

RF TEST REPORT



Report No.: 17071364-FCC-R3

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	David Huang	
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

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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-R3	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_EMC(ver.lcp-03A1)

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 : DSS

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
LTE Band: QPSK, 16QAM
802.11b/g/n: DSSS, OFDM
Bluetooth: GFSK, π /4DQPSK, 8DPSK
BLE: GFSK
GPS:BPSK

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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
 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

RF Operating Frequency (ies):

Max. Output Power:

5.34dBm

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

Number of Channels:

Port:

USB Port, Earphone Port

Adapter:

Model: A88-502000
 Input: AC100-240V~50/60Hz,0.35A

Input Power:

Output: DC 5V, 2.0A

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)(1)	Channel Separation	Compliance
§15.247(a)(1)	20 dB Bandwidth	Compliance
§15.247(b)(1)	Peak Output Power	Compliance
§15.247(a)(1)(iii)	Number of Hopping Channel	Compliance
§15.247(a)(1)(iii)	Time of Occupancy (Dwell Time)	Compliance
§15.247(d)	Band Edge& Restricted Band	Compliance
§15.207(a)	AC Line Conducted Emissions	Compliance
§15.205, §15.209, §15.247(d)	Radiated Emissions& Restricted Band	Compliance

Measurement Uncertainty

Emissions		
Test Item	Description	Uncertainty
Band Edge& Restricted Band and Radiated Emissions& Restricted Band	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.

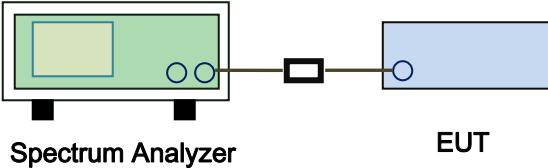
The antenna meets up with the ANTENNA REQUIREMENT.

Result: Compliance.

6.2 Channel Separation

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(a)(1)	a)	Channel Separation < 20dB BW and 20dB BW < 25KHz ; Channel Separation Limit=25KHz Chanel Separation < 20dB BW and 20dB BW > 25kHz ; Channel Separation Limit=2/3 20dB BW	<input checked="" type="checkbox"/>
Test Setup		 <p style="text-align: center;">Spectrum Analyzer EUT</p>	
Test Procedure		<p>The test follows FCC Public Notice DA 00-705 Measurement Guidelines.</p> <p><u>Use the following spectrum analyzer settings:</u></p> <ul style="list-style-type: none"> - The EUT must have its hopping function enabled - Span = wide enough to capture the peaks of two adjacent channels - Resolution (or IF) Bandwidth (RBW) \geq 1% of the span - Video (or Average) Bandwidth (VBW) \geq RBW - Sweep = auto - Detector function = peak - Trace = max hold - Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section. Submit this plot. 	

Remark		
Result	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

Test Data Yes N/A

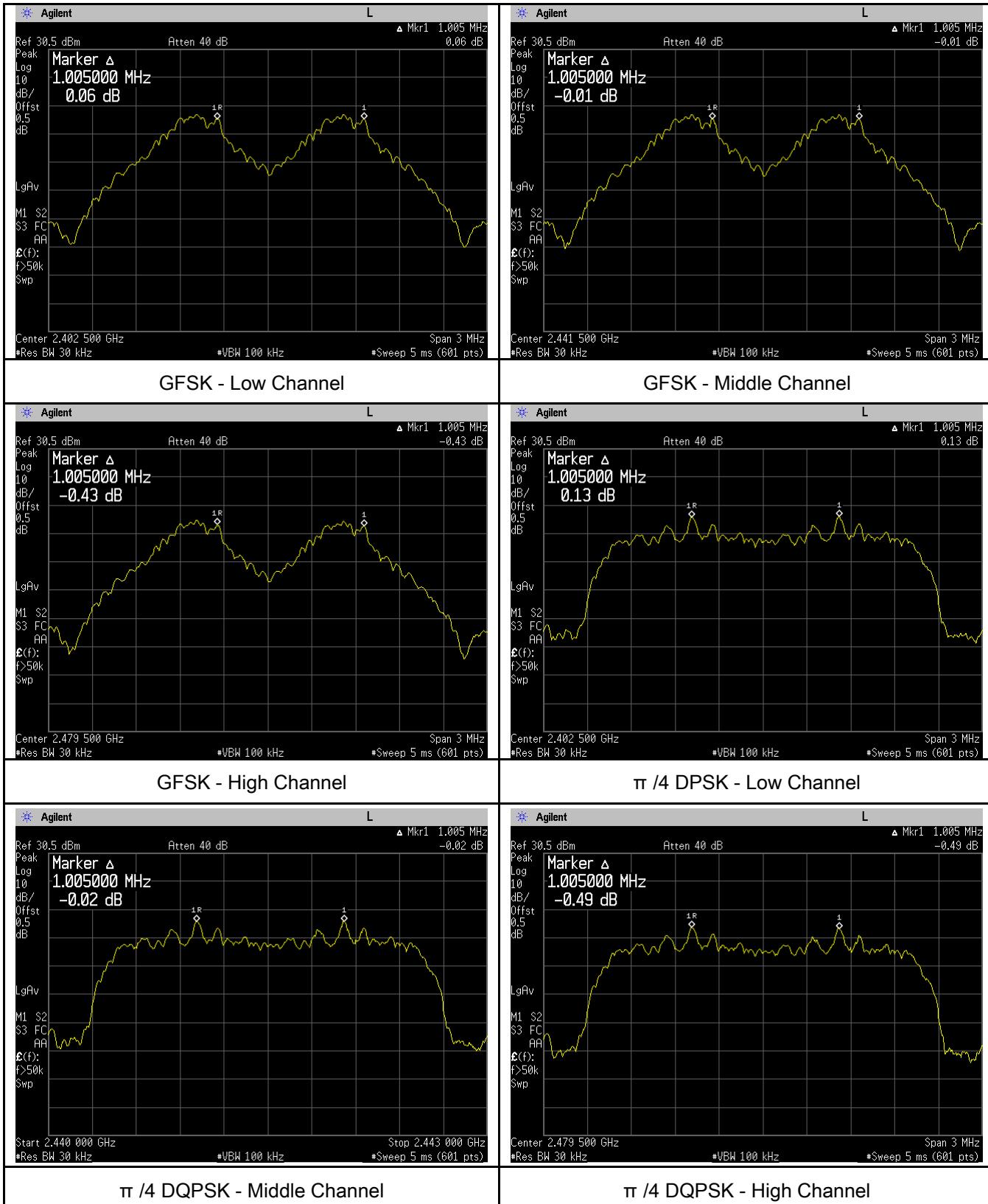
Test Plot Yes (See below) N/A

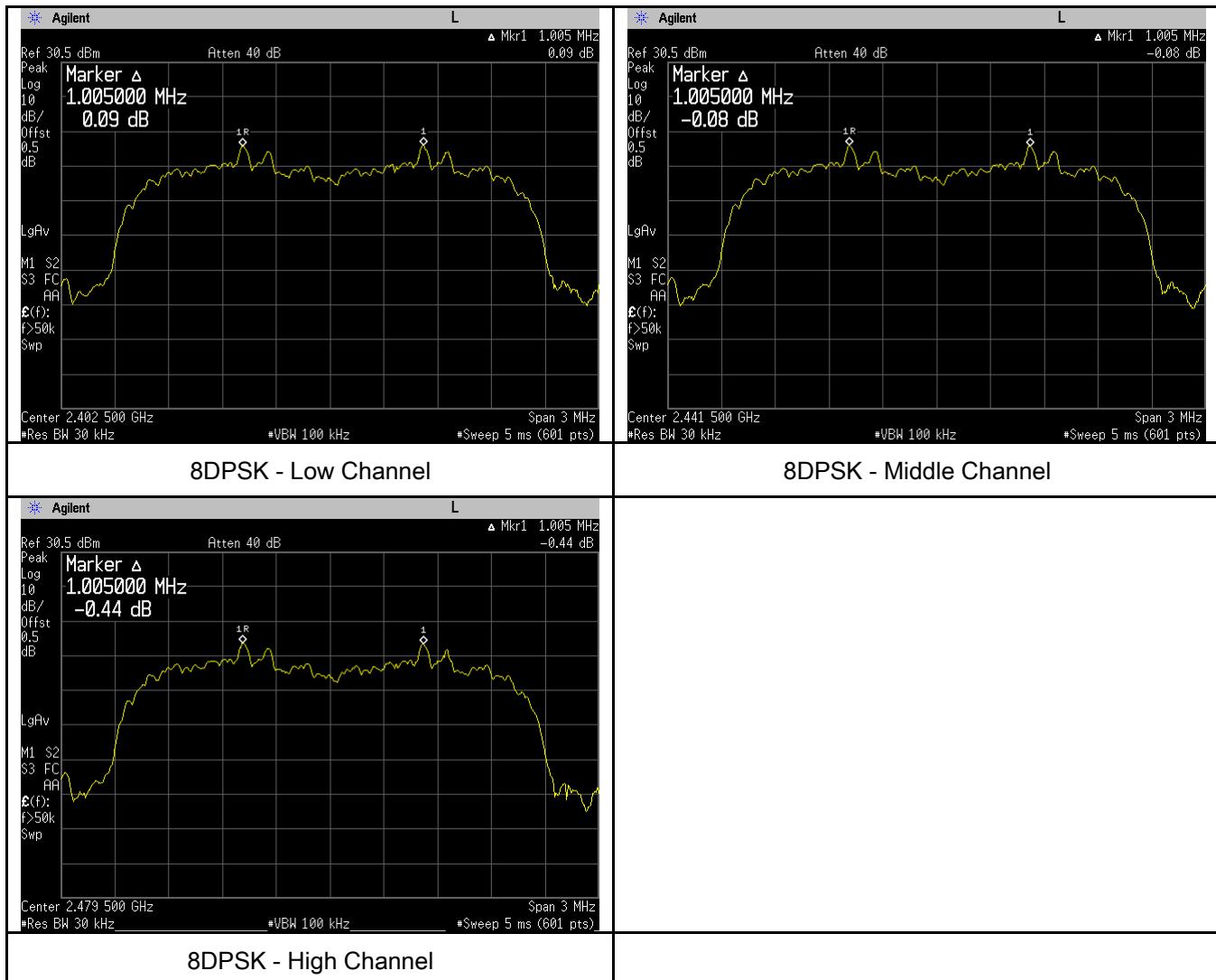
Channel Separation measurement result

Type/ Modulation	CH	CH Frequency (MHz)	CH Separation (MHz)	Limit (MHz)	Result
CH Separation GFSK	Low Channel	2402	1.005	0.954	Pass
	Adjacency Channel	2403			
	Mid Channel	2440			
	Adjacency Channel	2441	1.005	0.958	Pass
	High Channel	2480			
	Adjacency Channel	2479			
CH Separation $\pi/4$ DQPSK	Low Channel	2402	1.005	0.875	Pass
	Adjacency Channel	2403			
	Mid Channel	2440			
	Adjacency Channel	2441	1.005	0.859	Pass
	High Channel	2480			
	Adjacency Channel	2479			
CH Separation 8DPSK	Low Channel	2402	1.005	0.867	Pass
	Adjacency Channel	2403			
	Mid Channel	2440			
	Adjacency Channel	2441	1.005	0.862	Pass
	High Channel	2480			
	Adjacency Channel	2479			

Test Plots

Channel Separation measurement result

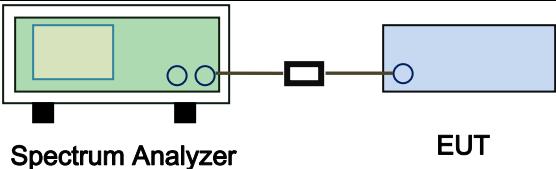




6.3 20dB Bandwidth

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(a) (1)	a)	Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.	<input checked="" type="checkbox"/>
Test Setup	 <p style="text-align: center;">Spectrum Analyzer EUT</p>		
Test Procedure	<p>The test follows FCC Public Notice DA 00-705 Measurement Guidelines.</p> <p><u>Use the following spectrum analyzer settings:</u></p> <ul style="list-style-type: none"> - Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel - RBW \geq 1% of the 20 dB bandwidth - VBW \geq RBW - Sweep = auto - Detector function = peak - Trace = max hold. - The EUT should be transmitting at its maximum data rate. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 20 dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference 		

	marker level. The marker-delta reading at this point is the 20 dB bandwidth of the emission. If this value varies with different modes of operation (e.g., data rate, modulation format, etc.), repeat this test for each variation. The limit is specified in one of the subparagraphs of this Section. Submit this plot(s).
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data Yes N/A

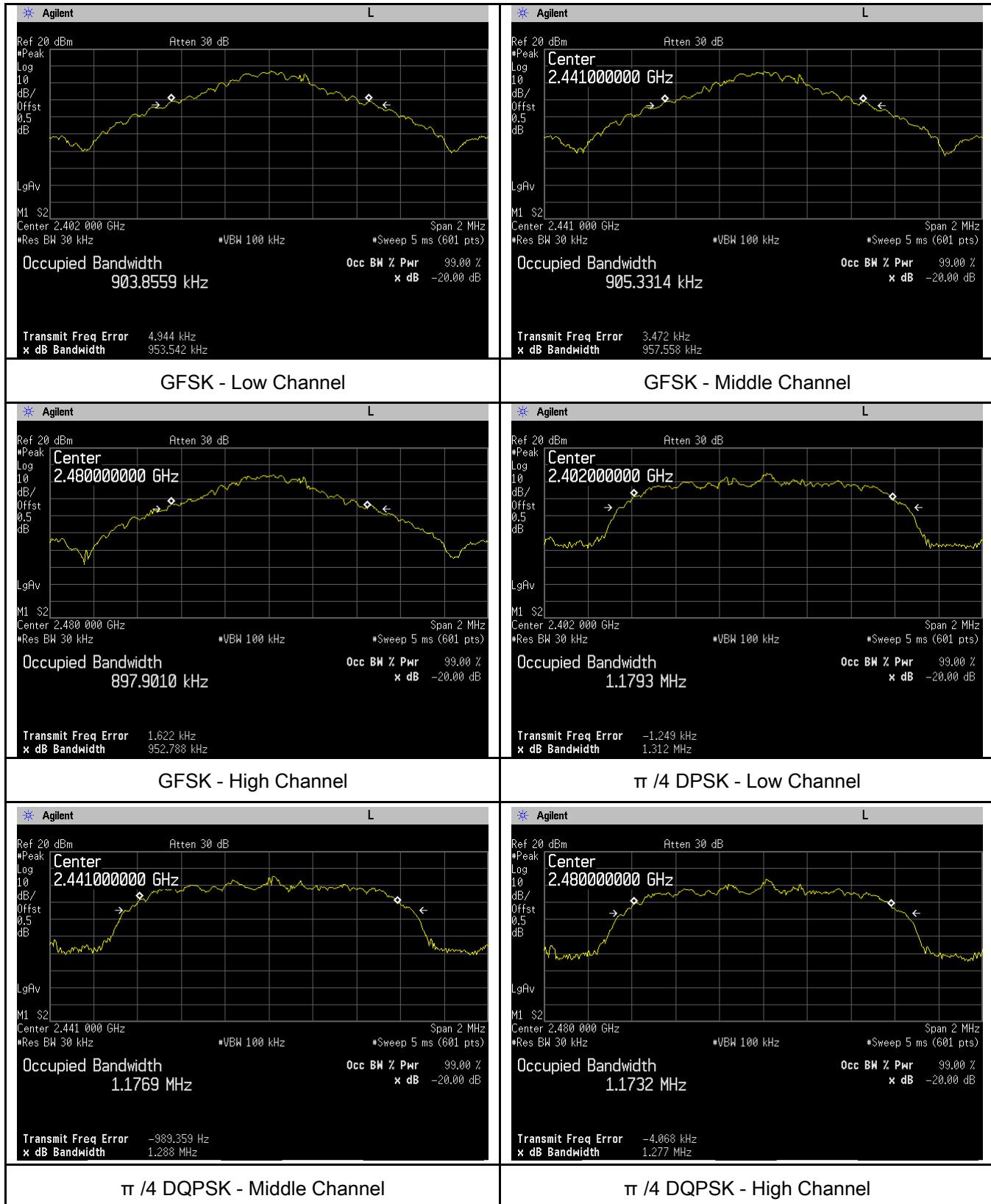
Test Plot Yes (See below) N/A

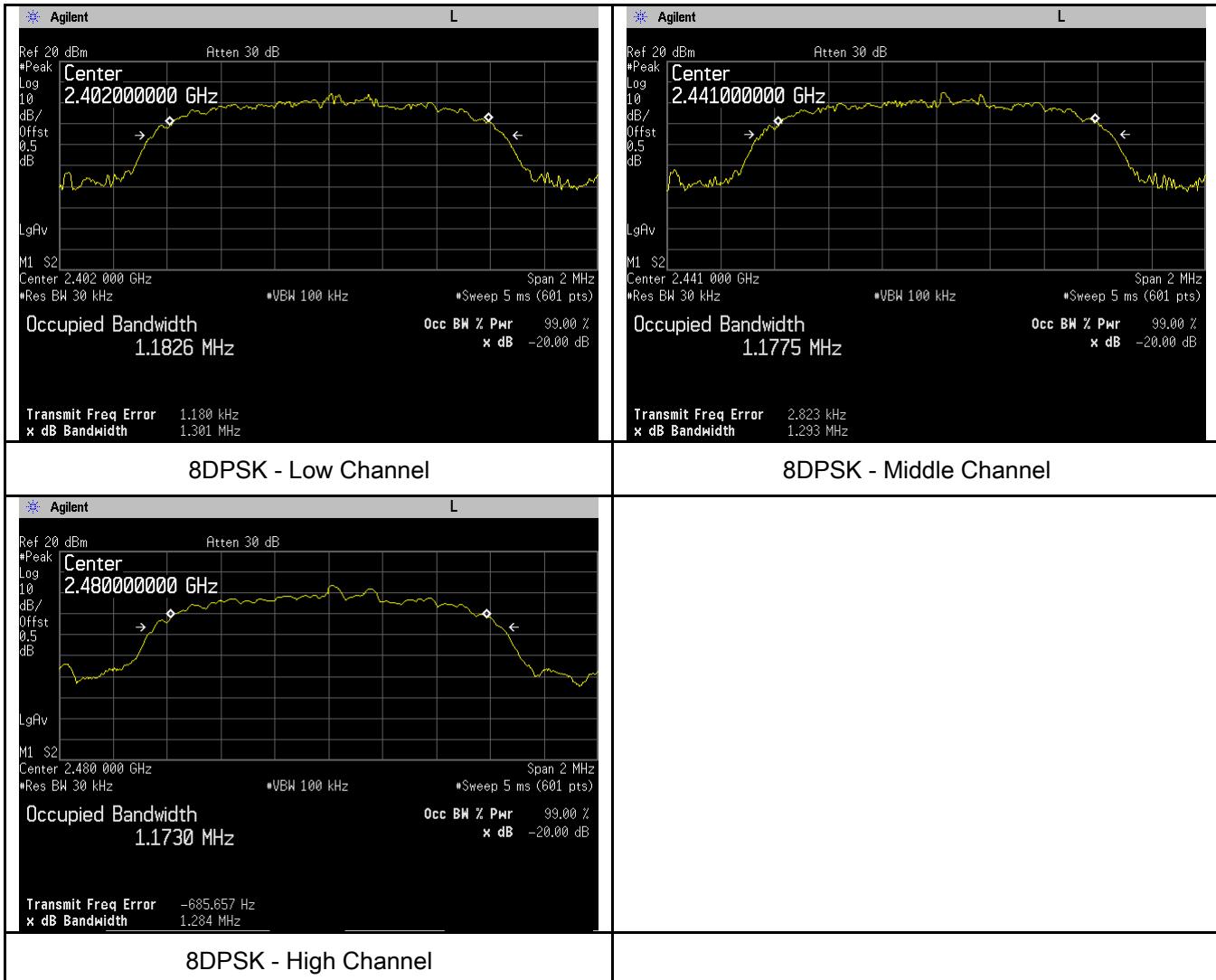
Measurement result

Modulation	CH	CH Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
GFSK	Low	2402	0.9535	0.9039
	Mid	2441	0.9576	0.9053
	High	2480	0.9528	0.8979
$\pi/4$ DQPSK	Low	2402	1.312	1.1793
	Mid	2441	1.288	1.1769
	High	2480	1.277	1.1732
8-DPSK	Low	2402	1.301	1.1826
	Mid	2441	1.293	1.1775
	High	2480	1.284	1.1730

Test Plots

20dB Bandwidth measurement result





6.4 Peak 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)	a)	FHSS in 2400-2483.5MHz with \geq 75 channels: \leq 1 Watt	<input checked="" 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 checked="" 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 type="checkbox"/>
Test Setup			
Test Procedure		<p>The test follows FCC Public Notice DA 00-705 Measurement Guidelines.</p> <p><u>Use the following spectrum analyzer settings:</u></p> <ul style="list-style-type: none"> - Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel - RBW > the 20 dB bandwidth of the emission being measured - VBW \geq RBW - Sweep = auto - Detector function = peak - Trace = max hold - Allow the trace to stabilize. 	

	<ul style="list-style-type: none"> - Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power (see the note above regarding external attenuation and cable loss). The limit is specified in one of the subparagraphs of this Section. Submit this plot. A peak responding power meter may be used instead of a spectrum analyzer.
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data Yes N/A

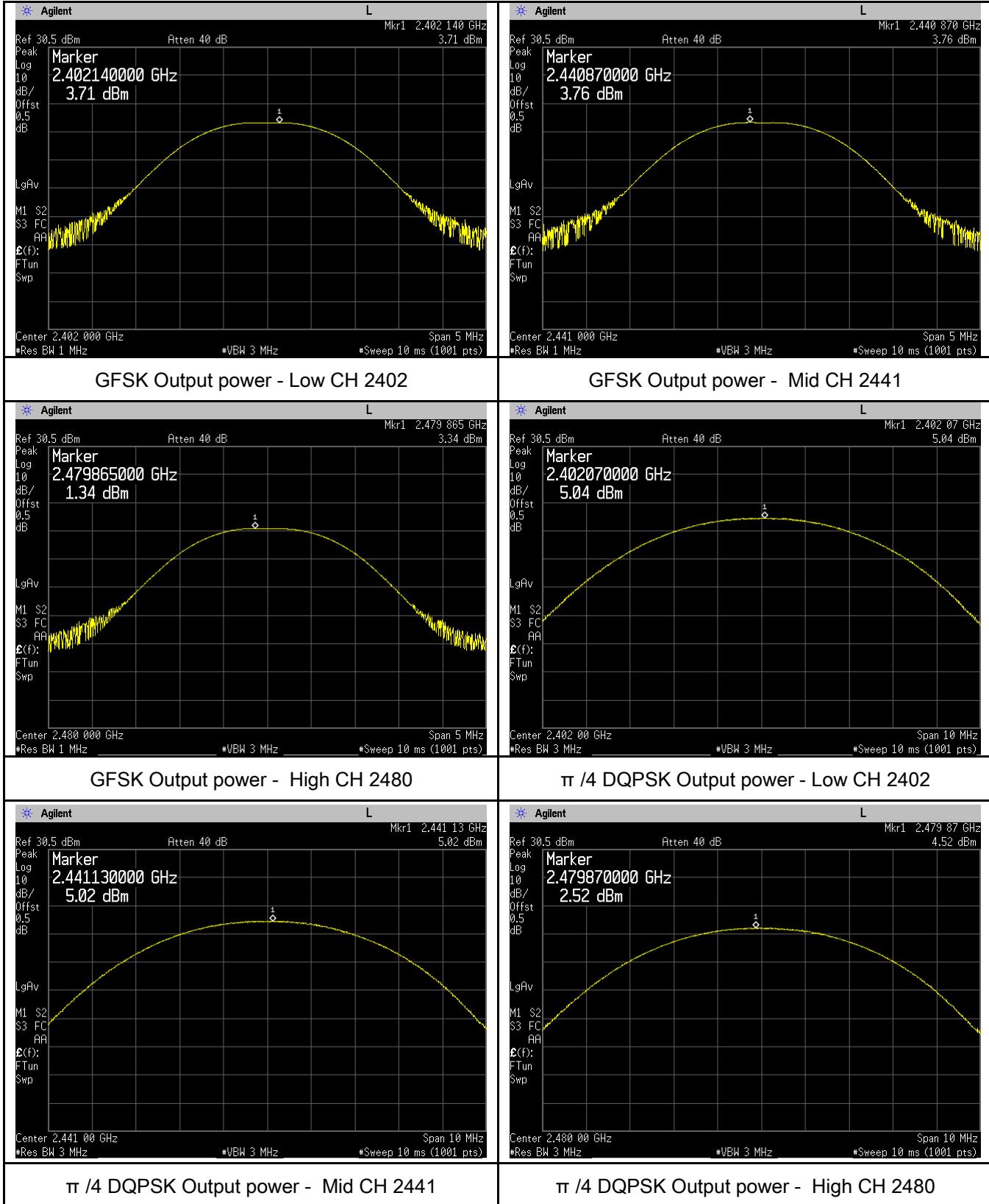
Test Plot Yes (See below) N/A

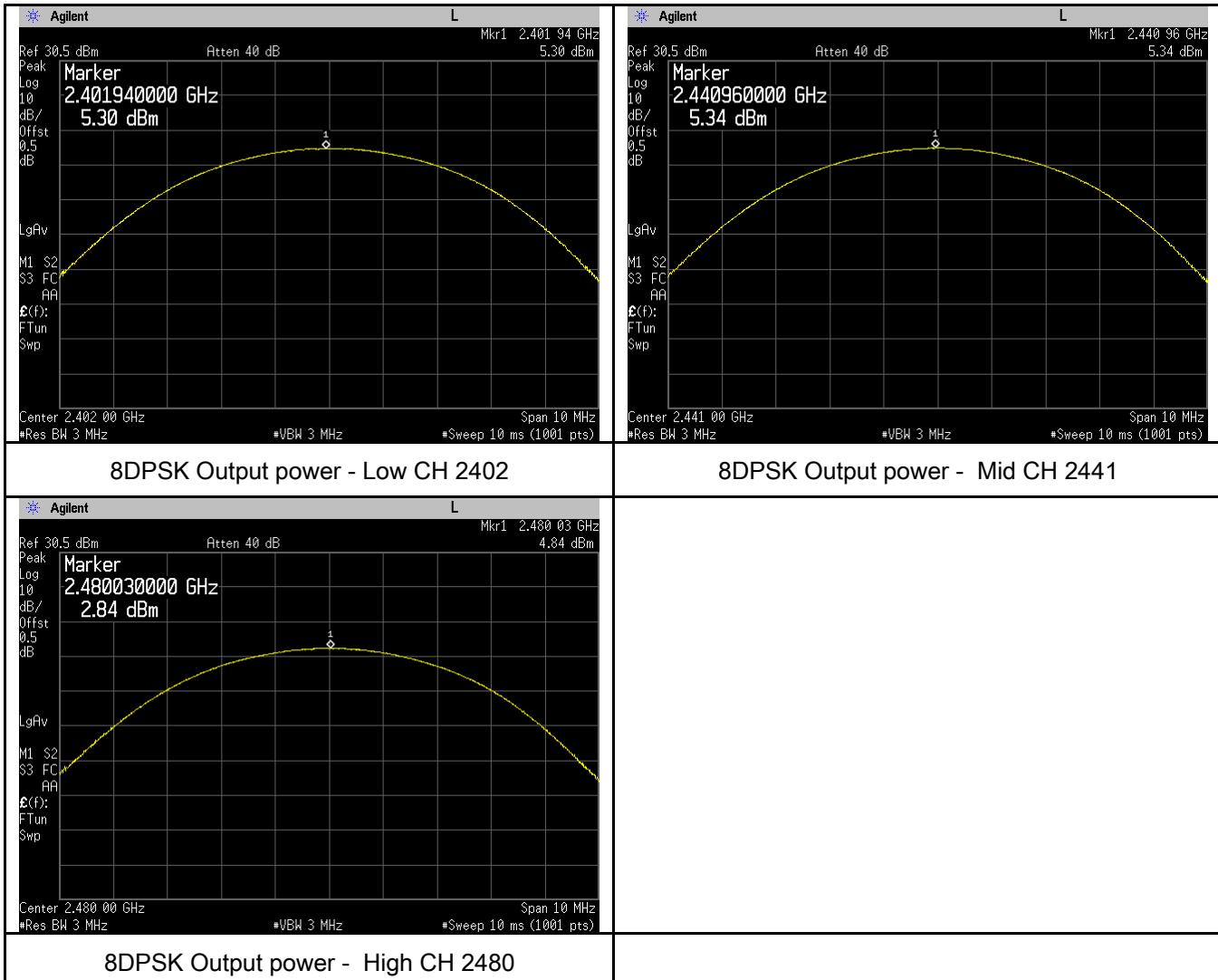
Peak Output Power measurement result

Type	Modulation	CH	Frequency (MHz)	Conducted Power (dBm)	Limit (mW)	Result
Output power	GFSK	Low	2402	3.71	1000	Pass
		Mid	2441	3.76	1000	Pass
		High	2480	3.34	1000	Pass
	$\pi/4$ DQPSK	Low	2402	5.04	125	Pass
		Mid	2441	5.02	125	Pass
		High	2480	4.52	125	Pass
	8-DPSK	Low	2402	5.30	125	Pass
		Mid	2441	5.34	125	Pass
		High	2480	4.84	125	Pass

Test Plots

Output Power measurement result

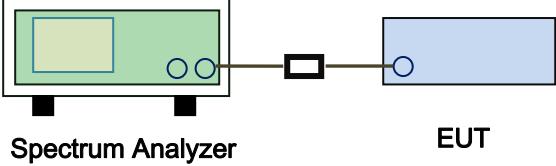




6.5 Number of Hopping Channel

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

Requirement(s):

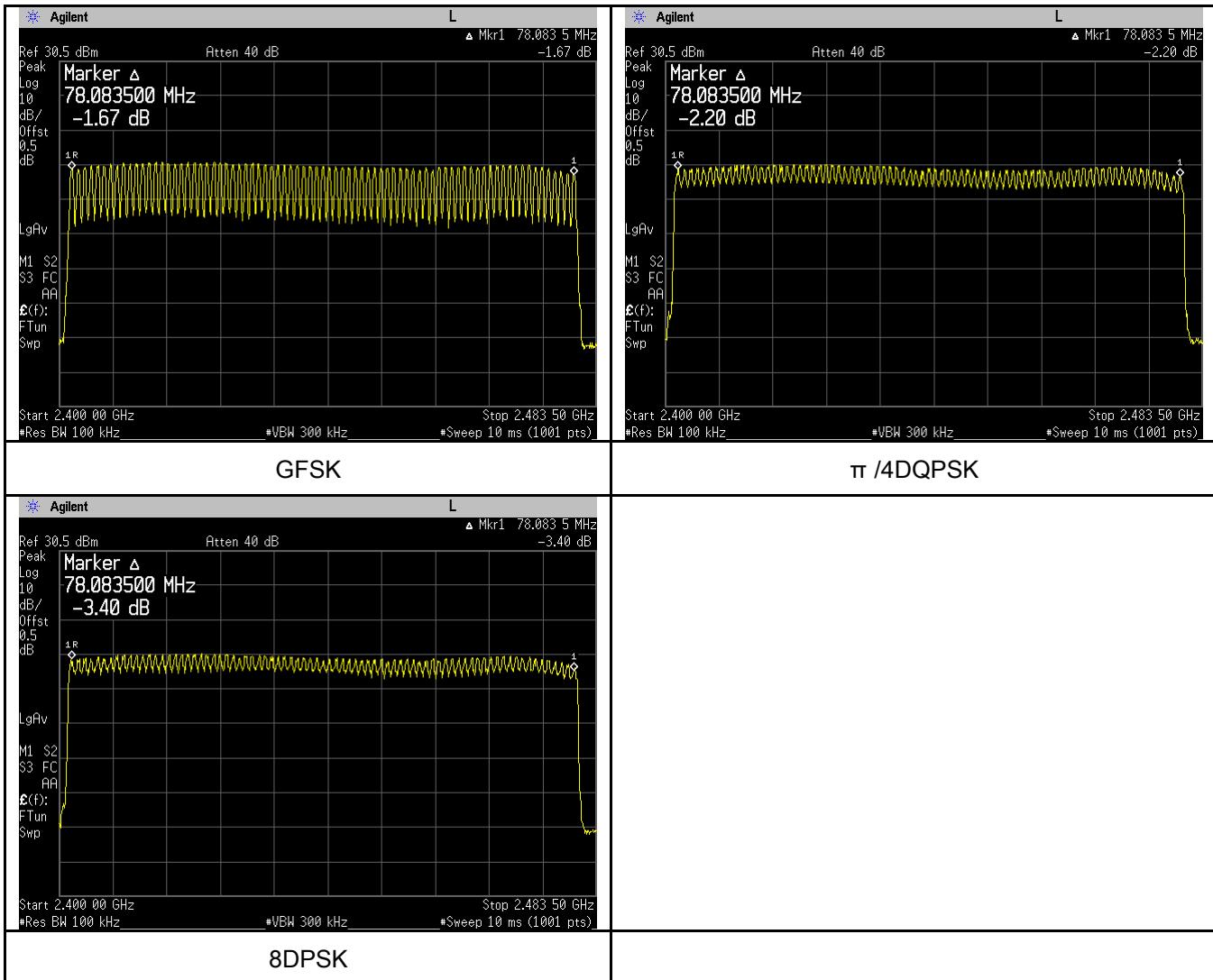
Spec	Item	Requirement	Applicable
§15.247(a) (1)(iii)	a)	FHSS in 2400-2483.5MHz ≥ 15 channels	<input checked="" type="checkbox"/>
Test Setup	 <p style="text-align: center;">Spectrum Analyzer EUT</p>		
Test Procedure	<p>The test follows FCC Public Notice DA 00-705 Measurement Guidelines.</p> <p><u>Use the following spectrum analyzer settings:</u></p> <p>The EUT must have its hopping function enabled.</p> <ul style="list-style-type: none"> - Span = the frequency band of operation - RBW ≥ 1% of the span - VBW ≥ RBW - Sweep = auto - Detector function = peak - Trace = max hold - Allow trace to fully stabilize. - It may prove necessary to break the span up to sections, in order to clearly show all of the hopping frequencies. The limit is specified in one of the subparagraphs of this Section. Submit this plot(s). 		
Remark			
Result	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail	
Test Data	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> N/A	
Test Plot	<input checked="" type="checkbox"/> Yes (See below)	<input type="checkbox"/> N/A	

Number of Hopping Channel measurement result

Type	Modulation	Frequency Range	Number of Hopping Channel	Limit
Number of Hopping Channel	GFSK	2400-2483.5	79	15
	$\pi/4$ DQPSK	2400-2483.5	79	15
	8-DPSK	2400-2483.5	79	15

Test Plots

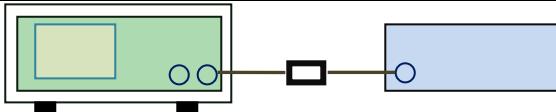
Number of Hopping Channels measurement result



6.6 Time of Occupancy (Dwell Time)

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(a) (1)(iii)	a)	Dwell Time < 0.4s	<input checked="" type="checkbox"/>
Test Setup	 Spectrum Analyzer EUT		
Test Procedure	<p>The test follows FCC Public Notice DA 00-705 Measurement Guidelines.</p> <p><u>Use the following spectrum analyzer</u></p> <ul style="list-style-type: none"> - Span = zero span, centered on a hopping channel - RBW = 1 MHz - VBW \geq RBW - Sweep = as necessary to capture the entire dwell time per hopping channel - Detector function = peak - Trace = max hold - use the marker-delta function to determine the dwell time 		
Remark			
Result	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail	

Test Data Yes N/A

Test Plot Yes (See below) N/A

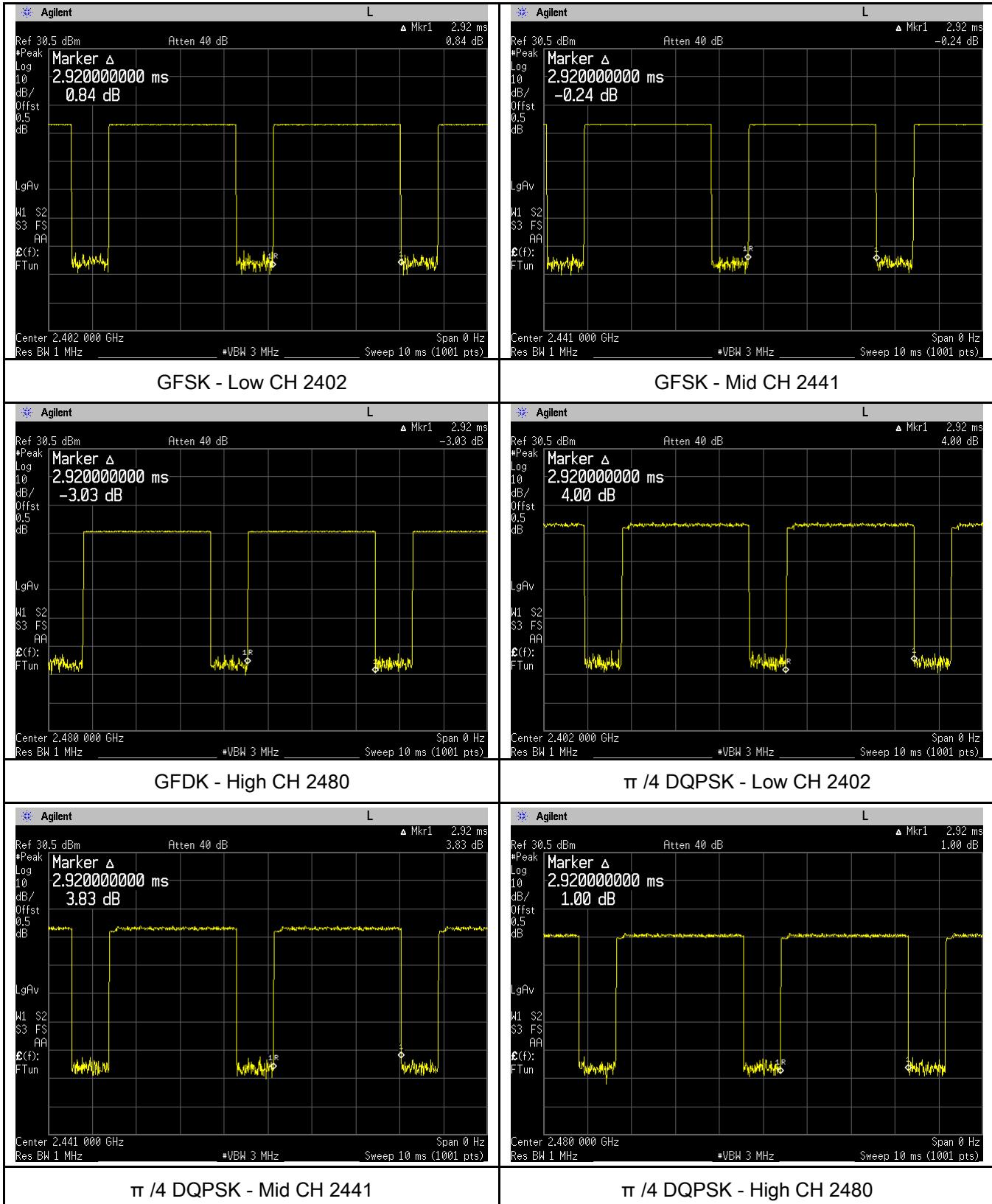
Dwell Time measurement result

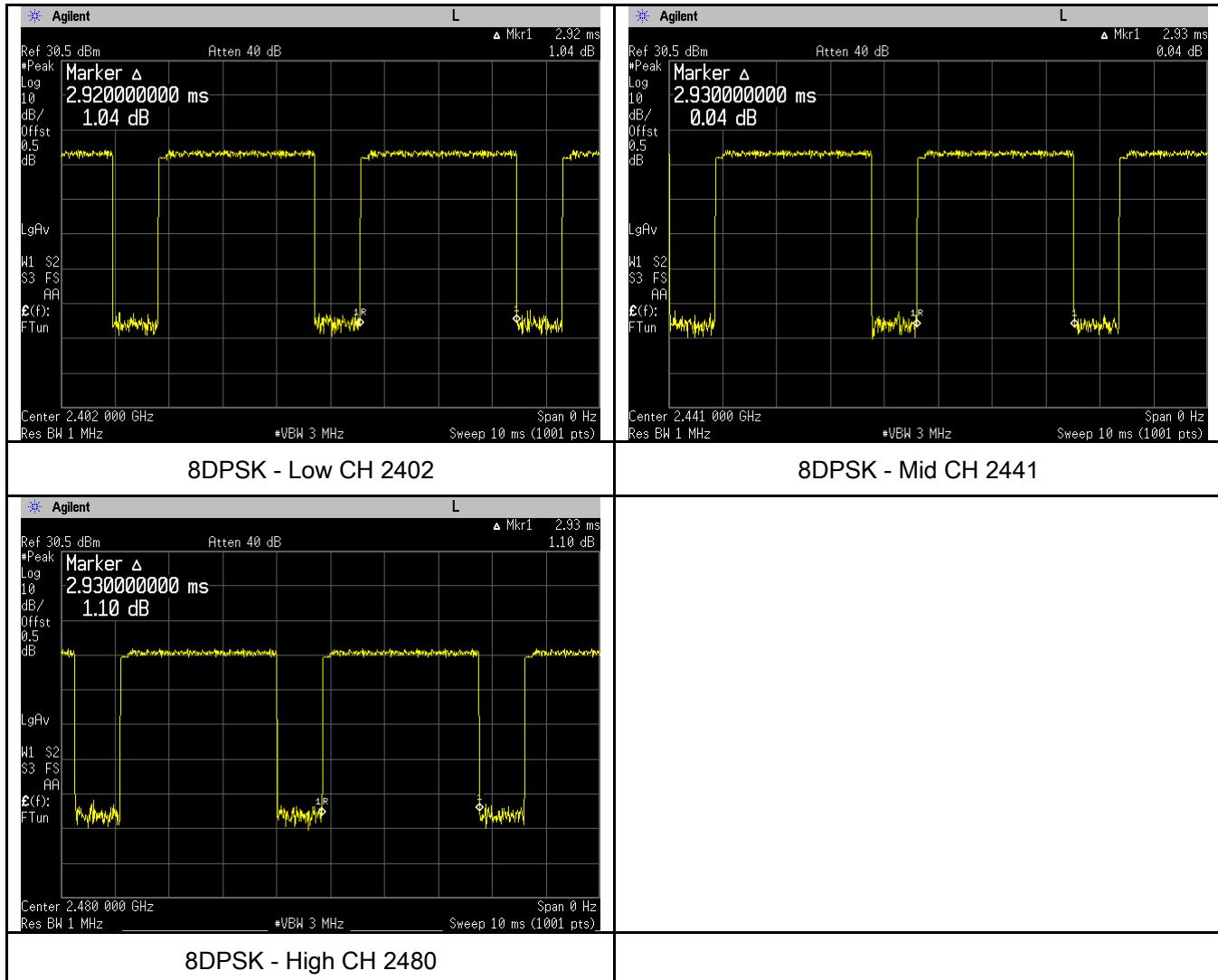
Type	Modulation	CH	Pulse Width (ms)	Dwell Time (ms)	Limit (ms)	Result
Dwell Time	GFSK	Low	2.92	311.467	400	Pass
		Mid	2.92	311.467	400	Pass
		High	2.92	311.467	400	Pass
	$\pi/4$ DQPSK	Low	2.92	311.467	400	Pass
		Mid	2.92	311.467	400	Pass
		High	2.92	311.467	400	Pass
	8-DPSK	Low	2.92	311.467	400	Pass
		Mid	2.93	312.533	400	Pass
		High	2.93	312.533	400	Pass

Note: Dwell time=Pulse Time (ms) × (1600 ÷ 6 ÷ 79) × 31.6

Test Plots

Dwell Time measurement result

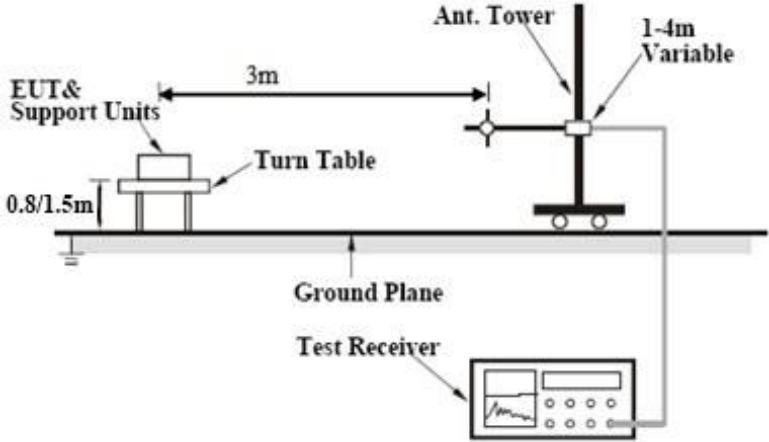




6.7 Band Edge & Restricted Band

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

Requirement(s):

Spec	Item	Requirement	Applicable
§15.247(a) (1)(iii)	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>The test follows FCC Public Notice DA 00-705 Measurement Guidelines. Radiated Method Only</p> <ul style="list-style-type: none"> - 1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator. - 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, 		

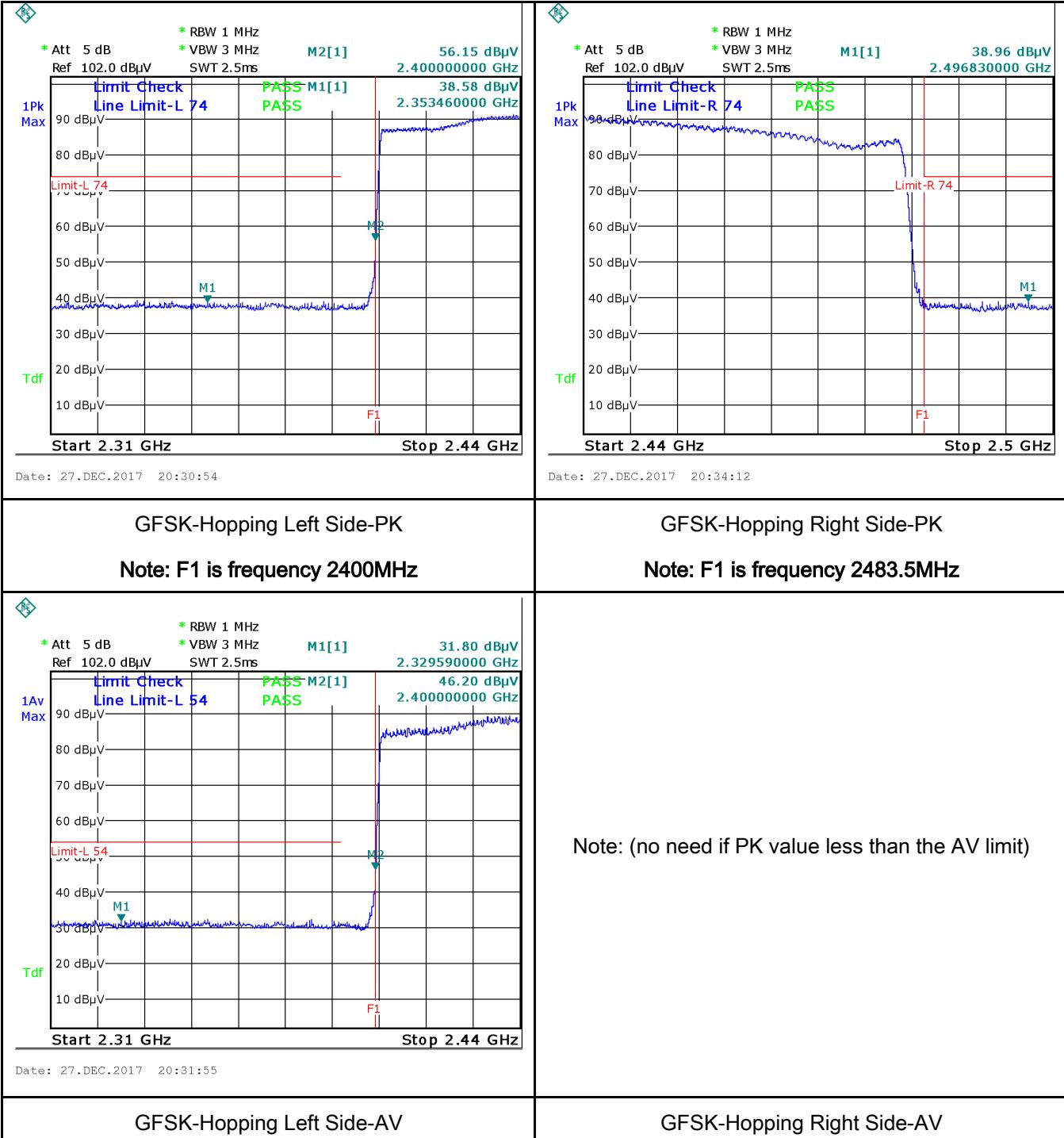
	<p>and make sure the instrument is operated in its linear range.</p> <ul style="list-style-type: none"> - 3. First, set both RBW and VBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100kHz bandwidth from band edge, check the emission of EUT, if pass then set Spectrum Analyzer as below: a. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasiy Peak detection at frequency below 1GHz. 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. 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. - 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. - 5. Repeat above procedures until all measured frequencies were complete.
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data Yes N/A

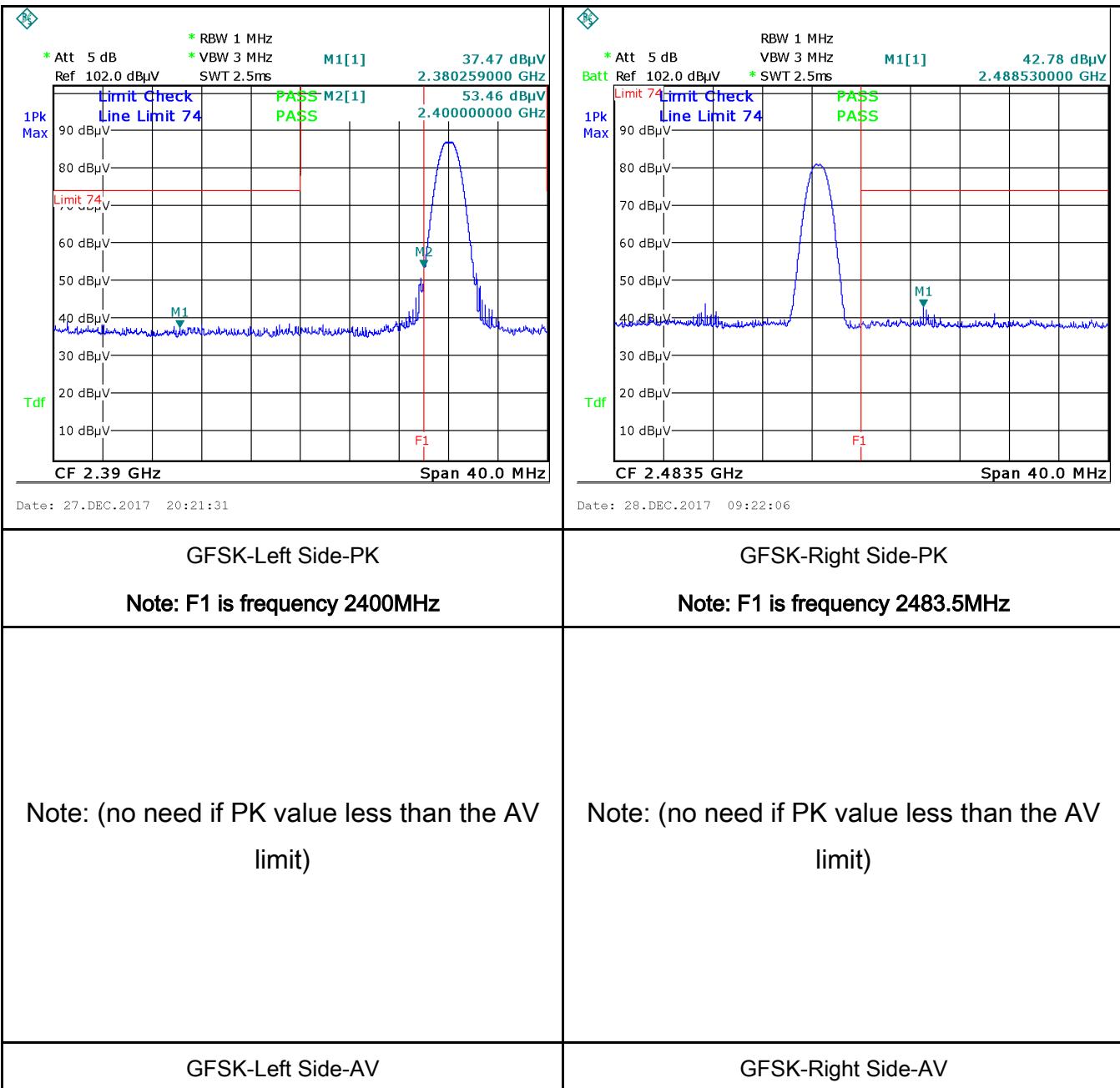
Test Plot Yes (See below) N/A

Test Plots

GFSK Mode:

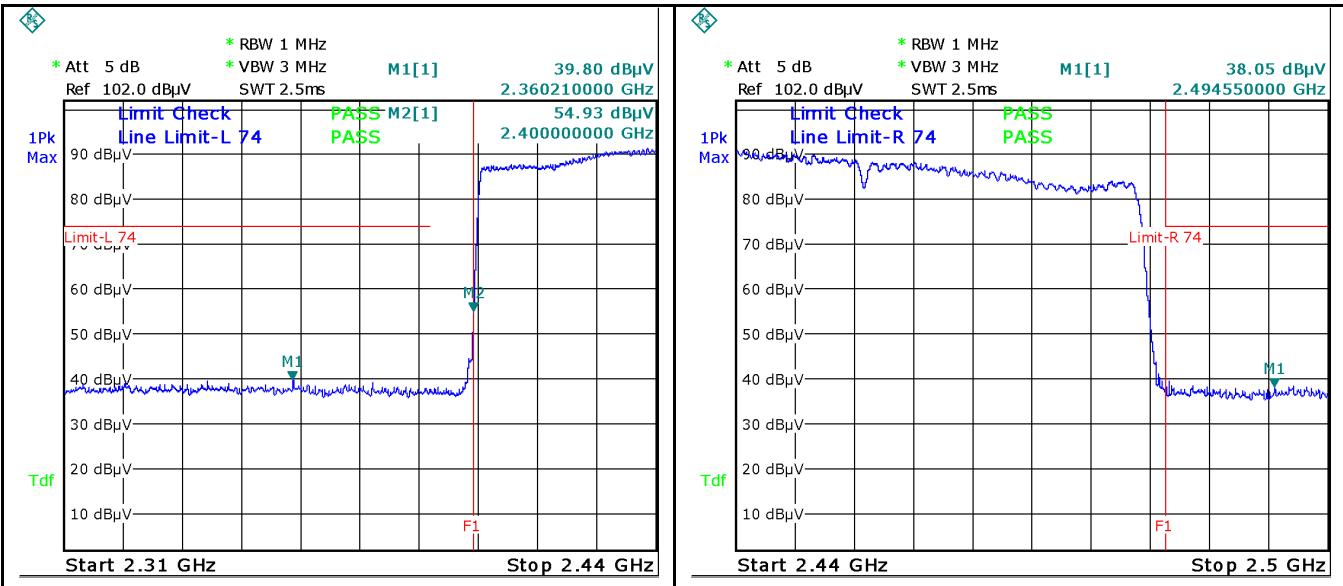


Note: Both Horizontal and vertical polarities were investigated.



Note: Both Horizontal and vertical polarities were investigated.

$\pi/4$ DQPSK Mode:



Date: 27.DEC.2017 20:31:12

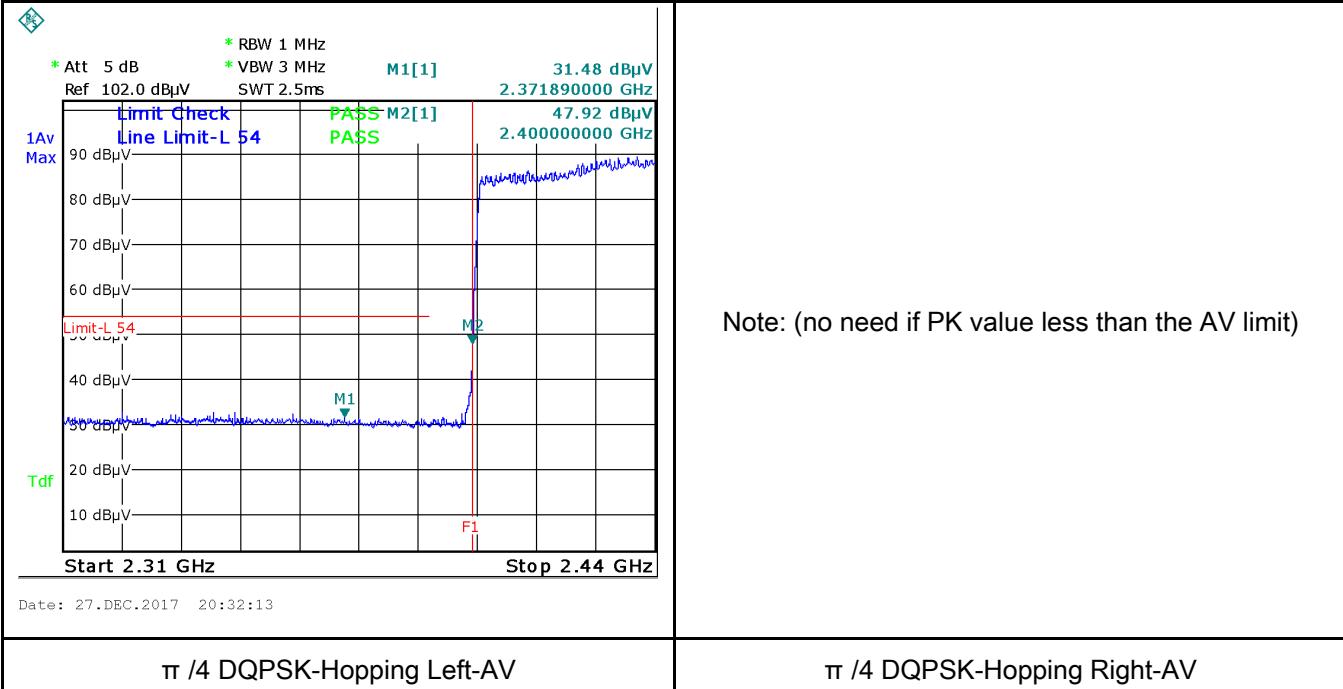
Date: 27.DEC.2017 20:33:56

$\pi/4$ DQPSK-Hopping Left Side-PK

Note: F1 is frequency 2400MHz

$\pi/4$ DQPSK-Hopping Right Side-PK

Note: F1 is frequency 2483.5MHz

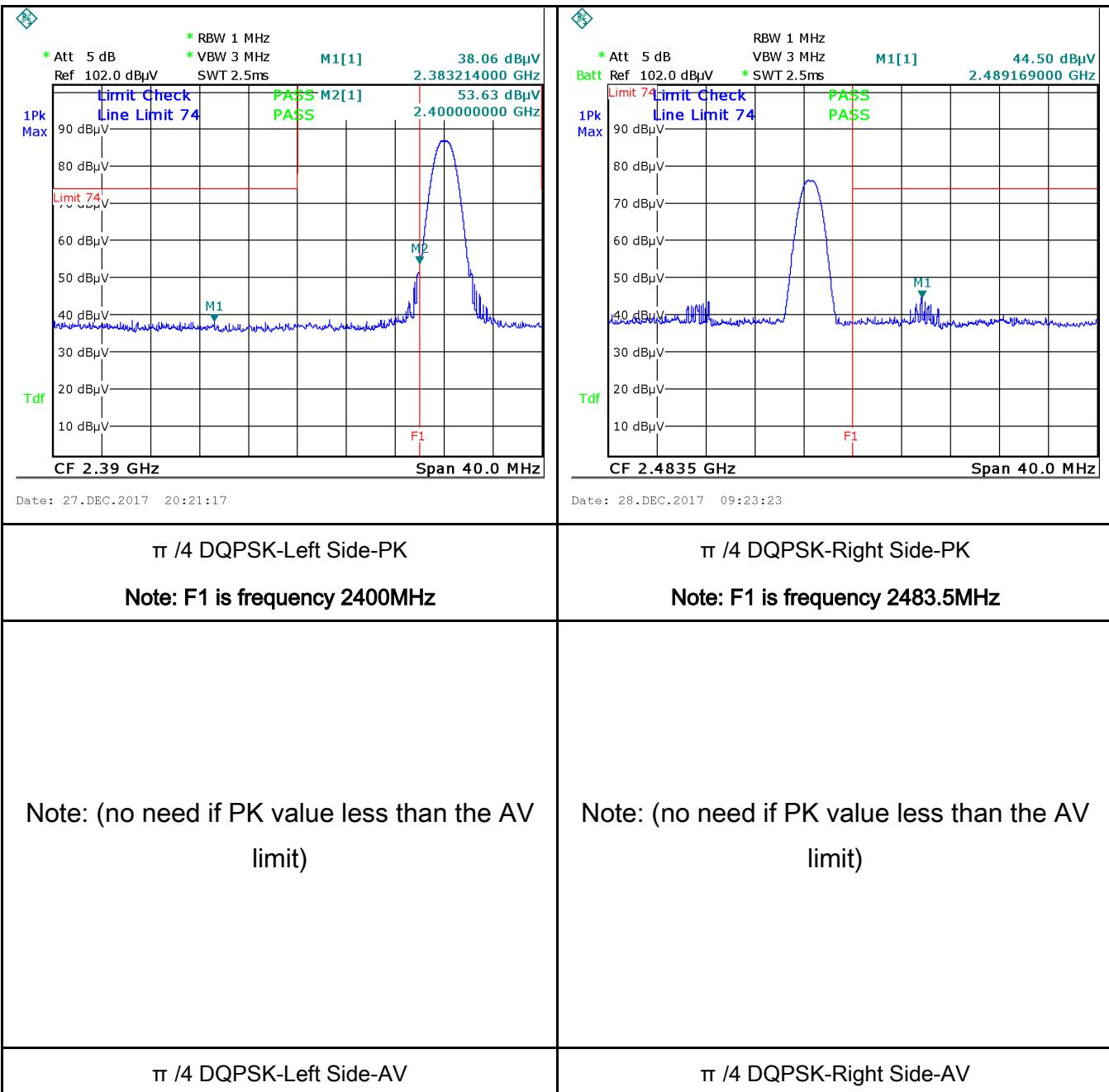


Date: 27.DEC.2017 20:32:13

$\pi/4$ DQPSK-Hopping Left-AV

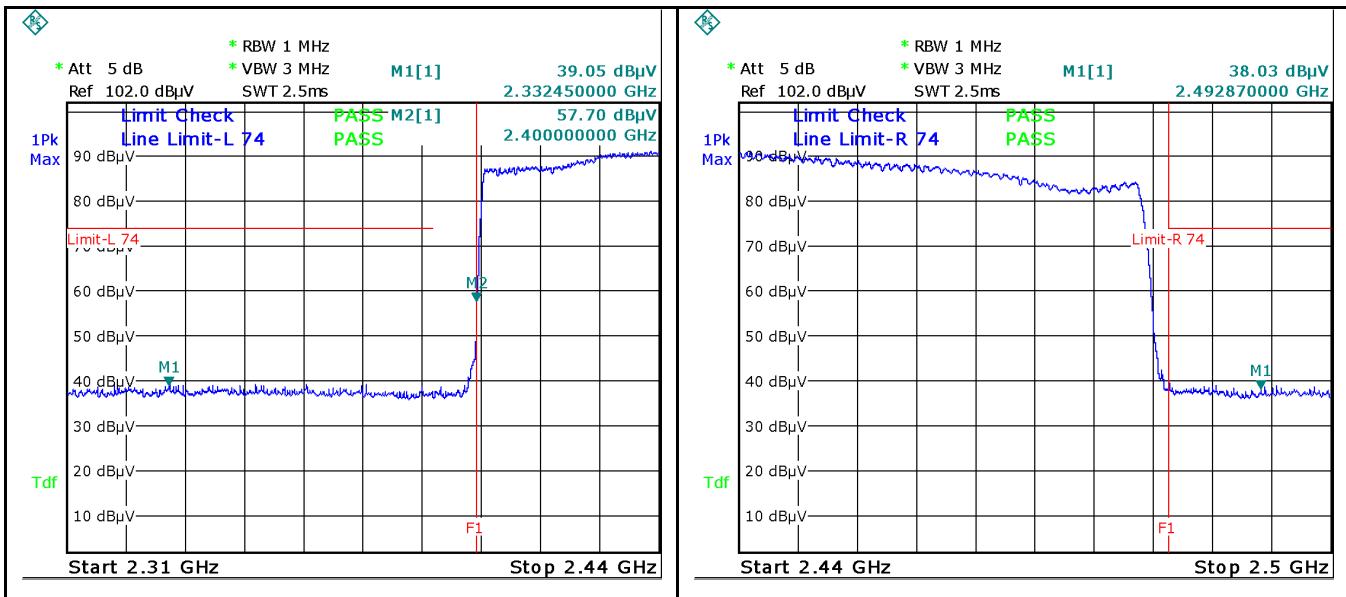
$\pi/4$ DQPSK-Hopping Right-AV

Note: Both Horizontal and vertical polarities were investigated.



Note: Both Horizontal and vertical polarities were investigated.

8-DPSK Mode:



Date: 27.DEC.2017 20:31:29

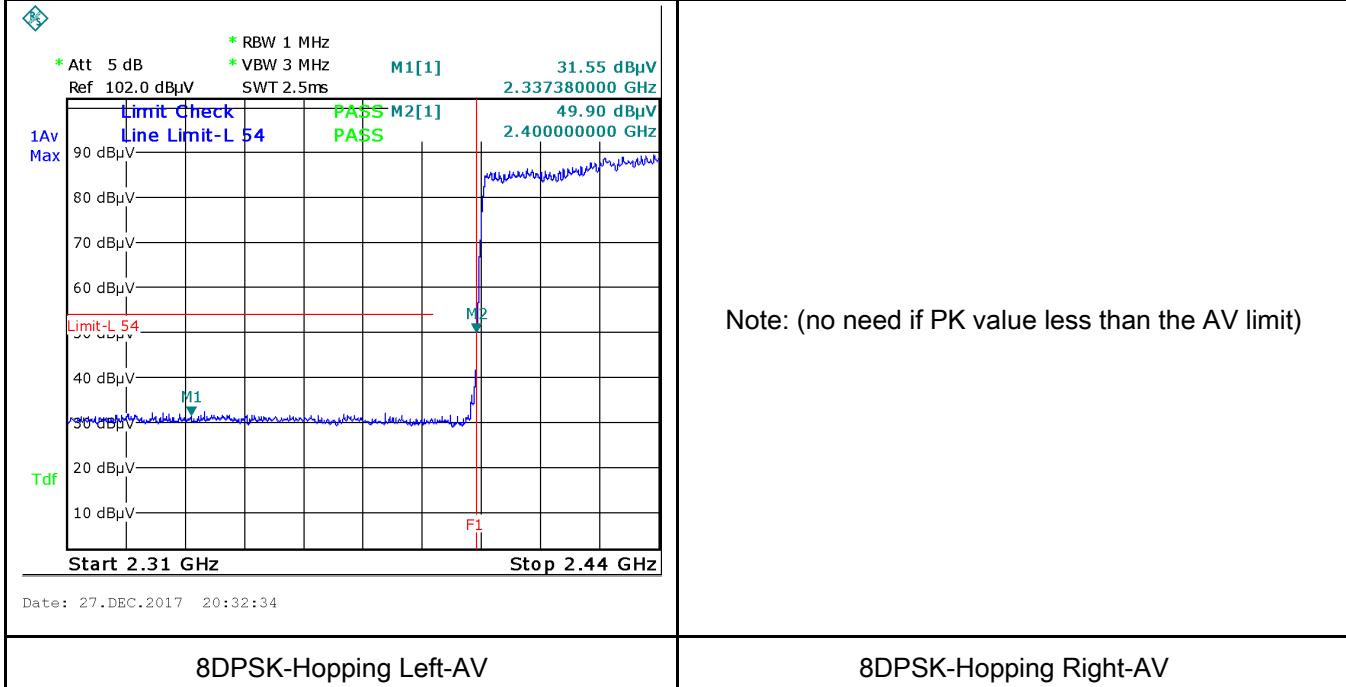
Date: 27.DEC.2017 20:33:41

8DPSK-Hopping Left Side-PK

Note: F1 is frequency 2400MHz

8DPSK-Hopping Right Side-PK

Note: F1 is frequency 2483.5MHz



Date: 27.DEC.2017 20:32:34

8DPSK-Hopping Left-AV

8DPSK-Hopping Right-AV

Note: Both Horizontal and vertical polarities were investigated.

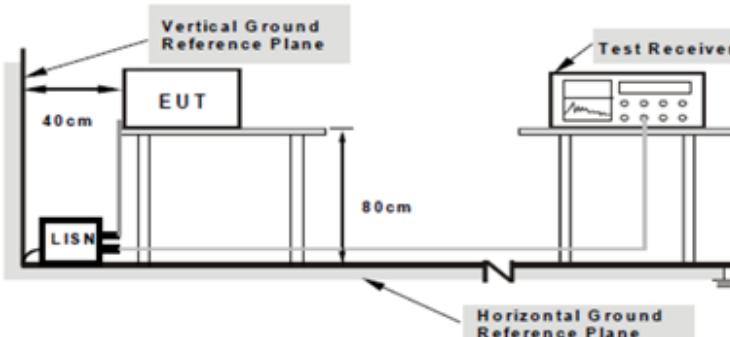


Note: Both Horizontal and vertical polarities were investigated.

6.8 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):

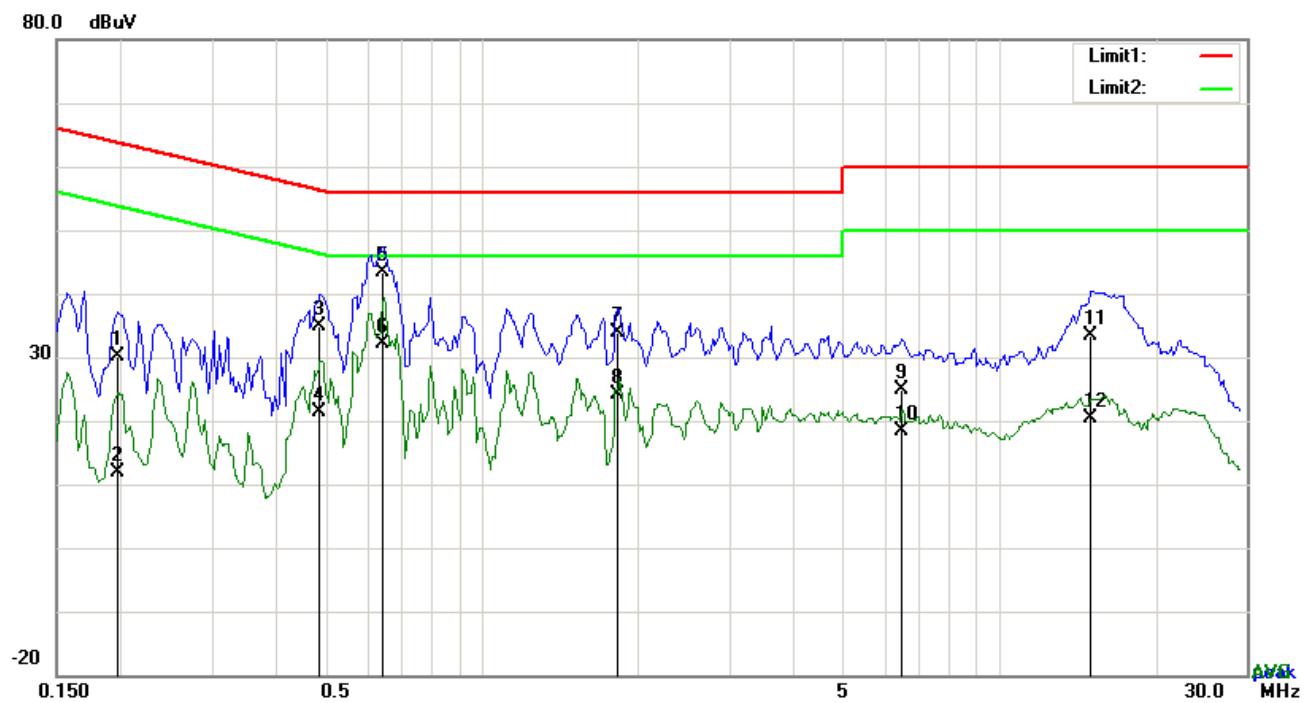
Spec	Item	Requirement	Applicable														
47CFR§15. 207, RSS210 (A8.1)	a)	<p>For Low-power radio-frequency devices that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within 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 (dB μ V)		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 (dB μ V)																
	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"> 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. The power supply for the EUT was fed through a 50W/50mH EUT LISN, connected to filtered mains. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss 																

	<p>coaxial cable.</p> <ol style="list-style-type: none"> 4. All other supporting equipment were powered separately from another main supply. 5. The EUT was switched on and allowed to warm up to its normal operating condition. 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. 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. 8. Step 7 was then repeated for the LIVE line (for AC mains) or DC line (for DC power).
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: Bluetooth Mode

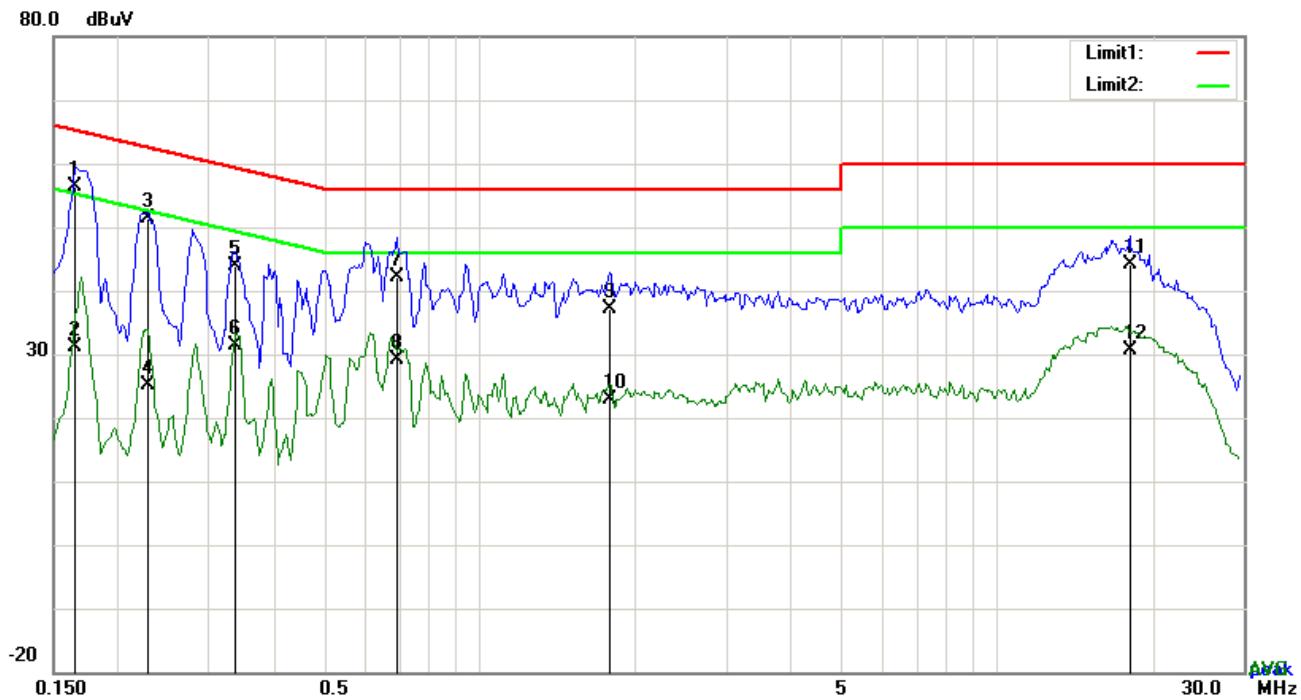


Test Data

Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	L1	0.1968	19.99	QP	10.03	30.02	63.74	-33.72
2	L1	0.1968	1.75	AVG	10.03	11.78	53.74	-41.96
3	L1	0.4854	24.77	QP	10.03	34.80	56.25	-21.45
4	L1	0.4854	11.46	AVG	10.03	21.49	46.25	-24.76
5	L1	0.6414	33.43	QP	10.03	43.46	56.00	-12.54
6	L1	0.6414	22.21	AVG	10.03	32.24	46.00	-13.76
7	L1	1.8270	23.95	QP	10.04	33.99	56.00	-22.01
8	L1	1.8270	14.14	AVG	10.04	24.18	46.00	-21.82
9	L1	6.4749	14.88	QP	10.10	24.98	60.00	-35.02
10	L1	6.4749	8.23	AVG	10.10	18.33	50.00	-31.67
11	L1	14.9379	23.19	QP	10.22	33.41	60.00	-26.59
12	L1	14.9379	10.15	AVG	10.22	20.37	50.00	-29.63

Test Mode: Bluetooth Mode

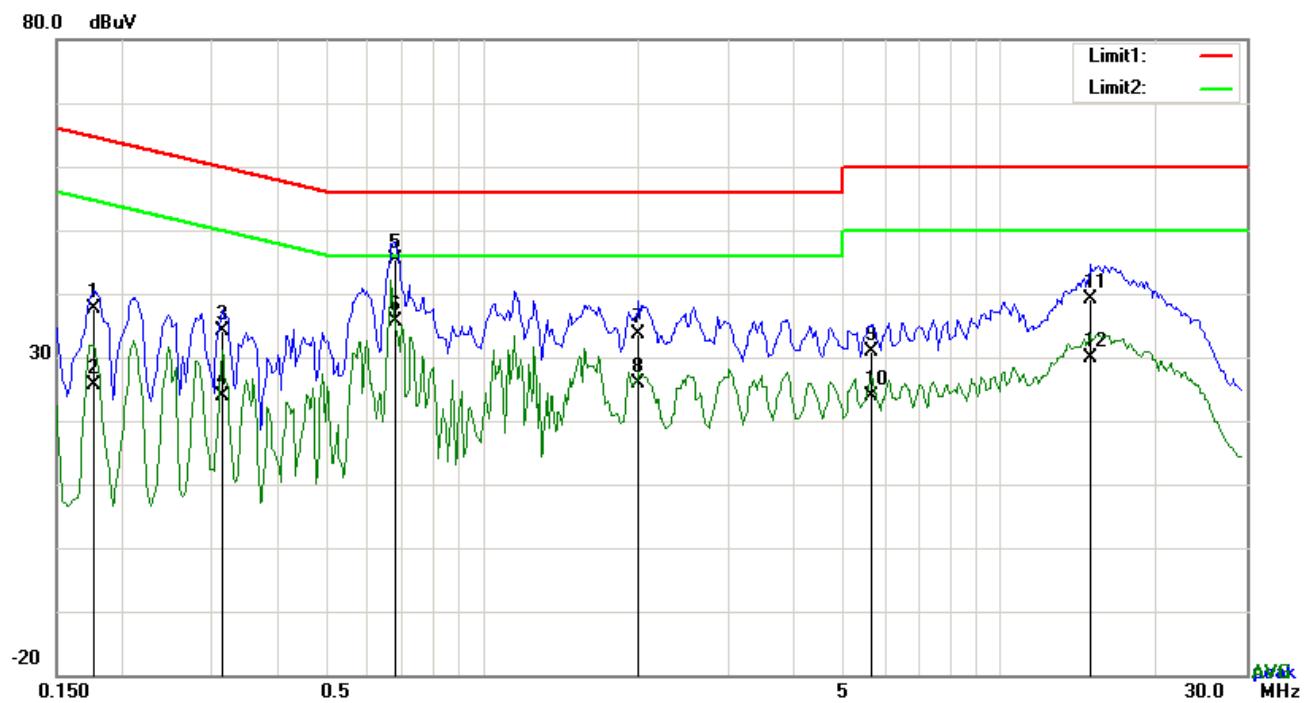


Test Data

Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	N	0.1656	46.47	QP	10.02	56.49	65.18	-8.69
2	N	0.1656	21.15	AVG	10.02	31.17	55.18	-24.01
3	N	0.2280	41.25	QP	10.02	51.27	62.52	-11.25
4	N	0.2280	15.17	AVG	10.02	25.19	52.52	-27.33
5	N	0.3372	33.81	QP	10.02	43.83	59.27	-15.44
6	N	0.3372	21.42	AVG	10.02	31.44	49.27	-17.83
7	N	0.6921	32.06	QP	10.02	42.08	56.00	-13.92
8	N	0.6921	19.17	AVG	10.02	29.19	46.00	-16.81
9	N	1.7880	27.12	QP	10.04	37.16	56.00	-18.84
10	N	1.7880	12.89	AVG	10.04	22.93	46.00	-23.07
11	N	18.1320	34.01	QP	10.24	44.25	60.00	-15.75
12	N	18.1320	20.46	AVG	10.24	30.70	50.00	-19.30

Test Mode: Bluetooth Mode

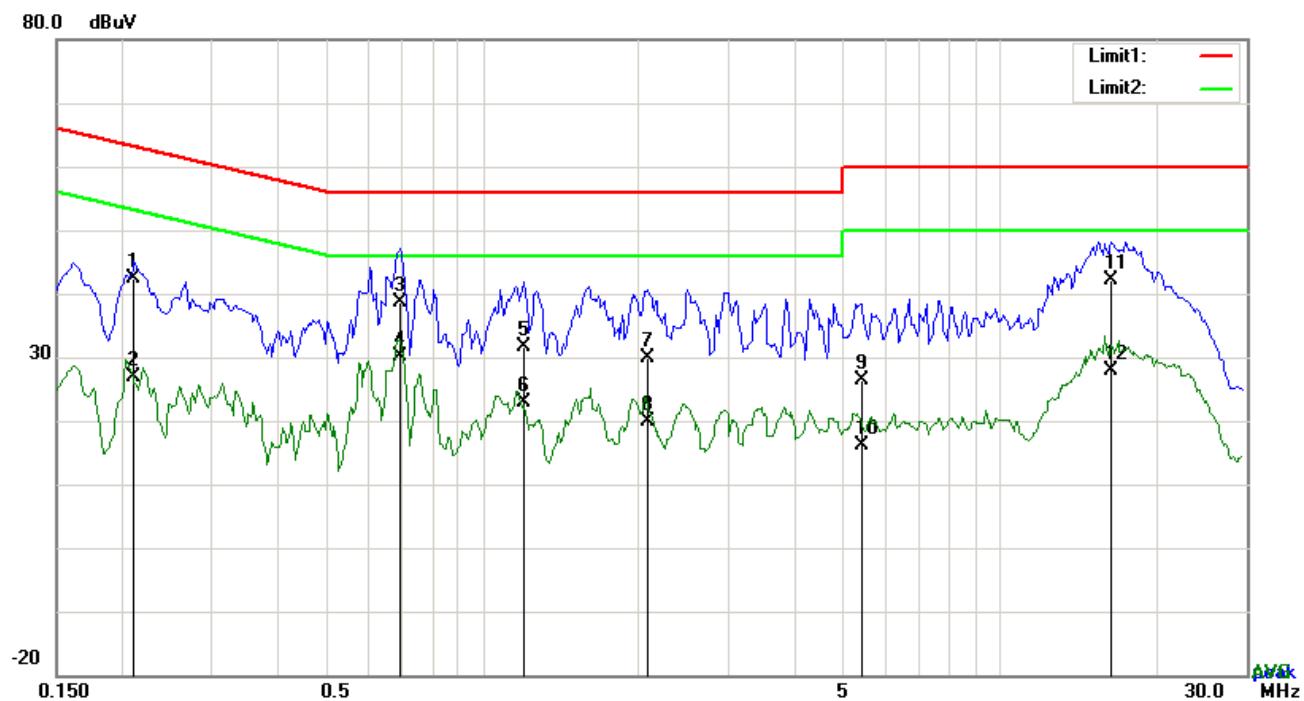


Test Data

Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	L1	0.1773	27.60	QP	10.02	37.62	64.61	-26.99
2	L1	0.1773	15.64	AVG	10.02	25.66	54.61	-28.95
3	L1	0.3138	24.14	QP	10.02	34.16	59.87	-25.71
4	L1	0.3138	13.78	AVG	10.02	23.80	49.87	-26.07
5	L1	0.6765	35.48	QP	10.02	45.50	56.00	-10.50
6	L1	0.6765	25.62	AVG	10.02	35.64	46.00	-10.36
7	L1	2.0025	23.49	QP	10.04	33.53	56.00	-22.47
8	L1	2.0025	15.81	AVG	10.04	25.85	46.00	-20.15
9	L1	5.6754	20.73	QP	10.08	30.81	60.00	-29.19
10	L1	5.6754	13.92	AVG	10.08	24.00	50.00	-26.00
11	L1	15.0198	28.95	QP	10.20	39.15	60.00	-20.85
12	L1	15.0198	19.74	AVG	10.20	29.94	50.00	-20.06

Test Mode: Bluetooth Mode



Test Data

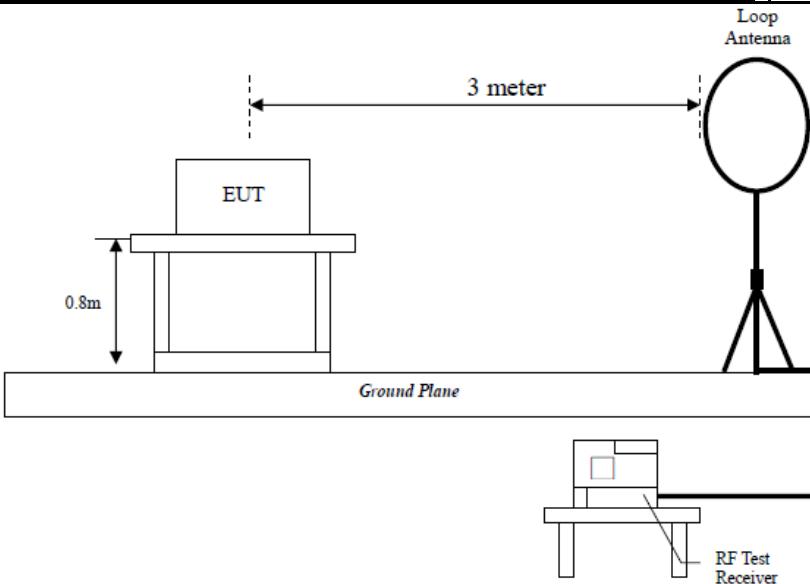
Phase Neutral Plot at 240Vac, 60Hz

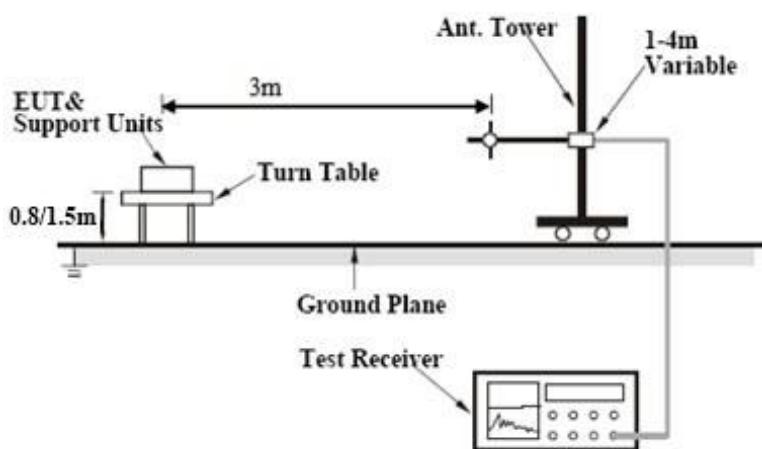
No.	P/L	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	N	0.2124	32.24	QP	10.02	42.26	63.11	-20.85
2	N	0.2124	16.76	AVG	10.02	26.78	53.11	-26.33
3	N	0.6960	28.65	QP	10.02	38.67	56.00	-17.33
4	N	0.6960	20.07	AVG	10.02	30.09	46.00	-15.91
5	N	1.2030	21.59	QP	10.03	31.62	56.00	-24.38
6	N	1.2030	12.80	AVG	10.03	22.83	46.00	-23.17
7	N	2.0805	19.85	QP	10.04	29.89	56.00	-26.11
8	N	2.0805	9.76	AVG	10.04	19.80	46.00	-26.20
9	N	5.3946	16.22	QP	10.08	26.30	60.00	-33.70
10	N	5.3946	6.09	AVG	10.08	16.17	50.00	-33.83
11	N	16.4121	32.00	QP	10.22	42.22	60.00	-17.78
12	N	16.4121	17.59	AVG	10.22	27.81	50.00	-22.19

6.9 Radiated 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. 205, §15.209, §15.247(d)	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 (μV/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 (μ 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 (μ 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																		
Test Setup		 <p>The diagram illustrates the test setup for radiated emissions. An EUT (Equipment Under Test) is placed on a stand 0.8m above a ground plane. A loop antenna is positioned 3 meters away from the EUT. An RF test receiver is connected to the loop antenna to measure the signal.</p>																	



	1.	The EUT was switched on and allowed to warm up to its normal operating condition.
Procedure	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: <ul style="list-style-type: none"> a. Vertical or horizontal polarization (whichever gave the higher emission level over a full rotation of the EUT) was chosen. b. The EUT was then rotated to the direction that gave the maximum emission. c. Finally, the antenna height was adjusted to the height that gave the maximum emission. 3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasiy Peak detection at frequency below 1GHz. 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. 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. 5. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.
Remark		
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:

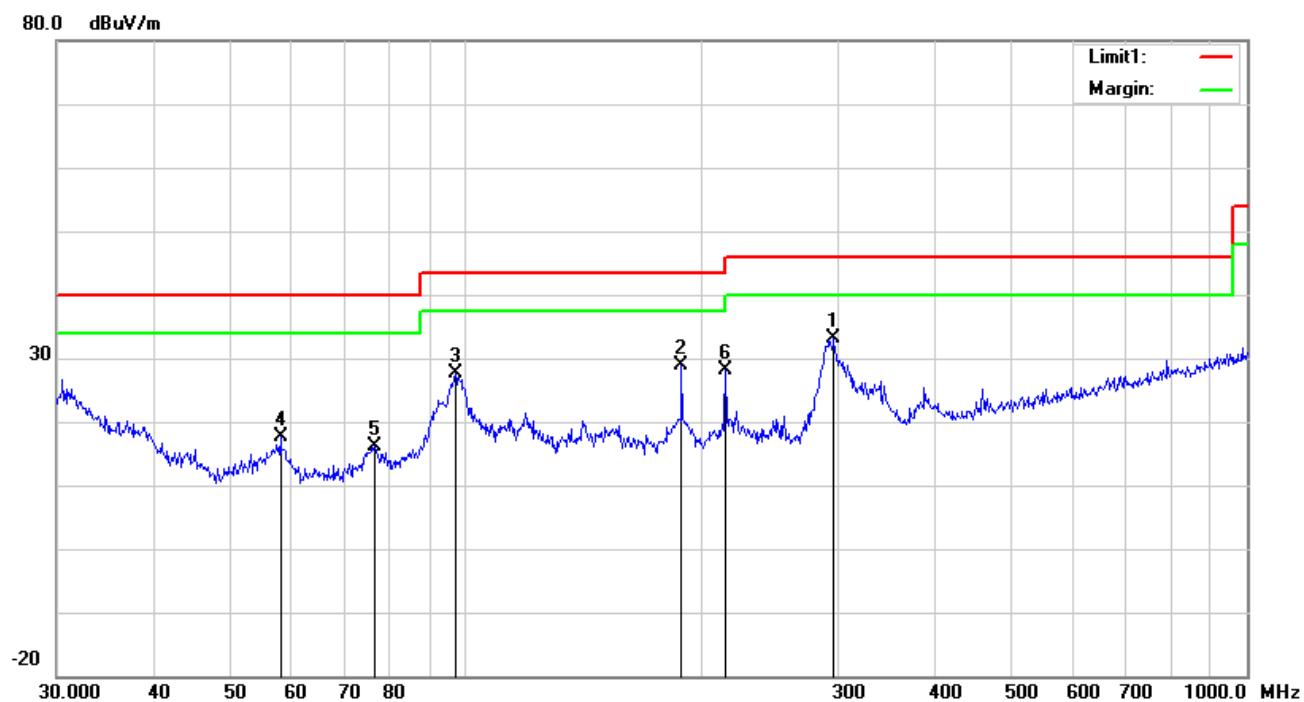
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

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

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

Test Mode: Bluetooth Mode

30MHz -1GHz

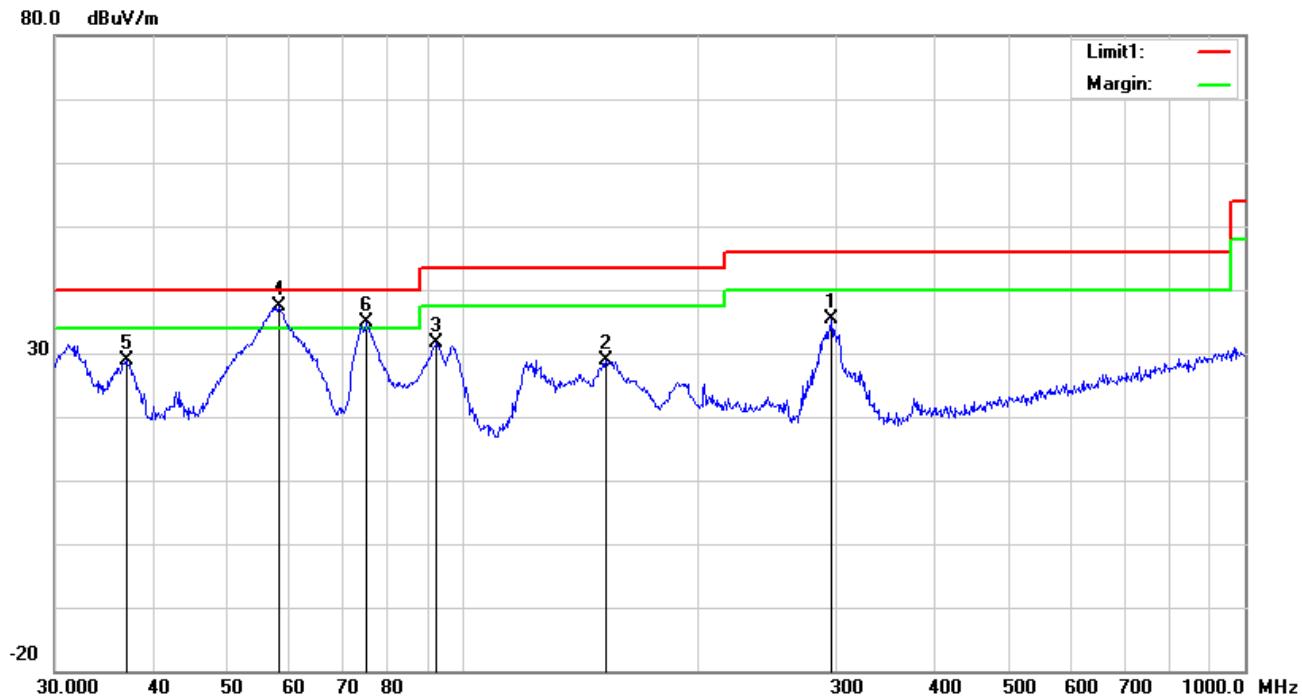


Test Data

Horizontal 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	H	296.1836	40.22	peak	13.43	22.29	1.78	33.14	46.00	-12.86	100	346
2	H	189.0743	38.24	peak	11.50	22.31	1.52	28.95	43.50	-14.55	100	323
3	H	97.1148	39.09	peak	9.71	22.32	1.04	27.52	43.50	-15.98	100	310
4	H	57.9993	31.69	peak	7.52	22.40	0.76	17.57	40.00	-22.43	100	142
5	H	76.5121	29.90	peak	7.67	22.41	0.99	16.15	40.00	-23.85	100	140
6	H	215.2678	36.93	peak	11.89	22.35	1.59	28.06	43.50	-15.44	100	245

30MHz -1GHz



Test Data

Vertical Polarity Plot @3m

No.	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	V	296.1836	42.57	peak	13.43	22.29	1.78	35.49	46.00	-10.51	100	357
2	V	152.1297	37.34	AVG	12.60	22.33	1.35	28.96	43.50	-14.54	100	212
3	V	92.4624	44.38	peak	8.59	22.32	0.97	31.62	43.50	-11.88	100	183
4	V	57.9993	51.52	QP	7.52	22.40	0.76	37.40	40.00	-2.60	100	35
5	V	37.0249	34.37	peak	16.07	22.26	0.77	28.95	40.00	-11.05	100	147
6	V	75.1823	48.55	QP	7.70	22.40	0.96	34.81	40.00	-5.19	100	345

Above 1GHz

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

Low Channel: 8-DPSK Mode (Worst Case) (2402 MHz)

Frequency (MHz)	S.A. Reading (dB μ V)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
4804	45.07	AV	V	33.39	7.22	48.46	37.22	54	-16.78
4804	46.12	AV	H	33.39	7.22	48.46	38.27	54	-15.73
4804	69.42	PK	V	33.39	7.22	48.46	61.57	74	-12.43
4804	65.24	PK	H	33.39	7.22	48.46	57.39	74	-16.61
10725	20.46	AV	V	40.7	9.9	46.6	24.46	54	-29.54
10725	20.63	AV	H	40.7	9.9	46.6	24.63	54	-29.37
10725	38.43	PK	V	40.7	9.9	46.6	42.43	74	-31.57
10725	40.81	PK	H	40.7	9.9	46.6	44.81	74	-29.19

Middle Channel: 8-DPSK Mode (Worst Case) (2441 MHz)

Frequency (MHz)	S.A. Reading (dB μ V)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
4882	46.44	AV	V	33.62	7.53	48.36	39.23	54	-14.77
4882	45.76	AV	H	33.62	7.53	48.36	38.55	54	-15.45
4882	66.49	PK	V	33.62	7.53	48.36	59.28	74	-14.72
4882	65.36	PK	H	33.62	7.53	48.36	58.15	74	-15.85
9749	18.04	AV	V	39.03	10.47	47.96	19.58	54	-34.42
9749	20.75	AV	H	39.03	10.47	47.96	22.29	54	-31.71
9749	38.11	PK	V	39.03	10.47	47.96	39.65	74	-34.35
9749	37.23	PK	H	39.03	10.47	47.96	38.77	74	-35.23

High Channel: 8-DPSK Mode (Worst Case) (2480 MHz)

Frequency (MHz)	S.A. Reading (dB μ V)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre- Amp. Gain (dB)	Cord. Amp. (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
4960	46.59	AV	V	33.89	7.86	48.31	40.03	54	-13.97
4960	44.61	AV	H	33.89	7.86	48.31	38.05	54	-15.95
4960	65.34	PK	V	33.89	7.86	48.31	58.78	74	-15.22
4960	68.81	PK	H	33.89	7.86	48.31	62.25	74	-11.75
17871	20.76	AV	V	43.6	20.13	43.69	40.8	54	-13.2
17871	18	AV	H	43.6	20.13	43.69	38.04	54	-15.96
17871	40.21	PK	V	43.6	20.13	43.69	60.25	74	-13.75
17871	40.46	PK	H	43.6	20.13	43.69	60.5	74	-13.5

Note:

1, The testing has been conformed to $10 \times 2480\text{MHz} = 24,800\text{MHz}$

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
AC Line Conducted					
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"/>
RF conducted test					
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"/>
Radiated Emissions					
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



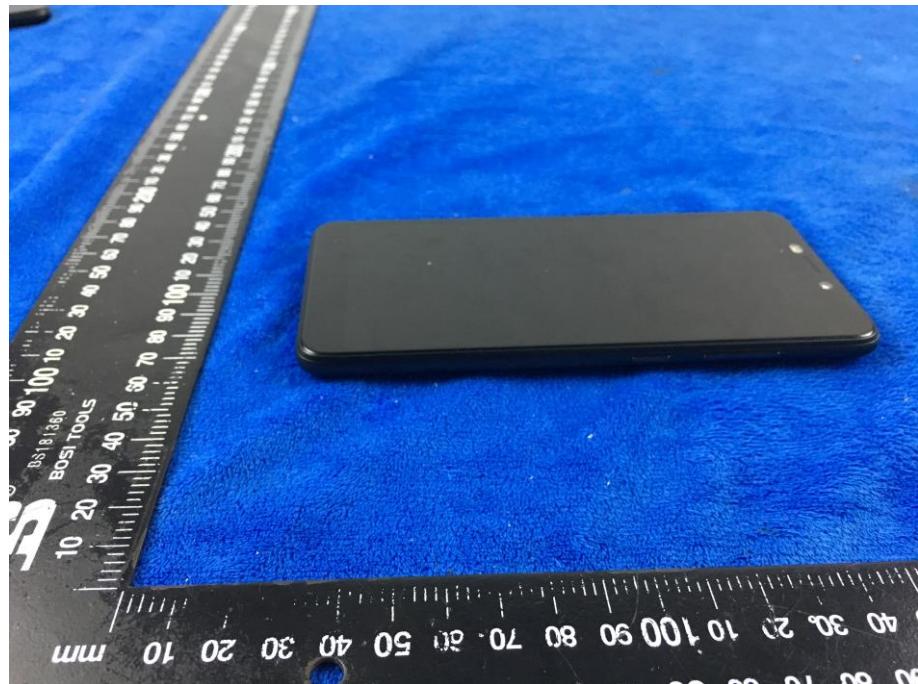
EUT - Top View



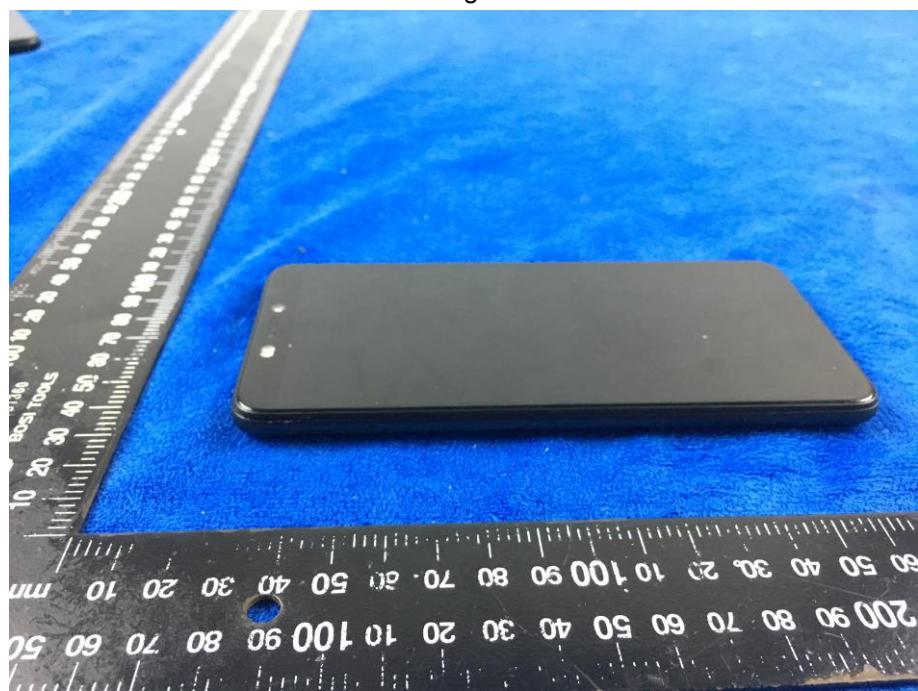
EUT - Bottom View



EUT - Left View



EUT - Right View



Annex B.ii. Photograph: EUT Internal Photo

Cover Off - Top View 1



Cover Off - Top View 2



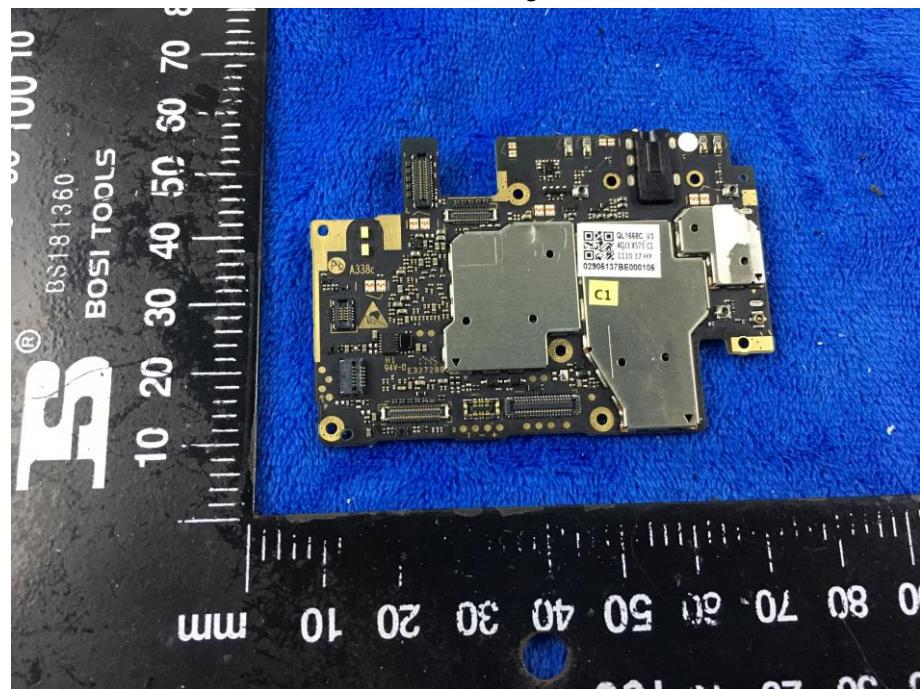
Battery - Front View



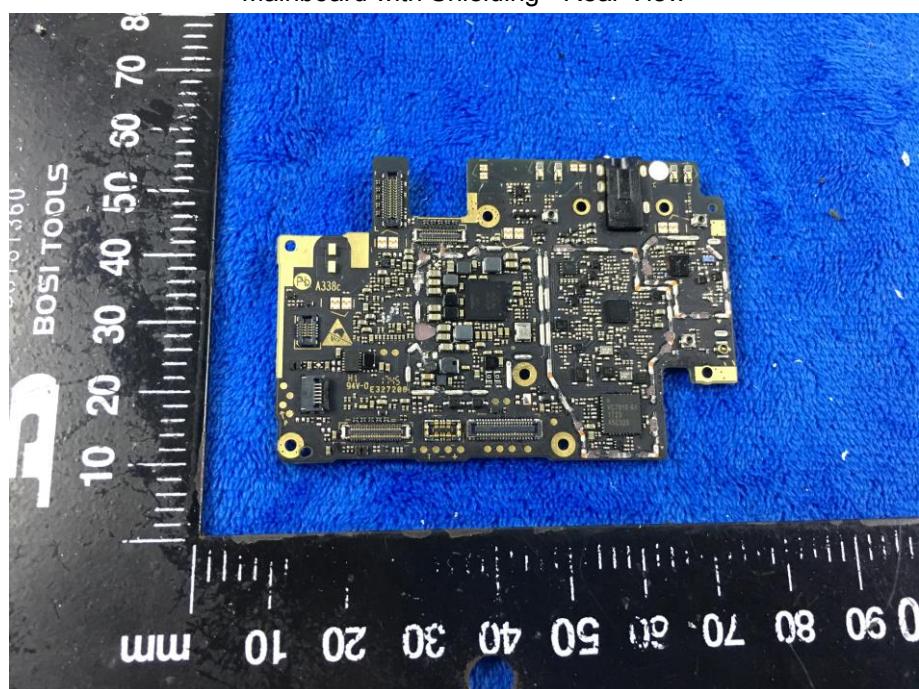
Battery - Rear View



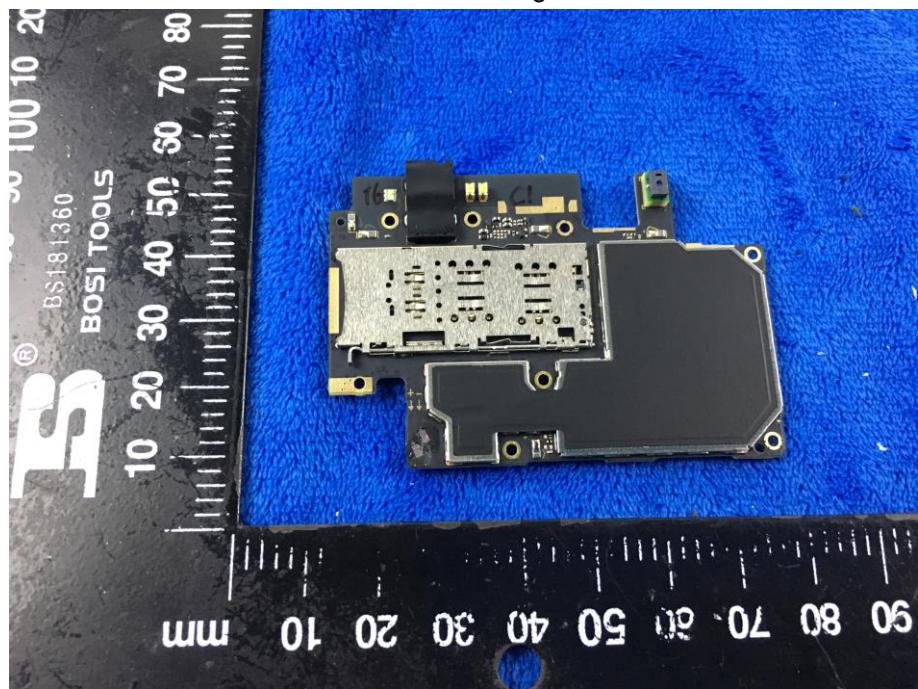
Mainboard with Shielding - Front View



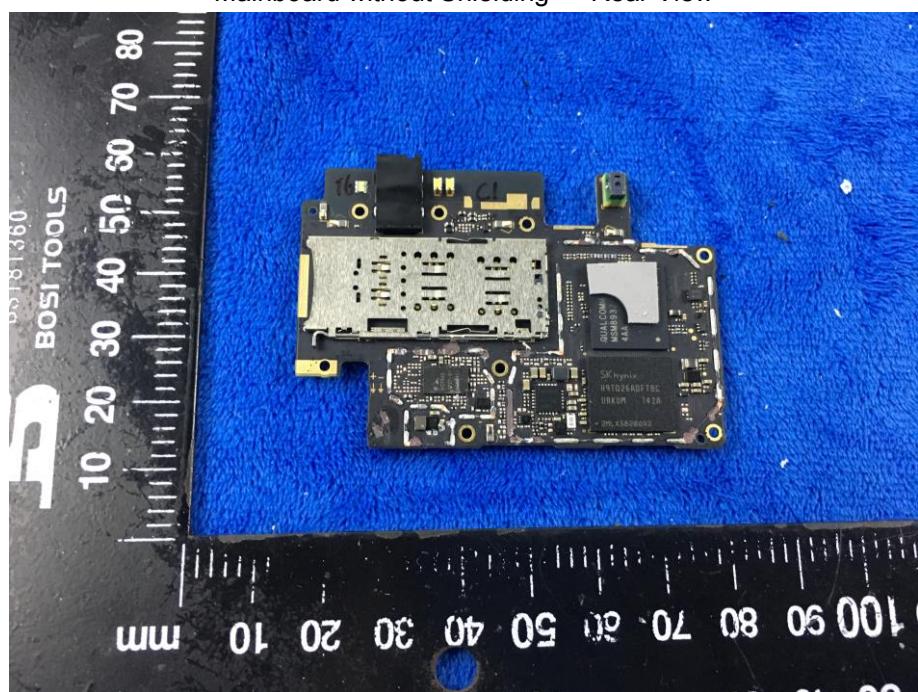
Mainboard with Shielding - Rear View



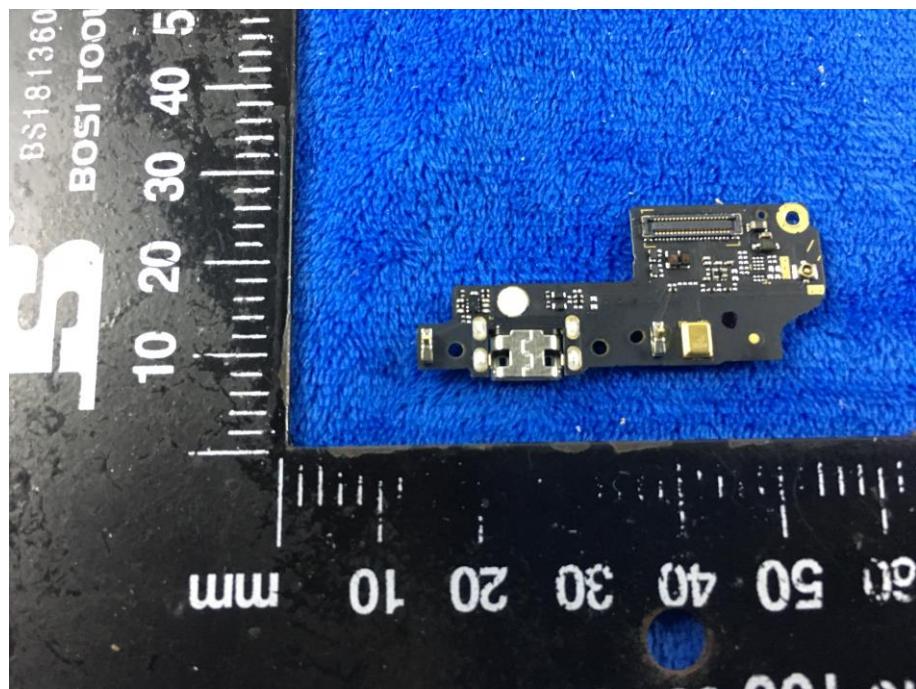
Mainboard without Shielding – Front View



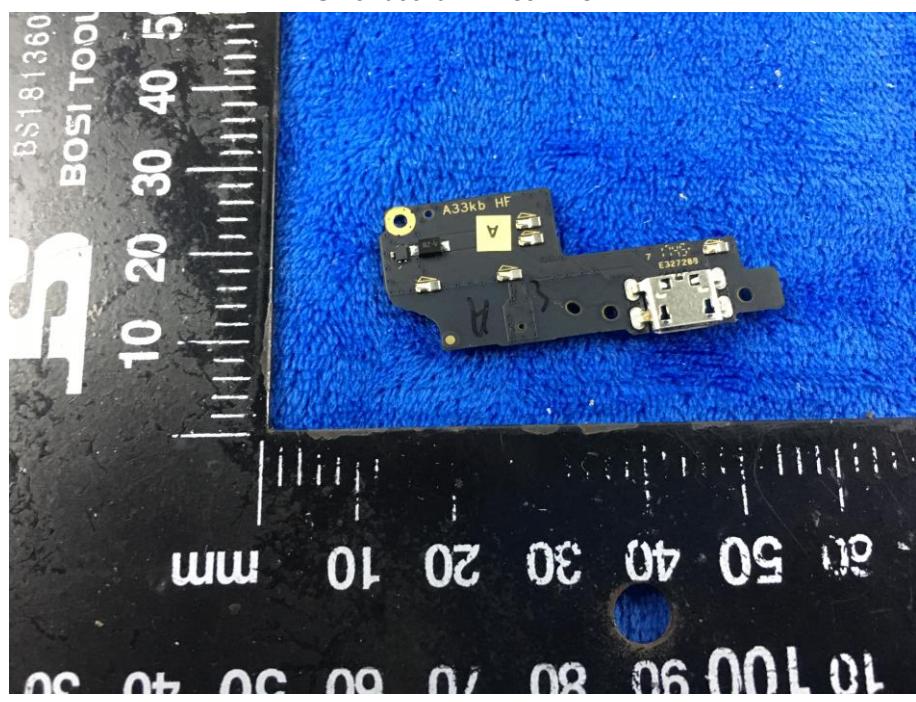
Mainboard without Shielding – Rear View



Smallboard – Front View



Smallboard – Rear View



LCD – Front View



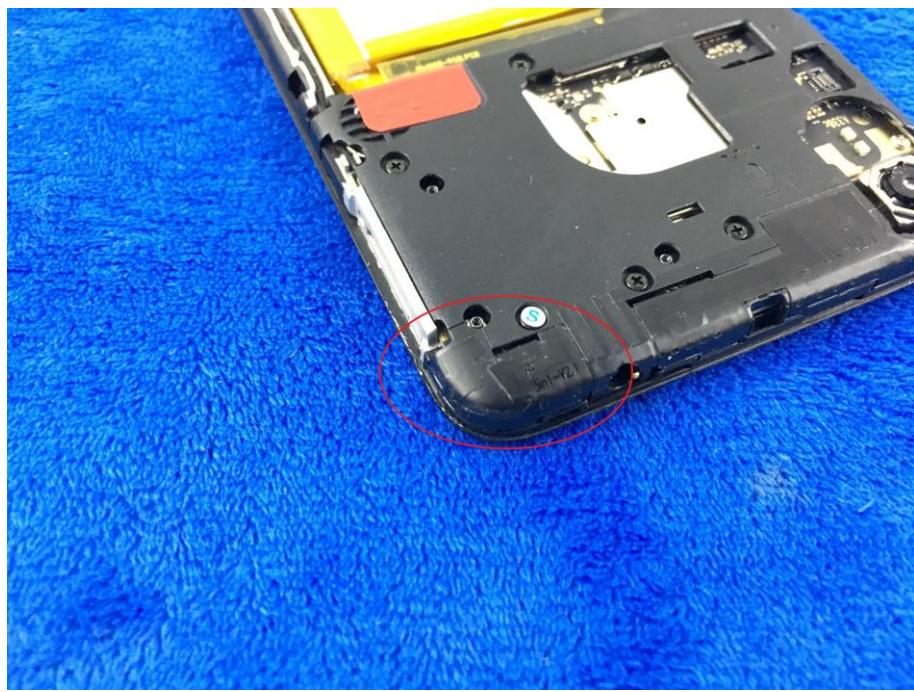
LCD – Rear View



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



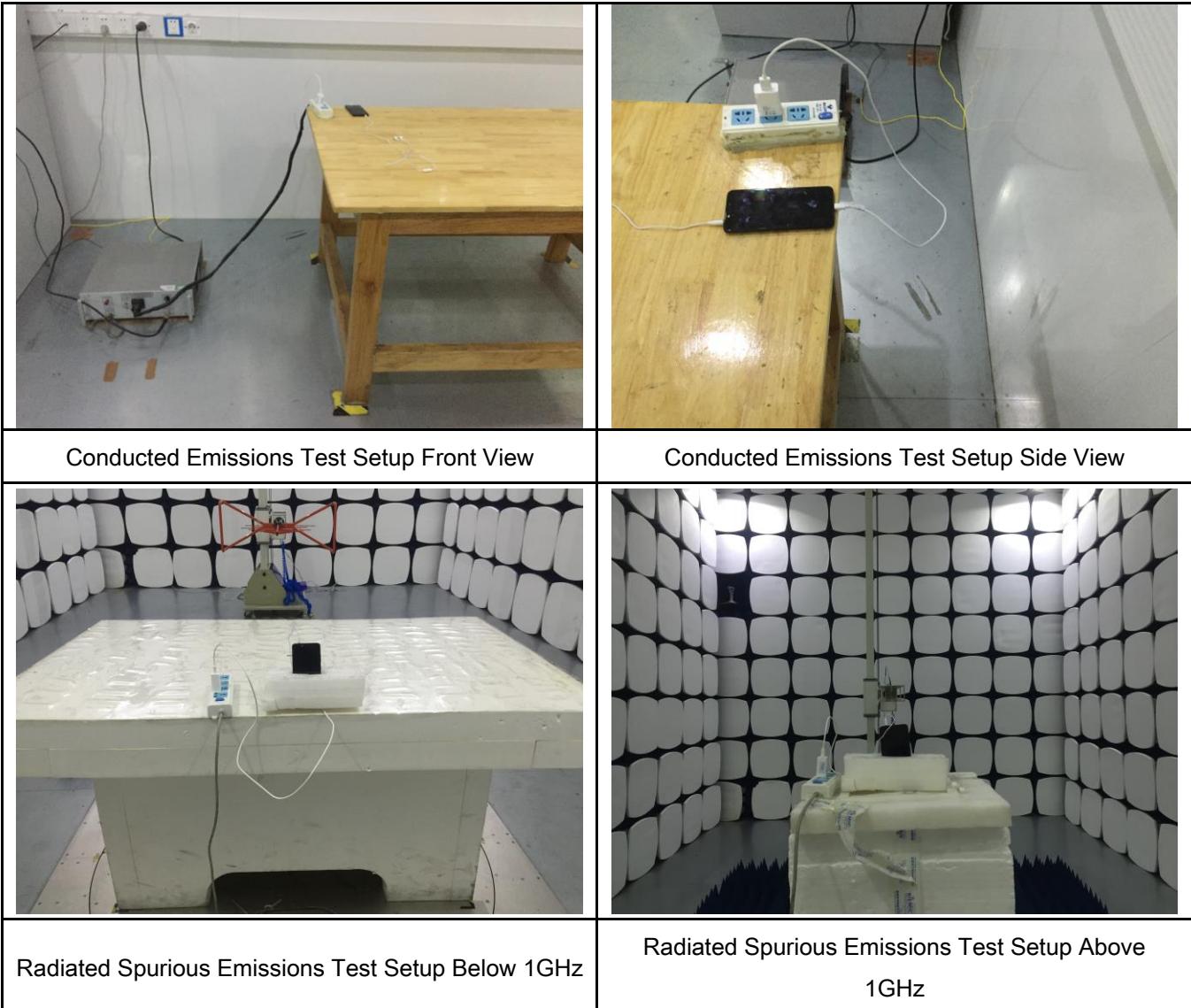
WIFI/BT/BLE/GPS - Antenna View



RXD- Antenna View



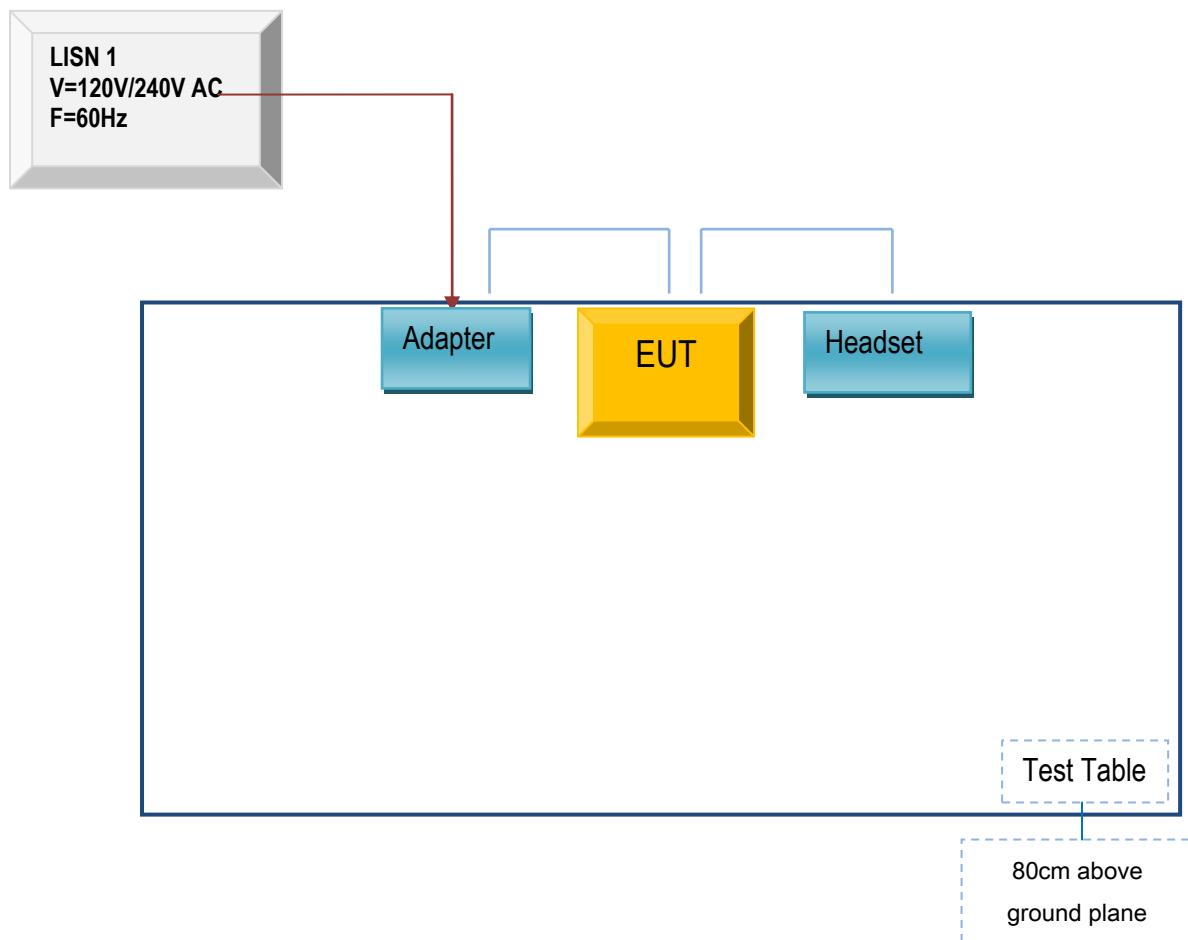
Annex B.iii. Photograph: Test Setup Photo



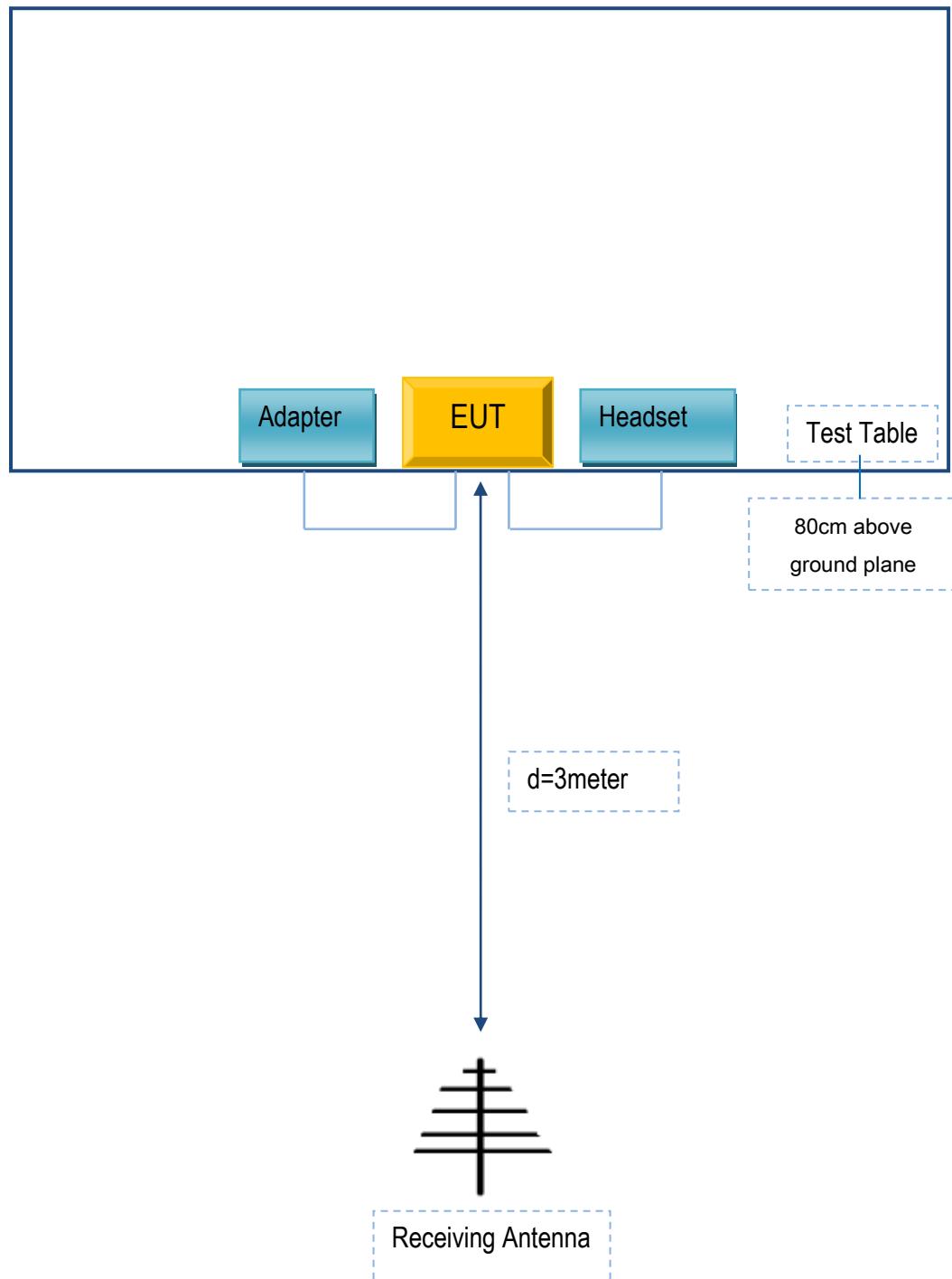
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

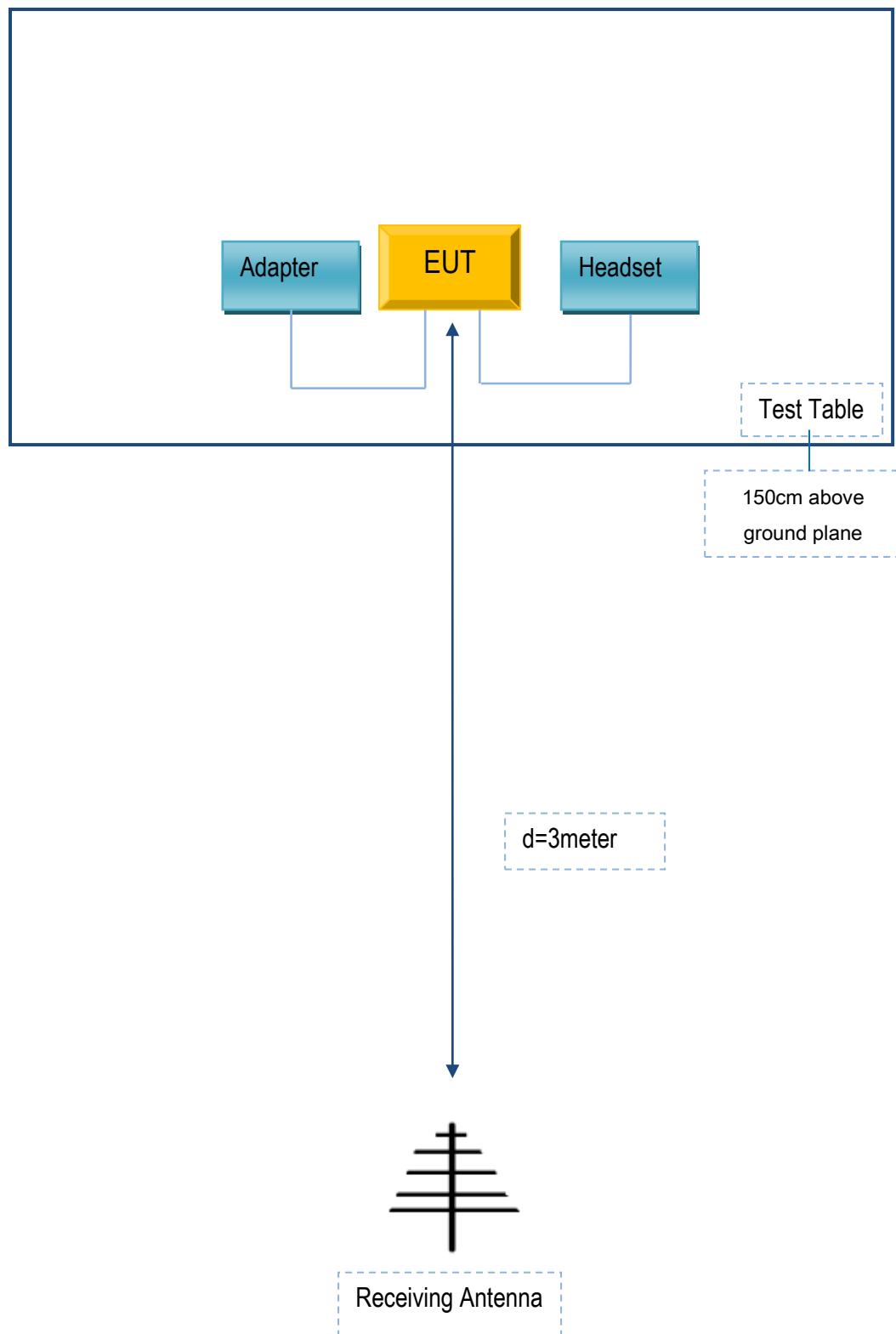
Block Configuration Diagram for AC Line Conducted Emissions



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

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

Please see the attachment

Annex E. DECLARATION OF SIMILARITY

N/A