

FCC

EMC

TEST REPORT

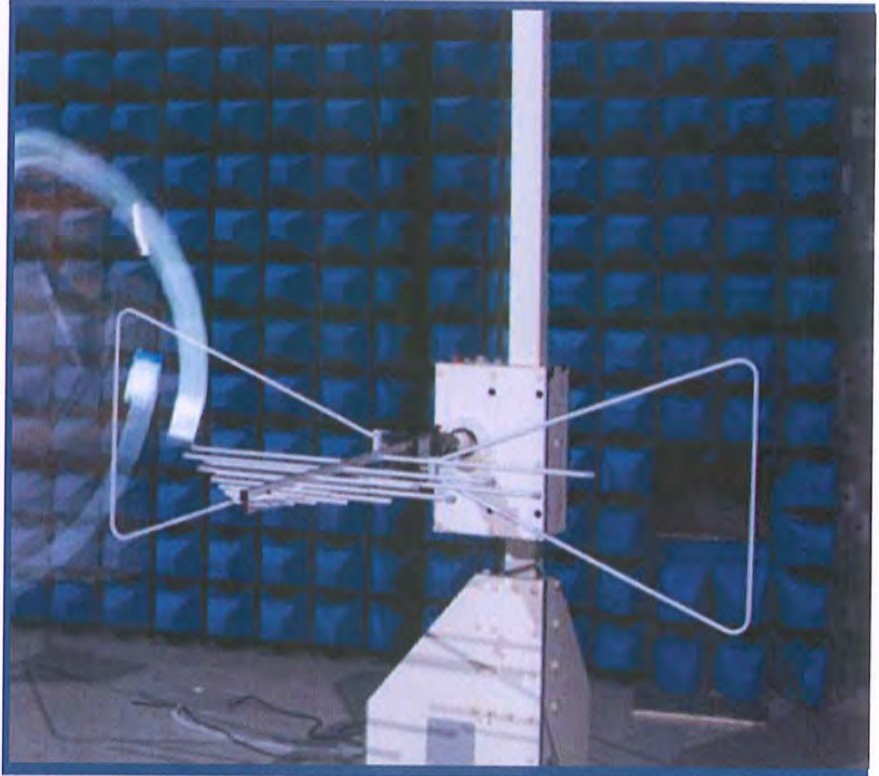
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
HUAWEI MateBook

ISSUED TO
Huawei Technologies Co., Ltd.

Administration Building, Headquarters of Huawei Technologies Co.,
Ltd., Bantian, Longgang District, Shenzhen, 518129, China



Tested by: Xia Long
Xia Long
(Engineer)

Date: Jan. 22, 2019

Approved by: Wei Yanguan
Wei Yanguan
(Chief Engineer)

Date: Jan. 22, 2019

Report No.:	BL-SZ18C0049-401
EUT Name:	HUAWEI MateBook
Model Name:	KLV-W09, KLV-W19, KLV-W29
Brand Name:	HUAWEI
Test Standard:	47 CFR Part 15 Subpart B
FCC ID:	QISKLV-WX9
Test Conclusion:	Pass
Test Date:	Dec. 05, 2018 ~ Dec. 14, 2018
Date of Issue:	Jan. 22, 2019

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Revision History

<u>Version</u>	<u>Issue Date</u>	<u>Revisions Content</u>
<u>Rev. 01</u>	<u>Jan. 22, 2019</u>	<u>Initial Issue</u>

TABLE OF CONTENTS

1	GENERAL INFORMATION.....	4
1.1	Identification of the Testing Laboratory.....	4
1.2	Identification of the Responsible Testing Location.....	4
1.3	Laboratory Condition.....	4
1.4	Announce.....	4
2	PRODUCT INFORMATION.....	5
2.1	Applicant Information.....	5
2.2	Manufacturer Information.....	5
2.3	Factory Information.....	5
2.4	General Description for Equipment under Test (EUT).....	5
2.5	Differences Description.....	5
2.6	Ancillary Equipment.....	6
2.7	Technical Information.....	7
3	SUMMARY OF TEST RESULTS.....	8
3.1	Test Standards.....	8
3.2	Verdict.....	8
3.3	Test Uncertainty.....	8
4	GENERAL TEST CONFIGURATIONS.....	9
4.1	Test Environments.....	9
4.2	Test Equipment List.....	9
4.3	Test Enclosure list.....	11
4.4	Test Configurations.....	12
4.5	Test Setups.....	13
4.6	Test Conditions.....	15
5	TEST ITEMS.....	16
5.1	Emission Tests.....	16

ANNEX A TEST RESULTS..... 18

 A.1 Radiated Emission 18

 A.2 Conducted Emission 25

ANNEX B TEST SETUP PHOTOS 28

ANNEX C EUT EXTERNAL PHOTOS 28

ANNEX D EUT INTERNAL PHOTOS..... 28

1 GENERAL INFORMATION

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co.,Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100
Fax Number	+86 755 6182 4271

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co.,Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	<p>The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1.</p> <p>The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.</p> <p>The laboratory is a testing organization accredited by American Association for Laboratory Accreditation(A2LA) according to ISO/IEC 17025.The accreditation certificate is 4344.01.</p> <p>The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.</p>
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Laboratory Condition

Ambient Temperature	20°C to 25°C
Ambient Relative Humidity	45% to 55%
Ambient Pressure	100 kPa to 102 kPa

1.4 Announce

- (1) The test report refer to the BALUN report mode v6.7.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
- (5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.
- (6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Huawei Technologies Co., Ltd.
Address	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, China

2.2 Manufacturer Information

Manufacturer	Huawei Technologies Co., Ltd.
Address	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, China

2.3 Factory Information

Factory	NA
Address	NA

2.4 General Description for Equipment under Test (EUT)

EUT Name	HUAWEI MateBook
Model Name Under Test	KLV-W09, KLV-W19, KLV-W29
Series Model Name	KLV-WXXXXX (The "X" in model name can be 0 to 9, A to Z, a to z, "-" or blank, only differences are model names for trading purpose)
Description of Model name differentiation	Refer section 2.5
Hardware Version	NB8510_PCB_MB_V5 HF
Software Version	1.5.0.10(C001)
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.5 Differences Description

	KLV-W29 (with GPU version)	KLV-W19 (with GPU version)	KLV-W19 (without GPU version)	KLV-W09 (without GPU version)
PCB layout	The same	The same	The same	The same
Main board	The same	The same	Delete GPU chip and related components	Delete GPU chip and related components
Frequency bands	The same, Support Wi-Fi 2.4G&5G, Support BT	The same, Support Wi-Fi 2.4G&5G, Support BT	The same, Support Wi-Fi 2.4G&5G, Support BT	The same, Support Wi-Fi 2.4G&5G, Support BT
BT/Wi-Fi	The same	The same	The same	The same

antenna				
Appearance	The same	The same	The same	The same
Dimension	The same	The same	The same	The same
CPU	Intel core i7, Support Max 4.6GHz	Intel core i5, Support Max 3.9GHz	Intel core i5, Support Max 3.9GHz	Intel core i3, Support Max 3.9GHz
GPU	Support	Support	Not support	Not support
Memory	16G/8G	8G	8G	4G
SSD	512G/256G	512G/256G	512G/256G	256G
Rear camera	Not support	Not support	Not support	Not support
Front camera	The same	The same	The same	The same
Adapter	The same	The same	The same	The same
Battery	The same	The same	The same	The same
Accessories	Docking Station	Docking Station	Docking Station	Docking Station

Note 1: The models KLV-W29, KLV-W19 and KLV-W09 are identical each other, except model name and main board and memory and CPU and GPU and SSD.

Note 2: Tested all mode on model KLV-W19, the model KLV-W29 and KLV-W09 test the worst case of each item on KLV-W19.

2.6 Ancillary Equipment

Ancillary Equipment 1	Rechargeable Li-ion Polymer Battery	
	Brand Name	HUAWEI
	Model No.	HB4593R1ECW
	Serial No.	N/A
	Capacity	7410 mAh
	Rated Voltage	7.6 V
	Limit Charge Voltage	8.7 V
Ancillary Equipment 2	Adapter 1	
	Brand Name	HUAWEI
	Model No.	HW-200325BP0 (UK Plug)
	Serial No.	C978Y9J7F00037
	Rated Input	100-240 V~, 1.8 A, 50/60 Hz
	Rated Output	5 V= 2 A / 9 V= 2 A / 12 V= 2 A / 15 V= 3 A / 20 V= 3.25 A
	Manufacturer	Huawei Technologies Co.,Ltd.
Ancillary Equipment 3	Adapter 2	
	Brand Name	HUAWEI
	Model No.	HW-200325UP0 (US Plug)
	Serial No.	C976Y1J8P00105
	Rated Input	100-240 V~, 1.8 A, 50/60 Hz
	Rated Output	5 V= 2 A / 9 V= 2 A / 12 V= 2 A / 15 V= 3 A / 20 V= 3.25 A

	Manufacturer	Huawei Technologies Co.,Ltd.
Ancillary Equipment 4	Adapter 3	
	Brand Name	HUAWEI
	Model No.	HW-200325EP0 (EU Plug)
	Serial No.	C974Y1J8W01169
	Rated Input	100-240 V~, 1.8 A, 50/60 Hz
	Rated Output	5 V= 2 A / 9 V= 2 A / 12 V= 2 A / 15 V= 3 A / 20 V= 3.25 A
	Manufacturer	Huawei Technologies Co.,Ltd.
Ancillary Equipment 5	Adapter 4	
	Brand Name	HUAWEI
	Model No.	HW-200325CP0 (GB Plug)
	Serial No.	C973Y1J7800783
	Rated Input	100-240 V~, 1.8 A, 50/60 Hz
	Rated Output	5 V= 2 A / 9 V= 2 A / 12 V= 2 A / 15 V= 3 A / 20 V= 3.25 A
	Manufacturer	Huawei Technologies Co.,Ltd.
Ancillary Equipment 6	Adapter 5	
	Brand Name	HUAWEI
	Model No.	HW-200325AP0 (AU Plug)
	Serial No.	C973Y1J7800783
	Rated Input	100-240 V~, 1.8 A, 50/60 Hz
	Rated Output	5 V= 2 A / 9 V= 2 A / 12 V= 2 A / 15 V= 3 A / 20 V= 3.25 A
	Manufacturer	Huawei Technologies Co.,Ltd.
Ancillary Equipment 7	Docking Station	
	Model No.	AD11
	Serial No.	N/A
	Manufacturer	Huawei Technologies Co.,Ltd.
Ancillary Equipment 8	USB-C to USB-A	
Ancillary Equipment 9	USB Cable	
	Length (Approx.)	1.8 m
Note: All adapter models only with different plug for marketing purpose. We select HW-200325UP0 (US Plug) during testing.		

2.7 Technical Information

Network and Wireless connectivity	WIFI, Bluetooth
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3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	FCC 47 CFR Part 15 Subpart B (10-1-17 Edition)	Unintentional Radiators
2	ANSI C63.4-2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low- Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

3.2 Verdict

No.	Description	FCC Rule	Test Verdict	Result
1	Radiated Emission	15.109	Pass	Annex A .1
2	Conducted Emission, AC Ports	15.107	Pass	Annex A .2

3.3 Test Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Value
Conducted emissions (9 kHz-30 MHz)	3.23 dB
Radiated emissions (30 MHz-1 GHz)	4.30 dB
Radiated emissions (1 GHz-18 GHz)	4.81 dB
Radiated emissions (18 GHz-40 GHz)	5.71 dB

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

Environment Parameter	Selected Values During Tests			
	Temperature	Voltage	Relative Humidity	Ambient Pressure
Normal Temperature, Normal Voltage (NTNV)	23°C to 25°C	AC 120 V/60 Hz or DC 7.6 V from Battery	50% to 55%	100 kPa to 102 kPa

4.2 Test Equipment List

Radiated Emission Test For Frequency Below 1 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2018.06.13	2019.06.12	<input checked="" type="checkbox"/>
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-977	2017.07.22	2019.07.21	<input checked="" type="checkbox"/>
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	9120D-1600	2018.07.11	2020.07.10	<input type="checkbox"/>
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60 *7.35m	N/A	2018.08.08	2019.08.07	<input checked="" type="checkbox"/>
Test Software	BALUN	BL410_E	V18.705	--	--	<input checked="" type="checkbox"/>

Radiated Emission Test For Frequency 1 GHz-18 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2018.11.07	2019.11.06	<input checked="" type="checkbox"/>
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2017.07.22	2019.07.21	<input type="checkbox"/>
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	9120D-1148	2018.07.11	2020.07.10	<input checked="" type="checkbox"/>
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2017.02.21	2019.02.20	<input checked="" type="checkbox"/>
Test Software	BALUN	BL410_E	V18.717	--	--	<input checked="" type="checkbox"/>

Radiated Emission Test For Frequency Above 18 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE & SCHWARZ	FSV40	101544	2018.2.16	2019.2.15	<input checked="" type="checkbox"/>
Test Antenna-Horn	A-INFOMW	LB-180400KF	J211060273	2017.01.06	2019.01.05	<input checked="" type="checkbox"/>
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2017.02.21	2019.02.20	<input checked="" type="checkbox"/>
Test Software	BALUN	BL410_E	V18.717	--	--	<input checked="" type="checkbox"/>

Conducted Emission Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2018.06.13	2019.06.12	<input checked="" type="checkbox"/>
LISN	SCHWARZBECK	NSLK 8127	8127-687	2018.06.13	2019.06.12	<input checked="" type="checkbox"/>
LISN	SCHWARZBECK	NNLK 8129	8129-462	2018.11.07	2019.11.06	<input type="checkbox"/>
ISN	TESEQ	ISN T800	34449	2017.12.05	2019.12.04	<input type="checkbox"/>
Shielded Enclosure	ChangNing	CN-130701	130703	N/A	N/A	<input checked="" type="checkbox"/>
Test Software	BALUN	BL410_E	V18.717	--	--	<input checked="" type="checkbox"/>

4.3 Test Enclosure list

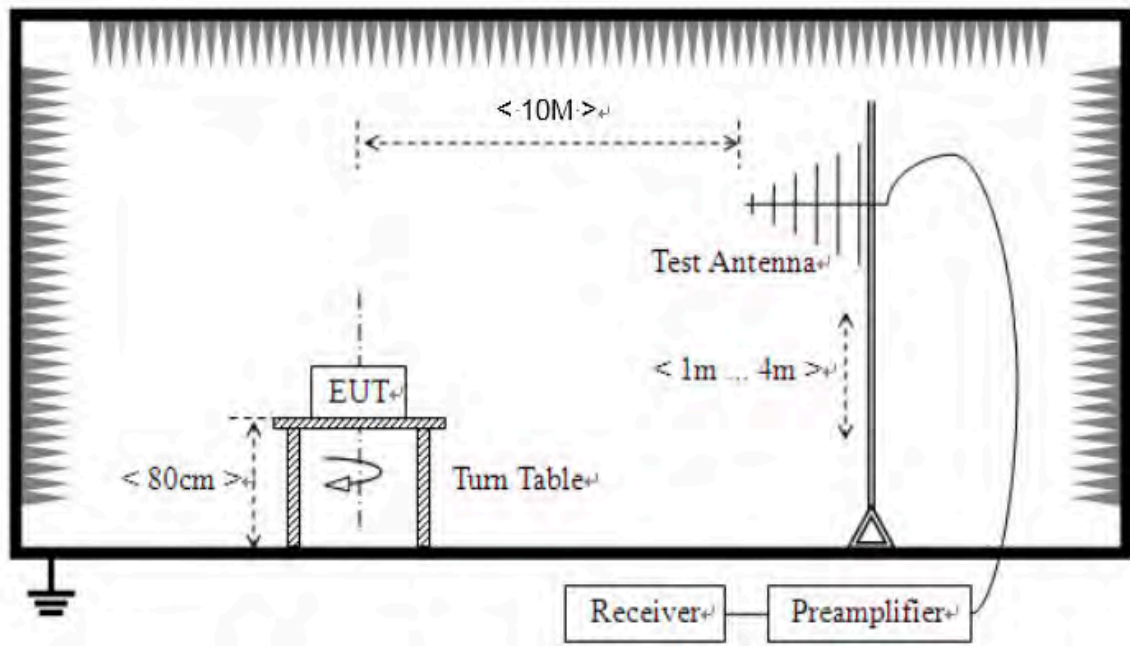
Description	Manufacturer	Model	Serial No.	Length	Description	Use
Laptop	Lenovo	E31-80	R3026PU9	N/A	N/A	<input checked="" type="checkbox"/>
Mobile Disk	WD Element	WDBUZG0010BB K	WXA1A48LD 5JT	N/A	N/A	<input checked="" type="checkbox"/>
HDMI Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input checked="" type="checkbox"/>
Earphone	N/A	N/A	N/A	1.1 m	N/A	<input checked="" type="checkbox"/>
Mouse	Lenovo	MOEUUOA	44NV838	N/A	N/A	<input checked="" type="checkbox"/>
Display Screen	Dell	U241HB	N/A	N/A	N/A	<input checked="" type="checkbox"/>
Display Screen	ASUS	MX27U	H9LMRS0334 74	N/A	N/A	<input checked="" type="checkbox"/>
TYPE-C to USB Connector	UGREEN	N/A	N/A	N/A	N/A	<input checked="" type="checkbox"/>

4.4 Test Configurations

Test Mode	
Mode 1:	Charging + Earphone + Mobile Disk + Video Playing + WIFI + BT ON + Burn-in test
Mode 2:	Charging + HDMI + Mobile Disk(USB 3.0) + Mouse(USB 2.0) + Burn-in test
Mode 3:	Charging + Camera
Mode 4:	Charging + Date Transmitting + Mobile Disk + Camera on + Earphone + Video Playing + WIFI + BT ON + Burn-in test + HDMI
Mode 5:	Date Transmitting + Mobile Disk + Camera on + Earphone + Video Playing + WIFI + BT ON + Burn-in test + Dock (Charging + USB-A + HDMI Playing)
Mode 6:	Date Transmitting + Mobile Disk + Camera on + Earphone + HDMI + Video Playing + WIFI + BT ON + Burn-in test + USB-C to USB-A(Mobile Disk)

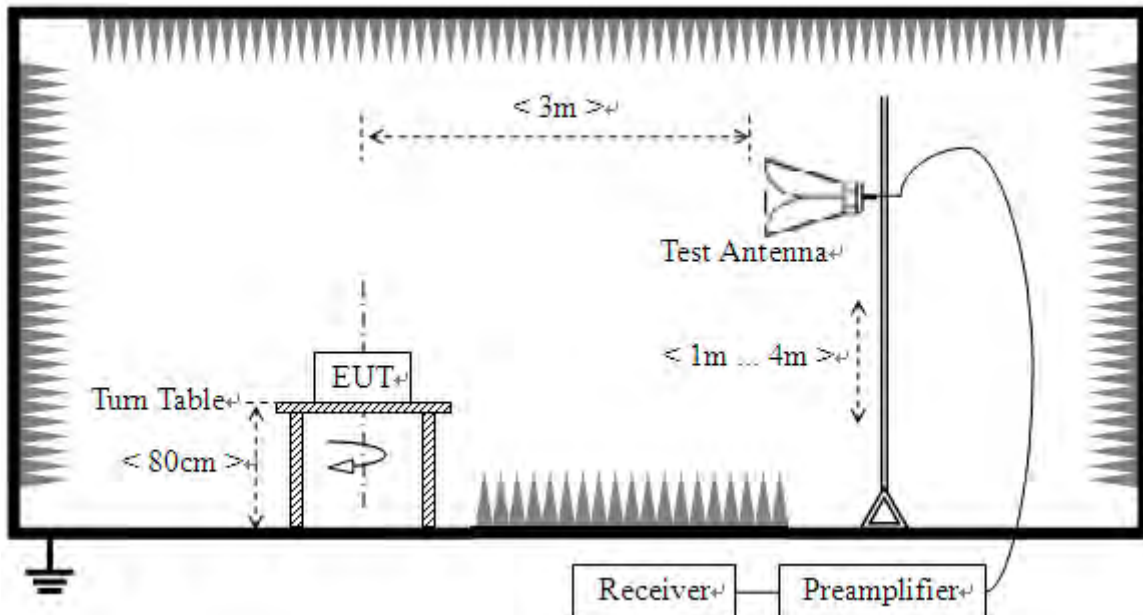
4.5 Test Setups

Test Setup 1



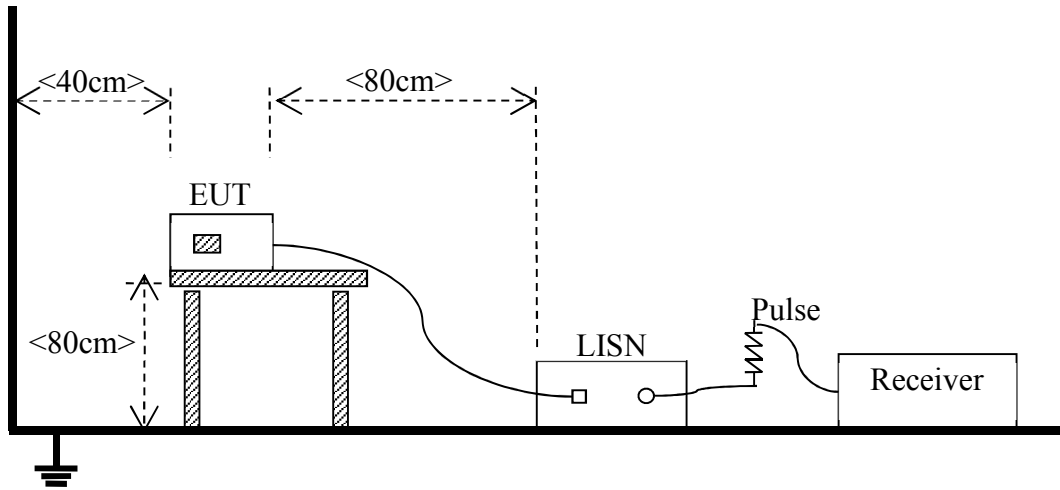
(For Radiated Emission Test (30 MHz-1 GHz))

Test Setup 2



(For Radiated Emission Test (above 1 GHz))

Test Setup 3



(For Conducted Emission, AC Ports Test)

4.6 Test Conditions

Test Case	Test Conditions	
Radiated Emission	Test Env.	NTNV
	Test Setup	Test Setup 1&2
	Test Configuration	TC01~TC06 ^{Note}
Conducted Emission, AC Ports	Test Env.	NTNV
	Test Setup	Test Setup 3
	Test Configuration	TC01~TC06 ^{Note}

Note:

- 1) If there is one kind of accessories with different models, each one should be applied throughout the compliance test respectively, however, only the worst case will be recorded in this report.
- 2) If EUT has more than one typical operation, only the worst test mode will be recorded in this report.

1) Radiated Emission

Mode 4: Adapter (Model: HW-200325UP0, SN: C976Y1J8P00105) +Charging + Date Transmitting + Mobile Disk + Camera on + Earphone + Video Playing + WIFI + BT ON + Burn-in test + HDMI. This result is the worst case. (30MHz-1GHz).

Mode 4: Adapter (Model: HW-200325UP0, SN: C976Y1J8P00105) +Charging + Date Transmitting + Mobile Disk + Camera on + Earphone + Video Playing + WIFI + BT ON + Burn-in test + HDMI. This result is the worst case. (1GHz-18GHz).

Mode 4: Adapter (Model: HW-200325UP0, SN: C976Y1J8P00105) +Charging + Date Transmitting + Mobile Disk + Camera on + Earphone + Video Playing + WIFI + BT ON + Burn-in test + HDMI. This result is the worst case. (18GHz-40GHz).

2) Conducted Emission

Mode 4: Adapter (Model: HW-200325UP0, SN: C976Y1J8P00105) + Charging + Date Transmitting + Mobile Disk + Camera on + Earphone + Video Playing + WIFI + BT ON + Burn-in test + HDMI. This result is the worst case.

5 TEST ITEMS

5.1 Emission Tests

5.1.1 Radiated Emission

5.1.1.1 Limit

Frequency range (MHz)	Class B (at 3 m)		Class B (at 10 m)	Class A (at 10 m)	
	Field Strength ($\mu\text{V/m}$)	Field Strength ($\text{dB}\mu\text{V/m}$)	Field Strength ($\text{dB}\mu\text{V/m}$)	Field Strength ($\mu\text{V/m}$)	Field Strength ($\text{dB}\mu\text{V/m}$)
30 - 88	100	40	30	90	39
88 - 216	150	43.5	33.5	150	43.5
216 - 960	200	46	36	210	46.4
Above 960	500	54	44	300	49.5

NOTE:

- 1) Field Strength ($\text{dB}\mu\text{V/m}$) = $20 \cdot \log$ [Field Strength ($\mu\text{V/m}$)].
- 2) In the emission tables above, the tighter limit applies at the band edges.

5.1.1.2 Test Setup

Refer to 4.5 section (test setup 1 to test setup 2) for radiated emission test, the photo of test setup please refer to ANNEX B.

5.1.1.3 Test Procedure

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

An initial pre-scan was performed in the chamber using the EMI Receiver in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by Bi-Log antenna with 2 orthogonal polarities.

5.1.1.4 Test Result

Please refer to ANNEX A.1.

NOTE:

1. Results ($\text{dB}\mu\text{V/m}$) = Reading ($\text{dB}\mu\text{V}$) + Factor (dB/m)

The reading level is calculated by software which is not shown in the sheet

2. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain (dB)

3. Over limit = Results – Limit.

5.1.2 Conducted Emission

5.1.2.1 Test Limit

Frequency range (MHz)	Class A	
	Quasi-peak (dB μ V)	Average (dB μ V)
0.15 - 0.50	79	66
0.50 - 30	73	60

Frequency range (MHz)	Class B	
	Quasi-peak (dB μ V)	Average (dB μ V)
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

NOTE:

- 1) The lower limit shall apply at the band edges.
- 2) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50 MHz.

5.1.2.2 Test Setup

Refer to 4.5 section test (test setup 3) for conducted emission, the photo of test setup please refer to ANNEX B.

5.1.2.3 Test Procedure

The EUT is connected to the power mains through a LISN which provides 50 Ω /50 μ H of coupling impedance for the measuring instrument. The test frequency range is from 150 kHz to 30 MHz. The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels that are more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed.

Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

5.1.2.4 Test Result

Please refer to ANNEX A.2.

NOTE:

$$1. \text{ Results (dBuV/m)} = \text{Reading (dBuV)} + \text{Factor (dB/m)}$$

The reading level is calculated by software which is not shown in the sheet

$$2. \text{ Factor} = \text{Insertion loss} + \text{Cable loss}$$

$$3. \text{ Over limit} = \text{Results} - \text{Limit.}$$

ANNEX A TEST RESULTS

A.1 Radiated Emission

Note 1: The symbol of "--" in the table which means not application.

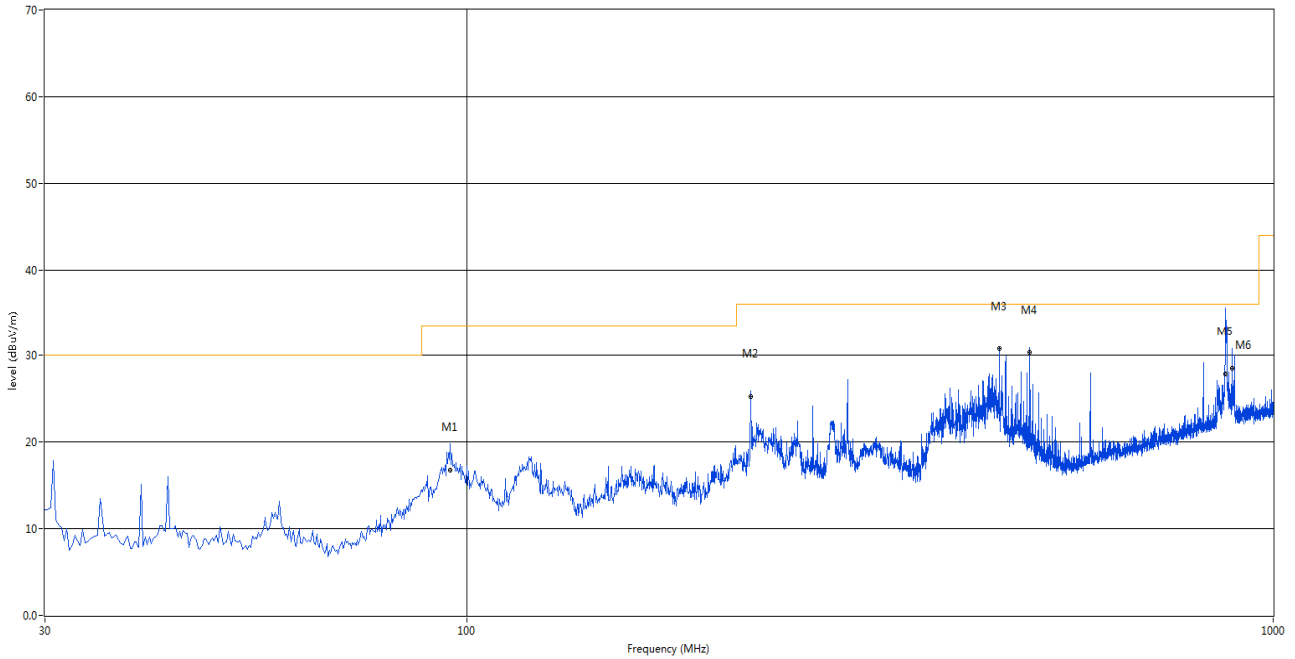
Note 2: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Note 3: The marked spikes near 2400 MHz with circle should be ignored because they are Bluetooth or WIFI carrier frequency.

Test Data and Plots

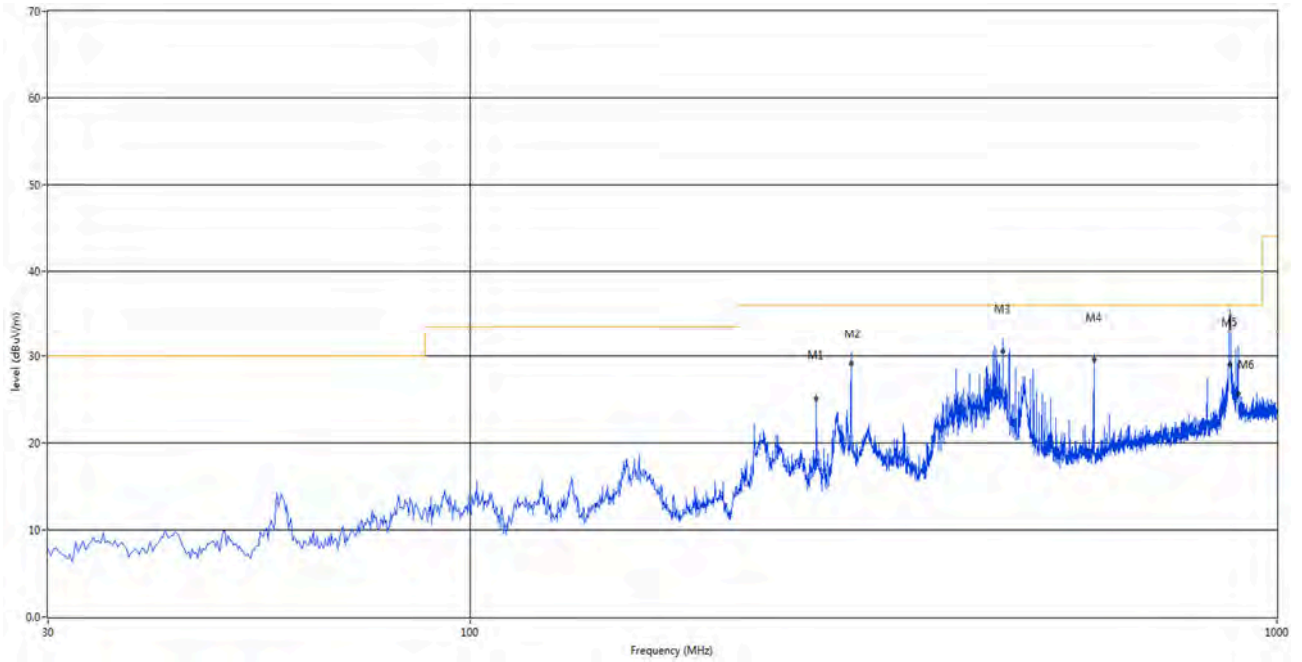
Test Mode 4: Charging + Date Transmitting + Mobile Disk + Camera on + Earphone + Video Playing + WIFI + BT ON + Burn-in test + HDMI

A.1.1 Test Antenna Vertical, 30 MHz – 1 GHz



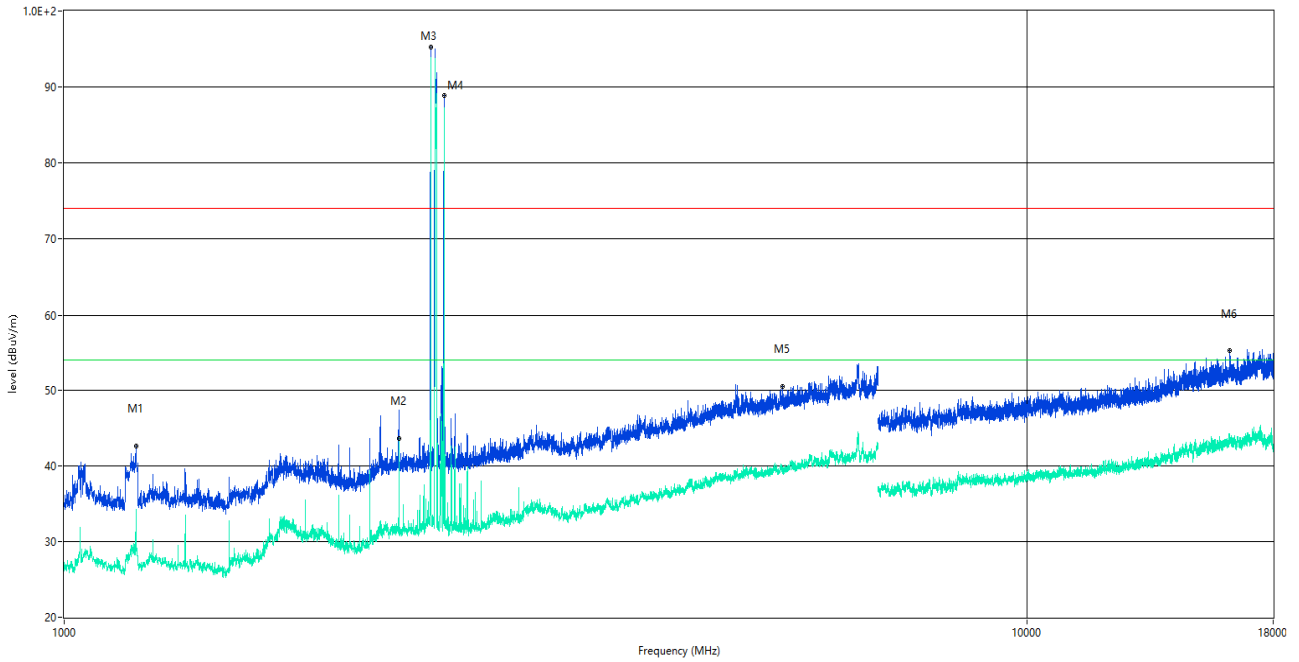
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	95.467	19.91	-30.47	33.5	-13.59	Peak	360.00	172	V	N/A
1*	95.467	16.72	-30.47	33.5	-16.78	QP	360.00	172	V	Pass
2	225.075	27.58	-28.27	36.0	-8.42	Peak	136.00	118	V	N/A
2*	225.075	25.31	-28.27	36.0	-10.69	QP	136.00	118	V	Pass
3	457.598	33.03	-21.24	36.0	-2.97	Peak	0.00	386	V	N/A
3*	457.598	30.81	-21.24	36.0	-5.19	QP	0.00	386	V	Pass
4	499.199	35.66	-20.65	36.0	-0.34	Peak	161.00	325	V	N/A
4*	499.199	30.42	-20.65	36.0	-5.58	QP	161.00	325	V	Pass
5	872.604	35.89	-12.92	36.0	-0.11	Peak	293.00	146	V	N/A
5*	872.604	27.85	-12.92	36.0	-8.15	QP	293.00	146	V	Pass
6	890.118	31.68	-12.59	36.0	-4.32	Peak	136.00	196	V	N/A
6*	890.118	28.54	-12.59	36.0	-7.46	QP	136.00	196	V	Pass

A.1.2 Test Antenna Horizontal, 30 MHz – 1 GHz



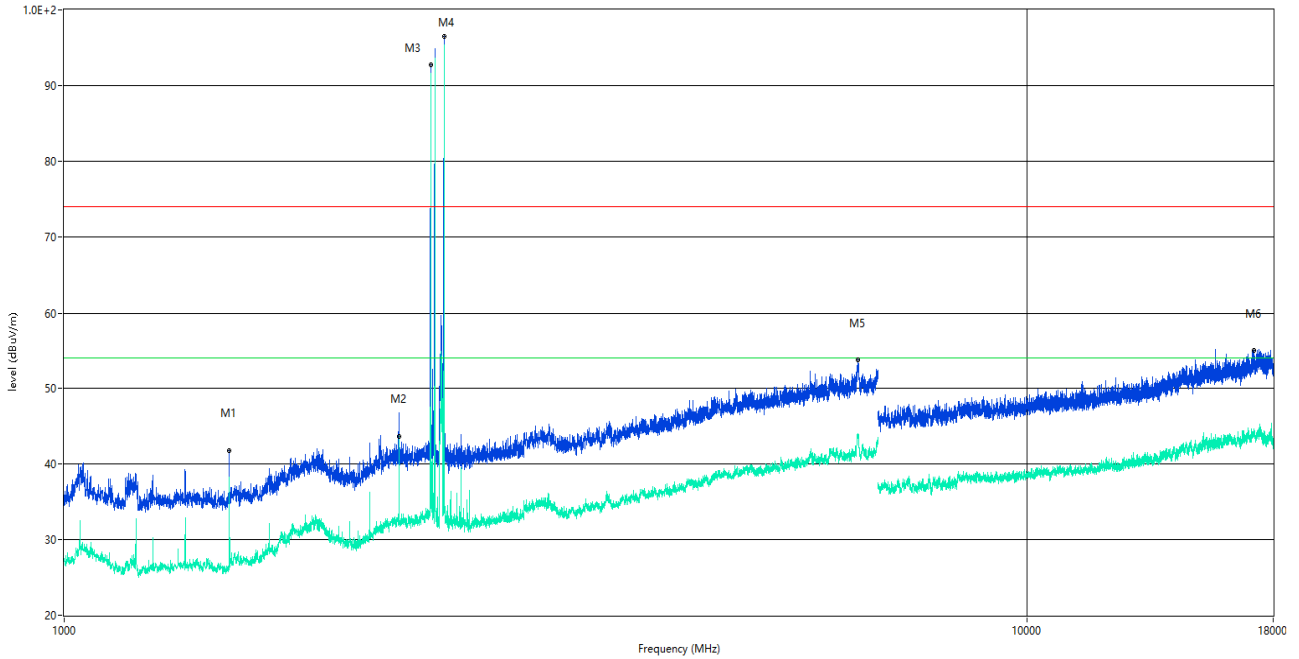
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	268.799	27.72	-26.65	36.0	-8.28	Peak	249.00	317	H	N/A
1*	268.799	25.17	-26.65	36.0	-10.83	QP	249.00	317	H	Pass
2	296.706	30.74	-26.07	36.0	-5.26	Peak	180.00	378	H	N/A
2*	296.706	29.22	-26.07	36.0	-6.78	QP	180.00	378	H	Pass
3	457.599	33.49	-21.24	36.0	-2.51	Peak	193.00	190	H	N/A
3*	457.599	30.64	-21.24	36.0	-5.36	QP	193.00	190	H	Pass
4	593.411	33.00	-18.30	36.0	-3.00	Peak	0.00	156	H	N/A
4*	593.411	29.61	-18.30	36.0	-6.39	QP	0.00	156	H	Pass
5	875.678	36.98	-12.65	36.0	0.98	Peak	237.00	108	H	N/A
5*	875.678	29.04	-12.65	36.0	-6.96	QP	237.00	108	H	Pass
6	895.996	34.78	-12.63	36.0	-1.22	Peak	360.00	119	H	N/A
6*	895.996	25.71	-12.63	36.0	-10.29	QP	360.00	119	H	Pass

A.1.3 Test Antenna Vertical, 1 GHz – 18 GHz



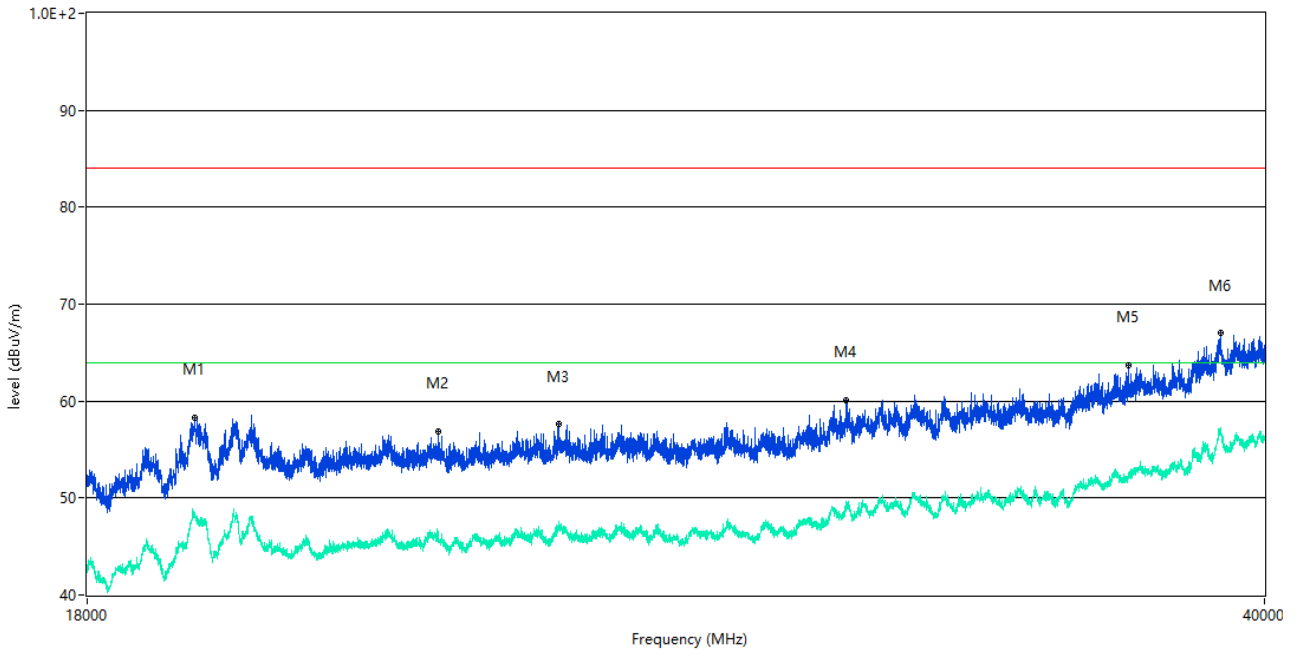
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1187.000	33.32	-17.74	54.0	-20.68	AV	216.00	100	V	Pass
1	1187.000	42.57	-17.74	74.0	-31.43	Peak	216.00	100	V	Pass
2**	2226.000	43.62	-12.74	54.0	-10.38	AV	34.00	100	V	Pass
2	2226.000	42.98	-12.74	74.0	-31.02	Peak	34.00	100	V	Pass
3**	2402.000	90.50	-12.20	54.0	36.50	AV	19.00	100	V	N/A
3	2402.000	95.27	-12.20	74.0	21.27	Peak	19.00	100	V	N/A
4**	2480.000	82.87	-11.71	54.0	28.87	AV	177.00	100	V	N/A
4	2480.000	88.93	-11.71	74.0	14.93	Peak	177.00	100	V	N/A
5**	5568.000	39.68	-2.19	54.0	-14.32	AV	146.00	100	V	Pass
5	5568.000	50.49	-2.19	74.0	-23.51	Peak	146.00	100	V	Pass
6**	16222.875	43.53	2.19	54.0	-10.47	AV	154.00	100	V	Pass
6	16222.875	55.25	2.19	74.0	-18.75	Peak	154.00	100	V	Pass

A.1.4 Test Antenna Horizontal, 1 GHz – 18 GHz



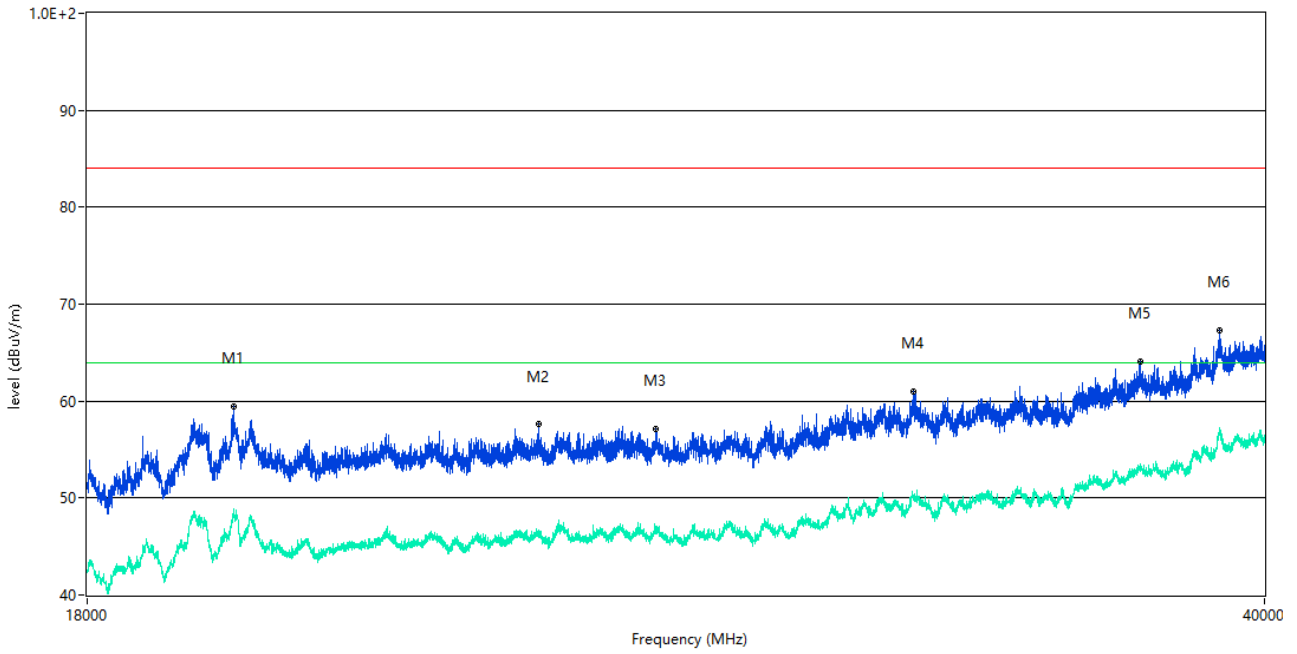
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1484.000	38.22	-17.41	54.0	-15.78	AV	315.00	100	H	Pass
1	1484.000	41.67	-17.41	74.0	-32.33	Peak	315.00	100	H	Pass
2**	2226.000	43.62	-12.74	54.0	-10.38	AV	176.00	100	H	Pass
2	2226.000	43.09	-12.74	74.0	-30.91	Peak	176.00	100	H	Pass
3**	2401.500	77.28	-12.23	54.0	23.28	AV	184.00	100	H	N/A
3	2401.500	92.74	-12.23	74.0	18.74	Peak	184.00	100	H	N/A
4**	2480.000	91.08	-11.71	54.0	37.08	AV	37.00	100	H	N/A
4	2480.000	96.52	-11.71	74.0	22.52	Peak	37.00	100	H	N/A
5**	6670.000	43.82	2.08	54.0	-10.18	AV	1.00	100	H	Pass
5	6670.000	53.70	2.08	74.0	-20.30	Peak	1.00	100	H	Pass
6**	17182.312	44.19	3.24	54.0	-9.81	AV	317.00	100	H	Pass
6	17182.312	54.93	3.24	74.0	-19.07	Peak	317.00	100	H	Pass

A.1.5 Test Antenna Vertical, 18 GHz – 40 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	19366.033	48.42	21.33	64.0	-15.58	AV	22.00	100	V	Pass
1	19366.033	58.29	21.33	84.0	-25.71	Peak	22.00	100	V	Pass
2**	22845.914	45.53	21.32	64.0	-18.47	AV	171.00	100	V	Pass
2	22845.914	56.89	21.32	84.0	-27.11	Peak	171.00	100	V	Pass
3**	24787.678	46.72	20.94	64.0	-17.28	AV	62.00	100	V	Pass
3	24787.678	57.58	20.94	84.0	-26.42	Peak	62.00	100	V	Pass
4**	30127.218	49.07	22.25	64.0	-14.93	AV	135.00	100	V	Pass
4	30127.218	60.10	22.25	84.0	-23.90	Peak	135.00	100	V	Pass
5**	36474.006	52.10	23.73	64.0	-11.90	AV	122.00	100	V	Pass
5	36474.006	63.70	23.73	84.0	-20.30	Peak	122.00	100	V	Pass
6**	38822.419	57.11	24.40	64.0	-6.89	AV	18.00	100	V	Pass
6	38822.419	66.98	24.40	84.0	-17.02	Peak	18.00	100	V	Pass

A.1.6 Test Antenna Horizontal, 18 GHz – 40 GHz



No.	Frequency (MHz)	Results (dBuH/m)	Factor (dB)	Limit (dBuH/m)	OHer Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Herdict
1**	19882.279	48.53	22.12	64.0	-15.47	AV	17.00	100	H	Pass
1	19882.279	59.46	22.12	84.0	-24.54	Peak	17.00	100	H	Pass
2**	24447.763	46.53	20.89	64.0	-17.47	AV	142.00	100	H	Pass
2	24447.763	57.60	20.89	84.0	-26.40	Peak	142.00	100	H	Pass
3**	26463.884	46.28	21.20	64.0	-17.72	AV	91.00	100	H	Pass
3	26463.884	57.13	21.20	84.0	-26.87	Peak	91.00	100	H	Pass
4**	31520.745	50.34	22.65	64.0	-13.66	AV	62.00	100	H	Pass
4	31520.745	61.05	22.65	84.0	-22.95	Peak	62.00	100	H	Pass
5**	36784.429	53.07	23.77	64.0	-10.93	AV	25.00	100	H	Pass
5	36784.429	64.08	23.77	84.0	-19.92	Peak	25.00	100	H	Pass
6**	38795.426	57.23	24.39	64.0	-6.77	AV	84.00	100	H	Pass
6	38795.426	67.32	24.39	84.0	-16.68	Peak	84.00	100	H	Pass

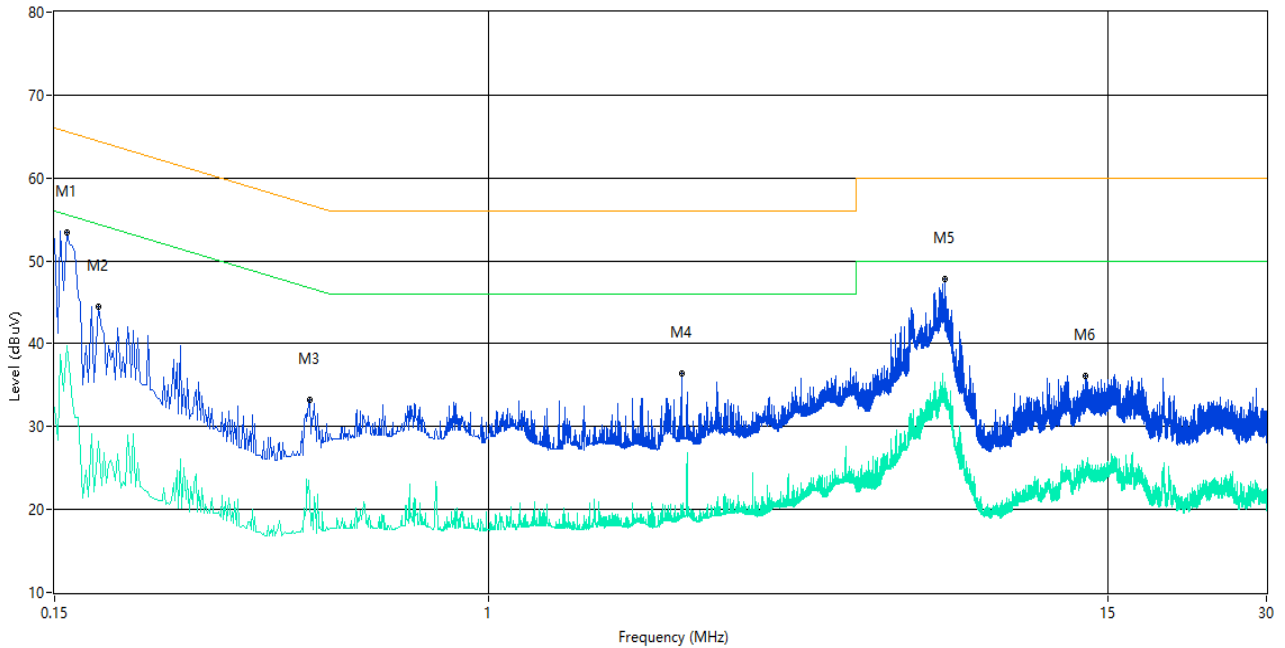
A.2 Conducted Emission

Test Data and Plots

Test Mode 4: Charging + Data Transmitting + Mobile Disk + Camera on + Earphone + Video Playing + WIFI + BT ON + Burn-in test + HDMI

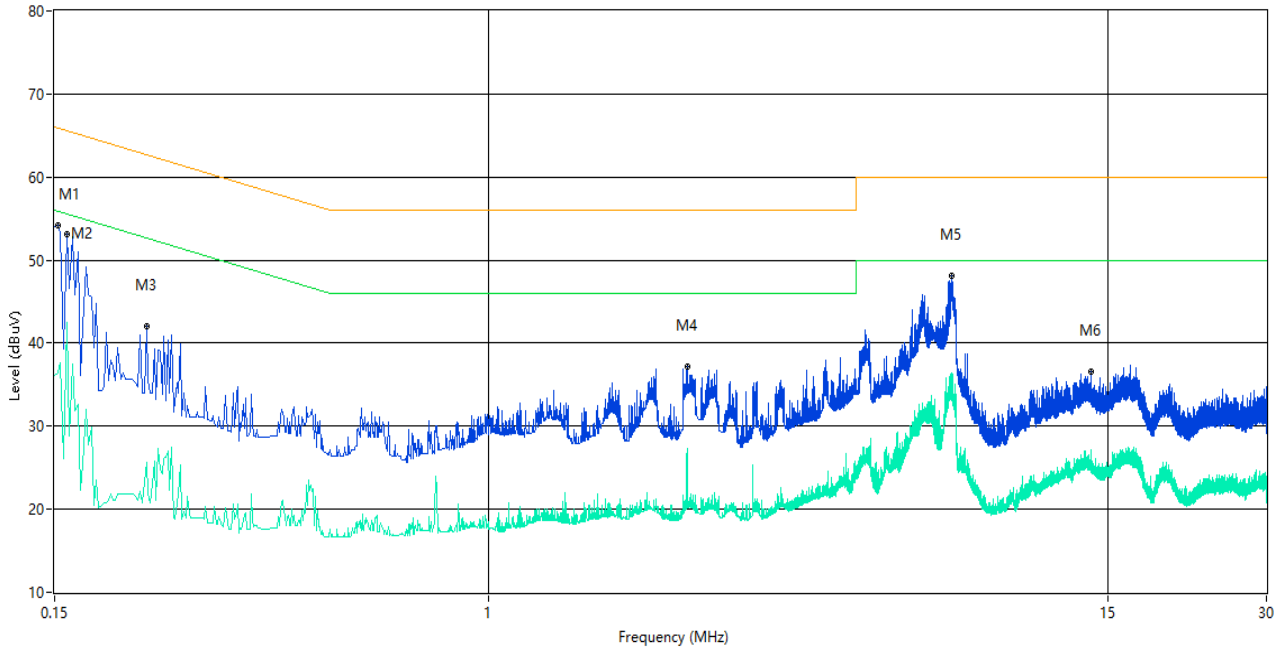
Note: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration (120 VAC, 60 Hz) shown here.

A.2.1 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.158	53.86	10.01	65.6	-11.74	Peak	L Line	N/A
1*	0.158	51.39	10.01	65.6	-14.21	QP	L Line	Pass
1**	0.158	34.32	10.01	55.6	-21.28	AV	L Line	Pass
2	0.182	50.38	10.01	64.4	-14.02	Peak	L Line	N/A
2*	0.182	46.68	10.01	64.4	-17.72	QP	L Line	Pass
2**	0.182	25.97	10.01	54.4	-28.43	AV	L Line	Pass
3	0.458	32.63	10.02	56.7	-24.07	Peak	L Line	N/A
3*	0.458	30.25	10.02	56.7	-26.45	QP	L Line	Pass
3**	0.458	22.90	10.02	46.7	-23.80	AV	L Line	Pass
4	2.324	36.20	10.07	56.0	-19.80	Peak	L Line	N/A
4*	2.324	29.20	10.07	56.0	-26.80	QP	L Line	Pass
4**	2.324	16.52	10.07	46.0	-29.48	AV	L Line	Pass
5	7.362	49.56	10.14	60.0	-10.44	Peak	L Line	N/A
5*	7.362	42.57	10.14	60.0	-17.43	QP	L Line	Pass
5**	7.362	33.66	10.14	50.0	-16.34	AV	L Line	Pass
6	13.628	36.50	10.20	60.0	-23.50	Peak	L Line	N/A
6*	13.628	29.55	10.20	60.0	-30.45	QP	L Line	Pass
6**	13.628	23.76	10.20	50.0	-26.24	AV	L Line	Pass

A.2.2 N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.152	54.65	10.01	65.9	-11.25	Peak	N Line	N/A
1*	0.152	52.17	10.01	65.9	-13.73	QP	N Line	Pass
1**	0.152	37.27	10.01	55.9	-18.63	AV	N Line	Pass
2	0.158	53.83	10.01	65.6	-11.77	Peak	N Line	N/A
2*	0.158	51.73	10.01	65.6	-13.87	QP	N Line	Pass
2**	0.158	36.98	10.01	55.6	-18.62	AV	N Line	Pass
3	0.224	42.56	10.02	62.7	-20.14	Peak	N Line	N/A
3*	0.224	36.51	10.02	62.7	-26.19	QP	N Line	Pass
3**	0.224	18.67	10.02	52.7	-34.03	AV	N Line	Pass
4	2.384	38.54	10.07	56.0	-17.46	Peak	N Line	N/A
4*	2.384	32.29	10.07	56.0	-23.71	QP	N Line	Pass
4**	2.384	26.57	10.07	46.0	-19.43	AV	N Line	Pass
5	7.562	49.45	10.14	60.0	-10.55	Peak	N Line	N/A
5*	7.562	42.67	10.14	60.0	-17.33	QP	N Line	Pass
5**	7.562	34.13	10.14	50.0	-15.87	AV	N Line	Pass
6	13.928	36.21	10.20	60.0	-23.79	Peak	N Line	N/A
6*	13.928	29.45	10.20	60.0	-30.55	QP	N Line	Pass
6**	13.928	23.81	10.20	50.0	-26.19	AV	N Line	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document "BL-SZ18C0049-AE.PDF".

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document "BL-SZ18C0049-AW.PDF".

ANNEX D EUT INTERNAL PHOTOS

Please refer the document "BL-SZ18C0049-AI.PDF".

--END OF REPORT--