

# TEST REPORT

**Applicant:** vivo Mobile Communication Co., Ltd.  
**Address:** No.1, vivo Road, Chang'an, Dongguan, Guangdong, China  
**Equipment Type:** Mobile Phone  
**Model Name:** V2110  
**Brand Name:** vivo  
**FCC ID:** 2AUCY-V2110  
**Test Standard:** 47 CFR Part 15 Subpart B  
**Test Date:** Apr. 11, 2022 - Apr. 12, 2022  
**Date of Issue:** Apr. 15, 2022

**ISSUED BY:**

Shenzhen BALUN Technology Co., Ltd.

**Tested by:** Zheng Sijie

**Checked by:** Xia Long

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

*Sijie. Zheng*

*Xia Long*

*Jm Liao*

<b>Revision History</b>		
<u>Version</u>	<u>Issue Date</u>	<u>Revisions</u>
<u>Rev. 01</u>	<u>Apr. 15, 2022</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, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China
Phone Number	+86 755 6685 0100

## 1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.
Description	All measurement facilities used to collect the measurement data are located at Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China

## 2 PRODUCT INFORMATION

### 2.1 Applicant Information

Applicant	vivo Mobile Communication Co., Ltd.
Address	No.1, vivo Road, Chang'an, Dongguan, Guangdong, China

### 2.2 Manufacturer Information

Manufacturer	vivo Mobile Communication Co., Ltd.
Address	No.1, vivo Road, Chang'an, Dongguan, Guangdong, China

### 2.3 Factory Information

Factory	N/A
Address	N/A

### 2.4 General Description for Equipment under Test (EUT)

EUT Name	Mobile Phone
Model Name Under Test	V2110
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	MP_0.1
Software Version	PD2138CF_EX_A_3.12.1
Dimensions (Approx.)	164.1mm*76.08mm*8.0mm
Weight (Approx.)	180g

## 2.5 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	vivo
	Model No.	B-S2
	Serial No.	N/A
	Capacity	Rated Capacity: 4910mAh/19.00Wh Typical capacity: 5000mAh/19.35Wh
	Rated Voltage	3.87 V
	Limit Charge Voltage	4.45 V
	Manufacturer	Huizhou Desay Battery Co., Ltd
Ancillary Equipment 2	Adapter 1	
	Brand Name	vivo
	Model No.	V1820L0B1-US (US Plug)
	Serial No.	N/A
	Rated Input	100-240 V~, 0.5 A, 50/60 Hz
	Rated Output	5.0 V= 2.0 A, 9.0 V= 2.0 A
	Manufacturer	Dongguan Aohai Technology Co., Ltd
Ancillary Equipment 3	Adapter	
	Brand Name	vivo
	Model No.	V1820L0B1-EU (EU Plug)
	Serial No.	N/A
	Rated Input	100-240 V~, 0.5 A, 50/60 Hz
	Rated Output	5.0 V= 2.0 A, 9.0 V= 2.0 A
	Manufacturer	Dongguan Aohai Technology Co., Ltd
Ancillary Equipment 4	USB Cable	
	Brand Name	BK-C-32
	Model No.	1 m
Ancillary Equipment 5	Earphone	
	Model No.	XE160
	Length (Approx.)	1.3 m
<p>Note 1: Letter in () means plug type.</p> <p>Note 2: All adapters are tested, only the worst data of V1820L0B1-US (US Plug) shown in this report.</p>		

## 2.6 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EGPRS 850/1900 MHz 3G Network WCDMA/HSDPA/HSUPA Band 2/4/5 4G Network FDD LTE Band 2/4/5/7/12/17/66 TDD LTE Band 38/41 LTE CA Uplink (UL): CA_7C, CA_38C, CA_41C Bluetooth (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20) 5G WIFI 802.11a, 802.11n(HT20/40), 802.11ac(VHT20/40/80) U-NII-1/2A/2C/3, GPS, GLONASS, BDS, Galileo, 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	2.0 GHz
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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 120V/60Hz DC 3.87V(battery)	21.4℃	47%	102kPa	Apr. 11, 2022 ~ Apr. 12, 2022	Zheng chuanzheng
Conducted Emission	AC 230V/50Hz AC 120V/60Hz DC 3.87V(battery)	23℃	55%	102kPa	Apr. 12, 2022	Wu Yunan

### 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	2021.10.10	2022.10.09	<input type="checkbox"/>
Amplifier (30-1GHz)	COM-MV	ZT30-1000M	B2018054558	2021.10.10	2022.10.09	<input type="checkbox"/>
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2019.07.02	2022.07.01	<input type="checkbox"/>
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60*7.35m	N/A	2021.08.15	2024.08.14	<input type="checkbox"/>
Description	Manufacturer	Name		Version		Use
Test Software	BALUN	BL410-E		V19.918		<input type="checkbox"/>

Radiated Emission Test For Frequency Below 1 GHz (3m)						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9038A	MY55330120	2021.10.20	2022.10.19	<input checked="" type="checkbox"/>
Amplifier (30-1GHz)	COM-MV	ZT30-1000M	B2017119081	2021.10.20	2022.10.19	<input checked="" type="checkbox"/>
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2019.07.02	2022.07.01	<input checked="" type="checkbox"/>
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2021.09.04	2024.09.03	<input checked="" type="checkbox"/>
Description	Manufacturer	Name		Version		Use
Test Software	BALUN	BL410-E		V19.918		<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	Agilent	N9038A	MY55330120	2021.10.20	2022.10.19	<input checked="" type="checkbox"/>
EMI Receiver	ROHDE & SCHWARZ	FSV40	101544	2022.01.04	2023.01.03	<input checked="" type="checkbox"/>
Amplifier (1-12GHz)	Advanced Microwave	WLA652A	1740103	2021.10.20	2022.10.19	<input checked="" type="checkbox"/>
Amplifier (0.8-21GHz)	Mini-Circuits	ZVA-213-S+	225321316	2021.10.20	2022.10.19	<input checked="" type="checkbox"/>
Amplifier (18-40GHz)	COM-MV	KA_LNA18-40G-01	18050001	2021.10.20	2022.10.19	<input checked="" type="checkbox"/>
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	1917	2019.07.02	2022.07.01	<input checked="" type="checkbox"/>
Test Antenna-Horn	A-INFOMW	LB-180400KF	J211060273	2021.07.02	2024.07.01	<input checked="" type="checkbox"/>
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2021.09.04	2024.09.03	<input checked="" type="checkbox"/>
Description	Manufacturer	Name		Version		Use
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	MY57110309	2021.10.10	2022.10.09	<input checked="" type="checkbox"/>
LISN	SCHWARZBECK	NSLK 8127	8127-687	2021.06.08	2022.06.07	<input checked="" type="checkbox"/>
Shielded Enclosure	YiHeng Electronic Co., Ltd	3.5m*3.1m*2.8m	N/A	2022.02.19	2025.02.18	<input checked="" type="checkbox"/>
Description	Manufacturer	Name		Version		Use
Test Software	BALUN	BL410-E		V19.918		<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 2023.01.03	<input checked="" type="checkbox"/>
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 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"/>

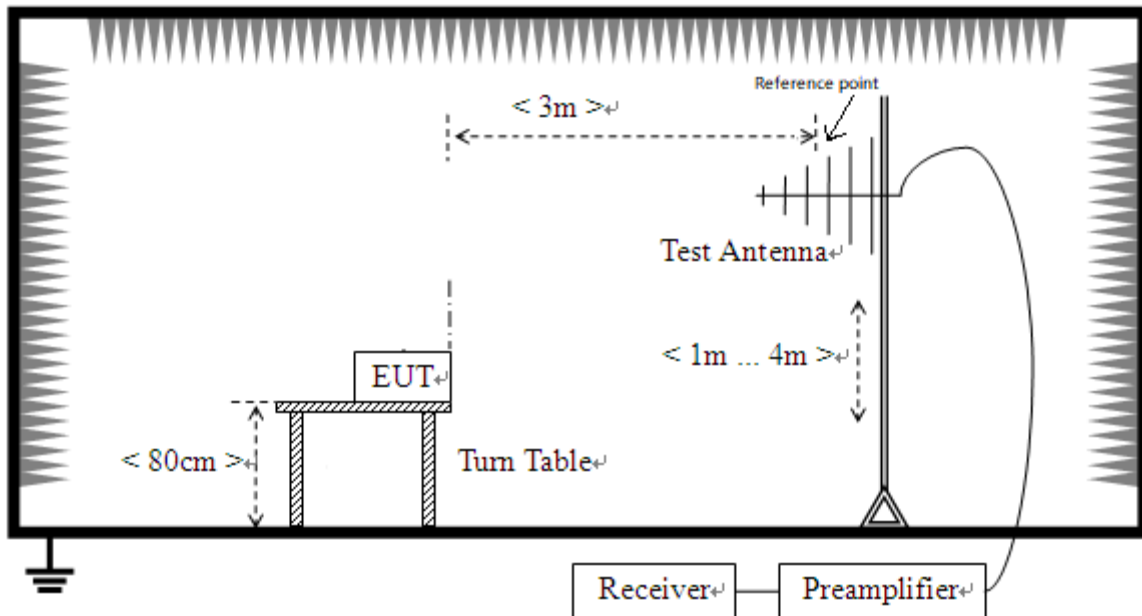
Electronic Load	ITECH	IT8511	N/A	N/A	N/A	<input type="checkbox"/>
USB Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input type="checkbox"/>
DC Power Supply	ITECH	IT6863A	60001401 06872100 06	N/A	N/A	<input type="checkbox"/>
LCD Monitor	SAMSUNG	UA32C4000P	N/A	N/A	N/A	<input type="checkbox"/>
LCD Monitor	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 GSM 850 MHz RX Test Mode</u> GSM 850 MHz RX + EUT +Adapter + USB Cable + Battery + Headset
TC02	<u>The EGPRS 850 MHz RX Test Mode</u> EGPRS 850 MHz RX + EUT +Adapter + USB Cable + Battery + Headset
TC03	<u>The WCDMA Band 5 RX Test Mode</u> WCDMA Band 5 RX + EUT +Adapter + USB Cable + Battery + Headset
TC04	<u>The FDD LTE Band 5 RX Test Mode</u> LTE Band 5 RX + EUT +Adapter + USB Cable + Battery + Headset
TC05	<u>The FDD LTE Band 12 RX Test Mode</u> LTE Band 12 RX + EUT +Adapter + USB Cable + Battery + Headset
TC06	<u>The FDD LTE Band 17 RX Test Mode</u> LTE Band 17 RX + EUT +Adapter + USB Cable + Battery + Headset
TC07	<u>The Camera Test Mode</u> EUT + Adapter + USB Cable + Battery + Headset + TF Card
TC08	<u>The Video Play Test Mode</u> EUT + Adapter + USB Cable + Battery + Headset + TF Card
TC09	<u>The USB Test Mode</u> EUT + USB Cable + Battery + Laptop+ Headset + TF Card

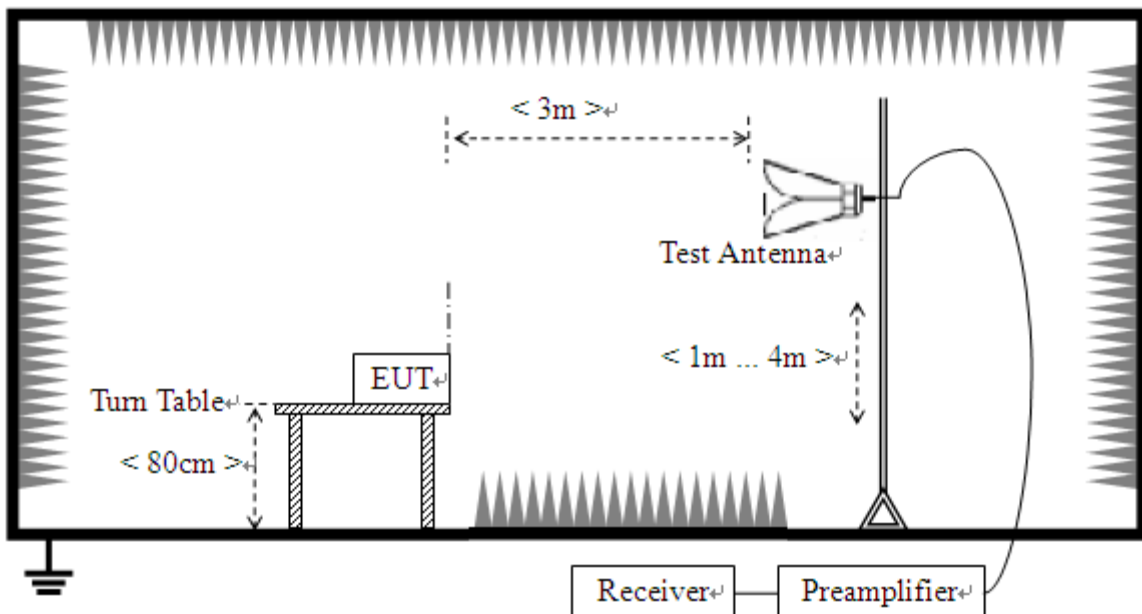
## 4.5 Test Setups

### Test Setup 1



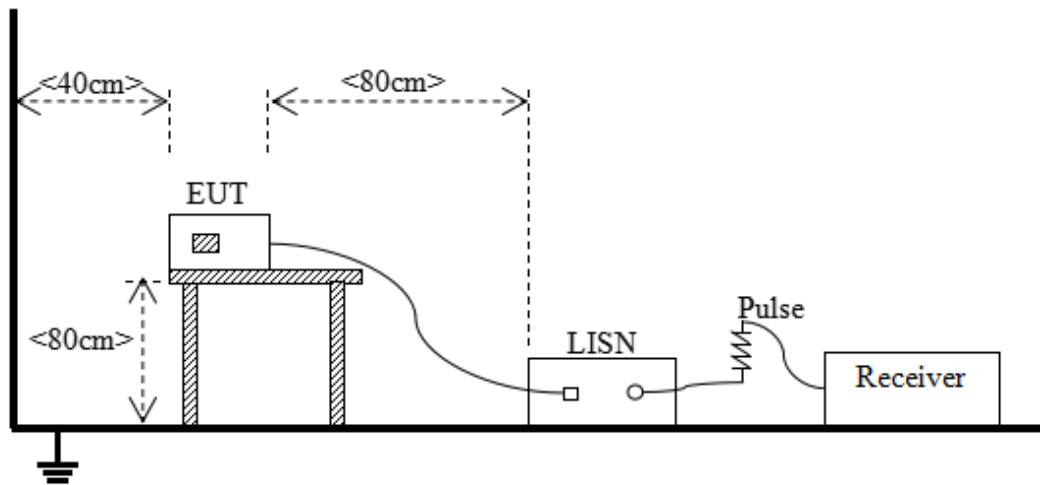
(For Radiated Emission Test (30 MHz-1 GHz))

### 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 Setup	Test Setup 1&2
	Test Configuration	TC01~TC09 <sup>Note</sup>
Conducted Emission, AC Ports	Test Setup	Test Setup 3
	Test Configuration	TC01~TC09 <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 (dBuV/m) = Reading (dBuV/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 (dBuV) = Reading (dBuV) + 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.

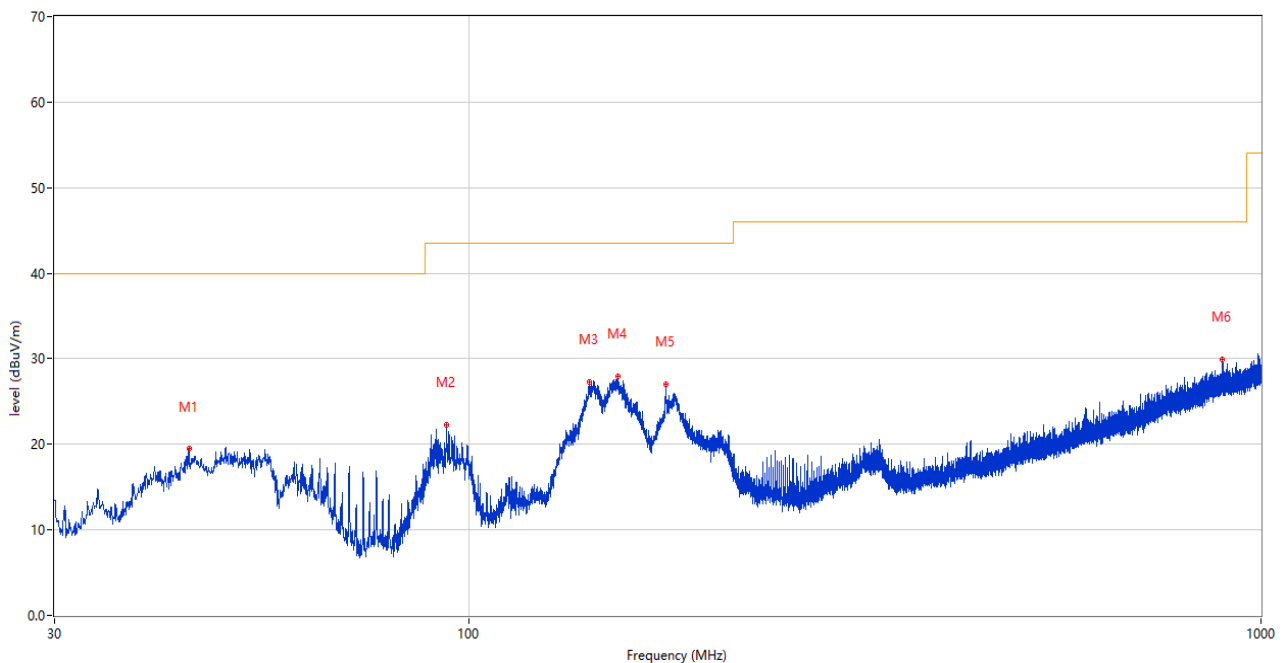
Note 2: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

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

### Test Data and Plots

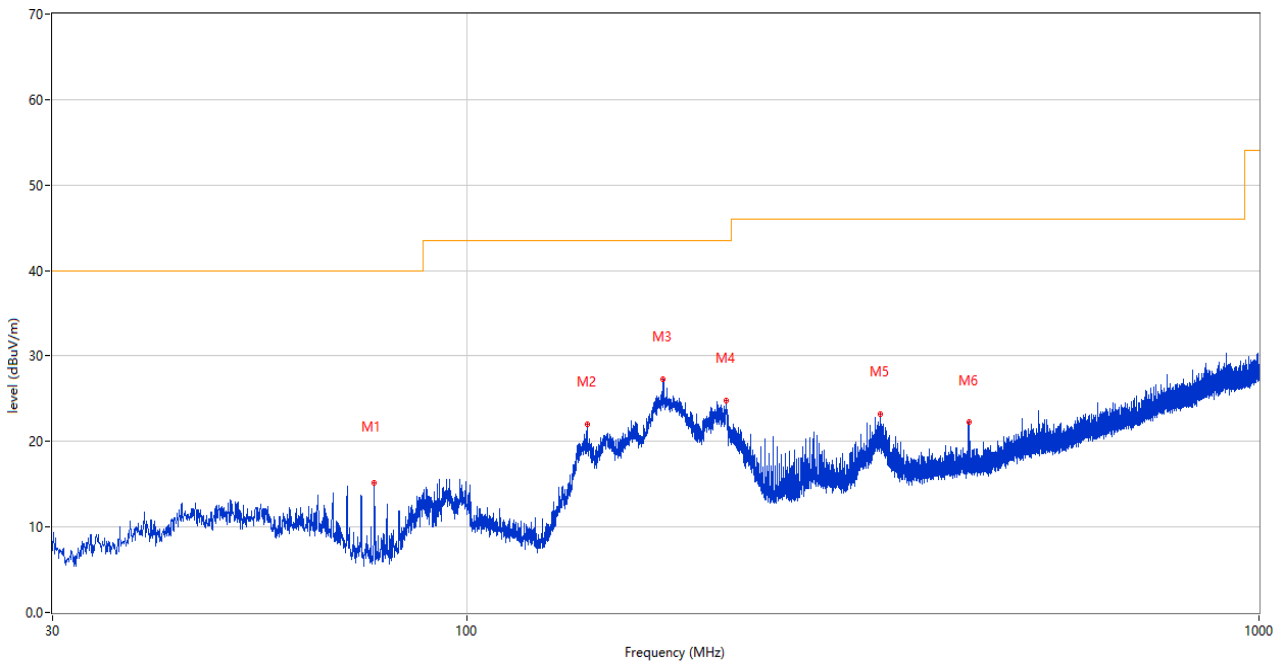
#### The Camera Test Mode

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



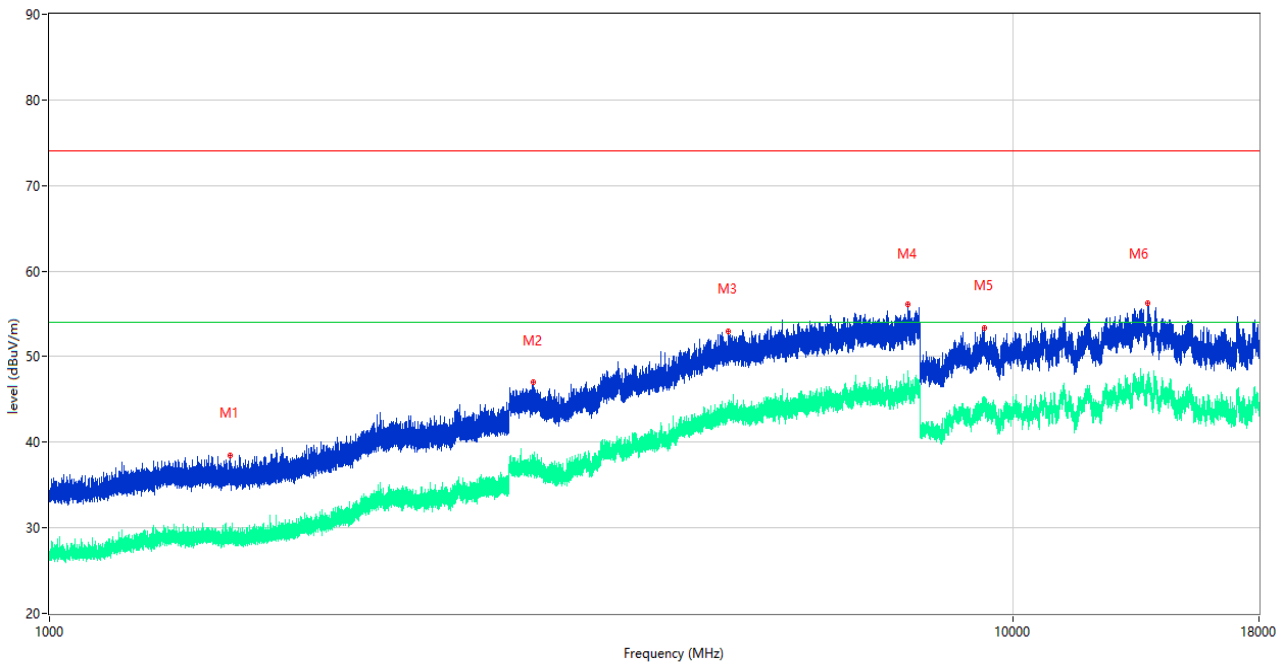
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	44.356	19.45	-25.72	40.0	-20.55	Peak	27.00	100	Vertical	Pass
2	93.729	22.26	-27.73	43.5	-21.24	Peak	264.00	100	Vertical	Pass
3	141.841	27.25	-30.28	43.5	-16.25	Peak	322.00	100	Vertical	Pass
4	154.208	27.91	-29.90	43.5	-15.59	Peak	320.00	100	Vertical	Pass
5	177.343	26.97	-28.68	43.5	-16.53	Peak	349.00	100	Vertical	Pass
6	892.185	29.87	-10.09	46.0	-16.13	Peak	308.00	100	Vertical	Pass

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



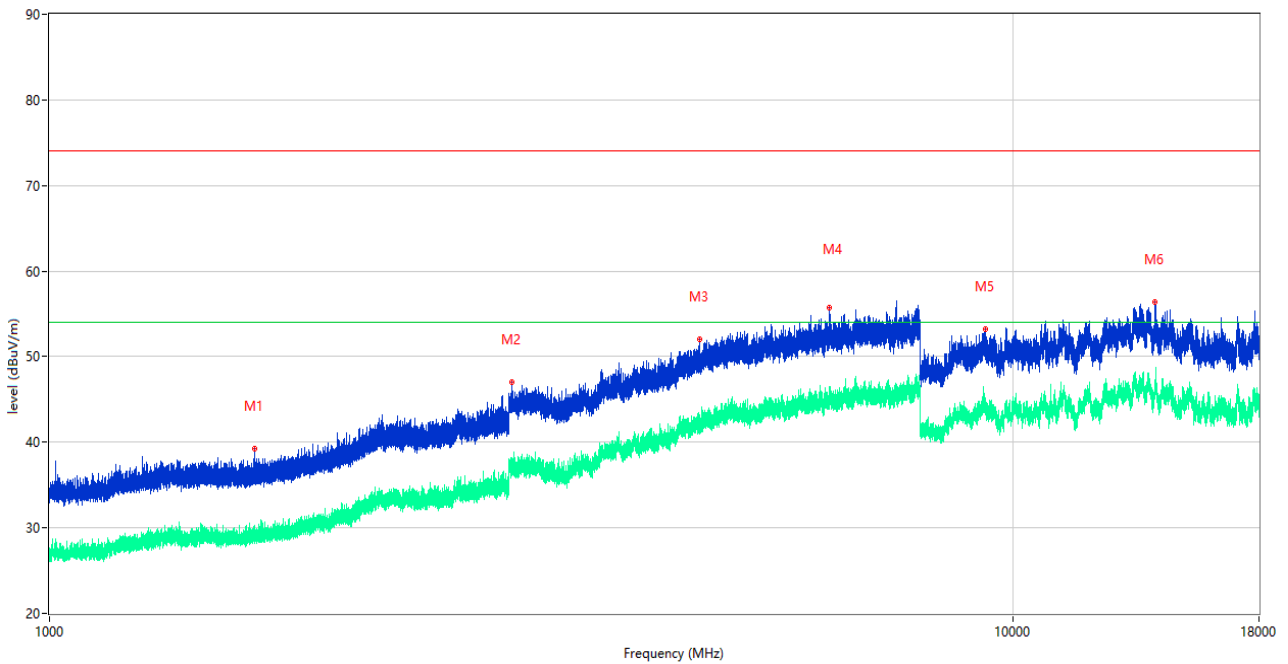
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	76.414	15.10	-31.18	40.0	-24.90	Peak	302.00	200	Horizontal	Pass
2	141.889	22.06	-30.28	43.5	-21.44	Peak	45.00	200	Horizontal	Pass
3	177.100	27.34	-28.66	43.5	-16.16	Peak	72.00	200	Horizontal	Pass
4	212.651	24.72	-26.54	43.5	-18.78	Peak	32.00	100	Horizontal	Pass
5	333.028	23.14	-22.62	46.0	-22.86	Peak	29.00	100	Horizontal	Pass
6	430.028	22.31	-20.14	46.0	-23.69	Peak	241.00	200	Horizontal	Pass

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



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1538.200	38.50	-16.66	74.0	-35.50	Peak	86.00	100	Vertical	Pass
1**	1538.200	28.52	-16.66	54.0	-25.48	AV	86.00	100	Vertical	Pass
2	3179.000	47.08	-4.94	74.0	-26.92	Peak	327.00	100	Vertical	Pass
2**	3179.000	37.26	-4.94	54.0	-16.74	AV	327.00	100	Vertical	Pass
3	5068.750	53.00	0.16	74.0	-21.00	Peak	360.00	100	Vertical	Pass
3**	5068.750	43.57	0.16	54.0	-10.43	AV	360.00	100	Vertical	Pass
4	7783.250	56.10	3.17	74.0	-17.90	Peak	267.00	100	Vertical	Pass
4**	7783.250	47.17	3.17	54.0	-6.83	AV	267.00	100	Vertical	Pass
5	9334.500	53.31	2.16	74.0	-20.69	Peak	246.00	100	Vertical	Pass
5**	9334.500	44.70	2.16	54.0	-9.30	AV	246.00	100	Vertical	Pass
6	13798.000	56.25	5.72	74.0	-17.75	Peak	0.00	100	Vertical	Pass
6**	13798.000	46.95	5.72	54.0	-7.05	AV	0.00	100	Vertical	Pass

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



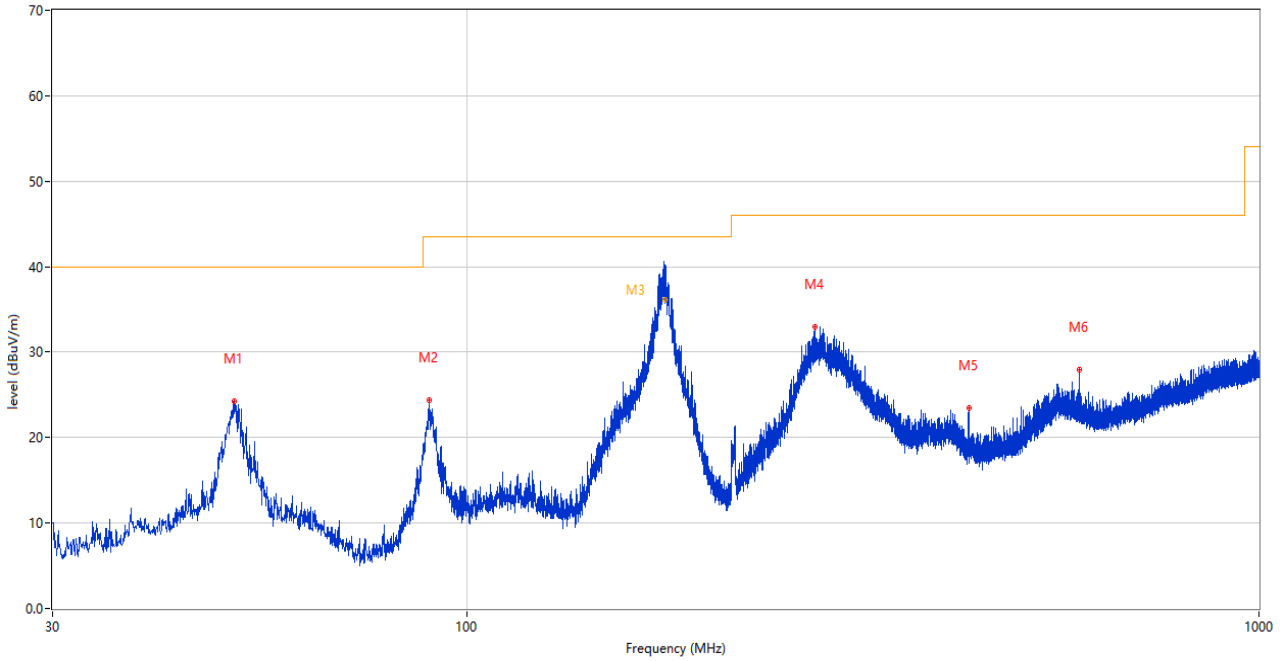
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1632.000	39.29	-16.65	74.0	-34.71	Peak	28.00	100	Horizontal	Pass
1**	1632.000	29.57	-16.65	54.0	-24.43	AV	28.00	100	Horizontal	Pass
2	3020.750	47.00	-6.56	74.0	-27.00	Peak	256.00	100	Horizontal	Pass
2**	3020.750	37.02	-6.56	54.0	-16.98	AV	256.00	100	Horizontal	Pass
3	4734.250	52.05	-0.59	74.0	-21.95	Peak	360.00	100	Horizontal	Pass
3**	4734.250	41.50	-0.59	54.0	-12.50	AV	360.00	100	Horizontal	Pass
4	6450.500	55.67	2.54	74.0	-18.33	Peak	280.00	100	Horizontal	Pass
4**	6450.500	46.42	2.54	54.0	-7.58	AV	280.00	100	Horizontal	Pass
5	9369.000	53.18	2.00	74.0	-20.82	Peak	0.00	100	Horizontal	Pass
5**	9369.000	43.62	2.00	54.0	-10.38	AV	0.00	100	Horizontal	Pass
6	14042.500	56.35	5.11	74.0	-17.65	Peak	111.00	100	Horizontal	Pass
6**	14042.500	47.16	5.11	54.0	-6.84	AV	111.00	100	Horizontal	Pass



Test Data and Plots

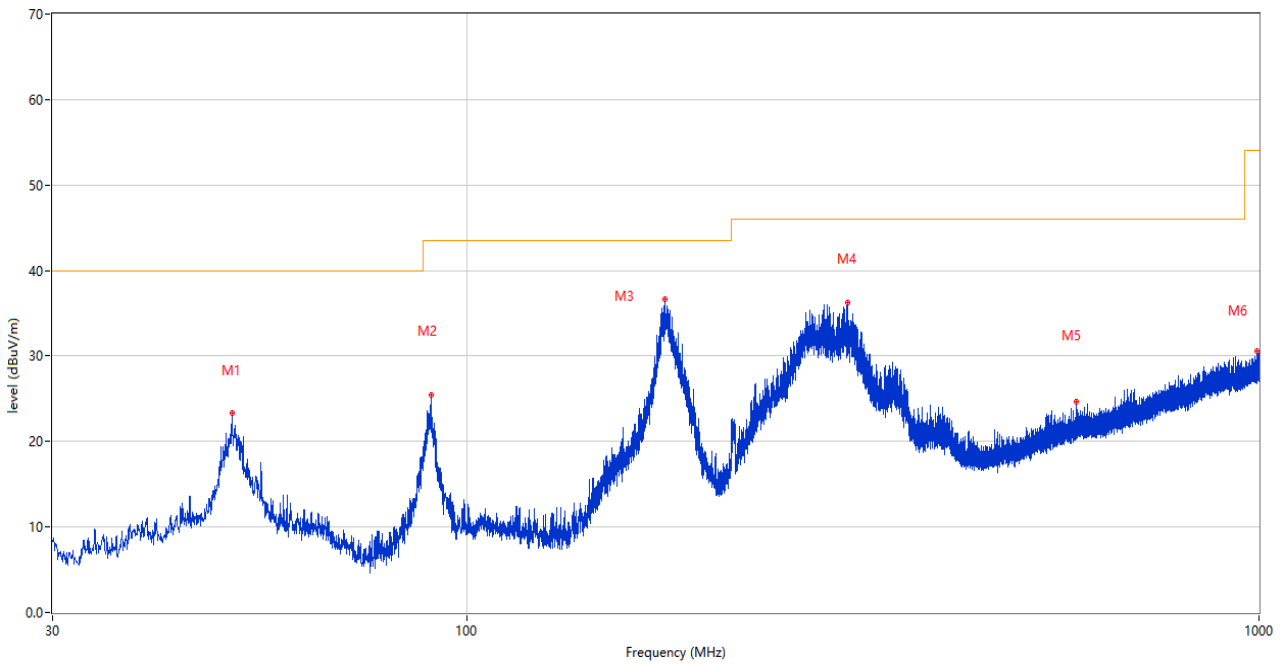
The USB Test Mode

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



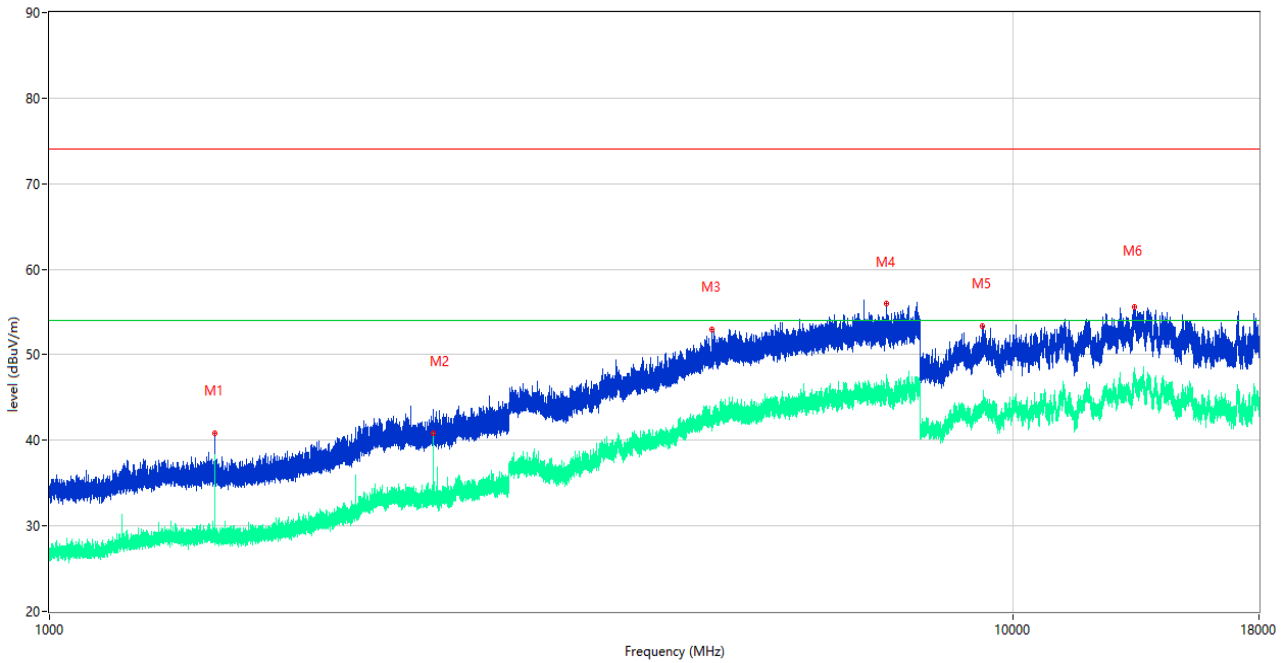
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	50.855	24.26	-25.50	40.0	-15.74	Peak	102.00	100	Vertical	Pass
2	89.655	24.45	-28.64	43.5	-19.05	Peak	191.00	100	Vertical	Pass
3	177.661	42.31	-28.67	43.5	-1.19	Peak	251.00	110	Vertical	N/A
3*	177.661	36.12	-28.67	43.5	-7.38	QP	251.00	110	Vertical	Pass
4	275.313	32.98	-24.42	46.0	-13.02	Peak	360.00	200	Vertical	Pass
5	430.028	23.47	-20.14	46.0	-22.53	Peak	360.00	200	Vertical	Pass
6	594.006	27.89	-16.07	46.0	-18.11	Peak	162.00	200	Vertical	Pass

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



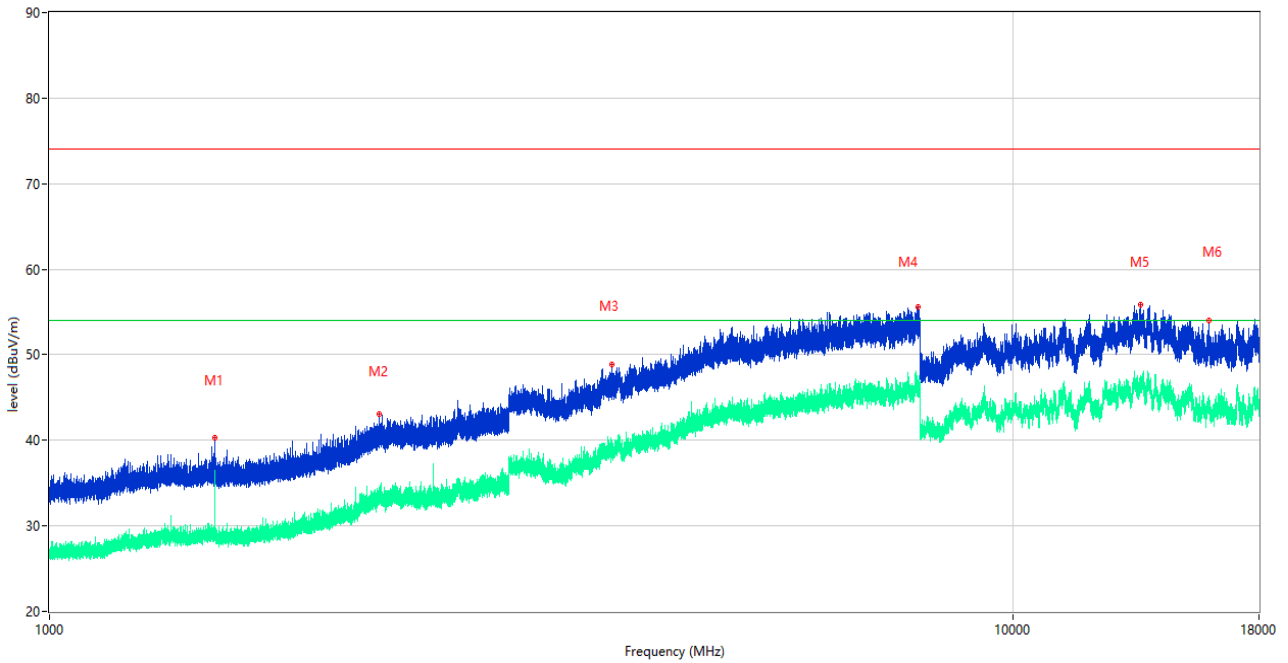
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	50.564	23.28	-25.54	40.0	-16.72	Peak	299.00	200	Horizontal	Pass
2	90.237	25.38	-28.45	43.5	-18.12	Peak	238.00	200	Horizontal	Pass
3	177.925	36.64	-28.68	43.5	-6.86	Peak	46.00	200	Horizontal	Pass
4	302.328	36.22	-23.69	46.0	-9.78	Peak	120.00	100	Horizontal	Pass
5	587.895	24.66	-16.38	46.0	-21.34	Peak	43.00	200	Horizontal	Pass
6	995.489	30.55	-8.42	54.0	-23.45	Peak	98.00	100	Horizontal	Pass

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



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1484.800	40.81	-16.61	74.0	-33.19	Peak	159.00	100	Vertical	Pass
1**	1484.800	36.79	-16.61	54.0	-17.21	AV	159.00	100	Vertical	Pass
2	2500.200	43.55	-11.12	74.0	-30.45	Peak	265.00	100	Vertical	Pass
2**	2500.200	40.88	-11.12	54.0	-13.12	AV	265.00	100	Vertical	Pass
3	4870.750	52.95	0.10	74.0	-21.05	Peak	28.00	100	Vertical	Pass
3**	4870.750	41.83	0.10	54.0	-12.17	AV	28.00	100	Vertical	Pass
4	7395.500	55.95	2.44	74.0	-18.05	Peak	303.00	100	Vertical	Pass
4**	7395.500	45.52	2.44	54.0	-8.48	AV	303.00	100	Vertical	Pass
5	9298.000	53.33	2.17	74.0	-20.67	Peak	247.00	100	Vertical	Pass
5**	9298.000	43.81	2.17	54.0	-10.19	AV	247.00	100	Vertical	Pass
6	13363.500	55.62	5.14	74.0	-18.38	Peak	105.00	100	Vertical	Pass
6**	13363.500	47.00	5.14	54.0	-7.00	AV	105.00	100	Vertical	Pass

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



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1484.500	40.27	-16.61	74.0	-33.73	Peak	260.00	100	Horizontal	Pass
1**	1484.500	32.84	-16.61	54.0	-21.16	AV	260.00	100	Horizontal	Pass
2	2200.200	43.10	-12.04	74.0	-30.90	Peak	243.00	100	Horizontal	Pass
2**	2200.200	33.60	-12.04	54.0	-20.40	AV	243.00	100	Horizontal	Pass
3	3836.000	48.87	-3.50	74.0	-25.13	Peak	129.00	100	Horizontal	Pass
3**	3836.000	38.72	-3.50	54.0	-15.28	AV	129.00	100	Horizontal	Pass
4	7975.500	55.58	2.08	74.0	-18.42	Peak	44.00	100	Horizontal	Pass
4**	7975.500	45.49	2.08	54.0	-8.51	AV	44.00	100	Horizontal	Pass
5	13559.000	55.82	4.74	74.0	-18.18	Peak	152.00	100	Horizontal	Pass
5**	13559.000	46.29	4.74	54.0	-7.71	AV	152.00	100	Horizontal	Pass
6	15955.000	54.07	0.95	74.0	-19.93	Peak	360.00	100	Horizontal	Pass
6**	15955.000	44.26	0.95	54.0	-9.74	AV	360.00	100	Horizontal	Pass

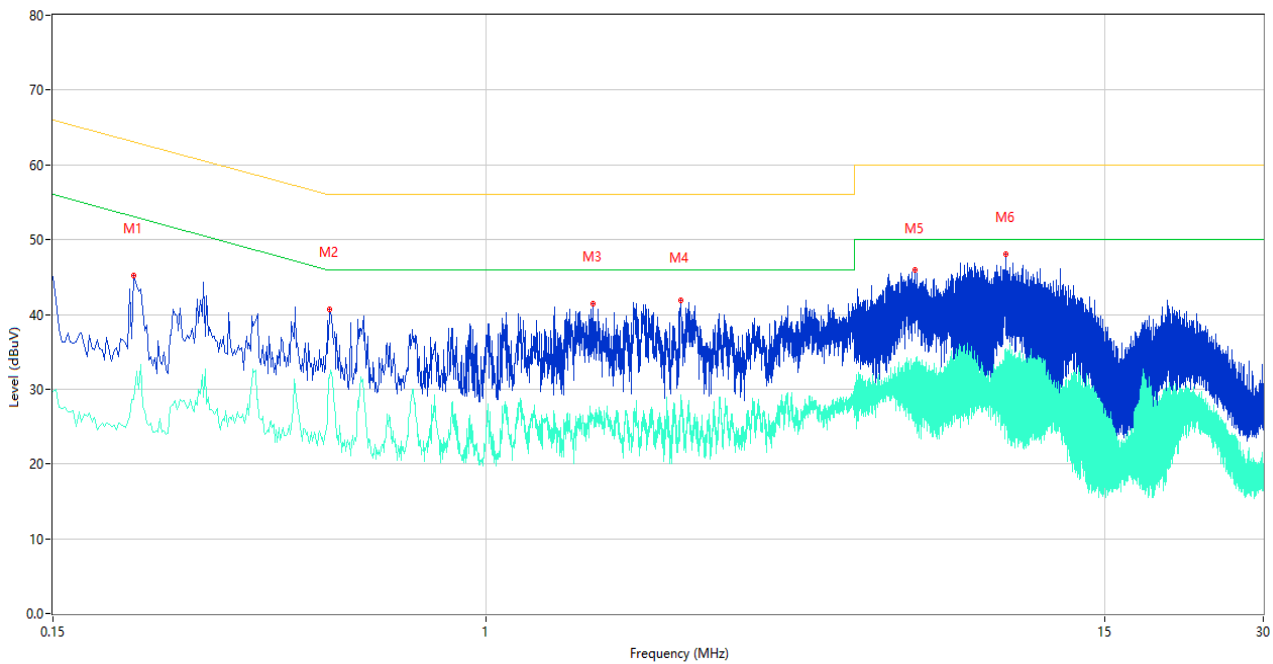
## A.2 Conducted Emission

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

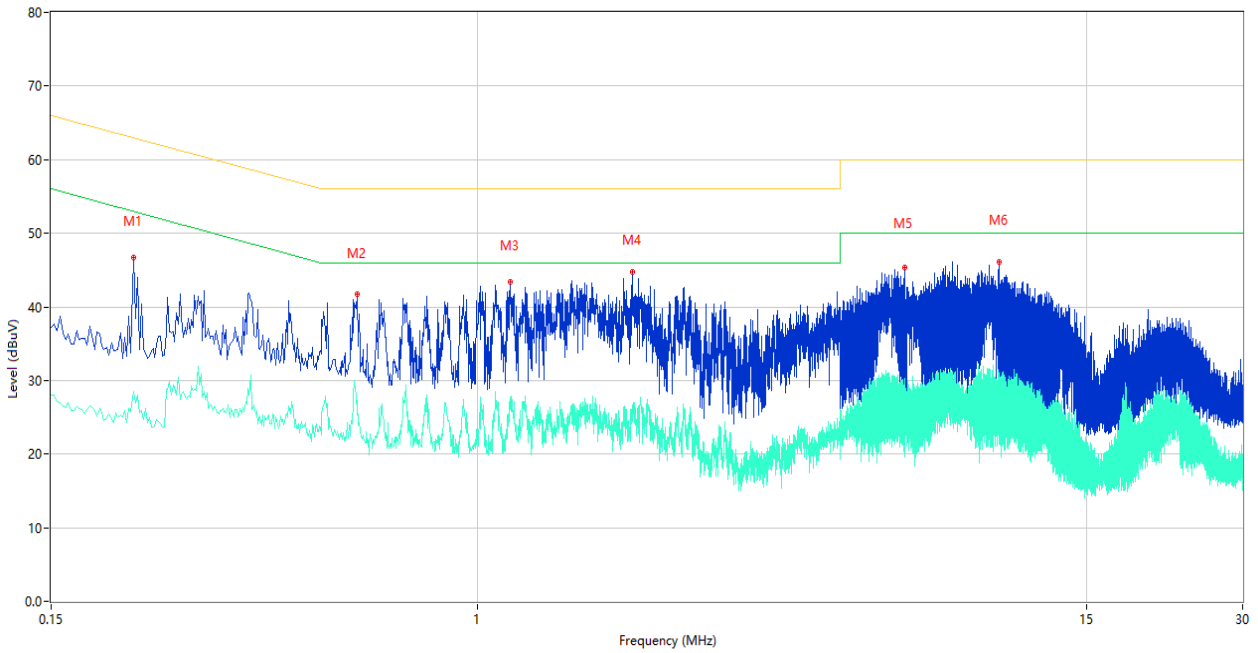
#### The Camera Test Mode

##### A.2.1 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.214	45.21	10.09	63.05	-17.84	Peak	L	Pass
1**	0.214	28.64	10.09	53.05	-24.41	AV	L	Pass
2	0.504	40.66	10.11	56.00	-15.34	Peak	L	Pass
2**	0.504	31.55	10.11	46.00	-14.45	AV	L	Pass
3	1.592	41.49	9.93	56.00	-14.51	Peak	L	Pass
3**	1.592	26.48	9.93	46.00	-19.52	AV	L	Pass
4	2.346	41.87	9.93	56.00	-14.13	Peak	L	Pass
4**	2.346	29.05	9.93	46.00	-16.95	AV	L	Pass
5	6.540	46.01	9.95	60.00	-13.99	Peak	L	Pass
5**	6.540	33.61	9.95	50.00	-16.39	AV	L	Pass
6	9.708	48.01	10.09	60.00	-11.99	Peak	L	Pass
6**	9.708	26.55	10.09	50.00	-23.45	AV	L	Pass

A.2.2 N Phase

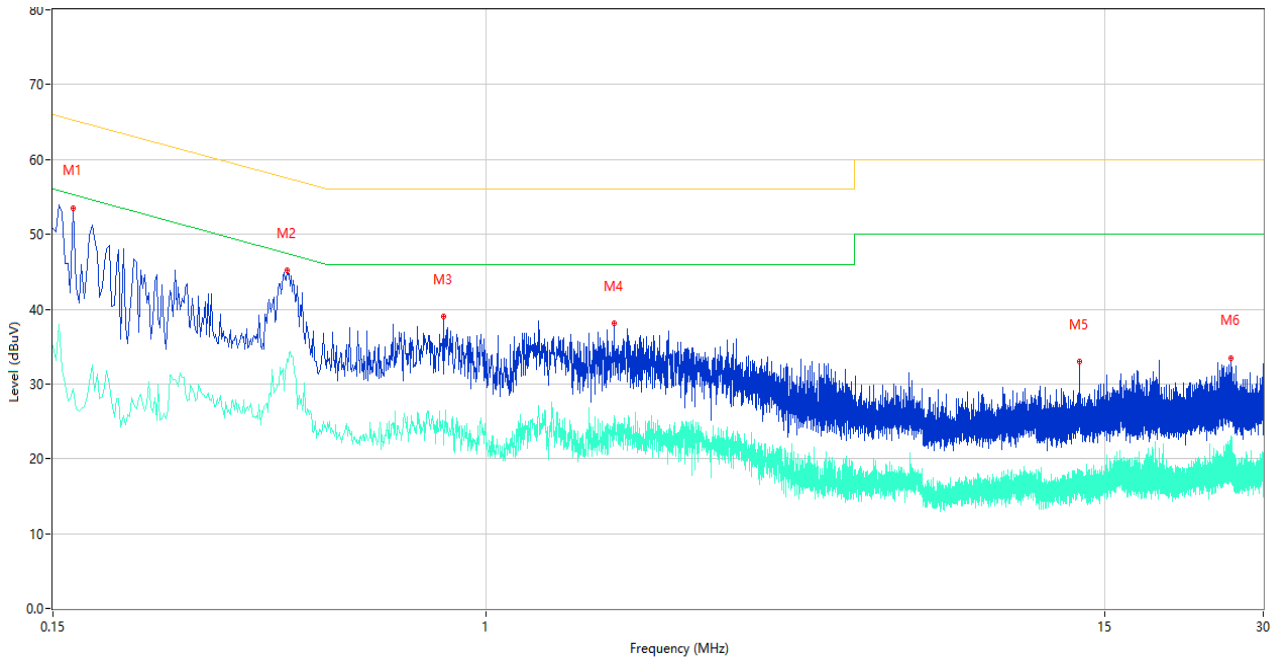


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.216	46.70	10.09	62.97	-16.27	Peak	N	Pass
1**	0.216	28.49	10.09	52.97	-24.48	AV	N	Pass
2	0.586	41.75	10.10	56.00	-14.25	Peak	N	Pass
2**	0.586	27.21	10.10	46.00	-18.79	AV	N	Pass
3	1.154	43.39	10.00	56.00	-12.61	Peak	N	Pass
3**	1.154	27.76	10.00	46.00	-18.24	AV	N	Pass
4	1.992	44.80	9.86	56.00	-11.20	Peak	N	Pass
4**	1.992	26.64	9.86	46.00	-19.36	AV	N	Pass
5	6.672	45.29	9.91	60.00	-14.71	Peak	N	Pass
5**	6.672	30.32	9.91	50.00	-19.68	AV	N	Pass
6	10.162	46.06	10.10	60.00	-13.94	Peak	N	Pass
6**	10.162	31.10	10.10	50.00	-18.90	AV	N	Pass

Test Data and Plots

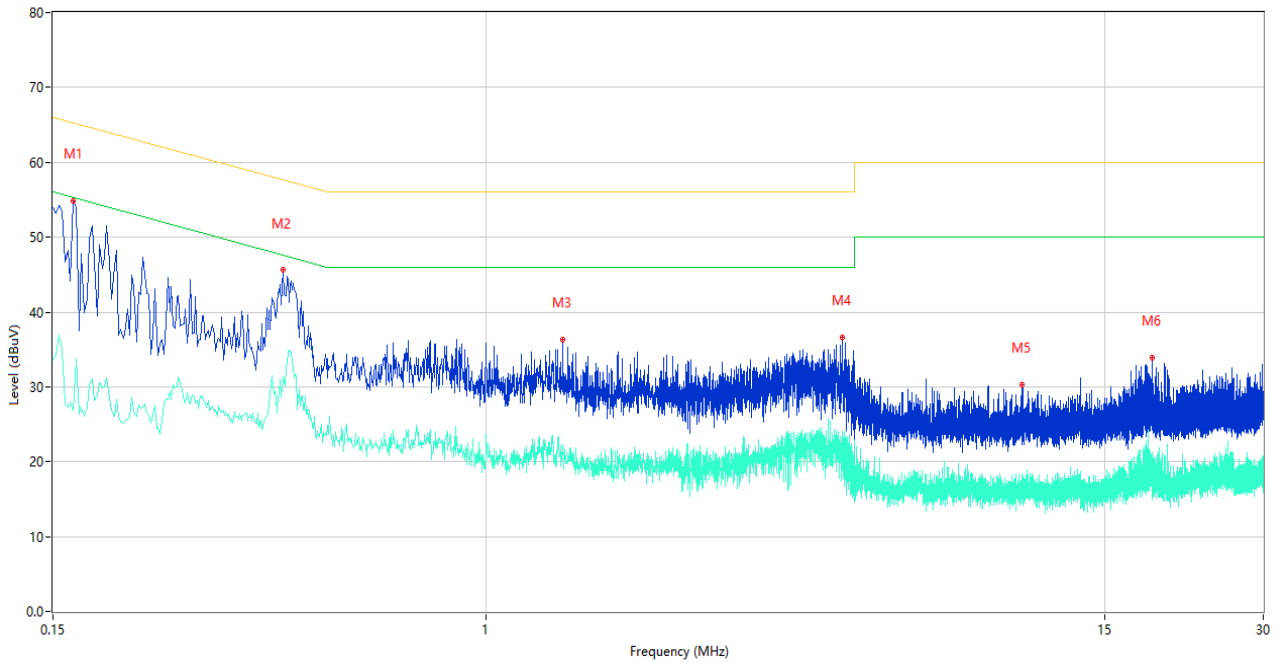
The USB Test Mode

A.2.3 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.164	53.55	10.16	65.26	-11.71	Peak	L	Pass
1**	0.164	29.30	10.16	55.26	-25.96	AV	L	Pass
2	0.418	45.24	10.09	57.49	-12.25	Peak	L	Pass
2**	0.418	33.24	10.09	47.49	-14.25	AV	L	Pass
3	0.828	39.02	10.06	56.00	-16.98	Peak	L	Pass
3**	0.828	23.63	10.06	46.00	-22.37	AV	L	Pass
4	1.752	38.16	9.90	56.00	-17.84	Peak	L	Pass
4**	1.752	25.76	9.90	46.00	-20.24	AV	L	Pass
5	13.428	32.97	10.11	60.00	-27.03	Peak	L	Pass
5**	13.428	17.39	10.11	50.00	-32.61	AV	L	Pass
6	25.988	33.51	10.16	60.00	-26.49	Peak	L	Pass
6**	25.988	18.33	10.16	50.00	-31.67	AV	L	Pass

A.2.4 N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.164	54.87	10.16	65.26	-10.39	Peak	N	Pass
1**	0.164	26.80	10.16	55.26	-28.46	AV	N	Pass
2	0.410	45.63	10.09	57.65	-12.02	Peak	N	Pass
2**	0.410	31.40	10.09	47.65	-16.25	AV	N	Pass
3	1.398	36.33	9.96	56.00	-19.67	Peak	N	Pass
3**	1.398	21.62	9.96	46.00	-24.38	AV	N	Pass
4	4.748	36.56	9.97	56.00	-19.44	Peak	N	Pass
4**	4.748	24.15	9.97	46.00	-21.85	AV	N	Pass
5	10.440	30.25	10.09	60.00	-29.75	Peak	N	Pass
5**	10.440	18.32	10.09	50.00	-31.68	AV	N	Pass
6	18.488	33.87	10.20	60.00	-26.13	Peak	N	Pass
6**	18.488	18.59	10.20	50.00	-31.41	AV	N	Pass



## **ANNEX B TEST SETUP PHOTOS**

Please refer the document “BL-SZ2240239-AE.PDF”.

## **ANNEX C EUT EXTERNAL PHOTOS**

Please refer the document “BL-SZ2240239-AW.PDF”.

## **ANNEX D EUT INTERNAL PHOTOS**

Please refer the document “BL-SZ2240239-AI.PDF”.

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--END OF REPORT--