FCC RF Test Report

APPLICANT	:	SAMSUNG Electronics Co., LTD.
EQUIPMENT	:	Mobile Phone
BRAND NAME	:	Samsung
MODEL NAME	:	SHV-E270L
MARKETING NAME	:	BAFFIN
FCC ID	:	A3LSHVE270L
STANDARD	:	FCC Part 15 Subpart E
CLASSIFICATION	:	(NII) Unlicensed National Information Infrastructure

The product was received on Oct. 09, 2012 and completely tested on Oct. 14, 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
FR2O0922C	Rev. 01	Initial issue of report	Nov. 06, 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 4.95 dB at 17097.000 MHz
3.6	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 7.40 dB at 0.414 MHz
3.7	15.407(g)	A9.5	Frequency Stability	Within Operation Band	Pass	-
3.8	15.407(c)	A9.5	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.9	15.203 & 15.407(a)	A9.2	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

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

1.2 Manufacturer

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

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Mobile Phone
Brand Name	Samsung
Model Name	SHV-E270L
Marketing Name	BAFFIN
FCC ID	A3LSHVE270L
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA WLAN 11abgn / Bluetooth
HW Version	REV0.1
SW Version	E270L.001
EUT Stage	Identical Prototype

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

Product Specification subjective to this standard	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5700 MHz
Maximum Output Power to Antenna	**<5180 MHz ~ 5240 MHz>** 802.11a : 14.17 dBm / 0.0261 W 802.11n HT20 : 12.20 dBm / 0.0166 W 802.11n HT40 : 12.16 dBm / 0.0164 W **<5260 MHz ~ 5320 MHz>** 802.11a : 14.27 dBm / 0.0267 W 802.11n HT20 : 12.23 dBm / 0.0167 W 802.11n HT40 : 12.18 dBm / 0.0165 W **<5500 MHz ~ 5700 MHz>** 802.11a : 14.28 dBm / 0.0268 W 802.11n HT20 : 12.28 dBm / 0.0169 W 802.11n HT40 : 12.37 dBm / 0.0173 W
Antenna Type	PIFA Antenna with gain -5.01 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-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
3.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
4.	LCD Monitor	Lenovo	6135-AB1	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m

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 (Z 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
	38	**5190**	**46**	**5230**
	40	5200	48	5240

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5250-5350 MHz Band 2	52	5260	60	5300
	54	**5270**	**62**	**5310**
	56	5280	64	5320

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5470-5725 MHz Band 3	100	5500	116	5580
	102	**5510**	132	5660
	104	5520	**134**	**5670**
	108	5540	136	5680
	110	**5550**	140	5700
	112	5560		

Note: The above Frequency and Channel in boldface were 802.11n HT40.

2.2 Pre-Scanned RF Power

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

5GHz 802.11a mode								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Peak Power (dBm)	14.28	14.26	14.26	14.26	14.26	14.25	14.27	14.27

5GHz 802.11n HT20 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	12.28	12.26	12.24	12.26	12.24	12.24	12.23	12.25

5GHz 802.11n HT40 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	12.37	12.33	12.33	12.36	12.36	12.35	12.36	12.27

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 and 99% BW Power Spectral Density**	**802.11a**	**6 Mbps**	**L/M/H**
		802.11n HT20	**6.5 Mbps**	**L/M/H**
		802.11n HT40	**13.5 Mbps**	**L/M/H**
	Output Power	**802.11a**	**6 Mbps**	**L/M/H**
		802.11n HT20	**6.5 Mbps**	**L/M/H**
		802.11n HT40	**13.5 Mbps**	**L/M/H**
	Peak Excursion	**802.11a**	**6 Mbps**	**L/M/H**
		802.11n HT20	**6.5 Mbps**	**L/M/H**
		802.11n HT40	**13.5 Mbps**	**L/M/H**
	Frequency Stability	**802.11a**	**6 Mbps**	**L/M/H**
		802.11n HT20	**6.5 Mbps**	**L/M/H**
		802.11n HT40	**13.5 Mbps**	**L/M/H**
Radiated TCs	**Radiated Band Edge**	**802.11a**	**6 Mbps**	**L/H**
		802.11n HT20	**6.5 Mbps**	**L/H**
		802.11n HT40	**13.5 Mbps**	**L/H**
	Radiated Spurious Emission	**802.11a**	**6 Mbps**	**L/M/H**
		802.11n HT20	**6.5 Mbps**	**L/M/H**
		802.11n HT40	**13.5 Mbps**	**L/M/H**
AC Conducted Emission	Mode 1 : GSM1900 Idle + Bluetooth Link + WLAN (5G) Link + Earphone + MP3 + USB Cable (Charging from Adapter)			

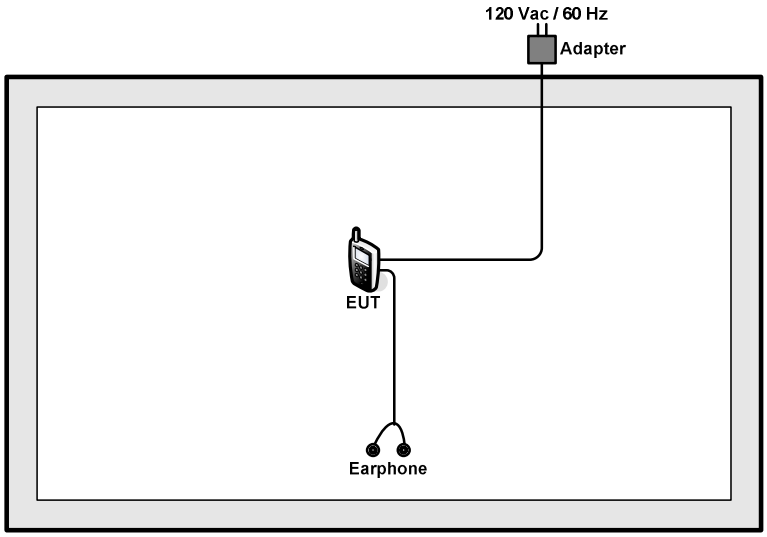
Ch. #		Band I：5150-5250 MHz	Band II：5250-5350 MHz	Band III：5470-5725 MHz
		802.11a	802.11a	802.11a
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

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

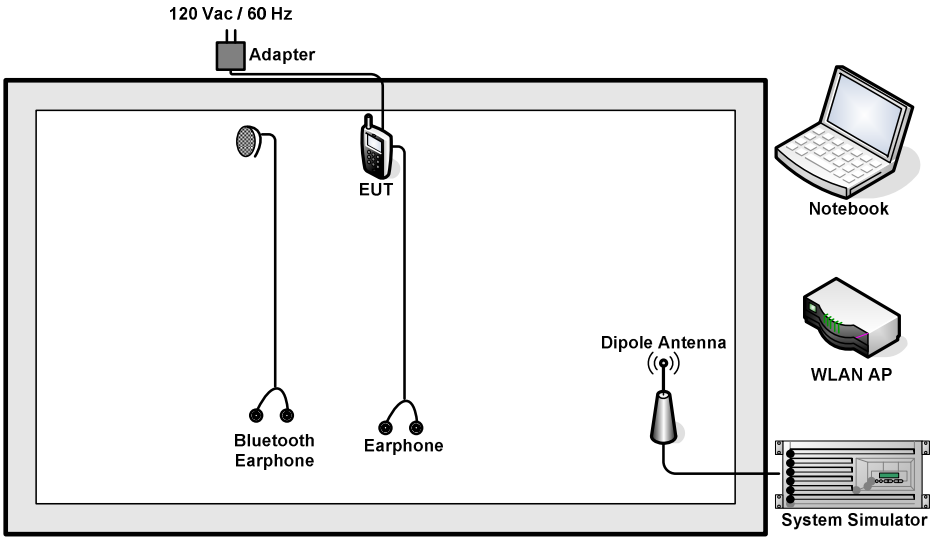
Ch. #		Band I：5150-5250 MHz	Band II：5250-5350 MHz	Band III：5470-5725 MHz
		802.11n HT40	802.11n HT40	802.11n HT40
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134

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

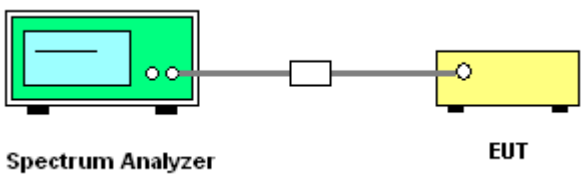
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r02. Section D) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

3.1.4 Test Setup

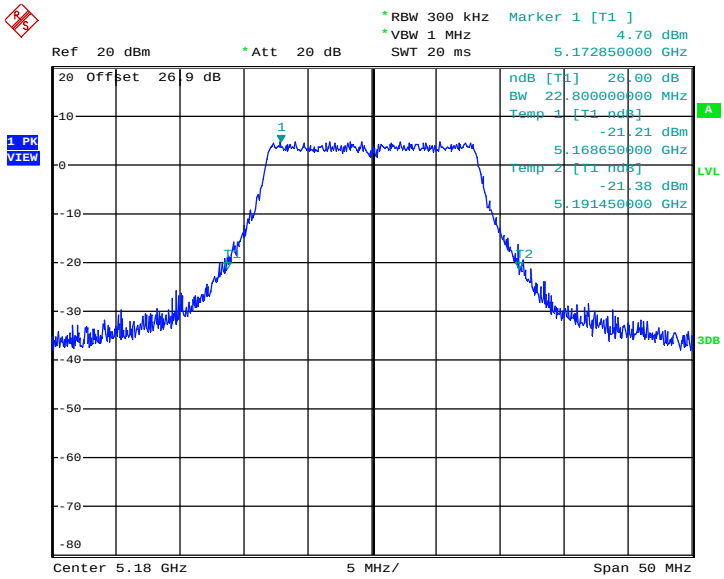


3.1.5 Test Result of 26dB Bandwidth Plots

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

Channel	Frequency (MHz)	802.11a 26dB Bandwidth (MHz)	Pass/Fail
36	5180	22.800	N/A
44	5220	22.950	N/A
48	5240	22.950	N/A
52	5260	23.100	N/A
60	5300	23.100	N/A
64	5320	22.700	N/A
100	5500	22.700	N/A
116	5580	22.600	N/A
140	5700	22.900	N/A

26 dB Bandwidth Plot on 802.11a Channel 36

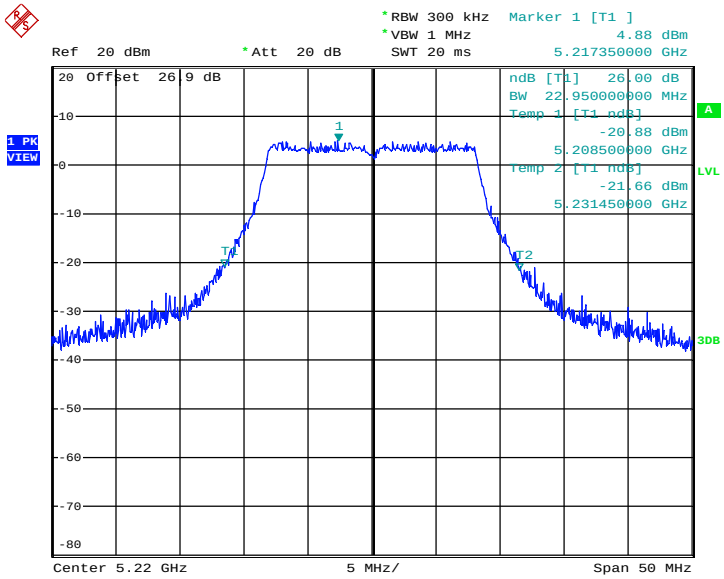


Note:

The total loss is 26.9dB 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 4.70dBm, has added (offset) with the total loss = attenuator factor + cable loss = 26.9dB, where, cable loss = 6.9dB 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.

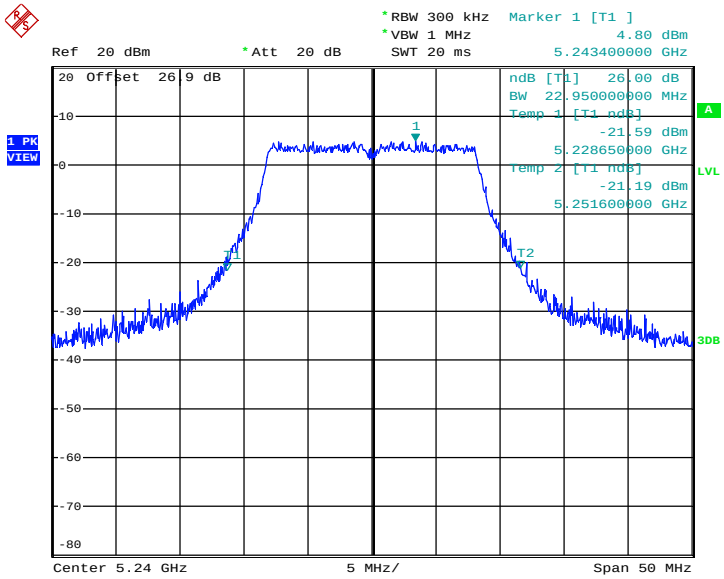
26 dB Bandwidth Plot on 802.11a Channel 44



Note:

The total loss is 26.9dB 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.

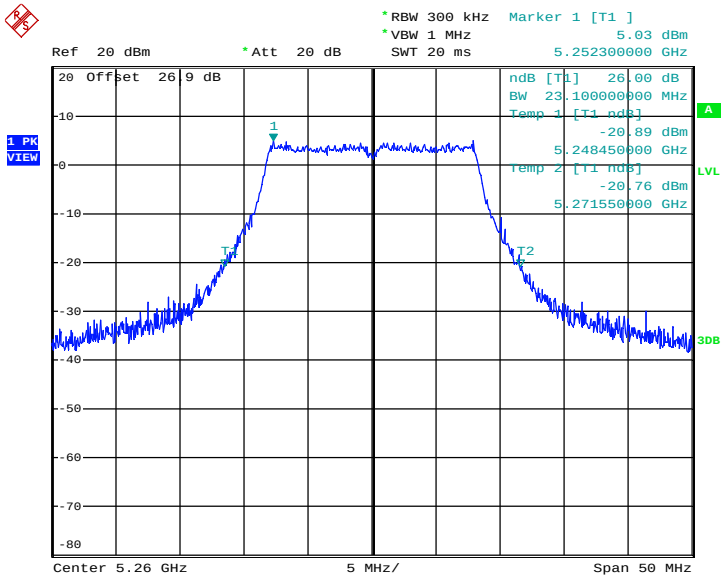
26 dB Bandwidth Plot on 802.11a Channel 48



Note:

The total loss is 26.9dB 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.

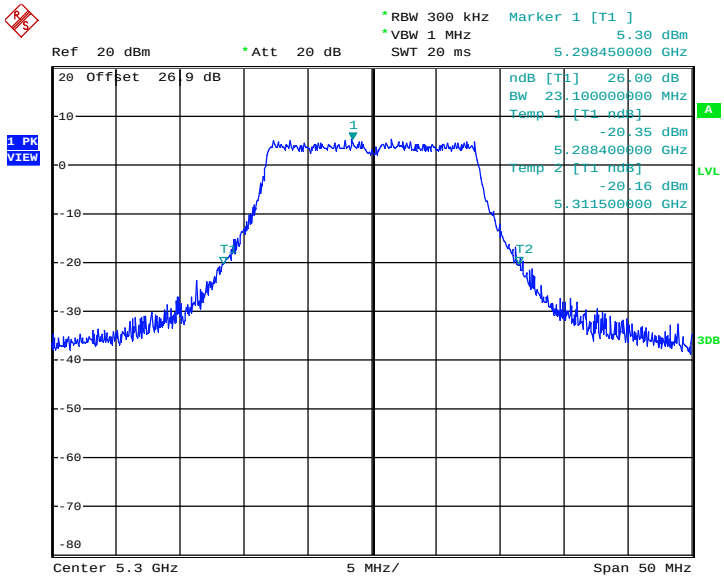
26 dB Bandwidth Plot on 802.11a Channel 52



Note:

The total loss is 26.9dB 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.

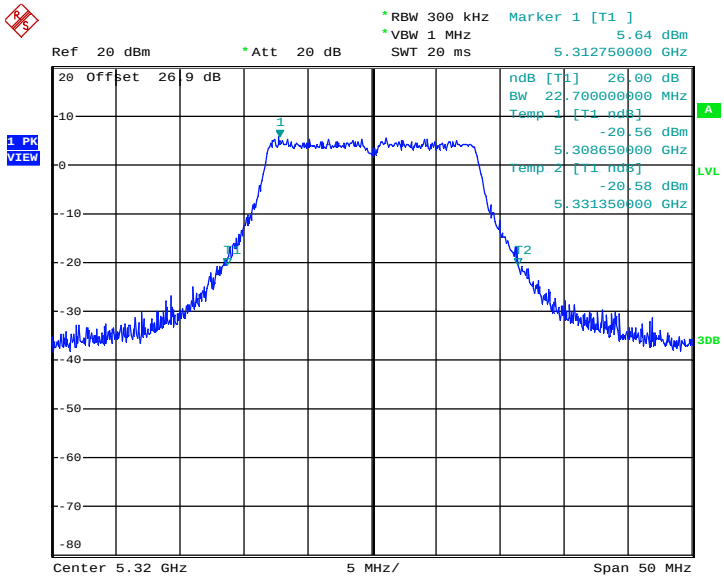
26 dB Bandwidth Plot on 802.11a Channel 60



Note:

The total loss is 26.9dB 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.

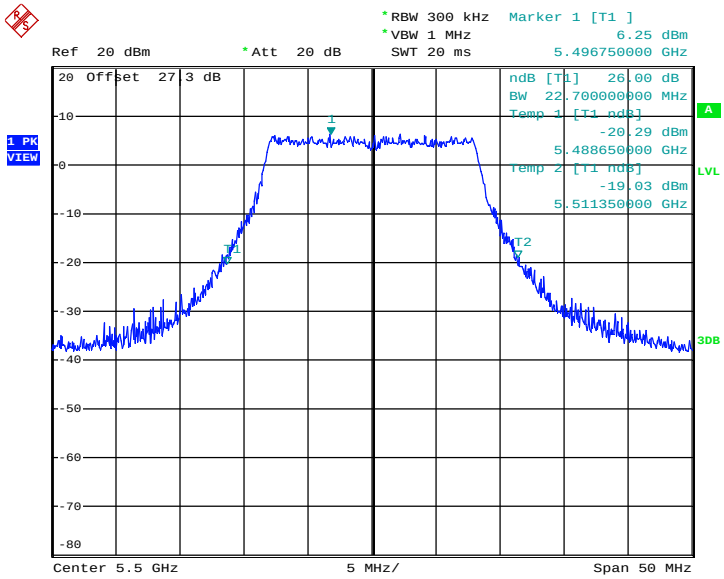
26 dB Bandwidth Plot on 802.11a Channel 64



Note:

The total loss is 26.9dB 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.

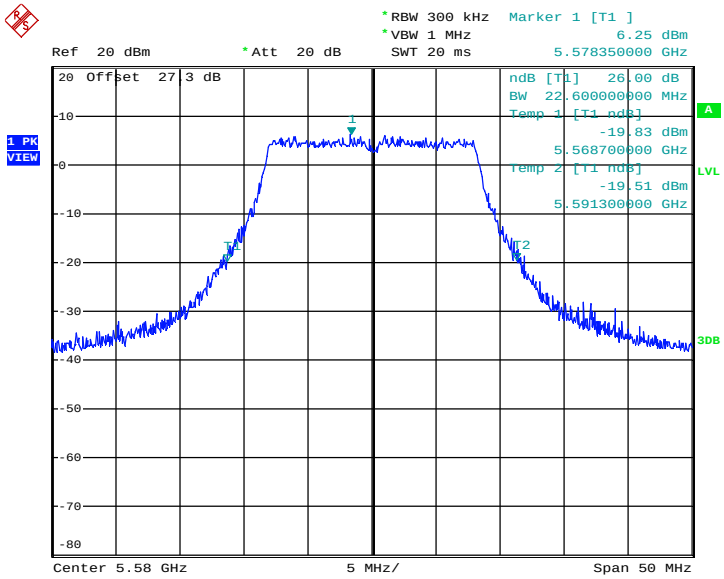
26 dB Bandwidth Plot on 802.11a Channel 100



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.

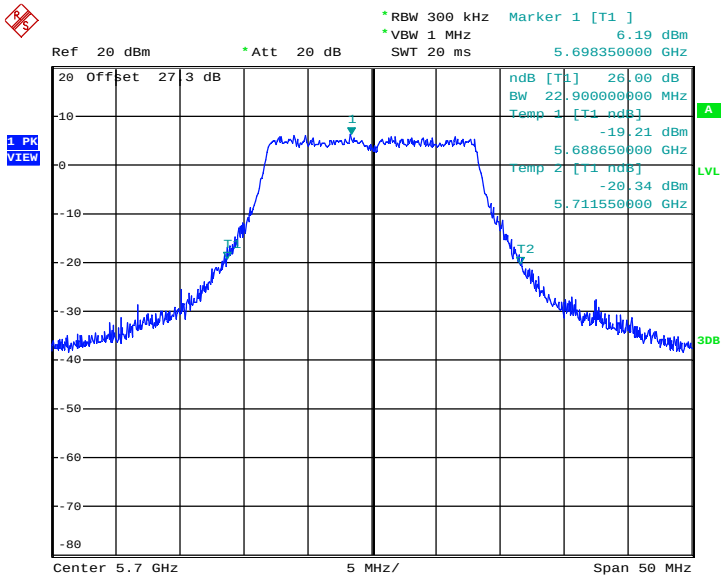
26 dB Bandwidth Plot on 802.11a Channel 116



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



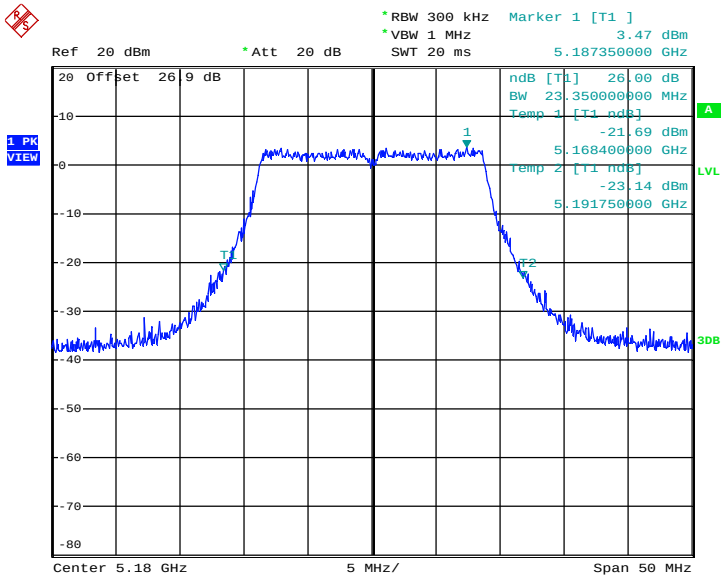
Note:

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 :	Bill Kuo	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11n HT20 26dB Bandwidth (MHz)	Pass/Fail
36	5180	23.350	N/A
44	5220	23.250	N/A
48	5240	23.450	N/A
52	5260	23.600	N/A
60	5300	23.400	N/A
64	5320	23.350	N/A
100	5500	23.000	N/A
116	5580	23.250	N/A
140	5700	23.400	N/A

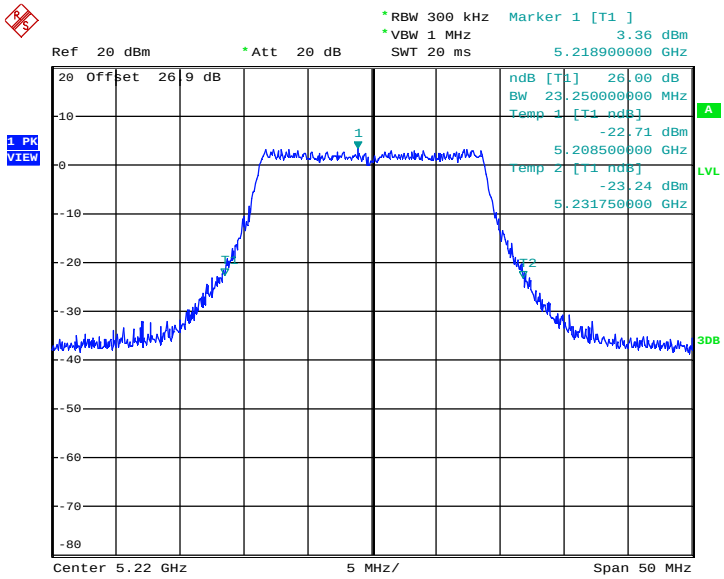
26 dB Bandwidth Plot on 802.11n HT20 Channel 36



Note:

The total loss is 26.9dB 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.

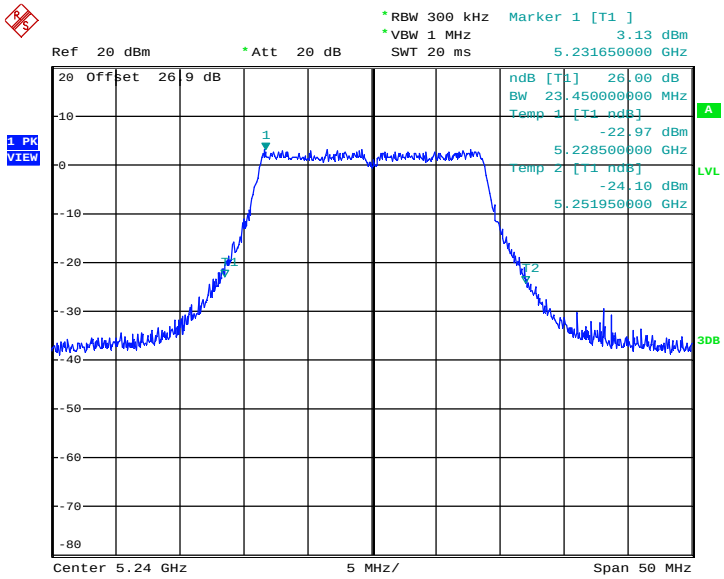
26 dB Bandwidth Plot on 802.11n HT20 Channel 44



Note:

The total loss is 26.9dB 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.

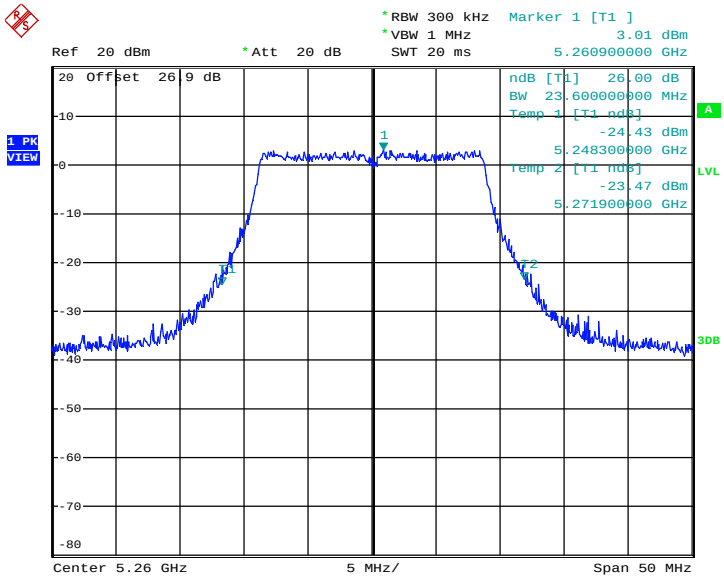
26 dB Bandwidth Plot on 802.11n HT20 Channel 48



Note:

The total loss is 26.9dB 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.

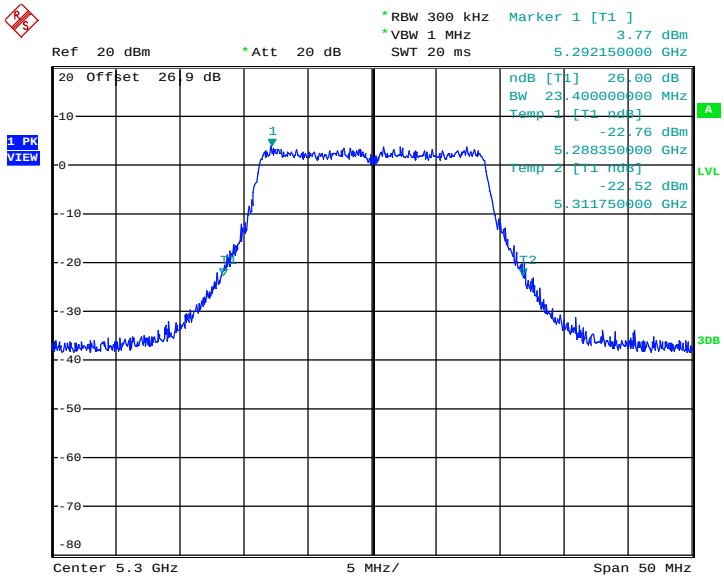
26 dB Bandwidth Plot on 802.11n HT20 Channel 52



Note:

The total loss is 26.9dB 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.

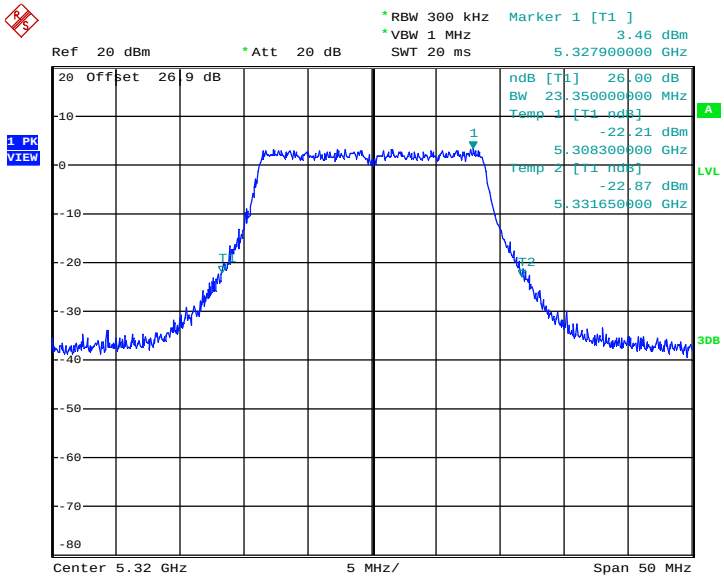
26 dB Bandwidth Plot on 802.11n HT20 Channel 60



Note:

The total loss is 26.9dB 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.

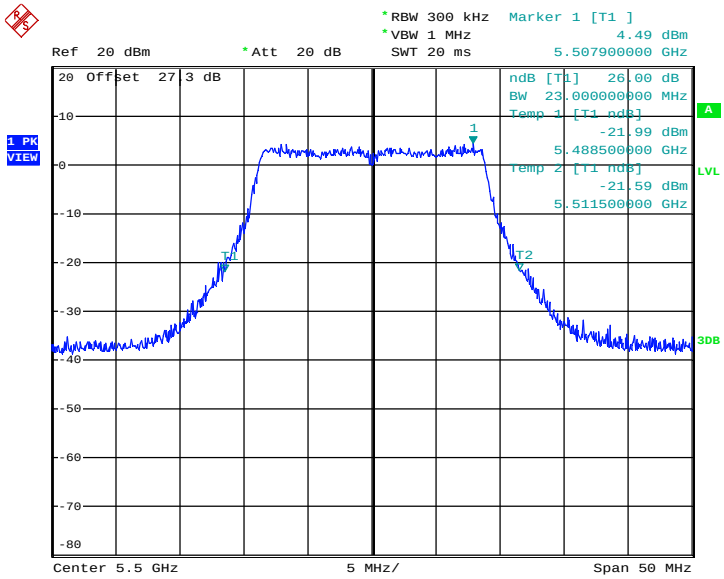
26 dB Bandwidth Plot on 802.11n HT20 Channel 64



Note:

The total loss is 26.9dB 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.

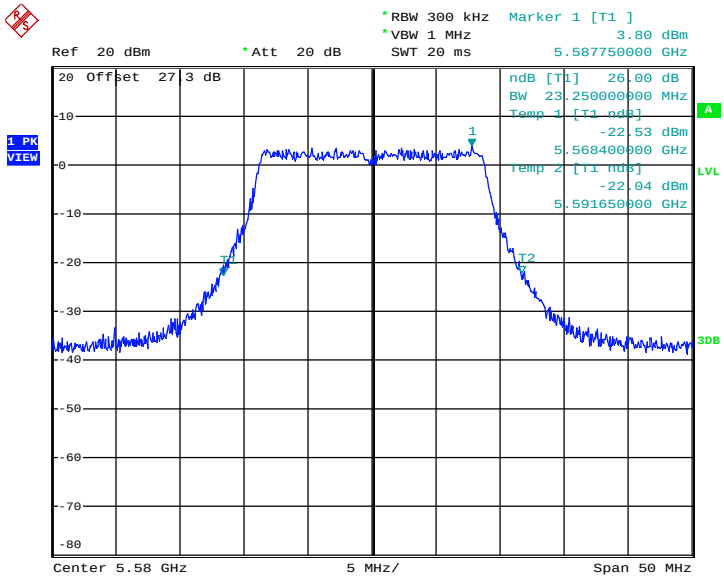
26 dB Bandwidth Plot on 802.11n HT20 Channel 100



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.

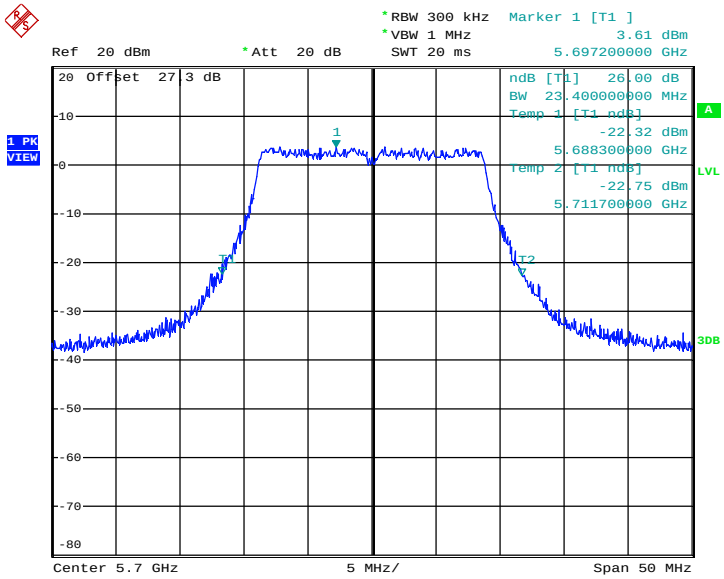
26 dB Bandwidth Plot on 802.11n HT20 Channel 116



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



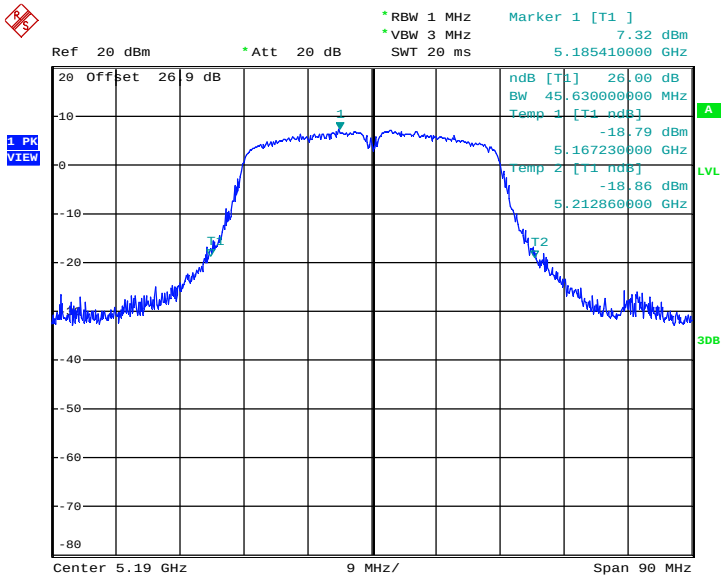
Note:

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 HT40	Temperature :	24~26℃
Test Engineer :	Bill Kuo	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11n HT40 26dB Bandwidth (MHz)	Pass/Fail
38	5190	45.630	N/A
46	5230	45.000	N/A
54	5270	45.540	N/A
62	5310	45.810	N/A
102	5510	45.630	N/A
110	5550	44.460	N/A
134	5670	45.900	N/A

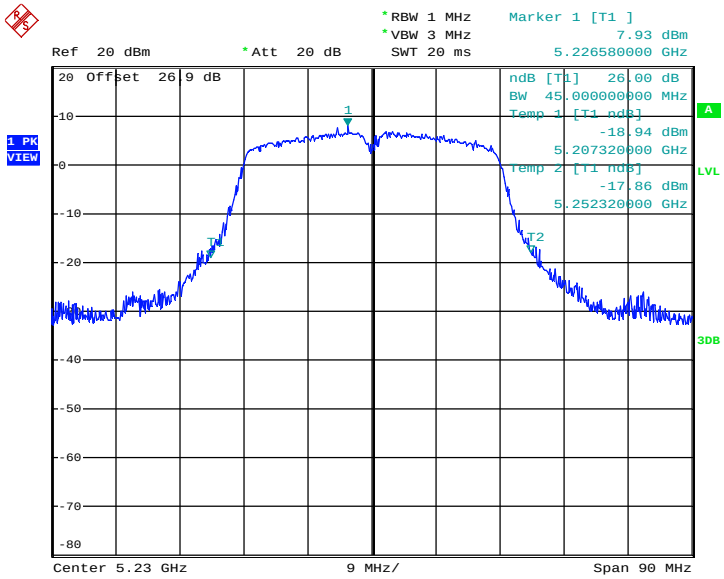
26 dB Bandwidth Plot on 802.11n HT40 Channel 38



Note:

The total loss is 26.9dB 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.

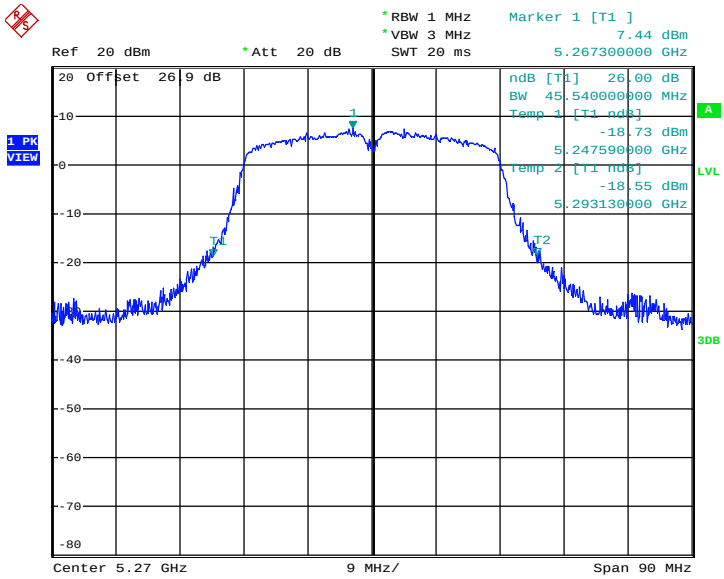
26 dB Bandwidth Plot on 802.11n HT40 Channel 46



Note:

The total loss is 26.9dB 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.

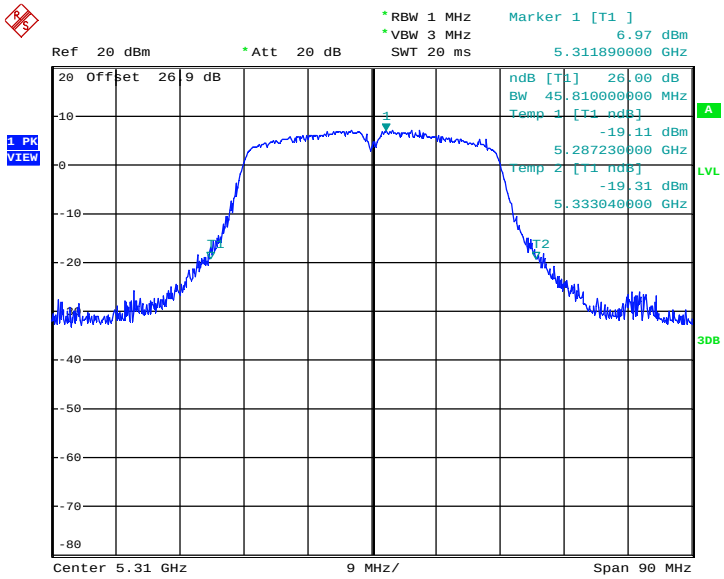
26 dB Bandwidth Plot on 802.11n HT40 Channel 54



Note:

The total loss is 26.9dB 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.

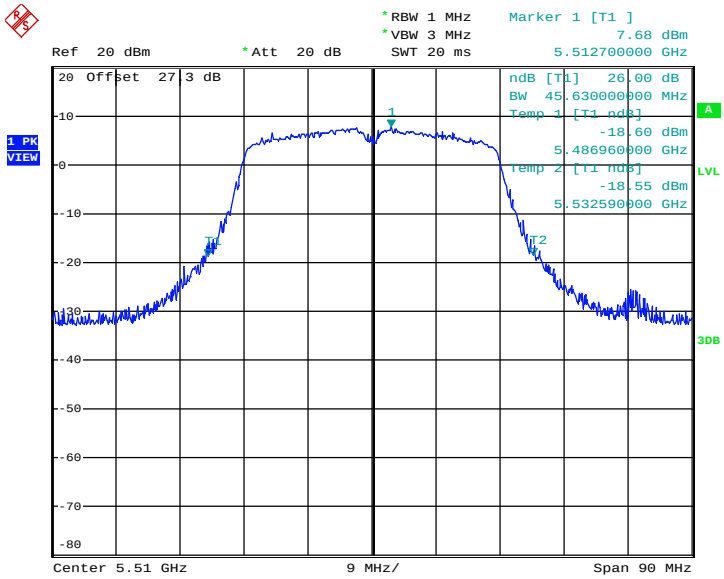
26 dB Bandwidth Plot on 802.11n HT40 Channel 62



Note:

The total loss is 26.9dB 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.

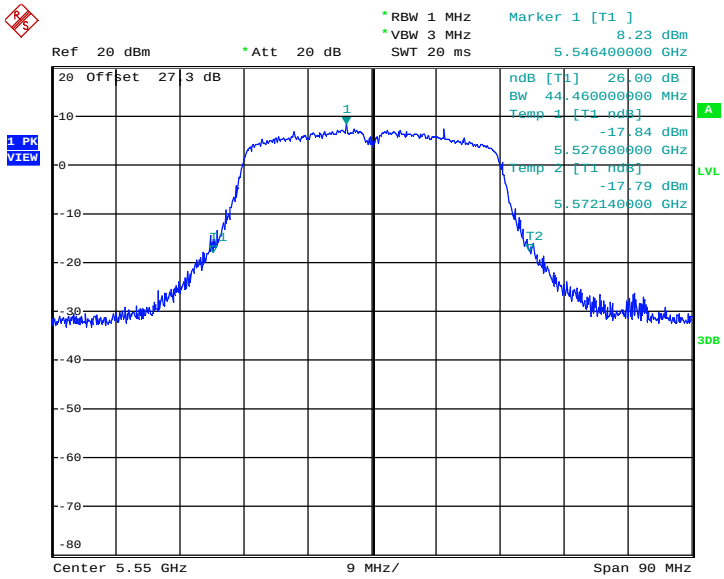
26 dB Bandwidth Plot on 802.11n HT40 Channel 102



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.

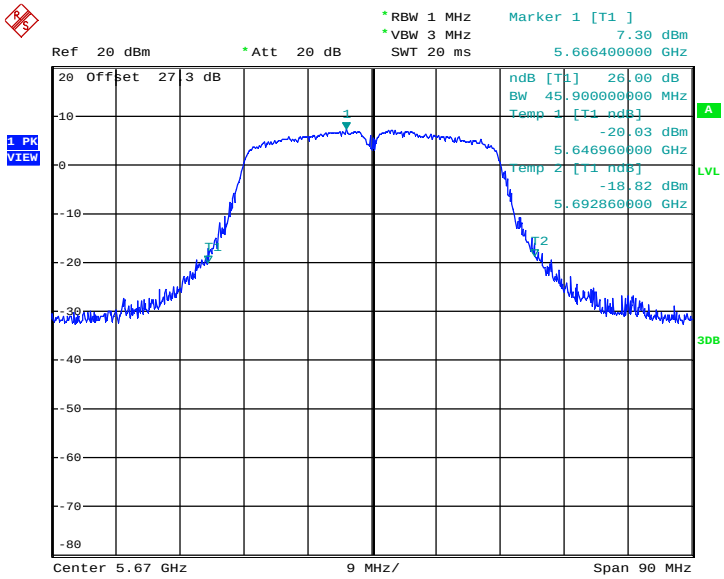
26 dB Bandwidth Plot on 802.11n HT40 Channel 110



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 HT40 Channel 134



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.

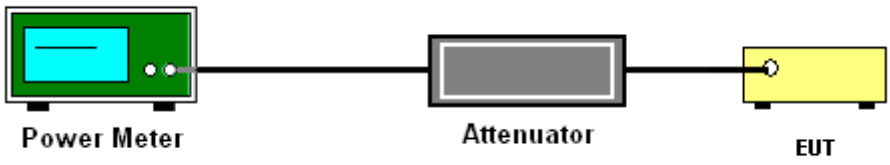
3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D01 General UNII Test Procedures v01r02.

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

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

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

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

Channel	Frequency (MHz)	802.11a Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	13.88	14.17	17	Pass
44	5220	13.78	14.07	17	Pass
48	5240	13.68	13.97	17	Pass
52	5260	13.63	13.92	24	Pass
60	5300	13.98	14.27	24	Pass
64	5320	13.77	14.06	24	Pass
100	5500	13.89	14.18	24	Pass
116	5580	13.91	14.20	24	Pass
140	5700	13.99	14.28	24	Pass

Note:

1. Final Output Power equals to Measured Output Power adds the duty factor.
2. For the band 5.15~5.25 GHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW)
3. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log (26dB BW).

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

Channel	Frequency (MHz)	802.11n HT20 Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	11.89	12.20	17	Pass
44	5220	11.74	12.05	17	Pass
48	5240	11.72	12.03	17	Pass
52	5260	11.54	11.85	24	Pass
60	5300	11.92	12.23	24	Pass
64	5320	11.74	12.05	24	Pass
100	5500	11.93	12.24	24	Pass
116	5580	11.86	12.17	24	Pass
140	5700	11.97	12.28	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 HT40	Temperature :	24~26℃
Test Engineer :	Bill Kuo	Relative Humidity :	45~49%
Duty Cycle	86.98%	Duty Factor	0.61dB

Channel	Frequency (MHz)	802.11n HT40 Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
38	5190	11.55	12.16	17	Pass
46	5230	11.46	12.07	17	Pass
54	5270	11.34	11.95	24	Pass
62	5310	11.57	12.18	24	Pass
102	5510	11.73	12.34	24	Pass
110	5550	11.52	12.13	24	Pass
134	5670	11.76	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 v01r02.
Section E) Peak power spectral density (PPSD).
Note: Though the rule refers to “peak power spectral density”, the intent is to measure the maximum value of the time average of the power spectral density measured during a period of continuous transmission.

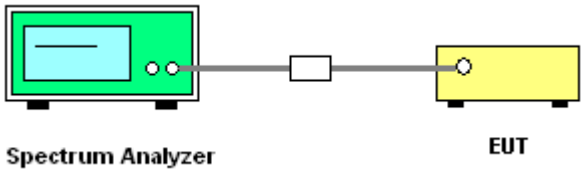
 # Method SA-2 #

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

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

3. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.

3.3.4 Test Setup



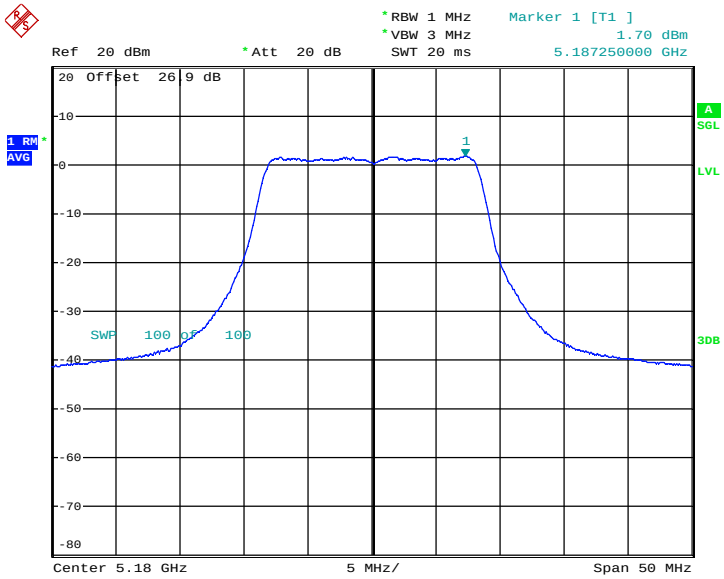
3.3.5 Test Result of Power Spectral Density

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

Channel	Frequency (MHz)	802.11a PSD (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	1.700	1.994	4	Pass
44	5220	1.660	1.954	4	Pass
48	5240	1.450	1.744	4	Pass
52	5260	1.490	1.784	11	Pass
60	5300	1.870	2.164	11	Pass
64	5320	2.310	2.604	11	Pass
100	5500	2.820	3.114	11	Pass
116	5580	2.460	2.754	11	Pass
140	5700	2.970	3.264	11	Pass

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

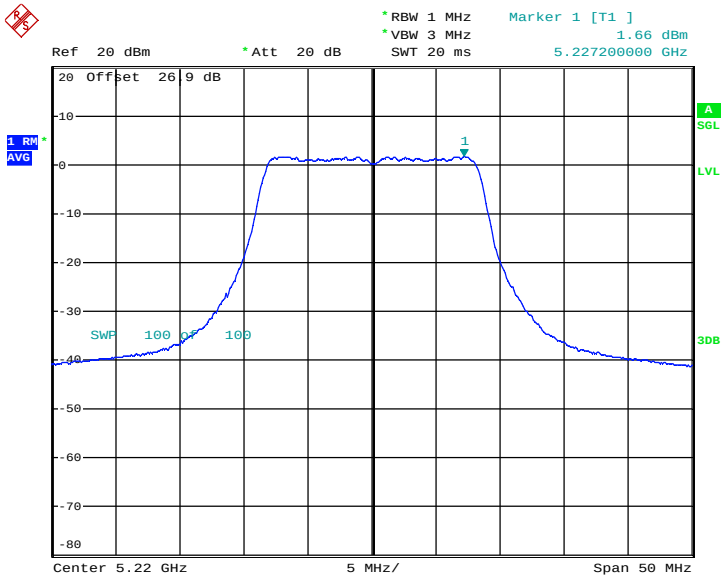
PSD Plot on 802.11a Channel 36



Note:

The total loss is 26.9dB 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.

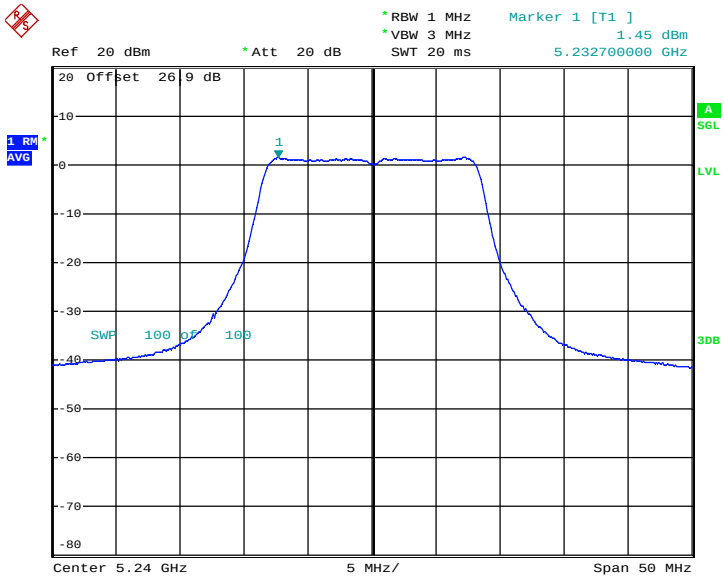
PSD Plot on 802.11a Channel 44



Note:

The total loss is 26.9dB 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.

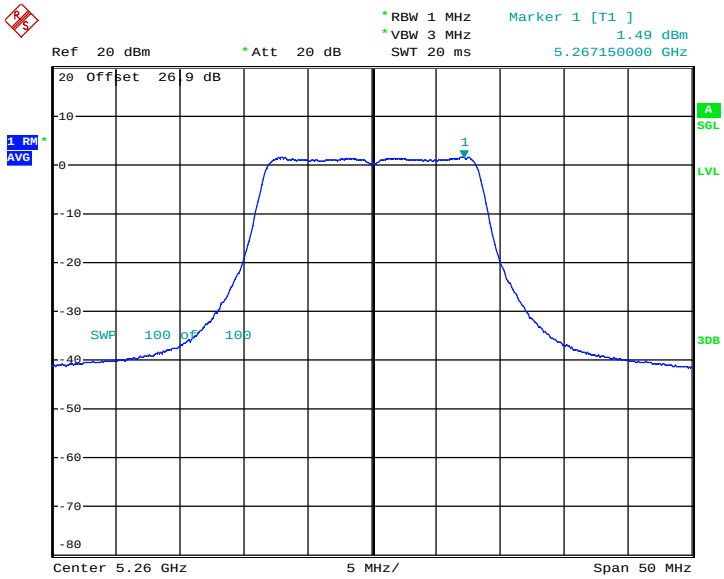
PSD Plot on 802.11a Channel 48



Note:

The total loss is 26.9dB 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.

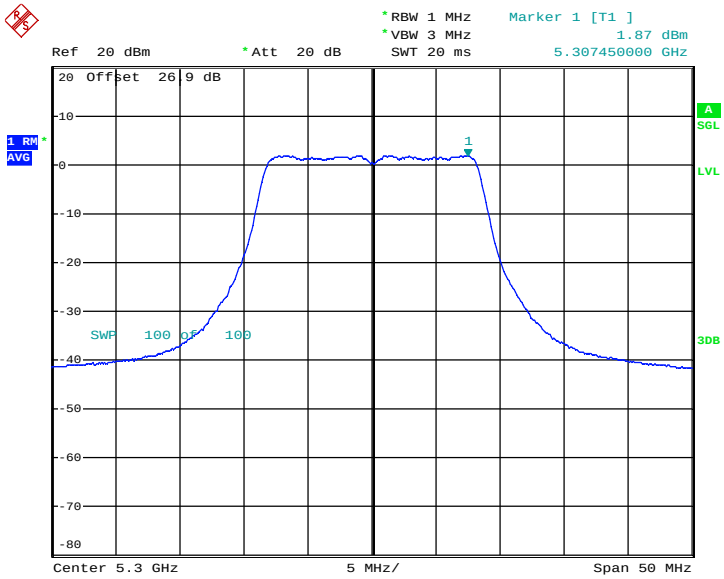
PSD Plot on 802.11a Channel 52



Note:

The total loss is 26.9dB 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.

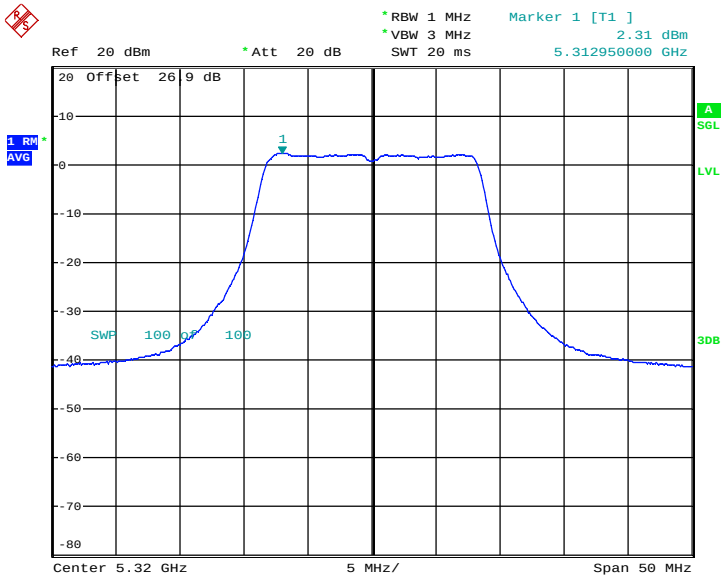
PSD Plot on 802.11a Channel 60



Note:

The total loss is 26.9dB 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.

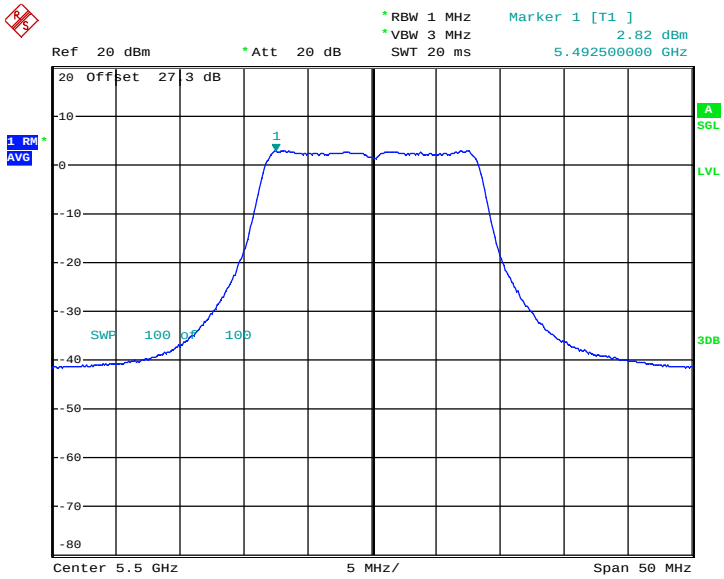
PSD Plot on 802.11a Channel 64



Note:

The total loss is 26.9dB 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.

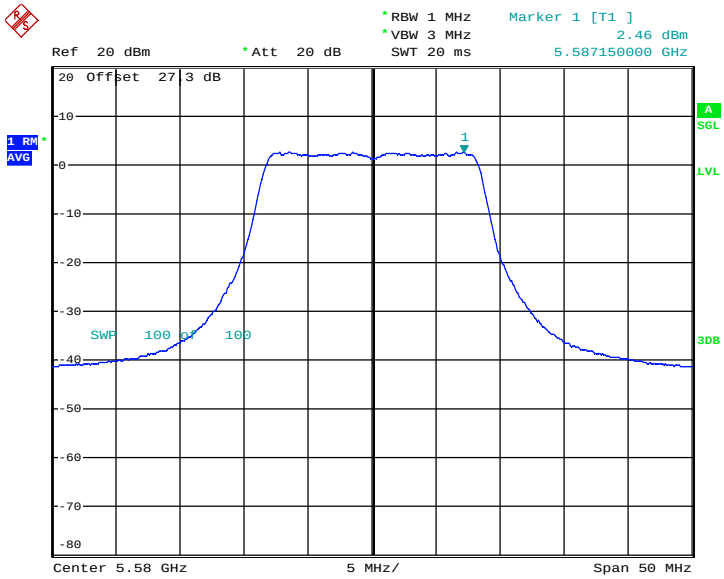
PSD Plot on 802.11a Channel 100



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.

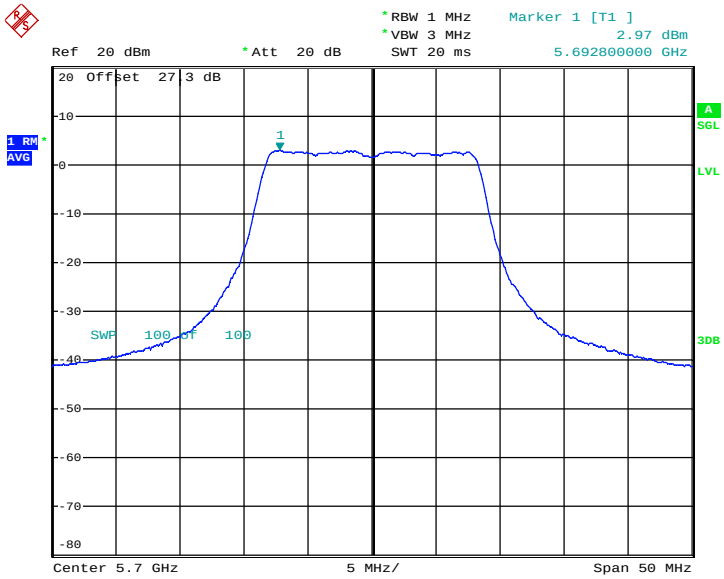
PSD Plot on 802.11a Channel 116



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



Note:

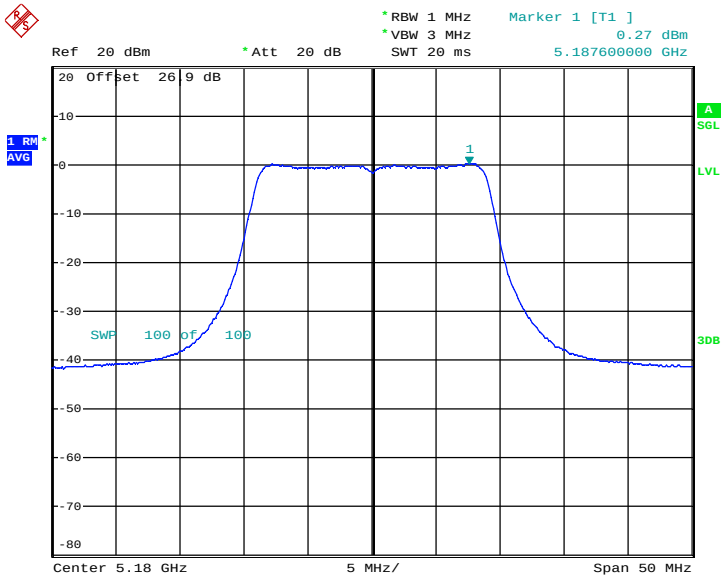
The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

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

Channel	Frequency (MHz)	802.11n HT20 PSD (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	0.270	0.582	4	Pass
44	5220	0.130	0.442	4	Pass
48	5240	0.050	0.362	4	Pass
52	5260	0.020	0.332	11	Pass
60	5300	0.240	0.552	11	Pass
64	5320	0.170	0.482	11	Pass
100	5500	0.850	1.162	11	Pass
116	5580	0.390	0.702	11	Pass
140	5700	0.610	0.922	11	Pass

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

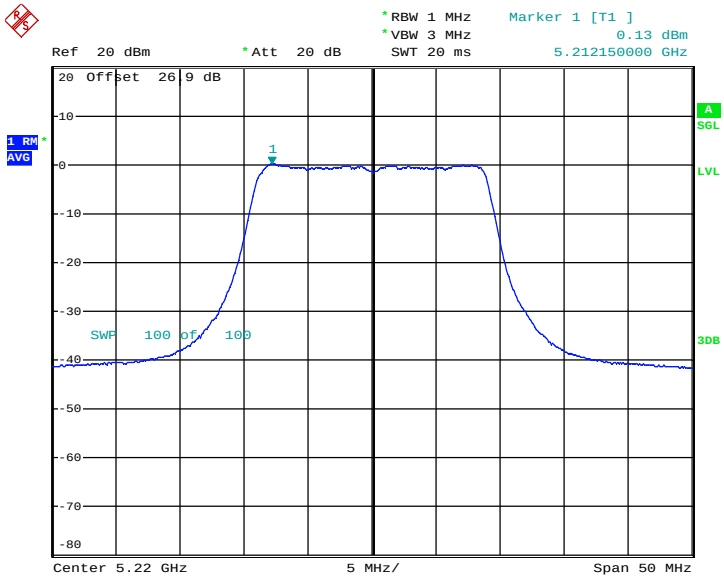
PSD Plot on 802.11n HT20 channel 36



Note:

The total loss is 26.9dB 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.

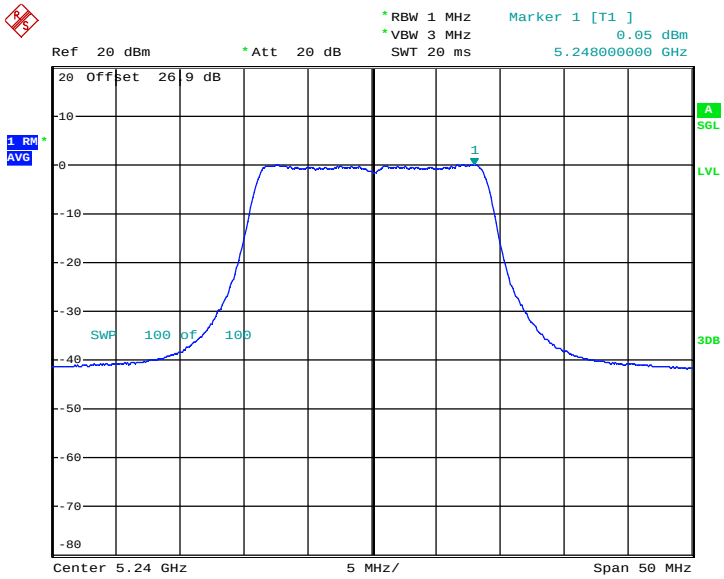
PSD Plot on 802.11n HT20 Channel 44



Note:

The total loss is 26.9dB 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.

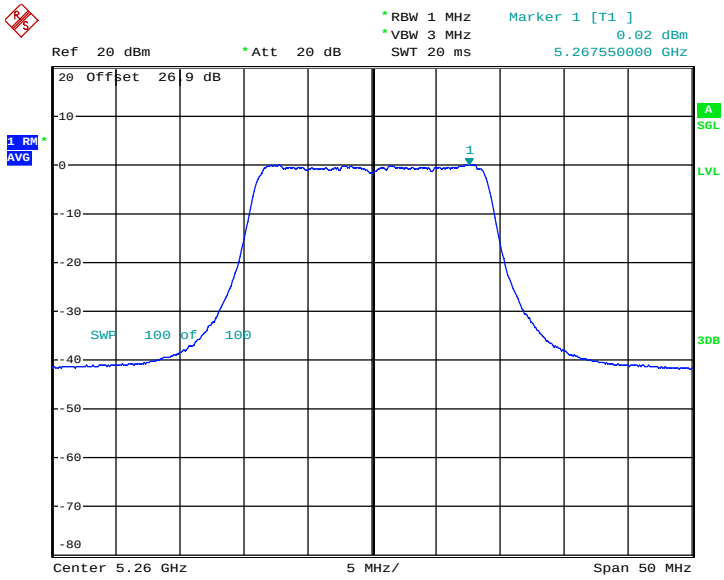
PSD Plot on 802.11n HT20 Channel 48



Note:

The total loss is 26.9dB 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.

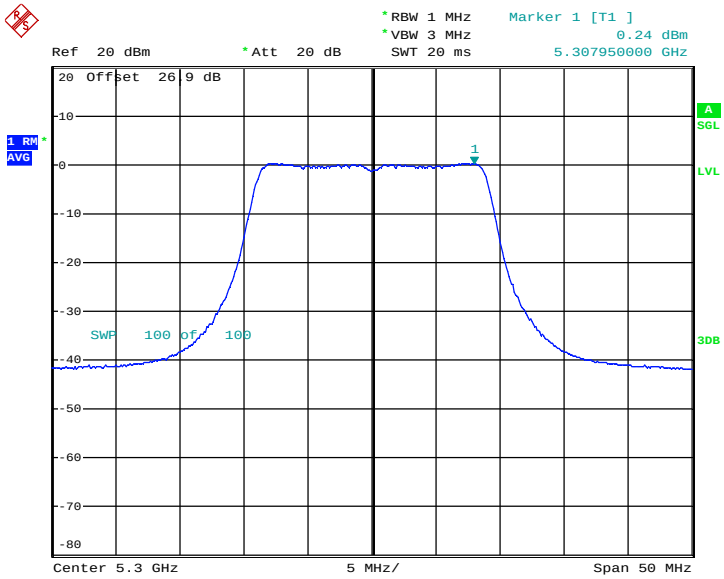
PSD Plot on 802.11n HT20 Channel 52



Note:

The total loss is 26.9dB 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.

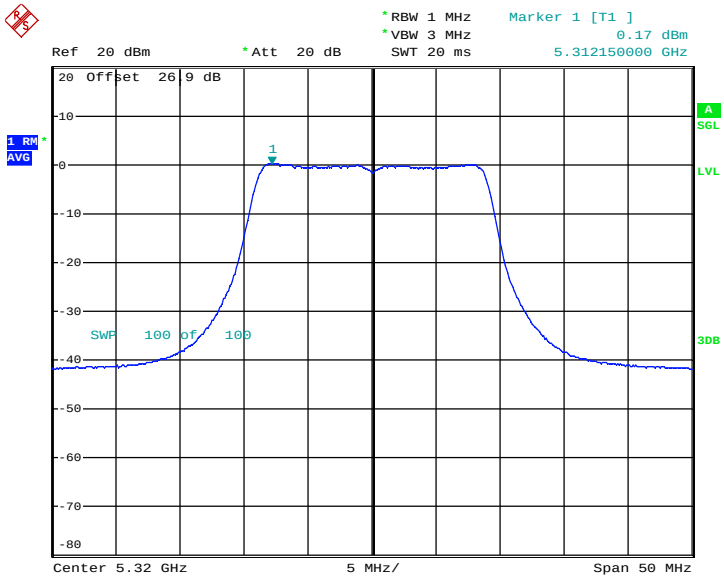
PSD Plot on 802.11n HT20 Channel 60



Note:

The total loss is 26.9dB 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.

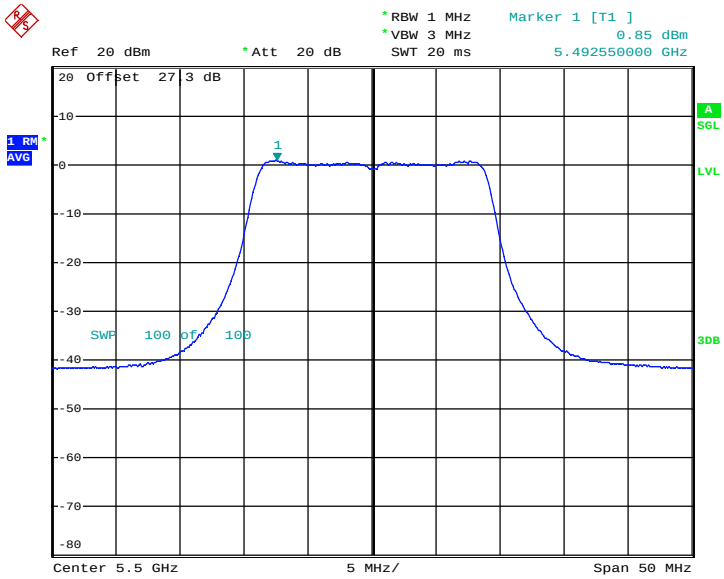
PSD Plot on 802.11n HT20 Channel 64



Note:

The total loss is 26.9dB 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.

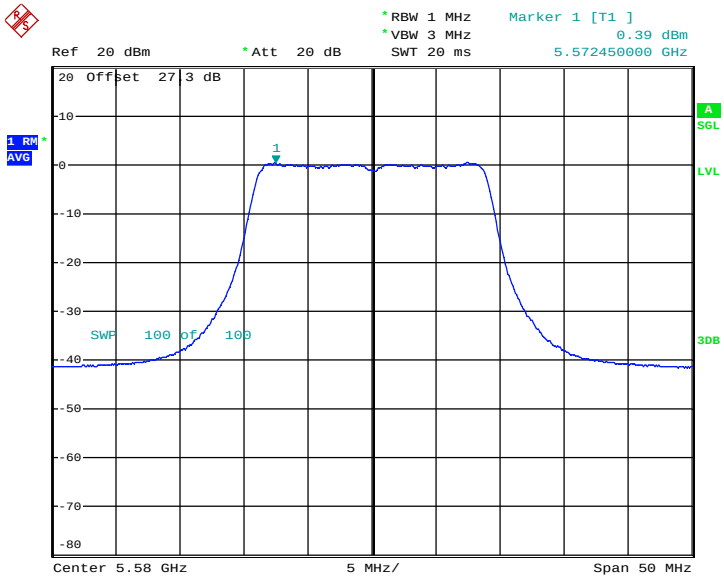
PSD Plot on 802.11n HT20 Channel 100



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.

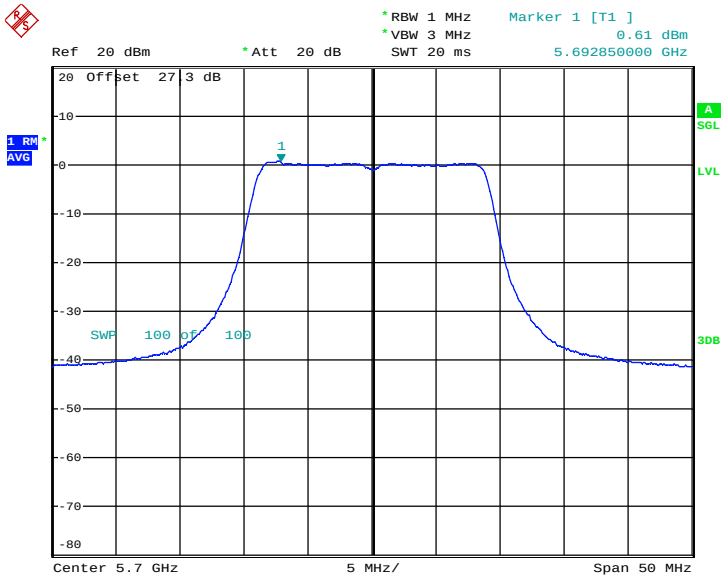
PSD Plot on 802.11n HT20 Channel 116



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



Note:

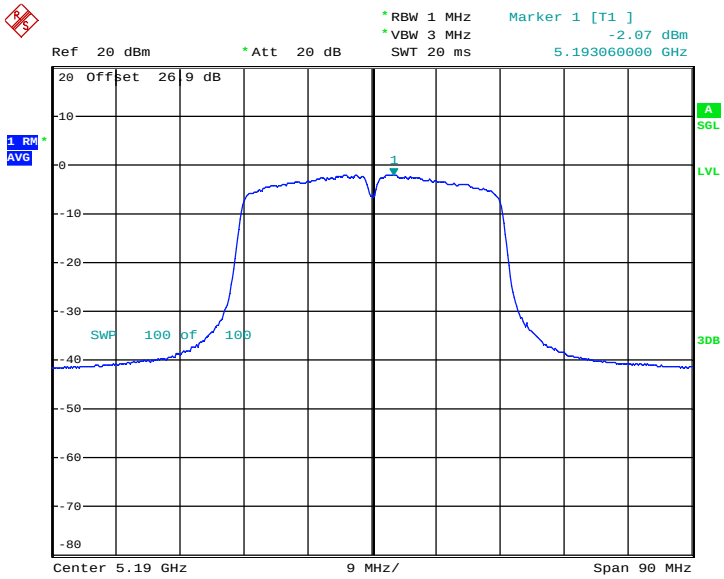
The total loss is 27.3dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Bill Kuo	Relative Humidity :	45~49%
Duty Cycle:	86.98%	Duty Factor:	0.61dB

Channel	Frequency (MHz)	802.11n HT40 PSD (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
38	5190	-2.070	-1.464	4	Pass
46	5230	-2.410	-1.804	4	Pass
54	5270	-2.280	-1.674	11	Pass
62	5310	-2.180	-1.574	11	Pass
102	5510	-1.550	-0.944	11	Pass
110	5550	-2.120	-1.514	11	Pass
134	5670	-2.050	-1.444	11	Pass

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

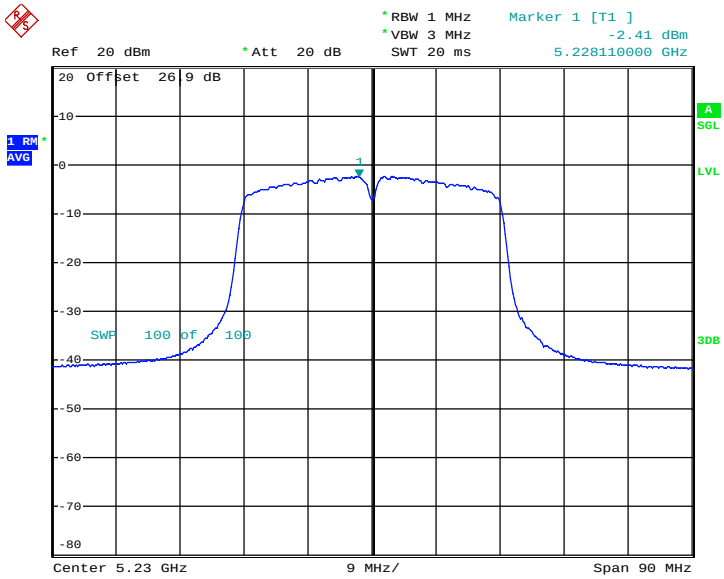
PSD Plot on 802.11n HT40 Channel 38



Note:

The total loss is 26.9dB 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.

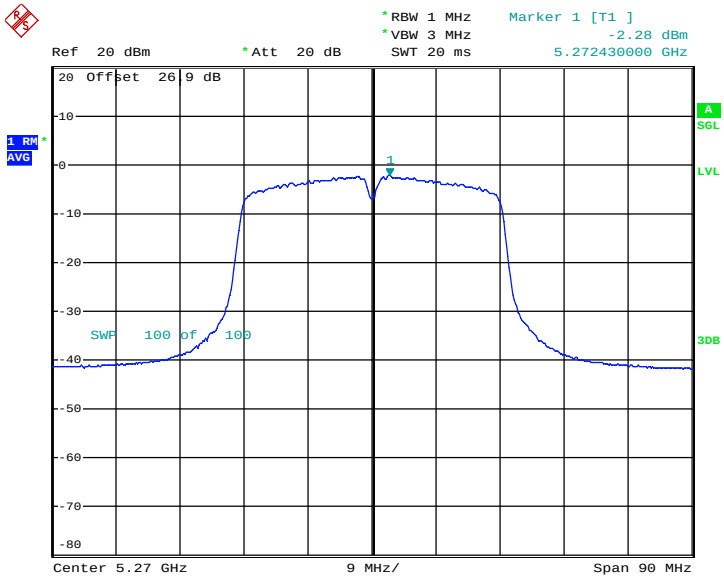
PSD Plot on 802.11n HT40 Channel 46



Note:

The total loss is 26.9dB 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.

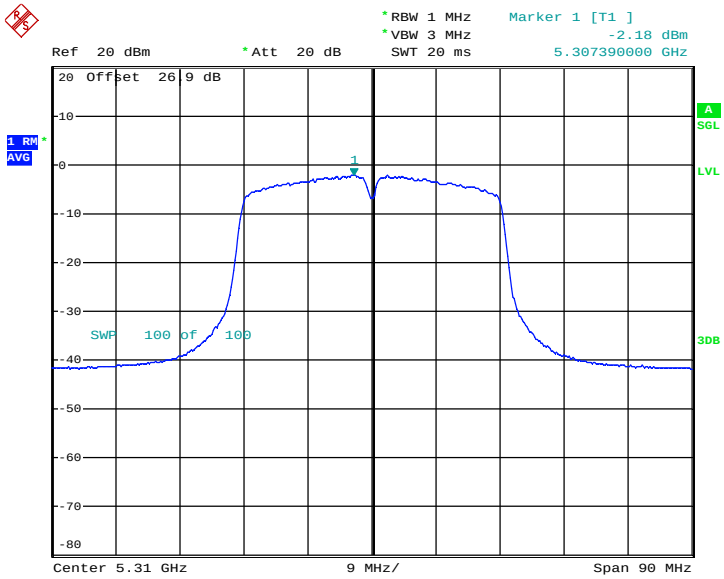
PSD Plot on 802.11n HT40 Channel 54



Note:

The total loss is 26.9dB 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.

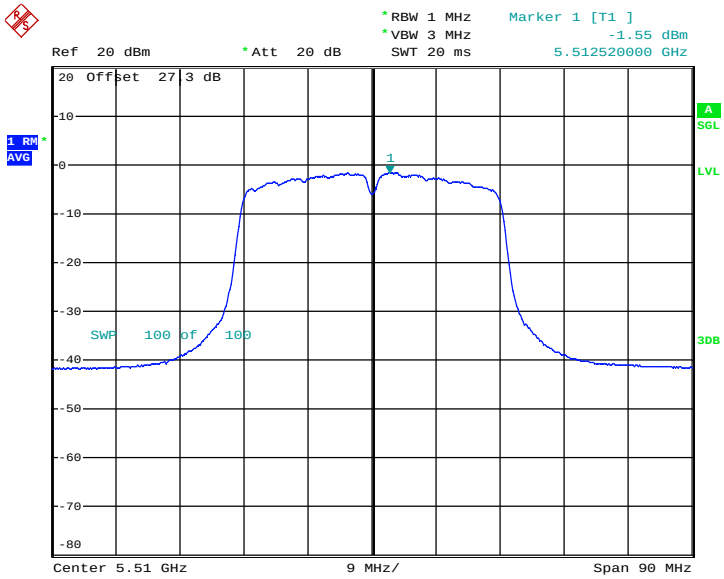
PSD Plot on 802.11n HT40 Channel 62



Note:

The total loss is 26.9dB 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.

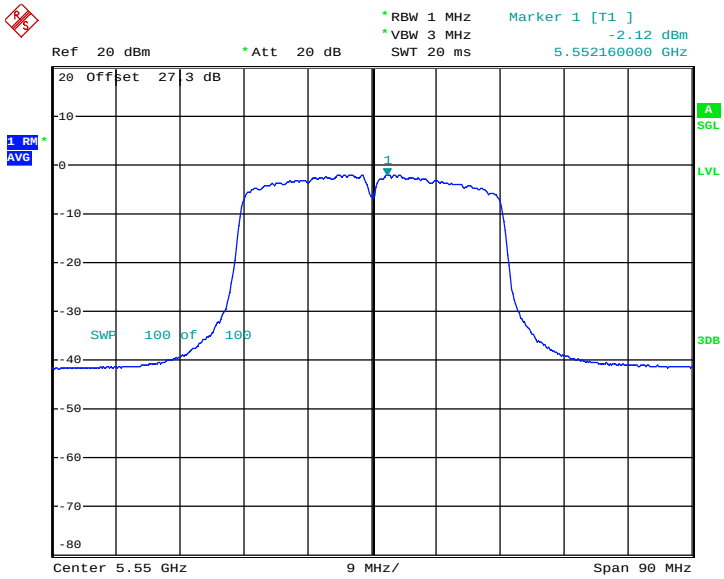
PSD Plot on 802.11n HT40 Channel 102



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.

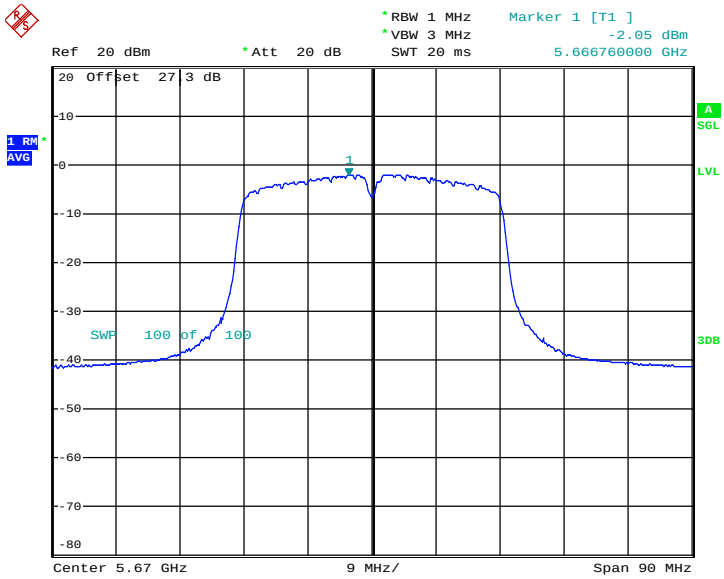
PSD Plot on 802.11n HT40 Channel 110



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 HT40 Channel 134



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 v01r02.

Section F) Peak excursion measurement

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

   *Set RBW = 1MHz.

   *Set VBW ≥ 3MHz.

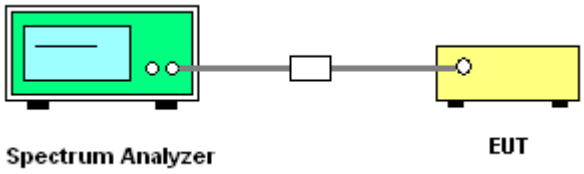
   *Detector = peak.

   *Trace mode = max-hold.

   *Allow the sweeps to continue until the trace stabilizes.

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

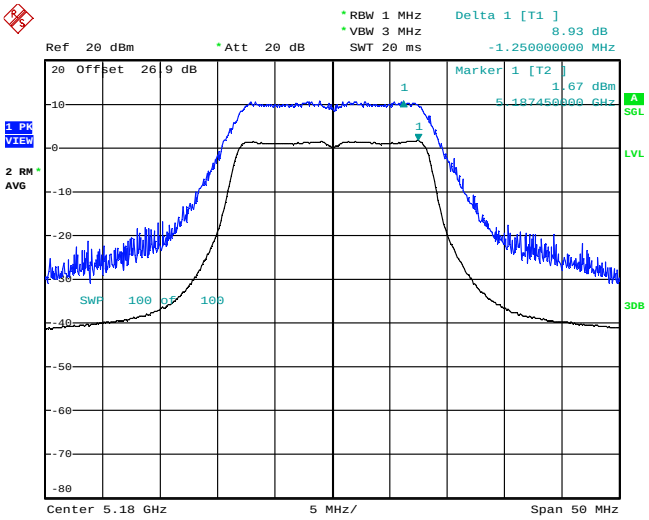
3.4.4 Test Setup



3.4.5 Test Result of Peak Excursion Ratio

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

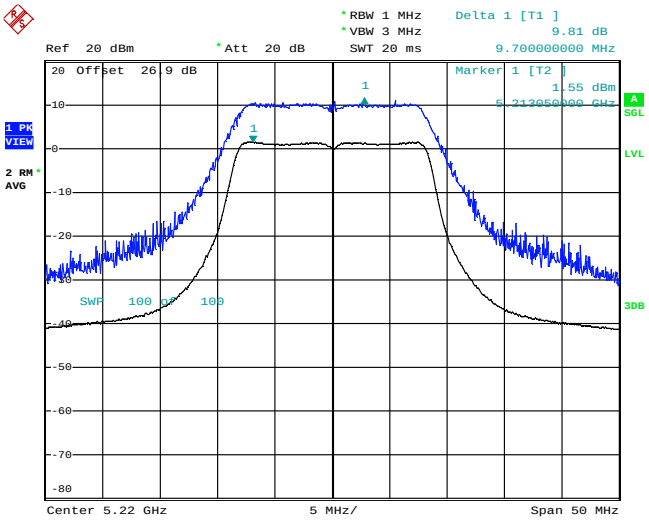
Peak Excursion Ratio Plot on 802.11a Channel 36



Note:

The total loss is 26.9dB 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.

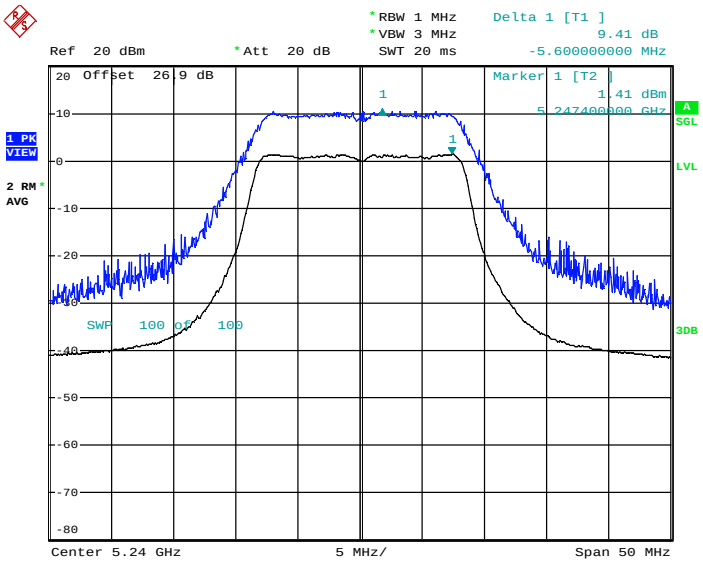
Peak Excursion Ratio Plot on 802.11a Channel 44



Note:

The total loss is 26.9dB 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.

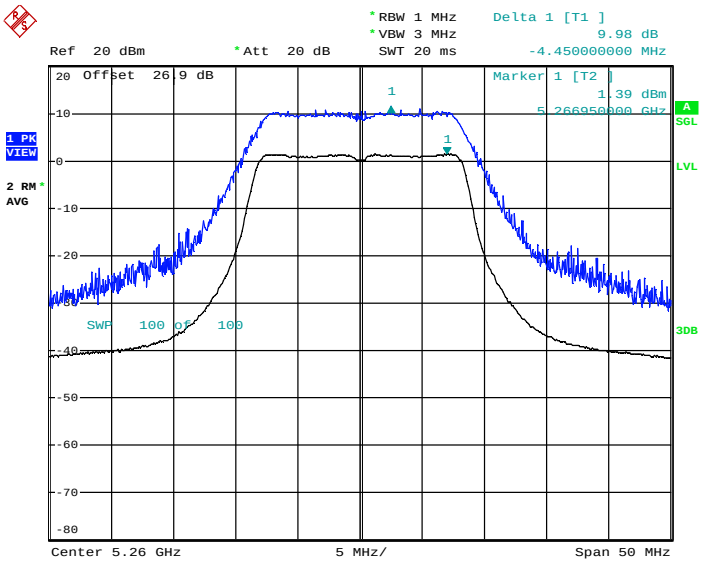
Peak Excursion Ratio Plot on 802.11a Channel 48



Note:

The total loss is 26.9dB 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.

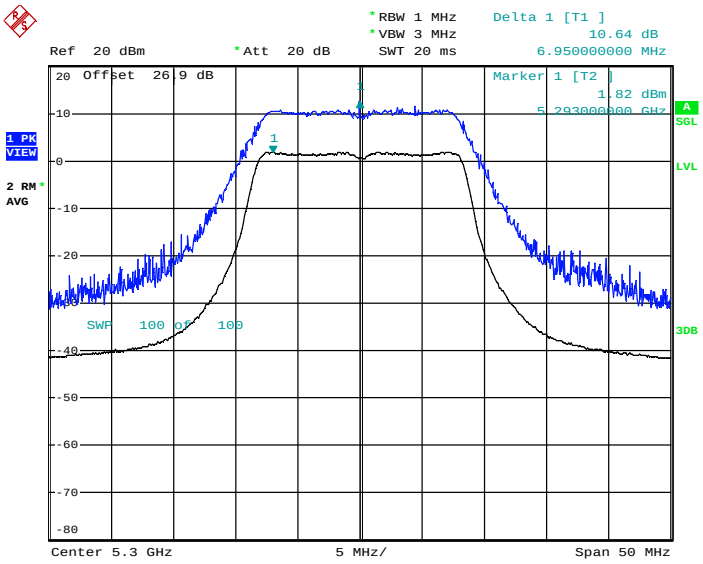
Peak Excursion Ratio Plot on 802.11a Channel 52



Note:

The total loss is 26.9dB 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.

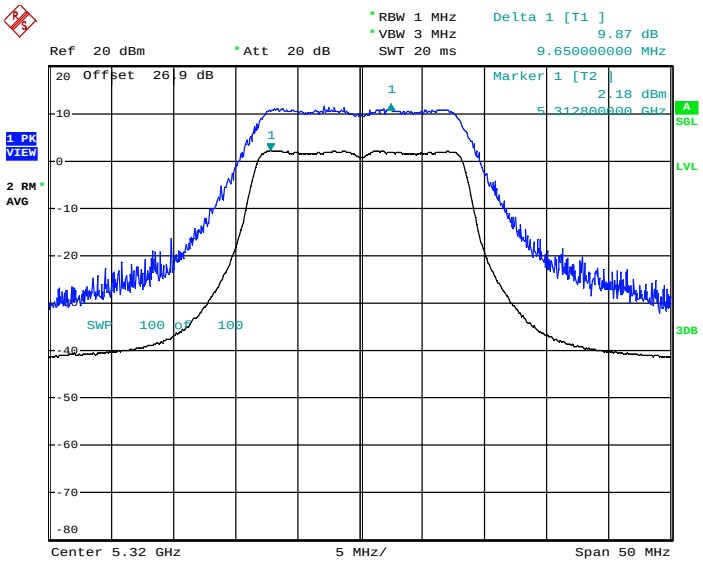
Peak Excursion Ratio Plot on 802.11a Channel 60



Note:

The total loss is 26.9dB 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.

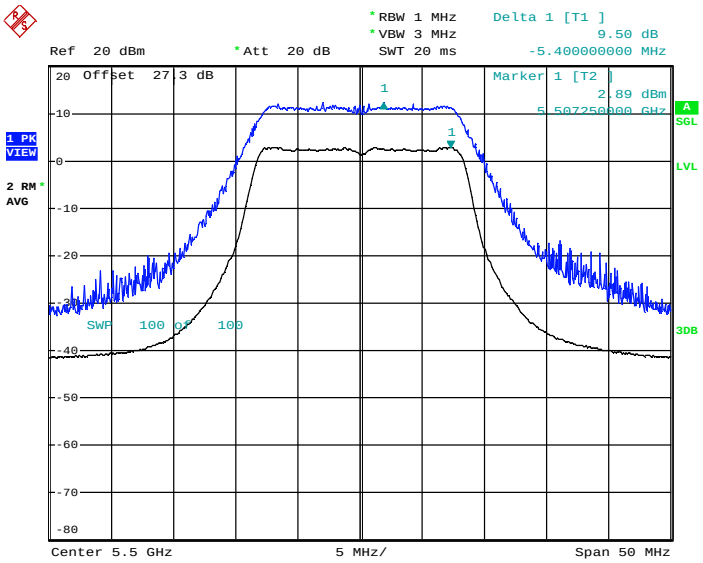
Peak Excursion Ratio Plot on 802.11a Channel 64



Note:

The total loss is 26.9dB 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.

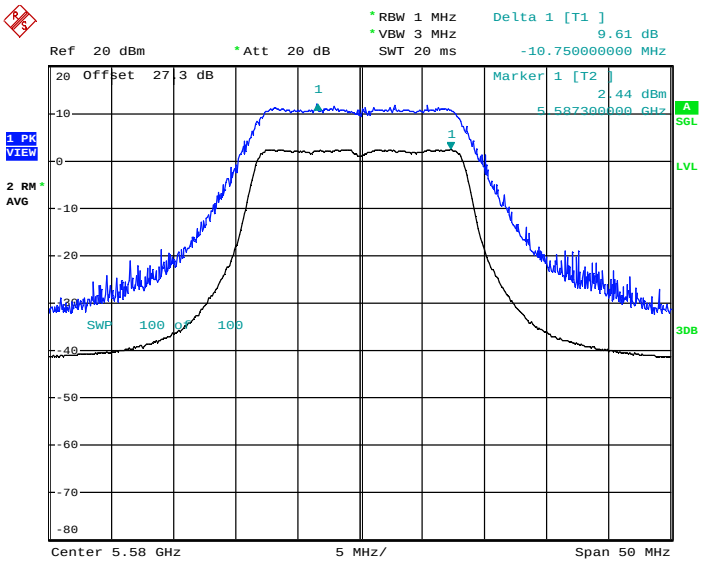
Peak Excursion Ratio Plot on 802.11a Channel 100



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.

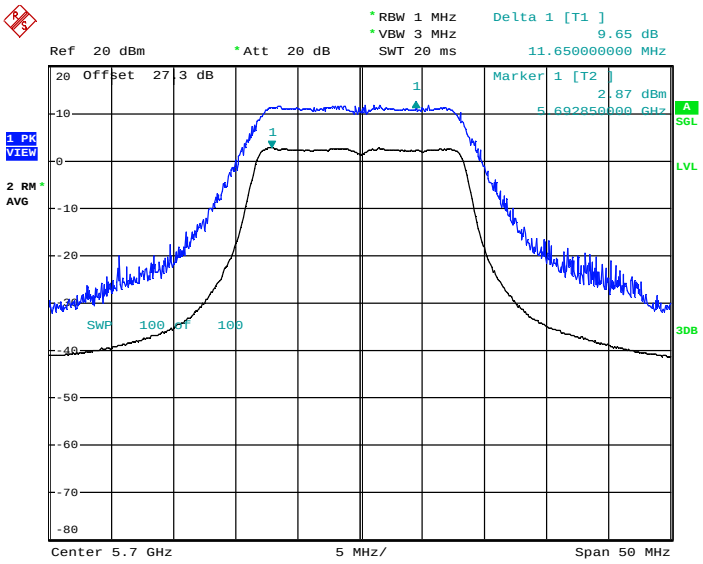
Peak Excursion Ratio Plot on 802.11a Channel 116



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

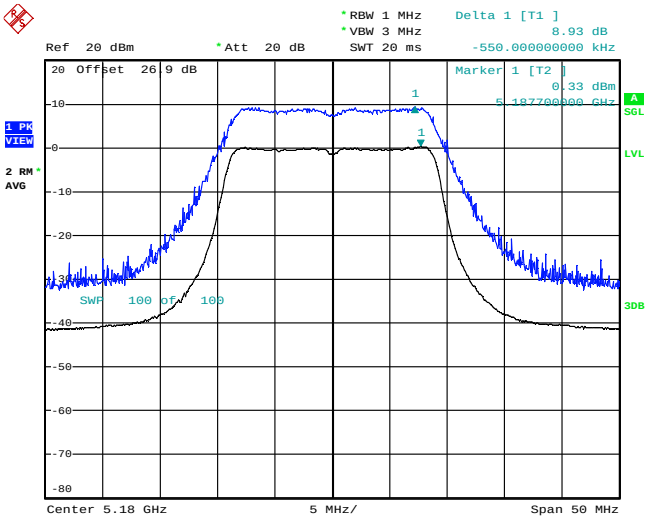


Note:

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 :	Bill Kuo	Relative Humidity :	45~49%

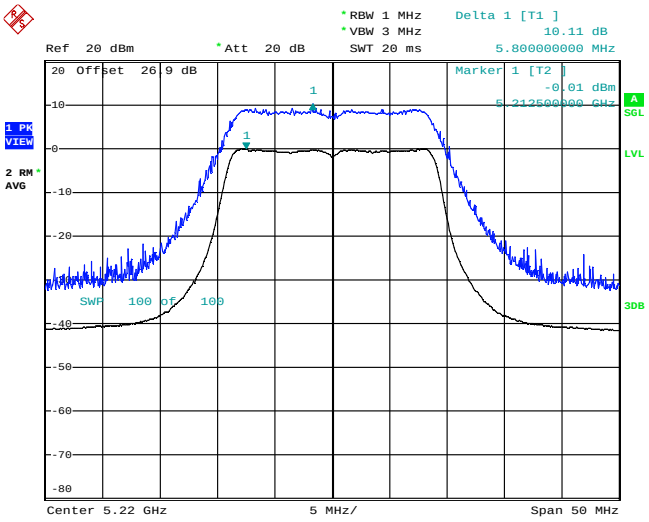
Peak Excursion Ratio Plot on 802.11n HT20 Channel 36



Note:

The total loss is 26.9dB 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.

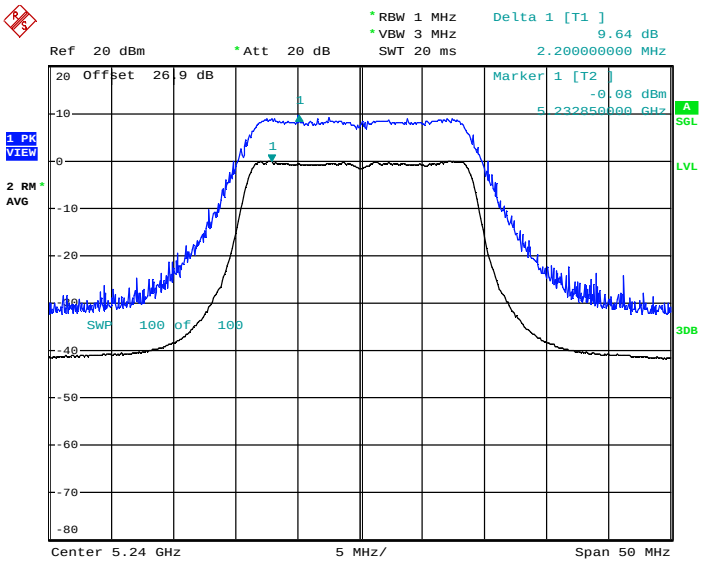
Peak Excursion Ratio Plot on 802.11n HT20 Channel 44



Note:

The total loss is 26.9dB 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.

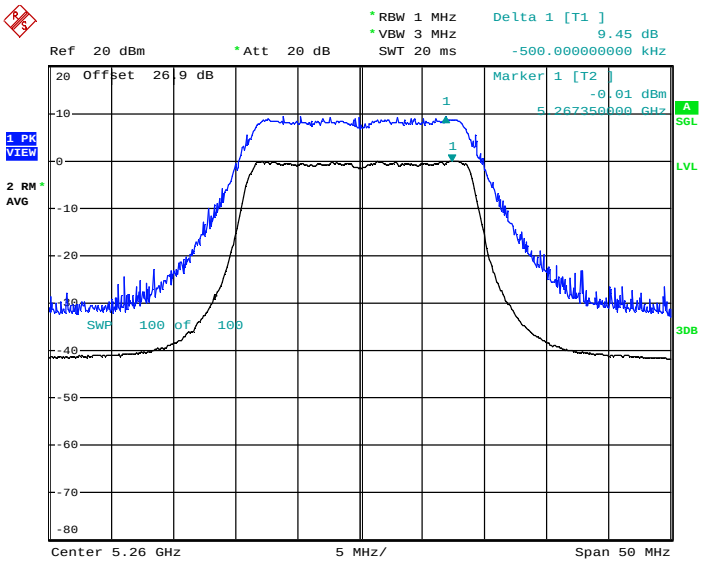
Peak Excursion Ratio Plot on 802.11n HT20 Channel 48



Note:

The total loss is 26.9dB 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.

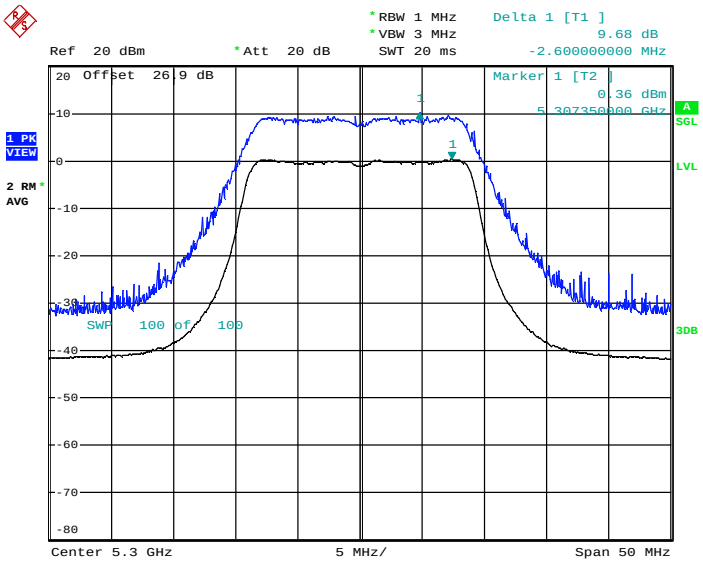
Peak Excursion Ratio Plot on 802.11n HT20 Channel 52



Note:

The total loss is 26.9dB 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.

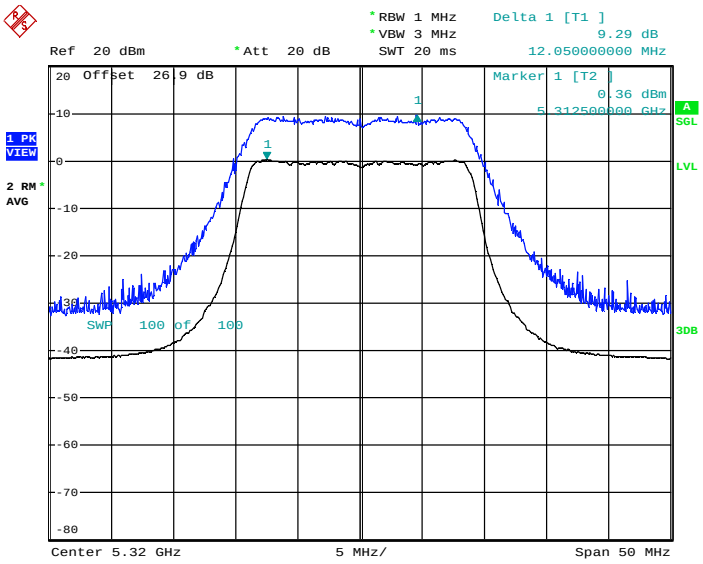
Peak Excursion Ratio Plot on 802.11n HT20 Channel 60



Note:

The total loss is 26.9dB 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.

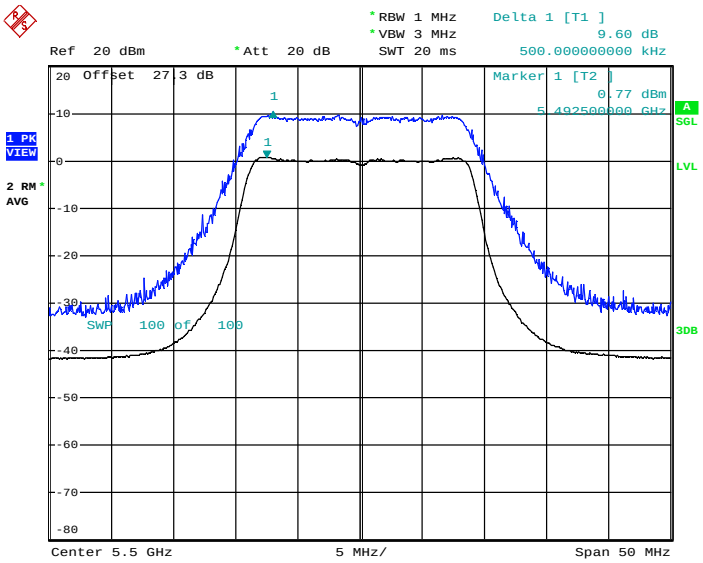
Peak Excursion Ratio Plot on 802.11n HT20 Channel 64



Note:

The total loss is 26.9dB 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.

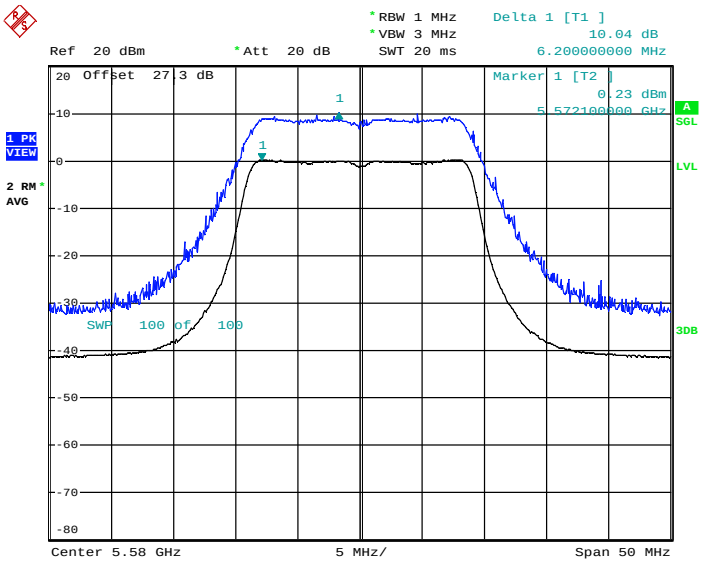
Peak Excursion Ratio Plot on 802.11n HT20 Channel 100



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.

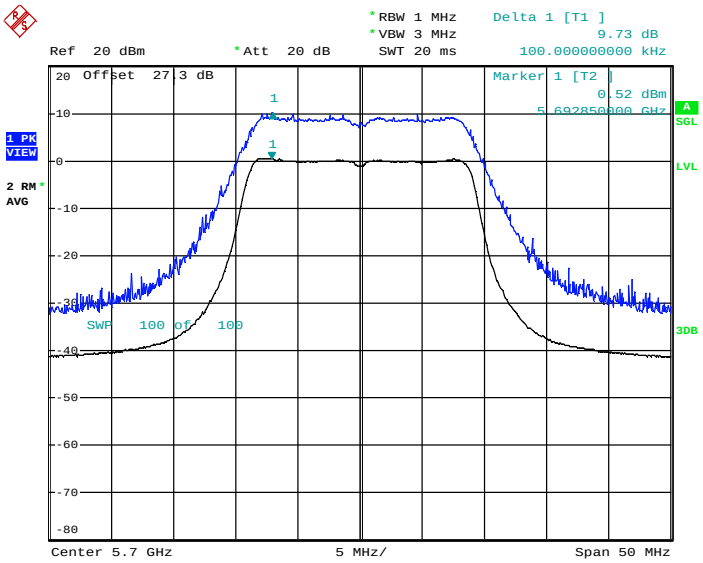
Peak Excursion Ratio Plot on 802.11n HT20 Channel 116



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

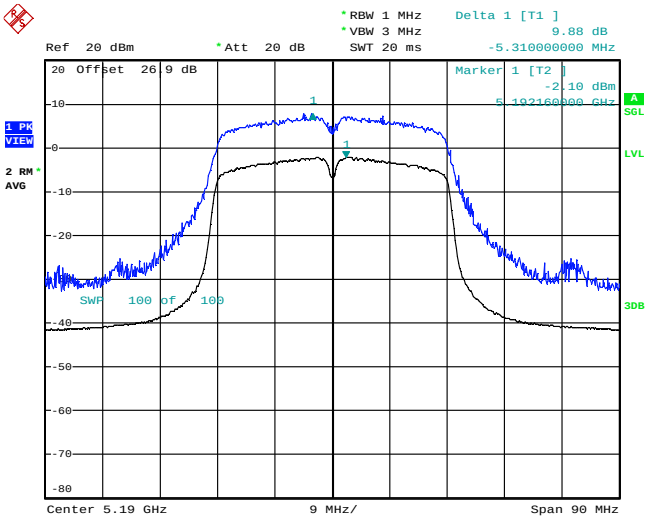


Note:

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 HT40	Temperature :	24~26℃
Test Engineer :	Bill Kuo	Relative Humidity :	45~49%

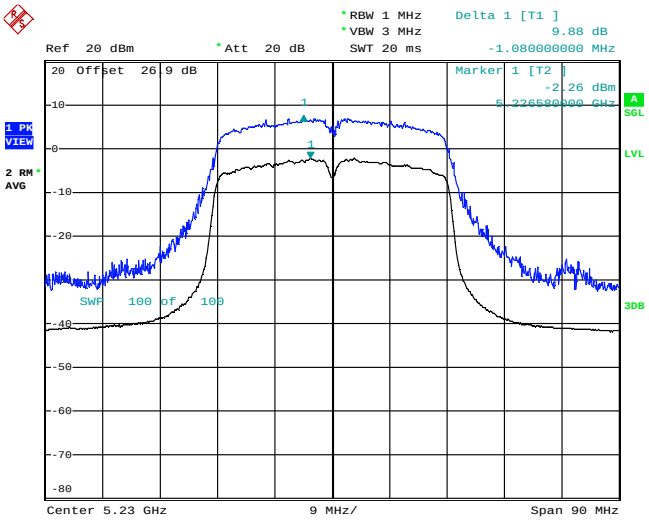
Peak Excursion Ratio Plot on 802.11n HT40 Channel 38



Note:

The total loss is 26.9dB 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.

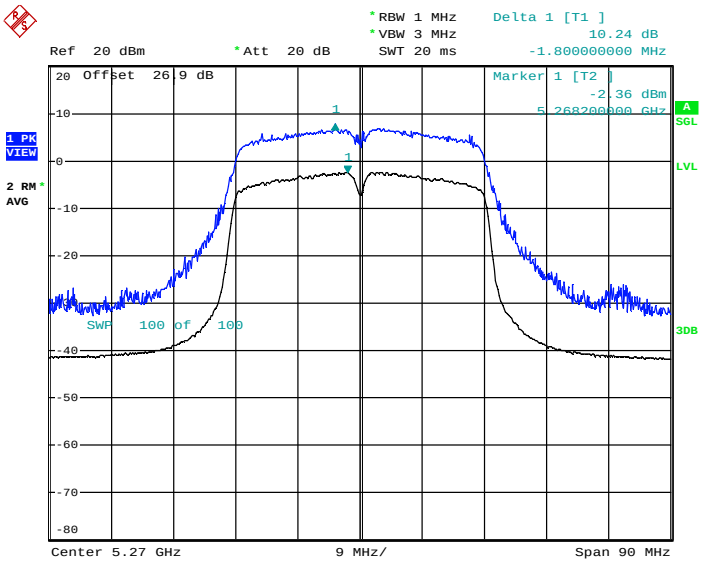
Peak Excursion Ratio Plot on 802.11n HT40 Channel 46



Note:

The total loss is 26.9dB 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.

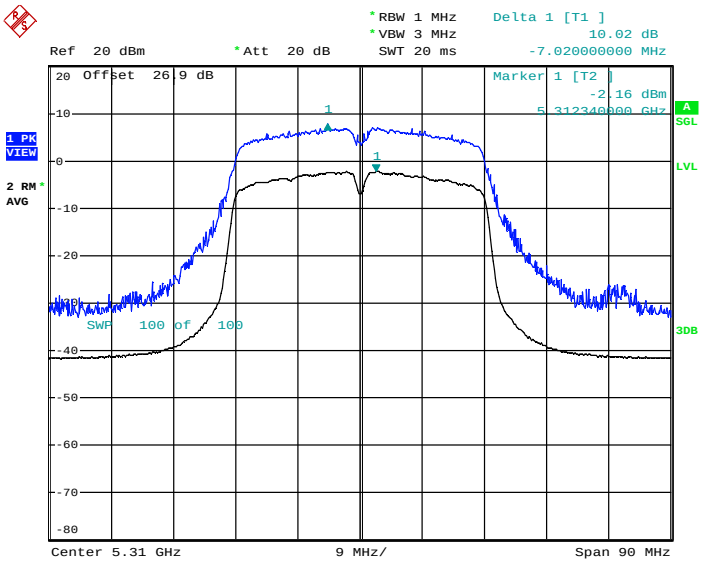
Peak Excursion Ratio Plot on 802.11n HT40 Channel 54



Note:

The total loss is 26.9dB 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.

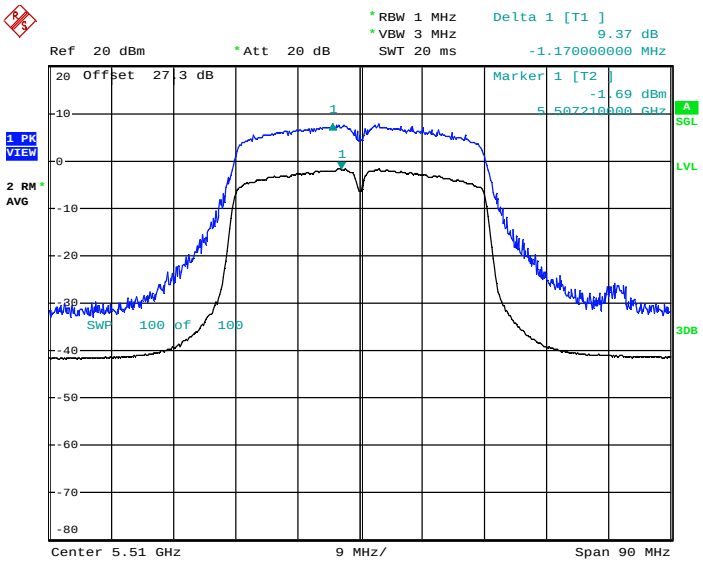
Peak Excursion Ratio Plot on 802.11n HT40 Channel 62



Note:

The total loss is 26.9dB 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.

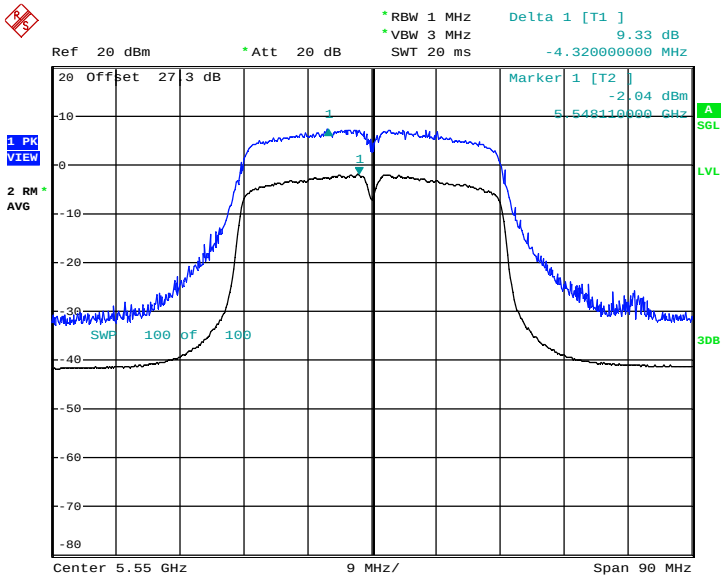
Peak Excursion Ratio Plot on 802.11n HT40 Channel 102



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.

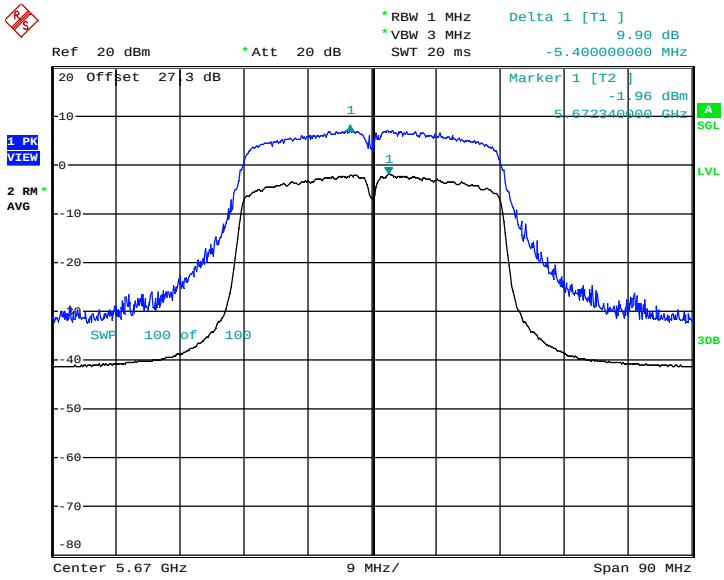
Peak Excursion Ratio Plot on 802.11n HT40 Channel 110



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 HT40 Channel 134



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 v01r02.

   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

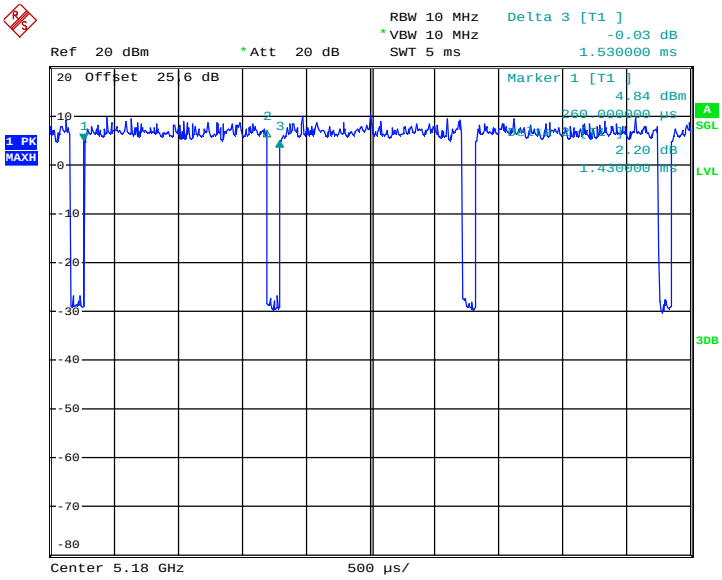
   - The setting follows the G) 5) of FCC KDB 789033.
   - RBW = 1 MHz
   - VBW ≥ 3 MHz
   - Detector = Peak
   - Sweep time = auto
   - Trace mode = max hold

   (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	1430.00	0.70	1kHz
802.11n HT20	93.06	1340.00	0.75	1kHz
802.11n HT40	86.98	668.00	1.50	3kHz

802.11a Duty Cycle

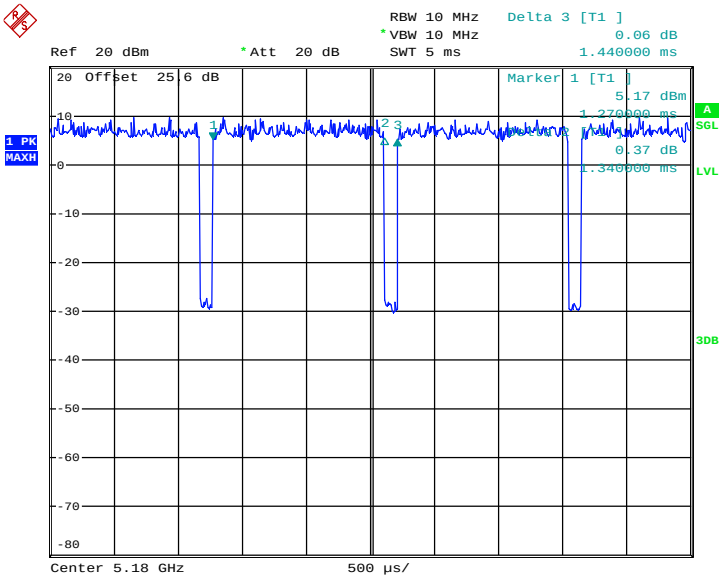


Date: 9.OCT.2012 21:44:51

Note:

The total loss is 25.6dB 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

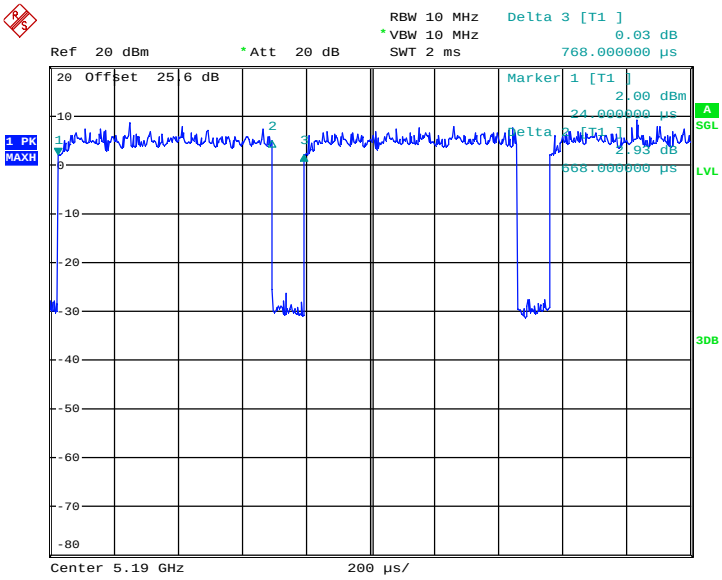


Date: 9.OCT.2012 21:56:26

Note:

The total loss is 25.6dB 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 HT40 Duty Cycle



Date: 9.OCT.2012 22:10:12

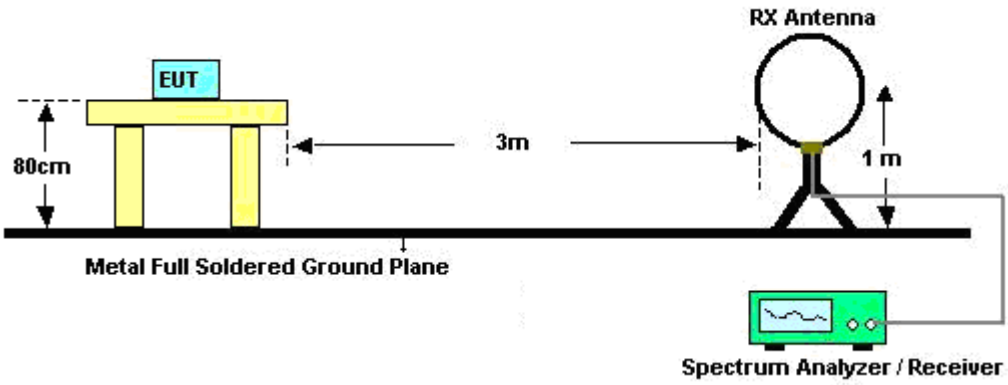
Note:

The total loss is 25.6dB 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.

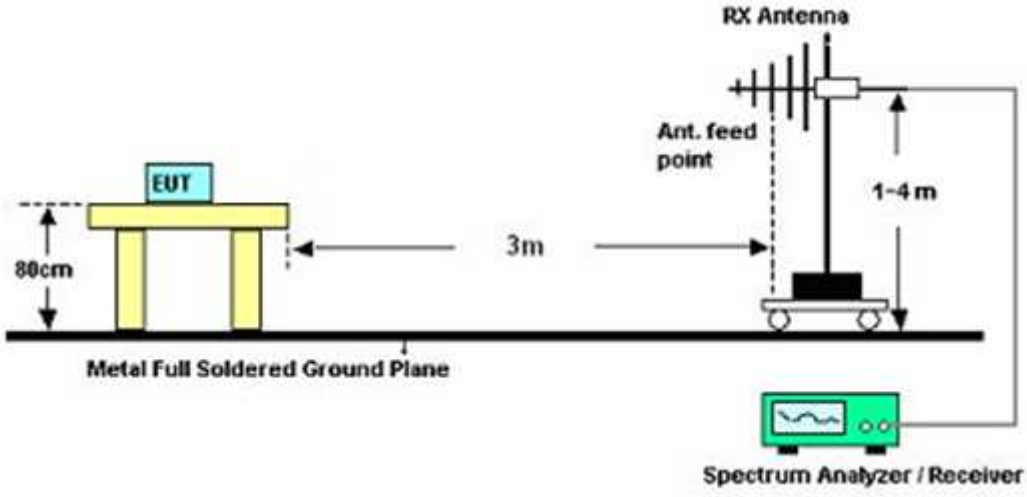
2. The EUT was placed on a rotatable table top 0.8 meter above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters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

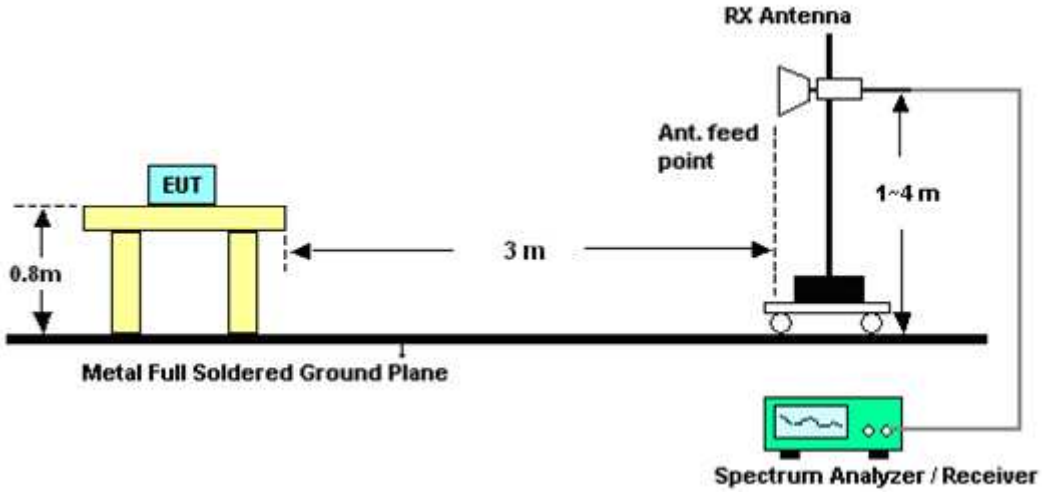
For radiated emissions below 30MHz



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℃
Test Channel :	36	**Relative Humidity :**	42~43%
Test Engineer :	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
5143.5	54.66	-19.34	74	43.18	34.89	10.44	33.85	101	22	Peak
5144.9	41.82	-12.18	54	30.34	34.89	10.44	33.85	101	22	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
5125.5	54.63	-19.37	74	43.2	34.88	10.4	33.85	101	254	Peak
5139.95	41.68	-12.32	54	30.24	34.89	10.4	33.85	101	254	Average

Test Mode :	802.11a	**Temperature :**	23~24℃
Test Channel :	48	**Relative Humidity :**	42~43%
Test Engineer :	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
5136.8	54.39	-19.61	74	42.96	34.88	10.4	33.85	100	360	Peak
5126.2	41.66	-12.34	54	30.23	34.88	10.4	33.85	100	360	Average
5382.45	56.01	-17.99	74	44.03	35.03	10.79	33.84	100	360	Peak
5365.25	42.61	-11.39	54	30.68	35.02	10.75	33.84	100	360	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
5123.3	54.58	-19.42	74	43.15	34.88	10.4	33.85	100	257	Peak
5124.4	41.58	-12.42	54	30.15	34.88	10.4	33.85	100	257	Average
5367.6	55.68	-18.32	74	43.75	35.02	10.75	33.84	100	257	Peak
5395.4	42.46	-11.54	54	30.47	35.04	10.79	33.84	100	257	Average

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	52	Relative Humidity :	42~43%
Test Engineer :	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
5108.1	54.92	-19.08	74	43.53	34.87	10.37	33.85	100	20	Peak
5150	41.66	-12.34	54	30.18	34.89	10.44	33.85	100	20	Average
5363.6	55.24	-18.76	74	43.31	35.02	10.75	33.84	100	20	Peak
5352.35	42.56	-11.44	54	30.67	35.01	10.72	33.84	100	20	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
5138.7	54.51	-19.49	74	43.08	34.88	10.4	33.85	100	263	Peak
5129.4	41.7	-12.3	54	30.27	34.88	10.4	33.85	100	263	Average
5380.7	55.15	-18.85	74	43.17	35.03	10.79	33.84	100	263	Peak
5366.3	42.38	-11.62	54	30.45	35.02	10.75	33.84	100	263	Average

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	64	Relative Humidity :	42~43%
Test Engineer :	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
5359.6	55.57	-18.43	74	43.65	35.01	10.75	33.84	100	353	Peak
5365.2	42.6	-11.4	54	30.67	35.02	10.75	33.84	100	353	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
5398.25	55.34	-18.66	74	43.35	35.04	10.79	33.84	100	265	Peak
5362.95	42.43	-11.57	54	30.5	35.02	10.75	33.84	100	265	Average

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	100	Relative Humidity :	42~43%
Test Engineer :	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
5442.16	54.9	-19.1	74	42.82	35.06	10.86	33.84	103	41	Peak
5470	53	-15.3	68.3	40.87	35.08	10.89	33.84	103	41	Peak
5455.52	42.32	-11.68	54	30.2	35.07	10.89	33.84	103	41	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
5456.56	55.09	-18.91	74	42.97	35.07	10.89	33.84	116	246	Peak
5470	52.95	-15.35	68.3	40.82	35.08	10.89	33.84	116	246	Peak
5437.12	42.19	-11.81	54	30.11	35.06	10.86	33.84	116	246	Average

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	140	Relative Humidity :	42~43%
Test Engineer :	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	56.14	-12.16	68.3	43.23	35.41	11.34	33.84	100	15	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	55.14	-13.16	68.3	42.23	35.41	11.34	33.84	102	266	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	36	Relative Humidity :	42~43%
Test Engineer :	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
5131.45	55.33	-18.67	74	43.9	34.88	10.4	33.85	101	13	Peak
5142.5	41.78	-12.22	54	30.3	34.89	10.44	33.85	101	13	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
5105.3	54.35	-19.65	74	42.97	34.86	10.37	33.85	100	256	Peak
5126	41.52	-12.48	54	30.09	34.88	10.4	33.85	100	256	Average

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	48	Relative Humidity :	42~43%
Test Engineer :	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
5137.7	54.38	-19.62	74	42.95	34.88	10.4	33.85	100	360	Peak
5130.2	41.62	-12.38	54	30.19	34.88	10.4	33.85	100	360	Average
5395.75	55.96	-18.04	74	43.97	35.04	10.79	33.84	100	360	Peak
5365.25	42.45	-11.55	54	30.52	35.02	10.75	33.84	100	360	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
5112.8	55.04	-18.96	74	43.65	34.87	10.37	33.85	100	263	Peak
5122.75	41.6	-12.4	54	30.17	34.88	10.4	33.85	100	263	Average
5377.7	55.35	-18.65	74	43.41	35.03	10.75	33.84	100	263	Peak
5382.85	42.4	-11.6	54	30.42	35.03	10.79	33.84	100	263	Average

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	52	Relative Humidity :	42~43%
Test Engineer :	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
5145	54.49	-19.51	74	43.01	34.89	10.44	33.85	100	356	Peak
5144.35	41.62	-12.38	54	30.14	34.89	10.44	33.85	100	356	Average
5362.8	55.26	-18.74	74	43.33	35.02	10.75	33.84	100	356	Peak
5367.7	42.48	-11.52	54	30.55	35.02	10.75	33.84	100	356	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
5129.45	55.49	-18.51	74	44.06	34.88	10.4	33.85	100	262	Peak
5124.6	41.61	-12.39	54	30.18	34.88	10.4	33.85	100	262	Average
5387	55.39	-18.61	74	43.41	35.03	10.79	33.84	100	262	Peak
5383.25	42.32	-11.68	54	30.34	35.03	10.79	33.84	100	262	Average

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	64	Relative Humidity :	42~43%
Test Engineer :	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
5370.8	55.49	-18.51	74	43.56	35.02	10.75	33.84	100	354	Peak
5365.65	42.56	-11.44	54	30.63	35.02	10.75	33.84	100	354	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
5385.1	55.55	-18.45	74	43.57	35.03	10.79	33.84	111	264	Peak
5379.75	42.45	-11.55	54	30.51	35.03	10.75	33.84	111	264	Average

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	100	Relative Humidity :	42~43%
Test Engineer :	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
5431.84	55.85	-18.15	74	43.77	35.06	10.86	33.84	128	31	Peak
5470	53.53	-14.77	68.3	41.4	35.08	10.89	33.84	128	31	Peak
5432.32	42.42	-11.58	54	30.34	35.06	10.86	33.84	128	31	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
5452.88	55.04	-18.96	74	42.92	35.07	10.89	33.84	191	23	Peak
5470	52.67	-15.63	68.3	40.54	35.08	10.89	33.84	191	23	Peak
5450.4	42.24	-11.76	54	30.15	35.07	10.86	33.84	191	23	Average

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	140	Relative Humidity :	42~43%
Test Engineer :	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	54.54	-13.76	68.3	41.63	35.41	11.34	33.84	100	16	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	54.26	-14.04	68.3	41.35	35.41	11.34	33.84	199	265	Peak

Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Channel :	38	Relative Humidity :	42~43%
Test Engineer :	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
5142.9	55.09	-18.91	74	43.61	34.89	10.44	33.85	100	21	Peak
5124.25	42.36	-11.64	54	30.93	34.88	10.4	33.85	100	21	Average
5369.2	55.49	-18.51	74	43.56	35.02	10.75	33.84	100	21	Peak
5371.7	43.13	-10.87	54	31.2	35.02	10.75	33.84	100	21	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
5115.65	54.95	-19.05	74	43.56	34.87	10.37	33.85	100	255	Peak
5124.7	42.57	-11.43	54	31.14	34.88	10.4	33.85	100	255	Average
5392.1	56.33	-17.67	74	44.35	35.03	10.79	33.84	100	255	Peak
5351.25	43.25	-10.75	54	31.36	35.01	10.72	33.84	100	255	Average

Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Channel :	46	Relative Humidity :	42~43%
Test Engineer :	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
5116.8	54.63	-19.37	74	43.21	34.87	10.4	33.85	100	360	Peak
5134	42.19	-11.81	54	30.76	34.88	10.4	33.85	100	360	Average
5383.55	55.35	-18.65	74	43.37	35.03	10.79	33.84	100	360	Peak
5362.2	43.27	-10.73	54	31.34	35.02	10.75	33.84	100	360	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
5137.1	54.85	-19.15	74	43.42	34.88	10.4	33.85	100	261	Peak
5130.7	42.17	-11.83	54	30.74	34.88	10.4	33.85	100	261	Average
5390.9	56.57	-17.43	74	44.59	35.03	10.79	33.84	100	261	Peak
5362.8	43.32	-10.68	54	31.39	35.02	10.75	33.84	100	261	Average

Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Channel :	54	Relative Humidity :	42~43%
Test Engineer :	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
5117.1	55.29	-18.71	74	43.87	34.87	10.4	33.85	100	358	Peak
5128.25	42.22	-11.78	54	30.79	34.88	10.4	33.85	100	358	Average
5361.15	55.7	-18.3	74	43.77	35.02	10.75	33.84	100	358	Peak
5373.55	43.4	-10.6	54	31.47	35.02	10.75	33.84	100	358	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
5125.85	55.52	-18.48	74	44.09	34.88	10.4	33.85	100	252	Peak
5140.2	42.26	-11.74	54	30.78	34.89	10.44	33.85	100	252	Average
5367	56.06	-17.94	74	44.13	35.02	10.75	33.84	100	252	Peak
5382.4	43.1	-10.9	54	31.12	35.03	10.79	33.84	100	252	Average

Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Channel :	62	Relative Humidity :	42~43%
Test Engineer :	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
5107.2	54.76	-19.24	74	43.37	34.87	10.37	33.85	100	340	Peak
5124.35	42.24	-11.76	54	30.81	34.88	10.4	33.85	100	340	Average
5387.2	56.26	-17.74	74	44.28	35.03	10.79	33.84	100	340	Peak
5353.6	43.2	-10.8	54	31.31	35.01	10.72	33.84	100	340	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
5122.85	55.18	-18.82	74	43.75	34.88	10.4	33.85	110	257	Peak
5139.95	42.27	-11.73	54	30.83	34.89	10.4	33.85	110	257	Average
5358.95	55.72	-18.28	74	43.8	35.01	10.75	33.84	110	257	Peak
5394.5	43.34	-10.66	54	31.36	35.03	10.79	33.84	110	257	Average

Test Mode :	802.11n HT40	**Temperature :**	23~24℃
Test Channel :	102	**Relative Humidity :**	42~43%
Test Engineer :	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
5441.68	54.92	-19.08	74	42.84	35.06	10.86	33.84	103	35	Peak
5470	54.01	-14.29	68.3	41.88	35.08	10.89	33.84	103	35	Peak
5444.64	43.07	-10.93	54	30.99	35.06	10.86	33.84	103	35	Average
5725	55.4	-12.9	68.3	42.49	35.41	11.34	33.84	103	35	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
5434.72	55.26	-18.74	74	43.18	35.06	10.86	33.84	190	22	Peak
5470	52.91	-15.39	68.3	40.78	35.08	10.89	33.84	190	22	Peak
5436.08	42.78	-11.22	54	30.7	35.06	10.86	33.84	190	22	Average
5725	53.94	-14.36	68.3	41.03	35.41	11.34	33.84	190	22	Peak

Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Channel :	134	Relative Humidity :	42~43%
Test Engineer :	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
5450.64	55.17	-18.83	74	43.08	35.07	10.86	33.84	100	23	Peak
5470	53.46	-14.84	68.3	41.33	35.08	10.89	33.84	100	23	Peak
5430.88	42.77	-11.23	54	30.69	35.06	10.86	33.84	100	23	Average
5725	53.41	-14.89	68.3	40.5	35.41	11.34	33.84	100	23	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
5433.44	54.9	-19.1	74	42.82	35.06	10.86	33.84	137	261	Peak
5470	53.58	-14.72	68.3	41.45	35.08	10.89	33.84	137	261	Peak
5432.32	42.66	-11.34	54	30.58	35.06	10.86	33.84	137	261	Average
5725	54.03	-14.27	68.3	41.12	35.41	11.34	33.84	137	261	Peak

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

Test Mode :	802.11a	**Temperature :**	23~24℃
Test Channel :	36	**Relative Humidity :**	42~43%
Test Engineer :	Timberland Lin and Luke Chang	**Polarization :**	Horizontal
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. 10359 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	87.97	-	-	76.44	34.91	10.47	33.85	101	22	Average
5180	98.05	-	-	86.52	34.91	10.47	33.85	101	22	Peak
10359	56.56	-11.74	68.3	63.59	37.69	10.64	55.36	100	0	Peak

Test Mode :	802.11a	**Temperature :**	23~24℃
Test Channel :	36	**Relative Humidity :**	42~43%
Test Engineer :	Timberland Lin and Luke Chang	**Polarization :**	Vertical
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. 10359 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	81.59	-	-	70.06	34.91	10.47	33.85	101	254	Average
5180	91.55	-	-	80.02	34.91	10.47	33.85	101	254	Peak
10359	51.25	-17.05	68.3	58.28	37.69	10.64	55.36	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	44	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10443 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
5220	89.69	-	-	78.07	34.93	10.54	33.85	100	357	Average
5220	98.87	-	-	87.25	34.93	10.54	33.85	100	357	Peak
10443	54.84	-13.46	68.3	61.72	37.75	10.65	55.28	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	44	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10440 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
5220	82.05	-	-	70.43	34.93	10.54	33.85	100	257	Average
5220	91.54	-	-	79.92	34.93	10.54	33.85	100	257	Peak
10440	50.69	-17.61	68.3	57.57	37.75	10.65	55.28	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	48	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 10476 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	89.73	-	-	78.06	34.94	10.58	33.85	100	360	Average
5240	98.86	-	-	87.19	34.94	10.58	33.85	100	360	Peak
10476	54.98	-13.32	68.3	61.79	37.77	10.66	55.24	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	48	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 10479 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	81.53	-	-	69.86	34.94	10.58	33.85	100	257	Average
5240	91.66	-	-	79.99	34.94	10.58	33.85	100	257	Peak
10479	50.32	-17.98	68.3	57.09	37.79	10.66	55.22	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	52	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 10524 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	88.76	-	-	77.03	34.96	10.61	33.84	100	20	Average
5260	98.49	-	-	86.76	34.96	10.61	33.84	100	20	Peak
10524	54.78	-13.52	68.3	61.48	37.81	10.67	55.18	100	0	Peak
15783	47.67	-6.33	54	48.7	40.51	11.72	53.26	100	274	Average
15783	56.34	-17.66	74	57.37	40.51	11.72	53.26	100	274	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	52	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 10521 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	82.1	-	-	70.37	34.96	10.61	33.84	100	263	Average
5260	92.13	-	-	80.4	34.96	10.61	33.84	100	263	Peak
10521	50.43	-17.87	68.3	57.13	37.81	10.67	55.18	100	0	Peak
15777	45.21	-8.79	54	46.29	40.49	11.72	53.29	100	287	Average
15777	56.09	-17.91	74	57.17	40.49	11.72	53.29	100	287	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	60	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	5300 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5300	86.9	-	-	75.11	34.98	10.65	33.84	100	353	Average
5300	96.81	-	-	85.02	34.98	10.65	33.84	100	353	Peak
10600	40.75	-13.25	54	47.31	37.84	10.68	55.08	100	224	Average
10600	53.04	-20.96	74	59.6	37.84	10.68	55.08	100	224	Peak
15903	45.7	-8.3	54	46.33	40.68	11.68	52.99	100	274	Average
15903	56.89	-17.11	74	57.52	40.68	11.68	52.99	100	274	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	60	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	5298 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5298	80.7	-	-	68.91	34.98	10.65	33.84	100	263	Average
5298	90.72	-	-	78.93	34.98	10.65	33.84	100	263	Peak
10600	38.78	-15.22	54	45.34	37.84	10.68	55.08	100	210	Average
10600	50.32	-23.68	74	56.88	37.84	10.68	55.08	100	210	Peak
15903	45.67	-8.33	54	46.3	40.68	11.68	52.99	100	272	Average
15903	57.25	-16.75	74	57.88	40.68	11.68	52.99	100	272	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	64	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	5320 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5320	87.51	-	-	75.68	34.99	10.68	33.84	100	353	Average
5320	98.31	-	-	86.48	34.99	10.68	33.84	100	353	Peak
15960	46.55	-7.45	54	47.02	40.75	11.66	52.88	100	266	Average
15960	57.49	-16.51	74	57.96	40.75	11.66	52.88	100	266	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	64	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	5320 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5320	79.13	-	-	67.3	34.99	10.68	33.84	100	265	Average
5320	89.16	-	-	77.33	34.99	10.68	33.84	100	265	Peak
15957	45.87	-8.13	54	46.34	40.75	11.66	52.88	100	295	Average
15957	59.68	-14.32	74	60.15	40.75	11.66	52.88	100	295	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	100	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. 16497 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
5500	88.03	-	-	75.81	35.1	10.96	33.84	103	41	Average
5500	97.63	-	-	85.41	35.1	10.96	33.84	103	41	Peak
11001	43.49	-10.51	54	49.33	38	10.76	54.6	100	331	Average
11001	55.08	-18.92	74	60.92	38	10.76	54.6	100	331	Peak
16497	61.24	-7.06	68.3	61.52	41.2	11.82	53.3	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	100	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. 16494 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
5500	81.4	-	-	69.18	35.1	10.96	33.84	116	246	Average
5500	91.48	-	-	79.26	35.1	10.96	33.84	116	246	Peak
11010	40.53	-13.47	54	46.33	38.01	10.76	54.57	100	52	Average
11010	52.11	-21.89	74	57.91	38.01	10.76	54.57	100	52	Peak
16494	62.38	-5.92	68.3	62.65	41.19	11.82	53.28	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	116	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. 16737 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
5580	90.06	-	-	77.61	35.2	11.09	33.84	102	29	Average
5580	100.07	-	-	87.62	35.2	11.09	33.84	102	29	Peak
16737	60.54	-7.76	68.3	60.2	41.54	11.91	53.11	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	116	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. 16740 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
5580	82.88	-	-	70.43	35.2	11.09	33.84	114	275	Average
5580	92.63	-	-	80.18	35.2	11.09	33.84	114	275	Peak
16740	61.49	-6.81	68.3	61.15	41.54	11.91	53.11	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	140	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. 17097 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
34.86	12.06	-27.94	40	27.98	14.9	0.69	31.51	-	-	Peak
200.1	27.83	-15.67	43.5	48.67	9.3	1.54	31.68	-	-	Peak
299.19	27.14	-18.86	46	43.7	13.2	1.91	31.67	-	-	Peak
317.5	27.35	-18.65	46	42.87	13.57	1.95	31.04	-	-	Peak
398.7	36.52	-9.48	46	50.26	15.84	2.19	31.77	102	44	Peak
745.9	21.65	-24.35	46	29.74	19.8	3.04	30.93	-	-	Peak
5700	91.72	-	-	78.89	35.37	11.3	33.84	100	15	Average
5700	101.71	-	-	88.88	35.37	11.3	33.84	100	15	Peak
11400	42.38	-11.62	54	47.03	38.32	10.99	53.96	100	322	Average
11400	54.12	-19.88	74	58.77	38.32	10.99	53.96	100	322	Peak
17097	61.11	-7.19	68.3	60.35	41.74	12.12	53.1	100	0	Peak

Test Mode :	802.11a	Temperature :	23~24℃
Test Channel :	140	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. 17097 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	28.37	-11.63	40	40.48	18.8	0.64	31.55	100	301	Peak
182.01	18.41	-25.09	43.5	39.15	9.02	1.46	31.22	-	-	Peak
261.93	17.42	-28.58	46	33.22	13.54	1.79	31.13	-	-	Peak
321	22.13	-23.87	46	37.48	13.61	1.96	30.92	-	-	Peak
402.2	21.39	-24.61	46	34.95	16.01	2.2	31.77	-	-	Peak
600.3	26.67	-19.33	46	37.15	18.8	2.77	32.05	-	-	Peak
5700	83.22	-	-	70.39	35.37	11.3	33.84	102	266	Average
5700	93.49	-	-	80.66	35.37	11.3	33.84	102	266	Peak
11400	42.32	-11.68	54	46.97	38.32	10.99	53.96	100	322	Average
11400	54.05	-19.95	74	58.7	38.32	10.99	53.96	100	322	Peak
17097	63.35	-4.95	68.3	62.59	41.74	12.12	53.1	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	36	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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	85.93	-	-	74.4	34.91	10.47	33.85	101	13	Average
5180	95.83	-	-	84.3	34.91	10.47	33.85	101	13	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	36	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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	78.56	-	-	67.03	34.91	10.47	33.85	100	256	Average
5180	88.67	-	-	77.14	34.91	10.47	33.85	100	256	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	44	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10446 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
5220	85.64	-	-	74.02	34.93	10.54	33.85	100	360	Average
5220	95.63	-	-	84.01	34.93	10.54	33.85	100	360	Peak
10446	52.76	-15.54	68.3	59.6	37.76	10.66	55.26	100	0	Peak
15657	42.21	-11.79	54	43.7	40.32	11.75	53.56	100	271	Average
15657	55.7	-18.3	74	57.19	40.32	11.75	53.56	100	271	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	44	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10449 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
5220	79.1	-	-	67.48	34.93	10.54	33.85	100	257	Average
5220	88.93	-	-	77.31	34.93	10.54	33.85	100	257	Peak
10449	50.31	-17.99	68.3	57.15	37.76	10.66	55.26	100	0	Peak
15660	41.11	-12.89	54	42.6	40.32	11.75	53.56	100	221	Average
15660	53.33	-20.67	74	54.82	40.32	11.75	53.56	100	221	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	48	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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	86.01	-	-	74.34	34.94	10.58	33.85	100	360	Average
5240	96.03	-	-	84.36	34.94	10.58	33.85	100	360	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	48	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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	78.99	-	-	67.32	34.94	10.58	33.85	100	263	Average
5240	89.07	-	-	77.4	34.94	10.58	33.85	100	263	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	52	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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	85.89	-	-	74.16	34.96	10.61	33.84	100	356	Average
5260	95.95	-	-	84.22	34.96	10.61	33.84	100	356	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	52	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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	79.62	-	-	67.89	34.96	10.61	33.84	100	262	Average
5260	89.3	-	-	77.57	34.96	10.61	33.84	100	262	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	60	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	5300 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.27	20.63	-19.37	40	32.74	18.8	0.64	31.55	-	-	Peak
177.42	22.29	-21.21	43.5	42.75	9.25	1.5	31.21	-	-	Peak
266.79	26.78	-19.22	46	42.98	13.14	1.8	31.14	-	-	Peak
314.7	30.85	-15.15	46	46.5	13.55	1.95	31.15	-	-	Peak
398.7	38.52	-7.48	46	52.26	15.84	2.19	31.77	100	52	Peak
849.5	22.47	-23.53	46	29.47	20.4	3.23	30.63	-	-	Peak
5300	84.45	-	-	72.66	34.98	10.65	33.84	100	354	Average
5300	95.32	-	-	83.53	34.98	10.65	33.84	100	354	Peak
15900	44.44	-9.56	54	45.13	40.66	11.68	53.03	100	287	Average
15900	56.83	-17.17	74	57.52	40.66	11.68	53.03	100	287	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	60	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	5300 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	27.37	-12.63	40	39.48	18.8	0.64	31.55	100	330	Peak
199.29	20.43	-23.07	43.5	41.32	9.3	1.54	31.73	-	-	Peak
269.22	18.59	-27.41	46	35.02	12.9	1.81	31.14	-	-	Peak
311.2	20.77	-25.23	46	36.59	13.51	1.94	31.27	-	-	Peak
359.5	21.87	-24.13	46	36.21	14.6	2.1	31.04	-	-	Peak
600.3	26.67	-19.33	46	37.15	18.8	2.77	32.05	-	-	Peak
5300	78.39	-	-	66.6	34.98	10.65	33.84	100	257	Average
5300	88.4	-	-	76.61	34.98	10.65	33.84	100	257	Peak
15894	43.81	-10.19	54	44.5	40.66	11.68	53.03	100	74	Average
15894	56.47	-17.53	74	57.16	40.66	11.68	53.03	100	74	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	64	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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	85.56	-	-	73.73	34.99	10.68	33.84	100	354	Average
5320	95.72	-	-	83.89	34.99	10.68	33.84	100	354	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	64	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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	77.74	-	-	65.91	34.99	10.68	33.84	111	264	Average
5320	87.77	-	-	75.94	34.99	10.68	33.84	111	264	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	100	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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	85.53	-	-	73.31	35.1	10.96	33.84	128	31	Average
5500	95.29	-	-	83.07	35.1	10.96	33.84	128	31	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	100	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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	76.69	-	-	64.47	35.1	10.96	33.84	191	23	Average
5500	86.55	-	-	74.33	35.1	10.96	33.84	191	23	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	116	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. 16740 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
5580	87.12	-	-	74.67	35.2	11.09	33.84	102	41	Average
5580	96.88	-	-	84.43	35.2	11.09	33.84	102	41	Peak
16740	56.58	-11.72	68.3	56.24	41.54	11.91	53.11	100	42	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	116	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. 16746 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
5580	80.46	-	-	68.01	35.2	11.09	33.84	125	274	Average
5580	90.32	-	-	77.87	35.2	11.09	33.84	125	274	Peak
16746	57.82	-10.48	68.3	57.48	41.54	11.91	53.11	100	51	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	140	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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	89.25	-	-	76.42	35.37	11.3	33.84	100	16	Average
5700	99.06	-	-	86.23	35.37	11.3	33.84	100	16	Peak

Test Mode :	802.11n HT20	Temperature :	23~24℃
Test Channel :	140	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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	81.46	-	-	68.63	35.37	11.3	33.84	199	265	Average
5700	91.6	-	-	78.77	35.37	11.3	33.84	199	265	Peak

Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Channel :	38	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5190 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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
5190	81.21	-	-	69.64	34.91	10.51	33.85	100	21	Average
5190	91.11	-	-	79.54	34.91	10.51	33.85	100	21	Peak

Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Channel :	38	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5190 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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
5190	73.5	-	-	61.93	34.91	10.51	33.85	100	255	Average
5190	83.5	-	-	71.93	34.91	10.51	33.85	100	255	Peak

Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Channel :	46	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5230 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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
5230	80.67	-	-	69.04	34.94	10.54	33.85	100	360	Average
5230	90.26	-	-	78.63	34.94	10.54	33.85	100	360	Peak

Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Channel :	46	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5230 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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
5230	74.17	-	-	62.54	34.94	10.54	33.85	100	261	Average
5230	83.75	-	-	72.12	34.94	10.54	33.85	100	261	Peak

Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Channel :	54	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5270 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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
35.67	17.68	-22.32	40	34.03	14.46	0.7	31.51	-	-	Peak
199.29	29.2	-14.3	43.5	50.09	9.3	1.54	31.73	-	-	Peak
266.79	27.78	-18.22	46	43.98	13.14	1.8	31.14	-	-	Peak
330.8	28.64	-17.36	46	43.88	13.72	1.99	30.95	-	-	Peak
398.7	38.52	-7.48	46	52.26	15.84	2.19	31.77	100	331	Peak
849.5	22.47	-23.53	46	29.47	20.4	3.23	30.63	-	-	Peak
5270	80.05	-	-	68.32	34.96	10.61	33.84	100	358	Average
5270	89.78	-	-	78.05	34.96	10.61	33.84	100	358	Peak

Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Channel :	54	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5270 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.59	25.03	-14.97	40	40.95	14.9	0.69	31.51	100	43	Peak
199.29	20.43	-23.07	43.5	41.32	9.3	1.54	31.73	-	-	Peak
212.52	17.53	-25.97	43.5	38.16	8.94	1.58	31.15	-	-	Peak
307	20.1	-25.9	46	36.22	13.42	1.93	31.47	-	-	Peak
359.5	21.87	-24.13	46	36.21	14.6	2.1	31.04	-	-	Peak
600.3	26.67	-19.33	46	37.15	18.8	2.77	32.05	-	-	Peak
5270	74.62	-	-	62.89	34.96	10.61	33.84	100	252	Average
5270	84.22	-	-	72.49	34.96	10.61	33.84	100	252	Peak

Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Channel :	62	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5310 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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
5310	80.37	-	-	68.54	34.99	10.68	33.84	100	340	Average
5310	90.08	-	-	78.25	34.99	10.68	33.84	100	340	Peak

Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Channel :	62	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5310 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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
5310	74.43	-	-	62.6	34.99	10.68	33.84	110	257	Average
5310	84.11	-	-	72.28	34.99	10.68	33.84	110	257	Peak

Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Channel :	102	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5510 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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
5510	80.62	-	-	68.4	35.1	10.96	33.84	103	35	Average
5510	90.39	-	-	78.17	35.1	10.96	33.84	103	35	Peak

Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Channel :	102	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5510 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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
5510	70.57	-	-	58.35	35.1	10.96	33.84	190	22	Average
5510	80.09	-	-	67.87	35.1	10.96	33.84	190	22	Peak

Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Channel :	110	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5550 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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
5550	80.98	-	-	68.6	35.17	11.05	33.84	103	42	Average
5550	90.78	-	-	78.4	35.17	11.05	33.84	103	42	Peak

Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Channel :	110	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5550 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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
5550	75.06	-	-	62.68	35.17	11.05	33.84	139	255	Average
5550	84.63	-	-	72.25	35.17	11.05	33.84	139	255	Peak

Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Channel :	134	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Horizontal
Remark :	1. 5670 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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
5670	82.95	-	-	70.19	35.34	11.26	33.84	100	23	Average
5670	92.61	-	-	79.85	35.34	11.26	33.84	100	23	Peak

Test Mode :	802.11n HT40	Temperature :	23~24℃
Test Channel :	134	Relative Humidity :	42~43%
Test Engineer :	Timberland Lin and Luke Chang	Polarization :	Vertical
Remark :	1. 5670 MHz is fundamental signal which can be ignored. 2. All other emission found more than 20dB below limit line is not reported.		

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
5670	76.26	-	-	63.5	35.34	11.26	33.84	137	261	Average
5670	85.87	-	-	73.11	35.34	11.26	33.84	137	261	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.

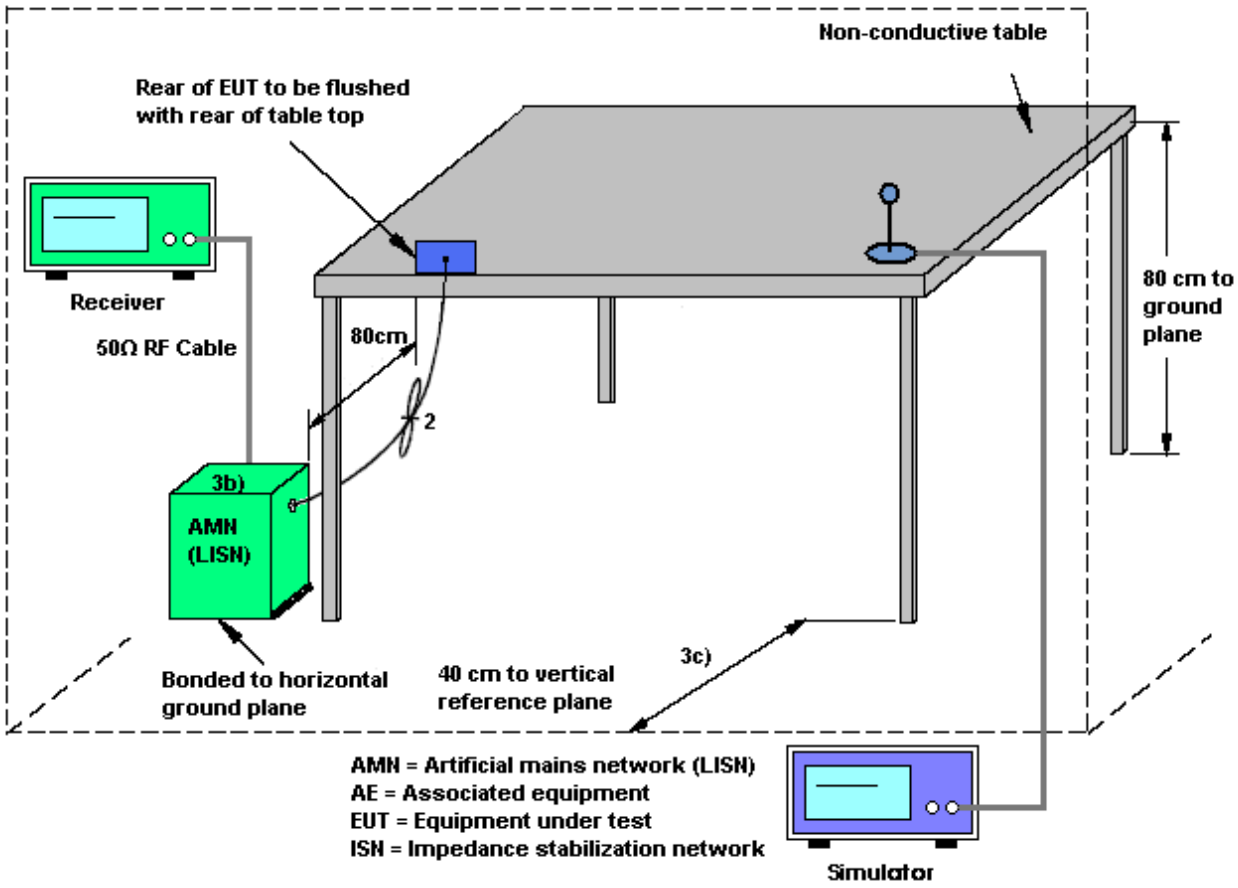
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

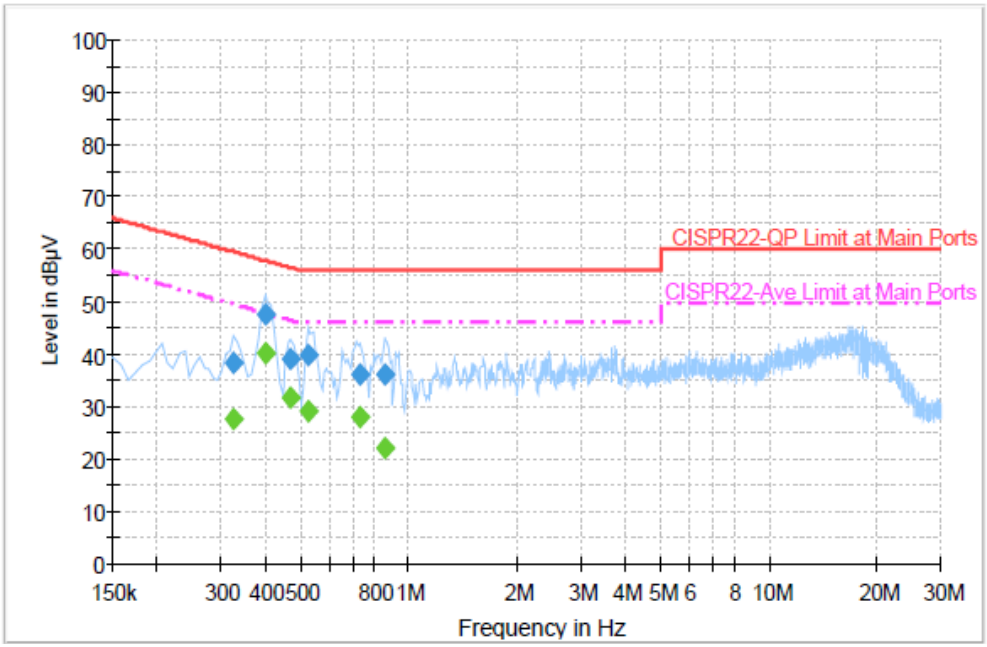
1. The testing follows the guidelines in ANSI C63.4-2003 and ANSI C63.10-2009 test site requirement.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a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

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

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



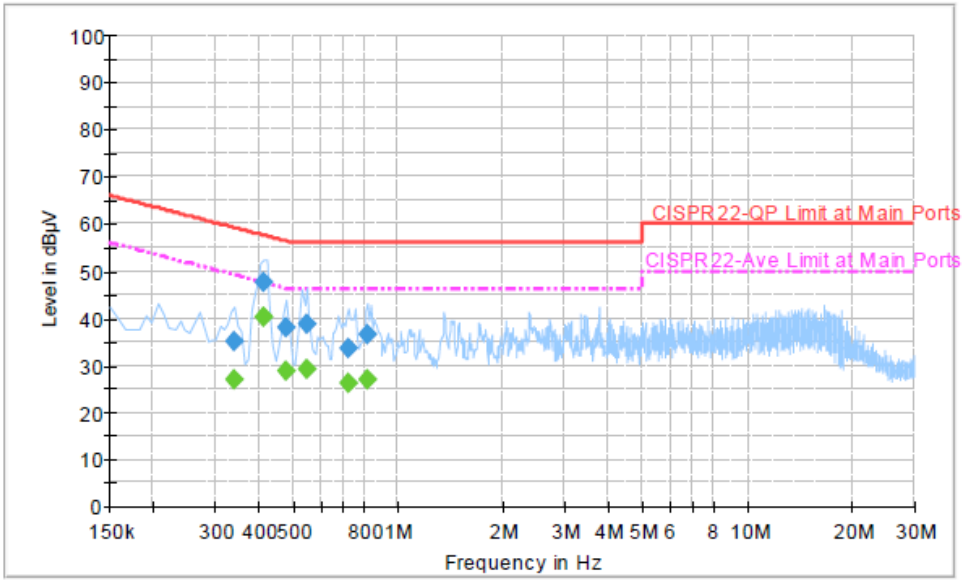
Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.326000	38.2	Off	L1	19.4	21.4	59.6
0.398000	47.7	Off	L1	19.5	10.2	57.9
0.470000	39.0	Off	L1	19.4	17.5	56.5
0.526000	40.0	Off	L1	19.4	16.0	56.0
0.734000	36.0	Off	L1	19.4	20.0	56.0
0.854000	36.0	Off	L1	19.5	20.0	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.326000	27.6	Off	L1	19.4	22.0	49.6
0.398000	40.1	Off	L1	19.5	7.8	47.9
0.470000	31.7	Off	L1	19.4	14.8	46.5
0.526000	29.0	Off	L1	19.4	17.0	46.0
0.734000	28.0	Off	L1	19.4	18.0	46.0
0.854000	22.2	Off	L1	19.5	23.8	46.0

Test Mode :	Mode 1	**Temperature :**	20~22℃
Test Engineer :	Slash Huang	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Function Type :	GSM1900 Idle + Bluetooth Link + WLAN (5G) Link + Earphone + MP3 + USB Cable (Charging from Adapter)		
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)
0.342000	35.1	Off	N	19.4	24.1	59.2
0.414000	47.6	Off	N	19.4	10.0	57.6
0.478000	38.2	Off	N	19.4	18.2	56.4
0.550000	38.8	Off	N	19.4	17.2	56.0
0.726000	33.8	Off	N	19.4	22.2	56.0
0.822000	36.6	Off	N	19.6	19.4	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.342000	26.8	Off	N	19.4	22.4	49.2
0.414000	40.2	Off	N	19.4	7.4	47.6
0.478000	28.9	Off	N	19.4	17.5	46.4
0.550000	29.2	Off	N	19.4	16.8	46.0
0.726000	26.0	Off	N	19.4	20.0	46.0
0.822000	27.0	Off	N	19.6	19.0	46.0

3.7 Frequency Stability Measurement

3.7.1 Limit of Frequency Stability

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

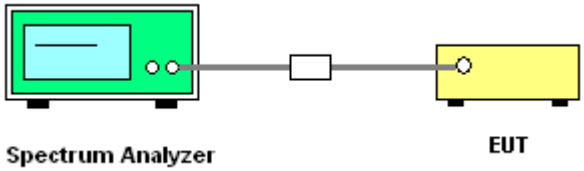
3.7.2 Measuring Instruments

See list of measuring instruments of this test report.

3.7.3 Test Procedures

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

3.7.4 Test Setup



3.7.5 Test Result of Frequency Stability

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

Channel	Frequency (MHz)	Low Frequency (F_L)	High Frequency (F_H)	Frequency Stability (ppm)
36	5180	5171.75	5188.35	9.65
44	5220	5211.70	5228.30	0.00
48	5240	5231.75	5248.35	9.54
52	5260	5251.75	5268.35	9.51
60	5300	5291.75	5308.35	9.43
64	5320	5311.70	5328.30	0.00
100	5500	5491.75	5508.35	9.09
116	5580	5571.75	5588.35	8.96
140	5700	5691.75	5708.35	8.77

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

Channel	Frequency (MHz)	Low Frequency (F_L)	High Frequency (F_H)	Frequency Stability (ppm)
36	5180	5171.10	5188.90	0.00
44	5220	5211.15	5228.90	4.79
48	5240	5231.15	5248.95	9.54
52	5260	5251.10	5268.95	4.75
60	5300	5291.15	5308.95	9.43
64	5320	5311.15	5328.95	9.40
100	5500	5491.15	5508.95	9.09
116	5580	5571.15	5588.95	8.96
140	5700	5691.15	5708.95	8.77

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Bill Kuo	Relative Humidity :	45~49%

Channel	Frequency (MHz)	Low Frequency (F_L)	High Frequency (F_H)	Frequency Stability (ppm)
38	5190	5171.91	5208.27	17.34
46	5230	5212.00	5248.18	17.21
54	5270	5251.91	5288.09	0.00
62	5310	5291.82	5328.18	0.00
102	5510	5491.91	5528.27	16.33
110	5550	5532.00	5568.18	16.22
134	5670	5651.82	5688.18	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. 09, 2012 ~ Oct. 14, 2012	Jun. 05, 2013	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	1036004	300MHz~40GHz	Sep. 08, 2012	Oct. 09, 2012 ~ Oct. 14, 2012	Sep. 07, 2013	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Sep. 08, 2012	Oct. 09, 2012 ~ Oct. 14, 2012	Sep. 07, 2013	Conducted (TH02-HY)
EMI Test Receiver	R&S	ESCS 30	100356	9KHz ~ 2.75GHz	Oct. 27, 2011	Oct. 12, 2012	Oct. 26, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz ~ 30MHz	Dec. 09, 2011	Oct. 12, 2012	Dec. 08, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz ~ 30MHz	Dec. 06, 2011	Oct. 12, 2012	Dec. 05, 2012	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Oct. 12, 2012	N/A	Conduction (CO05-HY)
System Simulator	R&S	CMU200	117995	N/A	Jul. 28, 2011	Oct. 12, 2012	Jul. 27, 2013	Conduction (CO05-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211030	9KHz ~ 26.5GHz	Nov. 23, 2011	Oct. 13, 2012 ~ Oct. 14, 2012	Nov. 22, 2012	Radiation (03CH06-HY)
Spectrum Analyzer	R&S	FSP30	101352	9KHz-30GHz	Nov. 03, 2011	Oct. 13, 2012 ~ Oct. 14, 2012	Nov. 02, 2012	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/003	20MHz ~ 1000MHz	May 04, 2012	Oct. 13, 2012 ~ Oct. 14, 2012	May. 03, 2013	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz ~ 2GHz	Oct. 22, 2011	Oct. 13, 2012 ~ Oct. 14, 2012	Oct. 21, 2012	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Aug. 01, 2012	Oct. 13, 2012 ~ Oct. 14, 2012	Jul. 31, 2013	Radiation (03CH06-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Oct. 20, 2011	Oct. 13, 2012 ~ Oct. 14, 2012	Oct. 19, 2012	Radiation (03CH06-HY)
Preamplifier	Agilent	8449B	3008A01917	1GHz ~ 26.5GHz	Apr. 13, 2012	Oct. 13, 2012 ~ Oct. 14, 2012	Apr. 12, 2013	Radiation (03CH06-HY)
Amplifier	Agilent	310N	186713	9KHz ~ 1GHz	Apr. 11, 2012	Oct. 13, 2012 ~ Oct. 14, 2012	Apr. 10, 2013	Radiation (03CH06-HY)
Pre Amplifier	EMCI	EMC051845	SN980048	1GHz ~ 18GHz	Jul. 21, 2012	Oct. 13, 2012 ~ Oct. 14, 2012	Jul. 20, 2013	Radiation (03CH06-HY)
Pre Amplifier	MITEQ	AMF-7D-00101800-30-10P	159087	1GHz~18GHz	Feb. 27, 2012	Oct. 13, 2012 ~ Oct. 14, 2012	Feb. 26, 2013	Radiation (03CH06-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9KHz ~ 30MHz	Jul. 03, 2012	Oct. 13, 2012 ~ Oct. 14, 2012	Jul. 02, 2014	Radiation (03CH06-HY)
EMI TEST RECEIVER	R&S	ESCI 7	100724	9kHz~7GHz	Sep. 03, 2012	Oct. 13, 2012 ~ Oct. 14, 2012	Sep. 02, 2013	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**