RF TEST REPORT



Report No.: 15050022-FCC-R2

b mobile HK Limited			
Mobile Phone			
AX600			
AX630			
FCC Part 1	5.247: 2014	, ANSI C63.10: 2	2013
June 10 to June 24,2015			
June 24, 2015			
Pass Fail			
Equipment complied with the specification			
Equipment did not comply with the specification			
Lucifer. He		Huang	
Lucifer.He Test Engineer		•	
	Mobile Pho AX600 AX630 FCC Part 1 June 10 to 3 June 24, 20 Pass ied with the set comply with	Mobile Phone AX600 AX630 FCC Part 15.247: 2014 June 10 to June 24,201 June 24, 2015 Pass Fail ied with the specification t comply with the specific	Mobile Phone AX600 AX630 FCC Part 15.247: 2014, ANSI C63.10: 2 June 10 to June 24,2015 June 24, 2015 Pass Fail ied with the specification t comply with the specification David Huang Be David Huang

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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
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Laboratories Introduction

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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
15050022-FCC-R2	NONE	Original	June 24, 2015

2. Customer information

Applicant Name	b mobile HK Limited	
Applicant Add	Flat 18; 14/F Block 1; Golden Industrial Building;16-26 Kwai Tak Street; Kwai	
	Chung;New Territories; Hong Kong	
Manufacturer	b mobile HK Limited	
Manufacturer Add	Flat 18; 14/F Block 1; Golden Industrial Building;16-26 Kwai Tak Street; Kwai	
	Chung;New Territories; Hong Kong	

3. Test site information

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.	718246	
IC Test Site No.	4842E-1	
Test Software	Radiated Emission Program-To Shenzhen v2.0	



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4. Equipment under Test (EUT) Information

Description of EUT:	Mobile Phone

Main Model: AX600

Serial Model: AX630

Date EUT received: June 10

Equipment Category: DSS

GSM850: -1.18dBi

PCS1900: 0.06dBi

UMTS-FDD Band V: -1.79dBi Antenna Gain:

UMTS-FDD Band II: -0.2dBi

Bluetooth/BLE:0.03dBi

WIFI: 0.03 dBi GPS: -1.76 dBi

Battery:

Model: AX600

Spec: 3.8V, 1250 mAh 4.75Wh

Input Power:

Adapter:

Input: AC100 ~ 240V ,50/60Hz 0.15A

Output:DC5.0V, 0.7A

Trade Name : Bmobile

FCC ID: ZSW-30-009



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Max. Output Power: 5.588 dBm

GSM / GPRS: GMSK

EGPRS: GMSK, 8PSK

UMTS-FDD: QPSK, 16QAM

Type of Modulation: 802.11b/g/n: DSSS, OFDM

Bluetooth: GFSK, π /4DQPSK, 8DPSK

BLE: GFSK GPS:BPSK

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 II TX:1852.4 ~ 1907.6 MHz;

RF Operating Frequency (ies): RX: 1932.4 ~ 1987.6 MHz

WIFI:802.11b/g/n(20M): 2412-2472 MHz WIFI:802.11n(40M): 2422-2462 MHz Bluetooth& BLE: 2402-2480 MHz

GPS RX:1575.42 MHz

GSM 850: 124CH PCS1900: 299CH

UMTS-FDD Band V : 102CH UMTS-FDD Band II : 277CH

Number of Channels: WIFI :802.11b/g/n(20M): 13CH

WIFI:802.11n(40M):9CH

Bluetooth: 79CH

BLE: 40CH

Port: Power Port, Earphone Port, USB Port

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



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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	Compliance
§15.207(a)	AC Line Conducted Emissions	Compliance
§15.205, §15.209, §15.247(d)	Radiated Emissions	Compliance

Measurement Uncertainty

Emissions			
Test Item	Description	Uncertainty	
Band Edge and Radiated Spurious Emissions	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/WIFI, the gain is 0.03dBi for Bluetooth/BLE/WIFI. A permanently attached PIFA antenna for GSM and UMTS, the gain is -1.18dBi for GSM850, -1.79dBi for UMTS-FDD Band V,0.06dBi for PCS1900, the gain is -0.2dBi for UMTS-FDD Band II

The antenna meets up with the ANTENNA REQUIREMENT.

Result: Compliance.



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6.2 Channel Separation

Temperature	21°C
Relative Humidity	51%
Atmospheric Pressure	1023mbar
Test date :	June 23, 2015
Tested By:	Lucifer.He

Requirement(s):	1		,		
Spec	Item Requirement		Applicable		
\$ 45 047(-)(4)		Channel Separation < 20dB BW and 20dB BW <	~		
	۵)	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				
100t1 1000daile	- 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 Yes (See below)		□ _{N/A}			

Channel Separation measurement result

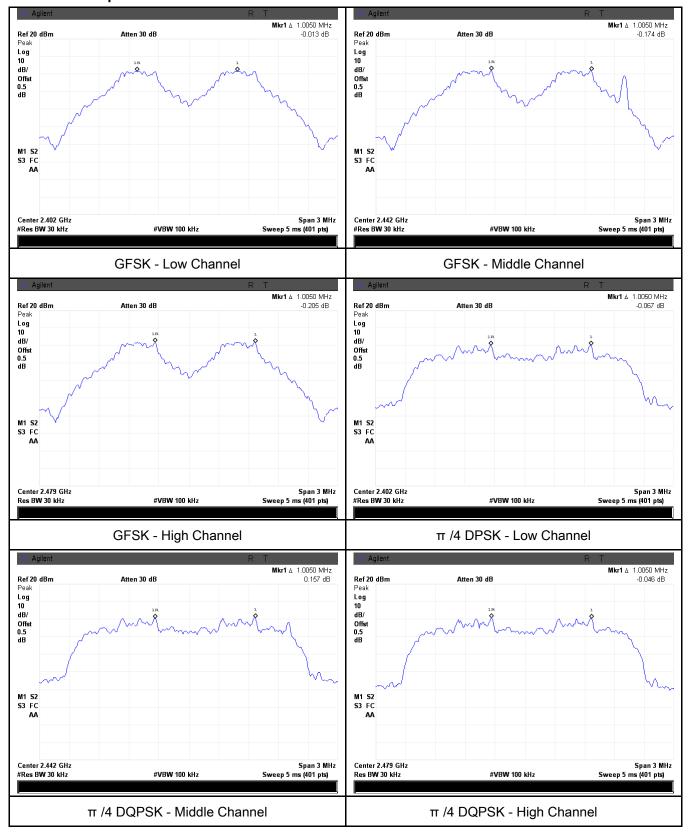
Type/ Modulation	СН	CH Freq (MHz)	CH Separation (MHz)	Limit (MHz)	Result
	Low Channel	2402	1.005	0.687	Desc
	Adjacency Channel	2403	1.005	0.087	Pass
CH Separation	Mid Channel	2440	1.005	0.605	Desc
GFSK	Adjacency Channel	2441	1.005	0.685	Pass
	High Channel	2480	1.005	0.603	Desc
	Adjacency Channel	2479	1.005	0.683	Pass
	Low Channel	2402	1.005	0.876	Desc
	Adjacency Channel	2403	1.005	0.676	Pass
CH Separation	Mid Channel	2440	1.005	0.875	Door
π /4 DQPSK	Adjacency Channel	2441	1.005	0.675	Pass
	High Channel	2480	1.005	0.879	Door
	Adjacency Channel	2479	1.005	0.679	Pass
	Low Channel	2402	1.005	0.869	Door
	Adjacency Channel	2403	1.005	0.009	Pass
CH Separation	Mid Channel	2440	1.005	0.070	Desc
8DPSK	Adjacency Channel	2441	1.005	0.870	Pass
	High Channel	2480	1.005	0.861	Door
	Adjacency Channel	2479	1.005	0.001	Pass



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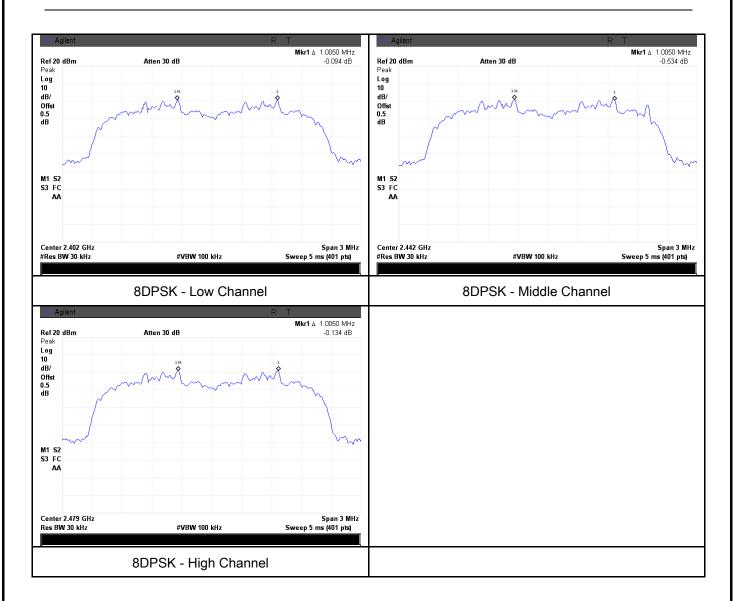
Test Plots

Channel Separation measurement result





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6.3 20dB Bandwidth

Temperature	21°C
Relative Humidity	51%
Atmospheric Pressure	1023mbar
Test date :	June 23, 2015
Tested By :	Lucifer.He

Requirement(s):					
Spec	Item	Requirement Applicable			
		Frequency hopping systems shall have hopping			
§15.247(a)	2)	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 te	st follows FCC Public Notice DA 00-705 Measurement Gu	uidelines.		
	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				
	- 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		



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_							
		marker level. The marker-delta reading at this point is the 20 dB					
		bandwid	bandwidth of the emission. If this value varies with different modes of				
		operatio	n (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	tion. Submit this plot(s).				
Remark							
Result		Pass	Fail				
Test Data	V	'es	□ _{N/A}				
Test Plot	Y	es (See below)	N/A				

Measurement result

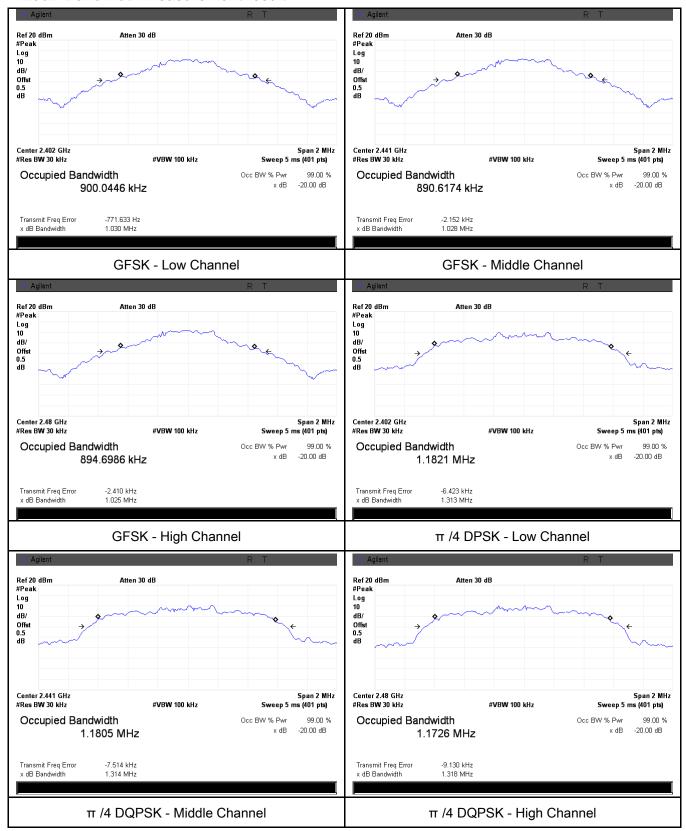
Modulation	СН	CH Freq (MHz)	20dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
	Low	2402	1.030	0.900
GFSK	Mid	2441	1.028	0.891
	High	2480	1.025	0.895
π /4 DQPSK	Low	2402	1.314	1.1805
	Mid	2441	1.312	1.1706
	High	2480	1.318	1.1726
8-DPSK	Low	2402	1.303	1.1913
	Mid	2441	1.311	1.1943
	High	2480	1.305	1.1851



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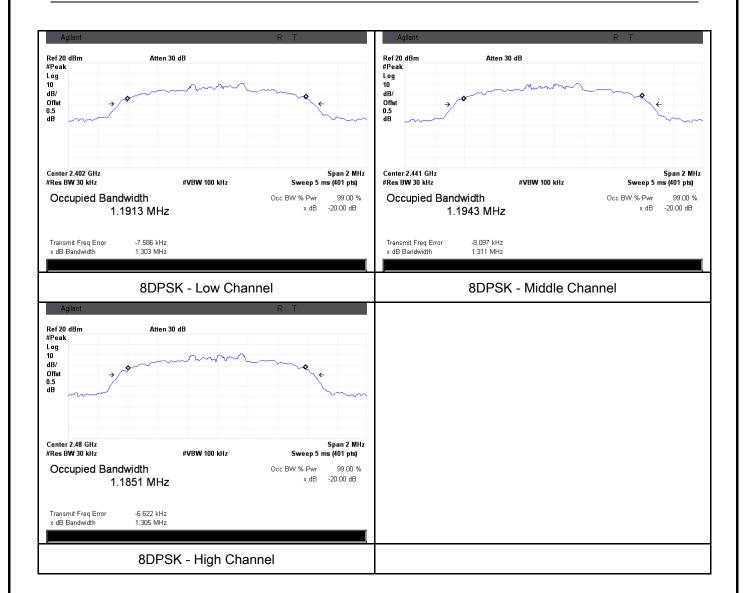
Test Plots

20dB Bandwidth measurement result





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6.4 Peak Output Power

Temperature	21°C
Relative Humidity	51%
Atmospheric Pressure	1023mbar
Test date :	June 23, 2015
Tested By:	Lucifer.He

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



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	- Allow the trace to stabilize.
	- 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	Pass Fail

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

Peak Output Power measurement result

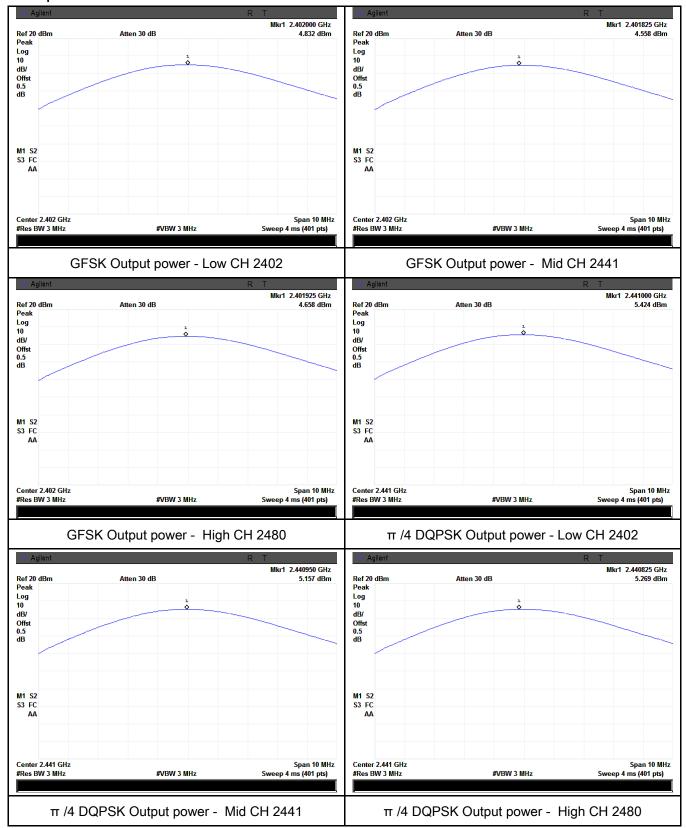
Туре	Modulation	СН	Freq (MHz)	Conducted Power (dBm)	Limit (mW)	Result
		Low	2402	4.832	125	Pass
	GFSK	Mid	2441	4.558	125	Pass
		High	2480	4.658	125	Pass
Out to ut	π /4 DQPSK	Low	2402	5.424	125	Pass
Output		Mid	2441	5.157	125	Pass
power		High	2480	5.269	125	Pass
8		Low	2402	5.588	125	Pass
	8-DPSK	Mid	2441	5.352	125	Pass
		High	2480	5.46	125	Pass



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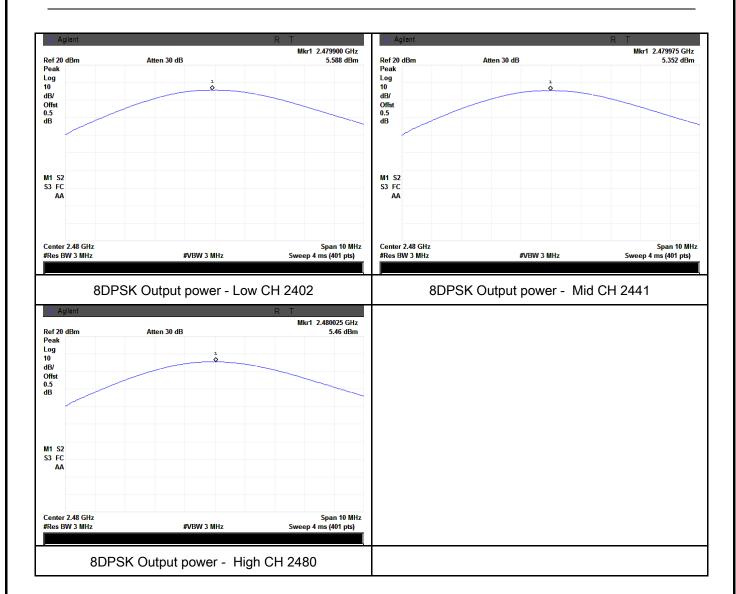
Test Plots

Output Power measurement result





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6.5 Number of Hopping Channel

Temperature	21°C
Relative Humidity	51%
Atmospheric Pressure	1023mbar
Test date :	June 23, 2015
Tested By :	Lucifer.He

Requirement(s):				
Spec	Item	Requirement	Applicable	
§15.247(a) (1)(iii)	a)	FHSS in 2400-2483.5MHz ≥ 15 channels	>	
Test Setup	Spectrum Analyzer EUT			
Test Procedure	Use the The El	st follows FCC Public Notice DA 00-705 Measurement Gue following spectrum analyzer settings: JT must have its hopping function enabled. Span = the frequency band of operation RBW ≥ 1% of the span VBW ≥ RBW Sweep = auto Detector function = peak Trace = max hold	iidelines.	
	-	Allow trace to fully stabilize. It may prove necessary to break the span up to sections, clearly show all of the hopping frequencies. The limit is spone of the subparagraphs of this Section. Submit this plot	ecified in	
Remark				
Result	Pas	ss Fail		
	Yes Yes (See	below)		



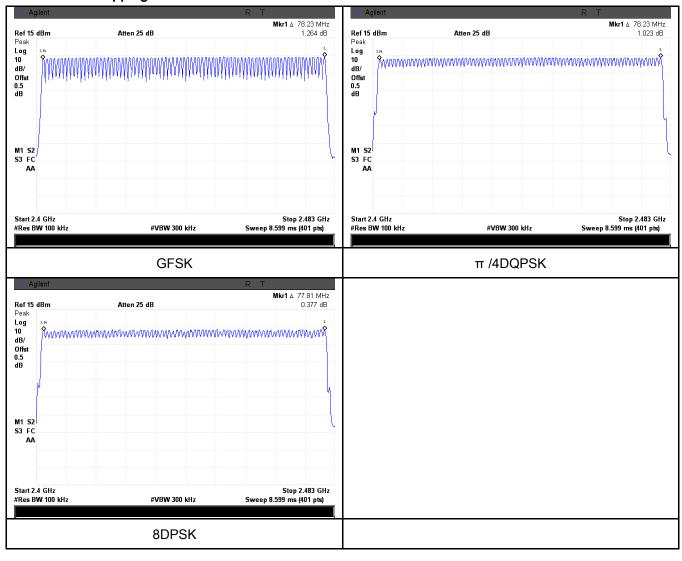
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Number of Hopping Channel measurement result

Туре	Modulation	Frequency Range	Number of Hopping Channel	Limit
Number	GFSK	2400-2483.5	79	15
Number of	π /4 DQPSK	2400-2483.5	79	15
Hopping Channel	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	21°C
Relative Humidity	51%
Atmospheric Pressure	1023mbar
Test date :	June 23, 2015
Tested By:	Lucifer.He

Spec	Item	Requirement	Applicable
§15.247(a) (1)(iii)	a)	Dwell Time < 0.4s	V
Test Setup		Spectrum Analyzer EUT	
		st follows FCC Public Notice DA 00-705 Measurement G	Guidelines.
	Use the	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 tim	е
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	2.925	312.000	400	Pass
	GFSK	Mid	2.925	312.000	400	Pass
		High	2.95	314.667	400	Pass
	π /4 DQPSK	Low	2.925	312.000	400	Pass
Dwell Time		Mid	2.925	312.000	400	Pass
		High	2.95	314.667	400	Pass
	8-DPSK	Low	2.925	312.000	400	Pass
		Mid	2.925	312.000	400	Pass
		High	2.925	312.000	400	Pass
N (D						

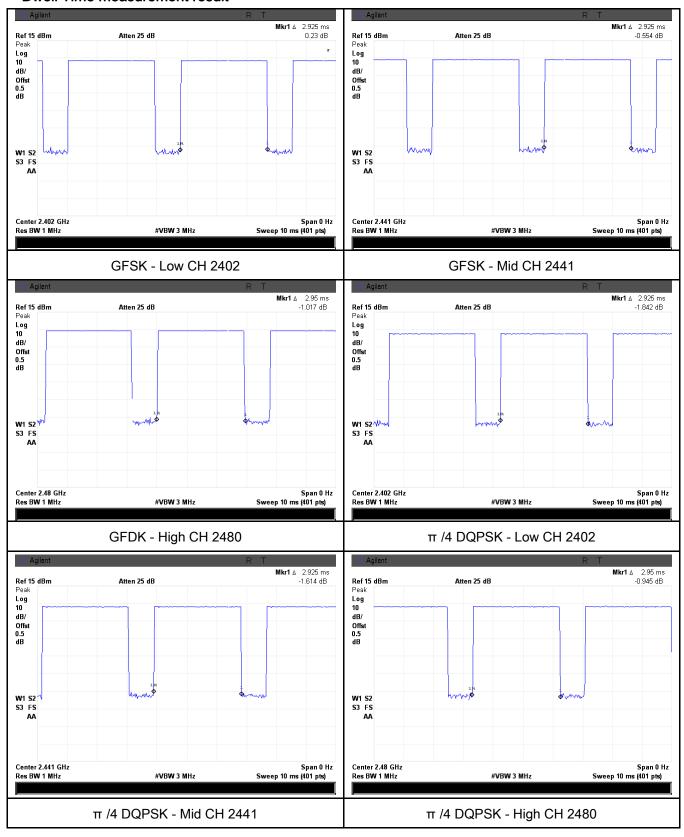
Note: Dwell time=Pulse Time (ms) × (1600 \div 6 \div 79) ×31.6



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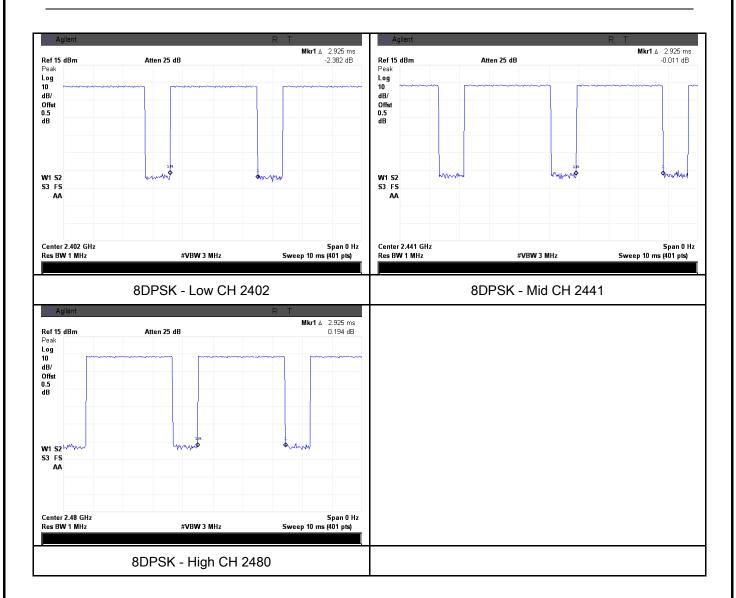
Test Plots

Dwell Time measurement result





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6.7 Band Edge

Temperature	21°C
Relative Humidity	51%
Atmospheric Pressure	1023mbar
Test date :	June 23, 2015
Tested By :	Lucifer.He

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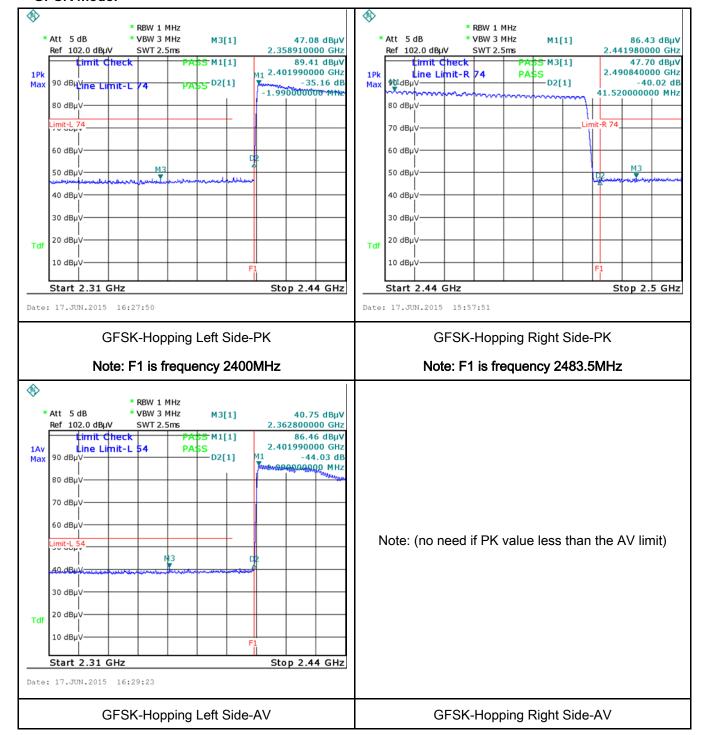
	and make sure the instrument is operated in its linear range.
	- 3. First, set both RBW and VBW of spectrum analyzer to 100 kHz with a
	convenient frequency span including 100kHz bandwidth from band edge, check
	the emission of EUT, if pass then set Spectrum Analyzer as below:
	a. The resolution bandwidth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



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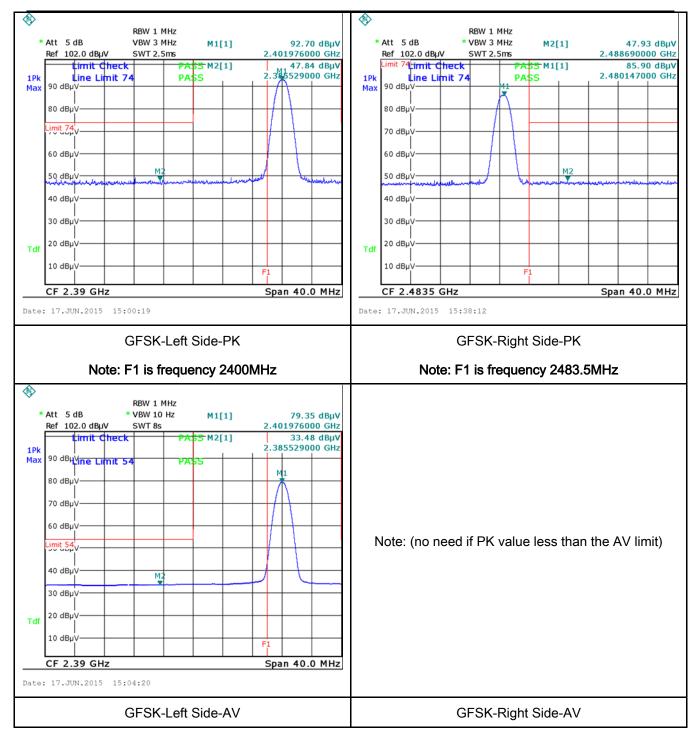
Test Plots

GFSK Mode:





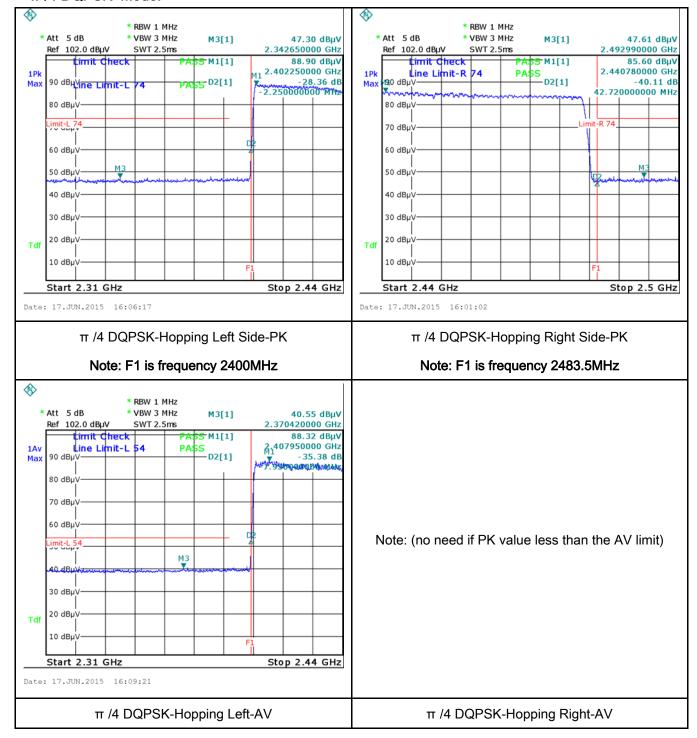
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π /4 DQPSK Mode:





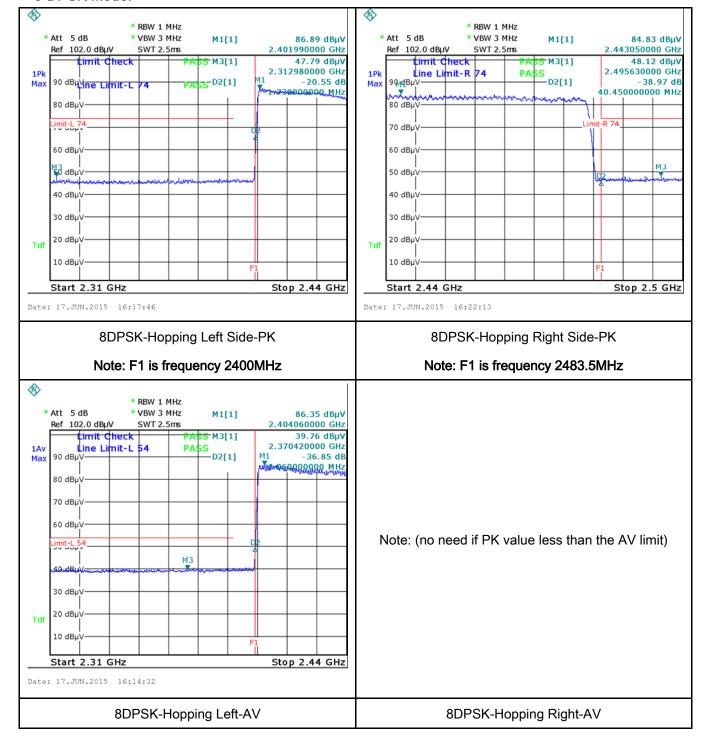
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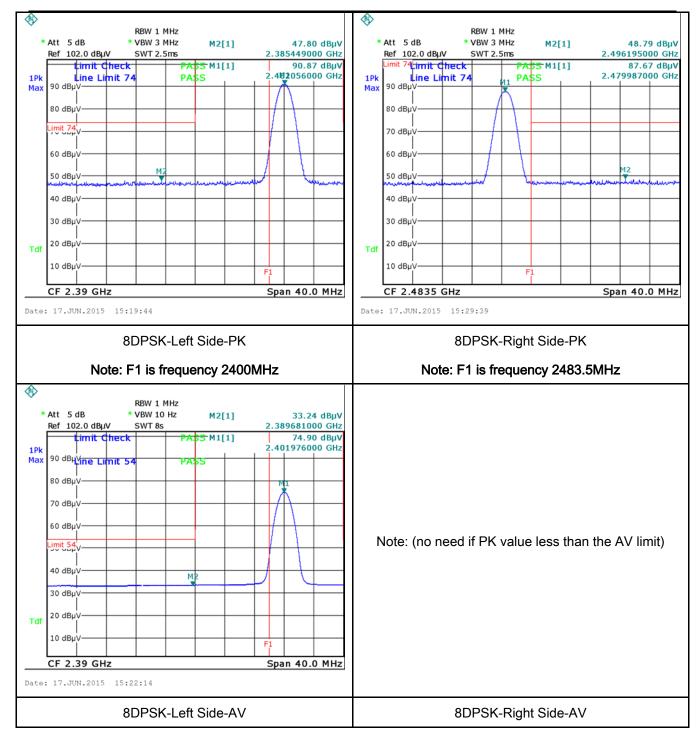
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8-DPSK Mode:





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6.8 AC Power Line Conducted Emissions

Temperature	21°C
Relative Humidity	51%
Atmospheric Pressure	1023mbar
Test date :	June 23, 2015
Tested By:	Lucifer.He

Spec	Item	Requirement			Applicable
47CFR§15. 207,	a)	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. Frequency ranges Limit (dBµV) QP Average		\	
		5 ~ 30	60	50	
Test Setup	Vertical Ground Reference Plane 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 				



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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

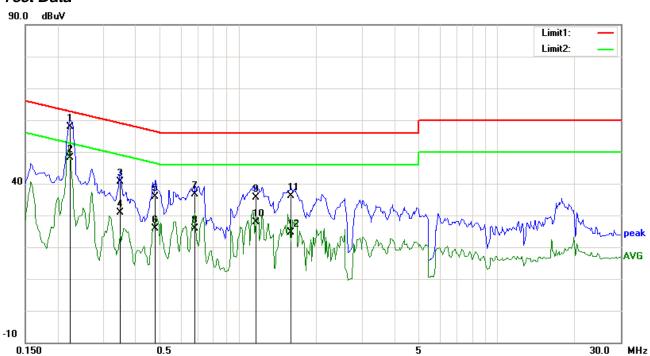
Test Data	Yes	□ _{N/A}
Test Plot	Yes (See below)	□ _{N/A}



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Test Mode: Bluetooth Mode

Test Data



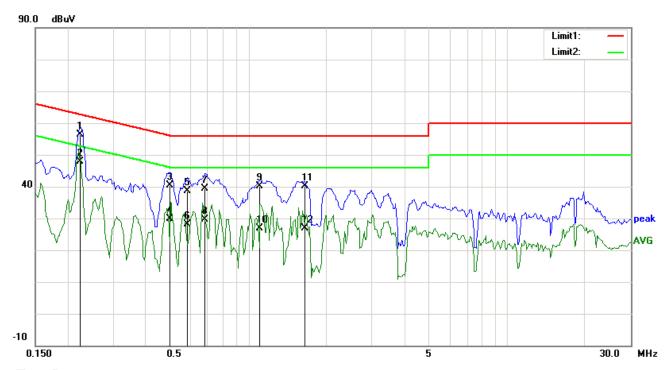
Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	Comment
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)	
1	L1	0.2242	44.90	QP	12.92	57.82	62.66	-4.84	
2	L1	0.2242	35.28	AVG	12.92	48.20	52.66	-4.46	
3	L1	0.3492	28.29	QP	12.46	40.75	58.98	-18.23	
4	L1	0.3492	18.30	AVG	12.46	30.76	48.98	-18.22	
5	L1	0.4781	23.91	QP	11.98	35.89	56.37	-20.48	
6	L1	0.4781	13.80	AVG	11.98	25.78	46.37	-20.59	
7	L1	0.6813	24.87	QP	11.72	36.59	56.00	-19.41	
8	L1	0.6813	14.04	AVG	11.72	25.76	46.00	-20.24	
9	L1	1.1695	24.20	QP	11.40	35.60	56.00	-20.40	
10	L1	1.1695	16.36	AVG	11.40	27.76	46.00	-18.24	
11	L1	1.5953	24.81	QP	11.40	36.21	56.00	-19.79	
12	L1	1.5953	13.30	AVG	11.40	24.70	46.00	-21.30	



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Test Mode:	Bluetooth Mode
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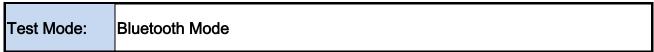
Test Data

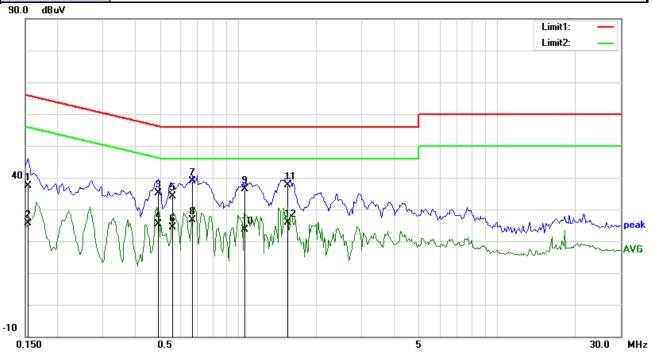
Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	Comment
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)	
1	N	0.2242	43.45	QP	12.92	56.37	62.66	-6.29	
2	N	0.2242	34.89	AVG	12.92	47.81	52.66	-4.85	
3	N	0.4977	28.48	QP	11.91	40.39	56.04	-15.65	
4	N	0.4977	17.97	AVG	11.91	29.88	46.04	-16.16	
5	N	0.5797	26.78	QP	11.82	38.60	56.00	-17.40	
6	N	0.5797	16.29	AVG	11.82	28.11	46.00	-17.89	
7	N	0.6813	27.64	QP	11.72	39.36	56.00	-16.64	
8	N	0.6813	17.86	AVG	11.72	29.58	46.00	-16.42	
9	N	1.1109	28.84	QP	11.41	40.25	56.00	-15.75	
10	N	1.1109	15.56	AVG	11.41	26.97	46.00	-19.03	
11	N	1.6500	28.67	QP	11.48	40.15	56.00	-15.85	
12	N	1.6500	15.29	AVG	11.48	26.77	46.00	-19.23	



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Test Data

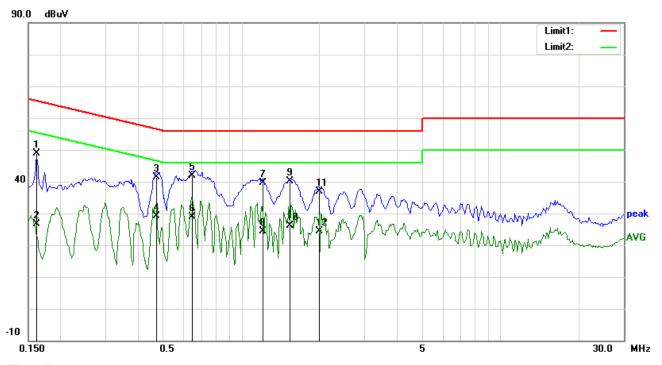
Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	Comment
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)	
1	L1	0.1539	24.14	QP	13.19	37.33	65.79	-28.46	
2	L1	0.1539	12.53	AVG	13.19	25.72	55.79	-30.07	
3	L1	0.4898	23.22	QP	11.94	35.16	56.17	-21.01	
4	L1	0.4898	13.39	AVG	11.94	25.33	46.17	-20.84	
5	L1	0.5552	22.32	QP	11.84	34.16	56.00	-21.84	
6	L1	0.5552	12.59	AVG	11.84	24.43	46.00	-21.57	
7	L1	0.6656	27.23	QP	11.73	38.96	56.00	-17.04	
8	L1	0.6656	14.93	AVG	11.73	26.66	46.00	-19.34	
9	L1	1.0597	25.07	QP	11.40	36.47	56.00	-19.53	
10	L1	1.0597	12.35	AVG	11.40	23.75	46.00	-22.25	
11	L1	1.5562	26.32	QP	11.40	37.72	56.00	-18.28	
12	L1	1.5562	14.57	AVG	11.40	25.97	46.00	-20.03	



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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	Comment
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)	
1	N	0.1617	35.70	QP	13.16	48.86	65.38	-16.52	
2	N	0.1617	13.58	AVG	13.16	26.74	55.38	-28.64	
3	N	0.4703	29.40	QP	12.01	41.41	56.51	-15.10	
4	N	0.4703	17.16	AVG	12.01	29.17	46.51	-17.34	
5	N	0.6422	30.08	QP	11.76	41.84	56.00	-14.16	
6	N	0.6422	17.10	AVG	11.76	28.86	46.00	-17.14	
7	N	1.2125	28.14	QP	11.43	39.57	56.00	-16.43	
8	N	1.2125	12.86	AVG	11.43	24.29	46.00	-21.71	
9	N	1.5367	28.70	QP	11.47	40.17	56.00	-15.83	
10	N	1.5367	14.57	AVG	11.47	26.04	46.00	-19.96	
11	N	2.0055	25.39	QP	11.53	36.92	56.00	-19.08	
12	N	2.0055	12.75	AVG	11.53	24.28	46.00	-21.72	



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6.9 Radiated Spurious Emissions

Temperature	21°C
Relative Humidity	51%
Atmospheric Pressure	1023mbar
Test date :	June 23, 2015
Tested By :	Lucifer.He

Requirement(s):

Spec	Item	Requirement Applicable						
47CFR§15. 205, §15.209,	a)	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	V					
§15.247(d)		Frequency range (MHz) 30 - 88	Field Strength (μV/m) 100					
310.217(0)		88 - 216	150					
		216 960	200					
		Above 960	500					
Test Setup		Ant. Tower Support Units Ground Plane Test Receiver						
Procedure	 The EUT was switched on and allowed to warm up to its normal operating condition. 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: 							



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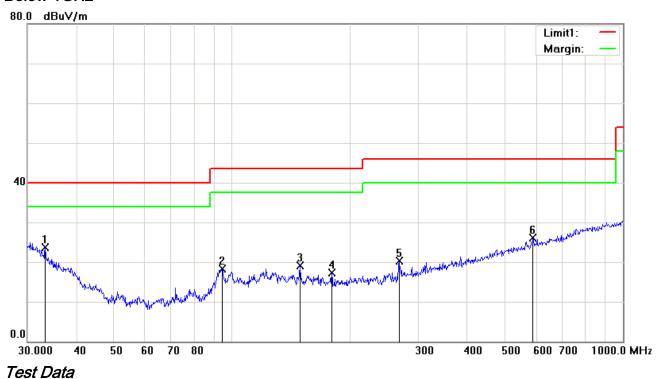
		o \	Vartical or harizantal palarization (whichever gave the higher emission
			retical or horizontal polarization (whichever gave the higher emission
		le	evel over a full rotation of the EUT) was chosen.
		b. T	he EUT was then rotated to the direction that gave the maximum
		е	emission.
		c. F	inally, the antenna height was adjusted to the height that gave the
		n	naximum emission.
	3.	The resol	ution bandwidth and video bandwidth of test receiver/spectrum analyzer is
		120 kHz f	or Quasiy Peak detection at frequency below 1GHz.
	4.	The resolu	tion bandwidth of test receiver/spectrum analyzer is 1MHz and video
		bandwidth	is 3MHz with Peak detection for Peak measurement at frequency above
		1GHz.	
		The resol	ution bandwidth of test receiver/spectrum analyzer is 1MHz and the video
		bandwidth	n is 10Hz with Peak detection for Average Measurement as below at
		frequency	above 1GHz.
	5.	Steps 2 a	and 3 were repeated for the next frequency point, until all selected
		frequency	y points were measured.
Remark			
Result	Pa:	SS	☐ Fail
-	7		
Test Data	Yes		N/A
Test Plot	Yes (S	ee below)	N/A



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Test Mode: Bluetooth Mode

Below 1GHz



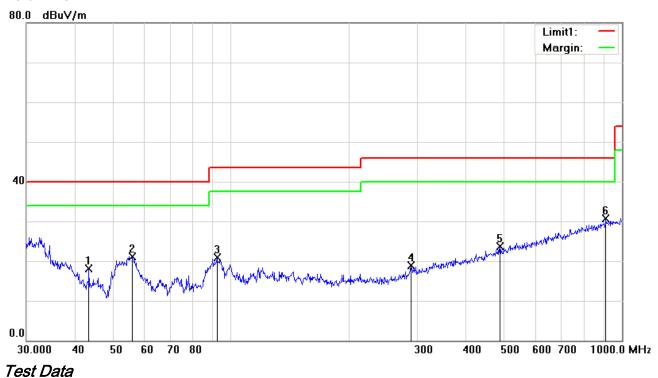
Horizontal Polarity Plot @3m

No.	P/L	Frequency	Readin g	Detector	Corrected	Result	Limit	Margin	Height	Degree	Comme nt
		(MHz)	(dBuV/ m)		(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	()	
1	Н	33.3279	26.42	peak	-2.71	23.71	40.00	-16.29	100	360	
2	Н	94.4284	30.56	peak	-12.27	18.29	43.50	-25.21	200	181	
3	Н	149.4857	27.50	peak	-8.40	19.10	43.50	-24.40	200	214	
4	Н	180.0165	27.29	peak	-9.89	17.40	43.50	-26.10	100	257	
5	Н	267.5455	28.66	peak	-8.39	20.27	46.00	-25.73	100	111	
6	Н	588.9051	26.21	peak	-0.18	26.03	46.00	-19.97	100	148	



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Below 1GHz



Vertical Polarity Plot @3m

No.	P/L	Frequency	Readin g	Detector	Corrected	Result	Limit	Margin	Height	Degree	Comme nt
		(MHz)	(dBuV/ m)		(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	()	
1	V	43.3534	27.94	peak	-9.84	18.10	40.00	-21.90	200	216	
2	V	56.0007	35.07	peak	-13.89	21.18	40.00	-18.82	100	180	
3	V	92.1388	33.84	peak	-12.84	21.00	43.50	-22.50	100	101	
4	V	289.0021	26.22	peak	-7.40	18.82	46.00	-27.18	100	184	
5	V	487.3151	25.80	peak	-2.04	23.76	46.00	-22.24	200	336	
6	V	909.6667	25.98	peak	4.78	30.76	46.00	-15.24	200	47	



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Test Mode: Transmitting Mode

Mode: GFSK (Worst Case)

Low Channel (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	40.54	AV	V	33.83	6.86	31.72	49.51	54	-4.49
4804	40.42	AV	Η	33.83	6.86	31.72	49.39	54	-4.61
4804	47.75	PK	٧	33.83	6.86	31.72	56.72	74	-17.28
4804	47.11	PK	Н	33.83	6.86	31.72	56.08	74	-17.92

Middle Channel (2441 MHz)

Frequence (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	40.29	AV	V	33.86	6.82	31.82	49.15	54	-4.85
4882	41.72	AV	Н	33.86	6.82	31.82	50.58	54	-3.42
4882	48.5	PK	V	33.86	6.82	31.82	57.36	74	-16.64
4882	47.52	PK	Н	33.86	6.82	31.82	56.38	74	-17.62

High Channel (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	40.6	AV	V	33.9	6.76	31.92	49.34	54	-4.66
4960	40.59	AV	Η	33.9	6.76	31.92	49.33	54	-4.67
4960	47.7	PK	٧	33.9	6.76	31.92	56.44	74	-17.56
4960	47.55	PK	Н	33.9	6.76	31.92	56.29	74	-17.71



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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	09/18/2014	09/17/2015	•
Line Impedance	LI-125A	191106	09/26/2014	09/25/2015	~
Line Impedance	LI-125A	191107	09/26/2014	09/25/2015	~
LISN	ISN T800	34373	09/26/2014	09/25/2015	~
Double Ridge Horn Antenna (1 ~18GHz)	AH-118	71283	09/25/2014	09/24/2015	•
Transient Limiter	LIT-153	531118	09/02/2014	09/01/2015	•
RF conducted test					
Agilent ESA-E SERIES	E4407B	MY45108319	09/18/2014	09/17/2015	•
Power Splitter	1#	1#	09/02/2014	09/01/2015	~
DC Power Supply	E3640A	MY40004013	09/18/2014	09/17/2015	~
Radiated Emissions					
EMI test receiver	ESL6	100262	09/18/2014	09/17/2015	•
Positioning Controller	UC3000	MF780208282	11/20/2014	11/19/2015	V
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	09/02/2014	09/01/2015	•
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/25/2015	03/24/2016	\
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/22/2014	09/21/2015	\
Double Ridge Horn Antenna (1 ~18GHz)	AH-118	71283	09/25/2014	09/24/2015	<u>S</u>
Universal Radio Communication Tester	CMU200	121393	09/26/2014	09/25/2015	V



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Annex B. EUT And Test Setup Photographs

Α

Annex B.i. Photograph: EUT External Photo





Whole Package - Top View



EUT - Front View

Adapter - Front View



EUT - Rear View

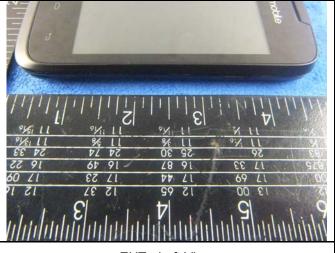


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EUT - Top View

EUT - Bottom View



EUT - Left View



EUT - Right View



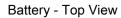
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Annex B.ii. Photograph: EUT Internal Photo





Cover Off - Top View









Mainborad With Shielding - Front View



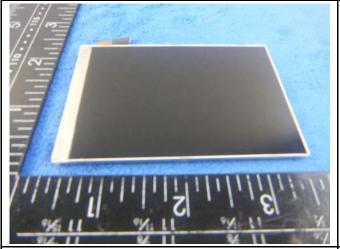
Mainborad Without Shielding - Front View



Mainborad - rear View



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LCD - Front View LCD - Rear View

LCD - Rear View





WIFI/BT/BLE - Antenna View

GSM/PCS/UMTS-FDD Antenna View



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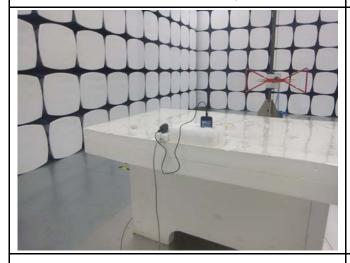
Annex B.iii. Photograph: Test Setup Photo



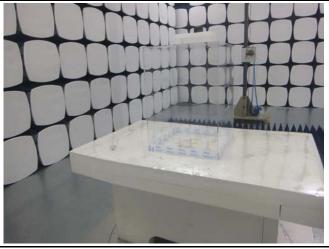
Conducted Emissions Test Setup Front View



Conducted Emissions Test Setup Side View



Radiated Spurious Emissions Test Setup Below 1GHz



Radiated Spurious Emissions Test Setup Above 1GHz

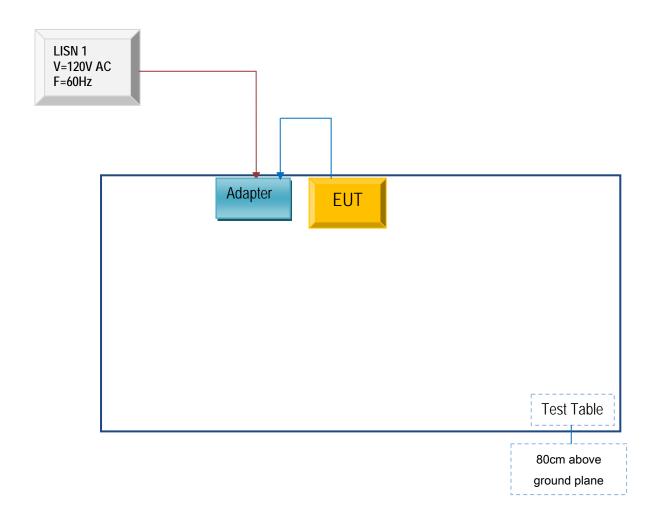


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Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

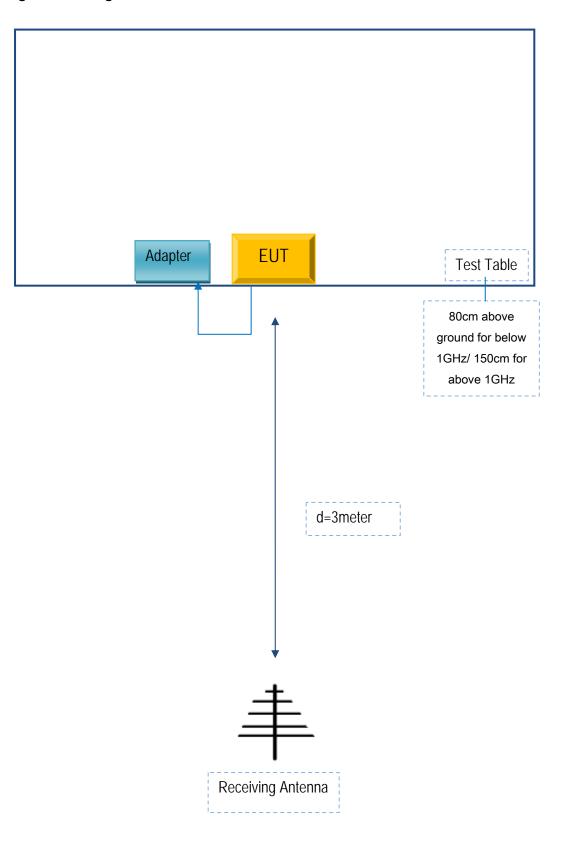
Block Configuration Diagram for AC Line Conducted Emissions





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Block Configuration Diagram for Radiated Emissions





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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.

Manufacturer	Equipment Description	Model	Calibration Date	Calibration Due Date
N/A	N/A	N/A	N/A	N/A



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

Please see attachment



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Annex E. DECLARATION OF SIMILARITY

b Mobile HK Limited

To SIEMIC Inc 775 Montague Expressway Milpitas, CA 95035.

Statement

We, b Mobile HK Limited apply a multiple-listing certification for the below models.

Product Name: Mobile phone

Model number: AX600/ AX630

FCC ID: ZSW-30-009

We hereby state that these models are identical in interior structure, electrical circuits and components, and just model name is different for the marketing requirement.

Your assistance on this matter is highly appreciated.

Sincerely,

Name: KA SHING LAM

ľK Limited

Title: Director

Signature: