


EMC TEST REPORT



Report No.: 17071342-FCC-E

Supersede Report No: N/A

Applicant	SMT TELECOMM HK LIMITED	
Product Name	Mobile Phone	
Model No.	BLAZE X500	
Serial No.	N/A	
Test Standard	FCC Part 15 Subpart B Class B:2016, ANSI C63.4: 2014	
Test Date	December 15, 2017 to January 07, 2018	
Issue Date	January 08, 2018	
Test Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Equipment complied with the specification <input checked="" type="checkbox"/>		
Equipment did not comply with the specification <input type="checkbox"/>		
		
Evans He Test Engineer	David Huang 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

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Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety

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1. Report Revision History

Report No.	Report Version	Description	Issue Date
17071342-FCC-E	NONE	Original	January 08, 2018

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
Lab Address	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park 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 Radiated Emission	Radiated Emission Program-To Shenzhen v2.0
Test Software of Conducted Emission	EZ-EMC(ver.lcp-03A1)

4. Equipment under Test (EUT) Information

Description of EUT:	Mobile Phone
Main Model:	BLAZE X500
Serial Model:	N/A
Antenna Gain:	GSM850: 3.24dBi PCS1900: 3.02dBi UMTS-FDD Band V: 3.16dBi UMTS-FDD Band IV: 3.27dBi UMTS-FDD Band II: 3.14dBi WIFI: 2.64dBi Bluetooth/BLE: 2.64dBi GPS: 2.47dBi
Antenna Type:	PIFA antenna
Input Power:	Adapter: Model: PCX500 Input: AC100-240V~50/60Hz,0.15A Output: DC 5.0V-700mAh Battery Model: BPX500 Voltage: 3.7V/ 7.4Wh Battery Capacity: 2000mAh Charging Limited Voltage: 4.2V
Equipment Category :	JBP
Type of Modulation:	GSM / GPRS: GMSK EGPRS: GMSK UMTS-FDD: QPSK 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;
 RX: 1932.4 ~ 1987.6 MHz
 RF Operating Frequency (ies): UMTS-FDD Band IV TX: 1712.4 ~ 1752.6 MHz;
 RX : 2112.4 ~ 2152.6 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

GSM 850: 124CH
 PCS1900: 299CH
 UMTS-FDD Band V: 102CH
 UMTS-FDD Band IV: 202CH
 UMTS-FDD Band II: 277CH
 WIFI :802.11b/g/n(20M): 11CH
 WIFI :802.11n(40M): 7CH
 Bluetooth: 79CH
 BLE: 40CH
 GPS:1CH

Port: USB Port, Earphone Port

Trade Name : N/A

FCC ID: 2AIMEX500

Date EUT received: December 15, 2017

Test Date(s): December 15, 2017 to January 07, 2018

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 (150kHz~30MHz)	±3.11dB
Radiated Emission(30MHz~1GHz)	±5.12dB
Radiated Emission(1GHz~6GHz)	±5.34dB

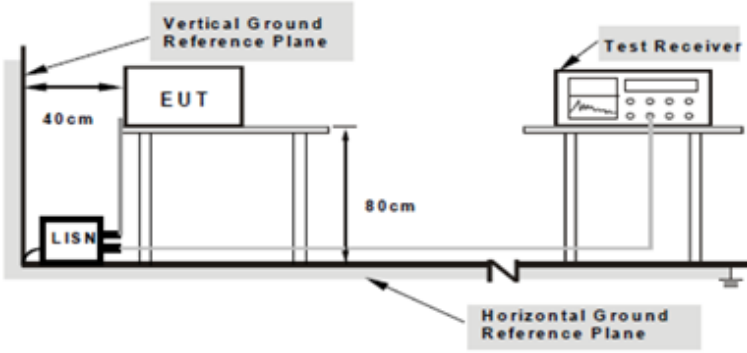
6. Measurements, Examination And Derived Results

6.1 AC Power Line Conducted Emissions

Temperature	23°C
Relative Humidity	54%
Atmospheric Pressure	1020mbar
Test date :	December 28, 2017
Tested By :	Evans He

Requirement(s):

Spec	Item	Requirement	Applicable														
47CFR§15.107	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.															
		<table><tr><th rowspan="2">Frequency ranges (MHz)</th><th colspan="2">Limit (dBµV)</th></tr><tr><th>QP</th><th>Average</th></tr><tr><td>0.15 ~ 0.5</td><td>66 – 56</td><td>56 – 46</td></tr><tr><td>0.5 ~ 5</td><td>56</td><td>46</td></tr><tr><td>5 ~ 30</td><td>60</td><td>50</td></tr></table>		Frequency ranges (MHz)	Limit (dBµV)		QP	Average	0.15 ~ 0.5	66 – 56	56 – 46	0.5 ~ 5	56	46	5 ~ 30	60	50
		Frequency ranges (MHz)			Limit (dBµV)												
				QP	Average												
		0.15 ~ 0.5		66 – 56	56 – 46												
		0.5 ~ 5		56	46												
5 ~ 30	60	50															

Test Setup	 <p>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.</p>
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Procedure	<ol style="list-style-type: none"> 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 50Ω /50mH EUT LISN, connected to filtered mains.
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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	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test Mode 1:	USB Mode
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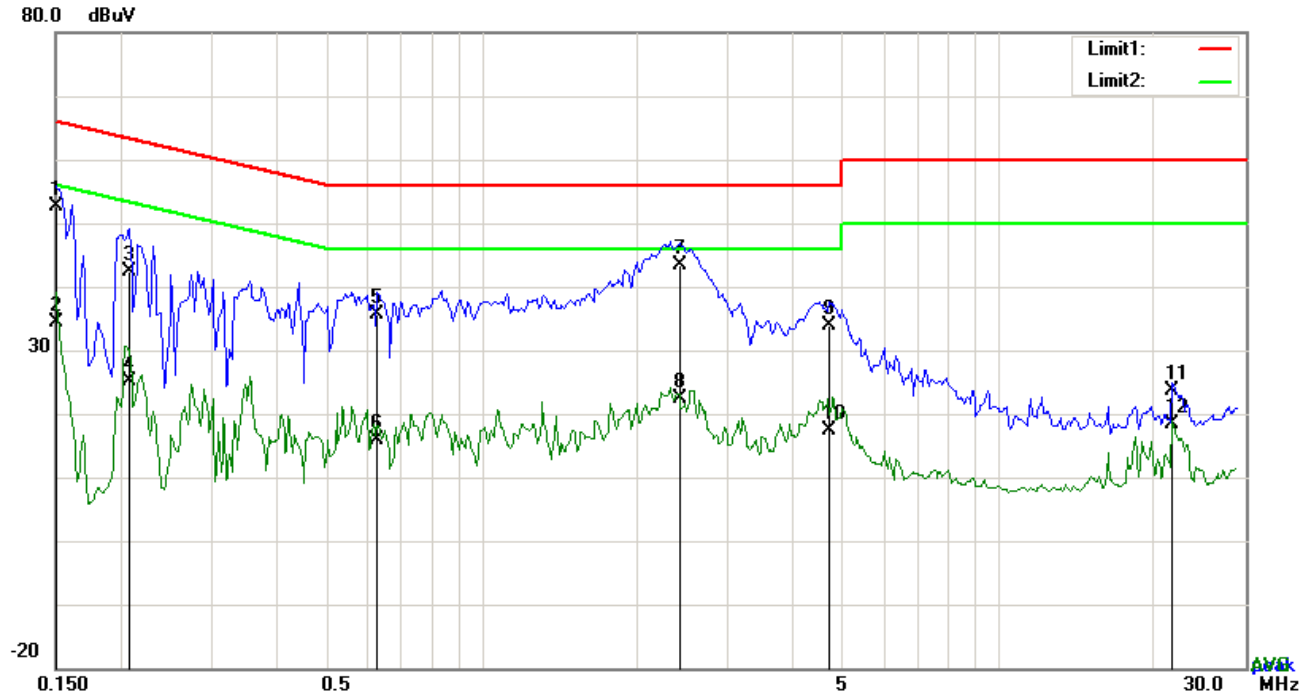
Test Mode 2:	MP4 Mode
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Test Mode 3:	Camera Mode
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Test Mode 4:	FM Mode
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Note: All modes were investigated, the results below show only the worst case(USB mode).

Test Mode 1:	USB Mode
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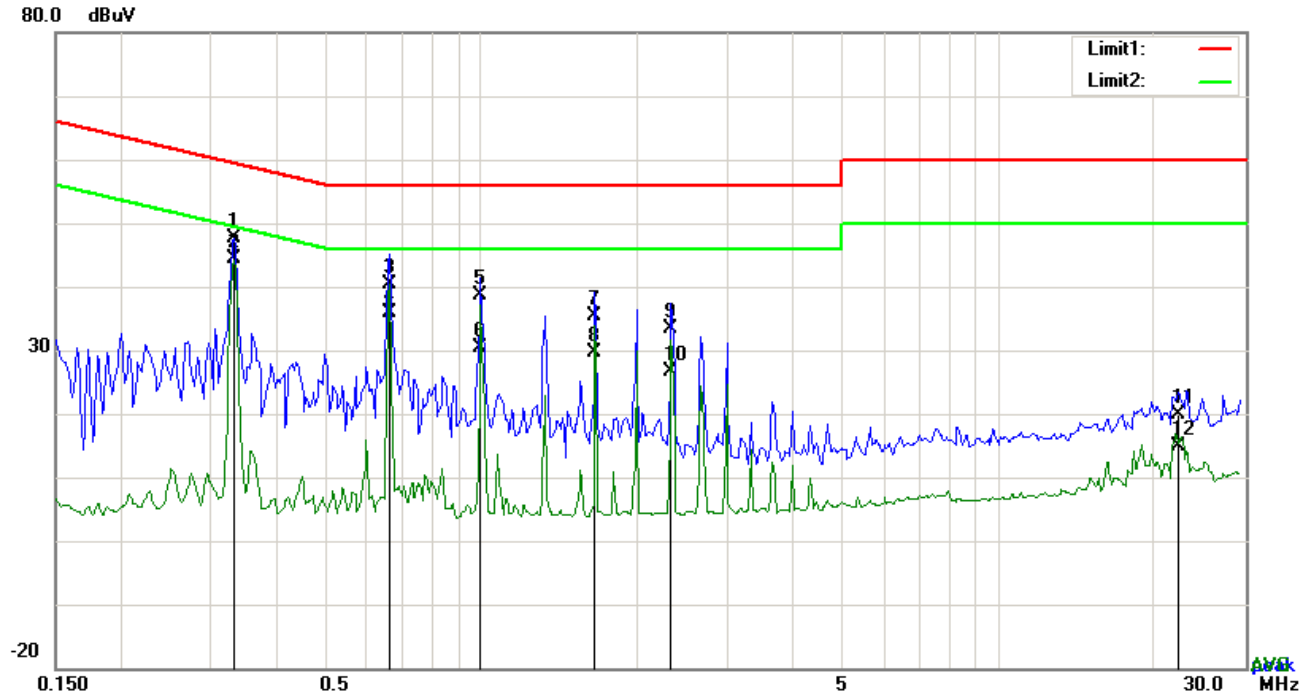


Test Data

Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB)	(dBuV)	(dBuV)	(dB)
1	L1	0.1500	42.52	QP	10.03	52.55	66.00	-13.45
2	L1	0.1500	24.42	AVG	10.03	34.45	56.00	-21.55
3	L1	0.2085	32.31	QP	10.03	42.34	63.26	-20.92
4	L1	0.2085	15.13	AVG	10.03	25.16	53.26	-28.10
5	L1	0.6297	25.64	QP	10.03	35.67	56.00	-20.33
6	L1	0.6297	5.87	AVG	10.03	15.90	46.00	-30.10
7	L1	2.4159	33.31	QP	10.05	43.36	56.00	-12.64
8	L1	2.4159	12.26	AVG	10.05	22.31	46.00	-23.69
9	L1	4.6965	23.76	QP	10.08	33.84	56.00	-22.16
10	L1	4.6965	7.22	AVG	10.08	17.30	46.00	-28.70
11	L1	21.6654	13.35	QP	10.33	23.68	60.00	-36.32
12	L1	21.6654	8.10	AVG	10.33	18.43	50.00	-31.57

Test Mode 1:	USB Mode
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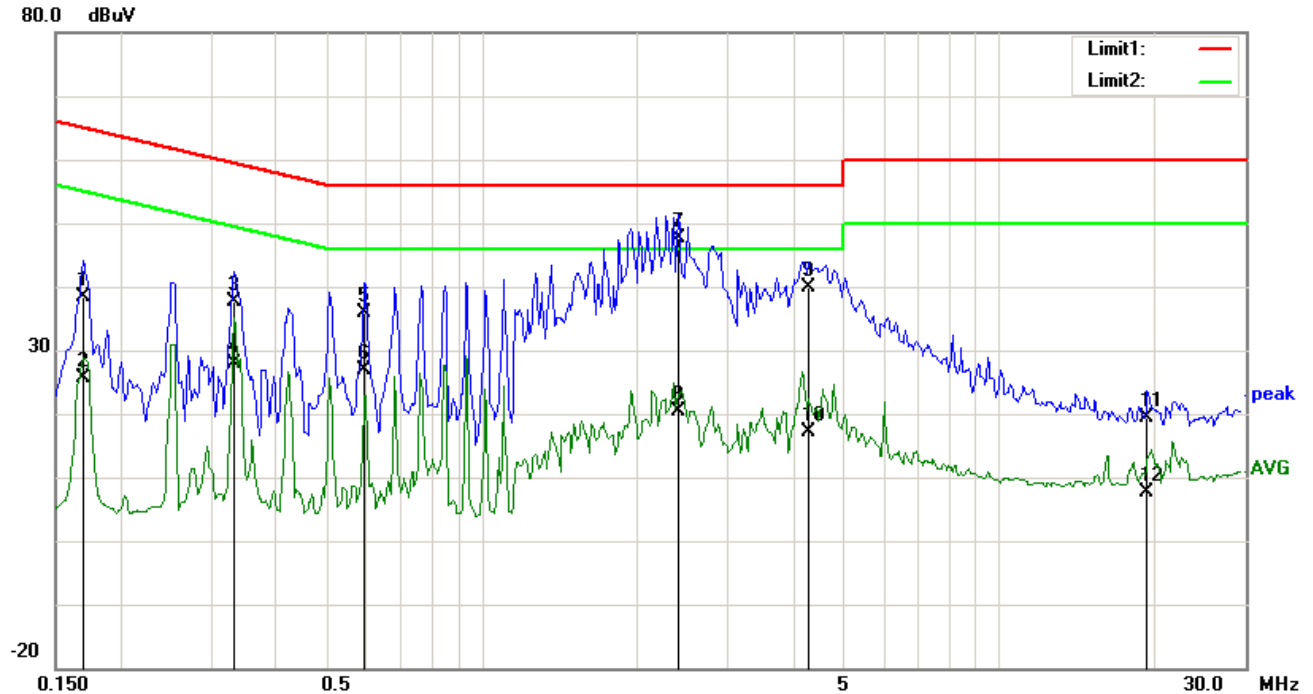


Test Data

Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	N	0.3333	37.62	QP	10.02	47.64	59.37	-11.73
2	N	0.3333	34.47	AVG	10.02	44.49	49.37	-4.88
3	N	0.6648	30.38	QP	10.02	40.40	56.00	-15.60
4	N	0.6648	25.97	AVG	10.02	35.99	46.00	-10.01
5	N	0.9963	28.66	QP	10.03	38.69	56.00	-17.31
6	N	0.9963	20.25	AVG	10.03	30.28	46.00	-15.72
7	N	1.6593	25.25	QP	10.04	35.29	56.00	-20.71
8	N	1.6593	19.55	AVG	10.04	29.59	46.00	-16.41
9	N	2.3301	23.22	QP	10.04	33.26	56.00	-22.74
10	N	2.3301	16.69	AVG	10.04	26.73	46.00	-19.27
11	N	22.2114	9.51	QP	10.30	19.81	60.00	-40.19
12	N	22.2114	4.69	AVG	10.30	14.99	50.00	-35.01

Test Mode 1:	USB Mode
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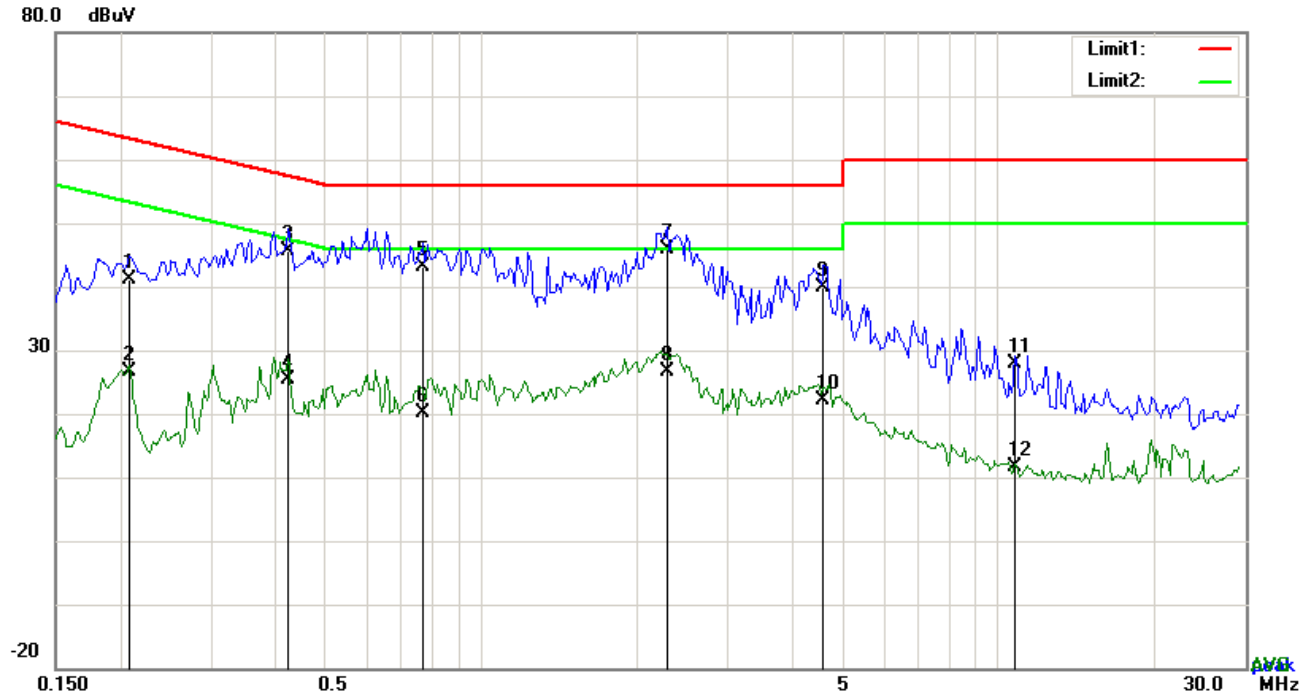


Test Data

Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.1695	28.46	QP	10.03	38.49	64.98	-26.49
2	L1	0.1695	15.69	AVG	10.03	25.72	54.98	-29.26
3	L1	0.3333	27.62	QP	10.03	37.65	59.37	-21.72
4	L1	0.3333	17.83	AVG	10.03	27.86	49.37	-21.51
5	L1	0.5946	25.74	QP	10.03	35.77	56.00	-20.23
6	L1	0.5946	16.94	AVG	10.03	26.97	46.00	-19.03
7	L1	2.4003	37.70	QP	10.05	47.75	56.00	-8.25
8	L1	2.4003	10.24	AVG	10.05	20.29	46.00	-25.71
9	L1	4.2831	29.85	QP	10.07	39.92	56.00	-16.08
10	L1	4.2831	7.17	AVG	10.07	17.24	46.00	-28.76
11	L1	19.4073	9.08	QP	10.29	19.37	60.00	-40.63
12	L1	19.4073	-2.54	AVG	10.29	7.75	50.00	-42.25

Test Mode 1: USB Mode



Test Data


Phase Neutral Plot at 240Vac, 60Hz

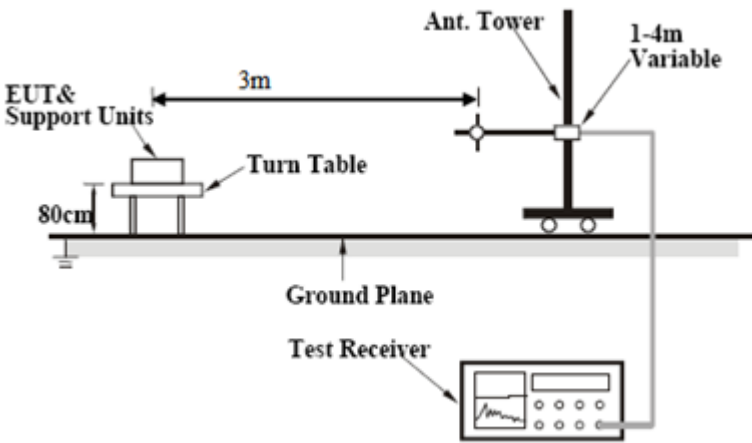
No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	N	0.2085	31.02	QP	10.02	41.04	63.26	-22.22
2	N	0.2085	16.54	AVG	10.02	26.56	53.26	-26.70
3	N	0.4230	35.63	QP	10.02	45.65	57.39	-11.74
4	N	0.4230	15.29	AVG	10.02	25.31	47.39	-22.08
5	N	0.7740	33.07	QP	10.03	43.10	56.00	-12.90
6	N	0.7740	10.16	AVG	10.03	20.19	46.00	-25.81
7	N	2.2950	35.79	QP	10.04	45.83	56.00	-10.17
8	N	2.2950	16.63	AVG	10.04	26.67	46.00	-19.33
9	N	4.5834	29.74	QP	10.07	39.81	56.00	-16.19
10	N	4.5834	11.95	AVG	10.07	22.02	46.00	-23.98
11	N	10.7688	17.65	QP	10.15	27.80	60.00	-32.20
12	N	10.7688	1.49	AVG	10.15	11.64	50.00	-38.36

6.2 Radiated Emissions

Temperature	23°C
Relative Humidity	54%
Atmospheric Pressure	1020mbar
Test date :	December 28, 2017
Tested By :	Evans He

Requirement(s):

Spec	Item	Requirement	Applicable	
47CFR§15.109(d)	a)	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
		216 - 960		200
		Above 960		500

Test Setup	
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Procedure	<ol style="list-style-type: none"> 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: <ol style="list-style-type: none"> Vertical or horizontal polarization (whichever gave the higher emission level
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	<p>over a full rotation of the EUT) was chosen.</p> <p>b. The EUT was then rotated to the direction that gave the maximum emission.</p> <p>c. Finally, the antenna height was adjusted to the height that gave the maximum emission.</p> <p>3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi Peak detection at frequency below 1GHz.</p> <p>4. 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.</p> <p>The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth with Peak detection for Average Measurement as below at frequency above 1GHz.</p> <p>■ 1 kHz (Duty cycle < 98%) □ 10 Hz (Duty cycle > 98%)</p> <p>5. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.</p>
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test Mode 1:	USB Mode
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Test Mode 2:	MP4 Mode
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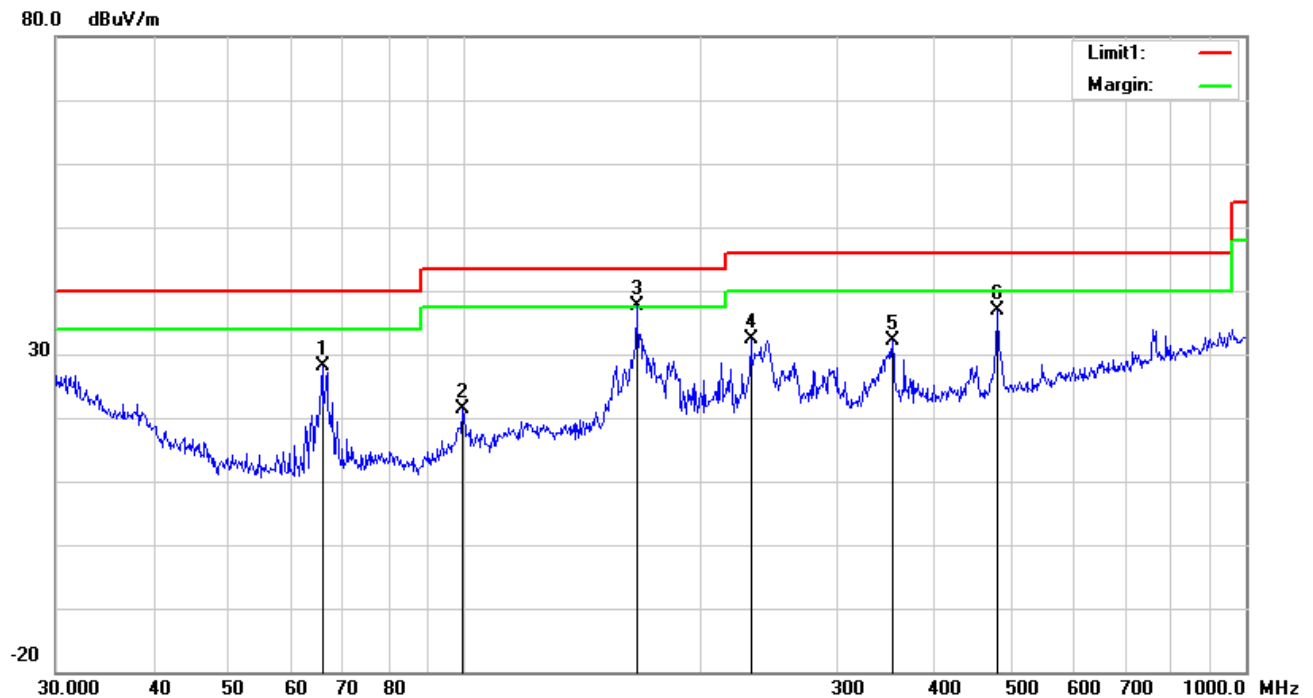
Test Mode 3:	Camera Mode
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Test Mode 4:	FM Mode
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Note: All modes were investigated, the results below show only the worst case(USB mode).

Test Mode 1: USB Mode

Below 1GHz

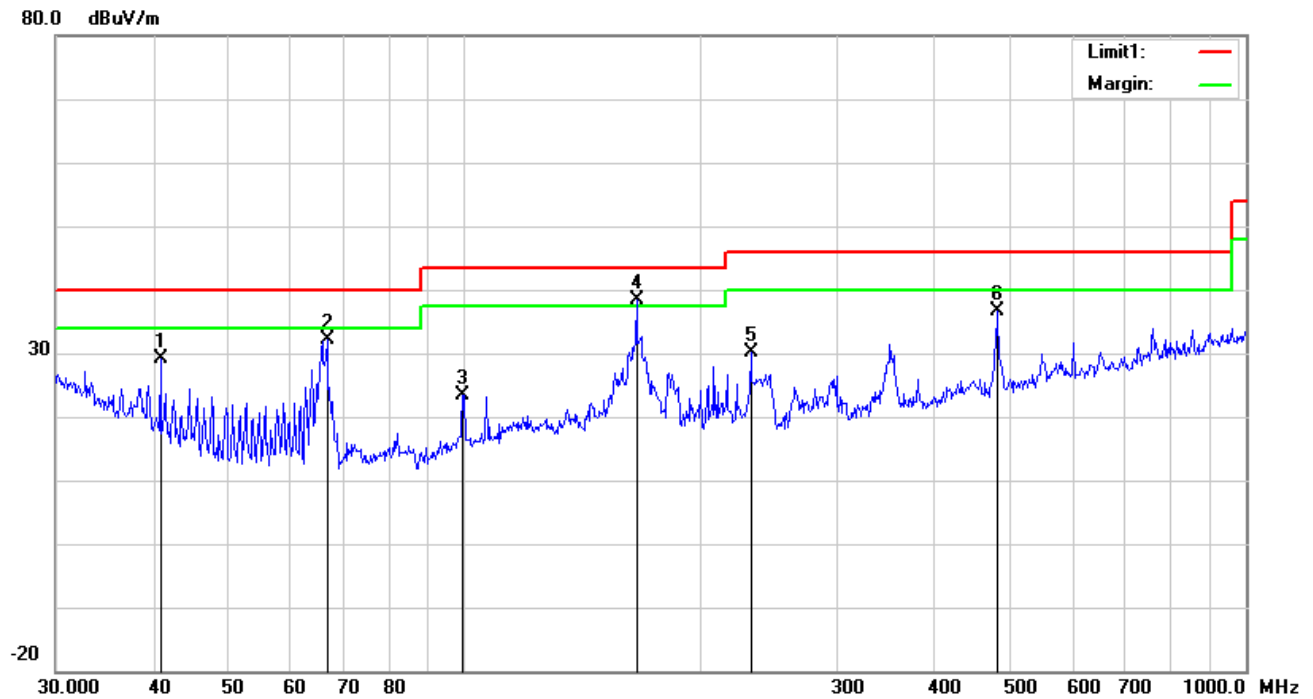


Test Data

Horizontal Polarity Plot @3m

No.	P/L	Frequency (MHz)	Reading (dBuV/m)	Detector	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)
1	H	65.8031	41.98	peak	7.59	22.39	0.90	28.08	40.00	-11.92	100	139
2	H	99.5281	32.21	peak	10.29	22.32	1.11	21.29	43.50	-22.21	100	291
3	H	166.0680	46.53	QP	12.11	22.26	1.37	37.75	43.50	-5.75	100	29
4	H	232.5318	41.30	peak	11.64	22.32	1.64	32.26	46.00	-13.74	100	311
5	H	352.9434	37.41	peak	14.71	22.14	2.04	32.02	46.00	-13.98	100	269
6	H	480.5276	39.08	peak	17.31	21.85	2.31	36.85	46.00	-9.15	100	332

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	V	40.8446	37.20	peak	13.34	22.28	0.78	29.04	40.00	-10.96	100	204
2	V	66.7325	45.92	peak	7.64	22.39	0.91	32.08	40.00	-7.92	200	20
3	V	99.5281	34.27	peak	10.29	22.32	1.11	23.35	43.50	-20.15	100	125
4	V	166.0680	47.08	QP	12.11	22.26	1.37	38.30	43.50	-5.20	100	129
5	V	232.5318	39.12	peak	11.64	22.32	1.64	30.08	46.00	-15.92	100	154
6	V	480.5276	38.93	peak	17.31	21.85	2.31	36.70	46.00	-9.30	100	71

Above 1GHz

Frequency (MHz)	Read_level (dBμV/m)	Azimuth	Height (cm)	Polarity (H/V)	Level (dBμV/m)	Factors (dB)	Limit (dBμV/m)	Margin (dB)	Detector (PK/AV)
1234.47	68.52	107	100	V	-19.83	48.69	74	-25.31	PK
1768.96	64.52	165	100	V	-17.24	47.28	74	-26.72	PK
2184.79	62.21	75	100	V	-14.35	47.86	74	-26.14	PK
1253.08	63.63	3	100	H	-19.38	44.25	74	-29.75	PK
1998.22	61.99	2	100	H	-15.1	46.89	74	-27.11	PK
2723.79	60.76	297	100	H	-13.41	47.35	74	-26.65	PK

*Note1: The highest frequency of the EUT is 2480 MHz, so the testing has been conformed to 5*2480MHz
=12,400MHz.*

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.

Annex A. TEST INSTRUMENT

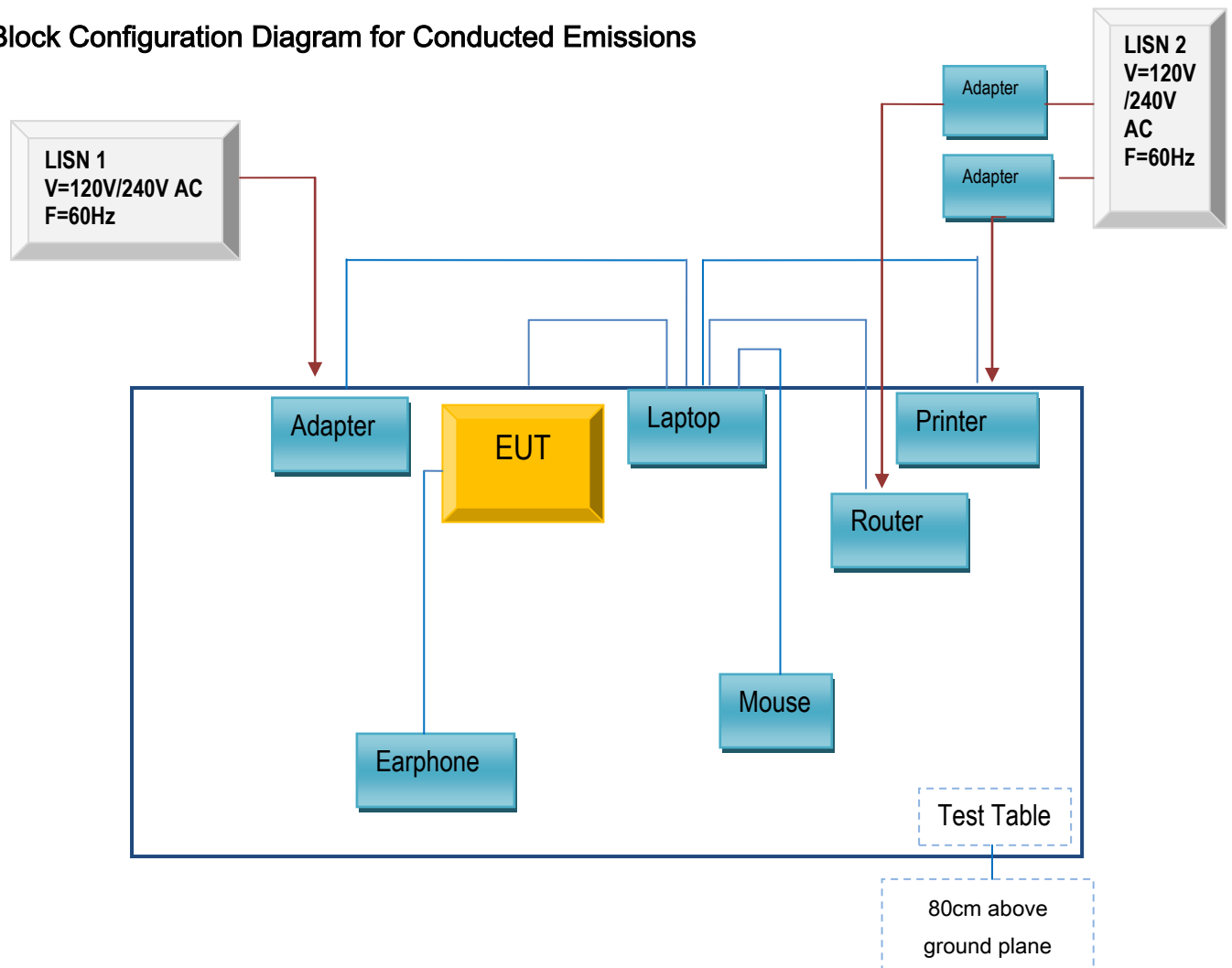
Instrument	Model	Serial #	Cal Date	Cal Due	In use
AC Line Conducted Emissions					
EMI test receiver	ESCS30	8471241027	09/15/2017	09/14/2018	<input checked="" type="checkbox"/>
Line Impedance Stabilization Network	LI-125A	191106	09/23/2017	09/22/2018	<input checked="" type="checkbox"/>
Line Impedance Stabilization Network	LI-125A	191107	09/23/2017	09/22/2018	<input checked="" type="checkbox"/>
LISN	ISN T800	34373	09/23/2017	09/22/2018	<input checked="" type="checkbox"/>
Transient Limiter	LIT-153	531118	08/30/2017	08/29/2018	<input checked="" type="checkbox"/>
Radiated Emissions					
EMI test receiver	ESL6	100262	09/15/2017	09/14/2018	<input checked="" type="checkbox"/>
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	08/30/2017	08/29/2018	<input checked="" type="checkbox"/>
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/23/2017	03/22/2018	<input checked="" type="checkbox"/>
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/19/2017	09/18/2018	<input checked="" type="checkbox"/>
Double Ridge Horn Antenna	AH-118	71259	09/22/2017	09/21/2018	<input checked="" type="checkbox"/>

Annex B. EUT And Test Setup Photographs

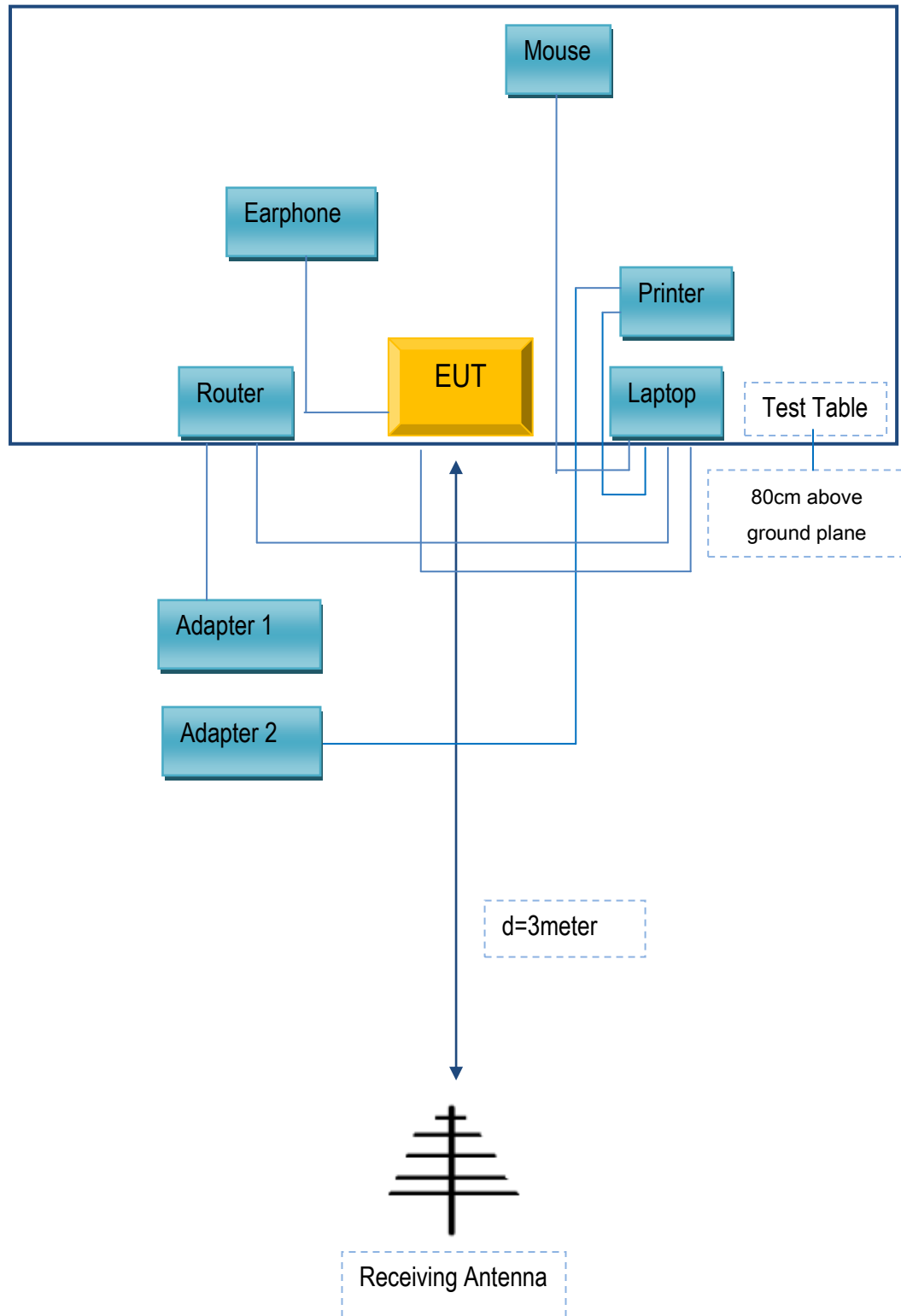
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

Block Configuration Diagram for Conducted Emissions



Block Configuration Diagram for Radiated Emissions



Annex C. ii. 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
N/A	Earphone	N/A	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

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

Please see the attachment

Annex E. DECLARATION OF SIMILARITY

N/A