RF TEST REPORT



Report No.: 17071091-FCC-R3
Supersede Report No.: N/A

Applicant	TECNO MOBILE LIMITED			
Product Name	Mobile pho	Mobile phone		
Model No.	K8			
Serial No.	N/A			
Test Standard	FCC Part 1	5.247: 2016,	ANSI C63.10: 2	013
Test Date	October 17	to Novembe	r 07, 2017	
Issue Date	November 08, 2017			
Test Result	Pass Fail			
Equipment complied with the specification				
Equipment did not comply with the specification				
Loven	Luo	David	Huang	
Loren Luo Test Engineer			d Huang cked By	

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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

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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
17071091-FCC-R3	NONE	Original	November 08, 2017

2. Customer information

Applicant Name	TECNO MOBILE 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	
	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park	
Lab Address	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 Addus s	2-1 Longcang Avenue Yuhua Economic and
Lab Address	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.



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4. Equipment under Test (EUT) Information

Description of EUT: Mobile phone

Main Model: K8

Serial Model: N/A

Date EUT received: October 17, 2017

Test Date(s): October 17 to November 07, 2017

Equipment Category: DSS

GSM850: -0.2dBi PCS1900: 1.7dBi

UMTS-FDD Band V: -0.2dBi UMTS-FDD Band IV: 1.7dBi UMTS-FDD Band II: 1.7dBi

Antenna Gain: LTE Band II:1.7dBi

LTE Band IV: 1.7dBi LTE Band VII:2.5dBi Bluetooth/BLE: 2.0dBi

WIFI: 2.0dBi GPS:1.7dBi

Antenna Type: PIFA antenna

Type of Modulation:

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

RF Operating Frequency (ies): 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: 2.480dBm

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: CU-52JT

Input: AC100-240V~50/60Hz,200mA

Output: DC 5.0V~1.2A

Input Power:

Battery:

Model: BL-30RT

Rating: 3.85V, 3000mAh, 11.55Wh

Limited charge voltage: 4.4V



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Trade Name :	TECNO
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FCC ID: 2ADYY-K8



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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	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	
-	-	-	



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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 2.0dBi for Bluetooth/BLE, the gain is 2.0dBi for WIFI, the gain is 1.7dBi for GPS.

A permanently attached PIFA antenna for GSM/PCS/UMTS/ LTE Band II/IV/VII, the gain is -0.2dBi for GSM850, 1.7dBi for PCS1900, -0.2dBi for UMTS-FDD Band V, 1.7dBi for UMTS-FDD Band II, 1.7dBi for UMTS-FDD Band IV, the gain is 1.7dBi for LTE Band II, 1.7dBi for LTE Band VII.

The antenna meets up with the ANTENNA REQUIREMENT.

Result: Compliance.



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6.2 Channel Separation

Temperature	25°C		
Relative Humidity	57%		
Atmospheric Pressure	1014mbar		
Test date :	October 20, 2017		
Tested By :	Loren Luo		

Requirement(s):

Requirement(s):			1		
Spec	Item	Item Requirement Applical			
6.45.047(.)(4)		Channel Separation < 20dB BW and 20dB BW <			
	,	25KHz ; Channel Separation Limit=25KHz	~		
§ 15.247(a)(1)	(a)	Chanel Separation < 20dB BW and 20dB BW >			
		25kHz; Channel Separation Limit=2/3 20dB BW			
Test Setup	Spectrum Analyzer EUT				
	The to	est follows FCC Public Notice DA 00-705 Measurement	Guidelines.		
	Use the following spectrum analyzer settings:				
	- The EUT must have its hopping function enabled				
	- Span = wide enough to capture the peaks of two adjacent				
	channels				
	- Resolution (or IF) Bandwidth (RBW) ≥ 1% of the span				
Test Procedure	- Video (or Average) Bandwidth (VBW) ≥ RBW				
restrioccure	- 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.			



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Rema	rk				
Resu	lt	Pass	Fail		
Test Data	Yes	.	N/A		
Test Plot	Ye	s (See below)	□ _{N/A}		

Channel Separation measurement result

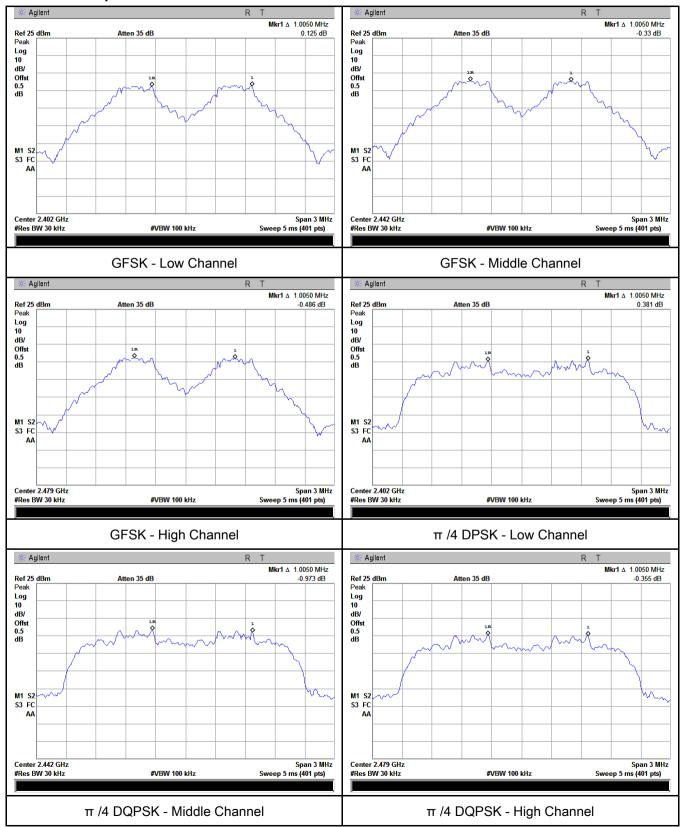
Type/ Modulation	СН	CH Frequency (MHz)	CH Separation (MHz)	Limit (MHz)	Result
	Low Channel	2402	1.005	0.690	Pass
	Adjacency Channel	2403	1.003	0.090	F d 5 5
CH Separation	Mid Channel	2440	1.005	0.693	Pass
GFSK	Adjacency Channel	2441	1.005	0.093	Pa55
	High Channel	2480	1 005	0 603	Door
	Adjacency Channel	2479	1.005	0.683	Pass
	Low Channel	2402	1.005	0.859	Pass
	Adjacency Channel	2403	1.005	0.059	Pass
CH Separation	Mid Channel	2440	1.005	0.859	Pass
π /4 DQPSK	Adjacency Channel	2441	1.005	0.059	Pass
	High Channel	2480	1.005	0.000	Desc
	Adjacency Channel	2479	1.005	0.860	Pass
	Low Channel	2402	4.005	0.004	Dese
	Adjacency Channel	2403	1.005	0.864	Pass
CH Separation	Mid Channel	2440	4.005	0.000	Desc
8DPSK	Adjacency Channel	2441	1.005	0.863	Pass
	High Channel	2480	4.005	0.004	Dess
	Adjacency Channel	2479	1.005	0.861	Pass



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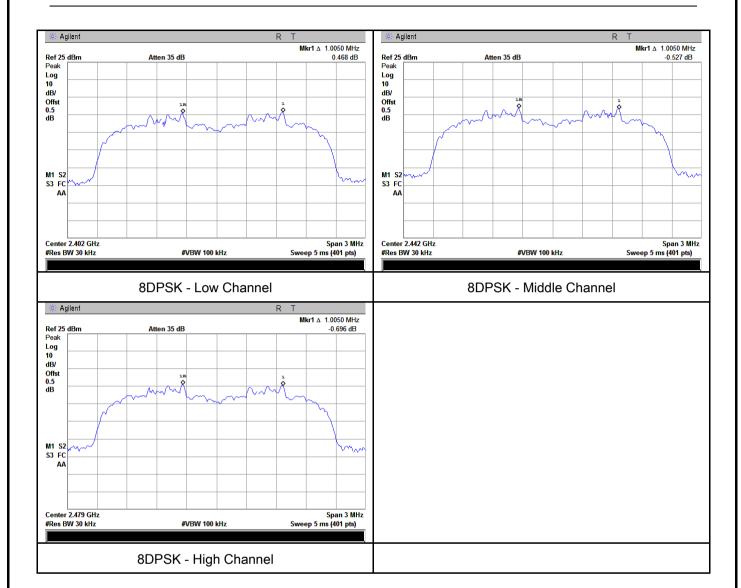
Test Plots

Channel Separation measurement result





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6.3 20dB Bandwidth

Temperature	25°C
Relative Humidity	57%
Atmospheric Pressure	1014mbar
Test date :	October 20, 2017
Tested By :	Loren Luo

Requirement(s):					
Spec	Item	Requirement	Applicable		
		Frequency hopping systems shall have hopping			
§15.247(a)	a)	channel carrier frequencies separated by a minimum	V		
(1)	(a)	of 25 kHz or the 20 dB bandwidth of the hopping			
		channel, whichever is greater.			
Test Setup					
		Spectrum Analyzer EUT			
	The test follows FCC Public Notice DA 00-705 Measurement Guidelin				
	Use the following spectrum analyzer settings:				
	-	Span = approximately 2 to 3 times the 20 dB bandwidth,	centered on		
		a hopping channel			
	-	RBW ≥ 1% of the 20 dB bandwidth			
	-	VBW ≥ RBW			
Test	-	Sweep = auto			
Procedure	-	Detector function = peak			
Trocedure	- 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	he		
emission, until it is (as close as possible to) even with the			reference		



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_					
		marker level. The marker-delta reading at this point is the 20 dB			
		bandwi	bandwidth of the emission. If this value varies with different modes of		
		operation	operation (e.g., data rate, modulation format, etc.), repeat this test for		
		each va	riation. The limit is specified in one of the subparagraphs of		
		this Sec	ction. Submit this plot(s).		
Remark					
Result		Pass	☐ Fail		
Test Data	V	´es	□ _{N/A}		
Test Plot	Y	es (See below)	□ _{N/A}		

Measurement result

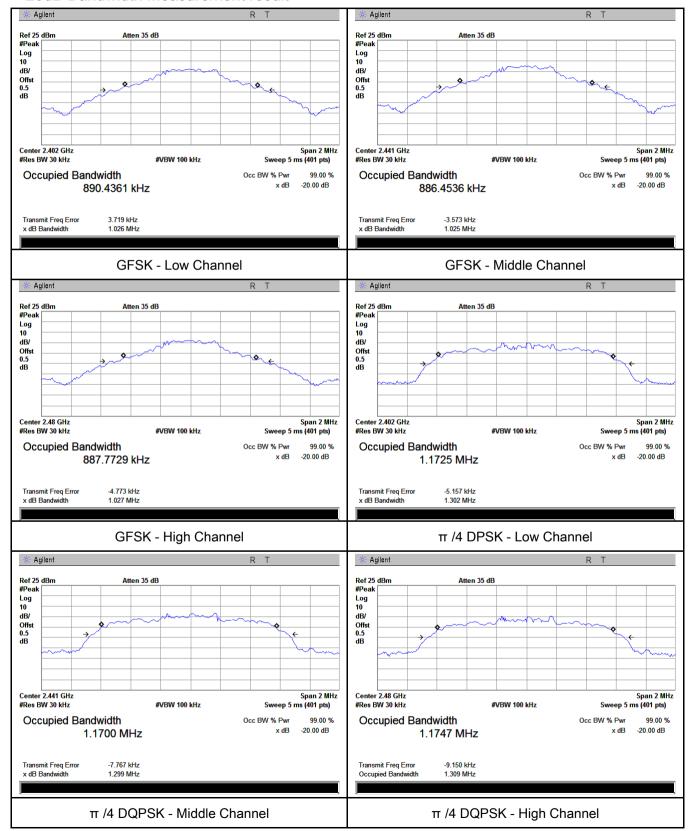
Modulation	СН	CH Frequency	20dB Bandwidth	99% Occupied
Modulation	G	(MHz)	(MHz)	Bandwidth (MHz)
	Low	2402	1.026	0.8904
GFSK	Mid	2441	1.025	0.8865
	High	2480	1.027	0.8878
	Low	2402	1.302	1.1725
π /4 DQPSK	Mid	2441	1.299	1.1700
	High	2480	1.309	1.1747
	Low	2402	1.298	1.1732
8-DPSK	Mid	2441	1.299	1.1778
	High	2480	1.309	1.1919



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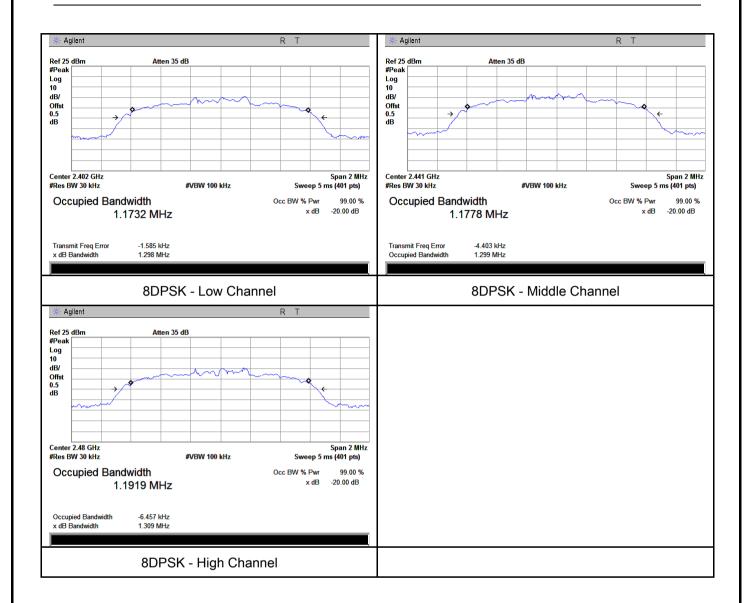
Test Plots

20dB Bandwidth measurement result





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6.4 Peak Output Power

Temperature	25°C
Relative Humidity	57%
Atmospheric Pressure	1014mbar
Test date :	October 20, 2017
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable	
	a)	FHSS in 2400-2483.5MHz with ≥ 75 channels: ≤ 1 Watt	>	
	b)	FHSS in 5725-5850MHz: ≤ 1 Watt		
§15.247(b)	c)	For all other FHSS in the 2400-2483.5MHz band: ≤ 0.125 Watt.	V	
(3)	d)	FHSS in 902-928MHz with ≥ 50 channels: ≤ 1 Watt		
	e)	FHSS in 902-928MHz with ≥ 25 & <50 channels: ≤ 0.25 Watt		
	f)	DTS in 90 <u>2</u> -928MHz, 2400-2483.5MHz: ≤ 1 Watt		
Test Setup	Spectrum Analyzer EUT			
	The test follows FCC Public Notice DA 00-705 Measurement Guidelines. Use the following spectrum analyzer settings:			
Test Procedure	- Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel - RBW > the 20 dB bandwidth of the emission being measured dure - VBW ≥ RBW - Sweep = auto			
	- - -	Detector function = peak Trace = max hold Allow the trace to stabilize.		



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		- Use the	e 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		
		specific	ed in one of the subparagraphs of this Section. Submit this		
		plot. A	peak responding power meter may be used instead of a		
		spectru	ım analyzer.		
Remark					
Result		Pass	Fail		
Test Data	V	es	N/A		

Peak Output Power measurement result

Test Plot Yes (See below)

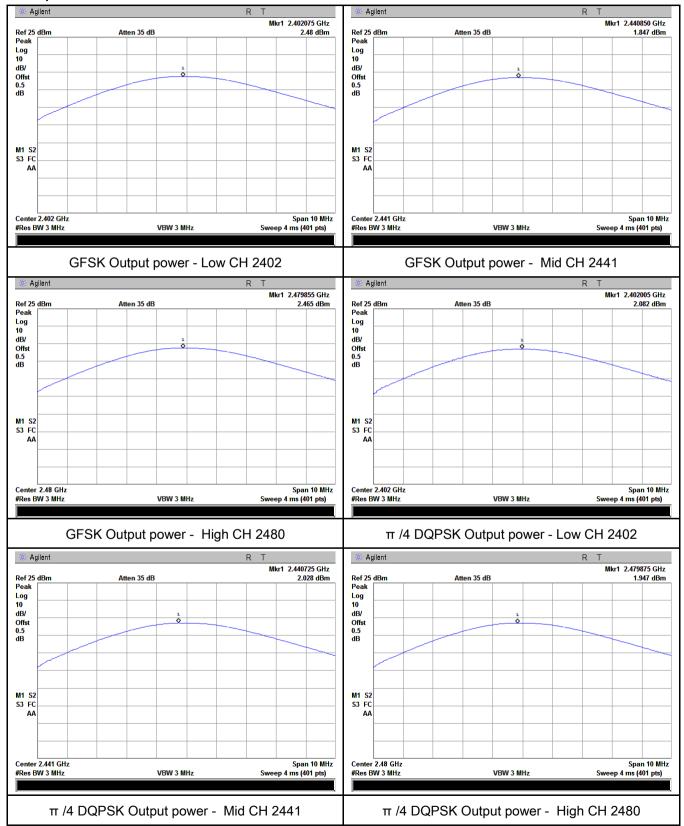
Туре	Modulation	СН	Frequenc y (MHz)	Conducted Power (dBm)	Limit (mW)	Result
		Low	2402	2.480	125	Pass
	GFSK	Mid	2441	1.847	125	Pass
Output power		High	2480	2.465	125	Pass
	π /4 DQPSK	Low	2402	2.082	125	Pass
		Mid	2441	2.028	125	Pass
		High	2480	1.947	125	Pass
	8-DPSK	Low	2402	1.980	125	Pass
		Mid	2441	2.126	125	Pass
		High	2480	1.945	125	Pass



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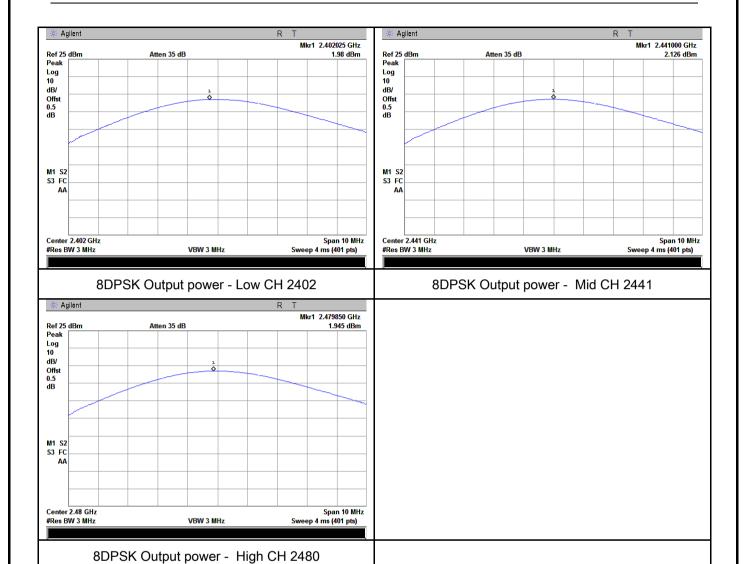
Test Plots

Output Power measurement result





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6.5 Number of Hopping Channel

Temperature	25°C
Relative Humidity	57%
Atmospheric Pressure	1014mbar
Test date :	October 20, 2017
Tested By:	Loren Luo

Requirement(s):						
Spec	Item Requirement Applicable					
§15.247(a) (1)(iii)	a)	a) FHSS in 2400-2483.5MHz ≥ 15 channels				
Test Setup		Spectrum Analyzer EUT				
	The te	st follows FCC Public Notice DA 00-705 Measurement Gu	idelines.			
	Use the	e following spectrum analyzer settings:				
	The El	JT must have its hopping function enabled.				
	- Span = the frequency band of operation					
	- RBW ≥ 1% of the span					
Test	- VBW ≥ RBW					
Procedure	- Sweep = auto					
Procedure	- Detector function = peak					
	- Trace = max hold					
	- Allow trace to fully stabilize.					
- It may prove necessary to break the span up to sections, in o						
	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	Pas	Fail				
Test Data	Yes	N/A	_			
Test Plot	Yes (See	below) N/A				



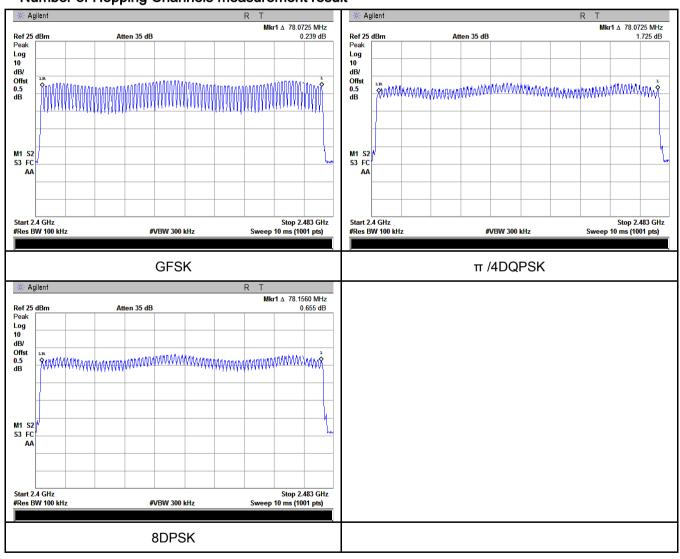
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Number of Hopping Channel measurement result

Туре	Modulation	Frequency Range	Number of Hopping Channel	Limit
Number of Hopping Channel	GFSK	2400-2483.5	79	15
	π /4 DQPSK	2400-2483.5	79	15
	8-DPSK	2400-2483.5	79	15

Test Plots

Number of Hopping Channels measurement result





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6.6 Time of Occupancy (Dwell Time)

Temperature	25°C
Relative Humidity	57%
Atmospheric Pressure	1014mbar
Test date :	October 20, 2017
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable
§15.247(a) (1)(iii)	a)	Dwell Time < 0.4s	V
Test Setup		Spectrum Analyzer EUT	
	The te	st follows FCC Public Notice DA 00-705 Measurement G	Guidelines.
	Use th	e following spectrum analyzer	
	- Span = zero span, centered on a hopping channel		
	-	RBW = 1 MHz	
Test	-	VBW ≥ RBW	
Procedure	-	Sweep = as necessary to capture the entire dwell time p	er hopping
		channel	
	-	Detector function = peak	
	- Trace = max hold		
	- use the marker-delta function to determine the dwell time		
Remark			
Result	Pas	s Fail	

Test Data	Yes	□ _{N/A}
Test Plot	Yes (See below)	□ _{N/A}



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Dwell Time measurement result

Туре	Modulation	СН	Pulse Width (ms)	Dwell Time (ms)	Limit (ms)	Result
		Low	2.92	311.467	400	Pass
	GFSK	Mid	2.90	309.333	400	Pass
		High	2.90	309.333	400	Pass
		Low	2.90	309.333	400	Pass
Dwell Time	π /4 DQPSK	Mid	2.90	309.333	400	Pass
		High	2.90	309.333	400	Pass
		Low	2.90	309.333	400	Pass
	8-DPSK	Mid	2.91	310.400	400	Pass
		High	2.90	309.333	400	Pass

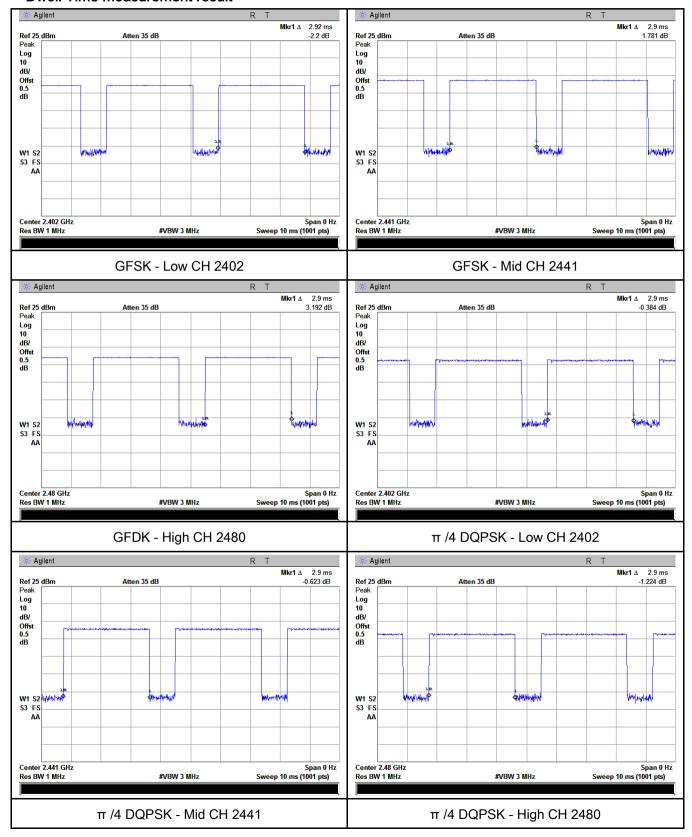
Note: Dwell time=Pulse Time (ms) × (1600 \div 6 \div 79) ×31.6



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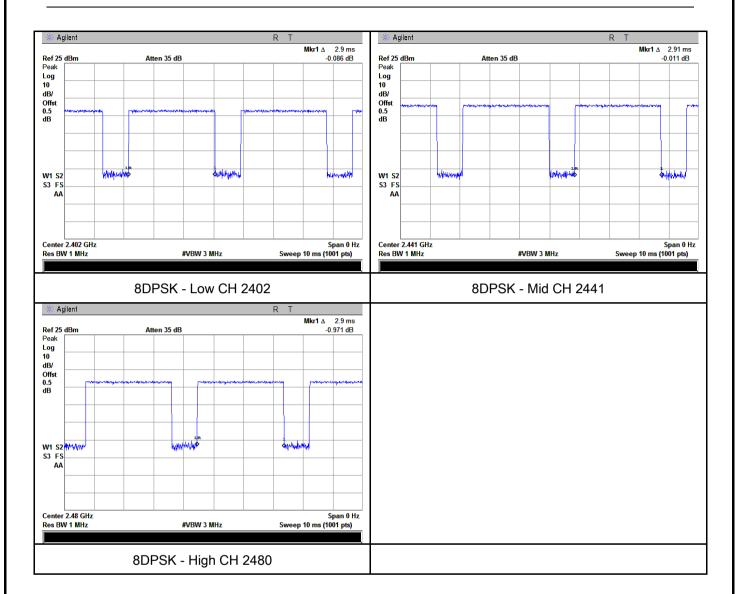
Test Plots

Dwell Time measurement result





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6.7 Band Edge & Restricted Band

Temperature	26°C
Relative Humidity	55%
Atmospheric Pressure	1017mbar
Test date :	October 18, 2017
Tested By:	Loren Luo

Requirement(s):

Requirement(s):	14	D. w.in. a. a. t	A
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	>
Test Setup	Peak conducted power limits. Ant. Tower Support Units Ground Plane Test Receiver		
Test Procedure	The test follows FCC Public Notice DA 00-705 Measurement Guidelines. Radiated Method Only 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,		



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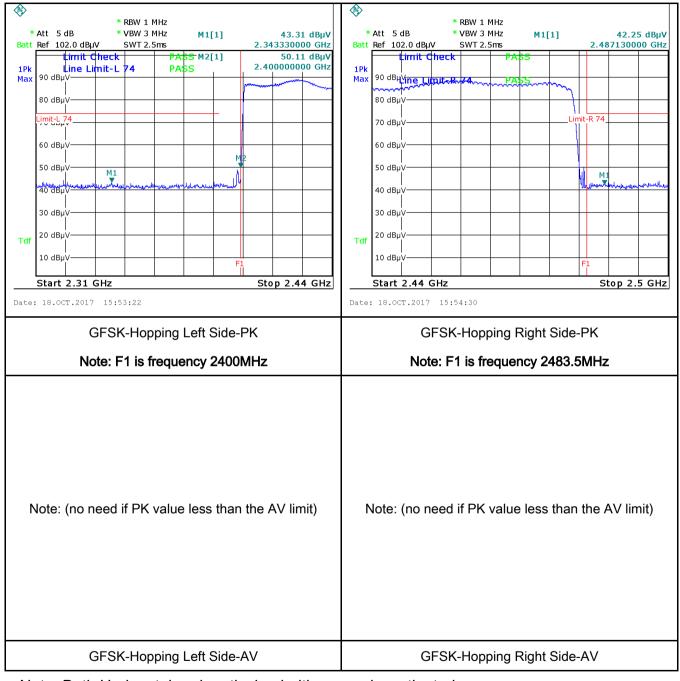
_	
	and make sure the instrument is operated in its linear range.
	- 3. First, set both RBW and VBW of spectrum analyzer to 100 kHz with a
	convenient frequency span including 100kHz bandwidth from band edge, check
	the emission of EUT, if pass then set Spectrum Analyzer as below:
	a. The resolution 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	Pass Fail
Took Data	Yes N/A
Test Data	Yes N/A
Test Plot	Yes (See below) N/A



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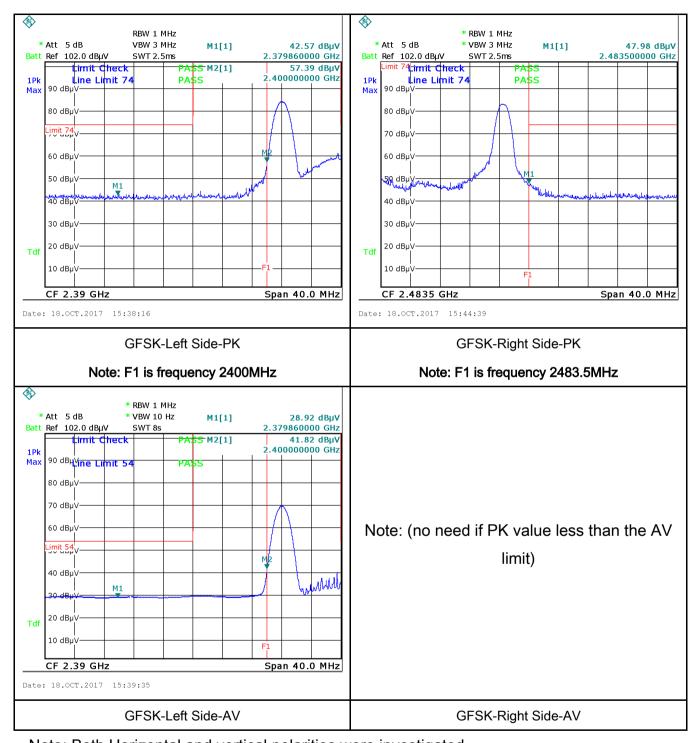
Test Plots

GFSK Mode:





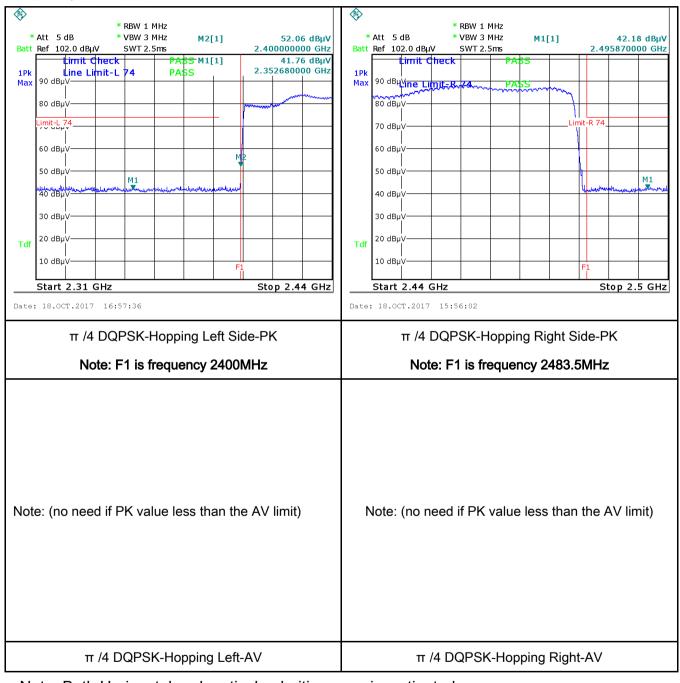
Test Report	17071091-FCC-R3
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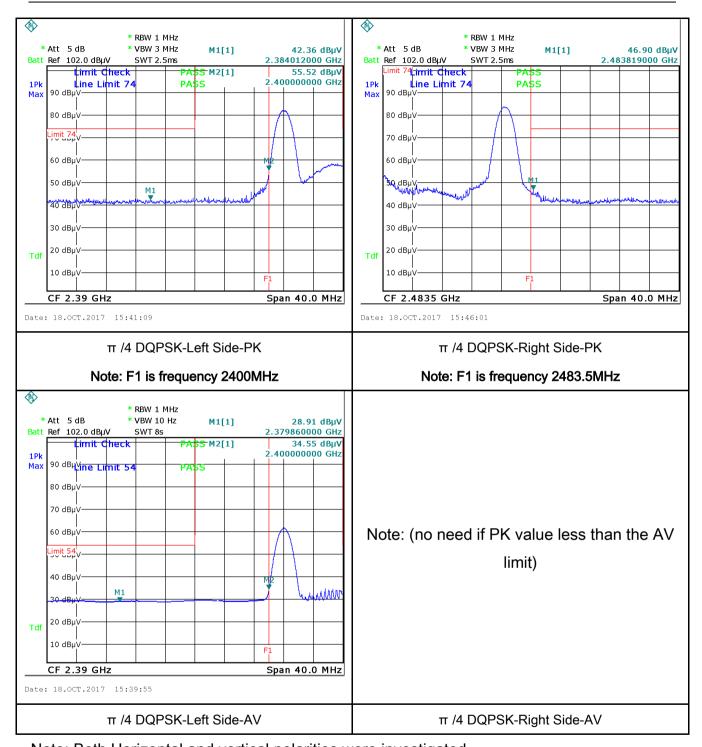
Test Report	17071091-FCC-R3
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π /4 DQPSK Mode:





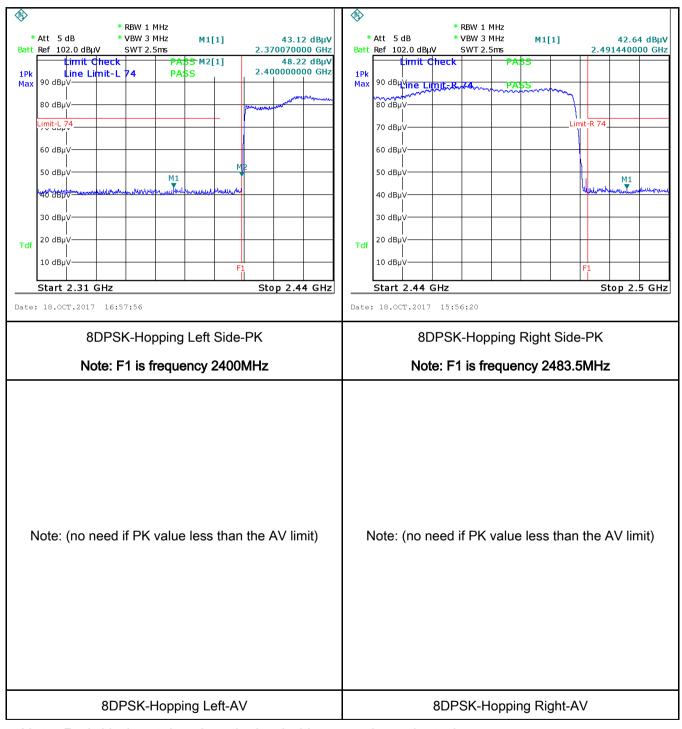
Test Report	17071091-FCC-R3
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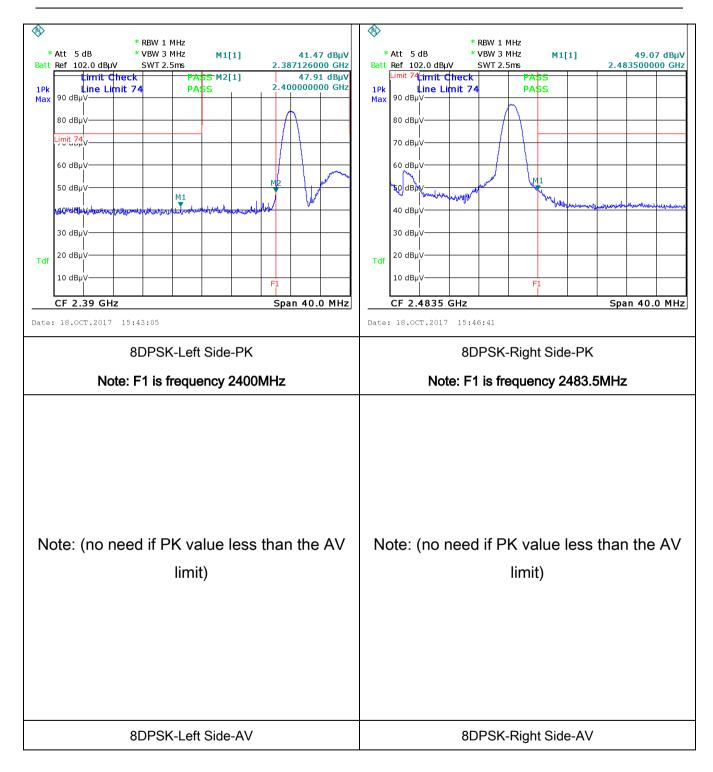
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8-DPSK Mode:





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6.8 AC Power Line Conducted Emissions

Temperature	26°C
Relative Humidity	55%
Atmospheric Pressure	1017mbar
Test date :	October 18, 2017
Tested By:	Loren Luo

Requirement(s):

Spec	Item	Requirement			Applicable
47CFR§15. 207, RSS210 (A8.1)	[mu]H/50 ohms line impedance stabilization no lower limit applies at the boundary between the frequency ranges.		the radio frequency ower line on any kHz to 30 MHz, shall measured using a 50 etwork (LISN). The	Y	
		0.15 ~ 0.5	66 – 56	56 – 46	
		0.5 ~ 5 5 ~ 30	56 60	46 50	
Test Setup	Vertical Ground Reference Plane EUT 80cm Horizontal Ground Reference Plane				
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.					
Procedure	 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 			onnected to	



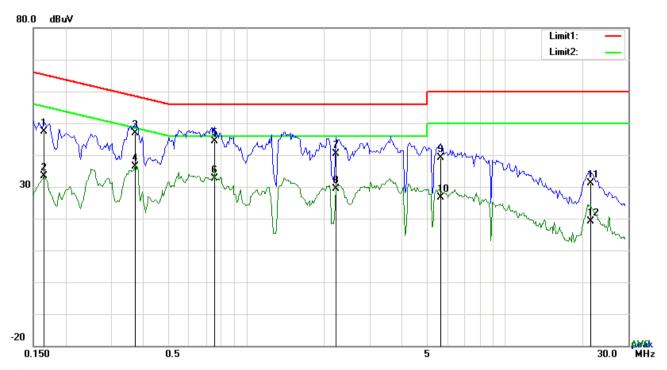
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_						
	coaxial cable.					
	4. All other supporting equipment were powered separately from another main supply.					
	5. The EUT was switched on and allowed to warm up to its normal operating condition.					
	6. A scan was made on the NEUTRAL line (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	Pass Fail					
Test Data	Yes N/A					
Test Plot	Yes (See below)					



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Test Mode:	Bluetooth Mode



Test Data

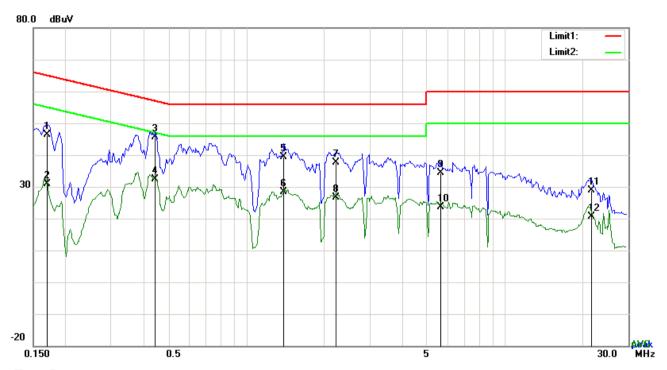
Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB)	(dBuV)	(dBuV)	(dB)
1	L1	0.1656	37.40	QP	10.03	47.43	65.18	-17.75
2	L1	0.1656	23.34	AVG	10.03	33.37	55.18	-21.81
3	L1	0.3723	36.79	QP	10.03	46.82	58.45	-11.63
4	L1	0.3723	26.33	AVG	10.03	36.36	48.45	-12.09
5	L1	0.7545	34.46	QP	10.03	44.49	56.00	-11.51
6	L1	0.7545	22.69	AVG	10.03	32.72	46.00	-13.28
7	L1	2.2248	30.34	QP	10.05	40.39	56.00	-15.61
8	L1	2.2248	19.39	AVG	10.05	29.44	46.00	-16.56
9	L1	5.6364	28.93	QP	10.09	39.02	60.00	-20.98
10	L1	5.6364	16.59	AVG	10.09	26.68	50.00	-23.32
11	L1	21.4041	20.74	QP	10.33	31.07	60.00	-28.93
12	L1	21.4041	8.87	AVG	10.33	19.20	50.00	-30.80



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Test Mode: Bluetooth Mode



Test Data

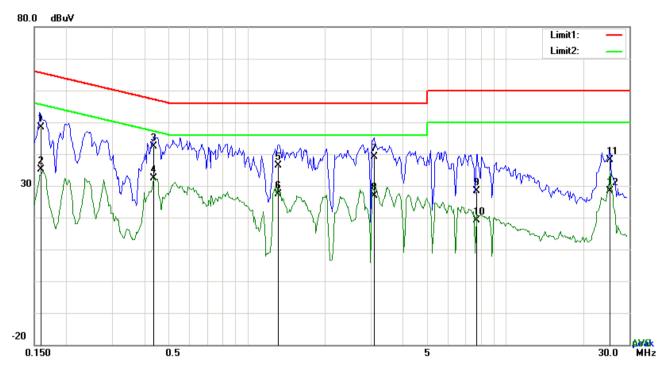
Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	N	0.1695	36.46	QP	10.02	46.48	64.98	-18.50
2	N	0.1695	20.90	AVG	10.02	30.92	54.98	-24.06
3	N	0.4464	35.65	QP	10.02	45.67	56.94	-11.27
4	N	0.4464	22.44	AVG	10.02	32.46	46.94	-14.48
5	N	1.3980	29.46	QP	10.03	39.49	56.00	-16.51
6	N	1.3980	18.38	AVG	10.03	28.41	46.00	-17.59
7	N	2.2170	27.58	QP	10.04	37.62	56.00	-18.38
8	N	2.2170	16.54	AVG	10.04	26.58	46.00	-19.42
9	N	5.6325	24.37	QP	10.08	34.45	60.00	-25.55
10	N	5.6325	13.53	AVG	10.08	23.61	50.00	-26.39
11	N	21.6225	18.58	QP	10.29	28.87	60.00	-31.13
12	N	21.6225	10.33	AVG	10.29	20.62	50.00	-29.38



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Test Mode:	Bluetooth Mode



Test Data

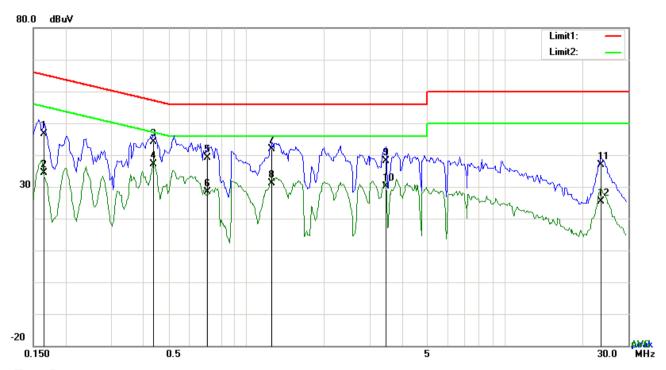
Phase Line Plot at 240Vac, 60Hz

	•								
No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	
		(MHz)	(dBuV)		(dB)		(dBuV)	(dB)	
1	L1	0.1590	38.33	QP	10.03	48.36	65.52	-17.16	
2	L1	0.1590	25.08	AVG	10.03	35.11	55.52	-20.41	
3	L1	0.4347	32.30	QP	10.03	42.33	57.16	-14.83	
4	L1	0.4347	22.33	AVG	10.03	32.36	47.16	-14.80	
5	L1	1.3200	26.46	QP	10.03	36.49	56.00	-19.51	
6	L1	1.3200	17.45	AVG	10.03	27.48	46.00	-18.52	
7	L1	3.0975	28.99	QP	10.06	39.05	56.00	-16.95	
8	L1	3.0975	16.73	AVG	10.06	26.79	46.00	-19.21	
9	L1	7.7268	18.14	QP	10.12	28.26	60.00	-31.74	
10	L1	7.7268	8.95	AVG	10.12	19.07	50.00	-30.93	
11	L1	25.2261	27.68	QP	10.40	38.08	60.00	-21.92	
12	L1	25.2261	17.89	AVG	10.40	28.29	50.00	-21.71	



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Test Mode:	Bluetooth Mode



Test Data

Phase Neutral Plot at 240Vac, 60Hz

No.	P/L	Frequency Reading		Detector	Corrected	Result	Limit	Margin	
		(MHz)	(dBuV)		(dB)	(dBuV) (dBuV)		(dB)	
1	N	0.1656	36.54	QP	10.02	46.56	65.18	-18.62	
2	N	0.1656	24.36	AVG	10.02	34.38	55.18	-20.80	
3	N	0.4386	34.08	QP	10.02	44.10	57.09	-12.99	
4	N	0.4386	27.02	AVG	10.02	37.04	47.09	-10.05	
5	N	0.7116	29.00	QP	10.02	39.02	56.00	-16.98	
6	N	0.7116	18.33	AVG	10.02	28.35	46.00	-17.65	
7	N	1.2615	31.79	QP	10.03	41.82	56.00	-14.18	
8	N	1.2615	21.14	AVG	10.03	31.17	46.00	-14.83	
9	N	3.4719	28.13	QP	10.05	38.18	56.00	-17.82	
10	N	3.4719	20.11	AVG	10.05	30.16	46.00	-15.84	
11	N	23.5491	26.57	QP	10.32	36.89	60.00	-23.11	
12	N	23.5491	15.05	AVG	10.32	25.37	50.00	-24.63	



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6.9 Radiated Emissions & Restricted Band

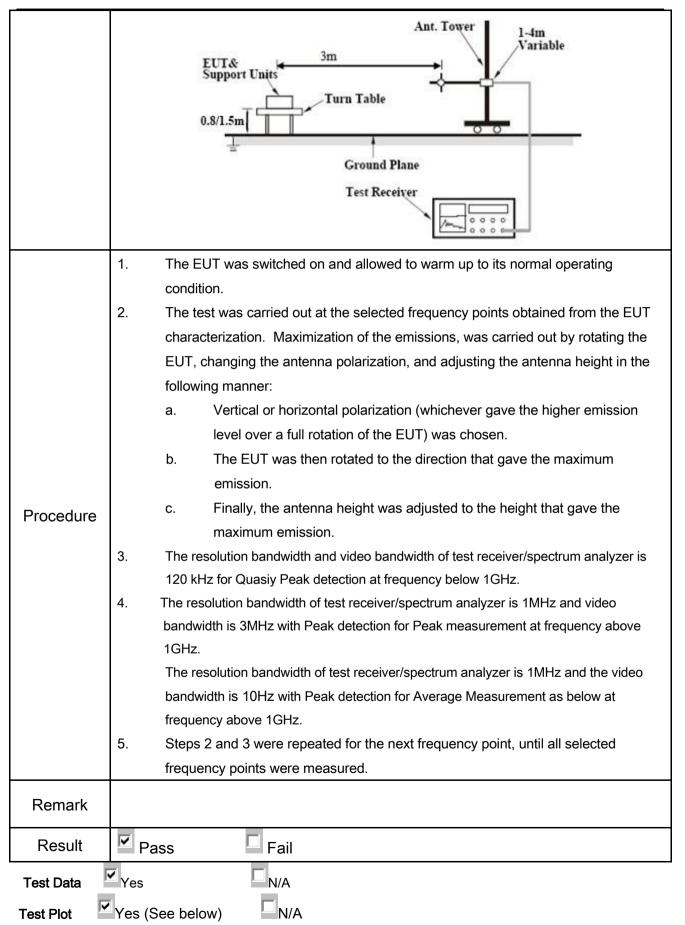
Temperature	26°C
Relative Humidity	55%
Atmospheric Pressure	1017mbar
Test date :	October 18, 2017
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	quirement Applicable						
47CFR§15.		Except higher limit as specified else emissions from the low-power radio exceed the field strength levels specified the level of any unwanted emissions the fundamental emission. The tight edges							
205, §15.209,	a)	Frequency range (MHz) 0.009~0.490	Field Strength (µV/m) 2400/F(KHz)	V					
§15.247(d)		0.490~1.705	24000/F(KHz)						
310.217(0)		1.705~30.0	30						
		30 – 88	100						
		88 – 216	150						
		216 960	200						
		Above 960	500						
Test Setup		EUT 6	3 meter RF Tes Receive	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\					



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Test Result:

Test Mode: Transmitting Mode

Frequency range: 9KHz - 30MHz

Freq.	Detection	Detection Factor Reading Result		Limit@3m	Margin	
(MHz)	value	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(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 (specific distance/test distance)(dB);

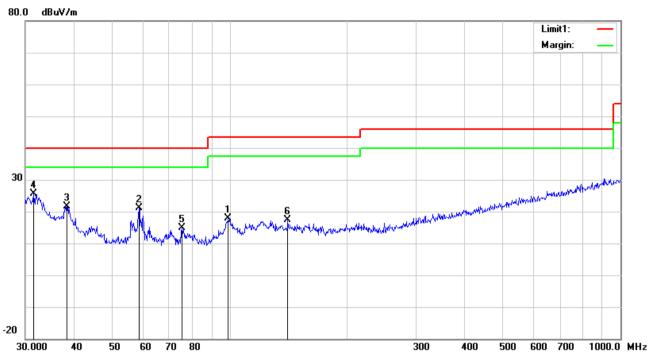
Limit line = specific limits(dBuv) + distance extrapolation factor.



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Test Mode: Bluetooth Mode

30MHz -1GHz



Test Data

Horizontal Polarity Plot @3m

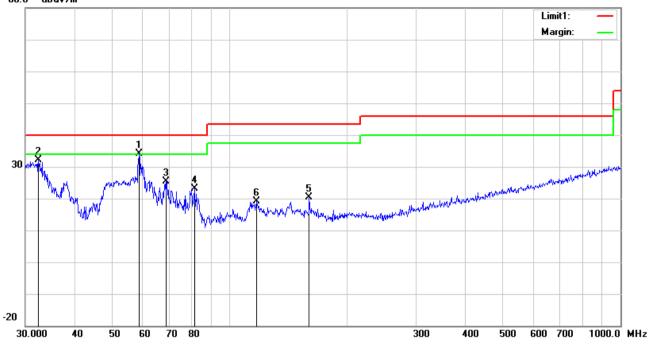
No.	P/L	Frequency	Reading	Detect	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degr
				or								ee
		(MHz)	(dBuV/m)		(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	()
1	Н	99.1797	28.94	peak	10.20	22.32	1.10	17.92	43.50	-25.58	100	253
2	Н	58.6126	35.45	peak	7.45	22.41	0.76	21.25	40.00	-18.75	100	265
3	Н	38.3462	27.96	peak	15.11	22.27	0.78	21.58	40.00	-18.42	100	225
4	Н	31.5095	26.97	peak	20.24	22.27	0.66	25.60	40.00	-14.40	100	68
5	Н	75.4464	28.71	peak	7.69	22.40	0.97	14.97	40.00	-25.03	100	75
6	Н	140.8351	25.87	peak	12.60	22.40	1.28	17.35	43.50	-26.15	100	213



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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)	51	(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	()
1	٧	58.6126	48.29	QP	7.45	22.41	0.76	34.09	40.00	-5.91	100	3
2	V	32.4059	34.04	peak	19.55	22.27	0.69	32.01	40.00	-7.99	100	353
3	V	68.8721	39.06	peak	7.74	22.38	0.96	25.38	40.00	-14.62	100	323
4	٧	81.2117	36.80	peak	7.65	22.41	1.05	23.09	40.00	-16.91	200	87
5	V	159.7844	28.55	peak	12.60	22.27	1.39	20.27	43.50	-23.23	100	325
6	٧	116.9495	26.84	peak	13.37	22.35	1.16	19.02	43.50	-24.48	100	152



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Above 1GHz

Test Mode:	Transmitting Mode
	A .

Low Channel: GFSK Mode (Worst Case) (2402 MHz)

Frequency (MHz)	S.A. Reading (dBµV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre- Amp. Gain (dB)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
4804	48.46	AV	V	33.39	7.22	48.46	40.61	54	-13.39
4804	46.79	AV	Н	33.39	7.22	48.46	38.94	54	-15.06
4804	56.29	PK	V	33.39	7.22	48.46	48.44	74	-25.56
4804	48.77	PK	Н	33.39	7.22	48.46	40.92	74	-33.08
12826	25.07	AV	V	45.03	11.21	32.38	48.93	54	-5.07
12826	24.95	AV	Н	45.03	11.21	32.38	48.81	54	-5.19
12826	38.61	PK	V	45.03	11.21	32.38	62.47	74	-11.53
12826	41.53	PK	Н	45.03	11.21	32.38	65.39	74	-8.61

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

Frequency (MHz)	S.A. Reading (dBµV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre- Amp. Gain (dB)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
4882	49.27	AV	V	33.62	7.53	48.36	42.06	54	-11.94
4882	45.7	AV	Н	33.62	7.53	48.36	38.49	54	-15.51
4882	52.16	PK	V	33.62	7.53	48.36	44.95	74	-29.05
4882	48.28	PK	Н	33.62	7.53	48.36	41.07	74	-32.93
12629	23.96	AV	V	45.15	11.18	32.41	47.88	54	-6.12
12629	25.93	AV	Н	45.15	11.18	32.41	49.85	54	-4.15
12629	40.98	PK	V	45.15	11.18	32.41	64.9	74	-9.1
12629	42.24	PK	Н	45.15	11.18	32.41	66.16	74	-7.84



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High Channel: GFSK Mode (Worst Case) (2480 MHz)

Frequency (MHz)	S.A. Reading (dBµV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre- Amp. Gain (dB)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
4960	45.61	AV	V	33.89	7.86	48.31	39.05	54	-14.95
4960	43.69	AV	Н	33.89	7.86	48.31	37.13	54	-16.87
4960	56.84	PK	V	33.89	7.86	48.31	50.28	74	-23.72
4960	50.24	PK	Н	33.89	7.86	48.31	43.68	74	-30.32
17839	20.93	AV	V	45.22	11.35	32.38	45.12	54	-8.88
17904	21.14	AV	Н	45.22	11.35	32.38	45.33	54	-8.67
17904	40.76	PK	V	45.22	11.35	32.38	64.95	74	-9.05
17904	41.77	PK	Н	45.22	11.35	32.38	65.96	74	-8.04

Note:

- 1, The testing has been conformed to 10*2480MHz=24,800MHz
- 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.



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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	>
Line Impedance	LI-125A	191106	09/23/2017	09/22/2018	>
Line Impedance	LI-125A	191107	09/23/2017	09/22/2018	>
ISN	ISN T800	34373	09/23/2017	09/22/2018	
Transient Limiter	LIT-153	531118	08/30/2017	08/29/2018	
RF conducted test					
Agilent ESA-E SERIES	E4407B	MY45108319	09/15/2017	09/14/2018	>
Power Splitter	1#	1#	08/30/2017	08/29/2018	>
DC Power Supply	E3640A	MY40004013	09/15/2017	09/14/2018	>
Radiated Emissions					
EMI test receiver	ESL6	100262	09/15/2017	09/14/2018	>
Positioning Controller	UC3000	MF780208282	11/18/2016	11/17/2017	>
OPT 010 AMPLIFIER	0.4.475	0707400400	00/00/0047	00/00/00/0	_
(0.1-1300MHz)	8447E	2727A02430	08/30/2017	08/29/2018	>
Microwave Preamplifier	0440D	2000402402	02/22/2047	02/22/2040	<u><</u>
(1 ~ 26.5GHz)	8449B	3008A02402	03/23/2017	03/22/2018	V
Horn Antenna	BBHA9170	3145226D1	09/27/2017	09/26/2018	>
Active Antenna	AL-130	121031	10/12/2017	10/11/2018	>
(9kHz-30MHz)					
Bilog Antenna	IDO	A440740	00/40/0047	00/40/0040	
(30MHz~6GHz)	JB6	A110712	09/19/2017	09/18/2018	>
Double Ridge Horn					
Antenna (1 ~18GHz)	AH-118	71283	09/22/2017	09/21/2018	>
Universal Radio					
Communication Tester	CMU200	121393	09/23/2017	09/22/2018	>



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Annex B. EUT And Test Setup Photographs

Annex B.i. Photograph: EUT External Photo

Whole Package View



Adapter - Lable View





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EUT - Front View



EUT - Rear View



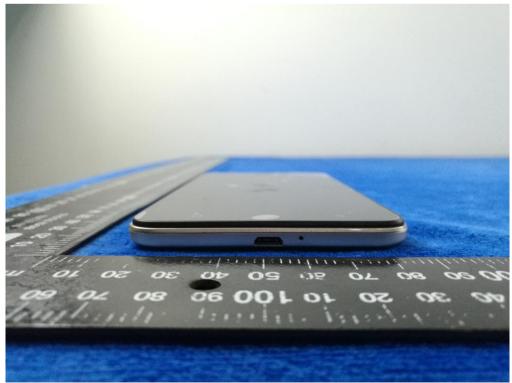


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EUT - Top View



EUT - Bottom View





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EUT - Left View



EUT - Right View





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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





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Mainboard with Shielding - Front View



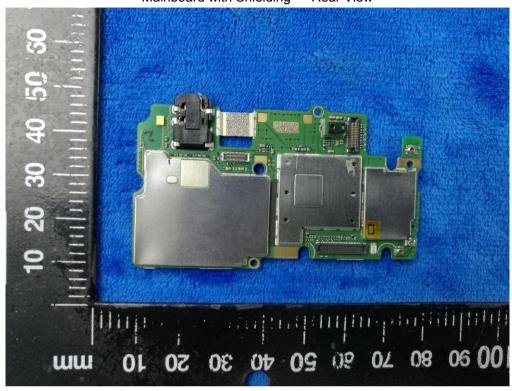
Mainboard without Shielding - Front View



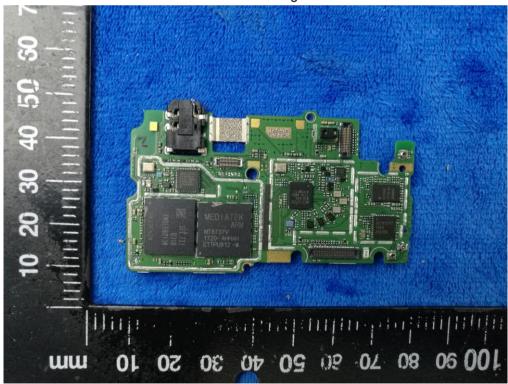


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Mainboard with Shielding - Rear View



Mainboard without Shielding - Rear View





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LCD - Front View



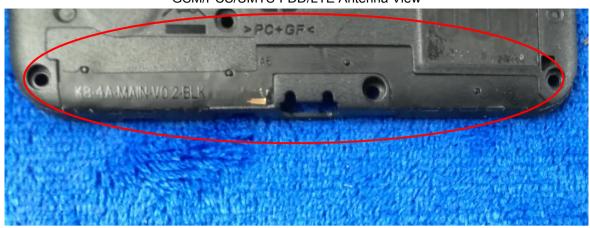
LCD - Rear View



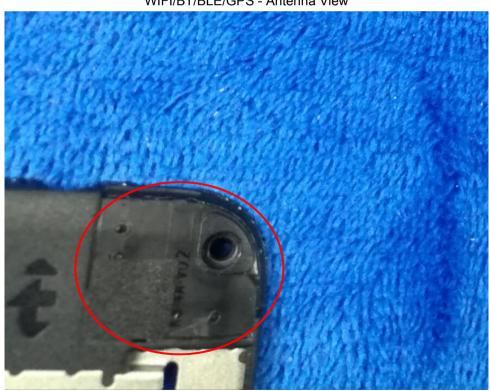


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GSM/PCS/UMTS-FDD/LTE Antenna View



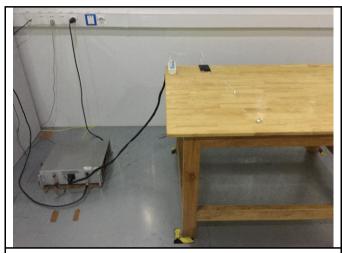
WIFI/BT/BLE/GPS - Antenna View





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Annex B.iii. Photograph: Test Setup Photo



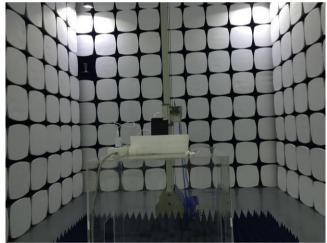
Conducted Emissions Test Setup Front View



Conducted Emissions Test Setup Side View



Radiated Spurious Emissions Test Setup Below 1GHz



Radiated Spurious Emissions Test Setup Above 1GHz

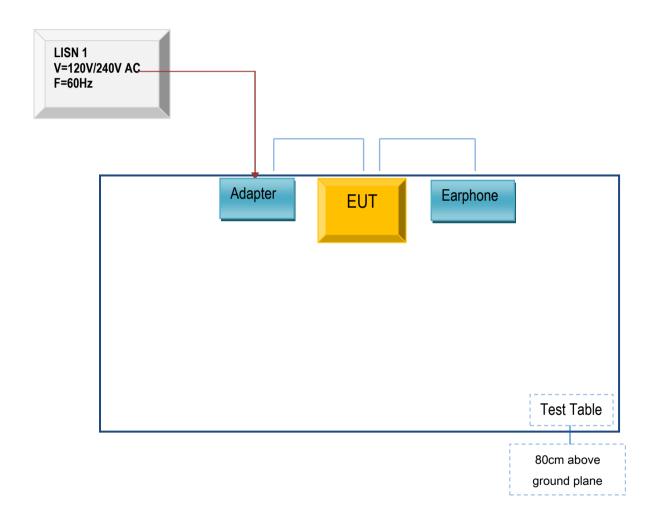


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Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

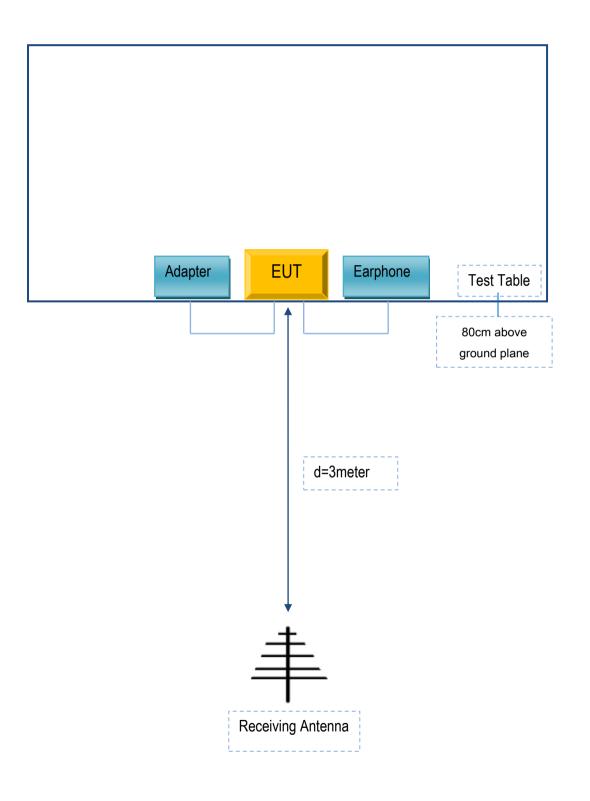
Block Configuration Diagram for AC Line Conducted Emissions





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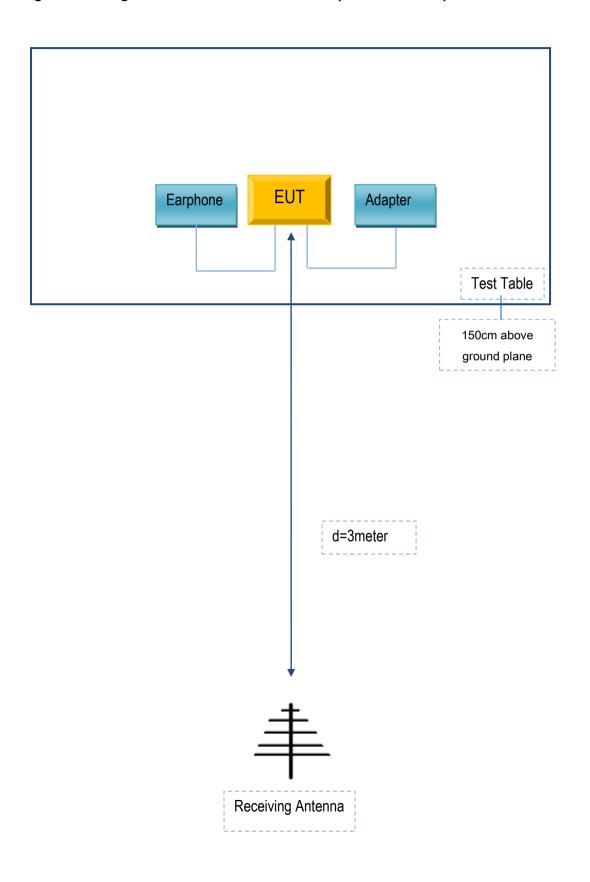
Block Configuration Diagram for Radiated Emissions (Below 1GHz).





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





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Annex C. il. 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	CU-52JT	N/A
TECNO MOBILE LIMITED	Earphone	K8	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