EMC TEST REPORT



Report No.: 16070923-FCC-E

Supersede Report No: N/A			
Applicant	SMT TELECOMM HK LIMITED		
Product Name	Mobile Phone		
Model No.	M488		
Serial No.	N/A		
Test Standard	FCC Part 15 Subpart B Class B:2015, ANSI C63.4: 2014		
Test Date	August 23 to September 05, 2016		
Issue Date	September 06, 2016		
Test Result	Pass Fail		
Equipment compl	lied with the specification		
Equipment did no	t comply with the specification		
Loven	110 David Huang		
Loren Lu	uo David Huang David Huang		
Test Engir	neer Checked By		
This test report may be reproduced in full only			
Test result presented in this test report is applicable to the tested sample only			

Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

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

South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108 Phone: +86 0755 2601 4629801 Email: China@siemic.com.cn



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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.

	•
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

Accreditations for Conformity Assessment



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1. Report Revision History

Report No.	Report Version	Description	Issue Date
16070923-FCC-E	NONE	Original	September 06, 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

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

Mobile Phone
M488
N/A
GSM850: 0.8dBi PCS1900: 1dBi UMTS-FDD Band V: 1dBi UMTS-FDD Band II: 1dBi Bluetooth/BLE/WIFI: 1dBi GPS: 1dBi
PIFA antenna
Adapter: Model: PC488 Input: AC100-240V~50/60Hz,0.15A Output: DC 5.0V-500mA Battery: Model: BPM488 Voltage: 3.7V Battery Capacity: 1400mAh Charging limit voltage: 4.2V
JBP
GSM / GPRS: GMSK EGPRS: GMSK UMTS-FDD: QPSK 802.11b/g/n: DSSS, OFDM Bluetooth: GFSK, π /4DQPSK, 8DPSK BLE: GFSK GPS:BPSK



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RF Operating Frequency (ies):	GSM850 TX: 824.2 ~ 848.8 MHz; RX: 869.2 ~ 893.8 MHz PCS1900 TX: 1850.2 ~ 1909.8 MHz; RX: 1930.2 ~ 1989.8 MHz UMTS-FDD Band V TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz UMTS-FDD Band II TX:1852.4 ~ 1907.6 MHz; 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 GPS: 1575.42 MHz
Number of Channels:	GSM 850: 124CH PCS1900: 299CH UMTS-FDD Band V: 102CH UMTS-FDD Band II: 277CH WIFI :802.11b/g/n(20M): 11CH WIFI :802.11n(40M): 7CH Bluetooth: 79CH BLE: 40CH GPS:1CH
Port:	Power Port, Earphone Port, USB Port
Trade Name :	N/A
FCC ID:	2AIMEM488
Date EUT received:	August 22, 2016
Test Date(s):	August 23 to September 05, 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	24°C
Relative Humidity	53%
Atmospheric Pressure	1001mbar
Test date :	September 01, 2016
Tested By :	Loren Luo

Requirement(s):

Spec	Item Requirement Applicable						
47CFR§15. 107	a)	For Low-power radio-fr connected to the public voltage that is conducted frequency or frequencies not exceed the limits in [mu] H/50 ohms line im lower limit applies at th Frequency ranges (MHz) 0.15 ~ 0.5	c utility (AC) power line ed back onto the AC po es, within the band 150 the following table, as pedance stabilization is e boundary between the Limit (QP 66 – 56	V			
		0.5 ~ 5 5 ~ 30	56 60	46 50			
Test Setup							
Procedure	the 2. The	the standard on top of a 1.5m x 1m x 0.8m high, non-metallic table.					

3						
SIEM		Test Report	16070923-FCC-E			
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		UT LISN was co	onnected to the EMI test receiver via a low-loss			
	coaxial cable.					
			powered separately from another main supply.			
			ed to warm up to its normal operating condition.			
			ine (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					
	-	and the necessa	ary measurements made with a receiver bandwidth			
	setting of 10 kHz.					
	8. Step 7 was then repe	ated for the LIVE	E line (for AC mains) or DC line (for DC power).			
Remark						
Result	Pass F	ail				
	Yes	1				
Test Data	Yes	N/A				
Test Plot	Yes (See below)	N/A				
	(, , , , , , , , , , , , , , , , , , ,					



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AVAK MHz

30.0



Test Data

0.5

0.150

-20

Phase	Line	Plot at	120Vac,	60Hz
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5

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.2709	35.38	QP	10.03	45.41	61.09	-15.68
2	L1	0.2709	16.46	AVG	10.03	26.49	51.09	-24.60
3	L1	0.3035	36.14	QP	10.03	46.17	60.15	-13.98
4	L1	0.3035	15.09	AVG	10.03	25.12	50.15	-25.03
5	L1	0.4492	27.71	QP	10.03	37.74	56.89	-19.15
6	L1	0.4492	6.57	AVG	10.03	16.60	46.89	-30.29
7	L1	3.0624	22.53	QP	10.06	32.59	56.00	-23.41
8	L1	3.0624	13.79	AVG	10.06	23.85	46.00	-22.15
9	L1	6.5919	18.98	QP	10.10	29.08	60.00	-30.92
10	L1	6.5919	9.22	AVG	10.10	19.32	50.00	-30.68
11	L1	16.1313	25.66	QP	10.24	35.90	60.00	-24.10
12	L1	16.1313	9.48	AVG	10.24	19.72	50.00	-30.28



-20

0.150

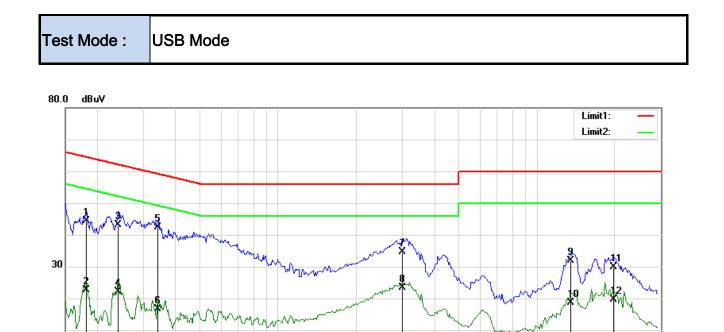
Test Data

0.5

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<mark>A₩8</mark>k MHz

30.0



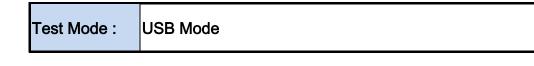
Phase Neutral Plot at 120Vac, 60Hz

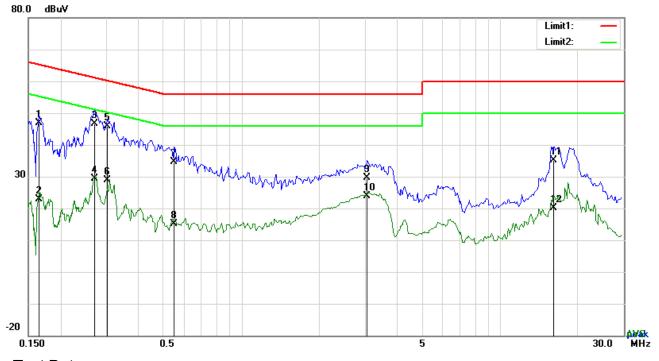
5

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	Ν	0.1812	34.37	QP	10.02	44.39	64.43	-20.04
2	Ν	0.1812	12.55	AVG	10.02	22.57	54.43	-31.86
3	Ν	0.2397	33.06	QP	10.02	43.08	62.11	-19.03
4	Ν	0.2397	12.19	AVG	10.02	22.21	52.11	-29.90
5	Ν	0.3411	32.28	QP	10.02	42.30	59.18	-16.88
6	Ν	0.3411	6.67	AVG	10.02	16.69	49.18	-32.49
7	Ν	3.0234	24.50	QP	10.05	34.55	56.00	-21.45
8	Ν	3.0234	13.23	AVG	10.05	23.28	46.00	-22.72
9	Ν	13.4988	21.68	QP	10.18	31.86	60.00	-28.14
10	Ν	13.4988	8.46	AVG	10.18	18.64	50.00	-31.36
11	Ν	19.6452	19.73	QP	10.26	29.99	60.00	-30.01
12	Ν	19.6452	9.33	AVG	10.26	19.59	50.00	-30.41



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Test Data

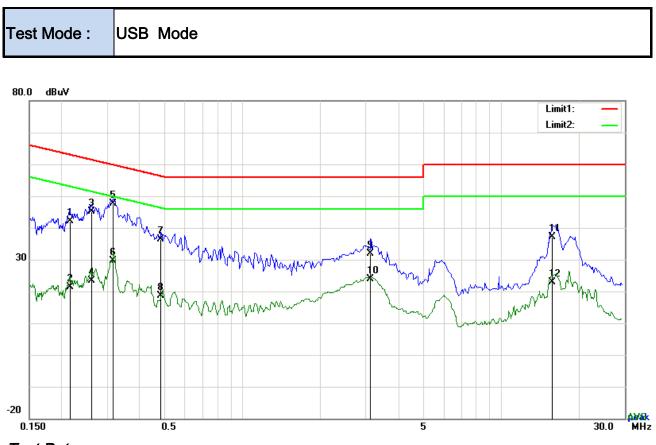
Phase Line Plot at 240Vac, 60H	Phase	ase Line	Plot at	: 240Vac,	60Hz
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No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.1656	36.95	QP	10.03	46.98	65.18	-18.20
2	L1	0.1656	12.86	AVG	10.03	22.89	55.18	-32.29
3	L1	0.2709	36.48	QP	10.03	46.51	61.09	-14.58
4	L1	0.2709	19.46	AVG	10.03	29.49	51.09	-21.60
5	L1	0.3035	35.88	QP	10.03	45.91	60.15	-14.24
6	L1	0.3035	18.75	AVG	10.03	28.78	50.15	-21.37
7	L1	0.5517	24.61	QP	10.03	34.64	56.00	-21.36
8	L1	0.5517	5.03	AVG	10.03	15.06	46.00	-30.94
9	L1	3.0624	19.55	QP	10.06	29.61	56.00	-26.39
10	L1	3.0624	13.71	AVG	10.06	23.77	46.00	-22.23
11	L1	16.1313	24.89	QP	10.24	35.13	60.00	-24.87
12	L1	16.1313	9.93	AVG	10.24	20.17	50.00	-29.83



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Test Data

Phase Neutral Plot at 240Vac, 60	Ηz
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No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	N	0.2151	32.12	QP	10.02	42.14	63.01	-20.87
2	Ν	0.2151	11.40	AVG	10.02	21.42	53.01	-31.59
3	Ν	0.2616	35.03	QP	10.02	45.05	61.38	-16.33
4	Ν	0.2616	13.30	AVG	10.02	23.32	51.38	-28.06
5	Ν	0.3177	37.61	QP	10.02	47.63	59.77	-12.14
6	Ν	0.3177	19.50	AVG	10.02	29.52	49.77	-20.25
7	Ν	0.4854	26.46	QP	10.02	36.48	56.25	-19.77
8	Ν	0.4854	8.67	AVG	10.02	18.69	46.25	-27.56
9	Ν	3.1365	21.89	QP	10.05	31.94	56.00	-24.06
10	Ν	3.1365	13.74	AVG	10.05	23.79	46.00	-22.21
11	Ν	15.7218	26.89	QP	10.21	37.10	60.00	-22.90
12	Ν	15.7218	12.65	AVG	10.21	22.86	50.00	-27.14



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6.2 Radiated Emissions

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

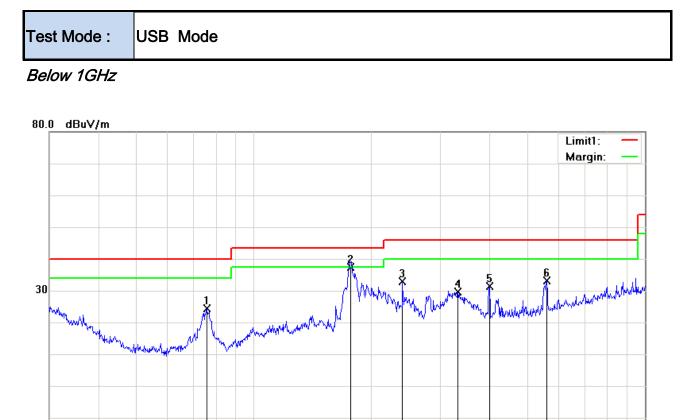
Requirement(s):

Spec	Item	em Requirement App						
47CFR§15.	a)	Except higher limit as specified else emissions from the low-power radic exceed the field strength levels spe the level of any unwanted emission the fundamental emission. The tigh edges	K					
109(d)	α)	Frequency range (MHz)	Field Strength (µV/m)					
		30 - 88	100					
		88 - 216	150					
		216 960	200					
		Above 960	500					
Test Setup		Ant. Tower Support Units Turn Table Socm Ground Plane Test Receiver						
Procedure	2.							

1			
SIEM	IIC	Test Report	16070923-FCC-E
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	over a ful	I rotation of the E	UT) was chosen.
	b. The EUT	was then rotated	to the direction that gave the maximum
	emission.		
	c. Finally, the mission	_	was adjusted to the height that gave the maximum
	3. The resolution ba	ndwidth and video	o bandwidth of test receiver/spectrum analyzer is
	120 kHz for Quas	iy Peak detection	at frequency below 1GHz.
	4. The resolution bar	ndwidth of test rec	eiver/spectrum analyzer is 1MHz and video
	bandwidth is 3MF 1GHz.	Iz with Peak dete	ction for Peak measurement at frequency above
	The resolution ba	andwidth of test re	eceiver/spectrum analyzer is 1MHz and the video
			Average Measurement as below at frequency
	above 1GHz.		
	■ 1 kHz (Duty cy	/cle < 98%) □ 10	Hz (Duty cycle > 98%)
	5. Steps 2 and 3 we	re repeated for th	e next frequency point, until all selected frequency
	points were meas	sured.	
Remark			
Result	Pass	Fail	
	Yes Yes (See below)	N/A N/A	
	Yes Yes (See below)	_	
		_	
		_	
		_	
		_	
		_	
		_	
		_	
		_	
		_	
		_	
		_	
		_	



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0 30.000 40 50 60 70 80 300 400 500 600 700 1000.0 MHz

Test Data

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Horizontal Polarity Plot @3m

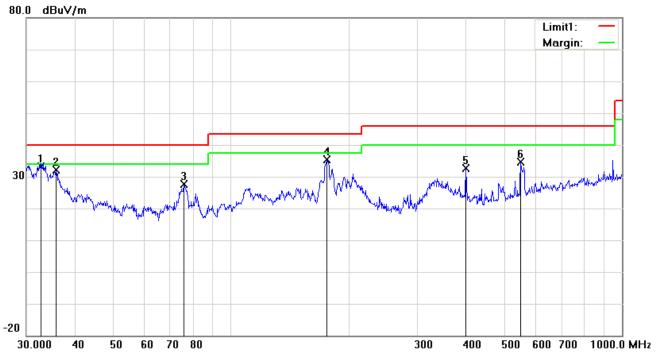
No.	P/L	Frequency	Readin g	Detector	Corrected	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/ m)		(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)
1	н	75.7114	38.12	peak	-13.74	24.38	40.00	-15.62	100	65
2	н	176.8878	46.93	QP	-9.64	37.29	43.50	-6.21	100	97
3	н	239.9873	42.03	peak	-9.10	32.93	46.00	-13.07	100	24
4	Н	332.5187	35.50	peak	-5.97	29.53	46.00	-16.47	100	254
5	Н	400.4319	35.69	peak	-4.29	31.40	46.00	-14.60	100	128
6	Н	560.6928	33.82	peak	-0.64	33.18	46.00	-12.82	100	360



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Test Data

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	V	32.6340	35.25	QP	-2.20	33.05	40.00	-6.95	100	238
2	V	35.7491	36.57	peak	-4.49	32.08	40.00	-7.92	100	108
3	V	75.7114	41.43	peak	-13.74	27.69	40.00	-12.31	100	92
4	V	175.6516	44.96	peak	-9.54	35.42	43.50	-8.08	100	56
5	V	399.0302	36.83	peak	-4.32	32.51	46.00	-13.49	100	360
6	V	550.9480	35.52	peak	-0.80	34.72	46.00	-11.28	100	0



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Above 1GHz

Frequency (MHz)	Amplitude (dBµV/m)	Azimuth	Height (cm)	Polarity (H/V)	Factors (dB)	Limit (dBµV/m)	Margin (dB)	Detector (PK/AV)
1522.47	50.57	87	166	V	-22.15	74	-23.43	PK
2033.58	49.34	95	121	V	-23.22	74	-24.66	PK
1645.72	50.26	65	169	V	-22.57	74	-23.74	PK
2169.15	49.66	77	170	Н	-23.33	74	-24.34	PK
2858.24	48.15	44	150	Н	-22.47	74	-25.85	PK
1877.35	50.33	88	141	Н	-22.44	74	-23.67	PK

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

Note2: 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	V			
Line Impedance Stabilization Network	LI-125A	191107	09/25/2015	09/24/2016	V			
LISN	ISN T800	34373	09/25/2015	09/24/2016	•			
Transient Limiter	LIT-153	531118	08/31/2016	08/30/2017				
Radiated Emissions								
EMI test receiver	ESL6	100262	09/17/2015	09/16/2016				
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	08/31/2016	08/30/2017	V			
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/24/2016	03/23/2017	V			
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/21/2015	09/20/2016	K			
Double Ridge Horn Antenna	AH-118	71259	09/24/2015	09/23/2016	K			

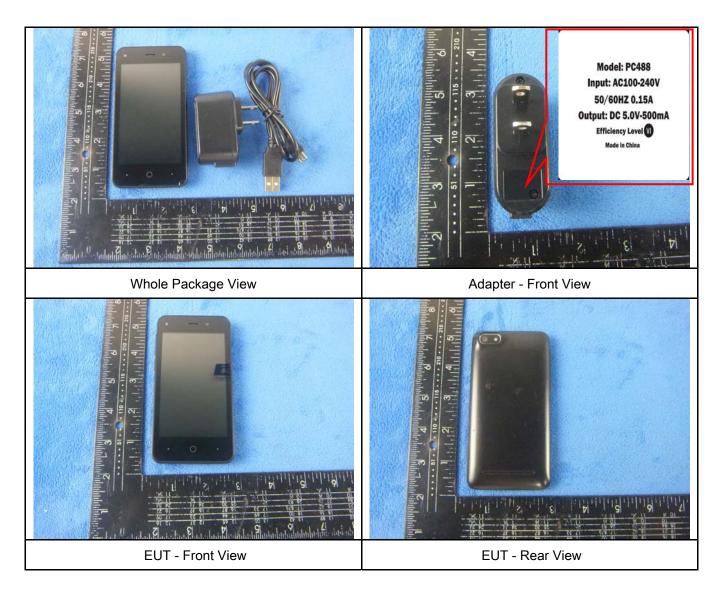


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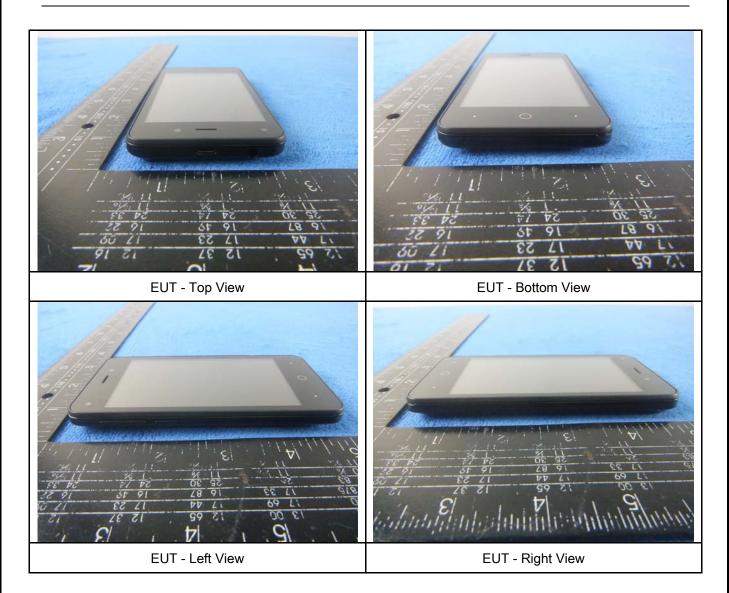
Annex B. EUT And Test Setup Photographs

Annex B.i. Photograph: EUT External Photo





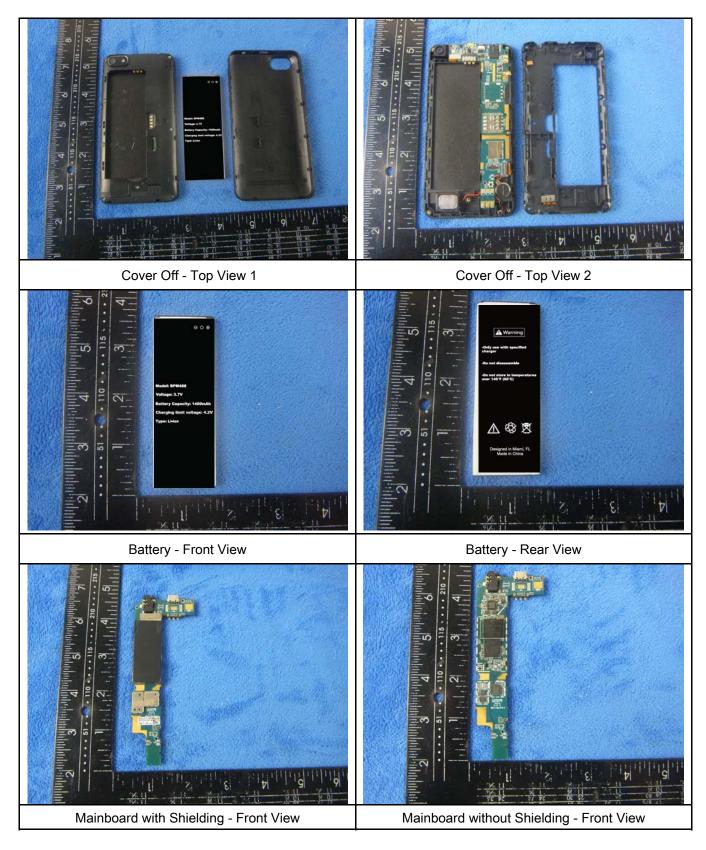
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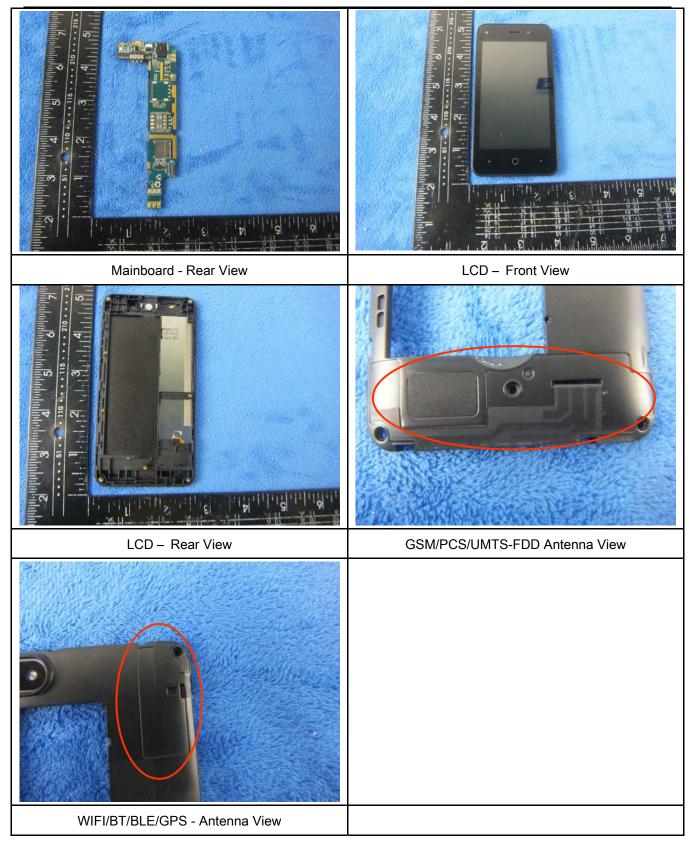
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Annex B.ii. Photograph: EUT Internal Photo





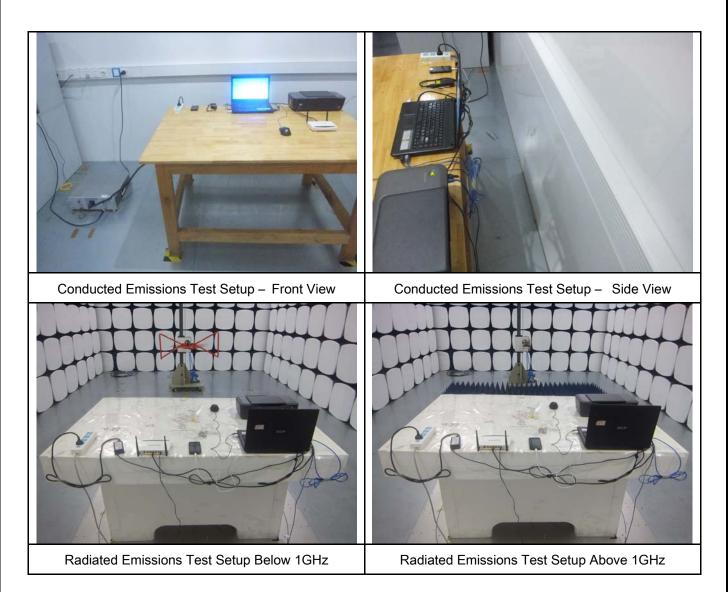
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Annex B.iii. Photograph: Test Setup Photo

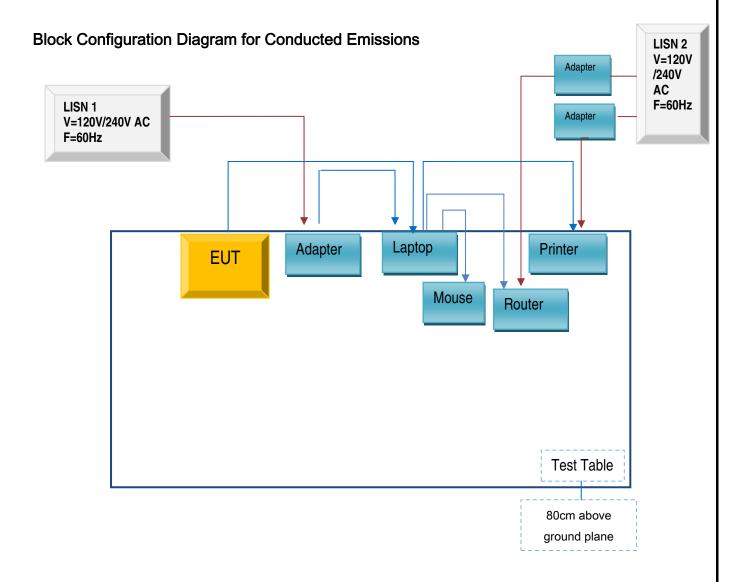




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Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

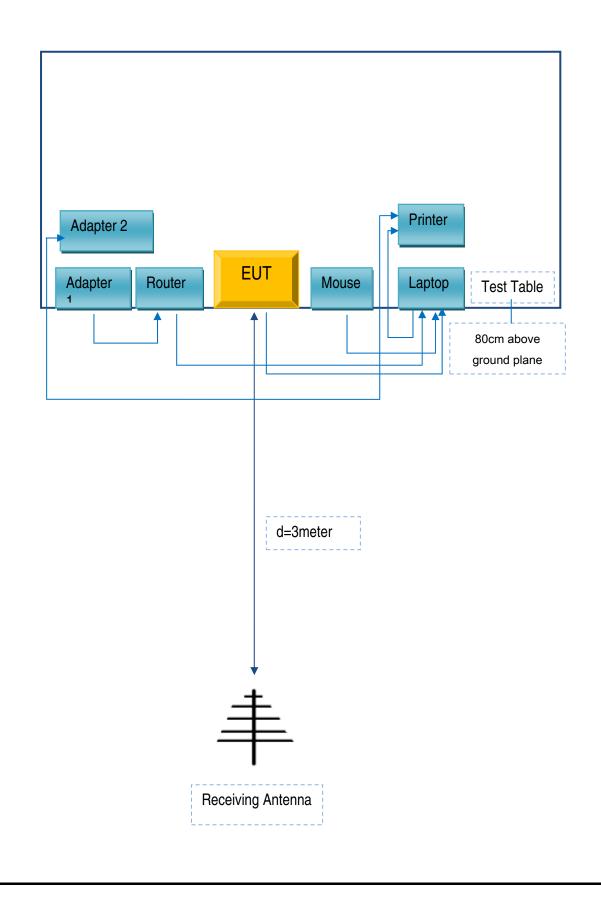
Annex C.ii. TEST SET UP BLOCK





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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	PC488	D2156273
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	CBA3000AH0C1
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 the attachment



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Annex E. DECLARATION OF SIMILARITY

N/A