FCC EMC TEST REPORT

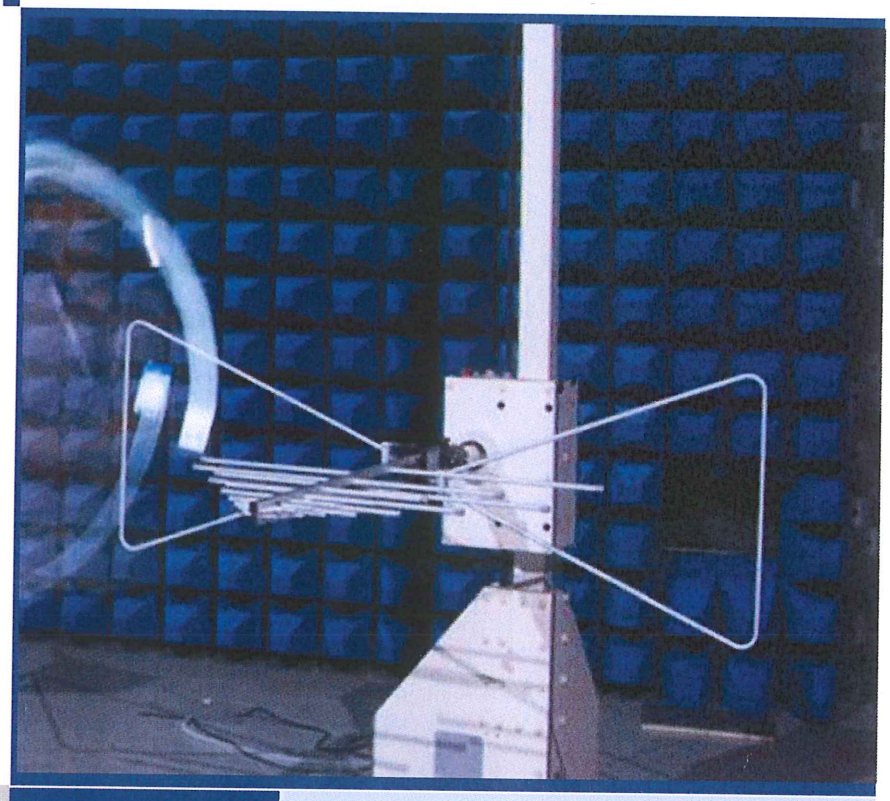
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

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: Nov. 05, 2018

Approved by:
Wei Yanquan
(Chief Engineer)
Date: Nov. 05, 2018

Report No.:	BL-SZ1880358-401
EUT Name:	HUAWEI MateBook
Model Name:	WRT-W19, WRT-W29
Brand Name:	HUAWEI
Test Standard:	47 CFR Part 15 Subpart B
FCC ID:	QISWRT-WX9
Test Conclusion:	Pass
Test Date:	Sep. 17, 2018 ~ Sep. 25, 2018
Date of Issue:	Nov. 05, 2018

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Revision History

Version	Issue Date	Revisions Content
Rev. 01	Nov. 05, 2018	Initial Issue

TABLE OF CONTENTS

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	The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1. The laboratory is a testing organizatin accredited by FCC as a accredited testing laboratory. The designation number is CN1196. 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. 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.
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℃ to 25℃
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	N/A
Address	N/A

2.4 General Description for Equipment under Test (EUT)

EUT Name	HUAWEI MateBook
Model Name Under Test	WRT-W19, WRT-W29
Series Model Name	WRT-WXXXXX (The “X” in model name can be 0 to 9, A to Z, a to z, “-” or blank, only differences are the appearance and model names for trading purpose)
Description of Model name differentiation	Refer section 2.5
Hardware Version	NX8309_PCB_MB_V5_HF
Software Version	1.4.0.11 (C001)
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.5 Differences Description

	WRT-W29 (with GPU version)	WRT-W19 (with GPU version)	WRT-W29 (without GPU version)	WRT-W19 (without GPU version)
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 module	The same	The same	The same	The same
BT/ Wi-Fi antenna	The same	The same	The same	The same

Appearance	The same	The same	The same	The same
Dimension	The same	The same	The same	The same
CPU	Intel i7-8565U, Support max4.6GHz	Intel i5-8265U, Support max3.9GHz	Intel i7-8565U, Support max4.6GHz	Intel i5-8265U, Support max3.9GHz
GPU	support	support	Not support	Not support
Memory	16/8G	8G	8G	8G
SSD	512G/256G	256G	512G	512G/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	The same, Docking Station	The same, Docking Station	The same, Docking Station	The same, Docking Station

2.6 Ancillary Equipment

Ancillary Equipment 1	Rechargeable Li-ion Polymer Battery	
	Brand Name	HUAWEI
	Model No.	HB4593J6ECW
	Serial No.	N/A
	Capacity	3660 mAh
	Rated Voltage	11.4 V
	Limit Charge Voltage	13.05 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.	C976Y1J8P00106
	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.	C974Y1J8W01182
	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.	C973Y1J5S01577
	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	USB-A to RJ45	
	Model No.	AD70
	Serial No.	48XJU17A18011914
	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 Cable	
	Length (Approx.)	1.8 m
Ancillary Equipment 9	USB-C to USB-A	
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, 5.8G SRD

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 11.4 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	☒
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-977	2017.07.22	2019.07.21	☒
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	9120D-1600	2018.07.11	2020.07.10	☐
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60 *7.35m	N/A	2018.08.08	2020.08.07	☒
Test Software	BALUN	BL410_E	V18.626	--	--	☒

Radiated Emission Test For Frequency 1 GHz-18 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2017.11.08	2018.11.07	☒
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2017.07.22	2019.07.21	☐
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	9120D-1148	2018.07.11	2020.07.10	☒
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2017.02.21	2019.02.20	☒
Test Software	BALUN	BL410_E	V18.626	--	--	☒

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	☒
Test Antenna-Horn	A-INFOMW	LB-180400KF	J211060273	2017.01.06	2019.01.05	☒
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2017.02.21	2019.02.20	☒
Test Software	BALUN	BL410_E	V18.626	--	--	☒

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	☒
LISN	SCHWARZBECK	NSLK 8127	8127-687	2018.06.13	2019.06.12	☒
LISN	SCHWARZBECK	NNLK 8129	8129-462	2017.11.08	2018.11.07	☐
ISN	TESEQ	ISN T800	34449	2017.12.05	2018.12.04	☐
Shielded Enclosure	ChangNing	CN-130701	130703	N/A	N/A	☒
Test Software	BALUN	BL410_E	V18.626	--	--	☒

4.3 Test Enclosure list

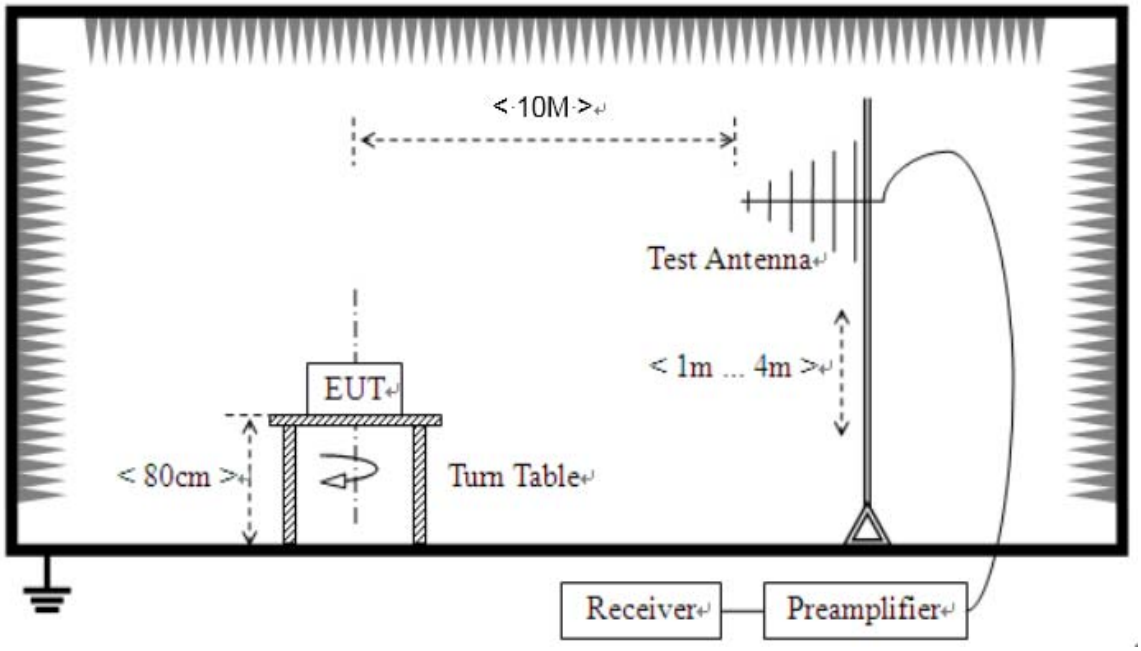
Description	Manufacturer	Model	Serial No.	Length	Description	Use
Laptop	Lenovo	E31-80	R3026PU9	N/A	N/A	☒
Mobile Disk	WD Element	WDBUZG0010BBK	WXA1A48LD5JT	N/A	N/A	☒
HDMI Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☒
VGA Cable	N/A	N/A	N/A	1.0 m	Shielded with core	☒
Earphone	OPPO	N/A	N/A	1.1 m	N/A	☒
RJ45 Cable	N/A	N/A	N/A	1.0 m	Shielded with core	☒
Display Screen	SAMSUNG	S24B360HL	0ZK6STQK510032P	N/A	N/A	☒
Display Screen	ASUS	MX27U	H9LMRS033474	N/A	N/A	☒
USB C to USB-A Connector	UGREEN	N/A	N/A	N/A	N/A	☒

4.4 Test Configurations

Test Mode	
Mode 1:	Charging + Earphone + Mobile Disk + Video Playing + WIFI + BT ON + Burn-in test
Mode 2:	Charging + USB + Dock (USB C + USB-A + HDMI Playing)
Mode 3:	Charging + USB + Dock (USB C + USB-A + VGA Playing)
Mode 4:	Charging + Camera On
Mode 5:	Charging + Date Transmitting (USB C + USB-A)
Mode 6:	Charging + Date Transmitting (USB C + USB-A) + Camera On + Earphone + Video Playing + WIFI + BT ON + Burn-in test
Mode 7:	Charging + LAN + Camera On + Earphone + Video Playing + WIFI + BT ON + Burn-in test

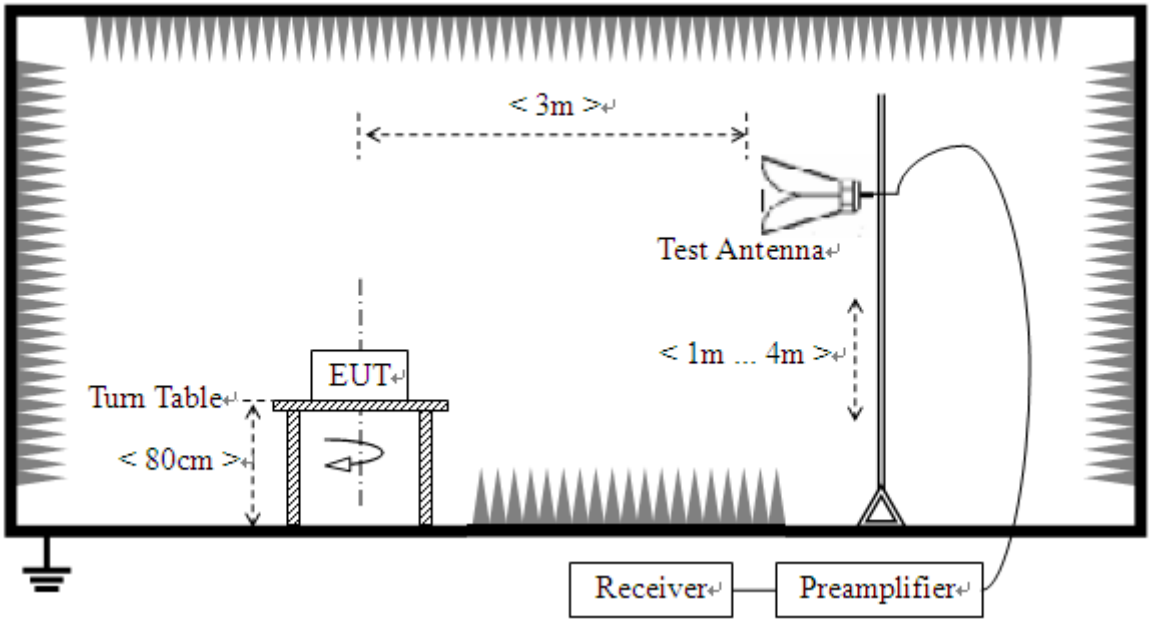
4.5 Test Setups

Test Setup 1



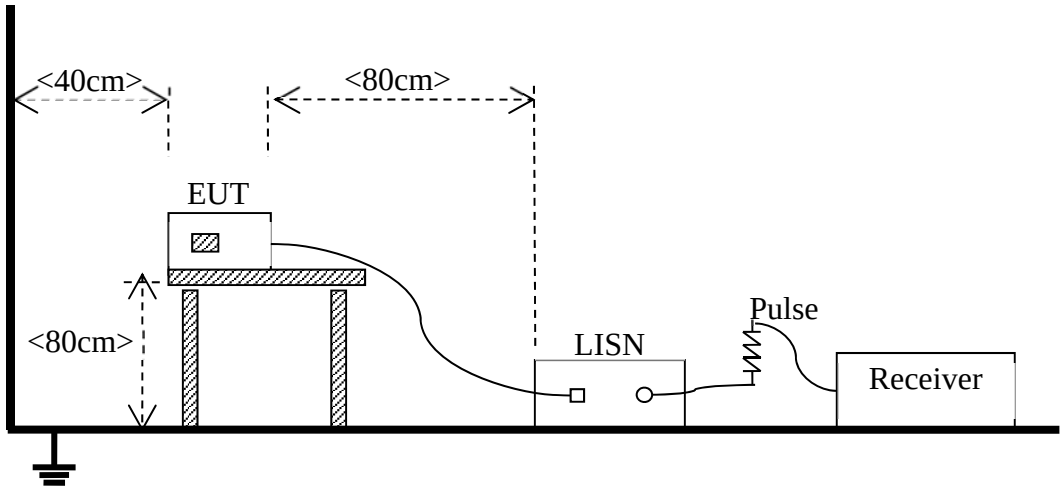
(For Radiated Emission Test (30 MHz-1 GHz))

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~TC07 Note
Conducted Emission, AC Ports	Test Env.	NTNV
	Test Setup	Test Setup 3
	Test Configuration	TC01~TC07 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.

Worst Case:
1) Radiated Emission
Mode 6：Adapter (Model: HW-200325UP0, SN: C976Y1J8P00106) + Charging + Date Transmitting (USB C + USB-A) + Camera On + Earphone + Mobile Disk + Video Playing + WIFI + BT ON + Burn-in test. This result is the worst case. (30MHz-1GHz).

Mode 6：Adapter (Model: HW-200325UP0, SN: C976Y1J8P00106) + Charging + Date Transmitting (USB C + USB-A) + Camera On + Earphone + Mobile Disk + Video Playing + WIFI + BT ON + Burn-in test. This result is the worst case. (1GHz-18GHz).

Mode 6：Adapter (Model: HW-200325UP0, SN: C976Y1J8P00106) + Charging + Date Transmitting (USB C + USB-A) + Camera On + Earphone + Mobile Disk + Video Playing + WIFI + BT ON + Burn-in test. This result is the worst case. (18GHz-40GHz).

2) Conducted Emission
Mode 6：Adapter (Model: HW-200325UP0, SN: C976Y1J8P00106) + Charging + Date Transmitting (USB C + USB-A) + Camera On + Earphone + Mobile Disk + Video Playing + WIFI + BT ON + Burn-in test. 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 (μV/m)	Field Strength (dBμV/m)	Field Strength (dBμV/m)	Field Strength (μV/m)	Field Strength (dBμV/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 (dBμV/m) = 20*log [Field Strength (μV/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 (dBuV/m) = Reading (dBuV) + 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 (dBμV)	Average (dBμV)
0.15 - 0.50	79	66
0.50 - 30	73	60

Frequency range (MHz)	Class B	
	Quasi-peak (dBμV)	Average (dBμV)
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 μH 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. Results (dBuV/m) = Reading (dBuV) + Factor (dB/m)

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

2. Factor = Insertion loss + Cable loss

3. Over limit = Results – Limit.

ANNEX A TEST RESULTS

A.1 Radiated Emission

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

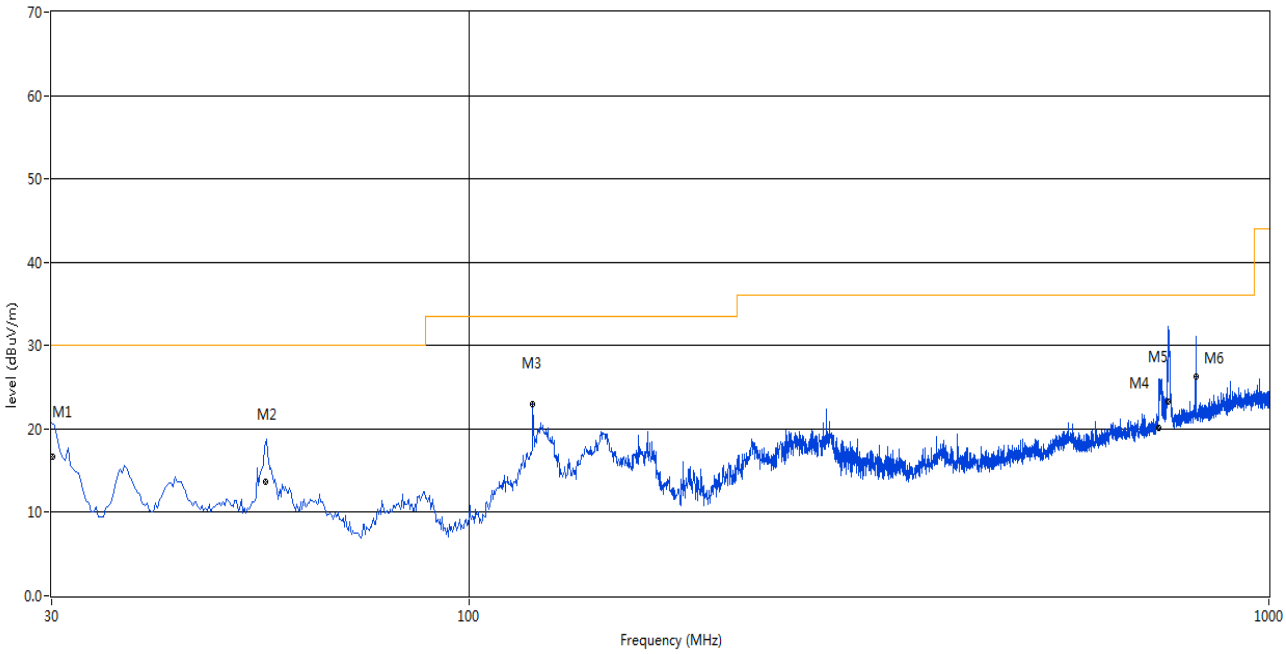
Note 2: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

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

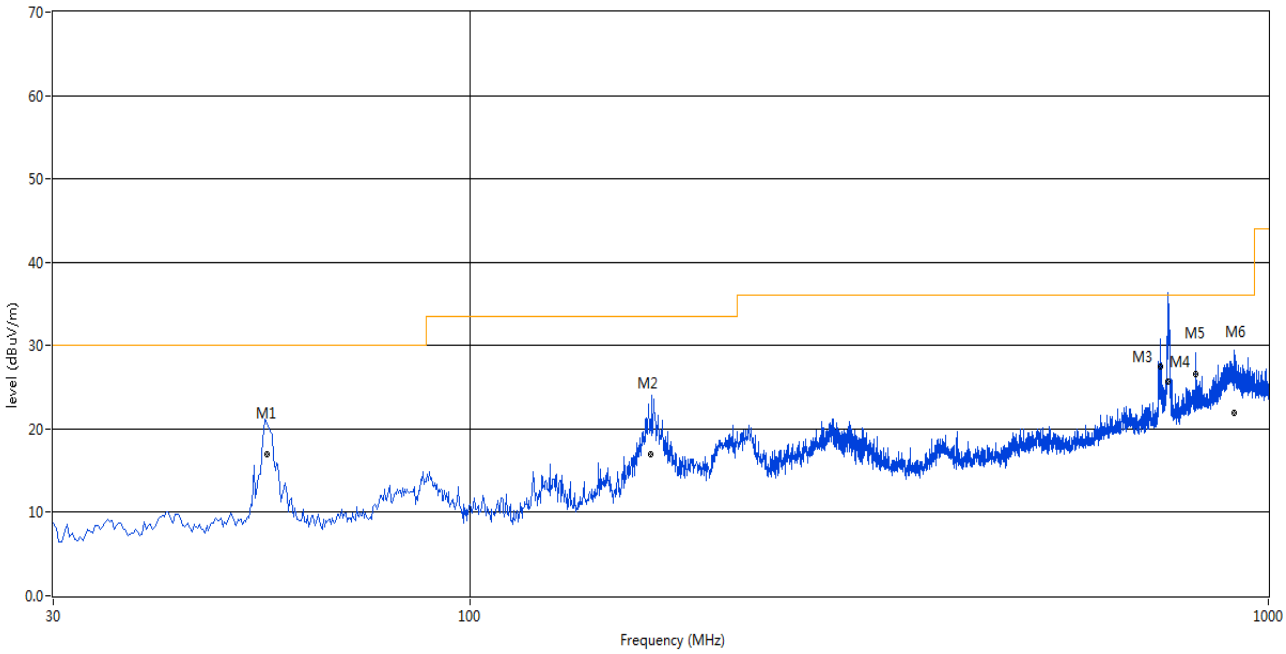
Test Mode 6: Charging + Date Transmitting (USB C + USB-A) + Camera On + Earphone + Video Playing + WIFI + BT ON + Burn-in test

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



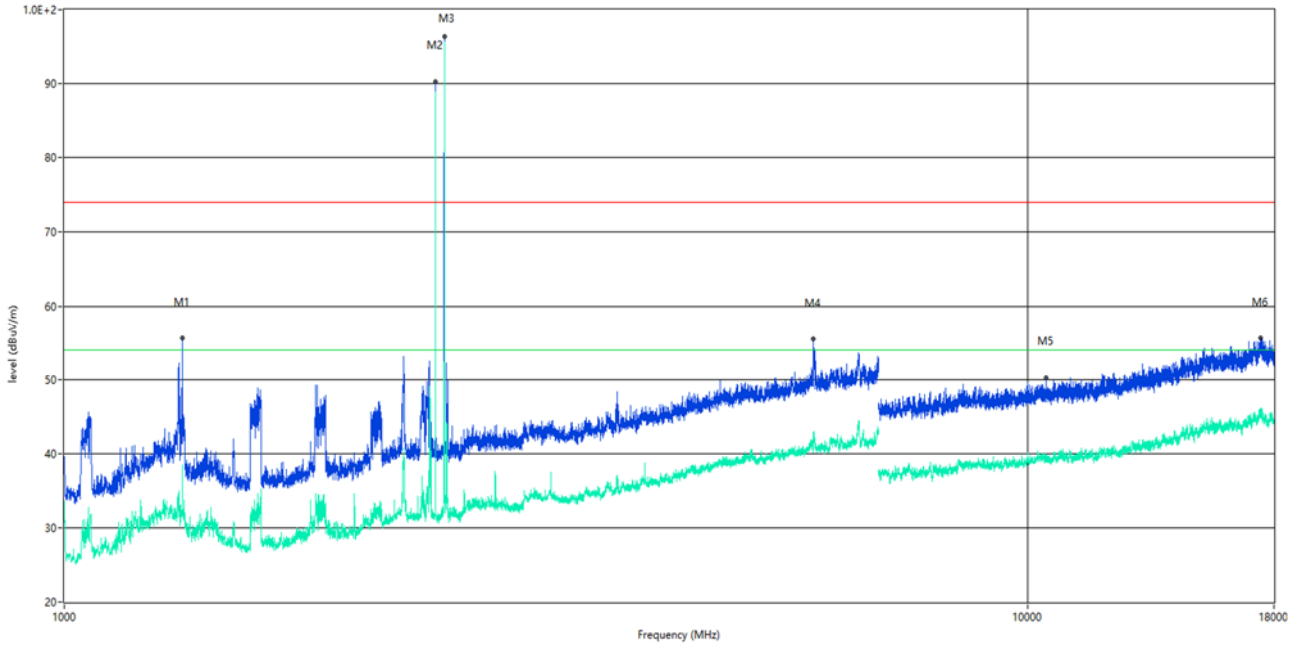
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	30.122	20.57	-27.46	30.0	-9.43	Peak	220.93	121	V	N/A
1*	30.122	16.62	-27.46	30.0	-13.38	QP	220.93	121	V	Pass
2	55.562	30.36	-27.47	30.0	0.36	Peak	319.00	326	V	N/A
2*	55.562	13.67	-27.47	30.0	-16.33	QP	319.00	326	V	Pass
3	120.002	28.96	-28.03	33.5	-4.54	Peak	0.00	318	V	N/A
3*	120.002	23.02	-28.03	33.5	-10.48	QP	0.00	318	V	Pass
4	728.692	26.83	-15.37	36.0	-9.17	Peak	360.00	255	V	N/A
4*	728.692	20.06	-15.37	36.0	-15.94	QP	360.00	255	V	Pass
5	747.624	33.00	-14.93	36.0	-3.00	Peak	41.00	386	V	N/A
5*	747.624	23.26	-14.93	36.0	-12.74	QP	41.00	386	V	Pass
6	810.022	33.44	-13.96	36.0	-2.56	Peak	325.00	191	V	N/A
6*	810.022	26.36	-13.96	36.0	-9.64	QP	325.00	191	V	Pass

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



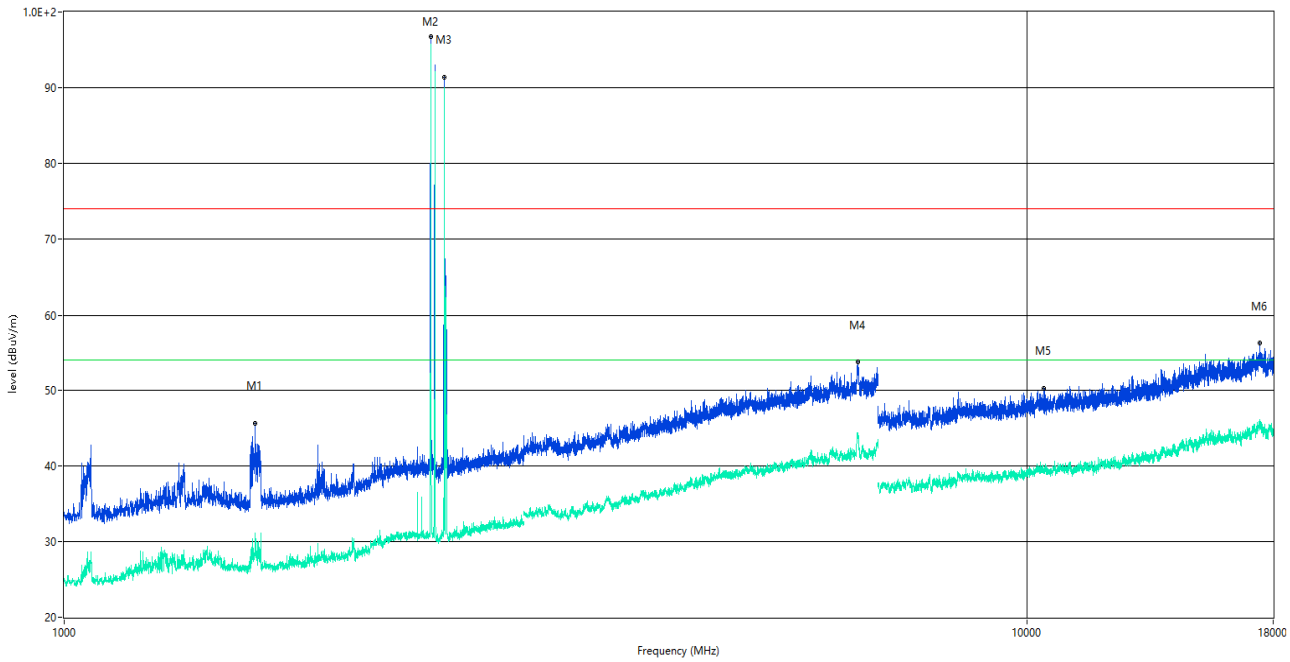
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	55.564	23.05	-27.48	30.0	-6.95	Peak	360.00	332	H	N/A
1*	55.564	16.95	-27.48	30.0	-13.05	QP	360.00	332	H	Pass
2	168.372	23.52	-26.58	33.5	-9.98	Peak	104.00	267	H	N/A
2*	168.372	17.04	-26.58	33.5	-16.46	QP	104.00	267	H	Pass
3	732.656	35.23	-15.52	36.0	-0.77	Peak	86.00	152	H	N/A
3*	732.656	27.45	-15.52	36.0	-8.55	QP	86.00	152	H	Pass
4	748.290	36.64	-14.93	36.0	0.64	Peak	0.00	110	H	N/A
4*	748.290	25.63	-14.93	36.0	-10.37	QP	0.00	110	H	Pass
5	810.014	33.87	-13.96	36.0	-2.13	Peak	262.00	127	H	N/A
5*	810.014	26.63	-13.96	36.0	-9.37	QP	262.00	127	H	Pass
6	906.161	27.15	-12.40	36.0	-8.85	Peak	73.00	127	H	N/A
6*	906.161	21.86	-12.40	36.0	-14.14	QP	73.00	127	H	Pass

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



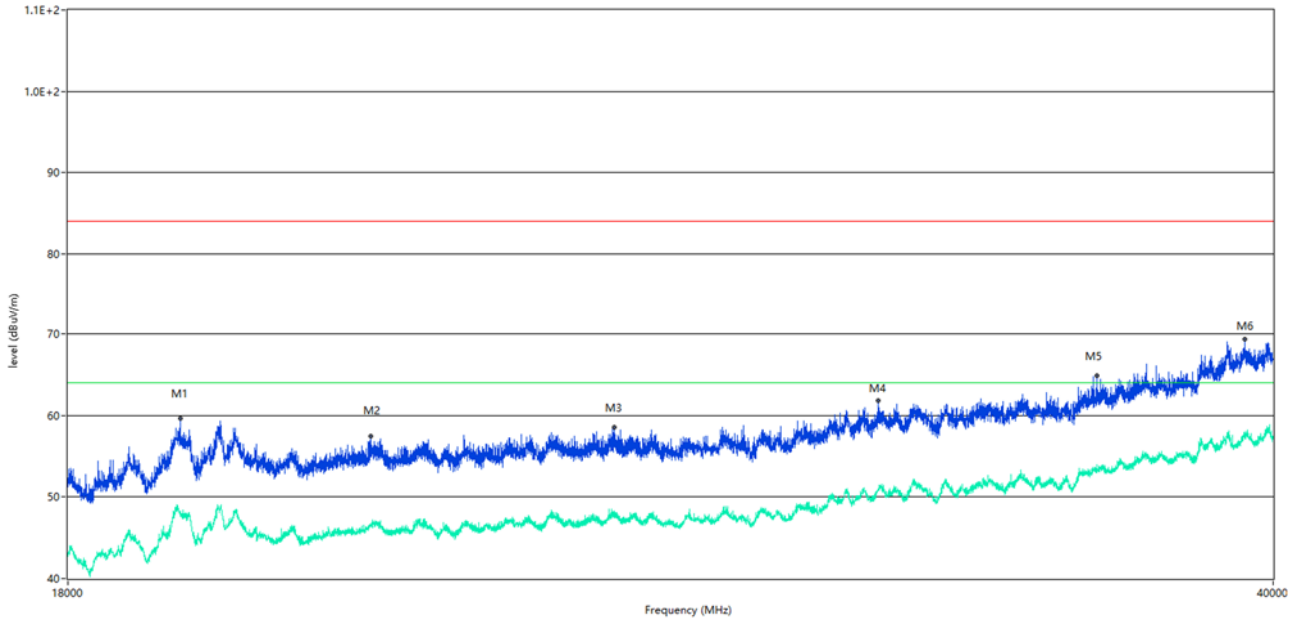
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1325.000	31.62	-17.16	54.0	-22.38	AV	76.00	100	V	Pass
1	1325.000	55.54	-17.16	74.0	-18.46	Peak	76.00	100	V	Pass
2**	2426.000	35.82	-12.96	54.0	-18.18	AV	256.00	100	V	N/A
2	2426.000	90.29	-12.96	74.0	16.29	Peak	256.00	100	V	N/A
3**	2479.500	81.29	-11.74	54.0	27.29	AV	168.00	100	V	N/A
3	2479.500	96.37	-11.74	74.0	22.37	Peak	168.00	100	V	N/A
4**	5992.000	41.36	-2.01	54.0	-12.64	AV	336.00	100	V	Pass
4	5992.000	55.42	-2.01	74.0	-18.58	Peak	336.00	100	V	Pass
5**	10445.688	39.08	0.08	54.0	-14.92	AV	18.00	100	V	Pass
5	10445.688	50.22	0.08	74.0	-23.78	Peak	18.00	100	V	Pass
6**	17435.625	45.34	4.34	54.0	-8.66	AV	171.00	100	V	Pass
6	17435.625	55.56	4.34	74.0	-18.44	Peak	171.00	100	V	Pass

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



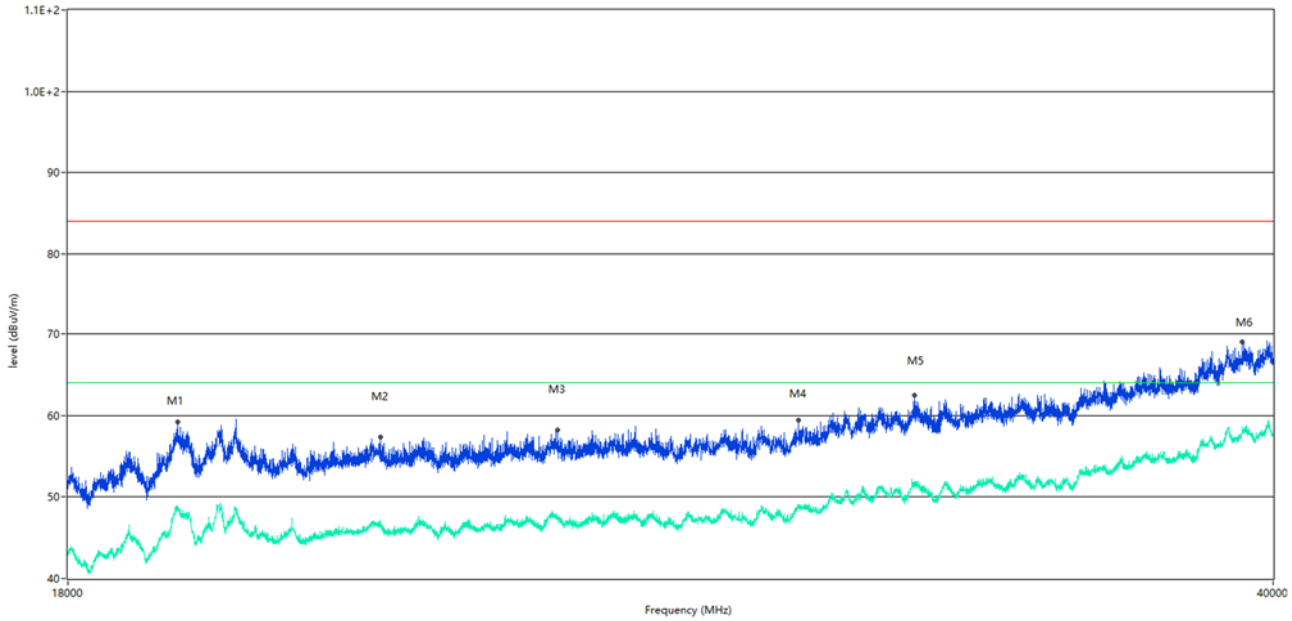
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1579.000	29.56	-17.27	54.0	-24.44	AV	146.00	100	H	Pass
1	1579.000	45.56	-17.27	74.0	-28.44	Peak	146.00	100	H	Pass
2**	2401.500	81.53	-12.23	54.0	27.53	AV	29.00	100	H	N/A
2	2401.500	96.72	-12.23	74.0	22.72	Peak	29.00	100	H	N/A
3**	2480.500	89.99	-11.70	54.0	35.99	AV	213.00	100	H	N/A
3	2480.500	91.33	-11.70	74.0	17.33	Peak	213.00	100	H	N/A
4**	6674.000	44.04	1.93	54.0	-9.96	AV	164.00	100	H	Pass
4	6674.000	53.72	1.93	74.0	-20.28	Peak	164.00	100	H	Pass
5**	10409.750	39.30	0.48	54.0	-14.70	AV	261.00	100	H	Pass
5	10409.750	50.18	0.48	74.0	-23.82	Peak	261.00	100	H	Pass
6**	17422.500	45.79	4.77	54.0	-8.21	AV	0.00	100	H	Pass
6	17422.500	56.24	4.77	74.0	-17.76	Peak	0.00	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**	19387.278	48.21	20.81	64.0	-15.79	AV	13.00	100	V	Pass
1	19387.278	59.70	20.81	84.0	-24.30	Peak	13.00	100	V	Pass
2**	22000.375	46.47	21.75	64.0	-17.53	AV	8.00	100	V	Pass
2	22000.375	57.52	21.75	84.0	-26.48	Peak	8.00	100	V	Pass
3**	25858.410	47.75	21.78	64.0	-16.25	AV	11.00	100	V	Pass
3	25858.410	58.57	21.78	84.0	-25.43	Peak	11.00	100	V	Pass
4**	30781.805	50.79	23.58	64.0	-13.21	AV	1.00	100	V	Pass
4	30781.805	61.80	23.58	84.0	-22.20	Peak	1.00	100	V	Pass
5**	35586.603	53.39	25.03	64.0	-10.61	AV	3.00	100	V	Pass
5	35586.603	64.89	25.03	84.0	-19.11	Peak	3.00	100	V	Pass
6**	39264.434	57.84	26.10	64.0	-6.16	AV	12.00	100	V	Pass
6	39264.434	69.33	26.10	84.0	-14.67	Peak	12.00	100	V	Pass

A.1.6 Test Antenna Horizontal, 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**	19353.287	48.51	21.94	64.0	-15.49	AV	13.00	100	H	Pass
1	19353.287	59.19	21.94	84.0	-24.81	Peak	13.00	100	H	Pass
2**	22136.341	46.39	21.75	64.0	-17.61	AV	9.00	100	H	Pass
2	22136.341	57.36	21.75	84.0	-26.64	Peak	9.00	100	H	Pass
3**	24896.026	47.54	21.57	64.0	-16.46	AV	7.00	100	H	Pass
3	24896.026	58.22	21.57	84.0	-25.78	Peak	7.00	100	H	Pass
4**	29212.822	48.91	22.94	64.0	-15.09	AV	2.00	100	H	Pass
4	29212.822	59.46	22.94	84.0	-24.54	Peak	2.00	100	H	Pass
5**	31534.241	51.62	23.84	64.0	-12.38	AV	0.00	100	H	Pass
5	31534.241	62.53	23.84	84.0	-21.47	Peak	0.00	100	H	Pass
6**	39180.080	57.93	26.16	64.0	-6.07	AV	4.00	100	H	Pass
6	39180.080	69.00	26.16	84.0	-15.00	Peak	4.00	100	H	Pass

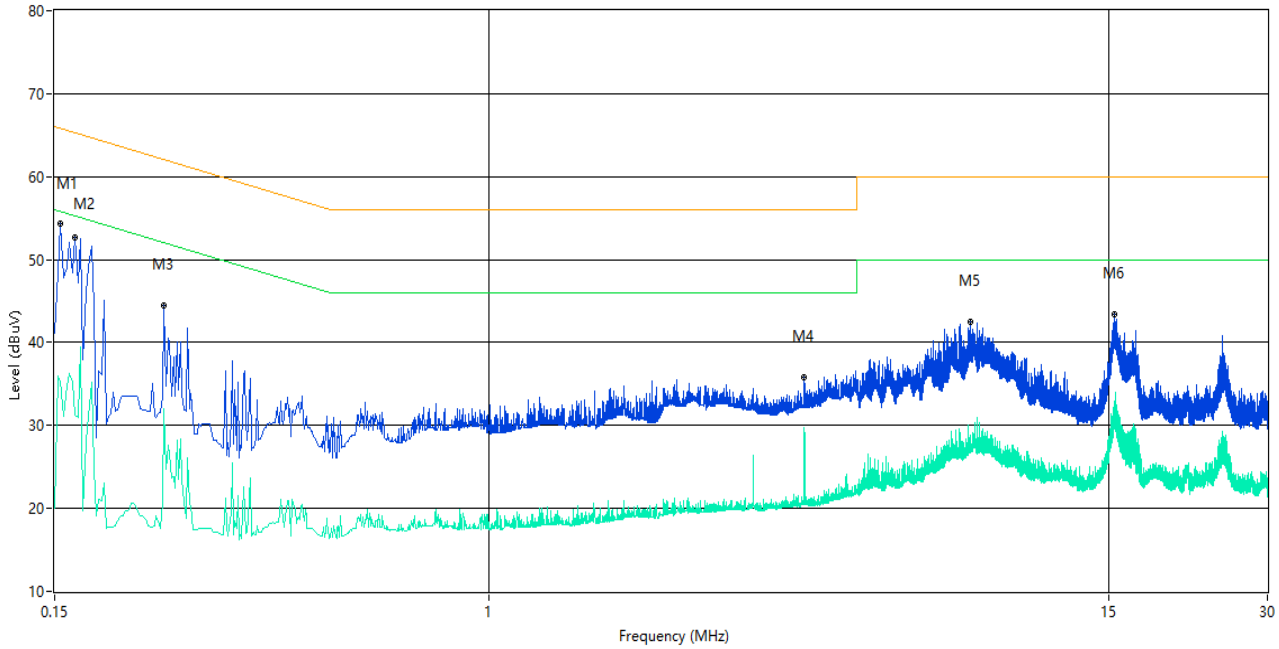
A.2 Conducted Emission

Test Data and Plots

Test Mode 6: Charging + Date Transmitting (USB C + USB-A) + Camera On + Earphone + Video Playing + WIFI + BT ON + Burn-in test

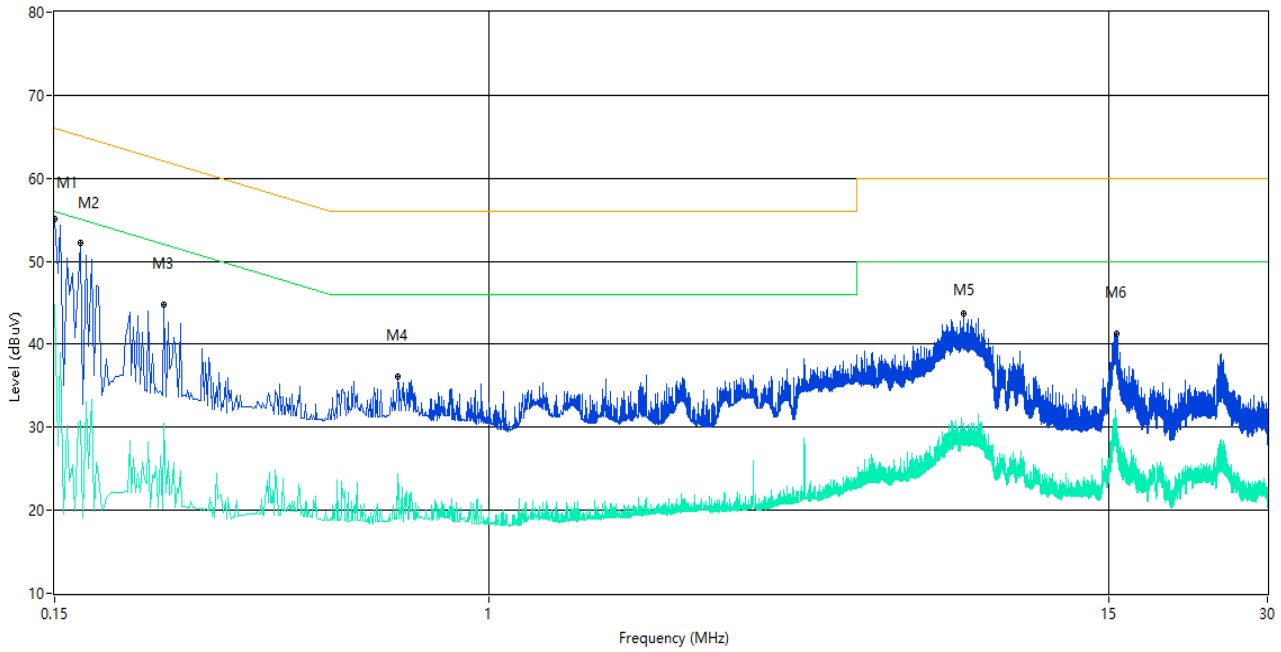
Note: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst 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	0.154	54.79	10.01	65.8	-11.01	Peak	L Line	N/A
1*	0.154	52.38	10.01	65.8	-13.42	QP	L Line	Pass
1**	0.154	36.35	10.01	55.8	-19.45	AV	L Line	Pass
2	0.164	53.52	10.01	65.3	-11.78	Peak	L Line	N/A
2*	0.164	51.43	10.01	65.3	-13.87	QP	L Line	Pass
2**	0.164	35.89	10.01	55.3	-19.41	AV	L Line	Pass
3	0.242	44.18	10.00	62.0	-17.82	Peak	L Line	N/A
3*	0.242	40.69	10.00	62.0	-21.31	QP	L Line	Pass
3**	0.242	25.90	10.00	52.0	-26.10	AV	L Line	Pass
4	3.966	36.53	10.09	56.0	-19.47	Peak	L Line	N/A
4*	3.966	31.46	10.09	56.0	-24.54	QP	L Line	Pass
4**	3.966	27.65	10.09	46.0	-18.35	AV	L Line	Pass
5	8.208	42.40	10.14	60.0	-17.60	Peak	L Line	N/A
5*	8.208	35.73	10.14	60.0	-24.27	QP	L Line	Pass
5**	8.208	27.19	10.14	50.0	-22.81	AV	L Line	Pass
6	15.364	44.41	10.21	60.0	-15.59	Peak	L Line	N/A
6*	15.364	37.39	10.21	60.0	-22.61	QP	L Line	Pass
6**	15.364	29.26	10.21	50.0	-20.74	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	0.150	55.60	10.01	66.0	-10.40	Peak	N Line	N/A
1*	0.150	49.70	10.01	66.0	-16.30	QP	N Line	Pass
1**	0.150	31.76	10.01	56.0	-24.24	AV	N Line	Pass
2	0.168	53.10	10.01	65.1	-12.00	Peak	N Line	N/A
2*	0.168	50.98	10.01	65.1	-14.12	QP	N Line	Pass
2**	0.168	36.35	10.01	55.1	-18.75	AV	N Line	Pass
3	0.242	45.87	10.00	62.0	-16.13	Peak	N Line	N/A
3*	0.242	42.89	10.00	62.0	-19.11	QP	N Line	Pass
3**	0.242	28.34	10.00	52.0	-23.66	AV	N Line	Pass
4	0.672	35.71	10.03	56.0	-20.29	Peak	N Line	N/A
4*	0.672	31.91	10.03	56.0	-24.09	QP	N Line	Pass
4**	0.672	16.47	10.03	46.0	-29.53	AV	N Line	Pass
5	7.964	44.25	10.15	60.0	-15.75	Peak	N Line	N/A
5*	7.964	36.98	10.15	60.0	-23.02	QP	N Line	Pass
5**	7.964	27.97	10.15	50.0	-22.03	AV	N Line	Pass
6	15.508	45.23	10.21	60.0	-14.77	Peak	N Line	N/A
6*	15.508	38.24	10.21	60.0	-21.76	QP	N Line	Pass
6**	15.508	30.08	10.21	50.0	-19.92	AV	N Line	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ1880358-AE.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ1880358-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ1880358-AI.PDF”.

--END OF REPORT--