FCC RF Test Report

APPLICANT	:	SAMSUNG Electronics Co., LTD.
EQUIPMENT	:	Mobile Phone
BRAND NAME	:	Samsung
MODEL NAME	:	SCH-W2013
MARKETING NAME	:	Grande
FCC ID	:	A3LSCHW2013
STANDARD	:	FCC Part 15 Subpart E
CLASSIFICATION	:	(NII) Unlicensed National Information Infrastructure

The product was received on Sep. 27, 2012 and completely tested on Oct. 25, 2012. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown the compliance with the applicable technical standards.

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

Reviewed by:

Jones Tsai / Manager

Testing Laboratory
1190

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

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR2O0932C	Rev. 01	Initial issue of report	Oct. 30, 2012

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	A9.2	26dB Bandwidth	-	Pass	-
3.2	15.407(a)	A9.2	Maximum Conducted Output Power	≤ 17, 24, 30 dBm (depend on band)	Pass	-
3.3	15.407(a)	A9.2	Power Spectral Density	≤ 4, 11, 17 dBm (depend on band)	Pass	-
3.4	15.407(a)(6)	A9.3	Peak Excursion Ratio	≤ 13dB	Pass	-
3.5	15.407(b)	A9.3	Unwanted Emissions	≤ -17, -27 dBm (depend on band)&15.209(a)	Pass	Under limit 3.22 dB at 213.330 MHz
3.6	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 15.40 dB at 2.366 MHz
3.7	15.407(g)	A9.5	Frequency Stability	Within Operation Band	Pass	-
3.8	15.407(c)	A9.5	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.9	15.203 & 15.407(a)	A9.2	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

SAMSUNG Electronics Co., LTD.
IT center, 416, Maetan-3dong, Yeongtong-gu, Suwon-city, Gyeonggi-do, Korea

1.2 Manufacturer

SAMSUNG Electronics Co., LTD.
IT center, 416, Maetan-3dong, Yeongtong-gu, Suwon-city, Gyeonggi-do, Korea

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Mobile Phone
Brand Name	Samsung
Model Name	SCH-W2013
Marketing Name	Grande
FCC ID	A3LSCHW2013
EUT supports Radios application	CDMA/EV-DO/GSM/EGPRS/WLAN 11abgn/Bluetooth
HW Version	W2013.05
SW Version	W2013KELG4
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Product Specification subjective to this standard	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5700 MHz
Maximum Output Power to Antenna	**<5180 MHz ~ 5240 MHz>** 802.11a : 14.37 dBm / 0.0274 W 802.11n HT20 : 12.23 dBm / 0.0167 W **<5260 MHz ~ 5320 MHz>** 802.11a : 14.42 dBm / 0.0277 W 802.11n HT20 : 12.47 dBm / 0.0177 W **<5500 MHz ~ 5700 MHz>** 802.11a : 14.14 dBm / 0.0259 W 802.11n HT20 : 12.19 dBm / 0.0166 W
Antenna Type	FPCB Antenna with gain -2.00 dBi
Type of Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)

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.
	TH02-HY	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 KDB 789033 D01 General UNII Test Procedures v01r02
- ANSI C63.4-2003 and ANSI C63.10-2009
- IC RSS-210 Issued 8
- IC RSS-Gen Issue 3

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, 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	Latitude E6320	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A

2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 KHz to 30 MHz) and radiated emission (9 KHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.

The final configuration from all the combinations and the worst-case data rates were investigated by measuring the maximum power across all the data rates and modulation modes under section 2.2.

Based on the worst configuration found above, the RF power setting is set individually to meet FCC compliance limit for the final conducted and radiated tests shown in section 2.3.

2.1 Carrier Frequency Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5150-5250 MHz Band 1	36	5180	44	5220
	40	5200	48	5240

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5250-5350 MHz Band 2	52	5260	60	5300
	56	5280	64	5320

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5470-5725 MHz Band 3	100	5500	116	5580
	104	5520	132	5660
	108	5540	136	5680
	112	5560	140	5700

2.2 Pre-Scanned RF Power

Preliminary tests were performed in different data rate and antenna configurations as following table and the highest power data rates were chosen for full test in the following tables. Final Output Power equals to Measured Output Power adds the duty factor.

5GHz 802.11a mode								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Peak Power (dBm)	14.42	14.41	14.40	14.40	14.41	14.41	14.40	14.40

5GHz 802.11n HT20 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	12.47	12.46	12.45	12.45	12.43	12.44	12.45	12.46

2.3 Test Mode

Final results of test modes, data rates and test channels are shown as following table.

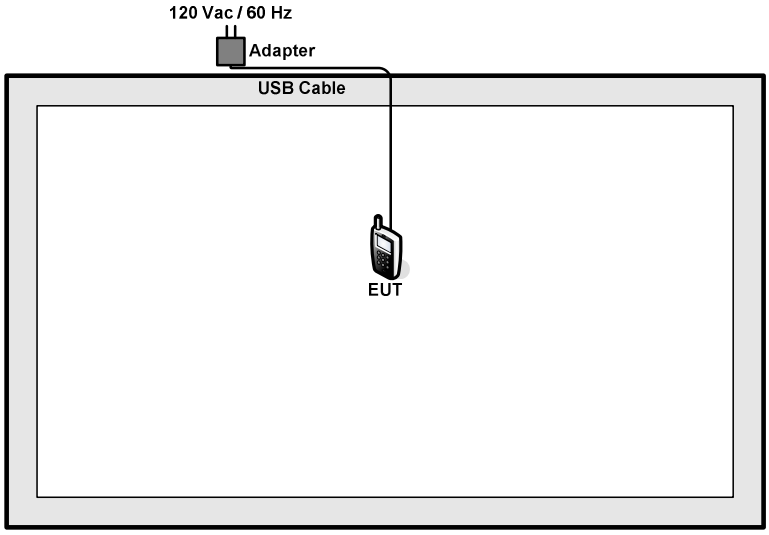
Test Cases				
	Test Items	Mode	Data rate	Test Channel
Conducted TCs	26dB BW Power Spectral Density	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
	Output Power	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
	Peak Excursion	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
	Frequency Stability	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
Radiated TCs	Radiated Band Edge	802.11a	6 Mbps	L/H
		802.11n HT20	6.5 Mbps	L/H
	Radiated Spurious Emission	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
AC Conducted Emission	Mode 1 : GSM1900 Idle + Bluetooth Link + WLAN (5G) Link + USB Cable (Charging from Adapter) + MP3			

Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5725 MHz
		802.11a	802.11a	802.11a
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5725 MHz
		802.11n HT20	802.11n HT20	802.11n HT20
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



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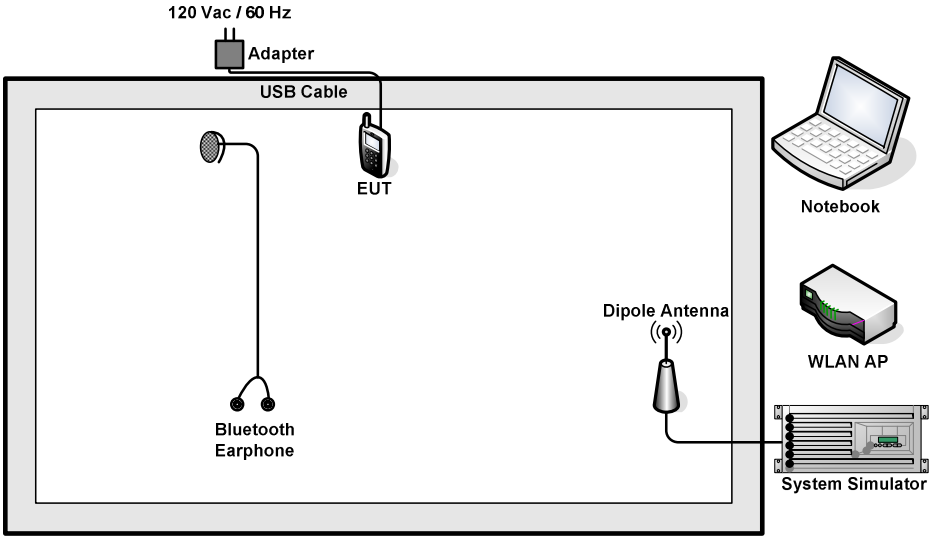


2.5 RF Utility

For WLAN function, key in "＊＃232339＃" on the EUT directly. Then, the EUT will get into the engineering modes to contact with WLAN AP for continuous transmitting and receiving signals.

3 Test Result

3.1 26dB Bandwidth Measurement

3.1.1 Description of Bandwidth Measurement

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

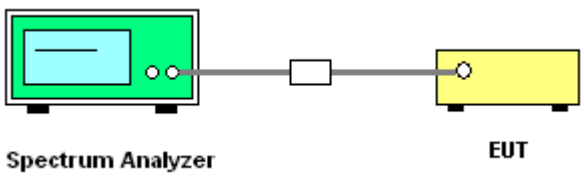
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r01. Section D) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

3.1.4 Test Setup

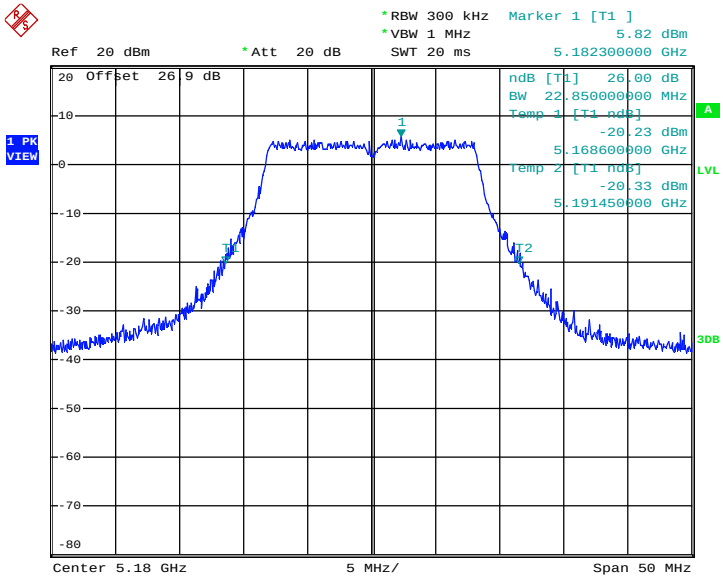


3.1.5 Test Result of 26dB Bandwidth Plots

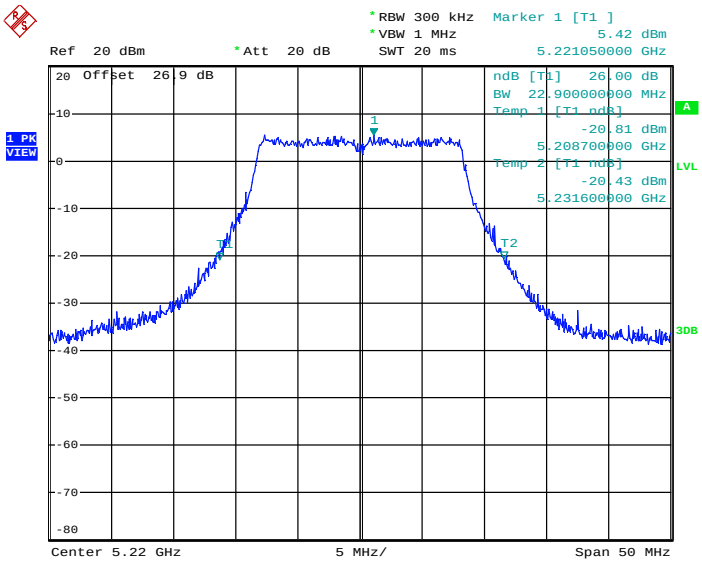
Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Bill Kuo	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11a 26dB Bandwidth (MHz)	Pass/Fail
36	5180	22.850	N/A
44	5220	22.900	N/A
48	5240	23.050	N/A
52	5260	22.950	N/A
60	5300	23.000	N/A
64	5320	23.000	N/A
100	5500	23.000	N/A
116	5580	23.000	N/A
140	5700	22.400	N/A

26 dB Bandwidth Plot on 802.11a Channel 36



26 dB Bandwidth Plot on 802.11a Channel 44



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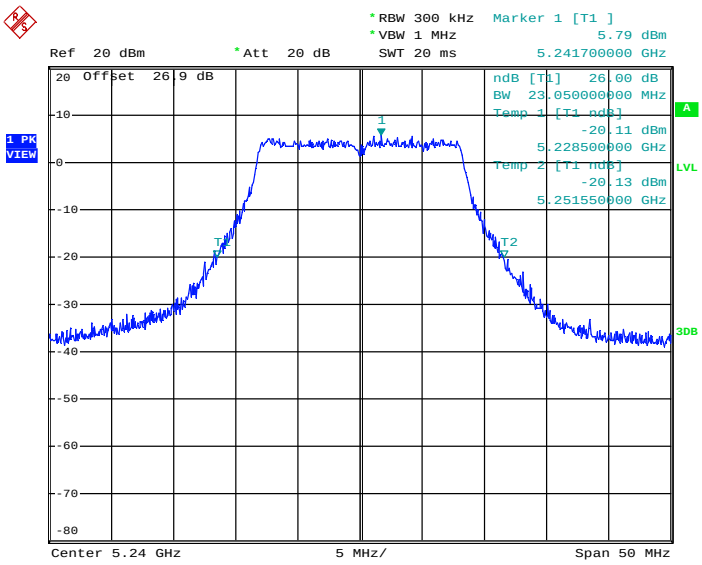
26 dB Bandwidth Plot on 802.11a Channel 48



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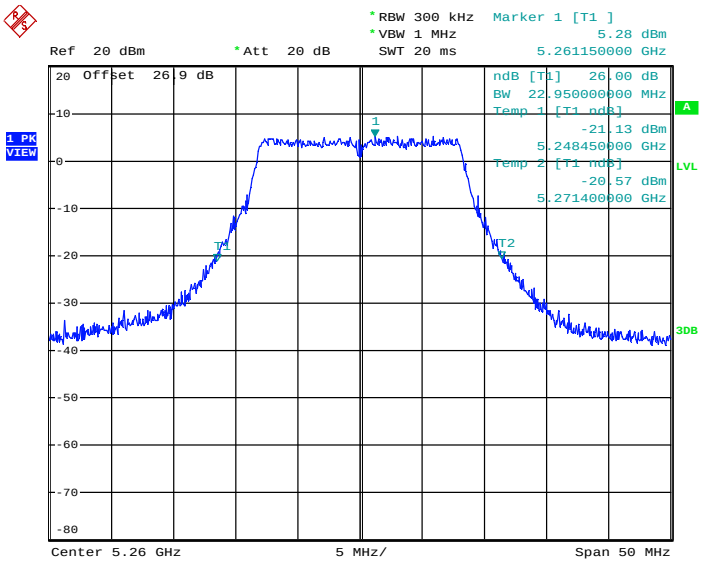
26 dB Bandwidth Plot on 802.11a Channel 52



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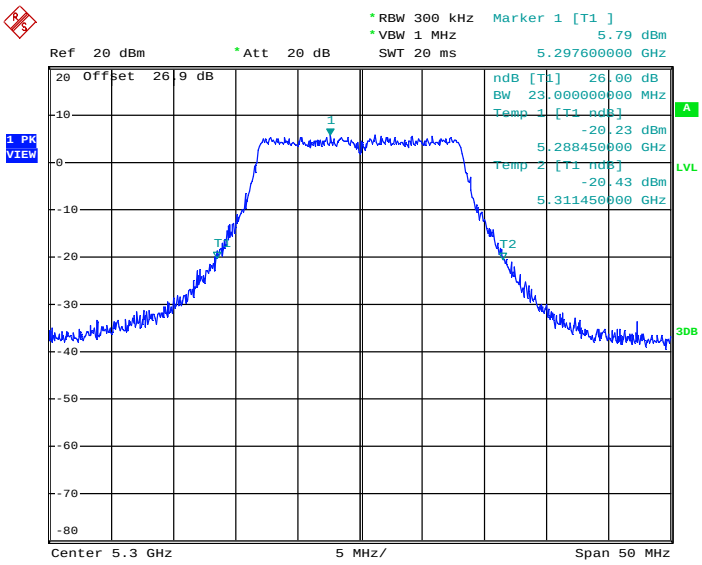
26 dB Bandwidth Plot on 802.11a Channel 60



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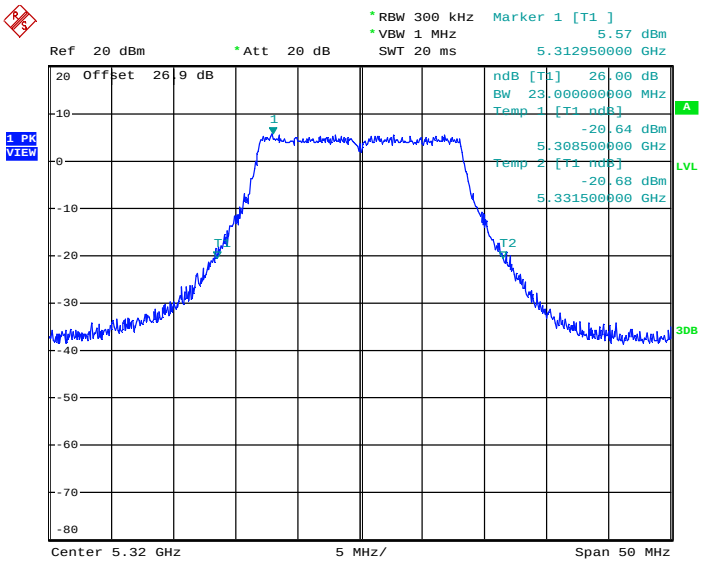
26 dB Bandwidth Plot on 802.11a Channel 64



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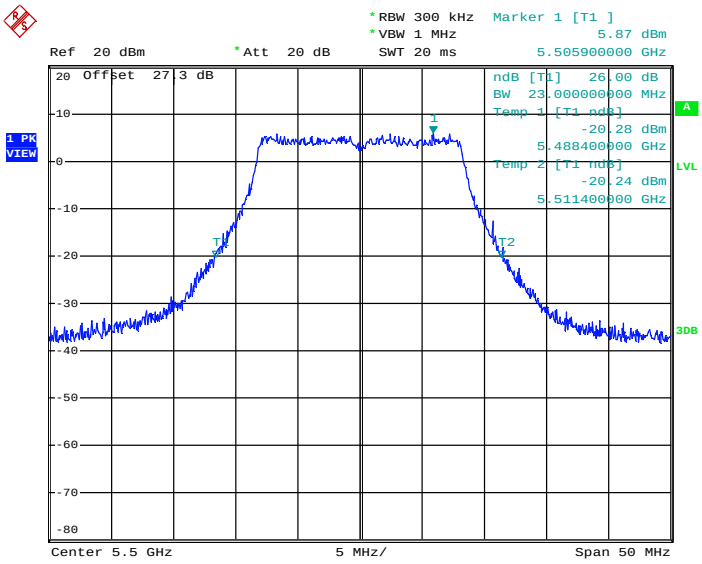
26 dB Bandwidth Plot on 802.11a Channel 100



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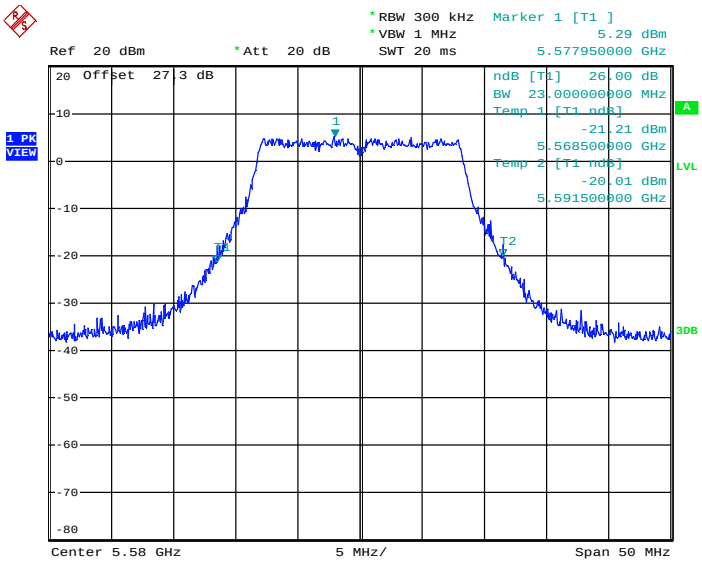

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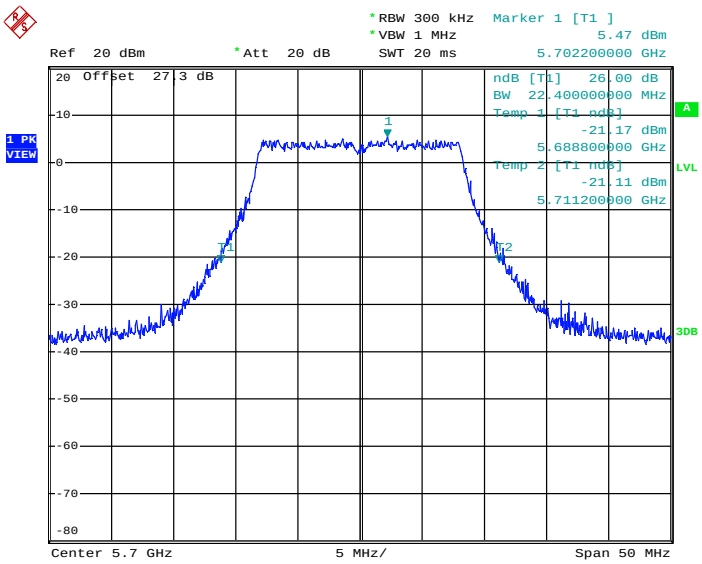
26 dB Bandwidth Plot on 802.11a Channel 140



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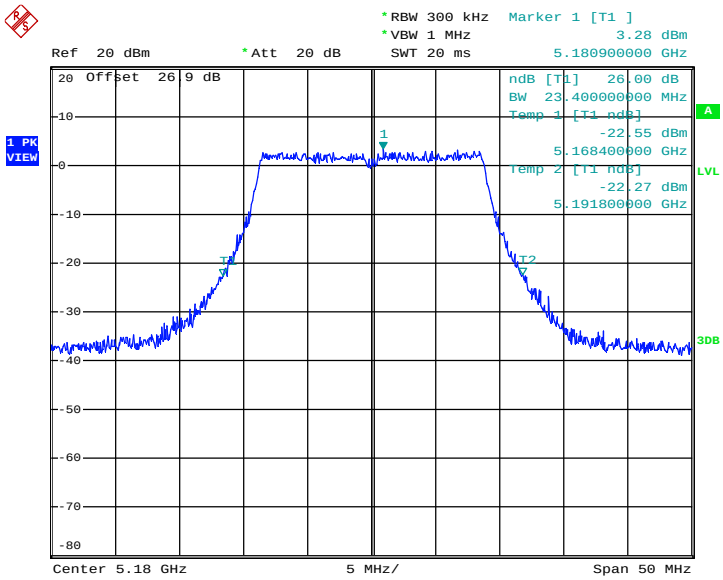
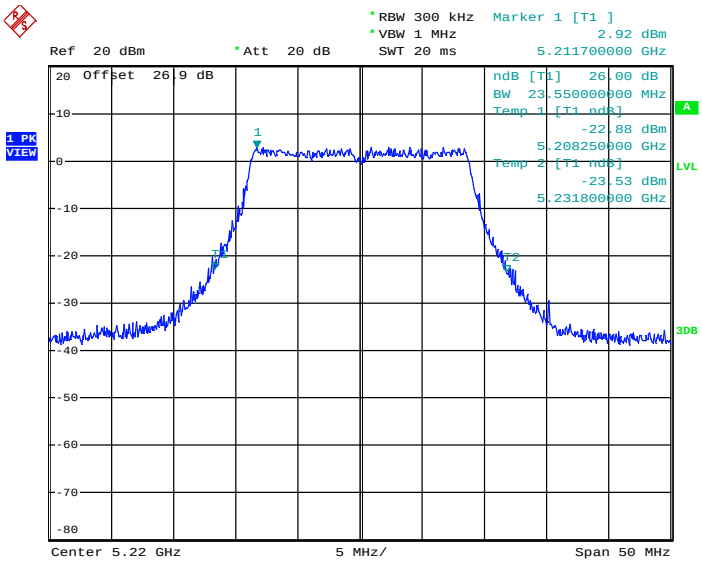
Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Bill Kuo	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11n HT20 26dB Bandwidth (MHz)	Pass/Fail
36	5180	23.400	N/A
44	5220	23.550	N/A
48	5240	23.450	N/A
52	5260	23.200	N/A
60	5300	23.400	N/A
64	5320	22.900	N/A
100	5500	23.450	N/A
116	5580	23.050	N/A
140	5700	23.250	N/A

26 dB Bandwidth Plot on 802.11n HT20 Channel 36



26 dB Bandwidth Plot on 802.11n HT20 Channel 44



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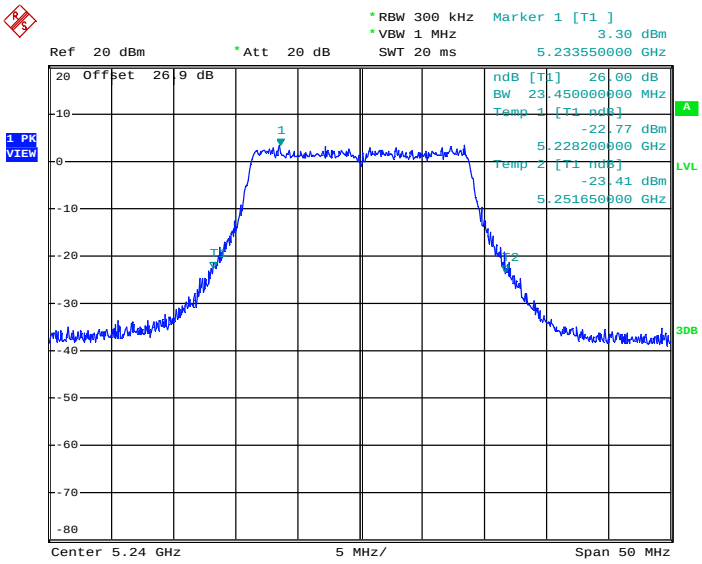
26 dB Bandwidth Plot on 802.11n HT20 Channel 48



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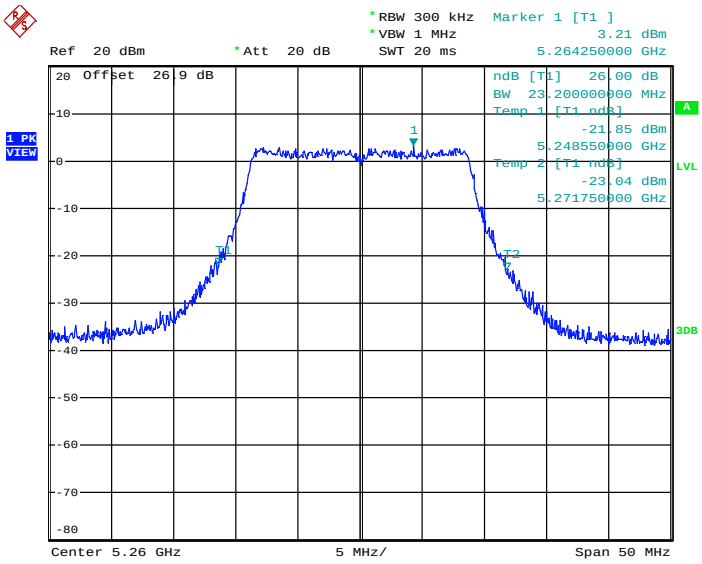
26 dB Bandwidth Plot on 802.11n HT20 Channel 52



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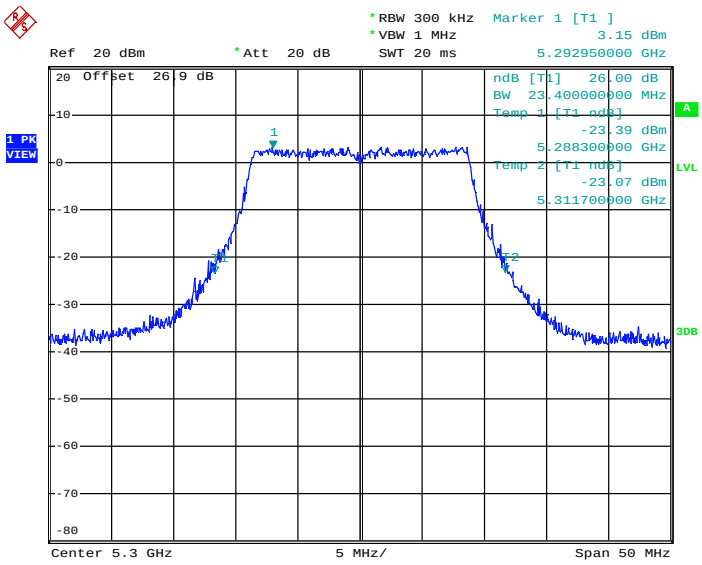
26 dB Bandwidth Plot on 802.11n HT20 Channel 60



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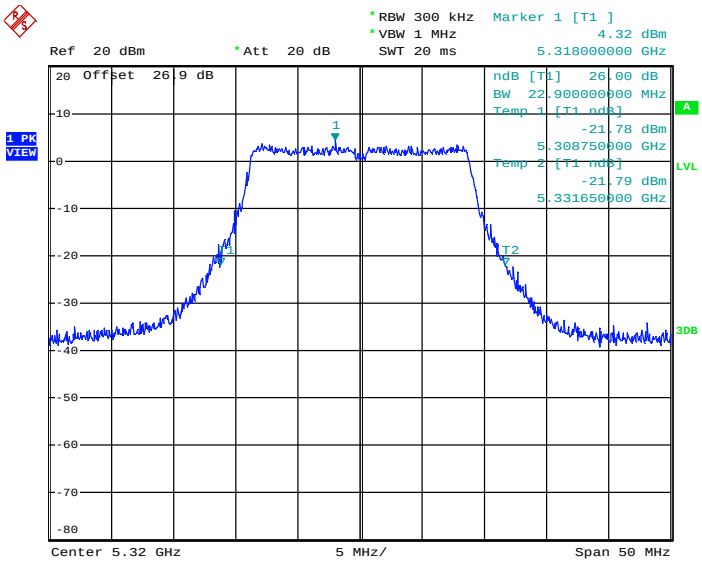
26 dB Bandwidth Plot on 802.11n HT20 Channel 64



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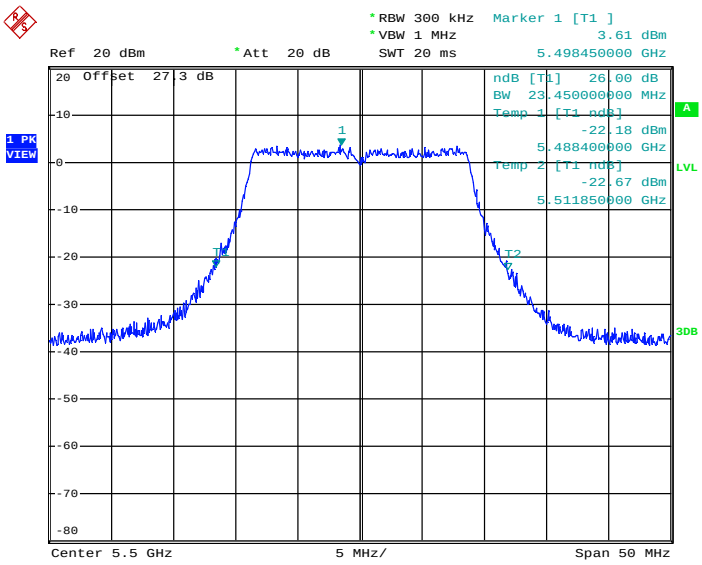
26 dB Bandwidth Plot on 802.11n HT20 Channel 100



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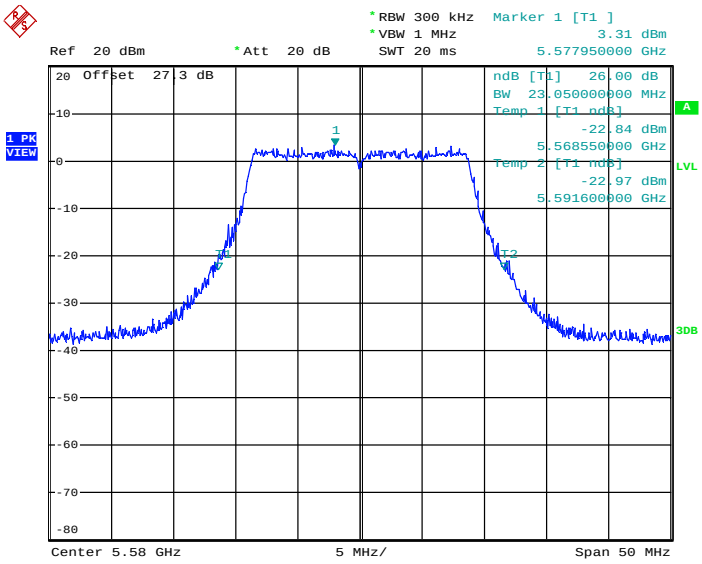
26 dB Bandwidth Plot on 802.11n HT20 Channel 116



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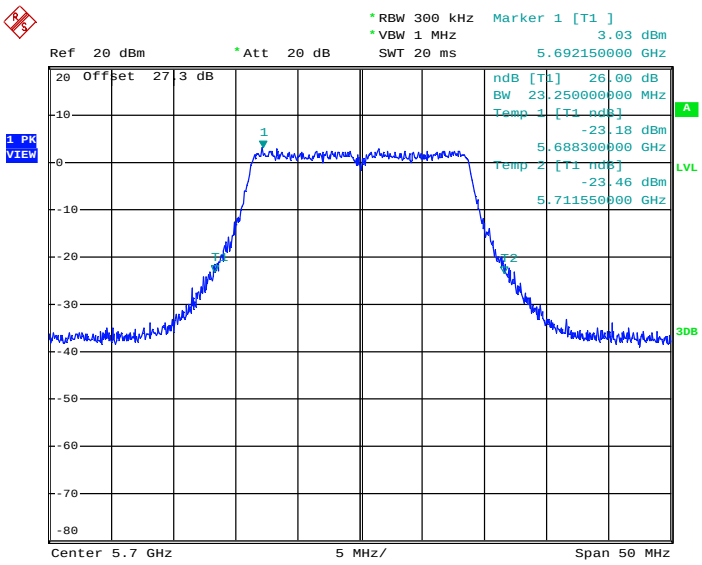
26 dB Bandwidth Plot on 802.11n HT20 Channel 140



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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 1-MHz. If transmitting antenna directional gain is greater than 6 dBi, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B, where B is the 26 dB emissions bandwidth in 1-MHz. If transmitting antenna directional gain is greater than 6 dBi, the peak output power 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.

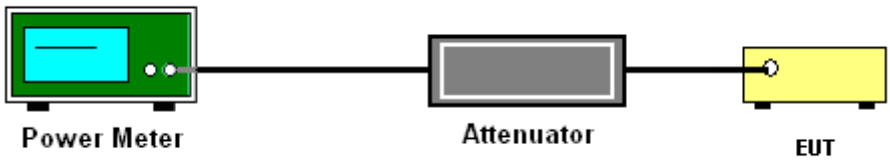
3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D01 General UNII Test Procedures v01r01.

Method PM (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, 10 log(1/x), where x is the duty cycle.

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Bill Kuo	Relative Humidity :	45~49%
Duty Cycle	93.46%	Duty Factor	0.29dB

Channel	Frequency (MHz)	802.11a Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	13.84	14.13	17	Pass
44	5220	14.08	14.37	17	Pass
48	5240	13.74	14.03	17	Pass
52	5260	13.85	14.14	24	Pass
60	5300	14.13	14.42	24	Pass
64	5320	14.10	14.39	24	Pass
100	5500	13.85	14.14	24	Pass
116	5580	13.57	13.86	24	Pass
140	5700	13.34	13.63	24	Pass

Note:

1. Final Output Power equals to Measured Output Power adds the duty factor.
2. 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 (26dB BW)
3. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log (26dB BW).

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Bill Kuo	Relative Humidity :	45~49%
Duty Cycle	93.06%	Duty Factor	0.31dB

Channel	Frequency (MHz)	802.11n HT20 Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	11.92	12.23	17	Pass
44	5220	11.87	12.18	17	Pass
48	5240	11.78	12.09	17	Pass
52	5260	11.93	12.24	24	Pass
60	5300	12.16	12.47	24	Pass
64	5320	12.14	12.45	24	Pass
100	5500	11.88	12.19	24	Pass
116	5580	11.73	12.04	24	Pass
140	5700	11.64	11.95	24	Pass

Note:

1. Final Output Power equals to Measured Output Power adds the duty factor.
2. 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 (26dB BW)
3. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log (26dB BW)

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

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

3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r01.
Section E) Peak power spectral density (PPSD).
Note: Though the rule refers to “peak power spectral density”, the intent is to measure the maximum value of the time average of the power spectral density measured during a period of continuous transmission.

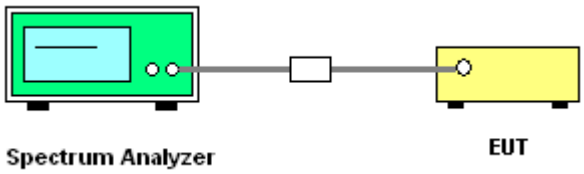
 # Method SA-2 #

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

1. The testing follows Method SA-2 of FCC KDB 789033 D01 General UNII Test Procedures v01r02.
   - Measure the duty cycle.
   - Set span to encompass the entire emission bandwidth (EBW) of the signal.
   - Set RBW = 1 MHz.
   - Set VBW ≥ 3 MHz.
   - Number of points in sweep ≥ 2 Span / RBW.
   - Sweep time = auto.
   - Detector = sample
   - Trace average at least 100 traces in power averaging mode.
   - Add 10 log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add 10 log(1/0.25) = 6 dB if the duty cycle is 25 percent.

2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.

3.3.4 Test Setup



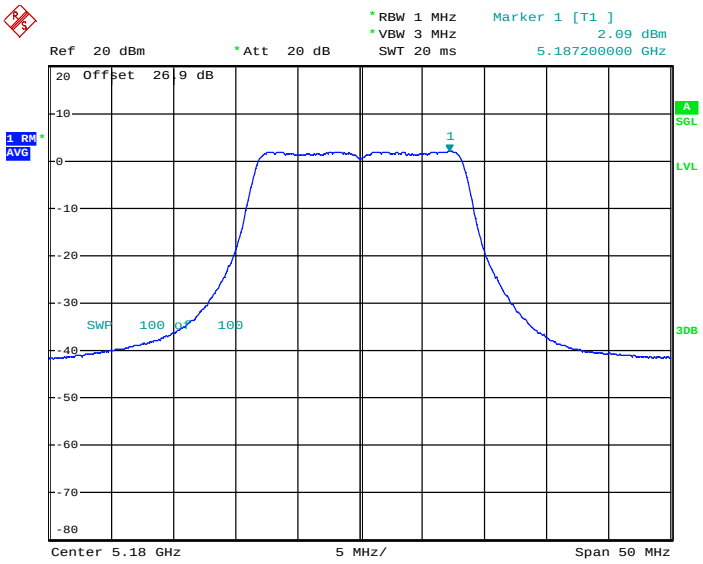
3.3.5 Test Result of Power Spectral Density

Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Bill Kuo	Relative Humidity :	45~49%
Duty Cycle:	93.46%	Duty Factor:	0.29dB

Channel	Frequency (MHz)	802.11a PSD (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	2.090	2.384	4	Pass
44	5220	2.120	2.414	4	Pass
48	5240	2.120	2.414	4	Pass
52	5260	1.880	2.174	11	Pass
60	5300	2.560	2.854	11	Pass
64	5320	2.690	2.984	11	Pass
100	5500	2.470	2.764	11	Pass
116	5580	1.910	2.204	11	Pass
140	5700	1.770	2.064	11	Pass

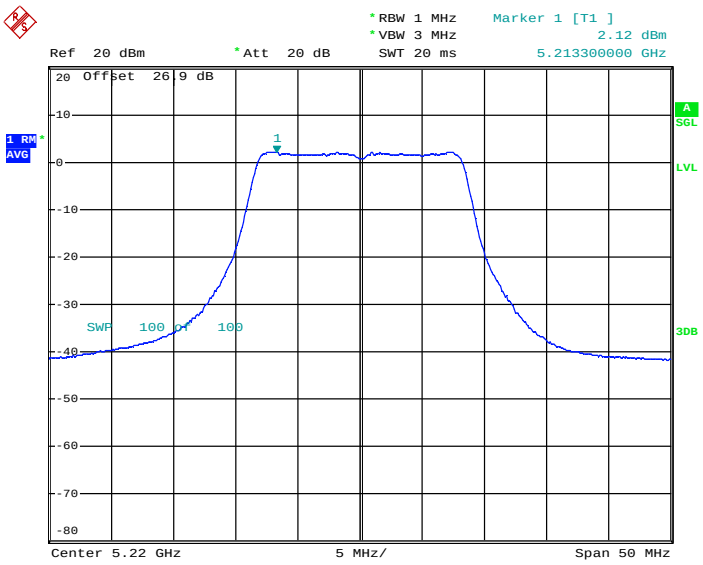
Note: Result of Final PSD equals to Measured PSD adds the duty factor.

PSD Plot on 802.11a Channel 36



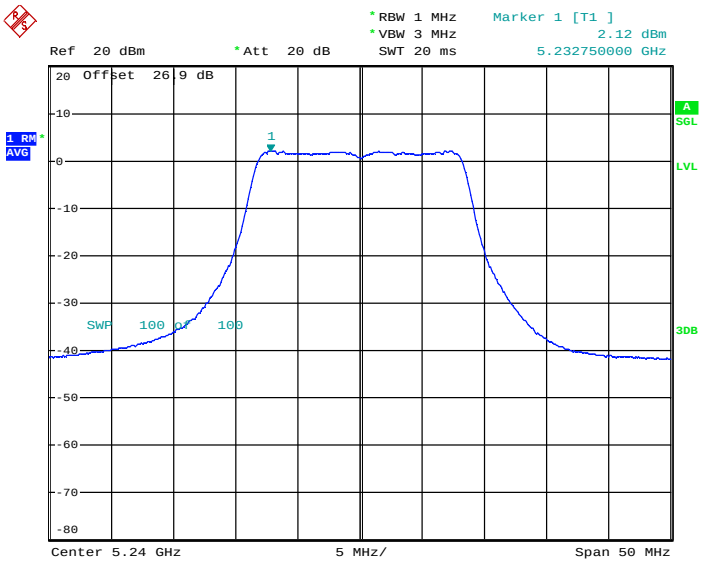
Date: 15.OCT.2012 23:20:43

PSD Plot on 802.11a Channel 44



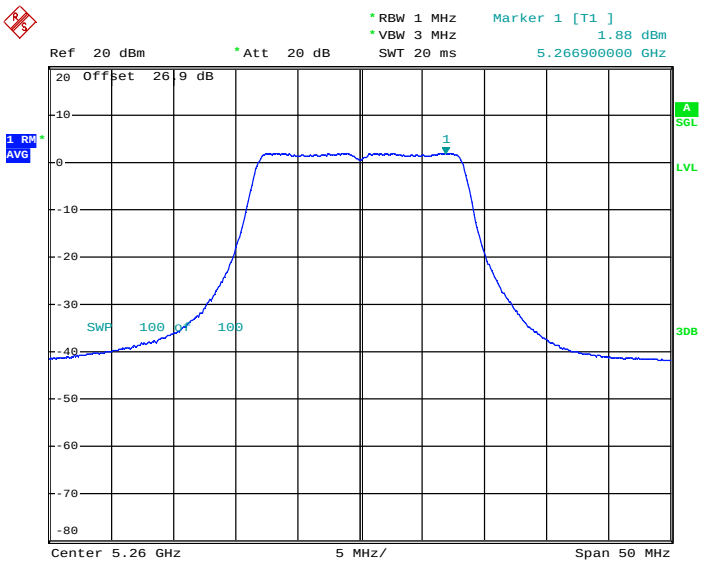
Date: 15.OCT.2012 23:23:15

PSD Plot on 802.11a Channel 48



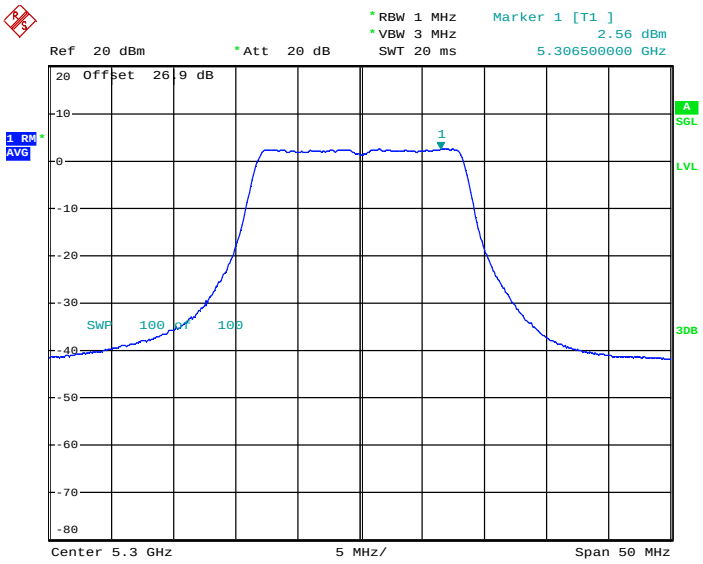
Date: 15.OCT.2012 23:26:04

PSD Plot on 802.11a Channel 52



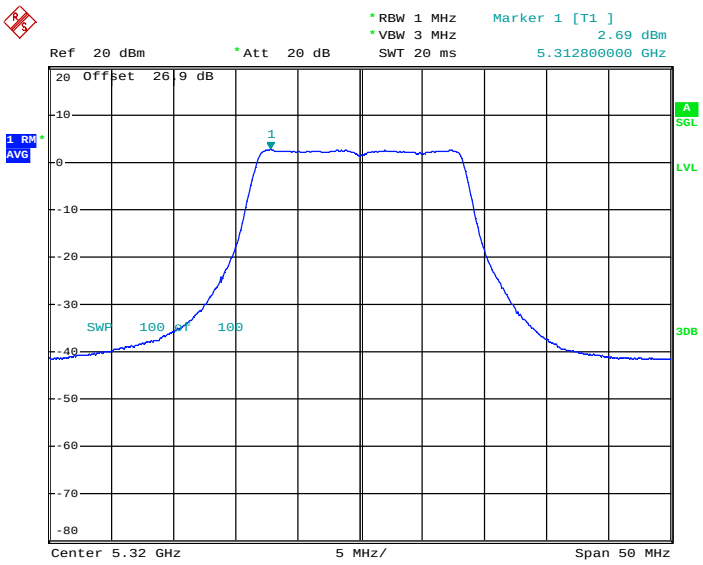
Date: 15.OCT.2012 23:39:57

PSD Plot on 802.11a Channel 60



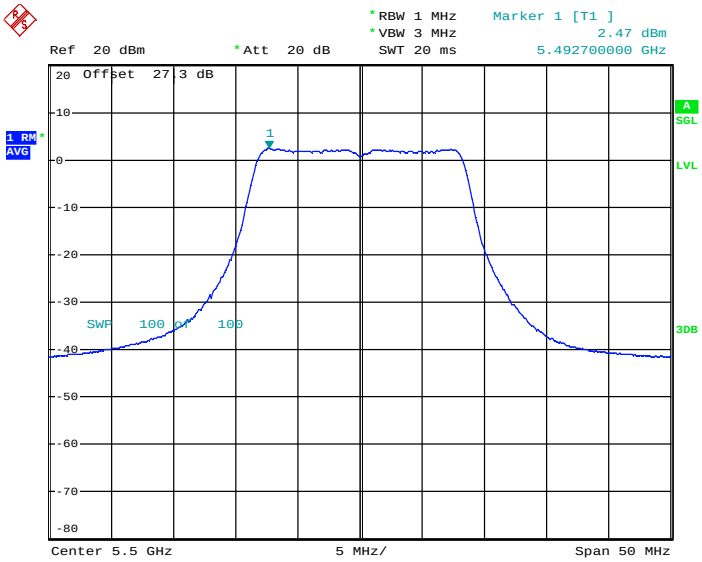
Date: 15.OCT.2012 23:51:36

PSD Plot on 802.11a Channel 64



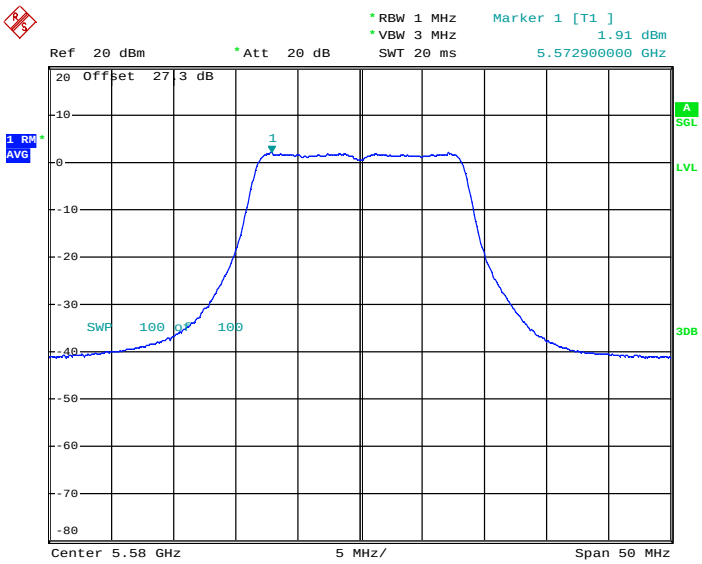
Date: 15.OCT.2012 23:53:33

PSD Plot on 802.11a Channel 100



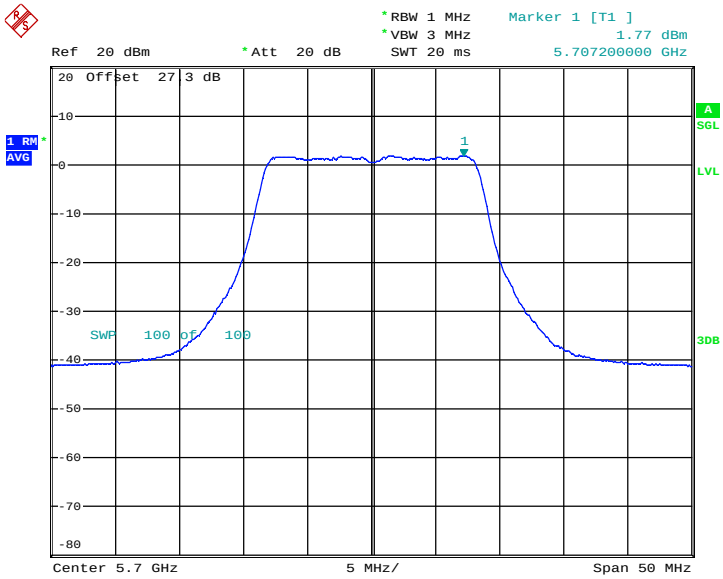
Date: 15.OCT.2012 23:55:29

PSD Plot on 802.11a Channel 116



Date: 15.OCT.2012 23:57:14

PSD Plot on 802.11a Channel 140



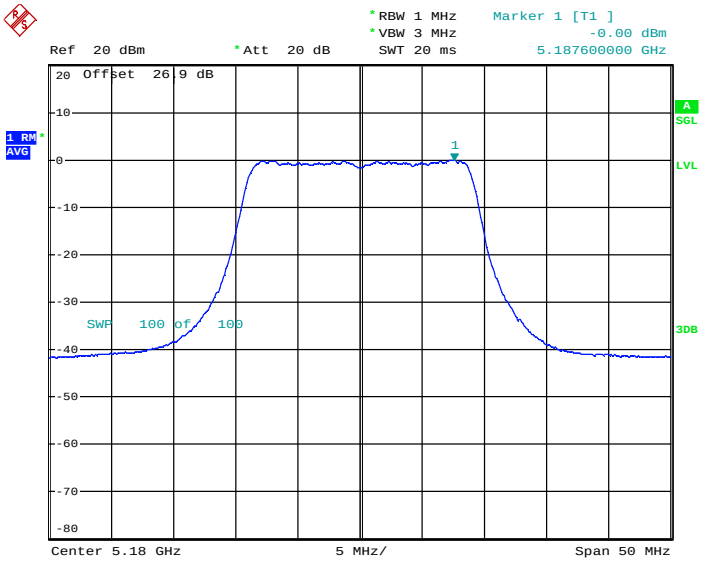
Date: 15.OCT.2012 23:58:53

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Bill Kuo	Relative Humidity :	45~49%
Duty Cycle:	93.06%	Duty Factor:	0.31dB

Channel	Frequency (MHz)	802.11n HT20 PSD (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	0.000	0.312	4	Pass
44	5220	0.010	0.322	4	Pass
48	5240	-0.250	0.062	4	Pass
52	5260	-0.110	0.202	11	Pass
60	5300	0.420	0.732	11	Pass
64	5320	0.400	0.712	11	Pass
100	5500	0.300	0.612	11	Pass
116	5580	-0.330	-0.018	11	Pass
140	5700	-0.270	0.042	11	Pass

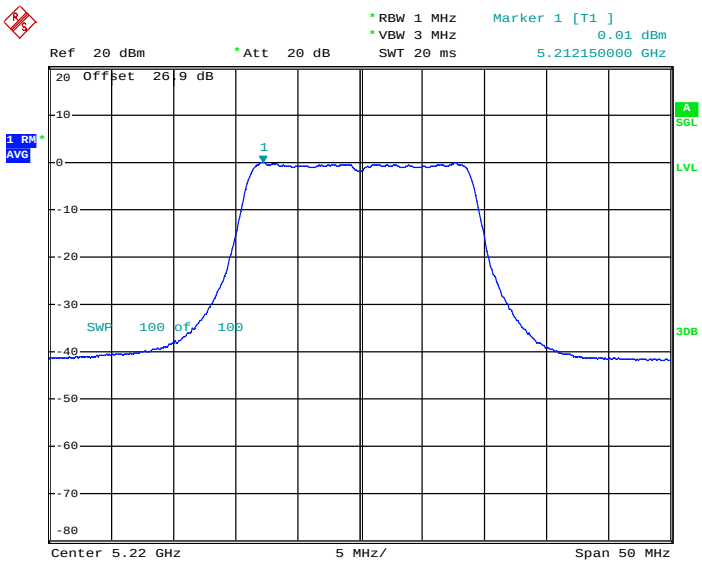
Note: Result of Final PSD equals to Measured PSD adds the duty factor.

PSD Plot on 802.11n HT20 channel 36



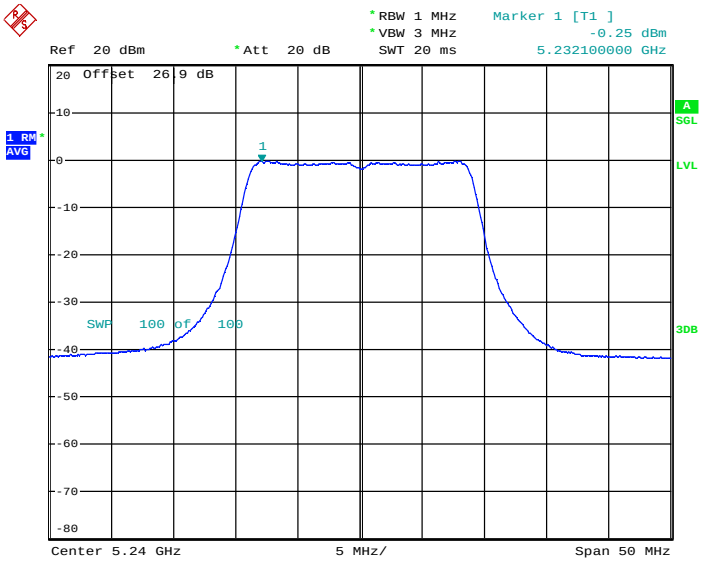
Date: 16.OCT.2012 00:00:55

PSD Plot on 802.11n HT20 Channel 44



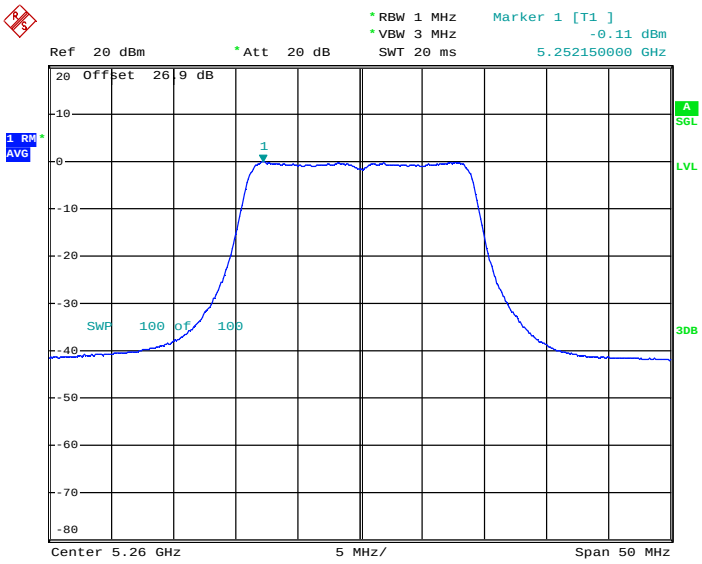
Date: 16.OCT.2012 00:02:44

PSD Plot on 802.11n HT20 Channel 48



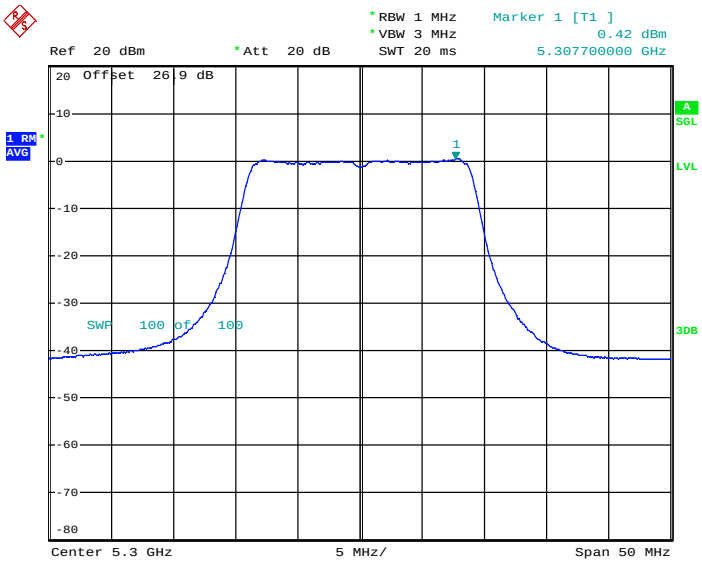
Date: 16.OCT.2012 00:04:26

PSD Plot on 802.11n HT20 Channel 52



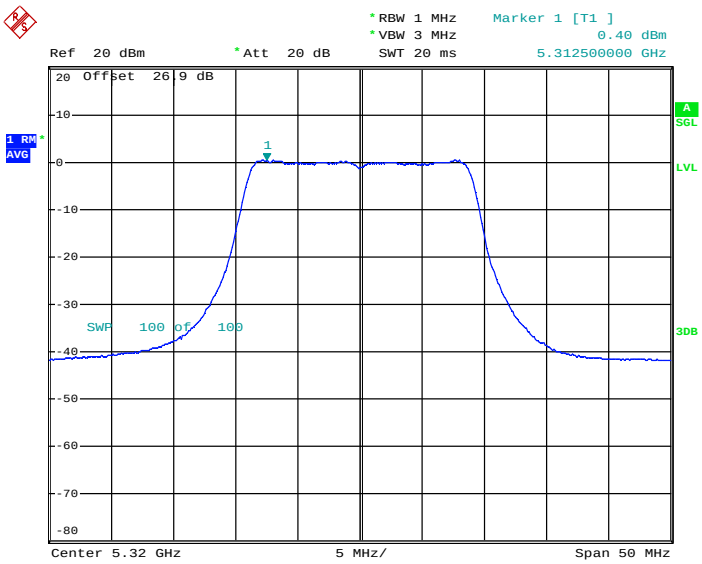
Date: 16.OCT.2012 00:06:12

PSD Plot on 802.11n HT20 Channel 60



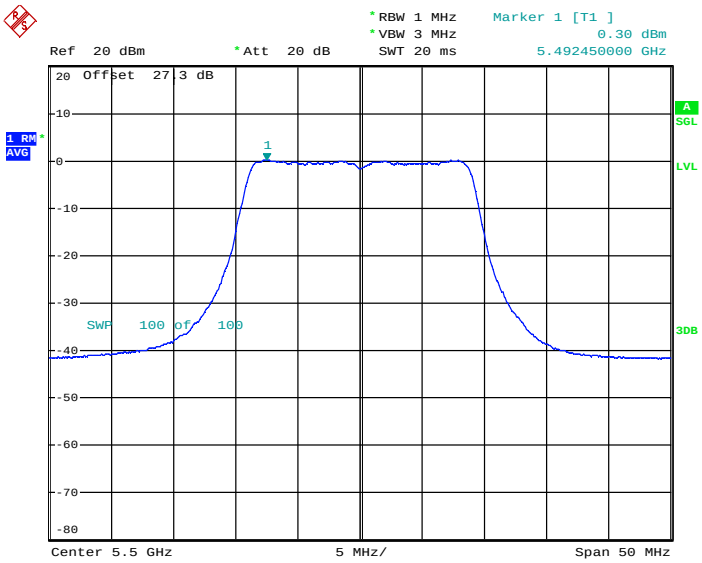
Date: 16.OCT.2012 00:14:08

PSD Plot on 802.11n HT20 Channel 64



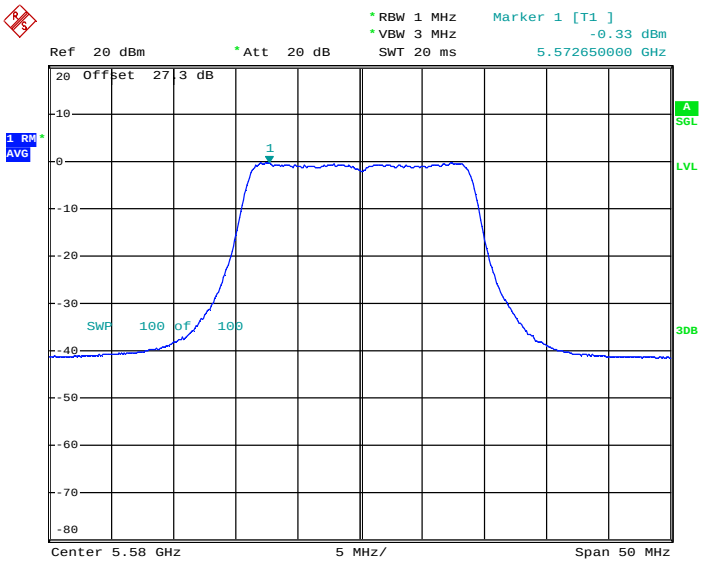
Date: 16.OCT.2012 00:19:10

PSD Plot on 802.11n HT20 Channel 100



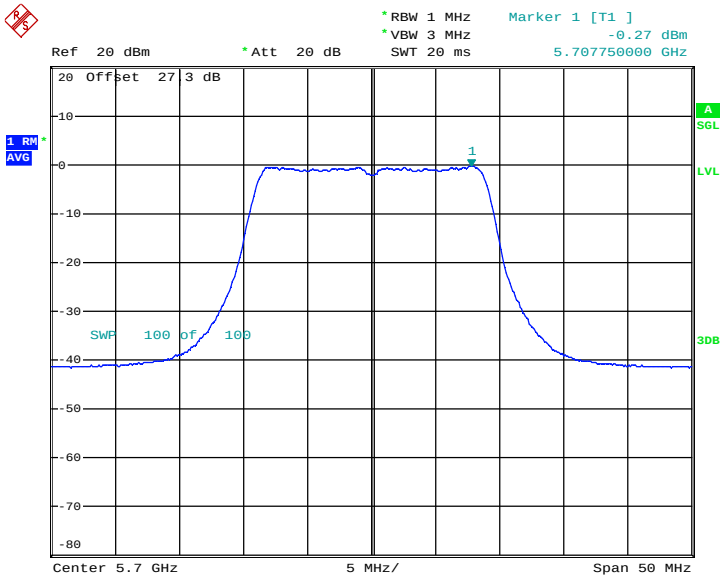
Date: 16.OCT.2012 00:20:48

PSD Plot on 802.11n HT20 Channel 116



Date: 16.OCT.2012 00:24:07

PSD Plot on 802.11n HT20 Channel 140



Date: 16.OCT.2012 00:30:46

3.4 Peak Excursion Ratio Measurement

3.4.1 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.

3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

T The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r02.

Section F) Peak excursion measurement

1. The transmitter output is connected to the spectrum analyzer.
2. Set the spectrum analyzer span to view the entire emission bandwidth.
3. Find the maximum of the peak-max-hold spectrum.

   *Set RBW = 1MHz.

   *Set VBW ≥ 3MHz.

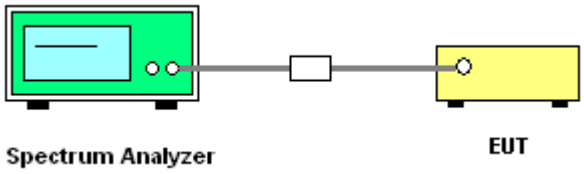
   *Detector = peak.

   *Trace mode = max-hold.

   *Allow the sweeps to continue until the trace stabilizes.

   *Use the peak search function to find the peak of the spectrum.
4. Use the procedure found under section 3.3 to measure the PPSD.
5. Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.

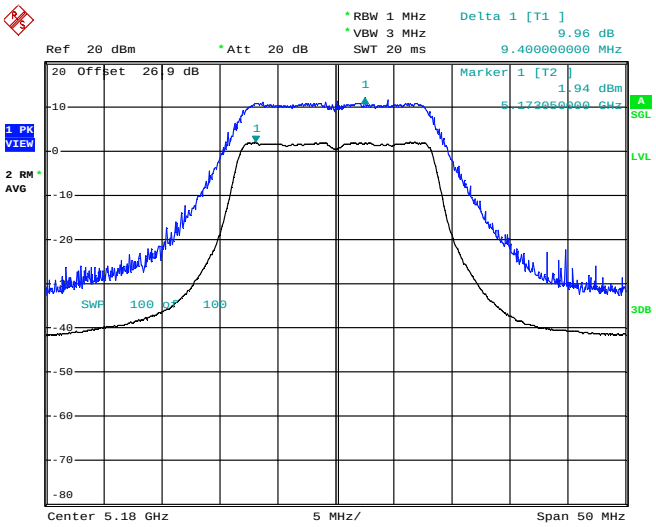
3.4.4 Test Setup



3.4.5 Test Result of Peak Excursion Ratio

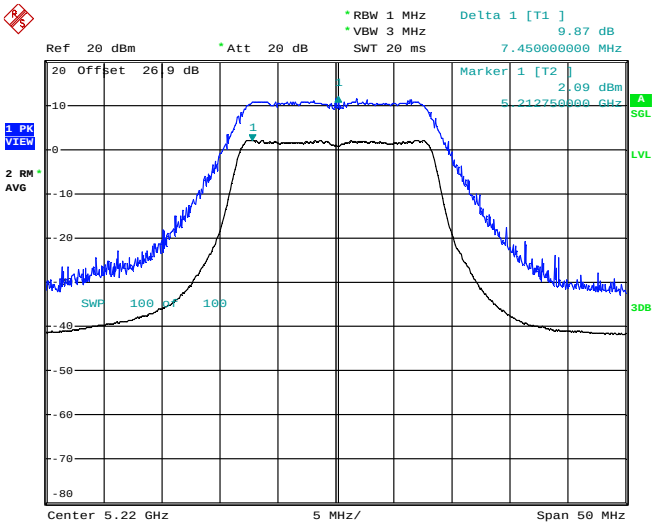
Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Bill Kuo	Relative Humidity :	45~49%

Peak Excursion Ratio Plot on 802.11a Channel 36



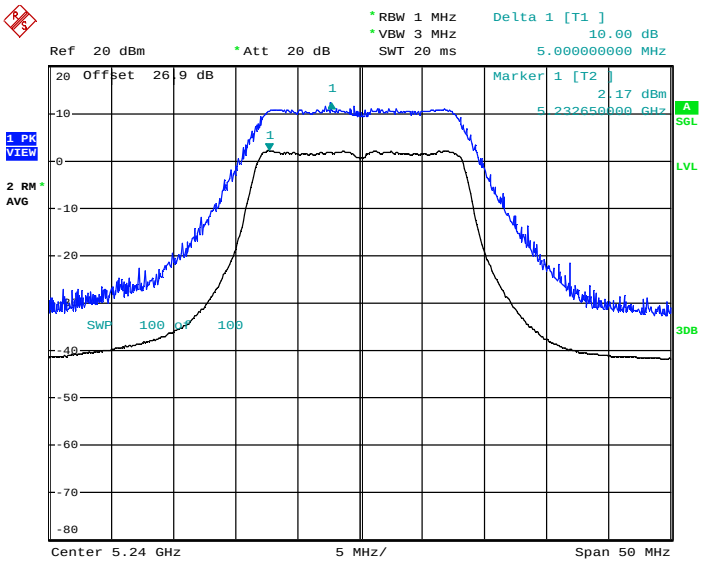
2o0932 15E PAR 802.11a 5180 (ch36)
Date: 15.OCT.2012 23:21:20

Peak Excursion Ratio Plot on 802.11a Channel 44



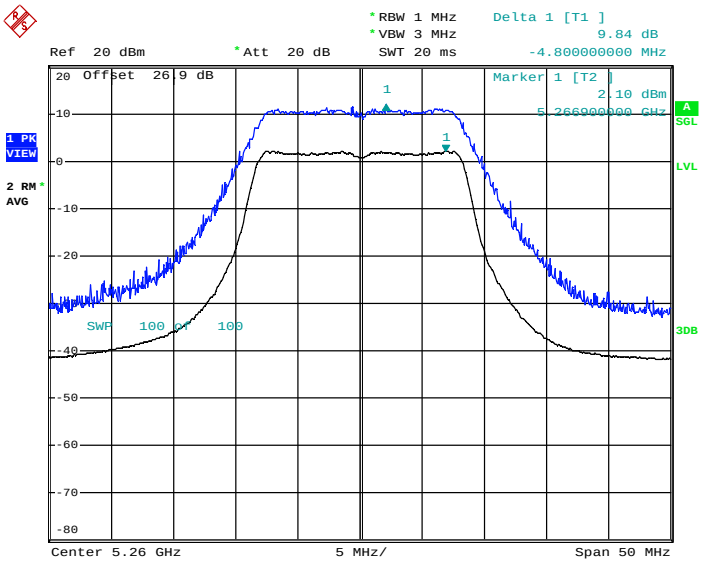
2o0932 15E PAR 802.11a 5220 (ch44)
Date: 15.OCT.2012 23:23:41

Peak Excursion Ratio Plot on 802.11a Channel 48



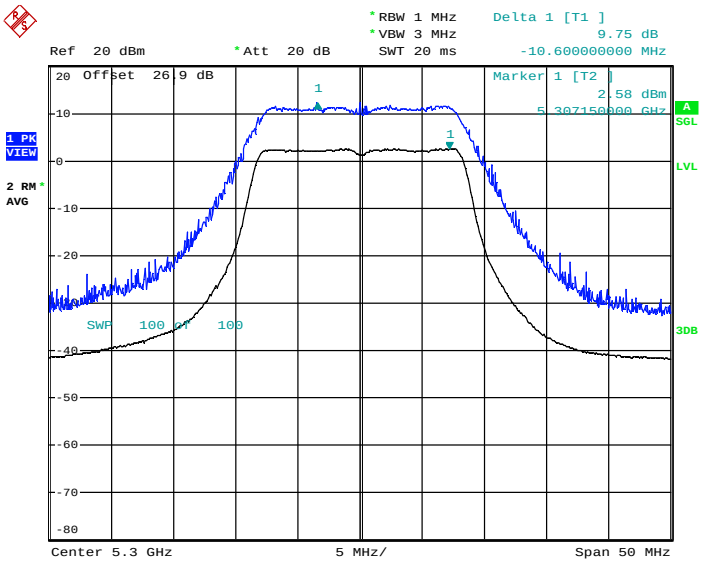
Date: 15.OCT.2012 23:26:22

Peak Excursion Ratio Plot on 802.11a Channel 52



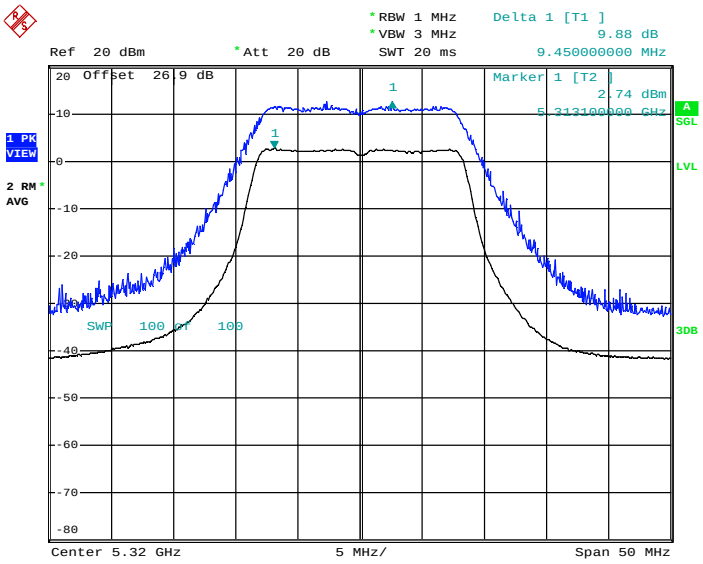
Date: 15.OCT.2012 23:40:20

Peak Excursion Ratio Plot on 802.11a Channel 60



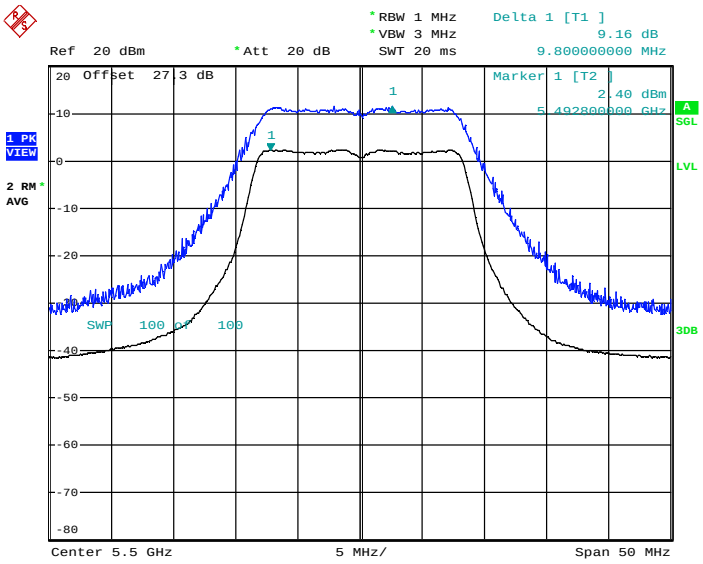
Date: 15.OCT.2012 23:52:05

Peak Excursion Ratio Plot on 802.11a Channel 64



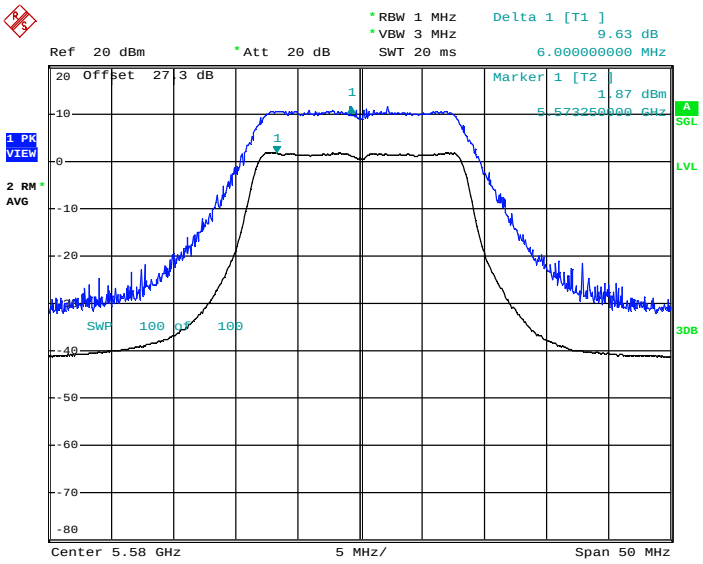
Date: 15.OCT.2012 23:53:51

Peak Excursion Ratio Plot on 802.11a Channel 100



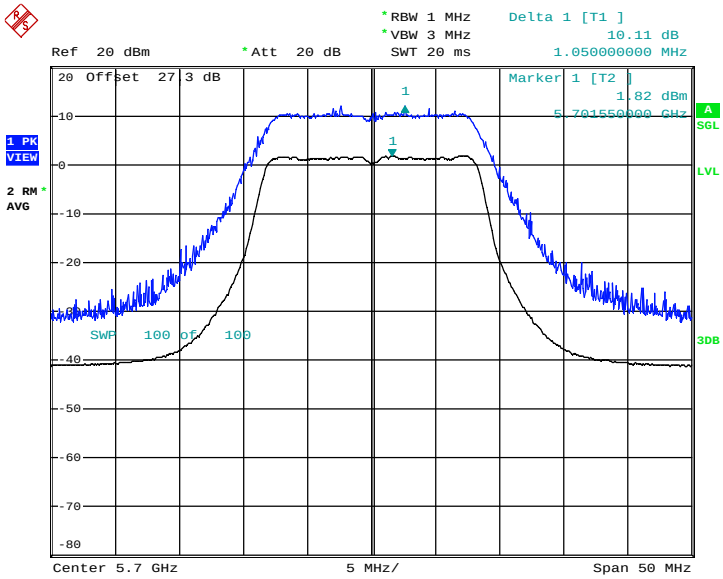
Date: 15.OCT.2012 23:55:46

Peak Excursion Ratio Plot on 802.11a Channel 116



Date: 15.OCT.2012 23:57:32

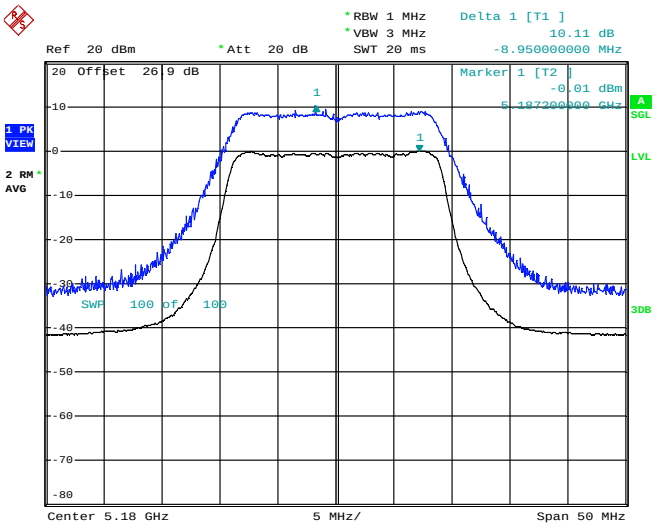
Peak Excursion Ratio Plot on 802.11a Channel 140



Date: 15.OCT.2012 23:59:11

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Bill Kuo	Relative Humidity :	45~49%

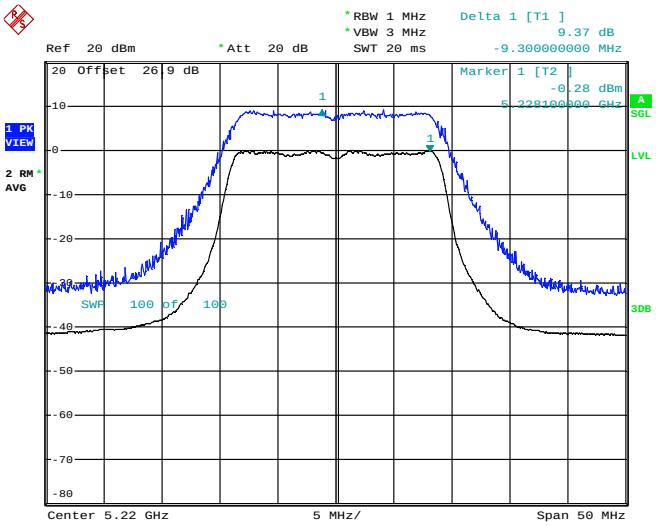
Peak Excursion Ratio Plot on 802.11n HT20 Channel 36



2o0932 15E PAR 802.11a_N20 5180 (ch36)

Date: 16.OCT.2012 00:01:15

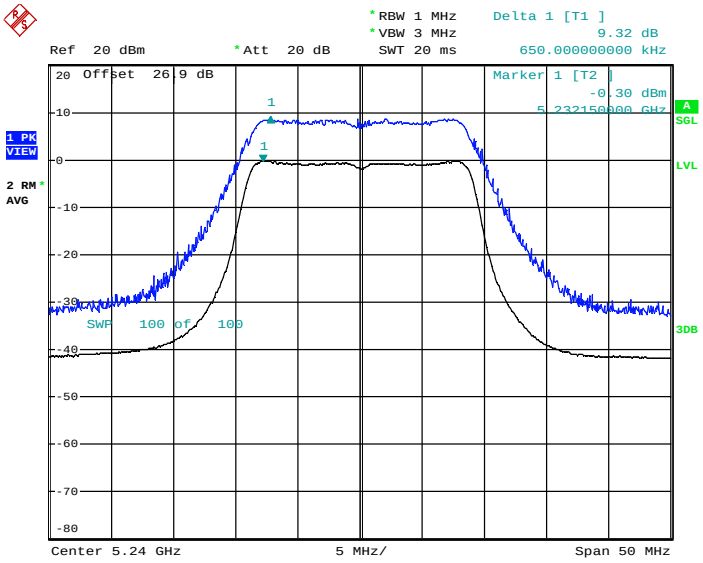
Peak Excursion Ratio Plot on 802.11n HT20 Channel 44



2o0932 15E PAR 802.11a_N20 5220 (ch44)

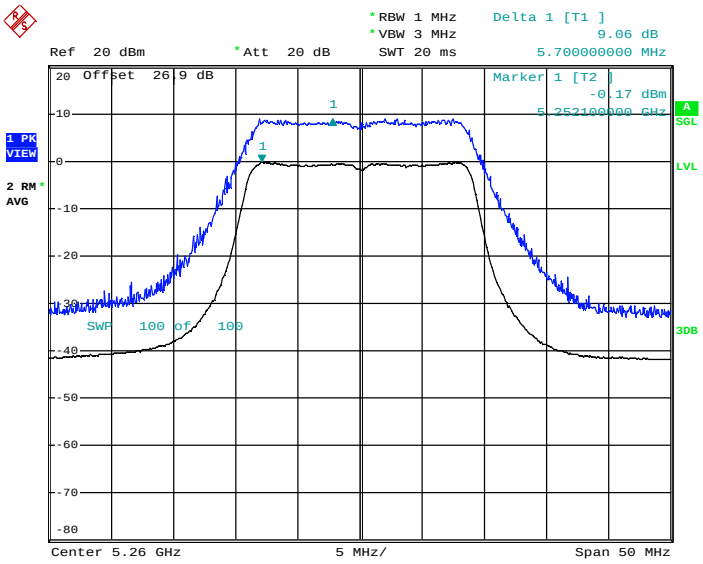
Date: 16.OCT.2012 00:03:01

Peak Excursion Ratio Plot on 802.11n HT20 Channel 48



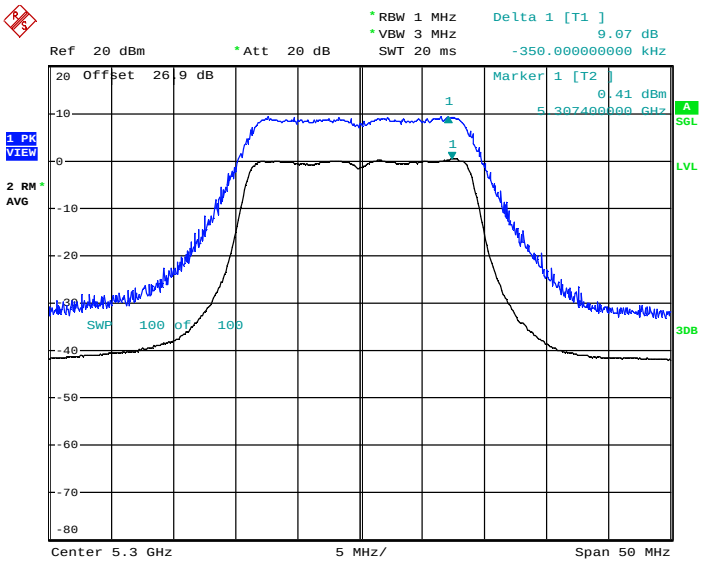
Date: 16.OCT.2012 00:04:43

Peak Excursion Ratio Plot on 802.11n HT20 Channel 52



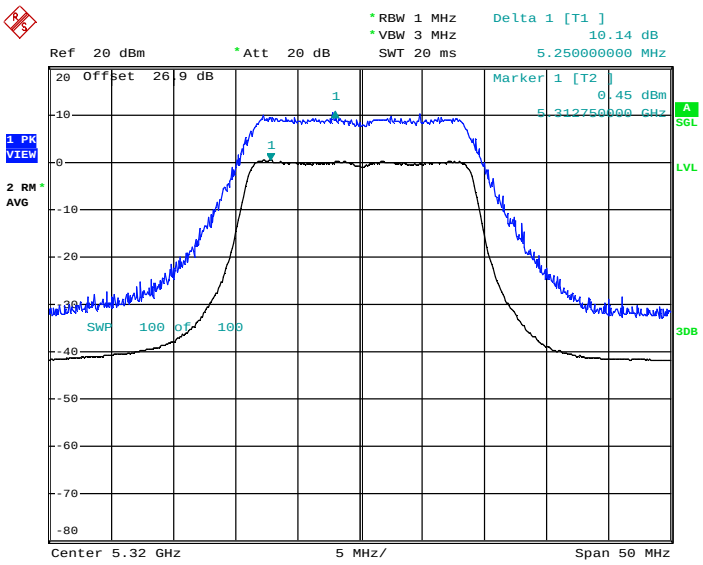
Date: 16.OCT.2012 00:06:29

Peak Excursion Ratio Plot on 802.11n HT20 Channel 60



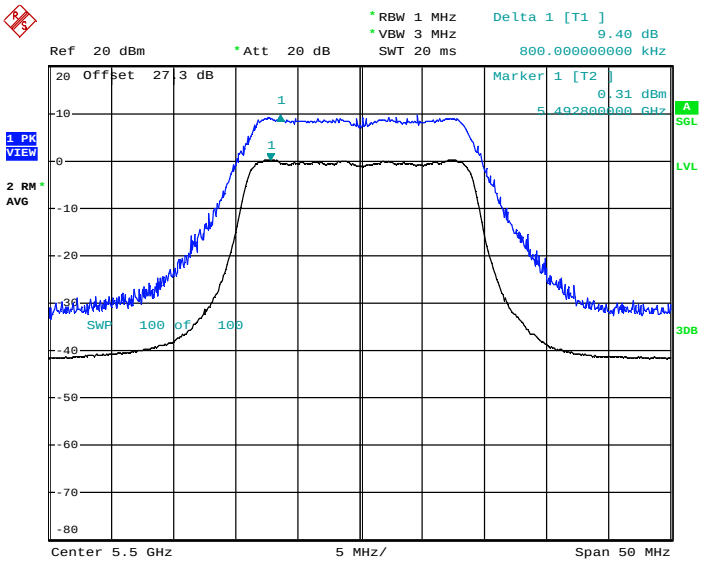
Date: 16.OCT.2012 00:17:49

Peak Excursion Ratio Plot on 802.11n HT20 Channel 64



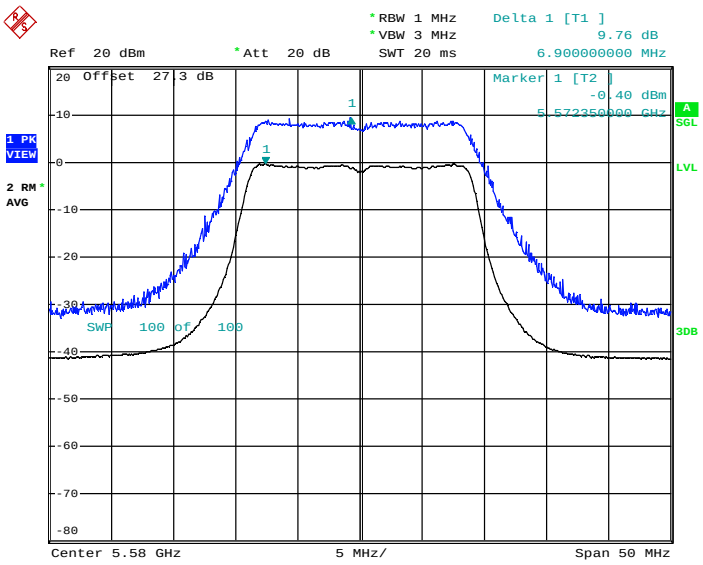
Date: 16.OCT.2012 00:19:28

Peak Excursion Ratio Plot on 802.11n HT20 Channel 100



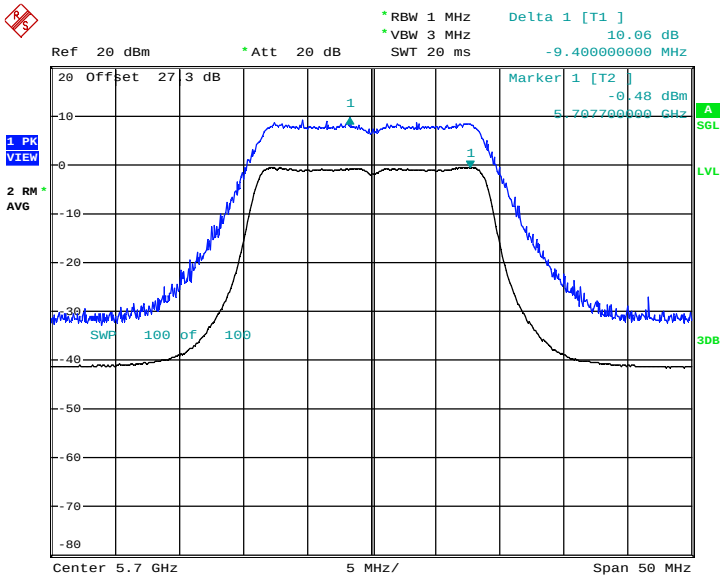
Date: 16.OCT.2012 00:22:30

Peak Excursion Ratio Plot on 802.11n HT20 Channel 116



Date: 16.OCT.2012 00:24:24

Peak Excursion Ratio Plot on 802.11n HT20 Channel 140



Date: 16.OCT.2012 00:31:04

3.5 Unwanted Radiated Emission Measurement

This section as specified in FCC Part 15.407(b) is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement. The unwanted emissions shall comply with 15.407(b)(1) to (6), and restricted bands per FCC Part15.205.

3.5.1 Limit of Unwanted Emissions

(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 –27dBm/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) Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 as below table,

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

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)
-17	78.3
- 27	68.3

3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

1. The testing follows the guidelines in fulfills ANSI C63.4-2003 and the guidelines in ANSI C63.10-2009 test site requirement and FCC KDB 789033 D01 General UNII Test Procedures v01r01.

   Section G) Unwanted emissions measurement.

   (1) Procedure for Unwanted Emissions Measurements Below 1000MHz

   - RBW = 120 KHz
   - VBW = 300 KHz
   - Detector = Peak
   - Trace mode = max hold

   (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz

   - The setting follows the G) 5) of FCC KDB 789033.
   - RBW = 1 MHz
   - VBW ≥ 3 MHz
   - Detector = Peak
   - Sweep time = auto
   - Trace mode = max hold

   (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

   - The setting follows G) 6) of FCC KDB 789033.
   - RBW = 1 MHz
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

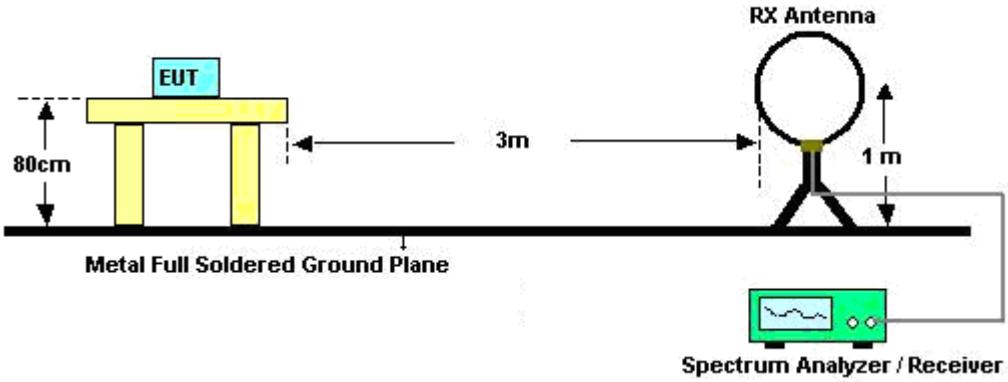
Band	Duty Cycle (%)	T(us)	1/T(KHz)	VBW Setting
802.11a	93.46	1430	0.699	1KHz
802.11n HT20	93.06	1340	0.746	1KHz

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 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.

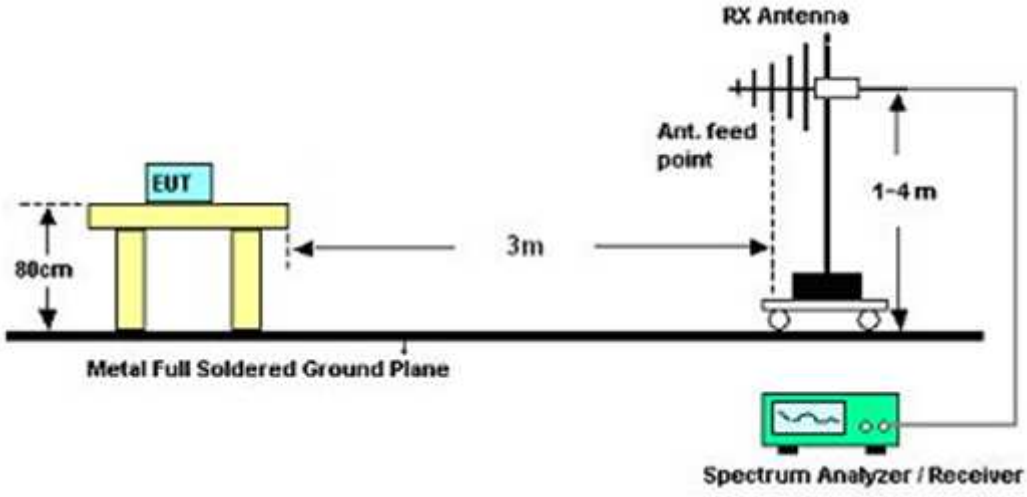
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. 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 peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.5.4 Test Setup

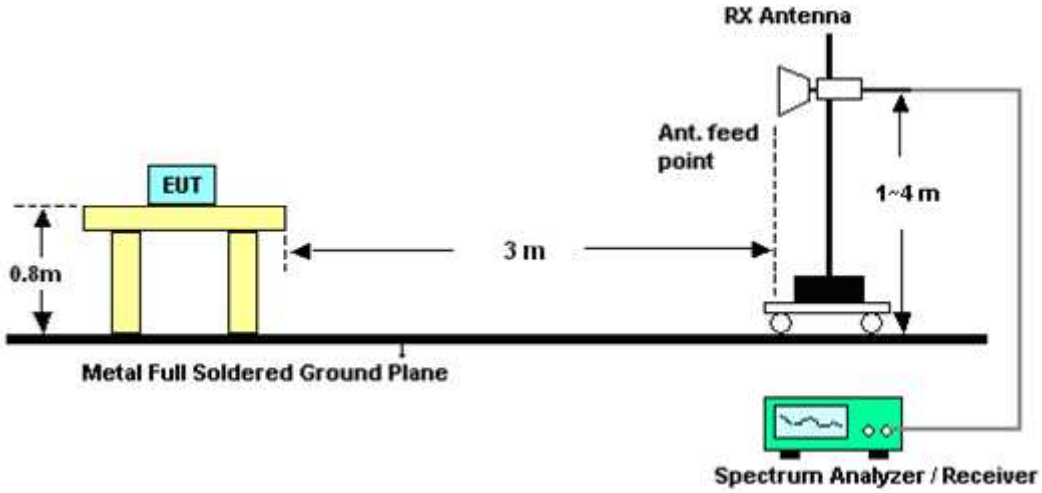
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Results of Radiated Emissions (9 KHz ~ 30 MHz)

The low frequency, which started from 9 KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

3.5.6 Test Result

3.5.6.1 Test Result of Radiated Band Edges

Test Mode :	802.11a	**Temperature :**	23~24℃
Test Channel :	36	**Relative Humidity :**	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5148.65	56.35	-17.65	74	45.62	34.29	9.41	32.97	102	305	Peak
5148.5	41.87	-12.13	54	31.14	34.29	9.41	32.97	102	305	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5148.35	62.96	-11.04	74	52.23	34.29	9.41	32.97	121	316	Peak
5148.05	44.43	-9.57	54	33.7	34.29	9.41	32.97	121	316	Average

Test Mode :	802.11a	**Temperature :**	23~24℃
Test Channel :	48	**Relative Humidity :**	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5073.8	54.03	-19.97	74	43.61	34.12	9.29	32.99	100	298	Peak
5149.55	41.17	-12.83	54	30.44	34.29	9.41	32.97	100	298	Average
5392.02	55.18	-18.82	74	43.38	34.9	9.82	32.92	100	298	Peak
5359.35	42.88	-11.12	54	31.22	34.81	9.78	32.93	100	298	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5133.35	55.35	-18.65	74	44.71	34.25	9.37	32.98	146	319	Peak
5144.9	42.9	-11.1	54	32.17	34.29	9.41	32.97	146	319	Average
5408.19	55.33	-18.67	74	43.45	34.94	9.86	32.92	146	319	Peak
5357.48	42.99	-11.01	54	31.33	34.81	9.78	32.93	146	319	Average

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	52	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5139.35	53.94	-20.06	74	43.3	34.25	9.37	32.98	100	298	Peak
5043.95	41.34	-12.66	54	31.1	34.03	9.21	33	100	298	Average
5391.47	56.01	-17.99	74	44.21	34.9	9.82	32.92	100	298	Peak
5355.61	43	-11	54	31.38	34.81	9.74	32.93	100	298	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5140.4	54.6	-19.4	74	43.87	34.29	9.41	32.97	118	317	Peak
5149.55	42.43	-11.57	54	31.7	34.29	9.41	32.97	118	317	Average
5354.29	56.78	-17.22	74	45.16	34.81	9.74	32.93	118	317	Peak
5350.99	44.06	-9.94	54	32.44	34.81	9.74	32.93	118	317	Average

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	64	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5081.75	53.88	-20.12	74	43.46	34.12	9.29	32.99	111	298	Peak
5130.5	41.13	-12.87	54	30.49	34.25	9.37	32.98	111	298	Average
5351.65	58.3	-15.7	74	46.68	34.81	9.74	32.93	111	298	Peak
5350	43.61	-10.39	54	31.99	34.81	9.74	32.93	111	298	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5147	53.62	-20.38	74	42.89	34.29	9.41	32.97	118	316	Peak
5148.5	41.64	-12.36	54	30.91	34.29	9.41	32.97	118	316	Average
5354.29	64.37	-9.63	74	52.75	34.81	9.74	32.93	118	316	Peak
5350	45.82	-8.18	54	34.2	34.81	9.74	32.93	118	316	Average

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	100	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5465.04	60.57	-13.43	74	48.43	35.11	9.94	32.91	128	298	Peak
5469.36	43.53	-10.47	54	31.39	35.11	9.94	32.91	128	298	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5468.4	61.96	-12.04	74	49.82	35.11	9.94	32.91	120	314	Peak
5469.68	45.26	-8.74	54	33.12	35.11	9.94	32.91	120	314	Average

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	140	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5726.04	62.26	-11.74	74	50.27	35.33	9.92	33.26	102	302	Peak
5725	43.95	-10.05	54	31.96	35.33	9.92	33.26	102	302	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5726.92	65.29	-8.71	74	53.3	35.33	9.92	33.26	131	305	Peak
5725	45.49	-8.51	54	33.5	35.33	9.92	33.26	131	305	Average

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	36	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5131.05	53.47	-20.53	74	42.83	34.25	9.37	32.98	101	296	Peak
5148.75	40.28	-13.72	54	29.55	34.29	9.41	32.97	101	296	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5148.75	54.52	-19.48	74	43.79	34.29	9.41	32.97	110	5	Peak
5148.5	40.83	-13.17	54	30.1	34.29	9.41	32.97	110	5	Average

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	48	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5112.55	53.16	-20.84	74	42.61	34.2	9.33	32.98	100	297	Peak
5135.7	39.99	-14.01	54	29.35	34.25	9.37	32.98	100	297	Average
5396.9	54.61	-19.39	74	42.77	34.94	9.82	32.92	100	297	Peak
5351.85	41.6	-12.4	54	29.98	34.81	9.74	32.93	100	297	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5107.75	53.86	-20.14	74	43.31	34.2	9.33	32.98	108	5	Peak
5147.25	40.36	-13.64	54	29.63	34.29	9.41	32.97	108	5	Average
5367	54.87	-19.13	74	43.17	34.85	9.78	32.93	108	5	Peak
5391.25	41.57	-12.43	54	29.77	34.9	9.82	32.92	108	5	Average

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	52	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5123.3	53.71	-20.29	74	43.07	34.25	9.37	32.98	100	297	Peak
5148.6	40.17	-13.83	54	29.44	34.29	9.41	32.97	100	297	Average
5395.55	55.41	-18.59	74	43.57	34.94	9.82	32.92	100	297	Peak
5388.75	41.72	-12.28	54	29.92	34.9	9.82	32.92	100	297	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5148.05	53.17	-20.83	74	42.44	34.29	9.41	32.97	107	5	Peak
5148.95	40.09	-13.91	54	29.36	34.29	9.41	32.97	107	5	Average
5378.95	55.11	-18.89	74	43.36	34.9	9.78	32.93	107	5	Peak
5351.45	41.87	-12.13	54	30.25	34.81	9.74	32.93	107	5	Average

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	64	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5351.87	57.14	-16.86	74	45.52	34.81	9.74	32.93	109	299	Peak
5352.86	43	-11	54	31.38	34.81	9.74	32.93	109	299	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350.88	59.65	-14.35	74	48.03	34.81	9.74	32.93	116	317	Peak
5351.32	44.55	-9.45	54	32.93	34.81	9.74	32.93	116	317	Average

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	100	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5467.92	56.82	-17.18	74	44.68	35.11	9.94	32.91	107	300	Peak
5470	42.13	-11.87	54	29.99	35.11	9.94	32.91	107	300	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5469.2	61.56	-12.44	74	49.42	35.11	9.94	32.91	100	296	Peak
5469.36	42.8	-11.2	54	30.66	35.11	9.94	32.91	100	296	Average

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	140	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	62.83	-11.17	74	50.84	35.33	9.92	33.26	114	294	Peak
5725.16	42.47	-11.53	54	30.48	35.33	9.92	33.26	114	294	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725.16	63.35	-10.65	74	51.36	35.33	9.92	33.26	157	355	Peak
5725.32	43.58	-10.42	54	31.59	35.33	9.92	33.26	157	355	Average

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

Test Mode :	802.11a	**Temperature :**	23~24℃
Test Channel :	36	**Relative Humidity :**	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	**Polarization :**	Horizontal
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5180	89.8	-	-	78.94	34.38	9.45	32.97	102	305	Average
5180	100.09	-	-	89.23	34.38	9.45	32.97	102	305	Peak
10356	48.42	-25.58	74	58.38	37.28	11.31	58.55	100	0	Peak
15537	48.02	-25.98	74	51.16	40.33	14.11	57.58	100	0	Peak

Test Mode :	802.11a	**Temperature :**	23~24℃
Test Channel :	36	**Relative Humidity :**	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5180	96.73	-	-	85.87	34.38	9.45	32.97	121	316	Average
5180	107.58	-	-	96.72	34.38	9.45	32.97	121	316	Peak
10359	38.52	-15.48	54	48.48	37.29	11.31	58.56	100	24	Average
10359	51.56	-22.44	74	61.52	37.29	11.31	58.56	100	24	Peak
15537	49.57	-24.43	74	52.71	40.33	14.11	57.58	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	44	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5220	89.42	-	-	78.39	34.46	9.53	32.96	136	299	Average
5220	99.28	-	-	88.25	34.46	9.53	32.96	136	299	Peak
10446	37.11	-16.89	54	47.2	37.36	11.18	58.63	100	342	Average
10446	51.18	-22.82	74	61.27	37.36	11.18	58.63	100	342	Peak
15663	49.38	-24.62	74	52.26	40.47	14.17	57.52	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	44	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5220	97.2	-	-	86.17	34.46	9.53	32.96	120	316	Average
5220	107.09	-	-	96.06	34.46	9.53	32.96	120	316	Peak
10440	38.72	-15.28	54	48.78	37.35	11.21	58.62	100	24	Average
10440	52.41	-21.59	74	62.47	37.35	11.21	58.62	100	24	Peak
15660	50.97	-23.03	74	53.87	40.46	14.17	57.53	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	48	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5240	89.55	-	-	78.42	34.51	9.57	32.95	100	298	Average
5240	99.52	-	-	88.44	34.51	9.53	32.96	100	298	Peak
10479	50.46	-23.54	74	60.59	37.39	11.14	58.66	100	0	Peak
15711	48.58	-25.42	74	51.38	40.51	14.2	57.51	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	48	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5240	95.58	-	-	84.45	34.51	9.57	32.95	146	319	Average
5240	105.37	-	-	94.29	34.51	9.53	32.96	146	319	Peak
10482	50.93	-23.07	74	61.06	37.39	11.14	58.66	100	0	Peak
15723	49.97	-24.03	74	52.75	40.52	14.2	57.5	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	52	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Horizontal
Remark :	5260 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5260	89.73	-	-	78.47	34.59	9.62	32.95	100	298	Average
5260	100.05	-	-	88.79	34.59	9.62	32.95	100	298	Peak
10518	39.71	-14.29	54	49.75	37.42	11.21	58.67	100	338	Average
10518	52.64	-21.36	74	62.68	37.42	11.21	58.67	100	338	Peak
15774	37.08	-16.92	54	39.75	40.58	14.23	57.48	100	276	Average
15774	51.72	-22.28	74	54.39	40.58	14.23	57.48	100	276	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	52	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5260	97.59	-	-	86.33	34.59	9.62	32.95	118	317	Average
5260	108.08	-	-	96.91	34.55	9.57	32.95	118	317	Peak
10521	39.22	-14.78	54	49.26	37.42	11.21	58.67	100	23	Average
10521	51.77	-22.23	74	61.81	37.42	11.21	58.67	100	23	Peak
15780	49.67	-24.33	74	52.34	40.58	14.23	57.48	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	60	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5300	90.24	-	-	78.84	34.68	9.66	32.94	100	302	Average
5300	101.08	-	-	89.68	34.68	9.66	32.94	100	302	Peak
10602	40.7	-13.3	54	50.33	37.5	11.51	58.64	100	335	Average
10602	52.34	-21.66	74	61.97	37.5	11.51	58.64	100	335	Peak
15909	50.19	-23.81	74	52.6	40.71	14.3	57.42	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	60	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5300	97.44	-	-	86.04	34.68	9.66	32.94	104	318	Average
5300	108.79	-	-	97.39	34.68	9.66	32.94	104	318	Peak
10608	40.07	-13.93	54	49.7	37.5	11.51	58.64	100	23	Average
10608	52.42	-21.58	74	62.05	37.5	11.51	58.64	100	23	Peak
15906	49.07	-24.93	74	51.48	40.71	14.3	57.42	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	64	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
159.87	32.06	-11.44	43.5	51.73	10.5	1.22	31.39	-	-	Peak
213.33	40.28	-3.22	43.5	60.22	10.04	1.38	31.36	100	136	Peak
246	37.52	-8.48	46	54.84	12.33	1.53	31.18	-	-	Peak
330.1	34.33	-11.67	46	49.63	14.11	1.85	31.26	-	-	Peak
672.4	22.01	-23.99	46	29.17	20.37	2.88	30.41	-	-	Peak
995.8	26.06	-27.94	54	28.46	24.54	3.51	30.45	-	-	Peak
5320	90.94	-	-	79.46	34.72	9.7	32.94	111	298	Average
5320	101.2	-	-	89.72	34.72	9.7	32.94	111	298	Peak
10641	40.5	-13.5	54	49.88	37.54	11.71	58.63	100	335	Average
10641	52.23	-21.77	74	61.61	37.54	11.71	58.63	100	335	Peak
15960	50.86	-23.14	74	53.17	40.77	14.32	57.4	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	64	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.05	31.12	-8.88	40	45.31	17.12	0.57	31.88	-	-	Peak
173.37	33.08	-10.42	43.5	53.9	9.19	1.24	31.25	-	-	Peak
213.33	38.87	-4.63	43.5	58.81	10.04	1.38	31.36	102	274	Peak
325.9	27.6	-18.4	46	42.97	14.01	1.83	31.21	-	-	Peak
479.9	22.1	-23.9	46	32.99	17.68	2.38	30.95	-	-	Peak
925.8	25.19	-20.81	46	29.14	23.49	3.4	30.84	-	-	Peak
5320	98.36	-	-	86.88	34.72	9.7	32.94	118	316	Average
5320	107.88	-	-	96.4	34.72	9.7	32.94	118	316	Peak
10638	40.82	-13.18	54	50.2	37.54	11.71	58.63	100	20	Average
10638	53.5	-20.5	74	62.88	37.54	11.71	58.63	100	20	Peak
15960	49.17	-24.83	74	51.48	40.77	14.32	57.4	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	100	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5500	94.1	-	-	81.78	35.2	10.02	32.9	128	298	Average
5500	104.83	-	-	92.51	35.2	10.02	32.9	128	298	Peak
11001	40.5	-13.5	54	47.92	37.9	13.22	58.54	100	356	Average
11001	53.13	-20.87	74	60.55	37.9	13.22	58.54	100	356	Peak
16497	50.12	-23.88	74	51.35	41.5	14.06	56.79	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	100	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Vertical
Remark :	5500 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5500	97.64	-	-	85.32	35.2	10.02	32.9	120	314	Average
5500	107.87	-	-	95.55	35.2	10.02	32.9	120	314	Peak
11004	44.75	-9.25	54	52.17	37.9	13.22	58.54	100	23	Average
11004	58.46	-15.54	74	65.88	37.9	13.22	58.54	100	23	Peak
16506	39.23	-14.77	54	40.46	41.5	14.06	56.79	102	47	Average
16506	52.23	-21.77	74	53.46	41.5	14.06	56.79	102	47	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	116	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5580	94.75	-	-	82.54	35.24	9.99	33.02	125	300	Average
5580	106.3	-	-	94.09	35.24	9.99	33.02	125	300	Peak
11166	39.22	-14.78	54	46.5	38.07	13.19	58.54	100	330	Average
11166	54.34	-19.66	74	61.62	38.07	13.19	58.54	100	330	Peak
16743	47.91	-26.09	74	49.64	41.74	14.17	57.64	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	116	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5580	98.88	-	-	86.67	35.24	9.99	33.02	132	312	Average
5580	109.37	-	-	97.16	35.24	9.99	33.02	132	312	Peak
11160	44.54	-9.46	54	51.81	38.07	13.2	58.54	100	22	Average
11160	57.95	-16.05	74	65.22	38.07	13.2	58.54	100	22	Peak
16737	48.78	-25.22	74	50.51	41.74	14.17	57.64	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	140	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Horizontal
Remark :	5700 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5700	93.6	-	-	81.58	35.31	9.93	33.22	102	302	Average
5700	103.6	-	-	91.58	35.31	9.93	33.22	102	302	Peak
11397	39.44	-14.56	54	46.52	38.3	13.16	58.54	100	329	Average
11397	51.02	-22.98	74	58.1	38.3	13.16	58.54	100	329	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	140	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Vertical
Remark :	5700 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5700	96.77	-	-	84.75	35.31	9.93	33.22	131	305	Average
5700	106.75	-	-	94.73	35.31	9.93	33.22	131	305	Peak
11400	43.8	-10.2	54	50.88	38.3	13.16	58.54	100	12	Average
11400	55.06	-18.94	74	62.14	38.3	13.16	58.54	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	36	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5180	87.89	-	-	77.03	34.38	9.45	32.97	101	296	Average
5180	98.46	-	-	87.6	34.38	9.45	32.97	101	296	Peak
10362	44.6	-29.4	74	54.56	37.29	11.31	58.56	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	36	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5180	90.17	-	-	79.31	34.38	9.45	32.97	110	5	Average
5180	100.47	-	-	89.61	34.38	9.45	32.97	110	5	Peak
10362	46.65	-27.35	74	56.61	37.29	11.31	58.56	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	44	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5220	88.11	-	-	77.08	34.46	9.53	32.96	100	296	Average
5220	98.62	-	-	87.59	34.46	9.53	32.96	100	296	Peak
10437	46.63	-27.37	74	56.69	37.35	11.21	58.62	100	0	Peak
15654	48.3	-25.7	74	51.2	40.46	14.17	57.53	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	44	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5220	90.18	-	-	79.15	34.46	9.53	32.96	109	5	Average
5220	100.53	-	-	89.5	34.46	9.53	32.96	109	5	Peak
10443	49.15	-24.85	74	59.21	37.35	11.21	58.62	100	0	Peak
15657	48.35	-25.65	74	51.25	40.46	14.17	57.53	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	48	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5240	88.16	-	-	77.03	34.51	9.57	32.95	100	297	Average
5240	98.91	-	-	87.78	34.51	9.57	32.95	100	297	Peak
10479	44.74	-29.26	74	54.87	37.39	11.14	58.66	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	48	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5240	90.34	-	-	79.21	34.51	9.57	32.95	108	5	Average
5240	99.88	-	-	88.75	34.51	9.57	32.95	108	5	Peak
10479	46.27	-27.73	74	56.4	37.39	11.14	58.66	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	52	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5260	88.11	-	-	76.85	34.59	9.62	32.95	100	297	Average
5260	98.42	-	-	87.16	34.59	9.62	32.95	100	297	Peak
10524	48.35	-25.65	74	58.39	37.42	11.21	58.67	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	52	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5260	90.3	-	-	79.04	34.59	9.62	32.95	107	5	Average
5260	100.19	-	-	88.93	34.59	9.62	32.95	107	5	Peak
10521	48.42	-25.58	74	58.46	37.42	11.21	58.67	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	60	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5300	87.97	-	-	76.57	34.68	9.66	32.94	100	300	Average
5300	97.96	-	-	86.56	34.68	9.66	32.94	100	300	Peak
10596	47.68	-26.32	74	57.33	37.49	11.51	58.65	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	60	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5300	95.14	-	-	83.74	34.68	9.66	32.94	117	318	Average
5300	105.33	-	-	93.93	34.68	9.66	32.94	117	318	Peak
10599	48.37	-25.63	74	58	37.5	11.51	58.64	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	64	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
173.37	34.22	-9.28	43.5	55.04	9.19	1.24	31.25	-	-	Peak
213.33	39.57	-3.93	43.5	59.51	10.04	1.38	31.36	104	199	Peak
246	37.83	-8.17	46	55.15	12.33	1.53	31.18	-	-	Peak
330.1	34.34	-11.66	46	49.64	14.11	1.85	31.26	-	-	Peak
659.1	22.6	-23.4	46	29.85	20.27	2.86	30.38	-	-	Peak
949.6	25.63	-20.37	46	29.17	23.84	3.46	30.84	-	-	Peak
5320	88.3	-	-	76.82	34.72	9.7	32.94	109	299	Average
5320	98.95	-	-	87.47	34.72	9.7	32.94	109	299	Peak
10643	48.8	-25.2	74	58.18	37.54	11.71	58.63	100	0	Peak
15963	48.55	-25.45	74	50.83	40.78	14.34	57.4	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	64	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.05	32.27	-7.73	40	46.46	17.12	0.57	31.88	-	-	Peak
173.37	34.11	-9.39	43.5	54.93	9.19	1.24	31.25	-	-	Peak
213.33	38.38	-5.12	43.5	58.32	10.04	1.38	31.36	106	252	Peak
322.4	28.58	-17.42	46	44.01	13.9	1.82	31.15	-	-	Peak
479.9	22.55	-23.45	46	33.44	17.68	2.38	30.95	-	-	Peak
806.8	25.04	-20.96	46	29.92	22.17	3.16	30.21	-	-	Peak
5320	94.99	-	-	83.51	34.72	9.7	32.94	116	317	Average
5320	105.84	-	-	94.36	34.72	9.7	32.94	116	317	Peak
10643	48.24	-25.76	74	57.62	37.54	11.71	58.63	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	100	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5500	90.58	-	-	78.26	35.2	10.02	32.9	107	300	Average
5500	101.46	-	-	89.14	35.2	10.02	32.9	107	300	Peak
11000	48.78	-25.22	74	56.3	37.9	13.12	58.54	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	100	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Vertical
Remark :	5500 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5500	93.03	-	-	80.71	35.2	10.02	32.9	100	296	Average
5500	102.93	-	-	90.61	35.2	10.02	32.9	100	296	Peak
11001	39.83	-14.17	54	47.25	37.9	13.22	58.54	100	25	Average
11001	53.35	-20.65	74	60.77	37.9	13.22	58.54	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	116	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5580	89	-	-	76.79	35.24	9.99	33.02	100	306	Average
5580	99.5	-	-	87.29	35.24	9.99	33.02	100	306	Peak
11160	47.21	-26.79	74	54.48	38.07	13.2	58.54	194	0	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	116	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5580	98.42	-	-	86.21	35.24	9.99	33.02	130	308	Average
5580	108.73	-	-	96.52	35.24	9.99	33.02	130	308	Peak
11157	48.03	-25.97	74	55.32	38.05	13.2	58.54	194	0	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	140	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5700	91.42	-	-	79.4	35.31	9.93	33.22	114	294	Average
5700	101.33	-	-	89.31	35.31	9.93	33.22	114	294	Peak
11400	48.14	-25.86	74	55.22	38.3	13.16	58.54	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	140	Relative Humidity :	42~43%
Test Engineer :	Ivan Chiang, Gavin Wu, and Kyle Jhuang	Polarization :	Vertical
Remark :	5700 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5700	94.63	-	-	82.61	35.31	9.93	33.22	157	355	Average
5700	104.69	-	-	92.67	35.31	9.93	33.22	157	355	Peak
11400	40.19	-13.81	54	47.27	38.3	13.16	58.54	100	16	Average
11400	52.85	-21.15	74	59.95	38.28	13.16	58.54	100	16	Peak

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

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

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

*Decreases with the logarithm of the frequency.

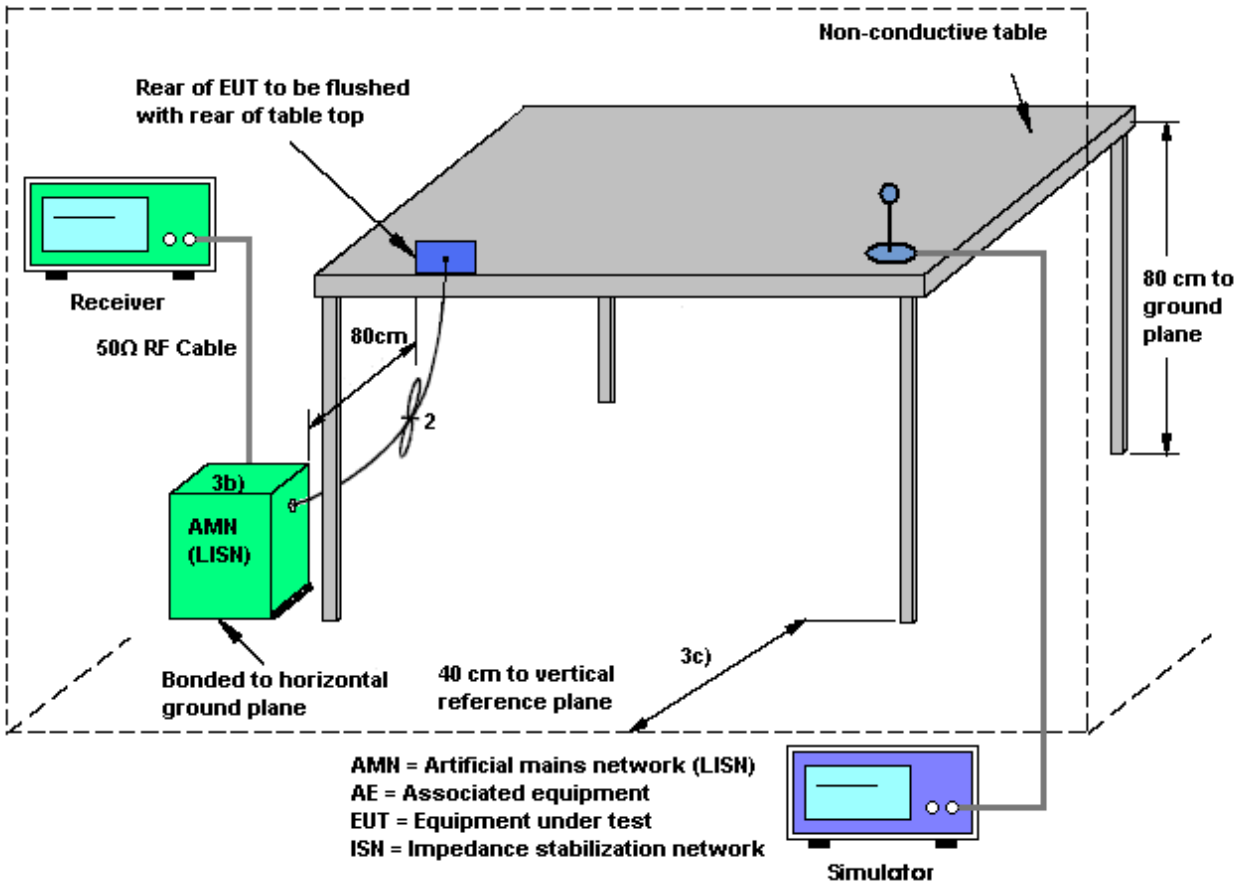
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

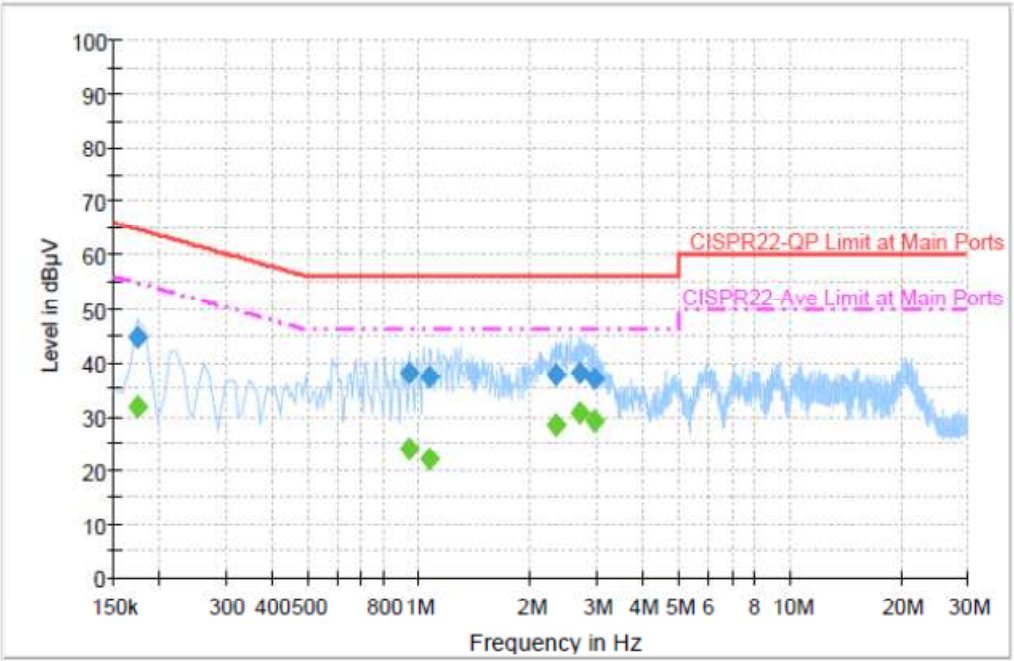
1. The testing follows the guidelines in FCC KDB 789033 D01 General UNII Test Procedures v01r02
2. ANSI C63.4-2003 and ANSI C63.10-2009 test site requirement.
3. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
4. Connect EUT to the power mains through a line impedance stabilization network (LISN).
5. All the support units are connecting to the other LISN.
6. The LISN provides 50 ohm coupling impedance for the measuring instrument.
7. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
8. Both sides of AC line were checked for maximum conducted interference.
9. The frequency range from 150 kHz to 30 MHz was searched.
10. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	**Temperature :**	20~22℃
Test Engineer :	Slash Huang	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	GSM1900 Idle + Bluetooth Link + WLAN (5G) Link + USB Cable (Charging from Adapter) + MP3		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



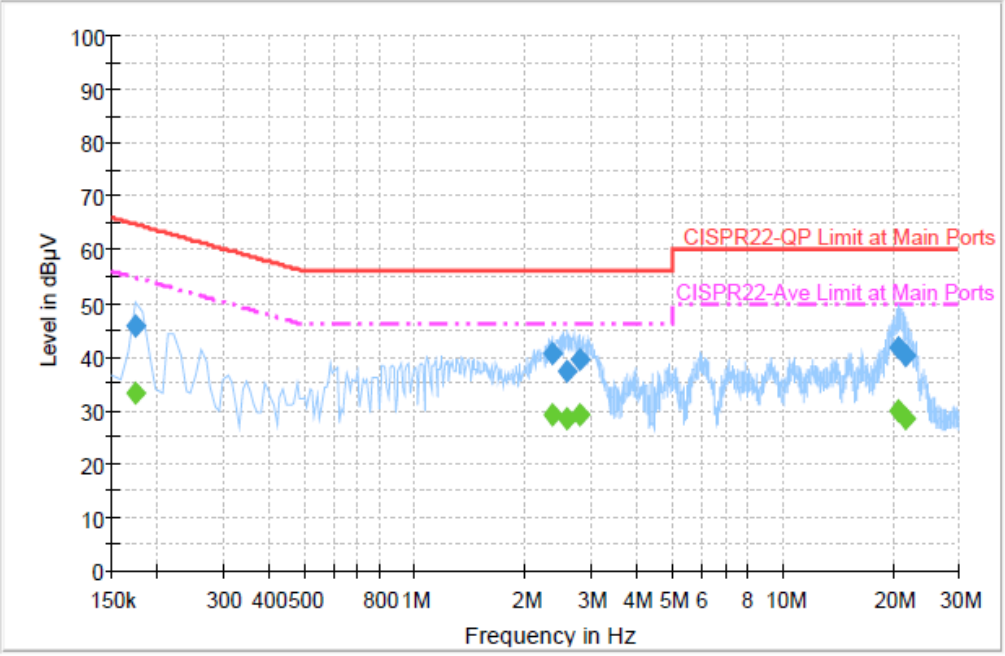
Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	44.6	Off	L1	19.4	20.2	64.8
0.942000	37.9	Off	L1	19.4	18.1	56.0
1.070000	37.1	Off	L1	19.4	18.9	56.0
2.342000	37.5	Off	L1	19.6	18.5	56.0
2.702000	38.1	Off	L1	19.6	17.9	56.0
2.974000	37.0	Off	L1	19.5	19.0	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	31.6	Off	L1	19.4	23.2	54.8
0.942000	24.2	Off	L1	19.4	21.8	46.0
1.070000	22.3	Off	L1	19.4	23.7	46.0
2.342000	28.6	Off	L1	19.6	17.4	46.0
2.702000	30.5	Off	L1	19.6	15.5	46.0
2.974000	29.2	Off	L1	19.5	16.8	46.0

Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Slash Huang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM1900 Idle + Bluetooth Link + WLAN (5G) Link + USB Cable (Charging from Adapter) + MP3		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	45.9	Off	N	19.4	18.9	64.8
2.366000	40.6	Off	N	19.6	15.4	56.0
2.590000	37.4	Off	N	19.6	18.6	56.0
2.806000	39.3	Off	N	19.7	16.7	56.0
20.702000	41.6	Off	N	19.9	18.4	60.0
21.558000	40.1	Off	N	20.0	19.9	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	33.1	Off	N	19.4	21.7	54.8
2.366000	29.0	Off	N	19.6	17.0	46.0
2.590000	28.3	Off	N	19.6	17.7	46.0
2.806000	29.2	Off	N	19.7	16.8	46.0
20.702000	29.7	Off	N	19.9	20.3	50.0
21.558000	28.4	Off	N	20.0	21.6	50.0

3.7 Frequency Stability Measurement

3.7.1 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.

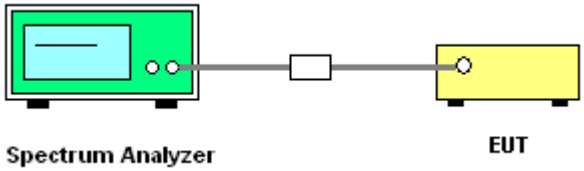
3.7.2 Measuring Instruments

See list of measuring instruments of this test report.

3.7.3 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.

3.7.4 Test Setup



3.7.5 Test Result of Frequency Stability

Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Bill Kuo	Relative Humidity :	45~49%

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.75	5188.35	9.65
44	5220	5211.75	5228.35	9.58
48	5240	5231.75	5248.35	9.54
52	5260	5251.80	5268.35	14.26
60	5300	5291.75	5308.35	9.43
64	5320	5311.70	5328.35	4.70
100	5500	5491.75	5508.35	9.09
116	5580	5571.75	5588.35	8.96
140	5700	5691.75	5708.35	8.77

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Bill Kuo	Relative Humidity :	45~49%

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.15	5188.95	9.65
44	5220	5211.15	5228.95	9.58
48	5240	5231.15	5248.95	9.54
52	5260	5251.15	5268.95	9.51
60	5300	5291.15	5308.95	9.43
64	5320	5311.10	5328.90	0.00
100	5500	5491.15	5508.95	9.09
116	5580	5571.15	5588.95	8.96
140	5700	5691.15	5708.95	8.77

3.8 Automatically Discontinue Transmission

3.8.1 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.

3.8.2 Measuring Instruments

See list of measuring instruments of this test report.

3.8.3 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.

3.9 Antenna Requirements

3.9.1 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.

3.9.2 Antenna Connected Construction

Non-standard connector used.

3.9.3 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	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 06, 2012	Sep. 27, 2012 ~ Oct. 16, 2012	Jun. 05, 2013	Conducted (TH02-HY)
Power Meter	Agilent	E4416A	GB41292344	300MHz~40GHz	Feb. 21, 2012	Sep. 27, 2012 ~ Oct. 16, 2012	Feb. 20, 2013	Conducted (TH02-HY)
Power Sensor	Agilent	E9327A	US40441548	300MHz~40GHz	Feb. 21, 2012	Sep. 27, 2012 ~ Oct. 16, 2012	Feb. 20, 2013	Conducted (TH02-HY)
EMI Test Receiver	R&S	ESCS 30	100356	9KHz ~ 2.75GHz	Oct. 27, 2011	Oct. 19, 2012	Oct. 26, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz ~ 30MHz	Dec. 09, 2011	Oct. 19, 2012	Dec. 08, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz ~ 30MHz	Dec. 06, 2011	Oct. 19, 2012	Dec. 05, 2012	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Oct. 19, 2012	N/A	Conduction (CO05-HY)
System Simulator	R&S	CMU200	117995	N/A	Jul. 28, 2011	Oct. 19, 2012	Jul. 27, 2013	Conduction (CO05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 06, 2012	Oct. 18, 2012 ~ Oct. 25, 2012	Oct. 05, 2013	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP30	101067	9KHz ~ 30GHz	Dec. 06, 2011	Oct. 18, 2012 ~ Oct. 25, 2012	Dec. 05, 2012	Radiation (03CH07-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Aug. 01, 2012	Oct. 18, 2012 ~ Oct. 25, 2012	Jul. 31, 2013	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1GHz ~ 26.5GHz	Dec. 05, 2011	Oct. 18, 2012 ~ Oct. 25, 2012	Dec. 04, 2012	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz.32 dB.GAIN	Feb. 27, 2012	Oct. 18, 2012 ~ Oct. 25, 2012	Feb. 26, 2013	Radiation (03CH07-HY)
Signal Analyzer	Rohde & Schwarz	FSQ	200578/026	20Hz~26.5GHz	Feb. 06, 2012	Oct. 18, 2012 ~ Oct. 25, 2012	Feb. 05, 2013	Radiation (03CH07-HY)
Pre Amplifier	MITEQ	AMF-7D-00101800-30-10P	159088	1GHz ~ 18GHz	Mar. 10, 2012	Oct. 18, 2012 ~ Oct. 25, 2012	Mar. 09, 2013	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Sep. 28, 2012	Oct. 18, 2012 ~ Oct. 25, 2012	Sep. 27, 2013	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9KHz ~ 30MHz	Jul. 03, 2012	Oct. 18, 2012 ~ Oct. 25, 2012	Jul. 02, 2014	Radiation (03CH07-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.26**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.54**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.72**