EMC TEST REPORT



Report No.: 16070720-FCC-E Supersede Report No.:N/A

Applicant	SMT TELECOMM HK LIMITED				
Product Name	Mobile Pho	Mobile Phone			
Model No.	X444				
Serial No.	N/A				
Test Standard	FCC Part 1	FCC Part 15 Subpart B Class B:2015, ANSI C63.4: 2014			
Test Date	June 21 to July 11, 2016				
Issue Date	July 12, 2016				
Test Result	Pass Fail				
Equipment complied with the specification					
Equipment did not comply with the specification					
Loven	Tho	David Huang			
Loren Luo Test Engineer		David Huang Checked 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
Phone: +86 0755 2601 4629801 Email: China@siemic.com.cn



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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	
- Country in togicin	Собра	
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
16070720-FCC-E	NONE	Original	July 12, 2016

2. Customer information

Applicant Name	SMT TELECOMM HK LIMITED
Applicant Add	Unit C 8/F, CHARMHILL CTR 50 HILLWOOD RD TST KL
Manufacturer	SMT TELECOMM HK LIMITED
Manufacturer Add	Unit C 8/F, CHARMHILL CTR 50 HILLWOOD RD TST KL

3. Test site information

	1		
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: X444

Serial Model: N/A

GSM850: -1.5dBi

PCS1900: -1.3dBi

Antenna Gain: UMTS-FDD Band V: -1.5dBi

> UMTS-FDD Band II: -1.2dBi Bluetooth/BLE/WIFI: -2.5dBi

Antenna Type: PIFA antenna

Adapter:

Model:PC444

Input: AC 100-240V~50/60Hz;0.15A

Output: DC 5.0V,500mA

Input Power: Battery:

Model:BPX444

Spec: 3.7V,1300mAh(4.81Wh) Charge limited voltage: 4.2V

Equipment Category: **JPC**

GSM / GPRS: GMSK

EGPRS: GMSK,8PSK

UMTS-FDD: QPSK

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

Bluetooth: GFSK, π /4DQPSK, 8DPSK

BLE: GFSK



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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 II TX:1852.4 ~ 1907.6 MHz;

RF Operating Frequency (ies):

RX: 1932.4 ~ 1987.6 MHz

WIFI: 802.11b/g/n(20M): 2412-2462 MHz WIFI: 802.11n(40M): 2422-2452 MHz

Bluetooth& BLE: 2402-2480 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): 11CH

WIFI:802.11n(40M): 7CH

Bluetooth: 79CH

BLE: 40CH

Port: Earphone Port, USB Port

Trade Name: N/A

FCC ID: 2AIMEX444

Date EUT received: June 20, 2016

Test Date(s): June 21 to July 11, 2016



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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
§15.107; ANSI C63.4: 2014	AC Power Line Conducted Emissions	Compliance
§15.109; ANSI C63.4: 2014	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 AC Power Line Conducted Emissions

Temperature	22°C	
Relative Humidity	58%	
Atmospheric Pressure	1025mbar	
Test date :	June 25, 2016	
Tested By:	Loren Luo	

Requirement(s):

Spec	Item	Requirement			Applicable
47CFR§15.	a)	For Low-power radio-freconnected to the public voltage that is conducted frequency or frequencied not exceed the limits in [mu] H/50 ohms line implower limit applies at the	c utility (AC) power line ed back onto the AC poes, within the band 150 the following table, as apedance stabilization r	the radio frequency ower line on any kHz to 30 MHz, shall measured using a 50 network (LISN). The	
107		Frequency ranges	Limit (
		(MHz)	QP	Average	
		0.15 ~ 0.5	66 – 56	56 – 46	
		0.5 ~ 5	56	46	
		5 ~ 30	60	50	
Test Setup Vertical Ground Reference Plane EUT Horizontal Ground					
	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	e EUT and supporting ed standard on top of a 1.5 e power supply for the El	im x 1m x 0.8m high, n	on-metallic table.	
	filte	ered mains.			



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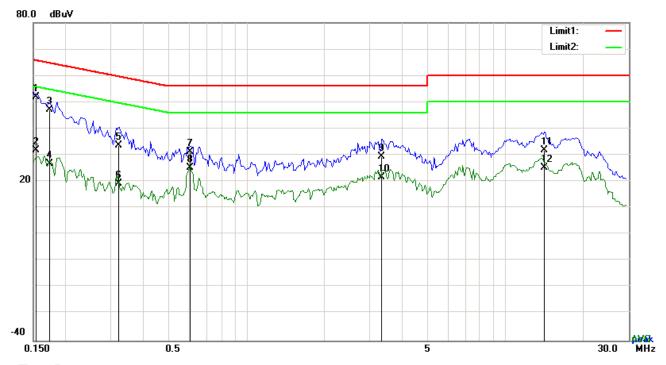
	 The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable. All other supporting equipment were powered separately from another main supply. The EUT was switched on and allowed to warm up to its normal operating condition. A scan was made on the NEUTRAL line (for AC 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:	USB Mode



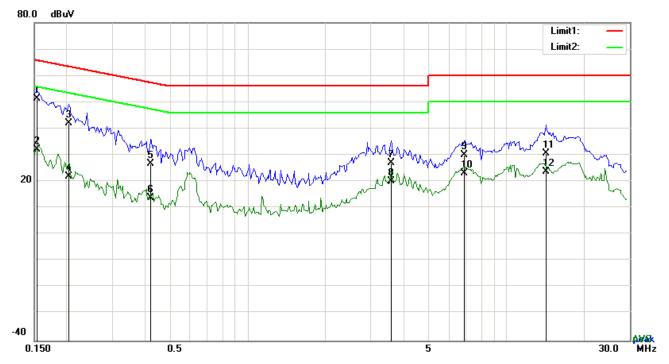
Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB)	(dBuV)	(dBuV)	(dB)
1	L1	0.1539	41.84	QP	10.03	51.87	65.79	-13.92
2	L1	0.1539	21.91	AVG	10.03	31.94	55.79	-23.85
3	L1	0.1734	37.20	QP	10.03	47.23	64.80	-17.57
4	L1	0.1734	16.73	AVG	10.03	26.76	54.80	-28.04
5	L1	0.3216	23.69	QP	10.03	33.72	59.67	-25.95
6	L1	0.3216	9.30	AVG	10.03	19.33	49.67	-30.34
7	L1	0.6063	21.29	QP	10.03	31.32	56.00	-24.68
8	L1	0.6063	15.29	AVG	10.03	25.32	46.00	-20.68
9	L1	3.3432	19.39	QP	10.06	29.45	56.00	-26.55
10	L1	3.3432	11.61	AVG	10.06	21.67	46.00	-24.33
11	L1	14.2047	21.58	QP	10.21	31.79	60.00	-28.21
12	L1	14.2047	15.11	AVG	10.21	25.32	50.00	-24.68



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USB Mode



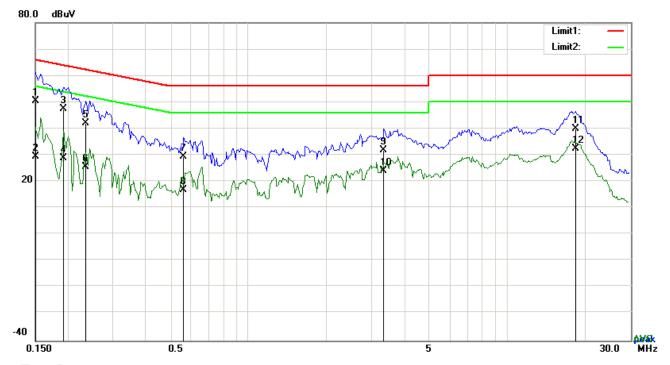
Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	N	0.1539	41.32	QP	10.02	51.34	65.79	-14.45
2	N	0.1539	22.10	AVG	10.02	32.12	55.79	-23.67
3	N	0.2046	32.18	QP	10.02	42.20	63.42	-21.22
4	N	0.2046	11.94	AVG	10.02	21.96	53.42	-31.46
5	Ν	0.4230	16.76	QP	10.02	26.78	57.39	-30.61
6	Ν	0.4230	3.81	AVG	10.02	13.83	47.39	-33.56
7	Ν	3.5850	17.11	QP	10.06	27.17	56.00	-28.83
8	Ν	3.5850	10.02	AVG	10.06	20.08	46.00	-25.92
9	N	6.9039	20.06	QP	10.10	30.16	60.00	-29.84
10	N	6.9039	12.95	AVG	10.10	23.05	50.00	-26.95
11	Ν	14.2749	20.55	QP	10.19	30.74	60.00	-29.26
12	N	14.2749	13.71	AVG	10.19	23.90	50.00	-26.10



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Test Mode:



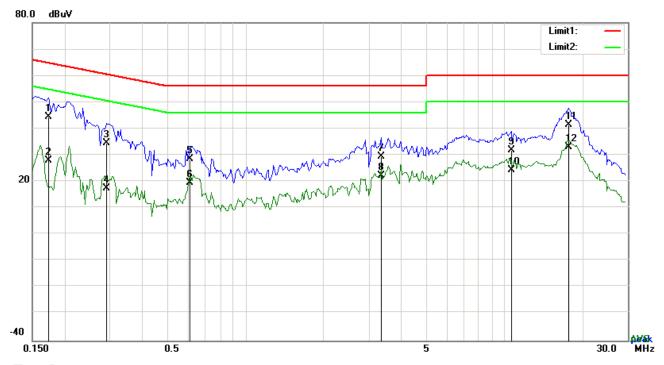
Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB)	(dBuV)	(dBuV)	(dB)
1	L1	0.1500	40.31	QP	10.03	50.34	66.00	-15.66
2	L1	0.1500	19.53	AVG	10.03	29.56	56.00	-26.44
3	L1	0.1929	37.37	QP	10.03	47.40	63.91	-16.51
4	L1	0.1929	18.74	AVG	10.03	28.77	53.91	-25.14
5	L1	0.2358	32.13	QP	10.03	42.16	62.24	-20.08
6	L1	0.2358	15.49	AVG	10.03	25.52	52.24	-26.72
7	L1	0.5634	19.31	QP	10.03	29.34	56.00	-26.66
8	L1	0.5634	6.84	AVG	10.03	16.87	46.00	-29.13
9	L1	3.3393	21.70	QP	10.06	31.76	56.00	-24.24
10	L1	3.3393	14.10	AVG	10.06	24.16	46.00	-21.84
11	L1	18.3621	29.79	QP	10.28	40.07	60.00	-19.93
12	L1	18.3621	22.04	AVG	10.28	32.32	50.00	-17.68



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Test Mode:



Phase Neutral Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB)	(dBuV)	(dBuV)	(dB)
1	N	0.1734	34.47	QP	10.02	44.49	64.80	-20.31
2	N	0.1734	17.90	AVG	10.02	27.92	54.80	-26.88
3	N	0.2904	24.54	QP	10.02	34.56	60.51	-25.95
4	Ν	0.2904	7.57	AVG	10.02	17.59	50.51	-32.92
5	Ν	0.6102	18.59	QP	10.02	28.61	56.00	-27.39
6	Ν	0.6102	9.63	AVG	10.02	19.65	46.00	-26.35
7	Ν	3.3627	19.36	QP	10.05	29.41	56.00	-26.59
8	Ν	3.3627	12.17	AVG	10.05	22.22	46.00	-23.78
9	N	10.6518	21.71	QP	10.15	31.86	60.00	-28.14
10	N	10.6518	14.07	AVG	10.15	24.22	50.00	-25.78
11	N	17.6913	31.37	QP	10.23	41.60	60.00	-18.40
12	N	17.6913	22.85	AVG	10.23	33.08	50.00	-16.92



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6.2 Radiated Emissions

Temperature	24°C
Relative Humidity	53%
Atmospheric Pressure	1001mbar
Test date :	July 01, 2016
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement		Applicable		
47CFR§15. 109(d)	a)	Frequency range (MHz) 30 – 88 100 88 – 216 150				
		216 960 Above 960	200 500			
Test Setup		Ant. Tower Support Units Turn Table Ground Plane Test Receiver				
Procedure	2.					



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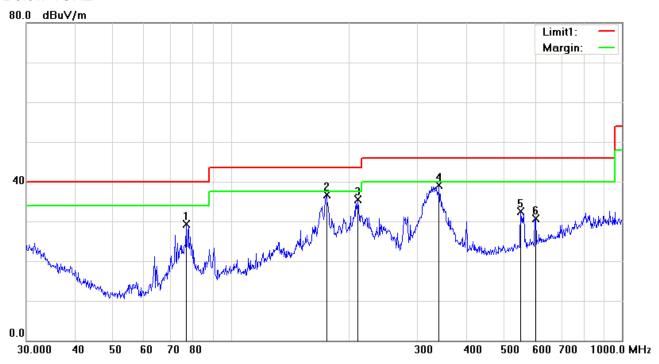
			over a full rotation of the EUT) was chosen.
		b.	The EUT was then rotated to the direction that gave the maximum
			emission.
		C.	Finally, the antenna height was adjusted to the height that gave the maximum
			emission.
	3.	The res	solution bandwidth and video bandwidth of test receiver/spectrum analyzer is
		120 kH	z for Quasiy Peak detection at frequency below 1GHz.
	4.	The reso	olution bandwidth of test receiver/spectrum analyzer is 1MHz and video
		bandwi	dth is 3MHz with Peak detection for Peak measurement at frequency above
		1GHz.	
		The re	solution bandwidth of test receiver/spectrum analyzer is 1MHz and the video
		bandw	vidth with Peak detection for Average Measurement as below at frequency
		above	1GHz.
		■ 1 kH	Hz (Duty cycle < 98%) □ 10 Hz (Duty cycle > 98%)
	5.	Steps 2	2 and 3 were repeated for the next frequency point, until all selected frequency
		points v	were measured.
Remark			
Result	Pa	SS	Fail
Test Data	Yes		□ _{N/A}
	1		
Test Plot	Yes (S	ee belo	w) N/A



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Test Mode : USB Mode

Below 1GHz



Test Data

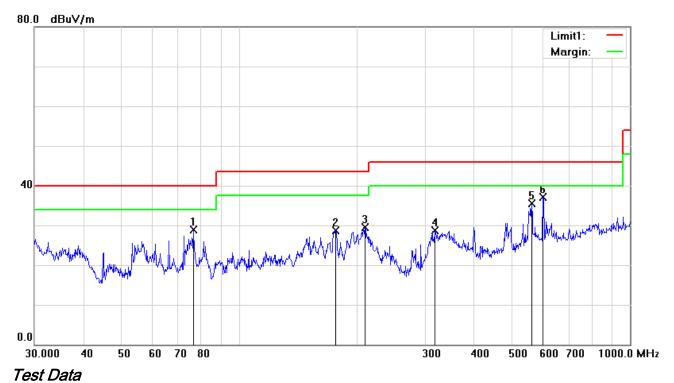
Horizontal Polarity Plot @3m

No.	P/L	Frequency	Readin g	Detector	Corrected	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/ m)		(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	()
1	Ι	76.7808	43.12	peak	-13.76	29.36	40.00	-10.64	100	52
2	Н	175.6516	46.20	peak	-9.54	36.66	43.50	-6.84	100	187
3	Н	211.5265	44.36	peak	-8.84	35.52	43.50	-7.98	100	341
4	Н	340.7817	44.75	peak	-5.73	39.02	46.00	-6.98	100	165
5	Н	550.9480	33.28	peak	-0.80	32.48	46.00	-13.52	100	112
6	Н	601.4265	30.76	peak	0.03	30.79	46.00	-15.21	100	206



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Below 1GHz



Vertical Polarity Plot @3m

No.	P/L	Frequency	Readin g	Detector	Corrected	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/ m)		(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	()
1	>	76.5121	42.66	peak	-13.75	28.91	40.00	-11.09	100	291
2	٧	176.8878	38.37	peak	-9.64	28.73	43.50	-14.77	100	169
3	V	210.0482	38.40	peak	-8.83	29.57	43.50	-13.93	100	223
4	V	316.5890	35.20	peak	-6.42	28.78	46.00	-17.22	100	159
5	٧	560.6928	36.11	peak	-0.64	35.47	46.00	-10.53	100	101
6	V	599.3213	37.13	peak	0.00	37.13	46.00	-8.87	100	58



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Above 1GHz

Frequency (MHz)	Amplitude (dΒμV/m)	Azimuth	Height (cm)	Polarity (H/V)	Factors (dB)	Limit (dBµV/m)	Margin (dB)	Detector (PK/AV)
788.63	51.02	52	142	V	-21.22	74	-22.98	PK
10375.33	55.66	101	156	V	-20.53	74	-18.34	PK
1134.52	52.13	97	135	V	-24.03	74	-21.87	PK
848.63	53.25	88	250	Н	-23.42	74	-20.75	PK
1243.56	45.44	120	222	Н	-21.56	74	-28.56	PK
1703.65	53.52	115	173	Н	-21.69	74	-20.48	PK

Note1: The highest frequency of the EUT is 2480 MHz, so the testing has been conformed to 5*2472MHz=12,360MHz.

Note 2: The frequency that above 3GHz is mainly from the environment noise.

Note3: The AV measurement performed, more than 20dB below limit so AV test data was not presented.



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Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Due	In use		
AC Line Conducted Emissions							
EMI test receiver	ESCS30	8471241027	09/17/2015	09/16/2016	•		
Line Impedance Stabilization Network	LI-125A	191106	09/25/2015	09/24/2016	>		
Line Impedance Stabilization Network	LI-125A	191107	09/25/2015	09/24/2016	<u><</u>		
LISN	ISN T800	34373	09/25/2015	09/24/2016	<		
Transient Limiter	LIT-153	531118	09/01/2015	08/31/2016	<		
Radiated Emissions							
EMI test receiver	ESL6	100262	09/17/2015	09/16/2016	>		
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	09/01/2015	08/31/2016	>		
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/24/2016	03/23/2017	\(\right\)		
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/21/2015	09/20/2016	\		
Double Ridge Horn Antenna	AH-118	71259	09/24/2015	09/23/2016	\(\z\)		

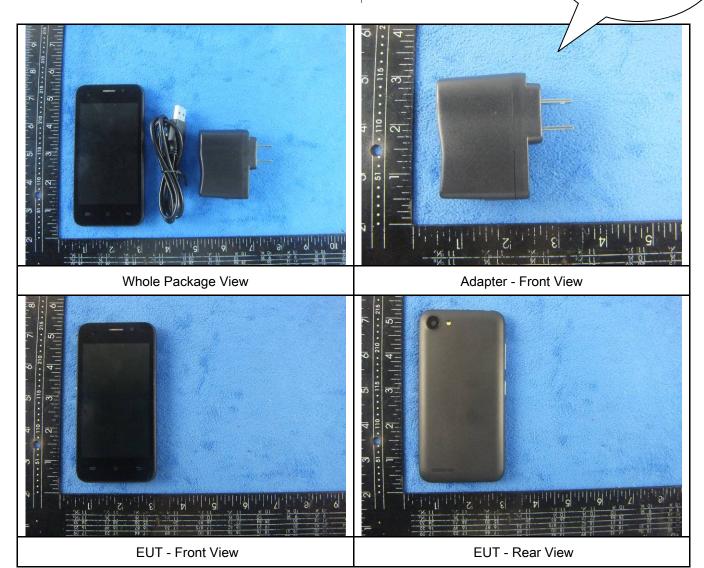


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Annex B. EUT And Test Setup Photographs

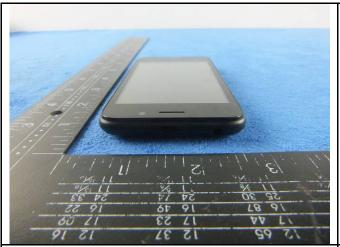
Annex B.i. Photograph: EUT External Photo

Model: PC444
Input: AC100-240V
50/60HZ 0.15A
Output: DC 5.0V-500mA
Made in China





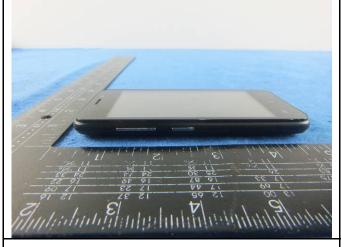
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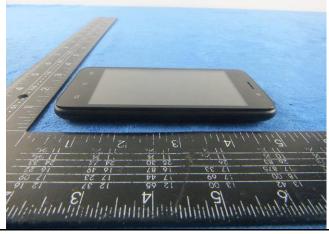
22 30 54 14 54 15 55 15 00 16 25 17 00 16

EUT - Top View

EUT - Bottom View





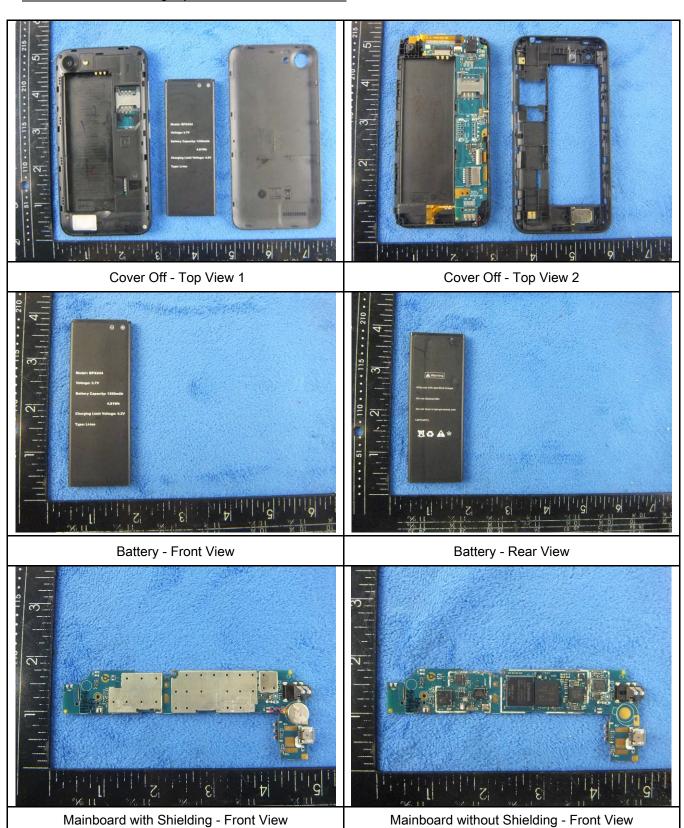


EUT - Right View



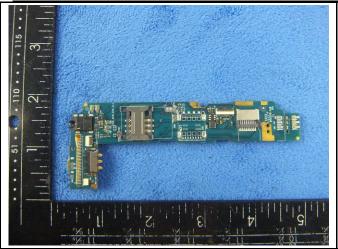
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Annex B.ii. Photograph: EUT Internal Photo





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Mainboard - Rear View

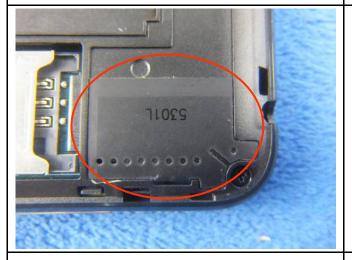
LCD - Front View





LCD - Rear View

GSM/PCS/UMTS-FDD Antenna View

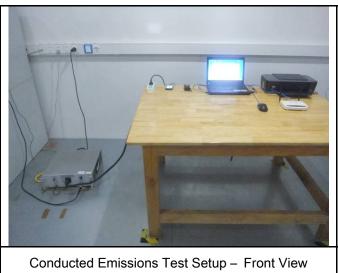


WIFI/BT/BLE - Antenna View



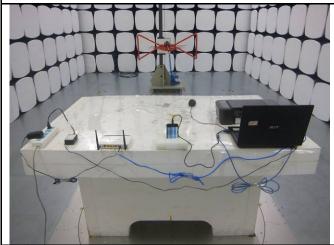
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Annex B.iii. Photograph: Test Setup Photo

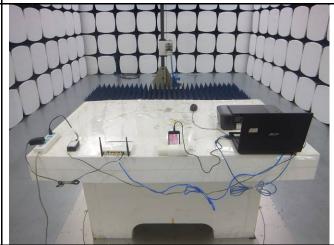




Conducted Emissions Test Setup - Side View



Radiated Emissions Test Setup Below 1GHz



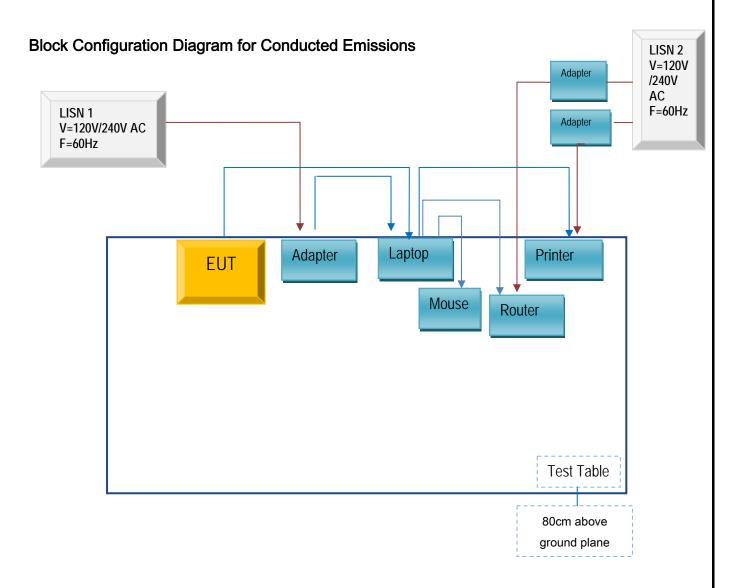
Radiated Emissions Test Setup Above 1GHz



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Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

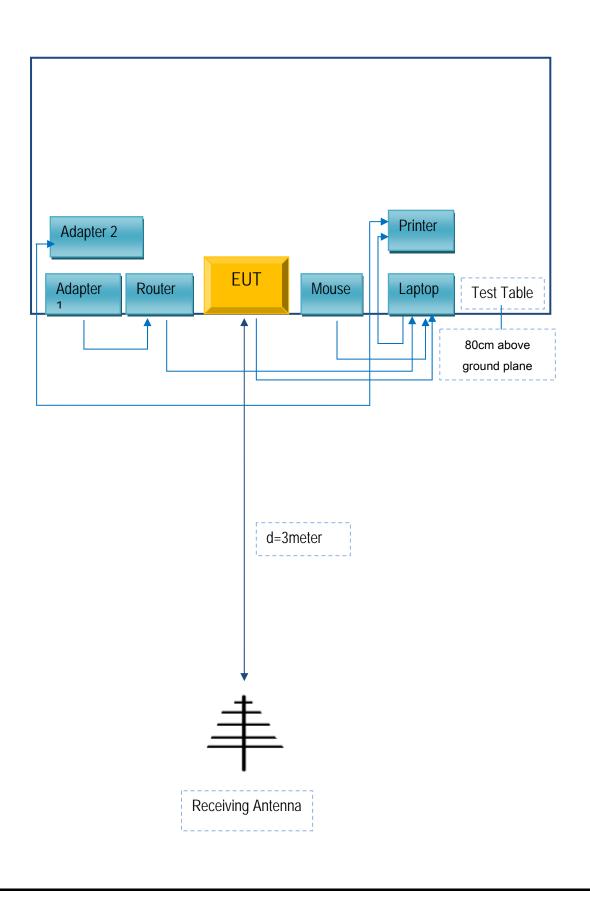
Annex C.ii. TEST SET UP BLOCK





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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.

Supporting Equipment:

Manufacturer	Equipment Description	Model	Serial No
Lenovo	Laptop	E40	LR-1EHRX
GOLDWEB	Router	R102	1202032094
SMT TELECOMM HK LIMITED	Adapter	PC444	X444
Lenovo	AC Adapter	42T4416	21D9JU
HP	Printer	VCVRA-1003	CN36M19JWX
DELL	Mouse	E100	912NMTUT41481
BULL	Socket	GN-403	GN201203

Supporting Cable:

Cable type	Shield Type	Ferrite Core	Length	Serial No
USB Cable	Un-shielding	No	2m	JX120051274
USB Cable	Un-shielding	No	2m	JX110725002
RJ45 Cable	Un-shielding	No	2m	KX156327541
Router Power cable	Un-shielding	No	2m	13274630Z
Printer Power cable	Un-shielding	No	2m	127581031
Power Cable	Un-shielding	No	0.8m	GT211032



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

Please see attachment



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Annex E. DECLARATION OF SIMILARITY

N/A