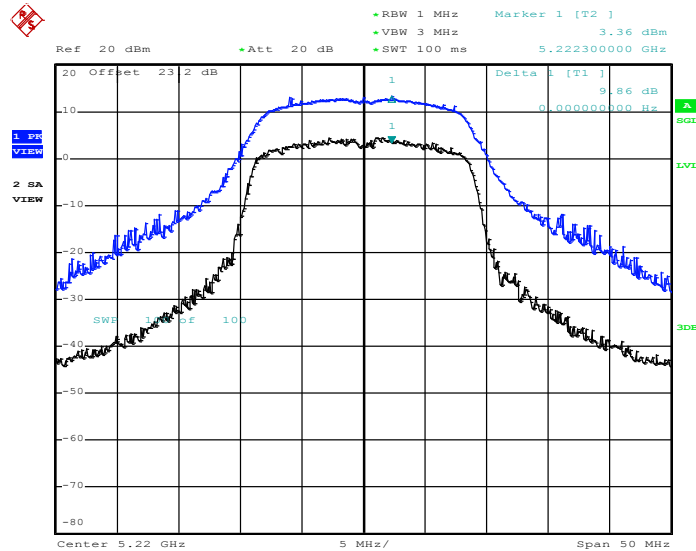
Test Mode :	Mode 10~18	Temperature :	25~27°C
Test Engineer :	Alan Liu	Relative Humidity :	51~54%

Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 36



Date: 19.MAR.2011 16:47:19

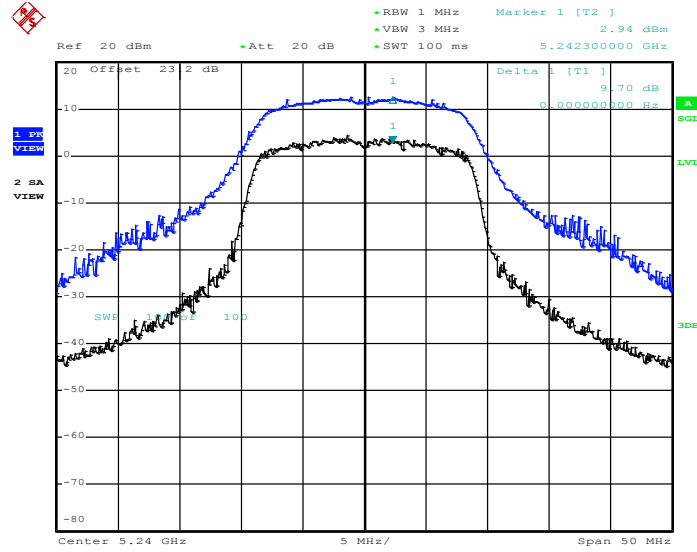
Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 44



Date: 19.MAR.2011 17:02:29

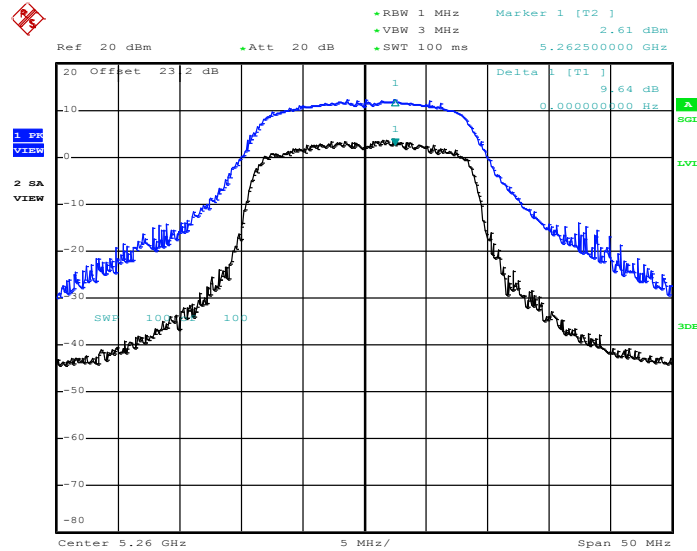


Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 48



Date: 19.MAR.2011 17:05:37

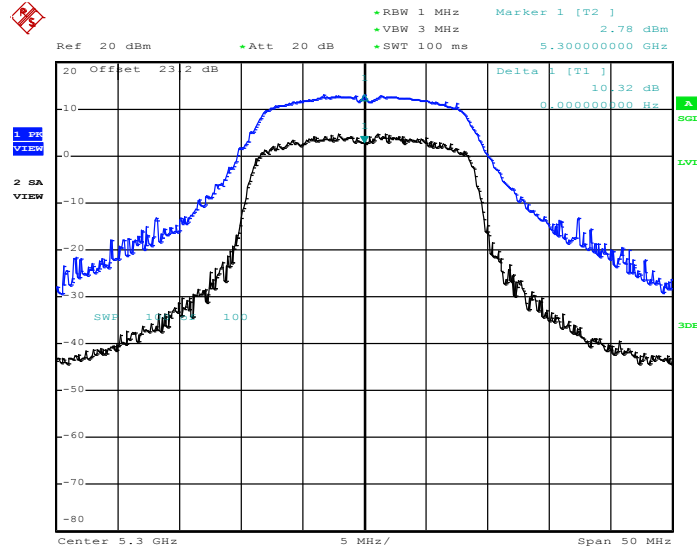
Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 52



Date: 19.MAR.2011 17:09:07

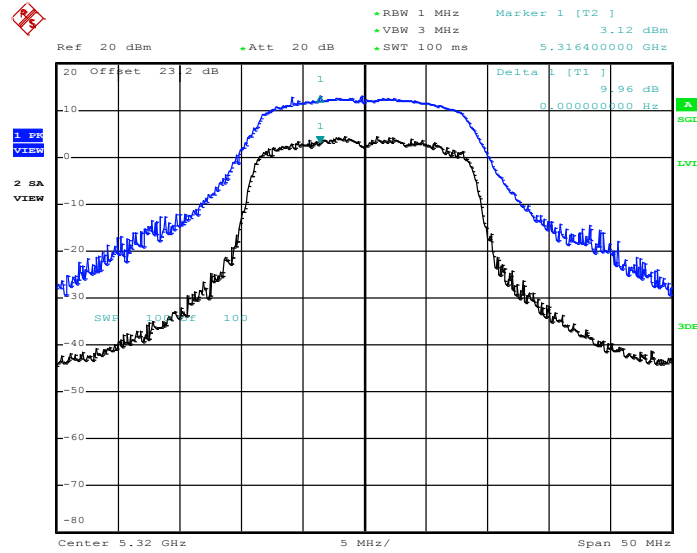


Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 60



Date: 19.MAR.2011 17:12:06

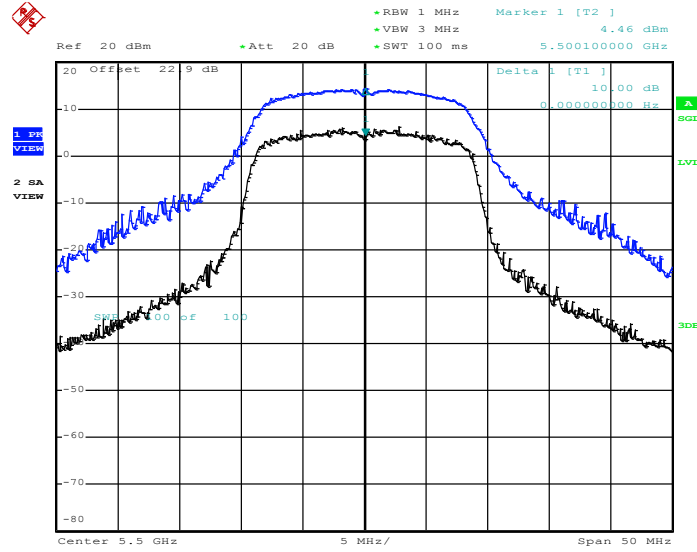
Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 64



Date: 19.MAR.2011 17:15:03

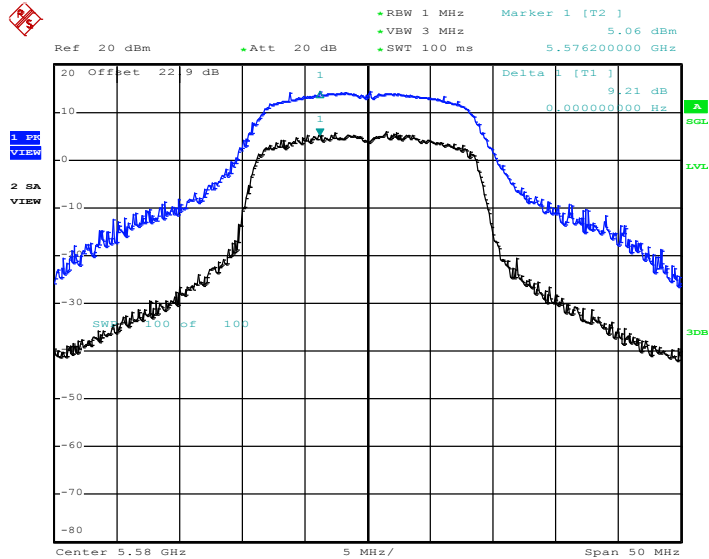


Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 100



Date: 19.MAR.2011 17:18:40

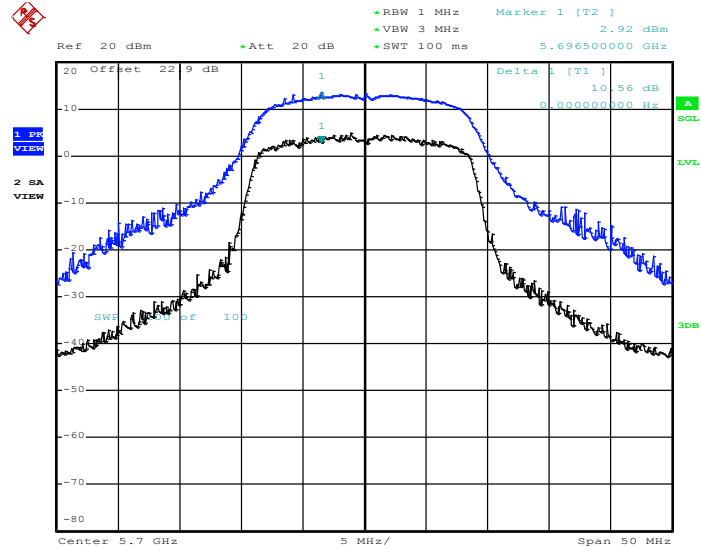
Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 116



Date: 19.MAR.2011 17:24:28



Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 140



Date: 19.MAR.2011 17:30:36



3.9 Automatically Discontinue Transmission

3.9.1 Limit of Automatically Discontinue Transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

3.9.2 Measuring Instruments

See list of measuring instruments of this test report.

3.9.3 Test Result of Automatically Discontinue Transmission

During no any information transmission, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

3.10 Frequency Stability Measurement

3.10.1 Limit of Frequency Stability

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

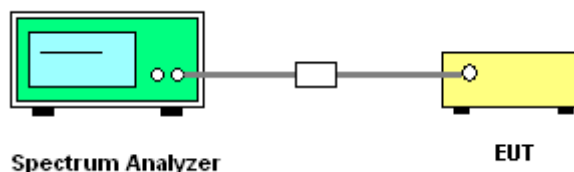
3.10.2 Measuring Instruments

See list of measuring instruments of this test report.

3.10.3 Test Procedures

1. To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
2. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value.
3. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

3.10.4 Test Setup





3.10.5 Test Result of Frequency Stability

Test Mode :	Mode 1~9	Temperature :	25~27°C
Test Engineer :	Alan Liu	Relative Humidity :	51~54%

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.70	5188.25	-4.83
44	5220	5211.65	5228.25	-9.58
48	5240	5231.65	5248.25	-9.54
52	5260	5251.70	5268.25	-4.75
60	5300	5291.70	5308.25	-4.72
64	5320	5311.70	5328.25	-4.70
100	5500	5491.70	5508.30	0.00
116	5580	5571.70	5588.25	-4.48
140	5700	5691.70	5708.25	-4.39

Test Mode :	Mode 10~18	Temperature :	25~27°C
Test Engineer :	Alan Liu	Relative Humidity :	51~54%

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.10	5188.90	0.00
44	5220	5211.10	5228.80	-9.58
48	5240	5231.10	5248.80	-9.54
52	5260	5251.15	5268.90	4.75
60	5300	5291.05	5308.80	-14.15
64	5320	5311.10	5328.85	-4.70
100	5500	5491.05	5508.85	-9.09
116	5580	5571.05	5588.80	-13.44
140	5700	5691.05	5708.80	-13.16



3.11 Antenna Requirements

3.11.1 Standard Applicable

According to FCC 47 CFR Section 15.407(a)(1)(2) ,if transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.11.2 Antenna Connected Construction

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

3.11.3 Antenna Gain

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

4 List of Measuring Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
System Simulator	R&S	CMU200	117995	N/A	Aug. 11, 2010	Aug.10, 2011	Conducted (TH02-HY)
Spectrum Analyzer	R&S	FSP30	101329	9kHz~30GHz	May. 03, 2011	May. 02, 2012	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	0932001	N/A	Sep. 13, 2010	Sep. 12, 2011	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	0846202	N/A	Sep. 14, 2010	Sep. 13, 2011	Conducted (TH02-HY)
Power Meter	Agilent	E4416A	GB41292344	N/A	Feb. 18, 2011	Feb. 17, 2012	Conducted (TH02-HY)
Power Sensor	Agilent	E9327A	US40441548	N/A	Feb. 18, 2011	Feb. 17, 2012	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D35P	TBN-930701	N/A	Jul. 30, 2010	Jul. 29, 2011	Conducted (TH02-HY)
EMI Test Receive	R&S	ESCS 30	100356	9KHz – 2.75GHz	Aug. 16, 2010	Aug. 15, 2011	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz – 30MHz	Dec. 03, 2010	Dec. 02, 2011	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz – 30MHz	Dec. 01, 2010	Nov. 30, 2011	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	N/A	Conduction (CO05-HY)
System Simulator	R&S	CMU200	117591	N/A	Oct. 18, 2010	Oct. 17, 2011	Conduction (CO05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 31, 2010	Oct. 30, 2011	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP	101067	9KHz ~ 30GHz	Dec. 03, 2010	Dec. 02, 2011	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 19, 2010	Aug. 18, 2011	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 18, 2010	Oct. 17, 2011	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Dec. 06, 2010	Dec. 05, 2011	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz.32 dB.GAIN	Mar. 29, 2011	Mar. 28, 2012	Radiation (03CH07-HY)

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 $U_c(y)$	1.13		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.26		

Uncertainty of Radiated Emission Measurement (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 $U_c(y)$	1.27		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.54		

Uncertainty of Radiated Emission Measurement (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 $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20\text{Log}(1-\Gamma_1*\Gamma_2)$	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty $U_c(y)$	2.36				
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.72				



Appendix A. Photographs of EUT

Please refer to Sporton report number EP143002 as below.