FCC RF Test Report

APPLICANT	:	**ZTE CORPORATION**
EQUIPMENT	:	**CDMA LTE multi-mode Digital Mobile Phone**
BRAND NAME	:	**ZTE**
MODEL NAME	:	**ZTE N9835**
FCC ID	:	**SRQ-ZTEN9835**
STANDARD	:	**FCC Part 15 Subpart E §15.407**
CLASSIFICATION	:	**(NII) Unlicensed National Information Infrastructure**

The product was received on Dec. 20, 2013 and testing was completed on Feb. 11, 2014. We, SPORTON INTERNATIONAL (KUNSAHN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown to be compliant with the applicable technical standards.

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

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

Testing Laboratory
2627

SPORTON INTERNATIONAL (KUNSHAN) INC.
No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR3D2003E	Rev. 01	Initial issue of report	Mar. 04, 2014

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	26dB Bandwidth	-	Pass	-
3.2	15.407(a)	Maximum Conducted Output Power	≤ 17	Pass	-
3.3	15.407(a)	Power Spectral Density	≤ 4	Pass	-
3.4	15.407(a)(6)	Peak Excursion Ratio	≤ 13dB	Pass	-
3.5	15.407(b)	Unwanted Emissions	≤ -17, -27 dBm (depend on band)&15.209(a)	Pass	Under limit 8.81 dB at 5148.550 MHz
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 14.05 dB at 0.560 MHz
3.7	15.407(g)	Frequency Stability	Within Operation Band	Pass	-
3.8	15.407(c)	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.9	15.203 & 15.407(a)	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District,Shenzhen, Guangdong, 518057, P.R.China

1.2 Manufacturer

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District,Shenzhen, Guangdong, 518057, P.R.China

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	CDMA LTE multi-mode Digital Mobile Phone
Brand Name	ZTE
Model Name	ZTE N9835
FCC ID	SRQ-ZTEN9835
EUT supports Radios application	CDMA/EV-DO/LTE/WLAN 11abgn HT20/802.11ac VHT80 Bluetooth v3.0 + EDR/Bluetooth v4.0 LE/NFC
HW Version	cxhA
SW Version	N9835V1.0.0B01
EUT Stage	Identical Prototype

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

1.4 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz
Maximum Output Power to Antenna	802.11a : 12.28 dBm / 0.0169 W 802.11n HT20 : 12.27 dBm / 0.0169 W 802.11ac VHT80 : 11.43 dBm / 0.0139 W
Antenna Type	PIFA Antenna with gain 1.00 dBi
Type of Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Testing Site

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.			
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C. TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958			
Test Site No.	Sporton Site No.			FCC Registration No.
	TH01-KS	03CH01-KS	CO01-KS	149928

Note: The test site complies with ANSI C63.4 2003 requirement.

1.7 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 v01r03
- ANSI C63.4-2003

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.

2 Test Configuration of Equipment Under Test

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

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

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

2.1 Carrier Frequency Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5150-5250 MHz Band 1 (U-NII-1)	36	5180	44	5220
	38	**5190**	**46**	**5230**
	40	5200	48	5240

2.2 Pre-Scanned RF Power

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

Channel	Frequency	5GHz 802.11a Average Output Power (dBm)							
		Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 36	5180 MHz	11.42	11.79	11.93	11.85	11.98	11.86	11.79	11.74
CH 44	5220 MHz	11.71	11.87	11.92	11.96	11.95	11.94	11.91	11.83
CH 48	5240 MHz	**12.28**	11.95	11.89	11.97	12.01	12.00	11.88	11.87

Channel	Frequency	5GHz 802. 11n HT20 Average Output Power (dBm)							
		Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 36	5180 MHz	12.09	12.10	12.12	12.22	12.11	11.88	11.75	11.70
CH 44	5220 MHz	11.95	12.00	11.91	11.98	11.96	11.67	11.66	11.77
CH 48	5240 MHz	**12.27**	12.07	12.06	12.20	12.06	11.85	11.73	11.67

Channel	Frequency	5GHz 802.11ac VHT80 Average Output Power (dBm)									
		Data Rate									
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
CH 42	5210 MHz	**11.43**	11.41	11.42	11.29	11.40	11.36	11.24	11.35	11.42	11.38

2.3 Test Mode

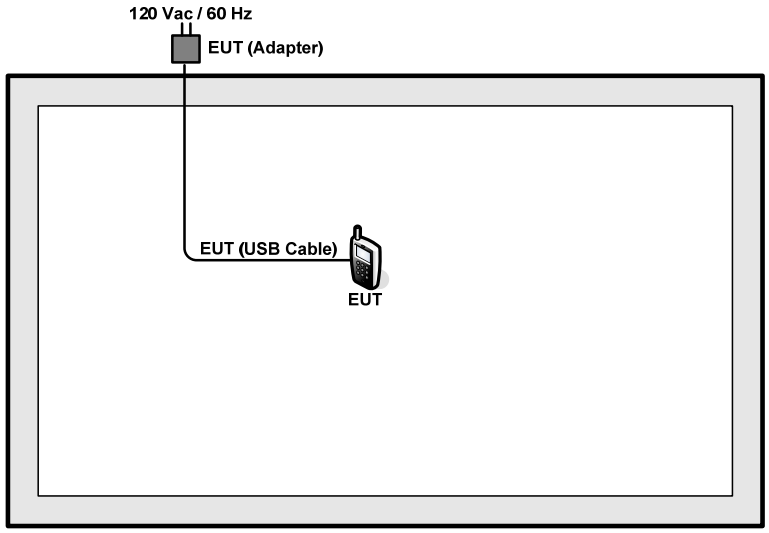
Final results of test modes, data rates and test channels are shown as following table.

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	MCS0	L/M/H
		802.11ac VHT80	MCS0	M
	Output Power	802.11a	6 Mbps	L/M/H
		802.11n HT20	MCS0	L/M/H
		802.11ac VHT80	MCS0	M
	Peak Excursion	802.11a	6 Mbps	L
		802.11n HT20	MCS0	L
		802.11ac VHT80	MCS0	M
	Frequency Stability	802.11a	6 Mbps	L/H
Radiated TCs	Radiated Band Edge	802.11a	6 Mbps	L/H
		802.11n HT20	MCS0	L/H
		802.11ac VHT80	MCS0	M
	Radiated Spurious Emission	802.11a	6 Mbps	L/M/H
		802.11n HT20	MCS0	L/M/H
		802.11ac VHT80	MCS0	M
AC Conducted Emission	Mode 1 : CDMA2000 BC0 Idle + Bluetooth Link + WLAN 5GHz Link + USB Cable (Charging from Adapter)			

Ch. #		5GHz Band I		
		802.11a	802.11n HT20	802.11ac VHT80
L	Low	36	36	42
M	Middle	44	44	
H	High	48	48	

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



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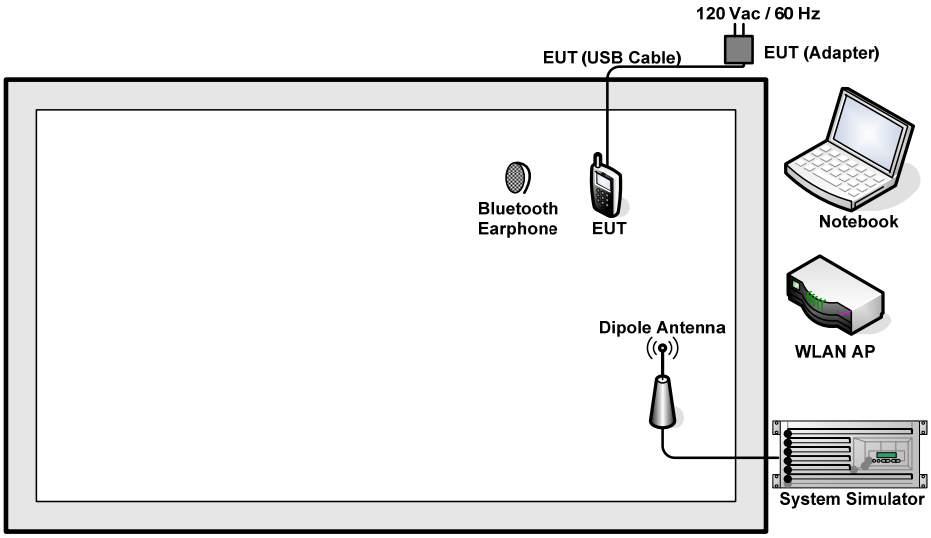


2.5 Support Unit used in test configuration and system

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.	DC Power Supply	GWINSTEK	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	D-Link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
4.	Notebook	Lenovo	G480	N/A	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	Bluetooth Earphone	Nokia	BH-106	QTLBH-106	N/A	N/A

2.6 EUT Operation Test Setup

For WLAN RF test items, an engineering test program was provided and enabled to make EUT continuous transmit/receive.

For AC power line conducted emissions, the EUT was set to connect with the WLAN AP under large package sizes transmission.

2.7 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 5.6 dB and 10dB attenuator.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 5.6 + 10 = 15.6 (dB)

3 Test Result

3.1 26dB Bandwidth Measurement

3.1.1 Description of 26dB Bandwidth

There is no restriction limits for bandwidth. The maximum conducted output power can be limited by measured emission bandwidth (B).

For the band 5150-5250 MHz, 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.

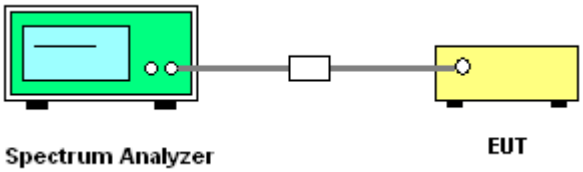
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r03.
   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%.
7. Measure and record the results in the test report.

3.1.4 Test Setup

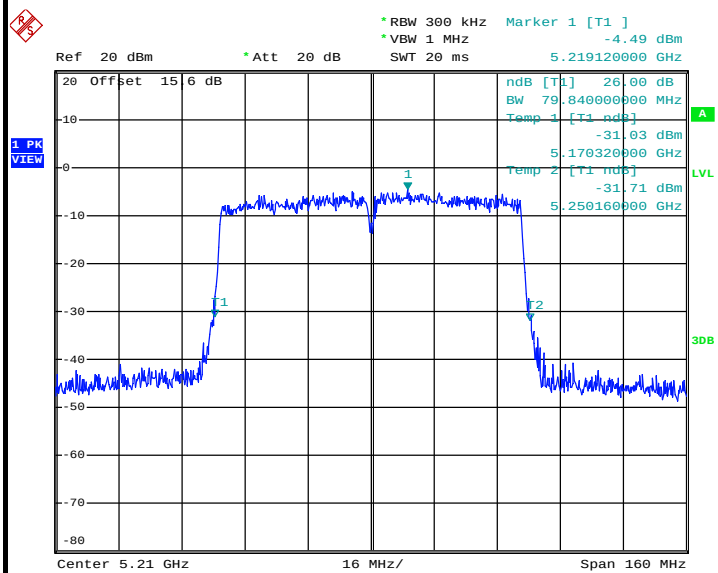


3.1.5 Test Result of 26dB Bandwidth Plots

Test Band :	5GHz band 1	Temperature :	23~24℃
Test Engineer :	Adonis Li	Relative Humidity :	47~48%

Mod.	Data Rate	N_{TX}	Channel	Freq. (MHz)	26dB Bandwidth (MHz)	FCC 26dB Bandwidth Power Limit (dBm)
11a	6Mbps	1	36	5180	21.75	16.99
11a	6Mbps	1	44	5220	21.65	16.99
11a	6Mbps	1	48	5240	21.85	16.99
HT20	MCS0	1	36	5180	21.90	16.99
HT20	MCS0	1	44	5220	21.85	16.99
HT20	MCS0	1	48	5240	22.00	16.99
VHT80	MCS0	1	42	5210	79.84	16.99

Maximum 26dB Bandwidth



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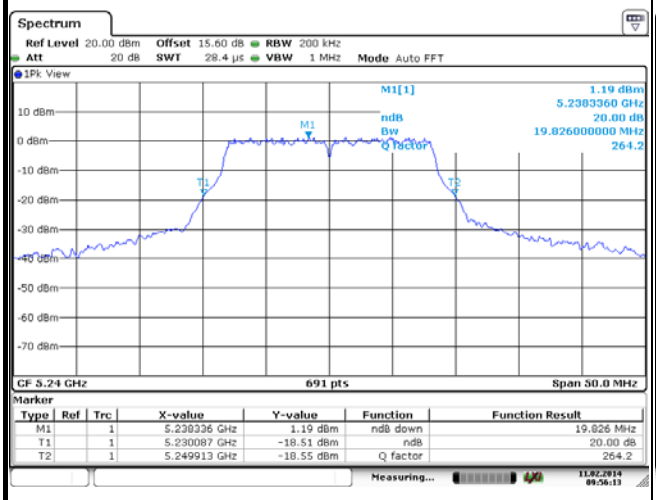
3.1.6 Test Result of 20dB Occupied Bandwidth

Mod.	Data Rate	NTX	Channel	Freq. (MHz)	20dB Bandwidth (MHz)
11a	6Mbps	1	48	5240	19.826
HT20	MCS0	1	48	5240	20.043
VHT80	MCS0	1	42	5210	78.440

20dB Occupied Bandwidth

802.11a CH48 5240MHz



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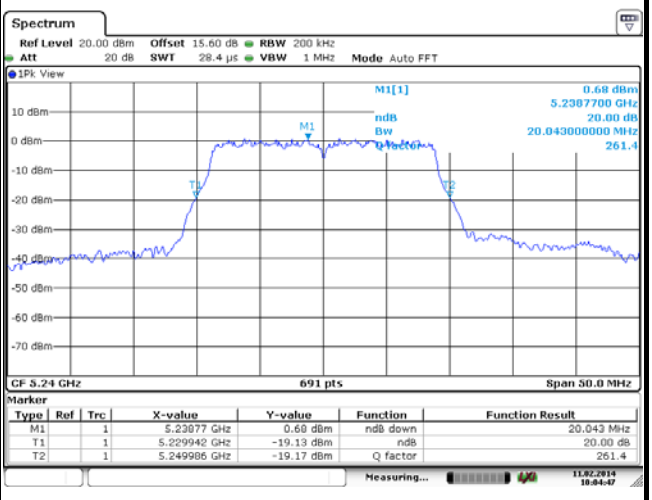
802.11n HT20 CH48 5240MHz



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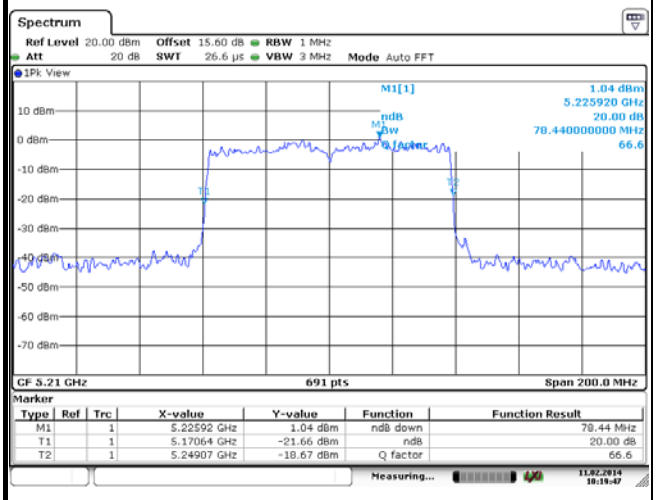
802.11ac VHT80 CH42 5210MHz



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3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

For the band 5150-5250 MHz, 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.

If transmitting antennas of directional gain greater than 6 dBi are used, 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

The measuring equipment is listed in the section 4 of this test report.

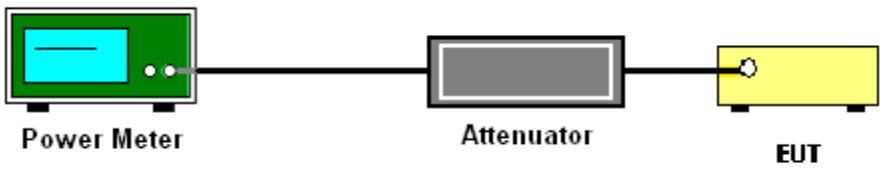
3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D01 General UNII Test Procedures v01r03.

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 Band :	5GHz band 1	Temperature :	23~24℃
Test Engineer :	Adonis Li	Relative Humidity :	47~48%

Mod.	Data Rate	N_{TX}	Channel	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	Pass/Fail
11a	6Mbps	1	36	5180	0.30	11.42	16.99	1.00	Pass
11a	6Mbps	1	44	5220	0.30	11.71	16.99	1.00	Pass
11a	6Mbps	1	48	5240	0.30	12.28	16.99	1.00	Pass
HT20	MCS0	1	36	5180	0.32	12.09	16.99	1.00	Pass
HT20	MCS0	1	44	5220	0.32	11.95	16.99	1.00	Pass
HT20	MCS0	1	48	5240	0.32	12.27	16.99	1.00	Pass
VHT80	MCS0	1	42	5210	1.16	11.43	16.99	1.00	Pass

Note:

1. Final Output Power equals to Measured Output Power adds the duty factor.
2. For the band 5150-5250 MHz, the maximum average conducted output power shall not exceed lesser of 50 mW (17dBm) or 4 dBm + 10log (B), where B is 26dB BW for FCC.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

For the band 5150-5250 MHz, the peak power spectral density shall not exceed 4 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

The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r03.

Section F) Peak power spectral density (PPSD).

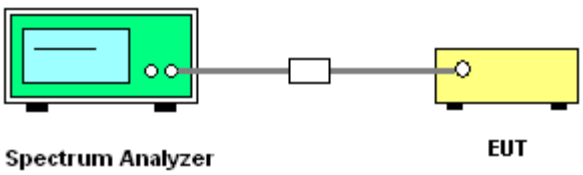
Note: Though the rule refers to “peak power spectral density”, the intent is to measure the maximum value of the time average of the power spectral density measured during a period of continuous transmission.

 # 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 v01r03.
   - 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 = RMS
   - 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

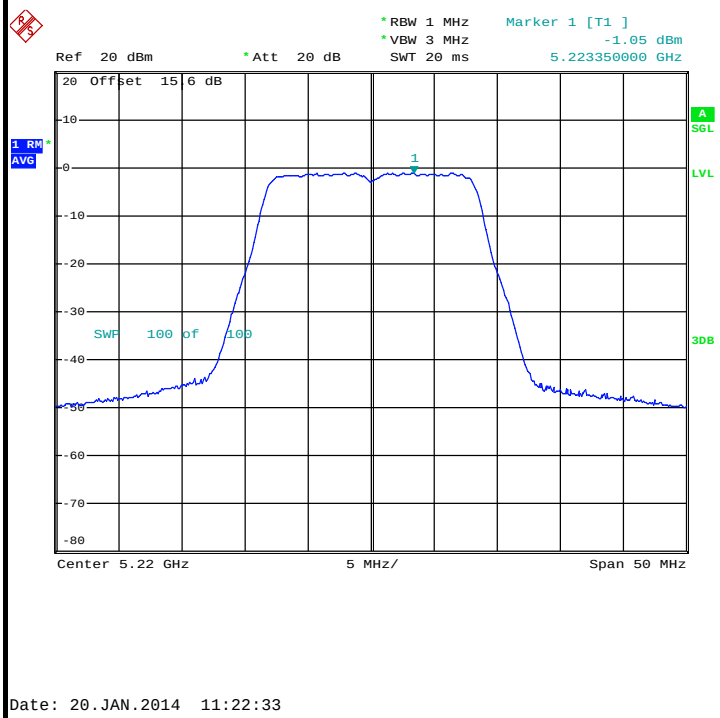


3.3.5 Test Result of Power Spectral Density

Test Band :	5GHz band 1	Temperature :	23~24℃
Test Engineer :	Adonis Li	Relative Humidity :	47~48%

Mod.	Data Rate	N_{TX}	CH	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm)	DG (dBi)	Pass/Fail
11a	6Mbps	1	36	5180	0.30	-1.75	4.00	1.00	Pass
11a	6Mbps	1	44	5220	0.30	-0.75	4.00	1.00	Pass
11a	6Mbps	1	48	5240	0.30	-1.17	4.00	1.00	Pass
HT20	MCS0	1	36	5180	0.32	-1.53	4.00	1.00	Pass
HT20	MCS0	1	44	5220	0.32	-1.53	4.00	1.00	Pass
HT20	MCS0	1	48	5240	0.32	-1.71	4.00	1.00	Pass
VHT80	MCS0	1	42	5210	1.16	-7.20	4.00	1.00	Pass

Worst Case Power Spectral Density(dBm/MHz)



Note: Average Power Density (dB) = Measured value+ Duty Factor

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

The measuring equipment is listed in the section 4 of this test report.

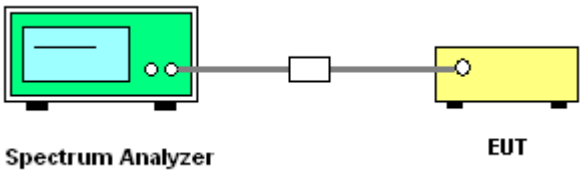
3.4.3 Test Procedures

The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r03.

Section G) 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



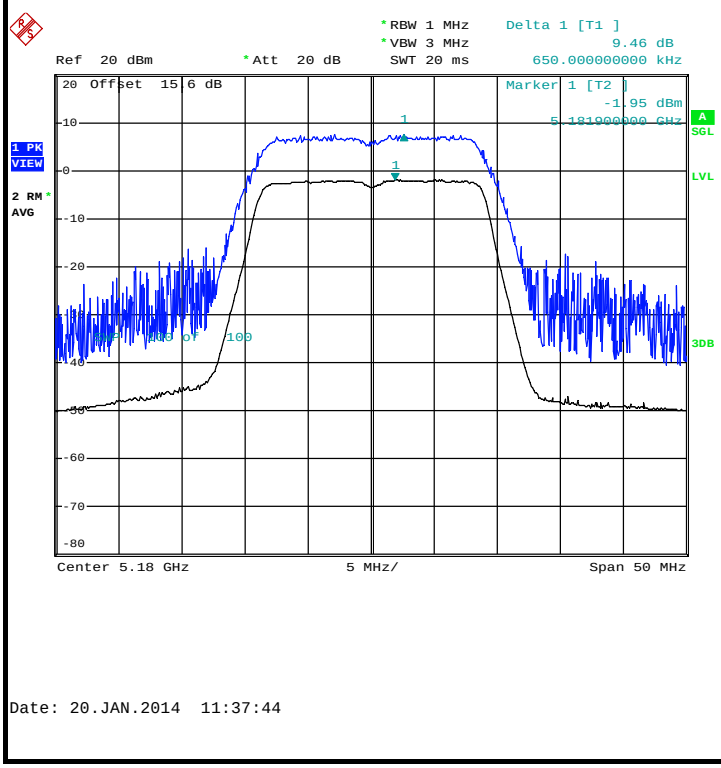
3.4.5 Test Result of Peak Excursion Ratio

Test Band :	5GHz band 1	Temperature :	23~24℃
Test Engineer :	Adonis Li	Relative Humidity :	47~48%

Mod.	N_{TX}	Channel	Freq. (MHz)	Peak Excursion Ratio (dB)					Max. Limits (dB)	Pass/Fail
				BPSK	QPSK	16QAM	64QAM	256QAM		
11a	1	36	5180	8.62	8.65	8.28	7.38	-	13	Pass
HT20	1	36	5180	9.14	8.94	8.41	7.58	-	13	Pass
VHT80	1	42	5210	9.00	8.65	7.95	6.84	6.75	13	Pass

Note: All modulation measured based on the minimum data rate setting.

Worst Case Peak Excursion Ratio (dB)



Note: Peak Excursion Ratio (dB) = Peak – (Average + Duty Cycle Offset)

Duty Cycle Offset: 0.32 dB

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 5150-5250 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of –27dBm/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 (dBμV/m)
-17	78.3
- 27	68.3

(3) KDB789033 v01r03 H)2)c)(i) As specified in 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit.

3.5.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

1. The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r03. Section H) 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 H) 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 H) 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(ms)	1/T(kHz)	VBW Setting
802.11a	93.342	1.430	0.699	1kHz
802.11n HT20	92.926	1.340	0.746	1kHz
802.11ac VHT80	76.498	0.332	3.012	10kHz

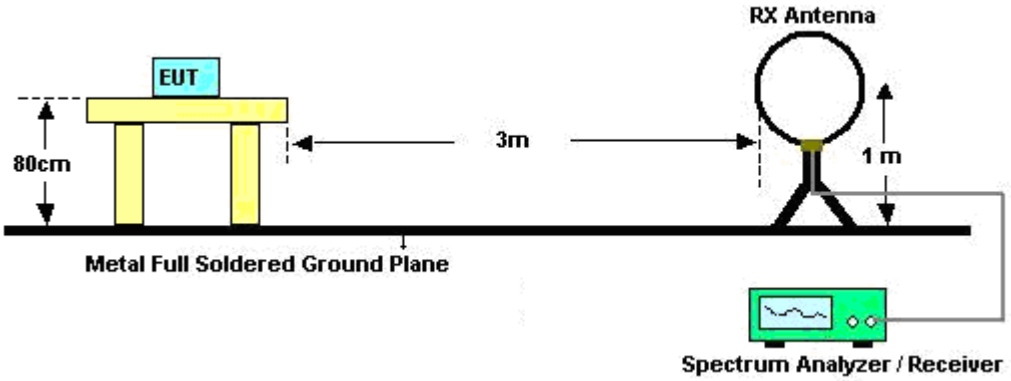
2. The EUT was placed on a rotatable table top 0.8 meter above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters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

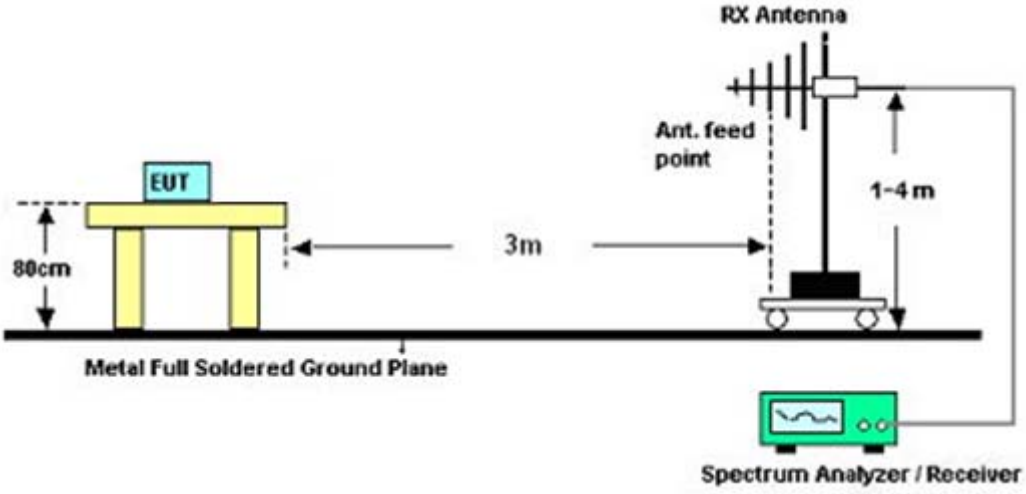
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level 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

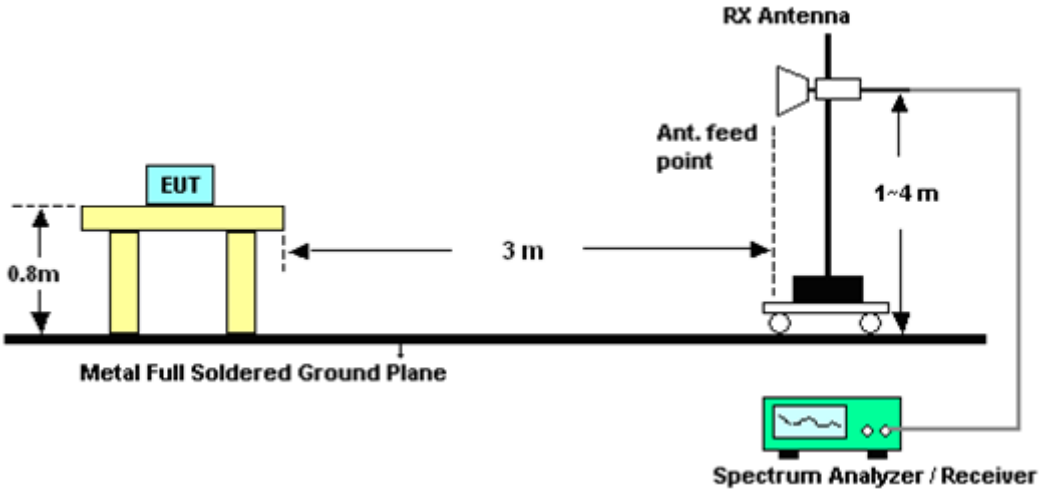
For radiated emissions below 30MHz



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 :	22~23°C
Test Channel :	36	Relative Humidity :	40~41%
Test Engineer :	Jun Liu		

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
5149.1	61	-13	74	54.14	35.25	5.38	33.77	100	336	Peak
5149.5	42.43	-11.57	54	35.57	35.25	5.38	33.77	100	336	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
5148.55	58.65	-15.35	74	51.79	35.25	5.38	33.77	111	43	Peak
5149.85	41.01	-12.99	54	34.15	35.25	5.38	33.77	111	43	Average

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	48	Relative Humidity :	40~41%
Test Engineer :	Jun Liu		

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
5388.3	52.67	-21.33	74	45.6	35.34	5.45	33.72	100	335	Peak
5355.2	39.29	-14.71	54	32.25	35.32	5.45	33.73	100	335	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
5384.1	52.96	-21.04	74	45.89	35.34	5.45	33.72	116	329	Peak
5350.1	39.05	-14.95	54	32.01	35.32	5.45	33.73	116	329	Average

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	36	Relative Humidity :	40~41%
Test Engineer :	Jun Liu		

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
5148.55	65.19	-8.81	74	58.33	35.25	5.38	33.77	100	331	Peak
5149.95	42.28	-11.72	54	35.42	35.25	5.38	33.77	100	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
5149.9	59.77	-14.23	74	52.91	35.25	5.38	33.77	109	47	Peak
5149.9	39.75	-14.25	54	32.89	35.25	5.38	33.77	109	47	Average

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	48	Relative Humidity :	40~41%
Test Engineer :	Jun Liu		

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
5351.35	51.81	-22.19	74	44.77	35.32	5.45	33.73	100	334	Peak
5351.15	38.48	-15.52	54	31.44	35.32	5.45	33.73	100	334	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
5369.95	51.48	-22.52	74	44.42	35.33	5.45	33.72	131	328	Peak
5394.95	38.39	-15.61	54	31.3	35.35	5.46	33.72	131	328	Average

Test Mode :	802.11ac VHT80	Temperature :	22~23°C
Test Channel :	42	Relative Humidity :	40~41%
Test Engineer :	Jun Liu		

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
5149.65	62.48	-11.52	74	55.62	35.25	5.38	33.77	100	334	Peak
5149.95	45.17	-8.83	54	38.31	35.25	5.38	33.77	100	334	Average
5354.8	51.92	-22.08	74	44.88	35.32	5.45	33.73	100	334	Peak
5350.65	41.08	-12.92	54	34.04	35.32	5.45	33.73	100	334	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
5148.6	57.69	-16.31	74	50.83	35.25	5.38	33.77	106	22	Peak
5145.9	42.39	-11.61	54	35.53	35.25	5.38	33.77	106	22	Average
5355.4	52.11	-21.89	74	45.07	35.32	5.45	33.73	106	22	Peak
5361.85	40.67	-13.33	54	33.61	35.33	5.45	33.72	106	22	Average

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

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	36	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. 10353 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (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	103.1	-	-	96.22	35.26	5.39	33.77	100	336	Peak
5180	92.14	-	-	85.26	35.26	5.39	33.77	100	336	Average
10353	38.02	-35.98	74	63.37	1.45	7.71	34.51	100	105	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	36	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. 10353 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (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	99.57	-	-	92.69	35.26	5.39	33.77	111	43	Peak
5180	88.63	-	-	81.75	35.26	5.39	33.77	111	43	Average
10356	41.04	-32.96	74	66.39	1.45	7.71	34.51	100	201	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	44	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (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	103.6	-	-	96.69	35.27	5.4	33.76	100	334	Peak
5220	93.06	-	-	86.15	35.27	5.4	33.76	100	334	Average
10443	36.47	-37.53	74	61.62	1.53	7.76	34.44	100	265	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	44	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (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	99.57	-	-	92.66	35.27	5.4	33.76	108	42	Peak
5220	89.11	-	-	82.2	35.27	5.4	33.76	108	42	Average
10440	36.05	-37.95	74	61.2	1.53	7.76	34.44	100	145	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	48	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 10473 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (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	103.86	-	-	96.92	35.28	5.41	33.75	100	335	Peak
5240	93.21	-	-	86.27	35.28	5.41	33.75	100	335	Average
10473	35.21	-38.79	74	60.3	1.55	7.78	34.42	100	26	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	48	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 10479 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (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	100.12	-	-	93.18	35.28	5.41	33.75	116	329	Peak
5240	89.45	-	-	82.51	35.28	5.41	33.75	116	329	Average
10479	37.19	-36.81	74	62.25	1.56	7.79	34.41	100	145	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	36	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. 10359 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
43.58	24.28	-15.72	40	47.25	10.03	0.62	33.62	174	48	Peak
92.08	18.41	-25.09	43.5	41.8	9.35	0.88	33.62	-	-	Peak
194.9	26.33	-17.17	43.5	49.86	8.75	1.28	33.56	-	-	Peak
342.34	24.6	-21.4	46	41.93	14.33	1.7	33.36	-	-	Peak
435.46	18.95	-27.05	46	34.01	16.23	1.94	33.23	-	-	Peak
728.4	21.73	-24.27	46	32.43	19.67	2.45	32.82	-	-	Peak
5180	104.94	-	-	98.06	35.26	5.39	33.77	100	331	Peak
5180	92.79	-	-	85.91	35.26	5.39	33.77	100	331	Average
10359	35.68	-38.32	74	60.99	1.46	7.72	34.49	100	152	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	36	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. 10362 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
42.61	29.08	-10.92	40	51.61	10.48	0.62	33.63	144	100	Peak
88.2	18.62	-24.88	43.5	43.07	8.3	0.87	33.62	-	-	Peak
128.94	15.32	-28.18	43.5	36.16	11.71	1.04	33.59	-	-	Peak
193.93	17.94	-25.56	43.5	41.53	8.7	1.27	33.56	-	-	Peak
454.86	22.77	-23.23	46	37.66	16.36	1.95	33.2	-	-	Peak
590.66	23.24	-22.76	46	35.39	18.59	2.22	32.96	-	-	Peak
5180	99.35	-	-	92.47	35.26	5.39	33.77	109	47	Peak
5180	87.77	-	-	80.89	35.26	5.39	33.77	109	47	Average
10362	37.41	-36.59	74	62.72	1.46	7.72	34.49	100	26	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	44	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (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	103.43	-	-	96.52	35.27	5.4	33.76	100	334	Peak
5220	92.29	-	-	85.38	35.27	5.4	33.76	100	334	Average
10440	31.78	-42.22	74	56.93	1.53	7.76	34.44	100	51	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	44	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (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	98.43	-	-	91.52	35.27	5.4	33.76	133	345	Peak
5220	86.34	-	-	79.43	35.27	5.4	33.76	133	345	Average
10440	30.84	-43.16	74	55.99	1.53	7.76	34.44	100	152	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	48	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 10479 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (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	103.99	-	-	97.05	35.28	5.41	33.75	100	334	Peak
5240	91.85	-	-	84.91	35.28	5.41	33.75	100	334	Average
10479	32.96	-41.04	74	58.02	1.56	7.79	34.41	100	20	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	48	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 10473 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (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	97.99	-	-	91.05	35.28	5.41	33.75	131	328	Peak
5240	86.25	-	-	79.31	35.28	5.41	33.75	131	328	Average
10473	32.99	-41.01	74	58.08	1.55	7.78	34.42	100	125	Peak

Test Mode :	802.11ac VHT80	Temperature :	22~23°C
Test Channel :	42	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	1. 5210 MHz is fundamental signal which can be ignored. 2. 10419 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5210	98.53	-	-	91.62	35.27	5.4	33.76	100	334	Peak
5210	87.45	-	-	80.54	35.27	5.4	33.76	100	334	Average
10419	31.61	-42.39	74	56.81	1.51	7.75	34.46	100	141	Peak

Test Mode :	802.11ac VHT80	Temperature :	22~23°C
Test Channel :	42	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	1. 5210 MHz is fundamental signal which can be ignored. 2. 10419 MHz is not within a restricted band and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5210	94.23	-	-	87.32	35.27	5.4	33.76	106	22	Peak
5210	83.08	-	-	76.17	35.27	5.4	33.76	106	22	Average
10419	31.66	-42.34	74	56.86	1.51	7.75	34.46	100	125	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 (dBμV)	
	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.

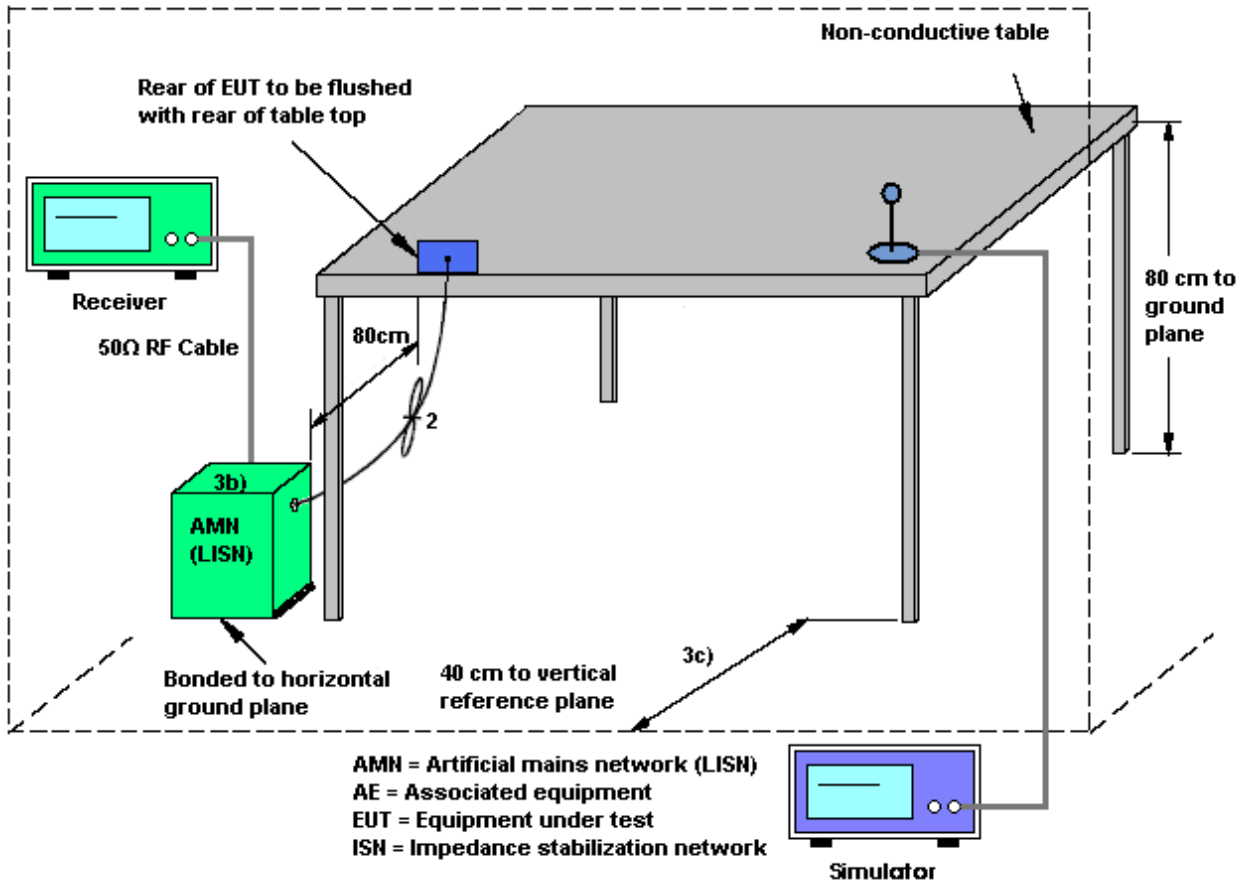
3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Procedures

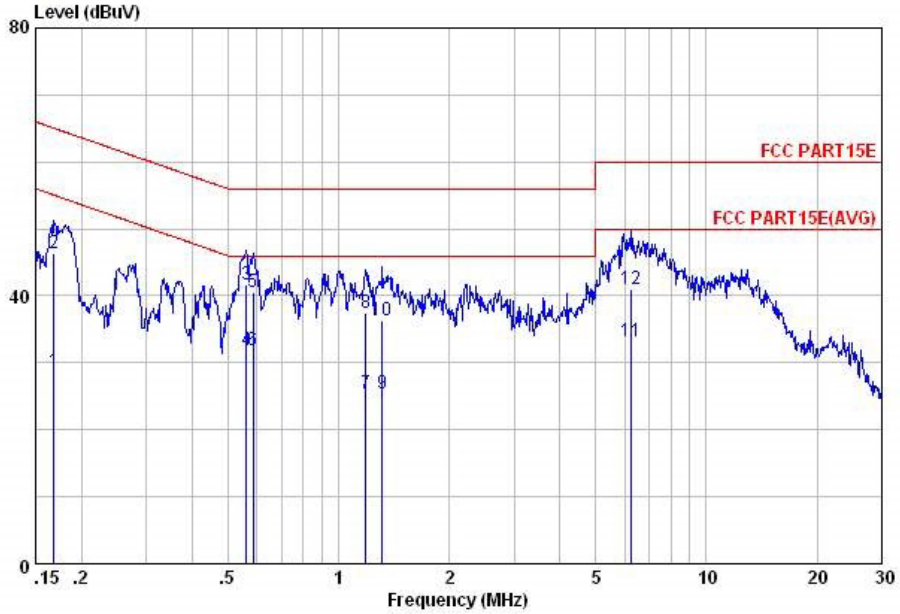
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. 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 :**	21~23℃
Test Engineer :	Harvey Tang	**Relative Humidity :**	41~43%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	CDMA2000 BC0 Idle + Bluetooth Link + WLAN 5GHz Link + USB Cable (Charging from Adapter)		

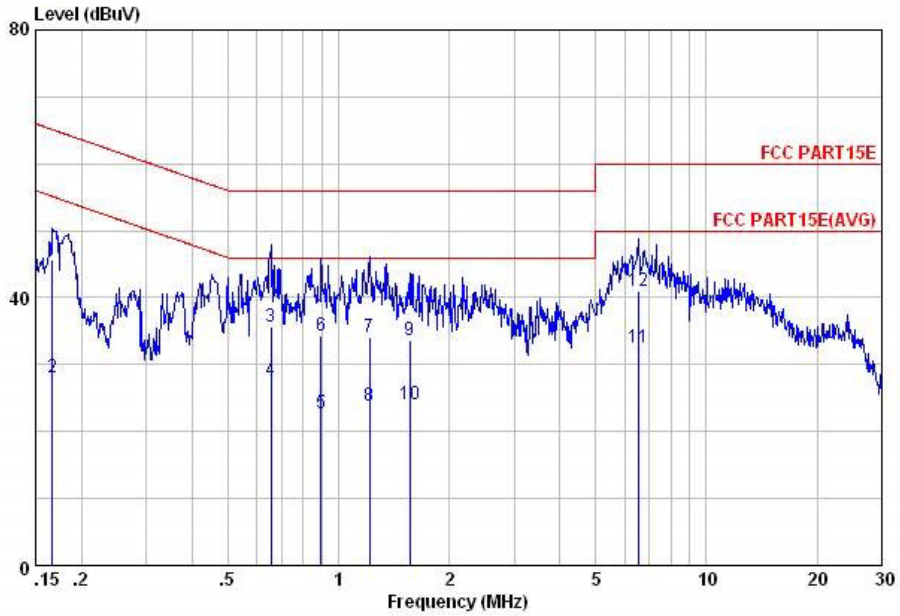


Site : C001-KS
Condition: FCC PART15E LISN-L20130306 LINE

mode : Mode 1

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.17	28.75	-26.28	55.03	16.50	1.60	10.65	Average
2	0.17	46.35	-18.68	65.03	34.10	1.60	10.65	QP
3	0.56	41.65	-14.35	56.00	31.20	0.20	10.25	QP
4	0.56	31.95	-14.05	46.00	21.50	0.20	10.25	Average
5	0.59	40.64	-15.36	56.00	30.20	0.20	10.24	QP
6	0.59	31.94	-14.06	46.00	21.50	0.20	10.24	Average
7	1.18	25.48	-20.52	46.00	15.20	0.10	10.18	Average
8	1.18	37.38	-18.62	56.00	27.10	0.10	10.18	QP
9	1.32	25.38	-20.62	46.00	15.10	0.10	10.18	Average
10	1.32	36.38	-19.62	56.00	26.10	0.10	10.18	QP
11	6.22	33.20	-16.80	50.00	22.70	0.20	10.30	Average
12	6.22	41.00	-19.00	60.00	30.50	0.20	10.30	QP

Test Mode :	Mode 1	Temperature :	21~23℃
Test Engineer :	Harvey Tang	Relative Humidity :	41~43%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	CDMA2000 BC0 Idle + Bluetooth Link + WLAN 5GHz Link + USB Cable (Charging from Adapter)		



Site : C001-KS
Condition: FCC PART15E LISN-N20130306 NEUTRAL

mode : Mode 1

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.17	45.66	-19.46	65.12	33.40	1.61	10.65	QP
2	0.17	28.06	-27.06	55.12	15.80	1.61	10.65	Average
3	0.65	35.64	-20.36	56.00	25.20	0.22	10.22	QP
4	0.65	27.54	-18.46	46.00	17.10	0.22	10.22	Average
5	0.89	22.71	-23.29	46.00	12.40	0.12	10.19	Average
6	0.89	34.21	-21.79	56.00	23.90	0.12	10.19	QP
7	1.22	34.18	-21.82	56.00	23.90	0.10	10.18	QP
8	1.22	23.88	-22.12	46.00	13.60	0.10	10.18	Average
9	1.56	33.69	-22.31	56.00	23.40	0.10	10.19	QP
10	1.56	24.09	-21.91	46.00	13.80	0.10	10.19	Average
11	6.56	32.51	-17.49	50.00	22.00	0.20	10.31	Average
12	6.56	40.91	-19.09	60.00	30.40	0.20	10.31	QP

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.

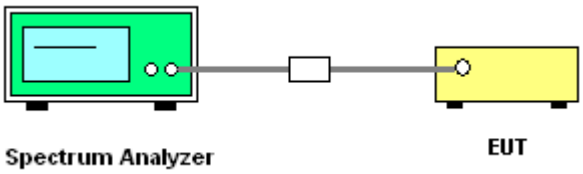
3.7.2 Measuring Instruments

The measuring equipment is listed in the section 4 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 Band :	5GHz band 1	Temperature :	23~24℃
Test Engineer :	Adonis Li	Relative Humidity :	47~48%

Mod.	Data Rate	N_{TX}	Channel	Frequency (MHz)	Center Frequency (Hz)	Frequency Deviation (Hz)	Frequency Stability (ppm)
11a	6Mbps	1	36	5180	5180025000.00	25000.00	4.83
11a	6Mbps	1	48	5240	5240025000.00	25000.00	4.77

Note: Center Frequency = (Low Frequency + High Frequency) / 2.

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

The measuring equipment is listed in the section 4 of this test report.

3.8.3 Test Result of Automatically Discontinue Transmission

While the EUT is not transmitting any information, 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 Anti-Replacement Construction

An embedded-in antenna design is used.

3.9.3 Antenna Gain

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

4 List of Measuring Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 28, 2013	Jan. 20, 2014~ Feb. 11, 2014	Dec. 27, 2014	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	30MHz~40GHz	Feb. 28, 2013	Jan. 20, 2014~ Feb. 11, 2014	Feb. 27, 2014	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Feb. 28, 2013	Jan. 20, 2014~ Feb. 11, 2014	Feb. 27, 2014	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz / Max-input30dBm	Nov. 05, 2013	Jan. 31, 2014	Nov. 04, 2014	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP30	101399	9kHz~30GHz;Max-intput 30dBm	May 23, 2013	Jan. 31, 2014	May 22, 2014	Radiation (03CH01-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 09, 2013	Jan. 31, 2014	Oct. 08, 2014	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Dec. 06, 2013	Jan. 31, 2014	Dec. 05, 2014	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	00075959	1GHz~18GHz	Dec. 06, 2013	Jan. 31, 2014	Dec. 05, 2014	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Nov. 22, 2013	Jan. 31, 2014	Nov. 21, 2014	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701030	1GHz~18GHz /AMP 25dB +/- 2	Nov. 18, 2013	Jan. 31, 2014	Nov. 17, 2014	Radiation (03CH01-KS)
Amplifier	com-power	PA-103A	161069	1MHz~1GHz /32 dB	May 23, 2013	Jan. 31, 2014	May 22, 2014	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz >23dB	Dec. 28, 2013	Jan. 31, 2014	Dec. 27, 2014	Radiation (03CH01-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Jan. 31, 2014	NCR	Radiation (03CH01-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Jan. 31, 2014	NCR	Radiation (03CH01-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz	May 23, 2013	Jan. 14, 2014	May 22, 2014	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	60103	9kHz~30MHz	Dec. 10, 2013	Jan. 14, 2014	Dec. 09, 2014	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	60105	9kHz~30MHz	Dec. 10, 2013	Jan. 14, 2014	Dec. 09, 2014	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	N/A	May 25, 2013	Jan. 14, 2014	May 24, 2014	Conduction (CO01-KS)

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 (30 MHz ~ 1000 MHz)

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