

EMC

TEST REPORT

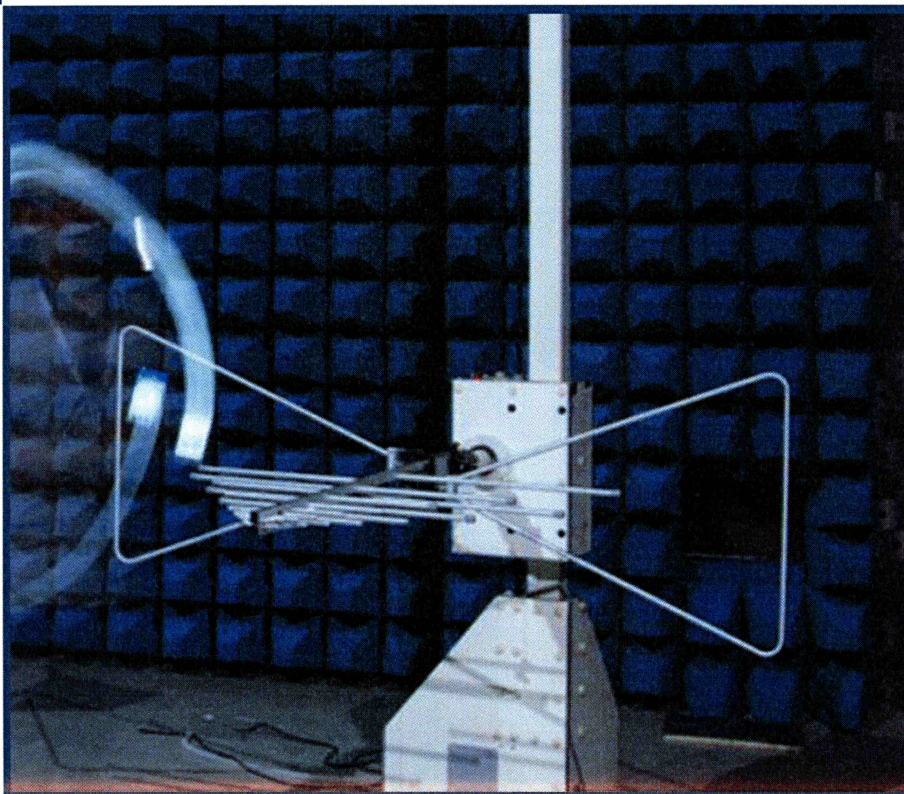
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
Mobile Phone

ISSUED TO
vivo Mobile Communication Co., Ltd.

No.168 Jinghai East Rd., Chang'an, Dongguan, Guangdong, China



Tested by: Xia Long
Xia Long
Date: Nov. 25, 2021

Approved by: Wei Yanquan
BALUN
Wei Yanquan
(Chief Engineer)
Date: Nov. 25, 2021

Report No.: BL-SZ21B0699-401
EUT Name: Mobile Phone
Model Name: V2110
Brand Name: vivo
Test Standard: 47 CFR Part 15 Subpart B
FCC ID: 2AUCY-V2110

Test Conclusion: Pass
Test Date: Nov. 18, 2021 ~ Nov. 22, 2021
Date of Issue: Nov. 25, 2021

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Revision History

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>Nov. 25, 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
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, 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	30% to 60%
Ambient Pressure	100 kPa to 102 kPa

1.4 Announce

- (1) The test report refer to the BALUN report mode v7.2.
- (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	vivo Mobile Communication Co., Ltd.
Address	No.168 Jinghai East Rd., Chang'an, Dongguan, Guangdong, China

2.2 Manufacturer Information

Manufacturer	vivo Mobile Communication Co., Ltd.
Address	No.168 Jinghai East Rd., 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	PD2138GF_EX_A_3.6.11
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	Minimal Capacity: 4910mAh Typical capacity: 5000mAh
	Rated Voltage	3.87 V
	Limit Charge Voltage	4.45 V
	Manufacturer	Huizhou Desay Battery Co., Ltd
Ancillary Equipment 2	Adapter	
	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	USB Cable 1	
	Model No.	BK-C-32
	Length (Approx.)	1 m
Ancillary Equipment 4	Earphone	
	Model No.	XE160
	Length (Approx.)	1 m
Note 1: Letter in () means plug type.		

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

Note: The only difference between the EUT (test samples in this report) and testing sample of report BL-SZ2170620-401, which was issued by Shenzhen BALUN Technology Co., Ltd. on Aug. 16, 2021 show as below:

1. Add the alternative manufacturer of the memory chip(pin to pin compatibility, with same technical parameter)
2. Add the alternative overvoltage protection IC(pin to pin compatibility, with same technical parameter)
3. Add the alternative Type-C controller(with same technical parameter)
4. No change in radio parameters has occurred.

All items were retested in this report, but only the worst data was shown in this report.

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)	20°C to 25°C	AC 120 V/60 Hz or DC 3.87V from Battery	30% to 60%	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	2021.10.08	2022.10.09	☐
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2019.07.02	2022.07.01	☐
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60*7.35m	N/A	2021.08.15	2024.08.14	☐
Test Software	BALUN	BL410_E	V19.918	--	--	☐

Radiated Emission Test For Frequency Below 1 GHz (3 m)						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9038A	MY55330120	2021.10.20	2022.10.19	☒
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2019.07.02	2022.07.01	☒
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2021.09.04	2024.09.03	☒
Test Software	BALUN	BL410_E	V19.918	--	--	☒

Radiated Emission Test For Frequency Above 1 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9038A	MY55330120	2021.10.20	2022.10.19	☐
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	9120D-1917	2019.07.02	2022.07.01	☐
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2021.09.04	2024.09.03	☐
Test Software	BALUN	BL410_E	V19.918	--	--	☐

Radiated Emission Test For Frequency 1 GHz-18 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9038A	MY55330120	2021.10.20	2022.10.19	☒
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	9120D-1917	2019.07.02	2022.07.01	☒
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2021.09.04	2024.09.03	☒
Test Software	BALUN	BL410_E	V19.918	--	--	☒

Conducted disturbance Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9010B	MY57110309	2021.10.10	2022.10.09	☒
LISN	SCHWARZBECK	NSLK 8127	8127-687	2021.06.08	2022.06.07	☒
Shielded Enclosure	YiHeng Electronic Co., Ltd	3.4m*3.1m*2.8m	N/A	2021.08.14	2024.08.13	☒
Test Software	BALUN	BL410_E	V19.918	--	--	☒

4.3 Test Enclosure list

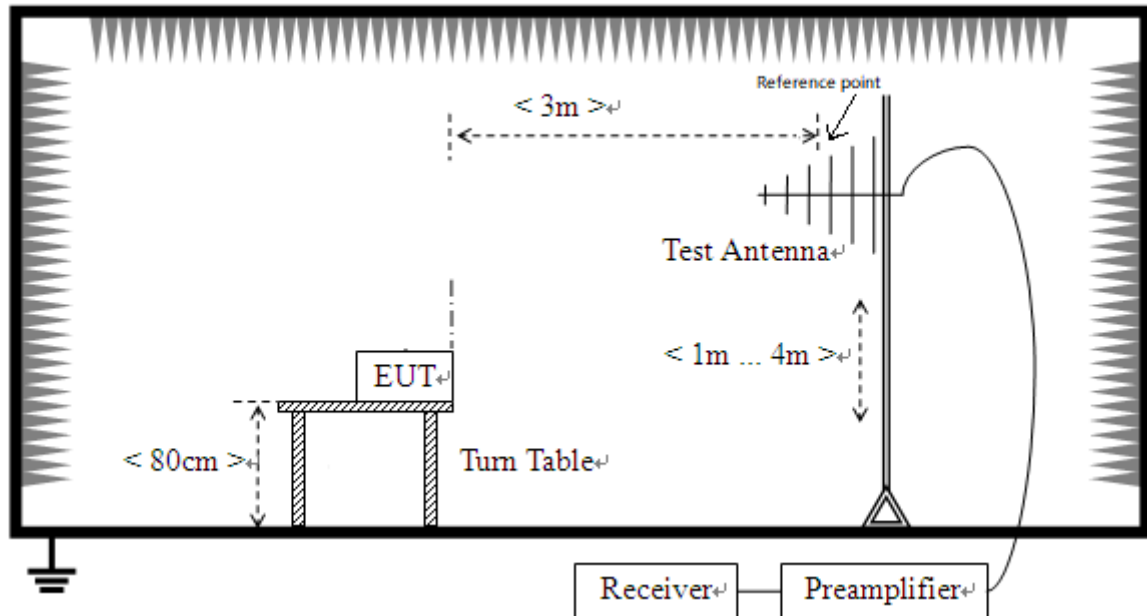
Description	Manufacturer	Model	Serial No.	Length	Description	Use
PC	Dell	015K3N	N/A	N/A	Special Handled	☐
Laptop	Apple	A1465	N/A	N/A	N/A	☒
Printer	HP	DESKJET 1000	N/A	N/A	N/A	☐
Keyboard	Logitech	Y-BP62a	N/A	N/A	N/A	☐
Mouse	Logitech	M100	N/A	N/A	N/A	☐
USB disk	Kingston	N/A	N/A	N/A	N/A	☐
TF Card	Kingston	N/A	N/A	N/A	N/A	☒
VGA Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☐
HDMI Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☐
DVI Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☐
Coaxial video cable	N/A	N/A	N/A	2.0 m	Shielded with core	☐
iPhone	Apple	A1586	N/A	N/A	N/A	☐
Phone	MI	M4	N/A	N/A	N/A	☐
Bluetooth Earphone	SAMSUNG	Gear Circle	N/A	N/A	N/A	☐
Wireless Communication s Test Set	R&S	CMW500	142028	N/A	Cal. Due 2022.01.13	☒
WIFI Router	TP-LINK	TL-WDR7500	N/A	N/A	N/A	☐
Earphone	N/A	OPPO	N/A	1.1 m	N/A	☐
Car Battery	Camel	55530	N/A	N/A	12 V/55 Ah	☐
Artificial load	N/A	N/A	N/A	N/A	2.5 Ω /100 W	☐
Artificial load	N/A	N/A	N/A	N/A	5 Ω /100 W	☐
Electronic Load	ITECH	IT8511	N/A	N/A	N/A	☐
USB Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☐
DC Power Supply	ITECH	IT6863A	60001401068 7210006	N/A	N/A	☐
LCD Monitor	SAMSUNG	UA32C4000P	N/A	N/A	N/A	☐
LCD Monitor	Dell	U241HB	N/A	N/A	N/A	☐
RJ45 Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☐

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

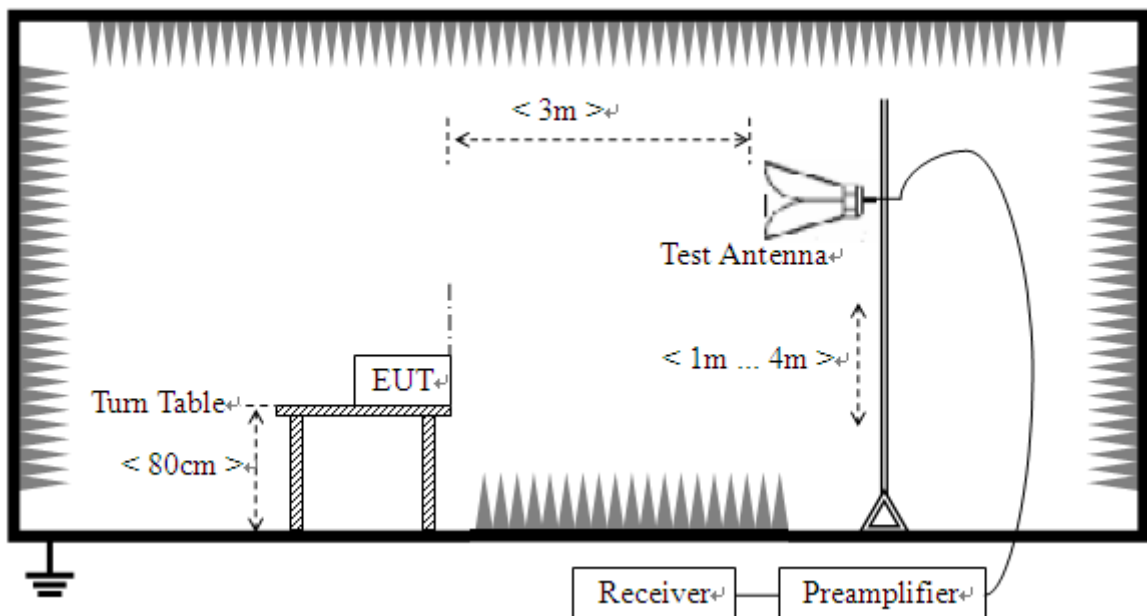
4.5 Test Setups

Test Setup 1



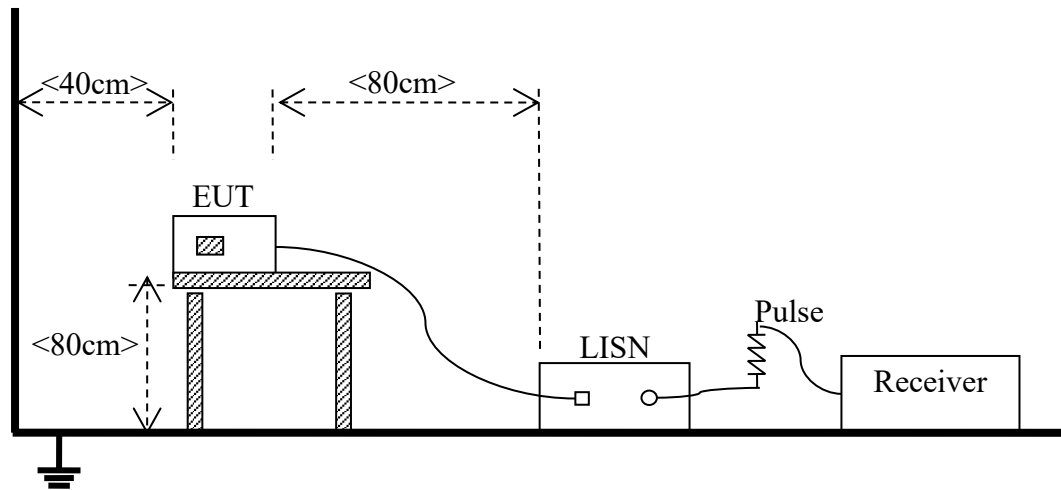
(For Radiated Emission Test (30 MHz-1 GHz))

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 Env.	NTNV
	Test Setup	Test Setup 1&2
	Test Configuration	TC01~TC09 ^{Note}
Conducted Emission, AC Ports	Test Env.	NTNV
	Test Setup	Test Setup 3
	Test Configuration	TC01~TC09 ^{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 (dB $\mu\text{V/m}$)	Field Strength (dB $\mu\text{V/m}$)	Field Strength ($\mu\text{V/m}$)	Field Strength (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 (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 (dB $\mu\text{V/m}$) = Reading (dB μV) + 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) = 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.

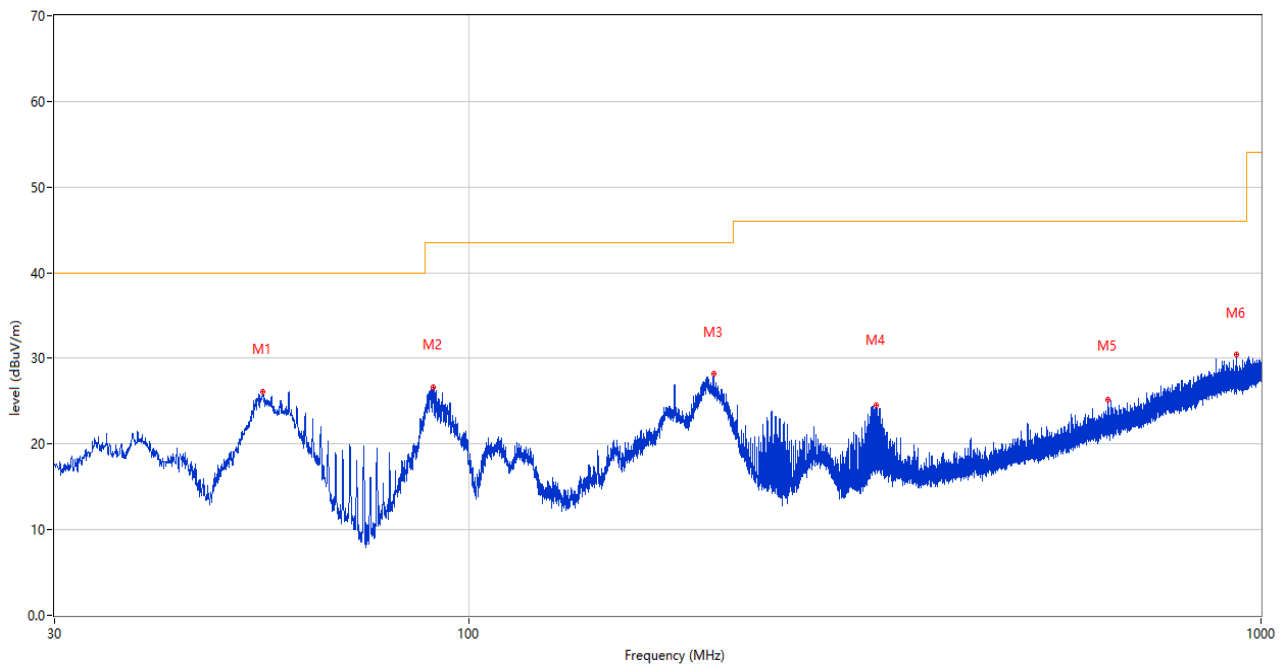
Note 2: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

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

Test Data and Plots

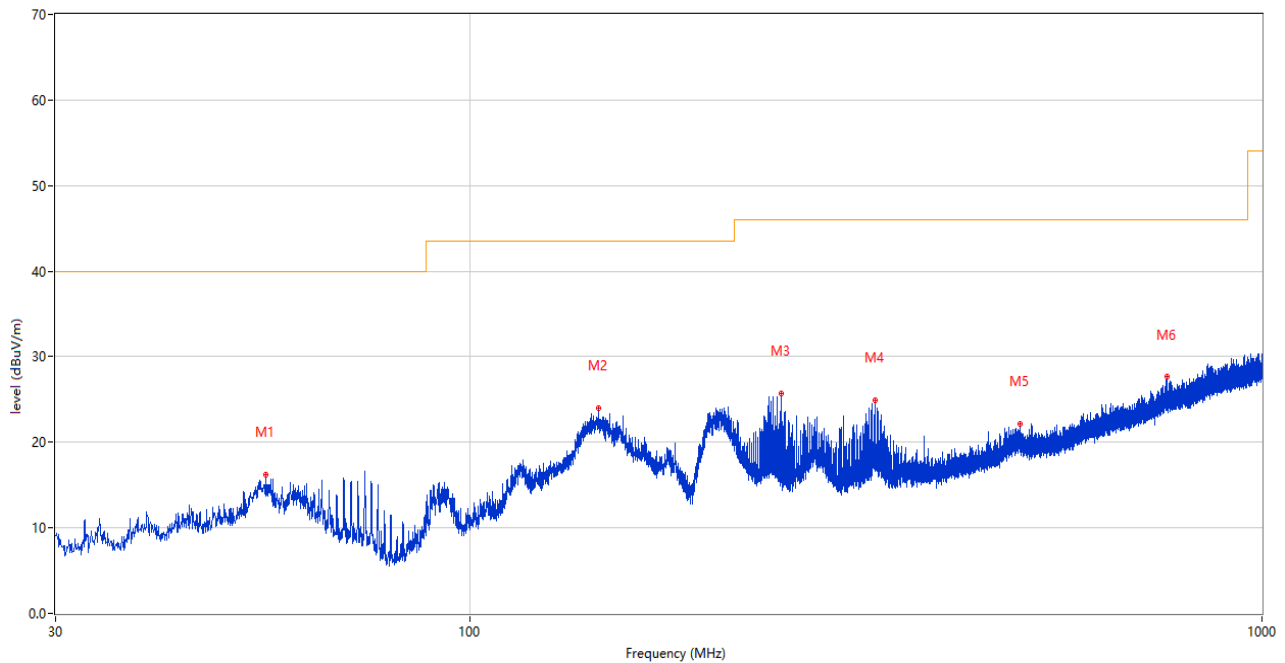
The Camera Test Mode

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



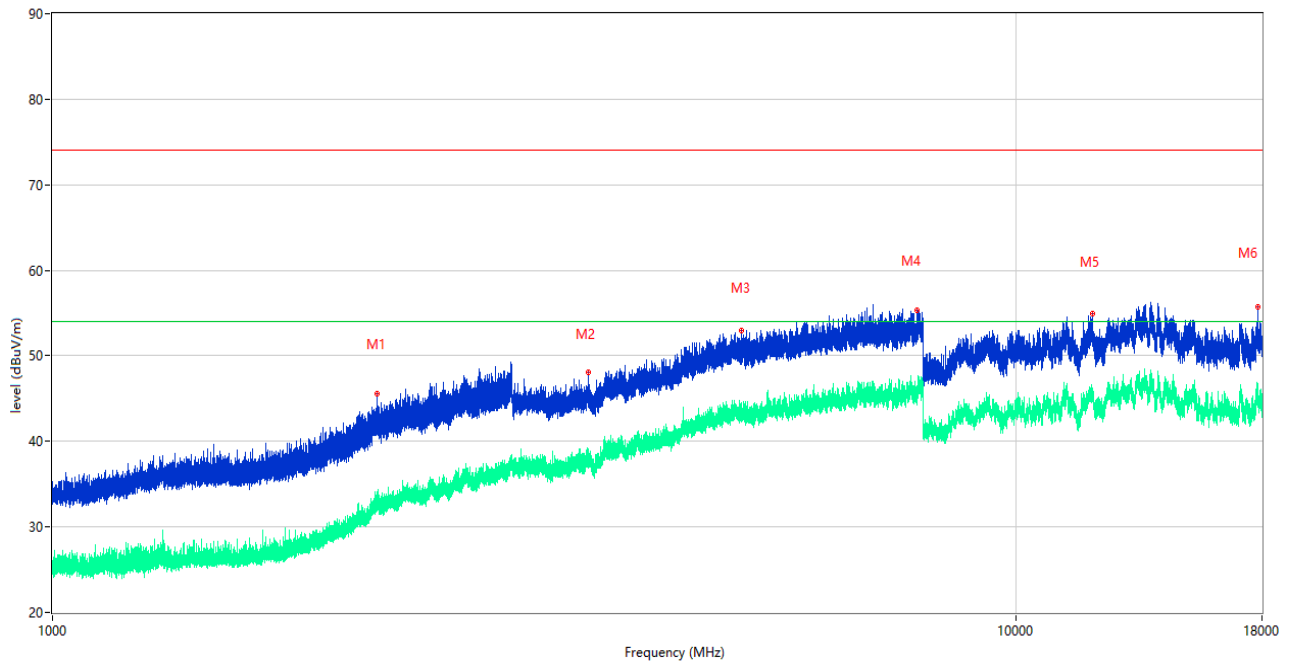
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	55.026	26.09	-25.80	40.0	-13.91	Peak	133.00	100	Vertical	Pass
2	90.237	26.69	-28.45	43.5	-16.81	Peak	19.00	100	Vertical	Pass
3	203.630	28.15	-26.51	43.5	-15.35	Peak	211.00	100	Vertical	Pass
4	326.481	24.54	-22.95	46.0	-21.46	Peak	98.00	100	Vertical	Pass
5	641.537	25.23	-15.09	46.0	-20.77	Peak	281.00	100	Vertical	Pass
6	931.809	30.42	-9.57	46.0	-15.58	Peak	360.00	200	Vertical	Pass

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



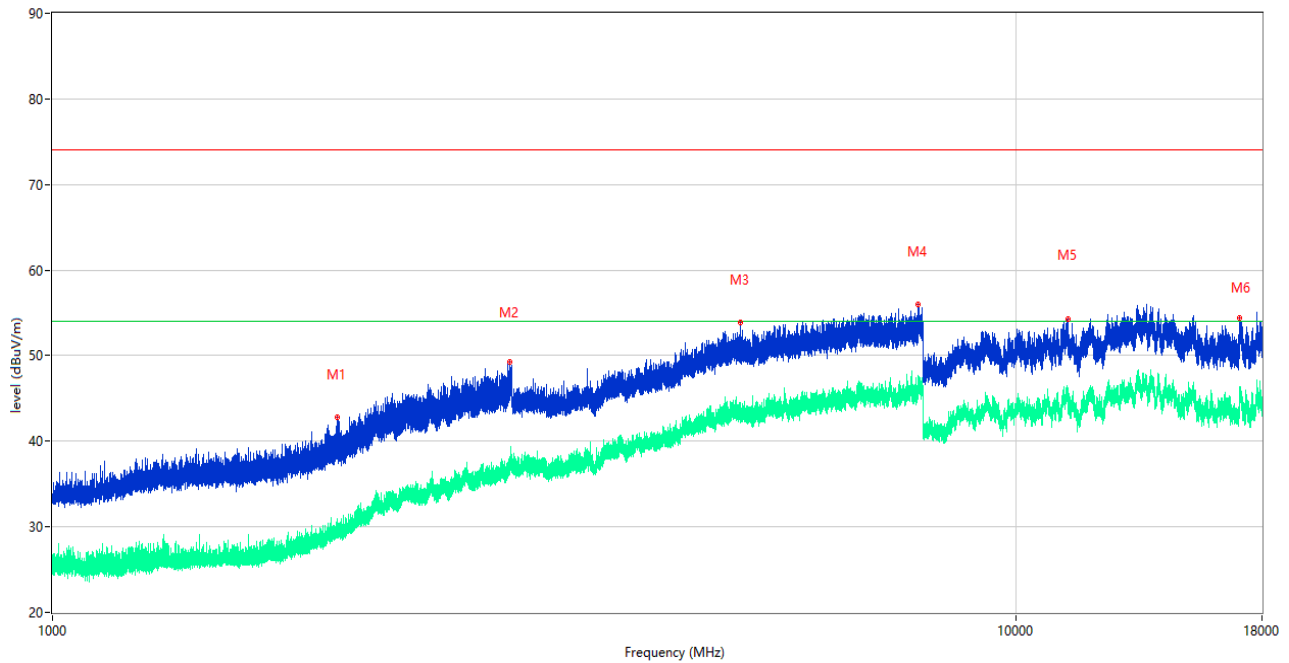
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	55.220	16.18	-25.88	40.0	-23.82	Peak	276.00	200	Horizontal	Pass
2	145.236	24.00	-30.22	43.5	-19.50	Peak	78.00	200	Horizontal	Pass
3	246.989	25.76	-24.95	46.0	-20.24	Peak	65.00	100	Horizontal	Pass
4	324.929	24.88	-23.00	46.0	-21.12	Peak	322.00	100	Horizontal	Pass
5	495.358	22.16	-18.79	46.0	-23.84	Peak	327.00	100	Horizontal	Pass
6	759.391	27.72	-12.51	46.0	-18.28	Peak	351.00	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	2172.100	45.53	3.95	74.0	-28.47	Peak	294.00	150	Vertical	Pass
1**	2172.100	33.39	3.95	54.0	-20.61	AV	294.00	150	Vertical	Pass
2	3596.500	48.02	-4.62	74.0	-25.98	Peak	0.00	150	Vertical	Pass
2**	3596.500	37.85	-4.62	54.0	-16.15	AV	0.00	150	Vertical	Pass
3	5192.250	52.95	0.24	74.0	-21.05	Peak	285.00	150	Vertical	Pass
3**	5192.250	43.42	0.24	54.0	-10.58	AV	285.00	150	Vertical	Pass
4	7894.500	55.33	2.23	74.0	-18.67	Peak	201.00	150	Vertical	Pass
4**	7894.500	46.40	2.23	54.0	-7.60	AV	201.00	150	Vertical	Pass
5	12011.000	54.92	2.30	74.0	-19.08	Peak	33.00	150	Vertical	Pass
5**	12011.000	45.21	2.30	54.0	-8.79	AV	33.00	150	Vertical	Pass
6	17806.000	55.76	2.70	74.0	-18.24	Peak	68.00	150	Vertical	Pass
6**	17806.000	46.59	2.70	54.0	-7.41	AV	68.00	150	Vertical	Pass

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

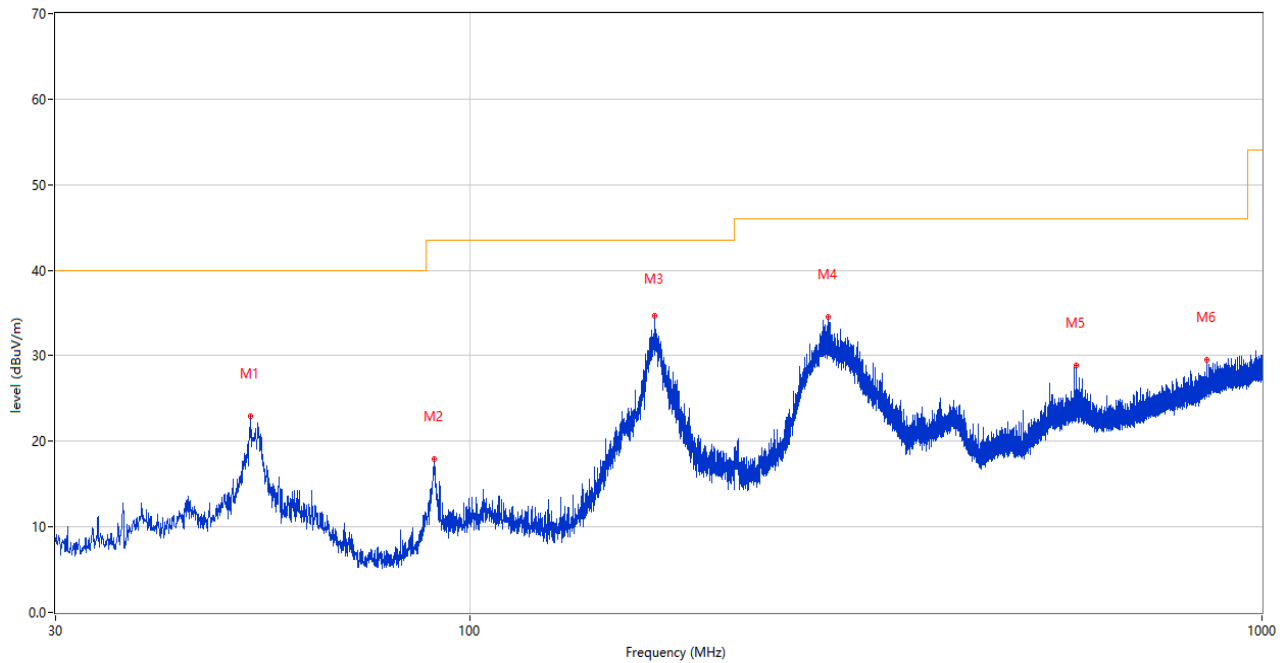


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1973.700	42.86	0.14	74.0	-31.14	Peak	328.00	150	Horizontal	Pass
1**	1973.700	29.41	0.14	54.0	-24.59	AV	328.00	150	Horizontal	Pass
2	2983.600	49.24	8.72	74.0	-24.76	Peak	8.00	150	Horizontal	Pass
2**	2983.600	36.53	8.72	54.0	-17.47	AV	8.00	150	Horizontal	Pass
3	5177.000	53.91	0.03	74.0	-20.09	Peak	148.00	150	Horizontal	Pass
3**	5177.000	43.67	0.03	54.0	-10.33	AV	148.00	150	Horizontal	Pass
4	7910.000	55.96	2.76	74.0	-18.04	Peak	280.00	150	Horizontal	Pass
4**	7910.000	47.63	2.76	54.0	-6.37	AV	280.00	150	Horizontal	Pass
5	11313.000	54.28	2.03	74.0	-19.72	Peak	14.00	150	Horizontal	Pass
5**	11313.000	44.47	2.03	54.0	-9.53	AV	14.00	150	Horizontal	Pass
6	17078.000	54.43	2.89	74.0	-19.57	Peak	246.00	150	Horizontal	Pass
6**	17078.000	45.22	2.89	54.0	-8.78	AV	246.00	150	Horizontal	Pass

Test Data and Plots

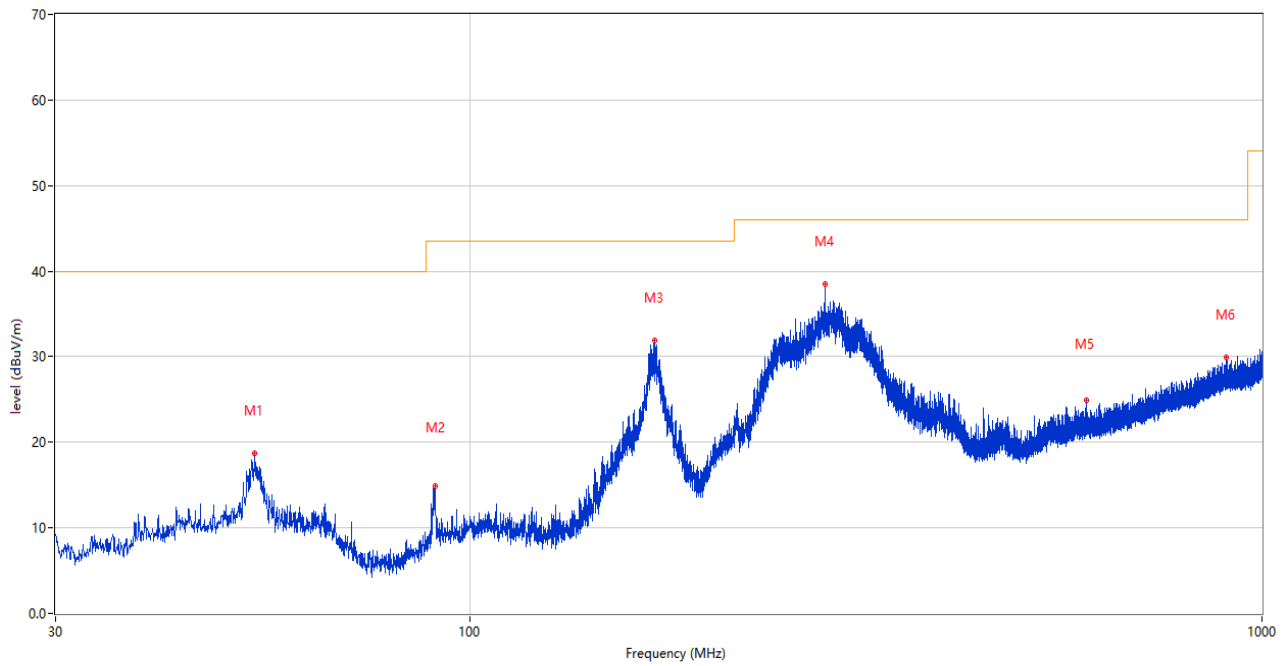
The USB Test Mode

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



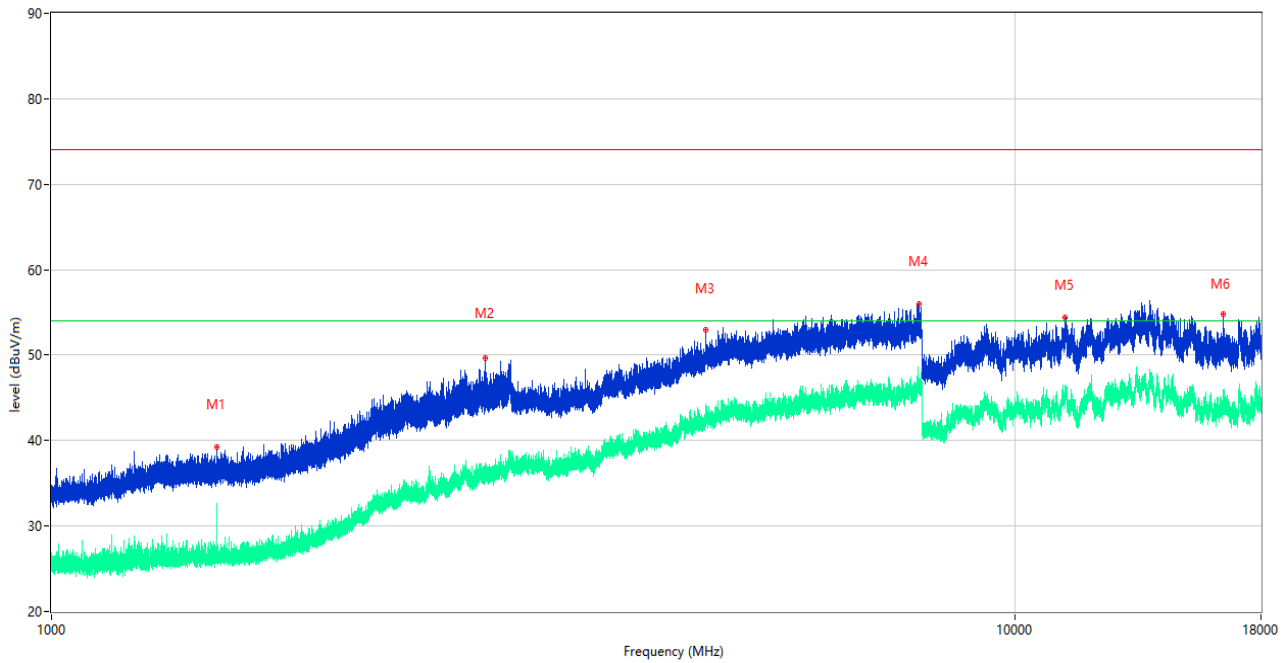
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	52.843	22.95	-25.50	40.0	-17.05	Peak	87.00	100	Vertical	Pass
2	90.091	17.97	-28.48	43.5	-25.53	Peak	140.00	100	Vertical	Pass
3	171.135	34.67	-29.14	43.5	-8.83	Peak	243.00	100	Vertical	Pass
4	283.801	34.52	-24.10	46.0	-11.48	Peak	360.00	200	Vertical	Pass
5	582.852	28.82	-16.51	46.0	-17.18	Peak	360.00	200	Vertical	Pass
6	852.851	29.54	-10.76	46.0	-16.46	Peak	120.00	200	Vertical	Pass

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



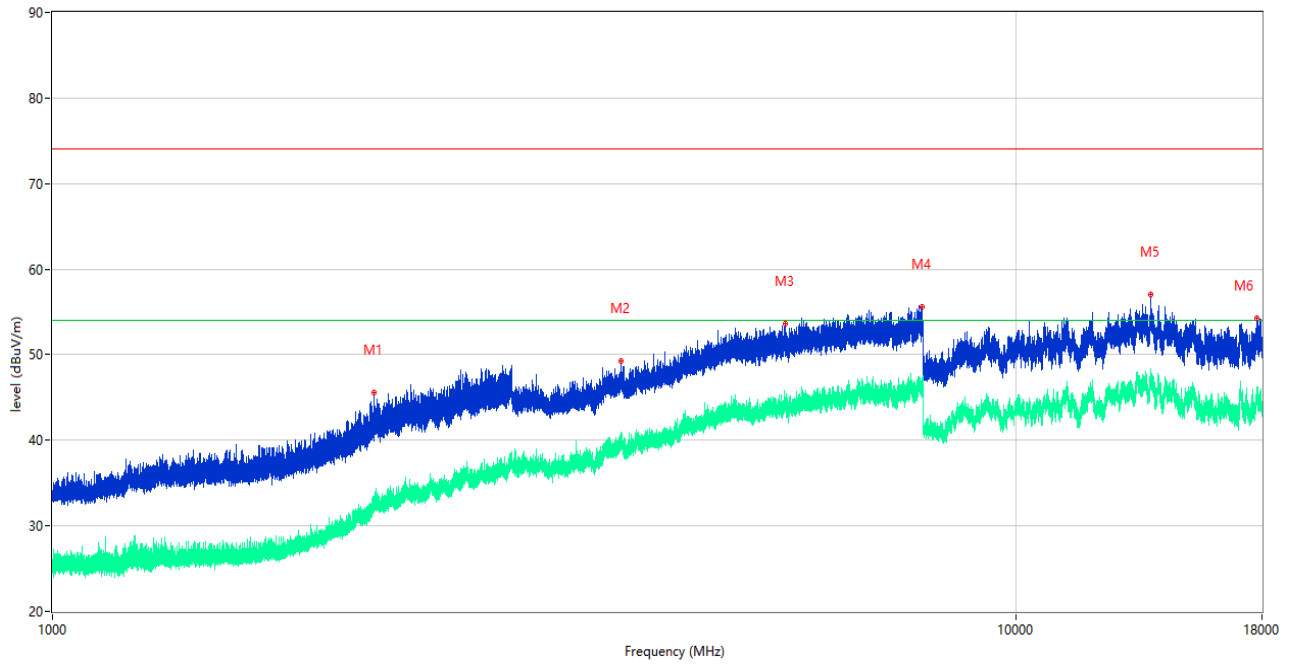
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	53.523	18.74	-25.57	40.0	-21.26	Peak	10.00	200	Horizontal	Pass
2	90.334	14.90	-28.43	43.5	-28.60	Peak	256.00	200	Horizontal	Pass
3	171.038	31.90	-29.15	43.5	-11.60	Peak	242.00	100	Horizontal	Pass
4	281.133	38.51	-24.14	46.0	-7.49	Peak	266.00	100	Horizontal	Pass
5	600.263	24.94	-15.78	46.0	-21.06	Peak	360.00	200	Horizontal	Pass
6	901.739	29.97	-9.84	46.0	-16.03	Peak	360.00	200	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	1485.100	39.24	-3.62	74.0	-34.76	Peak	68.00	150	Vertical	Pass
1**	1485.100	31.98	-3.62	54.0	-22.02	AV	68.00	150	Vertical	Pass
2	2822.900	49.68	7.34	74.0	-24.32	Peak	215.00	150	Vertical	Pass
2**	2822.900	35.87	7.34	54.0	-18.13	AV	215.00	150	Vertical	Pass
3	4777.500	52.89	0.48	74.0	-21.11	Peak	196.00	150	Vertical	Pass
3**	4777.500	41.71	0.48	54.0	-12.29	AV	196.00	150	Vertical	Pass
4	7960.000	56.03	2.76	74.0	-17.97	Peak	99.00	150	Vertical	Pass
4**	7960.000	46.04	2.76	54.0	-7.96	AV	99.00	150	Vertical	Pass
5	11271.500	54.41	2.05	74.0	-19.59	Peak	153.00	150	Vertical	Pass
5**	11271.500	45.03	2.05	54.0	-8.97	AV	153.00	150	Vertical	Pass
6	16451.500	54.82	2.17	74.0	-19.18	Peak	223.00	150	Vertical	Pass
6**	16451.500	44.41	2.17	54.0	-9.59	AV	223.00	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	2157.300	45.54	3.42	74.0	-28.46	Peak	146.00	150	Horizontal	Pass
1**	2157.300	32.24	3.42	54.0	-21.76	AV	146.00	150	Horizontal	Pass
2	3895.000	49.21	-2.27	74.0	-24.79	Peak	32.00	150	Horizontal	Pass
2**	3895.000	39.51	-2.27	54.0	-14.49	AV	32.00	150	Horizontal	Pass
3	5755.500	53.61	1.33	74.0	-20.39	Peak	140.00	150	Horizontal	Pass
3**	5755.500	44.37	1.33	54.0	-9.63	AV	140.00	150	Horizontal	Pass
4	7998.000	55.63	2.80	74.0	-18.37	Peak	360.00	150	Horizontal	Pass
4**	7998.000	45.76	2.80	54.0	-8.24	AV	360.00	150	Horizontal	Pass
5	13804.000	57.10	5.76	74.0	-16.90	Peak	155.00	150	Horizontal	Pass
5**	13804.000	47.58	5.76	54.0	-6.42	AV	155.00	150	Horizontal	Pass
6	17777.000	54.24	1.85	74.0	-19.76	Peak	121.00	150	Horizontal	Pass
6**	17777.000	45.67	1.85	54.0	-8.33	AV	121.00	150	Horizontal	Pass

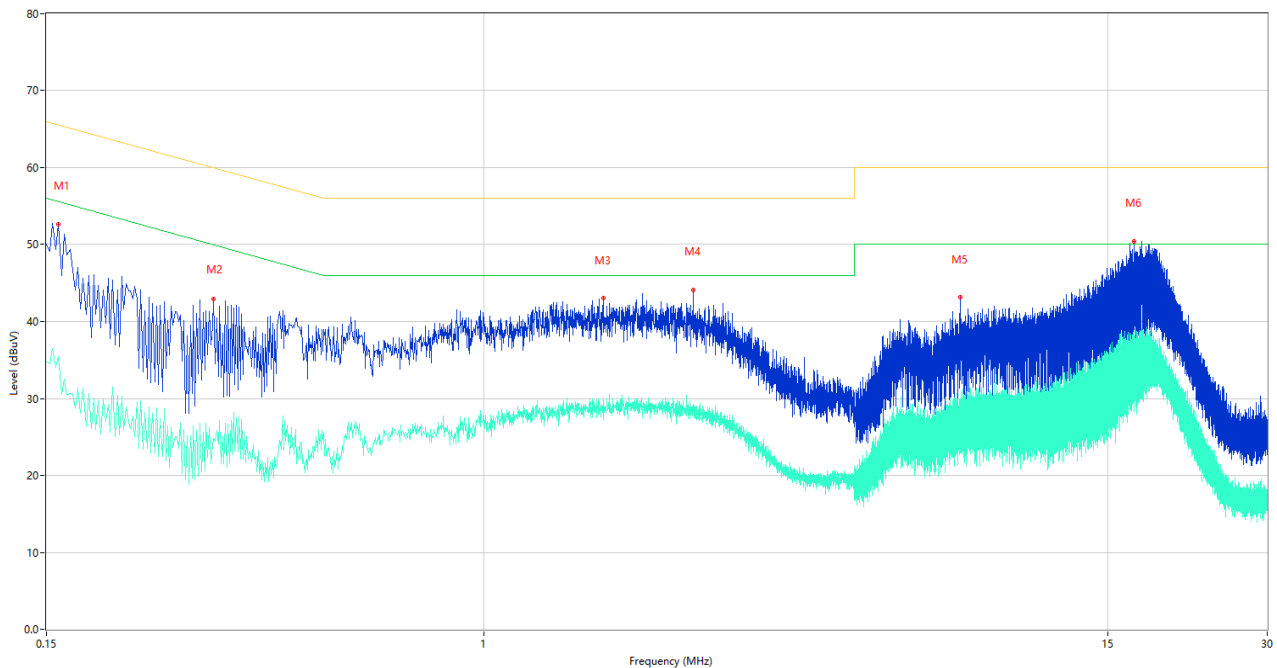
A.2 Conducted Emission

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

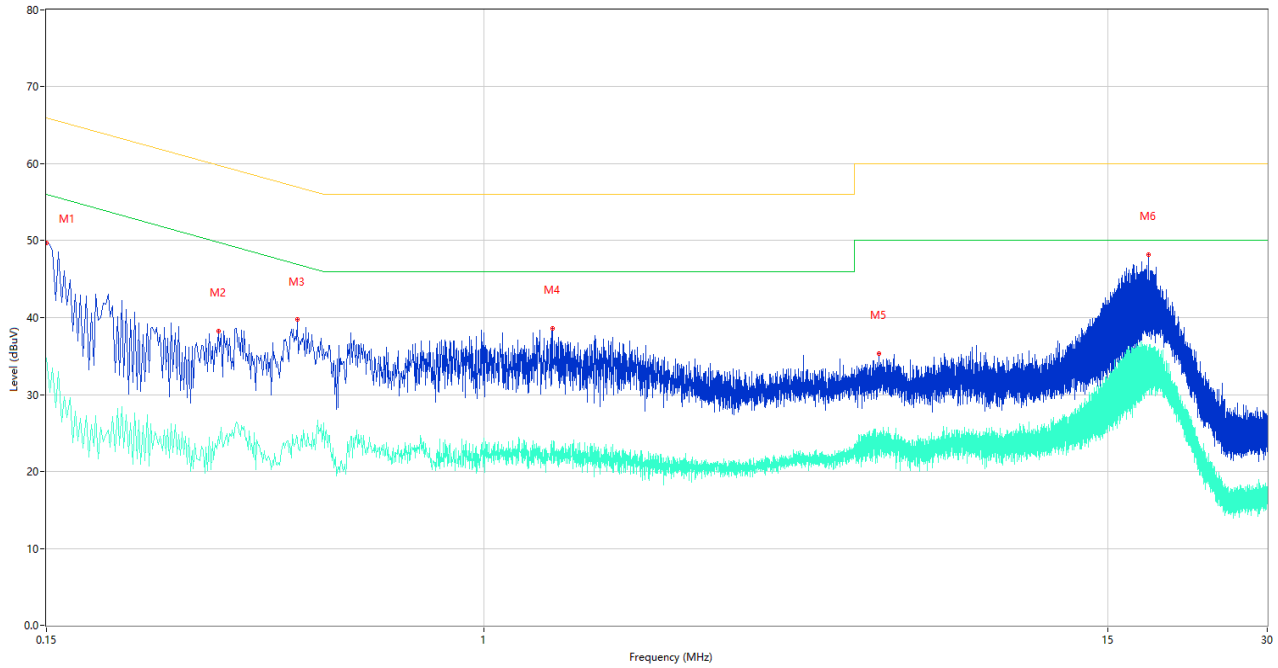
The Camera Test Mode

A.2.1 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.158	52.64	10.18	65.57	-12.93	Peak	L	Pass
1**	0.158	35.45	10.18	55.57	-20.12	AV	L	Pass
2	0.310	42.94	10.07	59.97	-17.03	Peak	L	Pass
2**	0.310	24.81	10.07	49.97	-25.16	AV	L	Pass
3	1.680	43.00	9.91	56.00	-13.00	Peak	L	Pass
3**	1.680	29.84	9.91	46.00	-16.16	AV	L	Pass
4	2.486	44.09	9.96	56.00	-11.91	Peak	L	Pass
4**	2.486	29.21	9.96	46.00	-16.79	AV	L	Pass
5	7.910	43.18	10.08	60.00	-16.82	Peak	L	Pass
5**	7.910	28.08	10.08	50.00	-21.92	AV	L	Pass
6	16.818	50.36	10.18	60.00	-9.64	Peak	L	Pass
6**	16.818	31.75	10.18	50.00	-18.25	AV	L	Pass

A.2.2 N Phase

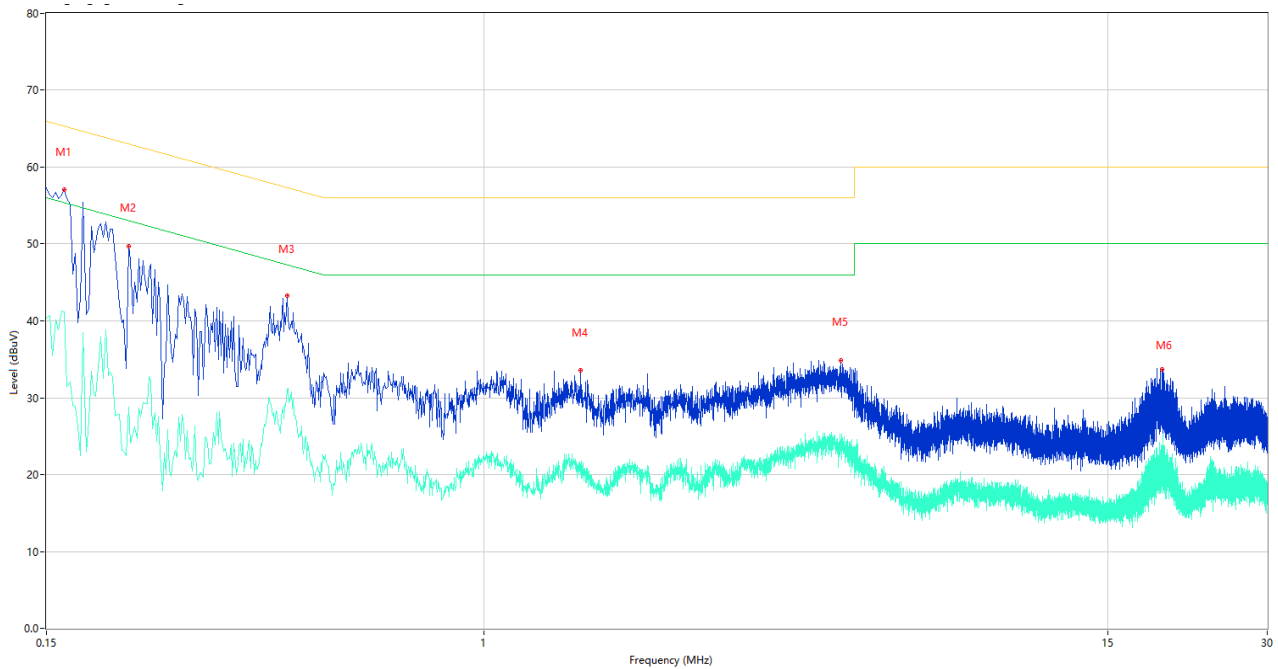


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.150	49.67	10.19	66.00	-16.33	Peak	N	Pass
1**	0.150	34.73	10.19	56.00	-21.27	AV	N	Pass
2	0.316	38.28	10.07	59.81	-21.53	Peak	N	Pass
2**	0.316	24.59	10.07	49.81	-25.22	AV	N	Pass
3	0.446	39.72	10.10	56.95	-17.23	Peak	N	Pass
3**	0.446	24.38	10.10	46.95	-22.57	AV	N	Pass
4	1.348	38.56	9.97	56.00	-17.44	Peak	N	Pass
4**	1.348	22.54	9.97	46.00	-23.46	AV	N	Pass
5	5.568	35.35	10.02	60.00	-24.65	Peak	N	Pass
5**	5.568	24.96	10.02	50.00	-25.04	AV	N	Pass
6	17.924	48.20	10.19	60.00	-11.80	Peak	N	Pass
6**	17.924	32.73	10.19	50.00	-17.27	AV	N	Pass

Test Data and Plots

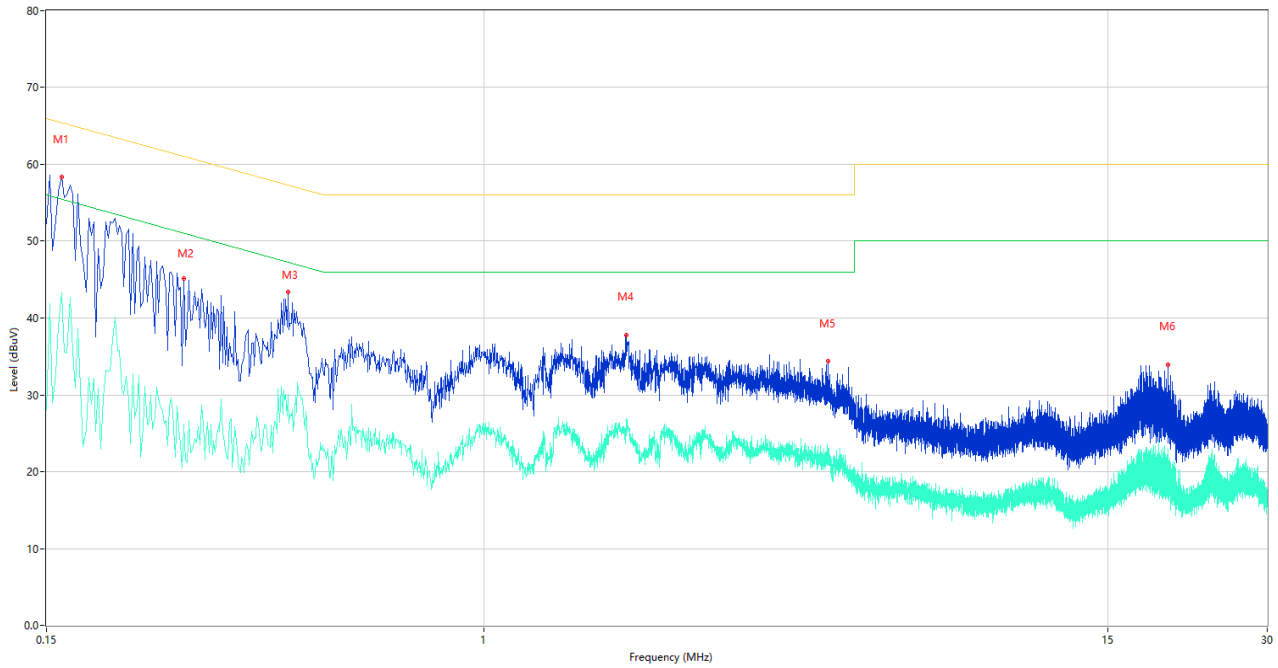
The USB Test Mode

A.2.3 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.162	57.09	10.17	65.36	-8.27	Peak	L	Pass
1**	0.162	41.13	10.17	55.36	-14.23	AV	L	Pass
2	0.214	49.65	10.09	63.05	-13.40	Peak	L	Pass
2**	0.214	28.79	10.09	53.05	-24.26	AV	L	Pass
3	0.426	43.22	10.09	57.33	-14.11	Peak	L	Pass
3**	0.426	30.98	10.09	47.33	-16.35	AV	L	Pass
4	1.524	33.51	9.94	56.00	-22.49	Peak	L	Pass
4**	1.524	21.43	9.94	46.00	-24.57	AV	L	Pass
5	4.716	34.90	9.98	56.00	-21.10	Peak	L	Pass
5**	4.716	24.59	9.98	46.00	-21.41	AV	L	Pass
6	19.012	33.63	10.22	60.00	-26.37	Peak	L	Pass
6**	19.012	23.69	10.22	50.00	-26.31	AV	L	Pass

A.2.4 N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.160	58.38	10.17	65.46	-7.08	Peak	N	Pass
1**	0.160	43.30	10.17	55.46	-12.16	AV	N	Pass
2	0.272	45.12	10.08	61.06	-15.94	Peak	N	Pass
2**	0.272	26.25	10.08	51.06	-24.81	AV	N	Pass
3	0.428	43.35	10.10	57.29	-13.94	Peak	N	Pass
3**	0.428	30.11	10.10	47.29	-17.18	AV	N	Pass
4	1.860	37.76	9.88	56.00	-18.24	Peak	N	Pass
4**	1.860	26.86	9.88	46.00	-19.14	AV	N	Pass
5	4.462	34.34	10.02	56.00	-21.66	Peak	N	Pass
5**	4.462	22.99	10.02	46.00	-23.01	AV	N	Pass
6	19.470	33.87	10.25	60.00	-26.13	Peak	N	Pass
6**	19.470	22.89	10.25	50.00	-27.11	AV	N	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ21B0699-AE.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ21B0699-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ21B0699-AI.PDF”.

--END OF REPORT--