EMC TEST REPORT



Report No.: 17070925-FCC-E
Supersede Report No: N/A

Applicant	SMT TELECOMM HK LIMITED				
Product Name	Mobile Pho	Mobile Phone			
Model No.	X422A	X422A			
Serial No.	N/A				
Test Standard	FCC Part 1	FCC Part 15 Subpart B Class B:2016, ANSI C63.4: 2014			
Test Date	September	September 20 to October 09, 2017			
Issue Date	October 10, 2017				
Test Result	Pass Fail				
Equipment compli	Equipment complied with the specification				
Equipment did not comply with the specification					
mas. He		David Huang			
Evans He 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
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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 EMC, RF, Telecom, SAR, Safety	
Australia		
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
17070925-FCC-E	NONE	Original	October 10, 2017

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.	535293	
IC Test Site No.	4842E-1	
Test Software of	Dadiated Emission Draways To Chamban v2 0	
Radiated Emission	Radiated Emission Program-To Shenzhen v2.0	
Test Software of	E7 FMC(venter 0244)	
Conducted Emission	EZ-EMC(ver.lcp-03A1)	



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4. Equipment under Test (EUT) Information

L	Description of EUT	:	Mobile Phone

Main Model: X422A

Serial Model: N/A

GSM850: -1.86dBi

PCS1900: -0.09dBi

UMTS-FDD Band V: -1.86dBi

Antenna Gain: UMTS-FDD Band IV: -0.16dBi

UMTS-FDD Band II: -0.09dBi

WIFI: 0.37dBi

Bluetooth/BLE: 0.37dBi

Antenna Type: PIFA Antenna

Adapter:

Model: PCX422

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

Output: DC 5.0V~500mA

Input Power:

Battery:

Model: BPX422

Battery Capacity: 3.7V, 1300mAh

Battery Voltage Limit: 4.2V

Equipment Category: JBP

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 IV TX:1712.4 ~ 1752.6 MHz;

RX: 2112.4 ~ 2152.6 MHz

RF Operating Frequency (ies):

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

GSM 850: 124CH PCS1900: 299CH

UMTS-FDD Band V: 102CH UMTS-FDD Band IV: 202CH

Number of Channels: UMTS-FDD Band II: 277CH

WIFI:802.11b/g/n(20M): 11CH

WIFI:802.11n(40M): 7CH

Bluetooth: 79CH

BLE: 40CH

Port: USB Port, Earphone Port

Trade Name: N/A

FCC ID: 2AIMEX422A

Date EUT received: September 20, 2017

Test Date(s): September 20 to October 09, 2017



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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

Parameter	Uncertainty		
AC Power Line Conducted Emissions	±3.11dB		
(150kHz~30MHz)	±3.110B		
Radiated Emission(30MHz~1GHz)	±5.12dB		
Radiated Emission(1GHz~6GHz)	±5.34dB		



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6. Measurements, Examination And Derived Results

6.1 AC Power Line Conducted Emissions

Temperature	26°C		
Relative Humidity	57%		
Atmospheric Pressure	1025mbar		
Test date :	September 25, 2017		
Tested By:	Evans He		

Requirement(s):

Spec	Item	Requirement Applicable						
47CFR§15.	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.				>			
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			sol Ground rence Plane	Test Receiver				
Procedure		EEUT and supporting eq			quirements of			
i roocaare	2. The power supply for the EUT was fed through a 50Ω /50mH EUT LISN, of filtered mains.				onnected to			



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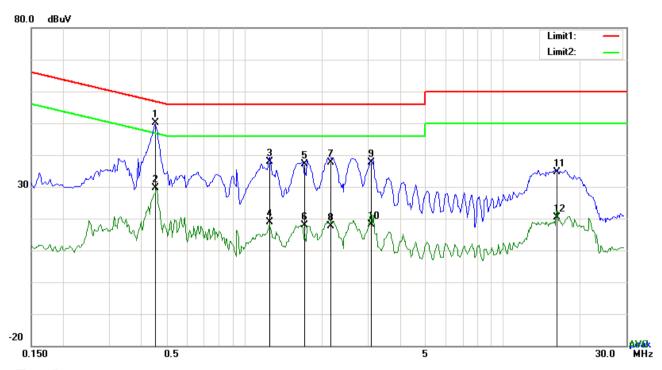
	3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss			
	coaxial cable.			
	4. All other supporting equipment were powered separately from another main supply.			
	5. The EUT was switched on and allowed to warm up to its normal operating condition.			
	6. A scan was made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



Test Data

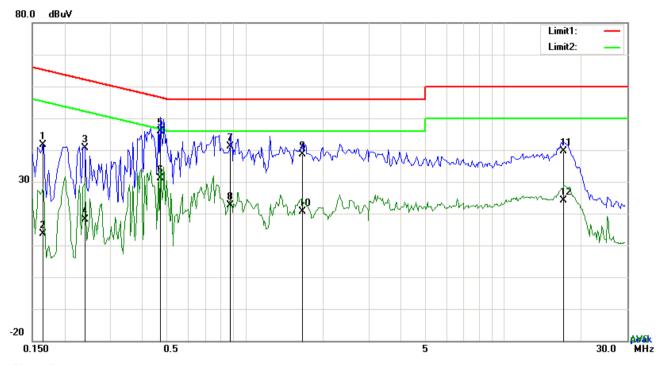
Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB)	(dBuV)	(dBuV)	(dB)
1	L1	0.4542	37.98	QP	12.07	50.05	56.80	-6.75
2	L1	0.4542	17.67	AVG	12.07	29.74	46.80	-17.06
3	L1	1.2537	26.44	QP	11.40	37.84	56.00	-18.16
4	L1	1.2537	7.39	AVG	11.40	18.79	46.00	-27.21
5	L1	1.7100	25.66	QP	11.40	37.06	56.00	-18.94
6	L1	1.7100	6.36	AVG	11.40	17.76	46.00	-28.24
7	L1	2.1663	26.11	QP	11.40	37.51	56.00	-18.49
8	L1	2.1663	6.16	AVG	11.40	17.56	46.00	-28.44
9	L1	3.1014	26.17	QP	11.40	37.57	56.00	-18.43
10	L1	3.1014	6.77	AVG	11.40	18.17	46.00	-27.83
11	L1	16.1664	20.16	QP	14.37	34.53	60.00	-25.47
12	L1	16.1664	6.02	AVG	14.37	20.39	50.00	-29.61



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Mode: USB Mode



Test Data

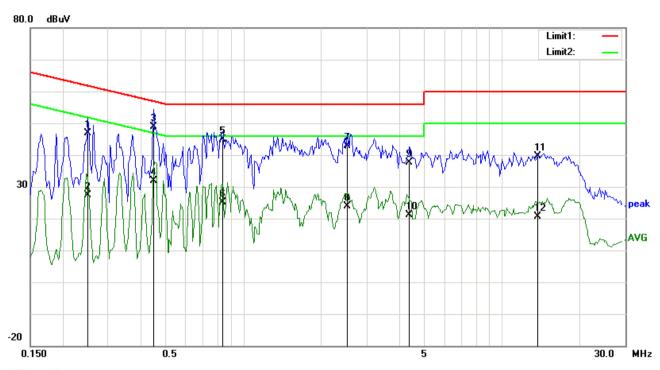
Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	N	0.1656	28.41	QP	13.14	41.55	65.18	-23.63
2	N	0.1656	0.38	AVG	13.14	13.52	55.18	-41.66
3	N	0.2397	27.68	QP	12.87	40.55	62.11	-21.56
4	N	0.2397	5.33	AVG	12.87	18.20	52.11	-33.91
5	N	0.4698	33.87	QP	12.01	45.88	56.52	-10.64
6	N	0.4698	19.11	AVG	12.01	31.12	46.52	-15.40
7	N	0.8793	29.60	QP	11.52	41.12	56.00	-14.88
8	N	0.8793	11.05	AVG	11.52	22.57	46.00	-23.43
9	N	1.6671	27.19	QP	11.40	38.59	56.00	-17.41
10	N	1.6671	9.12	AVG	11.40	20.52	46.00	-25.48
11	N	17.0205	25.14	QP	14.53	39.67	60.00	-20.33
12	Ν	17.0205	9.63	AVG	14.53	24.16	50.00	-25.84



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Test Mode : USB Mode



Test Data

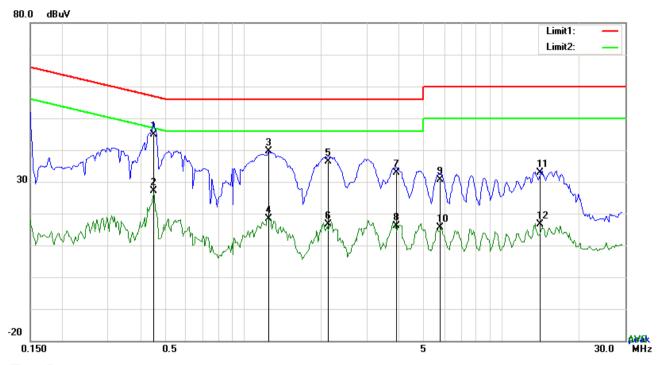
Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB)	(dBuV)	(dBuV)	(dB)
1	L1	0.2514	34.00	QP	12.82	46.82	61.71	-14.89
2	L1	0.2514	14.52	AVG	12.82	27.34	51.71	-24.37
3	L1	0.4503	36.80	QP	12.08	48.88	56.87	-7.99
4	L1	0.4503	19.83	AVG	12.08	31.91	46.87	-14.96
5	L1	0.8325	33.39	QP	11.57	44.96	56.00	-11.04
6	L1	0.8325	13.44	AVG	11.57	25.01	46.00	-20.99
7	L1	2.5212	31.48	QP	11.40	42.88	56.00	-13.12
8	L1	2.5212	12.47	AVG	11.40	23.87	46.00	-22.13
9	L1	4.4001	26.35	QP	11.40	37.75	56.00	-18.25
10	L1	4.4001	9.61	AVG	11.40	21.01	46.00	-24.99
11	L1	13.7367	25.81	QP	13.91	39.72	60.00	-20.28
12	L1	13.7367	6.72	AVG	13.91	20.63	50.00	-29.37



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Test Mode : USB 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	0.4503	32.69	QP	12.08	44.77	56.87	-12.10
2	N	0.4503	15.14	AVG	12.08	27.22	46.87	-19.65
3	N	1.2498	28.28	QP	11.43	39.71	56.00	-16.29
4	N	1.2498	6.94	AVG	11.43	18.37	46.00	-27.63
5	N	2.1273	24.84	QP	11.54	36.38	56.00	-19.62
6	N	2.1273	5.16	AVG	11.54	16.70	46.00	-29.30
7	N	3.9048	21.00	QP	11.76	32.76	56.00	-23.24
8	N	3.9048	4.34	AVG	11.76	16.10	46.00	-29.90
9	N	5.7885	18.50	QP	12.11	30.61	60.00	-29.39
10	N	5.7885	3.43	AVG	12.11	15.54	50.00	-34.46
11	N	14.0994	18.91	QP	13.98	32.89	60.00	-27.11
12	Ν	14.0994	2.71	AVG	13.98	16.69	50.00	-33.31



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6.2 Radiated Emissions

Temperature	26°C
Relative Humidity	57%
Atmospheric Pressure	1025mbar
Test date :	September 25, 2017
Tested By :	Evans He

Requirement(s):

Spec	Item	Requirement Applicable				
47CFR§15. 109(d)	Except higher limit as specified elsewhere in other section, the emissions from the low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges Frequency range (MHz) Field Strength (µV/m) 30 - 88 100 88 - 216 150		\			
		88 – 216 216 - 960	200			
		Above 960	500			
Test Setup	Ant. Tower Support Units Turn Table 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: Vertical or horizontal polarization (whichever gave the higher emission level 					



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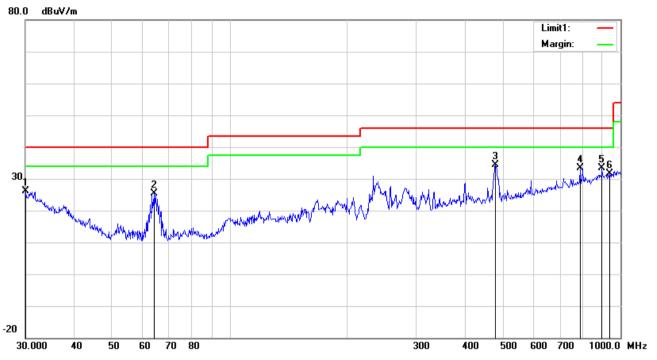
		over a full rotation of the EUT) was chosen.
	b.	The EUT was then rotated to the direction that gave the maximum
		emission.
	C.	Finally, the antenna height was adjusted to the height that gave the maximum
		emission.
	3. The re	solution bandwidth and video bandwidth of test receiver/spectrum analyzer is
	120 kH	z for Quasiy Peak detection at frequency below 1GHz.
	4. The res	olution bandwidth of test receiver/spectrum analyzer is 1MHz and video
	bandw	idth is 3MHz with Peak detection for Peak measurement at frequency above
	1GHz.	
	The re	esolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video
	bandv	vidth with Peak detection for Average Measurement as below at frequency
	above	e 1GHz.
	■ 1 kł	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	were measured.
Remark		
Result	Pass	☐ Fail
Test Data	Yes	N/A
Test Plot	Yes (See belo	ow) N/A



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Test Mode : USB Mode

Below 1GHz



Test Data

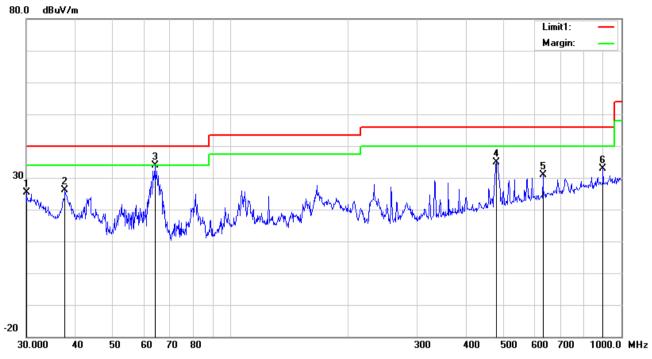
Horizontal Polarity Plot @3m

No.	P/L	Frequency	Reading	Detector	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/m)		(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	(cm)	(°)
1	I	30.1054	26.56	peak	21.32	22.28	0.62	26.22	40.00	-13.78	100	265
2	Н	63.9828	39.54	peak	7.50	22.40	0.85	25.49	40.00	-14.51	200	29
3	Н	478.8456	36.71	peak	17.28	21.85	2.30	34.44	46.00	-11.56	100	285
4	Н	787.8513	30.31	peak	21.25	21.18	2.94	33.32	46.00	-12.68	100	183
5	Н	896.9965	28.86	peak	22.47	20.89	3.06	33.50	46.00	-12.50	100	32
6	Н	938.8326	26.55	peak	22.69	20.81	3.15	31.58	46.00	-14.42	100	284



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Below 1GHz



Test Data

Vertical Polarity Plot @3m

No.	P/L	Frequency	Reading	Detector	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/m)		(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	(cm)	(°)
1	٧	30.0000	25.61	peak	21.40	22.28	0.62	25.35	40.00	-14.65	100	201
2	٧	37.6798	32.05	peak	15.59	22.27	0.78	26.15	40.00	-13.85	100	351
3	>	63.9828	47.86	QP	7.50	22.40	0.85	33.81	40.00	-6.19	200	21
4	>	478.8456	37.26	peak	17.28	21.85	2.30	34.99	46.00	-11.01	100	165
5	٧	629.4772	30.44	peak	19.42	21.52	2.57	30.91	46.00	-15.09	100	15
6	٧	896.9965	28.14	peak	22.47	20.89	3.06	32.78	46.00	-13.22	100	315



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Above 1GHz

Frequency	Read_level	A - Joseph	Height	Polarity	Level	Factors	Limit	Margin	Detector
(MHz)	(dBµV/m)	Azimuth	(cm)	(H/V)	(dBµV/m)	(dB)	(dBµV/m)	(dB)	(PK/AV)
1429.8	62.13	134	100	V	-18.97	43.16	74	-30.84	PK
1647.3	65.37	115	100	V	-17.76	47.61	74	-26.39	PK
2106.5	58.77	208	100	V	-14.49	44.28	74	-29.72	PK
1328.9	66.7	36	100	Н	-19.36	47.34	74	-26.66	PK
1751.4	63.67	305	100	Н	-16.76	46.91	74	-27.09	PK
2633.8	58.59	197	100	Н	-13.31	45.28	74	-28.72	PK

Note 1: The highest frequency of the EUT is 2480 MHz, so the testing has been conformed to 5*2480 MHz=12,400 MHz.

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 Emis	ssions				
EMI test receiver	ESCS30	8471241027	09/15/2017	09/14/2018	<
Line Impedance Stabilization Network	LI-125A	191106	09/23/2017	09/22/2018	<u><</u>
Line Impedance Stabilization Network	LI-125A	191107	09/23/2017	09/22/2018	V
ISN	ISN T800	34373	09/23/2017	09/22/2018	<
Transient Limiter	LIT-153	531118	08/30/2017	08/29/2018	<u><</u>
Radiated Emissions					
EMI test receiver	ESL6	100262	09/15/2017	09/14/2018	~
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	08/30/2017	08/29/2018	(
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/23/2017	03/22/2018	<u>\</u>
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/19/2017	09/18/2018	>
Double Ridge Horn Antenna	AH-118	71259	09/22/2017	09/21/2018	<u><</u>



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Annex B. EUT And Test Setup Photographs

Annex B.i. Photograph: EUT External Photo



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Annex B.ii. Photograph: EUT Internal Photo



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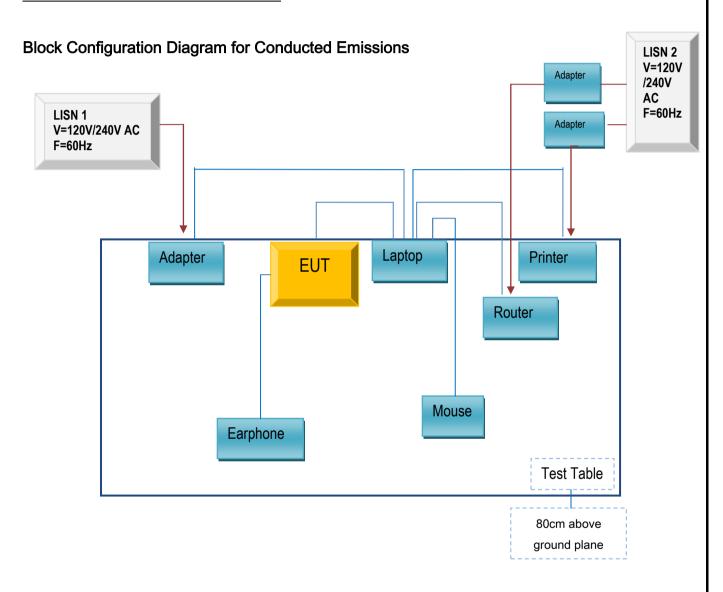
Annex B.iii. Photograph: Test Setup Photo



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Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

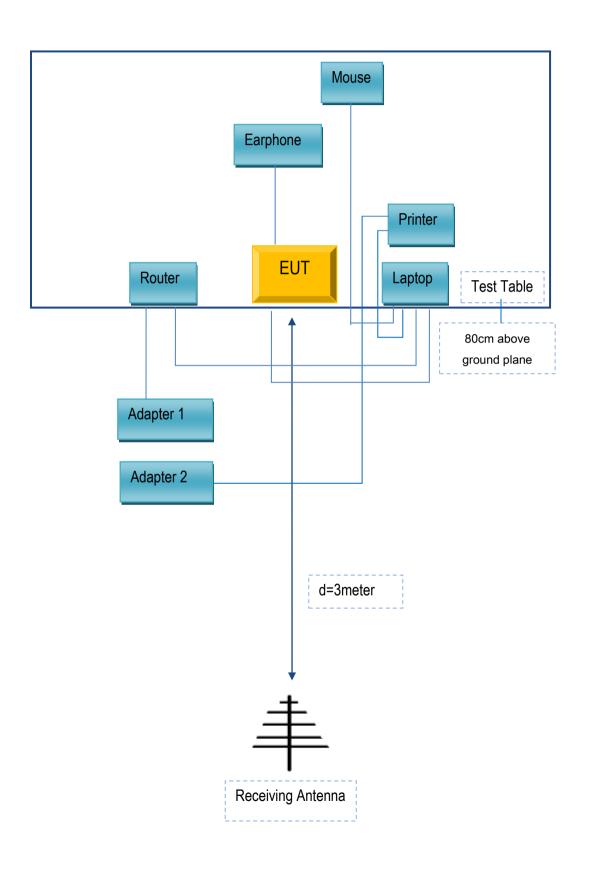
Annex C.ii. TEST SET UP BLOCK





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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
Lenovo	AC Adapter	42T4416	21D9JU
HP	Printer	VCVRA-1003	CN36M19JWX
DELL	Mouse	E100	912NMTUT41481
BULL	Socket	GN-403	GN201203
SMT TELECOMM HK LIMITED	Earphone	X422A	N/A

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