

# RF TEST REPORT



Report No.: 17071364-FCC-R2

Supersede Report No.: N/A

Applicant	INFINIX MOBILITY LIMITED	
Product Name	Mobile phone	
Model No.	X573	
Serial No.	N/A	
Test Standard	FCC Part 15.247: 2016, ANSI C63.10: 2013	
Test Date	December 06, 2017 to January 1, 2018	
Issue Date	January 2, 2018	
Test Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Equipment complied with the specification		<input checked="" type="checkbox"/>
Equipment did not comply with the specification		<input type="checkbox"/>
Aaron Liang Test Engineer	David Huang Checked By	
This test report may be reproduced in full only Test result presented in this test report is applicable to the tested sample only		

Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

Zone A, Floor 1, Building 2 Wan Ye Long Technology Park

South Side of Zhoushi Road, Bao'an District, Shenzhen, Guangdong China 518108

Phone: +86 0755 2601 4629801 Email: [China@siemic.com.cn](mailto:China@siemic.com.cn)

## Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

### Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety



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## 1. Report Revision History

Report No.	Report Version	Description	Issue Date
17071364-FCC-R2	NONE	Original	January 2, 2018

## 2. Customer information

Applicant Name	INFINIX MOBILITY LIMITED
Applicant Add	ROOMS 05-15, 13A/F., SOUTH TOWER, WORLD FINANCE CENTRE, HARBOUR CITY, 17 CANTON ROAD, TSIM SHA TSUI, KOWLOON, HONG KONG
Manufacturer	SHENZHEN TECNO TECHNOLOGY CO.,LTD.
Manufacturer Add	1-4th Floor,3rd Building,Pacific Industrial Park,No.2088,Shenyan Road,Yantian District,Shenzhen,Guangdong,China

## 3. Test site information

Test Lab A:

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES
Lab Address	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park South Side of Zhoushi Road, Bao'an District, Shenzhen, Guangdong China 518108
FCC Test Site No.	535293
IC Test Site No.	4842E-1
Test Software	Radiated Emission Program-To Shenzhen v2.0

Test Lab B:

Lab performing tests	SIEMIC (Nanjing-China) Laboratories
Lab Address	2-1 Longcang Avenue Yuhua Economic and Technology Development Park, Nanjing, China
FCC Test Site No.	694825
IC Test Site No.	4842B-1
Test Software	EZ_EMPC(ver.lcp-03A1)

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Note: We just perform Radiated Spurious Emission above 18GHz in the test Lab. B.

#### 4. Equipment under Test (EUT) Information

Description of EUT:	Mobile phone
Main Model:	X573
Serial Model:	N/A
Date EUT received:	December 05, 2017
Test Date(s):	December 06, 2017 to January 1, 2018
Equipment Category :	DTS
	GSM850: -0.7dBi
	PCS1900: 1.4dBi
	UMTS-FDD Band V: -0.7dBi
	UMTS-FDD Band IV: 1.4dBi
	UMTS-FDD Band II: 1.4dBi
Antenna Gain:	LTE Band II: 1.4dBi
	LTE Band IV: 1.7dBi
	LTE Band VII: 1.7dBi
	Bluetooth/BLE: 1.7dBi
	WIFI: 1.7dBi
	GPS: 1.7dBi
Antenna Type:	PIFA Antenna
	GSM / GPRS: GMSK
	EGPRS: GMSK,8PSK
	UMTS-FDD: QPSK
Type of Modulation:	LTE Band: QPSK, 16QAM
	802.11b/g/n: DSSS, OFDM
	Bluetooth: GFSK, π /4DQPSK, 8DPSK
	BLE: GFSK
	GPS:BPSK
RF Operating Frequency (ies):	GSM850 TX: 824.2 ~ 848.8 MHz; RX: 869.2 ~ 893.8 MHz
	PCS1900 TX: 1850.2 ~ 1909.8 MHz; RX: 1930.2 ~ 1989.8 MHz
	UMTS-FDD Band V TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz

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UMTS-FDD Band IV TX:1712.4 ~ 1752.6 MHz;  
RX : 2112.4 ~ 2152.6 MHz  
UMTS-FDD Band II TX:1852.4 ~ 1907.6 MHz;  
RX: 1932.4 ~ 1987.6 MHz  
LTE Band II TX: 1850.7 ~ 1909.3MHz; RX : 1930.7 ~ 1989.3 MHz  
LTE Band IV TX: 1710.7 ~ 1754.3 MHz; RX : 2110.7~ 2154.3 MHz  
LTE Band VII TX: 2502.5 ~ 2567.5 MHz; RX : 2622.5 ~ 2687.5 MHz  
WIFI: 802.11b/g/n(20M): 2412-2462 MHz  
WIFI: 802.11n(40M): 2422-2452 MHz  
Bluetooth& BLE: 2402-2480 MHz  
GPS: 1575.42 MHz

Max. Output Power:  
802.11b:16.68dBm  
802.11g:16.14dBm  
802.11n(20M):16.78dBm  
802.11n(40M):11.68dBm

Number of Channels:  
GSM 850: 124CH  
PCS1900: 299CH  
UMTS-FDD Band V: 102CH  
UMTS-FDD Band IV: 202CH  
UMTS-FDD Band II: 277CH  
WIFI :802.11b/g/n(20M): 11CH  
WIFI :802.11n(40M): 7CH  
Bluetooth: 79CH  
BLE: 40CH  
GPS:1CH

Port: USB Port, Earphone Port

Adapter:  
Model: A88-502000  
Input: AC100-240V~50/60Hz,0.35A  
Output: DC 5V, 2.0A  
Input Power:  
Battery:  
Model: BL-39GX  
Spec: 3.85V, 3900mAh/4000mAh, 15.02Wh/15.4Wh  
Voltage: 4.4V

Trade Name : Infinix



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GPRS/EGPRS Multi-slot class 8/10/11/12

FCC ID: 2AIZN-X573

## 5. Test Summary

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliance
§15.247 (a)(2)	DTS (6 dB&20 dB) CHANNEL BANDWIDTH	Compliance
§15.247(b)(3)	Conducted Maximum Output Power	Compliance
§15.247(e)	Power Spectral Density	Compliance
§15.247(d)	Band-Edge & Unwanted Emissions into Restricted Frequency Bands	Compliance
§15.207 (a),	AC Power Line Conducted Emissions	Compliance
§15.205, §15.209, §15.247(d)	Radiated Emissions & Unwanted Emissions into Restricted Frequency Bands	Compliance

### Measurement Uncertainty

Emissions		
Test Item	Description	Uncertainty
Band-Edge & Unwanted Emissions into Restricted Frequency Bands and Radiated Emissions & Unwanted Emissions into Restricted Frequency Bands	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+5.6dB/-4.5dB
-	-	-

## **6. Measurements, Examination And Derived Results**

### **6.1 Antenna Requirement**

#### **Applicable Standard**

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **Antenna Connector Construction**

The EUT has 2 antennas:

A permanently attached PIFA antenna for Bluetooth/BLE/WIF/GPS, the gain is 1.7dBi for Bluetooth/BLE/WIFI/GPS.

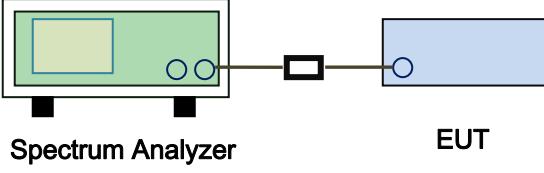
A permanently attached PIFA antenna for GSM/PCS/UMTS/LTE Band II/IV/VII, the gain is -0.7dBi for GSM850/UMTS-FDD Band V, the gain is 1.4dBi for PCS1900/UMTS-FDD Band II/ UMTS-FDD Band IV/ LTE Band II, the gain is 1.7dBi for LTE Band IV/ LTE Band VII.

**The antenna meets up with the ANTENNA REQUIREMENT.**

**Result:** Compliance.

## 6.2 DTS (6 dB&20 dB) Channel Bandwidth

Temperature	26 °C
Relative Humidity	56%
Atmospheric Pressure	1022mbar
Test date :	December 26, 2017
Tested By :	Aaron Liang

Spec	Item	Requirement	Applicable
§ 15.247(a)(2)	a)	6dB BW $\geq$ 500kHz;	<input checked="" type="checkbox"/>
RSS Gen(4.6.1)	b)	99% BW: For FCC reference only; required by IC.	<input checked="" type="checkbox"/>
Test Setup		 <b>Spectrum Analyzer</b> <b>EUT</b>	
Test Procedure		<p>558074 D01 DTS MEAS Guidance v03r03, 8.1 DTS bandwidth</p> <p><u>6dB bandwidth</u></p> <ol style="list-style-type: none"> <li>Set RBW = 100 kHz.</li> <li>Set the video bandwidth (VBW) <math>\geq</math> 3 <math>\times</math> RBW.</li> <li>Detector = Peak.</li> <li>Trace mode = max hold.</li> <li>Sweep = auto couple.</li> <li>Allow the trace to stabilize.</li> <li>Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.</li> </ol> <p><u>20dB bandwidth</u></p> <p>C63.10 Occupied Bandwidth (OBW=20dB bandwidth)</p> <ol style="list-style-type: none"> <li>Set RBW = 1%-5% OBW.</li> <li>Set the video bandwidth (VBW) <math>\geq</math> 3 x RBW.</li> <li>Set the span range between 2 times and 5 times of the OBW.</li> <li>Sweep time=Auto, Detector=PK, Trace=Max hold.</li> <li>Once the reference level is established, the equipment is conditioned with typical modulating signals to produce the worst-</li> </ol>	

	case (i.e., the widest) bandwidth. Unless otherwise specified for an unlicensed wireless device, measure the bandwidth at the 20 dB levels with respect to the reference level.
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data  Yes  N/A

Test Plot  Yes (See below)  N/A

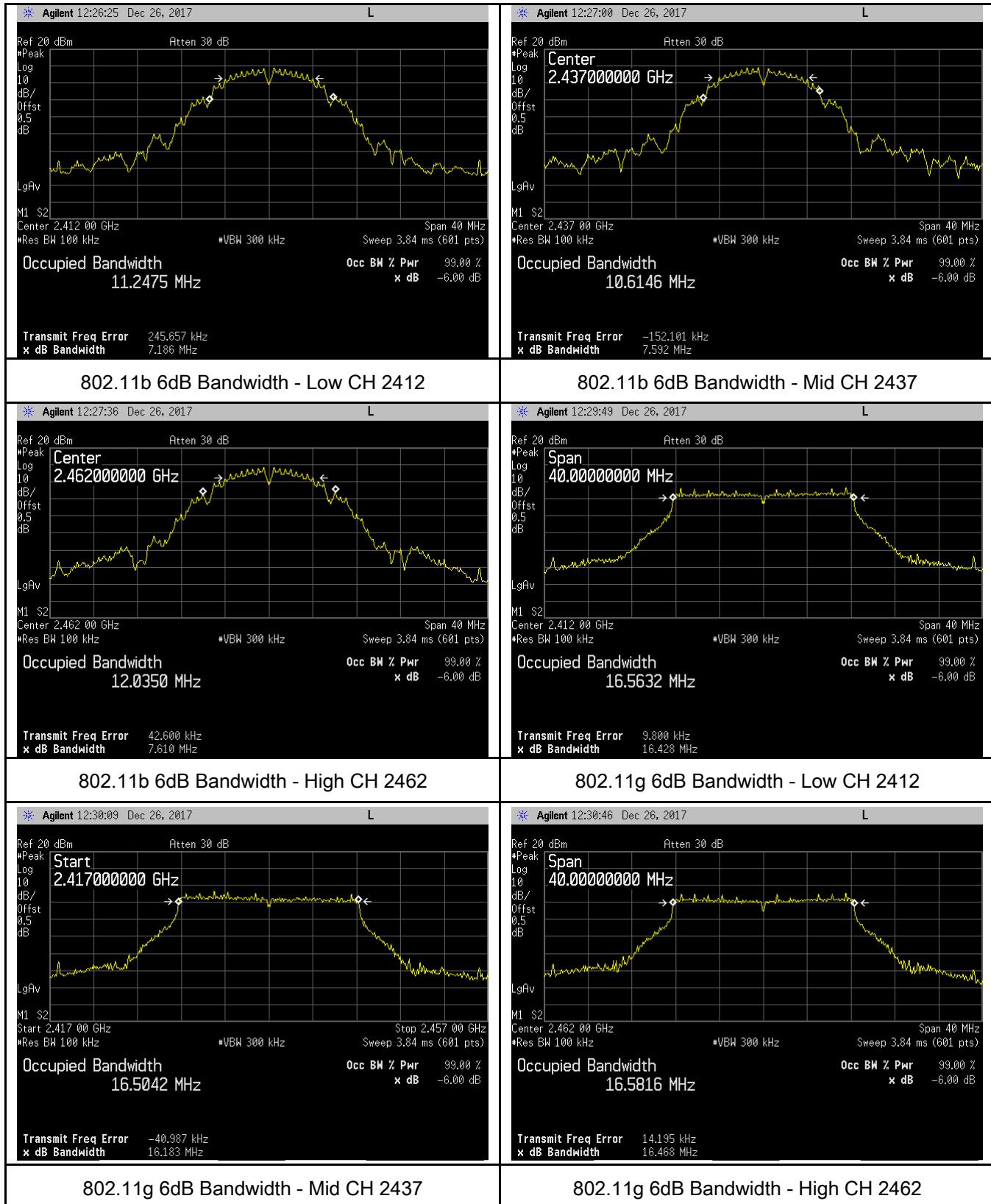
#### Measurement result

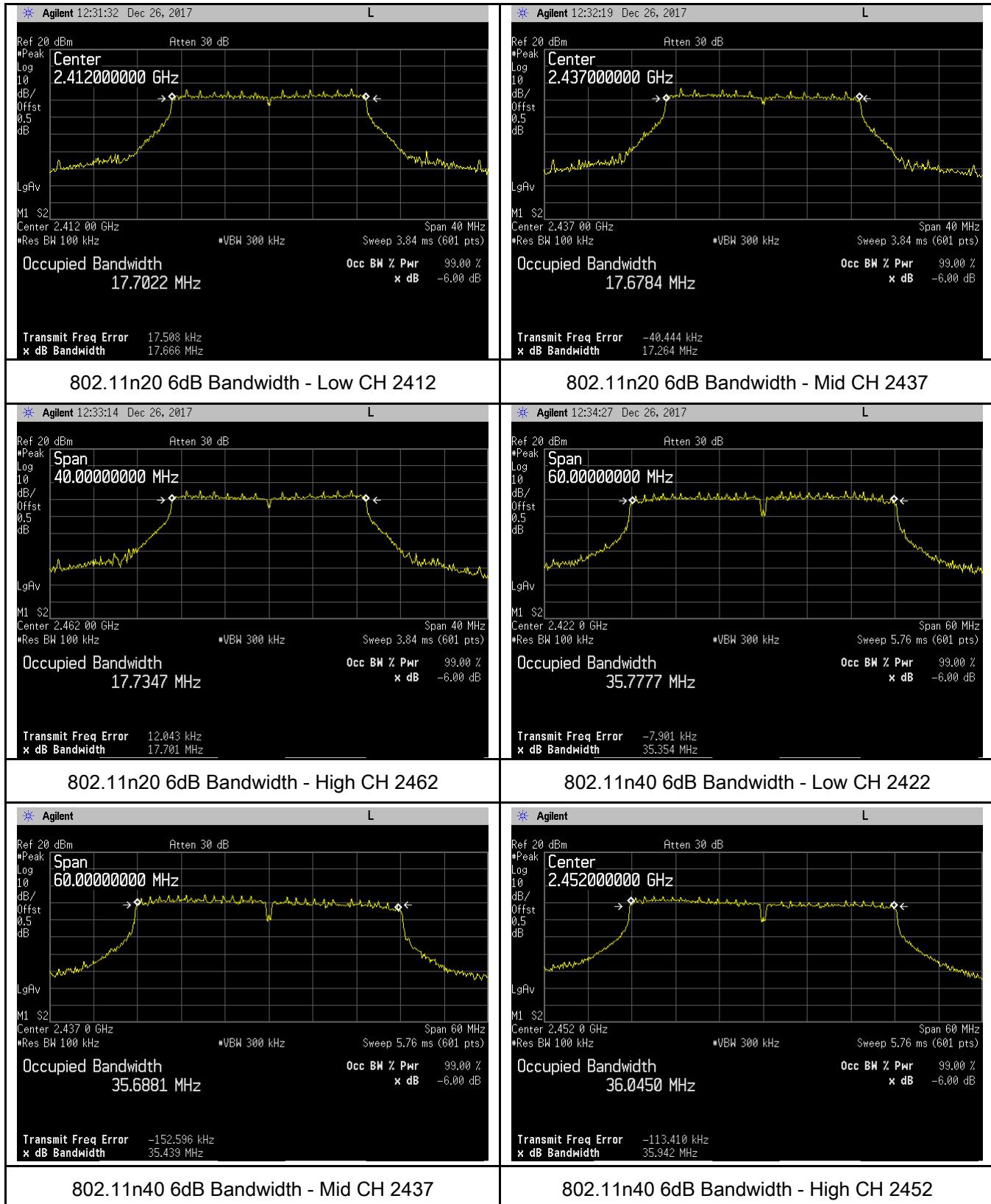
Test mode	CH	Freq (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
802.11b	Low	2412	7.186	$\geq 0.5$
	Mid	2437	7.592	$\geq 0.5$
	High	2462	7.610	$\geq 0.5$
802.11g	Low	2412	16.428	$\geq 0.5$
	Mid	2437	16.183	$\geq 0.5$
	High	2462	16.468	$\geq 0.5$
802.11n (20M)	Low	2412	17.666	$\geq 0.5$
	Mid	2437	17.264	$\geq 0.5$
	High	2462	17.701	$\geq 0.5$
802.11n (40M)	Low	2422	35.354	$\geq 0.5$
	Mid	2437	35.439	$\geq 0.5$
	High	2452	35.942	$\geq 0.5$

Test mode	CH	Freq (MHz)	20dB Bandwidth (MHz)
802.11b	Low	2412	13.771
	Mid	2437	13.177
	High	2462	14.330
802.11g	Low	2412	20.188
	Mid	2437	19.402
	High	2462	19.958
802.11n (20M)	Low	2412	20.219
	Mid	2437	19.937
	High	2462	20.596
802.11n (40M)	Low	2422	40.068
	Mid	2437	39.422
	High	2452	40.074

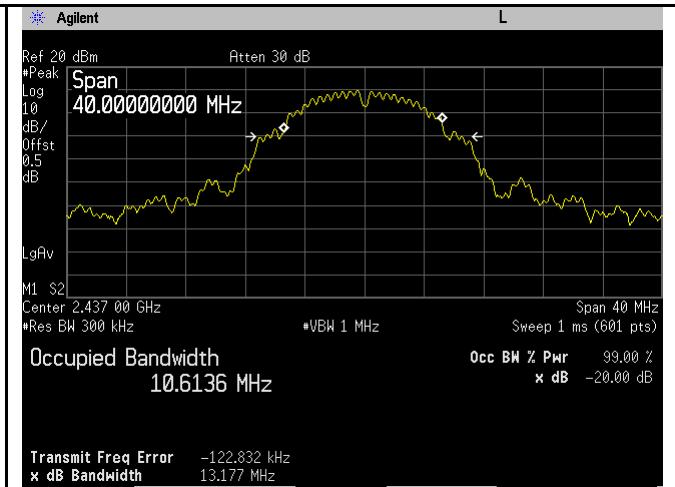
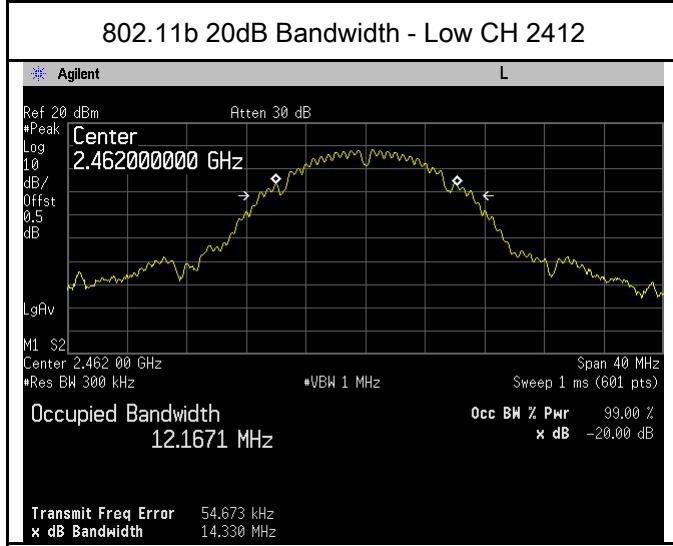
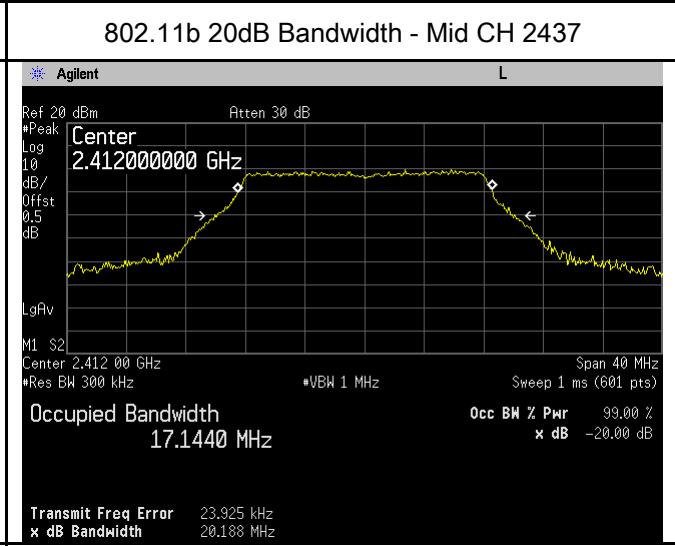
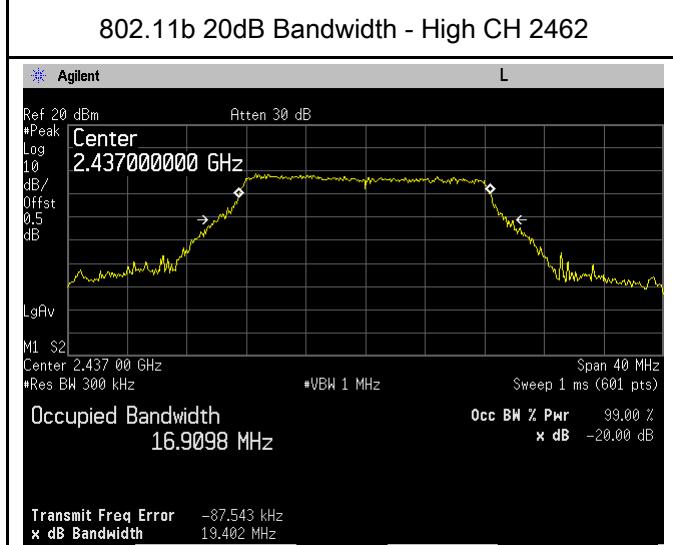
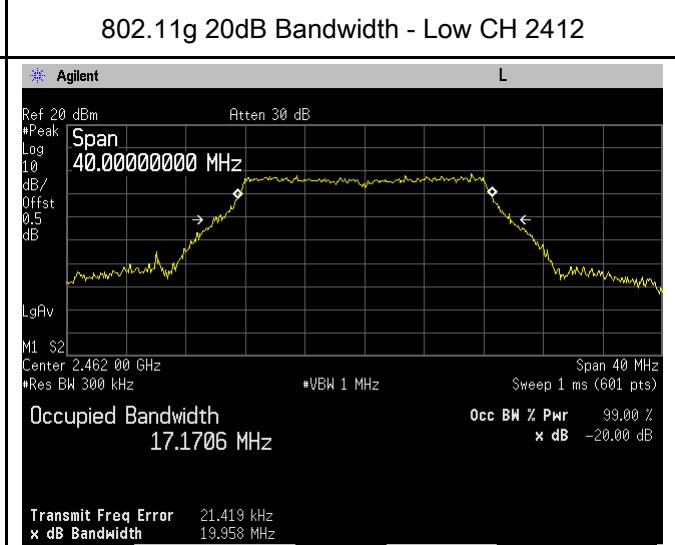
## Test Plots

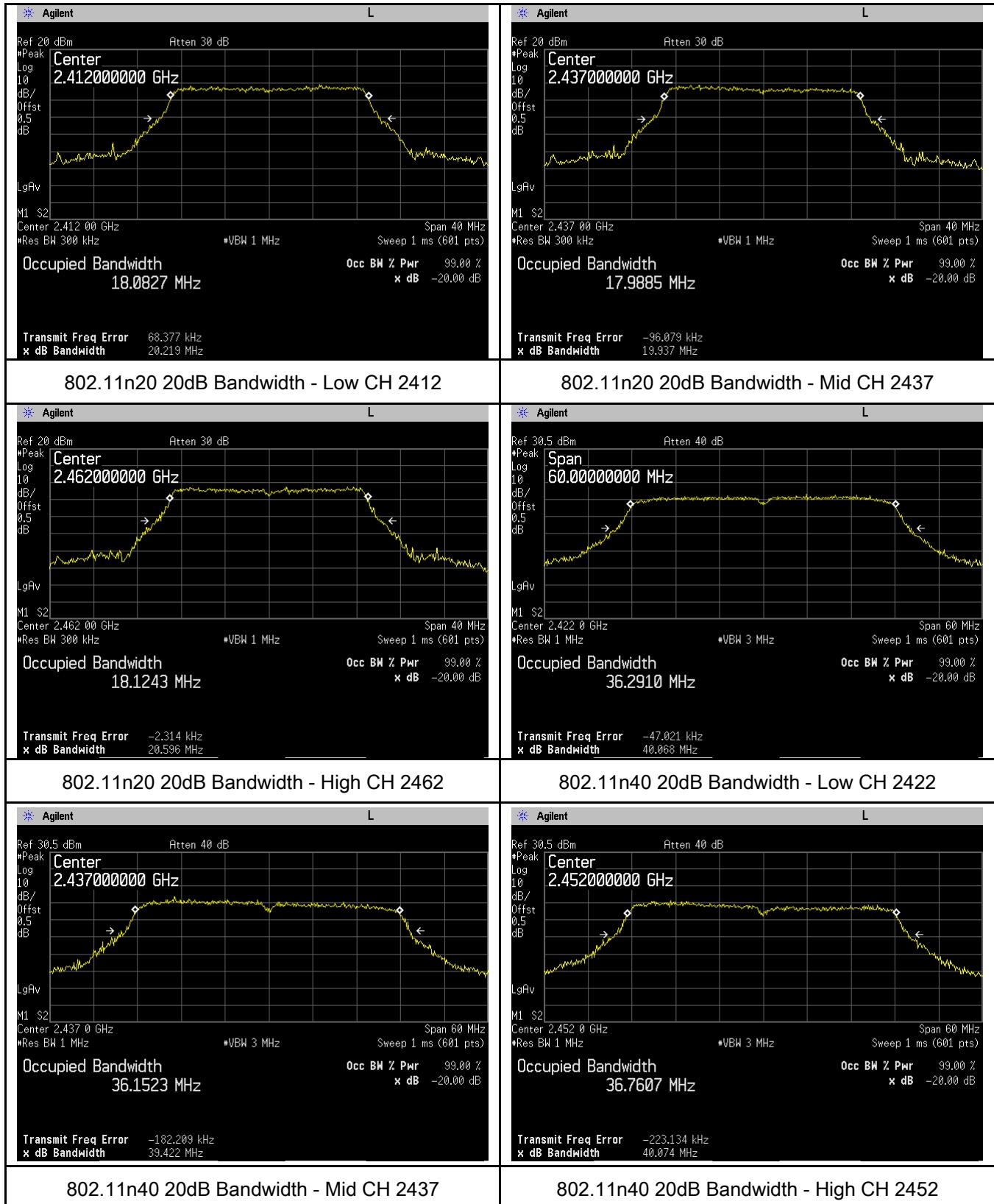
### 6dB Bandwidth measurement result





## 20 dB Bandwidth measurement result

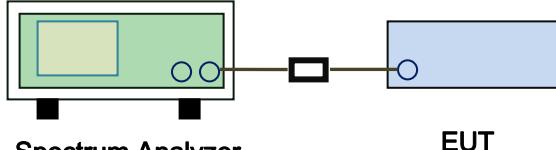
 <p>Ref 20 dBm #Peak Log 10 dB/Offst 0.5 dB Atten 30 dB Center 2.412 00 GHz #Res BW 300 kHz *VBW 1 MHz Sweep 1 ms (601 pts) <b>Occupied Bandwidth</b> 11.3452 MHz  Transmit Freq Error 235.764 kHz x dB Bandwidth 13.771 MHz</p>	 <p>Ref 20 dBm #Peak Log 10 dB/Offst 0.5 dB Span 40.00000000 MHz Atten 30 dB M1 S2 Center 2.437 00 GHz #Res BW 300 kHz *VBW 1 MHz Sweep 1 ms (601 pts) <b>Occupied Bandwidth</b> 10.6136 MHz  Transmit Freq Error -122.832 kHz x dB Bandwidth 13.177 MHz</p>
 <p>Ref 20 dBm #Peak Log 10 dB/Offst 0.5 dB Center 2.462 000000 GHz Atten 30 dB M1 S2 Center 2.462 00 GHz #Res BW 300 kHz *VBW 1 MHz Sweep 1 ms (601 pts) <b>Occupied Bandwidth</b> 12.1671 MHz  Transmit Freq Error 54.673 kHz x dB Bandwidth 14.330 MHz</p>	 <p>Ref 20 dBm #Peak Log 10 dB/Offst 0.5 dB Center 2.412 000000 GHz Atten 30 dB M1 S2 Center 2.412 00 GHz #Res BW 300 kHz *VBW 1 MHz Sweep 1 ms (601 pts) <b>Occupied Bandwidth</b> 17.1440 MHz  Transmit Freq Error 23.925 kHz x dB Bandwidth 20.188 MHz</p>
 <p>Ref 20 dBm #Peak Log 10 dB/Offst 0.5 dB Center 2.437 000000 GHz Atten 30 dB M1 S2 Center 2.437 00 GHz #Res BW 300 kHz *VBW 1 MHz Sweep 1 ms (601 pts) <b>Occupied Bandwidth</b> 16.9098 MHz  Transmit Freq Error -87.543 kHz x dB Bandwidth 19.402 MHz</p>	 <p>Ref 20 dBm #Peak Log 10 dB/Offst 0.5 dB Span 40.00000000 MHz Atten 30 dB M1 S2 Center 2.462 00 GHz #Res BW 300 kHz *VBW 1 MHz Sweep 1 ms (601 pts) <b>Occupied Bandwidth</b> 17.1706 MHz  Transmit Freq Error 21.419 kHz x dB Bandwidth 19.958 MHz</p>
<b>802.11g 20dB Bandwidth - Mid CH 2437</b>	<b>802.11g 20dB Bandwidth - High CH 2462</b>



### 6.3 Maximum Output Power

Temperature	26 °C
Relative Humidity	56%
Atmospheric Pressure	1022mbar
Test date :	December 26, 2017
Tested By :	Aaron Liang

#### Requirement(s):

Spec	Item	Requirement	Applicable
§15.247(b) (3), RSS210 (A8.4)	a)	FHSS in 2400-2483.5MHz with $\geq$ 75 channels: $\leq$ 1 Watt	<input type="checkbox"/>
	b)	FHSS in 5725-5850MHz: $\leq$ 1 Watt	<input type="checkbox"/>
	c)	For all other FHSS in the 2400-2483.5MHz band: $\leq$ 0.125 Watt.	<input type="checkbox"/>
	d)	FHSS in 902-928MHz with $\geq$ 50 channels: $\leq$ 1 Watt	<input type="checkbox"/>
	e)	FHSS in 902-928MHz with $\geq$ 25 & $<$ 50 channels: $\leq$ 0.25 Watt	<input type="checkbox"/>
	f)	DTS in 902-928MHz, 2400-2483.5MHz: $\leq$ 1 Watt	<input checked="" type="checkbox"/>
Test Setup		 <b>Spectrum Analyzer</b> <b>EUT</b>	
Test Procedure		<p>558074 D01 DTS MEAS Guidance v03r03, 9.1.2 Integrated band power method</p> <p>Maximum output power measurement procedure</p> <ul style="list-style-type: none"> <li>- a) Set span to at least 1.5 times the OBW.</li> <li>- b) Set RBW = 1-5% of the OBW, not to exceed 1 MHz.</li> <li>- c) Set VBW <math>\geq</math> 3 x RBW.</li> <li>- d) Number of points in sweep <math>\geq</math> 2 <math>\times</math> span / RBW. (This gives bin-to-bin spacing <math>\leq</math> RBW/2, so that narrowband signals are not lost between frequency bins.)</li> <li>- e) Sweep time = auto.</li> <li>- f) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.</li> <li>- g) If transmit duty cycle <math>&lt;</math> 98 %, use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at maximum</li> </ul>	

	<p>power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle <math>\geq 98\%</math>, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to " free run" .</p> <ul style="list-style-type: none"> <li>- h) Trace average at least 100 traces in power averaging (i.e., RMS) mode.</li> <li>- i) Compute power by integrating the spectrum across the OBW of the signal using the instrument' s band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.</li> </ul>
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data  Yes  N/A

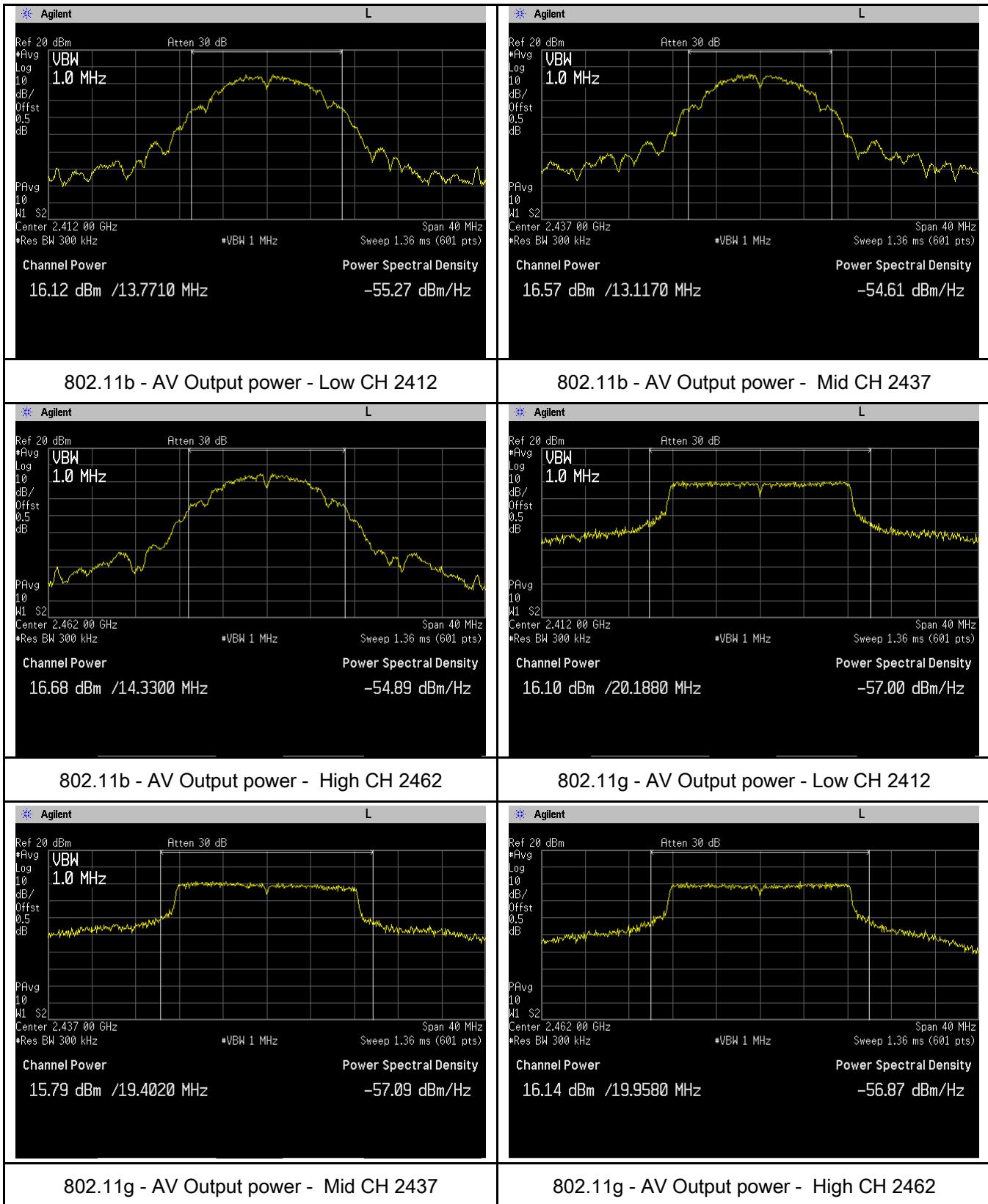
Test Plot  Yes (See below)  N/A

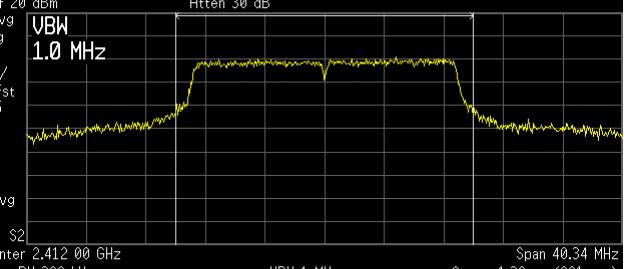
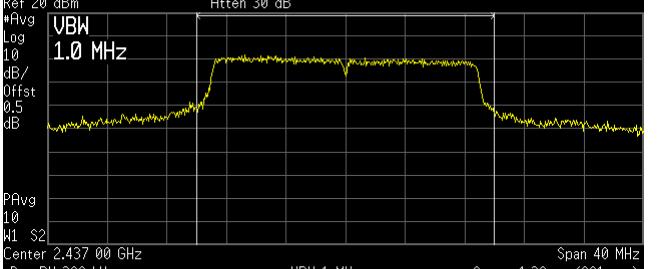
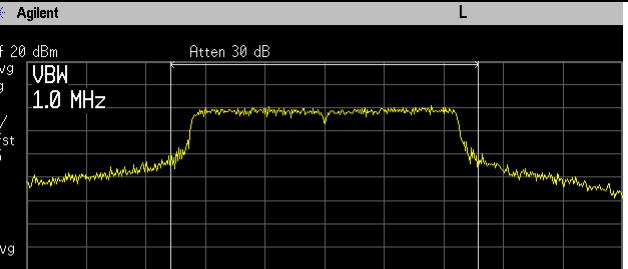
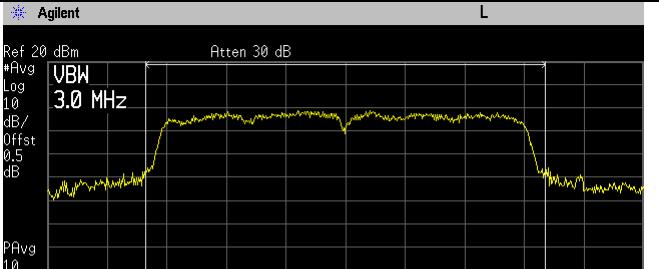
#### Output Power measurement result

Type	Test mode	CH	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Result
Output power	802.11b	Low	2412	16.12	30	Pass
		Mid	2437	16.57	30	Pass
		High	2462	<b>16.68</b>	30	Pass
	802.11g	Low	2412	16.10	30	Pass
		Mid	2437	15.79	30	Pass
		High	2462	<b>16.14</b>	30	Pass
	802.11n (20M)	Low	2412	16.31	30	Pass
		Mid	2437	<b>16.78</b>	30	Pass
		High	2462	16.09	30	Pass
	802.11n (40M)	Low	2422	11.58	30	Pass
		Mid	2437	<b>11.68</b>	30	Pass
		High	2452	11.65	30	Pass

## Test Plots

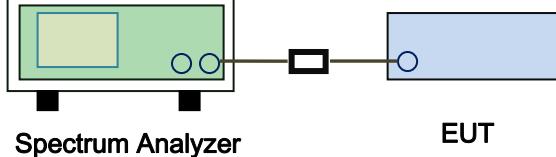
### The Average Power



<p><b>Agilent</b></p>  <p>Ref 20 dBm #Avg 10 Log 10 dB/Offst 0.5 dB VBW 1.0 MHz Atten 30 dB PSSD -56.73 dBm/Hz</p> <p>Center 2.412 00 GHz Span 40.34 MHz #Res BW 300 kHz *VBW 1 MHz Sweep 1.36 ms (601 pts)</p> <p>Channel Power 16.31 dBm /20.1290 MHz</p>	<p><b>Agilent</b></p>  <p>Ref 20 dBm #Avg 10 Log 10 dB/Offst 0.5 dB VBW 1.0 MHz Atten 30 dB PSSD -56.22 dBm/Hz</p> <p>Center 2.437 00 GHz Span 40 MHz #Res BW 300 kHz *VBW 1 MHz Sweep 1.36 ms (601 pts)</p> <p>Channel Power 16.78 dBm /19.9370 MHz</p>
<p><b>802.11n20 - AV Output power - Low CH 2412</b></p> <p><b>Agilent</b></p>  <p>Ref 20 dBm #Avg 10 Log 10 dB/Offst 0.5 dB VBW 1.0 MHz Atten 30 dB PSSD -57.05 dBm/Hz</p> <p>Center 2.462 00 GHz Span 40 MHz #Res BW 300 kHz *VBW 1 MHz Sweep 1.36 ms (601 pts)</p> <p>Channel Power 16.09 dBm /20.5960 MHz</p>	<p><b>802.11n20 - AV Output power - Mid CH 2437</b></p> <p><b>Agilent</b></p>  <p>Ref 20 dBm #Avg 10 Log 10 dB/Offst 0.5 dB VBW 3.0 MHz Atten 30 dB PSSD -64.45 dBm/Hz</p> <p>Center 2.422 0 GHz Span 60 MHz #Res BW 1 MHz *VBW 3 MHz Sweep 1 ms (601 pts)</p> <p>Channel Power 11.58 dBm /40.0680 MHz</p>
<p><b>802.11n20 - AV Output power - High CH 2462</b></p> <p><b>Agilent</b></p>  <p>Ref 20 dBm #Avg 10 Log 10 dB/Offst 0.5 dB VBW 3.0 MHz Atten 30 dB PSSD -64.28 dBm/Hz</p> <p>Center 2.437 0 GHz Span 60 MHz #Res BW 1 MHz *VBW 3 MHz Sweep 1 ms (601 pts)</p> <p>Channel Power 11.68 dBm /39.4220 MHz</p>	<p><b>802.11n40 - AV Output power - Low CH 2422</b></p> <p><b>Agilent</b></p>  <p>Ref 20 dBm #Avg 10 Log 10 dB/Offst 0.5 dB VBW 3.0 MHz Atten 30 dB PSSD -64.38 dBm/Hz</p> <p>Center 2.452 0 GHz Span 60 MHz #Res BW 1 MHz *VBW 3 MHz Sweep 1 ms (601 pts)</p> <p>Channel Power 11.65 dBm /40.0740 MHz</p>
<p><b>802.11n40 - AV Output power - Mid CH 2437</b></p>	<p><b>802.11n40 - AV Output power - High CH 2452</b></p>

## 6.4 Power Spectral Density

Temperature	26 °C
Relative Humidity	56%
Atmospheric Pressure	1022mbar
Test date :	December 26, 2017
Tested By :	Aaron Liang

Spec	Item	Requirement	Applicable
§15.247(e)	a)	The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.	<input checked="" type="checkbox"/>
Test Setup		 <p style="text-align: center;">Spectrum Analyzer                                  EUT</p>	
Test Procedure		<p>558074 D01 DTS MEAS Guidance v03r03, 10.2 power spectral density method power spectral density measurement procedure</p> <ul style="list-style-type: none"> <li>- a) Set analyzer center frequency to DTS channel center frequency.</li> <li>- b) Set the span to 1.5 times the DTS bandwidth.</li> <li>- c) Set the RBW to: <math>3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}</math>.</li> <li>- d) Set the VBW <math>\geq 3 \times \text{RBW}</math>.</li> <li>- e) Detector = peak.</li> <li>- f) Sweep time = auto couple.</li> <li>- g) Trace mode = max hold.</li> <li>- h) Allow trace to fully stabilize.</li> <li>- i) Use the peak marker function to determine the maximum amplitude level within the RBW.</li> <li>- j) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.</li> </ul>	
Remark			
Result		<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	

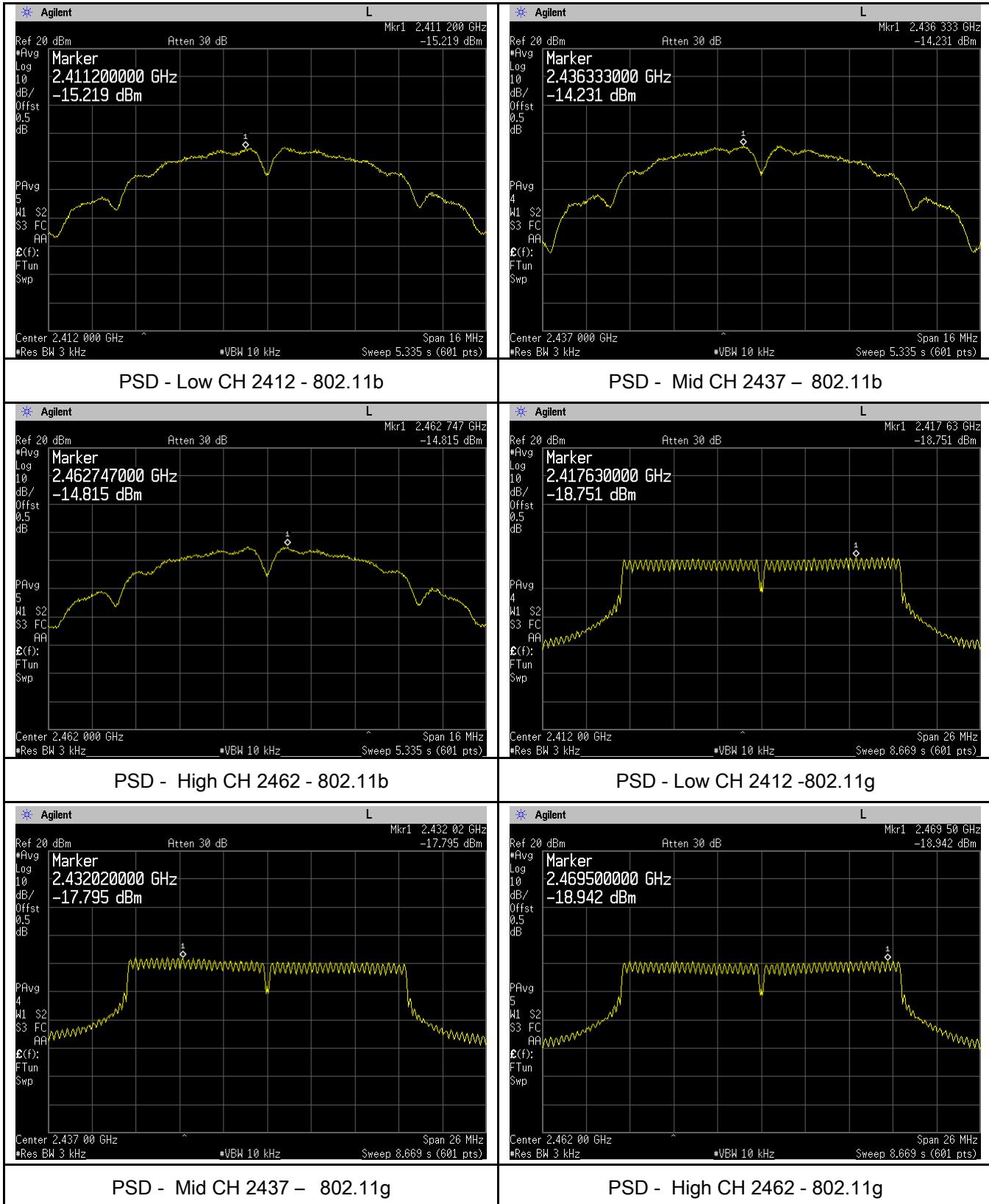
**Test Data**     Yes     N/A  
**Test Plot**     Yes (See below)     N/A

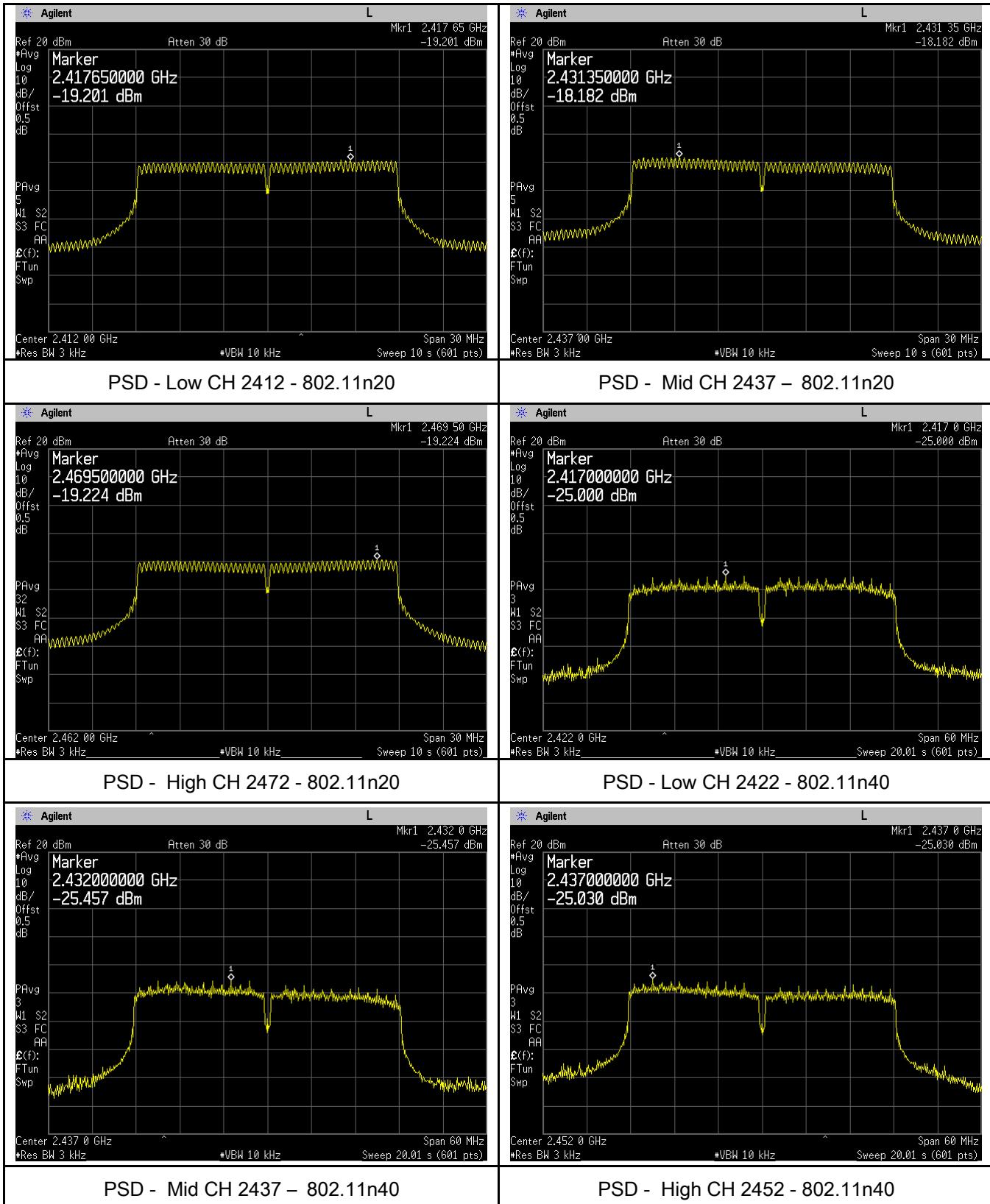
### Power Spectral Density measurement result

Type	Test mode	CH	Freq (MHz)	PSD	Limit (dBm)	Result
				(dBm)		
PSD	802.11b	Low	2412	-15.219	8	Pass
		Mid	2437	-14.231	8	Pass
		High	2462	-14.815	8	Pass
	802.11g	Low	2412	-18.751	8	Pass
		Mid	2437	-17.795	8	Pass
		High	2462	-18.942	8	Pass
	802.11n (20M)	Low	2412	-19.201	8	Pass
		Mid	2437	-18.182	8	Pass
		High	2462	-19.224	8	Pass
	802.11n (40M)	Low	2422	-25.000	8	Pass
		Mid	2437	-25.457	8	Pass
		High	2452	-25.030	8	Pass

## Test Plots

### Power Spectral Density measurement result

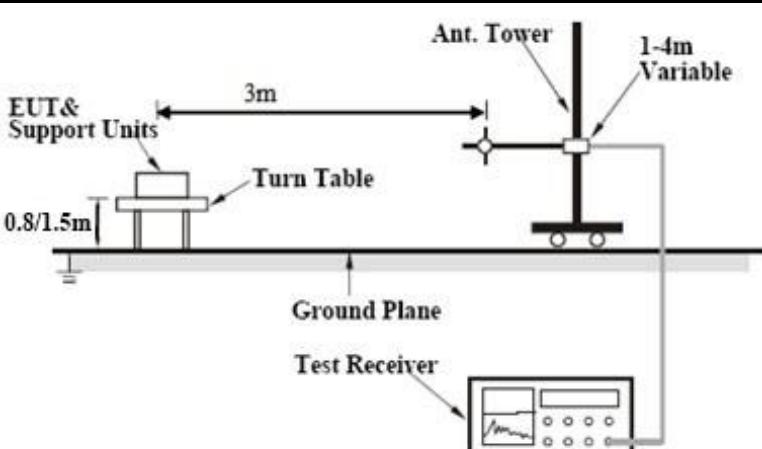




## 6.5 Band-Edge & Unwanted Emissions into Restricted Frequency Bands

Temperature	25 °C
Relative Humidity	57%
Atmospheric Pressure	1023mbar
Test date :	December 27, 2017
Tested By :	Aaron Liang

### Requirement(s):

Spec	Item	Requirement	Applicable
§15.247(d)	a)	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.	<input checked="" type="checkbox"/>
Test Setup			
Test Procedure	<p>Radiated Method Only</p> <ul style="list-style-type: none"> <li>- 1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.</li> <li>- 2. Position the EUT without connection to measurement instrument. Put it on the Rotated table and turn on the EUT and make it operate in transmitting mode. Then set it to Low Channel and High Channel within its operating range, and make sure the instrument is operated in its linear range.</li> </ul>		

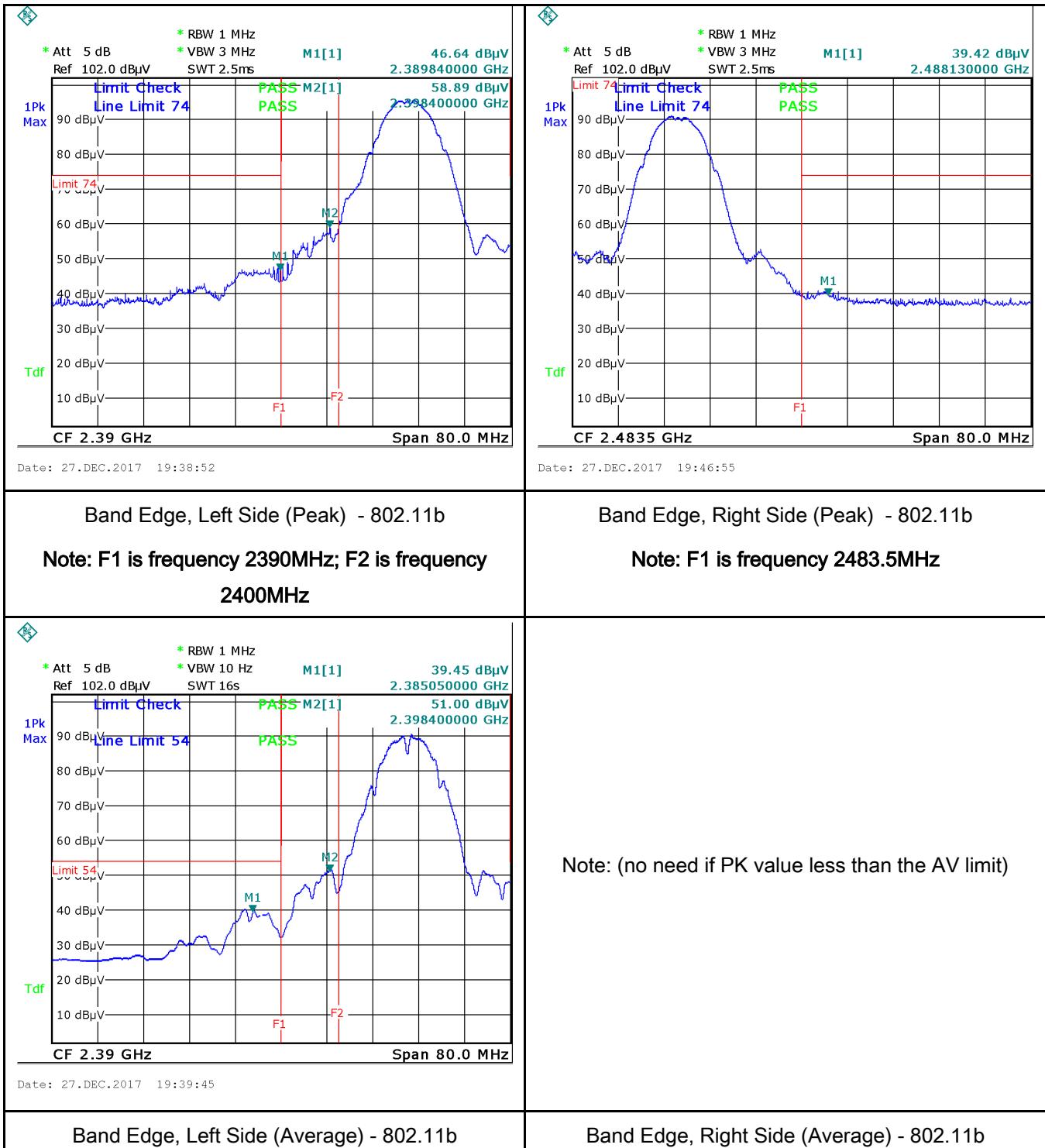
	<ul style="list-style-type: none"> <li>- 3. First, set both RBW and VBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100kHz bandwidth from band edge, check the emission of EUT, if pass then set Spectrum Analyzer as below: <ul style="list-style-type: none"> <li>a. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasiy Peak detection at frequency below 1GHz.</li> <li>b. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz with Peak detection for Peak measurement at frequency above 1GHz.</li> <li>c. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz with Peak detection for Average Measurement as below at frequency above 1GHz.</li> </ul> </li> <li>- 4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.</li> <li>- 5. Repeat above procedures until all measured frequencies were complete.</li> </ul>
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

**Test Data**     Yes       N/A

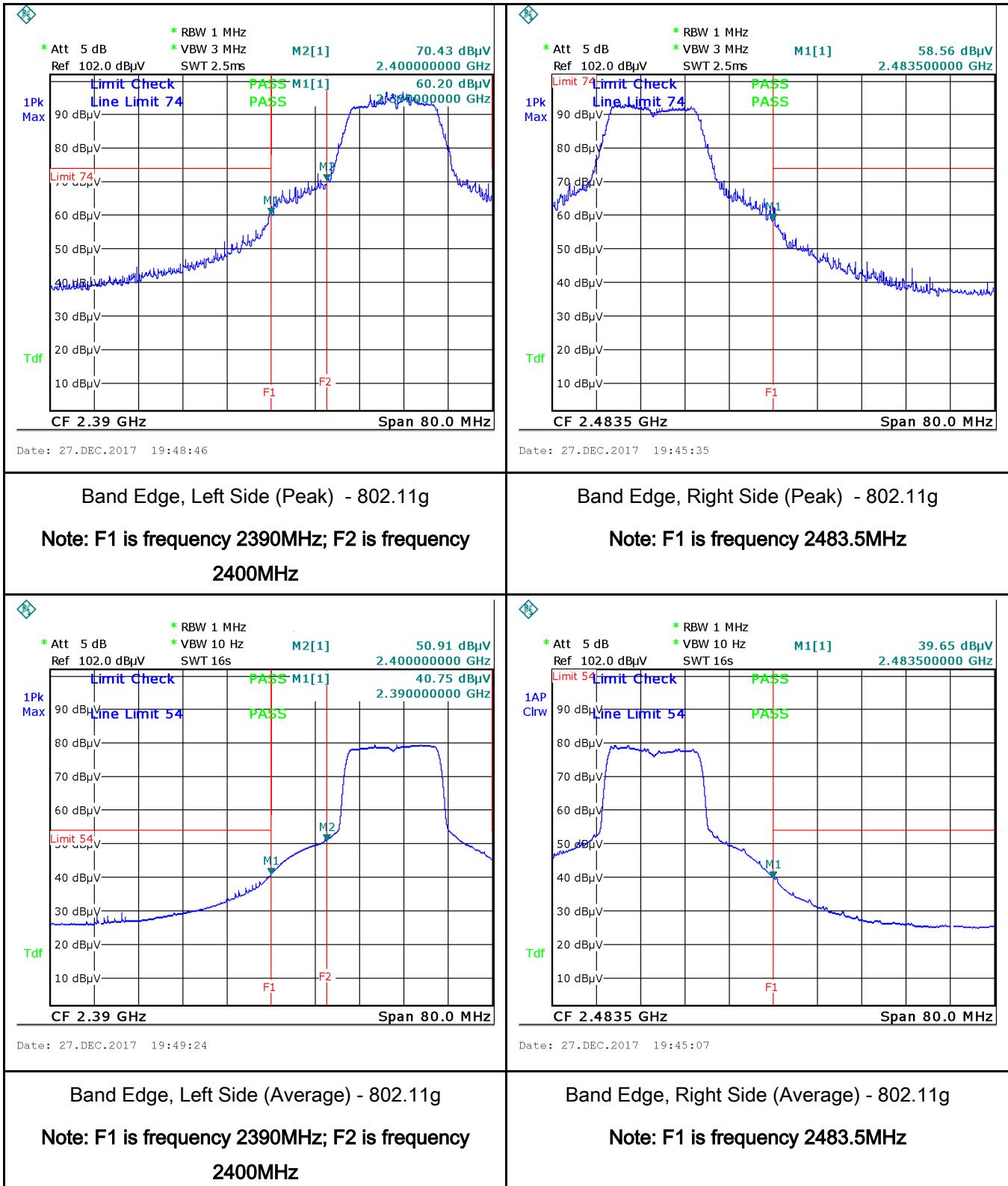
**Test Plot**     Yes (See below)       N/A

## Test Plots

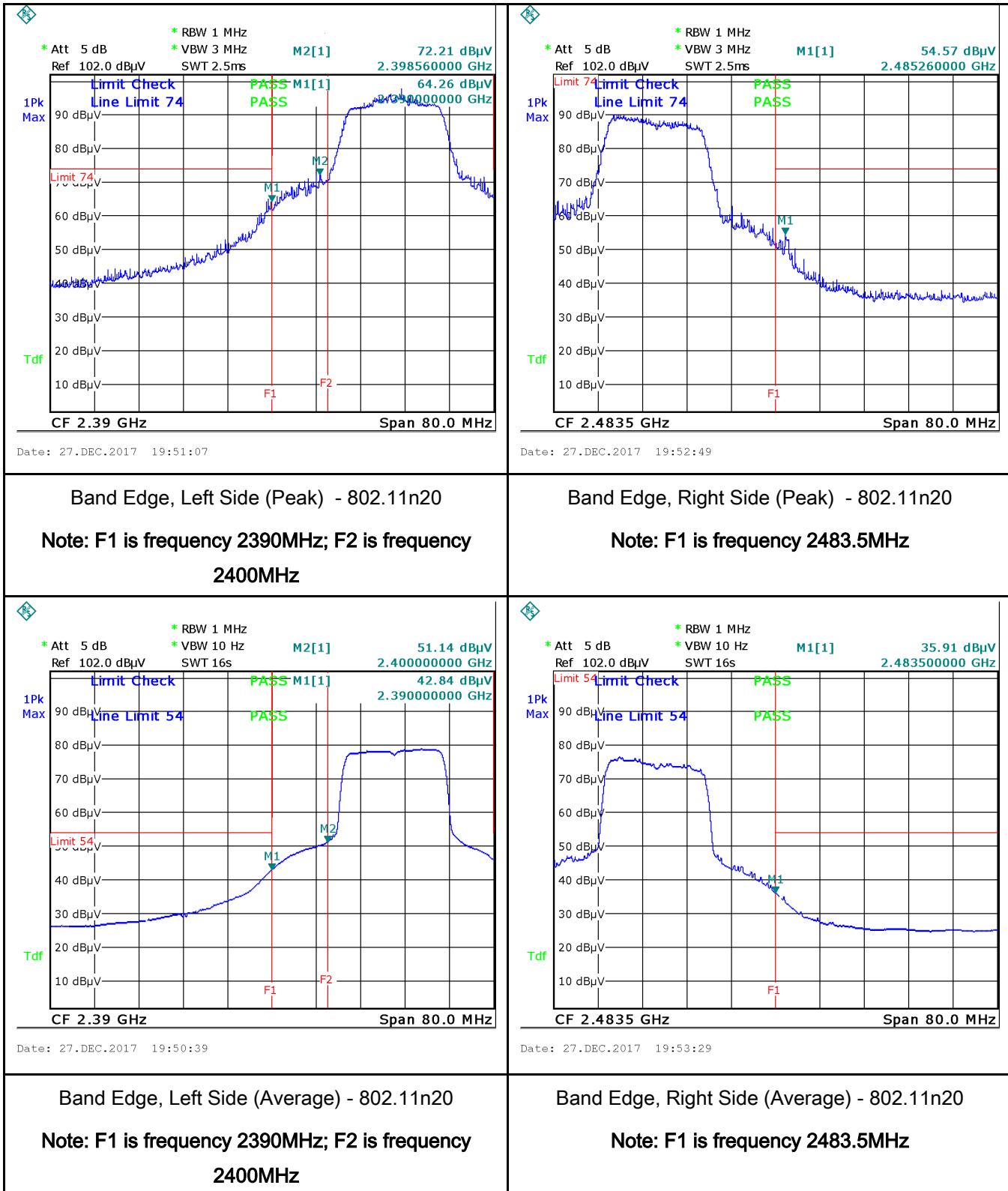
### Band Edge measurement result



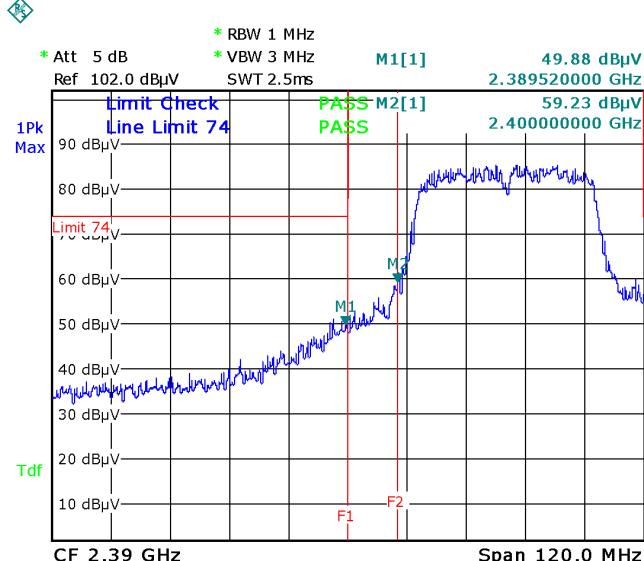
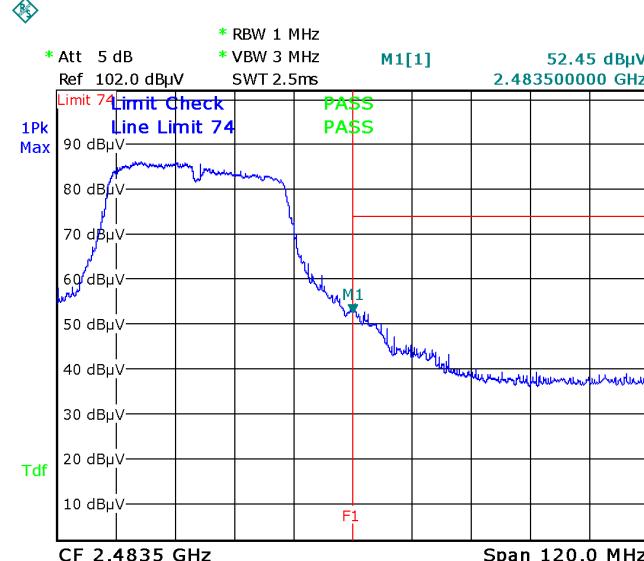
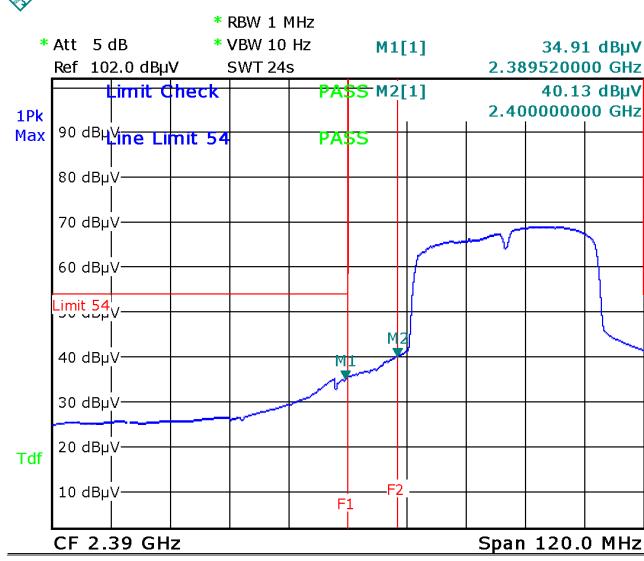
Note: Both Horizontal and vertical polarities were investigated



Note: Both Horizontal and vertical polarities were investigated



Note: Both Horizontal and vertical polarities were investigated

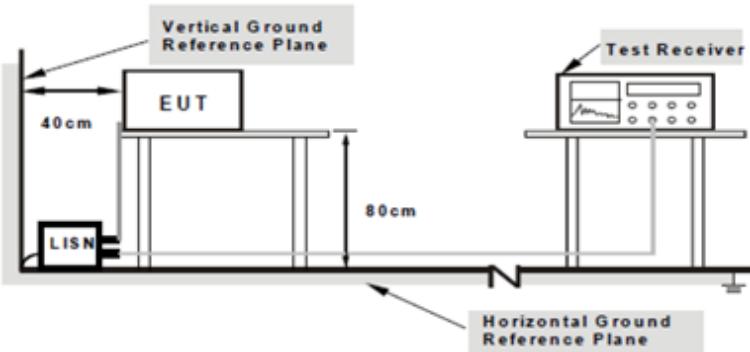
 <p>* RBW 1 MHz * Att 5 dB Ref 102.0 dB<math>\mu</math>V * VBW 3 MHz SWT 2.5ms</p> <p>M1[1] 49.88 dB<math>\mu</math>V 2.389520000 GHz</p> <p>1Pk Max 90 dB<math>\mu</math>V Tdf 10 dB<math>\mu</math>V</p> <p>Limit Check Line Limit 74 Limit 74 F1 F2 M1 M2</p> <p>PASS M2[1] PASS</p> <p>CF 2.39 GHz Span 120.0 MHz</p>	 <p>* RBW 1 MHz * Att 5 dB Ref 102.0 dB<math>\mu</math>V * VBW 3 MHz SWT 2.5ms</p> <p>M1[1] 52.45 dB<math>\mu</math>V 2.483500000 GHz</p> <p>1Pk Max 90 dB<math>\mu</math>V Tdf 10 dB<math>\mu</math>V</p> <p>Limit 74 Limit Check Line Limit 74 F1 M1</p> <p>PASS PASS</p> <p>CF 2.4835 GHz Span 120.0 MHz</p>
<p>Date: 27.DEC.2017 20:05:35</p> <p>Band Edge, Left Side (Peak) - 802.11n40</p> <p>Note: F1 is frequency 2390MHz; F2 is frequency 2400MHz</p>	<p>Date: 27.DEC.2017 20:03:58</p> <p>Band Edge, Right Side (Peak) - 802.11n40</p> <p>Note: F1 is frequency 2483.5MHz</p>
 <p>* RBW 1 MHz * Att 5 dB Ref 102.0 dB<math>\mu</math>V * VBW 10 Hz SWT 24s</p> <p>M1[1] 34.91 dB<math>\mu</math>V 2.389520000 GHz</p> <p>1Pk Max 90 dB<math>\mu</math>V Tdf 10 dB<math>\mu</math>V</p> <p>Line Limit 54 Limit 54 F1 F2 M1 M2</p> <p>PASS M2[1] PASS</p> <p>CF 2.39 GHz Span 120.0 MHz</p>	<p>Note: (no need if PK value less than the AV limit)</p>
<p>Date: 27.DEC.2017 20:07:12</p> <p>Band Edge, Left Side (Average) - 802.11n40</p> <p>Note: F1 is frequency 2390MHz; F2 is frequency 2400MHz</p>	<p>Band Edge, Right Side (Average) - 802.11n40</p> <p>Note: F1 is frequency 2483.5MHz</p>

Note: Both Horizontal and vertical polarities were investigated

## 6.6 AC Power Line Conducted Emissions

Temperature	25 °C
Relative Humidity	50%
Atmospheric Pressure	1008mbar
Test date :	December 08, 2017
Tested By :	Aaron Liang

### Requirement(s):

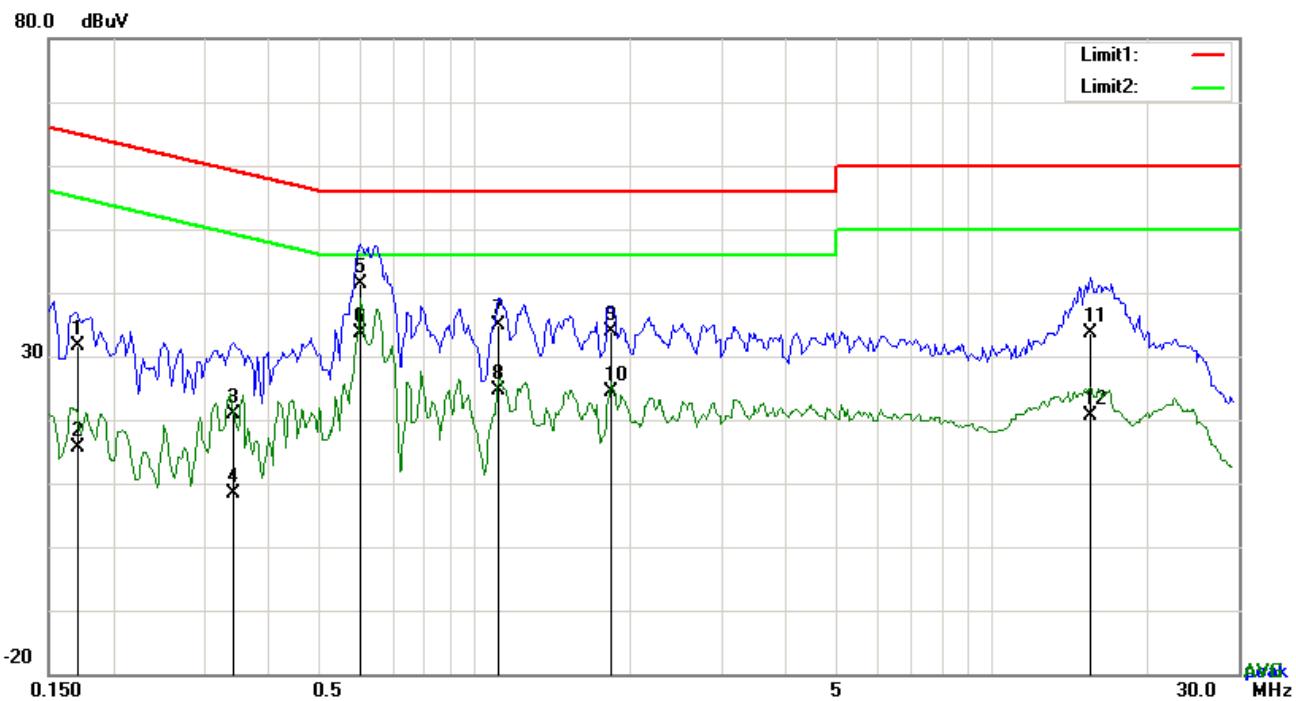
Spec	Item	Requirement	Applicable														
47CFR§15. 207, RSS210 (A8.1)	a)	<p>For Low-power radio-frequency devices that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 [mu] H/50 ohms line impedance stabilization network (LISN). The lower limit applies at the boundary between the frequencies ranges.</p> <table border="1"> <thead> <tr> <th rowspan="2">Frequency ranges (MHz)</th> <th colspan="2">Limit (dBμV)</th> </tr> <tr> <th>QP</th> <th>Average</th> </tr> </thead> <tbody> <tr> <td>0.15 ~ 0.5</td> <td>66 – 56</td> <td>56 – 46</td> </tr> <tr> <td>0.5 ~ 5</td> <td>56</td> <td>46</td> </tr> <tr> <td>5 ~ 30</td> <td>60</td> <td>50</td> </tr> </tbody> </table>	Frequency ranges (MHz)	Limit (dBμV)		QP	Average	0.15 ~ 0.5	66 – 56	56 – 46	0.5 ~ 5	56	46	5 ~ 30	60	50	<input checked="" type="checkbox"/>
Frequency ranges (MHz)	Limit (dBμV)																
	QP	Average															
0.15 ~ 0.5	66 – 56	56 – 46															
0.5 ~ 5	56	46															
5 ~ 30	60	50															
Test Setup	 <p>Note: 1. Support units were connected to second LISN. 2. Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.</p>																
Procedure	<ol style="list-style-type: none"> <li>The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m x 1m x 0.8m high, non-metallic table.</li> <li>The power supply for the EUT was fed through a 50W/50mH EUT LISN, connected to filtered mains.</li> <li>The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss</li> </ol>																

	<p>coaxial cable.</p> <ol style="list-style-type: none"> <li>4. All other supporting equipment were powered separately from another main supply.</li> <li>5. The EUT was switched on and allowed to warm up to its normal operating condition.</li> <li>6. A scan was made on the NEUTRAL line (for AC mains) or Earth line (for DC power) over the required frequency range using an EMI test receiver.</li> <li>7. High peaks, relative to the limit line, The EMI test receiver was then tuned to the selected frequencies and the necessary measurements made with a receiver bandwidth setting of 10 kHz.</li> <li>8. Step 7 was then repeated for the LIVE line (for AC mains) or DC line (for DC power).</li> </ol>
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data     Yes       N/A

Test Plot     Yes (See below)       N/A

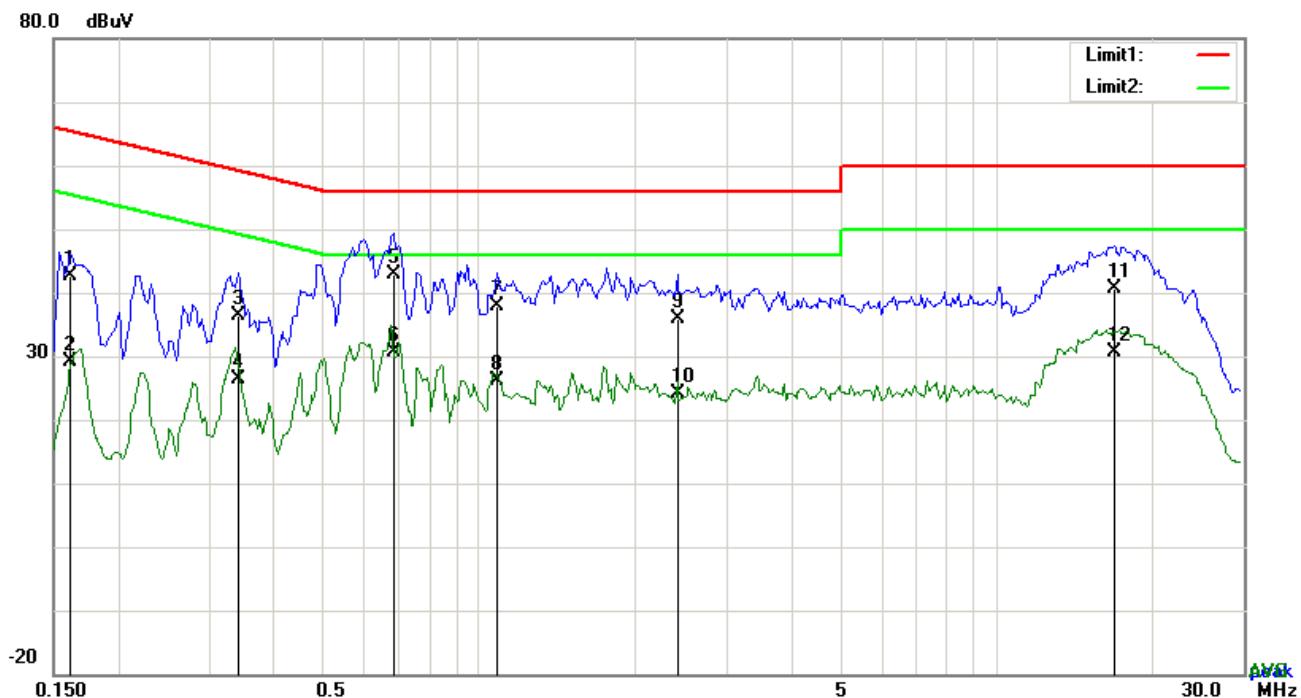
**Test Mode:** Transmitting Mode



Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dB $\mu$ V)	Detector	Corrected (dB)	Result (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)
1	L1	0.1712	21.62	QP	10.03	31.65	64.90	-33.25
2	L1	0.1712	5.68	AVG	10.03	15.71	54.90	-39.19
3	L1	0.3411	10.81	QP	10.03	20.84	59.18	-38.34
4	L1	0.3411	-1.62	AVG	10.03	8.41	49.18	-40.77
5	L1	0.6024	31.24	QP	10.03	41.27	56.00	-14.73
6	L1	0.6024	23.62	AVG	10.03	33.65	46.00	-12.35
7	L1	1.1172	24.85	QP	10.03	34.88	56.00	-21.12
8	L1	1.1172	14.65	AVG	10.03	24.68	46.00	-21.32
9	L1	1.8387	23.94	QP	10.04	33.98	56.00	-22.02
10	L1	1.8387	14.30	AVG	10.04	24.34	46.00	-21.66
11	L1	15.5073	23.50	QP	10.23	33.73	60.00	-26.27
12	L1	15.5073	10.35	AVG	10.23	20.58	50.00	-29.42

**Test Mode:** Transmitting Mode

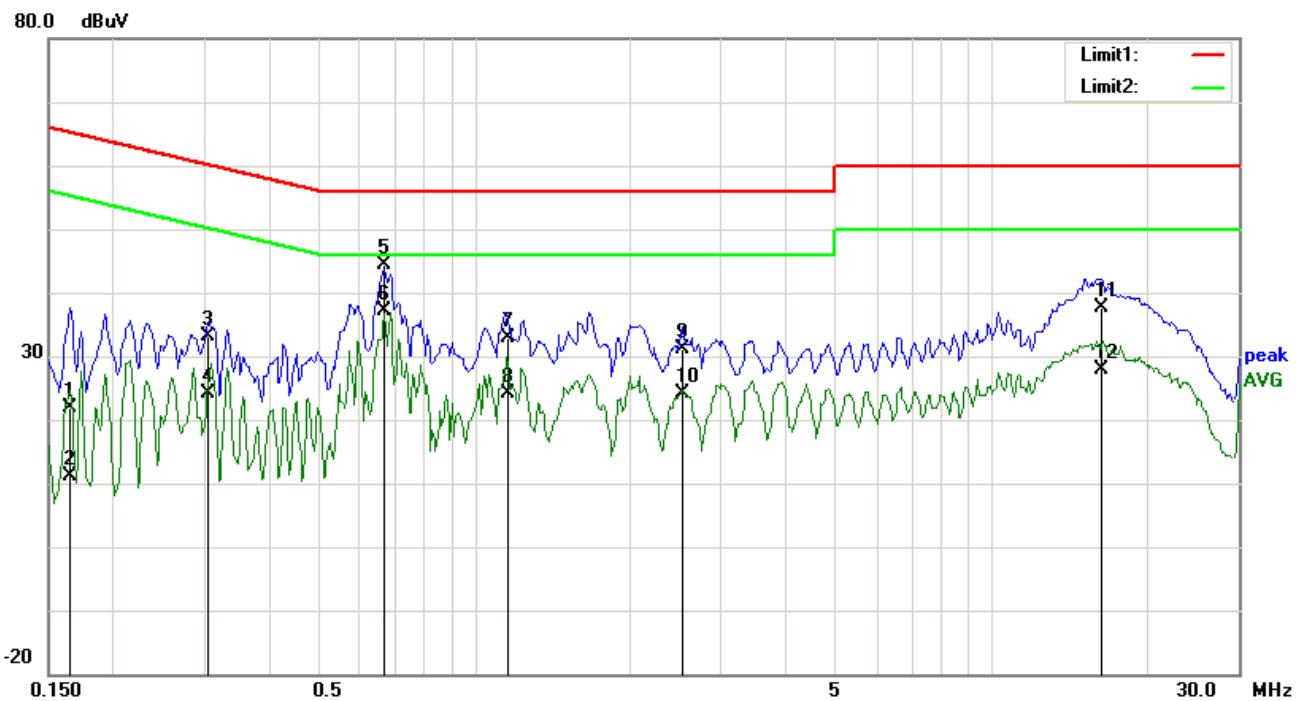


### Test Data

Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dB $\mu$ V)	Detector	Corrected (dB)	Result (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)
1	N	0.1617	32.49	QP	10.02	42.51	65.38	-22.87
2	N	0.1617	19.05	AVG	10.02	29.07	55.38	-26.31
3	N	0.3411	26.48	QP	10.02	36.50	59.18	-22.68
4	N	0.3411	16.41	AVG	10.02	26.43	49.18	-22.75
5	N	0.6843	32.86	QP	10.02	42.88	56.00	-13.12
6	N	0.6843	20.60	AVG	10.02	30.62	46.00	-15.38
7	N	1.0821	27.79	QP	10.03	37.82	56.00	-18.18
8	N	1.0821	16.03	AVG	10.03	26.06	46.00	-19.94
9	N	2.4120	25.75	QP	10.04	35.79	56.00	-20.21
10	N	2.4120	14.01	AVG	10.04	24.05	46.00	-21.95
11	N	16.8801	30.37	QP	10.22	40.59	60.00	-19.41
12	N	16.8801	20.30	AVG	10.22	30.52	50.00	-19.48

**Test Mode:** Transmitting Mode

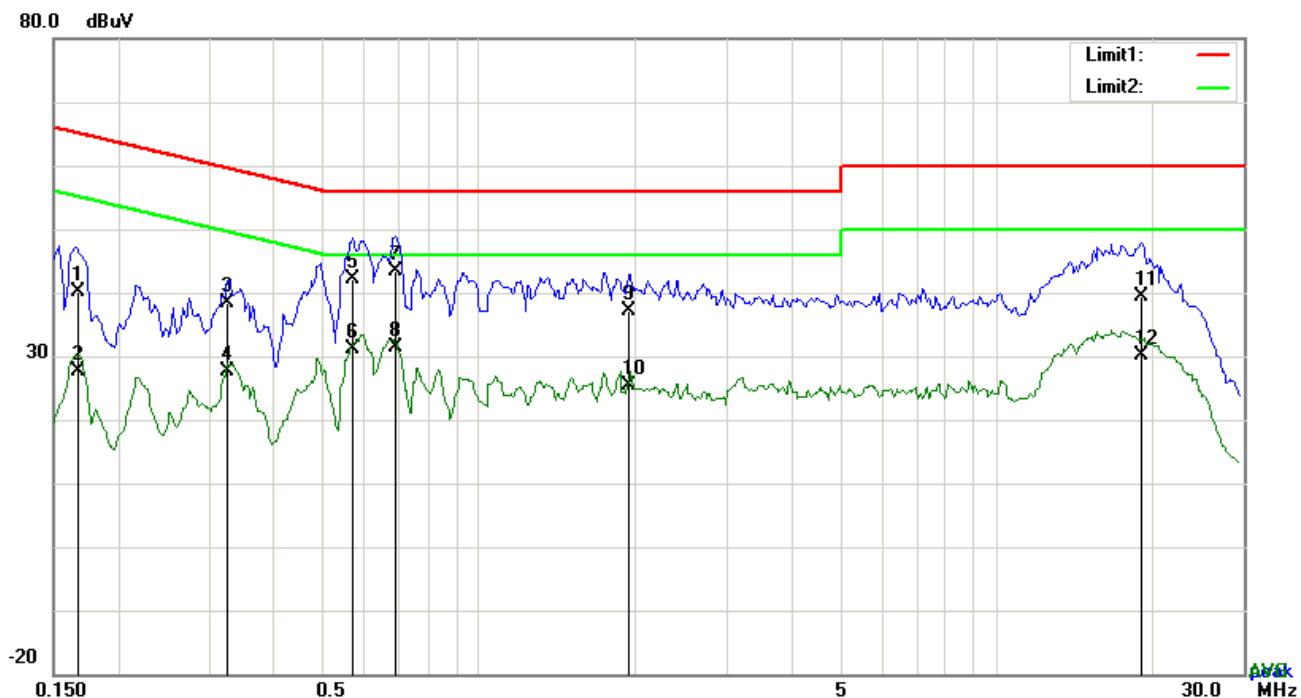


### Test Data

Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dB $\mu$ V)	Detector	Corrected (dB)	Result (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)
1	L1	0.1656	11.97	QP	10.03	22.00	65.18	-43.18
2	L1	0.1656	1.15	AVG	10.03	11.18	55.18	-44.00
3	L1	0.3060	23.11	QP	10.03	33.14	60.08	-26.94
4	L1	0.3060	14.14	AVG	10.03	24.17	50.08	-25.91
5	L1	0.6687	34.31	QP	10.03	44.34	56.00	-11.66
6	L1	0.6687	27.11	AVG	10.03	37.14	46.00	-8.86
7	L1	1.1595	22.76	QP	10.03	32.79	56.00	-23.21
8	L1	1.1595	14.02	AVG	10.03	24.05	46.00	-21.95
9	L1	2.5212	21.09	QP	10.05	31.14	56.00	-24.86
10	L1	2.5212	13.98	AVG	10.05	24.03	46.00	-21.97
11	L1	16.2444	27.43	QP	10.24	37.67	60.00	-22.33
12	L1	16.2444	17.76	AVG	10.24	28.00	50.00	-22.00

**Test Mode:** Transmitting Mode



### Test Data

Phase Neutral Plot at 240Vac, 60Hz

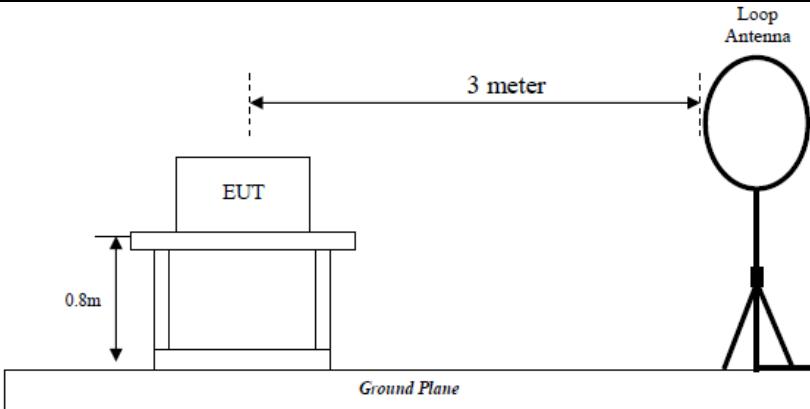
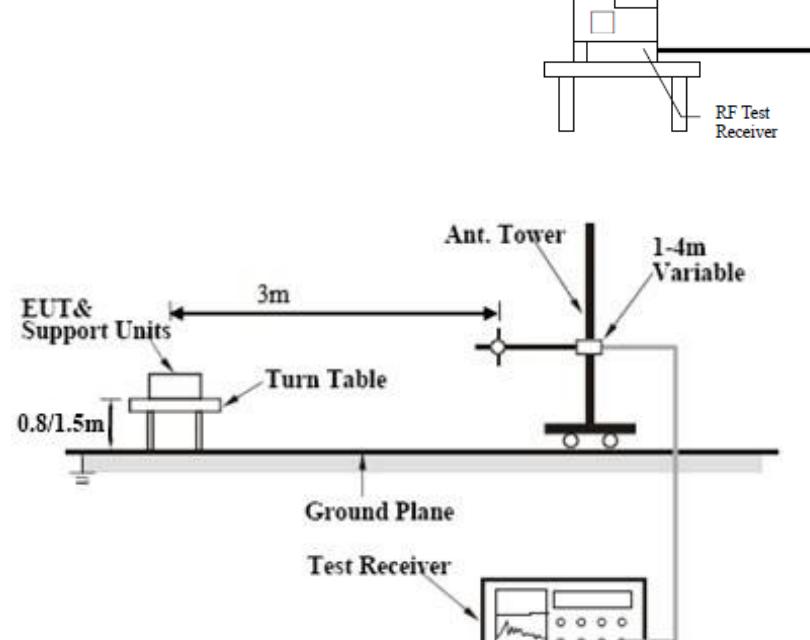
No.	P/L	Frequency (MHz)	Reading (dB $\mu$ V)	Detector	Corrected (dB)	Result (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)
1	N	0.1677	30.06	QP	10.02	40.08	65.07	-24.99
2	N	0.1677	17.69	AVG	10.02	27.71	55.07	-27.36
3	N	0.3255	28.38	QP	10.02	38.40	59.57	-21.17
4	N	0.3255	17.61	AVG	10.02	27.63	49.57	-21.94
5	N	0.5673	32.02	QP	10.02	42.04	56.00	-13.96
6	N	0.5673	21.17	AVG	10.02	31.19	46.00	-14.81
7	N	0.6882	33.40	QP	10.02	43.42	56.00	-12.58
8	N	0.6882	21.47	AVG	10.02	31.49	46.00	-14.51
9	N	1.9479	27.05	QP	10.04	37.09	56.00	-18.91
10	N	1.9479	15.34	AVG	10.04	25.38	46.00	-20.62
11	N	19.0758	29.14	QP	10.25	39.39	60.00	-20.61
12	N	19.0758	19.92	AVG	10.25	30.17	50.00	-19.83

## 6.7 Radiated Spurious Emissions & Restricted Band

Temperature	25 °C
Relative Humidity	57%
Atmospheric Pressure	1023mbar
Test date :	December 27, 2017
Tested By :	Aaron Liang

### Requirement(s):

Spec	Item	Requirement	Applicable																
47CFR§15. 247(d), RSS210	a)	<p>Except higher limit as specified elsewhere in other section, the emissions from the low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges</p> <table border="1"> <thead> <tr> <th>Frequency range (MHz)</th> <th>Field Strength (<math>\mu</math>V/m)</th> </tr> </thead> <tbody> <tr> <td>0.009~0.490</td> <td>2400/F(KHz)</td> </tr> <tr> <td>0.490~1.705</td> <td>24000/F(KHz)</td> </tr> <tr> <td>1.705~30.0</td> <td>30</td> </tr> <tr> <td>30 – 88</td> <td>100</td> </tr> <tr> <td>88 – 216</td> <td>150</td> </tr> <tr> <td>216~960</td> <td>200</td> </tr> <tr> <td>Above 960</td> <td>500</td> </tr> </tbody> </table>	Frequency range (MHz)	Field Strength ( $\mu$ V/m)	0.009~0.490	2400/F(KHz)	0.490~1.705	24000/F(KHz)	1.705~30.0	30	30 – 88	100	88 – 216	150	216~960	200	Above 960	500	<input checked="" type="checkbox"/>
Frequency range (MHz)	Field Strength ( $\mu$ V/m)																		
0.009~0.490	2400/F(KHz)																		
0.490~1.705	24000/F(KHz)																		
1.705~30.0	30																		
30 – 88	100																		
88 – 216	150																		
216~960	200																		
Above 960	500																		
	b)	<p>For non-restricted band, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB or 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, determined by the measurement method on output power to be used. Attenuation below the general limits specified in § 15.209(a) is not required</p> <p><input checked="" type="checkbox"/> 20 dB down      <input type="checkbox"/> 30 dB down</p>	<input checked="" type="checkbox"/>																
	c)	or restricted band, emission must also comply with the radiated emission limits specified in 15.209	<input checked="" type="checkbox"/>																

Test Setup	 <p>Diagram showing the test setup. An EUT (Equipment Under Test) is placed on a turntable. A vertical support unit is positioned between the EUT and the turntable. A loop antenna is located 3 meters away from the EUT. The entire setup rests on a ground plane. An RF Test Receiver is connected to the loop antenna.</p>  <p>Diagram showing an alternative test setup. The EUT and its support units are mounted on a turntable. The turntable is positioned 3 meters away from an antenna tower. The antenna tower has a height of 1-4m and is variable. The entire assembly sits on a ground plane. A Test Receiver is connected to the antenna tower.</p>
Procedure	<ol style="list-style-type: none"> <li>1. The EUT was switched on and allowed to warm up to its normal operating condition.</li> <li>2. The test was carried out at the selected frequency points obtained from the EUT characterization. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner:             <ol style="list-style-type: none"> <li>a. Vertical or horizontal polarization (whichever gave the higher emission level over a full rotation of the EUT) was chosen.</li> <li>b. The EUT was then rotated to the direction that gave the maximum emission.</li> <li>c. Finally, the antenna height was adjusted to the height that gave the maximum emission.</li> </ol> </li> <li>3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasiy Peak detection at frequency below 1GHz.</li> <li>4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz with Peak detection for Peak measurement at frequency above 1GHz.</li> </ol>

	<p>The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz with Peak detection for Average Measurement as below at frequency above 1GHz.</p> <p>5. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.</p>
Remark	Different RF configuration has been evaluated but not much difference was found. The data presented here is the worst case data with EUT under 802.11n – HT20-2437MHz mode.
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data  Yes  N/A

Test Plot  Yes (See below)  N/A

## Test Result:

Test Mode:	Transmitting Mode
------------	-------------------

Frequency range: 9KHz - 30MHz

Freq. (MHz)	Detection value	Factor (dB/m)	Reading (dBuV/m)	Result (dBuV/m)	Limit@3m (dBuV/m)	Margin (dB)
--	--	--	--	--	--	>20
--	--	--	--	--	--	>20

Note:

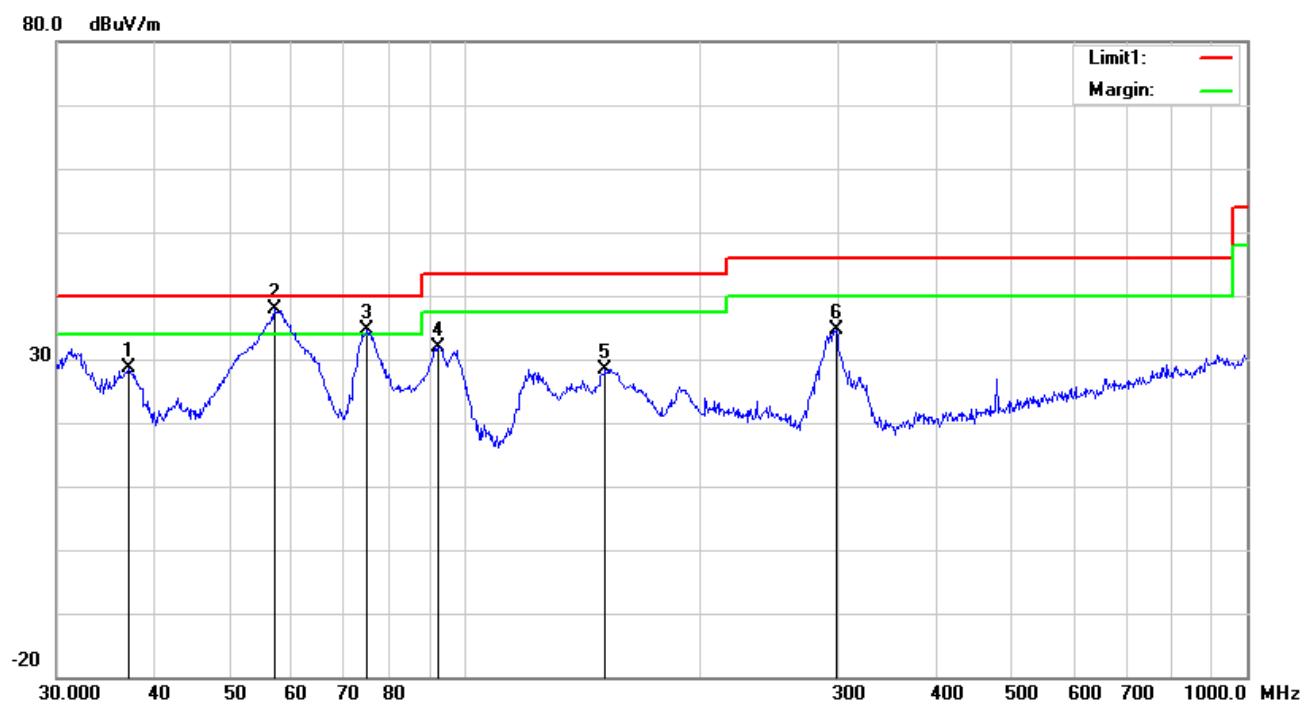
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =  $40 \log (\text{specific distance}/\text{test distance})(\text{dB})$ ;

Limit line = specific limits(dBuv) + distance extrapolation factor.

**Test Mode:** Transmitting Mode

**30MHz -1GHz**

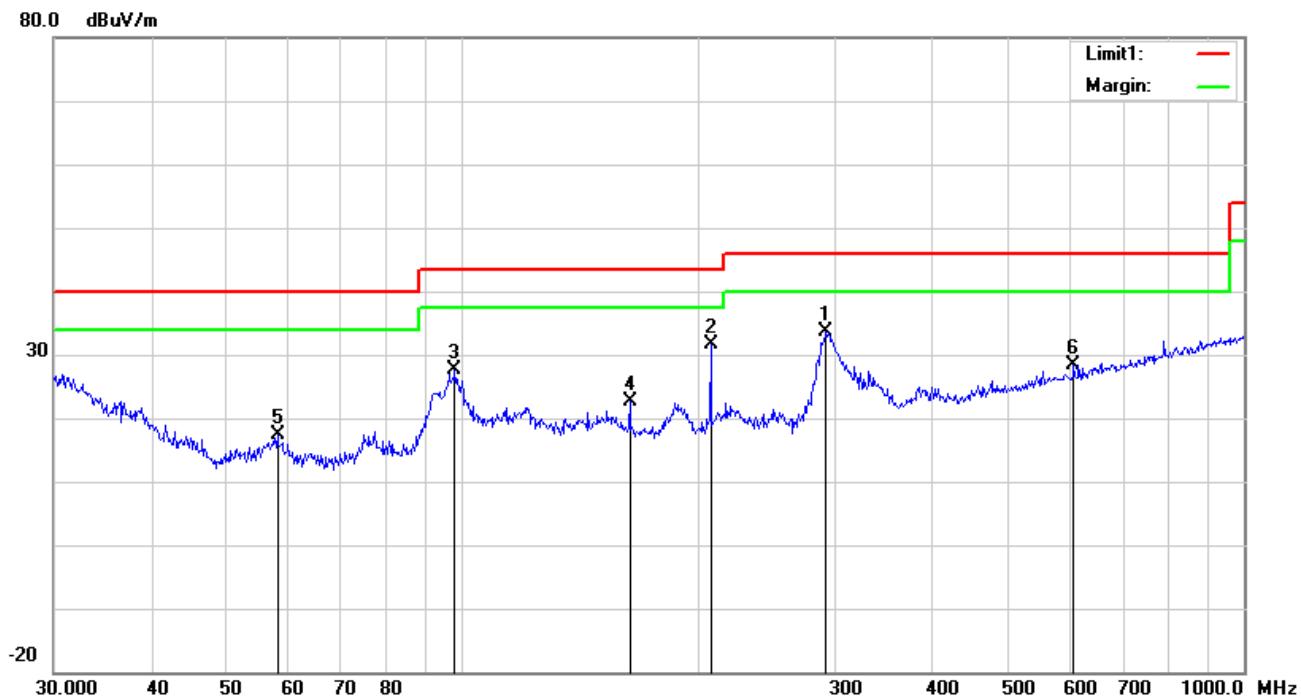


### Test Data

Vertical Polarity Plot @3m

No.	P/L	Frequency (MHz)	Reading (dBuV/m)	Detect or	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degr ee
1	V	37.0249	34.01	peak	16.07	22.26	0.77	28.59	40.00	-11.41	100	105
2	V	56.9912	51.77	QP	7.63	22.40	0.77	37.77	40.00	-2.23	100	32
3	V	74.9191	48.29	QP	7.70	22.40	0.96	34.55	40.00	-5.45	100	191
4	V	92.1388	44.72	peak	8.51	22.32	0.97	31.88	43.50	-11.62	200	139
5	V	151.0666	36.70	peak	12.60	22.33	1.35	28.32	43.50	-15.18	100	179
6	V	298.2681	41.58	peak	13.52	22.29	1.79	34.60	46.00	-11.40	100	157

## 30MHz -1GHz



### Test Data

#### Horizontal Polarity Plot @3m

N o.	P/ L	Frequency	Reading	Detect or	Ant_F	PA_G	Cab_ L	Result	Limit	Margin	Height	Degr ee
		(MHz)	(dBuV/m )		(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	( )
1	H	292.0583	40.77	peak	13.25	22.29	1.78	33.51	46.00	-12.49	100	205
2	H	207.8501	40.50	peak	11.99	22.37	1.57	31.69	43.50	-11.81	100	230
3	H	97.7983	39.08	peak	9.87	22.32	1.06	27.69	43.50	-15.81	100	226
4	H	163.7550	31.31	peak	12.30	22.27	1.38	22.72	43.50	-20.78	100	193
5	H	57.9993	31.50	peak	7.52	22.40	0.76	17.38	40.00	-22.62	100	156
6	H	605.6592	28.17	peak	19.16	21.57	2.51	28.27	46.00	-17.73	100	8

## Above 1GHz

Test Mode:	Transmitting Mode
------------	-------------------

Low Channel (2412 MHz) (n20 mode worst case)

Frequency (MHz)	S.A. Reading (dB $\mu$ V)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
4824	48.4	AV	V	33.39	7.22	48.46	40.55	54	-13.45
4824	45.71	AV	H	33.39	7.22	48.46	37.86	54	-16.14
4824	67.88	PK	V	33.39	7.22	48.46	60.03	74	-13.97
4824	64.26	PK	H	33.39	7.22	48.46	56.41	74	-17.59
8612	18.04	AV	V	38.25	8.77	48.4	16.66	54	-37.34
8612	18.25	AV	H	38.25	8.77	48.4	16.87	54	-37.13
8612	38.69	PK	V	38.25	8.77	48.4	37.31	74	-36.69
8612	42.79	PK	H	38.25	8.77	48.4	41.41	74	-32.59

Middle Channel (2437 MHz) (n20 mode worst case)

Frequency (MHz)	S.A. Reading (dB $\mu$ V)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
4874	47.57	AV	V	33.62	7.53	48.36	40.36	54	-13.64
4874	47.28	AV	H	33.62	7.53	48.36	40.07	54	-13.93
4874	70.62	PK	V	33.62	7.53	48.36	63.41	74	-10.59
4874	63.58	PK	H	33.62	7.53	48.36	56.37	74	-17.63
10820	18.22	AV	V	39.6	10.05	47.84	20.03	54	-33.97
10820	19.92	AV	H	39.6	10.05	47.84	21.73	54	-32.27
10820	38.2	PK	V	39.6	10.05	47.84	40.01	74	-33.99
10820	37.82	PK	H	39.6	10.05	47.84	39.63	74	-34.37

### High Channel (2462 MHz) (b mode worst case)

Frequency (MHz)	S.A. Reading (dB $\mu$ V)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
4924	47.76	AV	V	33.74	7.78	48.34	40.94	54	-13.06
4924	44.91	AV	H	33.74	7.78	48.34	38.09	54	-15.91
4924	72.69	PK	V	33.74	7.78	48.34	65.87	74	-8.13
4924	69.03	PK	H	33.74	7.78	48.34	62.21	74	-11.79
17909	18.07	AV	V	42.58	19.96	45.25	35.36	54	-18.64
17909	18.27	AV	H	42.58	19.96	45.25	35.56	54	-18.44
17909	38.76	PK	V	42.58	19.96	45.25	56.05	74	-17.95
17909	42.14	PK	H	42.58	19.96	45.25	59.43	74	-14.57

**Note:**

- 1, The testing has been conformed to  $10 \times 2462\text{MHz} = 24,620\text{MHz}$
- 2, All other emissions more than 30 dB below the limit
- 3, X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case.
- 4, The radiated spurious test above 18GHz is subcontracted to SIEMIC (Nanjing-China) Laboratories. and found 30dB below the limit at least.

## Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Due	In use
<b>AC Line Conducted</b>					
EMI test receiver	ESCS30	8471241027	09/15/2017	09/14/2018	<input checked="" type="checkbox"/>
Line Impedance	LI-125A	191106	09/23/2017	09/22/2018	<input checked="" type="checkbox"/>
Line Impedance	LI-125A	191107	09/23/2017	09/22/2018	<input checked="" type="checkbox"/>
ISN	ISN T800	34373	09/23/2017	09/22/2018	<input type="checkbox"/>
Transient Limiter	LIT-153	531118	08/30/2017	08/29/2018	<input type="checkbox"/>
<b>RF conducted test</b>					
Agilent ESA-E SERIES	E4407B	MY45108319	09/15/2017	09/14/2018	<input checked="" type="checkbox"/>
Power Splitter	1#	1#	08/30/2017	08/29/2018	<input checked="" type="checkbox"/>
DC Power Supply	E3640A	MY40004013	09/15/2017	09/14/2018	<input checked="" type="checkbox"/>
<b>Radiated Emissions</b>					
EMI test receiver	ESL6	100262	09/15/2017	09/14/2018	<input checked="" type="checkbox"/>
Positioning Controller	UC3000	MF780208282	11/17/2017	11/16/2018	<input checked="" type="checkbox"/>
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	08/30/2017	08/29/2018	<input checked="" type="checkbox"/>
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/23/2017	03/22/2018	<input checked="" type="checkbox"/>
Horn Antenna	BBHA9170	3145226D1	09/27/2017	09/26/2018	<input checked="" type="checkbox"/>
Active Antenna (9kHz-30MHz)	AL-130	121031	10/12/2017	10/11/2018	<input checked="" type="checkbox"/>
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/19/2017	09/18/2018	<input checked="" type="checkbox"/>
Double Ridge Horn Antenna (1 ~18GHz)	AH-118	71283	09/22/2017	09/21/2018	<input checked="" type="checkbox"/>
Universal Radio Communication Tester	CMU200	121393	09/23/2017	09/22/2018	<input checked="" type="checkbox"/>

## Annex B. EUT and Test Setup Photographs

### Annex B.i. Photograph: EUT External Photo

Whole Package View



Adapter - Label View



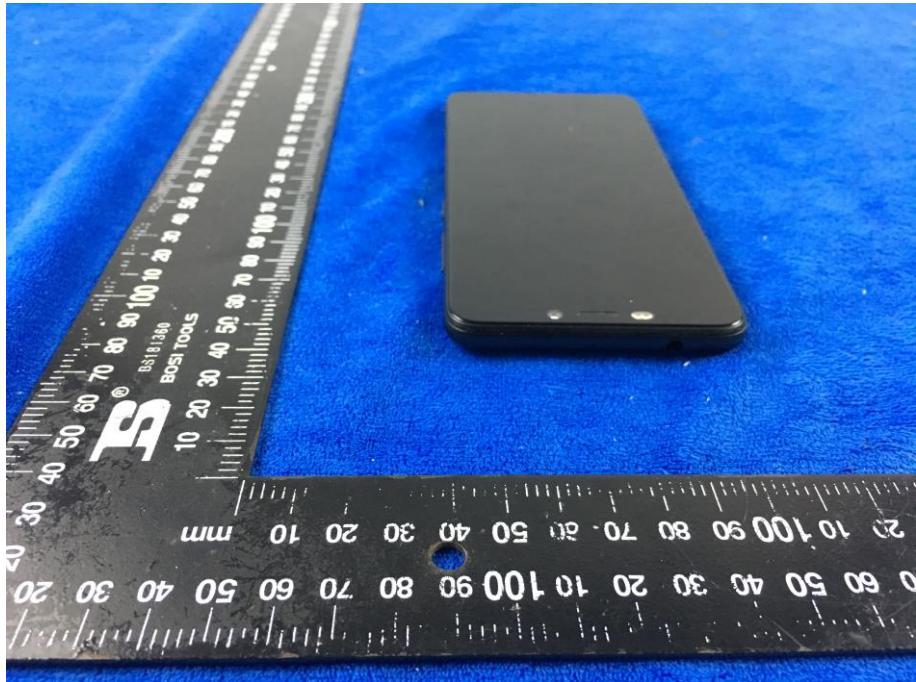
EUT - Front View



EUT - Rear View



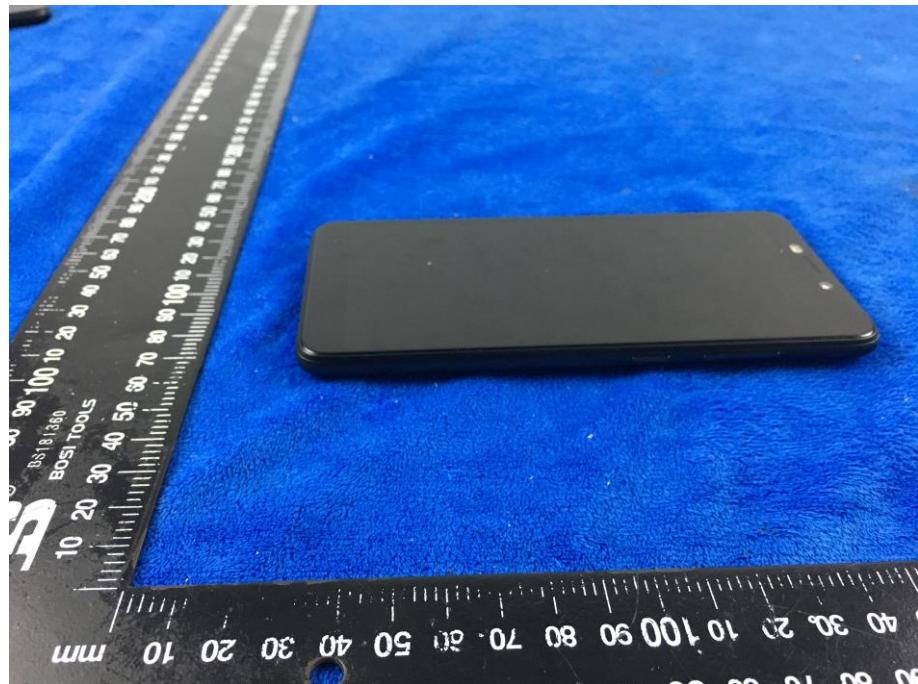
EUT - Top View



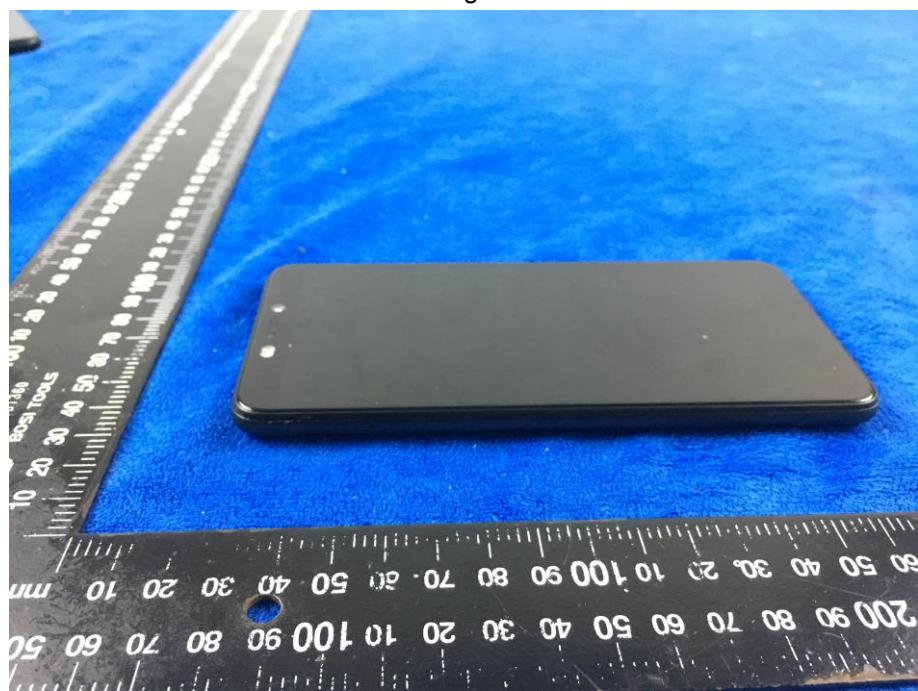
EUT - Bottom View



EUT - Left View



EUT - Right View



### Annex B.ii. Photograph: EUT Internal Photo

Cover Off - Top View 1



Cover Off - Top View 2



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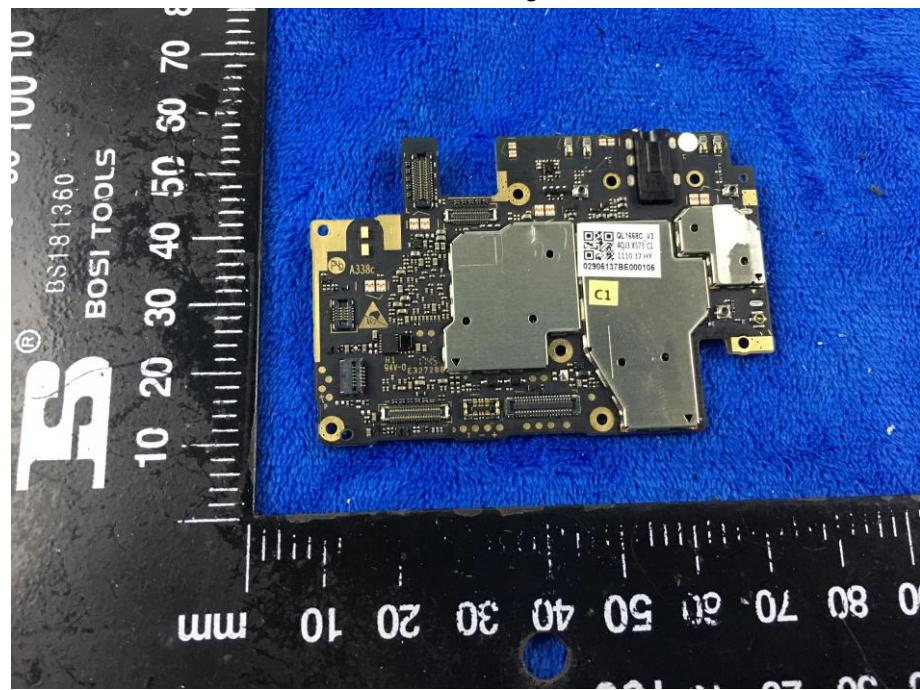
Battery - Front View



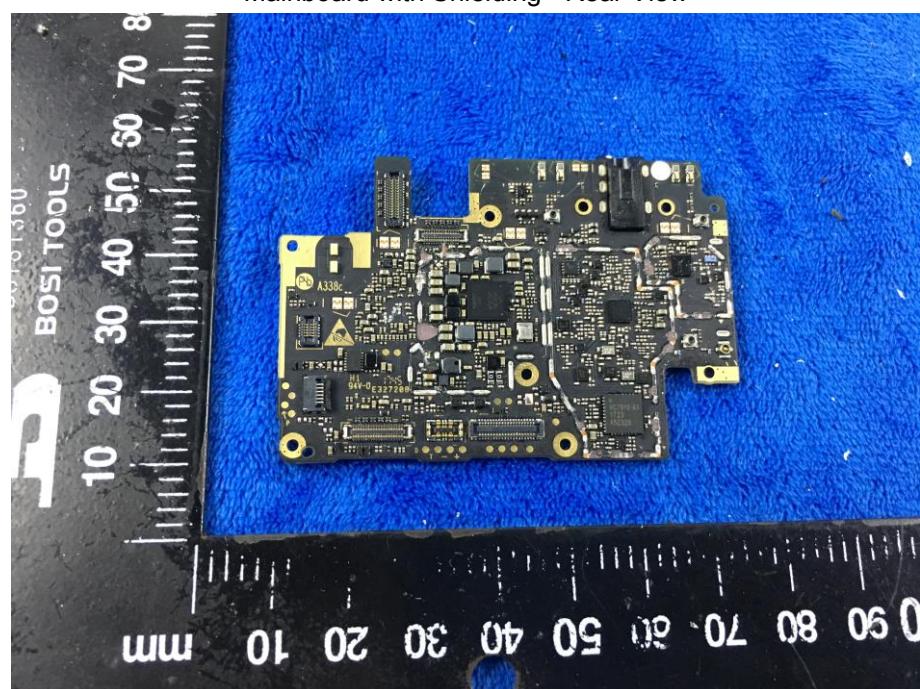
Battery - Rear View



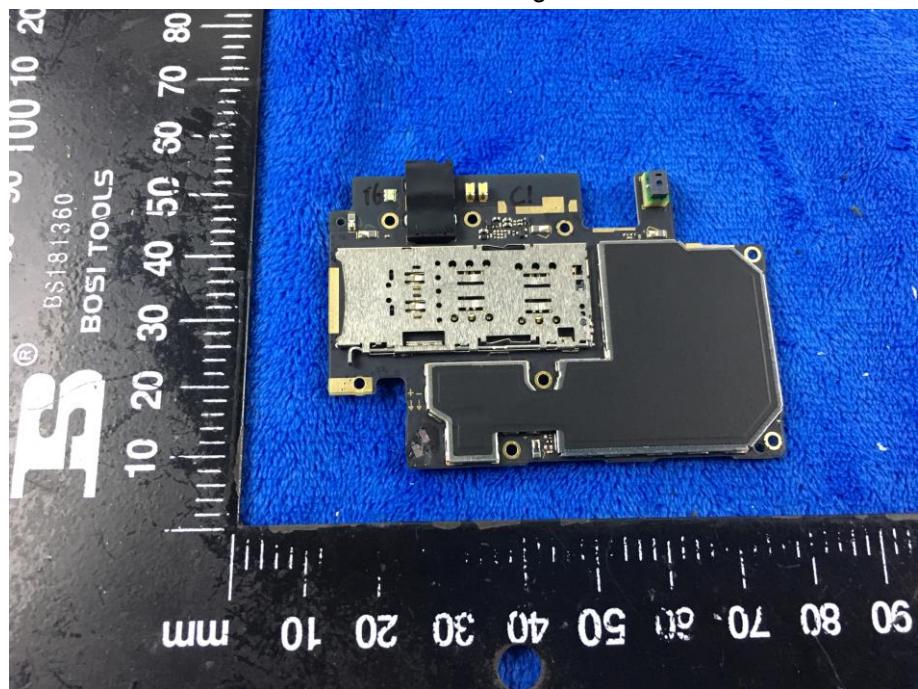
Mainboard with Shielding - Front View



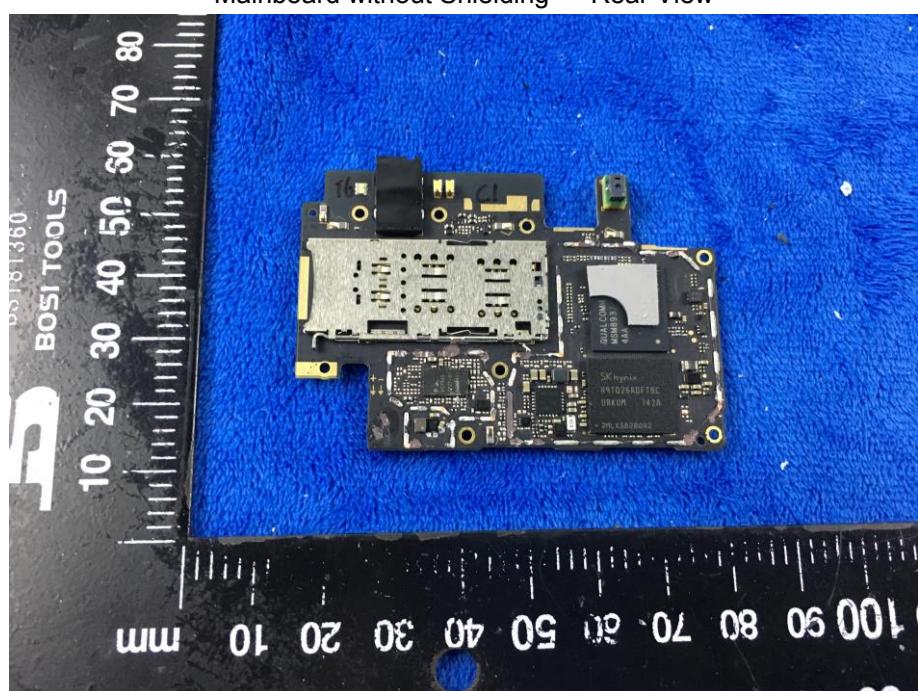
Mainboard with Shielding - Rear View



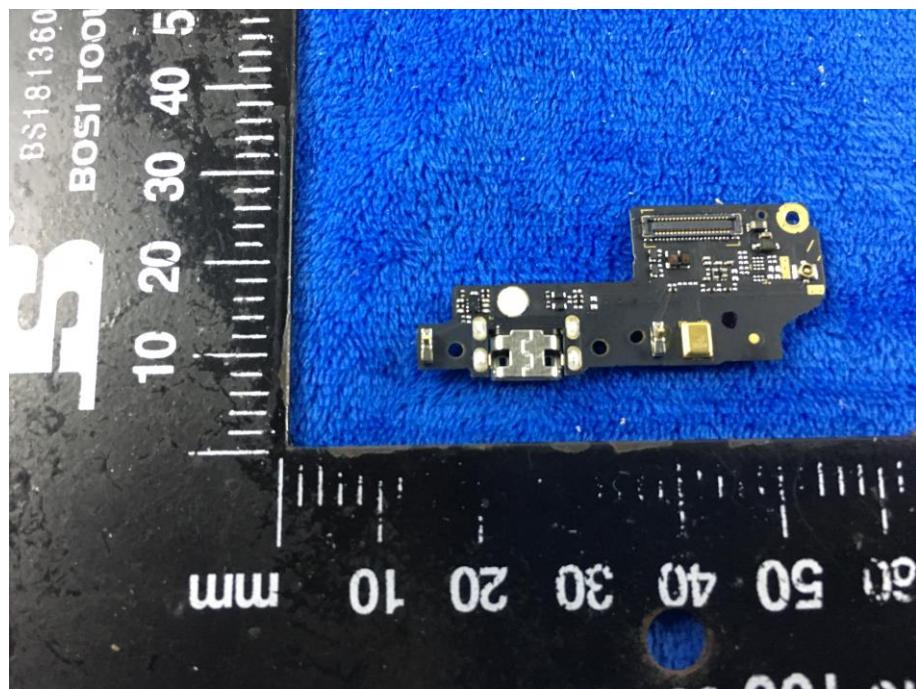
Mainboard without Shielding – Front View



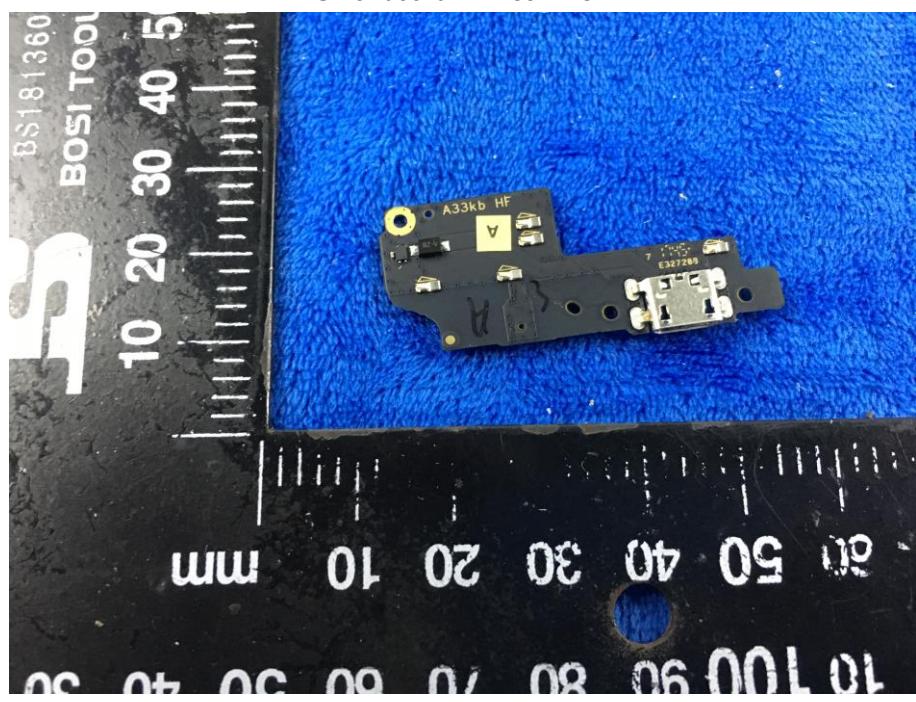
Mainboard without Shielding – Rear View



Smallboard – Front View



Smallboard – Rear View



LCD – Front View



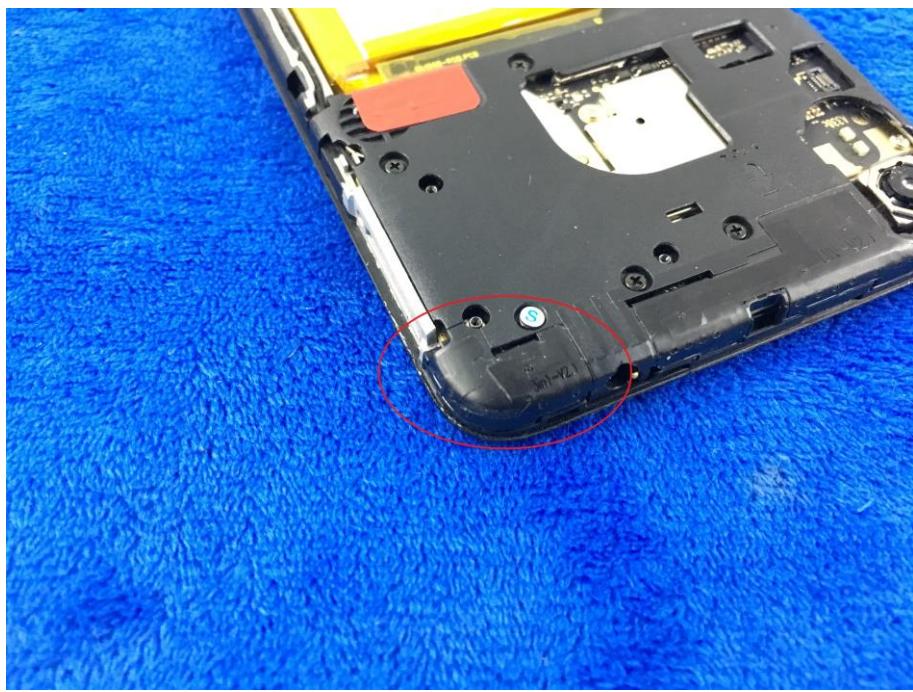
LCD – Rear View



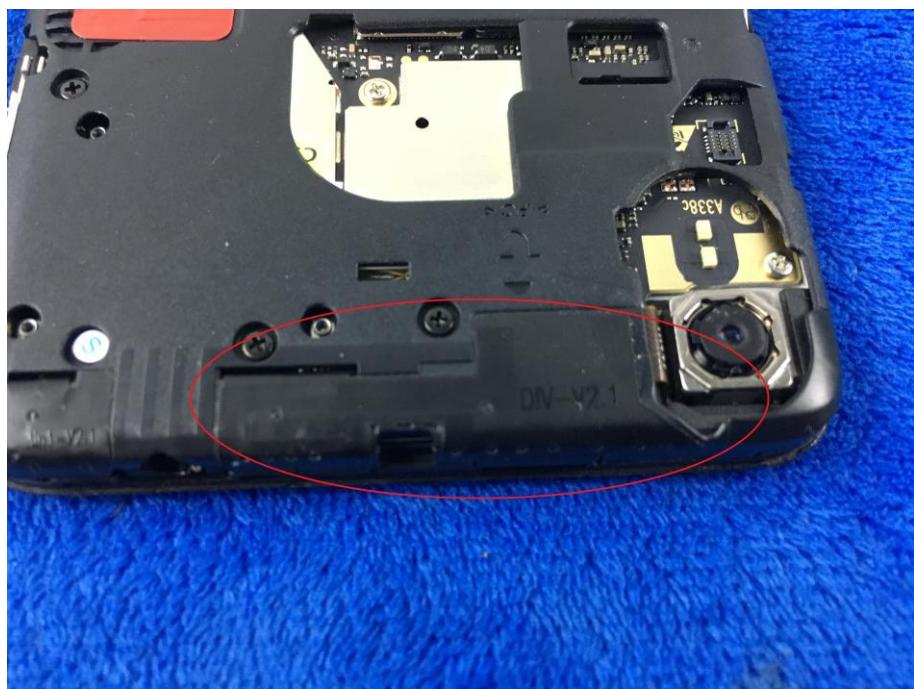
GSM/PCS/U MTS-FDD/LTE Antenna View



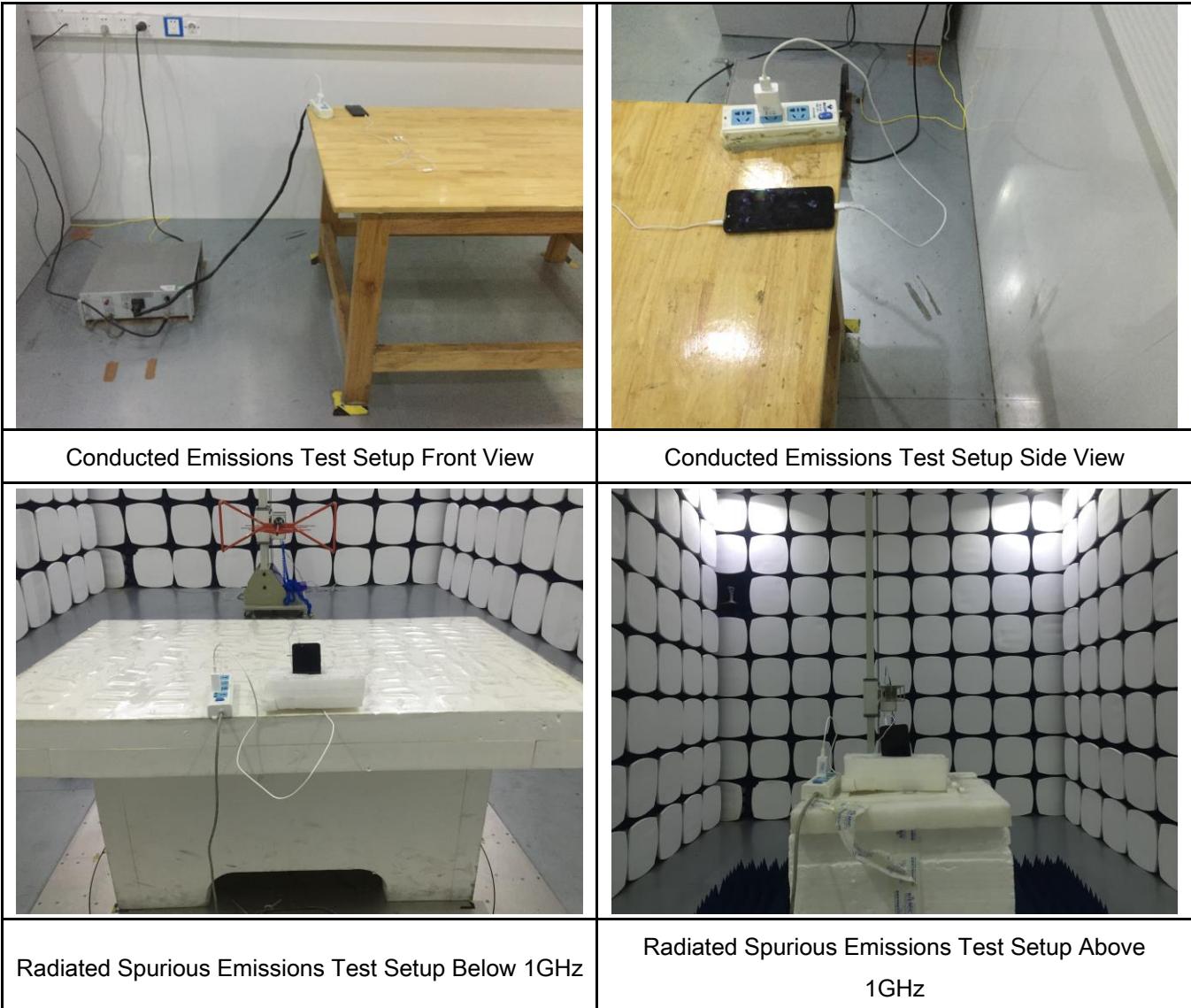
WIFI/BT/BLE/GPS - Antenna View



RXD- Antenna View



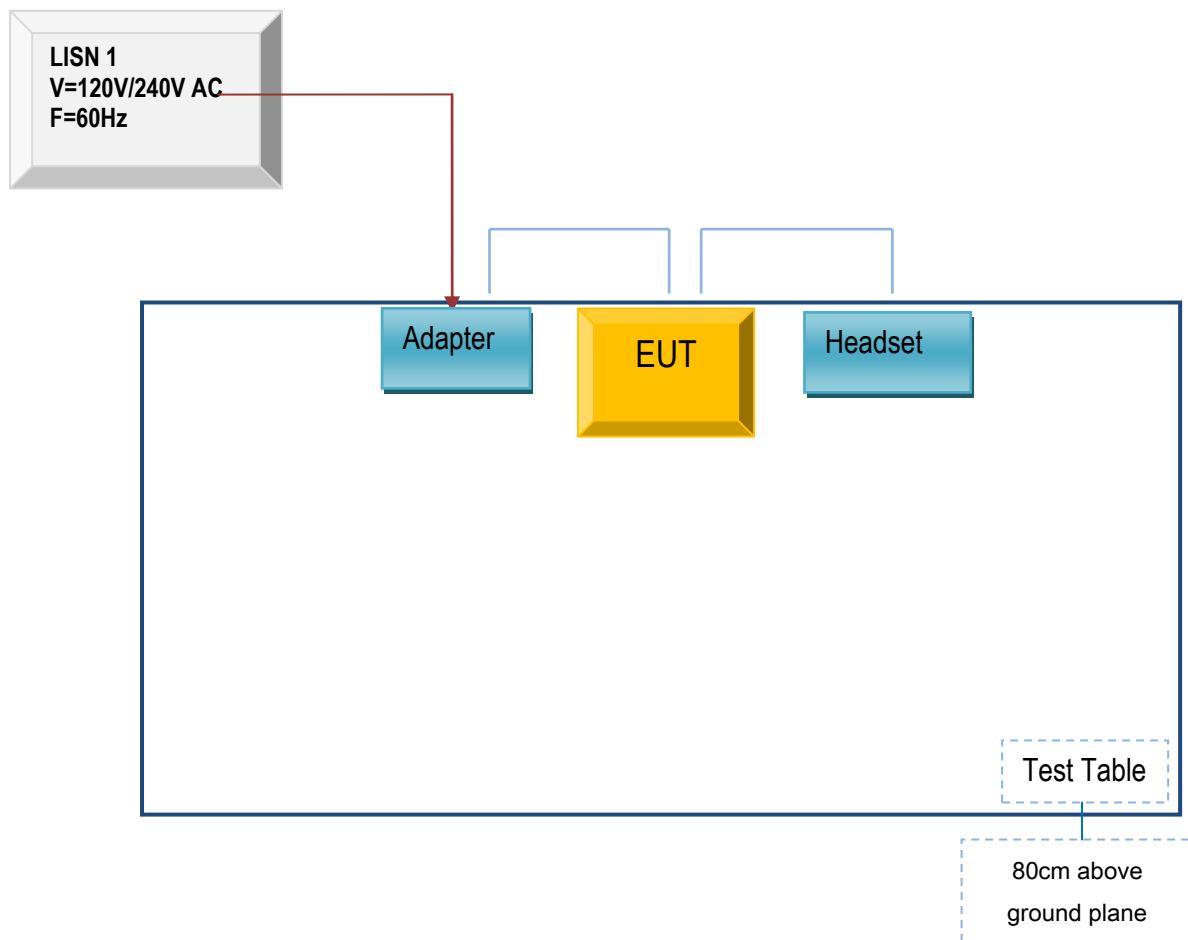
**Annex B.iii. Photograph: Test Setup Photo**



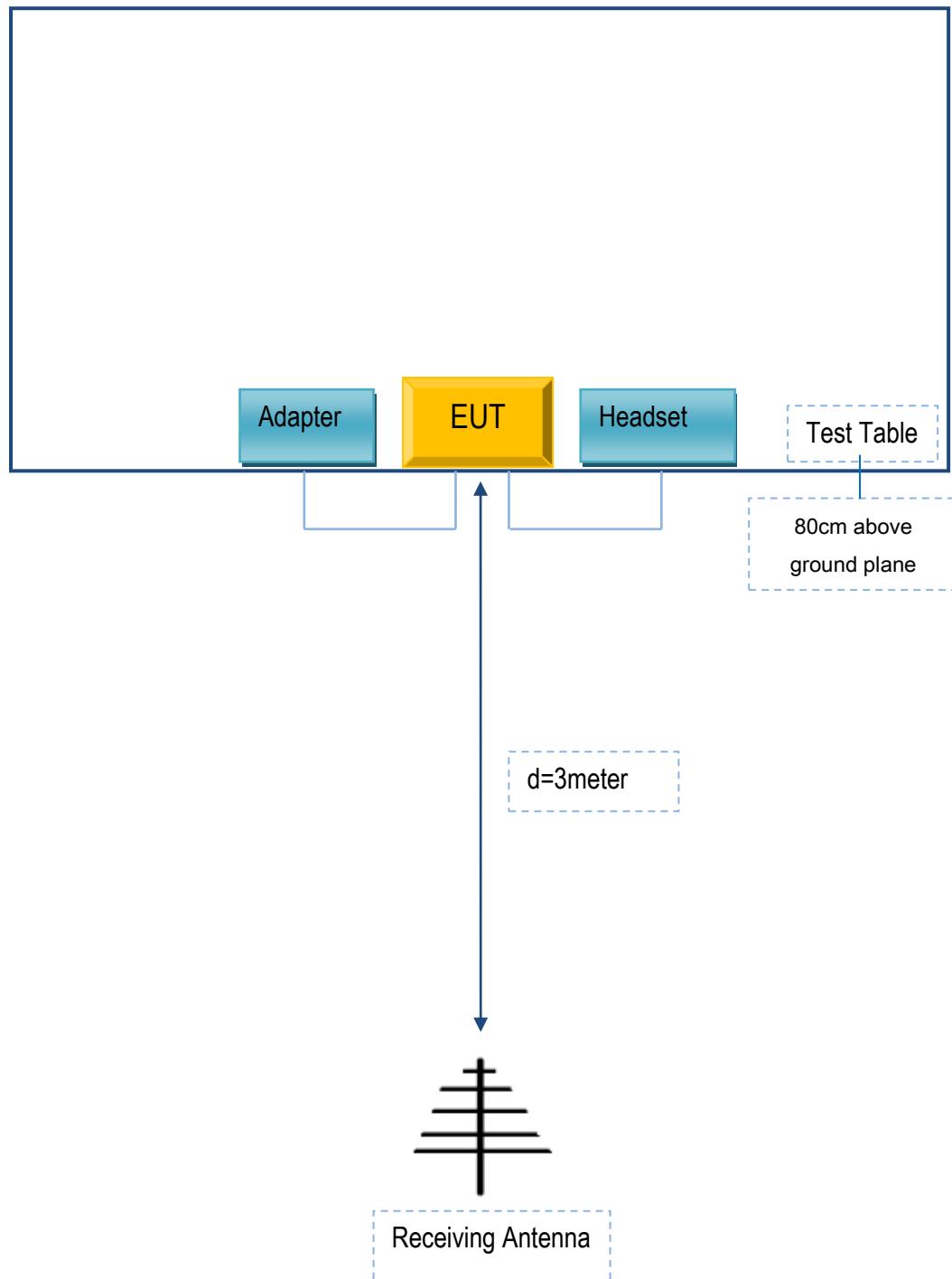
## Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

### Annex C.ii. TEST SET UP BLOCK

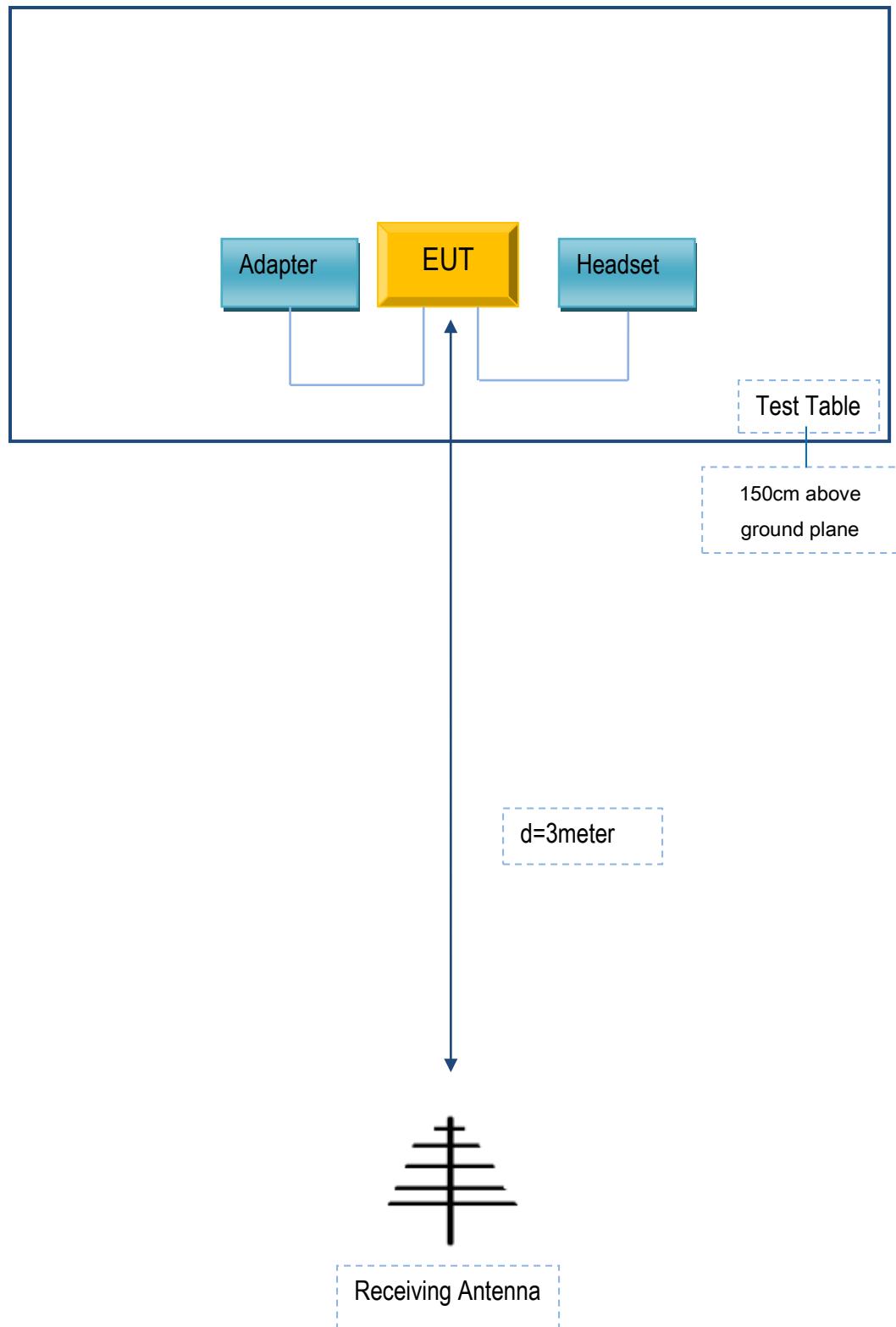
Block Configuration Diagram for AC Line Conducted Emissions



Block Configuration Diagram for Radiated Emissions ( Below 1GHz ) .



Block Configuration Diagram for Radiated Emissions ( Above 1GHz ) .



## Annex C. ii. SUPPORTING EQUIPMENT DESCRIPTION

The following is a description of supporting equipment and details of cables used with the EUT.

### Supporting Equipment:

Manufacturer	Equipment Description	Model	Serial No
TECNO MOBILE LIMITED	Adapter	A88-502000	N/A
TECNO MOBILE LIMITED	headset	X573	N/A

### Supporting Cable:

Cable type	Shield Type	Ferrite Core	Length	Serial No
USB Cable	Un-shielding	No	0.8m	N/A

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## Annex D. User Manual / Block Diagram / Schematics / Partlist

Please see the attachment

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## Annex E. DECLARATION OF SIMILARITY

N/A