FCC RF Test Report

APPLICANT	:	Intel Corp.
EQUIPMENT	:	Android Smart Phone
BRAND NAME	:	Intel
MODEL NAME	:	Black Bay/XOLO
MARKETING NAME	:	AZ510
FCC ID	:	O2Z-AZ510
STANDARD	:	FCC Part 15 Subpart E
CLASSIFICATION	:	(NII) Unlicensed National Information Infrastructure

The product was received on Sep. 26, 2012 and completely tested on Oct. 19, 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
FR232306-04D	Rev. 01	Initial issue of report	Nov. 12, 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 2.02 dB at 5470.000 MHz
3.6	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 3.70 dB at 2.470 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

Intel Corp.
SC1-20, 2200 Mission College Blvd, Santa Clara, CA 95054, USA

1.2 Manufacturer

Chi Mei Communication Systems, Inc.
No. 4, Mingsheng Street, Tucheng City, New Taipei City 23678, Taiwan

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Android Smart Phone
Brand Name	Intel
Model Name	Black Bay/XOLO
Marketing Name	AZ510
FCC ID	O2Z-AZ510
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/ WLAN 11abgn / Bluetooth / NFC
HW Version	PR3.3
SW Version	6892
EUT Stage	Production Unit

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

Product Specification subjective to this standard	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5700 MHz
Maximum Output Power to Antenna	**<5180 MHz ~ 5240 MHz>** 802.11a : 11.40 dBm / 0.0138 W 802.11n HT20 : 8.48 dBm / 0.0070 W **<5260 MHz ~ 5320 MHz>** 802.11a : 11.20 dBm / 0.0132 W 802.11n HT20 : 8.47 dBm / 0.0070 W **<5500 MHz ~ 5700 MHz>** 802.11a : 11.21 dBm / 0.0132 W 802.11n HT20 : 8.38 dBm / 0.0069 W
Antenna Type	PIFA Antenna with gain 1.93 dBi
Type of Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.			
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978			
Test Site No.	Sporton Site No.			FCC/IC Registration No.
	TH02-HY	CO05-HY	03CH07-HY	722060/4086B-1

1.5 Applied Standards

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

- FCC Part 15 Subpart E
- FCC KDB 789033 D01 General UNII Test Procedures v01r02
- ANSI C63.4-2003 and ANSI C63.10-2009
- IC RSS-210 Issued 8
- IC RSS-Gen Issue 3

Remark:

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

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
3.	Notebook	DELL	Latitude E6320	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	LCD Monitor	Dell	U2410	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
5.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A

2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 KHz to 30 MHz) and radiated emission (9 KHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (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
	40	5200	48	5240

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

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

2.2 Pre-Scanned RF Power

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

5GHz 802.11a mode								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Peak Power (dBm)	11.40	11.36	11.21	11.29	10.34	10.36	9.00	8.99

5GHz 802.11n HT20 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	8.48	8.45	8.42	8.47	8.44	8.44	8.46	7.85

2.3 Test Mode

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

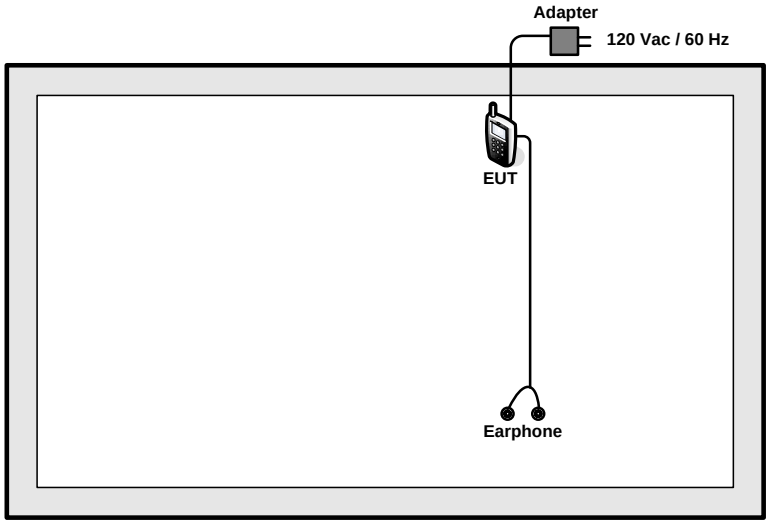
Test Cases				
	Test Items	Mode	Data rate	Test Channel
Conducted TCs	26dB BW Power Spectral Density	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
	Output Power	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
	Peak Excursion	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
	Frequency Stability	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
Radiated TCs	Radiated Band Edge	802.11a	6 Mbps	L/H
		802.11n HT20	6.5 Mbps	L/H
	Radiated Spurious Emission	802.11a	6 Mbps	L/M/H
		802.11n HT20	6.5 Mbps	L/M/H
AC Conducted Emission	Mode 1 : GSM850 Idle + Bluetooth Link + WLAN (5G) Link + Camera + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable			

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

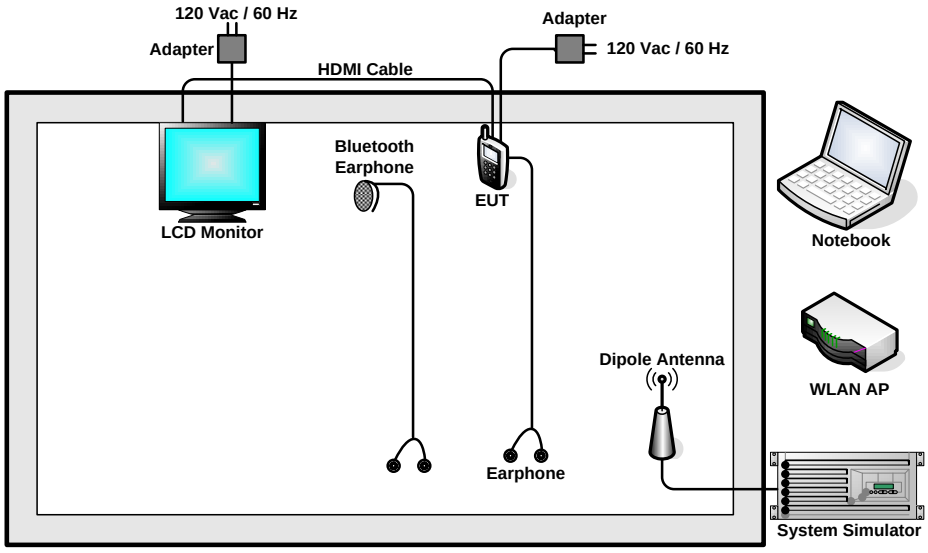
Ch. #		Band I：5150-5250 MHz	Band II：5250-5350 MHz	Band III：5470-5725 MHz
		802.11n HT20	802.11n HT20	802.11n HT20
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 RF Utility

The programmed RF utility “Intel bt/wi-fi tools” is installed in EUT to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testing. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

3 Test Result

3.1 26dB Bandwidth Measurement

3.1.1 Description of Bandwidth Measurement

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

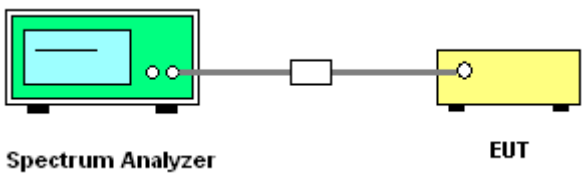
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

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

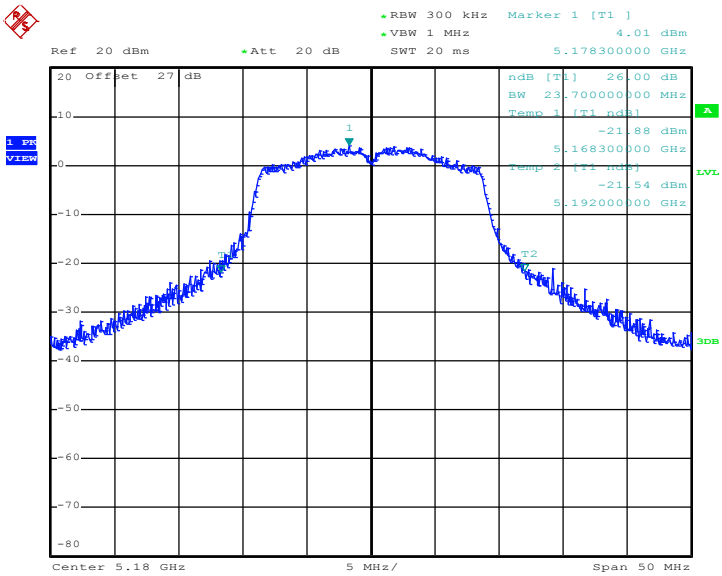


3.1.5 Test Result of 26dB Bandwidth Plots

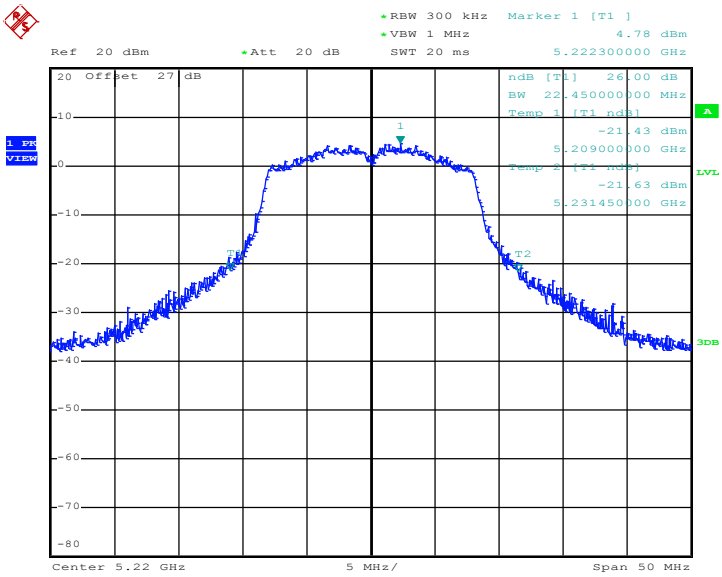
Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Coyote Lin	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11a 26dB Bandwidth (MHz)	Pass/Fail
36	5180	23.700	N/A
44	5220	22.450	N/A
48	5240	22.700	N/A
52	5260	22.250	N/A
60	5300	22.650	N/A
64	5320	22.200	N/A
100	5500	22.200	N/A
116	5580	22.500	N/A
140	5700	21.950	N/A

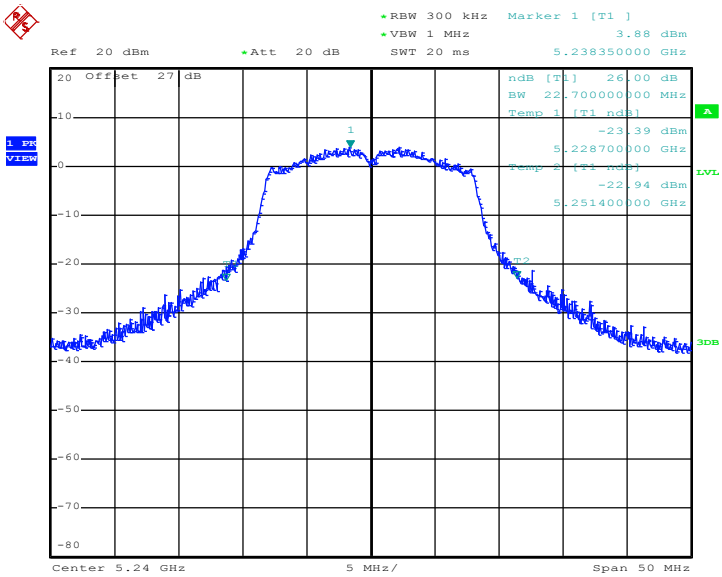
26 dB Bandwidth Plot on 802.11a Channel 36



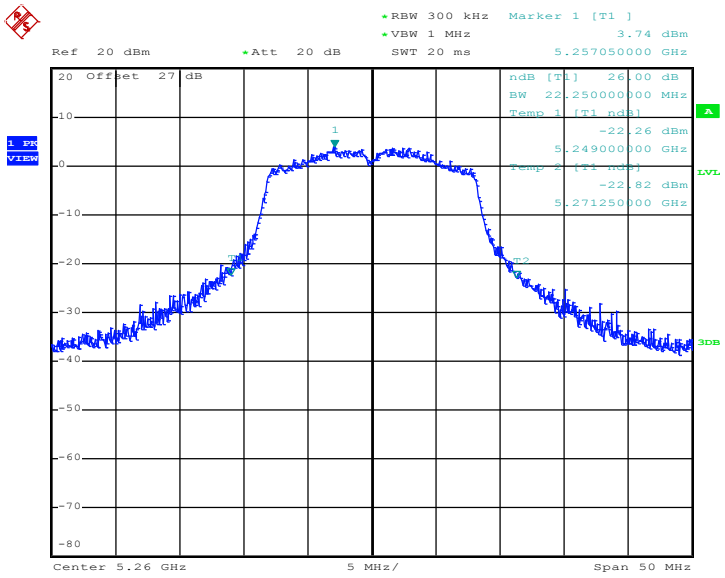
26 dB Bandwidth Plot on 802.11a Channel 44



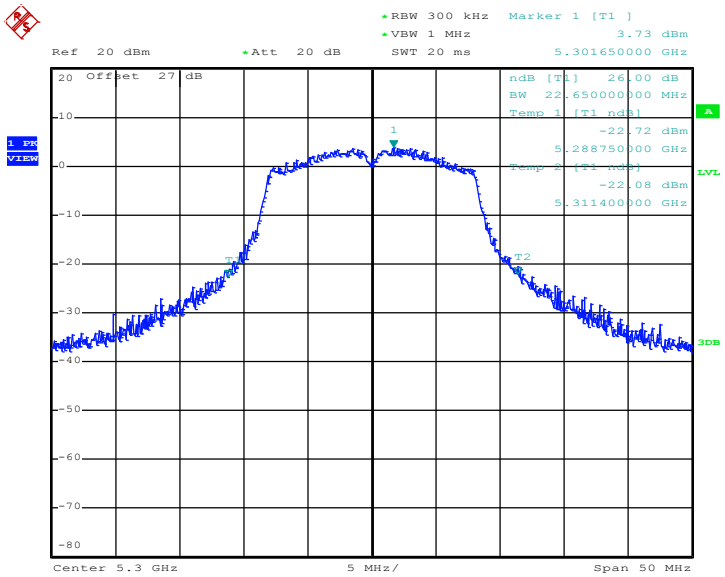
26 dB Bandwidth Plot on 802.11a Channel 48



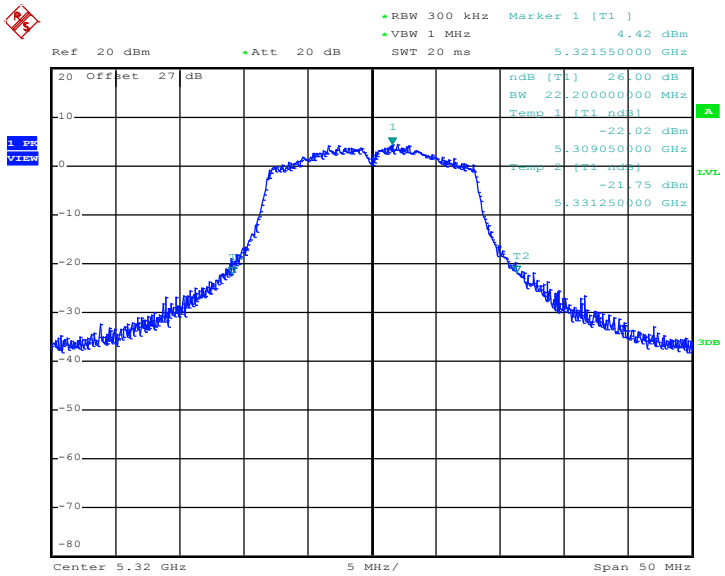
26 dB Bandwidth Plot on 802.11a Channel 52



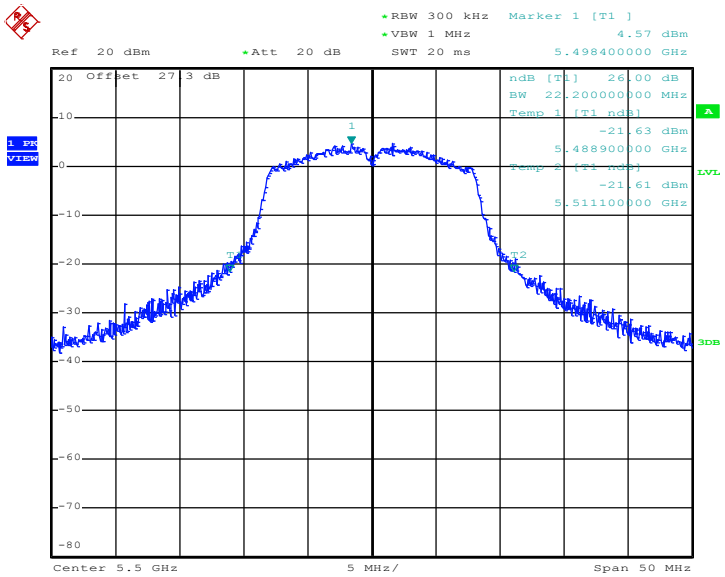
26 dB Bandwidth Plot on 802.11a Channel 60



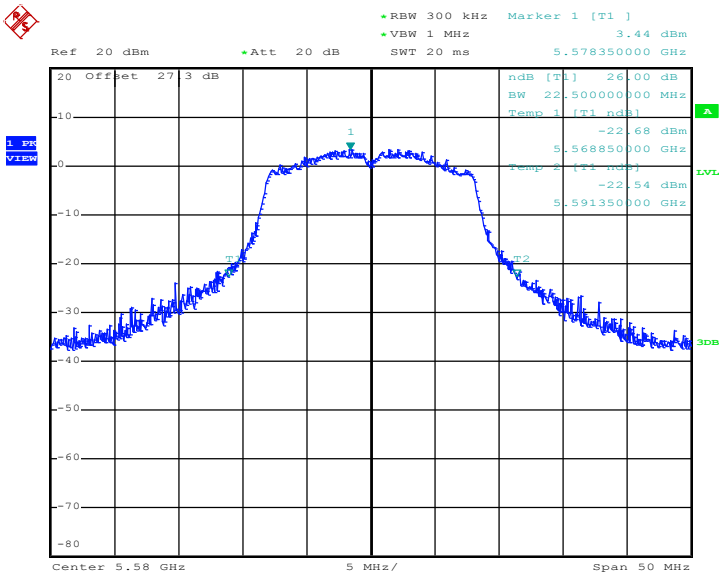
26 dB Bandwidth Plot on 802.11a Channel 64



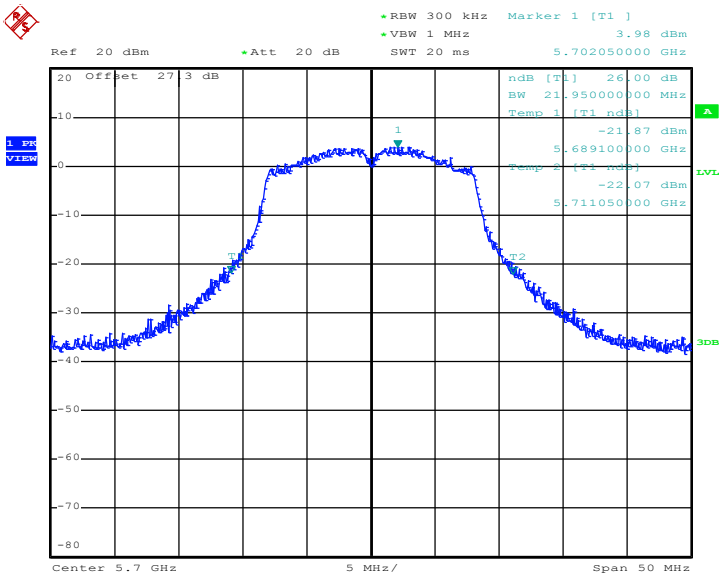
26 dB Bandwidth Plot on 802.11a Channel 100



26 dB Bandwidth Plot on 802.11a Channel 116



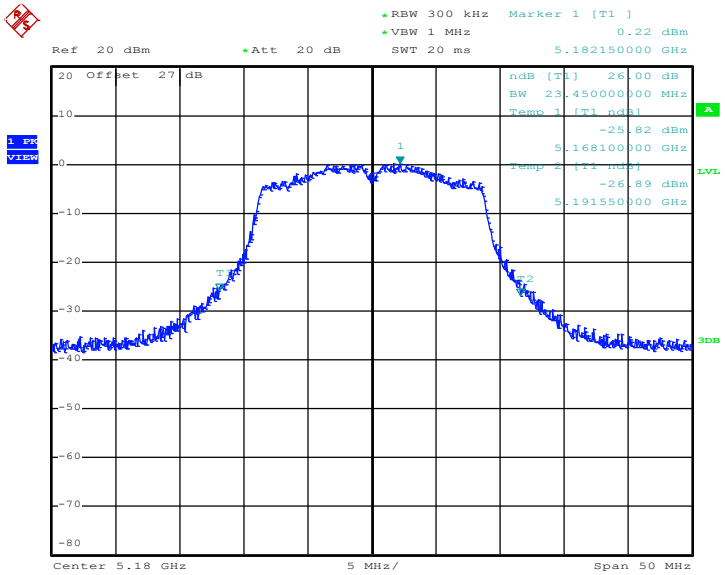
26 dB Bandwidth Plot on 802.11a Channel 140



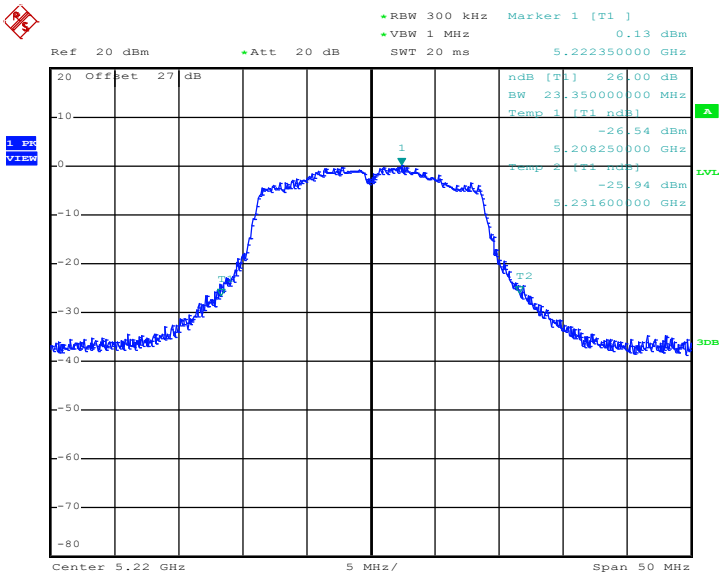
Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Coyote Lin	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11n HT20 26dB Bandwidth (MHz)	Pass/Fail
36	5180	23.450	N/A
44	5220	23.350	N/A
48	5240	23.450	N/A
52	5260	23.000	N/A
60	5300	23.550	N/A
64	5320	22.200	N/A
100	5500	23.400	N/A
116	5580	23.200	N/A
140	5700	23.400	N/A

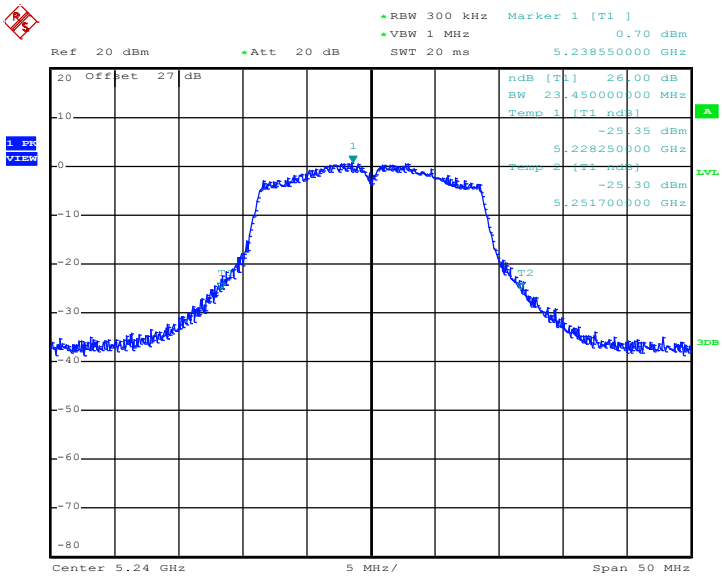
26 dB Bandwidth Plot on 802.11n HT20 Channel 36



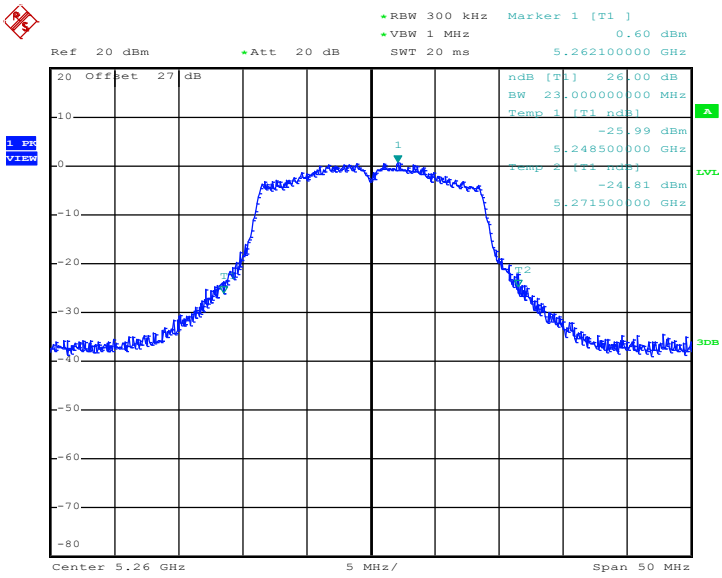
26 dB Bandwidth Plot on 802.11n HT20 Channel 44



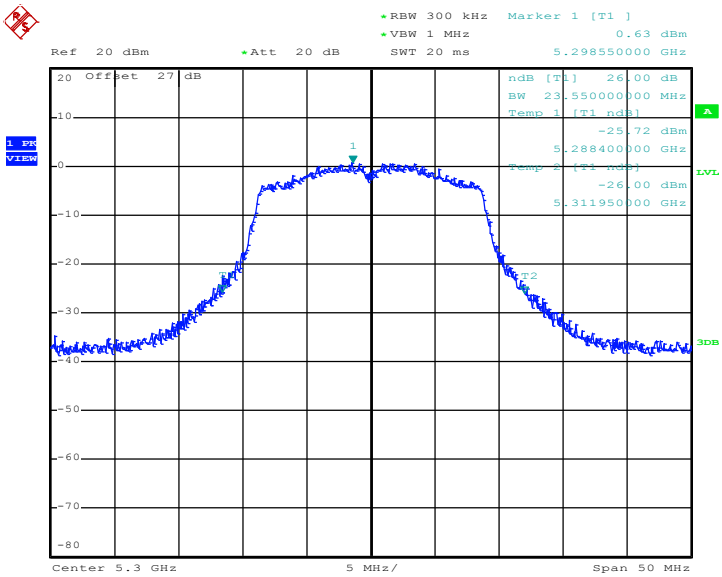
26 dB Bandwidth Plot on 802.11n HT20 Channel 48



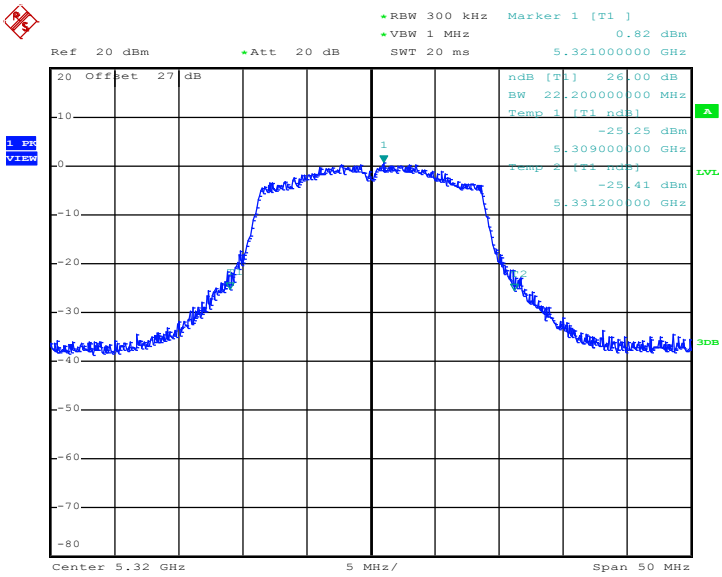
26 dB Bandwidth Plot on 802.11n HT20 Channel 52



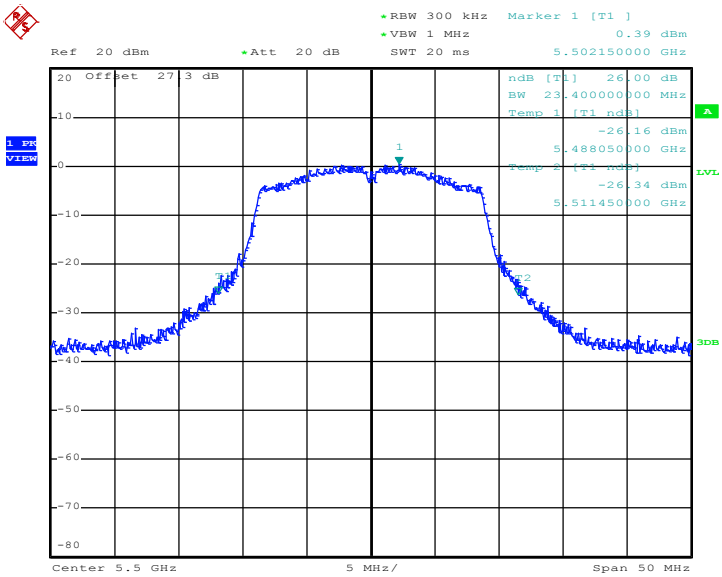
26 dB Bandwidth Plot on 802.11n HT20 Channel 60



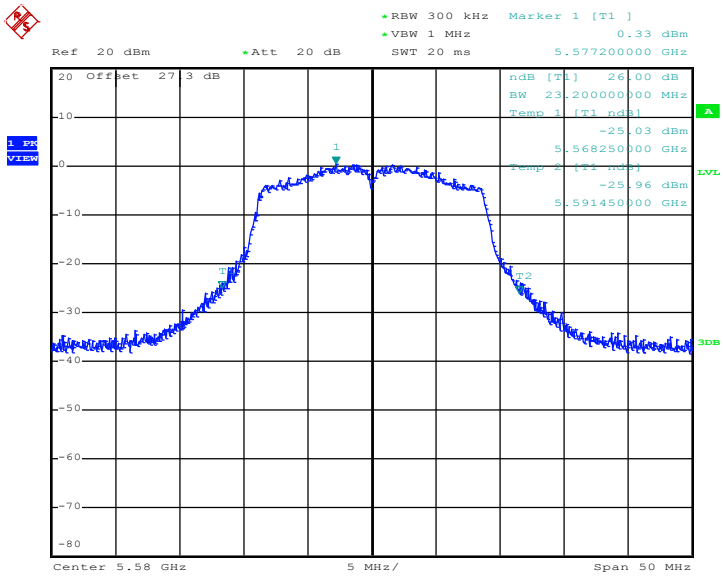
26 dB Bandwidth Plot on 802.11n HT20 Channel 64



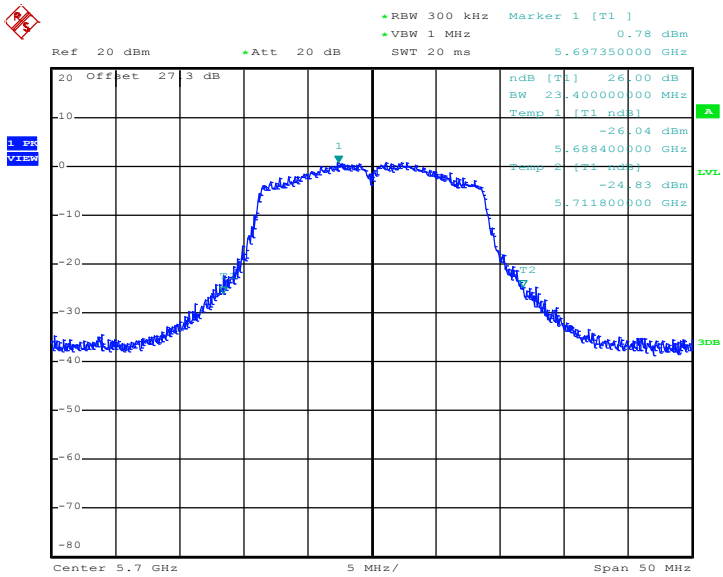
26 dB Bandwidth Plot on 802.11n HT20 Channel 100



26 dB Bandwidth Plot on 802.11n HT20 Channel 116



26 dB Bandwidth Plot on 802.11n HT20 Channel 140



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.

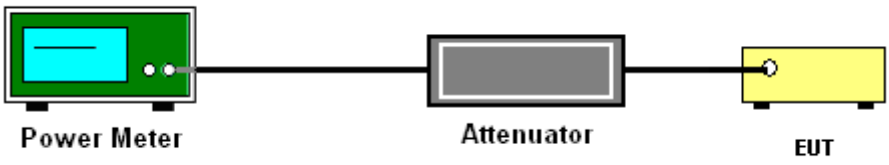
3.2.3 Test Procedures

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 :	Coyote Lin	Relative Humidity :	45~49%
Duty Cycle	97.90%	Duty Factor	0.09dB

Channel	Frequency (MHz)	802.11a Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	11.29	11.38	17	Pass
44	5220	11.31	11.40	17	Pass
48	5240	11.14	11.23	17	Pass
52	5260	11.05	11.14	24	Pass
60	5300	11.11	11.20	24	Pass
64	5320	11.04	11.13	24	Pass
100	5500	10.98	11.07	24	Pass
116	5580	10.79	10.88	24	Pass
140	5700	11.12	11.21	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 :	Coyote Lin	Relative Humidity :	45~49%
Duty Cycle	97.03%	Duty Factor	0.13dB

Channel	Frequency (MHz)	802.11n HT20 Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	7.57	7.70	17	Pass
44	5220	7.60	7.73	17	Pass
48	5240	8.35	8.48	17	Pass
52	5260	8.25	8.38	24	Pass
60	5300	8.34	8.47	24	Pass
64	5320	7.69	7.82	24	Pass
100	5500	7.63	7.76	24	Pass
116	5580	8.01	8.14	24	Pass
140	5700	8.25	8.38	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.

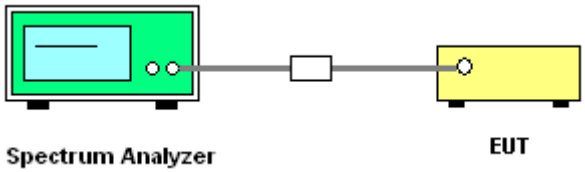
 # Method SA-2 #

(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



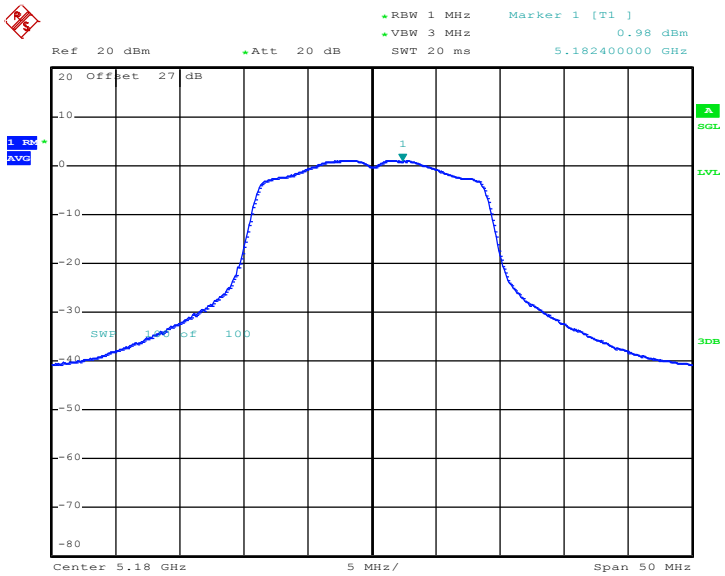
3.3.5 Test Result of Power Spectral Density

Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Coyote Lin	Relative Humidity :	45~49%
Duty Cycle:	97.90%	Duty Factor:	0.09dB

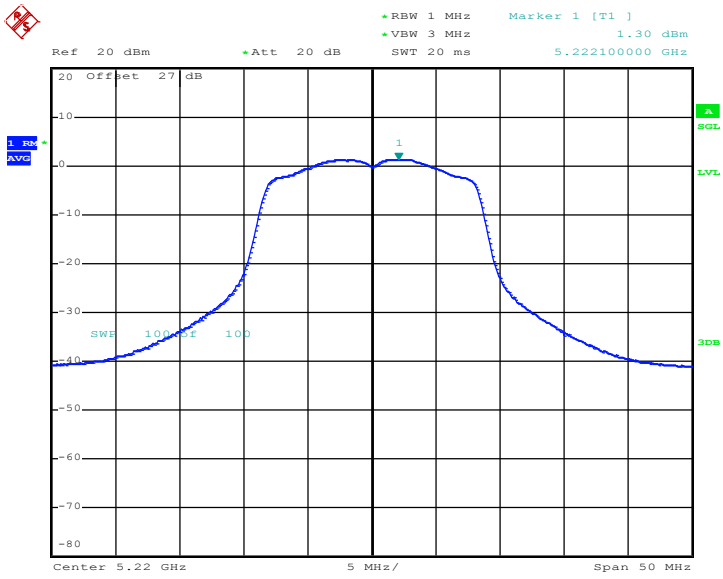
Channel	Frequency (MHz)	802.11a PSD (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	0.980	1.072	4	Pass
44	5220	1.300	1.392	4	Pass
48	5240	0.870	0.962	4	Pass
52	5260	0.790	0.882	11	Pass
60	5300	0.830	0.922	11	Pass
64	5320	1.520	1.612	11	Pass
100	5500	1.340	1.432	11	Pass
116	5580	0.600	0.692	11	Pass
140	5700	1.160	1.252	11	Pass

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

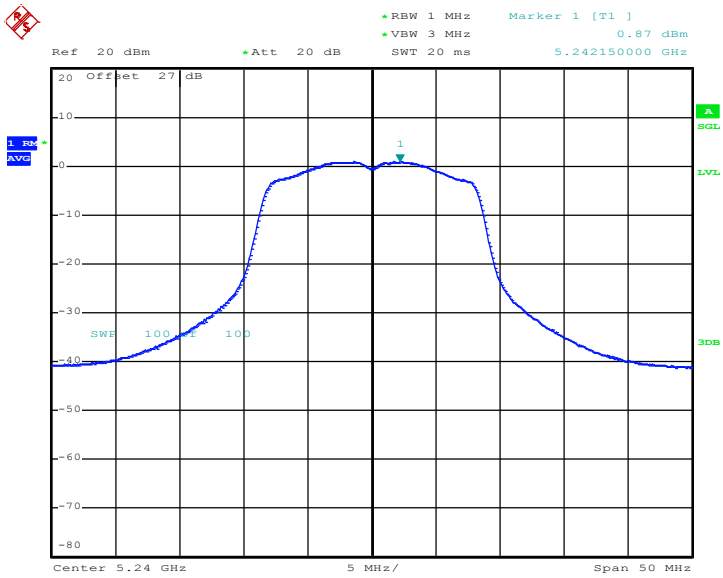
PSD Plot on 802.11a Channel 36



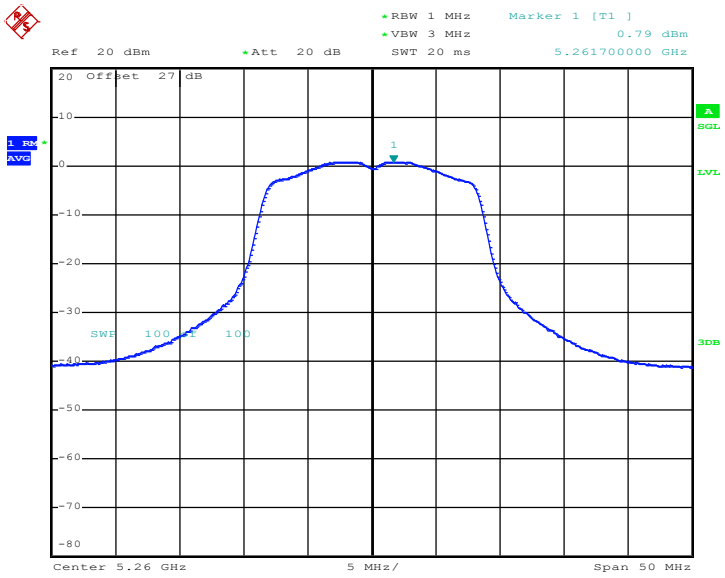
PSD Plot on 802.11a Channel 44



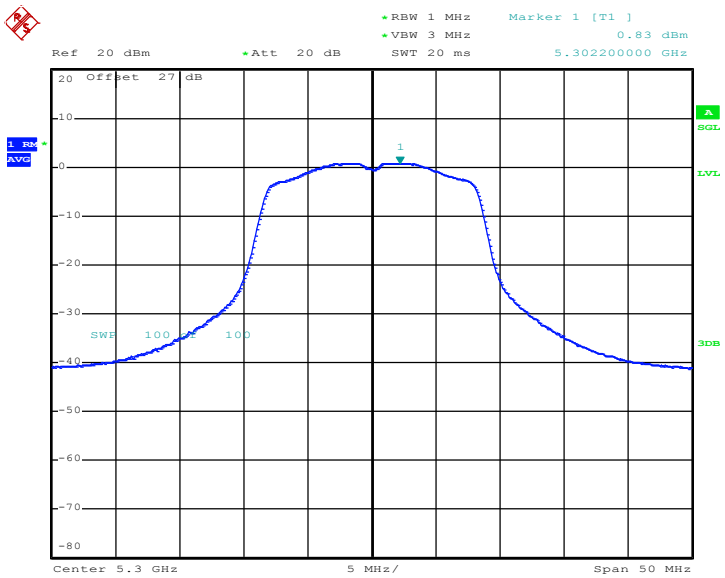
PSD Plot on 802.11a Channel 48



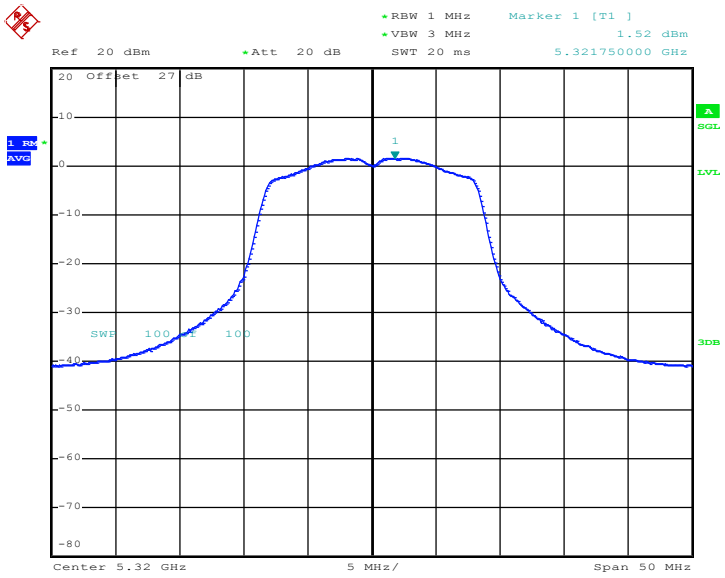
PSD Plot on 802.11a Channel 52



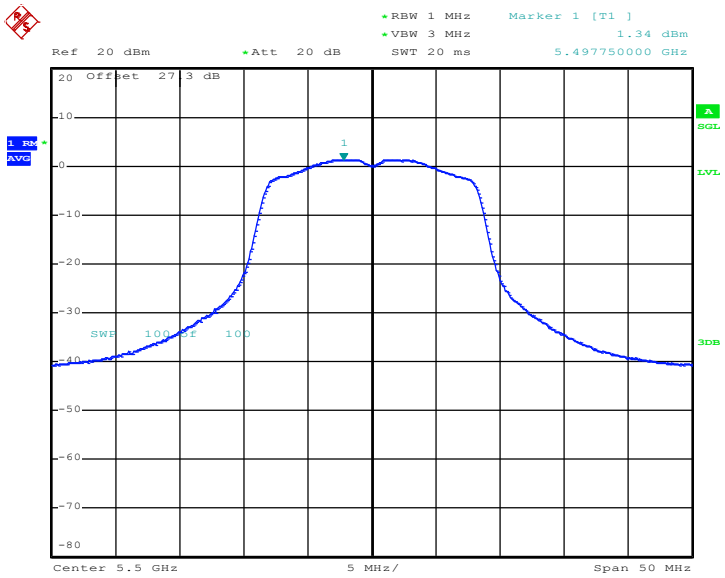
PSD Plot on 802.11a Channel 60



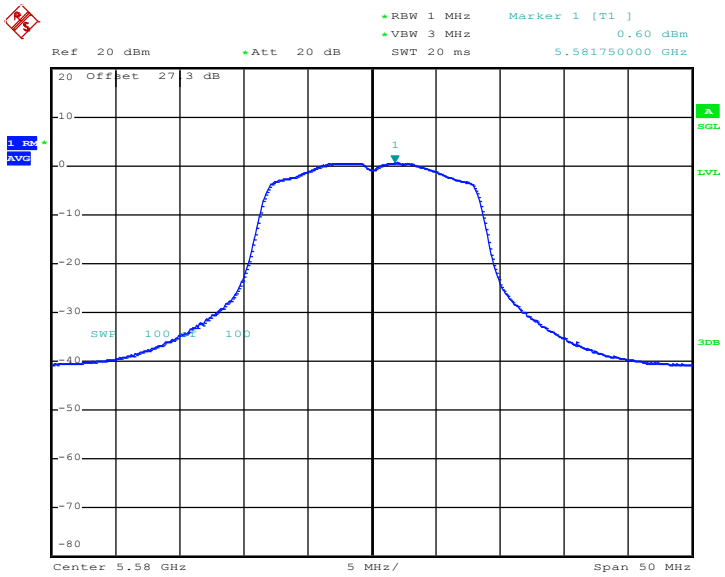
PSD Plot on 802.11a Channel 64



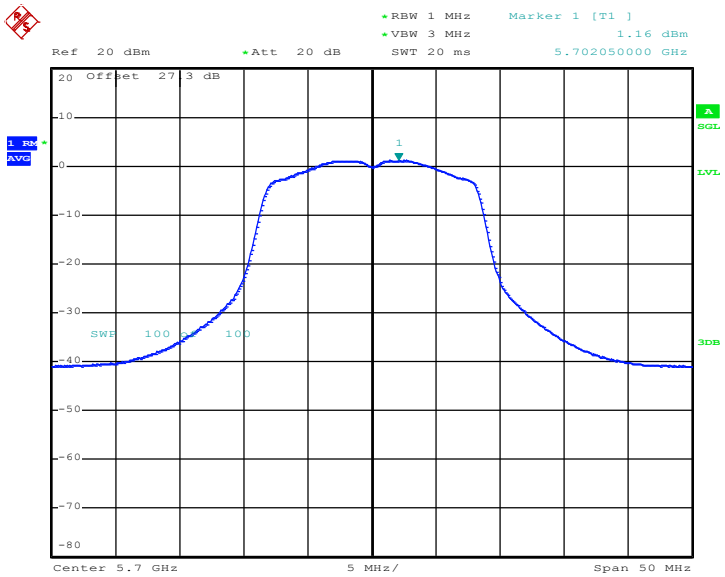
PSD Plot on 802.11a Channel 100



PSD Plot on 802.11a Channel 116



PSD Plot on 802.11a Channel 140

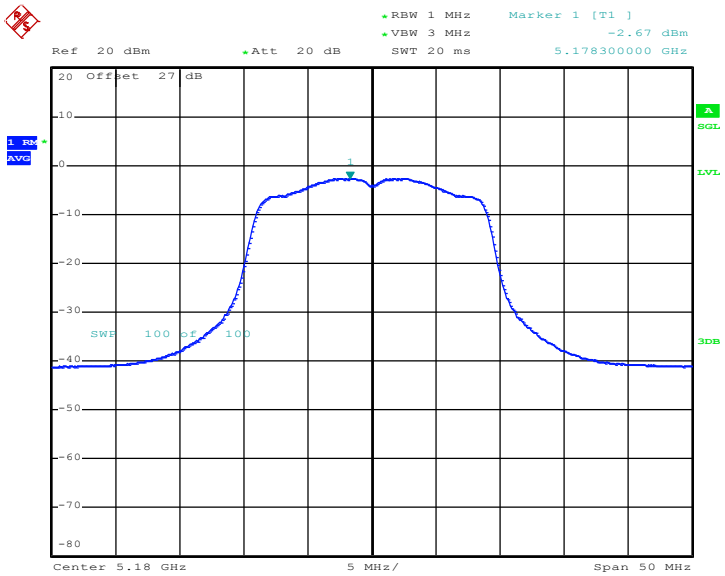


Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Coyote Lin	Relative Humidity :	45~49%
Duty Cycle:	97.03%	Duty Factor:	0.13dB

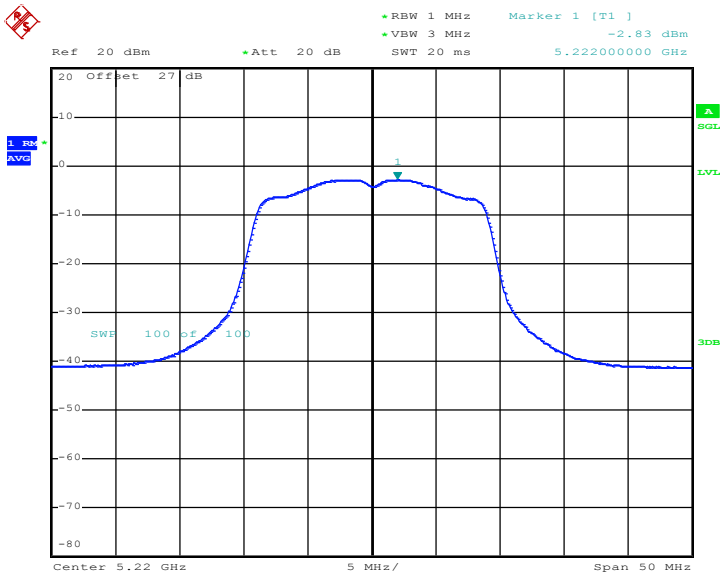
Channel	Frequency (MHz)	802.11n HT20 PSD (dBm)		Max. Limits (dBm)	Pass/Fail
		Measured	Final		
36	5180	-2.670	-2.539	4	Pass
44	5220	-2.830	-2.699	4	Pass
48	5240	-2.260	-2.129	4	Pass
52	5260	-2.370	-2.239	11	Pass
60	5300	-2.280	-2.149	11	Pass
64	5320	-2.450	-2.319	11	Pass
100	5500	-2.490	-2.359	11	Pass
116	5580	-2.550	-2.419	11	Pass
140	5700	-2.030	-1.899	11	Pass

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

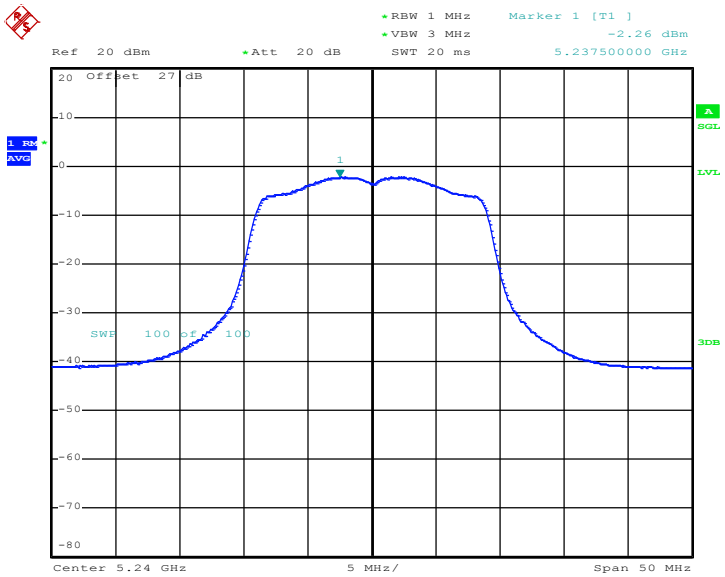
PSD Plot on 802.11n HT20 channel 36



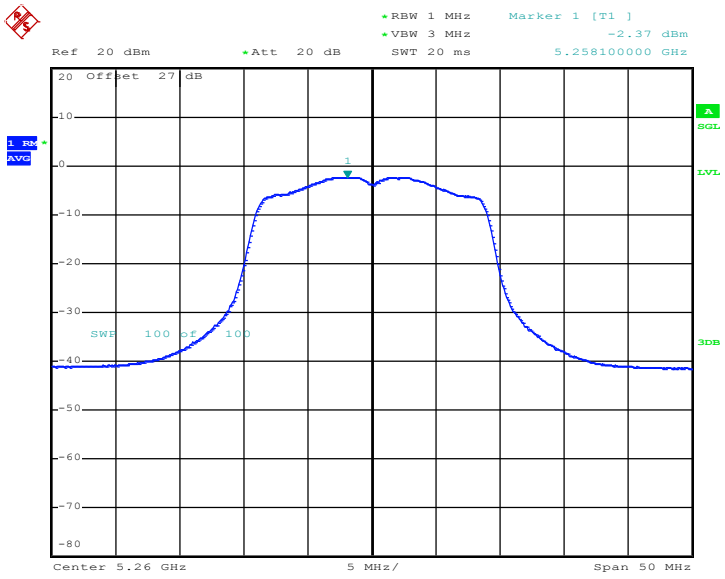
PSD Plot on 802.11n HT20 Channel 44



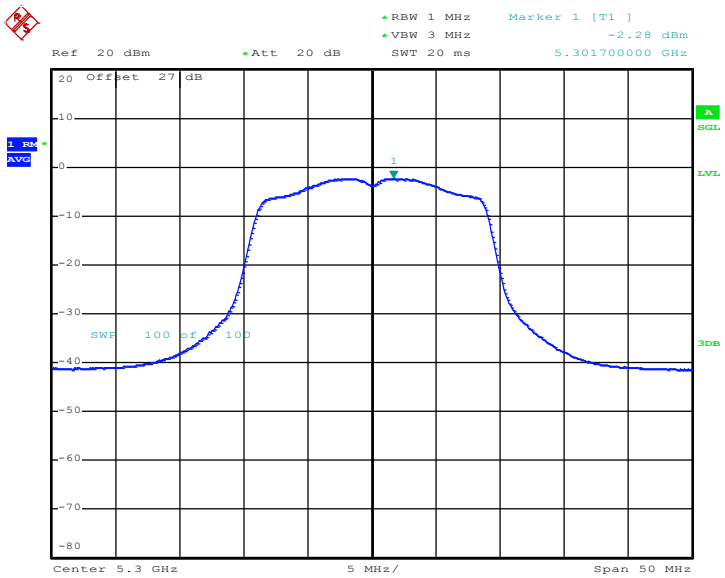
PSD Plot on 802.11n HT20 Channel 48



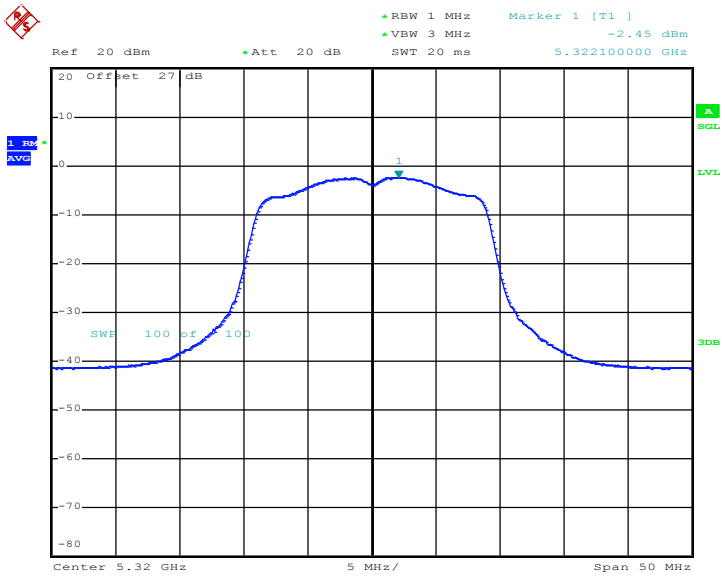
PSD Plot on 802.11n HT20 Channel 52



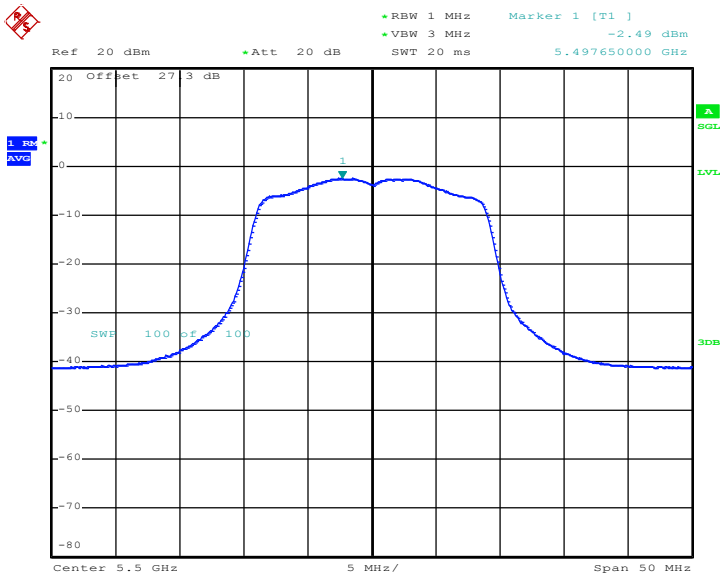
PSD Plot on 802.11n HT20 Channel 60



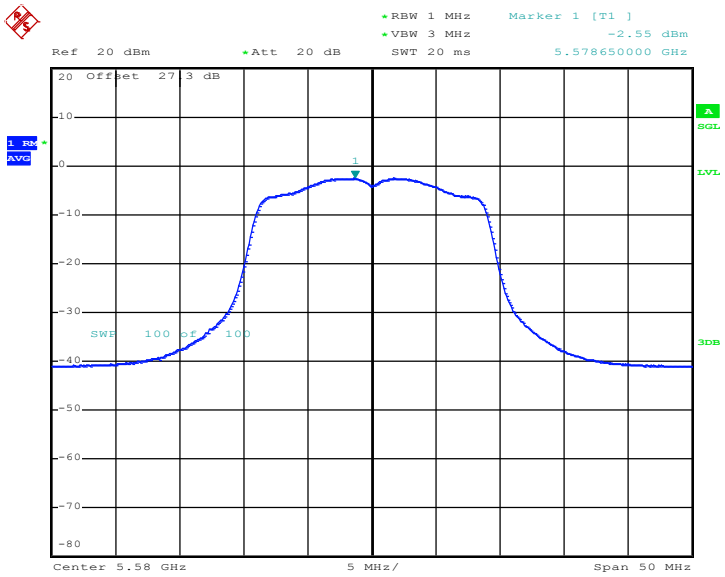
PSD Plot on 802.11n HT20 Channel 64



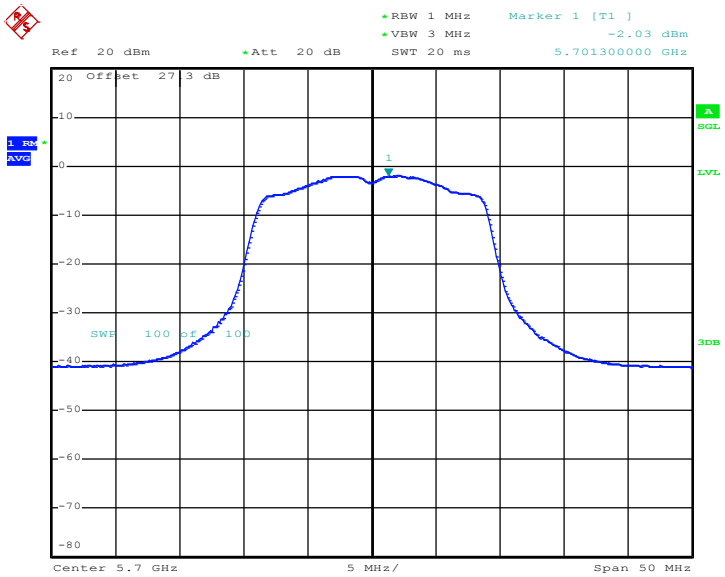
PSD Plot on 802.11n HT20 Channel 100



PSD Plot on 802.11n HT20 Channel 116



PSD Plot on 802.11n HT20 Channel 140



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.

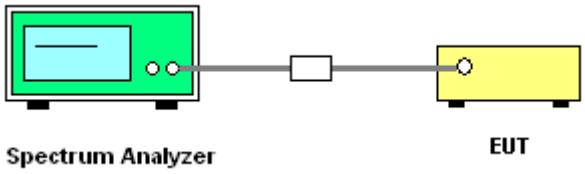
   *Detector = peak.

   *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.

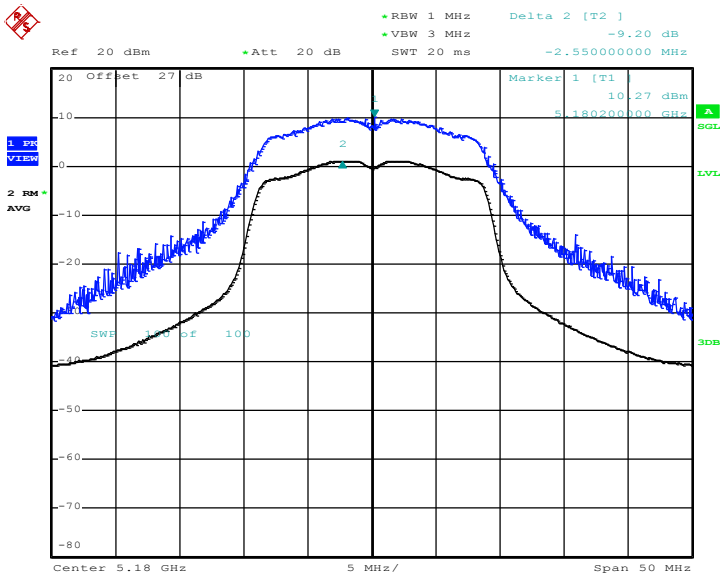
3.4.4 Test Setup



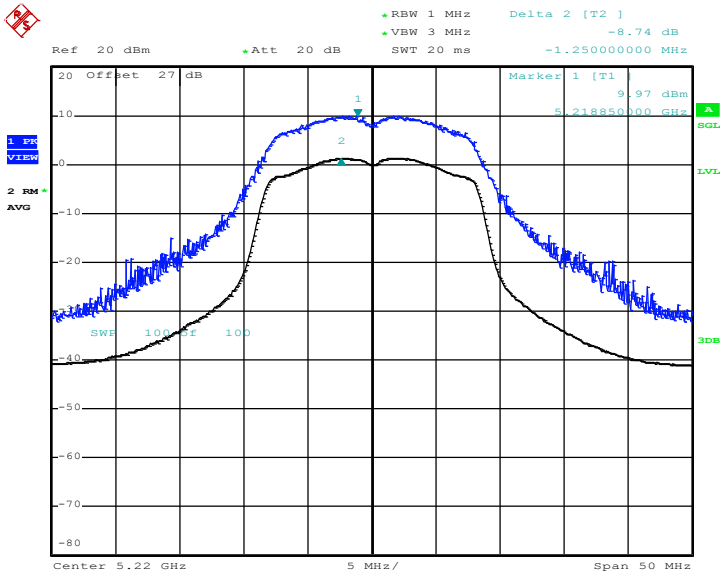
3.4.5 Test Result of Peak Excursion Ratio

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

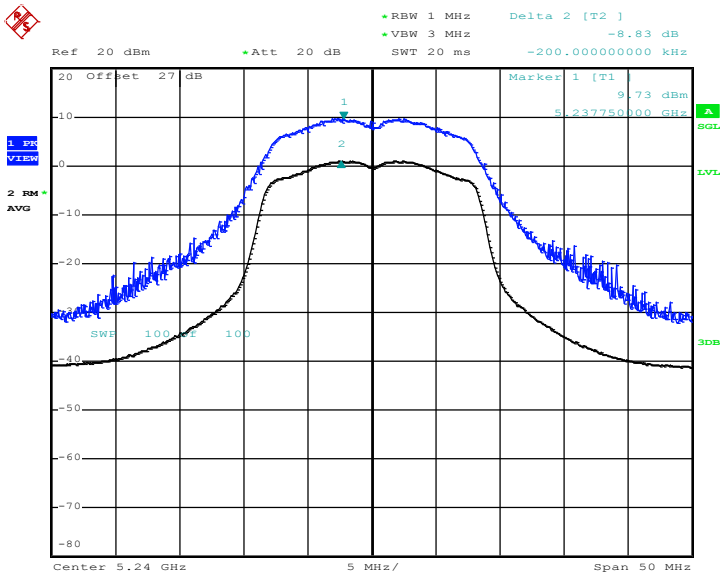
Peak Excursion Ratio Plot on 802.11a Channel 36



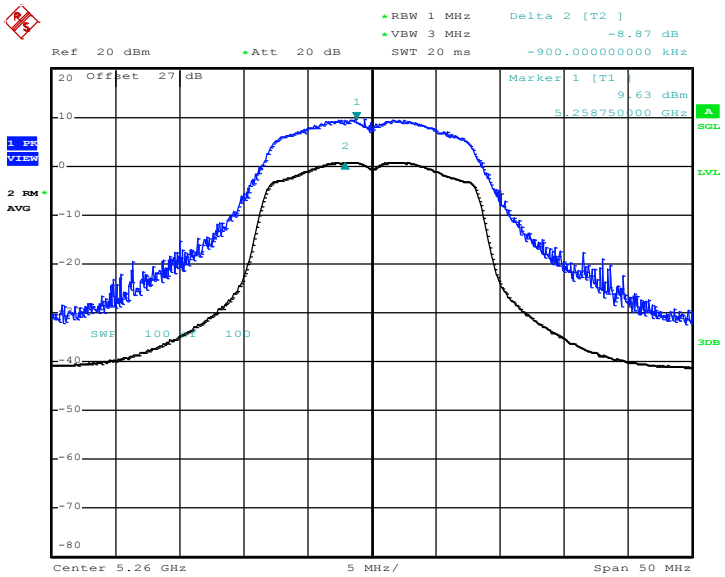
Peak Excursion Ratio Plot on 802.11a Channel 44



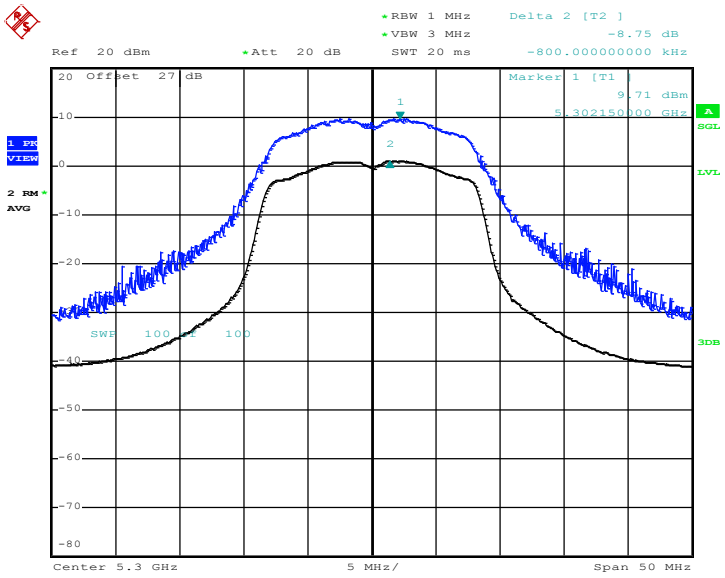
Peak Excursion Ratio Plot on 802.11a Channel 48



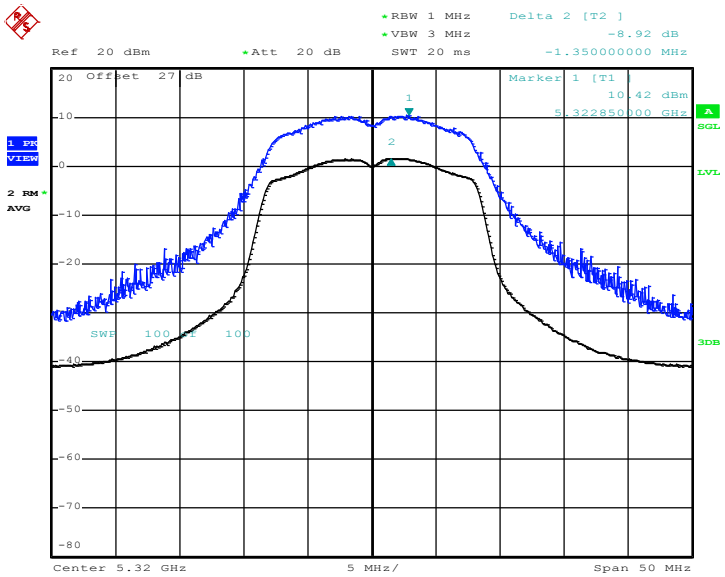
Peak Excursion Ratio Plot on 802.11a Channel 52



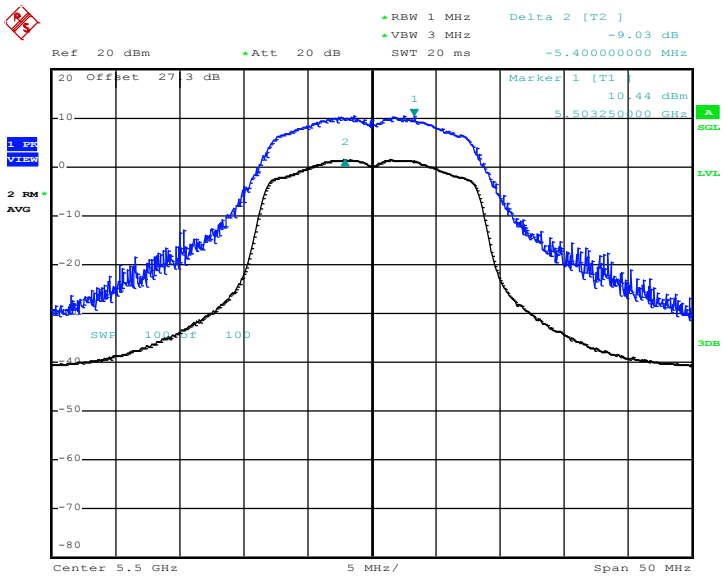
Peak Excursion Ratio Plot on 802.11a Channel 60



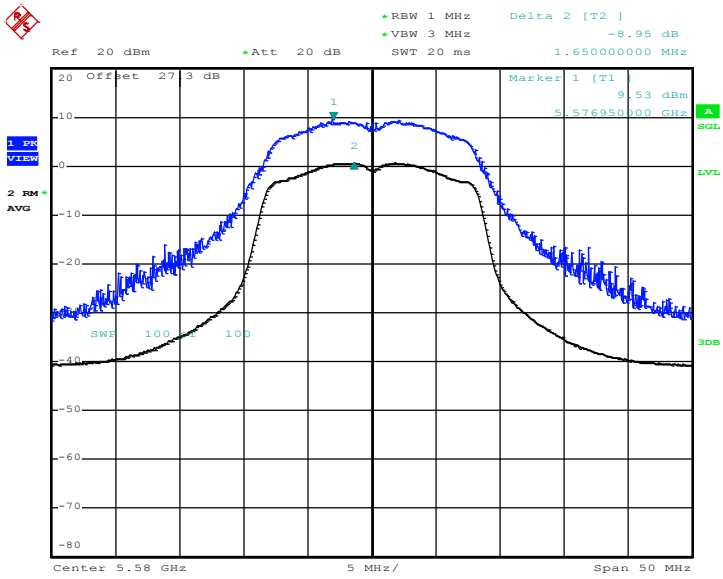
Peak Excursion Ratio Plot on 802.11a Channel 64



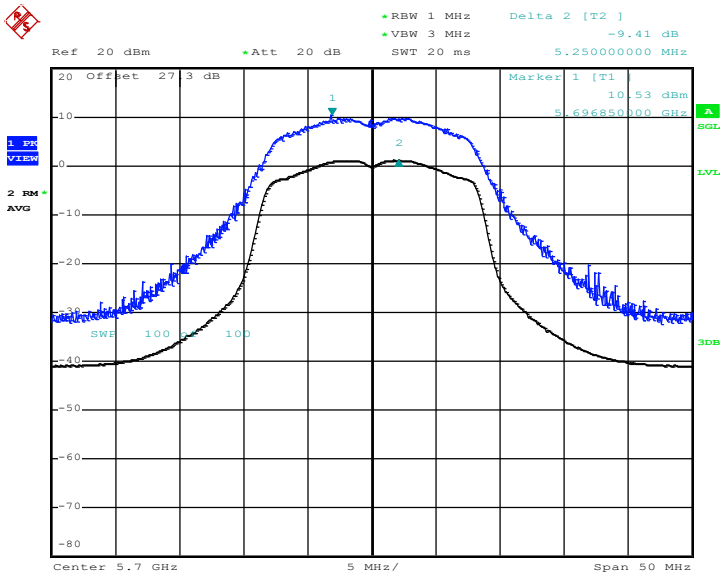
Peak Excursion Ratio Plot on 802.11a Channel 100



Peak Excursion Ratio Plot on 802.11a Channel 116

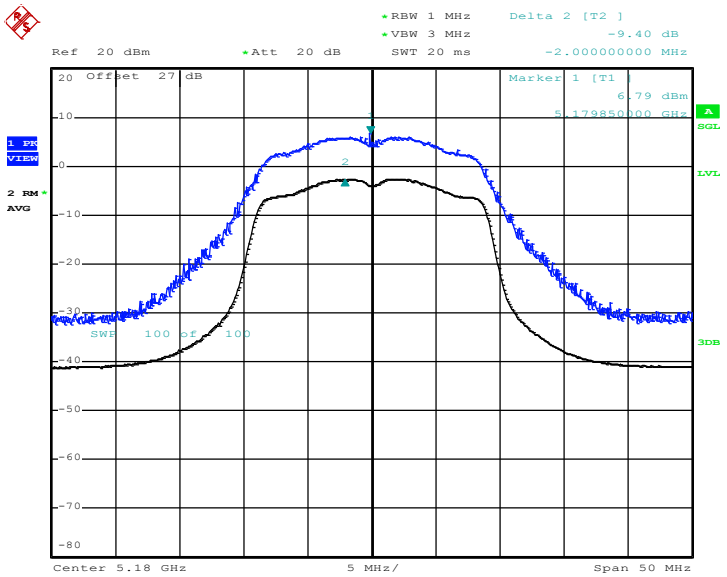


Peak Excursion Ratio Plot on 802.11a Channel 140

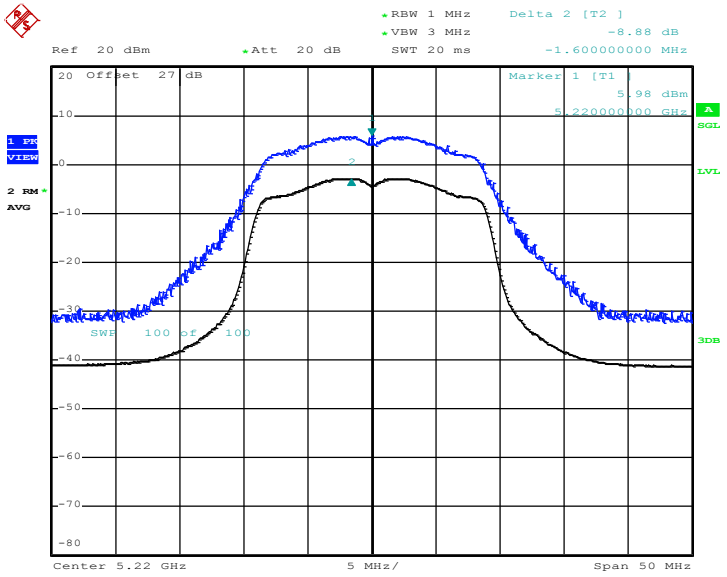


Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Coyote Lin	Relative Humidity :	45~49%

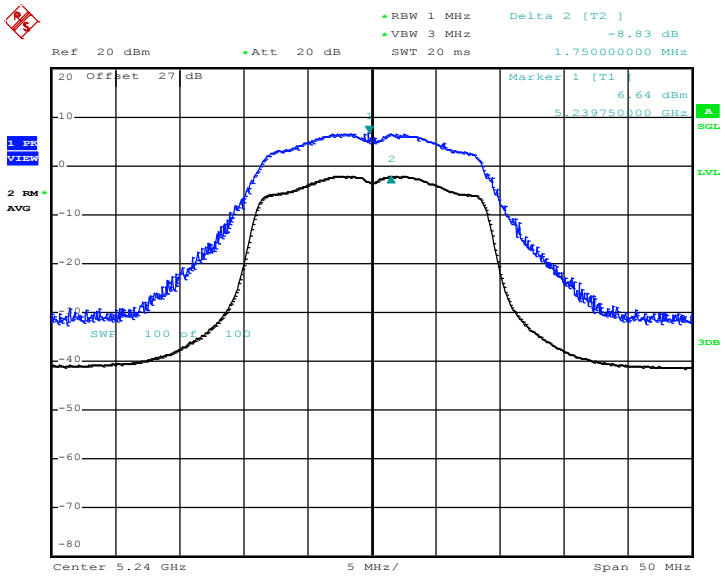
Peak Excursion Ratio Plot on 802.11n HT20 Channel 36



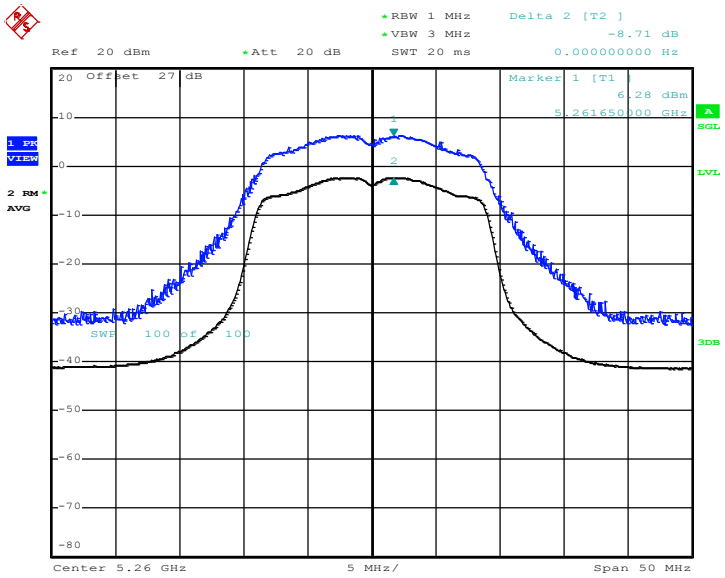
Peak Excursion Ratio Plot on 802.11n HT20 Channel 44



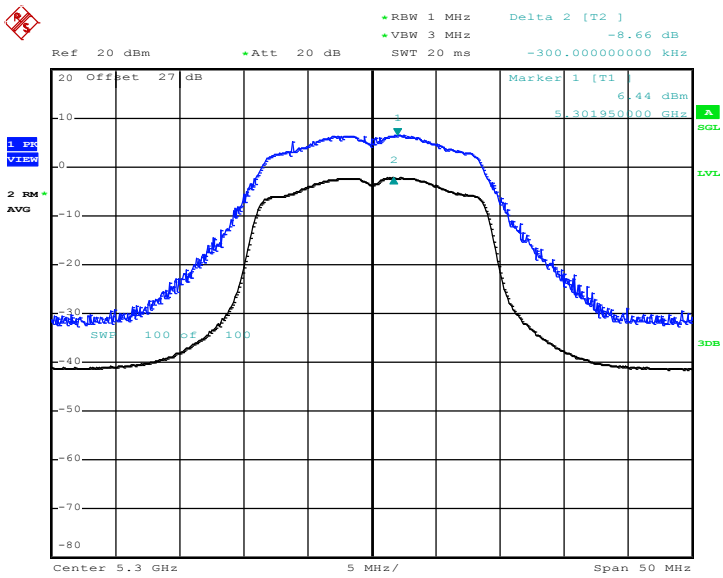
Peak Excursion Ratio Plot on 802.11n HT20 Channel 48



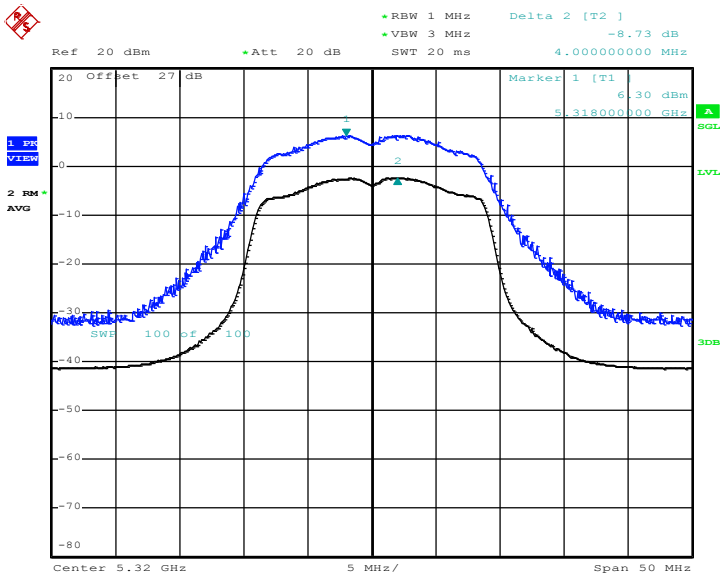
Peak Excursion Ratio Plot on 802.11n HT20 Channel 52



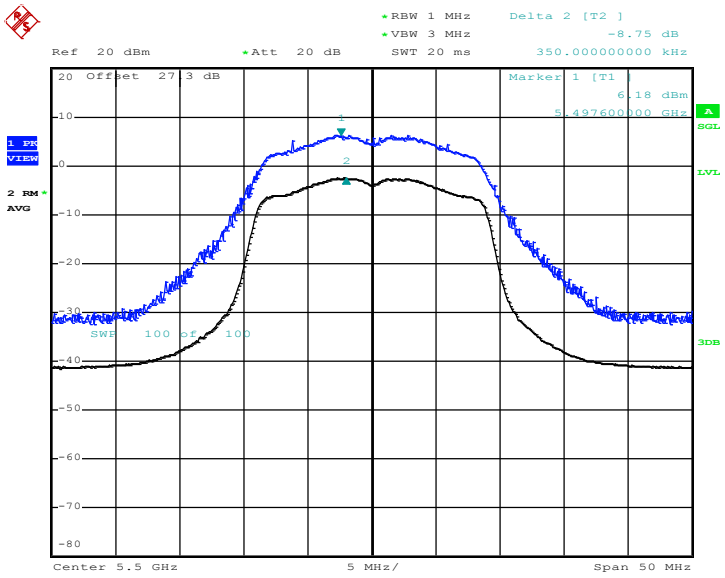
Peak Excursion Ratio Plot on 802.11n HT20 Channel 60



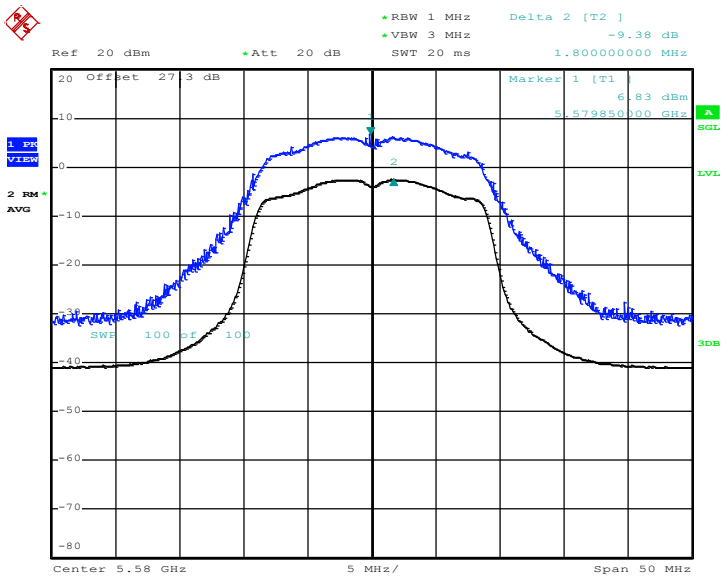
Peak Excursion Ratio Plot on 802.11n HT20 Channel 64



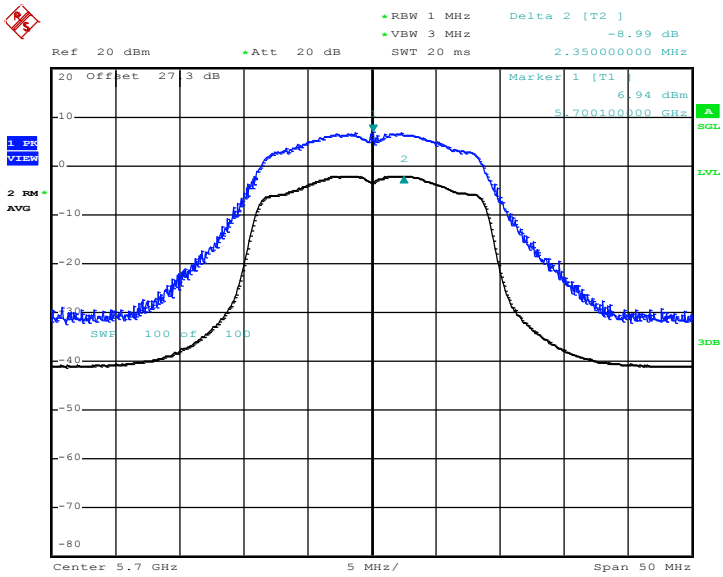
Peak Excursion Ratio Plot on 802.11n HT20 Channel 100



Peak Excursion Ratio Plot on 802.11n HT20 Channel 116



Peak Excursion Ratio Plot on 802.11n HT20 Channel 140



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.

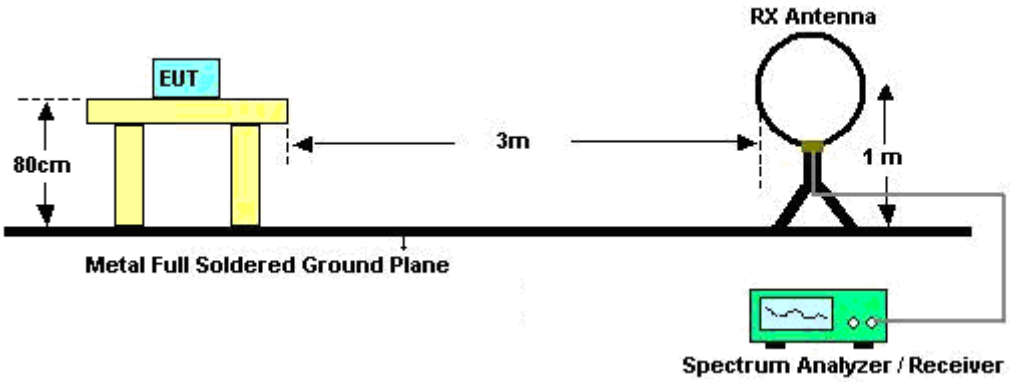
Band	Duty Cycle (%)	T(us)	1/T(KHz)	VBW Setting
802.11a	97.90	1400	0.714	1KHz
802.11n HT20	97.03	1306	0.766	1KHz

2. The EUT was placed on a rotatable table top 0.8 meter above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.

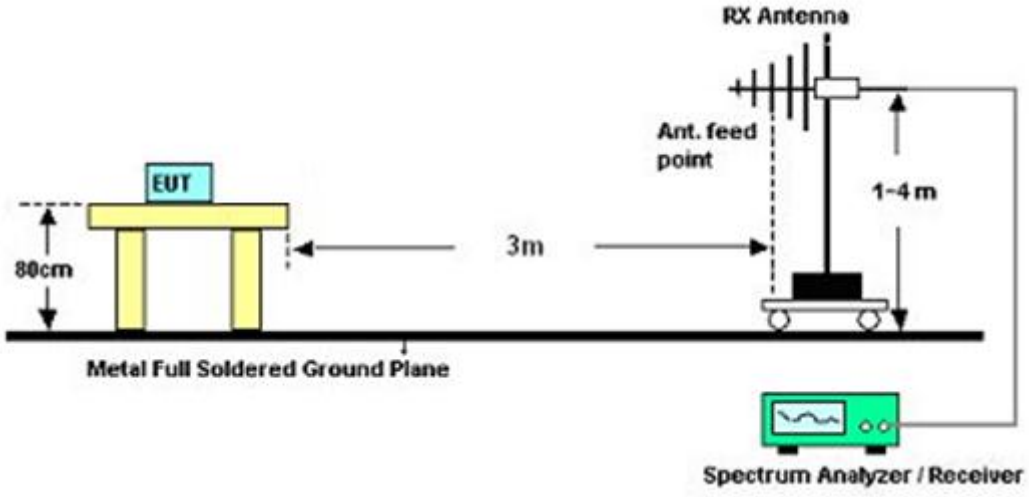
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.5.4 Test Setup

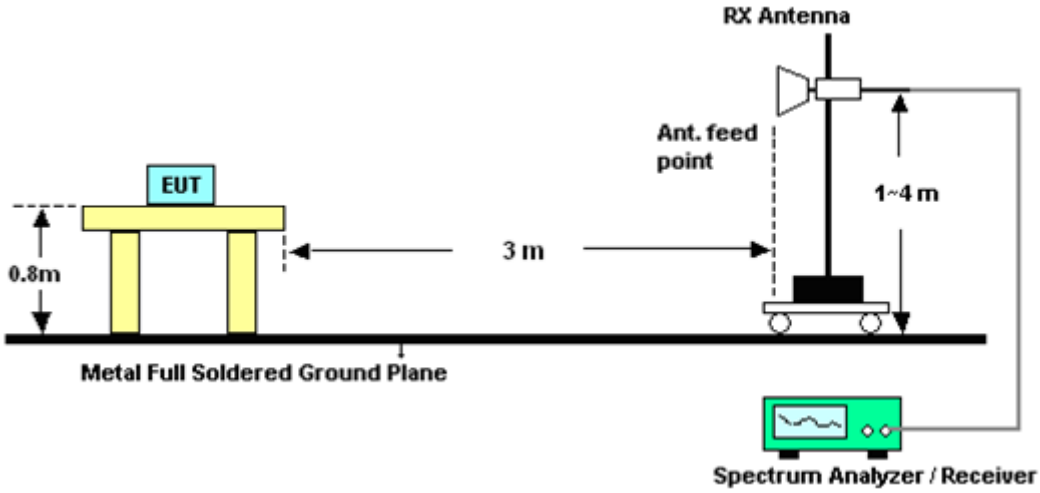
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

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

3.5.6 Test Result

3.5.6.1 Test Result of Radiated Band Edges

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	36	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5148.95	66.34	-7.66	74	55.61	34.29	9.41	32.97	112	343	Peak
5150	47.05	-6.95	54	36.32	34.29	9.41	32.97	112	343	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5148.95	59.96	-14.04	74	49.23	34.29	9.41	32.97	129	345	Peak
5150	42.79	-11.21	54	32.06	34.29	9.41	32.97	129	345	Average

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	48	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5139	54.57	-19.43	74	43.93	34.25	9.37	32.98	110	347	Peak
5149.1	41.83	-12.17	54	31.1	34.29	9.41	32.97	110	347	Average
5353.25	55.54	-18.46	74	43.92	34.81	9.74	32.93	110	347	Peak
5359.85	42.7	-11.3	54	31.04	34.81	9.78	32.93	110	347	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
5115.95	53.68	-20.32	74	43.13	34.2	9.33	32.98	100	342	Peak
5142.1	40.82	-13.18	54	30.09	34.29	9.41	32.97	100	342	Average
5361.25	54.7	-19.3	74	43	34.85	9.78	32.93	100	342	Peak
5363.45	42.15	-11.85	54	30.45	34.85	9.78	32.93	100	342	Average

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	52	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5130.8	54.01	-19.99	74	43.37	34.25	9.37	32.98	110	349	Peak
5133.1	41.14	-12.86	54	30.5	34.25	9.37	32.98	110	349	Average
5377.35	55.86	-18.14	74	44.16	34.85	9.78	32.93	110	349	Peak
5353.55	42.93	-11.07	54	31.31	34.81	9.74	32.93	110	349	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
5124.75	53.85	-20.15	74	43.21	34.25	9.37	32.98	116	35	Peak
5134.25	40.94	-13.06	54	30.3	34.25	9.37	32.98	116	35	Average
5363.05	55.22	-18.78	74	43.52	34.85	9.78	32.93	116	35	Peak
5351.4	42.22	-11.78	54	30.6	34.81	9.74	32.93	116	35	Average

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	64	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5351.3	65.64	-8.36	74	54.02	34.81	9.74	32.93	162	331	Peak
5350	47.44	-6.56	54	35.82	34.81	9.74	32.93	162	331	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
5356.2	60.97	-13.03	74	49.31	34.81	9.78	32.93	100	68	Peak
5350.2	44.52	-9.48	54	32.9	34.81	9.74	32.93	100	68	Average

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	100	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5459.12	60.94	-13.06	74	48.84	35.07	9.94	32.91	104	337	Peak
5470	66.28	-2.02	68.3	54.14	35.11	9.94	32.91	104	337	Peak
5460	45.44	-8.56	54	33.34	35.07	9.94	32.91	104	337	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
5459.2	55.49	-18.51	74	43.39	35.07	9.94	32.91	146	0	Peak
5470	61.92	-6.38	68.3	49.78	35.11	9.94	32.91	146	0	Peak
5455.12	42.71	-11.29	54	30.61	35.07	9.94	32.91	146	0	Average

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	140	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	57.38	-10.92	68.3	45.39	35.33	9.92	33.26	100	333	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	54.07	-14.23	68.3	42.08	35.33	9.92	33.26	129	360	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	36	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5148.75	55.41	-18.59	74	44.68	34.29	9.41	32.97	100	350	Peak
5148.85	42.96	-11.04	54	32.23	34.29	9.41	32.97	100	350	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
5141.45	53.95	-20.05	74	43.22	34.29	9.41	32.97	113	348	Peak
5148.85	41.16	-12.84	54	30.43	34.29	9.41	32.97	113	348	Average

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	48	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5138.05	54.77	-19.23	74	44.13	34.25	9.37	32.98	109	346	Peak
5149.6	41.45	-12.55	54	30.72	34.29	9.41	32.97	109	346	Average
5360.55	55.81	-18.19	74	44.11	34.85	9.78	32.93	109	346	Peak
5350.3	43.15	-10.85	54	31.53	34.81	9.74	32.93	109	346	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5147.35	53.74	-20.26	74	43.01	34.29	9.41	32.97	140	352	Peak
5149.3	40.92	-13.08	54	30.19	34.29	9.41	32.97	140	352	Average
5356.4	55.58	-18.42	74	43.92	34.81	9.78	32.93	140	352	Peak
5364.5	42.38	-11.62	54	30.68	34.85	9.78	32.93	140	352	Average

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	52	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5135.45	54.74	-19.26	74	44.1	34.25	9.37	32.98	111	345	Peak
5149.8	41.84	-12.16	54	31.11	34.29	9.41	32.97	111	345	Average
5365.75	55.85	-18.15	74	44.15	34.85	9.78	32.93	111	345	Peak
5357.95	43.11	-10.89	54	31.45	34.81	9.78	32.93	111	345	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5136.35	53.88	-20.12	74	43.24	34.25	9.37	32.98	116	87	Peak
5134.1	40.97	-13.03	54	30.33	34.25	9.37	32.98	116	87	Average
5366.4	55.08	-18.92	74	43.38	34.85	9.78	32.93	116	87	Peak
5392.4	42.28	-11.72	54	30.48	34.9	9.82	32.92	116	87	Average

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	64	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350.55	58.11	-15.89	74	46.49	34.81	9.74	32.93	110	12	Peak
5350.7	45.22	-8.78	54	33.6	34.81	9.74	32.93	110	12	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
5368.9	55.92	-18.08	74	44.22	34.85	9.78	32.93	139	61	Peak
5351.3	43.4	-10.6	54	31.78	34.81	9.74	32.93	139	61	Average

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	100	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5459.04	57.19	-16.81	74	45.09	35.07	9.94	32.91	154	320	Peak
5470	56.51	-11.79	68.3	44.37	35.11	9.94	32.91	154	320	Peak
5460	44.16	-9.84	54	32.06	35.07	9.94	32.91	154	320	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
5432.16	55.29	-18.71	74	43.27	35.03	9.9	32.91	111	83	Peak
5470	54.8	-13.5	68.3	42.66	35.11	9.94	32.91	111	83	Peak
5430.96	42.26	-11.74	54	30.24	35.03	9.9	32.91	111	83	Average

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	140	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	54.33	-13.97	68.3	42.34	35.33	9.92	33.26	100	337	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	53.79	-14.51	68.3	41.8	35.33	9.92	33.26	106	6	Peak

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

Test Mode :	802.11a	**Temperature :**	22~24°C
Test Channel :	36	**Relative Humidity :**	50~52%
Test Engineer :	Kyle Jhuang	**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	102.67	-	-	91.81	34.38	9.45	32.97	112	343	Average
5180	113.1	-	-	102.24	34.38	9.45	32.97	112	343	Peak
10359	40.8	-27.5	68.3	50.76	37.29	11.31	58.56	100	0	Peak

Test Mode :	802.11a	**Temperature :**	22~24°C
Test Channel :	36	**Relative Humidity :**	50~52%
Test Engineer :	Kyle Jhuang	**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	94.88	-	-	84.02	34.38	9.45	32.97	129	345	Average
5180	105.4	-	-	94.54	34.38	9.45	32.97	129	345	Peak
10359	41.35	-26.95	68.3	51.31	37.29	11.31	58.56	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	44	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
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	102.71	-	-	91.68	34.46	9.53	32.96	165	345	Average
5220	112.76	-	-	101.73	34.46	9.53	32.96	165	345	Peak
10440	40.82	-27.48	68.3	50.88	37.35	11.21	58.62	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	44	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	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	96.8	-	-	85.77	34.46	9.53	32.96	104	29	Average
5220	107.38	-	-	96.35	34.46	9.53	32.96	104	29	Peak
10440	40.87	-27.43	68.3	50.93	37.35	11.21	58.62	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	48	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
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	102.15	-	-	91.02	34.51	9.57	32.95	110	347	Average
5240	112.67	-	-	101.54	34.51	9.57	32.95	110	347	Peak
10479	41.29	-27.01	68.3	51.42	37.39	11.14	58.66	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	48	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	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	94.82	-	-	83.69	34.51	9.57	32.95	100	342	Average
5240	105.49	-	-	94.36	34.51	9.57	32.95	100	342	Peak
10479	40.59	-27.71	68.3	50.72	37.39	11.14	58.66	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	52	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
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	101.52	-	-	90.26	34.59	9.62	32.95	110	349	Average
5260	112.03	-	-	100.77	34.59	9.62	32.95	110	349	Peak
10521	41.93	-26.37	68.3	51.97	37.42	11.21	58.67	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	52	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	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	94.89	-	-	83.63	34.59	9.62	32.95	116	35	Average
5260	105.95	-	-	94.69	34.59	9.62	32.95	116	35	Peak
10521	42.1	-26.2	68.3	52.14	37.42	11.21	58.67	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	60	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. 10599 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5300	102.69	-	-	91.29	34.68	9.66	32.94	109	349	Average
5300	113.54	-	-	102.14	34.68	9.66	32.94	109	349	Peak
10599	40.61	-27.69	68.3	50.24	37.5	11.51	58.64	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	60	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. 10599 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5300	94.9	-	-	83.5	34.68	9.66	32.94	139	350	Average
5300	105.22	-	-	93.82	34.68	9.66	32.94	139	350	Peak
10599	41.98	-26.32	68.3	51.61	37.5	11.51	58.64	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	64	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5320	102.51	-	-	91.03	34.72	9.7	32.94	162	331	Average
5320	112.96	-	-	101.48	34.72	9.7	32.94	162	331	Peak
10641	42.71	-31.29	74	52.09	37.54	11.71	58.63	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	64	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5320	96.11	-	-	84.63	34.72	9.7	32.94	100	68	Average
5320	106.96	-	-	95.48	34.72	9.7	32.94	100	68	Peak
10641	42.48	-31.52	74	51.86	37.54	11.71	58.63	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	100	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.81	19.98	-20.02	40	32.03	19.28	0.54	31.87	-	-	Peak
186.87	20.83	-22.67	43.5	41.87	8.97	1.27	31.28	-	-	Peak
291.63	28.93	-17.07	46	45.43	13.19	1.71	31.4	102	218	Peak
326.6	19.32	-26.68	46	34.67	14.03	1.84	31.22	-	-	Peak
406.4	20.62	-25.38	46	33.76	16.14	2.16	31.44	-	-	Peak
728.4	23.98	-22.02	46	30.46	21.02	3.01	30.51	-	-	Peak
5500	102.97	-	-	90.65	35.2	10.02	32.9	104	337	Average
5500	113.93	-	-	101.61	35.2	10.02	32.9	104	337	Peak
11001	42.37	-31.63	74	49.79	37.9	13.22	58.54	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	100	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.59	30.53	-9.47	40	45.43	16.4	0.58	31.88	106	163	Peak
165.27	26.97	-16.53	43.5	47.04	10.03	1.23	31.33	-	-	Peak
291.63	21.39	-24.61	46	37.89	13.19	1.71	31.4	-	-	Peak
323.1	20.52	-25.48	46	35.93	13.93	1.82	31.16	-	-	Peak
539.4	19.94	-26.06	46	29.83	18.76	2.53	31.18	-	-	Peak
806.1	24.45	-21.55	46	29.34	22.16	3.16	30.21	-	-	Peak
5500	96.37	-	-	84.05	35.2	10.02	32.9	146	0	Average
5500	106.79	-	-	94.47	35.2	10.02	32.9	146	0	Peak
11001	42.84	-31.16	74	50.26	37.9	13.22	58.54	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	116	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5580	102.77	-	-	90.56	35.24	9.99	33.02	102	331	Average
5580	113.38	-	-	101.17	35.24	9.99	33.02	102	331	Peak
11160	43.38	-30.62	74	50.65	38.07	13.2	58.54	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	116	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5580	96.89	-	-	84.68	35.24	9.99	33.02	145	5	Average
5580	107.21	-	-	95	35.24	9.99	33.02	145	5	Peak
11160	42.92	-31.08	74	50.19	38.07	13.2	58.54	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	140	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5700	98.08	-	-	86.06	35.31	9.93	33.22	100	333	Average
5700	108.49	-	-	96.47	35.31	9.93	33.22	100	333	Peak
11400	42.63	-31.37	74	49.71	38.3	13.16	58.54	100	0	Peak

Test Mode :	802.11a	Temperature :	22~24°C
Test Channel :	140	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5700	92.45	-	-	80.43	35.31	9.93	33.22	129	360	Average
5700	102.59	-	-	90.57	35.31	9.93	33.22	129	360	Peak
11400	42.34	-31.66	74	49.42	38.3	13.16	58.54	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	36	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	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	98.69	-	-	87.83	34.38	9.45	32.97	100	350	Average
5180	109.65	-	-	98.79	34.38	9.45	32.97	100	350	Peak
10359	41.37	-26.93	68.3	51.33	37.29	11.31	58.56	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	36	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	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	91.84	-	-	80.98	34.38	9.45	32.97	113	348	Average
5180	101.85	-	-	90.99	34.38	9.45	32.97	113	348	Peak
10359	41.63	-26.67	68.3	51.59	37.29	11.31	58.56	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	44	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
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	99.07	-	-	88.04	34.46	9.53	32.96	100	360	Average
5220	109.47	-	-	98.44	34.46	9.53	32.96	100	360	Peak
10440	40.07	-28.23	68.3	50.13	37.35	11.21	58.62	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	44	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	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	91.77	-	-	80.74	34.46	9.53	32.96	102	59	Average
5220	102.03	-	-	91	34.46	9.53	32.96	102	59	Peak
10440	40.48	-27.82	68.3	50.54	37.35	11.21	58.62	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	48	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
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	98.47	-	-	87.34	34.51	9.57	32.95	109	346	Average
5240	108.99	-	-	97.86	34.51	9.57	32.95	109	346	Peak
10479	41.78	-26.52	68.3	51.91	37.39	11.14	58.66	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	48	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	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	91.88	-	-	80.75	34.51	9.57	32.95	140	352	Average
5240	102.44	-	-	91.31	34.51	9.57	32.95	140	352	Peak
10479	41.26	-27.04	68.3	51.39	37.39	11.14	58.66	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	52	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
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	99.93	-	-	88.67	34.59	9.62	32.95	111	345	Average
5260	110.17	-	-	98.91	34.59	9.62	32.95	111	345	Peak
10521	42.15	-26.15	68.3	52.19	37.42	11.21	58.67	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	52	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	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	91.81	-	-	80.55	34.59	9.62	32.95	116	87	Average
5260	102.2	-	-	90.94	34.59	9.62	32.95	116	87	Peak
10521	41.28	-27.02	68.3	51.32	37.42	11.21	58.67	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	60	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. 10599 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5300	98.95	-	-	87.55	34.68	9.66	32.94	100	7	Average
5300	109.59	-	-	98.19	34.68	9.66	32.94	100	7	Peak
10599	41.82	-26.48	68.3	51.45	37.5	11.51	58.64	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	60	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. 10599 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5300	92.7	-	-	81.3	34.68	9.66	32.94	100	350	Average
5300	103.42	-	-	92.02	34.68	9.66	32.94	100	350	Peak
10599	41.05	-27.25	68.3	50.68	37.5	11.51	58.64	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	64	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5320	98.12	-	-	86.64	34.72	9.7	32.94	110	12	Average
5320	108.56	-	-	97.08	34.72	9.7	32.94	110	12	Peak
10641	41.52	-32.48	74	50.9	37.54	11.71	58.63	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	64	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5320	94.41	-	-	82.93	34.72	9.7	32.94	139	61	Average
5320	104.77	-	-	93.29	34.72	9.7	32.94	139	61	Peak
10641	42.25	-31.75	74	51.63	37.54	11.71	58.63	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	100	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5500	98.06	-	-	85.74	35.2	10.02	32.9	154	320	Average
5500	108.73	-	-	96.41	35.2	10.02	32.9	154	320	Peak
11001	43.18	-30.82	74	50.6	37.9	13.22	58.54	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	100	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5500	91.41	-	-	79.09	35.2	10.02	32.9	111	83	Average
5500	101.89	-	-	89.57	35.2	10.02	32.9	111	83	Peak
11001	42.33	-31.67	74	49.75	37.9	13.22	58.54	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	116	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5580	99.14	-	-	86.93	35.24	9.99	33.02	114	336	Average
5580	109.6	-	-	97.39	35.24	9.99	33.02	114	336	Peak
11160	43.06	-30.94	74	50.33	38.07	13.2	58.54	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	116	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5580	93.6	-	-	81.39	35.24	9.99	33.02	171	12	Average
5580	104.07	-	-	91.86	35.24	9.99	33.02	171	12	Peak
11160	43.28	-30.72	74	50.55	38.07	13.2	58.54	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	140	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5700	94.72	-	-	82.7	35.31	9.93	33.22	100	337	Average
5700	105.14	-	-	93.12	35.31	9.93	33.22	100	337	Peak
11400	43.26	-30.74	74	50.34	38.3	13.16	58.54	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Channel :	140	Relative Humidity :	50~52%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5700	90.49	-	-	78.47	35.31	9.93	33.22	106	6	Average
5700	100.91	-	-	88.89	35.31	9.93	33.22	106	6	Peak
11400	42.46	-31.54	74	49.54	38.3	13.16	58.54	100	0	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.

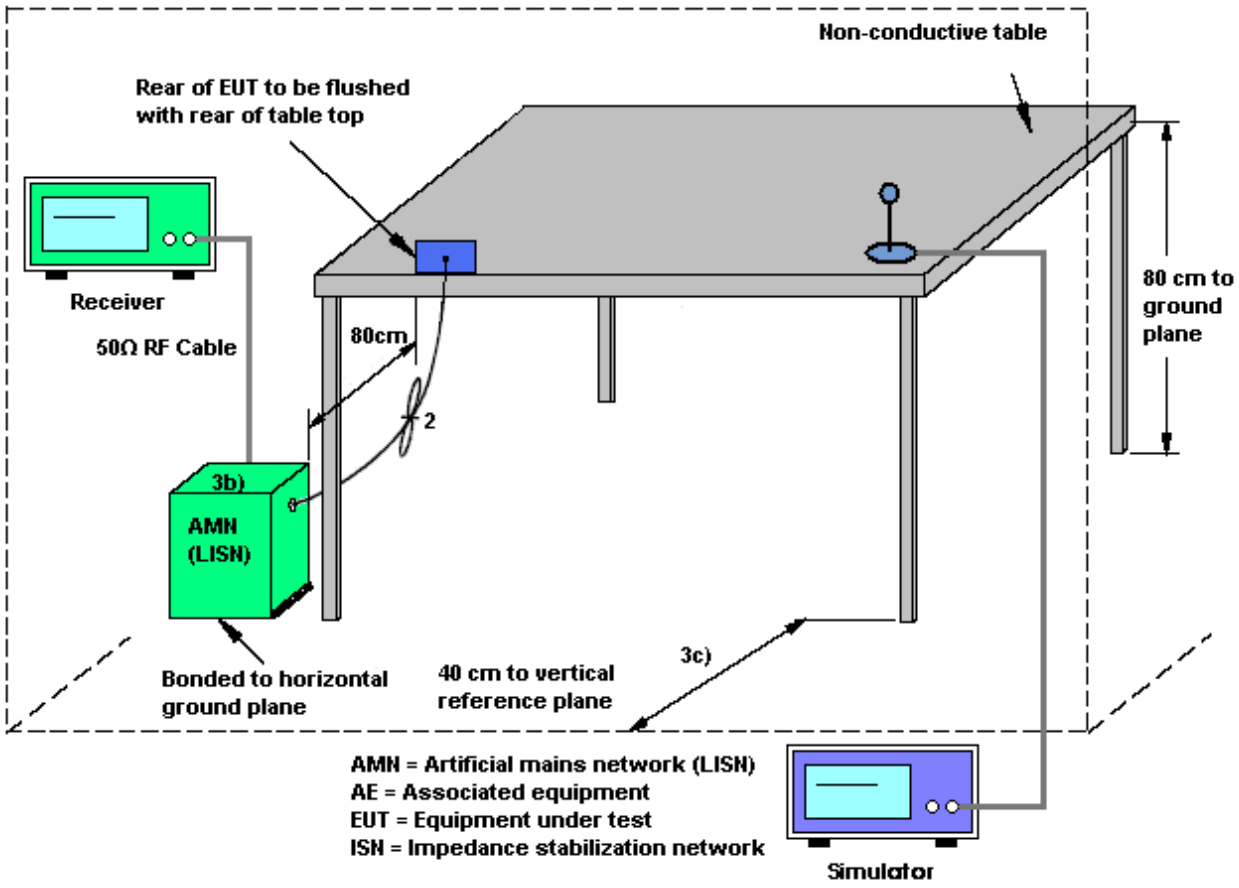
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

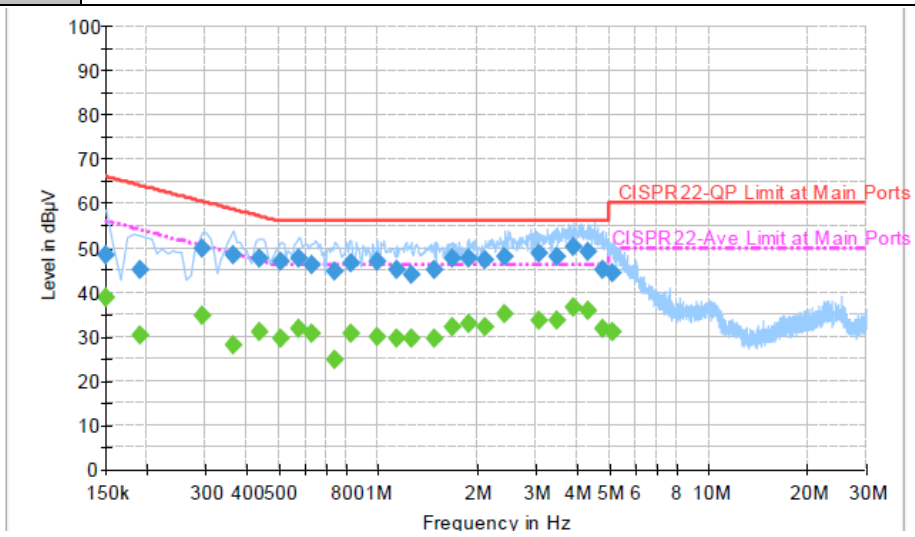
1. The testing follows the guidelines in ANSI C63.4-2003 and ANSI C63.10-2009 test site requirement.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a 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

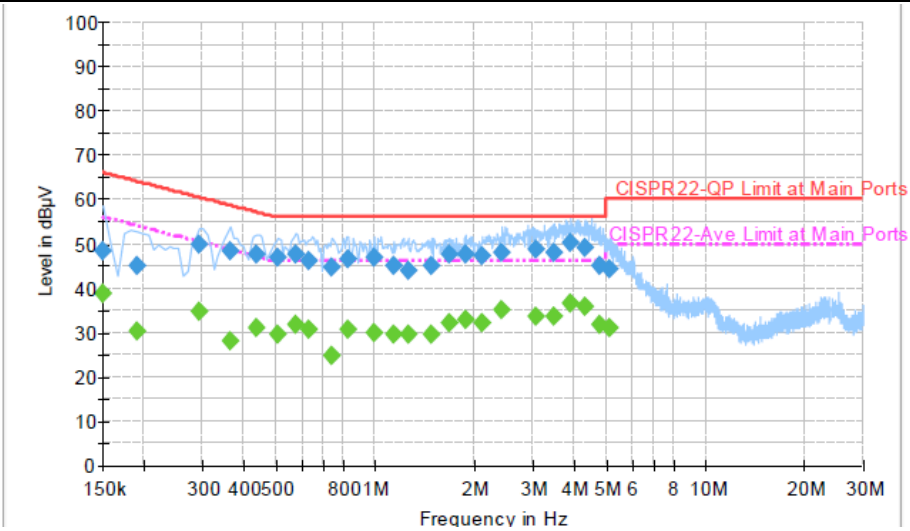
Test Mode :	Mode 1	**Temperature :**	20~22℃
Test Engineer :	Slash Huang	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (5G) Link + Camera + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	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)
0.150000	48.3	Off	L1	19.4	17.7	66.0
0.190000	45.2	Off	L1	19.4	18.8	64.0
0.294000	49.7	Off	L1	19.4	10.7	60.4
0.366000	48.2	Off	L1	19.4	10.4	58.6
0.438000	47.5	Off	L1	19.4	9.6	57.1
0.510000	46.9	Off	L1	19.4	9.1	56.0
0.574000	47.7	Off	L1	19.4	8.3	56.0
0.630000	46.1	Off	L1	19.4	9.9	56.0
0.742000	44.6	Off	L1	19.4	11.4	56.0
0.830000	46.4	Off	L1	19.5	9.6	56.0
0.990000	46.8	Off	L1	19.4	9.2	56.0
1.134000	45.1	Off	L1	19.4	10.9	56.0
1.262000	43.9	Off	L1	19.5	12.1	56.0
1.486000	45.2	Off	L1	19.5	10.8	56.0
1.670000	47.5	Off	L1	19.5	8.5	56.0
1.878000	47.7	Off	L1	19.5	8.3	56.0

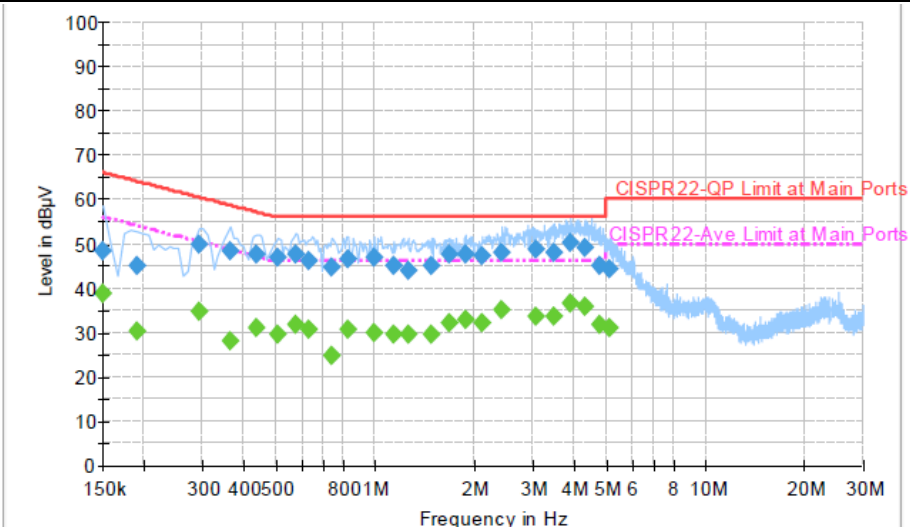
Test Mode :	Mode 1	**Temperature :**	20~22℃
Test Engineer :	Slash Huang	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (5G) Link + Camera + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	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)
2.110000	47.4	Off	L1	19.5	8.6	56.0
2.422000	47.9	Off	L1	19.6	8.1	56.0
3.086000	48.7	Off	L1	19.6	7.3	56.0
3.470000	48.0	Off	L1	19.6	8.0	56.0
3.910000	50.2	Off	L1	19.6	5.8	56.0
4.302000	49.1	Off	L1	19.6	6.9	56.0
4.774000	45.2	Off	L1	19.6	10.8	56.0
5.110000	44.4	Off	L1	19.6	15.6	60.0

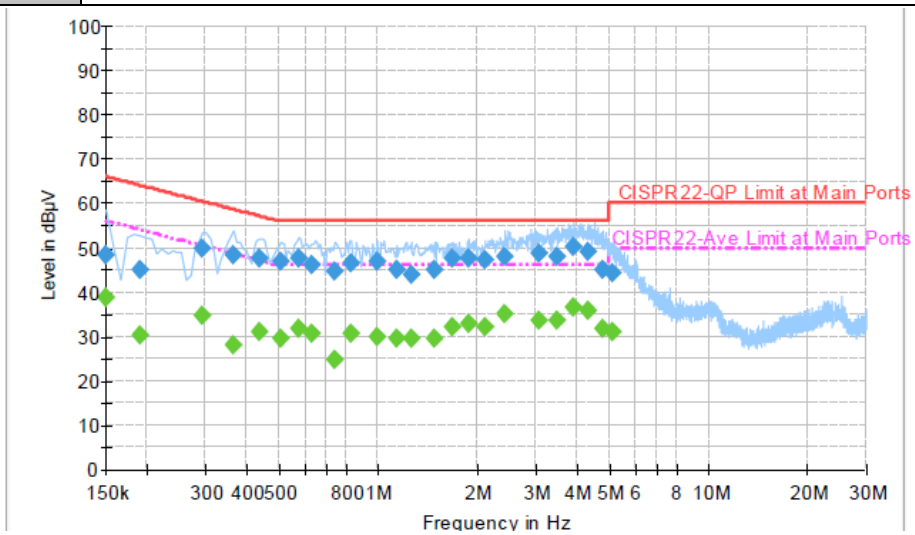
Test Mode :	Mode 1	**Temperature :**	20~22℃
Test Engineer :	Slash Huang	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (5G) Link + Camera + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	38.8	Off	L1	19.4	17.2	56.0
0.190000	30.2	Off	L1	19.4	23.8	54.0
0.294000	34.6	Off	L1	19.4	15.8	50.4
0.366000	28.1	Off	L1	19.4	20.5	48.6
0.438000	31.0	Off	L1	19.4	16.1	47.1
0.510000	29.7	Off	L1	19.4	16.3	46.0
0.574000	31.7	Off	L1	19.4	14.3	46.0
0.630000	30.7	Off	L1	19.4	15.3	46.0
0.742000	24.8	Off	L1	19.4	21.2	46.0
0.830000	30.8	Off	L1	19.5	15.2	46.0
0.990000	29.7	Off	L1	19.4	16.3	46.0
1.134000	29.7	Off	L1	19.4	16.3	46.0
1.262000	29.7	Off	L1	19.5	16.3	46.0
1.486000	29.7	Off	L1	19.5	16.3	46.0
1.670000	32.1	Off	L1	19.5	13.9	46.0
1.878000	32.7	Off	L1	19.5	13.3	46.0

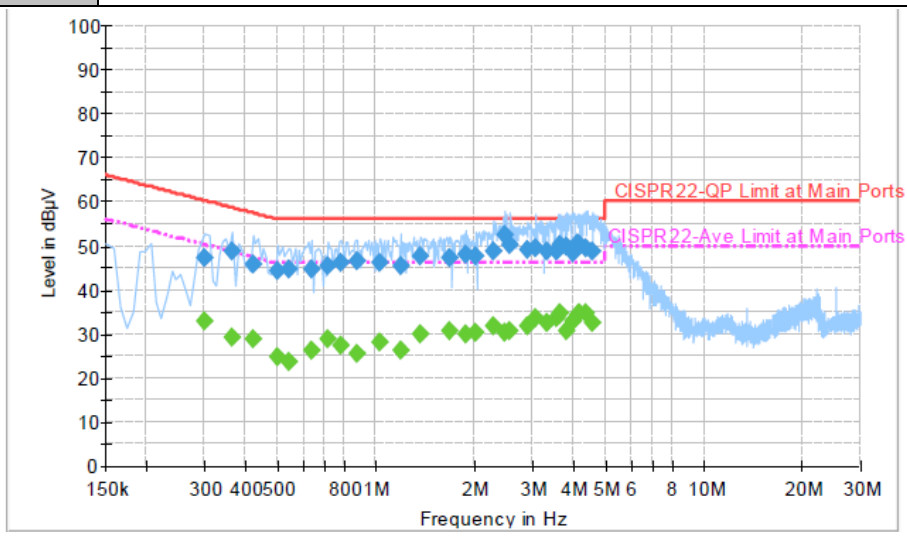
Test Mode :	Mode 1	**Temperature :**	20~22℃
Test Engineer :	Slash Huang	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (5G) Link + Camera + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
2.110000	32.1	Off	L1	19.5	13.9	46.0
2.422000	34.9	Off	L1	19.6	11.1	46.0
3.086000	33.4	Off	L1	19.6	12.6	46.0
3.470000	33.4	Off	L1	19.6	12.6	46.0
3.910000	36.5	Off	L1	19.6	9.5	46.0
4.302000	35.9	Off	L1	19.6	10.1	46.0
4.774000	31.7	Off	L1	19.6	14.3	46.0
5.110000	31.0	Off	L1	19.6	19.0	50.0

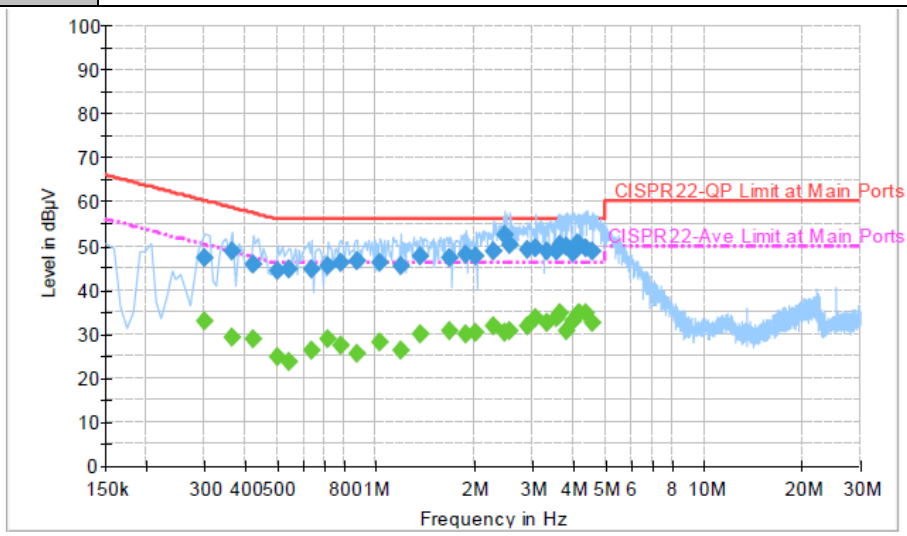
Test Mode :	Mode 1	**Temperature :**	20~22℃
Test Engineer :	Slash Huang	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (5G) Link + Camera + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	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)
0.302000	47.4	Off	N	19.4	12.8	60.2
0.366000	48.6	Off	N	19.4	10.0	58.6
0.422000	45.7	Off	N	19.4	11.7	57.4
0.502000	44.4	Off	N	19.4	11.6	56.0
0.542000	44.8	Off	N	19.4	11.2	56.0
0.638000	44.6	Off	N	19.4	11.4	56.0
0.718000	45.3	Off	N	19.5	10.7	56.0
0.782000	46.1	Off	N	19.5	9.9	56.0
0.878000	46.6	Off	N	19.4	9.4	56.0
1.030000	46.0	Off	N	19.4	10.0	56.0
1.190000	45.3	Off	N	19.5	10.7	56.0
1.374000	47.5	Off	N	19.5	8.5	56.0
1.670000	47.1	Off	N	19.5	8.9	56.0
1.878000	48.0	Off	N	19.5	8.0	56.0

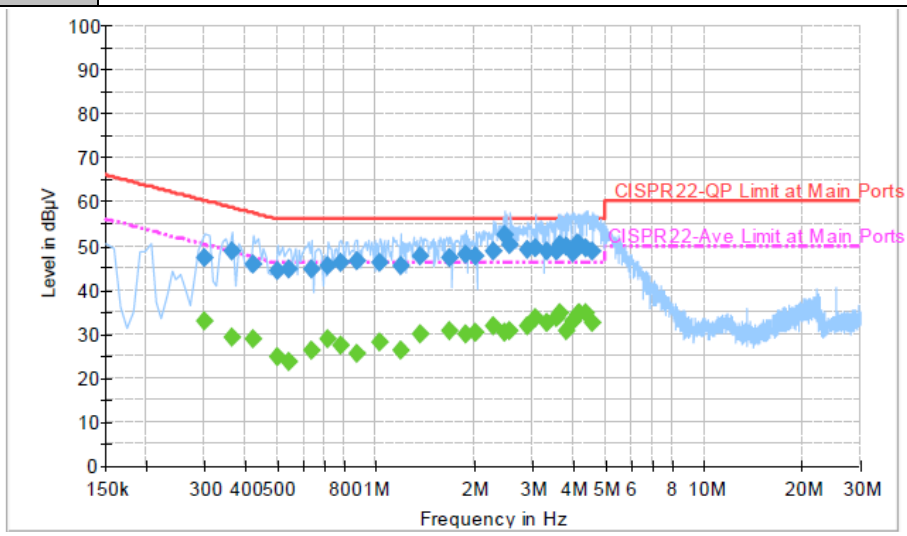
Test Mode :	Mode 1	**Temperature :**	20~22℃
Test Engineer :	Slash Huang	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (5G) Link + Camera + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	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)
2.022000	47.8	Off	N	19.6	8.2	56.0
2.278000	48.6	Off	N	19.6	7.4	56.0
2.470000	52.3	Off	N	19.6	3.7	56.0
2.574000	50.3	Off	N	19.6	5.7	56.0
2.918000	49.2	Off	N	19.6	6.8	56.0
3.070000	49.4	Off	N	19.6	6.6	56.0
3.326000	48.7	Off	N	19.7	7.3	56.0
3.550000	48.7	Off	N	19.6	7.3	56.0
3.654000	50.3	Off	N	19.6	5.7	56.0
3.830000	50.0	Off	N	19.6	6.0	56.0
3.982000	48.3	Off	N	19.6	7.7	56.0
4.118000	50.6	Off	N	19.6	5.4	56.0
4.198000	50.3	Off	N	19.6	5.7	56.0
4.366000	49.6	Off	N	19.6	6.4	56.0
4.590000	48.6	Off	N	19.7	7.4	56.0

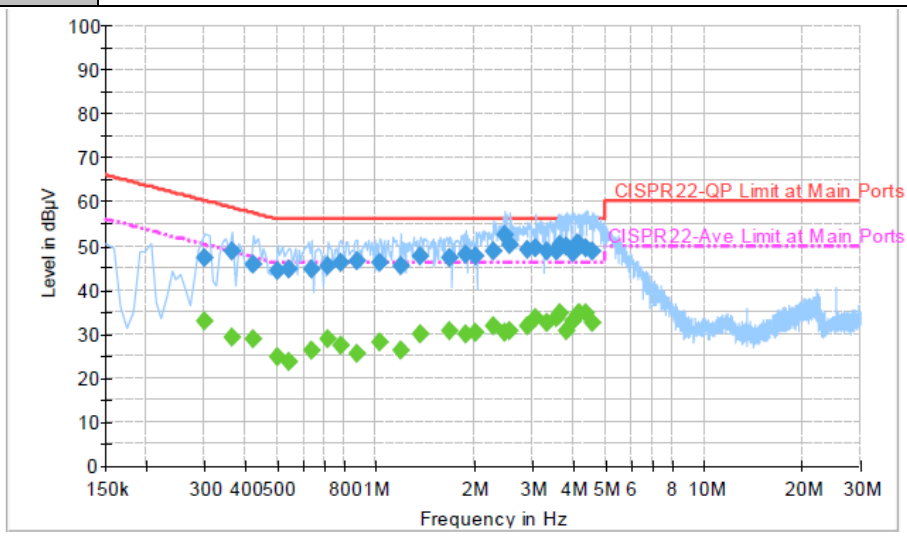
Test Mode :	Mode 1	**Temperature :**	20~22℃
Test Engineer :	Slash Huang	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (5G) Link + Camera + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.302000	32.8	Off	N	19.4	17.4	50.2
0.366000	29.1	Off	N	19.4	19.5	48.6
0.422000	28.8	Off	N	19.4	18.6	47.4
0.502000	24.8	Off	N	19.4	21.2	46.0
0.542000	23.6	Off	N	19.4	22.4	46.0
0.638000	26.3	Off	N	19.4	19.7	46.0
0.718000	28.8	Off	N	19.5	17.2	46.0
0.782000	27.3	Off	N	19.5	18.7	46.0
0.878000	25.6	Off	N	19.4	20.4	46.0
1.030000	28.0	Off	N	19.4	18.0	46.0
1.190000	26.2	Off	N	19.5	19.8	46.0
1.374000	29.9	Off	N	19.5	16.1	46.0
1.670000	30.5	Off	N	19.5	15.5	46.0
1.878000	30.0	Off	N	19.5	16.0	46.0

Test Mode :	Mode 1	**Temperature :**	20~22℃
Test Engineer :	Slash Huang	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (5G) Link + Camera + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
2.022000	30.3	Off	N	19.6	15.7	46.0
2.278000	31.9	Off	N	19.6	14.1	46.0
2.470000	30.3	Off	N	19.6	15.7	46.0
2.574000	30.6	Off	N	19.6	15.4	46.0
2.918000	31.9	Off	N	19.6	14.1	46.0
3.070000	33.6	Off	N	19.6	12.4	46.0
3.326000	32.5	Off	N	19.7	13.5	46.0
3.550000	33.7	Off	N	19.6	12.3	46.0
3.654000	34.7	Off	N	19.6	11.3	46.0
3.830000	30.5	Off	N	19.6	15.5	46.0
3.982000	33.0	Off	N	19.6	13.0	46.0
4.118000	34.4	Off	N	19.6	11.6	46.0
4.198000	34.7	Off	N	19.6	11.3	46.0
4.366000	34.6	Off	N	19.6	11.4	46.0
4.590000	32.6	Off	N	19.7	13.4	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.

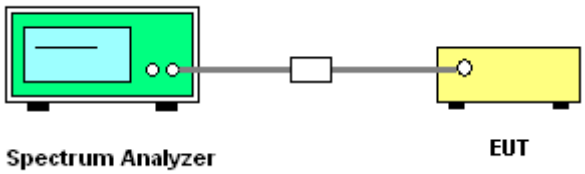
3.7.2 Measuring Instruments

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 :	Coyote Lin	Relative Humidity :	45~49%

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.20	5188.80	0.00
44	5220	5211.80	5228.20	0.00
48	5240	5231.80	5248.20	0.00
52	5260	5251.80	5268.20	0.00
60	5300	5291.80	5308.20	0.00
64	5320	5311.85	5328.20	4.70
100	5500	5491.80	5508.20	0.00
116	5580	5571.85	5588.15	0.00
140	5700	5691.85	5708.15	0.00

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

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.20	5188.80	0.00
44	5220	5211.20	5228.80	0.00
48	5240	5231.15	5248.80	-4.77
52	5260	5251.25	5268.75	0.00
60	5300	5291.20	5308.80	0.00
64	5320	5311.20	5328.75	-4.70
100	5500	5491.25	5508.75	0.00
116	5580	5571.25	5588.75	0.00
140	5700	5691.20	5708.80	0.00

3.8 Automatically Discontinue Transmission

3.8.1 Limit of Automatically Discontinue Transmission

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

3.8.2 Measuring Instruments

See list of measuring instruments of this test report.

3.8.3 Test Result of Automatically Discontinue Transmission

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

3.9 Antenna Requirements

3.9.1 Standard Applicable

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

3.9.2 Antenna Connected Construction

Non-standard connector used.

3.9.3 Antenna Gain

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

4 List of Measuring Equipment

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. 02, 2012 ~ Oct. 19, 2012	Jun. 05, 2013	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	1036004	300MHz~40GHz	Sep. 08, 2012	Oct. 02, 2012 ~ Oct. 19, 2012	Sep. 07, 2013	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Sep. 08, 2012	Oct. 02, 2012 ~ Oct. 19, 2012	Sep. 07, 2013	Conducted (TH02-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 22, 2011	Oct. 09, 2012 ~ Oct. 10, 2012	Oct. 21, 2012	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP30	101067	9KHz ~ 30GHz	Dec. 06, 2011	Oct. 09, 2012 ~ Oct. 10, 2012	Dec. 05, 2012	Radiation (03CH07-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Aug. 01, 2012	Oct. 09, 2012 ~ Oct. 10, 2012	Jul. 31, 2013	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1GHz ~ 26.5GHz	Dec. 05, 2011	Oct. 09, 2012 ~ Oct. 10, 2012	Dec. 04, 2012	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz.32 dB.GAIN	Feb. 27, 2012	Oct. 09, 2012 ~ Oct. 10, 2012	Feb. 26, 2013	Radiation (03CH07-HY)
Signal Analyzer	Rohde & Schwarz	FSQ	200578/026	20Hz~26.5GHz	Feb. 06, 2012	Oct. 09, 2012 ~ Oct. 10, 2012	Feb. 05, 2013	Radiation (03CH07-HY)
Pre Amplifier	MITEQ	AMF-7D-0010 1800-30-10P	159088	1GHz ~ 18GHz	Mar. 10, 2012	Oct. 09, 2012 ~ Oct. 10, 2012	Mar. 09, 2013	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Oct. 21, 2011	Oct. 09, 2012 ~ Oct. 10, 2012	Oct. 20, 2012	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9KHz ~ 30MHz	Jul. 03, 2012	Oct. 09, 2012 ~ Oct. 10, 2012	Jul. 02, 2014	Radiation (03CH07-HY)
EMI Test Receiver	R&S	ESCS 30	100356	9KHz ~ 2.75GHz	Oct. 27, 2011	Oct. 02, 2012	Oct. 26, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz ~ 30MHz	Dec. 09, 2011	Oct. 02, 2012	Dec. 08, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz ~ 30MHz	Dec. 06, 2011	Oct. 02, 2012	Dec. 05, 2012	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Oct. 02, 2012	N/A	Conduction (CO05-HY)
System Simulator	R&S	CMU200	117997	N/A	Aug. 22, 2011	Oct. 02, 2012	Aug. 21, 2013	Conduction (CO05-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**

Appendix A. Photographs of EUT

Please refer to Sporton report number EP232306-04 as below.