FCC/IC RF Test Report

APPLICANT	:	PSION INC.
EQUIPMENT	:	EP10 Hand-Held Computer
BRAND NAME	:	psion
MODEL NAME	:	7515U
FCC ID	:	GM37515UA
IC	:	2739D-7515UA
STANDARD	:	FCC Part 15 Subpart E IC RSS-210 Issue 8
CLASSIFICATION	:	Unlicensed National Information Infrastructure (UNII)
EMISSION DESIGNATOR	:	18M3D1D

The product was received on Apr. 09, 2011 and completely tested on Jun. 13, 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

Jones Tsai / Manager

Testing Laboratory 1190

SPORTON INTERNATIONAL INC.

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

TABLE OF CONTENTS

REVISION HISTORY **3**

SUMMARY OF TEST RESULT **4**

1 GENERAL DESCRIPTION **5**

1.1 Applicant 5
1.2 Manufacturer 5
1.3 Feature of Equipment Under Test 6
1.4 Testing Site 8
1.5 Applied Standards 8
1.6 Ancillary Equipment List 9

2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST **10**

2.1 Carrier Frequency Channel 10
2.2 RF Power 11
2.3 Test Mode 12
2.4 Connection Diagram of Test System 14
2.5 RF Utility 15

3 TEST RESULT **16**

3.1 26dB & 99% Bandwidth Measurement 16
3.2 Maximum Conducted Output Power Measurement 37
3.3 Maximum e.i.r.p. measurement 40
3.4 Power Spectral Density Measurement 42
3.5 Band Edges Measurement 55
3.6 Conducted Spurious Emission 65
3.7 AC Conducted Emission Measurement 96
3.8 Radiated Emission Measurement 100
3.9 Peak Excursion Ratio Measurement 141
3.10 Automatically Discontinue Transmission 152
3.11 Frequency Stability Measurement 153
3.12 Antenna Requirements 155

4 LIST OF MEASURING EQUIPMENTS **156**

5 UNCERTAINTY OF EVALUATION **157**

APPENDIX A. PHOTOGRAPHS OF EUT

APPENDIX B. SETUP PHOTOGRAPHS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR140905C	Rev. 01	Initial issue of report	Jul. 04, 2011
FR140905C	Rev. 02	Update report for revising PSD Limits	Jul. 08, 2011

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	A9.2	26dB & 99% Bandwidth	-	Pass	-
3.2	15.407(a)	A9.2	Maximum Conducted Output Power	≤ 17, 24, 30 dBm (depend on band)	Pass	-
3.4	15.407(a)	A9.2	Power Spectral Density	≤ 4, 11, 17 dBm (depend on band)	Pass	-
3.5	15.407(b)	A9.3	Frequency Band Edges	≤ -17, -27 dBm (depend on band)&15.209(a)	Pass	-
3.6	15.407(b)	A9.3	Spurious Emission	EIRP < -27 dBm/MHz	Pass	-
3.7	15.207	Gen 7.2.2	AC Conducted Emission	15.207(a)	Pass	Under limit 5.9 dB at 0.566 MHz
3.8	15.407(b)	A9.3	Transmitter Radiated Emission	≤ -17, -27 dBm (depend on band)&15.209(a)	Pass	Under limit 3.1 dB at 5470 MHz
3.9	15.407(b)	A9.3	Peak Excursion Ratio	≤ 13dB	Pass	-
3.10	15.407(c)	A9.5	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.11	15.407(g)	A9.5	Frequency Stability	Within Operation Band	Pass	-
3.12	15.203 & 15.407(a)	A9.2	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	7515U
FCC ID	GM37515UA
IC	2739D-7515UA
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)
Type of Emission	18M3D1D
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.

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 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	CO05-HY	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
- IC RSS-210 Issued 8

Remark:

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

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	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	12.1	12.06	11.98	11.93	11.89
CH 44	5220 MHz	12.23	12.2	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	12.1	11.95	11.9	11.75	11.78	11.71
CH 60	5300 MHz	12.02	12.04	12.09	11.88	11.85	11.8	11.71	11.68
CH 64	5320 MHz	12.06	12	12.07	11.89	11.84	11.77	11.7	11.64
CH 100	5500 MHz	12.12	12.09	12.08	12.16	12.11	11.79	11.71	11.8
CH 116	5580 MHz	12.16	12.11	12	11.98	11.94	11.87	11.85	11.77
CH 140	5700 MHz	12.04	12.01	12.01	11.79	11.7	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	12.1	12.04	11.97	11.9	11.98
CH 44	5220 MHz	12.23	12.18	12.15	12.11	12.09	11.97	11.92	12
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	11.9	11.86	11.83	11.8	11.78	11.73
CH 60	5300 MHz	12.2	12.16	11.76	11.73	11.71	11.7	11.68	11.67
CH 64	5320 MHz	12.18	12.2	11.87	11.8	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	11.89	11.84	12.4	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).

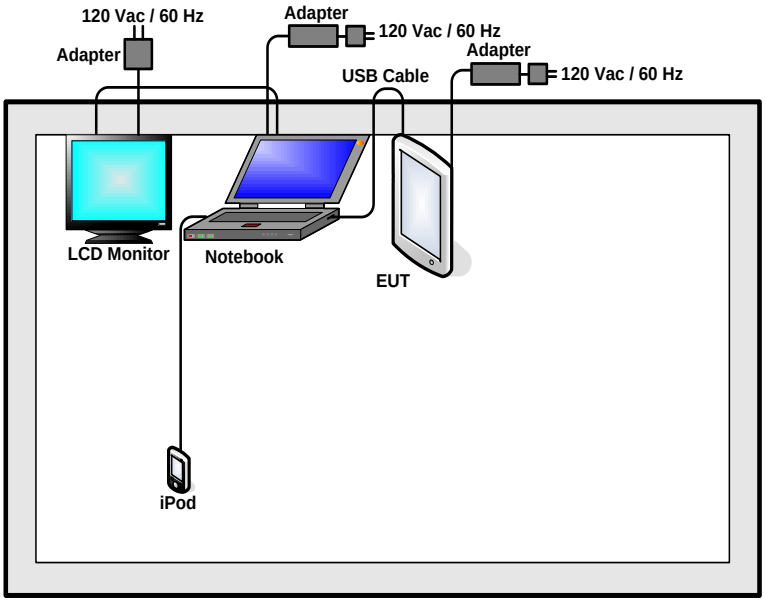
Pre-scanned tests were conducted to determine the final configuration from all possible combinations. The following tables are showing the test modes as the worst cases and recorded in this report.

Test Cases	
Test Item	**802.11a (Modulation : OFDM)**
Conducted TCs	■ 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)

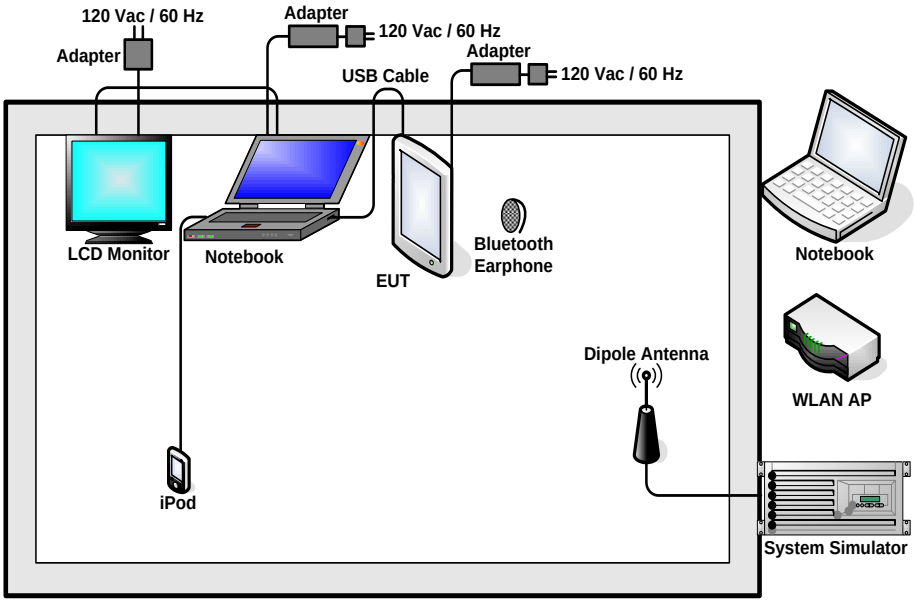
Radiated TCs	■ Mode 1: 802.11a_CH36_5180 MHz ■ Mode 2: 802.11a_CH44_5220 MHz ■ Mode 3: 802.11a_CH48_5240 MHz ■ Mode 4: 802.11a_CH52_5260 MHz ■ Mode 5: 802.11a_CH60_5300 MHz ■ Mode 6: 802.11a_CH64_5320 MHz ■ Mode 7: 802.11a_CH100_5500 MHz ■ Mode 8: 802.11a_CH116_5580 MHz ■ Mode 9: 802.11a_CH140_5700 MHz ■ 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	WCDMA Band V Idle + WLAN (5G) Link + Bluetooth Link + MP3 + Camera + Sleeve (USB Port + DC Jack) + USB Cable (Link with Notebook) + Adapter

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 RF Utility

The programmed RF Utility “call23WM”, 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 & 99% Bandwidth Measurement

3.1.1 Limit of 26dB & 99% 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. For the band 5.725-5.825 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 1 W (30dBm) or 17 dBm + 10log B.

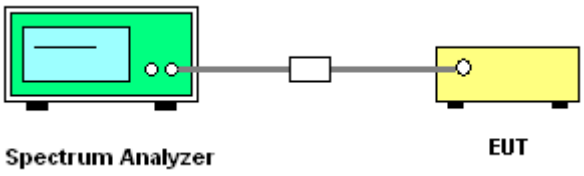
3.1.2 Measuring Instruments

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

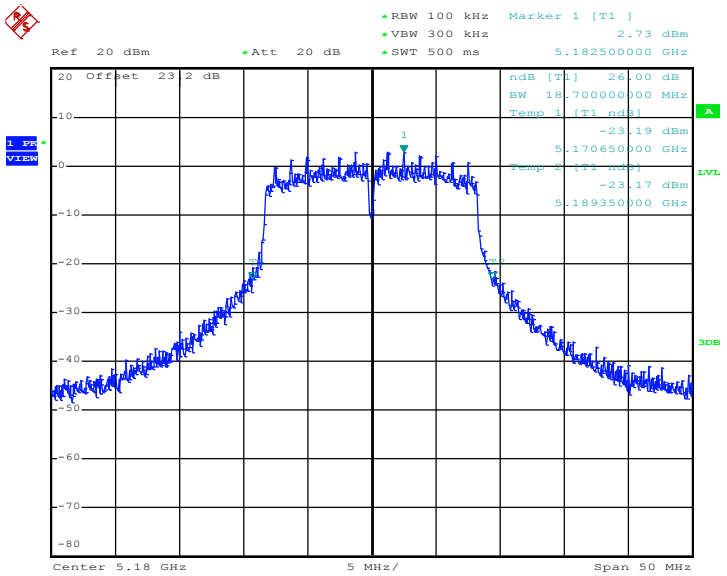


3.1.5 Test Result of 26dB Bandwidth

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

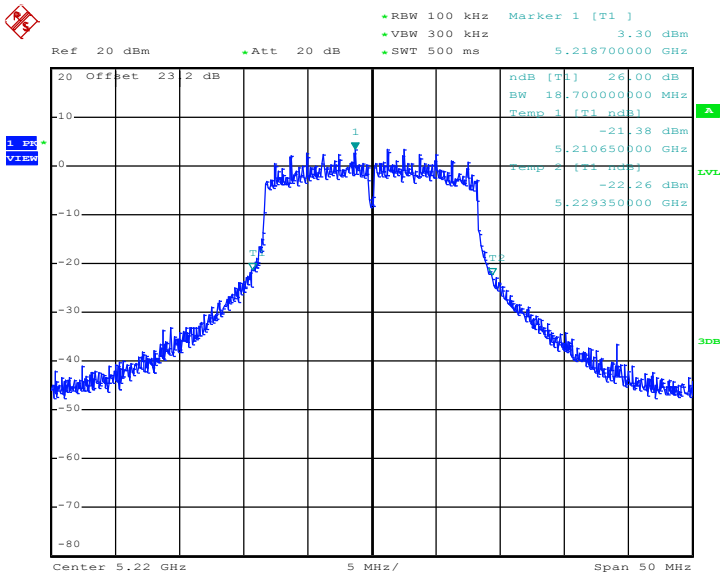
Channel	Frequency (MHz)	802.11a 26dB Bandwidth (MHz)	Pass/Fail
36	5180	18.70	Pass
44	5220	18.70	Pass
48	5240	18.80	Pass
52	5260	18.55	Pass
60	5300	18.55	Pass
64	5320	18.55	Pass
100	5500	18.80	Pass
116	5580	18.85	Pass
140	5700	18.70	Pass

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



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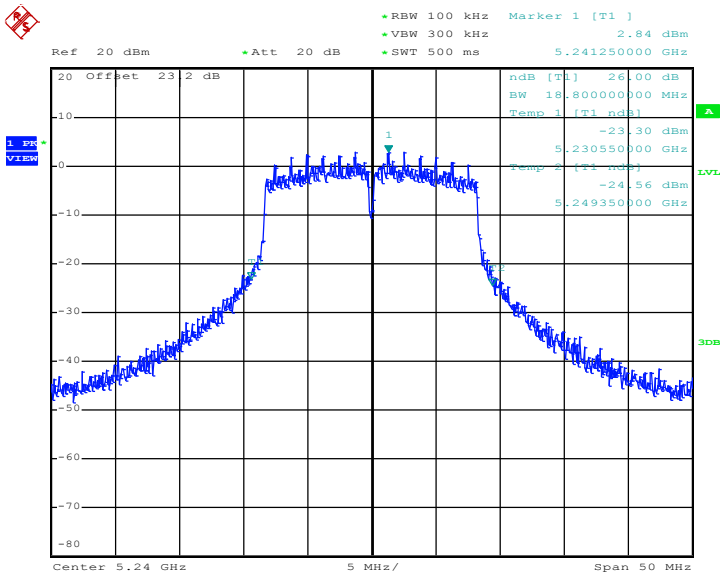
26 dB Bandwidth Plot on 802.11a Channel 48



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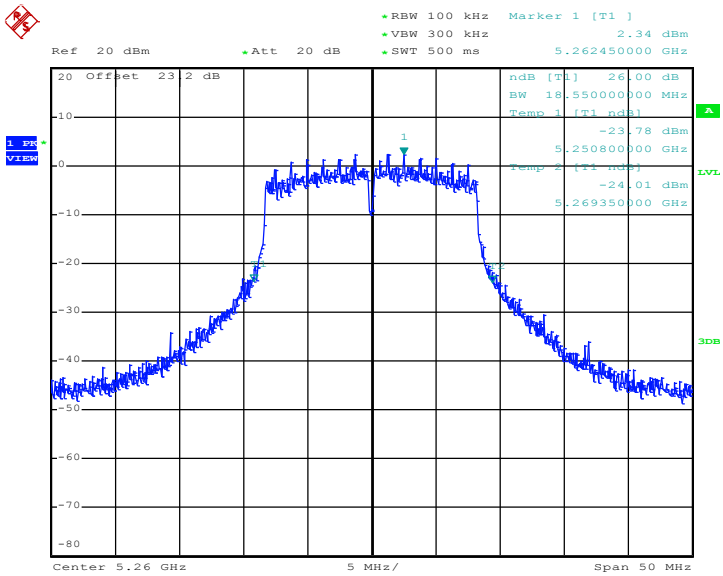
26 dB Bandwidth Plot on 802.11a Channel 52



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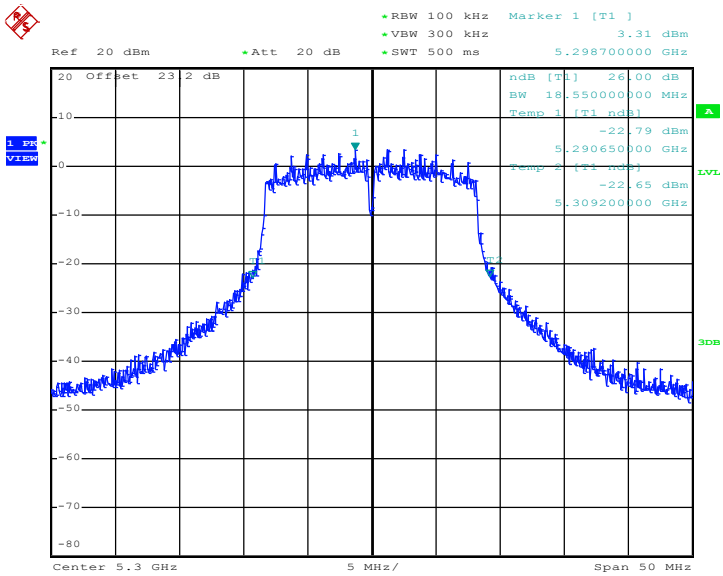
26 dB Bandwidth Plot on 802.11a Channel 60



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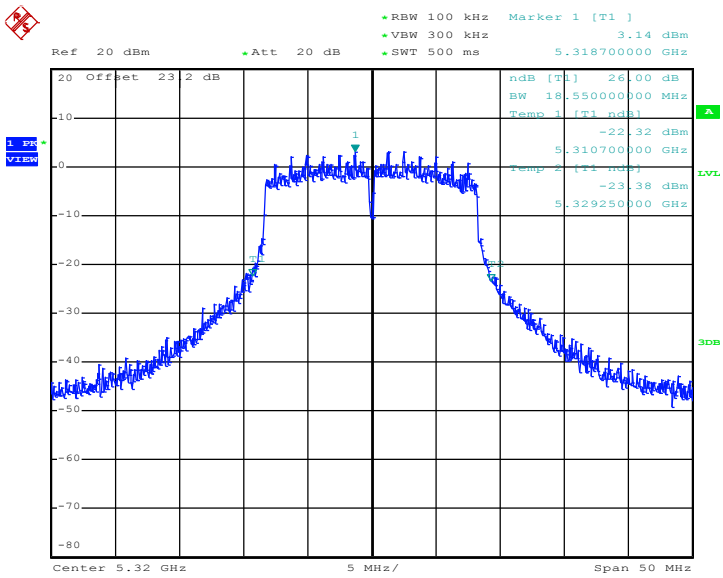
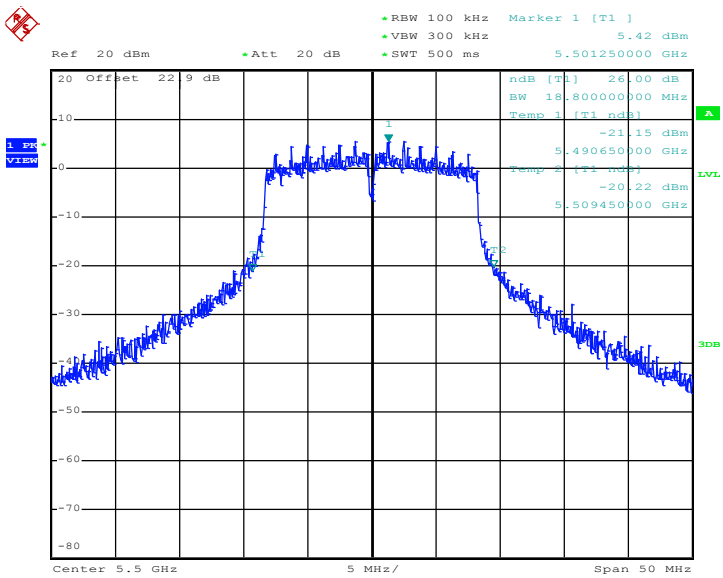
26 dB Bandwidth Plot on 802.11a Channel 64



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

26 dB Bandwidth Plot on 802.11a Channel 100



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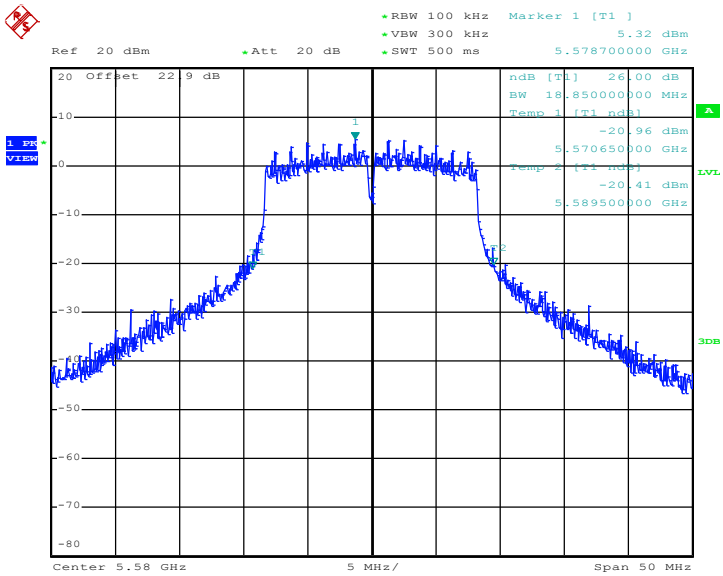
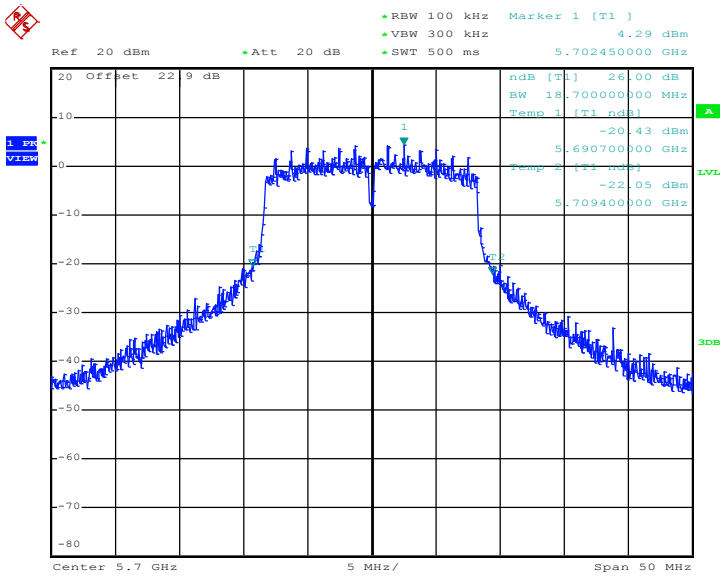
26 dB Bandwidth Plot on 802.11a Channel 116



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

26 dB Bandwidth Plot on 802.11a Channel 140

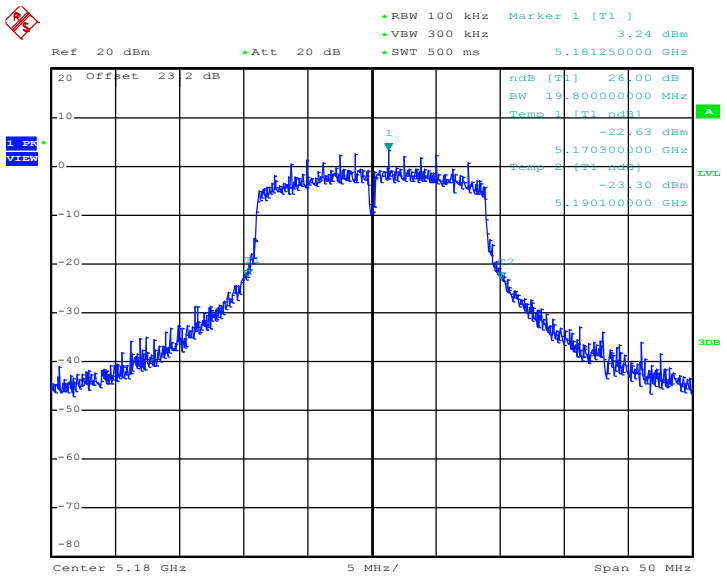


Date: 19.MAR.2011 16:03:20

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

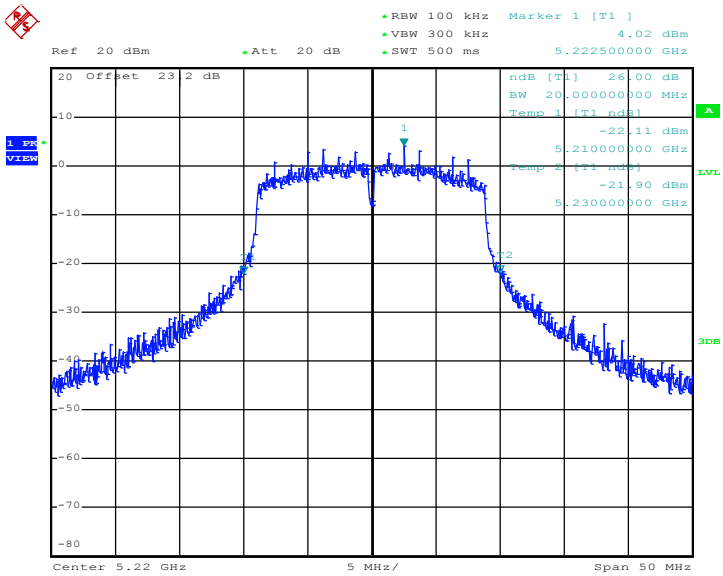
Channel	Frequency (MHz)	802.11n (BW 20MHz) 26dB Bandwidth (MHz)	Pass/Fail
36	5180	19.80	Pass
44	5220	20.00	Pass
48	5240	19.75	Pass
52	5260	19.50	Pass
60	5300	19.60	Pass
64	5320	20.20	Pass
100	5500	19.75	Pass
116	5580	19.90	Pass
140	5700	20.15	Pass

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 44



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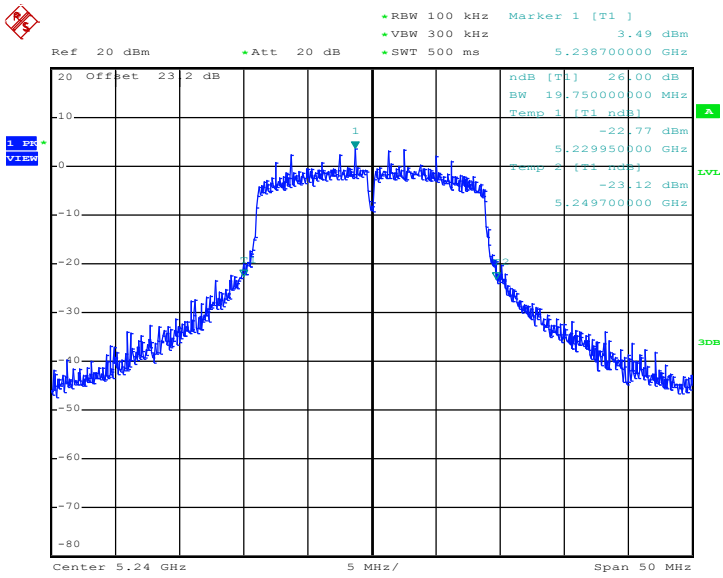
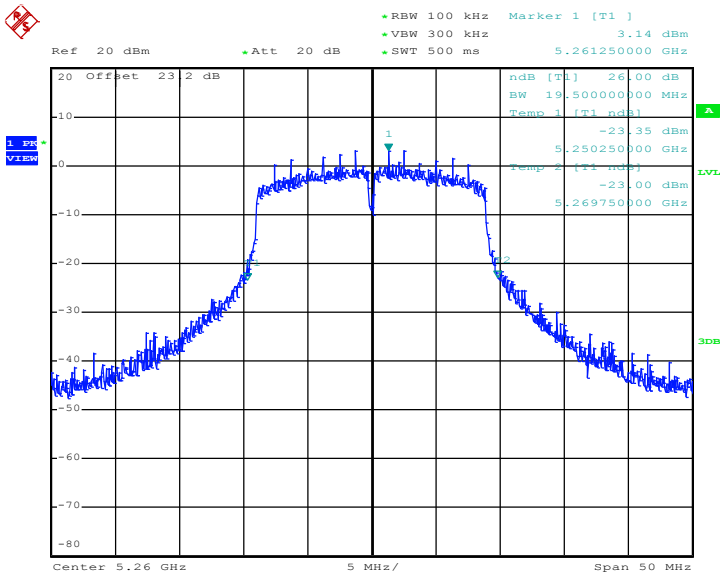
26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 48



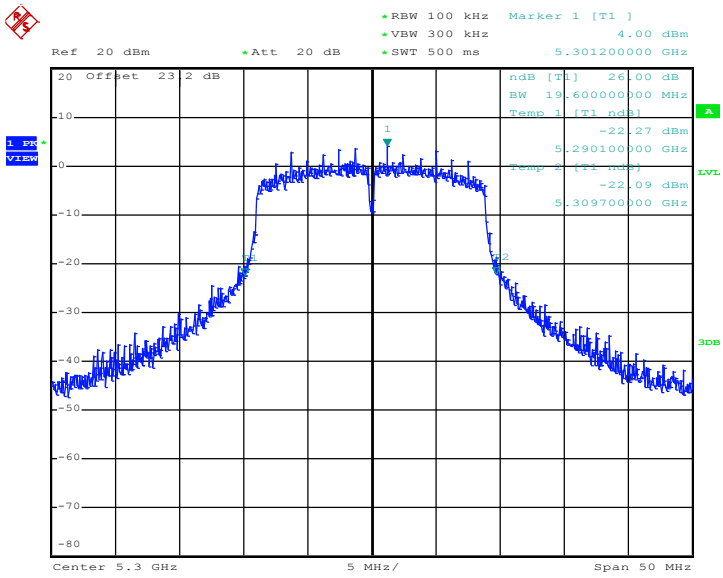
Date: 19.MAR.2011 17:04:50

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



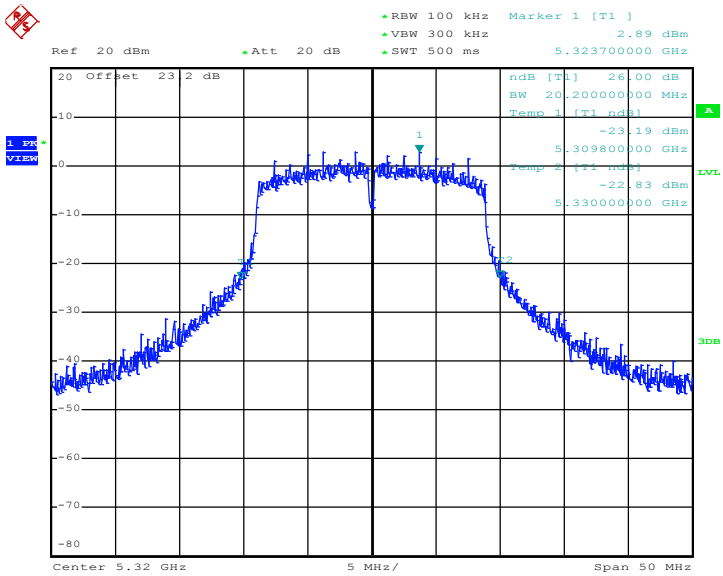
Date: 19.MAR.2011 17:08:20

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



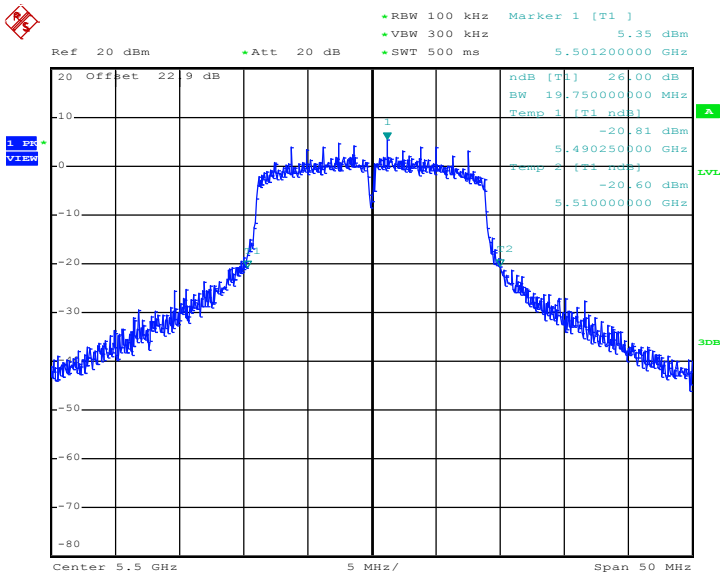
Date: 19.MAR.2011 17:11:15

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



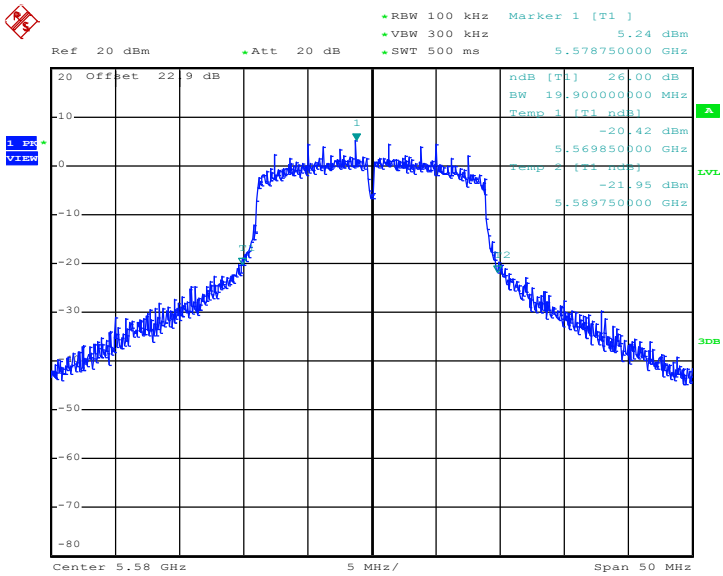
Date: 19.MAR.2011 17:14:16

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



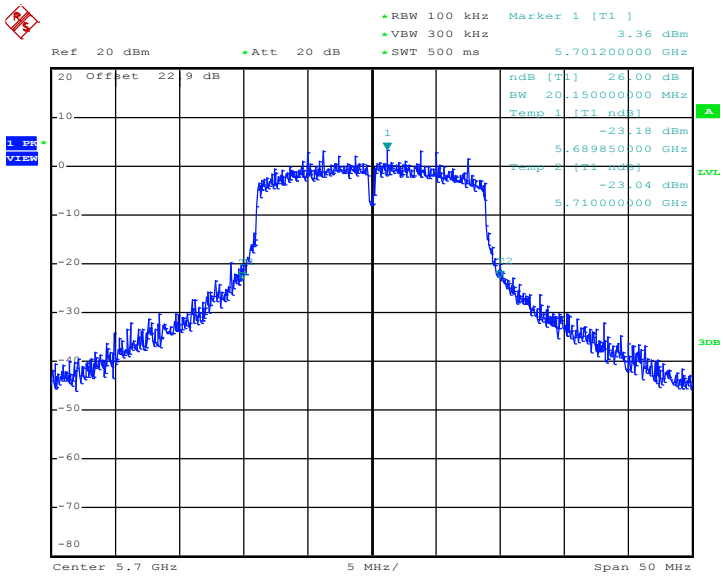
Date: 19.MAR.2011 17:17:50

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



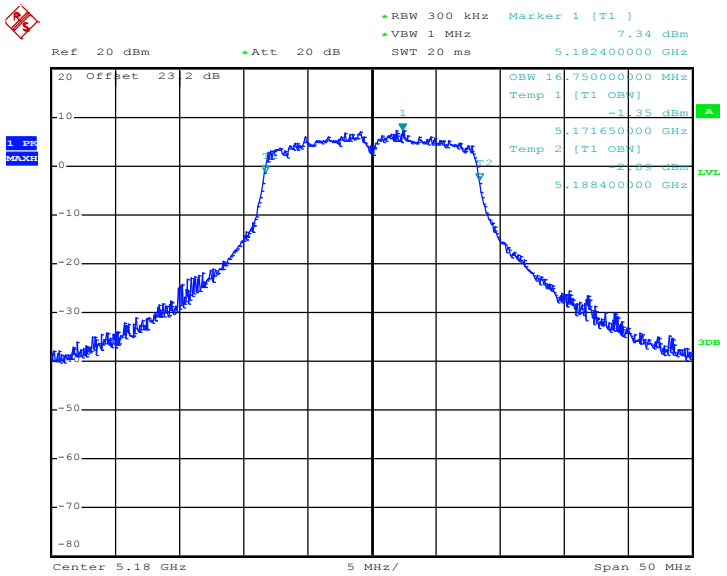
Date: 19.MAR.2011 17:29:51

3.1.6 Test Result of 99% Occupied Bandwidth

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

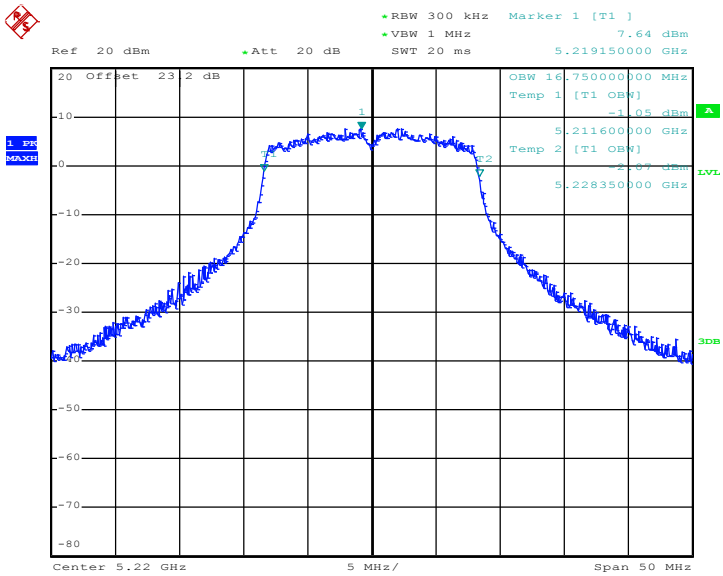
Channel	Frequency (MHz)	802.11a 99% Occupied Bandwidth (MHz)	Pass/Fail
36	5180	16.75	Pass
44	5220	16.75	Pass
48	5240	16.80	Pass
52	5260	16.75	Pass
60	5300	16.75	Pass
64	5320	16.75	Pass
100	5500	16.85	Pass
116	5580	16.90	Pass
140	5700	16.80	Pass

99% Occupied Bandwidth Plot on 802.11a Channel 36



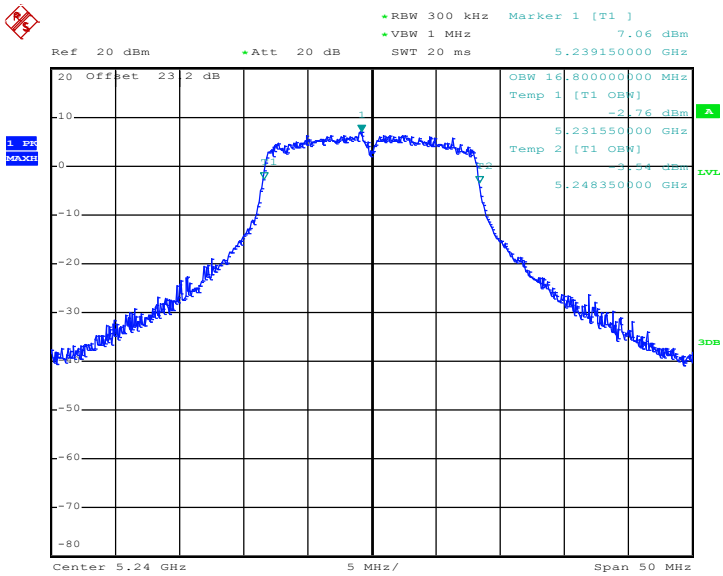
Date: 19.MAR.2011 13:45:10

99% Occupied Bandwidth Plot on 802.11a Channel 44



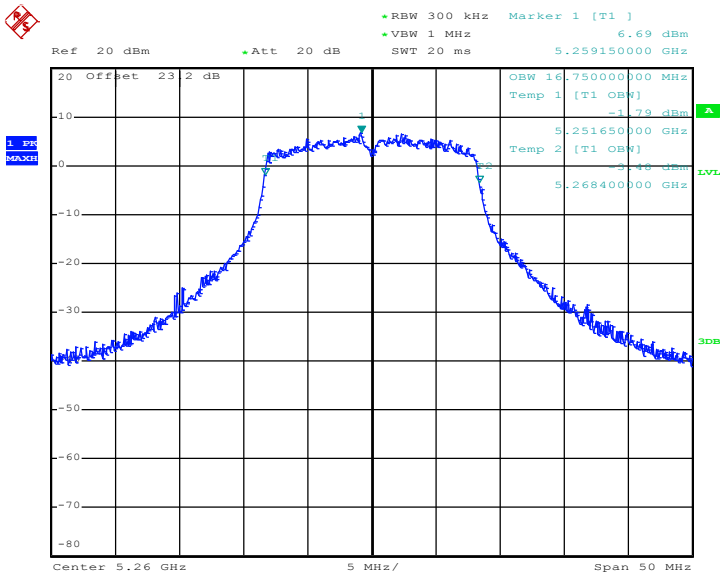
Date: 19.MAR.2011 14:15:35

99% Occupied Bandwidth Plot on 802.11a Channel 48



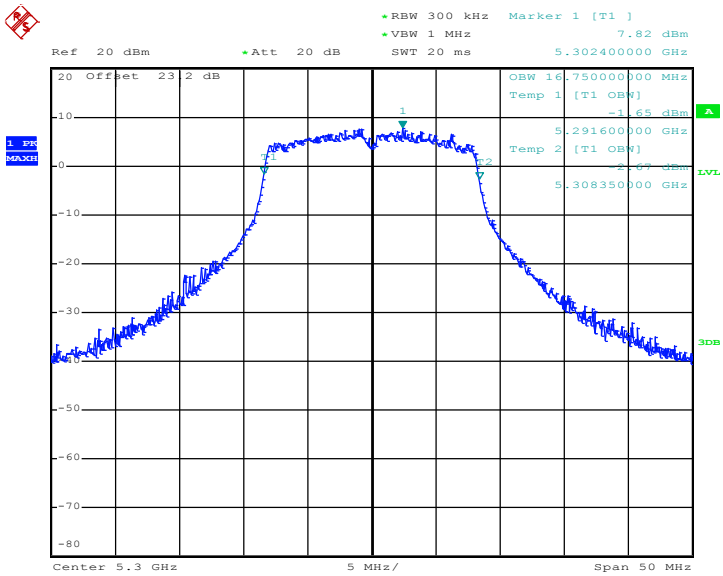
Date: 19.MAR.2011 14:23:29

99% Occupied Bandwidth Plot on 802.11a Channel 52



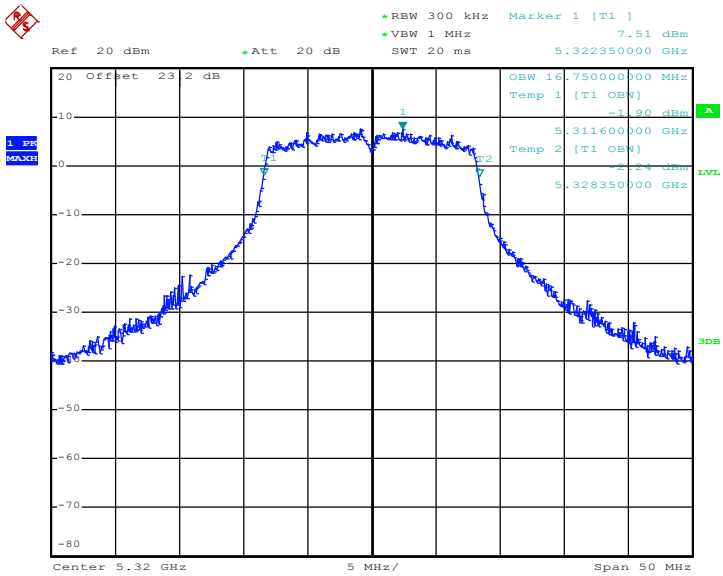
Date: 19.MAR.2011 14:26:55

99% Occupied Bandwidth Plot on 802.11a Channel 60



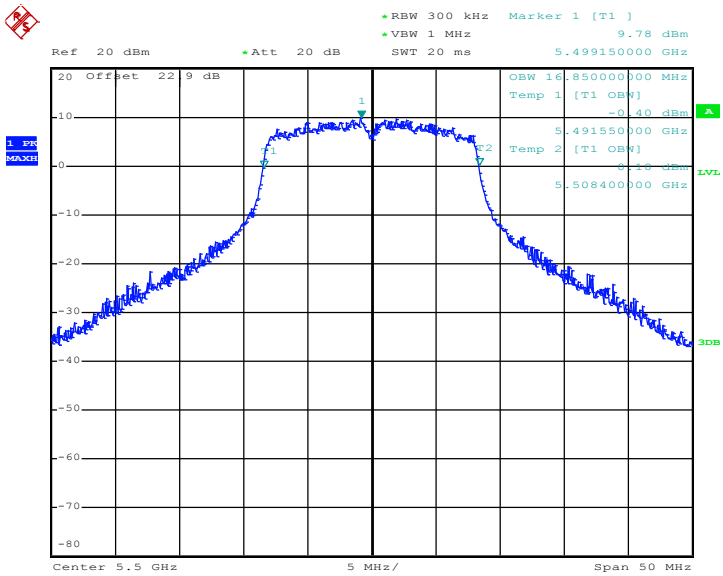
Date: 19.MAR.2011 14:29:48

99% Occupied Bandwidth Plot on 802.11a Channel 64



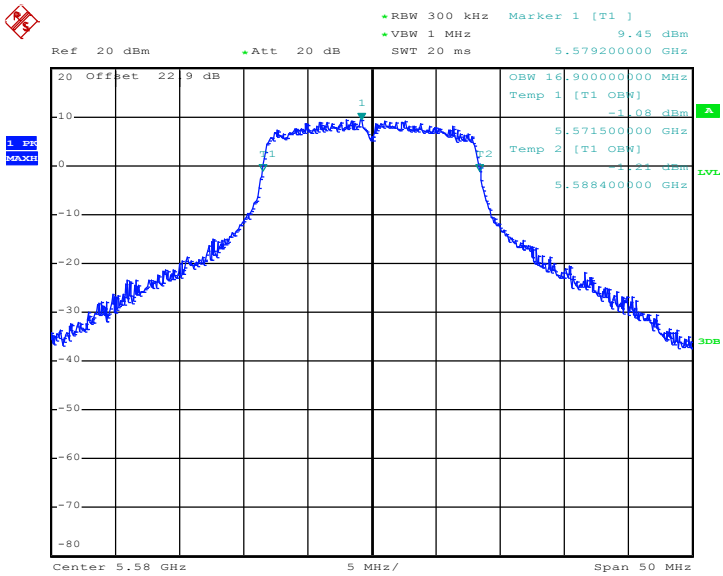
Date: 19.MAR.2011 14:33:02

99% Occupied Bandwidth Plot on 802.11a Channel 100



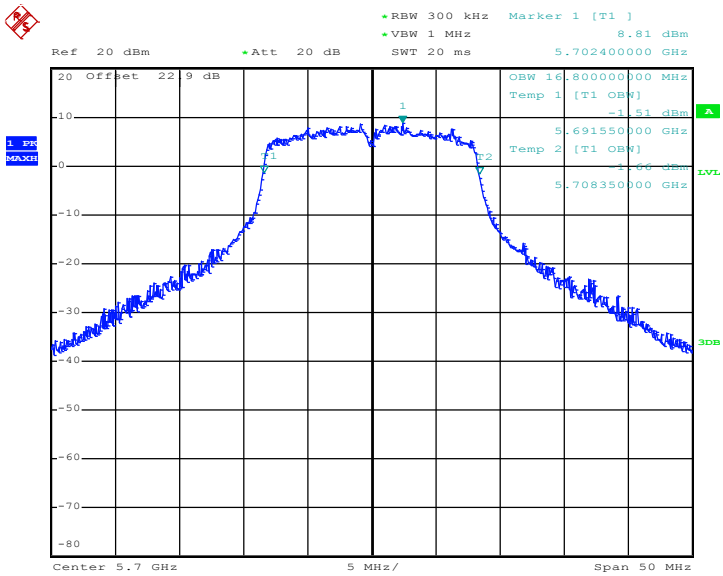
Date: 19.MAR.2011 15:55:54

99% Occupied Bandwidth Plot on 802.11a Channel 116



Date: 19.MAR.2011 15:59:10

99% Occupied Bandwidth Plot on 802.11a Channel 140

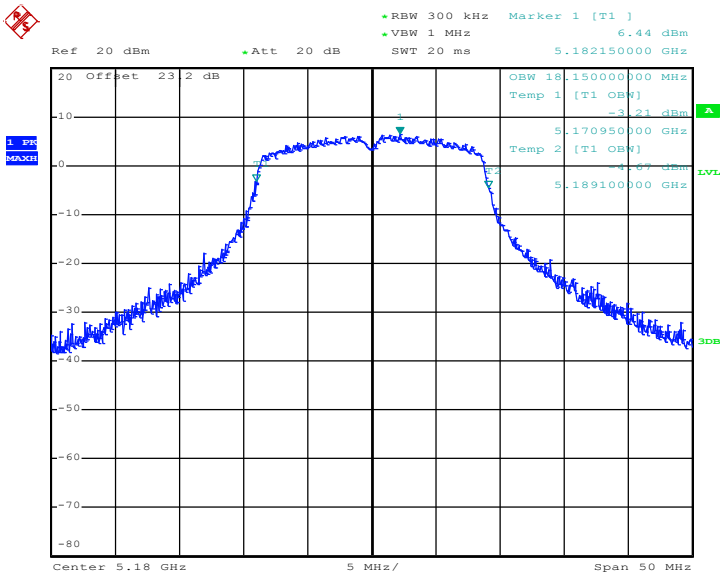


Date: 19.MAR.2011 16:04:32

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

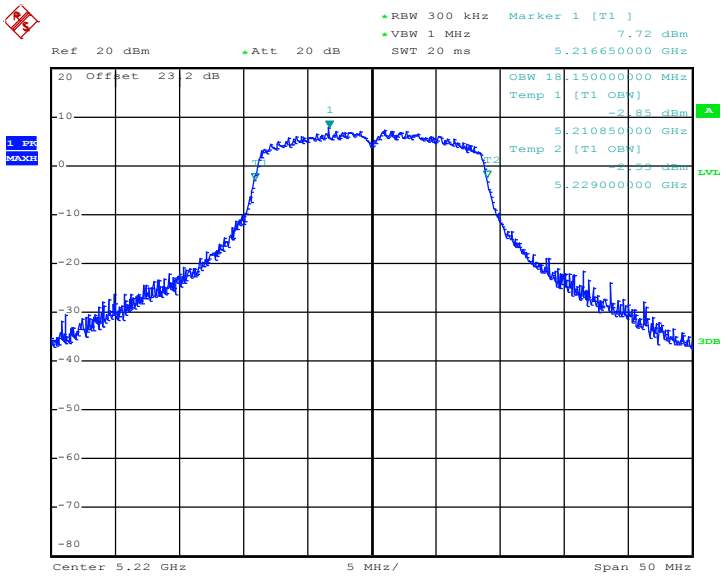
Channel	Frequency (MHz)	802.11n (BW 20MHz) 99% Occupied Bandwidth (MHz)	Pass/Fail
36	5180	18.15	Pass
44	5220	18.15	Pass
48	5240	18.20	Pass
52	5260	18.15	Pass
60	5300	18.15	Pass
64	5320	18.15	Pass
100	5500	18.25	Pass
116	5580	18.25	Pass
140	5700	18.20	Pass

99% Occupied Bandwidth Plot on 802.11n (BW 20MHz) Channel 36



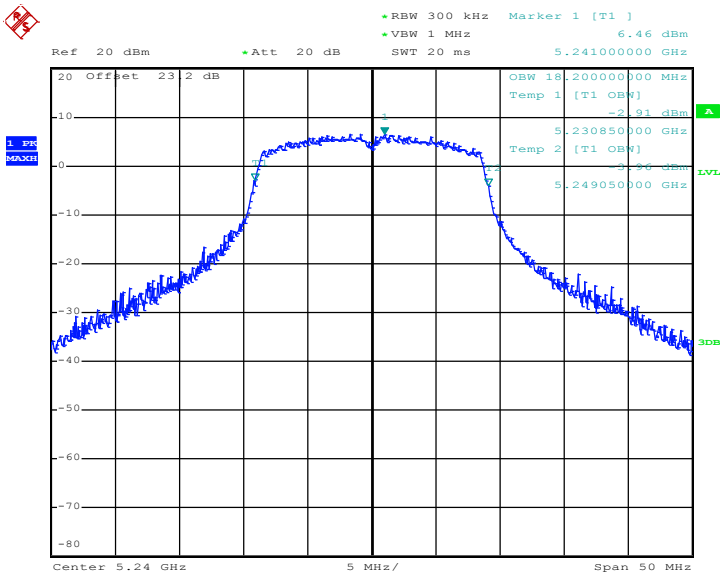
Date: 19.MAR.2011 16:47:43

99% Occupied Bandwidth Plot on 802.11n (BW 20MHz) Channel 44



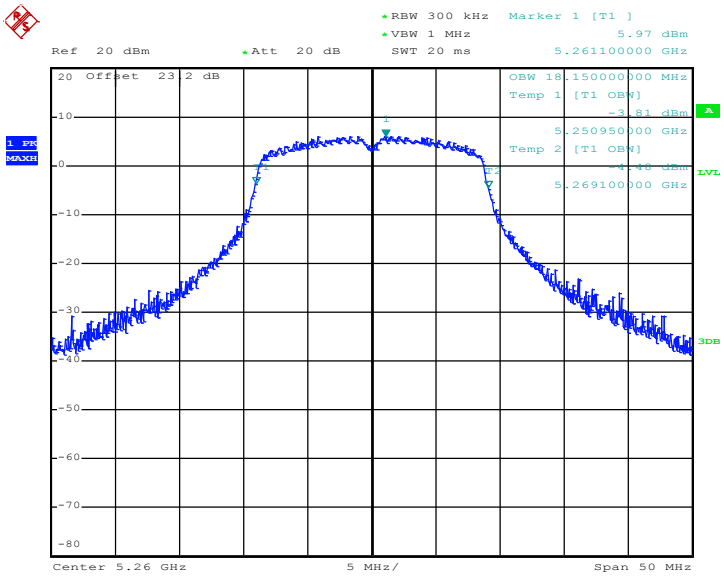
Date: 19.MAR.2011 17:02:53

99% Occupied Bandwidth Plot on 802.11n (BW 20MHz) Channel 48



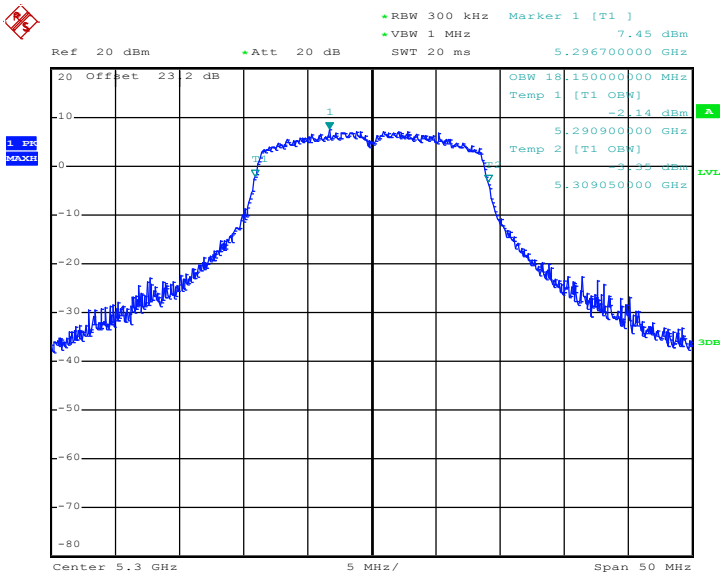
Date: 19.MAR.2011 17:06:23

99% Occupied Bandwidth Plot on 802.11n (BW 20MHz) Channel 52



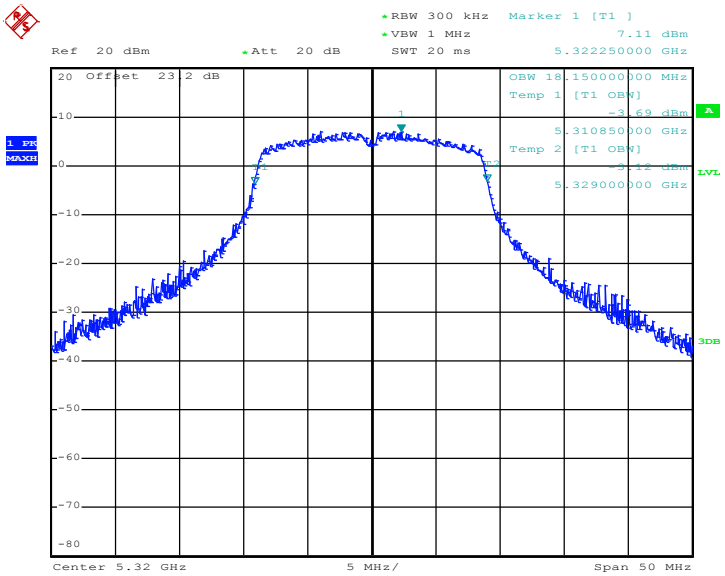
Date: 19.MAR.2011 17:09:31

99% Occupied Bandwidth Plot on 802.11n (BW 20MHz) Channel 60



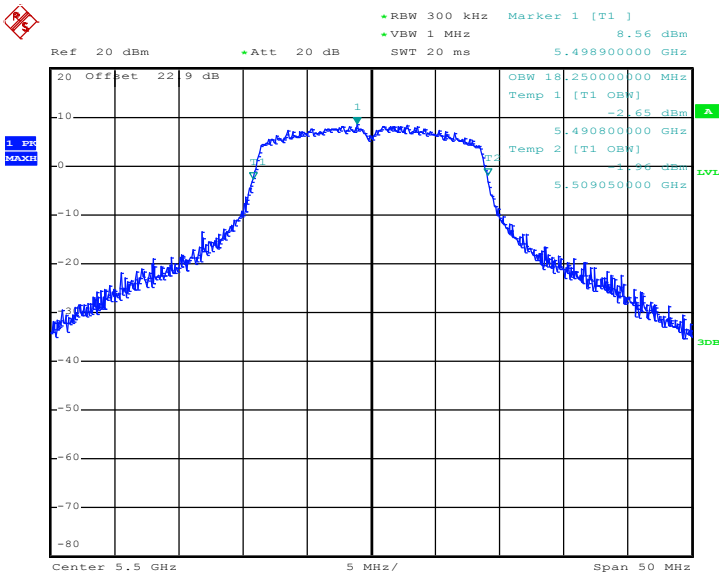
Date: 19.MAR.2011 17:12:30

99% Occupied Bandwidth Plot on 802.11n (BW 20MHz) Channel 64



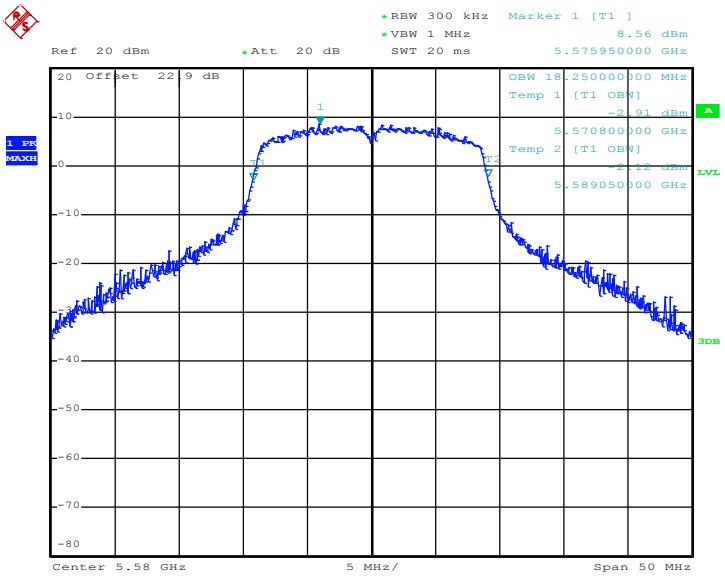
Date: 19.MAR.2011 17:15:27

99% Occupied Bandwidth Plot on 802.11n (BW 20MHz) Channel 100



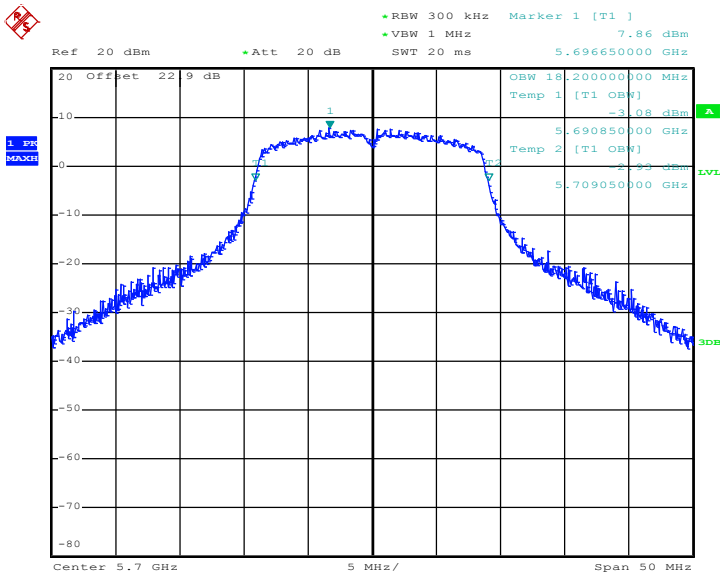
Date: 19.MAR.2011 17:21:10

99% Occupied Bandwidth Plot on 802.11n (BW 20MHz) Channel 116



Date: 19.MAR.2011 17:25:35

99% Occupied Bandwidth Plot on 802.11n (BW 20MHz) Channel 140



Date: 19.MAR.2011 17:31:02

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 dBm + 10log 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 bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log 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.

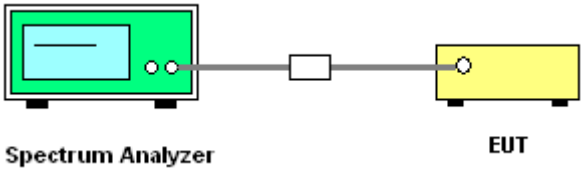
3.2.2 Measuring Instruments

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 ≥ 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℃
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	-	Pass
44	5220	12.23	-	Pass
48	5240	12.28	-	Pass
52	5260	12.01	24	Pass
60	5300	12.02	24	Pass
64	5320	12.06	24	Pass
100	5500	12.12	24	Pass
116	5580	12.16	24	Pass
140	5700	12.04	24	Pass

Test Mode :	Mode 10~18	**Temperature :**	25~27℃
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	-	Pass
44	5220	12.23	-	Pass
48	5240	12.45	-	Pass
52	5260	12.21	24	Pass
60	5300	12.20	24	Pass
64	5320	12.18	24	Pass
100	5500	12.06	24	Pass
116	5580	12.02	24	Pass
140	5700	12.01	24	Pass

3.3 Maximum e.i.r.p. measurement

3.3.1 Limit of Maximum e.i.r.p.

The maximum equivalent isotropically radiated power(e.i.r.p.) can be limited by measured emission bandwidth (B). For the band 5150-5250 MHz, the maximum e.i.r.p. shall not exceed 200mW (23dBm) or 10 + $10\log_{10}$ B, dBm, whichever power is less. For the bands 5250-5350 MHz and 5470-5725MHz, the maximum e.i.r.p. shall not exceed 1.0W (30dBm) or 17 + $10\log_{10}$ B, dBm, whichever power is less.

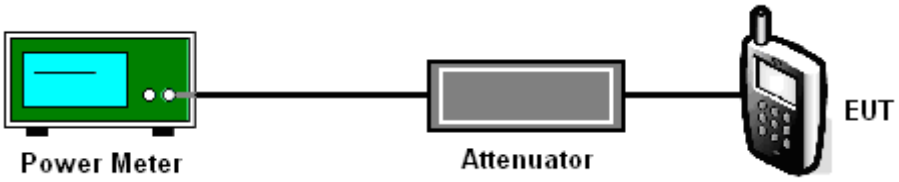
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 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 power meter by a low loss cable.
3. Measure the power and record it.

3.3.4 Test Setup



3.3.5 Test Result of EIRP

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

Channel	Frequency (MHz)	Conducted Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	12.18	4.85	17.03	22.24	Pass
44	5220	12.23	4.85	17.08	22.24	Pass
48	5240	12.28	4.85	17.13	22.25	Pass
52	5260	12.01	4.86	16.86	29.24	Pass
60	5300	12.02	4.86	16.87	29.24	Pass
64	5320	12.06	4.86	16.91	29.24	Pass
100	5500	12.12	4.87	16.97	29.27	Pass
116	5580	12.16	4.87	17.01	29.28	Pass
140	5700	12.04	4.87	16.89	29.25	Pass

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

Channel	Frequency (MHz)	Conducted Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	12.18	4.85	17.03	22.59	Pass
44	5220	12.23	4.85	17.08	22.59	Pass
48	5240	12.45	4.85	17.30	22.60	Pass
52	5260	12.21	4.86	17.06	29.59	Pass
60	5300	12.20	4.86	17.05	29.59	Pass
64	5320	12.18	4.86	17.03	29.59	Pass
100	5500	12.06	4.87	16.91	29.61	Pass
116	5580	12.02	4.87	16.87	29.61	Pass
140	5700	12.01	4.87	16.86	29.60	Pass

3.4 Power Spectral Density Measurement

3.4.1 Limit of Power Spectral Density

For the band 5.15–5.25 GHz, the peak power spectral density shall not exceed 4 dBm and the e.i.r.p. spectral density shall not exceed 10 dBm in any 1 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 1MHz 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.

3.4.2 Measuring Instruments

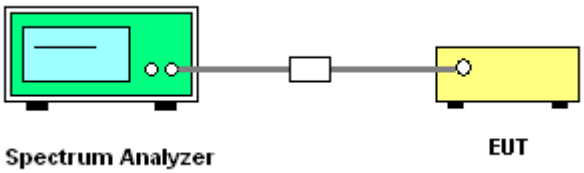
See list of measuring instruments of this test report.

3.4.3 Test Procedures

The transmitter output is connected to the spectrum analyzer. According

- Use peak detector mode and max hold. Set RBW= 1MHz and VBW > 1 MHz. The PPSD is the highest level found across the emission in any 1-MHz band.

3.4.4 Test Setup



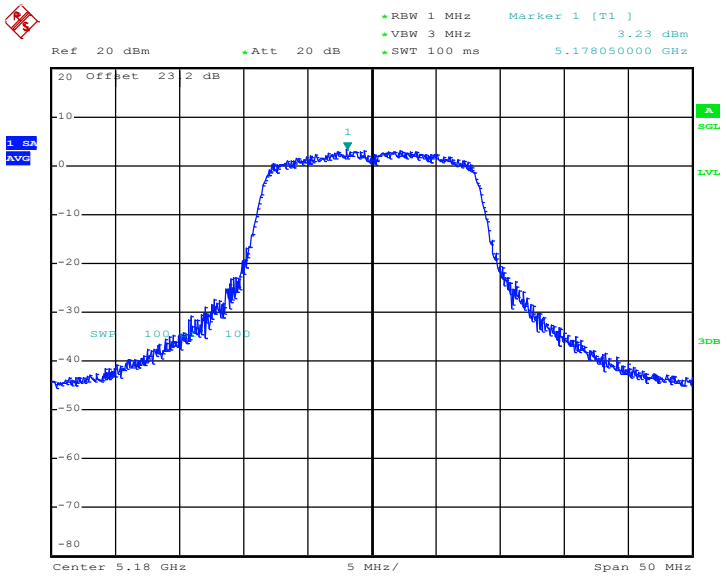
3.4.5 Test Result of Power Spectral Density

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

Channel	Frequency (MHz)	802.11a Measured PSD (dBm)	FCC 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

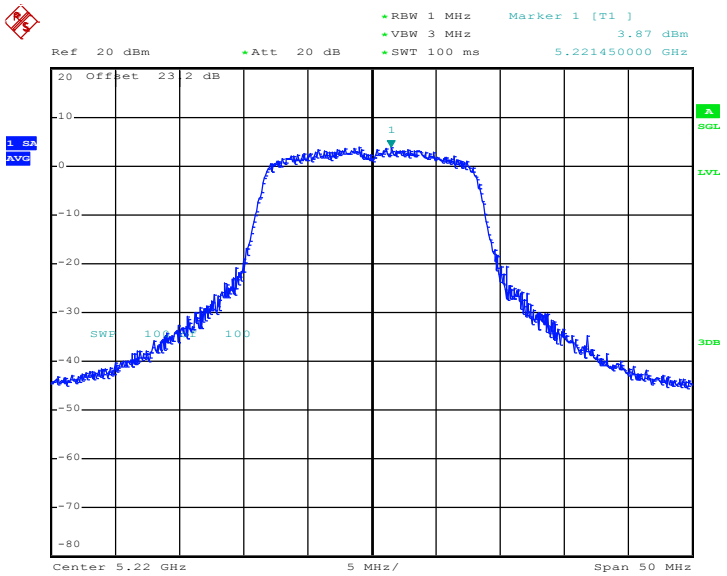
Channel	Frequency (MHz)	Measured e.i.r.p. PSD (dBm)	IC Max. Limits (dBm)	Pass/Fail
36	5180	8.08	10	Pass
44	5220	8.72	10	Pass
48	5240	8.04	10	Pass
52	5260	3.07	11	Pass
60	5300	4.01	11	Pass
64	5320	3.70	11	Pass
100	5500	5.92	11	Pass
116	5580	6.02	11	Pass
140	5700	5.22	11	Pass

PSD Plot on 802.11a Channel 36



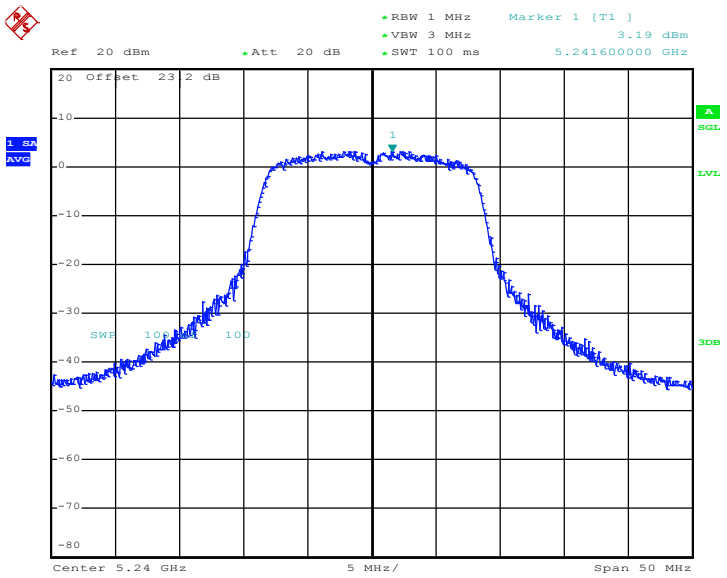
Date: 19.MAR.2011 13:46:05

PSD Plot on 802.11a Channel 44



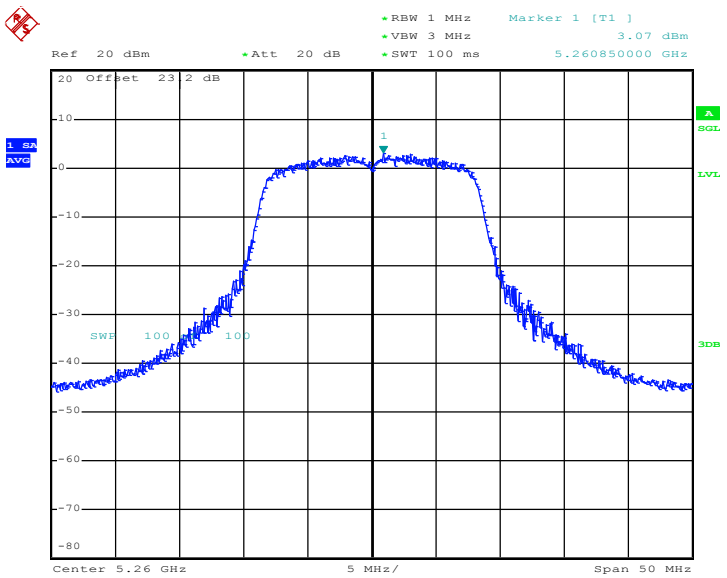
Date: 19.MAR.2011 14:14:30

PSD Plot on 802.11a Channel 48



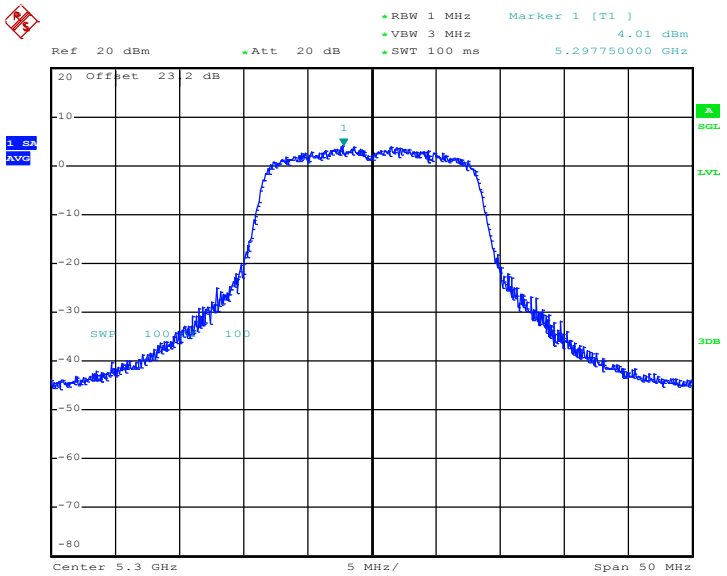
Date: 19.MAR.2011 14:21:36

PSD Plot on 802.11a Channel 52



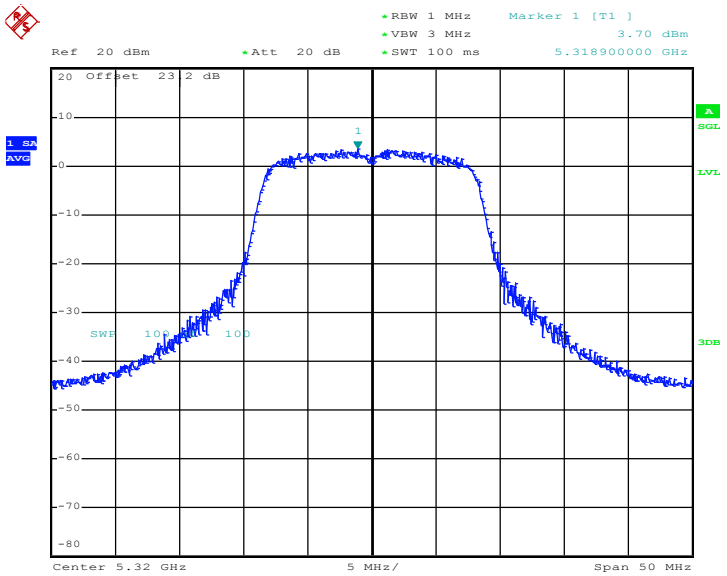
Date: 19.MAR.2011 14:26:06

PSD Plot on 802.11a Channel 60



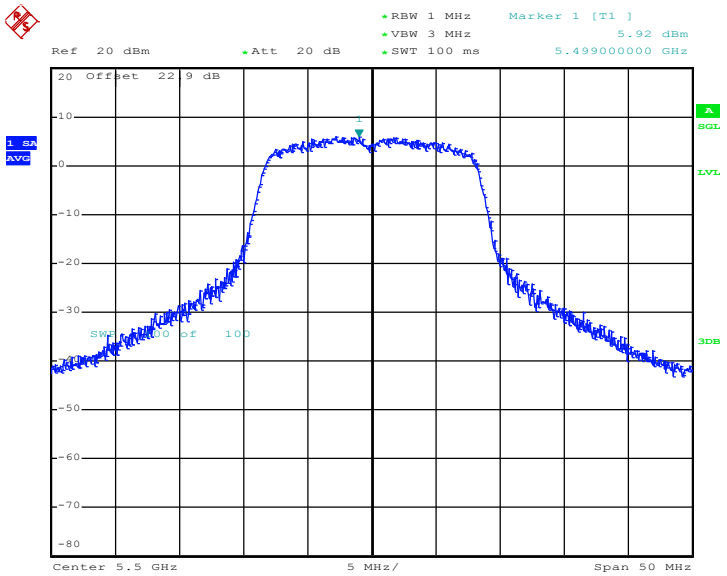
Date: 19.MAR.2011 14:29:06

PSD Plot on 802.11a Channel 64



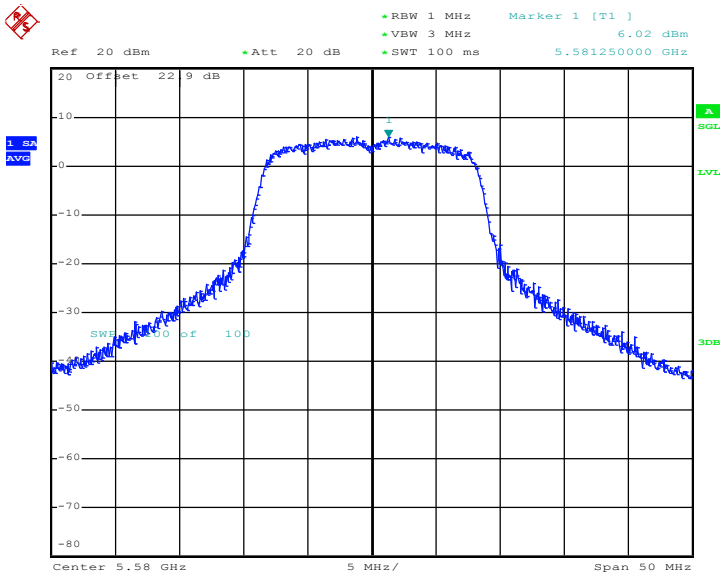
Date: 19.MAR.2011 14:32:16

PSD Plot on 802.11a Channel 100



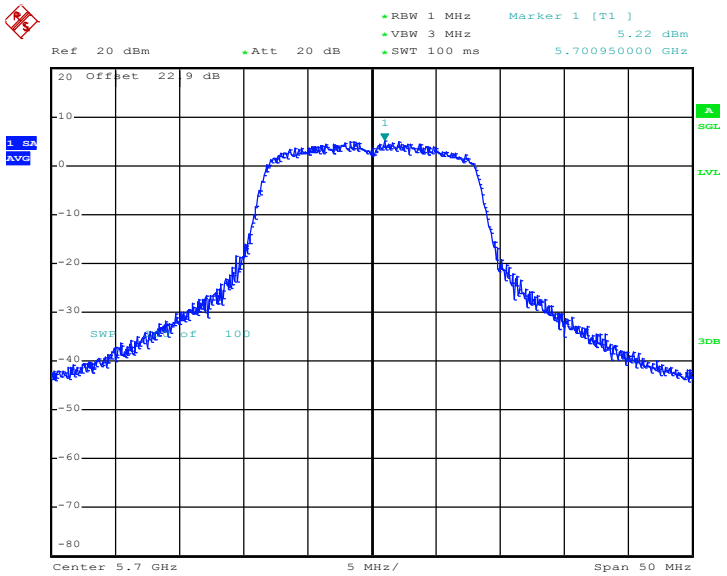
Date: 19.MAR.2011 15:55:06

PSD Plot on 802.11a Channel 116



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

PSD Plot on 802.11a Channel 140



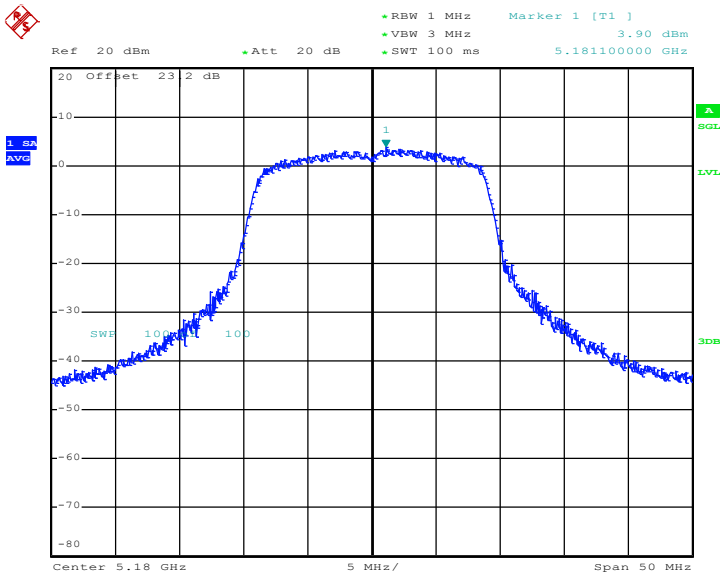
Date: 19.MAR.2011 16:03:49

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

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured PSD (dBm)	FCC 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

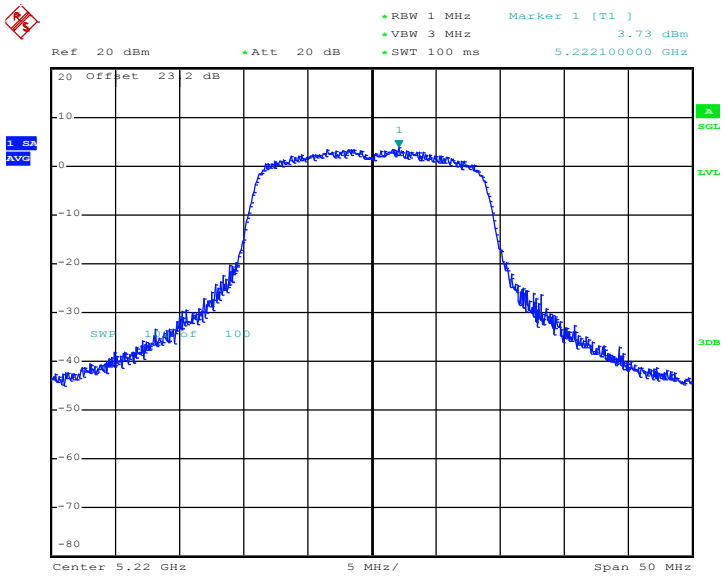
Channel	Frequency (MHz)	Measured e.i.r.p. PSD (dBm)	IC Max. Limits (dBm)	Pass/Fail
36	5180	8.75	10	Pass
44	5220	8.58	10	Pass
48	5240	8.40	10	Pass
52	5260	3.75	11	Pass
60	5300	4.75	11	Pass
64	5320	4.51	11	Pass
100	5500	5.96	11	Pass
116	5580	5.95	11	Pass
140	5700	4.71	11	Pass

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



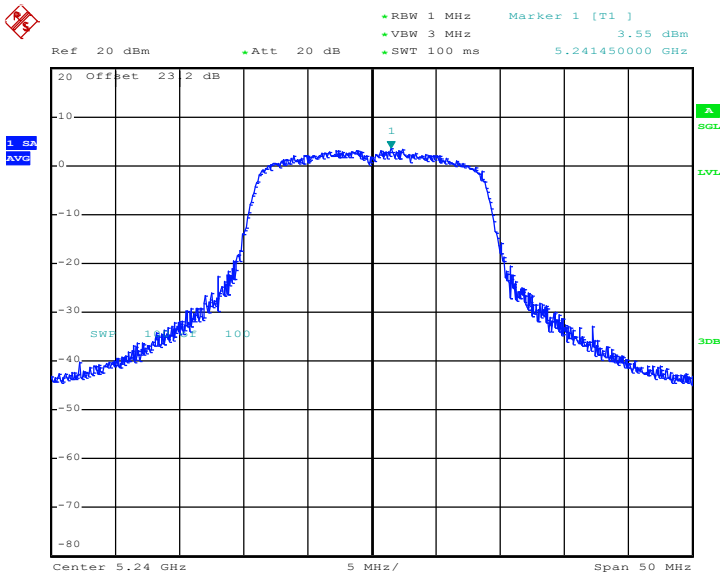
Date: 19.MAR.2011 17:33:37

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



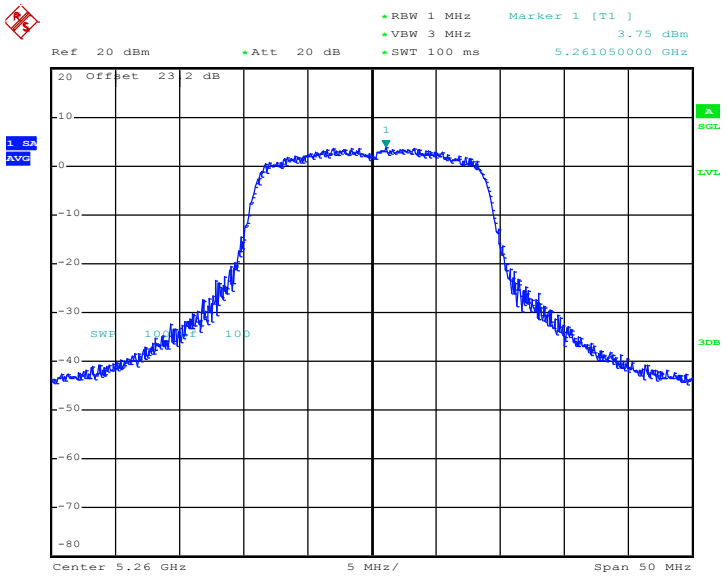
Date: 19.MAR.2011 17:38:44

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



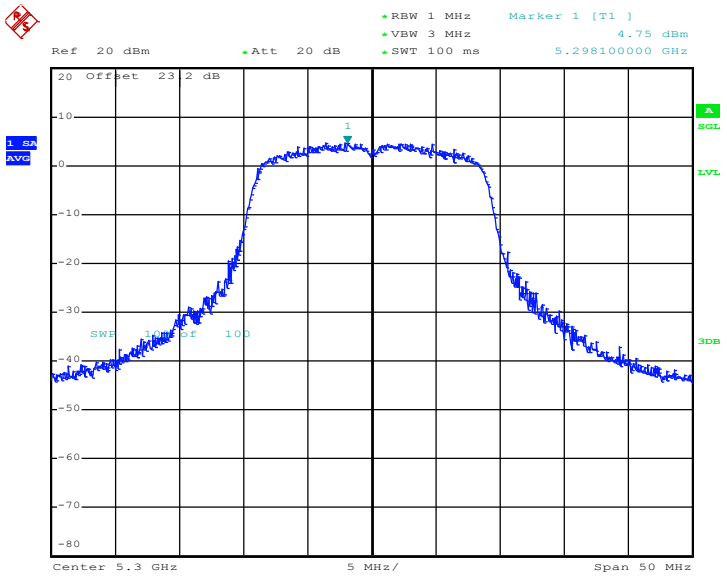
Date: 19.MAR.2011 17:40:05

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



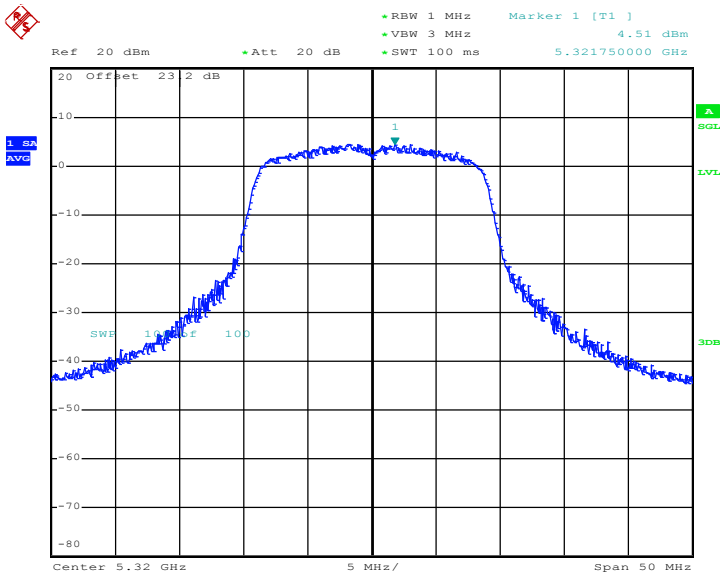
Date: 19.MAR.2011 17:08:48

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



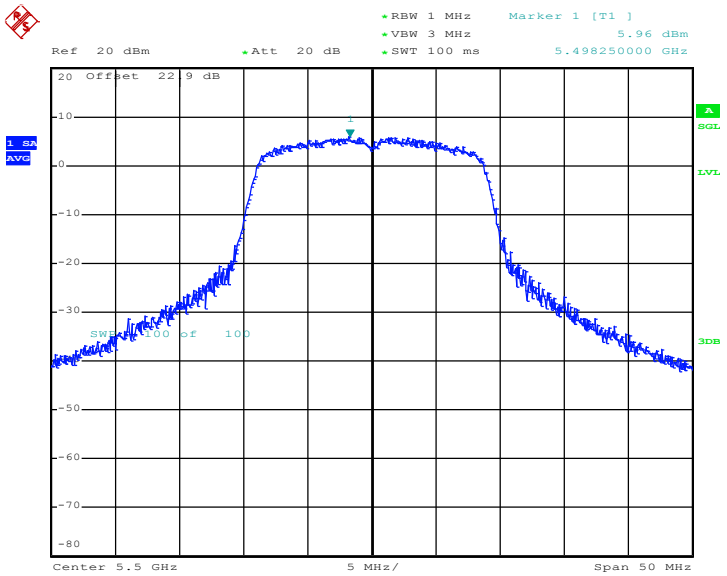
Date: 19.MAR.2011 17:11:44

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



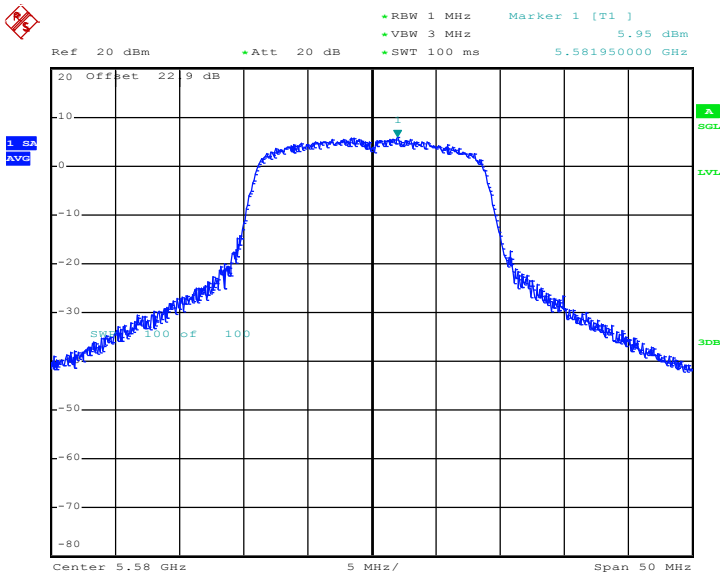
Date: 19.MAR.2011 17:14:45

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



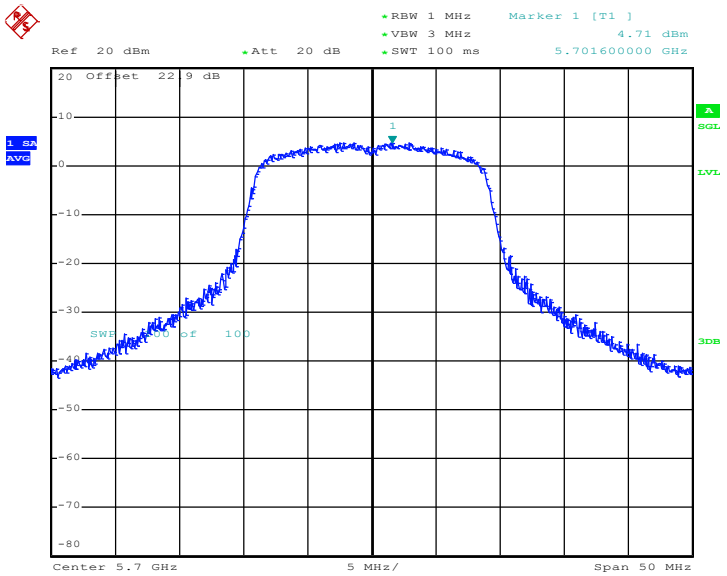
Date: 19.MAR.2011 17:18:20

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

3.5 Band Edges Measurement

3.5.1 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.

3.5.2 Measuring Instruments

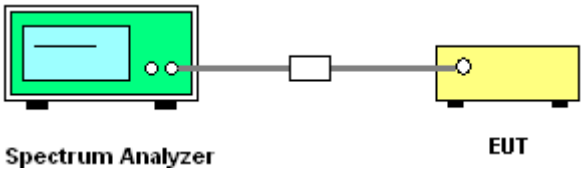
See list of measuring instruments of this test report.

3.5.3 Test Procedures

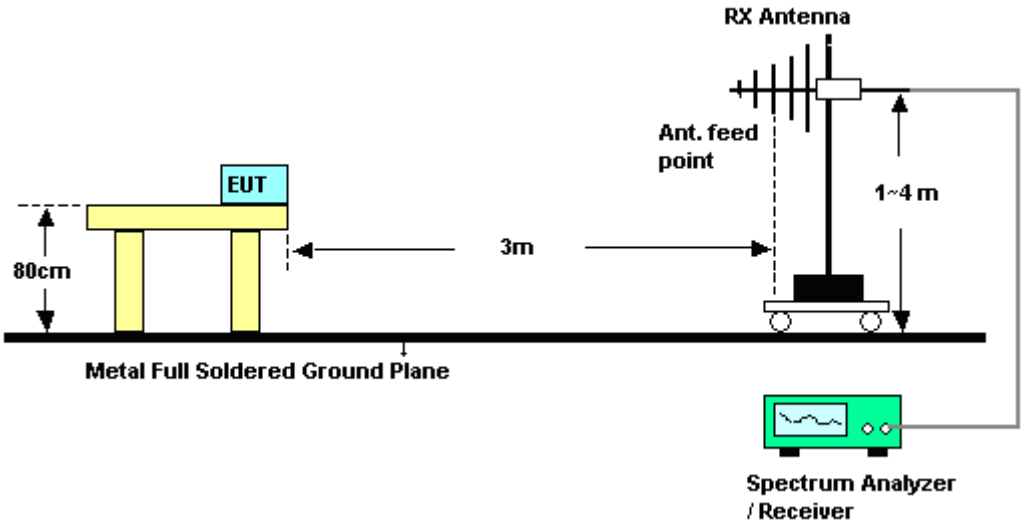
1. Set both RBW / VBW of spectrum analyzer to 1MHz / 3MHz with convenient frequency span including 1MHz bandwidth from band edge.
2. The band edges was measured and recorded.

3.5.4 Test Setup

<Conducted>



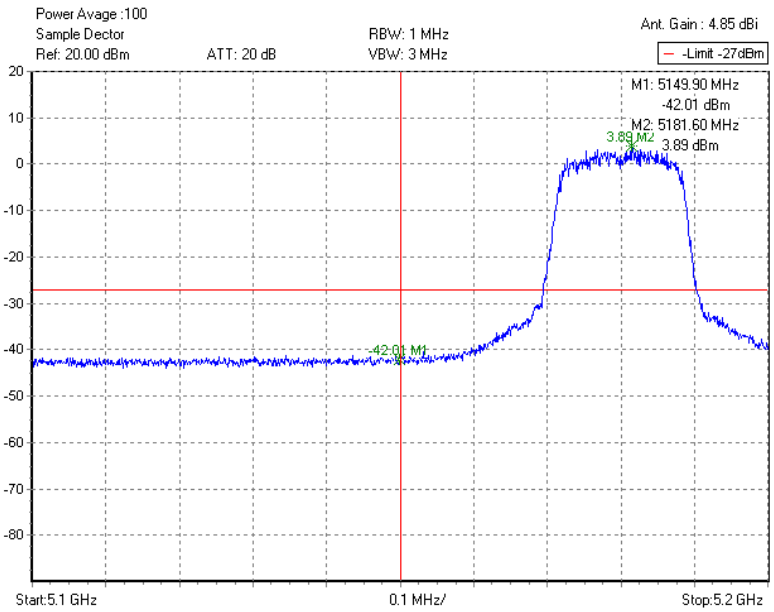
<Radiated>



3.5.5 Test Result of Conducted Band Edges

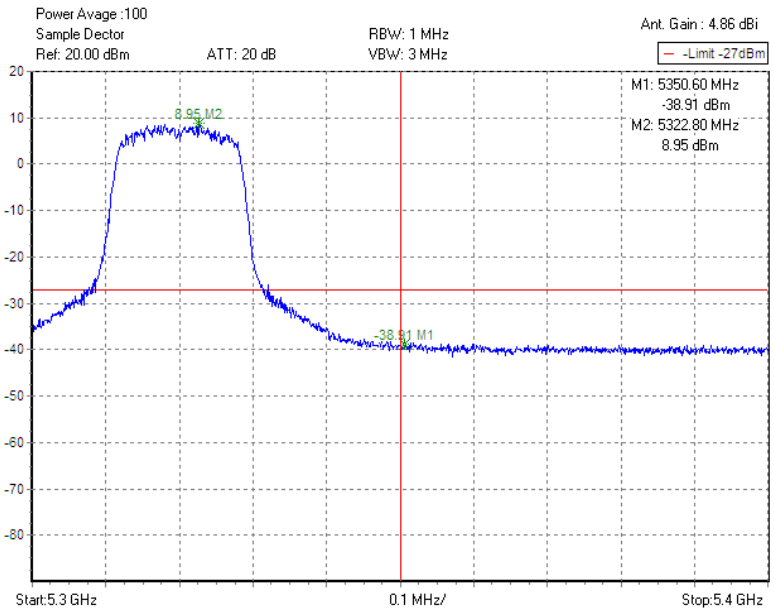
Test Mode :	Mode 1 and 6	**Temperature :**	25~27℃
Test Engineer :	Alan Liu	**Relative Humidity :**	51~54%

Low Band Edge Plot on Channel 36



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

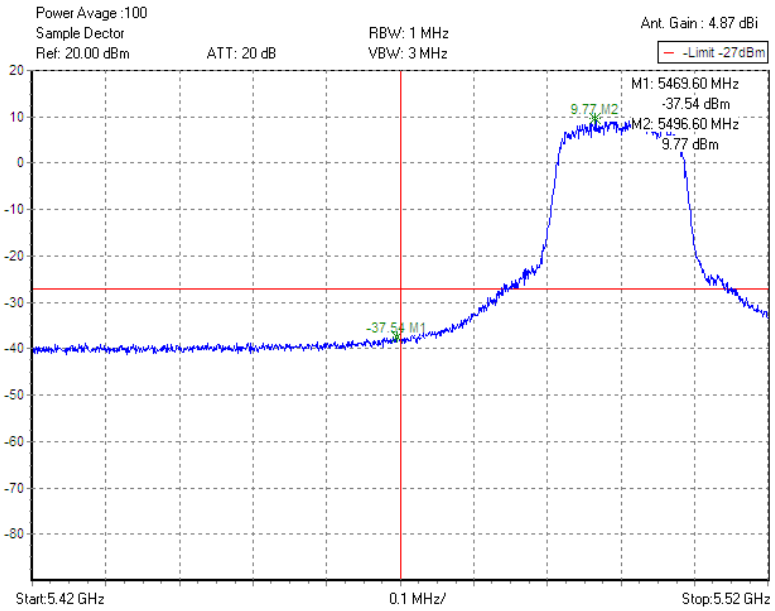
High Band Edge Plot on Channel 64



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

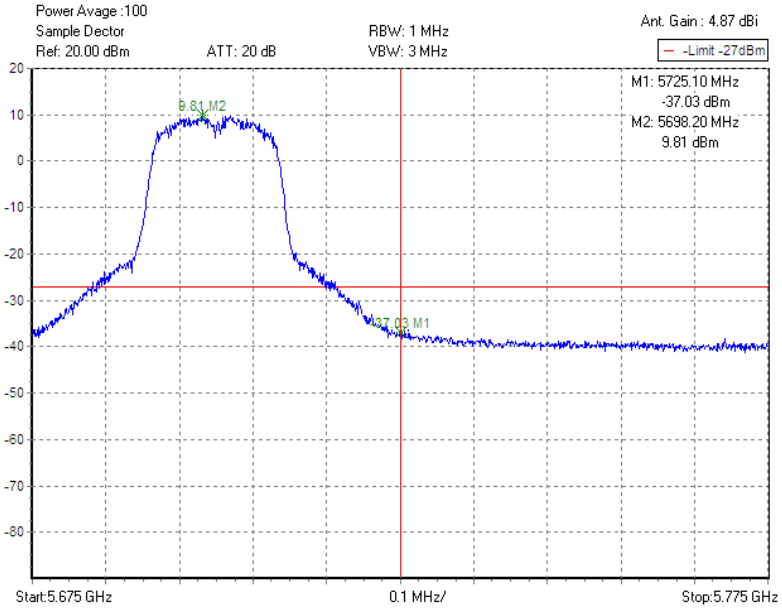
Test Mode :	Mode 7 and 9	**Temperature :**	25~27℃
Test Engineer :	Alan Liu	**Relative Humidity :**	51~54%

Low Band Edge Plot on Channel 100



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

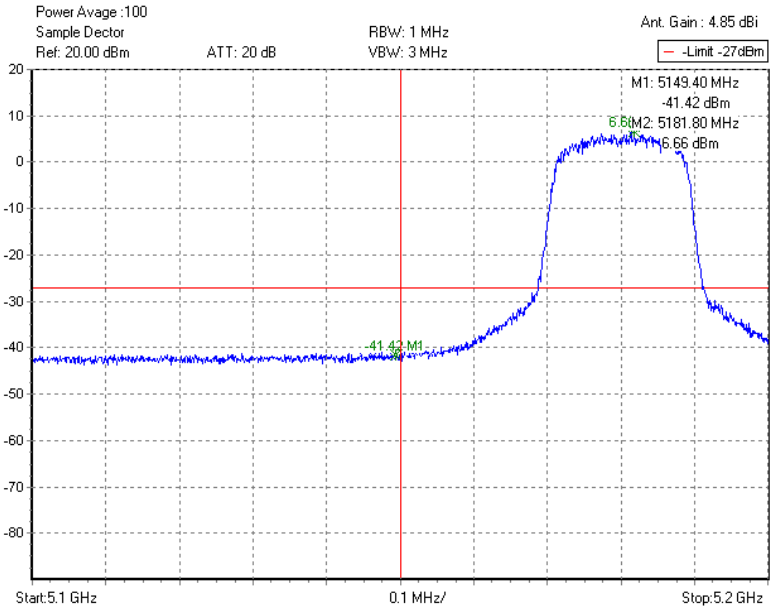
High Band Edge Plot on Channel 140



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

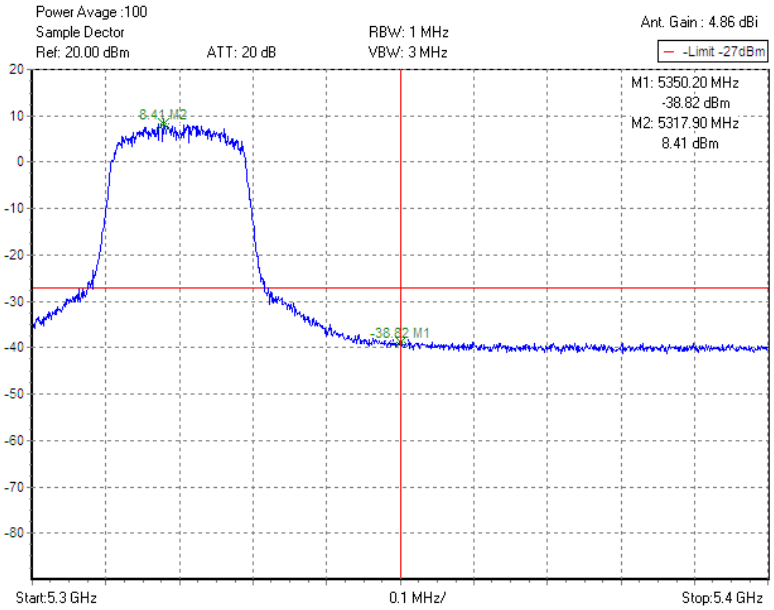
Test Mode :	Mode 10 and 15	**Temperature :**	25~27℃
Test Engineer :	Alan Liu	**Relative Humidity :**	51~54%

Low Band Edge Plot on Channel 36



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

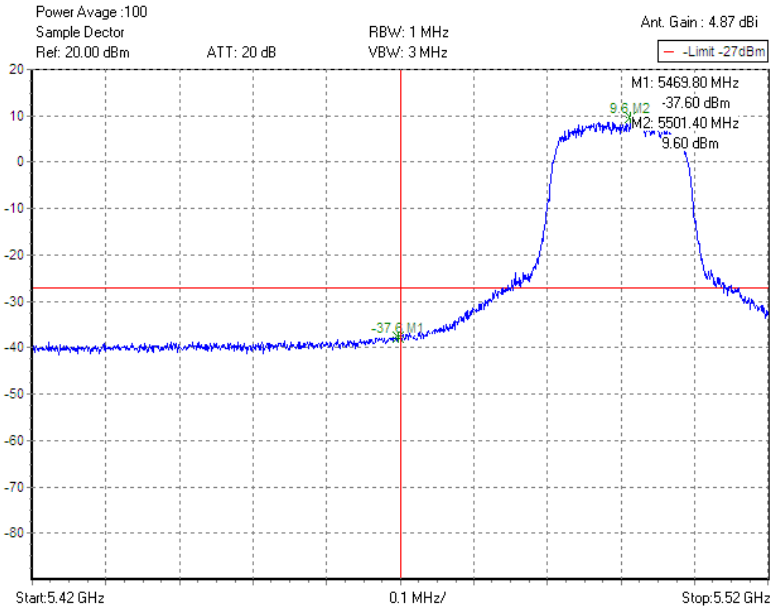
High Band Edge Plot on Channel 64



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

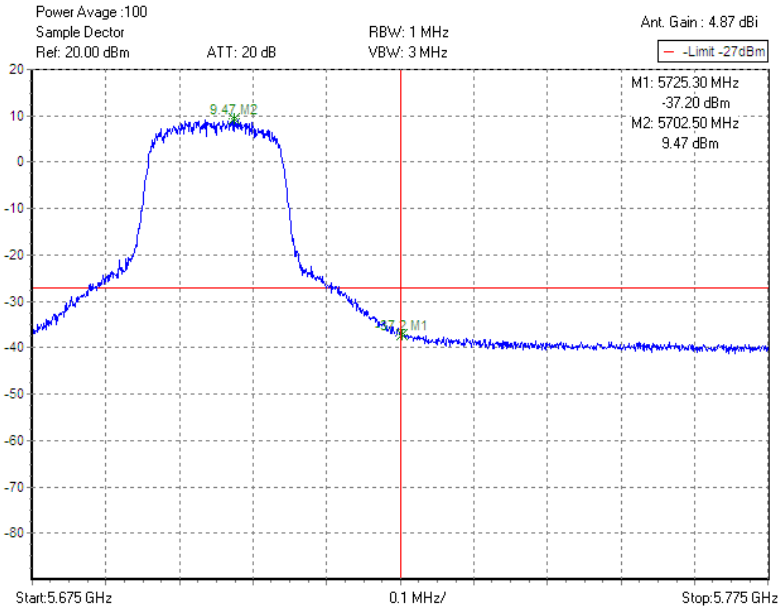
Test Mode :	Mode 16 and 18	**Temperature :**	25~27℃
Test Engineer :	Alan Liu	**Relative Humidity :**	51~54%

Low Band Edge Plot on Channel 100



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

High Band Edge Plot on Channel 140



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

3.5.6 Test Result of Radiated Band Edges

Test Mode :	Mode 1	**Temperature :**	22~26℃
Test Band :	802.11a	**Relative Humidity :**	47~51%
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	58.44	-15.56	74	48.43	34.25	9.41	33.65	100	16	Peak
5150	42.55	-11.45	54	32.54	34.25	9.41	33.65	100	16	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	59.22	-14.78	74	49.21	34.25	9.41	33.65	100	265	Peak
5150	42.77	-11.23	54	32.76	34.25	9.41	33.65	100	265	Average

Test Mode :	Mode 6	**Temperature :**	22~26℃
Test Band :	802.11a	**Relative Humidity :**	47~51%
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	58.77	-15.23	74	47.84	34.45	9.74	33.26	102	174	Peak
5350	42.29	-11.71	54	31.36	34.45	9.74	33.26	102	174	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	58.4	-15.6	74	47.47	34.45	9.74	33.26	100	259	Peak
5350	43.25	-10.75	54	32.32	34.45	9.74	33.26	100	259	Average

Test Mode :	Mode 7	**Temperature :**	22~26℃
Test Band :	802.11a	**Relative Humidity :**	47~51%
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	59.29	-9.01	68.3	47.79	34.57	9.94	33.01	100	175	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	65.2	-3.1	68.3	53.7	34.57	9.94	33.01	112	244	Peak

Test Mode :	Mode 9	**Temperature :**	22~26℃
Test Band :	802.11a	**Relative Humidity :**	47~51%
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	46.42	-21.88	68.3	34.86	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	49.89	-18.41	68.3	38.33	34.82	9.92	33.18	100	269	Peak

Test Mode :	Mode 10	**Temperature :**	22~26℃
Test Band :	802.11n (BW 20MHz)	**Relative Humidity :**	47~51%
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	55.89	-18.11	74	45.88	34.25	9.41	33.65	100	317	Peak
5150	41.66	-12.34	54	31.65	34.25	9.41	33.65	100	317	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	57.09	-16.91	74	47.08	34.25	9.41	33.65	100	265	Peak
5150	42.08	-11.92	54	32.07	34.25	9.41	33.65	100	265	Average

Test Mode :	Mode 15	**Temperature :**	22~26℃
Test Band :	802.11n (BW 20MHz)	**Relative Humidity :**	47~51%
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	57.25	-16.75	74	46.32	34.45	9.74	33.26	100	174	Peak
5350	42.58	-11.42	54	31.65	34.45	9.74	33.26	100	174	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	57.94	-16.06	74	47.01	34.45	9.74	33.26	100	253	Peak
5350	43.15	-10.85	54	32.22	34.45	9.74	33.26	100	253	Average

Test Mode :	Mode 16	**Temperature :**	22~26℃
Test Band :	802.11n (BW 20MHz)	**Relative Humidity :**	47~51%
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	46.45	-21.85	68.3	34.95	34.57	9.94	33.01	125	176	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	51.34	-16.96	68.3	39.84	34.57	9.94	33.01	102	278	Peak

Test Mode :	Mode 18	**Temperature :**	22~26℃
Test Band :	802.11n (BW 20MHz)	**Relative Humidity :**	47~51%
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	48.27	-20.03	68.3	36.71	34.82	9.92	33.18	100	322	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	50.83	-17.47	68.3	39.27	34.82	9.92	33.18	100	268	Peak

3.6 Conducted Spurious Emission

3.6.1 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.

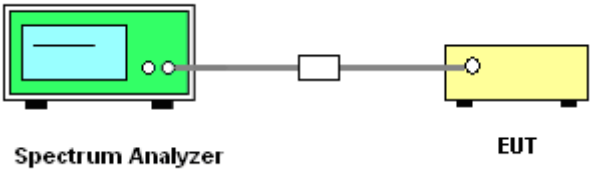
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 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.

3.6.4 Test Setup



3.6.5 Test Result

Test Mode :	Mode 1~9	**Temperature :**	25~27℃
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

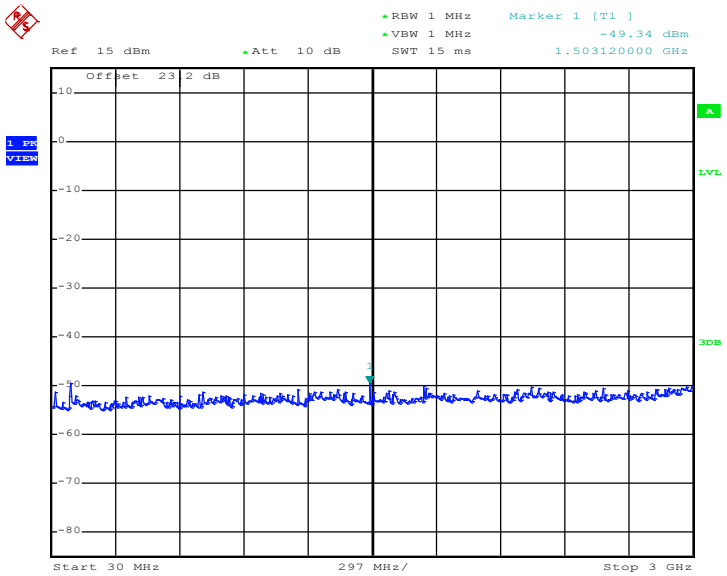
<3 GHz ~ 13.6 GHz>

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>

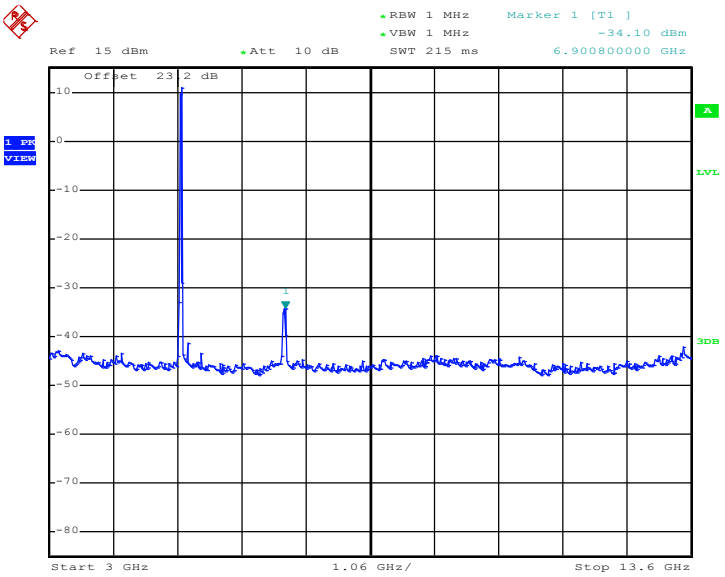
Channel	Frequency (MHz)	Frequency (MHz)	Level (dBm)	Antenna Gain (dBi)	EIRP Test Result (dBm)	Limit (dBm)
36	5180	40000	-32.6	4.85	-27.75	-27
44	5220	40000	-32.64	4.85	-27.79	-27
48	5240	40000	-32.65	4.85	-27.8	-27
52	5260	40000	-32.86	4.86	-28	-27
60	5300	40000	-32.52	4.86	-27.66	-27
64	5320	39947.2	-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



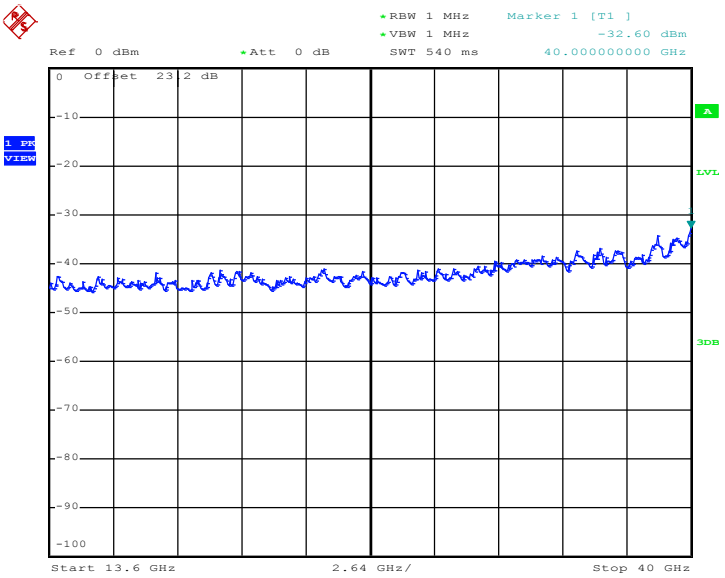
Date: 19.MAR.2011 18:59:28

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



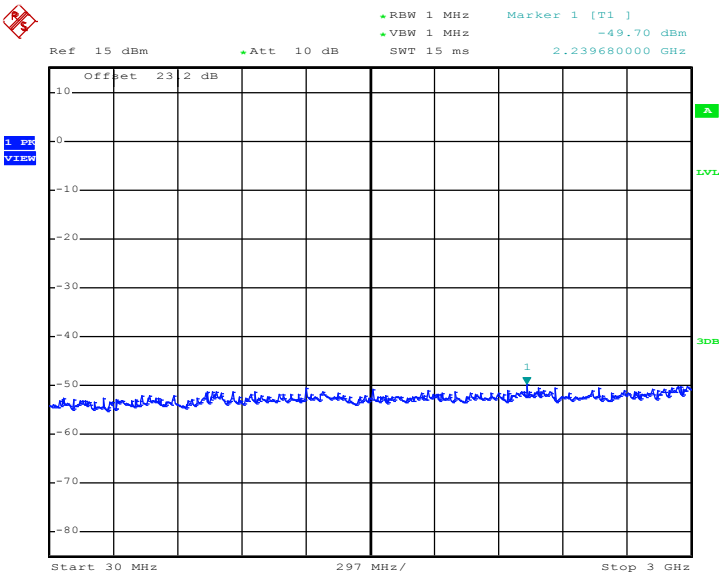
Date: 19.MAR.2011 18:59:40

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



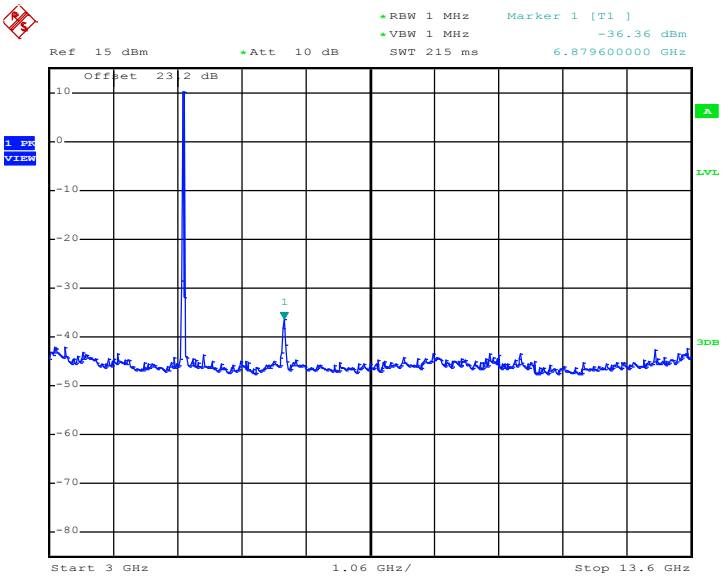
Date: 19.MAR.2011 18:59:52

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



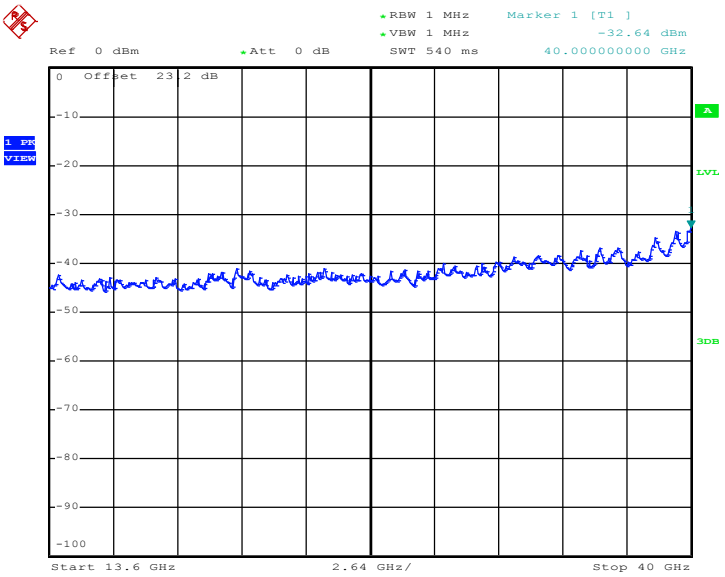
Date: 19.MAR.2011 18:05:14

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



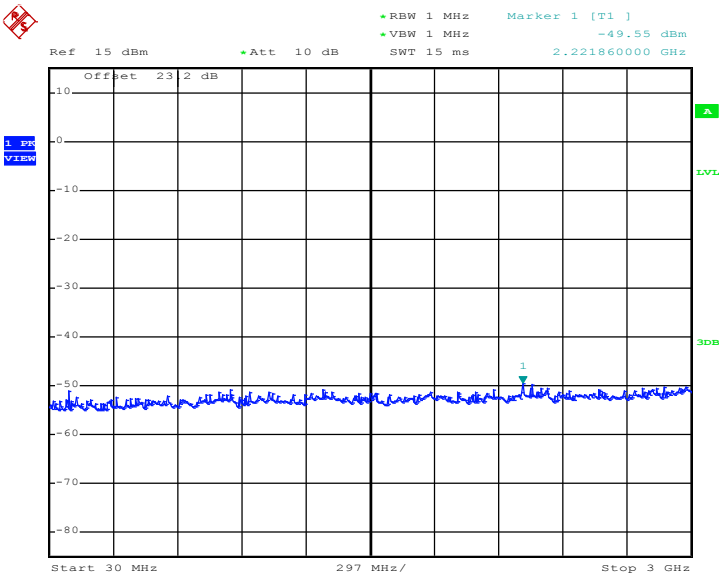
Date: 19.MAR.2011 18:05:26

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



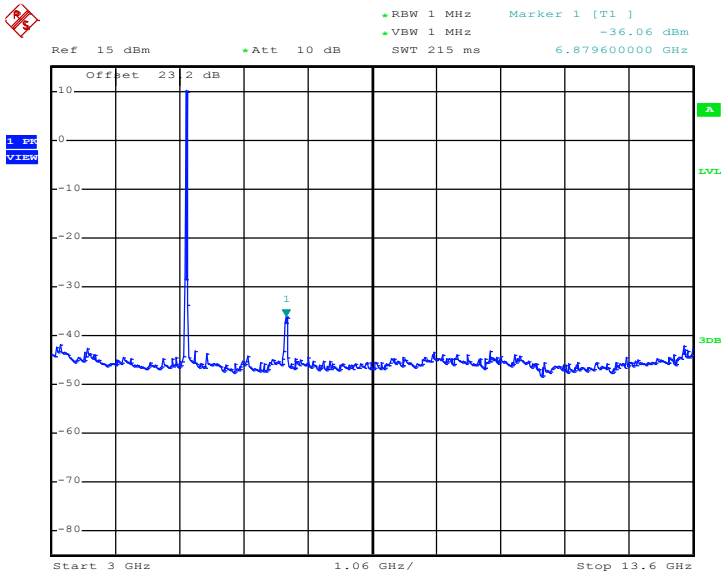
Date: 19.MAR.2011 18:05:38

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



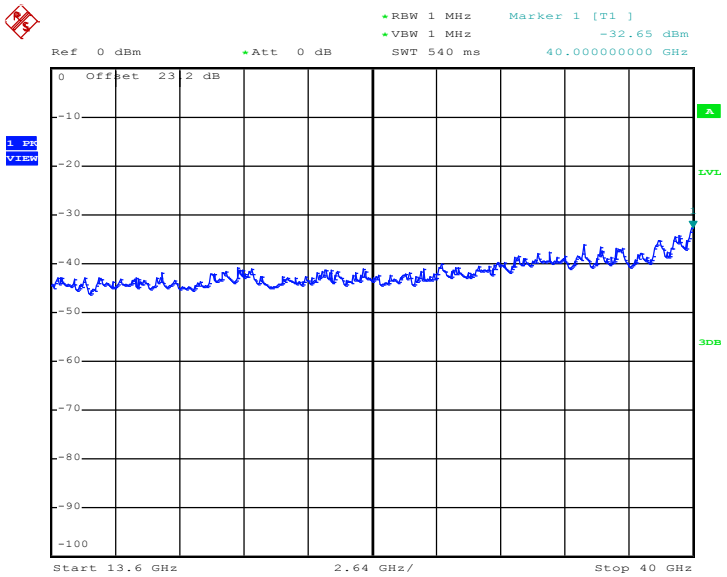
Date: 19.MAR.2011 18:06:08

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



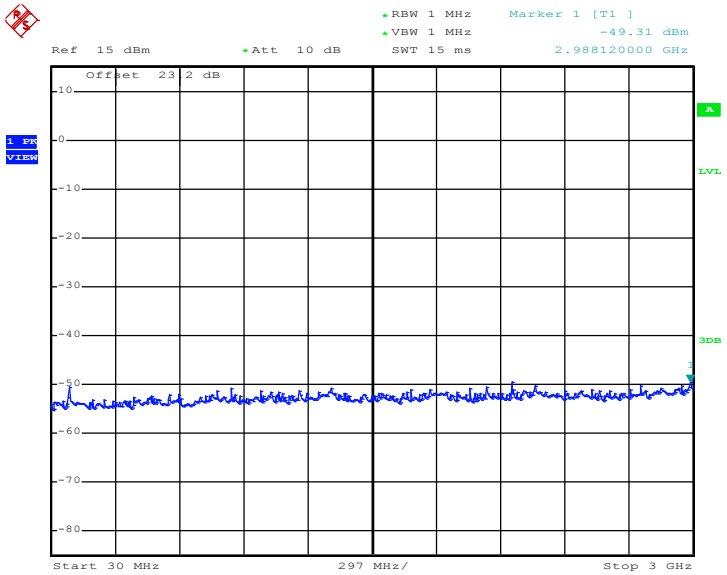
Date: 19.MAR.2011 18:06:19

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



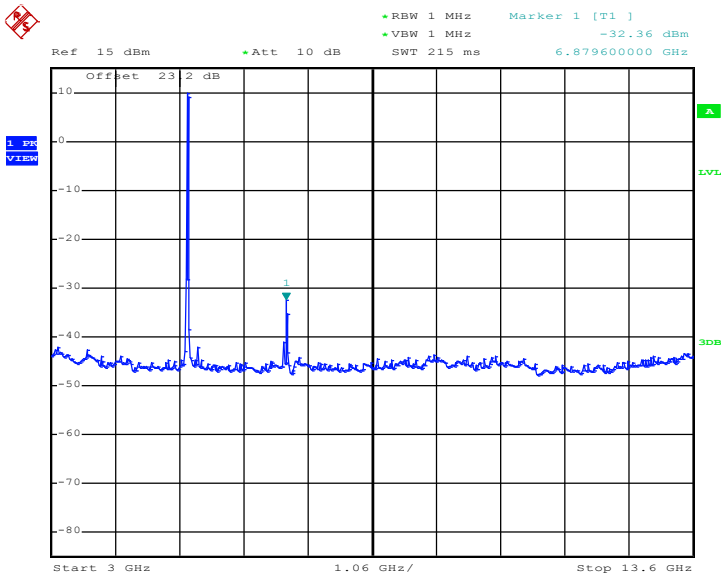
Date: 19.MAR.2011 18:06:31

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



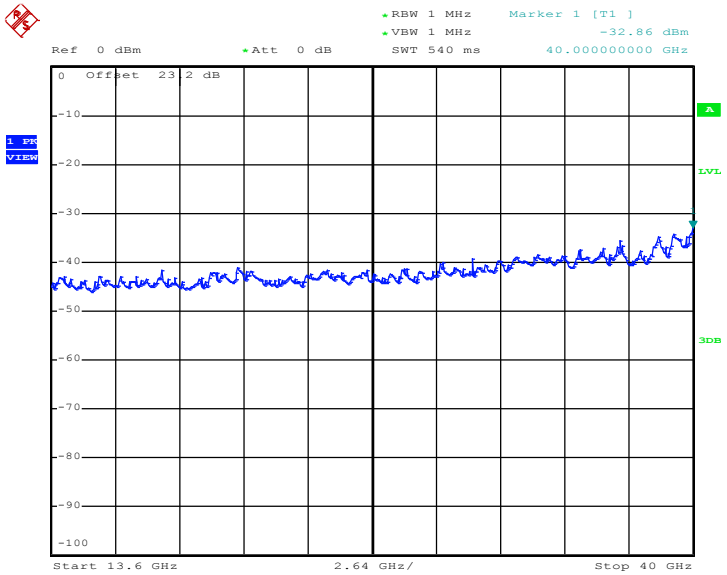
Date: 19.MAR.2011 18:09:53

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



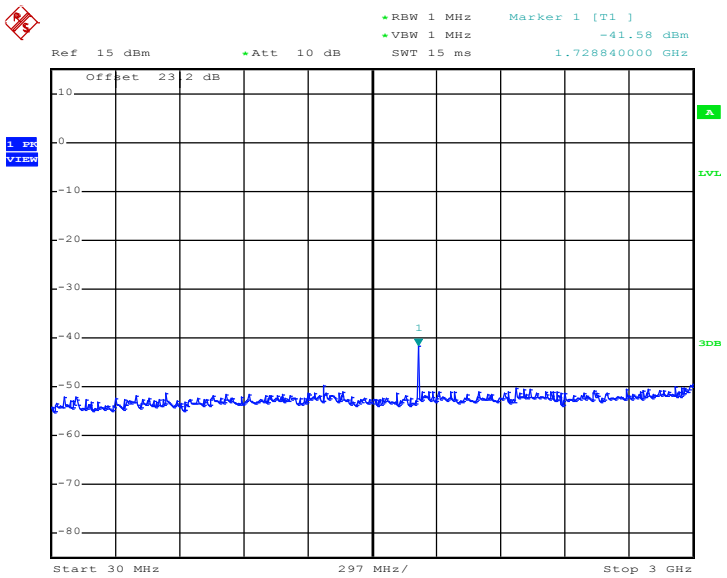
Date: 19.MAR.2011 18:10:05

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



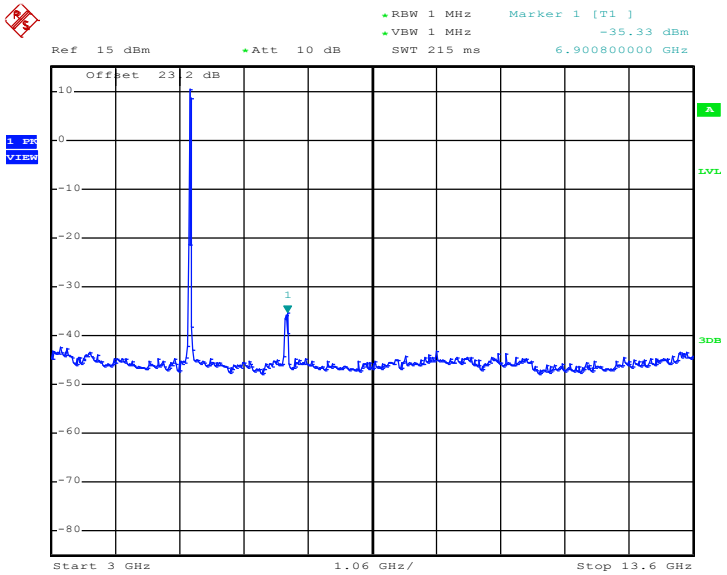
Date: 19.MAR.2011 18:10:17

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



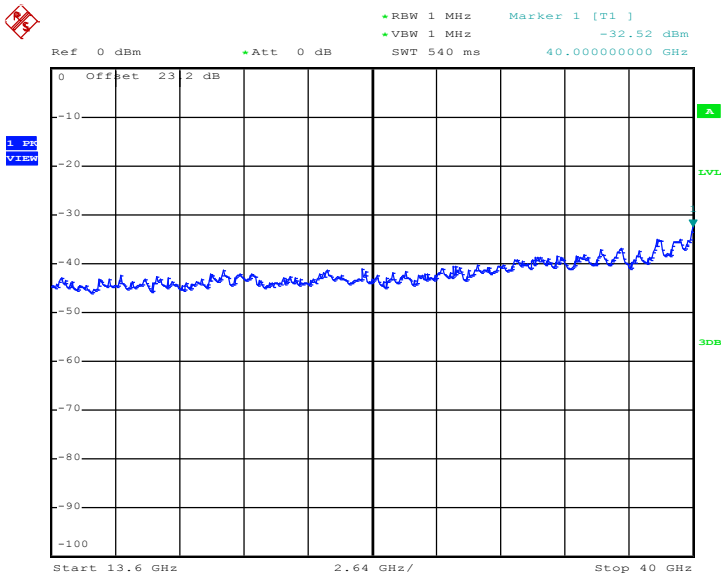
Date: 19.MAR.2011 18:10:50

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



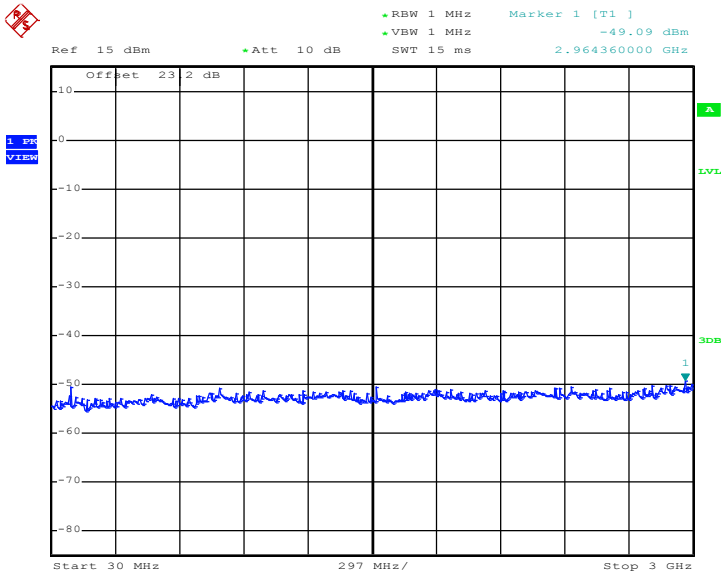
Date: 19.MAR.2011 18:11:02

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



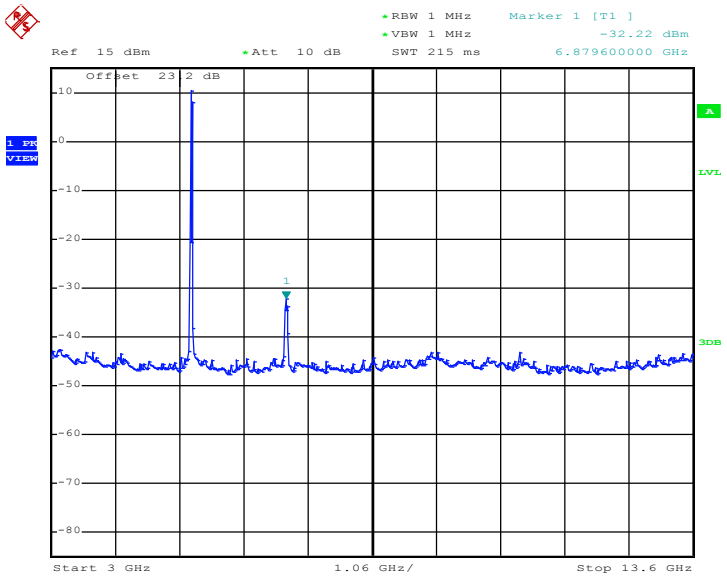
Date: 19.MAR.2011 19:07:57

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



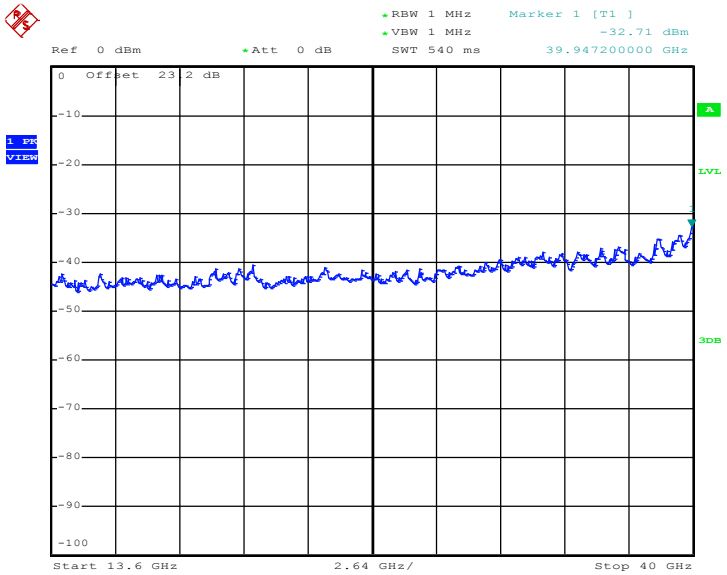
Date: 19.MAR.2011 18:33:38

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



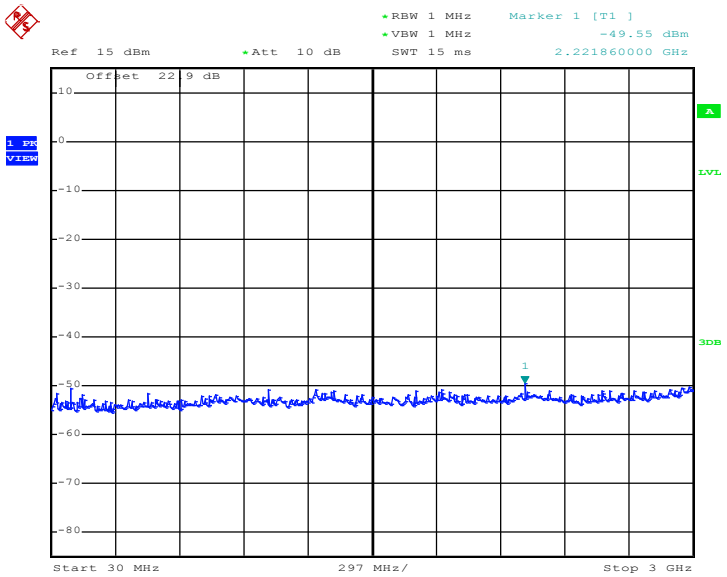
Date: 19.MAR.2011 18:33:50

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



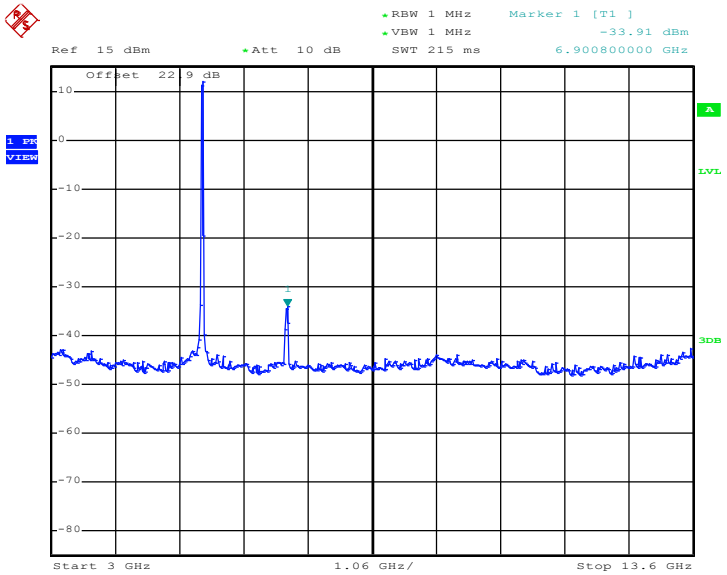
Date: 19.MAR.2011 18:34:02

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



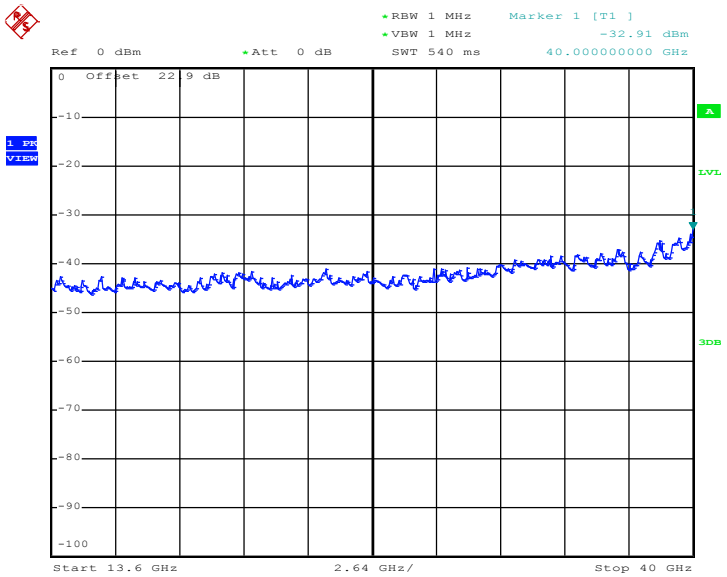
Date: 19.MAR.2011 18:35:11

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



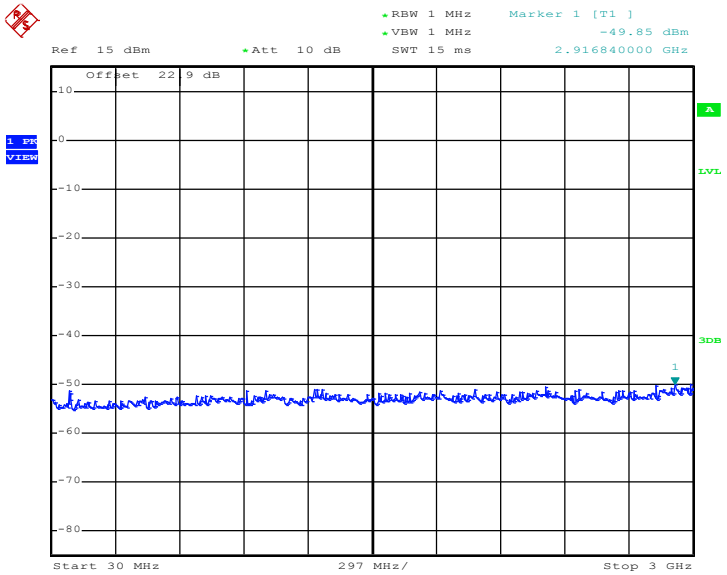
Date: 19.MAR.2011 18:35:23

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



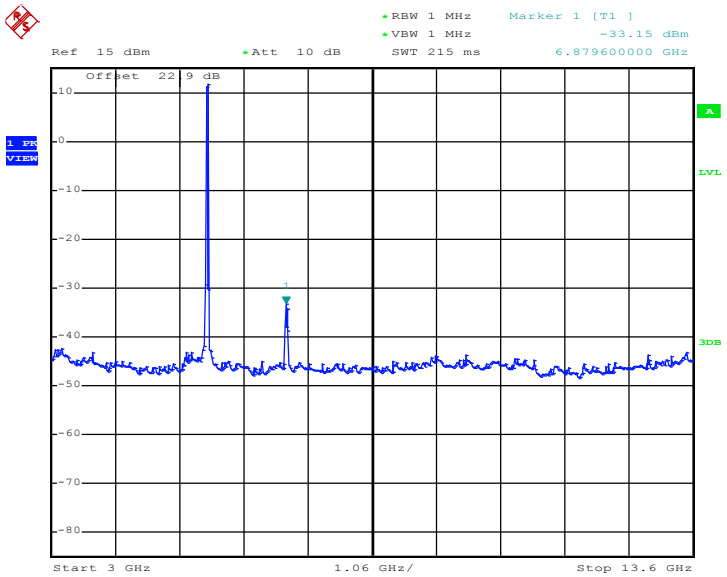
Date: 19.MAR.2011 18:35:35

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



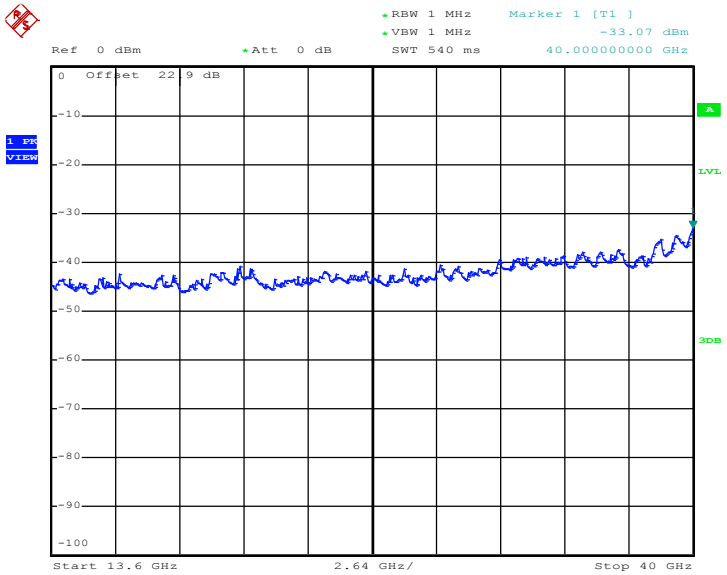
Date: 19.MAR.2011 18:36:22

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



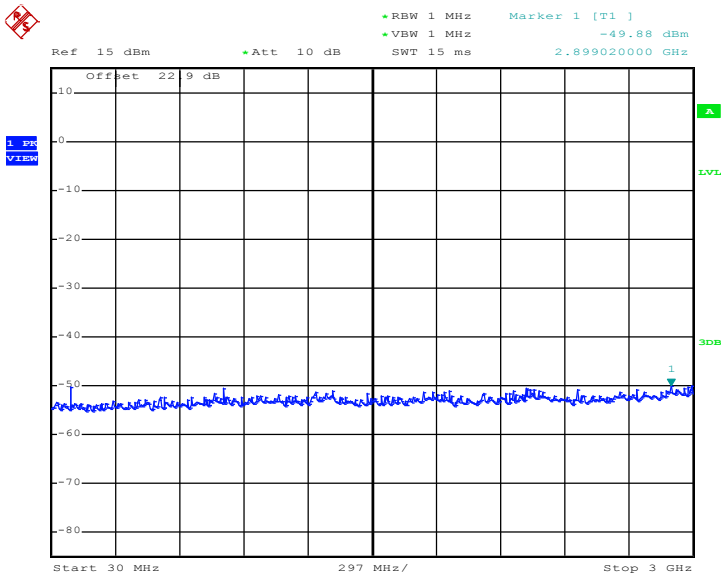
Date: 19.MAR.2011 18:36:34

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



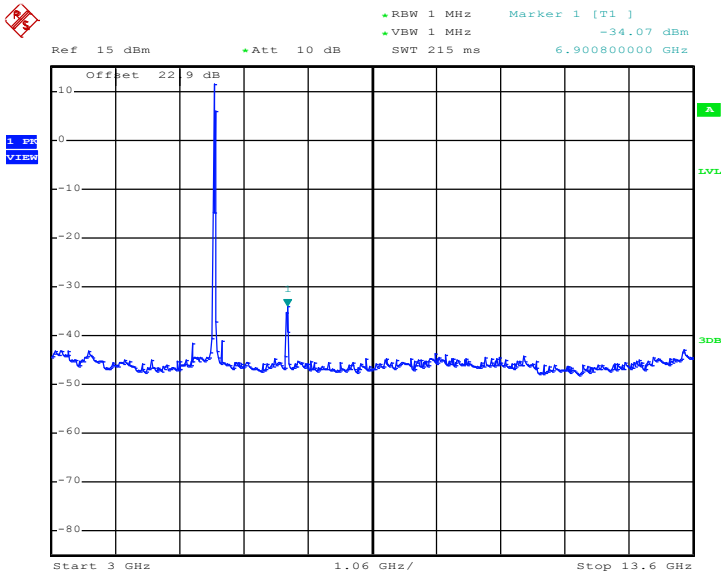
Date: 19.MAR.2011 18:36:46

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



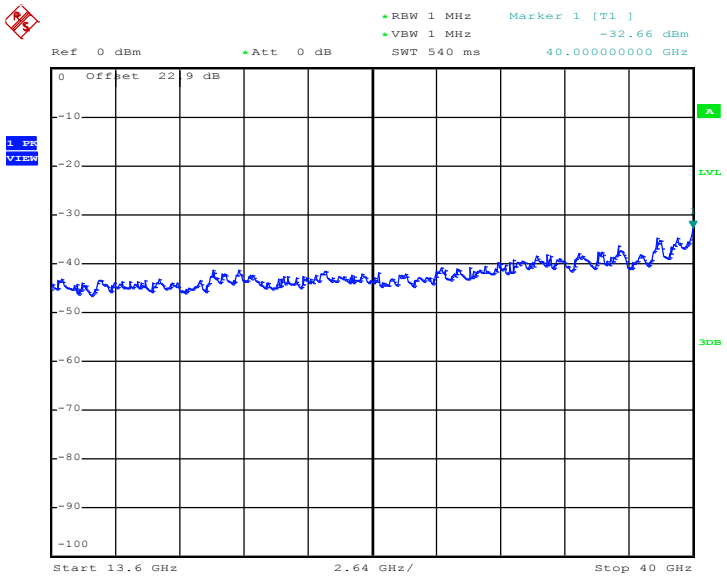
Date: 19.MAR.2011 18:38:22

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℃
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

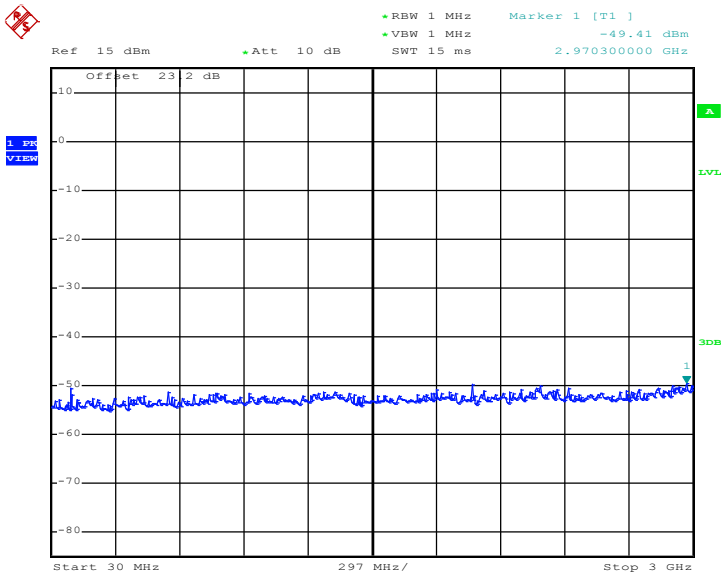
<3 GHz ~ 13.6 GHz>

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>

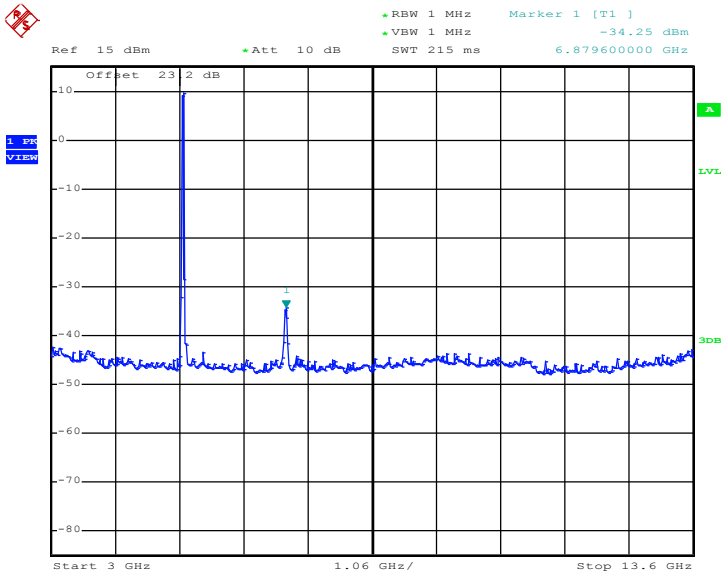
Channel	Frequency (MHz)	Frequency (MHz)	Level (dBm)	Antenna Gain (dBi)	EIRP Test Result (dBm)	Limit (dBm)
36	5180	40000	-32.25	4.85	-27.4	-27
44	5220	39947.2	-32.23	4.85	-27.38	-27
48	5240	40000	-32.96	4.85	-28.11	-27
52	5260	40000	-32.38	4.86	-27.52	-27
60	5300	40000	-32.52	4.86	-27.66	-27
64	5320	40000	-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



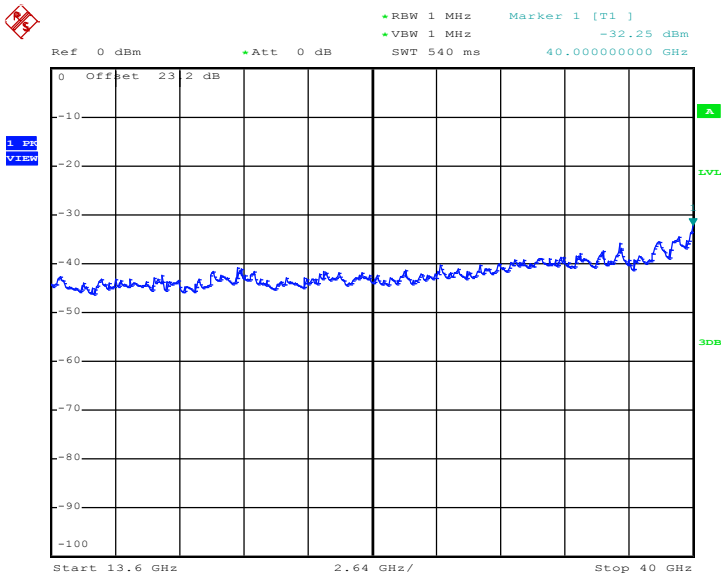
Date: 19.MAR.2011 19:04:04

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



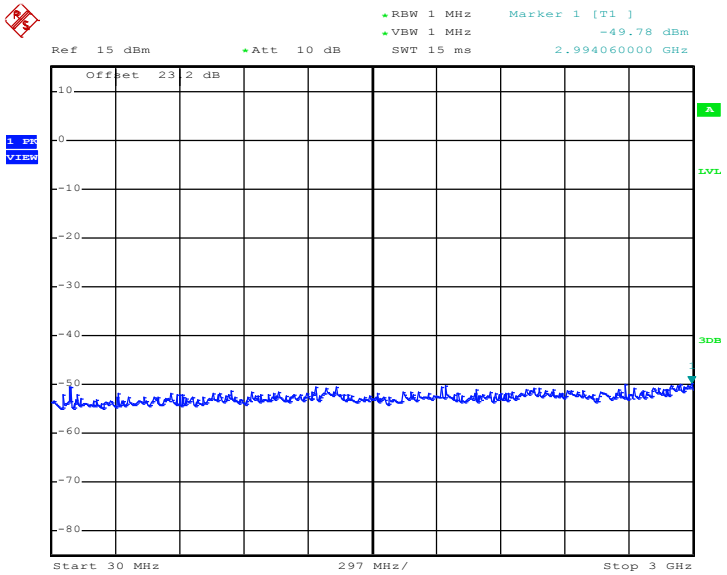
Date: 19.MAR.2011 19:04:16

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



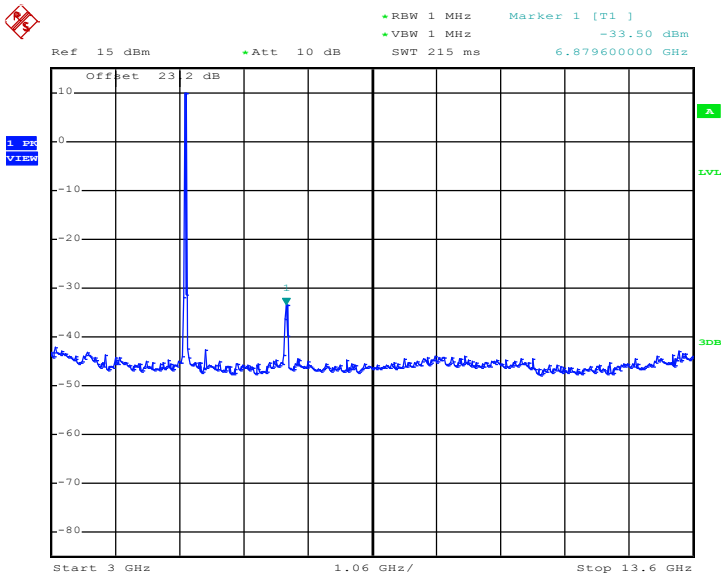
Date: 19.MAR.2011 19:04:28

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



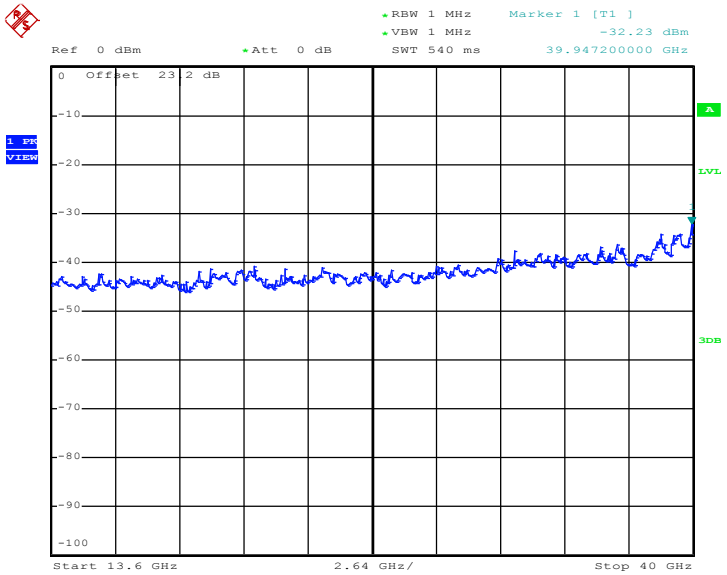
Date: 19.MAR.2011 19:04:57

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



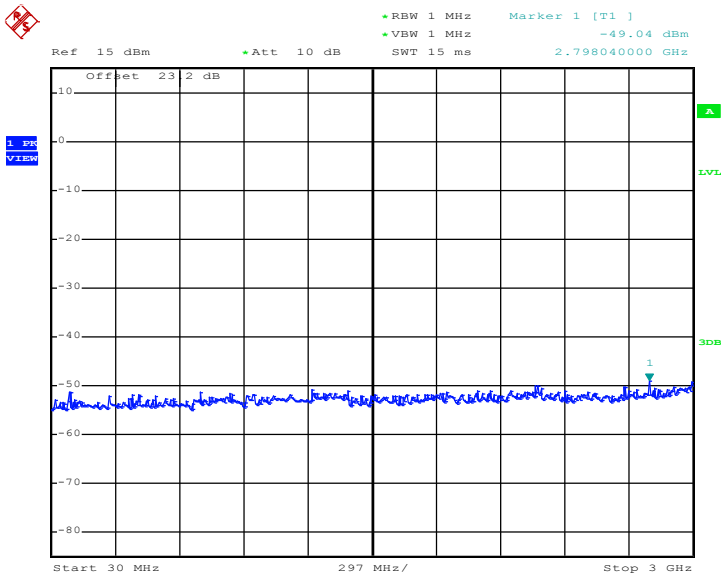
Date: 19.MAR.2011 19:05:09

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



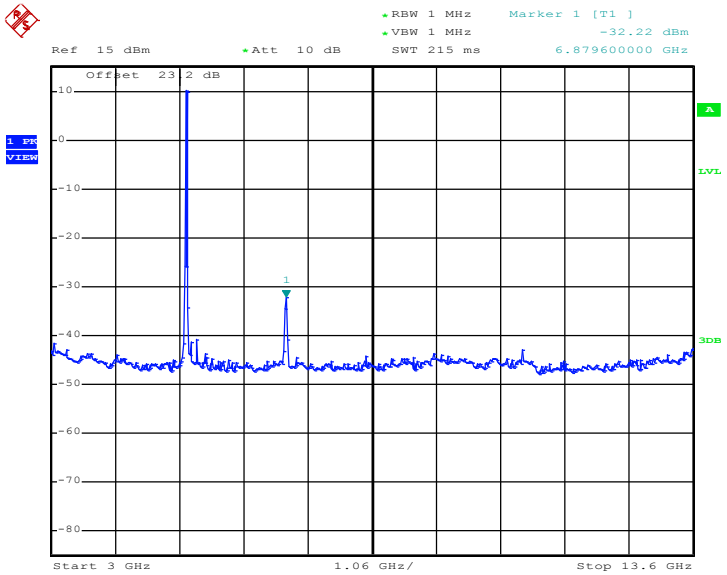
Date: 19.MAR.2011 19:05:21

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



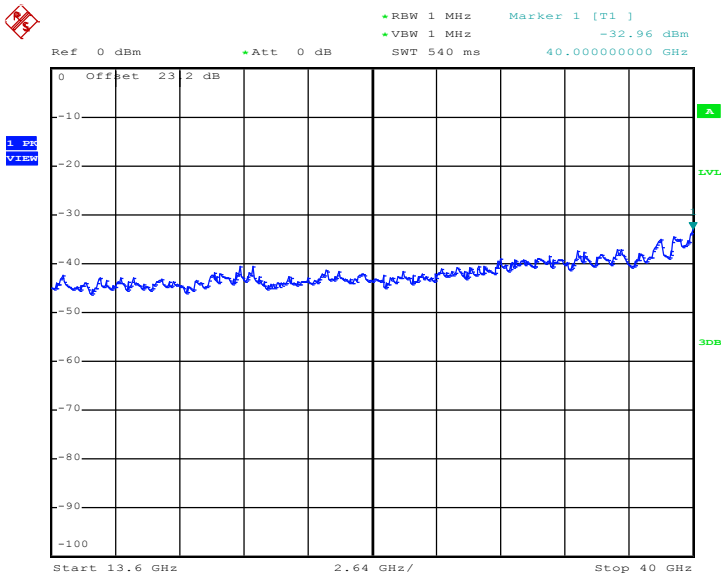
Date: 19.MAR.2011 19:05:47

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



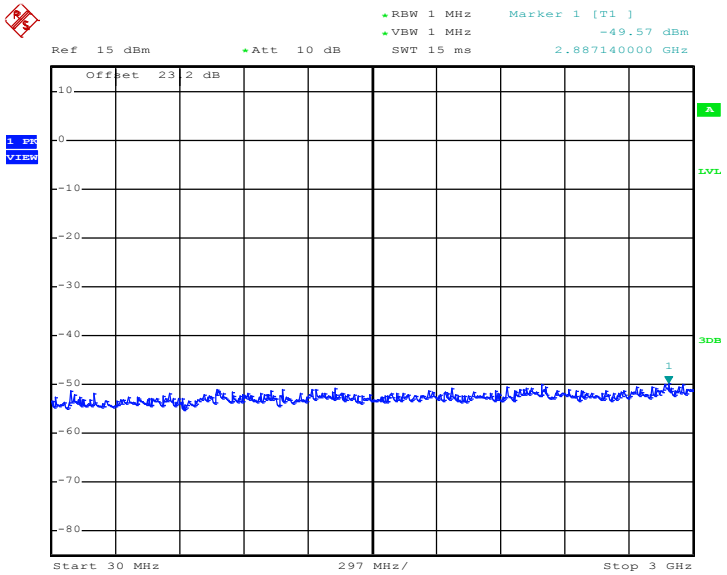
Date: 19.MAR.2011 19:05:58

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



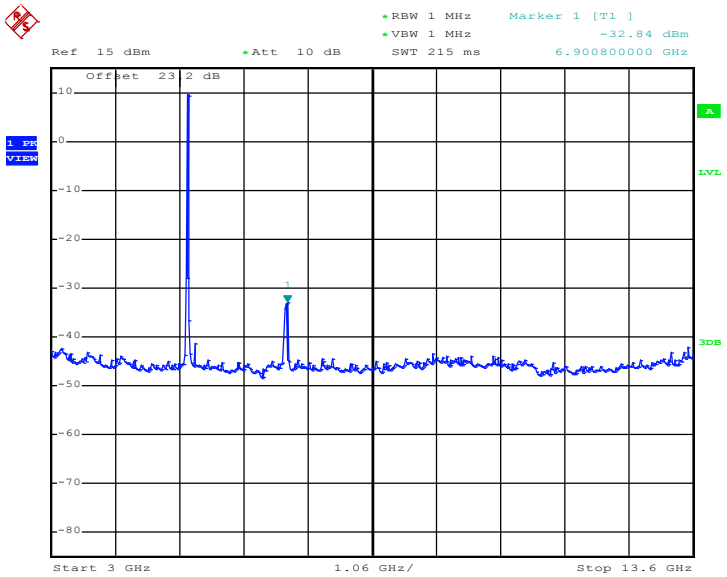
Date: 19.MAR.2011 19:06:10

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



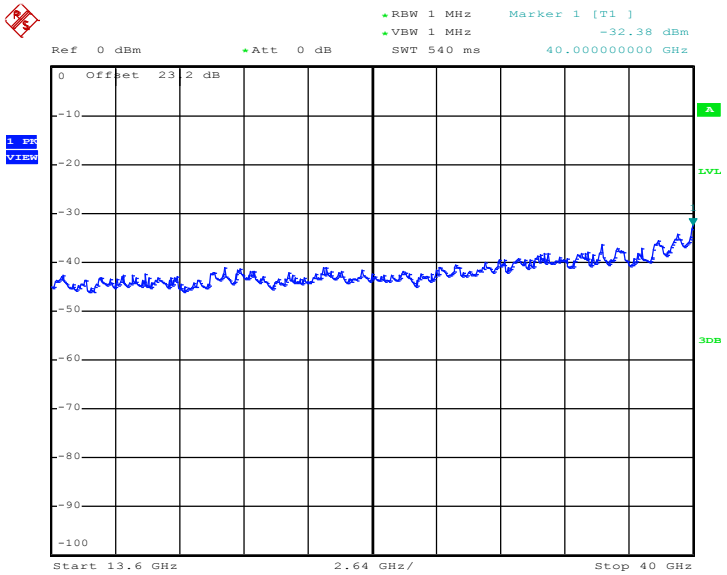
Date: 19.MAR.2011 19:06:39

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



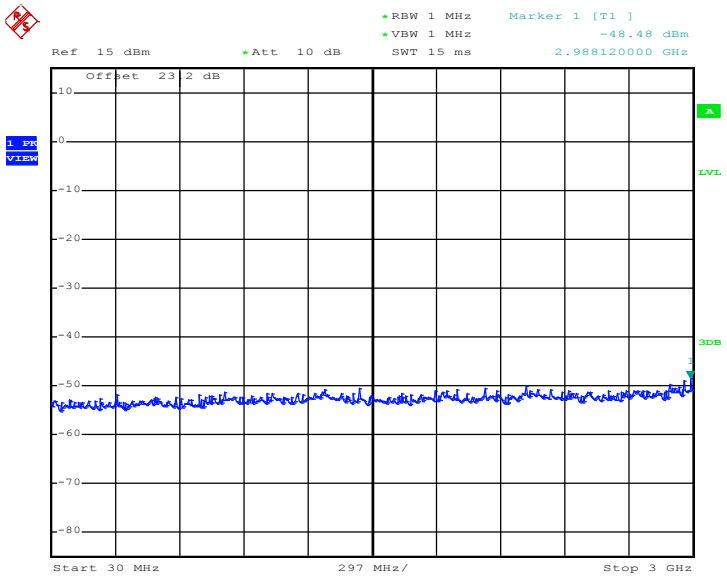
Date: 19.MAR.2011 19:06:51

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



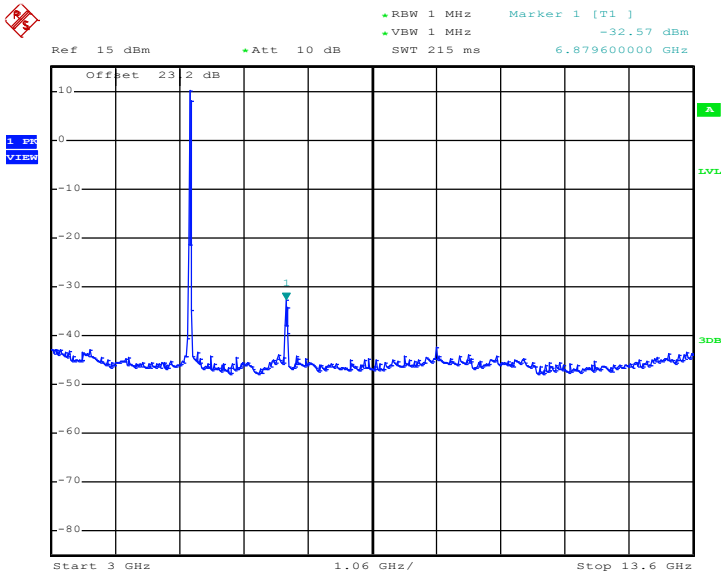
Date: 19.MAR.2011 19:07:03

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



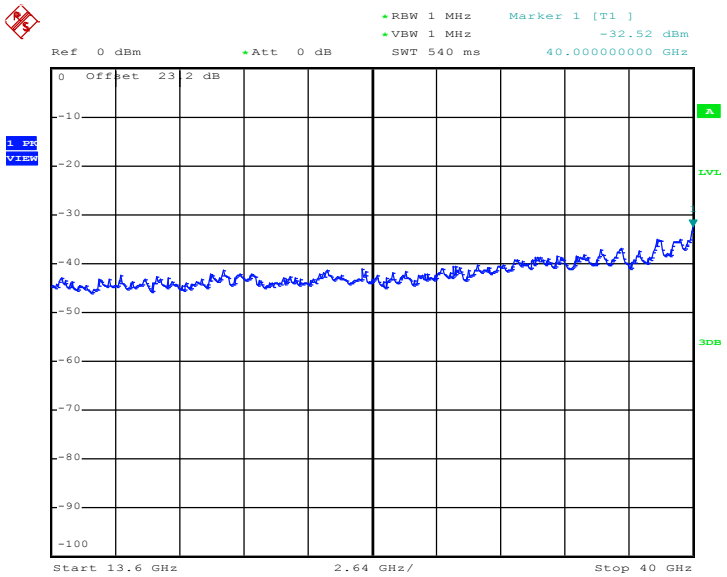
Date: 19.MAR.2011 19:07:33

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



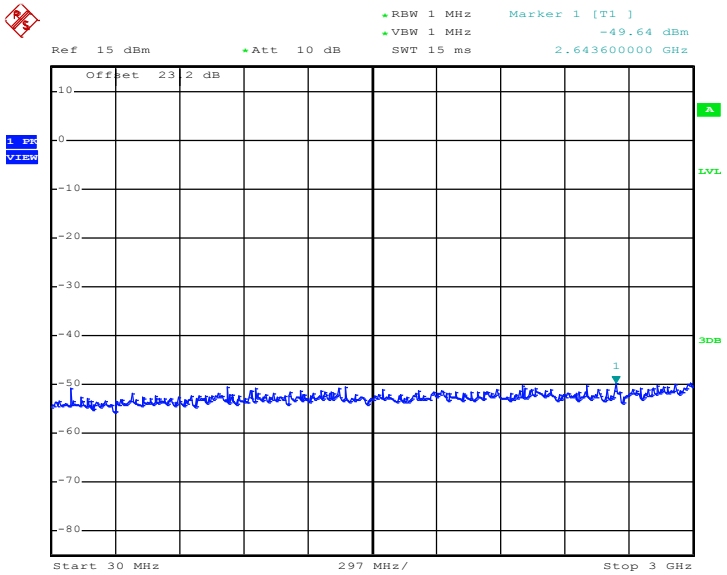
Date: 19.MAR.2011 19:07:45

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



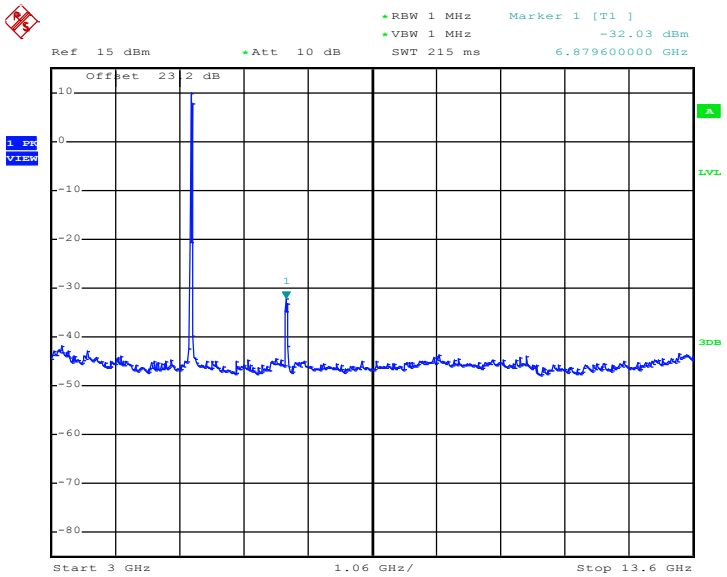
Date: 19.MAR.2011 19:07:57

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



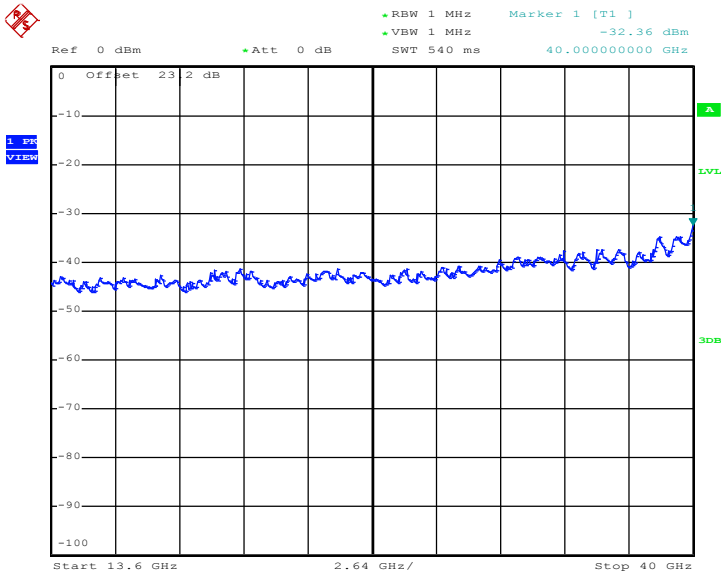
Date: 19.MAR.2011 19:08:25

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



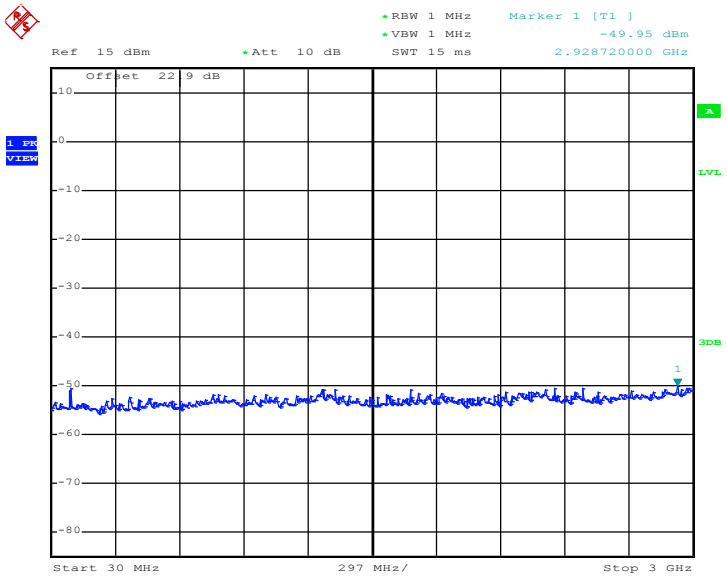
Date: 19.MAR.2011 19:08:37

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



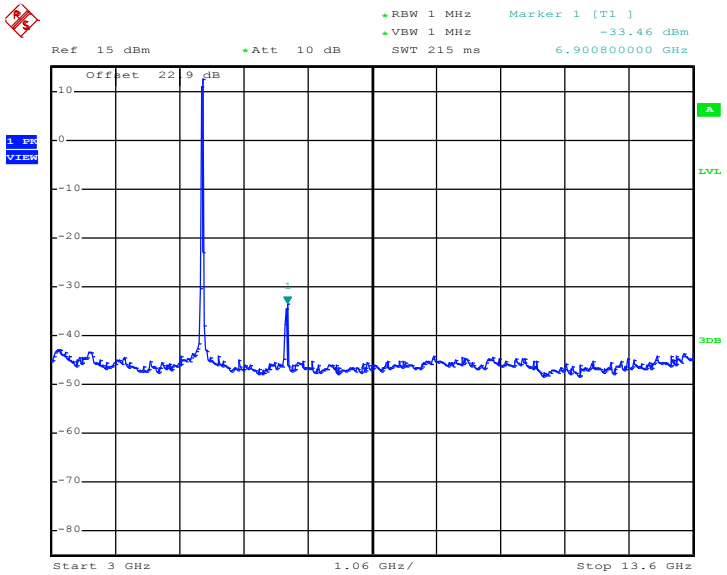
Date: 19.MAR.2011 19:08:48

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



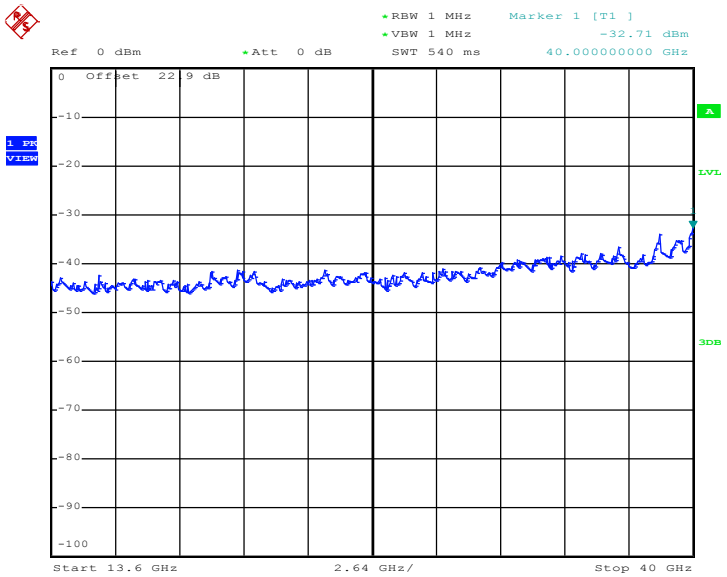
Date: 19.MAR.2011 19:09:20

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



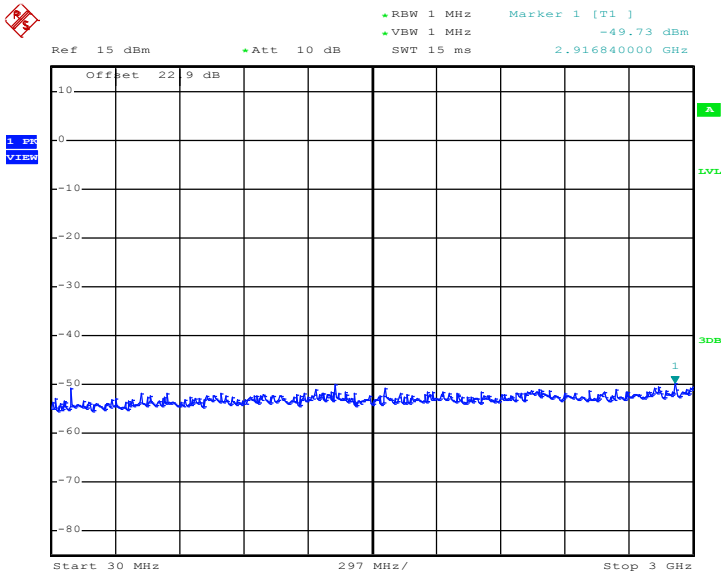
Date: 19.MAR.2011 19:09:32

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



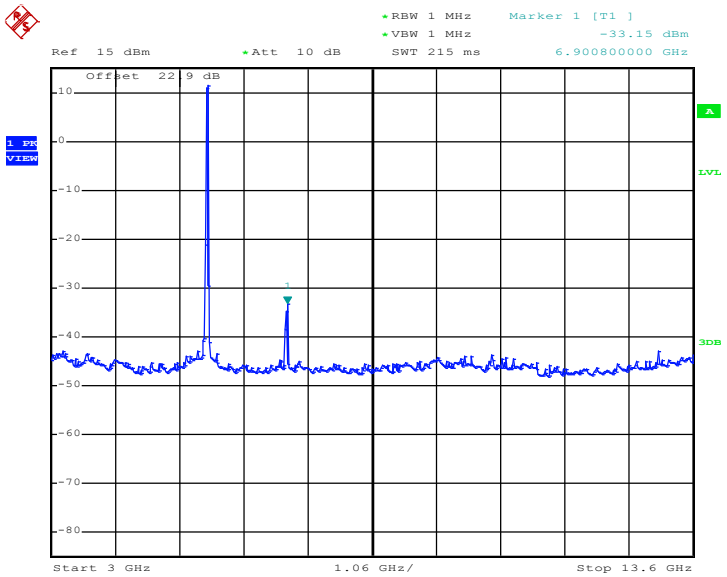
Date: 19.MAR.2011 19:09:44

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



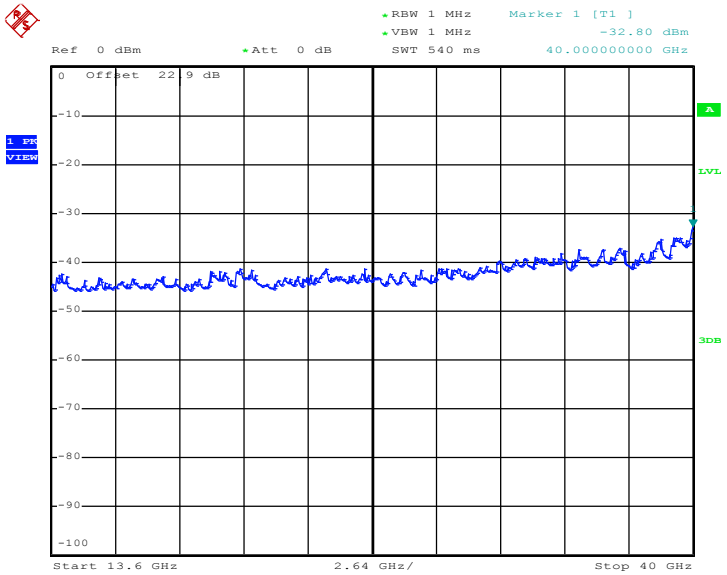
Date: 19.MAR.2011 19:10:27

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



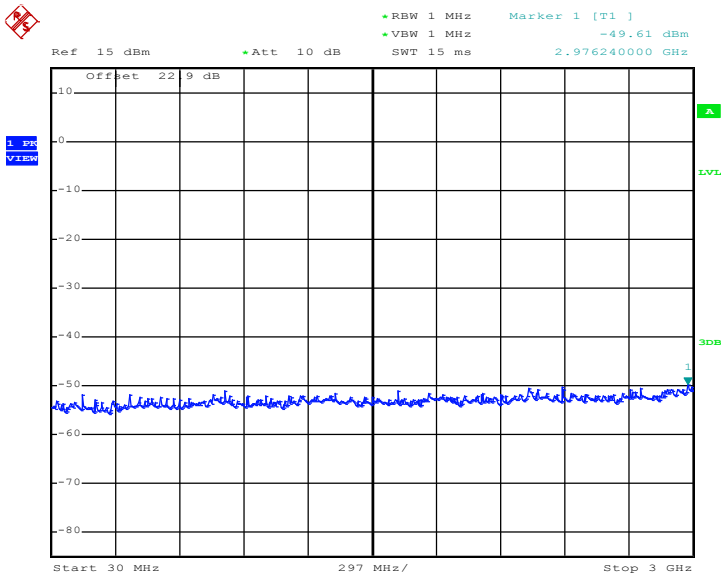
Date: 19.MAR.2011 19:10:39

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



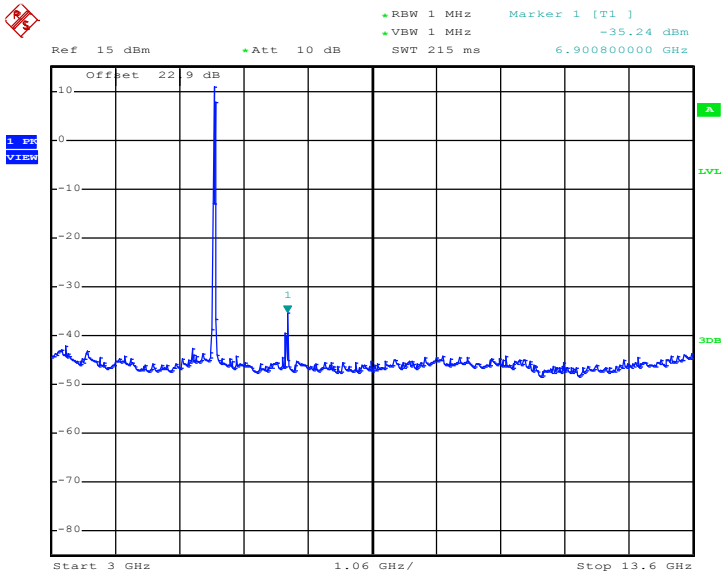
Date: 19.MAR.2011 19:10:51

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



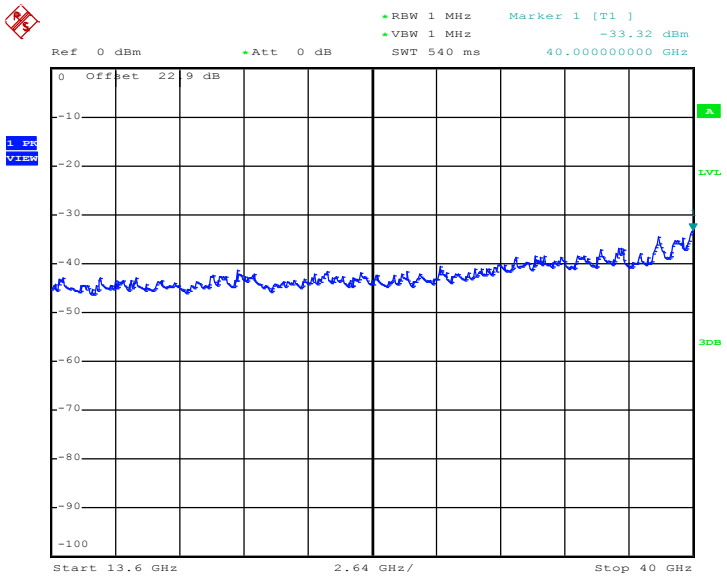
Date: 19.MAR.2011 19:13:50

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

3.7 AC Conducted Emission Measurement

3.7.1 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.

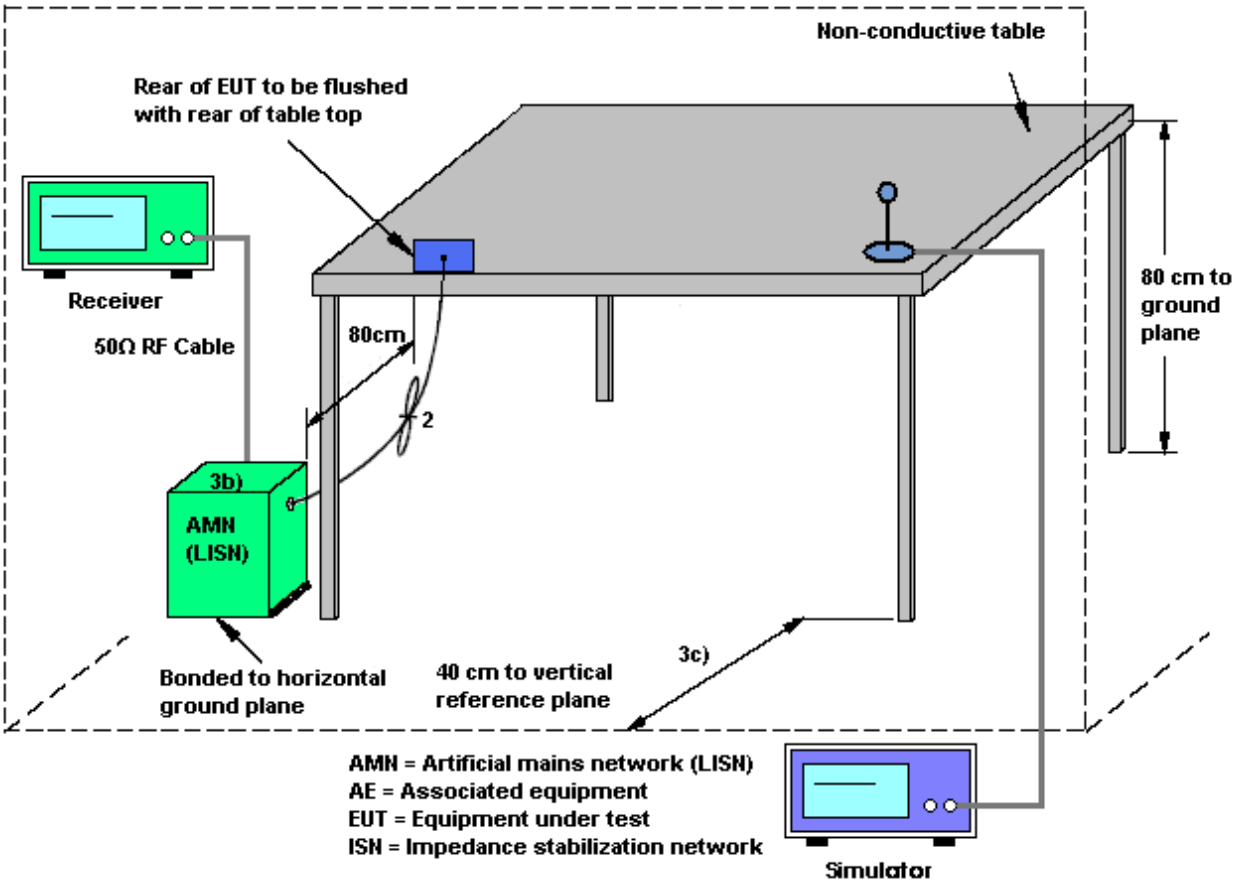
3.7.2 Measuring Instruments

See list of measuring instruments of this test report.

3.7.3 Test Procedures

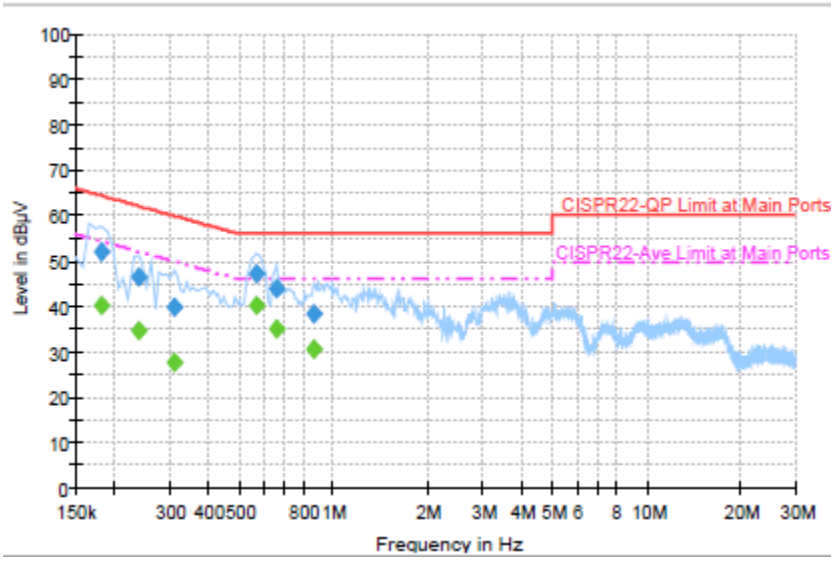
1. Please follow the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All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

3.7.4 Test Setup



3.7.5 Test Result of AC Conducted Emission

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



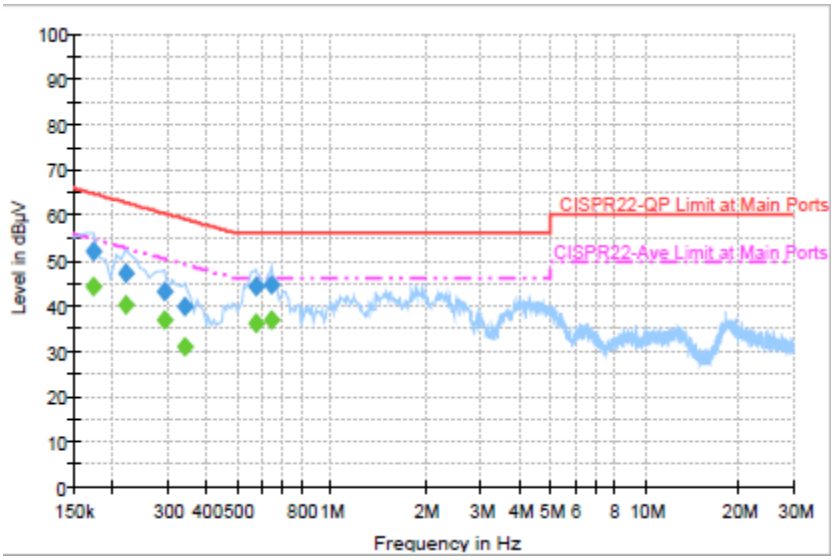
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.182000	51.9	Off	L1	19.4	12.5	64.4
0.238000	46.5	Off	L1	19.4	15.7	62.2
0.310000	39.9	Off	L1	19.4	20.1	60.0
0.566000	47.3	Off	L1	19.4	8.7	56.0
0.662000	44.0	Off	L1	19.4	12.0	56.0
0.870000	38.2	Off	L1	19.5	17.8	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.182000	40.2	Off	L1	19.4	14.2	54.4
0.238000	34.6	Off	L1	19.4	17.6	52.2
0.310000	27.5	Off	L1	19.4	22.5	50.0
0.566000	40.1	Off	L1	19.4	5.9	46.0
0.662000	35.2	Off	L1	19.4	10.8	46.0
0.870000	30.7	Off	L1	19.5	15.3	46.0

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



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	52.0	Off	N	19.4	12.8	64.8
0.222000	47.1	Off	N	19.4	15.6	62.7
0.294000	43.2	Off	N	19.4	17.2	60.4
0.342000	39.8	Off	N	19.4	19.4	59.2
0.574000	44.2	Off	N	19.4	11.8	56.0
0.646000	44.8	Off	N	19.4	11.2	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	44.1	Off	N	19.4	10.7	54.8
0.222000	40.2	Off	N	19.4	12.5	52.7
0.294000	37.0	Off	N	19.4	13.4	50.4
0.342000	31.1	Off	N	19.4	18.1	49.2
0.574000	36.3	Off	N	19.4	9.7	46.0
0.646000	37.0	Off	N	19.4	9.0	46.0

3.8 Radiated Emission Measurement

3.8.1 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.

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

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

3.8.2 Measuring Instruments

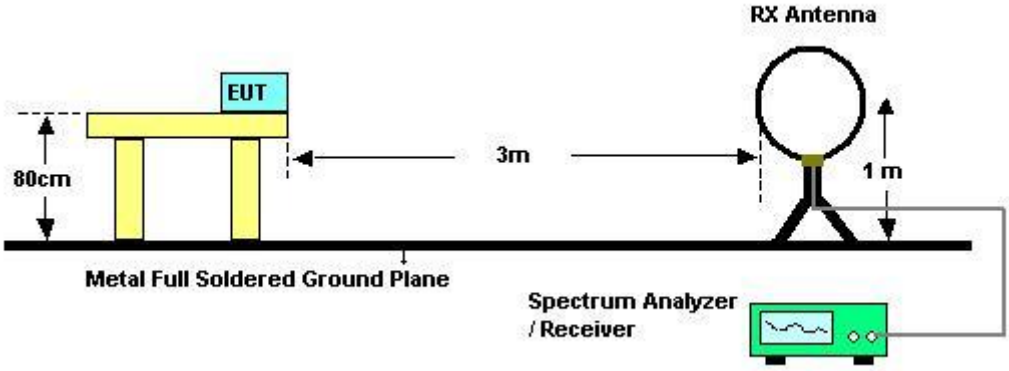
See list of measuring instruments of this test report.

3.8.3 Test Procedures

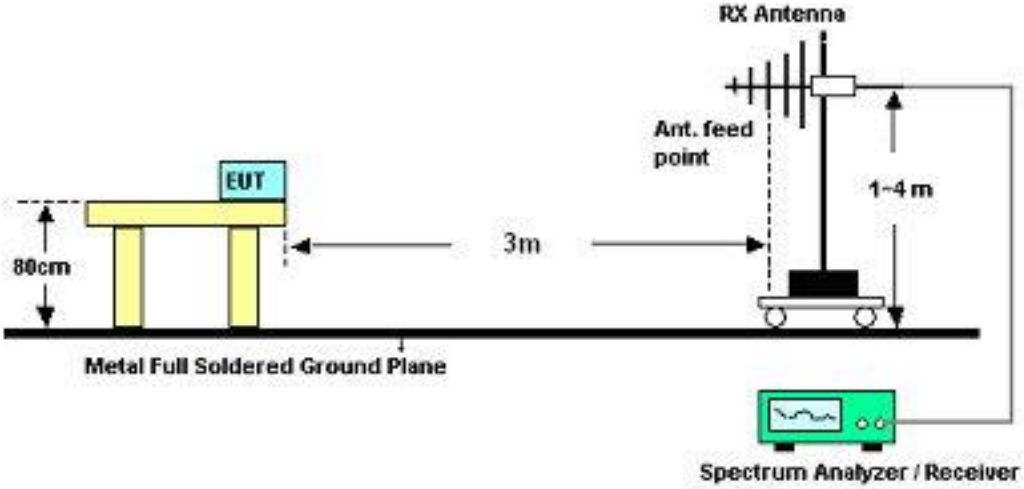
1. The testing follows the guidelines in FCC Public Notice DA 02-2138, (Measurement Guidelines of UNII)
2. The EUT was placed on a rotatable table top 0.8 meter above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna 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.

3.8.4 Test Setup

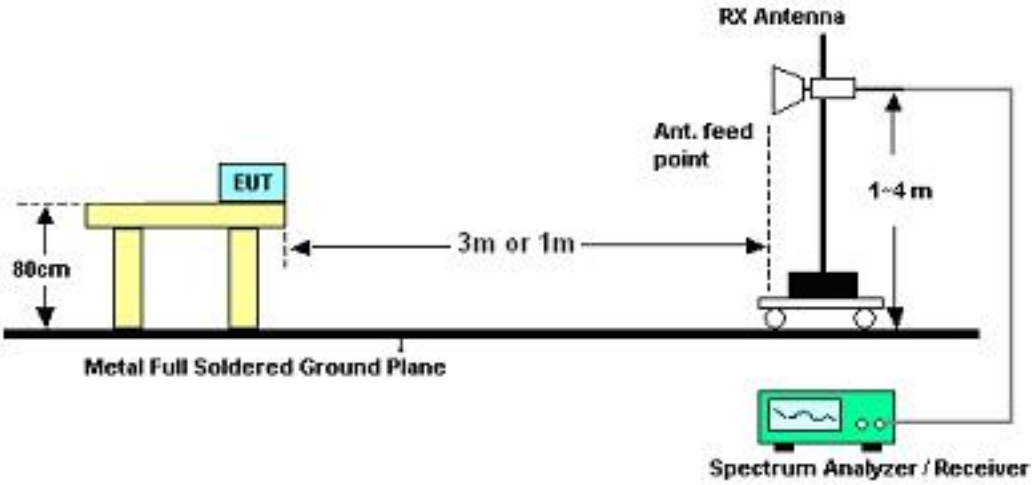
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

Temperature	22~26˚C	Humidity	47~51%
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 (specific distance / test distance) (dB);

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

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

Test Mode :	Mode 1	**Temperature :**	22~26℃
Test Channel :	36	**Relative Humidity :**	47~51%
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
30.81	19.79	-20.21	40	34.44	16.27	0.54	31.46	-	-	Peak
240.06	25.72	-20.28	46	43.63	11.98	1.53	31.42	-	-	Peak
287.85	32.43	-13.57	46	48.81	13.27	1.68	31.33	-	-	Peak
335	33.13	-12.87	46	48.03	14.54	1.87	31.31	147	185	Peak
358.1	32.65	-13.35	46	46.61	15.27	2.04	31.27	-	-	Peak
407.8	29.8	-16.2	46	42.11	16.69	2.17	31.17	-	-	Peak
5150	42.55	-11.45	54	32.54	34.25	9.41	33.65	100	16	Average
5150	58.44	-15.56	74	48.43	34.25	9.41	33.65	100	16	Peak
5180	96.42	-	-	86.29	34.28	9.45	33.6	100	16	Average
5180	108	-	-	97.87	34.28	9.45	33.6	100	16	Peak
5350	52.64	-21.36	74	41.71	34.45	9.74	33.26	100	16	Peak
5350	40.64	-13.36	54	29.71	34.45	9.74	33.26	100	16	Average

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	30.56	-9.44	40	45.67	15.8	0.56	31.47	108	223	Peak
106.41	23.07	-20.43	43.5	43.22	10.37	1.03	31.55	-	-	Peak
180.66	21.85	-21.65	43.5	43.09	9.04	1.25	31.53	-	-	Peak
358.1	21.29	-24.71	46	35.25	15.27	2.04	31.27	-	-	Peak
598.9	21.91	-24.09	46	30.41	19.74	2.68	30.92	-	-	Peak
659.8	24.75	-21.25	46	32.32	20.43	2.86	30.86	-	-	Peak
5150	59.22	-14.78	74	49.21	34.25	9.41	33.65	100	265	Peak
5150	42.77	-11.23	54	32.76	34.25	9.41	33.65	100	265	Average
5180	98.25	-	-	88.12	34.28	9.45	33.6	100	265	Average
5180	108.85	-	-	98.72	34.28	9.45	33.6	100	265	Peak
5350	51.95	-22.05	74	41.02	34.45	9.74	33.26	100	265	Peak
5350	40.78	-13.22	54	29.85	34.45	9.74	33.26	100	265	Average
6902	58.51	-9.79	68.3	47.21	35.66	9.89	34.25	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
31.89	20.35	-19.65	40	35.22	16.04	0.55	31.46	-	-	Peak
216.3	24.04	-21.96	46	43.83	10.27	1.4	31.46	-	-	Peak
287.85	32.54	-13.46	46	48.92	13.27	1.68	31.33	-	-	Peak
310.5	34.7	-11.3	46	50.44	13.79	1.79	31.32	142	176	Peak
358.1	33.31	-12.69	46	47.27	15.27	2.04	31.27	-	-	Peak
407.8	28.64	-17.36	46	40.95	16.69	2.17	31.17	-	-	Peak
5014	52.61	-21.39	74	43.27	34.12	9.17	33.95	100	17	Peak
5014	39.32	-14.68	54	29.98	34.12	9.17	33.95	100	17	Average
5220	96.33	-	-	85.98	34.32	9.53	33.5	100	17	Average
5220	106.68	-	-	96.33	34.32	9.53	33.5	100	17	Peak
5374	53.93	-20.07	74	42.89	34.47	9.78	33.21	100	17	Peak
5374	40.8	-13.2	54	29.76	34.47	9.78	33.21	100	17	Average

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
32.97	29.77	-10.23	40	44.88	15.8	0.56	31.47	103	229	Peak
65.37	24.17	-15.83	40	48.93	5.98	0.8	31.54	-	-	Peak
183.9	21.68	-21.82	43.5	42.89	9.05	1.26	31.52	-	-	Peak
407.8	20.25	-25.75	46	32.56	16.69	2.17	31.17	-	-	Peak
598.9	22.25	-23.75	46	30.75	19.74	2.68	30.92	-	-	Peak
831.3	24.9	-21.1	46	29.56	22.83	3.22	30.71	-	-	Peak
5124	52.33	-21.67	74	42.43	34.23	9.37	33.7	100	266	Peak
5124	40.1	-13.9	54	30.2	34.23	9.37	33.7	100	266	Average
5220	109.19	-	-	98.84	34.32	9.53	33.5	100	266	Peak
5220	97.97	-	-	87.62	34.32	9.53	33.5	100	266	Average
5372	53.67	-20.33	74	42.63	34.47	9.78	33.21	100	266	Peak
5372	40.83	-13.17	54	29.79	34.47	9.78	33.21	100	266	Average
6900	58.5	-9.8	68.3	47.2	35.66	9.89	34.25	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	20.17	-19.83	40	34.82	16.27	0.54	31.46	-	-	Peak
216.3	23.81	-22.19	46	43.6	10.27	1.4	31.46	-	-	Peak
287.85	32.24	-13.76	46	48.62	13.27	1.68	31.33	153	241	Peak
335	29.37	-16.63	46	44.27	14.54	1.87	31.31	-	-	Peak
383.3	31.9	-14.1	46	44.97	16.05	2.11	31.23	-	-	Peak
407.8	31.62	-14.38	46	43.93	16.69	2.17	31.17	-	-	Peak
5036	52.3	-21.7	74	42.86	34.13	9.21	33.9	125	20	Peak
5036	39.4	-14.6	54	29.96	34.13	9.21	33.9	125	20	Average
5240	106.76	-	-	96.31	34.33	9.57	33.45	125	20	Peak
5240	95.72	-	-	85.27	34.33	9.57	33.45	125	20	Average
5396	55.64	-18.36	74	44.48	34.5	9.82	33.16	125	20	Peak
5396	41.08	-12.92	54	29.92	34.5	9.82	33.16	125	20	Average
6908	59.97	-8.33	68.3	48.66	35.67	9.89	34.25	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
32.97	30.01	-9.99	40	45.12	15.8	0.56	31.47	112	57	Peak
184.17	21.88	-21.62	43.5	43.09	9.05	1.26	31.52	-	-	Peak
232.5	23.82	-22.18	46	42.32	11.43	1.5	31.43	-	-	Peak
312.6	21.9	-24.1	46	37.58	13.85	1.79	31.32	-	-	Peak
478.5	20.82	-25.18	46	31.65	17.86	2.37	31.06	-	-	Peak
780.2	24.4	-21.6	46	29.83	22.15	3.11	30.69	-	-	Peak
5078	52.58	-21.42	74	42.91	34.18	9.29	33.8	110	272	Peak
5078	39.72	-14.28	54	30.05	34.18	9.29	33.8	110	272	Average
5240	99.72	-	-	89.27	34.33	9.57	33.45	110	272	Average
5240	110.27	-	-	99.91	34.33	9.53	33.5	110	272	Peak
5318	59.56	-8.74	68.3	48.75	34.42	9.7	33.31	100	0	Peak
5396	41.58	-12.42	54	30.42	34.5	9.82	33.16	110	272	Average
5396	53.61	-20.39	74	42.45	34.5	9.82	33.16	110	272	Peak
6910	61.67	-6.63	68.3	50.36	35.67	9.89	34.25	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
30.81	20.15	-19.85	40	34.8	16.27	0.54	31.46	-	-	Peak
215.49	24	-19.5	43.5	43.88	10.2	1.39	31.47	-	-	Peak
287.85	30.72	-15.28	46	47.1	13.27	1.68	31.33	-	-	Peak
335	32.5	-13.5	46	47.4	14.54	1.87	31.31	-	-	Peak
358.1	35.33	-10.67	46	49.29	15.27	2.04	31.27	142	248	Peak
407.8	29.05	-16.95	46	41.36	16.69	2.17	31.17	-	-	Peak
5100	53.19	-20.81	74	43.41	34.2	9.33	33.75	100	17	Peak
5100	39.98	-14.02	54	30.2	34.2	9.33	33.75	100	17	Average
5260	106.12	-	-	95.65	34.35	9.57	33.45	100	17	Peak
5260	95.65	-	-	85.07	34.37	9.62	33.41	100	17	Average
5428	53.31	-20.69	74	42.04	34.52	9.86	33.11	100	17	Peak
5428	41.09	-12.91	54	29.82	34.52	9.86	33.11	100	17	Average

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
32.97	30.11	-9.89	40	45.22	15.8	0.56	31.47	115	336	Peak
54.3	21.23	-18.77	40	44.82	7.24	0.72	31.55	-	-	Peak
180.93	21.75	-21.75	43.5	42.99	9.04	1.25	31.53	-	-	Peak
346.9	21.48	-24.52	46	35.89	14.93	1.95	31.29	-	-	Peak
539.4	21.86	-24.14	46	31.5	18.83	2.53	31	-	-	Peak
780.2	24.51	-21.49	46	29.94	22.15	3.11	30.69	-	-	Peak
5142	52.93	-21.07	74	42.92	34.25	9.41	33.65	110	274	Peak
5142	39.7	-14.3	54	29.69	34.25	9.41	33.65	110	274	Average
5260	109.73	-	-	99.15	34.37	9.62	33.41	110	274	Peak
5260	99.34	-	-	88.76	34.37	9.62	33.41	110	274	Average
5420	55.77	-18.23	74	44.5	34.52	9.86	33.11	110	274	Peak
5420	41.99	-12.01	54	30.72	34.52	9.86	33.11	110	274	Average
6900	61.84	-6.46	68.3	50.54	35.66	9.89	34.25	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	25.11	-14.89	40	39.76	16.27	0.54	31.46	-	-	Peak
215.49	24.92	-18.58	43.5	44.8	10.2	1.39	31.47	-	-	Peak
287.85	31.37	-14.63	46	47.75	13.27	1.68	31.33	-	-	Peak
310.5	34.75	-11.25	46	50.49	13.79	1.79	31.32	-	-	Peak
358.1	35.05	-10.95	46	49.01	15.27	2.04	31.27	127	252	Peak
419	25.38	-20.62	46	37.44	16.88	2.21	31.15	-	-	Peak
5134	54.44	-19.56	74	44.54	34.23	9.37	33.7	107	18	Peak
5134	40.02	-13.98	54	30.12	34.23	9.37	33.7	107	18	Average
5300	105.86	-	-	95.16	34.4	9.66	33.36	107	18	Peak
5300	95.25	-	-	84.55	34.4	9.66	33.36	107	18	Average
5460	56.31	-17.69	74	44.83	34.55	9.94	33.01	107	18	Peak
5460	42.69	-11.31	54	31.21	34.55	9.94	33.01	107	18	Average
6908	56.89	-11.41	68.3	45.58	35.67	9.89	34.25	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
31.89	30.2	-9.8	40	45.07	16.04	0.55	31.46	100	21	Peak
54.3	21.36	-18.64	40	44.95	7.24	0.72	31.55	-	-	Peak
183.09	22.11	-21.39	43.5	43.32	9.05	1.26	31.52	-	-	Peak
346.9	21.7	-24.3	46	36.11	14.93	1.95	31.29	-	-	Peak
539.4	22.03	-23.97	46	31.67	18.83	2.53	31	-	-	Peak
780.2	24.72	-21.28	46	30.15	22.15	3.11	30.69	-	-	Peak
5150	51.66	-22.34	74	41.65	34.25	9.41	33.65	100	251	Peak
5150	39.55	-14.45	54	29.54	34.25	9.41	33.65	100	251	Average
5300	108.4	-	-	97.7	34.4	9.66	33.36	100	251	Peak
5300	97.37	-	-	86.67	34.4	9.66	33.36	100	251	Average
5454	57.39	-16.61	74	45.91	34.55	9.94	33.01	100	251	Peak
5454	43.37	-10.63	54	31.89	34.55	9.94	33.01	100	251	Average
6902	56.98	-11.32	68.3	45.68	35.66	9.89	34.25	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
216.3	22.87	-23.13	46	42.66	10.27	1.4	31.46	-	-	Peak
264.09	31.42	-14.58	46	48.32	12.89	1.61	31.4	-	-	Peak
287.85	30.54	-15.46	46	46.92	13.27	1.68	31.33	-	-	Peak
310.5	35.26	-10.74	46	51	13.79	1.79	31.32	125	163	Peak
358.1	33.71	-12.29	46	47.67	15.27	2.04	31.27	-	-	Peak
407.8	31.72	-14.28	46	44.03	16.69	2.17	31.17	-	-	Peak
5062	52.2	-21.8	74	42.63	34.17	9.25	33.85	102	174	Peak
5062	39.13	-14.87	54	29.56	34.17	9.25	33.85	102	174	Average
5320	105.66	-	-	94.85	34.42	9.7	33.31	102	174	Peak
5320	95.19	-	-	84.38	34.42	9.7	33.31	102	174	Average
5350	58.77	-15.23	74	47.84	34.45	9.74	33.26	102	174	Peak
5350	42.29	-11.71	54	31.36	34.45	9.74	33.26	102	174	Average

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
32.97	30.58	-9.42	40	45.69	15.8	0.56	31.47	103	97	Peak
106.41	21.26	-22.24	43.5	41.41	10.37	1.03	31.55	-	-	Peak
180.93	22.35	-21.15	43.5	43.59	9.04	1.25	31.53	-	-	Peak
358.1	20.13	-25.87	46	34.09	15.27	2.04	31.27	-	-	Peak
478.5	20.79	-25.21	46	31.62	17.86	2.37	31.06	-	-	Peak
724.9	22.33	-23.67	46	28.82	21.27	3	30.76	-	-	Peak
5134	39.66	-14.34	54	29.76	34.23	9.37	33.7	100	259	Average
5134	51.81	-22.19	74	41.91	34.23	9.37	33.7	100	259	Peak
5320	97.36	-	-	86.55	34.42	9.7	33.31	100	259	Average
5320	108.86	-	-	98.05	34.42	9.7	33.31	100	259	Peak
5350	58.4	-15.6	74	47.47	34.45	9.74	33.26	100	259	Peak
5350	43.25	-10.75	54	32.32	34.45	9.74	33.26	100	259	Average

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
35.13	23.21	-16.79	40	38.77	15.33	0.58	31.47	-	-	Peak
216.3	26.11	-19.89	46	45.9	10.27	1.4	31.46	-	-	Peak
287.85	31.92	-14.08	46	48.3	13.27	1.68	31.33	-	-	Peak
360.2	33.82	-12.18	46	47.7	15.33	2.06	31.27	142	174	Peak
407.8	29.37	-16.63	46	41.68	16.69	2.17	31.17	-	-	Peak
780.2	26.59	-19.41	46	32.02	22.15	3.11	30.69	-	-	Peak
5470	59.29	-9.01	68.3	47.79	34.57	9.94	33.01	100	175	Peak
5500	93.31	-	-	81.6	34.6	10.02	32.91	100	175	Average
5500	104.04	-	-	92.33	34.6	10.02	32.91	100	175	Peak
5725	51.93	-16.37	68.3	40.37	34.82	9.92	33.18	100	175	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
30.54	30.09	-9.91	40	44.74	16.27	0.54	31.46	121	182	Peak
53.22	21.58	-18.42	40	44.91	7.5	0.72	31.55	-	-	Peak
180.93	22.11	-21.39	43.5	43.35	9.04	1.25	31.53	-	-	Peak
346.9	20.12	-25.88	46	34.53	14.93	1.95	31.29	-	-	Peak
478.5	21.91	-24.09	46	32.74	17.86	2.37	31.06	-	-	Peak
713	25.26	-20.74	46	31.99	21.09	2.97	30.79	-	-	Peak
5470	65.2	-3.1	68.3	53.7	34.57	9.94	33.01	112	244	Peak
5500	99.19	-	-	87.48	34.6	10.02	32.91	112	244	Average
5500	109.9	-	-	98.3	34.58	9.98	32.96	112	244	Peak
5725	52.13	-16.17	68.3	40.57	34.82	9.92	33.18	112	244	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	33.5	-12.5	46	49.24	13.79	1.79	31.32	123	156	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	324	Peak
5580	96.38	-	-	84.72	34.67	9.99	33	100	324	Average
5580	106.69	-	-	95.03	34.67	9.99	33	100	324	Peak
5725	51.69	-16.61	68.3	40.13	34.82	9.92	33.18	100	324	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	29.73	-10.27	40	45.06	15.57	0.57	31.47	109	235	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	102	273	Peak
5580	103.28	-	-	91.62	34.67	9.99	33	102	273	Average
5580	113.81	-	-	102.15	34.67	9.99	33	102	273	Peak
5725	52.29	-16.01	68.3	40.73	34.82	9.92	33.18	102	273	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
215.49	25.01	-18.49	43.5	44.89	10.2	1.39	31.47	-	-	Peak
240.06	26.4	-19.6	46	44.31	11.98	1.53	31.42	-	-	Peak
275.97	24.81	-21.19	46	41.44	13.09	1.64	31.36	-	-	Peak
335	33.86	-12.14	46	48.76	14.54	1.87	31.31	142	257	Peak
358.1	33.06	-12.94	46	47.02	15.27	2.04	31.27	-	-	Peak
780.2	26.24	-19.76	46	31.67	22.15	3.11	30.69	-	-	Peak
5470	51.14	-17.16	68.3	39.64	34.57	9.94	33.01	100	326	Peak
5700	95.45	-	-	83.88	34.79	9.93	33.15	100	326	Average
5700	106.08	-	-	94.51	34.79	9.93	33.15	100	326	Peak
5725	46.42	-21.88	68.3	34.86	34.82	9.92	33.18	100	326	Peak
6902	55.82	-12.48	68.3	44.52	35.66	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 :**	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
31.62	30.3	-9.7	40	45.17	16.04	0.55	31.46	104	57	Peak
106.41	21.73	-21.77	43.5	41.88	10.37	1.03	31.55	-	-	Peak
231.42	22.37	-23.63	46	40.95	11.37	1.49	31.44	-	-	Peak
346.9	21.91	-24.09	46	36.32	14.93	1.95	31.29	-	-	Peak
659.8	25	-21	46	32.57	20.43	2.86	30.86	-	-	Peak
988.1	26.57	-27.43	54	28.91	24.74	3.5	30.58	-	-	Peak
5470	51.13	-17.17	68.3	39.63	34.57	9.94	33.01	100	269	Peak
5700	112.31	-	-	100.74	34.79	9.93	33.15	100	269	Peak
5700	101.32	-	-	89.75	34.79	9.93	33.15	100	269	Average
5725	49.89	-18.41	68.3	38.33	34.82	9.92	33.18	100	269	Peak
6908	57.56	-10.74	68.3	46.25	35.67	9.89	34.25	100	0	Peak

Test Mode :	Mode 10	**Temperature :**	22~26
Test Channel :	36	**Relative Humidity :**	47~51
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
215.49	24.65	-18.85	43.5	44.53	10.2	1.39	31.47	-	-	Peak
287.85	33.63	-12.37	46	50.01	13.27	1.68	31.33	-	-	Peak
299.73	26.35	-19.65	46	42.45	13.46	1.77	31.33	-	-	Peak
310.5	35.32	-10.68	46	51.06	13.79	1.79	31.32	125	110	Peak
346.9	32.39	-13.61	46	46.8	14.93	1.95	31.29	-	-	Peak
478.5	24.52	-21.48	46	35.35	17.86	2.37	31.06	-	-	Peak
5150	55.89	-18.11	74	45.88	34.25	9.41	33.65	100	317	Peak
5150	41.66	-12.34	54	31.65	34.25	9.41	33.65	100	317	Average
5180	106.48	-	-	96.35	34.28	9.45	33.6	100	317	Peak
5180	95.4	-	-	85.27	34.28	9.45	33.6	100	317	Average
5406	40.67	-13.33	54	29.42	34.5	9.86	33.11	100	317	Average
5406	52.68	-21.32	74	41.43	34.5	9.86	33.11	100	317	Peak
6910	59.02	-9.28	68.3	47.71	35.67	9.89	34.25	100	0	Peak

Test Mode :	Mode 10	**Temperature :**	22~26
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	30.57	-9.43	40	45.68	15.8	0.56	31.47	100	325	Peak
54.3	21.43	-18.57	40	45.02	7.24	0.72	31.55	-	-	Peak
183.09	22.19	-21.31	43.5	43.4	9.05	1.26	31.52	-	-	Peak
419	20.47	-25.53	46	32.53	16.88	2.21	31.15	-	-	Peak
539.4	22.23	-23.77	46	31.87	18.83	2.53	31	-	-	Peak
956.6	26.44	-19.56	46	29.2	24.34	3.47	30.57	-	-	Peak
5150	57.09	-16.91	74	47.08	34.25	9.41	33.65	100	265	Peak
5150	42.08	-11.92	54	32.07	34.25	9.41	33.65	100	265	Average
5180	107.13	-	-	97	34.28	9.45	33.6	100	265	Peak
5180	96.39	-	-	86.26	34.28	9.45	33.6	100	265	Average
5358	40.54	-13.46	54	29.52	34.45	9.78	33.21	100	265	Average
5358	52.65	-21.35	74	41.63	34.45	9.78	33.21	100	265	Peak
6900	56.63	-11.67	68.3	45.33	35.66	9.89	34.25	100	0	Peak

Test Mode :	Mode 11	**Temperature :**	22~26
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	21.08	-18.92	40	35.73	16.27	0.54	31.46	-	-	Peak
251.94	23.34	-22.66	46	40.51	12.7	1.54	31.41	-	-	Peak
275.97	24.83	-21.17	46	41.46	13.09	1.64	31.36	-	-	Peak
310.5	32.07	-13.93	46	47.81	13.79	1.79	31.32	-	-	Peak
358.1	35.42	-10.58	46	49.38	15.27	2.04	31.27	123	174	Peak
407.8	29.21	-16.79	46	41.52	16.69	2.17	31.17	-	-	Peak
5134	51.9	-22.1	74	42	34.23	9.37	33.7	100	315	Peak
5134	39.47	-14.53	54	29.57	34.23	9.37	33.7	100	315	Average
5220	94.76	-	-	84.41	34.32	9.53	33.5	100	315	Average
5220	105.84	-	-	95.49	34.32	9.53	33.5	100	315	Peak
5390	52.97	-21.03	74	41.83	34.48	9.82	33.16	100	315	Peak
5390	40.61	-13.39	54	29.47	34.48	9.82	33.16	100	315	Average
6900	59.31	-8.99	68.3	48.01	35.66	9.89	34.25	100	0	Peak

Test Mode :	Mode 11	**Temperature :**	22~26
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
32.7	30.02	-9.98	40	45.13	15.8	0.56	31.47	109	307	Peak
271.38	23.55	-22.45	46	40.27	13.01	1.64	31.37	-	-	Peak
285.42	21.74	-24.26	46	38.18	13.23	1.66	31.33	-	-	Peak
659.8	24.21	-21.79	46	31.78	20.43	2.86	30.86	-	-	Peak
791.4	24.38	-21.62	46	29.6	22.33	3.13	30.68	-	-	Peak
976.2	27.16	-26.84	54	29.67	24.58	3.49	30.58	-	-	Peak
5054	53.87	-20.13	74	44.32	34.15	9.25	33.85	100	266	Peak
5054	39.77	-14.23	54	30.22	34.15	9.25	33.85	100	266	Average
5220	106.89	-	-	96.54	34.32	9.53	33.5	100	266	Peak
5220	95.55	-	-	85.2	34.32	9.53	33.5	100	266	Average
5398	52.65	-21.35	74	41.49	34.5	9.82	33.16	100	266	Peak
5398	40.72	-13.28	54	29.56	34.5	9.82	33.16	100	266	Average
6900	56.47	-11.83	68.3	45.17	35.66	9.89	34.25	100	0	Peak

Test Mode :	Mode 12	**Temperature :**	22~26
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
215.49	25.03	-18.47	43.5	44.91	10.2	1.39	31.47	-	-	Peak
264.09	29.66	-16.34	46	46.56	12.89	1.61	31.4	-	-	Peak
287.85	32.35	-13.65	46	48.73	13.27	1.68	31.33	-	-	Peak
335	32.63	-13.37	46	47.53	14.54	1.87	31.31	155	276	Peak
371.4	28.93	-17.07	46	42.41	15.69	2.08	31.25	-	-	Peak
430.9	24.95	-21.05	46	36.76	17.07	2.25	31.13	-	-	Peak
5078	53.11	-20.89	74	43.44	34.18	9.29	33.8	100	315	Peak
5078	39.3	-14.7	54	29.63	34.18	9.29	33.8	100	315	Average
5240	105.6	-	-	95.13	34.35	9.57	33.45	100	315	Peak
5240	93.77	-	-	83.32	34.33	9.57	33.45	100	315	Average
5436	53.14	-20.86	74	41.77	34.53	9.9	33.06	100	315	Peak
5436	40.86	-13.14	54	29.49	34.53	9.9	33.06	100	315	Average
6894	59.79	-8.51	68.3	48.49	35.66	9.89	34.25	100	0	Peak

Test Mode :	Mode 12	**Temperature :**	22~26
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
32.97	30.22	-9.78	40	45.33	15.8	0.56	31.47	104	82	Peak
183.09	22.5	-21	43.5	43.71	9.05	1.26	31.52	-	-	Peak
272.46	26.87	-19.13	46	43.56	13.03	1.64	31.36	-	-	Peak
313.3	20.45	-25.55	46	36.09	13.88	1.8	31.32	-	-	Peak
539.4	21.9	-24.1	46	31.54	18.83	2.53	31	-	-	Peak
780.2	24.04	-21.96	46	29.47	22.15	3.11	30.69	-	-	Peak
5076	54.78	-19.22	74	45.11	34.18	9.29	33.8	125	273	Peak
5076	40.07	-13.93	54	30.4	34.18	9.29	33.8	125	273	Average
5240	108.74	-	-	98.38	34.33	9.53	33.5	125	273	Peak
5240	97.75	-	-	87.3	34.33	9.57	33.45	125	273	Average
5356	53.81	-20.19	74	42.79	34.45	9.78	33.21	125	273	Peak
5356	40.88	-13.12	54	29.86	34.45	9.78	33.21	125	273	Average
6892	54.71	-13.59	68.3	43.41	35.66	9.89	34.25	100	0	Peak

Test Mode :	Mode 13	**Temperature :**	22~26
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
216.3	22.42	-23.58	46	42.21	10.27	1.4	31.46	-	-	Peak
264.09	29.43	-16.57	46	46.33	12.89	1.61	31.4	-	-	Peak
287.85	32.6	-13.4	46	48.98	13.27	1.68	31.33	-	-	Peak
310.5	32.7	-13.3	46	48.44	13.79	1.79	31.32	-	-	Peak
358.1	33.93	-12.07	46	47.89	15.27	2.04	31.27	155	261	Peak
407.8	27.54	-18.46	46	39.85	16.69	2.17	31.17	-	-	Peak
5150	39.82	-14.18	54	29.81	34.25	9.41	33.65	131	177	Average
5150	51.33	-22.67	74	41.32	34.25	9.41	33.65	131	177	Peak
5260	93.51	-	-	82.93	34.37	9.62	33.41	131	177	Average
5260	107.56	-	-	96.98	34.37	9.62	33.41	131	177	Peak
5350	52.01	-21.99	74	41.08	34.45	9.74	33.26	131	177	Peak
5350	40.65	-13.35	54	29.72	34.45	9.74	33.26	131	177	Average
6902	56.74	-11.56	68.3	45.44	35.66	9.89	34.25	131	177	Peak

Test Mode :	Mode 13	**Temperature :**	22~26
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
32.97	30.52	-9.48	40	45.63	15.8	0.56	31.47	121	193	Peak
180.66	22.01	-21.49	43.5	43.25	9.04	1.25	31.53	-	-	Peak
250.05	23.19	-22.81	46	40.4	12.67	1.53	31.41	-	-	Peak
407.8	19.43	-26.57	46	31.74	16.69	2.17	31.17	-	-	Peak
635.3	21.92	-24.08	46	29.84	20.16	2.8	30.88	-	-	Peak
780.2	24.06	-21.94	46	29.49	22.15	3.11	30.69	-	-	Peak
5150	39.75	-14.25	54	29.74	34.25	9.41	33.65	100	256	Average
5150	52.03	-21.97	74	42.02	34.25	9.41	33.65	100	256	Peak
5260	94.14	-	-	83.56	34.37	9.62	33.41	100	256	Average
5260	108.17	-	-	97.59	34.37	9.62	33.41	100	256	Peak
5350	52.77	-21.23	74	41.84	34.45	9.74	33.26	100	256	Peak
5350	40.78	-13.22	54	29.85	34.45	9.74	33.26	100	256	Average
6908	59.07	-9.23	68.3	47.76	35.67	9.89	34.25	100	256	Peak

Test Mode :	Mode 14	**Temperature :**	22~26
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
240.06	27.56	-18.44	46	45.47	11.98	1.53	31.42	-	-	Peak
263.82	28.42	-17.58	46	45.32	12.89	1.61	31.4	-	-	Peak
287.85	32.71	-13.29	46	49.09	13.27	1.68	31.33	-	-	Peak
358.1	35.59	-10.41	46	49.55	15.27	2.04	31.27	126	317	Peak
407.8	29.95	-16.05	46	42.26	16.69	2.17	31.17	-	-	Peak
659.8	23.39	-22.61	46	30.96	20.43	2.86	30.86	-	-	Peak
5150	51.32	-22.68	74	41.31	34.25	9.41	33.65	101	172	Peak
5150	39.59	-14.41	54	29.58	34.25	9.41	33.65	101	172	Average
5300	93.31	-	-	82.61	34.4	9.66	33.36	101	172	Average
5300	107.64	-	-	96.94	34.4	9.66	33.36	101	172	Peak
5350	53.15	-20.85	74	42.22	34.45	9.74	33.26	101	172	Peak
5350	41.12	-12.88	54	30.19	34.45	9.74	33.26	101	172	Average
6918	56.34	-11.96	68.3	45.03	35.67	9.9	34.26	101	172	Peak

Test Mode :	Mode 14	**Temperature :**	22~26
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
32.97	30.19	-9.81	40	45.3	15.8	0.56	31.47	109	36	Peak
177.69	22.21	-21.29	43.5	43.24	9.26	1.24	31.53	-	-	Peak
221.97	30.58	-15.42	46	49.93	10.68	1.43	31.46	-	-	Peak
346.9	20.62	-25.38	46	35.03	14.93	1.95	31.29	-	-	Peak
539.4	21.29	-24.71	46	30.93	18.83	2.53	31	-	-	Peak
797.7	24.41	-21.59	46	29.53	22.42	3.14	30.68	-	-	Peak
5150	39.63	-14.37	54	29.62	34.25	9.41	33.65	100	251	Average
5150	51.07	-22.93	74	41.06	34.25	9.41	33.65	100	251	Peak
5300	95.08	-	-	84.38	34.4	9.66	33.36	100	251	Average
5300	109.29	-	-	98.59	34.4	9.66	33.36	100	251	Peak
5350	53.39	-20.61	74	42.46	34.45	9.74	33.26	100	251	Peak
5350	41.79	-12.21	54	30.86	34.45	9.74	33.26	100	251	Average
6916	58.15	-10.15	68.3	46.84	35.67	9.89	34.25	100	251	Peak

Test Mode :	Mode 15	**Temperature :**	22~26
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
240.06	28.69	-17.31	46	46.6	11.98	1.53	31.42	-	-	Peak
264.09	29.77	-16.23	46	46.67	12.89	1.61	31.4	-	-	Peak
287.85	31.66	-14.34	46	48.04	13.27	1.68	31.33	-	-	Peak
358.1	34.69	-11.31	46	48.65	15.27	2.04	31.27	145	223	Peak
383.3	30.54	-15.46	46	43.61	16.05	2.11	31.23	-	-	Peak
626.2	21.54	-24.46	46	29.6	20.06	2.77	30.89	-	-	Peak
5150	39.64	-14.36	54	29.63	34.25	9.41	33.65	100	174	Average
5150	52.24	-21.76	74	42.23	34.25	9.41	33.65	100	174	Peak
5320	93.85	-	-	83.04	34.42	9.7	33.31	100	174	Average
5320	107.77	-	-	96.96	34.42	9.7	33.31	100	174	Peak
5350	57.25	-16.75	74	46.32	34.45	9.74	33.26	100	174	Peak
5350	42.58	-11.42	54	31.65	34.45	9.74	33.26	100	174	Average

Test Mode :	Mode 15	**Temperature :**	22~26
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
32.97	30.56	-9.44	40	45.67	15.8	0.56	31.47	111	87	Peak
106.41	21.13	-22.37	43.5	41.28	10.37	1.03	31.55	-	-	Peak
184.17	22.26	-21.24	43.5	43.47	9.05	1.26	31.52	-	-	Peak
346.9	21.88	-24.12	46	36.29	14.93	1.95	31.29	-	-	Peak
539.4	22.23	-23.77	46	31.87	18.83	2.53	31	-	-	Peak
792.1	24.41	-21.59	46	29.61	22.35	3.13	30.68	-	-	Peak
5150	51.46	-22.54	74	41.45	34.25	9.41	33.65	100	253	Peak
5150	39.62	-14.38	54	29.61	34.25	9.41	33.65	100	253	Average
5320	94.72	-	-	83.91	34.42	9.7	33.31	100	253	Average
5320	108.92	-	-	98.11	34.42	9.7	33.31	100	253	Peak
5350	57.94	-16.06	74	47.01	34.45	9.74	33.26	100	253	Peak
5350	43.15	-10.85	54	32.22	34.45	9.74	33.26	100	253	Average
6908	58.48	-9.82	68.3	47.17	35.67	9.89	34.25	100	253	Peak

Test Mode :	Mode 16	**Temperature :**	22~26
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
215.49	23.43	-20.07	43.5	43.31	10.2	1.39	31.47	-	-	Peak
263.82	29.68	-16.32	46	46.58	12.89	1.61	31.4	-	-	Peak
287.85	29.48	-16.52	46	45.86	13.27	1.68	31.33	-	-	Peak
310.5	31.44	-14.56	46	47.18	13.79	1.79	31.32	-	-	Peak
358.1	34.97	-11.03	46	48.93	15.27	2.04	31.27	145	231	Peak
478.5	24.58	-21.42	46	35.41	17.86	2.37	31.06	-	-	Peak
5470	46.45	-21.85	68.3	34.95	34.57	9.94	33.01	125	176	Peak
5500	94.73	-	-	83.02	34.6	10.02	32.91	125	176	Average
5500	108.52	-	-	96.81	34.6	10.02	32.91	125	176	Peak
5725	52.01	-16.29	68.3	40.45	34.82	9.92	33.18	125	176	Peak

Test Mode :	Mode 16	**Temperature :**	22~26
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
32.97	30.76	-9.24	40	45.87	15.8	0.56	31.47	100	221	Peak
106.41	21.3	-22.2	43.5	41.45	10.37	1.03	31.55	-	-	Peak
168.78	21.2	-22.3	43.5	41.66	9.83	1.23	31.52	-	-	Peak
419	21.32	-24.68	46	33.38	16.88	2.21	31.15	-	-	Peak
659.8	23.84	-22.16	46	31.41	20.43	2.86	30.86	-	-	Peak
783.7	24.43	-21.57	46	29.8	22.21	3.11	30.69	-	-	Peak
5470	51.34	-16.96	68.3	39.84	34.57	9.94	33.01	102	278	Peak
5500	99.29	-	-	87.58	34.6	10.02	32.91	102	278	Average
5500	114.9	-	-	103.19	34.6	10.02	32.91	102	278	Peak
5725	52.81	-15.49	68.3	41.25	34.82	9.92	33.18	102	278	Peak
6902	57.12	-11.18	68.3	45.82	35.66	9.89	34.25	102	278	Peak

Test Mode :	Mode 17	**Temperature :**	22~26
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
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
383.3	31.13	-14.87	46	44.2	16.05	2.11	31.23	116	203	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	330	Peak
5580	106.33	-	-	94.67	34.67	9.99	33	100	330	Peak
5580	96	-	-	84.34	34.67	9.99	33	100	330	Average
5725	52.64	-15.66	68.3	41.08	34.82	9.92	33.18	100	330	Peak

Test Mode :	Mode 17	**Temperature :**	22~26
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
33.24	29.67	-10.33	40	44.78	15.8	0.56	31.47	103	248	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	269	Peak
5580	102.83	-	-	91.17	34.67	9.99	33	102	269	Average
5580	113.98	-	-	102.32	34.67	9.99	33	102	269	Peak
5725	52.99	-15.31	68.3	41.43	34.82	9.92	33.18	102	269	Peak
6916	61.32	-6.98	68.3	50.01	35.67	9.89	34.25	100	0	Peak

Test Mode :	Mode 18	**Temperature :**	22~26
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
216.3	23.27	-22.73	46	43.06	10.27	1.4	31.46	-	-	Peak
251.94	23.67	-22.33	46	40.84	12.7	1.54	31.41	-	-	Peak
264.09	31.37	-14.63	46	48.27	12.89	1.61	31.4	-	-	Peak
310.5	32.57	-13.43	46	48.31	13.79	1.79	31.32	-	-	Peak
358.1	34.24	-11.76	46	48.2	15.27	2.04	31.27	100	141	Peak
912.5	26.65	-19.35	46	30.16	23.79	3.37	30.67	-	-	Peak
5470	51.54	-16.76	68.3	40.04	34.57	9.94	33.01	100	322	Peak
5700	94.52	-	-	82.95	34.79	9.93	33.15	100	322	Average
5700	108.53	-	-	96.96	34.79	9.93	33.15	100	322	Peak
5725	48.27	-20.03	68.3	36.71	34.82	9.92	33.18	100	322	Peak
6924	61.95	-6.35	68.3	50.64	35.67	9.9	34.26	100	322	Peak

Test Mode :	Mode 18	**Temperature :**	22~26
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
32.7	29.87	-10.13	40	44.98	15.8	0.56	31.47	110	251	Peak
177.69	22.35	-21.15	43.5	43.38	9.26	1.24	31.53	-	-	Peak
240.06	21.48	-24.52	46	39.39	11.98	1.53	31.42	-	-	Peak
601	21.39	-24.61	46	29.84	19.78	2.69	30.92	-	-	Peak
783.7	24.62	-21.38	46	29.99	22.21	3.11	30.69	-	-	Peak
984.6	26.94	-27.06	54	29.34	24.69	3.49	30.58	-	-	Peak
5470	52.63	-15.67	68.3	41.13	34.57	9.94	33.01	100	268	Peak
5700	98.7	-	-	87.13	34.79	9.93	33.15	100	268	Average
5700	113.5	-	-	101.93	34.79	9.93	33.15	100	268	Peak
5725	50.83	-17.47	68.3	39.27	34.82	9.92	33.18	100	268	Peak
6916	62.04	-6.26	68.3	50.73	35.67	9.89	34.25	100	268	Peak

3.9 Peak Excursion Ratio Measurement

3.9.1 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.

3.9.2 Measuring Instruments

See list of measuring instruments of this test report.

3.9.3 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.

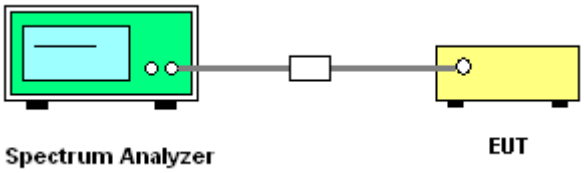
1st Trace :

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

2nd Trace:

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

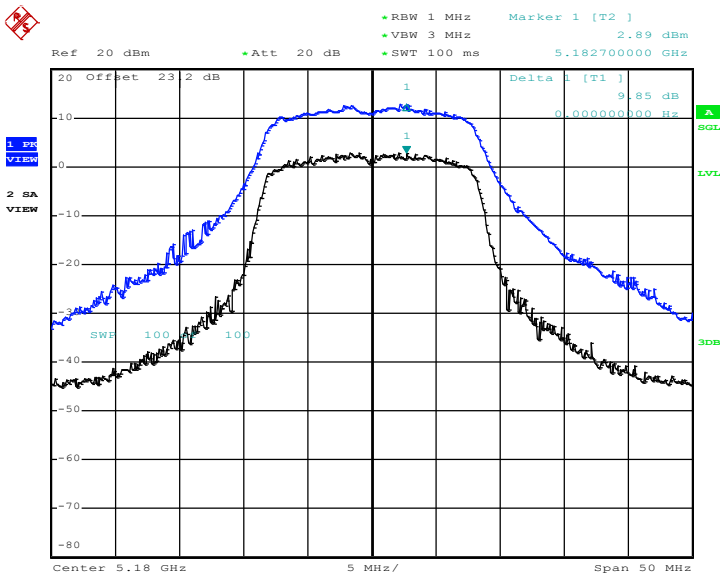
3.9.4 Test Setup



3.9.5 Test Result of Peak Excursion Ratio

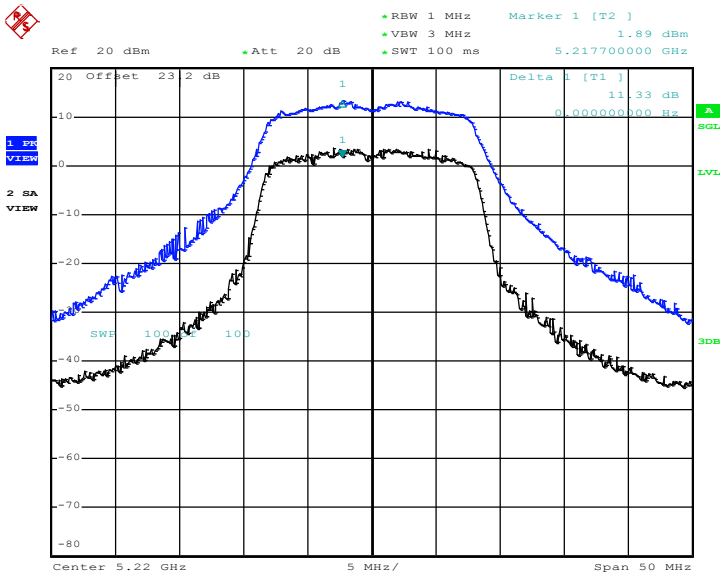
Test Mode :	Mode 1~9	Temperature :	25~27℃
Test Engineer :	Alan Liu	Relative Humidity :	51~54%

Peak Excursion Ratio Plot on 802.11a Channel 36



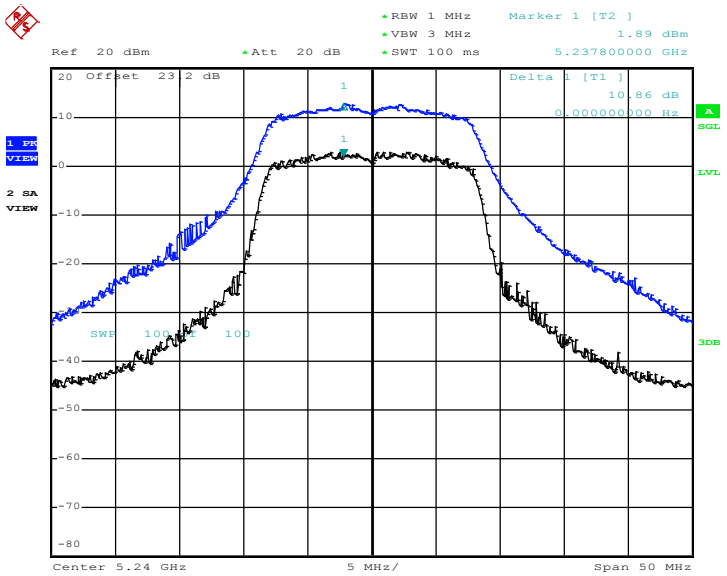
Date: 19.MAR.2011 13:49:28

Peak Excursion Ratio Plot on 802.11a Channel 44



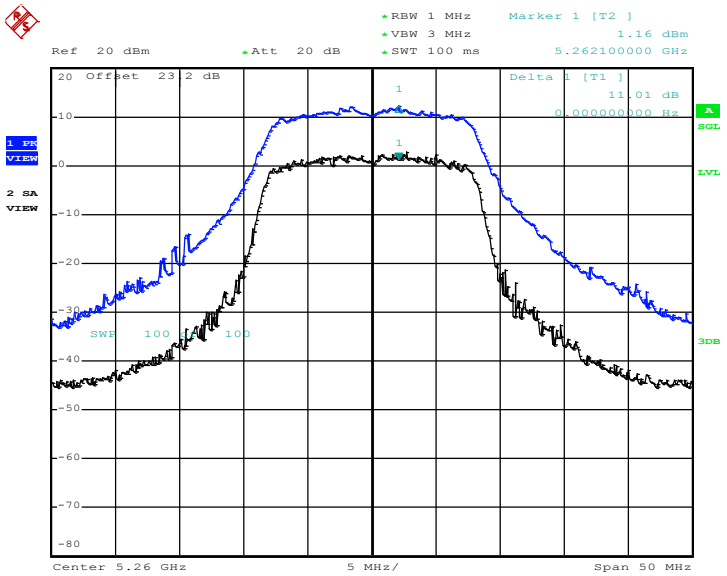
Date: 19.MAR.2011 14:14:49

Peak Excursion Ratio Plot on 802.11a Channel 48



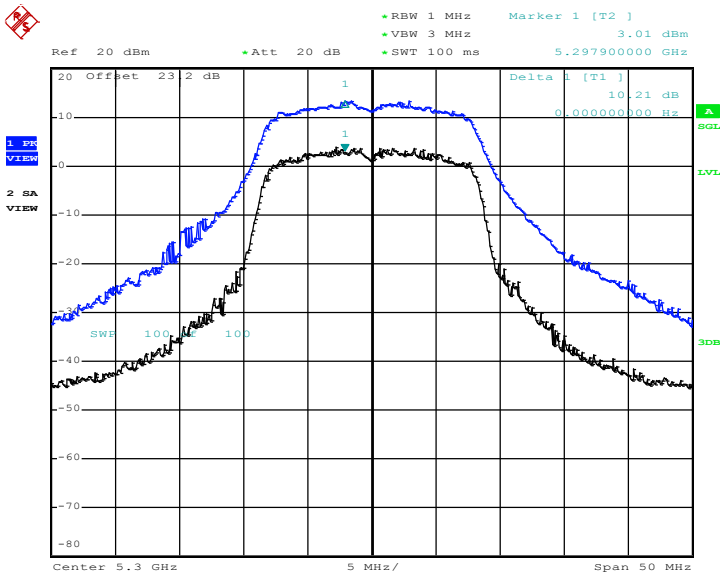
Date: 19.MAR.2011 14:22:49

Peak Excursion Ratio Plot on 802.11a Channel 52



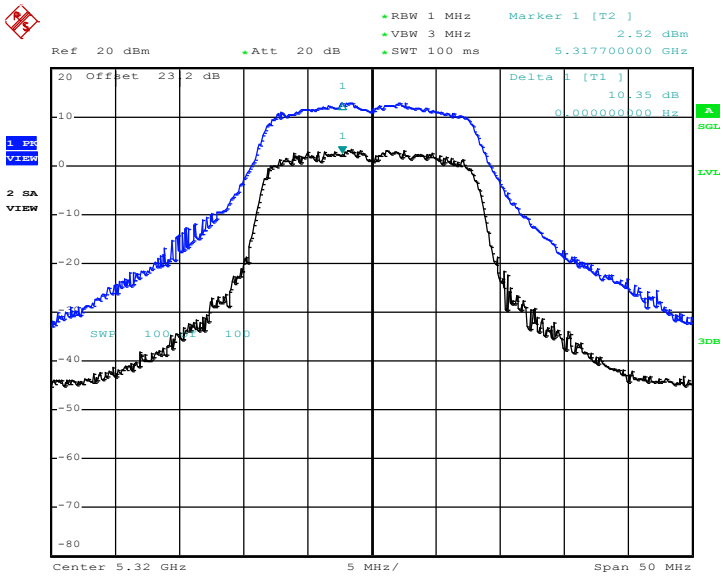
Date: 19.MAR.2011 14:26:28

Peak Excursion Ratio Plot on 802.11a Channel 60



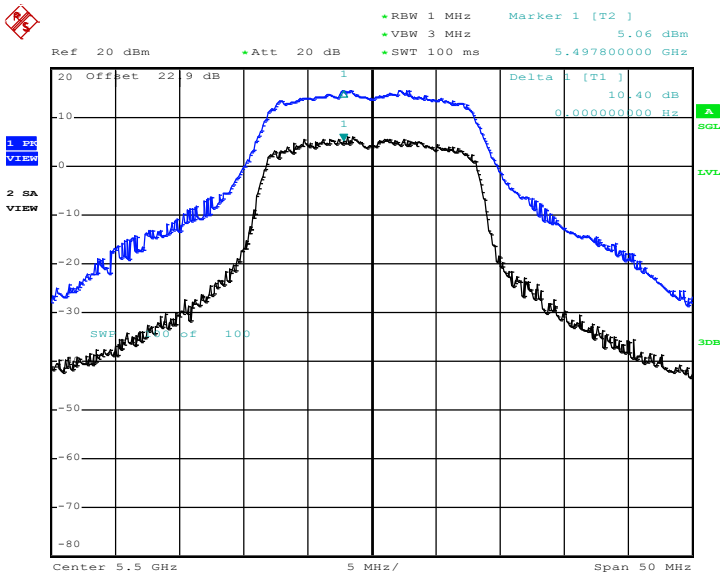
Date: 19.MAR.2011 14:29:24

Peak Excursion Ratio Plot on 802.11a Channel 64



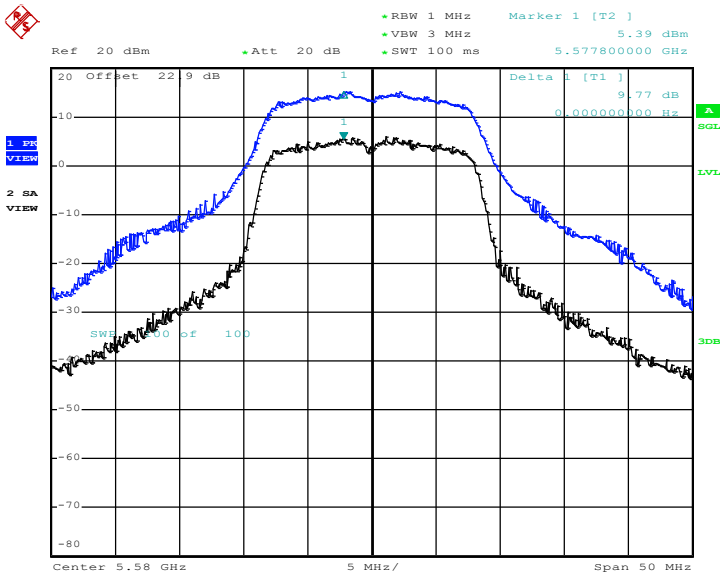
Date: 19.MAR.2011 14:32:37

Peak Excursion Ratio Plot on 802.11a Channel 100



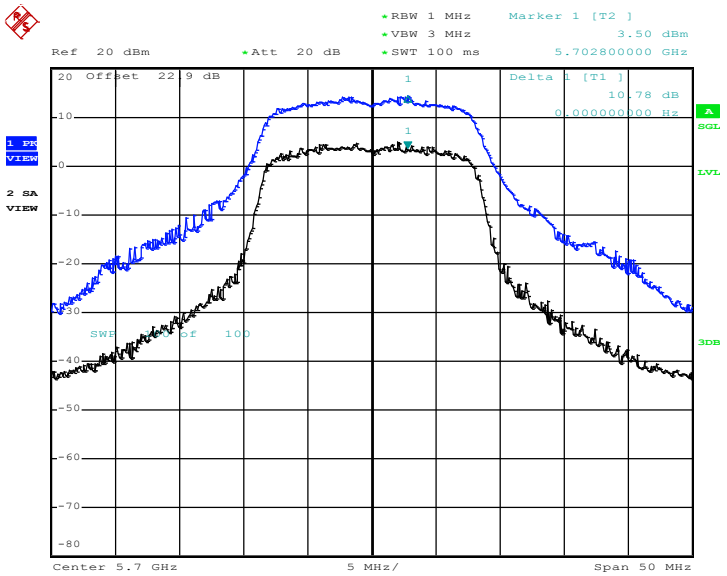
Date: 19.MAR.2011 15:55:29

Peak Excursion Ratio Plot on 802.11a Channel 116



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

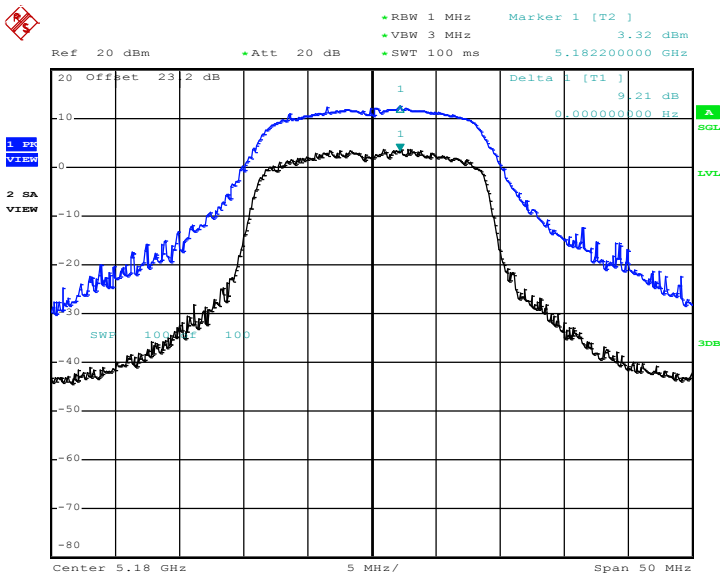
Peak Excursion Ratio Plot on 802.11a Channel 140



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

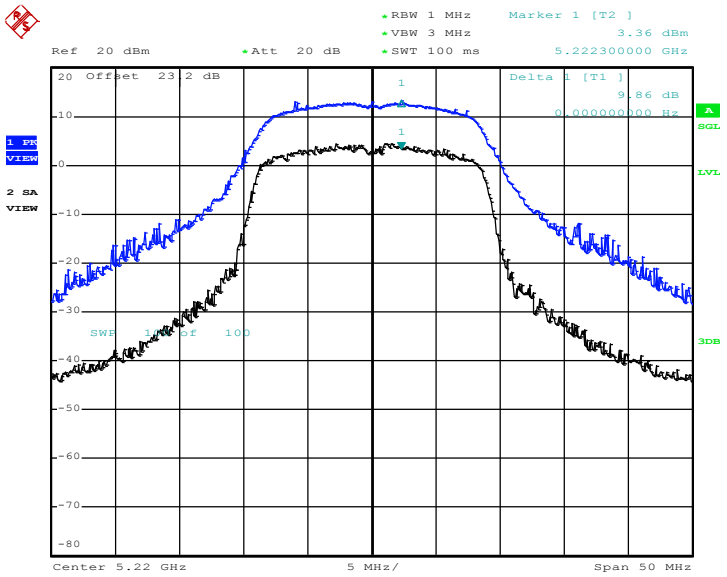
Test Mode :	Mode 10~18	Temperature :	25~27℃
Test Engineer :	Alan Liu	Relative Humidity :	51~54%

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



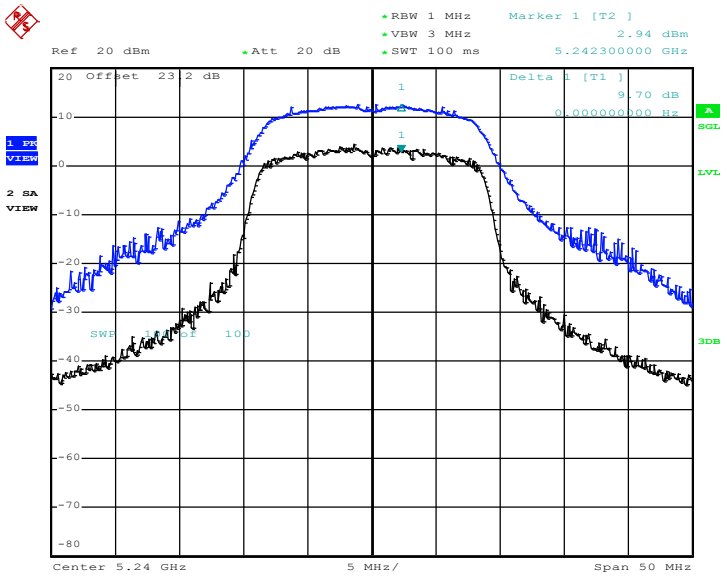
Date: 19.MAR.2011 16:47:19

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



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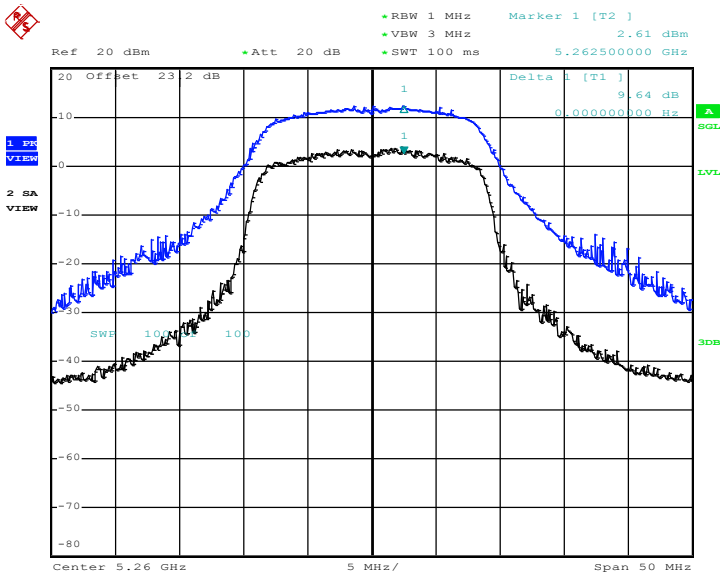
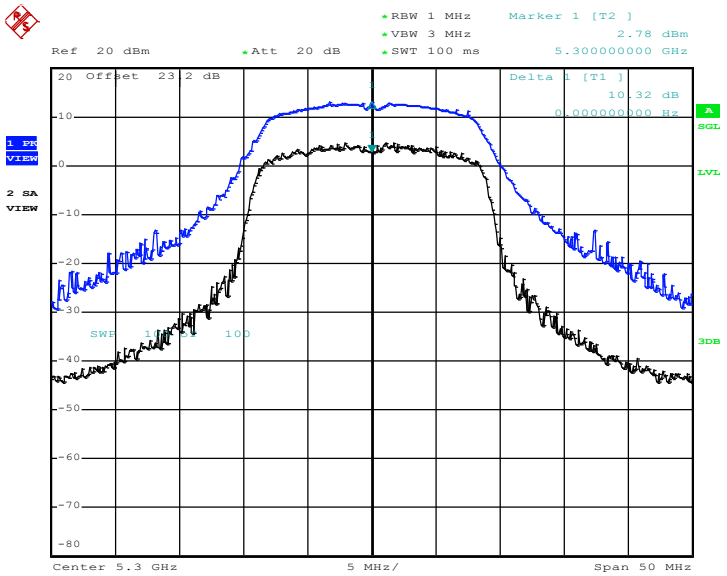
Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 52



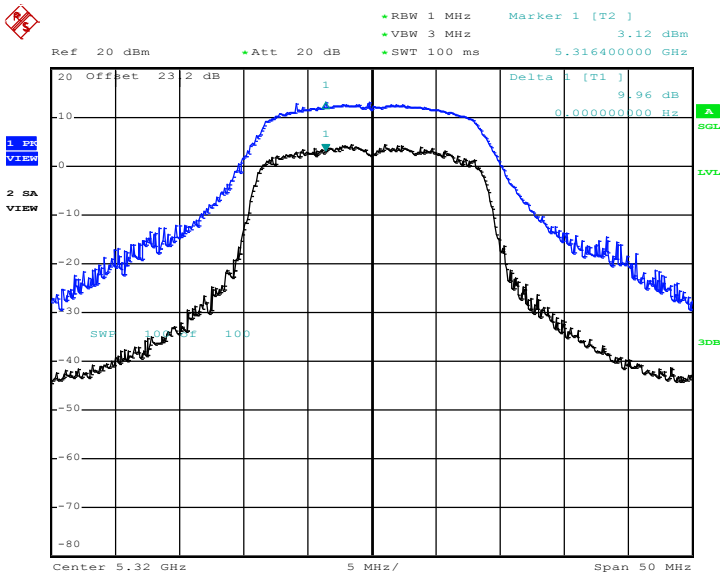
Date: 19.MAR.2011 17:09:07

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



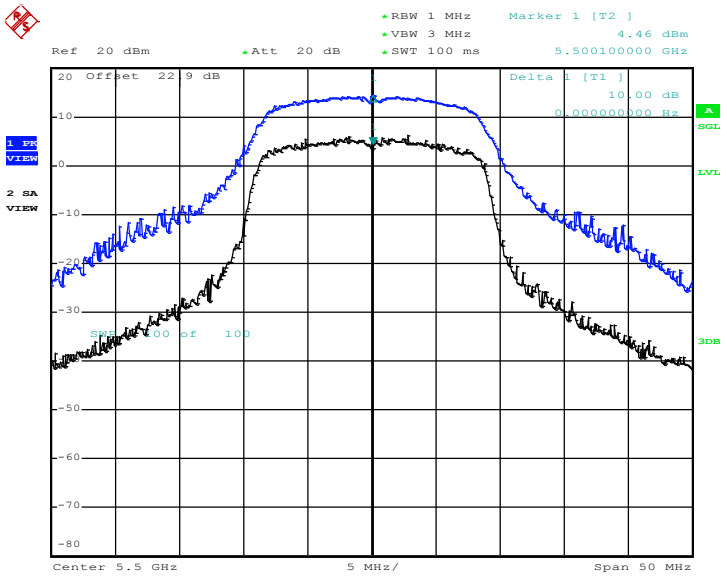
Date: 19.MAR.2011 17:12:06

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



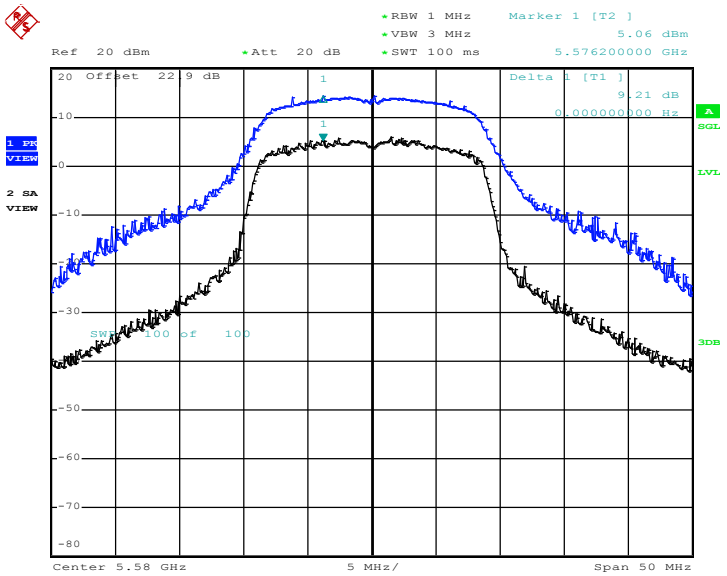
Date: 19.MAR.2011 17:15:03

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



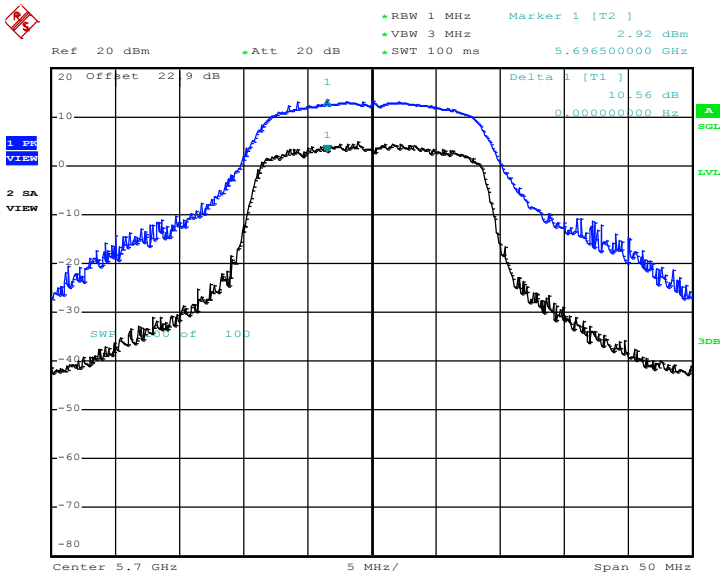
Date: 19.MAR.2011 17:18:40

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

3.10 Automatically Discontinue Transmission

3.10.1 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.

3.10.2 Measuring Instruments

See list of measuring instruments of this test report.

3.10.3 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.

3.11 Frequency Stability Measurement

3.11.1 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.

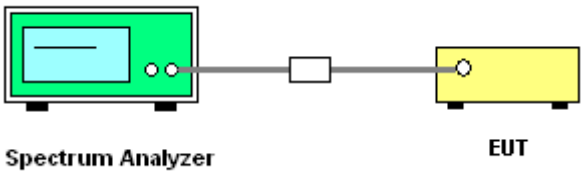
3.11.2 Measuring Instruments

See list of measuring instruments of this test report.

3.11.3 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.

3.11.4 Test Setup



3.11.5 Test Result of Frequency Stability

Test Mode :	Mode 1~9	**Temperature :**	25~27℃
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℃
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

3.12 Antenna Requirements

3.12.1 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.

3.12.2 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.

3.12.3 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
Spectrum Analyzer	R&S	FSP40	100055	9KHz~40GHz	Jun. 13, 2011	Jun. 12, 2012	Conducted (TH02-HY)
Spectrum Analyzer	R&S	FSP30	101329	9kHz~30GHz	May. 03, 2011	May. 02, 2012	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)
DC Power Supply	TOPWARD	3303D	740889	N/A	Jun. 08, 2011	Jun. 07, 2012	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)
DC- LISN	R&S	ESH3-Z6	1000485	0.1MHz-200MHz	Jun. 08, 2011	Jun. 07, 2012	Conduction (CO05-HY)
DC- LISN	R&S	ESH3-Z6	1000484	0.1MHz-200MHz	Jun. 08, 2011	Jun. 07, 2012	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)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz~30 MHz	Jul. 29, 2010	Jul. 28, 2011	Radiation (03CH07-HY)

5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

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

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

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

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

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

Appendix A. Photographs of EUT

Please refer to Sporton report number EP140905 as below.