

# TEST REPORT

**Applicant:** Guangdong OPPO Mobile Telecommunications Corp., Ltd.  
**Address:** NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan City, Guangdong, China  
**Equipment Type:** Mobile Phone  
**Model Name:** CPH2531  
**Brand Name:** OPPO  
**FCC ID:** R9C-CPH2531  
**Test Standard:** 47 CFR Part 15 Subpart B  
ANSI C63.4-2014  
**Sample Arrival Date:** Mar. 21, 2023  
**Test Date:** Mar. 29, 2023 - Apr. 07, 2022  
**Date of Issue:** May 04, 2023

**ISSUED BY:**

Shenzhen BALUN Technology Co., Ltd.

**Tested by:** Zhang Guoxi

**Checked by:** Xia Long

**Approved by:** Liao Jianming  
(Technical Director)

*Zhang Guoxi*

*Xia Long*

*Liao Jianming*

<b>Revision History</b>		
<u>Version</u>	<u>Issue Date</u>	<u>Revisions Content</u>
<u>Rev. 01</u>	<u>May 04, 2023</u>	<u>Initial Issue</u>

## TABLE OF CONTENTS

1	GENERAL INFORMATION.....	4
1.1	Test Laboratory .....	4
1.2	Test Location .....	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	Ancillary Equipment.....	6
2.6	Technical Information .....	8
3	SUMMARY OF TEST RESULTS .....	9
3.1	Test Standards .....	9
3.2	Verdict .....	9
3.3	Test Uncertainty .....	9
4	GENERAL TEST CONFIGURATIONS .....	10
4.1	Test Environments, Test Date and Test Engineer.....	10
4.2	Test Equipment List.....	10
4.3	Test Enclosure list .....	12
4.4	Test Configurations .....	13
4.5	Test Setups .....	14
4.6	Test Conditions.....	17
5	TEST ITEMS .....	18
5.1	Emission Tests .....	18
ANNEX A	TEST RESULTS.....	22
A.1	Radiated Emission.....	22

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A.2	Conducted Emission.....	30
ANNEX B	TEST SETUP PHOTOS .....	34
ANNEX C	EUT EXTERNAL PHOTOS.....	34
ANNEX D	EUT INTERNAL PHOTOS.....	34

# 1 GENERAL INFORMATION

## 1.1 Test Laboratory

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

## 1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	<input checked="" type="checkbox"/> Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	<input type="checkbox"/> 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.

## 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	CPH2531
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	11
Software Version	ColorOS 13.1
Dimensions (Approx.)	162.43*74.19*7.99 mm
Weight (Approx.)	185g±3g (with battery)
EUT ID	S01, S04
IMEI Number	S01: IMEI1: 865303060027812, IMEI2: 865303060027804 S04: IMEI1: 865303060027150, IMEI2: 865303060027143

## 2.5 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	SUPERVOOC
	Model No.	BLPA05
	Serial No.	N/A
	Capacitance	Rated: 4870mAh/18.94Wh Typical: 5000mAh/19.45Wh
	Rated Voltage	3.89V
	Limited Voltage	4.48V
	Manufacturer	DONGGUAN NVT TECHNOLOGY CO., LTD
Ancillary Equipment 2	Power Supply Unit 1	
	Brand Name	SUPERVOOC
	Model No.	VCB7CAEH (EU plug)
	Serial No.	N/A
	Rated Input	100-240V ~ 50/60Hz, 1.8A
	Rated Output	5VDC 2A 10.0W or 5-11VDC 6.1A(Max), 67.0W(Max)
Ancillary Equipment 3	Power Supply Unit 2	
	Brand Name	SUPERVOOC
	Model No.	VCB7CAYH (UK plug)
	Serial No.	N/A
	Rated Input	100-240V ~ 50/60Hz, 1.8A
	Rated Output	5VDC 2A 10.0W or 5-11VDC 6.1A(Max), 67.0W(Max)
Ancillary Equipment 4	Power Supply Unit 3	
	Brand Name	SUPERVOOC
	Model No.	VCB7CAUH (USA plug)
	Serial No.	N/A
	Rated Input	Input1: 100-130V ~ 50/60Hz, 2A; Input2: 200-240V ~ 50/60Hz, 2A;
	Rated Output	5VDC 2A 10.0W or 5-11VDC 6.1A(Max), 67.0W(Max)
Ancillary Equipment 6	Power Supply Unit 4	
	Brand Name	SUPERVOOC
	Model No.	VCB8JAUH (USA plug)
	Serial No.	N/A
	Rated Input	Input1: 100-130V ~ 50/60Hz, 2A; Input2: 200-240V ~ 50/60Hz, 2A;
	Rated Output	Output 1: 5VDC 2A or 5-11VDC 6.1A(Max), 67.0W(Max) Output 2: 5VDC 2A or 5-11VDC 7.3A(Max), 80.0W(Max)

Ancillary Equipment 3	USB Cable	
	Model No.	DL129
	Length (Approx.)	1.0 m

Note 1: Letter in () means plug type.

Note 2: All adapters are tested, only the worst data of VCB8JAUH (USA Plug) shown in this report.

## 2.6 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EDGE 850/1900 MHz 3G Network WCDMA/HSDPA/HSUPA Band 2/4/5 4G Network LTE FDD Band 2/4/5/7/12/13/17/18/19/26/66 LTE TDD Band 38/41 LTE CA Uplink (UL): CA_7C, CA_38C, CA_41C 5G Network SA: NR n5/n7/n38/n41/n66 NSA: DC_2A_n7A, DC_2A_n66A, DC_5A_n7A, DC_5A_n66A, DC_7A_n5A, DC_7_n66A, DC_12_n66A, DC_26A_n41A, DC_66A_n5A, DC_66A_n7A, DC_66A_n38A, DC_66A_n41A Bluetooth 5.3 (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20/40), VHT20/40 and 802.11ax(HE20/40) 5G WIFI 802.11a, 802.11n(HT20/40), 802.11ac(VHT20/40/80) and 802.11ax(HE20/40/80) U-NII-1/2A/2C/3, GPS, NFC, BeiDou, Galileo, GLONASS, SBAS
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The requirement for the following technical information of the EUT was tested in this report:

The Highest Speed of Processor	N/A
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### 3 SUMMARY OF TEST RESULTS

#### 3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 15 Subpart B	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)	3.22 dB
Radiated emissions (30 MHz-1 GHz)-10m	4.80 dB
Radiated emissions (30 MHz-1 GHz)-3m	4.76 dB
Radiated emissions (1 GHz-18 GHz)-3m	4.88 dB

## 4 GENERAL TEST CONFIGURATIONS

### 4.1 Test Environments, Test Date and Test Engineer

Test items	Voltage	Temperature	Relative Humidity	Ambient Pressure	Test Date	Test Engineer
Radiated Emission	AC 230V/50Hz AC 120V/60Hz DC 3.89V(battery)	22.8℃	50%	101kPa	Mar. 29, 2023	Gu Shuaizhen
Conducted Emission	AC 230V/50Hz AC 120V/60Hz DC 3.89V(battery)	22.6℃	54%		Apr. 07, 2023	Yuan Zhishen

### 4.2 Test Equipment List

Radiated Emission Test For Frequency Below 1 GHz (3m)						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	Keysight	N9038A	MY55330120	2022.09.09	2023.09.08	<input checked="" type="checkbox"/>
Amplifier (30-1GHz)	COM-MV	ZT30-1000M	B2017119081	2022.12.07	2023.12.06	<input checked="" type="checkbox"/>
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9168	9168-00867	2022.04.12	2025.04.11	<input checked="" type="checkbox"/>
Anechoic Chamber	YiHeng	9m*6m*6m	142	2021.08.19	2024.08.18	<input checked="" type="checkbox"/>
Description	Manufacturer	Name		Version		Use
Test Software	BALUN	BL410-E		V22.930		<input checked="" type="checkbox"/>

Radiated Emission Test For Frequency Above 1 GHz (3m)						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	Keysight	N9038A	MY55330120	2022.09.09	2023.09.08	<input checked="" type="checkbox"/>
Amplifier (1-12GHz)	Advanced Microwave	WLA652A	1740103	2022.12.07	2023.12.06	<input checked="" type="checkbox"/>
Amplifier (0.8-21GHz)	Mini-Circuits	ZVA-213-S+	225321316	2022.12.07	2023.12.06	<input checked="" type="checkbox"/>
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	01917	2022.06.09	2025.06.08	<input checked="" type="checkbox"/>
Anechoic Chamber	YiHeng	9m*6m*6m	142	2021.08.19	2024.08.18	<input checked="" type="checkbox"/>
Description	Manufacturer	Name		Version		Use
Test Software	BALUN	BL410-E		V22.930		<input checked="" type="checkbox"/>

Conducted disturbance Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9010B	MY57110309	2022.09.09	2023.09.08	<input checked="" type="checkbox"/>
LISN	SCHWARZBECK	NSLK 8127	8127-687	2022.06.01	2023.05.31	<input checked="" type="checkbox"/>
ISN	TESEQ	ISN T800	34449	2022.11.11	2023.11.10	<input type="checkbox"/>
ISN	TESEQ	ISN T8-Cat6	53561	2022.05.24	2023.05.23	<input type="checkbox"/>
Shielded Room	YiHeng Electronic Co., Ltd	3.5m*3.1m*2.8m	112	2022.02.19	2025.02.18	<input checked="" type="checkbox"/>
Description	Manufacturer	Name		Version		Use
Test Software	BALUN	BL410-E		V22.930		<input checked="" type="checkbox"/>

### 4.3 Test Enclosure list

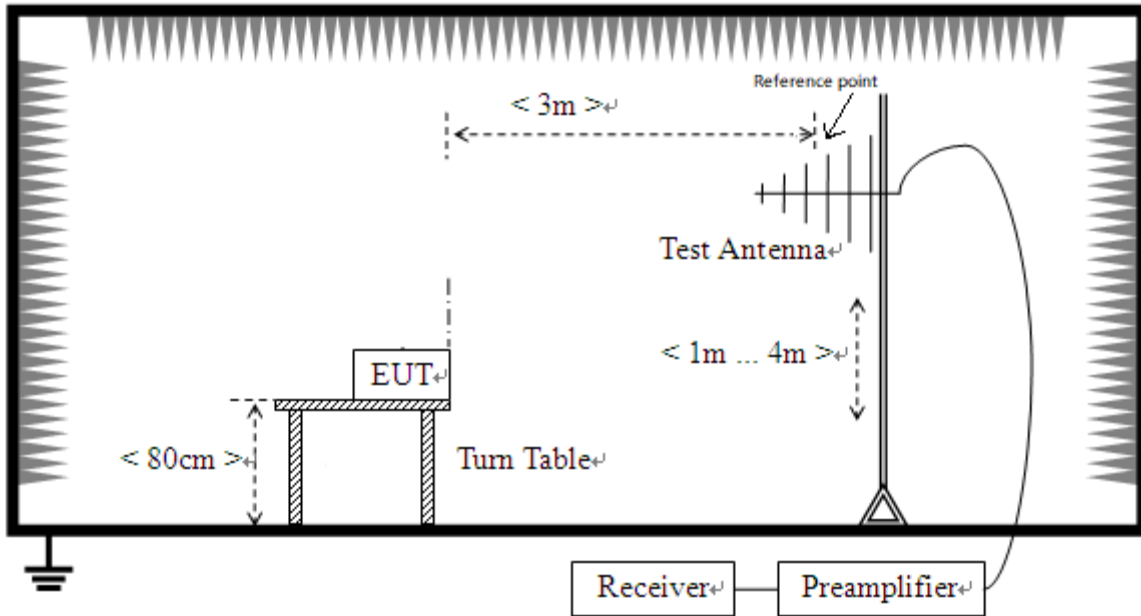
Description	Manufacturer	Model	Serial No.	Length	Description	Use
Wireless Communications Test Set	R&S	CMW500	127801	N/A	Cal. Due 2023.12.27	<input checked="" type="checkbox"/>
Laptop	Lenovo	N/A	N/A	N/A	N/A	<input checked="" type="checkbox"/>
Data connector	N/A	N/A	N/A	N/A	N/A	<input checked="" type="checkbox"/>
USB disk	Sandisk	N/A	N/A	N/A	N/A	<input checked="" type="checkbox"/>

## 4.4 Test Configurations

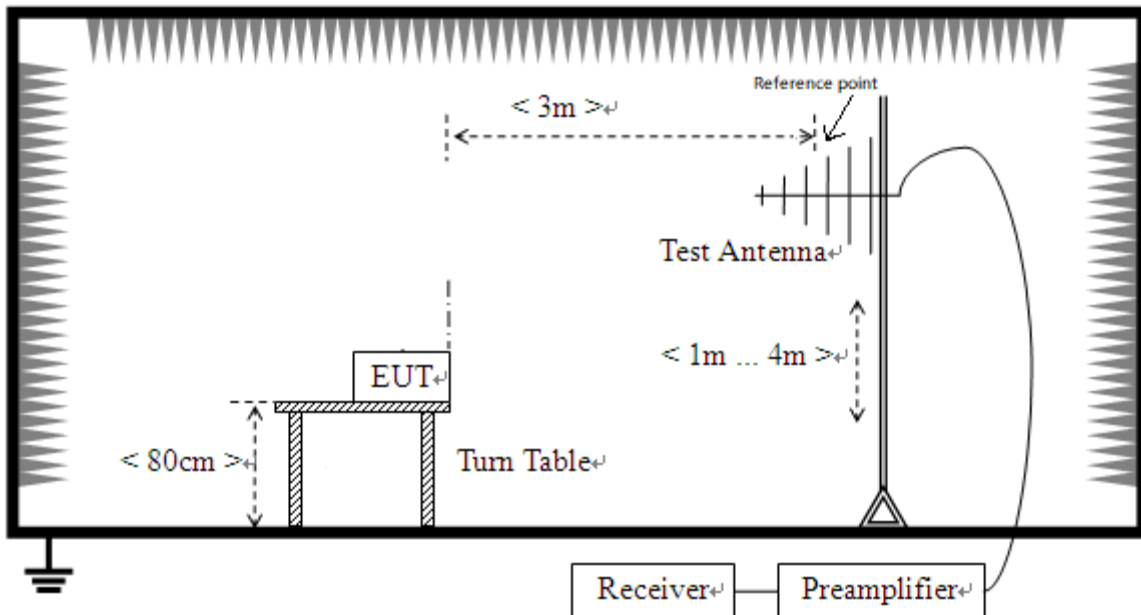
Test Configurations (TC) No.	Description
TC01	<u>The GSM 850 MHz RX Test Mode</u> GSM 850 MHz RX + EUT +Adapter + USB Cable + Battery
TC02	<u>The EGPRS 850 MHz RX Test Mode</u> EGPRS 850 MHz RX + EUT +Adapter + USB Cable + Battery
TC03	<u>The WCDMA Band 5 RX Test Mode</u> WCDMA Band 5 RX + EUT +Adapter + USB Cable + Battery
TC04	<u>The FDD LTE Band 5 RX Test Mode</u> LTE Band 5 RX + EUT +Adapter + USB Cable + Battery
TC05	<u>The FDD LTE Band 12 RX Test Mode</u> LTE Band 12 RX + EUT +Adapter + USB Cable + Battery
TC06	<u>The FDD LTE Band 13 RX Test Mode</u> LTE Band 13 RX + EUT +Adapter + USB Cable + Battery
TC07	<u>The FDD LTE Band 17 RX Test Mode</u> LTE Band 17 RX + EUT +Adapter + USB Cable + Battery
TC08	<u>The FDD LTE Band 26 RX Test Mode</u> LTE Band 26 RX + EUT +Adapter + USB Cable + Battery
TC09	<u>The n5 Test Mode</u> n5 RX + EUT + Adapter + USB Cable + Battery
TC10	<u>The Camera Test Mode</u> EUT + Adapter + USB Cable + Battery
TC11	<u>The Video Play Test Mode</u> EUT + Adapter + USB Cable + Battery
TC12	<u>The USB Test Mode</u> EUT + USB Cable + Battery + Laptop
TC13	<u>The OTG Test Mode</u> EUT + Battery + Data connector + USB Disk
TC14	<u>The Type-C Headset Test Mode</u> EUT + Type-C Headset + Battery

## 4.5 Test Setups

### Test Setup 1

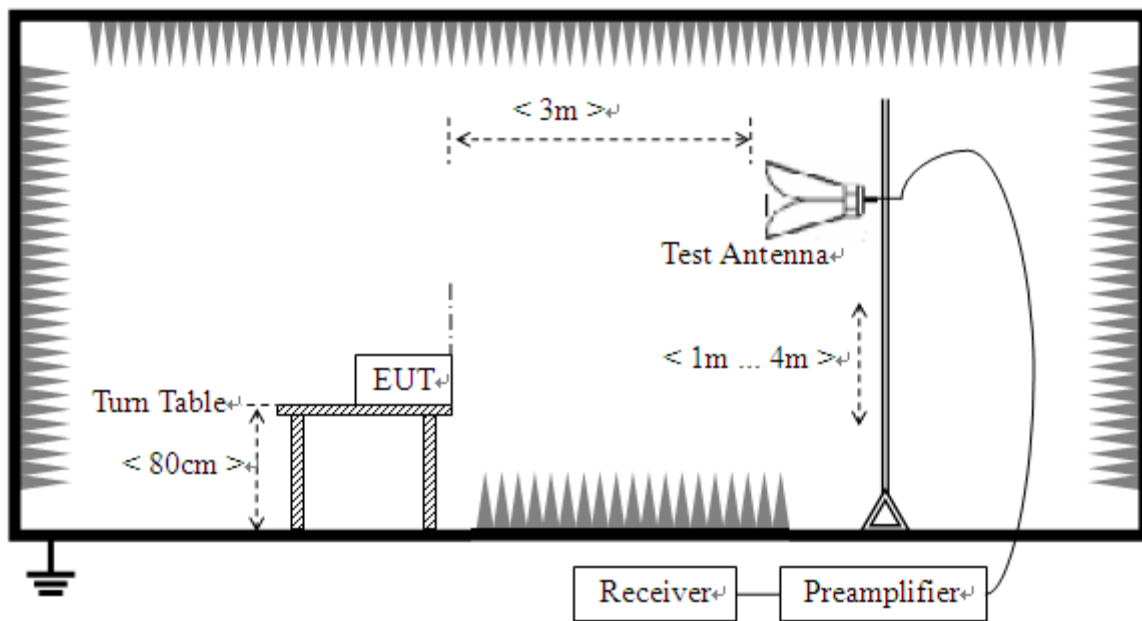


(For Radiated Emission Test (30 MHz-1 GHz))



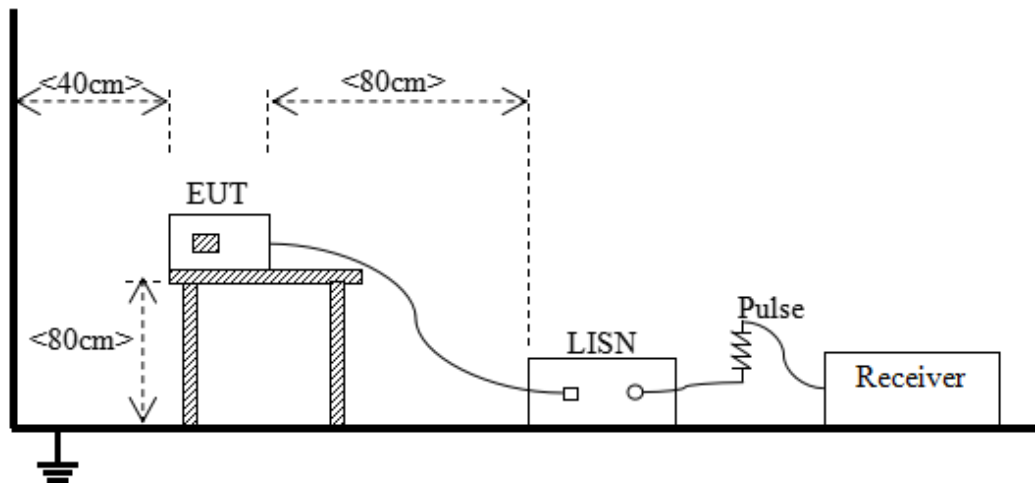
(For Radiated Emission Test (30 MHz-1 GHz))

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 Setup	Test Setup 1&2
	Test Configuration	TC01~TC14 <sup>Note</sup>
Conducted Emission, AC Ports	Test Setup	Test Setup 3
	Test Configuration	TC01~TC12 <sup>Note</sup>

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.

The measurement frequency range is from 30 MHz to the 5th harmonic of the maximum frequency of the EUT internal source. The Turn Table is actuated to turn from  $0^\circ$  to  $360^\circ$ , and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for  $f \geq 1$  GHz, 100 kHz for  $f < 1$  GHz

VBW  $\geq$  RBW

Sweep = auto

Detector function = peak for  $f < 1$  GHz, peak & RMS Average for  $f \geq 1$  GHz

Trace = max hold

#### 5.1.1.4 Test Result

Please refer to ANNEX A.1.

#### NOTE:

1. Results (dB $\mu$ V/m) = Reading (dB $\mu$ V/m) + 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 $\mu$ V)	Average (dB $\mu$ V)
0.15 - 0.50	79	66
0.50 - 30	73	60

Frequency range (MHz)	Class B	
	Quasi-peak (dB $\mu$ V)	Average (dB $\mu$ 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  $\Omega$ /50  $\mu$ 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.

Use the following spectrum analyzer settings:

RBW = 9 kHz

VBW  $\geq$  RBW

Sweep = 10ms

Detector function = peak & Average

Trace = max hold

#### 5.1.2.4 Test Result

Please refer to ANNEX A.2.

NOTE:

1. Results (dB $\mu$ V) = Reading (dB $\mu$ V) + Factor (dB)

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.

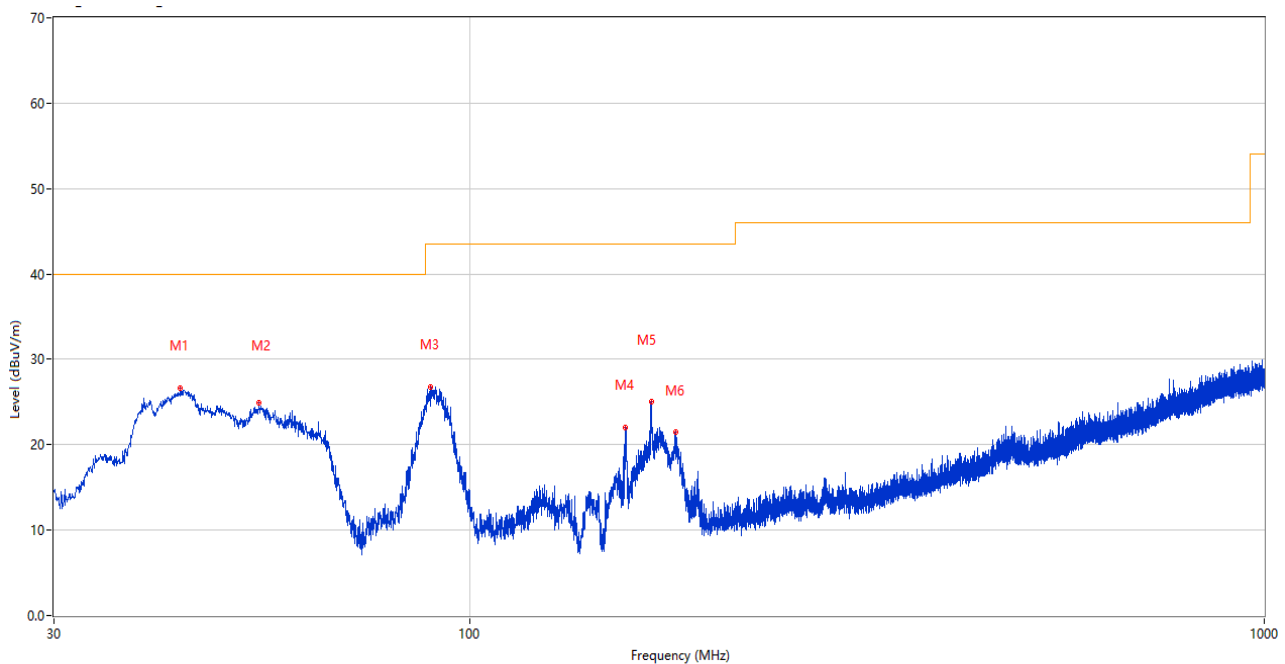
Note 3: The Radiated Emission from 18G-40G is noise only, do not show on the report.

Note 4: All the configurations were pre tested, only the worst configuration has been reported in this report.

### Test Data and Plots

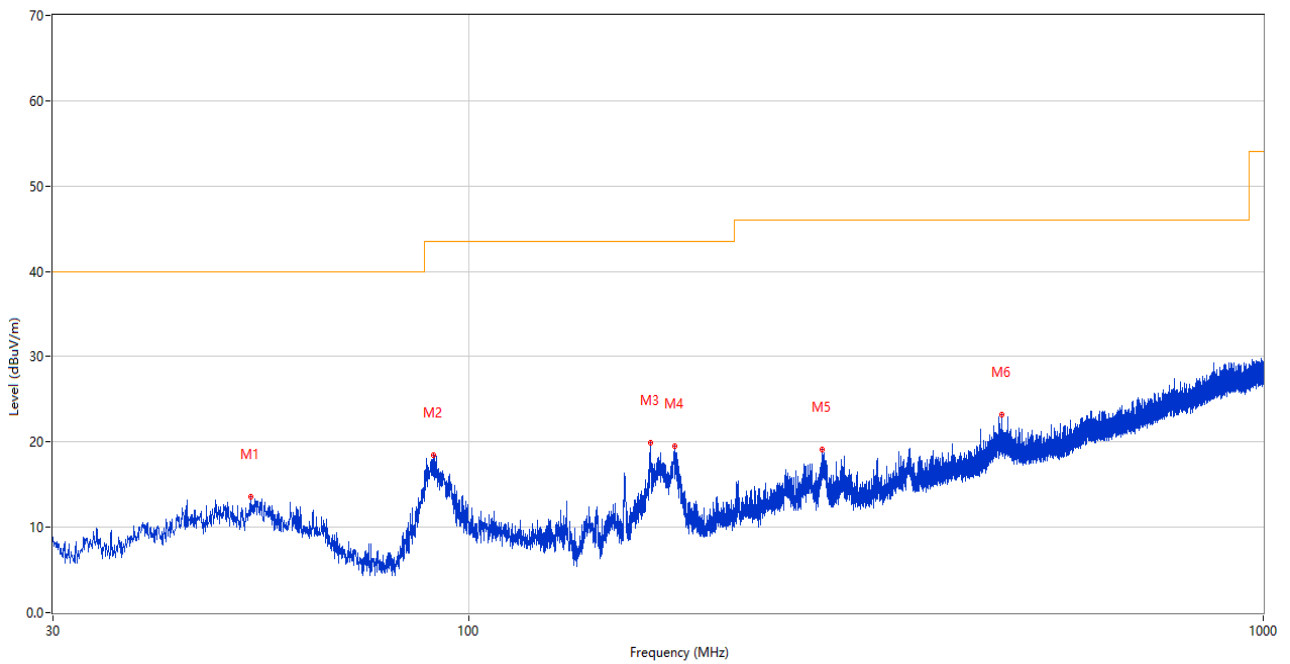
#### The Camera Test Mode

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



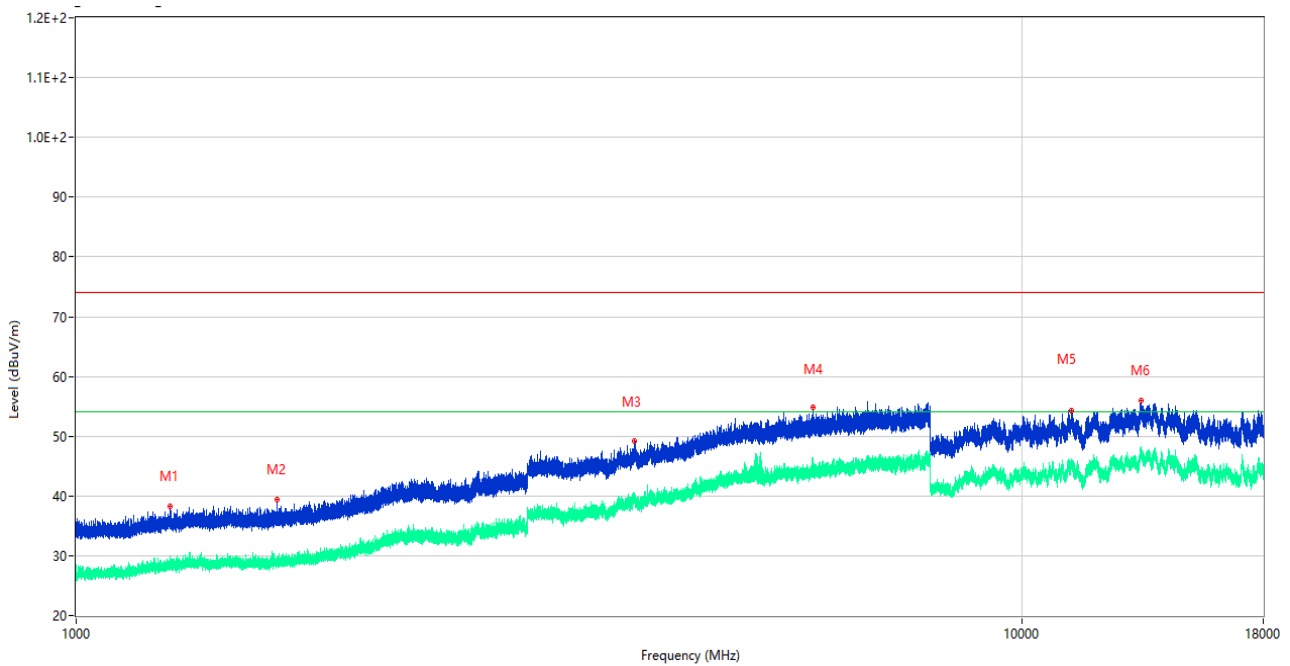
No.	Frequency (MHz)	Results (dBUV/m)	Factor (dB)	Limit (dBUV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	43.289	26.69	-25.76	40.0	13.31	Peak	177.00	100	Vertical	Pass
2	54.347	24.94	-25.58	40.0	15.06	Peak	200.00	100	Vertical	Pass
3	89.315	26.70	-28.76	43.5	16.80	Peak	105.00	100	Vertical	Pass
4	157.167	22.00	-29.73	43.5	21.50	Peak	321.00	100	Vertical	Pass
5	169.244	25.07	-29.27	43.5	18.43	Peak	295.00	100	Vertical	Pass
6	181.562	21.52	-28.39	43.5	21.98	Peak	1.00	100	Vertical	Pass

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



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	53.231	13.64	-25.54	40.0	26.36	Peak	1.00	100	Horizontal	Pass
2	90.237	18.51	-28.45	43.5	24.99	Peak	140.00	200	Horizontal	Pass
3	169.340	19.94	-29.26	43.5	23.56	Peak	46.00	200	Horizontal	Pass
4	181.660	19.47	-28.37	43.5	24.03	Peak	45.00	100	Horizontal	Pass
5	278.659	19.14	-24.28	46.0	26.86	Peak	77.00	100	Horizontal	Pass
6	468.682	23.26	-19.43	46.0	22.74	Peak	202.00	200	Horizontal	Pass

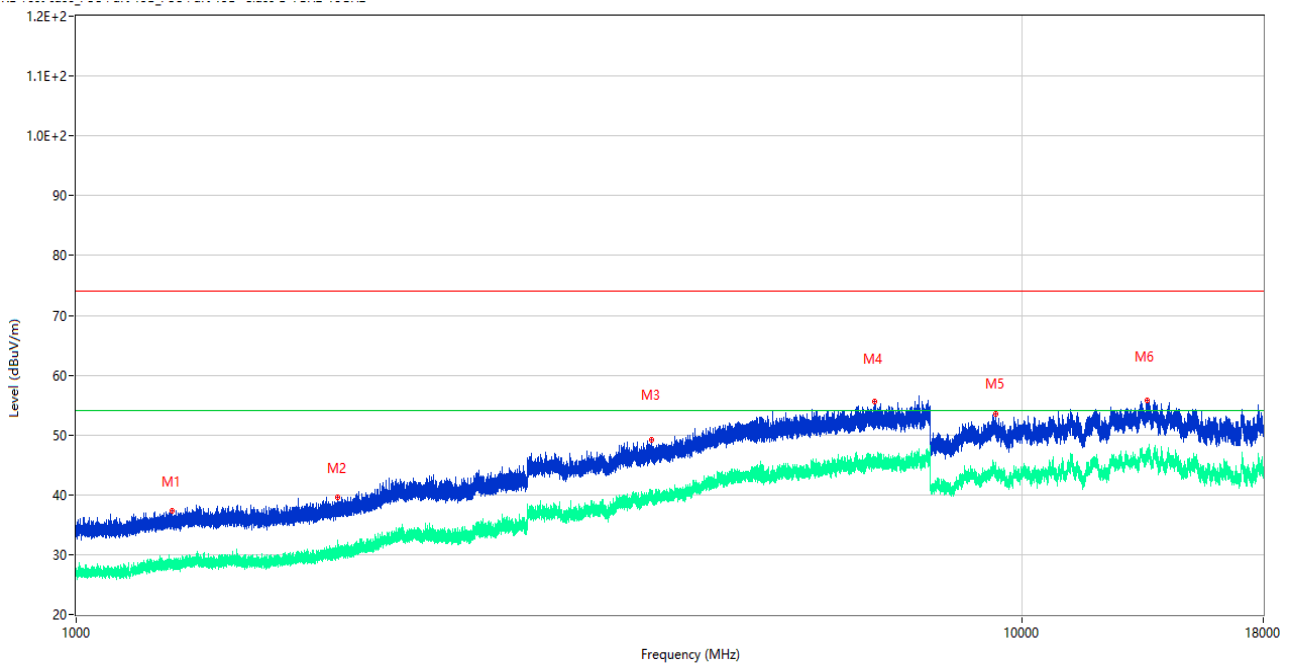
A.1.3 Test Antenna Vertical, 1 GHz – 18 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1255.400	38.32	-16.95	74.0	35.68	Peak	298.00	100	Vertical	Pass
1**	1255.400	28.10	-16.95	54.0	25.90	AV	298.00	100	Vertical	Pass
2	1631.800	39.44	-16.68	74.0	34.56	Peak	279.00	100	Vertical	Pass
2**	1631.800	28.57	-16.68	54.0	25.43	AV	279.00	100	Vertical	Pass
3	3888.750	49.12	-2.77	74.0	24.88	Peak	285.00	100	Vertical	Pass
3**	3888.750	40.55	-2.77	54.0	13.45	AV	285.00	100	Vertical	Pass
4	6013.250	54.92	2.07	74.0	19.08	Peak	334.00	100	Vertical	Pass
4**	6013.250	44.09	2.07	54.0	9.91	AV	334.00	100	Vertical	Pass
5	11297.500	54.28	2.37	74.0	19.72	Peak	274.00	100	Vertical	Pass
5**	11297.500	45.06	2.37	54.0	8.94	AV	274.00	100	Vertical	Pass
6	13353.500	56.02	5.21	74.0	17.98	Peak	57.00	100	Vertical	Pass
6**	13353.500	46.93	5.21	54.0	7.07	AV	57.00	100	Vertical	Pass



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

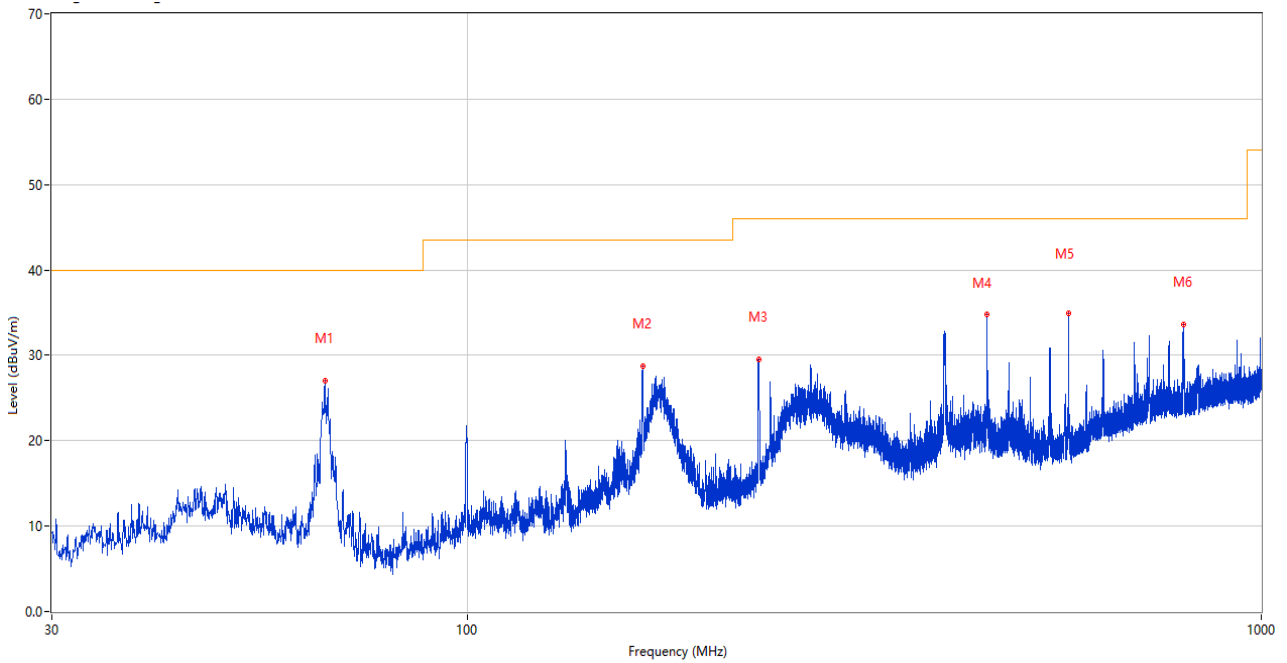


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1261.500	37.29	-17.05	74.0	36.71	Peak	95.00	100	Horizontal	Pass
1**	1261.500	28.73	-17.05	54.0	25.27	AV	95.00	100	Horizontal	Pass
2	1889.000	39.56	-15.42	74.0	34.44	Peak	302.00	100	Horizontal	Pass
2**	1889.000	30.18	-15.42	54.0	23.82	AV	302.00	100	Horizontal	Pass
3	4056.750	49.22	-1.84	74.0	24.78	Peak	3.00	100	Horizontal	Pass
3**	4056.750	39.12	-1.84	54.0	14.88	AV	3.00	100	Horizontal	Pass
4	6989.250	55.51	1.52	74.0	18.49	Peak	360.00	100	Horizontal	Pass
4**	6989.250	46.07	1.52	54.0	7.93	AV	360.00	100	Horizontal	Pass
5	9377.500	53.55	1.93	74.0	20.45	Peak	15.00	100	Horizontal	Pass
5**	9377.500	43.36	1.93	54.0	10.64	AV	15.00	100	Horizontal	Pass
6	13582.500	55.83	4.72	74.0	18.17	Peak	70.00	100	Horizontal	Pass
6**	13582.500	46.84	4.72	54.0	7.16	AV	70.00	100	Horizontal	Pass

Test Data and Plots

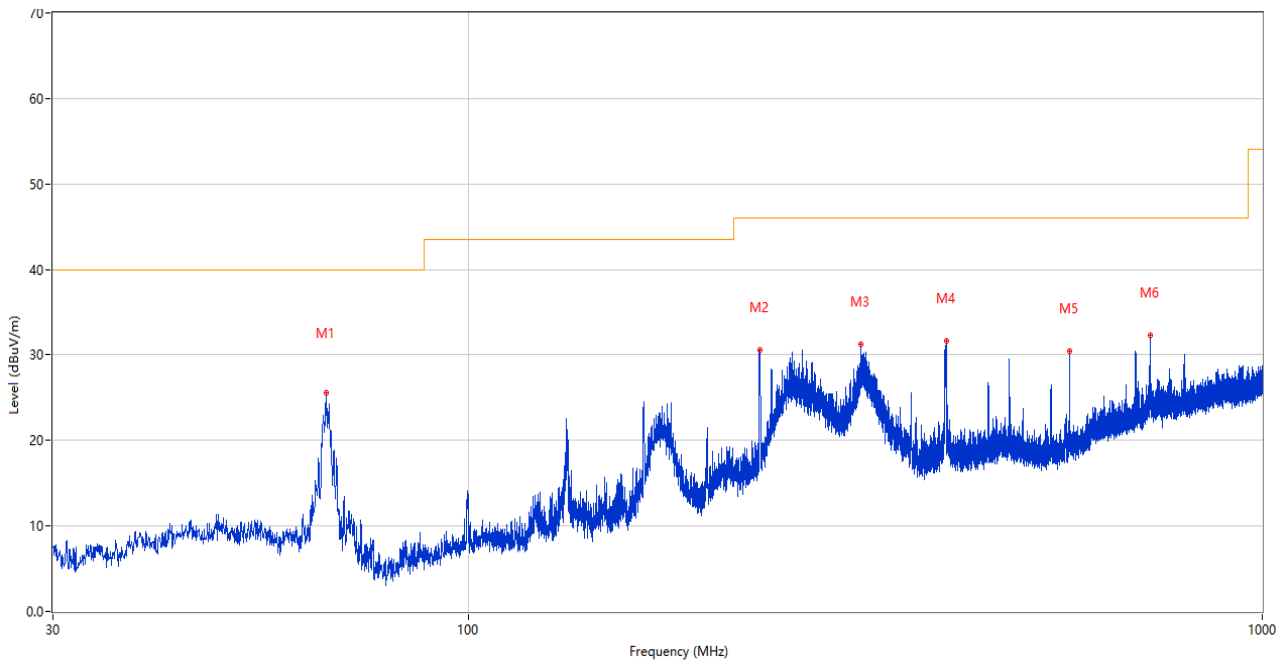
The USB Test Mode

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



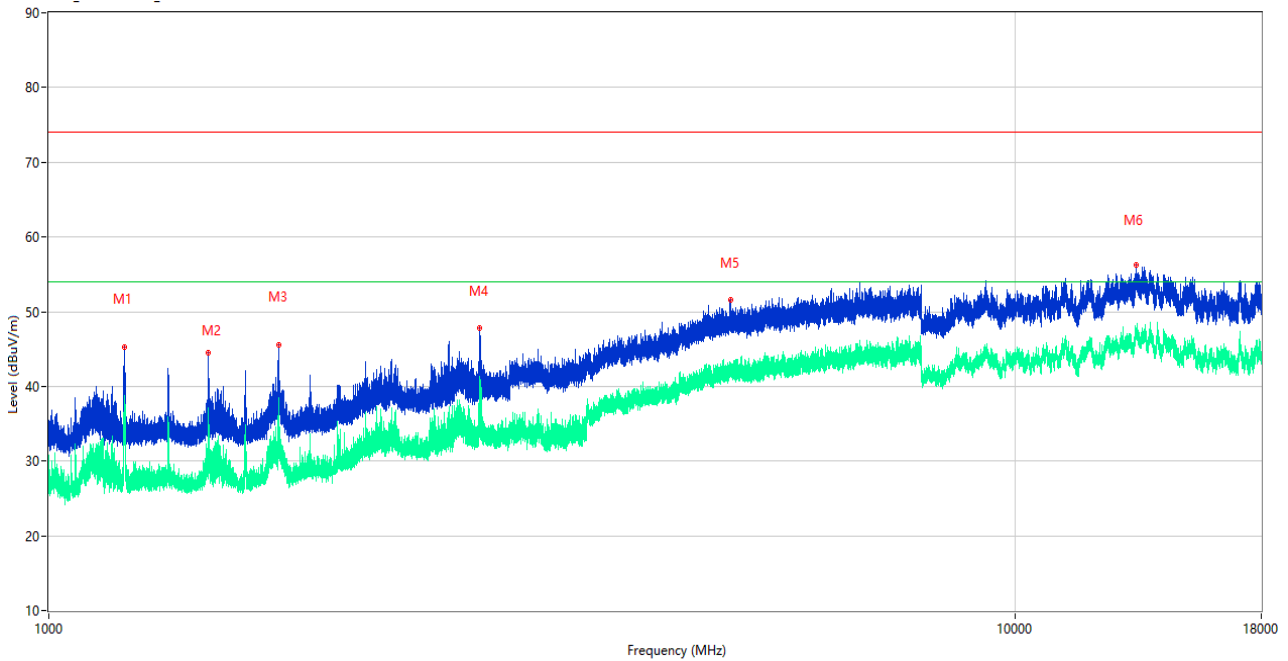
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	66.181	27.04	-27.83	40.0	12.96	Peak	268.00	100	Vertical	Pass
2	166.576	28.79	-29.24	43.5	14.71	Peak	277.00	100	Vertical	Pass
3	233.215	29.50	-25.44	46.0	16.50	Peak	287.00	200	Vertical	Pass
4	451.514	34.76	-19.86	46.0	11.24	Peak	177.00	100	Vertical	Pass
5	571.987	34.89	-16.98	46.0	11.11	Peak	125.00	100	Vertical	Pass
6	797.222	33.64	-11.95	46.0	12.36	Peak	222.00	100	Vertical	Pass

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



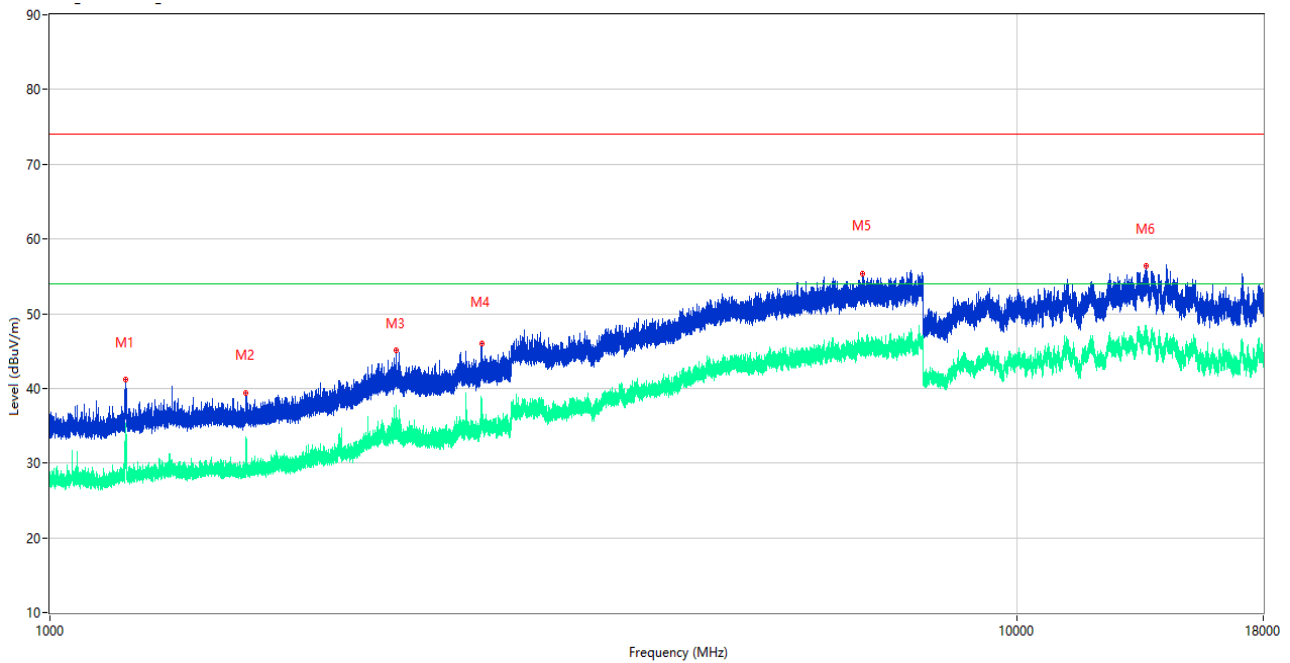
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	66.181	25.57	-27.83	40.0	14.43	Peak	165.00	100	Horizontal	Pass
2	233.215	30.61	-25.44	46.0	15.39	Peak	74.00	100	Horizontal	Pass
3	311.882	31.29	-23.35	46.0	14.71	Peak	348.00	100	Horizontal	Pass
4	399.861	31.62	-20.95	46.0	14.38	Peak	217.00	100	Horizontal	Pass
5	572.279	30.49	-16.98	46.0	15.51	Peak	240.00	200	Horizontal	Pass
6	723.016	32.34	-13.47	46.0	13.66	Peak	227.00	100	Horizontal	Pass

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



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1198.300	45.25	-17.32	74.0	28.75	Peak	225.00	100	Vertical	Pass
1**	1198.300	37.86	-17.32	54.0	16.14	AV	225.00	100	Vertical	Pass
2	1463.500	44.45	-16.48	74.0	29.55	Peak	213.00	100	Vertical	Pass
2**	1463.500	33.03	-16.48	54.0	20.97	AV	213.00	100	Vertical	Pass
3	1728.400	45.50	-16.49	74.0	28.50	Peak	213.00	100	Vertical	Pass
3**	1728.400	33.82	-16.49	54.0	20.18	AV	213.00	100	Vertical	Pass
4	2789.800	47.75	-9.07	74.0	26.25	Peak	255.00	100	Vertical	Pass
4**	2789.800	35.41	-9.07	54.0	18.59	AV	255.00	100	Vertical	Pass
5	5086.000	51.57	0.53	74.0	22.43	Peak	159.00	100	Vertical	Pass
5**	5086.000	42.41	0.53	54.0	11.59	AV	159.00	100	Vertical	Pass
6	13354.500	56.20	5.20	74.0	17.80	Peak	20.00	100	Vertical	Pass
6**	13354.500	46.72	5.20	54.0	7.28	AV	20.00	100	Vertical	Pass

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



No.	Frequency (MHz)	Results (dBUV/m)	Factor (dB)	Limit (dBUV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1198.600	41.14	-17.34	74.0	32.86	Peak	117.00	100	Horizontal	Pass
1**	1198.600	31.41	-17.34	54.0	22.59	AV	117.00	100	Horizontal	Pass
2	1595.900	39.37	-16.92	74.0	34.63	Peak	164.00	100	Horizontal	Pass
2**	1595.900	31.13	-16.92	54.0	22.87	AV	164.00	100	Horizontal	Pass
3	2281.900	45.12	-11.63	74.0	28.88	Peak	152.00	100	Horizontal	Pass
3**	2281.900	33.89	-11.63	54.0	20.11	AV	152.00	100	Horizontal	Pass
4	2799.700	46.05	-8.73	74.0	27.95	Peak	254.00	100	Horizontal	Pass
4**	2799.700	37.39	-8.73	54.0	16.61	AV	254.00	100	Horizontal	Pass
5	6933.250	55.39	1.38	74.0	18.61	Peak	240.00	100	Horizontal	Pass
5**	6933.250	45.00	1.38	54.0	9.00	AV	240.00	100	Horizontal	Pass
6	13611.000	56.45	4.80	74.0	17.55	Peak	124.00	100	Horizontal	Pass
6**	13611.000	46.93	4.80	54.0	7.07	AV	124.00	100	Horizontal	Pass

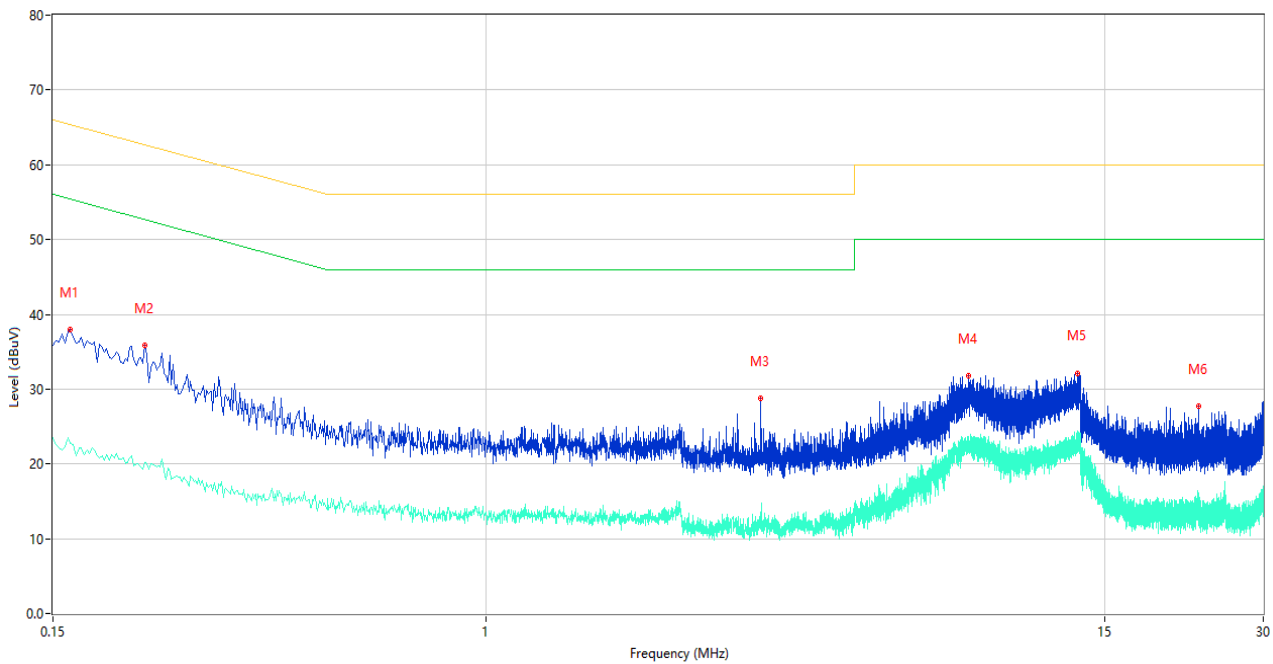
## A.2 Conducted Emission

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

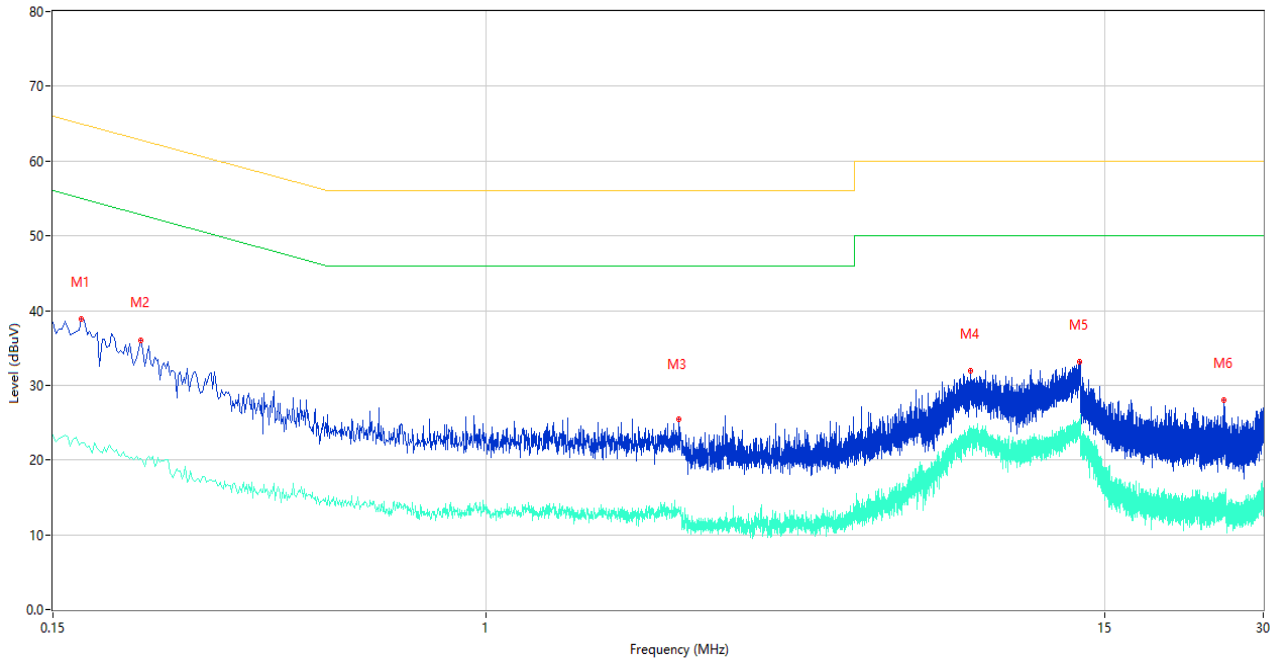
#### The Camera Test Mode

##### A.2.1 L Phase



No.	Frequency (MHz)	Results (dBUV)	Factor (dB)	Limit (dBUV)	Margin (dB)	Detector	Line	Verdict
1	0.162	37.95	9.83	65.36	27.41	Peak	L	Pass
1**	0.162	22.78	9.83	55.36	32.58	AV	L	Pass
2	0.224	35.84	9.78	62.67	26.83	Peak	L	Pass
2**	0.224	20.14	9.78	52.67	32.53	AV	L	Pass
3	3.328	28.75	10.15	56.00	27.25	Peak	L	Pass
3**	3.328	11.32	10.15	46.00	34.68	AV	L	Pass
4	8.256	31.77	10.07	60.00	28.23	Peak	L	Pass
4**	8.256	22.38	10.07	50.00	27.62	AV	L	Pass
5	13.294	32.14	10.14	60.00	27.86	Peak	L	Pass
5**	13.294	22.34	10.14	50.00	27.66	AV	L	Pass
6	22.618	27.65	10.83	60.00	32.35	Peak	L	Pass
6**	22.618	12.85	10.83	50.00	37.15	AV	L	Pass

A.2.2 N Phase

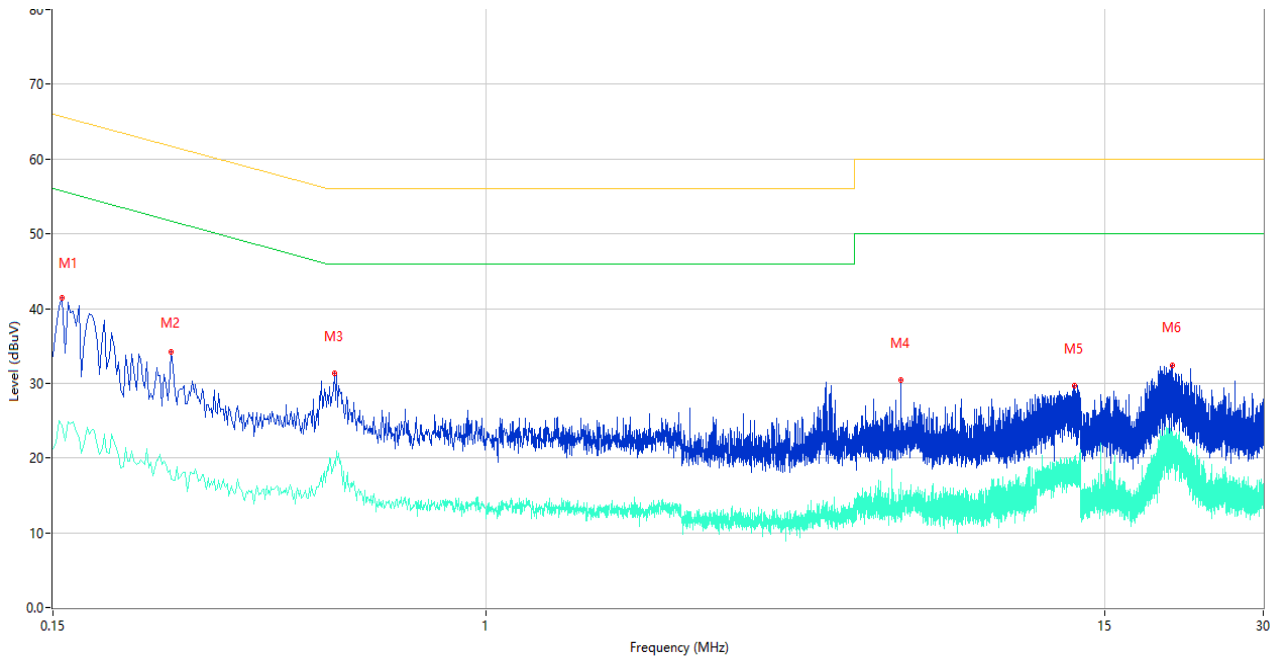


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.170	38.86	9.82	64.96	26.10	Peak	N	Pass
1**	0.170	22.33	9.82	54.96	32.63	AV	N	Pass
2	0.220	36.06	9.78	62.82	26.76	Peak	N	Pass
2**	0.220	20.25	9.78	52.82	32.57	AV	N	Pass
3	2.324	25.50	10.24	56.00	30.50	Peak	N	Pass
3**	2.324	13.67	10.24	46.00	32.33	AV	N	Pass
4	8.332	31.94	10.42	60.00	28.06	Peak	N	Pass
4**	8.332	23.44	10.42	50.00	26.56	AV	N	Pass
5	13.414	33.08	10.52	60.00	26.92	Peak	N	Pass
5**	13.414	25.43	10.52	50.00	24.57	AV	N	Pass
6	25.226	28.01	10.48	60.00	31.99	Peak	N	Pass
6**	25.226	14.39	10.48	50.00	35.61	AV	N	Pass

Test Data and Plots

The USB Test Mode

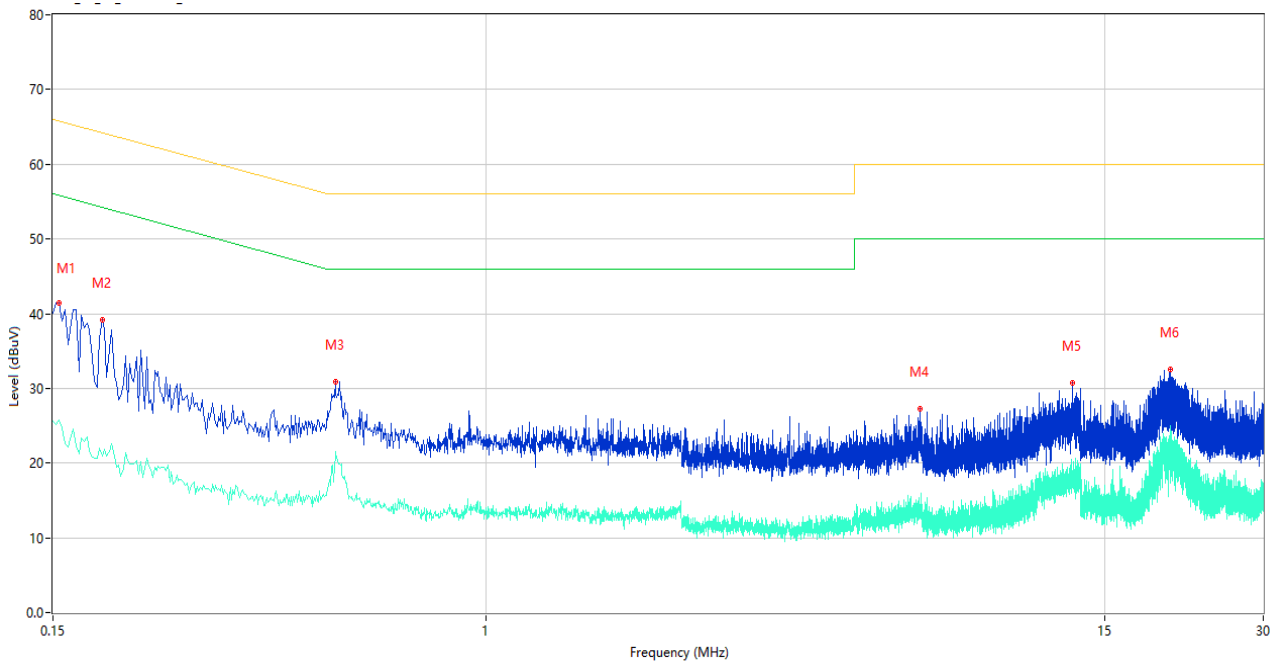
A.2.3 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.156	41.43	9.83	65.67	24.24	Peak	L	Pass
1**	0.156	24.35	9.83	55.67	31.32	AV	L	Pass
2	0.252	34.15	9.79	61.69	27.54	Peak	L	Pass
2**	0.252	17.23	9.79	51.69	34.46	AV	L	Pass
3	0.514	31.33	10.10	56.00	24.67	Peak	L	Pass
3**	0.514	19.41	10.10	46.00	26.59	AV	L	Pass
4	6.146	30.45	10.09	60.00	29.55	Peak	L	Pass
4**	6.146	16.71	10.09	50.00	33.29	AV	L	Pass
5	13.152	29.70	10.39	60.00	30.30	Peak	L	Pass
5**	13.152	20.11	10.39	50.00	29.89	AV	L	Pass
6	20.190	32.46	10.62	60.00	27.54	Peak	L	Pass
6**	20.190	21.55	10.62	50.00	28.45	AV	L	Pass



A.2.4 N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.154	41.47	9.84	65.78	24.31	Peak	N	Pass
1**	0.154	25.80	9.84	55.78	29.98	AV	N	Pass
2	0.186	39.20	9.80	64.21	25.01	Peak	N	Pass
2**	0.186	20.92	9.80	54.21	33.29	AV	N	Pass
3	0.516	30.88	10.11	56.00	25.12	Peak	N	Pass
3**	0.516	20.57	10.11	46.00	25.43	AV	N	Pass
4	6.674	27.20	10.38	60.00	32.80	Peak	N	Pass
4**	6.674	14.25	10.38	50.00	35.75	AV	N	Pass
5	12.992	30.68	10.34	60.00	29.32	Peak	N	Pass
5**	12.992	19.02	10.34	50.00	30.98	AV	N	Pass
6	19.960	32.50	10.75	60.00	27.50	Peak	N	Pass
6**	19.960	24.95	10.75	50.00	25.05	AV	N	Pass

## **ANNEX B TEST SETUP PHOTOS**

Please refer the document “BL-SZ2330970-AE-1.PDF”.

## **ANNEX C EUT EXTERNAL PHOTOS**

Please refer the document “BL-SZ2330970-AW.PDF”.

## **ANNEX D EUT INTERNAL PHOTOS**

Please refer the document “BL-SZ2330970-AI.PDF”.

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--END OF REPORT--