FCC RF Test Report

APPLICANT	:	**SAMSUNG Electronics Co., LTD.**
EQUIPMENT	:	**Mobile Phone**
BRAND NAME	:	**Samsung**
MODEL NAME	:	**GT-I8190L**
MARKETING NAME	:	**GOLDEN**
FCC ID	:	**A3LGTI8190L**
STANDARD	:	**FCC Part 15 Subpart E**
CLASSIFICATION	:	**(NII) Unlicensed National Information Infrastructure**

The product was received on Oct. 16, 2012 and completely tested on Oct. 21, 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

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
FR2O1604C	Rev. 01	Initial issue of report	Oct. 26, 2012
FR2O1604C	Rev. 02	Update report for adding description of offsets, RF cable and attenuator for conducted measurement.	Nov. 02, 2012
FR2O1604C	Rev. 03	Update report for adding duty cycle plots and description of offsets, RF cable and attenuator for conducted measurement.	Nov. 05, 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 0.45 dB at 6310.000 MHz
3.6	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 18.80 dB at 0.286 MHz
3.6	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	GT-I8190L
Marketing Name	GOLDEN
FCC ID	A3LGTI8190L
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/ WLAN 11abgn / Bluetooth
HW Version	REV1.0
SW Version	I8190L.010
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 : 11.65 dBm / 0.0146 W 802.11n HT20 : 11.64 dBm / 0.0146 W **<5260 MHz ~ 5320 MHz>** 802.11a : 11.84 dBm / 0.0153 W 802.11n HT20 : 11.80 dBm / 0.0151 W **<5500 MHz ~ 5700 MHz>** 802.11a : 12.30 dBm / 0.0170 W 802.11n HT20 : 12.37 dBm / 0.0173 W
Antenna Type	FPCB Antenna with gain -4.00 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	03CH06-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-825	KA2DIR825A1	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 (X 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)	**12.30**	12.25	12.26	12.26	12.25	12.27	12.29	12.28

5GHz 802.11n HT20 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	**12.37**	12.30	12.33	12.35	12.33	12.35	12.34	12.34

2.3 Test Mode

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

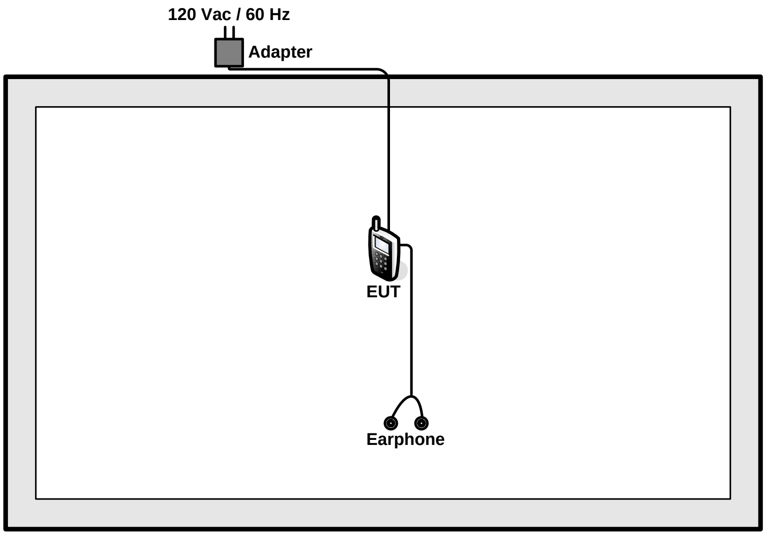
Test Cases				
	Test Items	Mode	Data rate	Test Channel
Conducted TCs	26dB BW Power Spectral Density	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
	Output Power	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
	Peak Excursion	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
	Frequency Stability	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 ： GSM850 Idle + Bluetooth Link + WLAN (5G) Link + Adapter + Earphone + 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

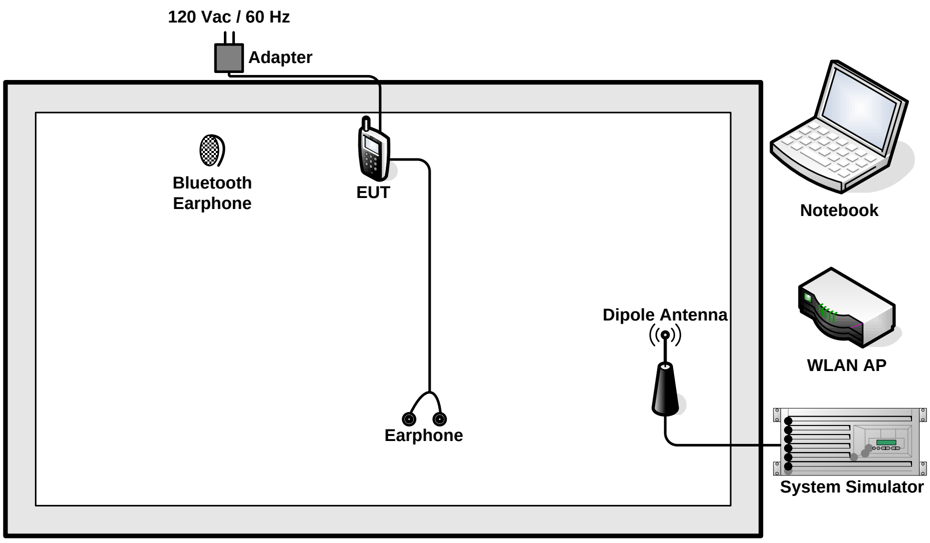
Ch. #		Band I：5150-5250 MHz	Band II：5250-5350 MHz	Band III：5470-5725 MHz
		802.11n HT20	802.11n HT20	802.11n HT20
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



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.

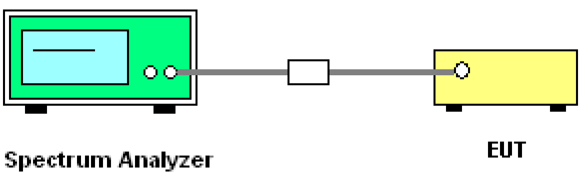
3.1.2 Measuring Instruments

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

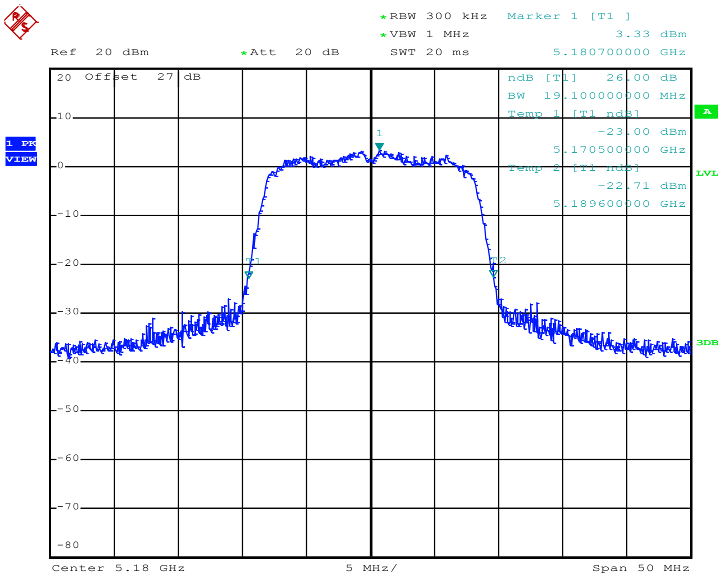


3.1.5 Test Result of 26dB Bandwidth Plots

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

Channel	Frequency (MHz)	802.11a 26dB Bandwidth (MHz)	Pass/Fail
36	5180	19.10	N/A
44	5220	19.05	N/A
48	5240	19.10	N/A
52	5260	19.05	N/A
60	5300	19.20	N/A
64	5320	19.05	N/A
100	5500	19.20	N/A
116	5580	19.30	N/A
140	5700	19.90	N/A

26 dB Bandwidth Plot on 802.11a Channel 36



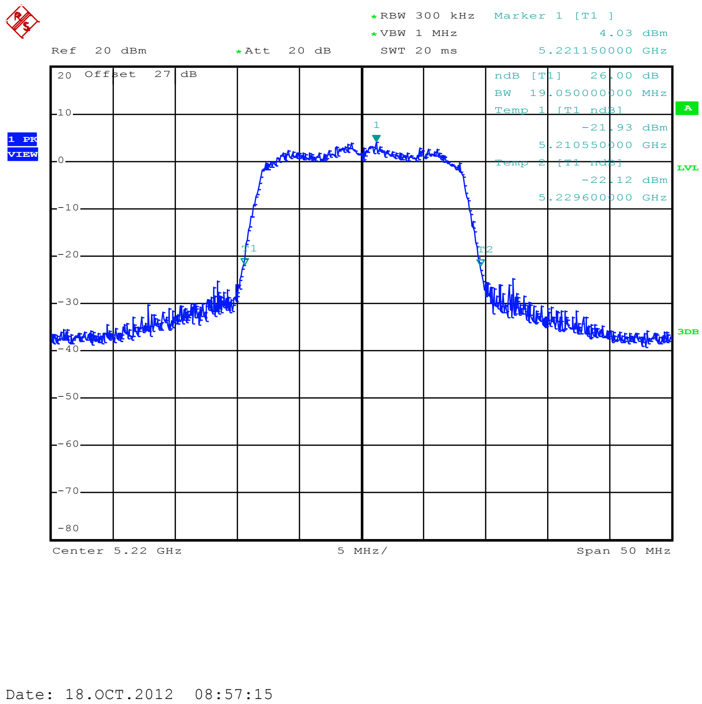
Date: 18.OCT.2012 08:50:44

Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

Example: the 26dB bandwidth test item, the peak point of fundamental signal is 3.33dBm, has added (offset) with the total loss = attenuator factor + cable loss = 27dB, where, cable loss = 7dB and 20dB attenuator, and then the 26dB bandwidth is measured and compliance with the limit line. Hereafter, each plot of spectrum analyzer has been added the total loss respectively and to demonstrate in compliance with the limit line.

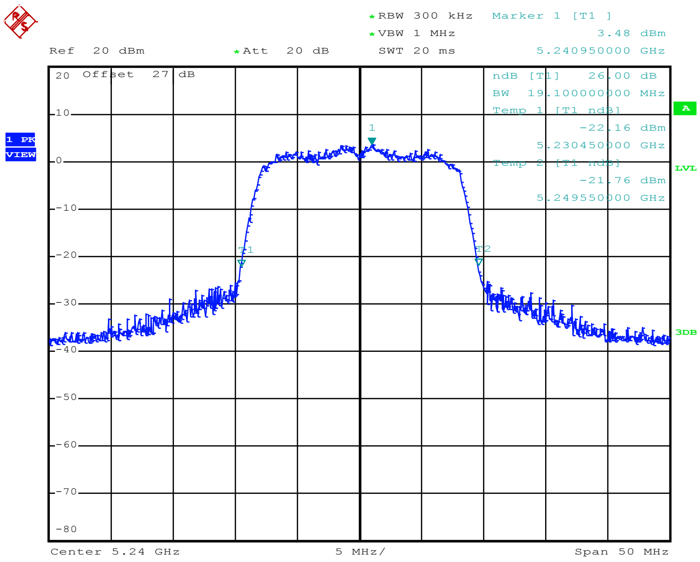
26 dB Bandwidth Plot on 802.11a Channel 44



Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

26 dB Bandwidth Plot on 802.11a Channel 48

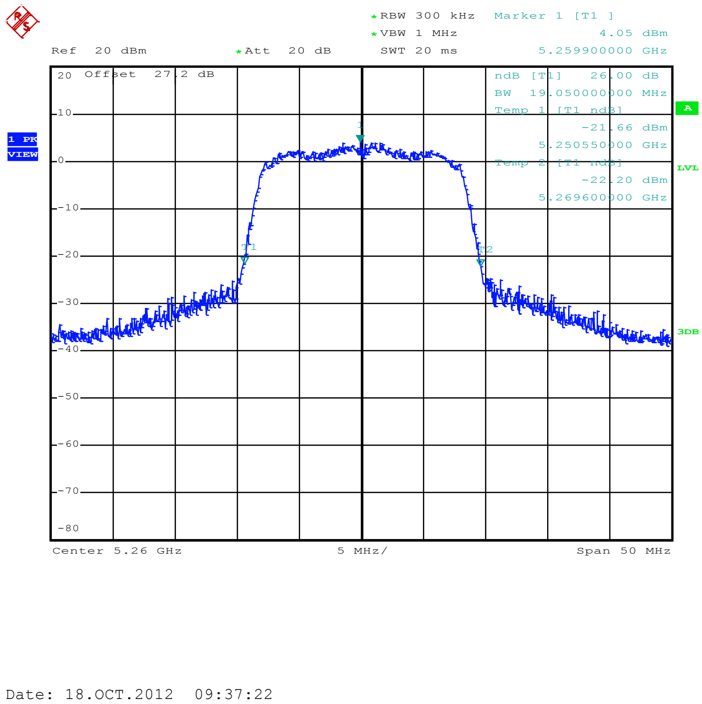


Date: 18.OCT.2012 09:02:57

Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

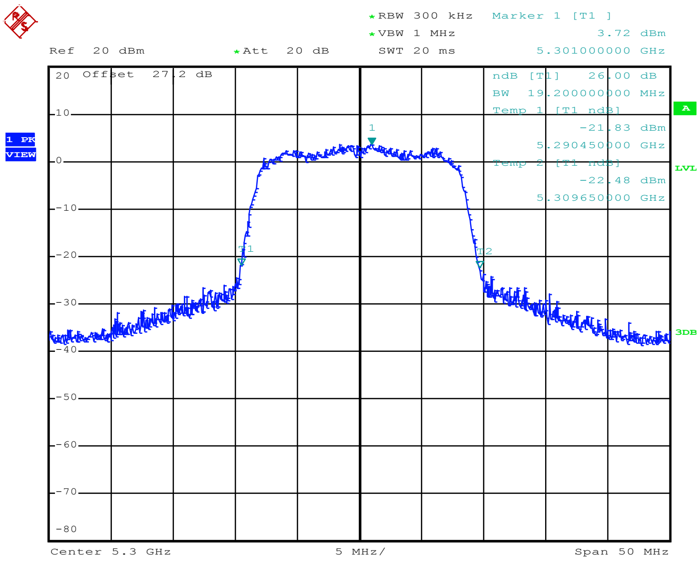
26 dB Bandwidth Plot on 802.11a Channel 52



Note:

The total loss is 27.2dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

26 dB Bandwidth Plot on 802.11a Channel 60

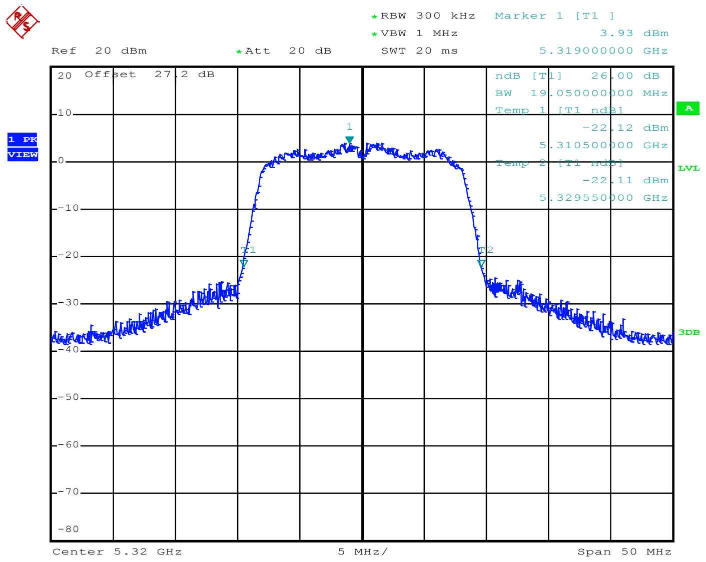


Date: 18.OCT.2012 09:38:06

Note:

The total loss is 27.2dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

26 dB Bandwidth Plot on 802.11a Channel 64

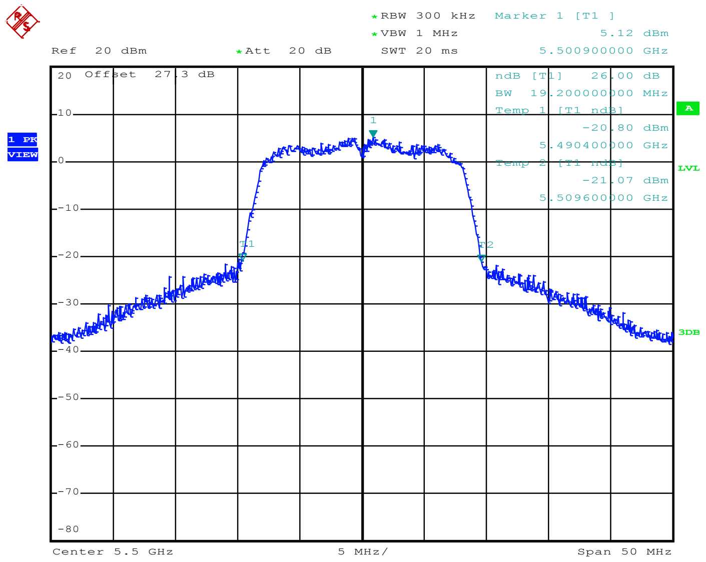


Date: 18.OCT.2012 09:44:04

Note:

The total loss is 27.2dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

26 dB Bandwidth Plot on 802.11a Channel 100

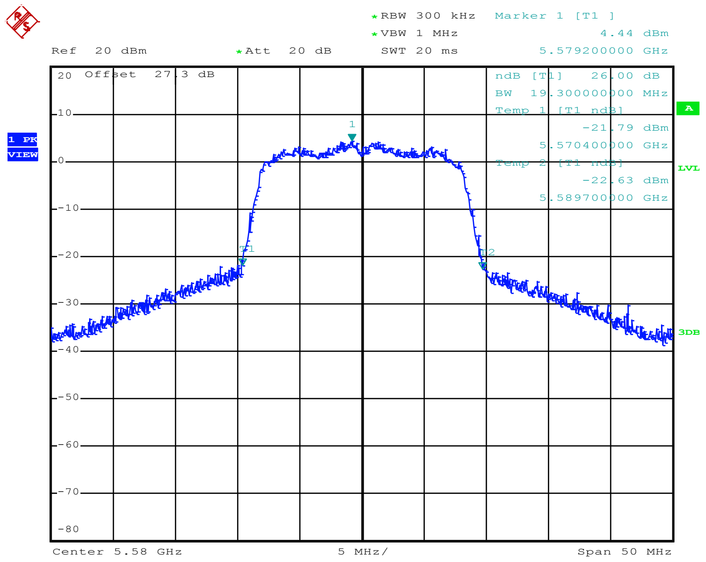


Date: 18.OCT.2012 09:48:07

Note:

The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

26 dB Bandwidth Plot on 802.11a Channel 116

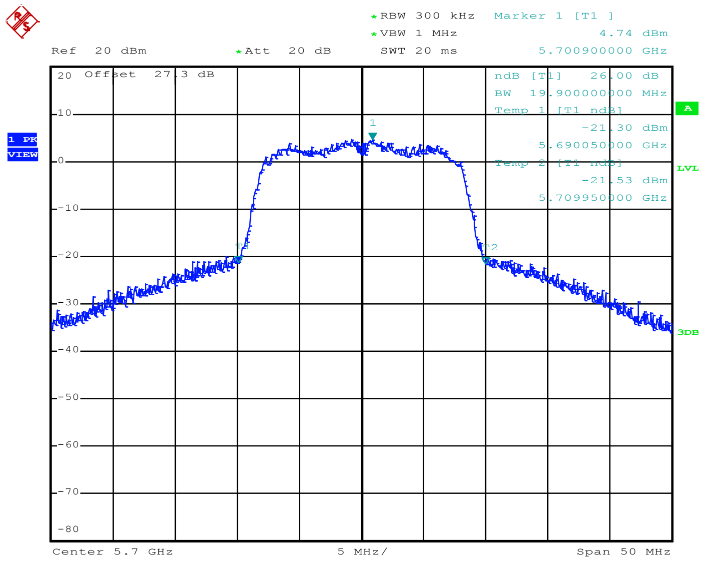


Date: 18.OCT.2012 09:51:02

Note:

The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

26 dB Bandwidth Plot on 802.11a Channel 140



Date: 18.OCT.2012 09:54:53

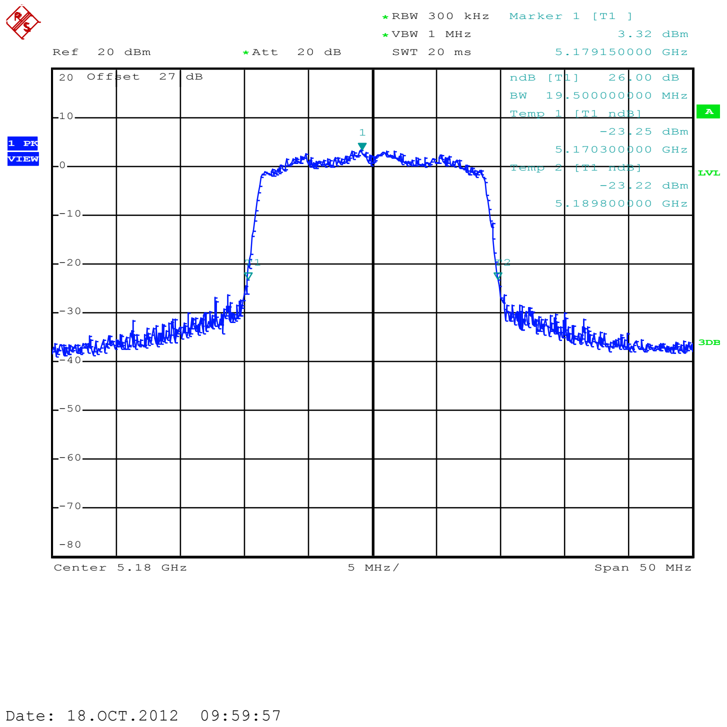
Note:

The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

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

Channel	Frequency (MHz)	802.11n HT20 26dB Bandwidth (MHz)	Pass/Fail
36	5180	19.50	N/A
44	5220	19.50	N/A
48	5240	19.45	N/A
52	5260	19.55	N/A
60	5300	19.60	N/A
64	5320	19.45	N/A
100	5500	19.65	N/A
116	5580	19.50	N/A
140	5700	20.25	N/A

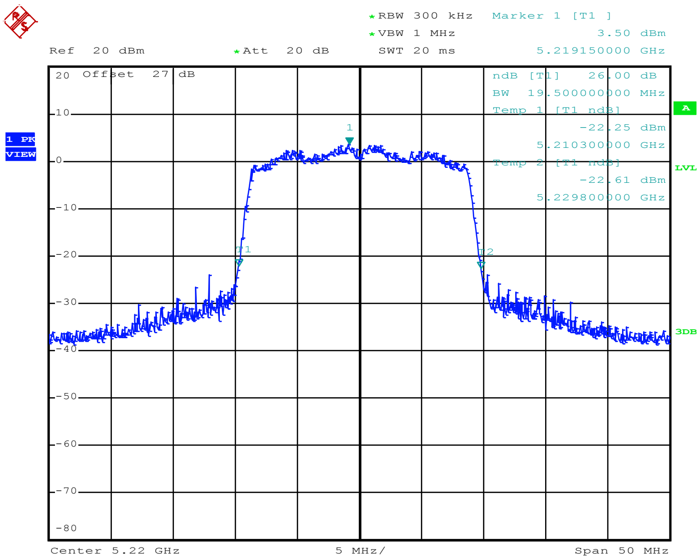
26 dB Bandwidth Plot on 802.11n HT20 Channel 36



Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

26 dB Bandwidth Plot on 802.11n HT20 Channel 44

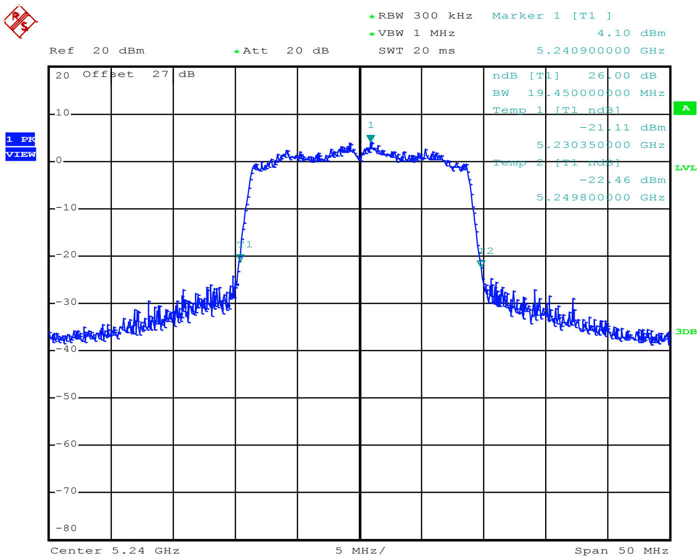


Date: 18.OCT.2012 10:04:11

Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

26 dB Bandwidth Plot on 802.11n HT20 Channel 48

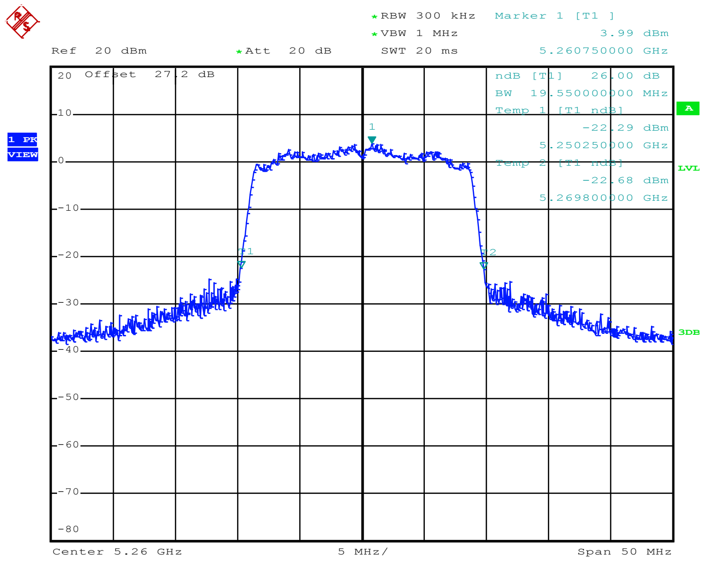


Date: 18.OCT.2012 10:07:34

Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

26 dB Bandwidth Plot on 802.11n HT20 Channel 52

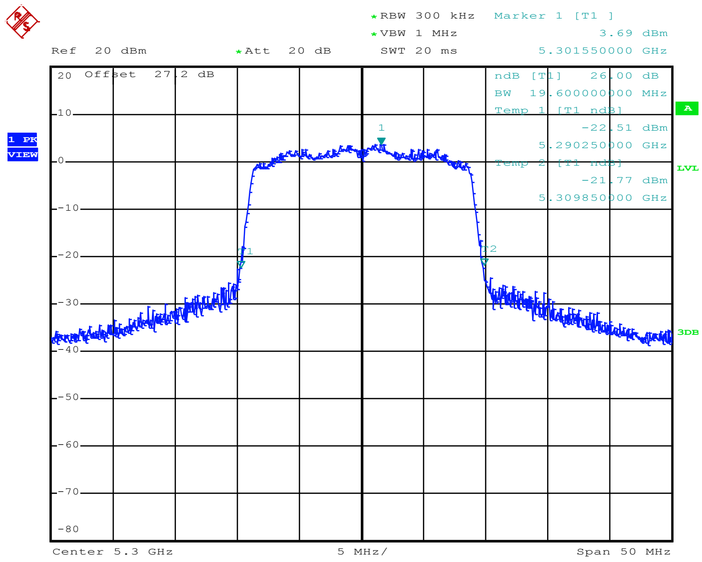


Date: 18.OCT.2012 10:11:42

Note:

The total loss is 27.2dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

26 dB Bandwidth Plot on 802.11n HT20 Channel 60

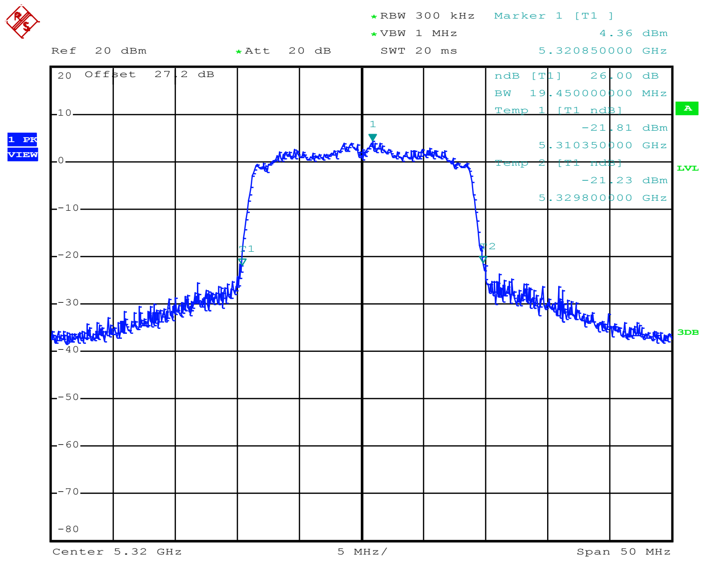


Date: 18.OCT.2012 10:15:43

Note:

The total loss is 27.2dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

26 dB Bandwidth Plot on 802.11n HT20 Channel 64

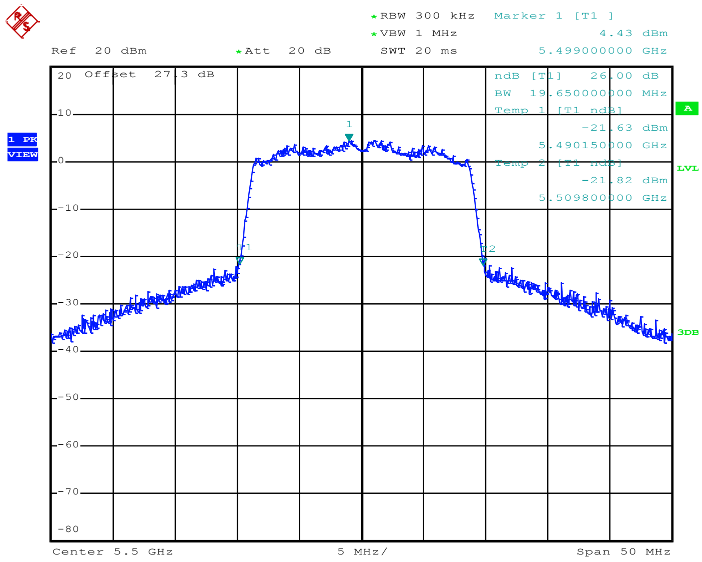


Date: 18.OCT.2012 10:18:59

Note:

The total loss is 27.2dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

26 dB Bandwidth Plot on 802.11n HT20 Channel 100

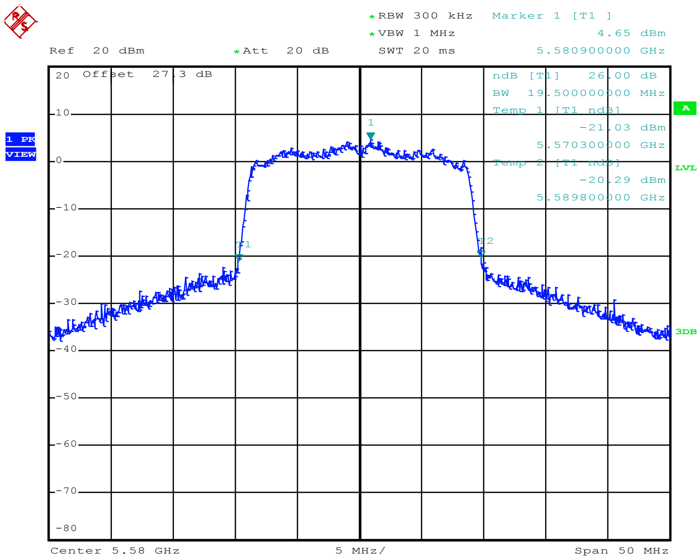


Date: 18.OCT.2012 10:22:47

Note:

The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

26 dB Bandwidth Plot on 802.11n HT20 Channel 116

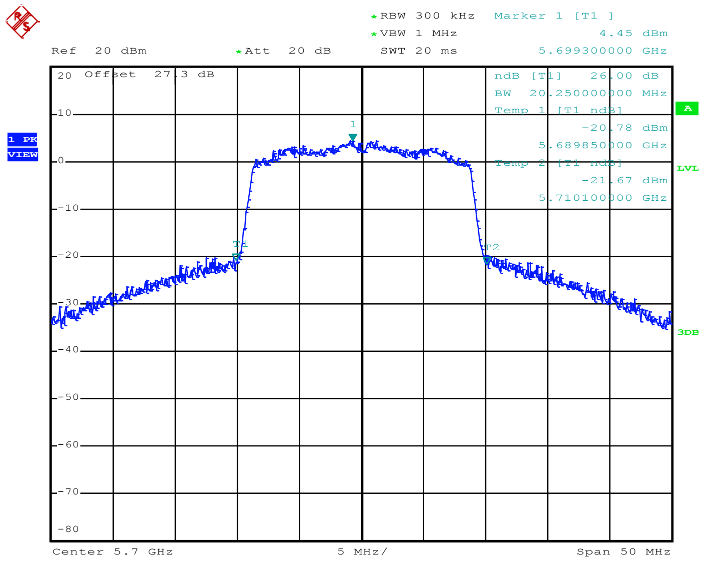


Date: 18.OCT.2012 10:26:04

Note:

The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

26 dB Bandwidth Plot on 802.11n HT20 Channel 140



Date: 18.OCT.2012 10:30:34

Note:

The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

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.

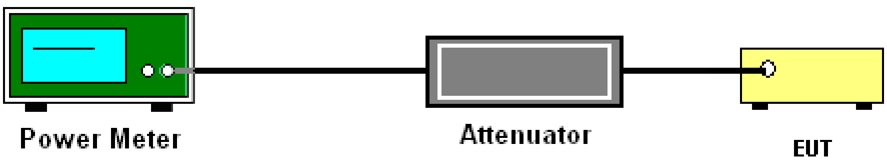
3.2.3 Test Procedures

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 :	Felix Song	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	11.25	11.54	17	Pass
44	5220	11.33	11.62	17	Pass
48	5240	11.36	11.65	17	Pass
52	5260	11.41	11.70	24	Pass
60	5300	11.51	11.80	24	Pass
64	5320	11.55	11.84	24	Pass
100	5500	11.95	12.24	24	Pass
116	5580	11.82	12.11	24	Pass
140	5700	12.01	12.30	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 :	Felix Song	Relative Humidity :	45~49%
Duty Cycle	92.78%	Duty Factor	0.33dB

Channel	Frequency (MHz)	802.11n HT20 Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	11.31	11.64	17	Pass
44	5220	11.23	11.56	17	Pass
48	5240	11.26	11.59	17	Pass
52	5260	11.34	11.67	24	Pass
60	5300	11.39	11.72	24	Pass
64	5320	11.47	11.80	24	Pass
100	5500	11.85	12.18	24	Pass
116	5580	11.72	12.05	24	Pass
140	5700	12.04	12.37	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.

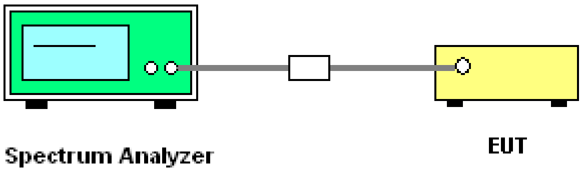
 # Method SA-2 #

(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 v01r01.
   - 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



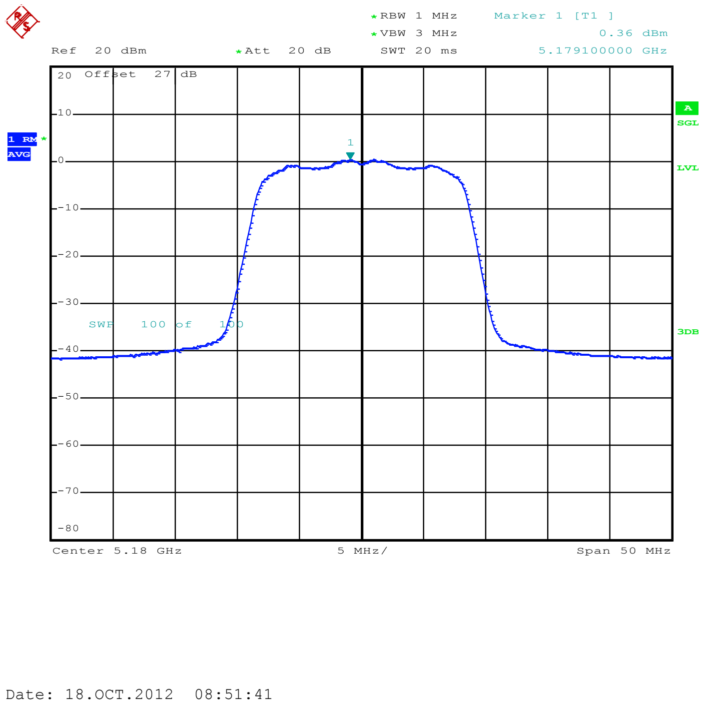
3.3.5 Test Result of Power Spectral Density

Test Mode :	802.11a	**Temperature :**	24~26℃
Test Engineer :	Felix Song	**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	0.36	0.65	4	Pass
44	5220	0.39	0.68	4	Pass
48	5240	0.42	0.71	4	Pass
52	5260	0.80	1.09	11	Pass
60	5300	0.88	1.17	11	Pass
64	5320	0.86	1.15	11	Pass
100	5500	1.77	2.06	11	Pass
116	5580	1.05	1.34	11	Pass
140	5700	1.57	1.86	11	Pass

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

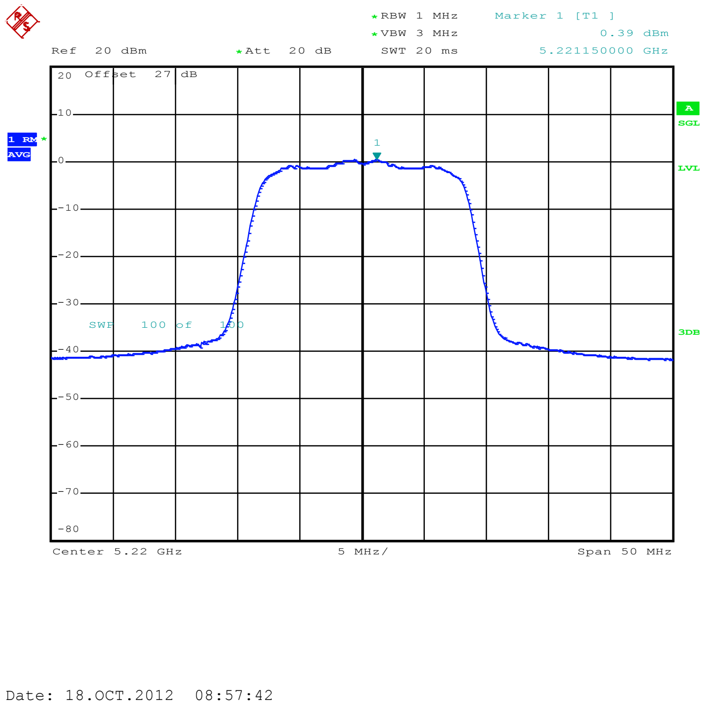
PSD Plot on 802.11a Channel 36



Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

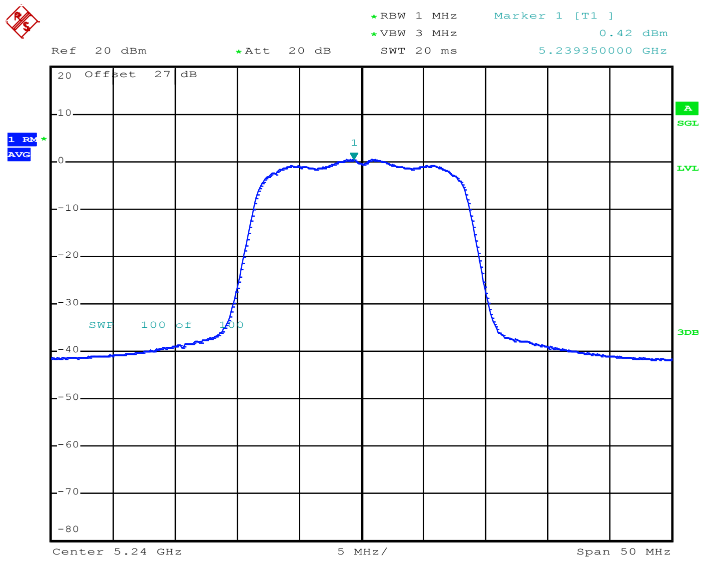
PSD Plot on 802.11a Channel 44



Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

PSD Plot on 802.11a Channel 48

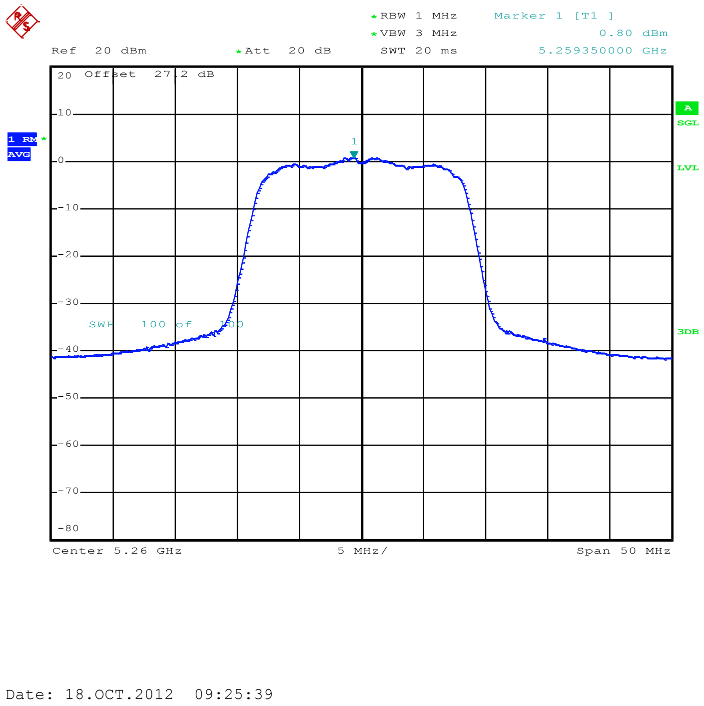


Date: 18.OCT.2012 09:03:37

Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

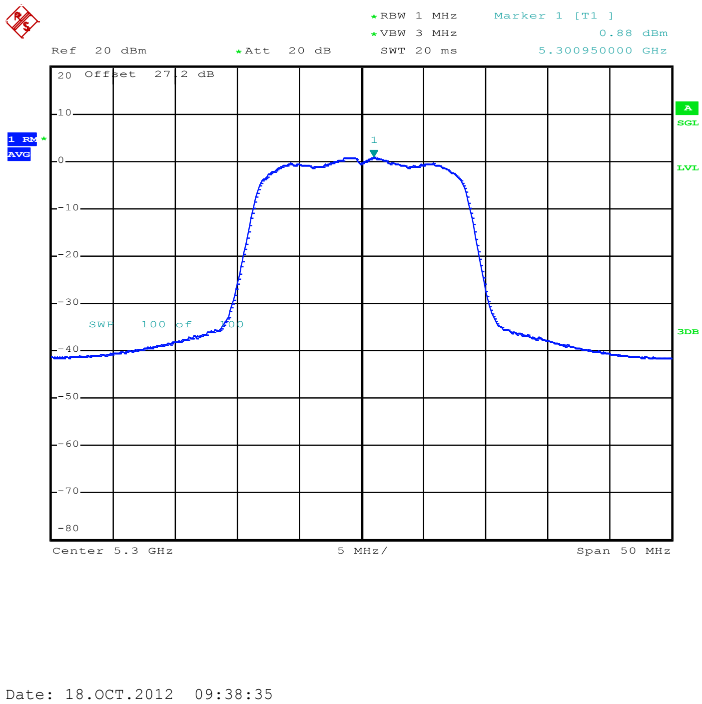
PSD Plot on 802.11a Channel 52



Note:

The total loss is 27.2dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

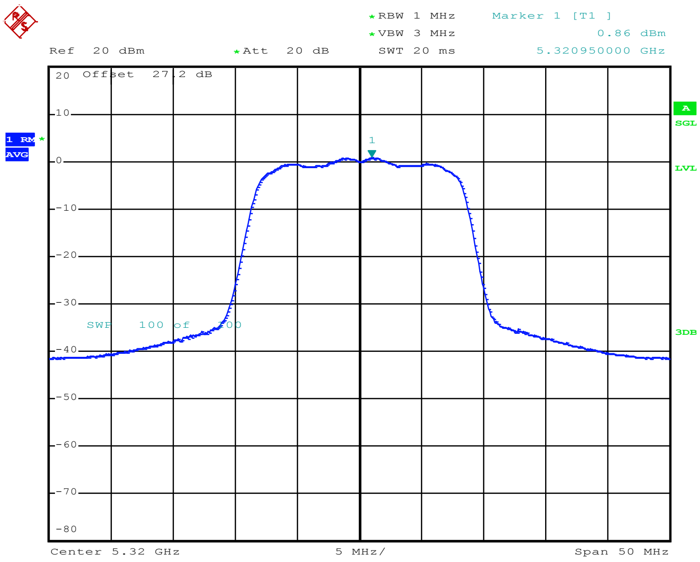
PSD Plot on 802.11a Channel 60



Note:

The total loss is 27.2dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

PSD Plot on 802.11a Channel 64

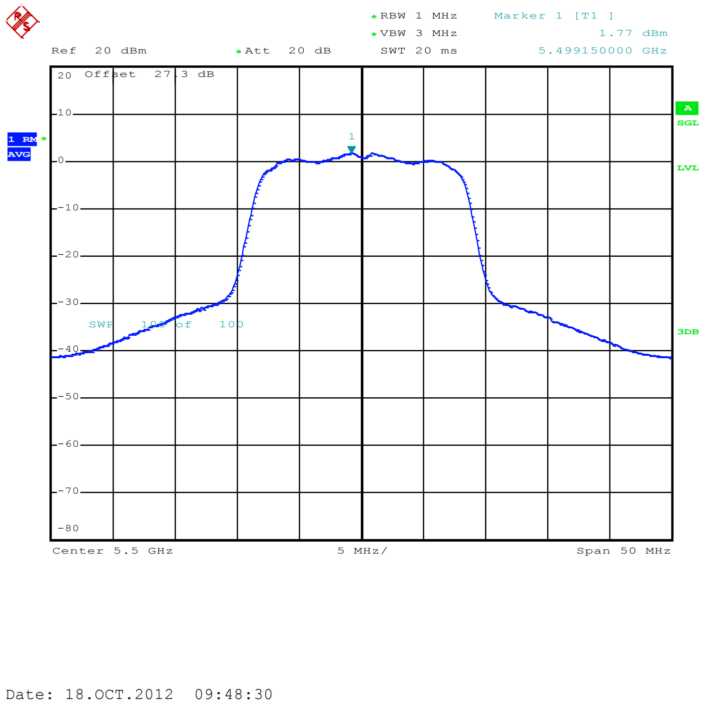


Date: 18.OCT.2012 09:44:38

Note:

The total loss is 27.2dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

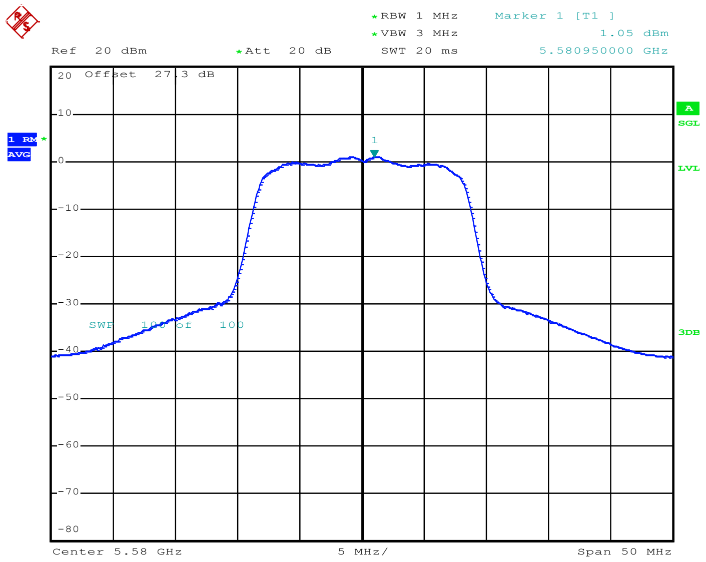
PSD Plot on 802.11a Channel 100



Note:

The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

PSD Plot on 802.11a Channel 116

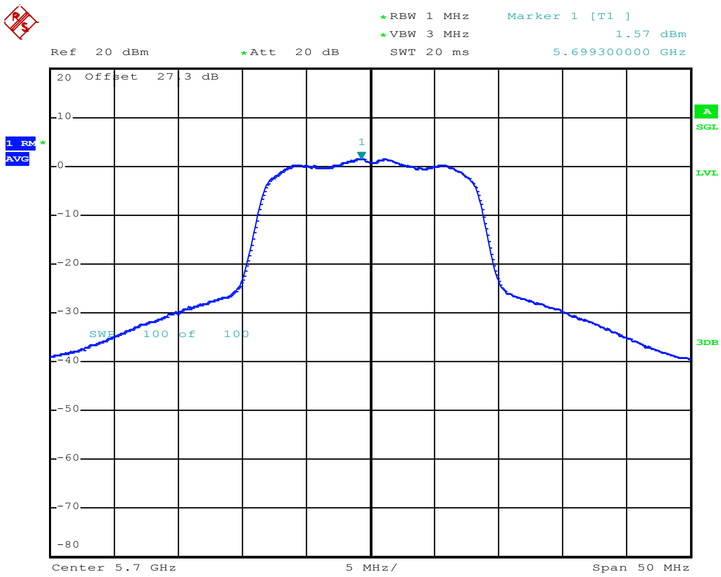


Date: 18.OCT.2012 09:51:20

Note:

The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

PSD Plot on 802.11a Channel 140



Date: 18.OCT.2012 09:55:30

Note:

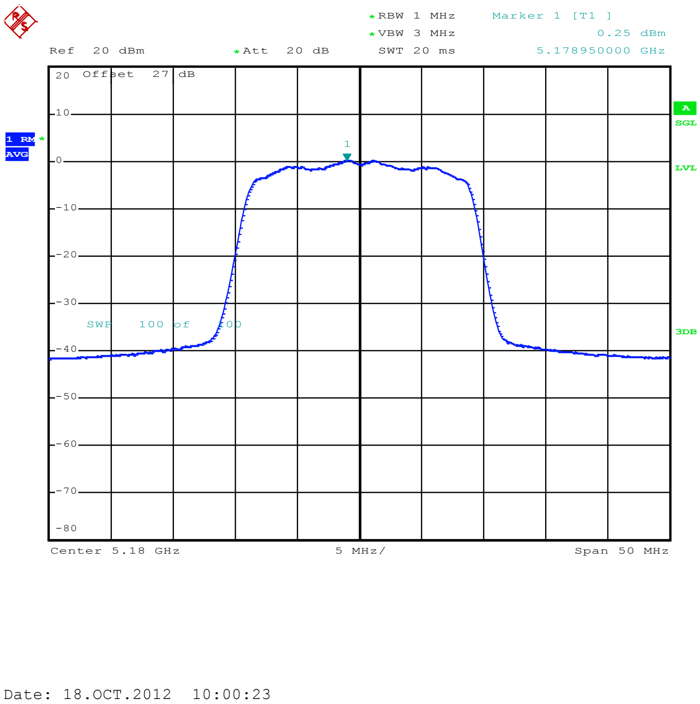
The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Felix Song	Relative Humidity :	45~49%
Duty Cycle:	92.78%	Duty Factor:	0.33dB

Channel	Frequency (MHz)	802.11n HT20 PSD (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	0.25	0.58	4	Pass
44	5220	0.20	0.53	4	Pass
48	5240	0.13	0.46	4	Pass
52	5260	0.45	0.78	11	Pass
60	5300	0.51	0.84	11	Pass
64	5320	0.73	1.06	11	Pass
100	5500	1.39	1.72	11	Pass
116	5580	0.81	1.14	11	Pass
140	5700	1.37	1.70	11	Pass

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

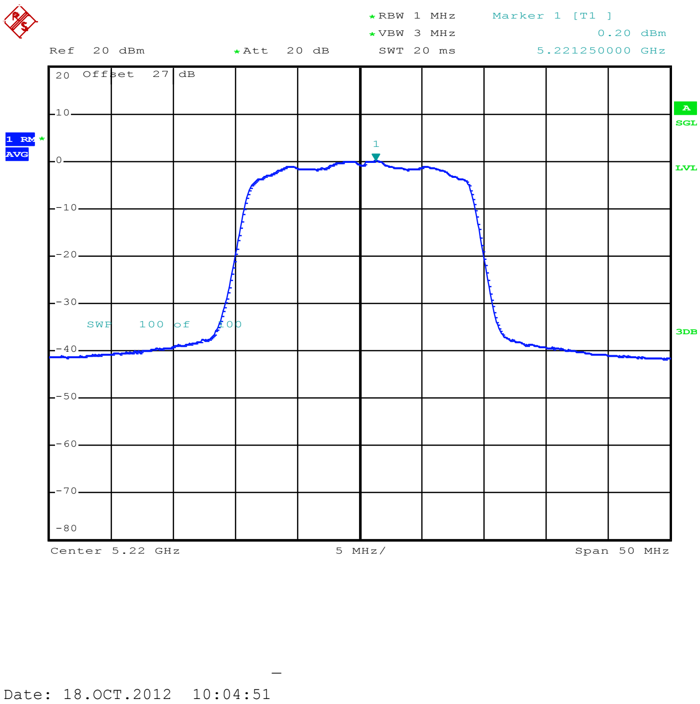
PSD Plot on 802.11n HT20 channel 36



Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

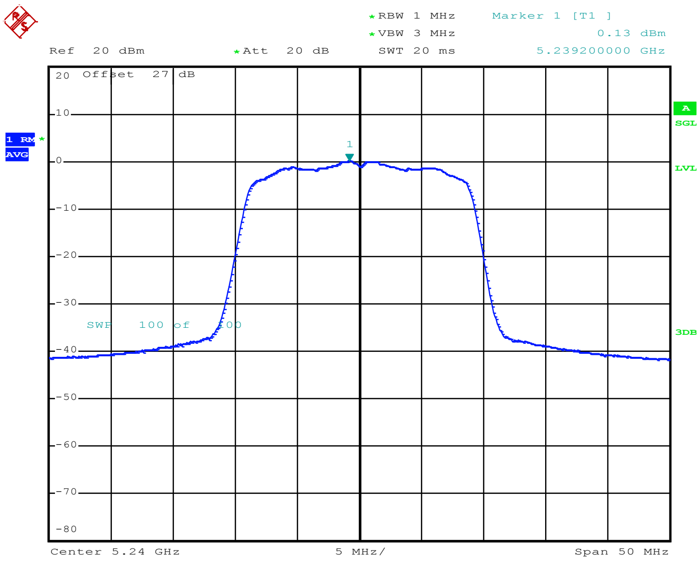
PSD Plot on 802.11n HT20 Channel 44



Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

PSD Plot on 802.11n HT20 Channel 48

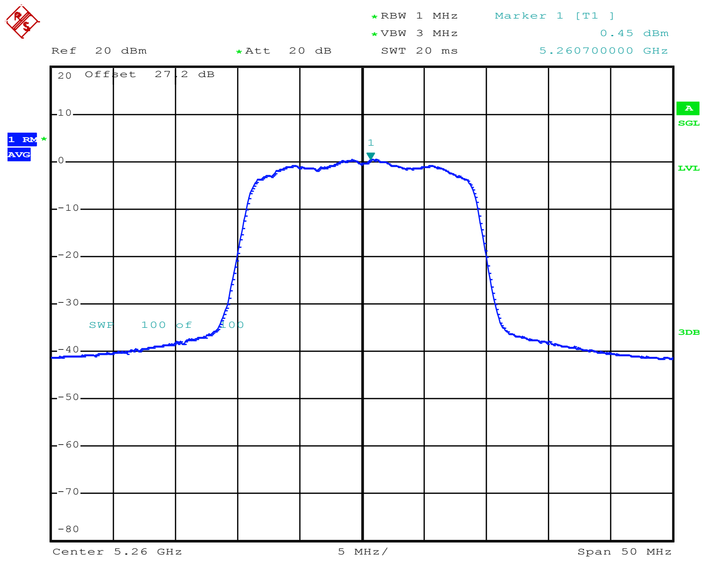


Date: 18.OCT.2012 10:08:05

Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

PSD Plot on 802.11n HT20 Channel 52

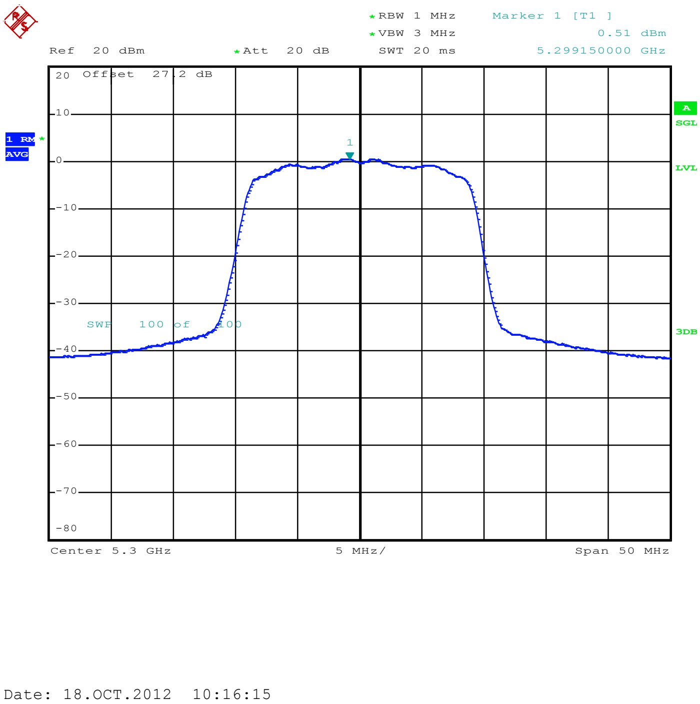


Date: 18.OCT.2012 10:12:29

Note:

The total loss is 27.2dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

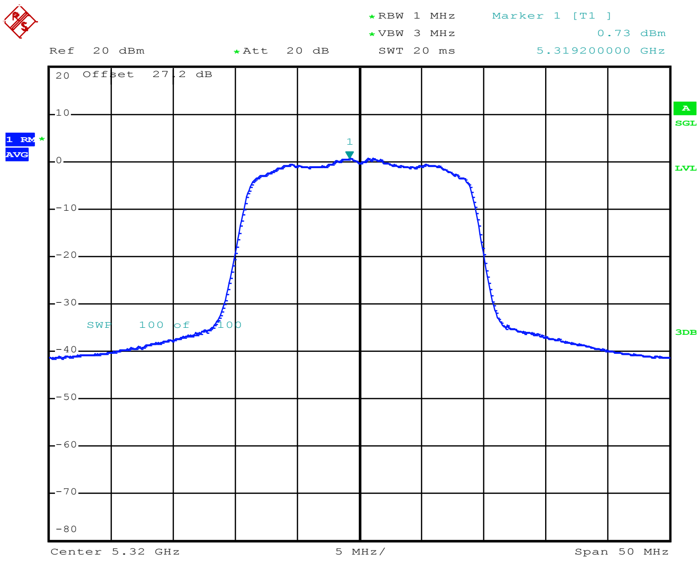
PSD Plot on 802.11n HT20 Channel 60



Note:

The total loss is 27.2dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

PSD Plot on 802.11n HT20 Channel 64

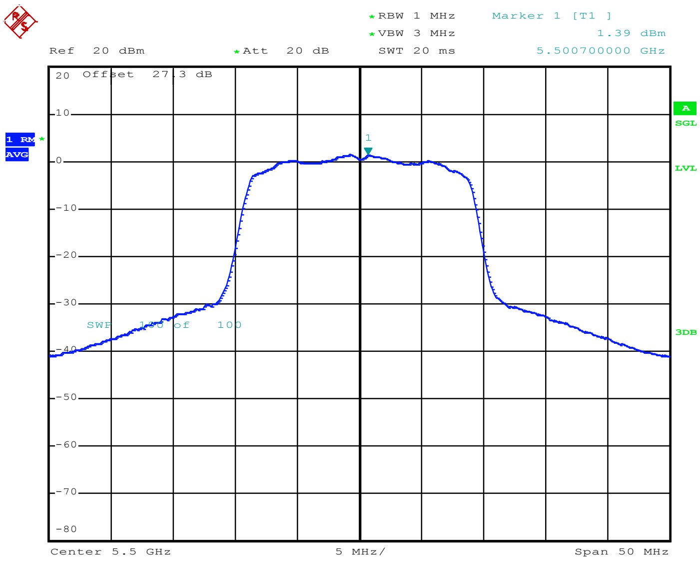


Date: 18.OCT.2012 10:19:23

Note:

The total loss is 27.2dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

PSD Plot on 802.11n HT20 Channel 100

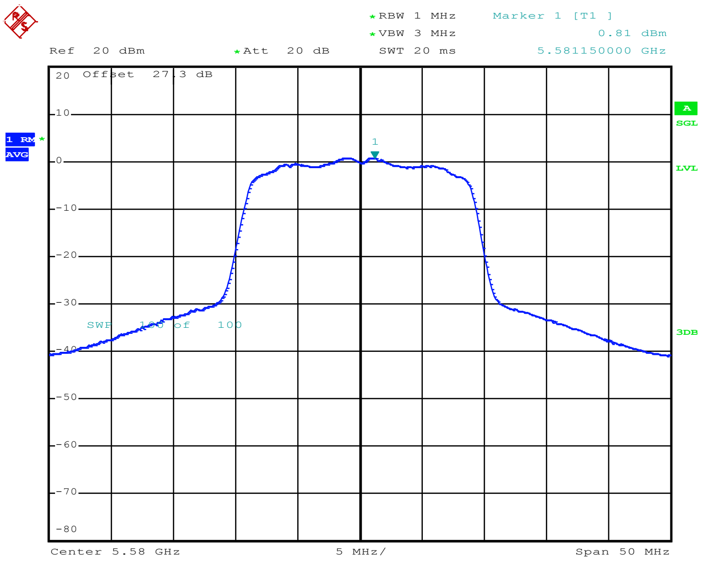


Date: 18.OCT.2012 10:23:17

Note:

The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

PSD Plot on 802.11n HT20 Channel 116

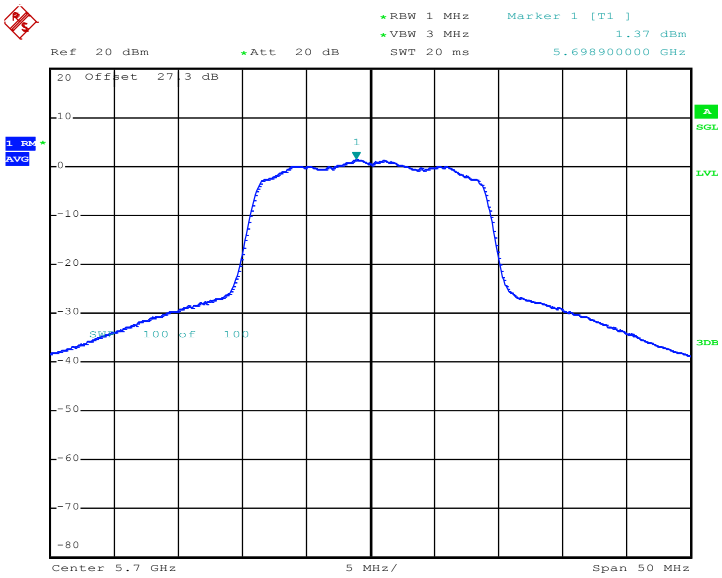


Date: 18.OCT.2012 10:26:40

Note:

The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

PSD Plot on 802.11n HT20 Channel 140



Date: 18.OCT.2012 10:30:52

Note:

The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

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.

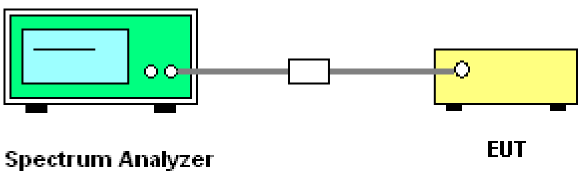
3.4.3 Test Procedures

T The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r01.

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.

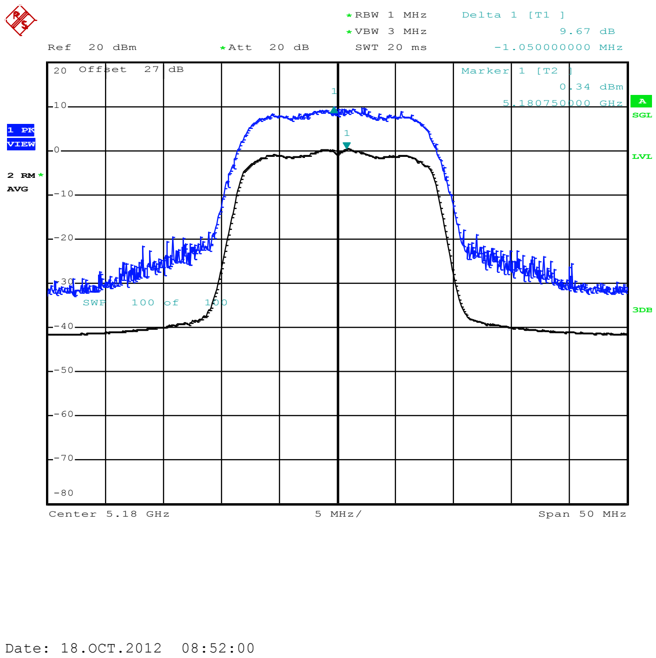
3.4.4 Test Setup



3.4.5 Test Result of Peak Excursion Ratio

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

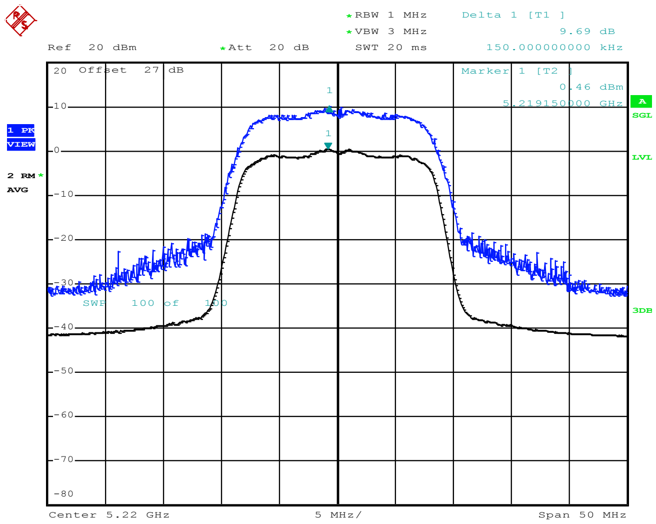
Peak Excursion Ratio Plot on 802.11a Channel 36



Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

Peak Excursion Ratio Plot on 802.11a Channel 44

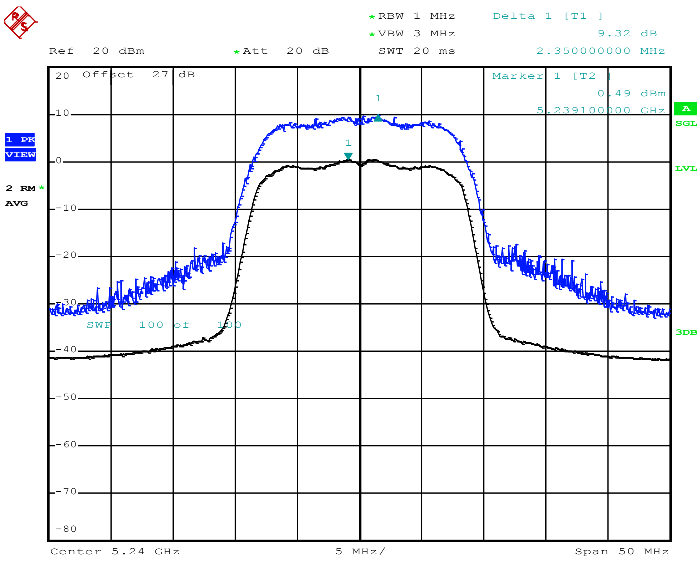


Date: 18.OCT.2012 08:58:04

Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

Peak Excursion Ratio Plot on 802.11a Channel 48

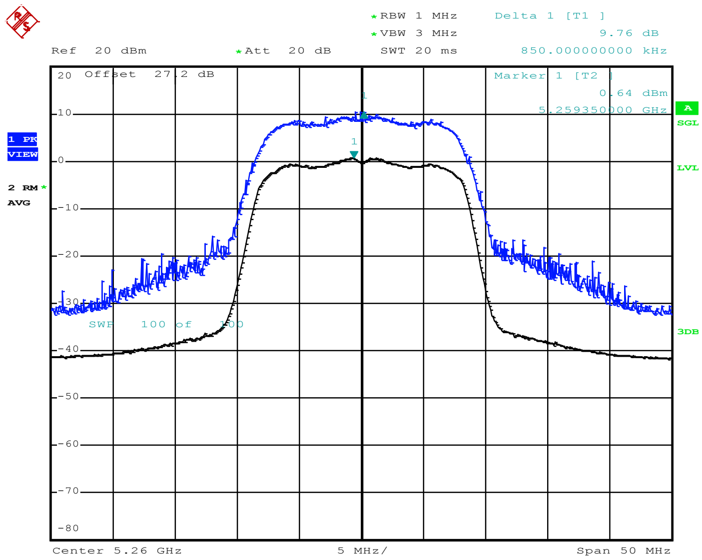


Date: 18.OCT.2012 09:04:21

Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

Peak Excursion Ratio Plot on 802.11a Channel 52

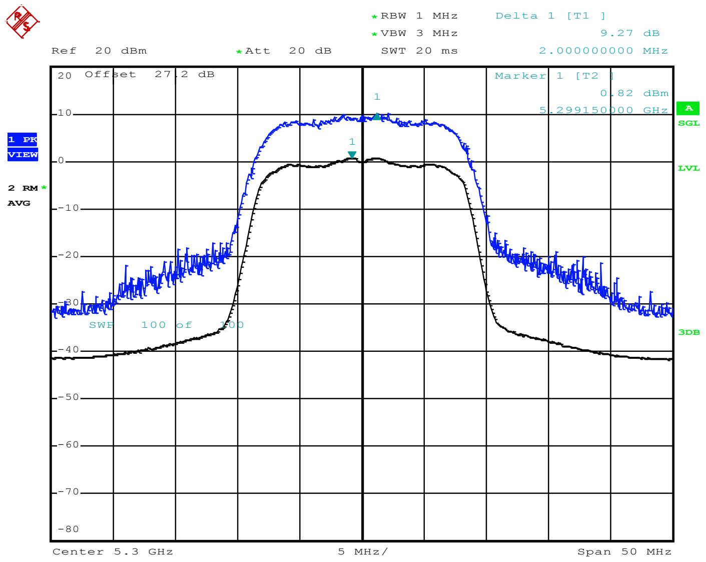


Date: 18.OCT.2012 09:26:03

Note:

The total loss is 27.2dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

Peak Excursion Ratio Plot on 802.11a Channel 60

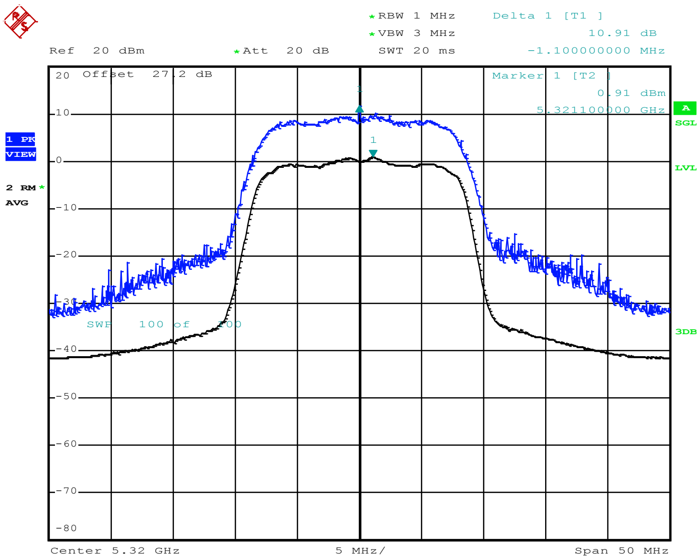


Date: 18.OCT.2012 09:39:03

Note:

The total loss is 27.2dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

Peak Excursion Ratio Plot on 802.11a Channel 64

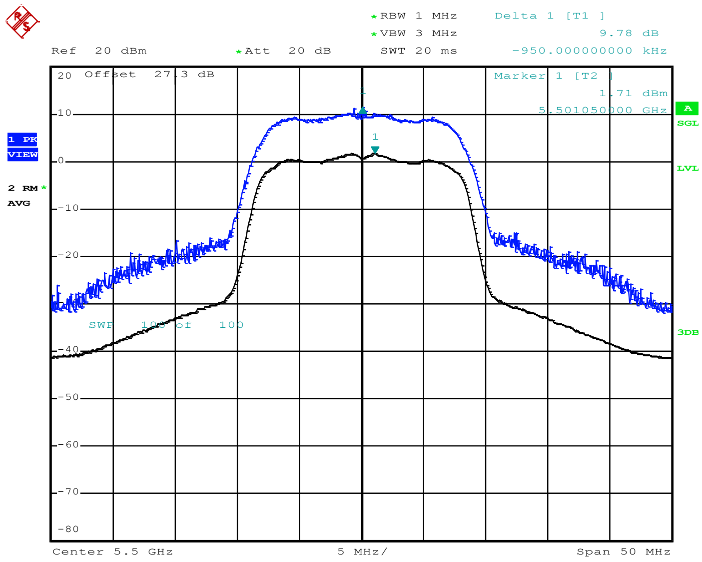


Date: 18.OCT.2012 09:45:04

Note:

The total loss is 27.2dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

Peak Excursion Ratio Plot on 802.11a Channel 100

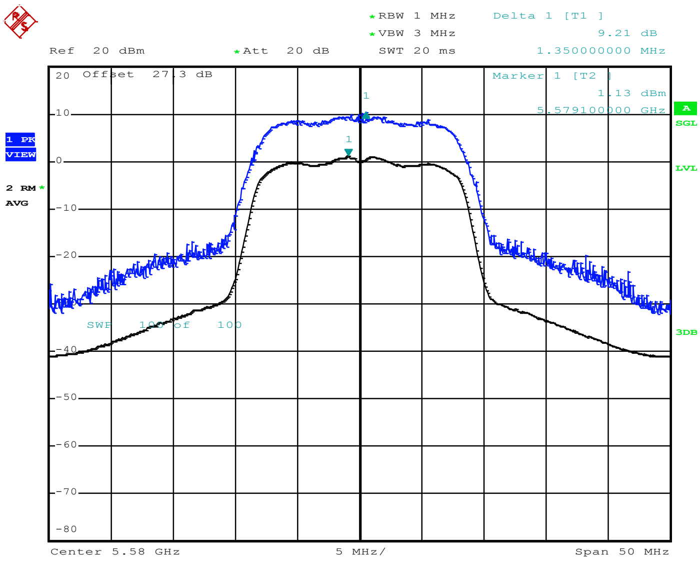


Date: 18.OCT.2012 09:48:59

Note:

The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

Peak Excursion Ratio Plot on 802.11a Channel 116

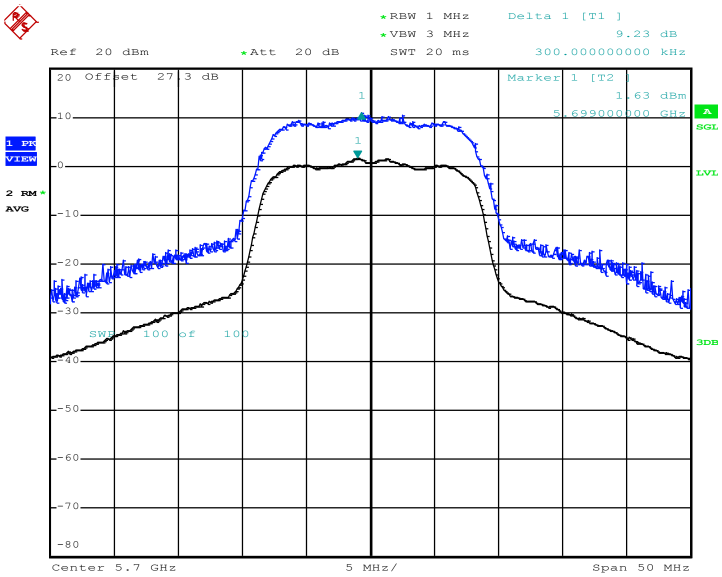


Date: 18.OCT.2012 09:51:44

Note:

The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

Peak Excursion Ratio Plot on 802.11a Channel 140



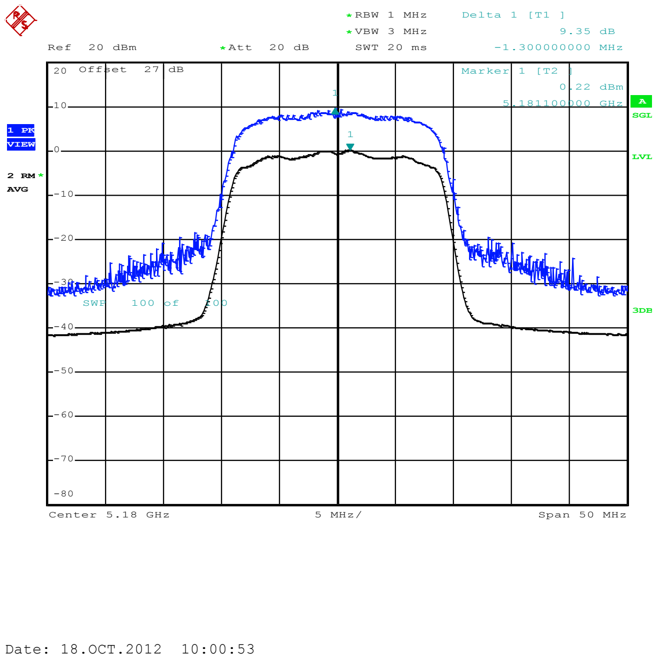
Date: 18.OCT.2012 09:55:56

Note:

The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

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

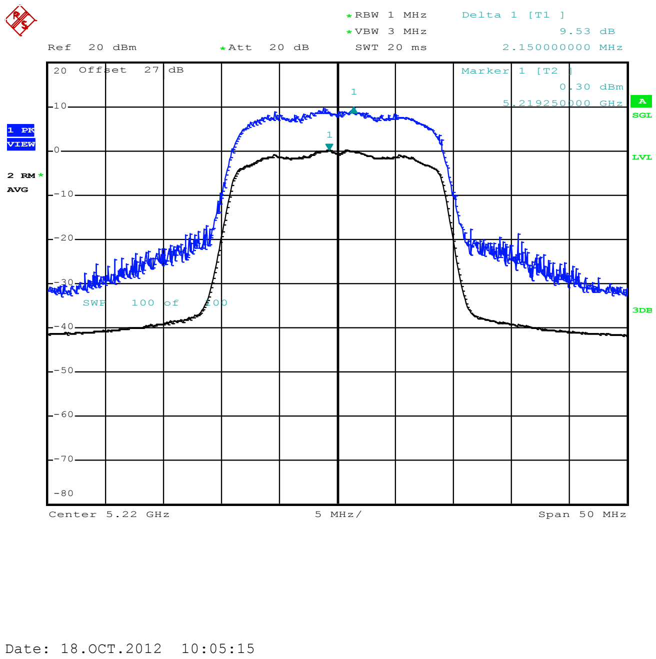
Peak Excursion Ratio Plot on 802.11n HT20 Channel 36



Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

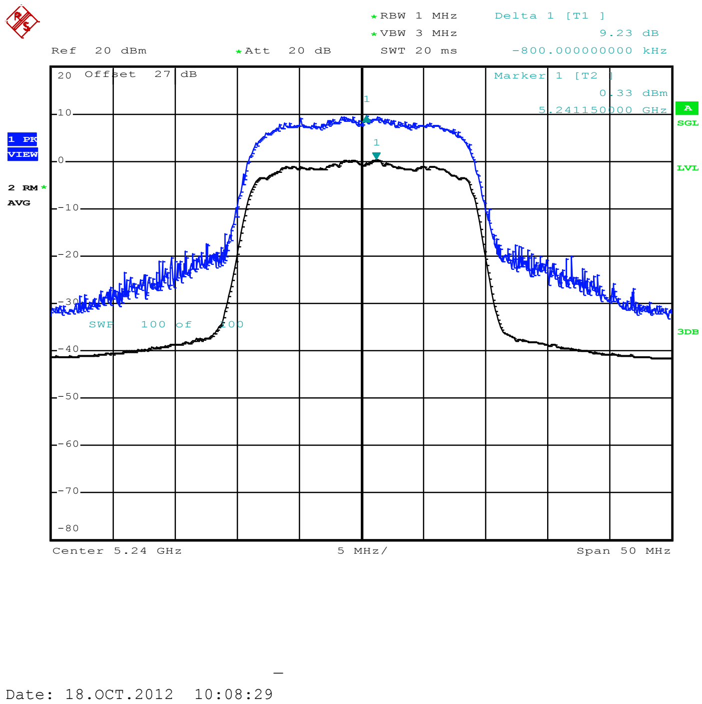
Peak Excursion Ratio Plot on 802.11n HT20 Channel 44



Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

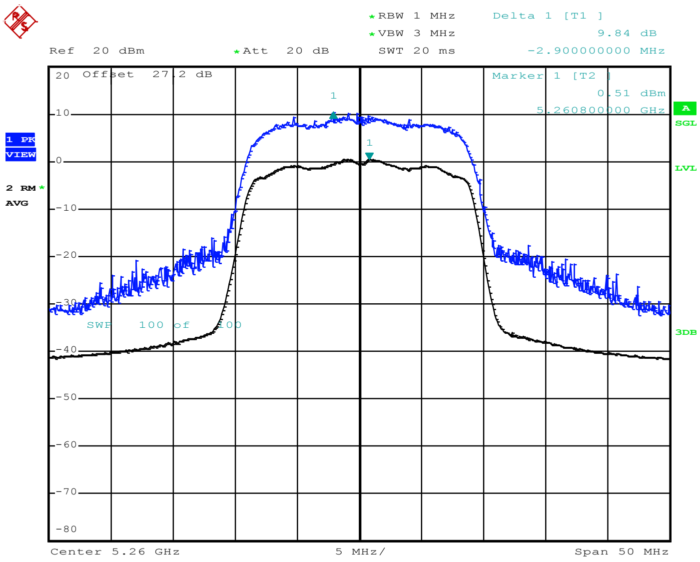
Peak Excursion Ratio Plot on 802.11n HT20 Channel 48



Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

Peak Excursion Ratio Plot on 802.11n HT20 Channel 52

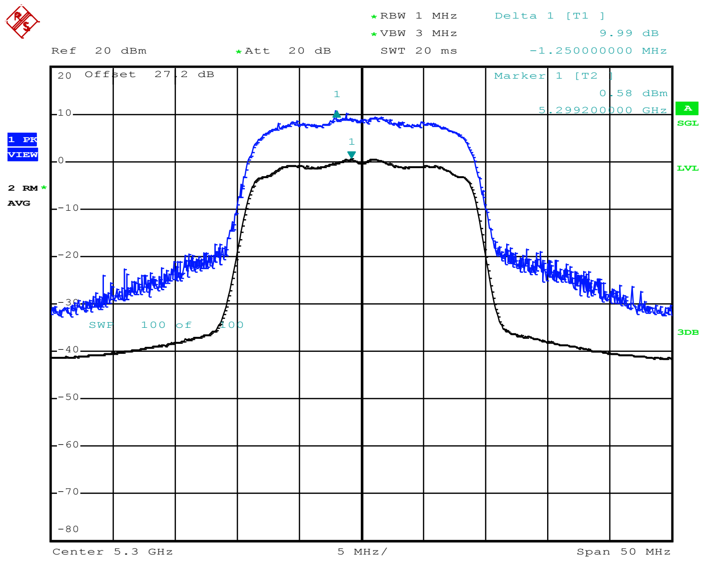


Date: 18.OCT.2012 10:12:48

Note:

The total loss is 27.2dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

Peak Excursion Ratio Plot on 802.11n HT20 Channel 60

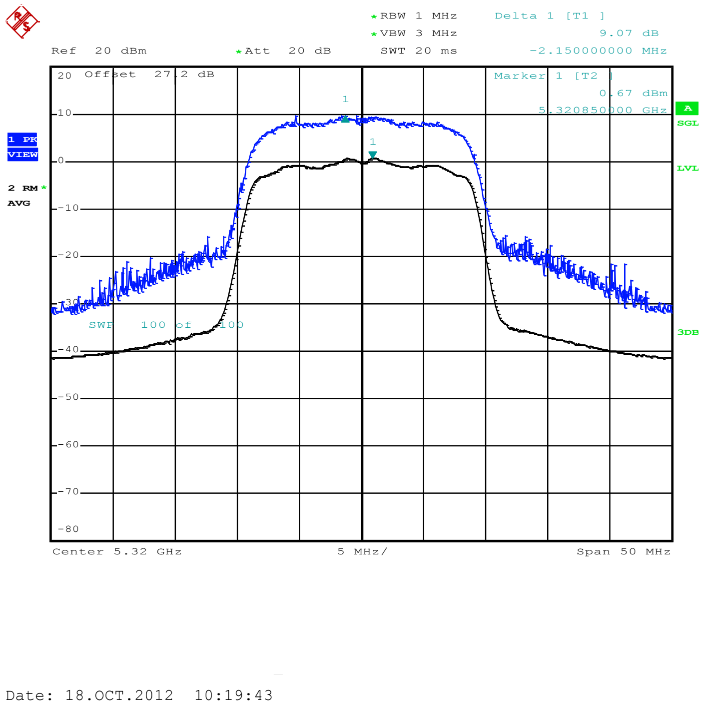


Date: 18.OCT.2012 10:16:34

Note:

The total loss is 27.2dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

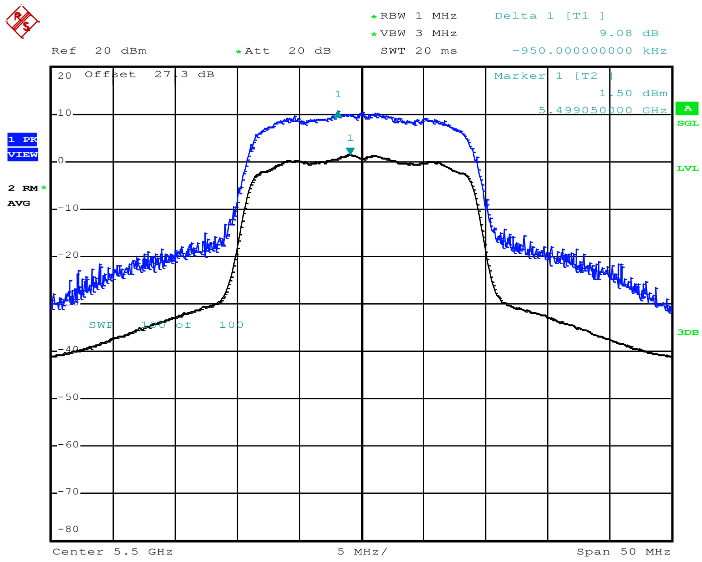
Peak Excursion Ratio Plot on 802.11n HT20 Channel 64



Note:

The total loss is 27.2dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

Peak Excursion Ratio Plot on 802.11n HT20 Channel 100

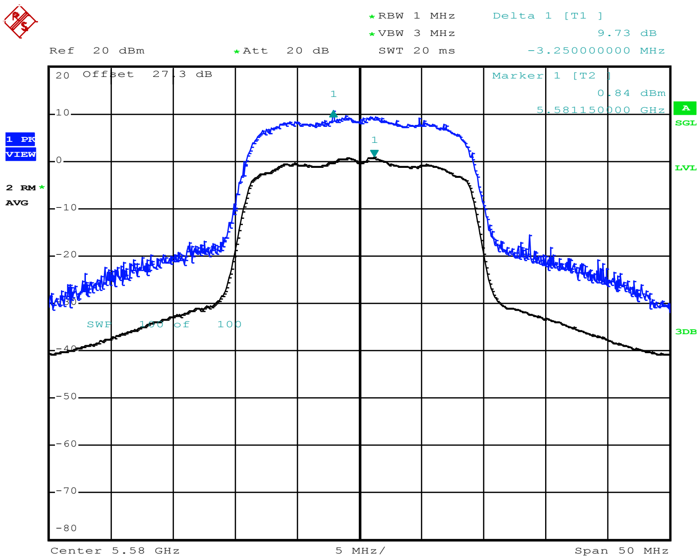


Date: 18.OCT.2012 10:23:45

Note:

The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

Peak Excursion Ratio Plot on 802.11n HT20 Channel 116

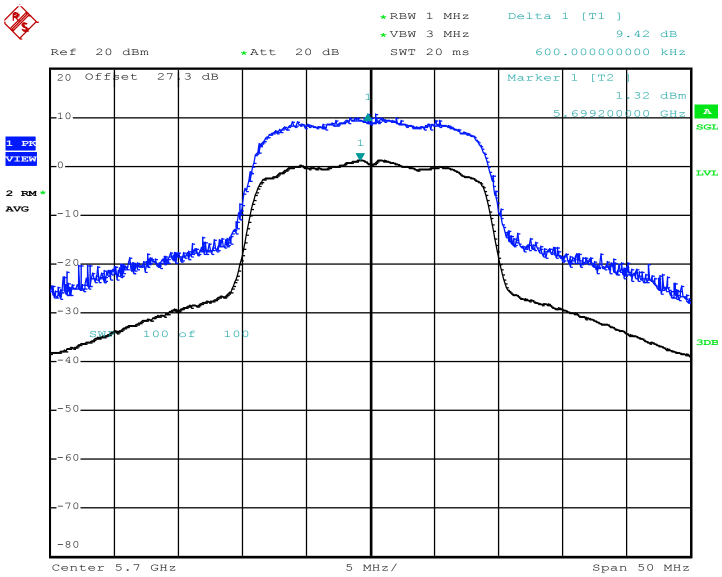


Date: 18.OCT.2012 10:27:03

Note:

The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

Peak Excursion Ratio Plot on 802.11n HT20 Channel 140



Date: 18.OCT.2012 10:31:48

Note:

The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

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

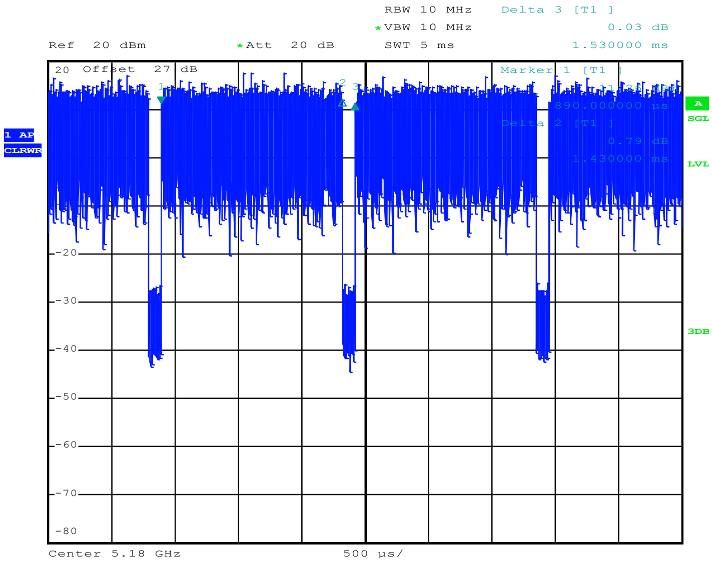
   - The setting follows the G) 5) of FCC KDB 789033.
   - RBW = 1 MHz
   - VBW ≥ 3 MHz
   - Detector = Peak
   - Sweep time = auto
   - Trace mode = max hold

   (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	92.78	1336	0.749	1KHz

802.11a Duty Cycle

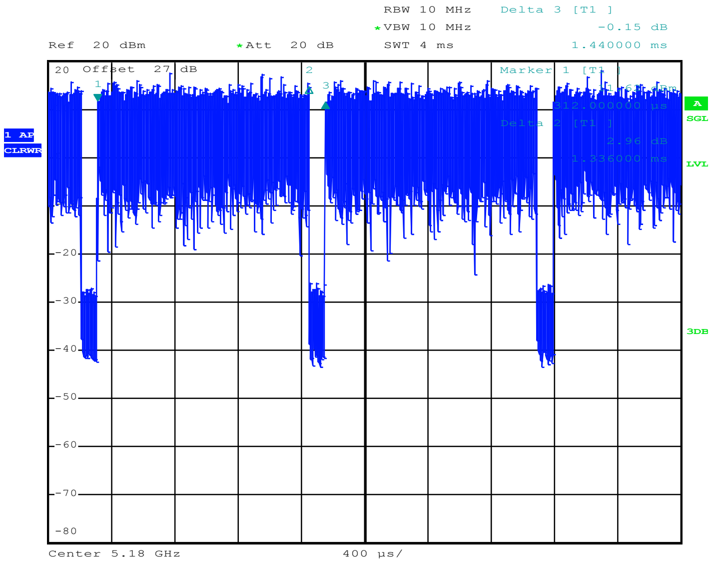


Date: 17.OCT.2012 01:33:26

Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

802.11n HT20 Duty Cycle



Date: 17.OCT.2012 01:38:31

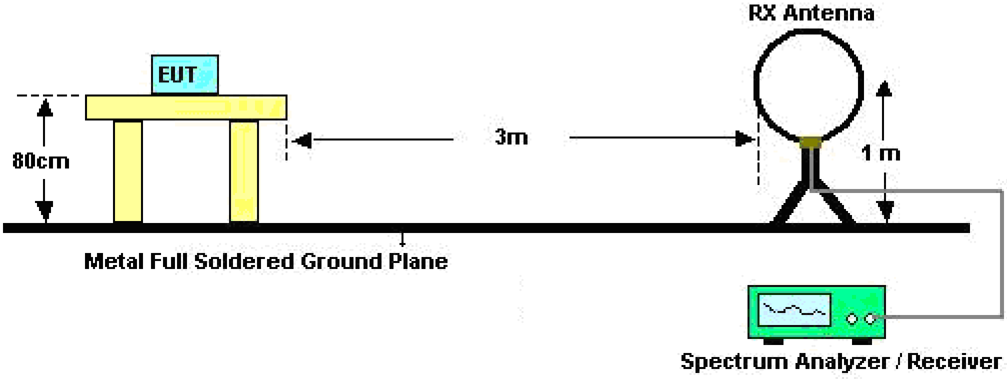
Note:

The total loss is 27dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

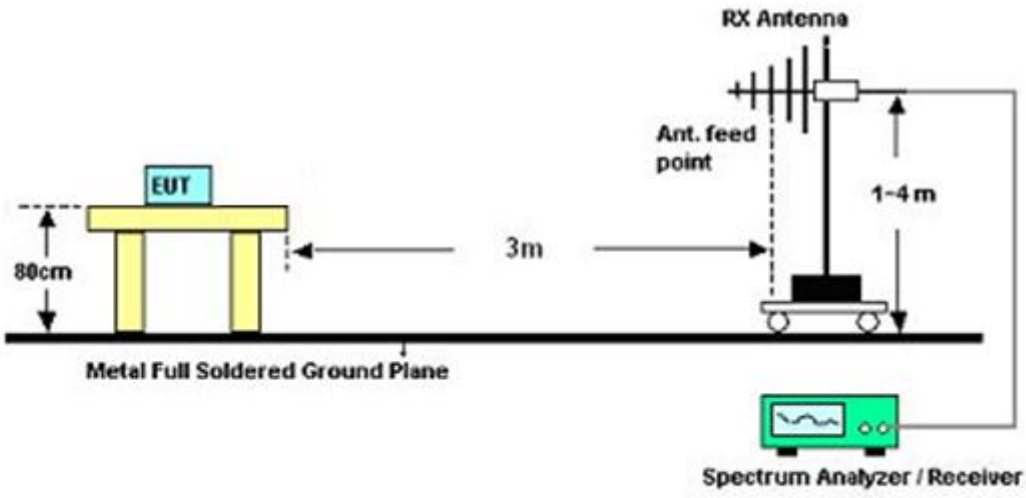
2. The EUT was placed on a rotatable table top 0.8 meter above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters 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

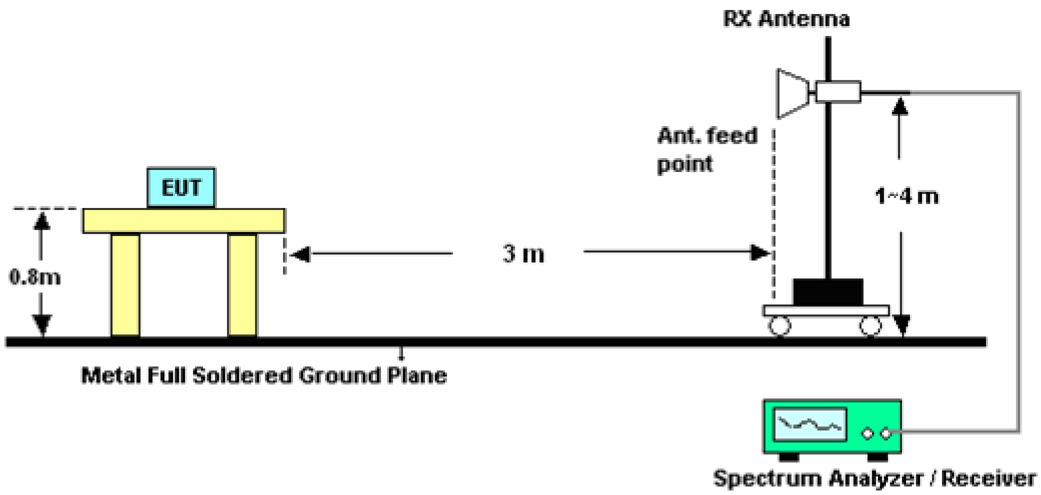
For radiated emissions below 30MHz



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°C
Test Channel :	36	**Relative Humidity :**	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang		

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
5046.35	54.46	-19.54	74	43.18	34.83	10.3	33.85	100	44	Peak
5127.65	41.53	-12.47	54	30.1	34.88	10.4	33.85	100	44	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
5144.45	55.56	-18.44	74	44.08	34.89	10.44	33.85	104	330	Peak
5147.15	42.02	-11.98	54	30.54	34.89	10.44	33.85	104	330	Average

Test Mode :	802.11a	**Temperature :**	23~24°C
Test Channel :	48	**Relative Humidity :**	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang		

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
5123.45	54.48	-19.52	74	43.05	34.88	10.4	33.85	100	42	Peak
5136.8	41.38	-12.62	54	29.95	34.88	10.4	33.85	100	42	Average
5378.38	54.8	-19.2	74	42.86	35.03	10.75	33.84	100	42	Peak
5453.95	42.14	-11.86	54	30.02	35.07	10.89	33.84	100	42	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
5136.5	54.99	-19.01	74	43.56	34.88	10.4	33.85	104	348	Peak
5145.65	41.88	-12.12	54	30.4	34.89	10.44	33.85	104	348	Average
5358.58	55.5	-18.5	74	43.58	35.01	10.75	33.84	104	348	Peak
5378.27	42.38	-11.62	54	30.44	35.03	10.75	33.84	104	348	Average

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	52	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang		

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
5037.35	54.09	-19.91	74	42.86	34.82	10.26	33.85	100	9	Peak
5074.25	41.35	-12.65	54	30.02	34.85	10.33	33.85	100	9	Average
5458.35	54.88	-19.12	74	42.76	35.07	10.89	33.84	100	9	Peak
5377.61	42.1	-11.9	54	30.16	35.03	10.75	33.84	100	9	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
5070.2	54.79	-19.21	74	43.47	34.84	10.33	33.85	112	313	Peak
5117.9	41.45	-12.55	54	30.03	34.87	10.4	33.85	112	313	Average
5359.68	55.11	-18.89	74	43.19	35.01	10.75	33.84	112	313	Peak
5360.78	42.36	-11.64	54	30.43	35.02	10.75	33.84	112	313	Average

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	64	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang		

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
5445.15	55.58	-18.42	74	43.5	35.06	10.86	33.84	100	7	Peak
5397.41	42.16	-11.84	54	30.17	35.04	10.79	33.84	100	7	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
5364.52	57.07	-16.93	74	45.14	35.02	10.75	33.84	102	348	Peak
5375.85	43.01	-10.99	54	31.08	35.02	10.75	33.84	102	348	Average

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	100	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang		

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
5383.92	55.55	-18.45	74	43.57	35.03	10.79	33.84	100	6	Peak
5470	52.73	-15.57	68.3	40.6	35.08	10.89	33.84	100	6	Peak
5438.96	42.19	-11.81	54	30.11	35.06	10.86	33.84	100	7	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
5450.16	56.33	-17.67	74	44.24	35.07	10.86	33.84	109	349	Peak
5470	54.81	-13.49	68.3	42.68	35.08	10.89	33.84	109	349	Peak
5453.36	43.45	-10.55	54	31.33	35.07	10.89	33.84	109	349	Average

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	140	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang		

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	53.84	-14.46	68.3	40.93	35.41	11.34	33.84	100	348	Peak

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	55.13	-13.17	68.3	42.22	35.41	11.34	33.84	104	8	Peak

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	36	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang		

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
5074.4	53.8	-20.2	74	42.47	34.85	10.33	33.85	102	43	Peak
5128.25	41.33	-12.67	54	29.9	34.88	10.4	33.85	102	43	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
5149.85	55.23	-18.77	74	43.75	34.89	10.44	33.85	104	346	Peak
5139.65	42.14	-11.86	54	30.7	34.89	10.4	33.85	104	346	Average

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	48	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang		

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
5049.65	54.69	-19.31	74	43.41	34.83	10.3	33.85	100	61	Peak
5049.2	41.2	-12.8	54	29.92	34.83	10.3	33.85	100	61	Average
5439.98	55.62	-18.38	74	43.54	35.06	10.86	33.84	100	61	Peak
5381.02	42.01	-11.99	54	30.03	35.03	10.79	33.84	100	61	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
5000.45	54.58	-19.42	74	43.4	34.8	10.23	33.85	104	346	Peak
5147.9	41.78	-12.22	54	30.3	34.89	10.44	33.85	104	346	Average
5438.99	55.08	-18.92	74	43	35.06	10.86	33.84	104	346	Peak
5366.39	42.23	-11.77	54	30.3	35.02	10.75	33.84	104	346	Average

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	52	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang		

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
5106.35	54.25	-19.75	74	42.86	34.87	10.37	33.85	100	50	Peak
5144.9	41.3	-12.7	54	29.82	34.89	10.44	33.85	100	50	Average
5403.57	55.14	-18.86	74	43.15	35.04	10.79	33.84	100	50	Peak
5375.85	42.15	-11.85	54	30.22	35.02	10.75	33.84	100	50	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
5119.25	54.22	-19.78	74	42.8	34.87	10.4	33.85	103	347	Peak
5144.3	41.52	-12.48	54	30.04	34.89	10.44	33.85	103	347	Average
5366.28	55.44	-18.56	74	43.51	35.02	10.75	33.84	103	347	Peak
5368.7	42.57	-11.43	54	30.64	35.02	10.75	33.84	103	347	Average

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	64	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang		

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
5378.38	54.9	-19.1	74	42.96	35.03	10.75	33.84	100	46	Peak
5393.34	42.04	-11.96	54	30.06	35.03	10.79	33.84	100	46	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
5354.4	57.35	-16.65	74	45.46	35.01	10.72	33.84	102	347	Peak
5373.98	42.95	-11.05	54	31.02	35.02	10.75	33.84	102	347	Average

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	100	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang		

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
5392.56	54.84	-19.16	74	42.86	35.03	10.79	33.84	114	74	Peak
5470	52.1	-16.2	68.3	39.97	35.08	10.89	33.84	114	74	Peak
5452.56	42.15	-11.85	54	30.03	35.07	10.89	33.84	114	74	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
5454	56.22	-17.78	74	44.1	35.07	10.89	33.84	109	348	Peak
5470	53.64	-14.66	68.3	41.51	35.08	10.89	33.84	109	348	Peak
5456.4	43.62	-10.38	54	31.5	35.07	10.89	33.84	109	348	Average

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	140	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang		

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	54.97	-13.33	68.3	42.06	35.41	11.34	33.84	101	27	Peak

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	57.8	-10.5	68.3	44.89	35.41	11.34	33.84	105	349	Peak

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

Test Mode :	802.11a	**Temperature :**	23~24°C
Test Channel :	36	**Relative Humidity :**	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	**Polarization :**	Horizontal
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. 6298 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

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	86.57	-	-	75.04	34.91	10.47	33.85	100	44	Average
5180	96.2	-	-	84.67	34.91	10.47	33.85	100	44	Peak
6298	57.16	-11.14	68.3	43.2	36.04	11.75	33.83	100	44	Peak

Test Mode :	802.11a	**Temperature :**	23~24°C
Test Channel :	36	**Relative Humidity :**	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	**Polarization :**	Vertical
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. 6296 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

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	93.02	-	-	81.49	34.91	10.47	33.85	104	330	Average
5180	103.77	-	-	92.24	34.91	10.47	33.85	104	330	Peak
6296	66.49	-1.81	68.3	52.53	36.04	11.75	33.83	104	330	Peak

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	44	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Horizontal
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 6292 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

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
30	18.44	-21.56	40	30.45	18.9	0.64	31.55	-	-	Peak
174.72	22.14	-21.36	43.5	42.19	9.6	1.55	31.2	143	29	Peak
255.72	18.66	-27.34	46	34.83	13.18	1.77	31.12	-	-	Peak
548.5	19.96	-26.04	46	29.42	19.07	2.54	31.07	-	-	Peak
763.4	21.07	-24.93	46	29.4	19.73	3.05	31.11	-	-	Peak
891.5	22.44	-23.56	46	29.96	20.51	3.35	31.38	-	-	Peak
5220	83.09	-	-	71.47	34.93	10.54	33.85	100	42	Average
5220	92.62	-	-	81	34.93	10.54	33.85	100	42	Peak
6292	57.4	-10.9	68.3	43.45	36.03	11.75	33.83	100	42	Peak

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	44	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Vertical
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 6318 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

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
30	33.32	-6.68	40	45.33	18.9	0.64	31.55	100	348	Peak
131.79	20.18	-23.32	43.5	38.49	11.7	1.28	31.29	-	-	Peak
284.61	17.61	-28.39	46	33.98	12.88	1.85	31.1	-	-	Peak
460.3	21.33	-24.67	46	33.03	17.02	2.33	31.05	-	-	Peak
748	21.57	-24.43	46	29.63	19.76	3.04	30.86	-	-	Peak
933.5	22.22	-23.78	46	28.63	20.73	3.36	30.5	-	-	Peak
5220	93.23	-	-	81.61	34.93	10.54	33.85	102	345	Average
5220	103.42	-	-	91.8	34.93	10.54	33.85	102	345	Peak
6318	67.54	-0.76	68.3	53.58	36.05	11.74	33.83	102	345	Peak

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	48	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Horizontal
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 6288 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

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	83.65	-	-	71.98	34.94	10.58	33.85	100	42	Average
5240	93.78	-	-	82.11	34.94	10.58	33.85	100	42	Peak
6288	57.17	-11.13	68.3	43.22	36.03	11.75	33.83	100	42	Peak

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	48	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Vertical
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 6312 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

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	93.7	-	-	82.03	34.94	10.58	33.85	104	348	Average
5240	103.68	-	-	92.01	34.94	10.58	33.85	104	348	Peak
6312	67.47	-0.83	68.3	53.51	36.04	11.75	33.83	104	348	Peak

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	52	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Horizontal
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 5932 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

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	82.74	-	-	71.01	34.96	10.61	33.84	100	9	Average
5260	93.13	-	-	81.4	34.96	10.61	33.84	100	9	Peak
5932	57.07	-11.23	68.3	43.48	35.7	11.73	33.84	100	9	Peak

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	52	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Vertical
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 6326 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

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	92.22	-	-	80.49	34.96	10.61	33.84	112	313	Average
5260	102.45	-	-	90.72	34.96	10.61	33.84	112	313	Peak
6326	66.5	-1.8	68.3	52.54	36.05	11.74	33.83	112	313	Peak

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	60	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Horizontal
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

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	80.97	-	-	69.18	34.98	10.65	33.84	100	43	Average
5300	91.21	-	-	79.42	34.98	10.65	33.84	100	43	Peak

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	60	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Vertical
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 6306 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

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	93.29	-	-	81.5	34.98	10.65	33.84	102	346	Average
5300	103.25	-	-	91.46	34.98	10.65	33.84	102	346	Peak
6306	66.49	-1.81	68.3	52.53	36.04	11.75	33.83	102	346	Peak

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	64	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Horizontal
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

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
5320	83.67	-	-	71.84	34.99	10.68	33.84	100	7	Average
5320	94.13	-	-	82.3	34.99	10.68	33.84	100	7	Peak

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	64	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Vertical
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

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
5320	93.69	-	-	81.86	34.99	10.68	33.84	102	348	Average
5320	103.53	-	-	91.7	34.99	10.68	33.84	102	348	Peak

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	100	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Horizontal
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

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	82.09	-	-	69.87	35.1	10.96	33.84	100	7	Average
5500	92.77	-	-	80.58	35.1	10.93	33.84	100	7	Peak

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	100	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Vertical
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

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	95.34	-	-	83.12	35.1	10.96	33.84	100	7	Average
5500	105.19	-	-	93	35.1	10.93	33.84	100	7	Peak

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	116	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Horizontal
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

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	83.06	-	-	70.61	35.2	11.09	33.84	100	9	Average
5580	92.92	-	-	80.47	35.2	11.09	33.84	100	9	Peak

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	116	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Vertical
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

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	95.52	-	-	83.07	35.2	11.09	33.84	100	346	Average
5580	105.38	-	-	92.93	35.2	11.09	33.84	100	346	Peak

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	140	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Horizontal
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

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	81.83	-	-	69	35.37	11.3	33.84	101	26	Average
5700	93.93	-	-	81.08	35.39	11.3	33.84	101	26	Peak

Test Mode :	802.11a	Temperature :	23~24°C
Test Channel :	140	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Vertical
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

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	94.58	-	-	81.75	35.37	11.3	33.84	105	349	Average
5700	107.38	-	-	94.55	35.37	11.3	33.84	105	349	Peak

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	36	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Horizontal
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

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	85.33	-	-	73.8	34.91	10.47	33.85	102	43	Average
5180	95.04	-	-	83.51	34.91	10.47	33.85	102	43	Peak

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	36	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Vertical
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. 6316 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

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	92.71	-	-	81.18	34.91	10.47	33.85	104	346	Average
5180	102.91	-	-	91.38	34.91	10.47	33.85	104	346	Peak
6316	66.4	-1.9	68.3	52.44	36.05	11.74	33.83	104	346	Peak

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	44	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Horizontal
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

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
30	18.44	-21.56	40	30.45	18.9	0.64	31.55	-	-	Peak
174.72	22.14	-21.36	43.5	42.19	9.6	1.55	31.2	143	29	Peak
255.72	18.66	-27.34	46	34.83	13.18	1.77	31.12	-	-	Peak
548.5	19.96	-26.04	46	29.42	19.07	2.54	31.07	-	-	Peak
763.4	21.07	-24.93	46	29.4	19.73	3.05	31.11	-	-	Peak
891.5	22.44	-23.56	46	29.96	20.51	3.35	31.38	-	-	Peak
5220	83.43	-	-	71.81	34.93	10.54	33.85	100	72	Average
5220	93.74	-	-	82.12	34.93	10.54	33.85	100	72	Peak

Test Mode :	802.11n HT20	**Temperature :**	23~24°C
Test Channel :	44	**Relative Humidity :**	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	**Polarization :**	Vertical
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 6310 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

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**
30	33.32	-6.68	40	45.33	18.9	0.64	31.55	100	348	Peak
131.79	20.18	-23.32	43.5	38.49	11.7	1.28	31.29	-	-	Peak
284.61	17.61	-28.39	46	33.98	12.88	1.85	31.1	-	-	Peak
460.3	21.33	-24.67	46	33.03	17.02	2.33	31.05	-	-	Peak
748	21.57	-24.43	46	29.63	19.76	3.04	30.86	-	-	Peak
933.5	22.22	-23.78	46	28.63	20.73	3.36	30.5	-	-	Peak
5220	93.4	-	-	81.78	34.93	10.54	33.85	103	347	Average
5220	104.07	-	-	92.45	34.93	10.54	33.85	103	347	Peak
6310	67.85	-0.45	68.3	53.89	36.04	11.75	33.83	103	347	Peak

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	48	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Horizontal
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 6298 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

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	84.25	-	-	72.58	34.94	10.58	33.85	100	61	Average
5240	94.49	-	-	82.82	34.94	10.58	33.85	100	61	Peak
6298	59.83	-8.47	68.3	45.87	36.04	11.75	33.83	100	61	Peak

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	48	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Vertical
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 6308 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

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	93.23	-	-	81.56	34.94	10.58	33.85	104	346	Average
5240	103.32	-	-	91.65	34.94	10.58	33.85	104	346	Peak
6308	66.78	-1.52	68.3	52.82	36.04	11.75	33.83	104	346	Peak

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	52	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Horizontal
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 6310 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

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	85.5	-	-	73.77	34.96	10.61	33.84	100	50	Average
5260	95.23	-	-	83.54	34.95	10.58	33.84	100	50	Peak
6310	58.29	-10.01	68.3	44.33	36.04	11.75	33.83	100	50	Peak

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	52	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Vertical
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 6310 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

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	94.04	-	-	82.31	34.96	10.61	33.84	103	347	Average
5260	104.02	-	-	92.29	34.96	10.61	33.84	103	347	Peak
6310	67.05	-1.25	68.3	53.09	36.04	11.75	33.83	103	347	Peak

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	60	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Horizontal
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. 6310 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

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	83.15	-	-	71.36	34.98	10.65	33.84	101	25	Average
5300	92.89	-	-	81.1	34.98	10.65	33.84	101	25	Peak
6310	60.3	-8	68.3	46.34	36.04	11.75	33.83	101	25	Peak

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	60	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Vertical
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. 6310 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

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	93.9	-	-	82.11	34.98	10.65	33.84	102	347	Average
5300	103.72	-	-	91.93	34.98	10.65	33.84	102	347	Peak
6310	66.87	-1.43	68.3	52.91	36.04	11.75	33.83	102	347	Peak

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	64	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Horizontal
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

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
5320	83.28	-	-	71.45	34.99	10.68	33.84	100	46	Average
5320	92.95	-	-	81.12	34.99	10.68	33.84	100	46	Peak

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	64	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Vertical
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

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
5320	94.32	-	-	82.49	34.99	10.68	33.84	102	347	Average
5320	104.71	-	-	92.88	34.99	10.68	33.84	102	347	Peak

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	100	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Horizontal
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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	83.04	-	-	70.82	35.1	10.96	33.84	100	7	Average
5500	92.37	-	-	80.18	35.1	10.93	33.84	100	7	Peak

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	100	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Vertical
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	96.03	-	-	83.81	35.1	10.96	33.84	100	349	Average
5500	106.16	-	-	93.94	35.1	10.96	33.84	100	349	Peak

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	116	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Horizontal
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

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	83.46	-	-	71.01	35.2	11.09	33.84	101	8	Average
5580	93.24	-	-	80.79	35.2	11.09	33.84	101	8	Peak

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	116	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Vertical
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

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	95.53	-	-	83.08	35.2	11.09	33.84	100	347	Average
5580	105.25	-	-	92.8	35.2	11.09	33.84	100	347	Peak

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	140	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Horizontal
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

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	83.79	-	-	70.96	35.37	11.3	33.84	101	27	Average
5700	93.66	-	-	80.83	35.37	11.3	33.84	101	27	Peak

Test Mode :	802.11n HT20	Temperature :	23~24°C
Test Channel :	140	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland Lin, and Luke Chang	Polarization :	Vertical
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

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	97.01	-	-	84.18	35.37	11.3	33.84	105	349	Average
5700	107.12	-	-	94.29	35.37	11.3	33.84	105	349	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.

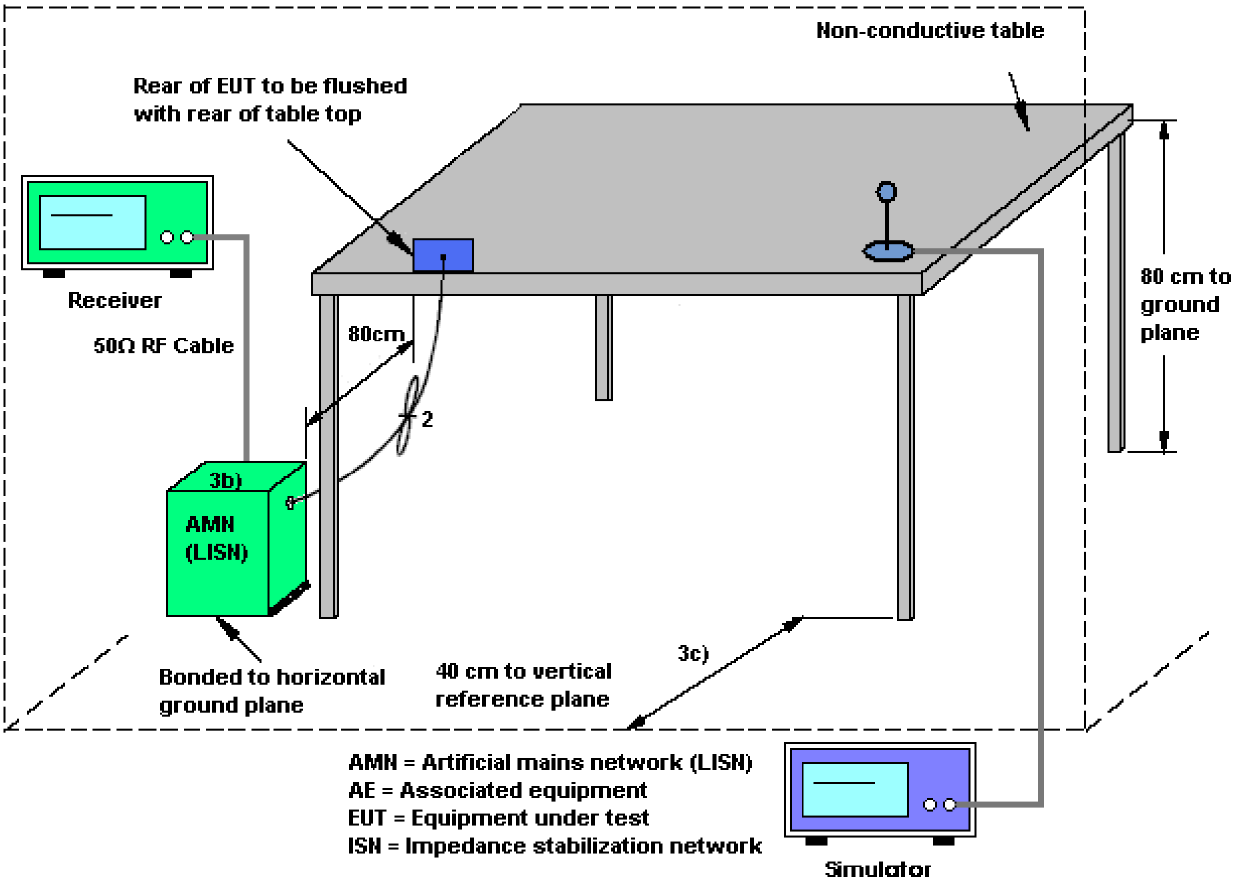
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

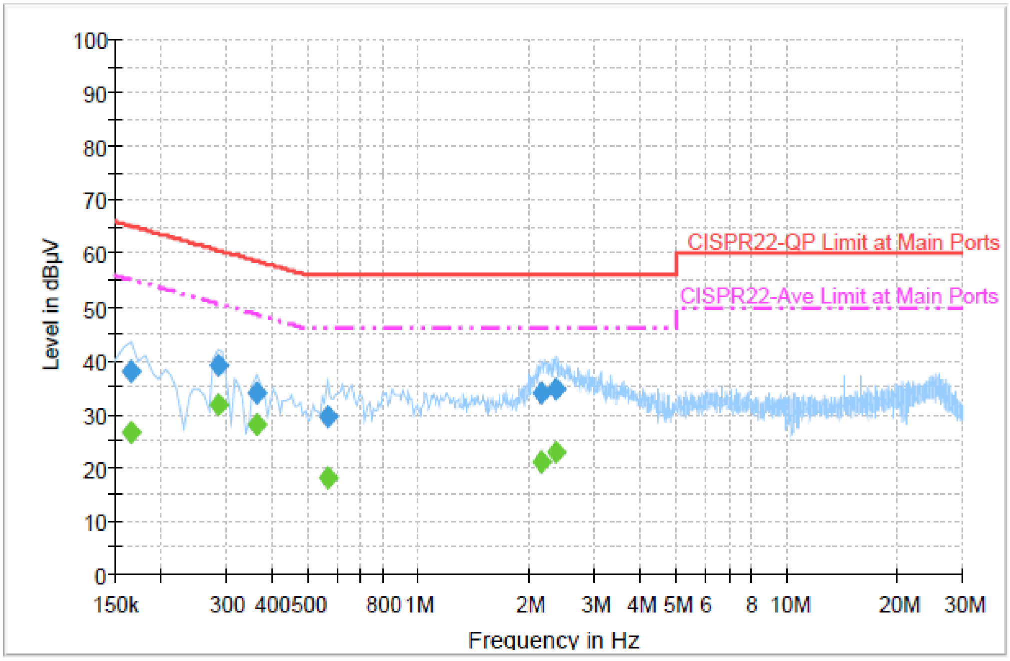
1. The testing follows the guidelines in FCC KDB 789033 D01 General UNII Test Procedures v01r02
2. ANSI C63.4-2003 and ANSI C63.10-2009 test site requirement.
3. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting 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 :	GSM850 Idle + Bluetooth Link + WLAN (5G) Link + Adapter + Earphone + MP3		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



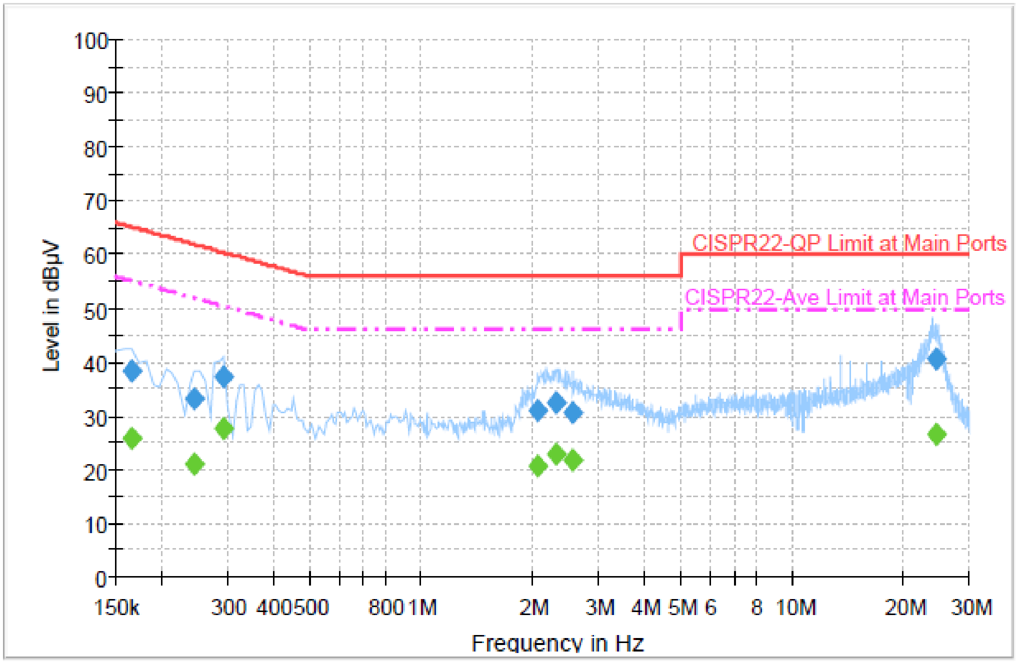
Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	37.9	Off	L1	19.4	27.3	65.2
0.286000	39.1	Off	L1	19.4	21.5	60.6
0.366000	34.1	Off	L1	19.4	24.5	58.6
0.566000	29.7	Off	L1	19.4	26.3	56.0
2.166000	33.9	Off	L1	19.6	22.1	56.0
2.366000	34.5	Off	L1	19.6	21.5	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	26.4	Off	L1	19.4	28.8	55.2
0.286000	31.8	Off	L1	19.4	18.8	50.6
0.366000	28.2	Off	L1	19.4	20.4	48.6
0.566000	18.0	Off	L1	19.4	28.0	46.0
2.166000	21.0	Off	L1	19.6	25.0	46.0
2.366000	22.8	Off	L1	19.6	23.2	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 :	GSM850 Idle + Bluetooth Link + WLAN (5G) Link + Adapter + Earphone + 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)
0.166000	38.3	Off	N	19.4	26.9	65.2
0.246000	33.4	Off	N	19.4	28.5	61.9
0.294000	37.4	Off	N	19.4	23.0	60.4
2.062000	31.0	Off	N	19.6	25.0	56.0
2.302000	32.7	Off	N	19.6	23.3	56.0
2.558000	30.7	Off	N	19.6	25.3	56.0
24.390000	40.7	Off	N	20.0	19.3	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	26.0	Off	N	19.4	29.2	55.2
0.246000	21.0	Off	N	19.4	30.9	51.9
0.294000	27.8	Off	N	19.4	22.6	50.4
2.062000	20.6	Off	N	19.6	25.4	46.0
2.302000	23.1	Off	N	19.6	22.9	46.0
2.558000	21.8	Off	N	19.6	24.2	46.0
24.390000	26.5	Off	N	20.0	23.5	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.

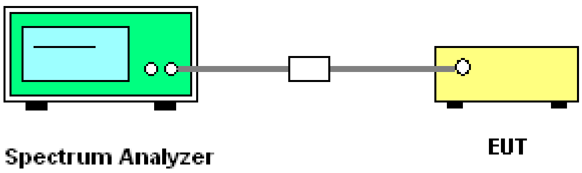
3.7.2 Measuring Instruments

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 :	Felix Song	**Relative Humidity :**	45~49%

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.80	5188.30	9.65
44	5220	5211.80	5228.30	9.58
48	5240	5231.80	5248.30	9.54
52	5260	5251.80	5268.30	9.51
60	5300	5291.80	5308.30	9.43
64	5320	5311.80	5328.30	9.40
100	5500	5491.80	5508.25	4.55
116	5580	5571.80	5588.20	0.00
140	5700	5691.75	5708.30	4.39

Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Engineer :	Felix Song	**Relative Humidity :**	45~49%

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.20	5188.80	0.00
44	5220	5211.20	5228.90	9.58
48	5240	5231.20	5248.80	0.00
52	5260	5251.20	5268.80	0.00
60	5300	5291.20	5308.80	0.00
64	5320	5311.30	5328.80	9.40
100	5500	5491.25	5508.80	4.55
116	5580	5571.30	5588.80	8.96
140	5700	5691.20	5708.80	0.00

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	Oct. 17, 2012 ~ Oct. 18, 2012	Jun. 05, 2013	Conducted (TH02-HY)
Power Meter	Agilent	E4416A	GB41292344	300MHz~40GHz	Feb. 21, 2012	Oct. 17, 2012 ~ Oct. 18, 2012	Feb. 20, 2013	Conducted (TH02-HY)
Power Sensor	Agilent	E9327A	US40441548	300MHz~40GHz	Feb. 21, 2012	Oct. 17, 2012 ~ Oct. 18, 2012	Feb. 20, 2013	Conducted (TH02-HY)
EMI Test Receiver	R&S	ESCS 30	100356	9KHz ~ 2.75GHz	Oct. 27, 2011	Oct. 17, 2012	Oct. 26, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz ~ 30MHz	Dec. 09, 2011	Oct. 17, 2012	Dec. 08, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz ~ 30MHz	Dec. 06, 2011	Oct. 17, 2012	Dec. 05, 2012	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Oct. 17, 2012	N/A	Conduction (CO05-HY)
System Simulator	R&S	CMU200	117995	N/A	Jul. 28, 2011	Oct. 17, 2012	Jul. 27, 2013	Conduction (CO05-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211030	9KHz ~ 26.5GHz	Nov. 23, 2011	Oct. 19, 2012 ~ Oct. 21, 2012	Nov. 22, 2012	Radiation (03CH06-HY)
Spectrum Analyzer	R&S	FSP30	101352	9KHz-30GHz	Nov. 03, 2011	Oct. 19, 2012 ~ Oct. 21, 2012	Nov. 02, 2012	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/003	20MHz ~ 1000MHz	May 04, 2012	Oct. 19, 2012 ~ Oct. 21, 2012	May. 03, 2013	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz ~ 2GHz	Oct. 06, 2012	Oct. 19, 2012 ~ Oct. 21, 2012	May. 03, 2013	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Aug. 01, 2012	Oct. 19, 2012 ~ Oct. 21, 2012	Jul. 31, 2013	Radiation (03CH06-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Sep. 28, 2012	Oct. 19, 2012~ Oct. 21, 2012	Sep. 27, 2013	Radiation (03CH06-HY)
Preamplifier	Agilent	8449B	3008A01917	1GHz ~ 26.5GHz	Apr. 13, 2012	Oct. 19, 2012 ~ Oct. 21, 2012	Apr. 12, 2013	Radiation (03CH06-HY)
Amplifier	Agilent	310N	186713	9KHz ~ 1GHz	Apr. 11, 2012	Oct. 19, 2012 ~ Oct. 21, 2012	Apr. 10, 2013	Radiation (03CH06-HY)
Pre Amplifier	EMCI	EMC051845	SN980048	1GHz ~ 18GHz	Jul. 21, 2012	Oct. 19, 2012 ~ Oct. 21, 2012	Jul. 20, 2013	Radiation (03CH06-HY)
Pre Amplifier	MITEQ	AMF-7D-00101800-30-10P	159087	1GHz~18GHz	Feb. 27, 2012	Oct. 19, 2012 ~ Oct. 21, 2012	Feb. 26, 2013	Radiation (03CH06-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9KHz ~ 30MHz	Jul. 03, 2012	Oct. 19, 2012 ~ Oct. 21, 2012	Jul. 02, 2014	Radiation (03CH06-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**