

FCC

EMC

TEST REPORT

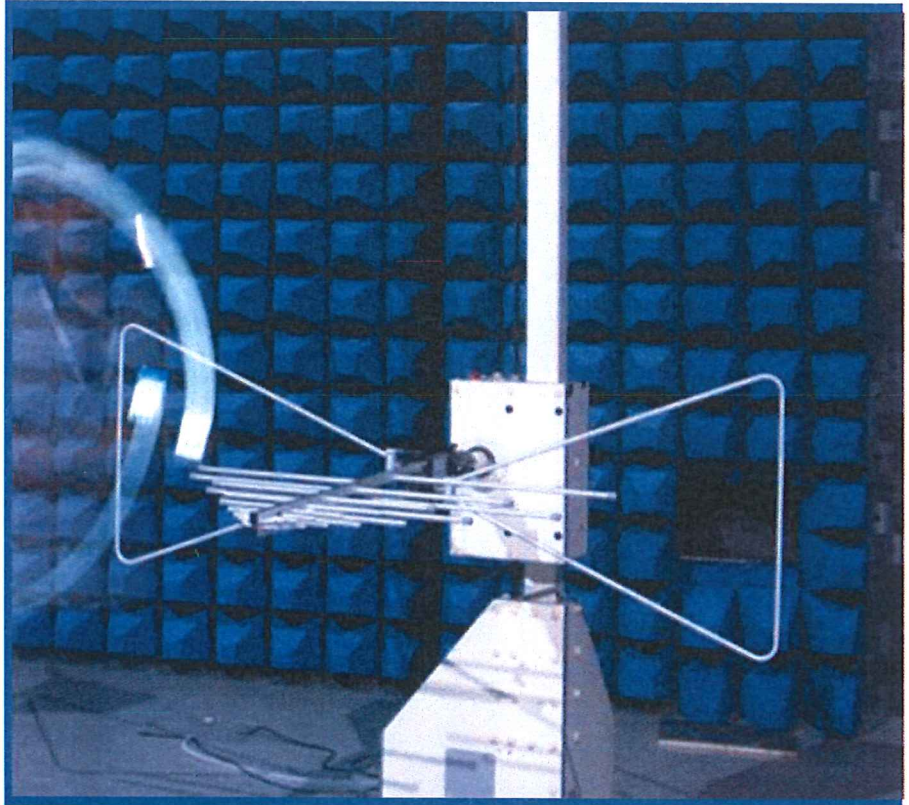
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
Mobile Phone

ISSUED TO
Guangdong OPPO Mobile Telecommunications Corp., Ltd.

NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan City,
Guangdong, China



Tested by: *Liu zhen xiang*
Liu Zhenxiang
Date *Mar. 12, 2021*

Approved by: *[Signature]*
Wei Yanquan
(Chief Engineer)
Date *Mar. 17, 2021*

Report No.: BL-SZ2110523-401
EUT Name: Mobile Phone
Model Name: CPH2239
Brand Name: OPPO
Test Standard: 47 CFR Part 15 Subpart B
FCC ID: R9C-CPH2239

Test Conclusion: Pass
Test Date: Jan. 22, 2021 ~ Jan. 27, 2021
Date of Issue: Mar. 12, 2021

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Revision History

<u>Version</u>	<u>Issue Date</u>	<u>Revisions Content</u>
<u>Rev. 01</u>	<u>Mar. 12, 2021</u>	<u>Initial Issue</u>

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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
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 v7.0.
- (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.
- (7) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Guangdong OPPO Mobile Telecommunications Corp., Ltd.
Address	NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan City, Guangdong, China

2.2 Manufacturer Information

Manufacturer	Guangdong OPPO Mobile Telecommunications Corp., Ltd.
Address	NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan City, Guangdong, China

2.3 Factory Information

Factory	Guangdong OPPO Mobile Telecommunications Corp., Ltd.
Address	NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan City, Guangdong, China

2.4 General Description for Equipment under Test (EUT)

EUT Name	Mobile Phone
Model Name Under Test	CPH2239
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	11
Software Version	ColorOS V7.2
Dimensions (Approx.)	163.6*75.7*8.4mm
Weight (Approx.)	192g

2.5 Ancillary Equipment

Ancillary Equipment 1	Battery 1	
	Brand Name	OPPO
	Model No.	BLP805
	Serial No.	N/A
	Capacity	Rated Capacity:4890mAh Typical Capacity:5000mAh
	Rated Voltage	3.87 V
	Limit Charge Voltage	4.2 V
	Manufacturer	HUIZHOU DESAY BATTERY Co., LTD.
Ancillary Equipment 2	Battery 2	
	Brand Name	OPPO
	Model No.	BLP805
	Serial No.	N/A
	Capacity	Rated Capacity:4890mAh Typical Capacity:5000mAh
	Rated Voltage	3.87 V
	Limit Charge Voltage	4.2 V
	Manufacturer	Sunwoda Electronic Co., Ltd.
Ancillary Equipment 3	Adapter 1	
	Brand Name	OPPO
	Model No.	OP92KAUH (US Plug)
	Serial No.	N/A
	Rated Input	100-240 V~, 0.5 A, 50/60 Hz
	Rated Output	5 V= 0.5 A or 9 V= 2 A
Ancillary Equipment 4	Adapter 2	
	Brand Name	OPPO
	Model No.	OP92JAUH (US Plug)
	Serial No.	N/A
	Rated Input	100-240 V~, 0.5 A, 50/60 Hz
	Rated Output	5 V= 0.5 A or 9 V= 2 A
Ancillary Equipment 5	Adapter 3	
	Brand Name	OPPO
	Model No.	OP92CAUH (US Plug)
	Serial No.	N/A
	Rated Input	100-240 V~, 0.5 A, 50/60 Hz
	Rated Output	5 V= 0.5 A or 9 V= 2 A
Ancillary Equipment 6	Adapter 4	
	Brand Name	OPPO
	Model No.	OP92YAUH (US Plug)
	Serial No.	N/A
	Rated Input	100-240 V~, 0.5 A, 50/60 Hz
	Rated Output	5 V= 0.5 A or 9 V= 2 A
Ancillary Equipment 7	USB Cable	

	Model No.	DL143
	Length (Approx.)	1 m
Ancillary Equipment 8	Headset 1	
	Model No.	MH156
	Length (Approx.)	1.2 m
Ancillary Equipment 9	Headset 2	
	Model No.	MH145
	Length (Approx.)	1.2 m
<p>Note 1: Letter in () means plug type.</p> <p>Note 2: All adapters are tested, only the worst data of OP92JAUH (US Plug 100-240VAC) shown in this report.</p> <p>Note 3: All batteries are tested, only the worst data of BLP805 (Sunwoda) shown in this report.</p>		

2.6 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EDGE 850/900/1800/1900 MHz 3G Network WCDMA/HSDPA/HSUPA Band 1/2/4/5/8 4G Network FDD LTE Band 1/2/3/4/5/7/8/12/17/26/28/66 TDD LTE Band 38/41 Bluetooth (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20/40) 5G WIFI 802.11a, 802.11n(HT20/40), 802.11ac(VHT20/40/80) U-NII-1/2A/2C/3, GPS, GLONASS, BDS, Galileo, SBAS, FM Receiver
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The requirement for the following technical information of the EUT was tested in this report:

The Highest Speed of Processor	2.3 GHz
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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 (10-1-19 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)	2.96 dB
Radiated emissions (30 MHz-1 GHz)	3.67 dB
Radiated emissions (1 GHz-18 GHz)	3.57 dB
Radiated emissions (18 GHz-40 GHz)	5.16 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 3.85 V from Battery	50% to 55%	100 kPa to 102 kPa

4.2 Test Equipment List

Radiated Emission Test For Frequency Below 1 GHz (10 m)						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2020.06.09	2021.06.08	<input type="checkbox"/>
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9168	9168-0883	2020.05.11	2022.05.10	<input type="checkbox"/>
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60*7.35m	N/A	2018.08.08	2021.08.07	<input type="checkbox"/>
Test Software	BALUN	BL410_E	V19.918	--	--	<input type="checkbox"/>

Radiated Emission Test For Frequency Below 1 GHz (3 m)						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2020.09.18	2021.09.17	<input checked="" type="checkbox"/>
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2019.07.02	2021.07.01	<input checked="" type="checkbox"/>
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2018.07.18	2021.07.27	<input checked="" type="checkbox"/>
Test Software	BALUN	BL410_E	V19.918	--	--	<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	2020.09.18	2021.09.17	<input checked="" type="checkbox"/>
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	9120D-1917	2019.07.02	2021.07.01	<input checked="" type="checkbox"/>
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2018.07.18	2021.07.17	<input checked="" type="checkbox"/>
Test Software	BALUN	BL410_E	V19.918	--	--	<input checked="" type="checkbox"/>

Conducted disturbance Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9010B	MY5711030 9	2020.06.08	2021.06.07	<input checked="" type="checkbox"/>
LISN	SCHWARZBECK	NSLK 8127	8127-687	2020.06.09	2021.06.08	<input checked="" type="checkbox"/>
Shielded Enclosure	YiHeng Electronic Co., Ltd	3.4m*3.1m*2 .8m	N/A	2018.08.16	2021.08.15	<input checked="" type="checkbox"/>
Test Software	BALUN	BL410_E	V19.918	--	--	<input checked="" type="checkbox"/>

4.3 Test Enclosure list

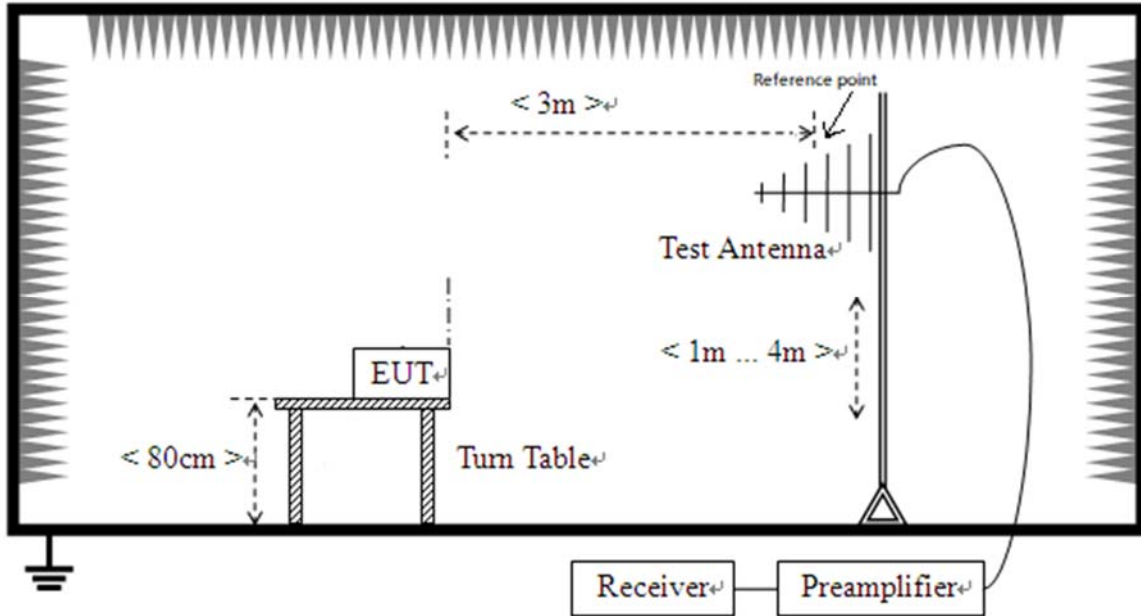
Description	Manufacturer	Model	Serial No.	Length	Description	Use
PC	Dell	015K3N	N/A	N/A	Special Handled	<input type="checkbox"/>
Laptop	Apple	A1465	N/A	N/A	N/A	<input checked="" type="checkbox"/>
Printer	HP	DESKJET 1000	N/A	N/A	N/A	<input type="checkbox"/>
Keyboard	Logitech	Y-BP62a	N/A	N/A	N/A	<input type="checkbox"/>
Mouse	Logitech	M100	N/A	N/A	N/A	<input type="checkbox"/>
USB disk	Kingston	N/A	N/A	N/A	N/A	<input type="checkbox"/>
TF Card	Kingston	N/A	N/A	N/A	N/A	<input checked="" type="checkbox"/>
VGA Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input type="checkbox"/>
HDMI Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input type="checkbox"/>
DVI Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input type="checkbox"/>
Coaxial video cable	N/A	N/A	N/A	2.0 m	Shielded with core	<input type="checkbox"/>
iPhone	Apple	A1586	N/A	N/A	N/A	<input type="checkbox"/>
Phone	MI	M4	N/A	N/A	N/A	<input type="checkbox"/>
Bluetooth Earphone	SAMSUNG	Gear Circle	N/A	N/A	N/A	<input type="checkbox"/>
WIFI Router	TP-LINK	TL-WDR7500	N/A	N/A	N/A	<input type="checkbox"/>
Earphone	N/A	OPPO	N/A	1.1 m	N/A	<input type="checkbox"/>
Car Battery	Camel	55530	N/A	N/A	12 V/55 Ah	<input type="checkbox"/>
Artificial load	N/A	N/A	N/A	N/A	2.5 Ω/100 W	<input type="checkbox"/>
Artificial load	N/A	N/A	N/A	N/A	5 Ω/100 W	<input type="checkbox"/>
Electronic Load	ITECH	IT8511	N/A	N/A	N/A	<input type="checkbox"/>
USB Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input type="checkbox"/>
DC Power Supply	ITECH	IT6863A	60001401068 7210006	N/A	N/A	<input type="checkbox"/>
LCD Monitor	SAMSUNG	UA32C4000P	N/A	N/A	N/A	<input type="checkbox"/>
LCD Monitor	Dell	U241HB	N/A	N/A	N/A	<input type="checkbox"/>
RJ45 Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input type="checkbox"/>

4.4 Test Configurations

Test Configurations (TC) No.	Description
TC01	<u>The Camera Test Mode</u> EUT + Adapter + USB Cable + Battery + Headset + TF Card
TC02	<u>The Video Play Test Mode</u> EUT + Adapter + USB Cable + Battery + Headset + TF Card
TC03	<u>The USB Test Mode</u> EUT + USB Cable + Battery + Laptop+ Headset + TF Card

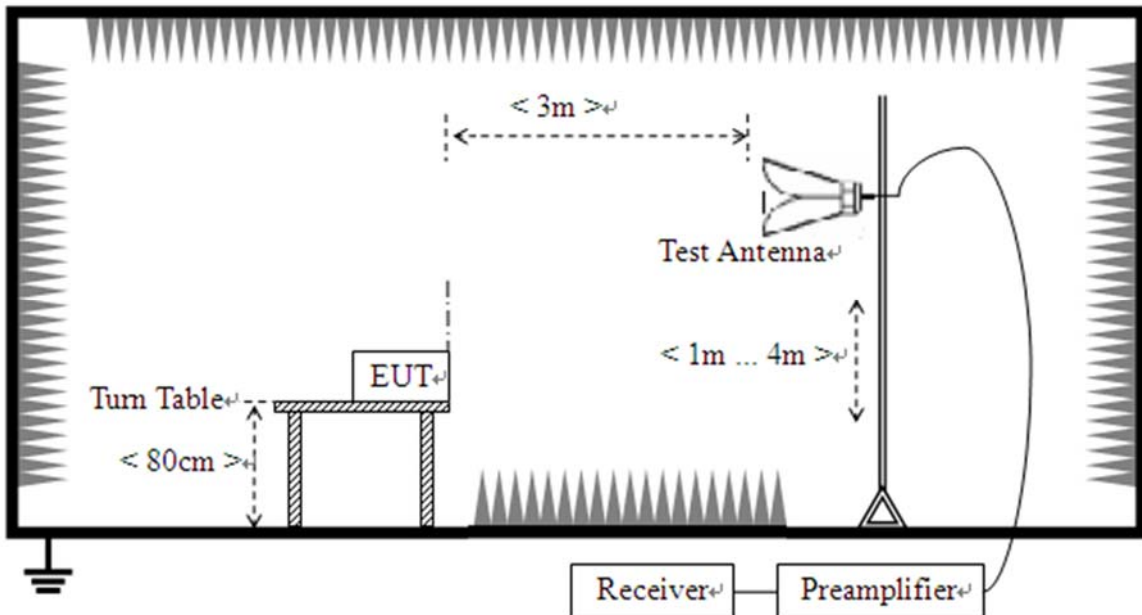
4.5 Test Setups

Test Setup 1



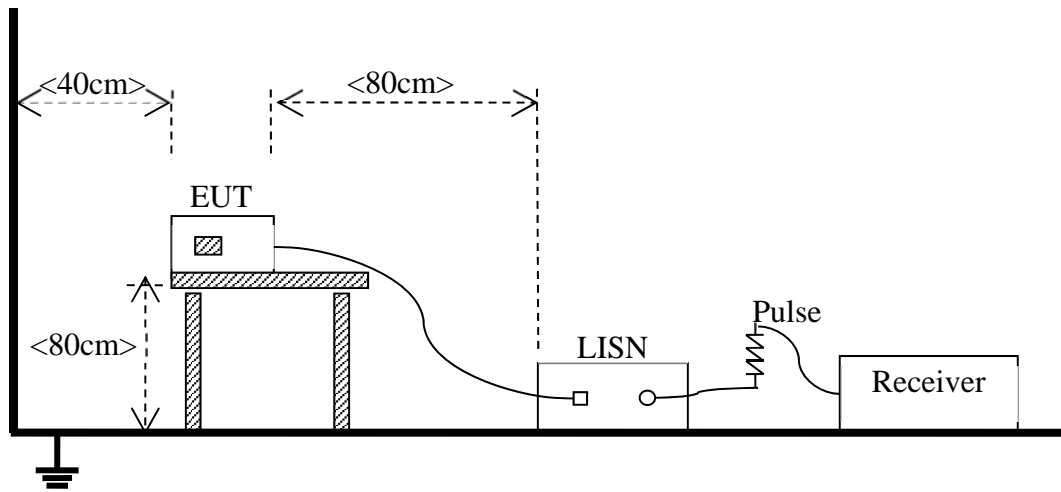
(For Radiated Emission Test (30 MHz-1 GHz))

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~TC03 ^{Note}
Conducted Emission, AC Ports	Test Env.	NTNV
	Test Setup	Test Setup 3
	Test Configuration	TC01~TC03 ^{Note}

Note: Based on client request, all normal using modes of the normal function were tested but only the worst test data of the worst mode is reported by this report. The Camera Test Mode is the worst mode in this report.

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:

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

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.

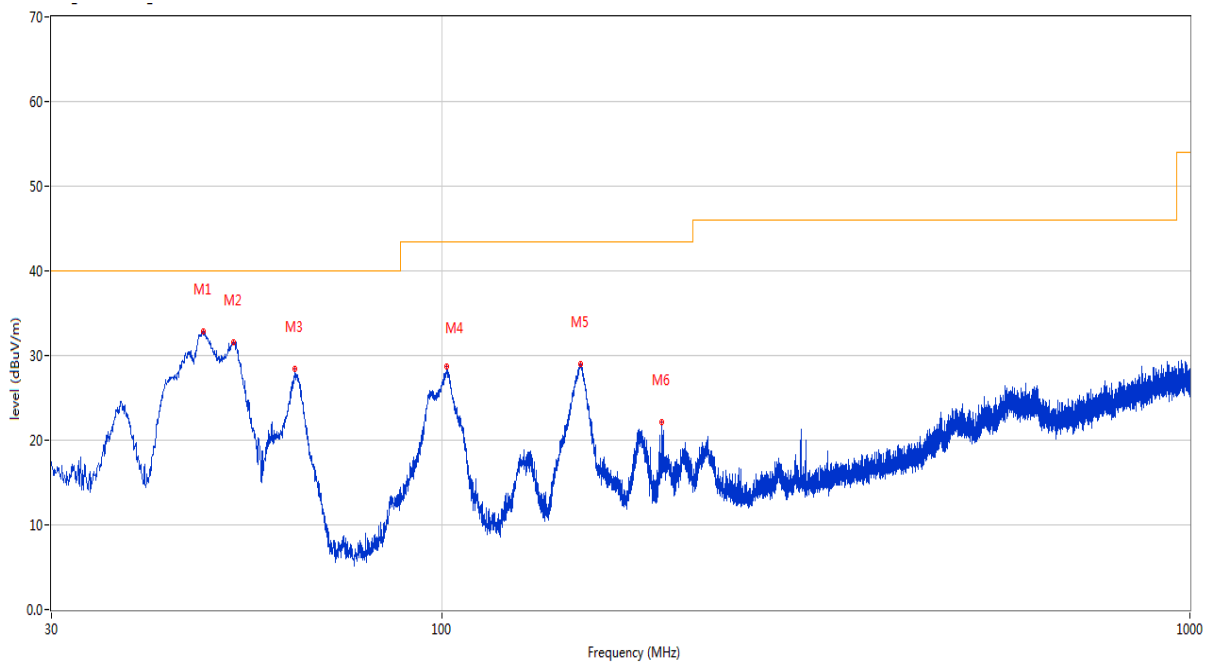
Note 2: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Note 3: The Radiated Emission from 18G-40G is noise only, do not show on the report.

Test Data and Plots

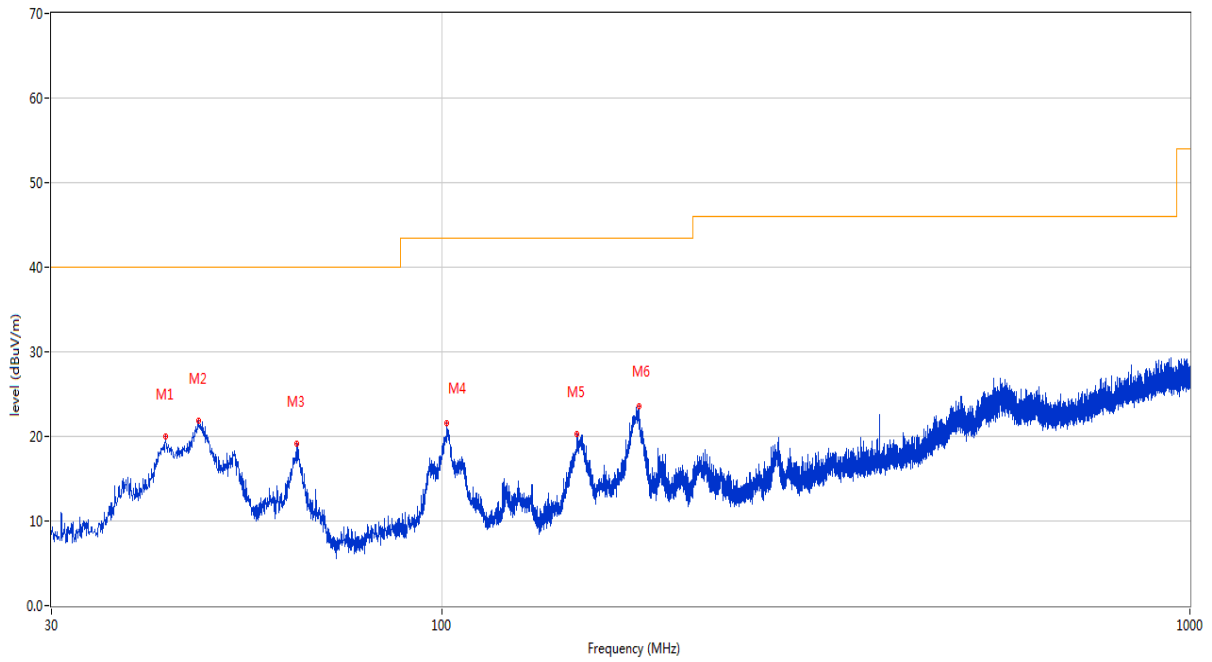
The Camera Test Mode

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



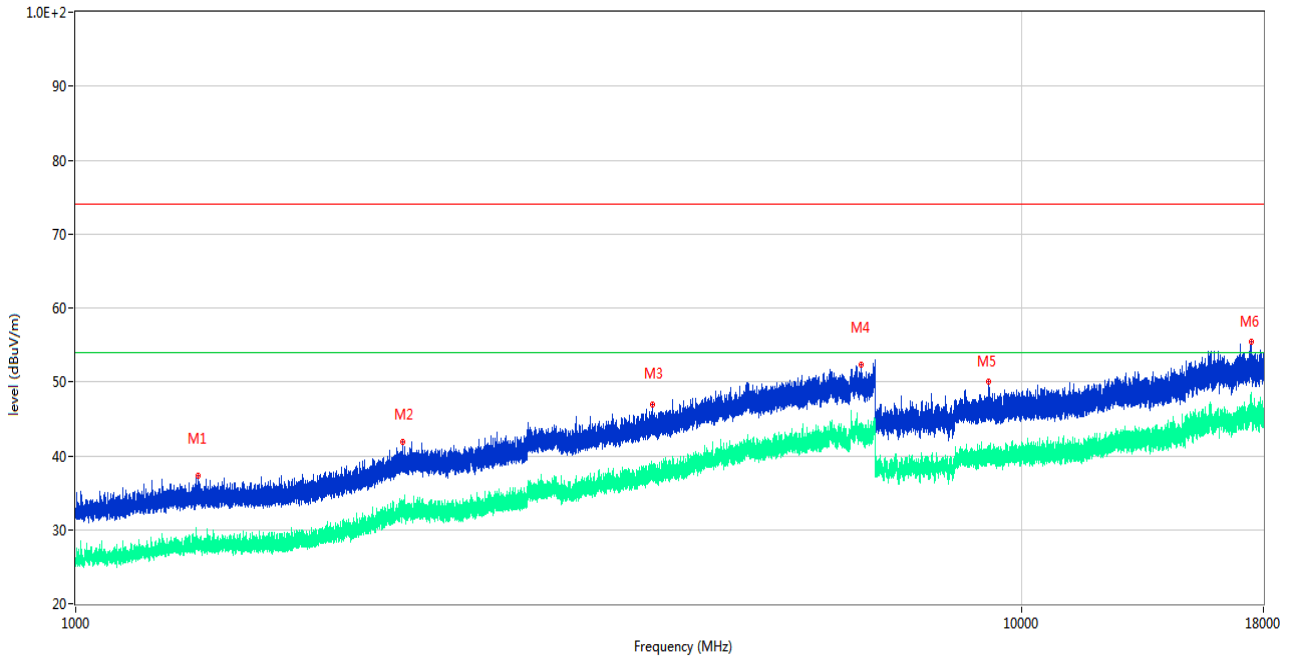
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	47.897	32.89	-22.66	40.0	-7.11	Peak	129.70	100	Vertical	Pass
2	52.504	31.59	-23.09	40.0	-8.41	Peak	104.20	100	Vertical	Pass
3	63.514	28.37	-24.85	40.0	-11.63	Peak	125.50	100	Vertical	Pass
4	101.440	28.68	-24.60	43.5	-14.82	Peak	190.10	100	Vertical	Pass
5	153.044	29.00	-27.59	43.5	-14.50	Peak	333.60	100	Vertical	Pass
6	196.743	22.17	-24.26	43.5	-21.33	Peak	360.00	200	Vertical	Pass

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



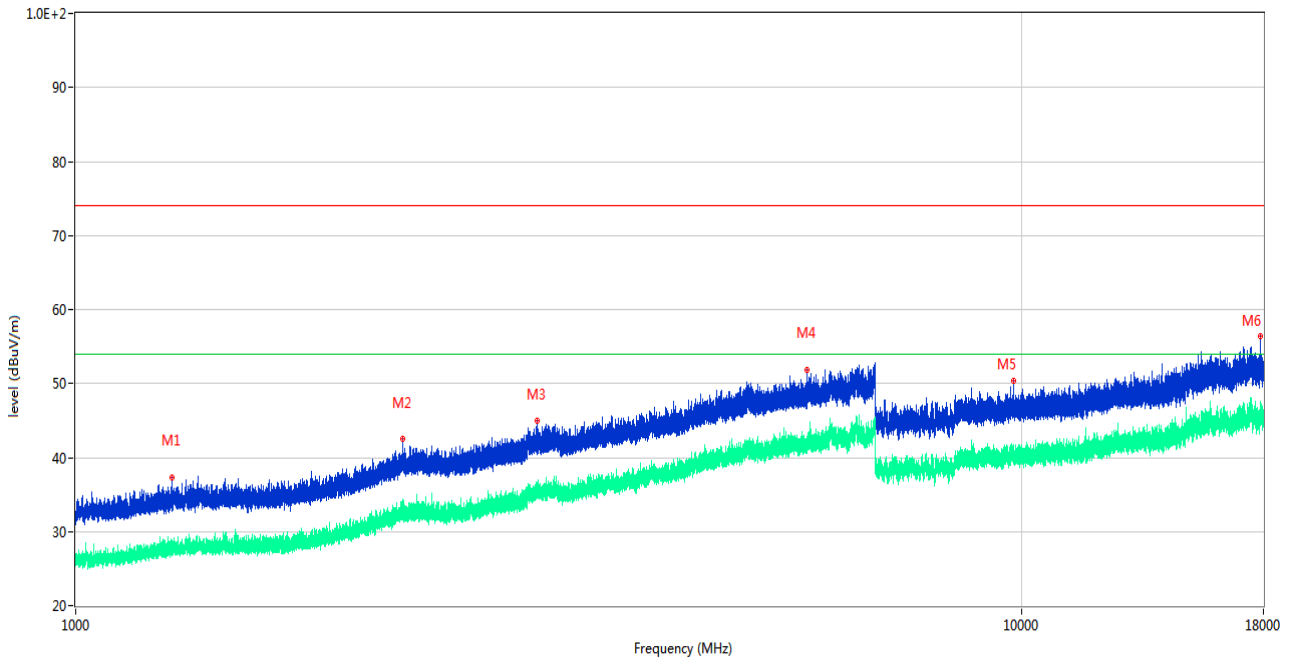
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	42.610	20.00	-23.41	40.0	-20.00	Peak	161.20	200	Horizontal	Pass
2	47.218	21.92	-22.83	40.0	-18.08	Peak	102.10	200	Horizontal	Pass
3	63.853	19.14	-24.90	40.0	-20.86	Peak	359.10	100	Horizontal	Pass
4	101.440	21.57	-24.60	43.5	-21.93	Peak	255.80	100	Horizontal	Pass
5	151.492	20.28	-28.06	43.5	-23.22	Peak	296.30	200	Horizontal	Pass
6	183.066	23.62	-25.27	43.5	-19.88	Peak	95.20	100	Horizontal	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 (Degree)	Height (cm)	Antenna	Verdict
1	1345.700	37.35	-17.27	74.0	-36.65	Peak	0.00	150	Vertical	Pass
1**	1345.700	28.09	-17.27	54.0	-25.91	AV	0.00	150	Vertical	Pass
2	2217.800	41.85	-12.77	74.0	-32.15	Peak	306.00	150	Vertical	Pass
2**	2217.800	33.31	-12.77	54.0	-20.69	AV	306.00	150	Vertical	Pass
3	4067.800	46.87	-5.49	74.0	-27.13	Peak	215.00	150	Vertical	Pass
3**	4067.800	38.22	-5.49	54.0	-15.78	AV	215.00	150	Vertical	Pass
4	6769.600	52.28	-1.17	74.0	-21.72	Peak	29.00	150	Vertical	Pass
4**	6769.600	43.14	-1.17	54.0	-10.86	AV	29.00	150	Vertical	Pass
5	9227.837	50.08	-1.36	74.0	-23.92	Peak	103.00	150	Vertical	Pass
5**	9227.837	39.58	-1.36	54.0	-14.42	AV	103.00	150	Vertical	Pass
6	17465.287	55.50	2.89	74.0	-18.50	Peak	135.00	150	Vertical	Pass
6**	17465.287	47.04	2.89	54.0	-6.96	AV	135.00	150	Vertical	Pass

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

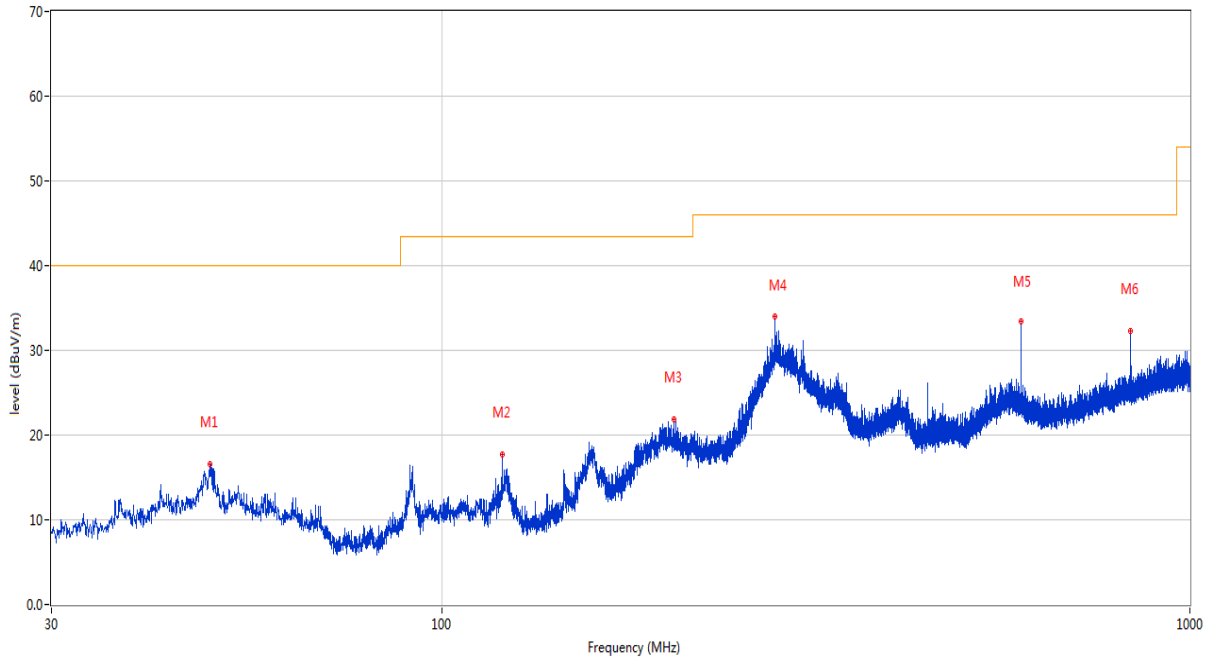


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1263.700	37.32	-17.57	74.0	-36.68	Peak	67.00	150	Horizontal	Pass
1**	1263.700	28.41	-17.57	54.0	-25.59	AV	67.00	150	Horizontal	Pass
2	2214.700	42.47	-12.92	74.0	-31.53	Peak	184.00	150	Horizontal	Pass
2**	2214.700	31.89	-12.92	54.0	-22.11	AV	184.00	150	Horizontal	Pass
3	3077.200	45.03	-8.39	74.0	-28.97	Peak	0.00	150	Horizontal	Pass
3**	3077.200	35.44	-8.39	54.0	-18.56	AV	0.00	150	Horizontal	Pass
4	5925.800	51.85	-2.51	74.0	-22.15	Peak	360.00	150	Horizontal	Pass
4**	5925.800	41.26	-2.51	54.0	-12.74	AV	360.00	150	Horizontal	Pass
5	9799.963	50.37	-0.29	74.0	-23.63	Peak	360.00	150	Horizontal	Pass
5**	9799.963	39.76	-0.29	54.0	-14.24	AV	360.00	150	Horizontal	Pass
6	17879.511	56.39	3.57	74.0	-17.61	Peak	23.00	150	Horizontal	Pass
6**	17879.511	47.03	3.57	54.0	-6.97	AV	23.00	150	Horizontal	Pass

Test Data and Plots

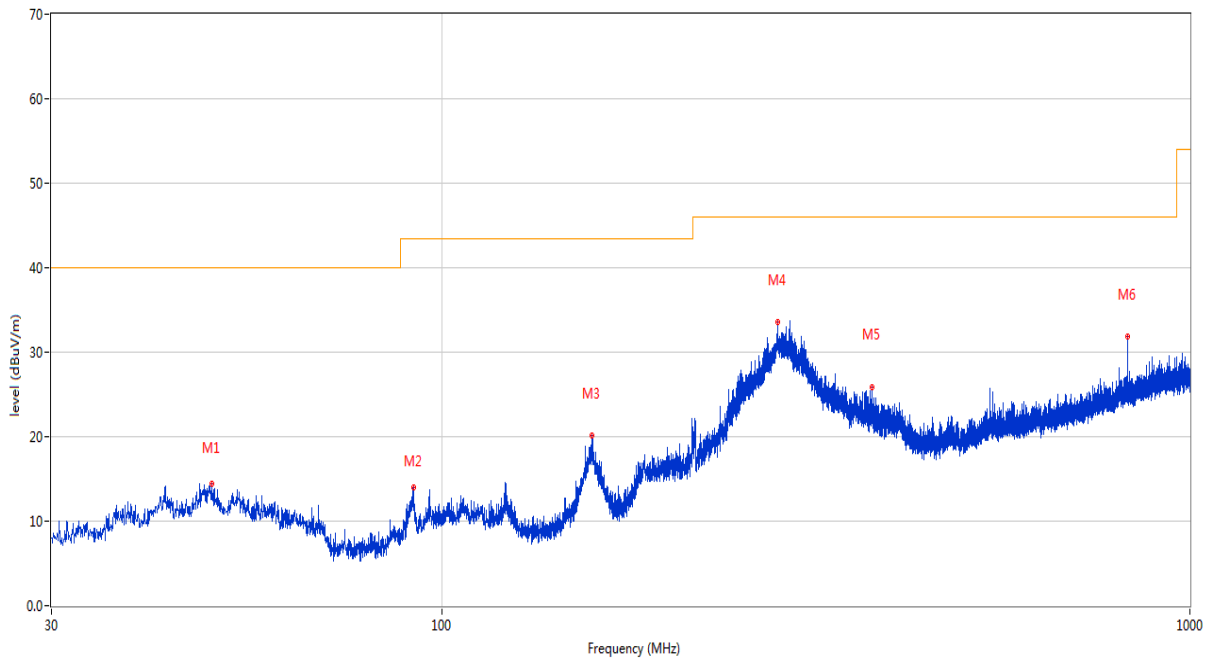
The USB Test Mode

A.1.5 Test Antenna Vertical, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	48.818	16.62	-22.47	40.0	-23.38	Peak	91.00	100	Vertical	Pass
2	120.307	17.77	-25.81	43.5	-25.73	Peak	188.80	100	Vertical	Pass
3	203.824	21.90	-23.74	43.5	-21.60	Peak	192.90	100	Vertical	Pass
4	278.805	33.97	-21.87	46.0	-12.03	Peak	1.30	200	Vertical	Pass
5	594.006	33.40	-14.68	46.0	-12.60	Peak	214.00	100	Vertical	Pass
6	833.257	32.34	-11.38	46.0	-13.66	Peak	281.50	100	Vertical	Pass

A.1.6 Test Antenna Horizontal, 30 MHz – 1 GHz



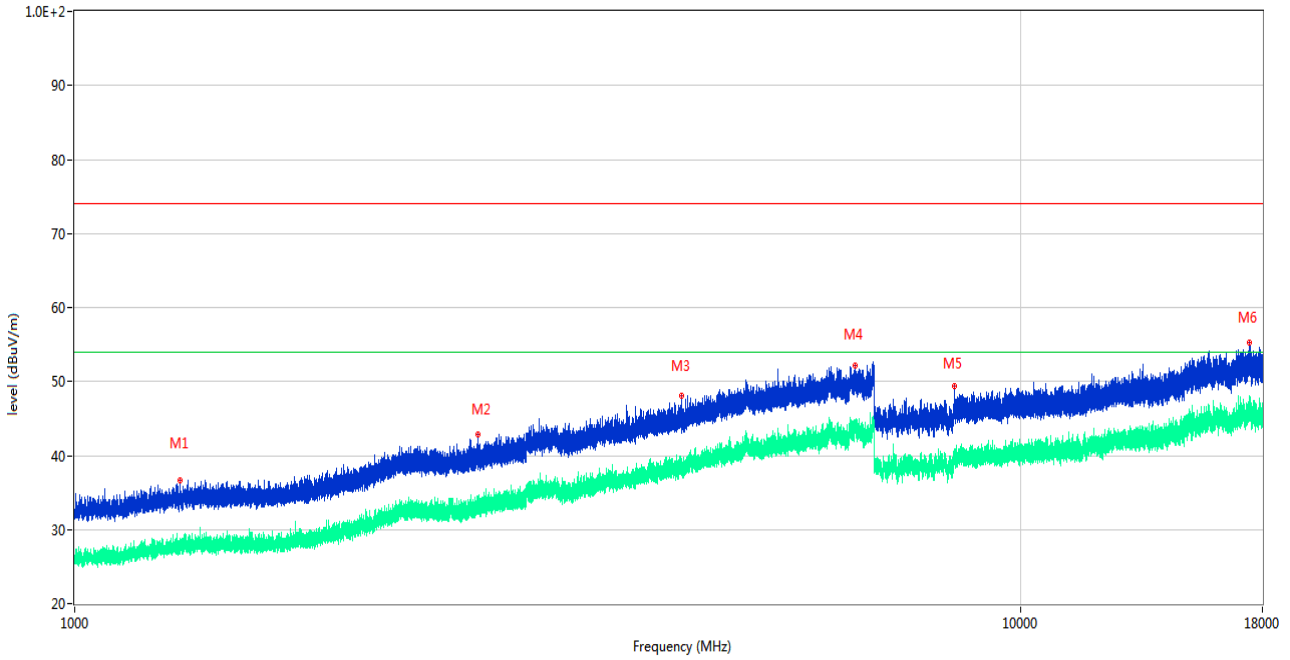
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	49.109	14.39	-22.41	40.0	-25.61	Peak	16.70	200	Horizontal	Pass
2	91.595	14.05	-25.72	43.5	-29.45	Peak	79.40	200	Horizontal	Pass
3	158.670	20.15	-27.51	43.5	-23.35	Peak	33.10	200	Horizontal	Pass
4	281.230	33.60	-21.75	46.0	-12.40	Peak	95.70	100	Horizontal	Pass
5	375.126	25.80	-19.09	46.0	-20.20	Peak	108.10	100	Horizontal	Pass
6	824.673	31.84	-11.15	46.0	-14.16	Peak	142.70	100	Horizontal	Pass

A.1.7 Test Antenna Vertical, 1 GHz – 18 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1228.600	37.14	-17.73	74.0	-36.86	Peak	70.00	150	Vertical	Pass
1**	1228.600	27.57	-17.73	54.0	-26.43	AV	70.00	150	Vertical	Pass
2	2337.600	41.84	-12.63	74.0	-32.16	Peak	190.00	150	Vertical	Pass
2**	2337.600	32.29	-12.63	54.0	-21.71	AV	190.00	150	Vertical	Pass
3	3965.800	46.29	-4.82	74.0	-27.71	Peak	284.00	150	Vertical	Pass
3**	3965.800	37.15	-4.82	54.0	-16.85	AV	284.00	150	Vertical	Pass
4	6682.800	51.97	-0.42	74.0	-22.03	Peak	0.00	150	Vertical	Pass
4**	6682.800	44.10	-0.42	54.0	-9.90	AV	0.00	150	Vertical	Pass
5	10501.175	49.99	-0.88	74.0	-24.01	Peak	104.00	150	Vertical	Pass
5**	10501.175	39.64	-0.88	54.0	-14.36	AV	104.00	150	Vertical	Pass
6	17434.051	54.84	3.30	74.0	-19.16	Peak	268.00	150	Vertical	Pass
6**	17434.051	45.68	3.30	54.0	-8.32	AV	268.00	150	Vertical	Pass

A.1.8 Test Antenna Horizontal, 1 GHz – 18 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1292.400	36.69	-17.46	74.0	-37.31	Peak	227.00	150	Horizontal	Pass
1**	1292.400	28.70	-17.46	54.0	-25.30	AV	227.00	150	Horizontal	Pass
2	2666.800	42.90	-11.34	74.0	-31.10	Peak	124.00	150	Horizontal	Pass
2**	2666.800	33.18	-11.34	54.0	-20.82	AV	124.00	150	Horizontal	Pass
3	4375.000	48.16	-4.41	74.0	-25.84	Peak	290.00	150	Horizontal	Pass
3**	4375.000	38.04	-4.41	54.0	-15.96	AV	290.00	150	Horizontal	Pass
4	6688.400	52.22	-0.25	74.0	-21.78	Peak	360.00	150	Horizontal	Pass
4**	6688.400	43.98	-0.25	54.0	-10.02	AV	360.00	150	Horizontal	Pass
5	8503.338	49.34	-1.34	74.0	-24.66	Peak	173.00	150	Horizontal	Pass
5**	8503.338	39.49	-1.34	54.0	-14.51	AV	173.00	150	Horizontal	Pass
6	17418.562	55.27	3.72	74.0	-18.73	Peak	360.00	150	Horizontal	Pass
6**	17418.562	46.52	3.72	54.0	-7.48	AV	360.00	150	Horizontal	Pass

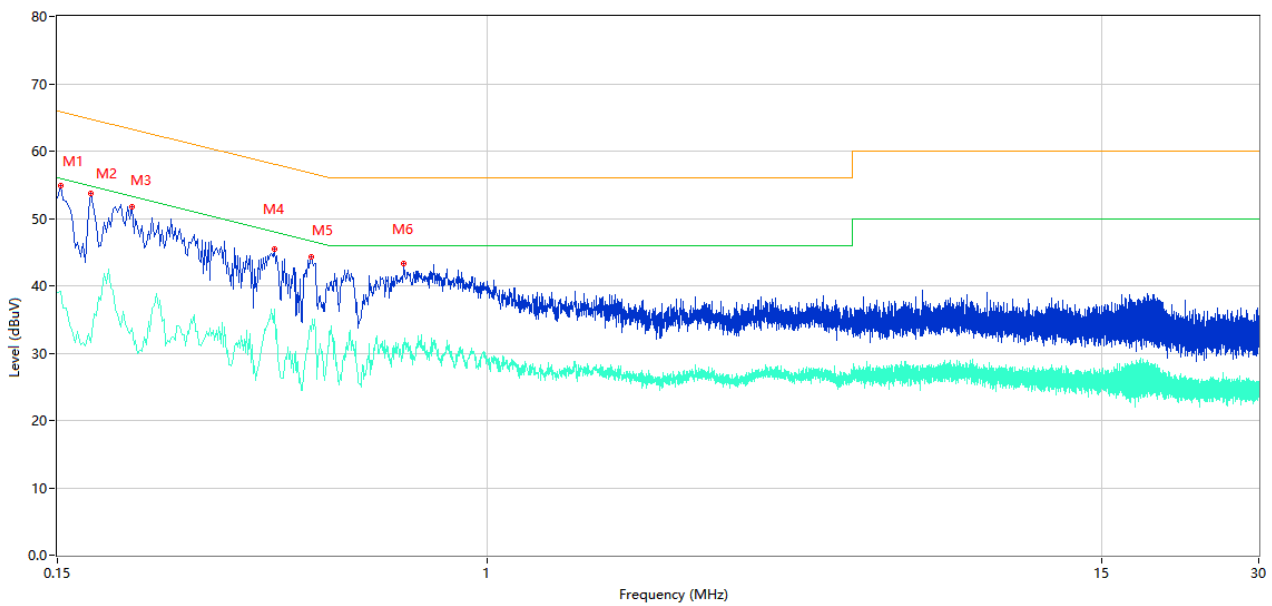
A.2 Conducted Emission

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.

Test Data and Plots

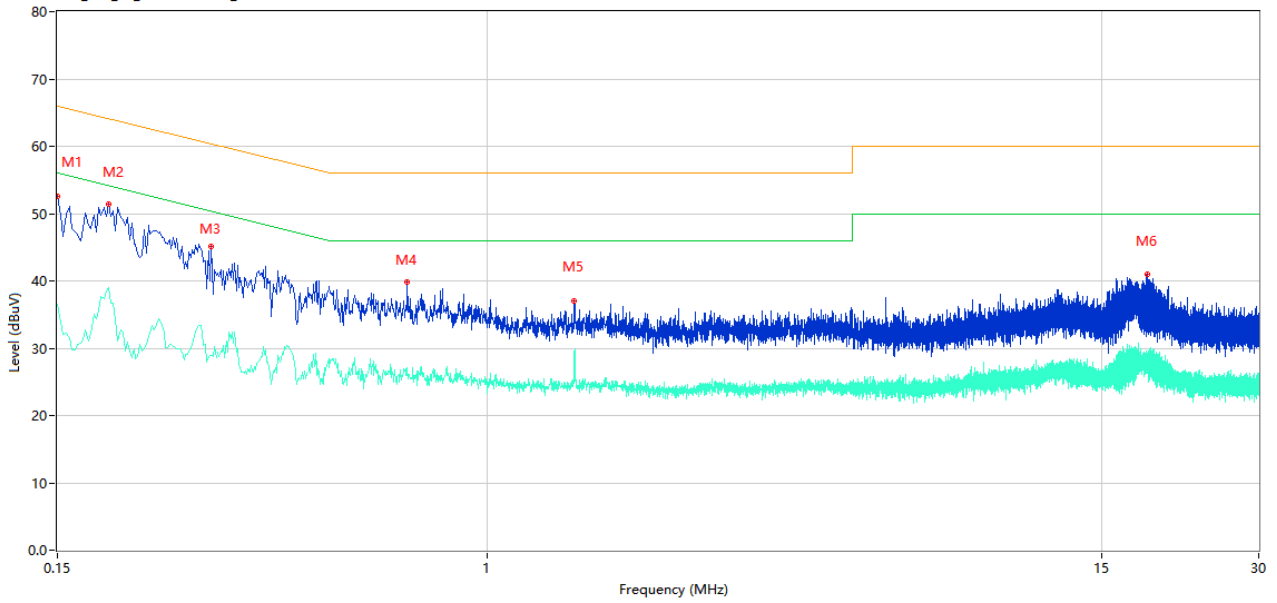
The Camera Test Mode

A.2.1 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.152	54.94	10.41	65.89	-10.95	Peak	L	Pass
1**	0.152	39.14	10.41	55.89	-16.75	AV	L	Pass
2	0.174	53.78	10.39	64.77	-10.99	Peak	L	Pass
2**	0.174	31.61	10.39	54.77	-23.16	AV	L	Pass
3	0.208	51.80	10.38	63.28	-11.48	Peak	L	Pass
3**	0.208	33.75	10.38	53.28	-19.53	AV	L	Pass
4	0.390	45.42	10.30	58.06	-12.64	Peak	L	Pass
4**	0.390	36.47	10.30	48.06	-11.59	AV	L	Pass
5	0.460	44.29	10.30	56.69	-12.40	Peak	L	Pass
5**	0.460	33.30	10.30	46.69	-13.39	AV	L	Pass
6	0.692	43.28	10.27	56.00	-12.72	Peak	L	Pass
6**	0.692	30.02	10.27	46.00	-15.98	AV	L	Pass

A.2.2 N Phase

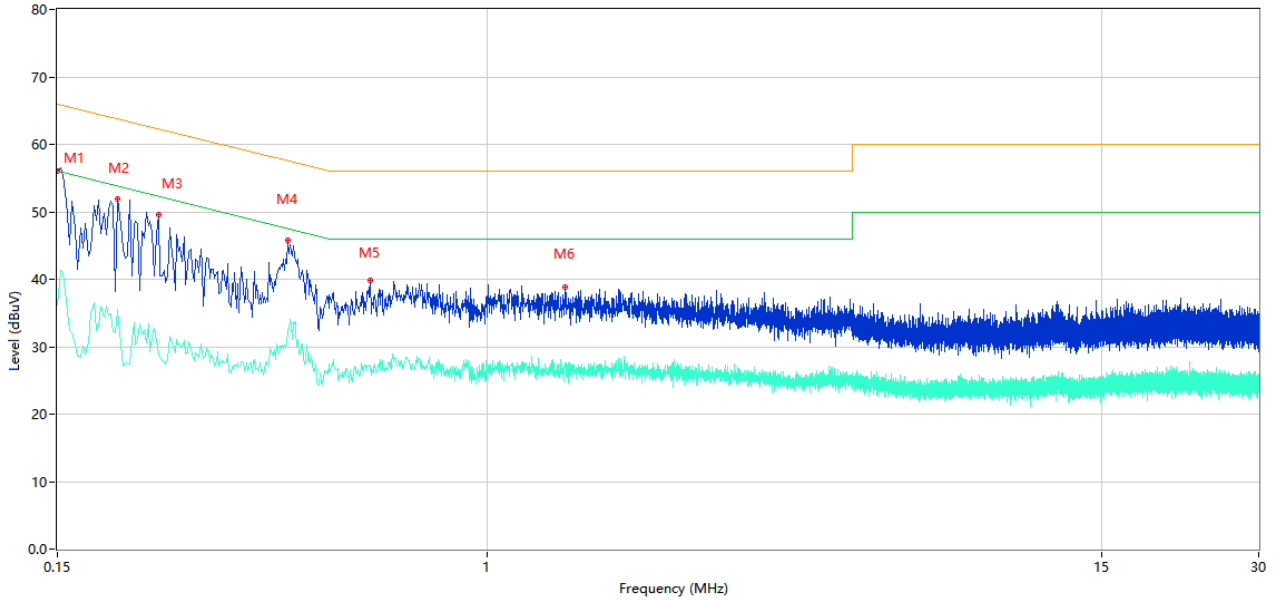


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.150	52.49	10.41	66.00	-13.51	Peak	N	Pass
1**	0.150	36.55	10.41	56.00	-19.45	AV	N	Pass
2	0.188	51.33	10.38	64.12	-12.79	Peak	N	Pass
2**	0.188	38.95	10.38	54.12	-15.17	AV	N	Pass
3	0.296	45.16	10.33	60.35	-15.19	Peak	N	Pass
3**	0.296	28.97	10.33	50.35	-21.38	AV	N	Pass
4	0.702	39.78	10.26	56.00	-16.22	Peak	N	Pass
4**	0.702	25.98	10.26	46.00	-20.02	AV	N	Pass
5	1.466	37.05	10.25	56.00	-18.95	Peak	N	Pass
5**	1.466	29.37	10.25	46.00	-16.63	AV	N	Pass
6	18.322	40.92	10.51	60.00	-19.08	Peak	N	Pass
6**	18.322	28.76	10.51	50.00	-21.24	AV	N	Pass

Test Data and Plots

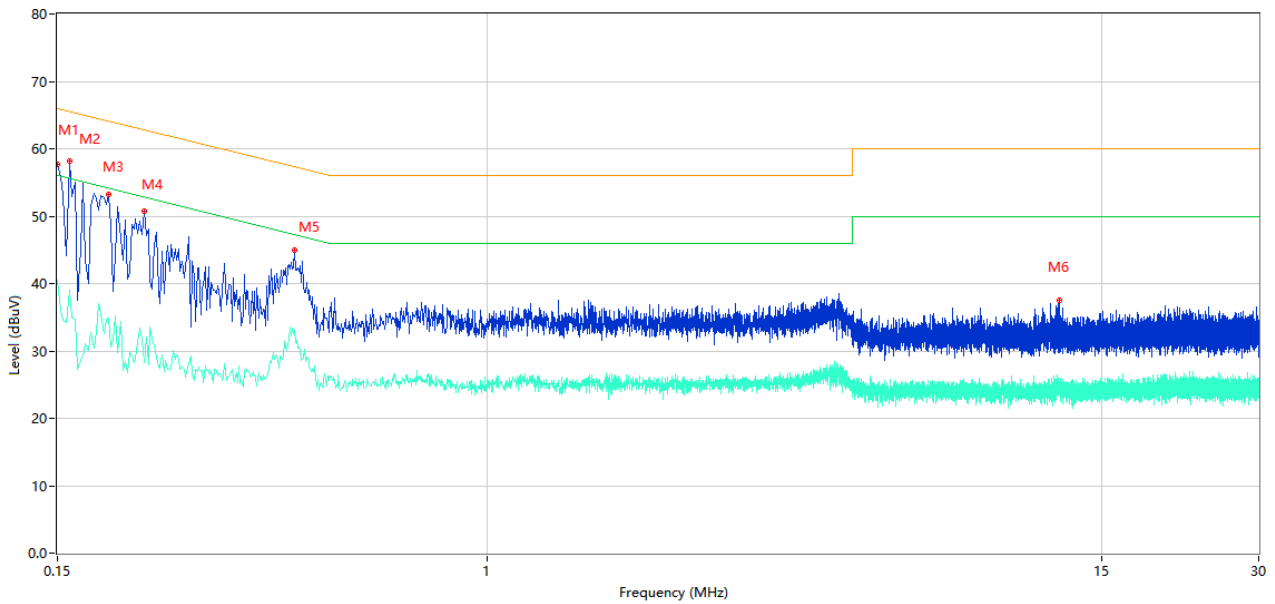
The USB Test Mode

A.2.3 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.152	56.59	10.41	65.89	-9.30	Peak	L	Pass
1**	0.152	41.31	10.41	55.89	-14.58	AV	L	Pass
2	0.196	51.92	10.38	63.78	-11.86	Peak	L	Pass
2**	0.196	35.46	10.38	53.78	-18.32	AV	L	Pass
3	0.234	49.51	10.35	62.31	-12.80	Peak	L	Pass
3**	0.234	29.09	10.35	52.31	-23.22	AV	L	Pass
4	0.414	45.75	10.31	57.57	-11.82	Peak	L	Pass
4**	0.414	32.48	10.31	47.57	-15.09	AV	L	Pass
5	0.596	39.81	10.28	56.00	-16.19	Peak	L	Pass
5**	0.596	27.06	10.28	46.00	-18.94	AV	L	Pass
6	1.410	38.88	10.25	56.00	-17.12	Peak	L	Pass
6**	1.410	27.56	10.25	46.00	-18.44	AV	L	Pass

A.2.4 N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.150	57.62	10.41	66.00	-8.38	Peak	N	Pass
1**	0.150	40.49	10.41	56.00	-15.51	AV	N	Pass
2	0.158	58.14	10.40	65.57	-7.43	Peak	N	Pass
2**	0.158	39.05	10.40	55.57	-16.52	AV	N	Pass
3	0.188	53.28	10.38	64.12	-10.84	Peak	N	Pass
3**	0.188	34.89	10.38	54.12	-19.23	AV	N	Pass
4	0.220	50.66	10.37	62.82	-12.16	Peak	N	Pass
4**	0.220	28.32	10.37	52.82	-24.50	AV	N	Pass
5	0.426	45.00	10.31	57.33	-12.33	Peak	N	Pass
5**	0.426	33.02	10.31	47.33	-14.31	AV	N	Pass
6	12.438	37.57	10.39	60.00	-22.43	Peak	N	Pass
6**	12.438	25.45	10.39	50.00	-24.55	AV	N	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document "BL-SZ2110523-AE.PDF".

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document "BL-SZ2110523-AW.PDF".

ANNEX D EUT INTERNAL PHOTOS

Please refer the document "BL-SZ2110523-AI.PDF".

--END OF REPORT--