

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR

Mobile Phone

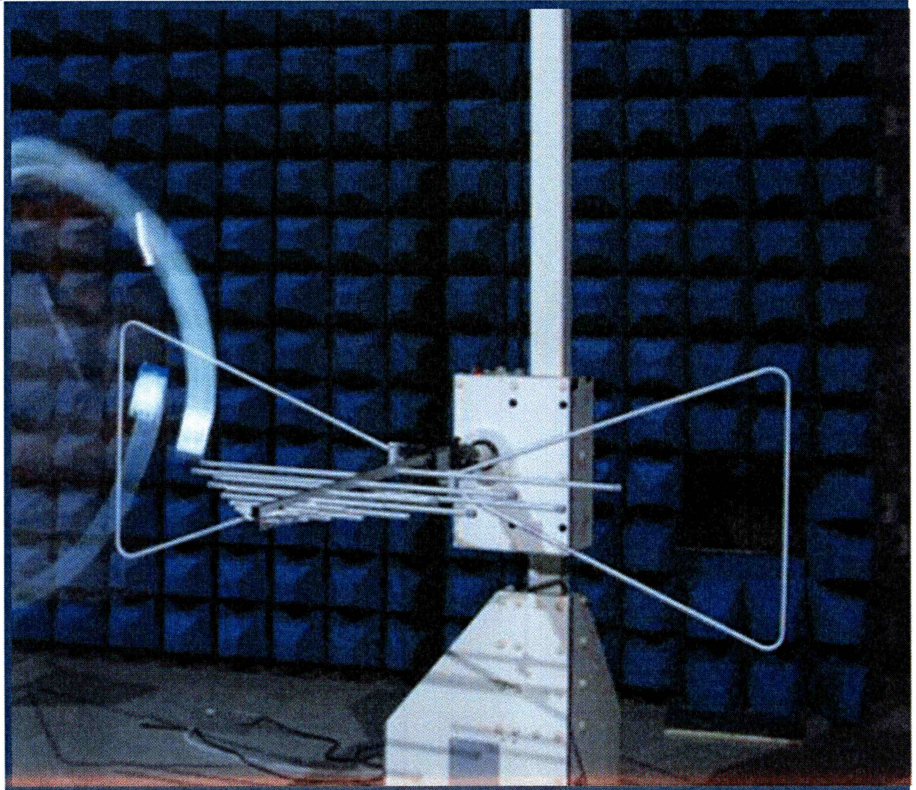
ISSUED TO

vivo Mobile Communication Co., Ltd.

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

EMC

TEST REPORT



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

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

Report No.: BL-SZ21B0700-401

EUT Name: Mobile Phone

Model Name: V2109

Brand Name: vivo

Test Standard: 47 CFR Part 15 Subpart B

FCC ID 2AUCY-V2109

Test Conclusion: Pass

Test Date: Nov. 18, 2021 ~ Nov. 22, 2021

Date of Issue: Nov. 25, 2021

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Revision History

<u>Version</u>	<u>Issue Date</u>	<u>Revisions Content</u>
<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	V2109
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	MP_0.1
Software Version	PD2147IF_EX_A_3.6.11
Dimensions (Approx.)	164.26*76.08*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 V= 2 A or 9 V= 2 A
	Manufacturer	Dongguan Aohai Technology Co., Ltd
Ancillary Equipment 3	USB Cable	
	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-SZ2180012-401, which was issued by Shenzhen BALUN Technology Co., Ltd. on Aug. 25, 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. Add the alternative gravity sensor(pin to pin compatibility, with same technical parameter)
5. 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	<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"/>
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	MY55330120	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"/>
Test Software	BALUN	BL410_E	V19.918	--	--	<input checked="" type="checkbox"/>

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	<input type="checkbox"/>
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	9120D-1917	2019.07.02	2022.07.01	<input type="checkbox"/>
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2021.09.04	2024.09.03	<input type="checkbox"/>
Test Software	BALUN	BL410_E	V19.918	--	--	<input 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	MY55330120	2021.10.20	2022.10.19	<input checked="" type="checkbox"/>
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	9120D-1917	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"/>
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	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	3.4m*3.1m*2 .8m	N/A	2021.08.14	2024.08.13	<input checked="" type="checkbox"/>
Test Software	BALUN	BL410_E	V19.918	--	--	<input checked="" type="checkbox"/>

4.3 Test Enclosure list

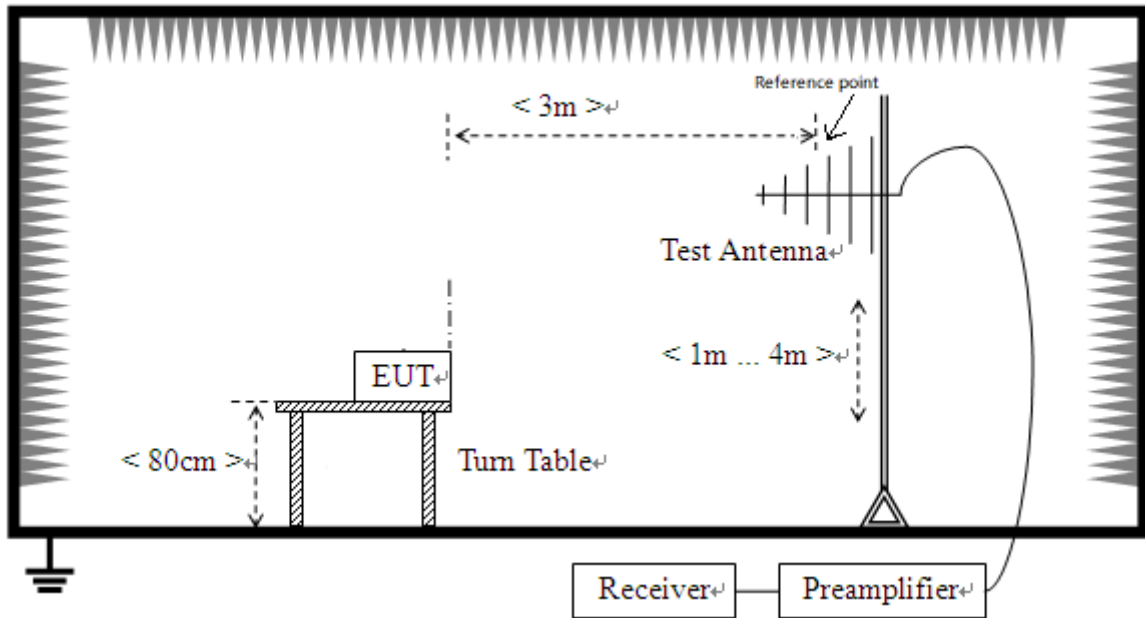
Description	Manufacturer	Model	Serial No.	Length	Description	Use
PC	Dell	015K3N	N/A	N/A	Special Handled	<input type="checkbox"/>
Laptop	Apple	A1465	N/A	N/A	N/A	<input checked="" type="checkbox"/>
Printer	HP	DESKJET 1000	N/A	N/A	N/A	<input type="checkbox"/>
Keyboard	Logitech	Y-BP62a	N/A	N/A	N/A	<input 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"/>
Wireless Communications Test Set	R&S	CMW500	142028	N/A	Cal. Due 2022.01.13	<input checked="" 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 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

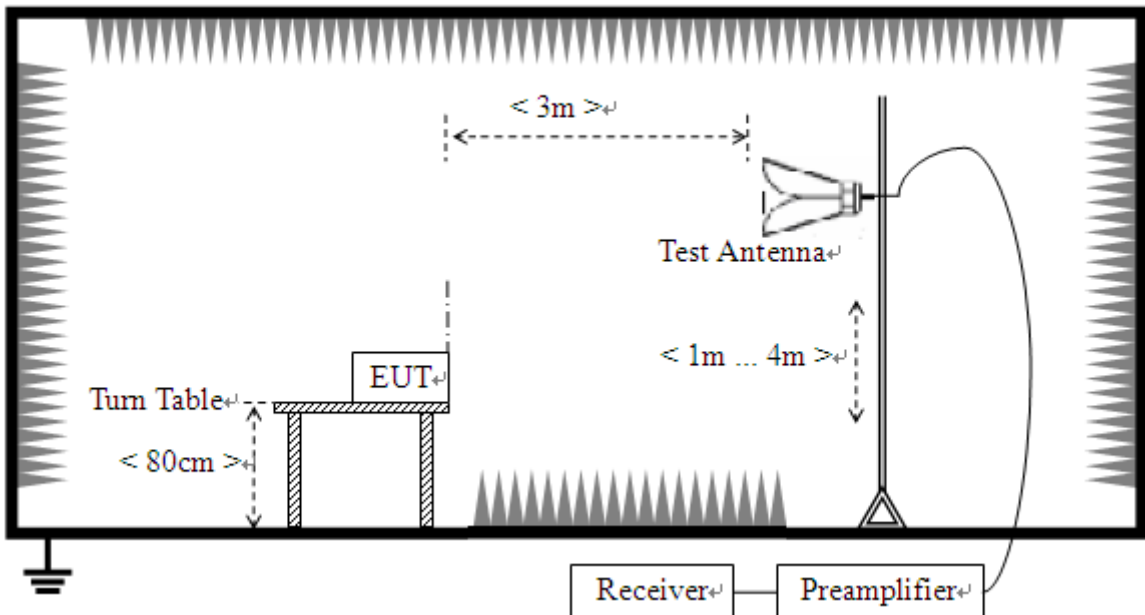
4.5 Test Setups

Test Setup 1



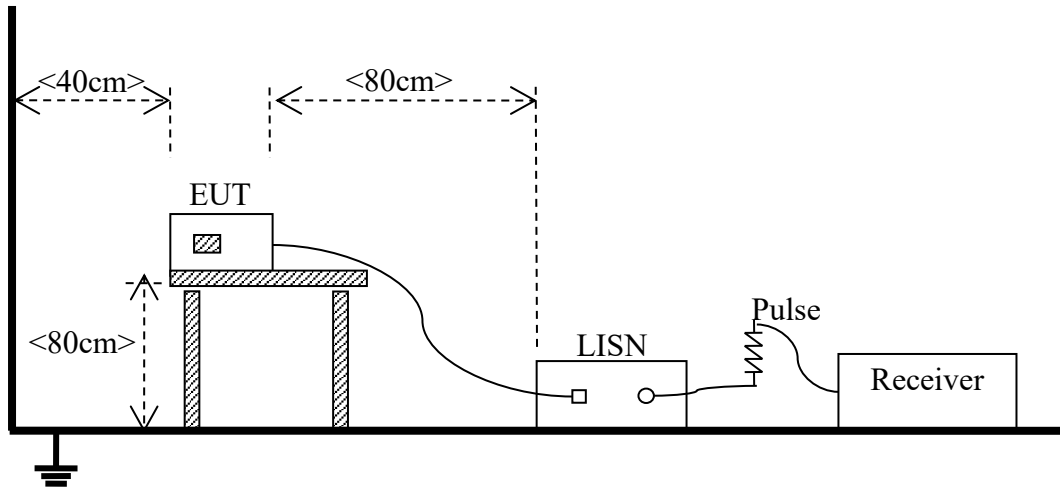
(For Radiated Emission Test (30 MHz-1 GHz))

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 ($\text{dB}\mu\text{V/m}$)	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. 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.

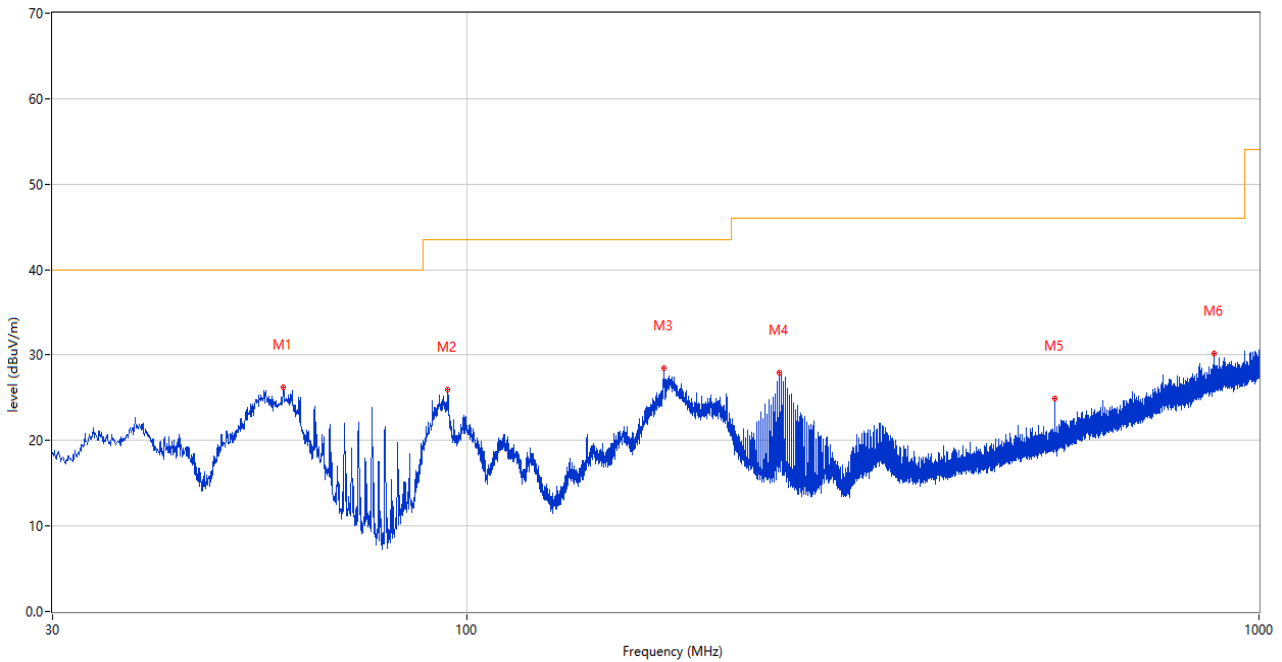
Note 2: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

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

Test Data and Plots

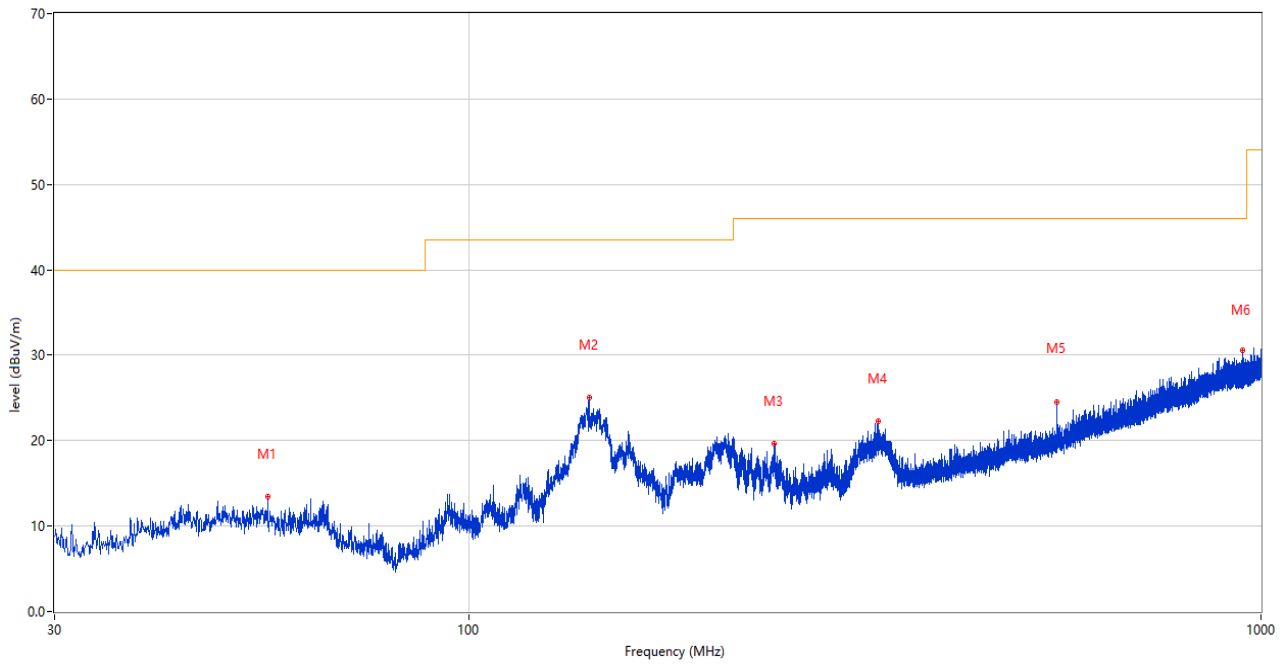
The Camera Test Mode

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



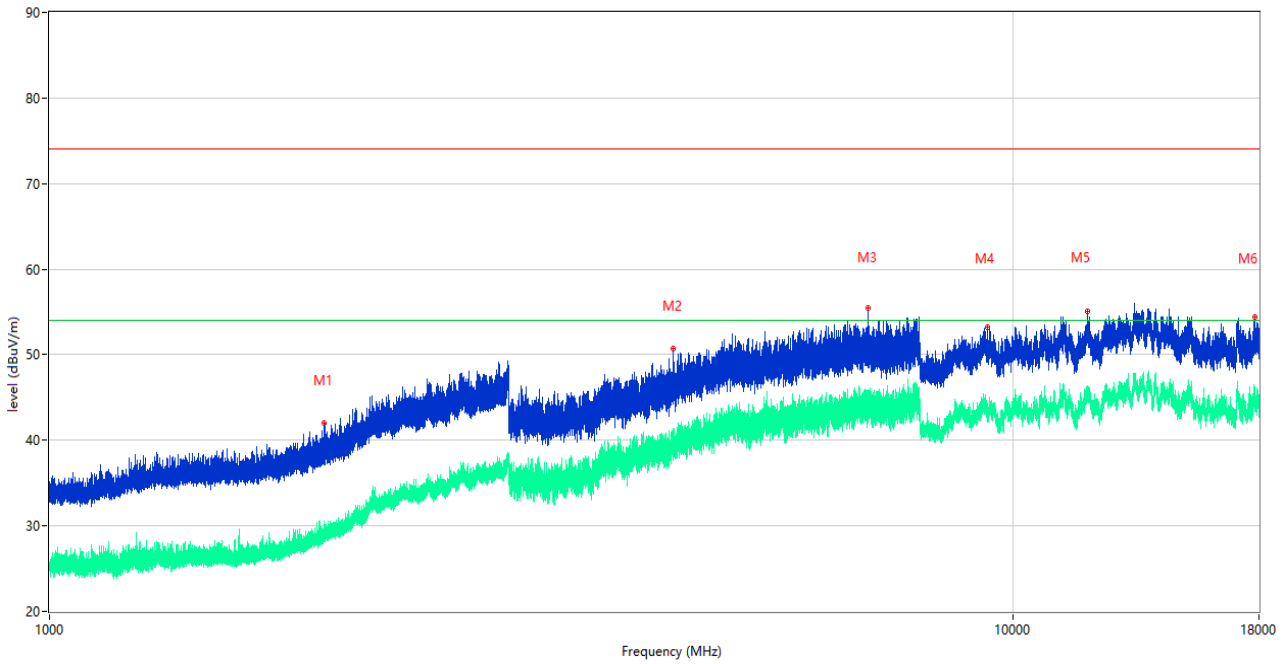
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	58.663	26.22	-26.73	40.0	-13.78	Peak	187.00	100	Vertical	Pass
2	94.699	25.97	-27.61	43.5	-17.53	Peak	314.00	100	Vertical	Pass
3	177.149	28.47	-28.66	43.5	-15.03	Peak	138.00	100	Vertical	Pass
4	248.202	27.93	-24.97	46.0	-18.07	Peak	136.00	100	Vertical	Pass
5	553.024	24.94	-17.55	46.0	-21.06	Peak	154.00	100	Vertical	Pass
6	878.459	30.25	-10.30	46.0	-15.75	Peak	143.00	100	Vertical	Pass

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



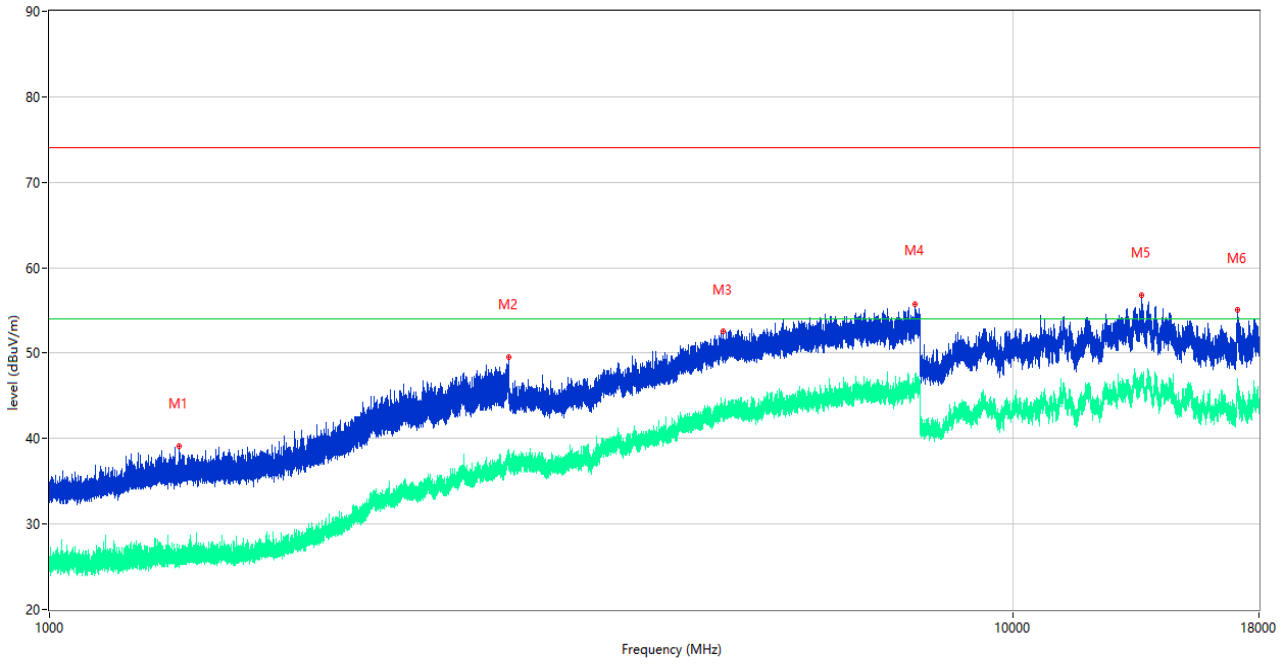
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	55.754	13.48	-25.97	40.0	-26.52	Peak	162.00	200	Horizontal	Pass
2	141.792	24.98	-30.28	43.5	-18.52	Peak	284.00	200	Horizontal	Pass
3	243.254	19.67	-24.99	46.0	-26.33	Peak	332.00	100	Horizontal	Pass
4	328.323	22.29	-22.75	46.0	-23.71	Peak	67.00	100	Horizontal	Pass
5	553.024	24.58	-17.55	46.0	-21.42	Peak	85.00	100	Horizontal	Pass
6	947.329	30.61	-9.40	46.0	-15.39	Peak	189.00	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	1927.900	42.07	-0.17	74.0	-31.93	Peak	26.00	150	Vertical	Pass
1**	1927.900	28.78	-0.17	54.0	-25.22	AV	26.00	150	Vertical	Pass
2	4436.750	50.67	-2.02	74.0	-23.33	Peak	8.00	150	Vertical	Pass
2**	4436.750	40.51	-2.02	54.0	-13.49	AV	8.00	150	Vertical	Pass
3	7080.000	55.43	1.72	74.0	-18.57	Peak	-1.00	150	Vertical	Pass
3**	7080.000	43.80	1.72	54.0	-10.20	AV	-1.00	150	Vertical	Pass
4	9414.500	53.22	1.77	74.0	-20.78	Peak	276.00	150	Vertical	Pass
4**	9414.500	44.04	1.77	54.0	-9.96	AV	276.00	150	Vertical	Pass
5	11943.000	55.05	2.59	74.0	-18.95	Peak	293.00	150	Vertical	Pass
5**	11943.000	45.07	2.59	54.0	-8.93	AV	293.00	150	Vertical	Pass
6	17803.999	54.42	2.77	74.0	-19.58	Peak	224.00	150	Vertical	Pass
6**	17803.999	44.89	2.77	54.0	-9.11	AV	224.00	150	Vertical	Pass

A.1.4 Test Antenna Horizontal, 1 GHz – 6 GHz

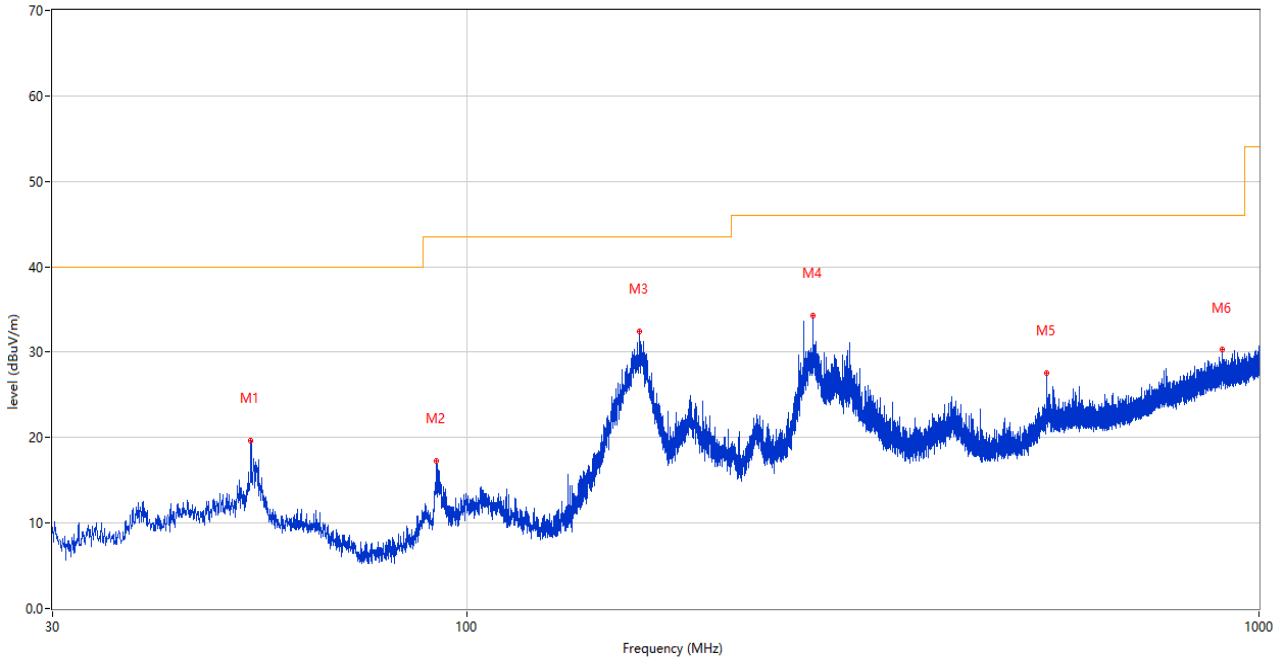


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1363.600	39.18	-4.19	74.0	-34.82	Peak	150.00	150	Horizontal	Pass
1**	1363.600	25.94	-4.19	54.0	-28.06	AV	150.00	150	Horizontal	Pass
2	2995.000	49.55	8.84	74.0	-24.45	Peak	238.00	150	Horizontal	Pass
2**	2995.000	37.16	8.84	54.0	-16.84	AV	238.00	150	Horizontal	Pass
3	5002.500	52.50	0.26	74.0	-21.50	Peak	279.00	150	Horizontal	Pass
3**	5002.500	42.93	0.26	54.0	-11.07	AV	279.00	150	Horizontal	Pass
4	7916.500	55.66	2.83	74.0	-18.34	Peak	316.00	150	Horizontal	Pass
4**	7916.500	45.64	2.83	54.0	-8.36	AV	316.00	150	Horizontal	Pass
5	13603.000	56.75	4.74	74.0	-17.25	Peak	119.00	150	Horizontal	Pass
5**	13603.000	46.51	4.74	54.0	-7.49	AV	119.00	150	Horizontal	Pass
6	17105.500	55.09	3.66	74.0	-18.91	Peak	242.00	150	Horizontal	Pass
6**	17105.500	45.73	3.66	54.0	-8.27	AV	242.00	150	Horizontal	Pass

Test Data and Plots

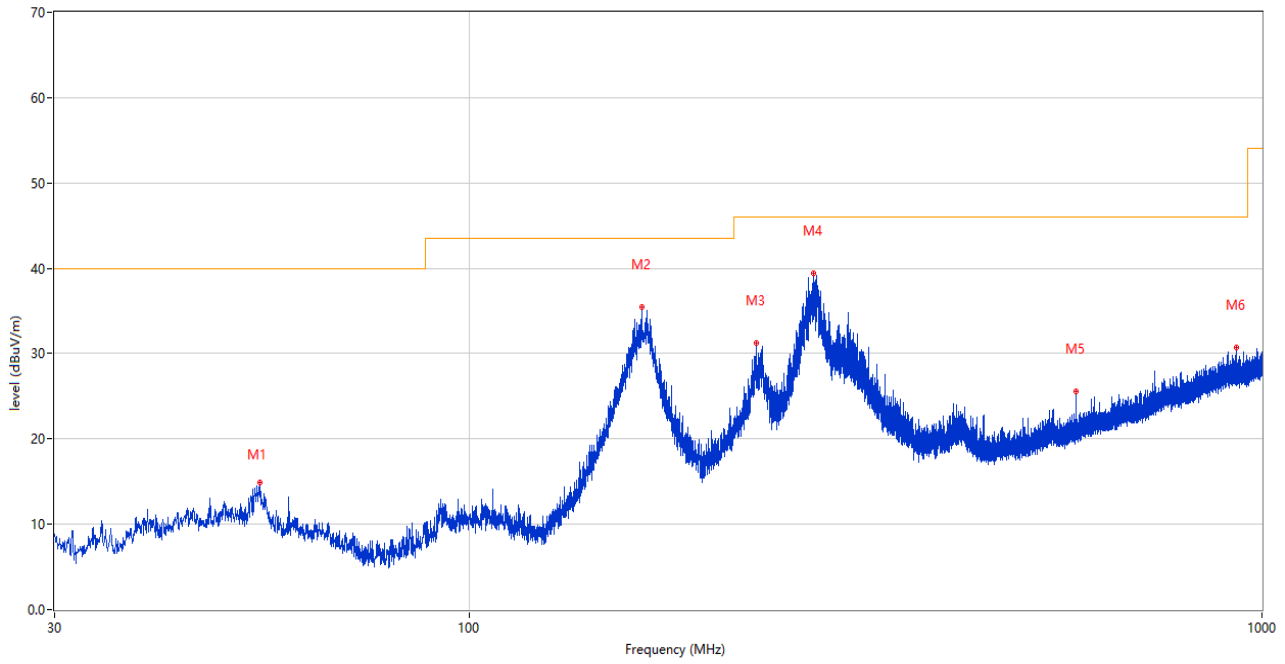
The USB Test Mode

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



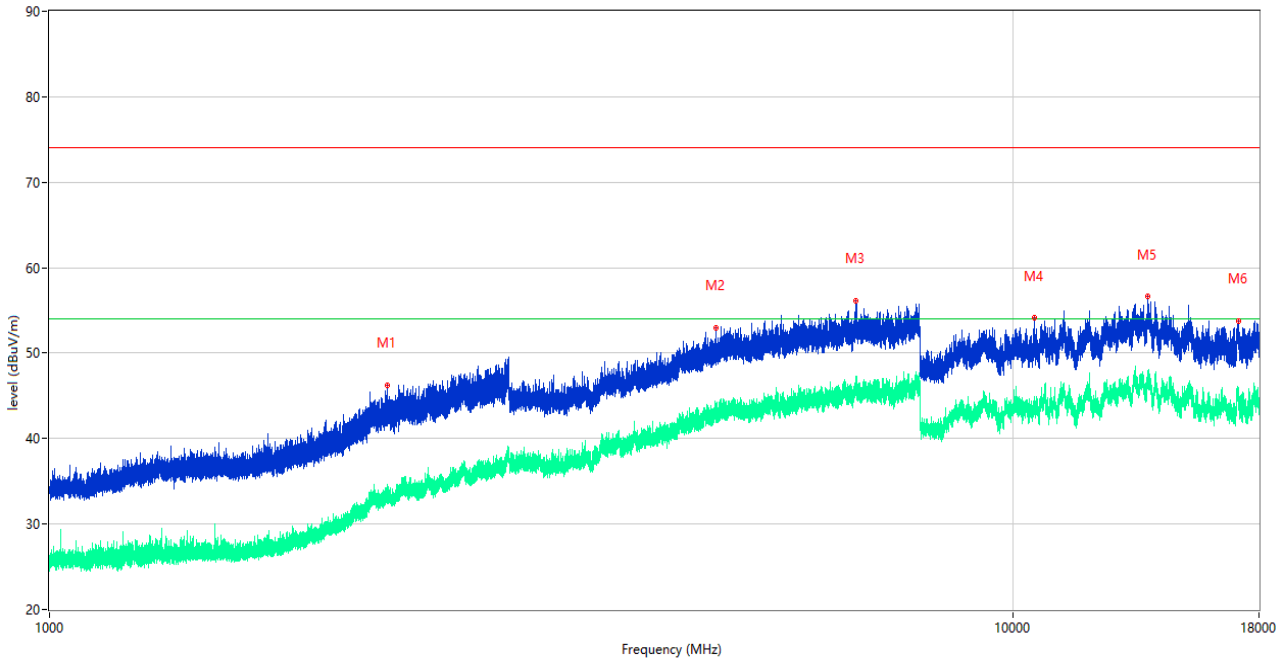
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	53.377	19.59	-25.55	40.0	-20.41	Peak	50.00	100	Vertical	Pass
2	91.644	17.30	-28.17	43.5	-26.20	Peak	241.00	100	Vertical	Pass
3	165.121	32.43	-29.32	43.5	-11.07	Peak	223.00	100	Vertical	Pass
4	273.810	34.31	-24.44	46.0	-11.69	Peak	20.00	100	Vertical	Pass
5	539.977	27.56	-17.69	46.0	-18.44	Peak	360.00	200	Vertical	Pass
6	898.441	30.26	-9.80	46.0	-15.74	Peak	269.00	100	Vertical	Pass

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



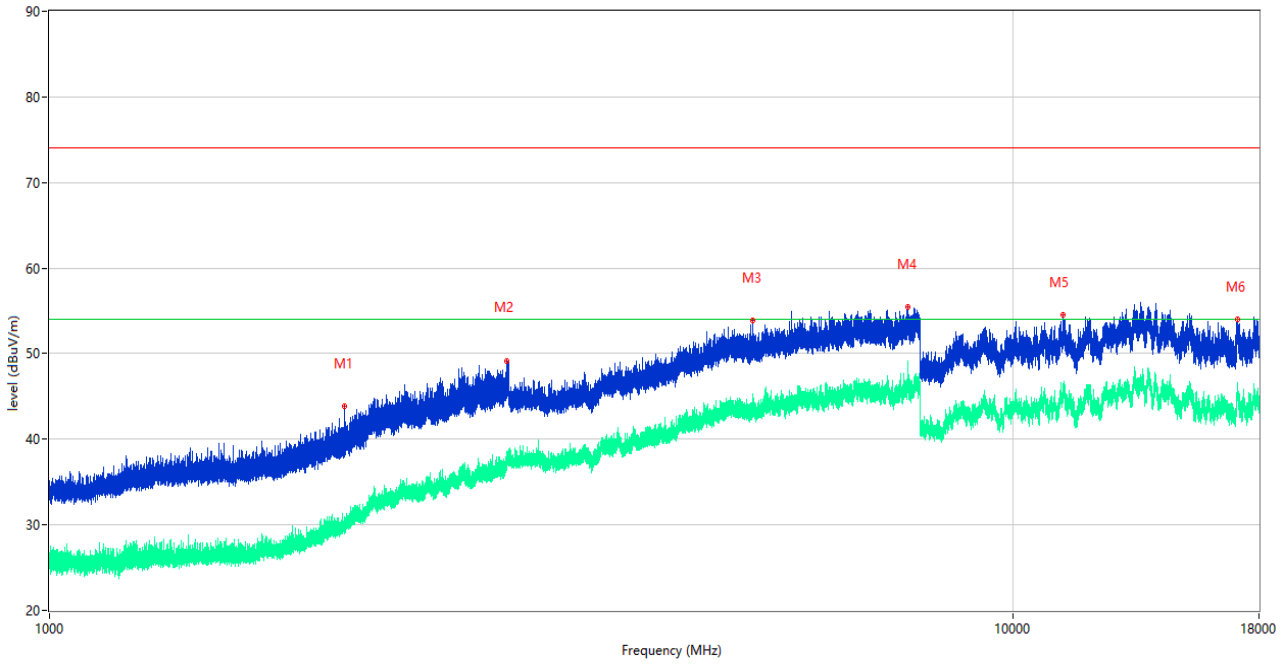
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	54.444	14.95	-25.59	40.0	-25.05	Peak	334.00	200	Horizontal	Pass
2	165.121	35.47	-29.32	43.5	-8.03	Peak	360.00	200	Horizontal	Pass
3	230.208	31.29	-25.52	46.0	-14.71	Peak	310.00	100	Horizontal	Pass
4	271.627	39.36	-24.41	46.0	-6.64	Peak	120.00	100	Horizontal	Pass
5	583.337	25.56	-16.49	46.0	-20.44	Peak	280.00	200	Horizontal	Pass
6	929.142	30.68	-9.64	46.0	-15.32	Peak	360.00	200	Horizontal	Pass

A.1.7 Test Antenna Vertical, 1 GHz – 6 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2239.800	46.18	3.86	74.0	-27.82	Peak	87.00	150	Vertical	Pass
1**	2239.800	33.54	3.86	54.0	-20.46	AV	87.00	150	Vertical	Pass
2	4921.750	53.01	1.00	74.0	-20.99	Peak	185.00	150	Vertical	Pass
2**	4921.750	42.75	1.00	54.0	-11.25	AV	185.00	150	Vertical	Pass
3	6871.250	56.08	1.79	74.0	-17.92	Peak	244.00	150	Vertical	Pass
3**	6871.250	45.67	1.79	54.0	-8.33	AV	244.00	150	Vertical	Pass
4	10525.500	54.19	1.09	74.0	-19.81	Peak	275.00	150	Vertical	Pass
4**	10525.500	44.45	1.09	54.0	-9.55	AV	275.00	150	Vertical	Pass
5	13799.000	56.59	5.77	74.0	-17.41	Peak	222.00	150	Vertical	Pass
5**	13799.000	46.94	5.77	54.0	-7.06	AV	222.00	150	Vertical	Pass
6	17126.500	53.74	3.32	74.0	-20.26	Peak	65.00	150	Vertical	Pass
6**	17126.500	45.00	3.32	54.0	-9.00	AV	65.00	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	2025.900	43.81	0.79	74.0	-30.19	Peak	27.00	150	Horizontal	Pass
1**	2025.900	30.15	0.79	54.0	-23.85	AV	27.00	150	Horizontal	Pass
2	2985.600	49.12	8.81	74.0	-24.88	Peak	38.00	150	Horizontal	Pass
2**	2985.600	37.26	8.81	54.0	-16.74	AV	38.00	150	Horizontal	Pass
3	5374.750	53.89	1.32	74.0	-20.11	Peak	105.00	150	Horizontal	Pass
3**	5374.750	43.23	1.32	54.0	-10.77	AV	105.00	150	Horizontal	Pass
4	7782.750	55.45	3.17	74.0	-18.55	Peak	177.00	150	Horizontal	Pass
4**	7782.750	46.26	3.17	54.0	-7.74	AV	177.00	150	Horizontal	Pass
5	11274.500	54.57	2.09	74.0	-19.43	Peak	209.00	150	Horizontal	Pass
5**	11274.500	45.77	2.09	54.0	-8.23	AV	209.00	150	Horizontal	Pass
6	17095.500	54.03	3.58	74.0	-19.97	Peak	70.00	150	Horizontal	Pass
6**	17095.500	45.22	3.58	54.0	-8.78	AV	70.00	150	Horizontal	Pass

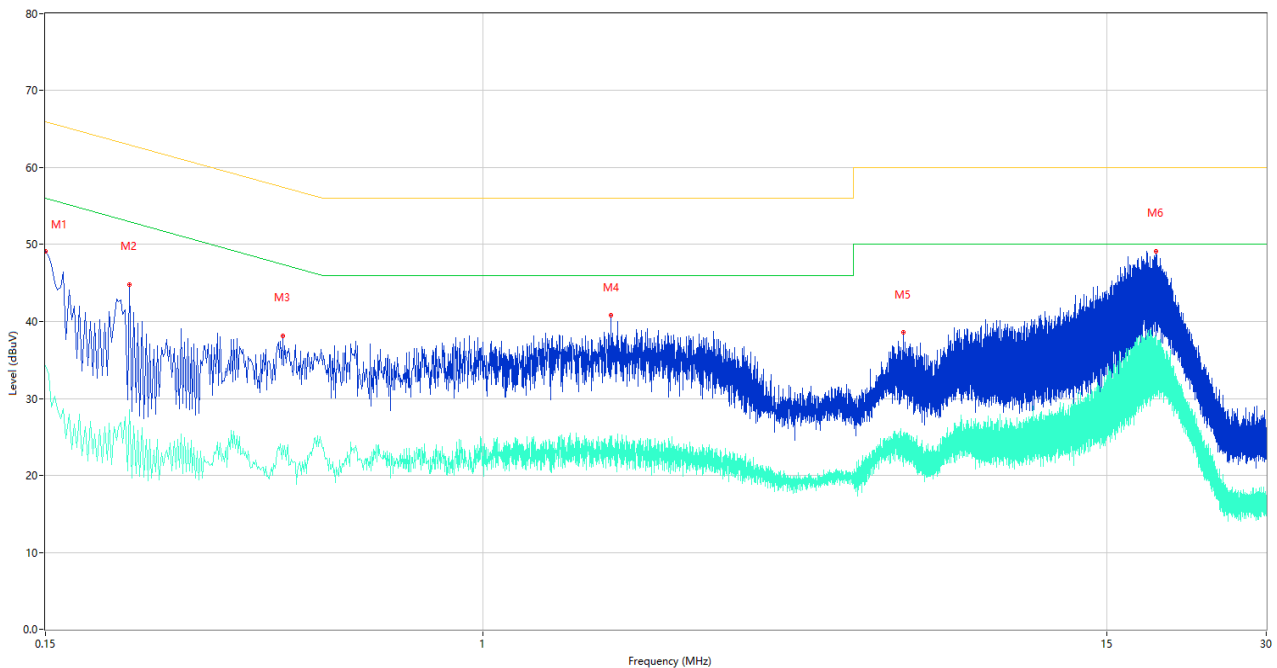
A.2 Conducted Emission

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

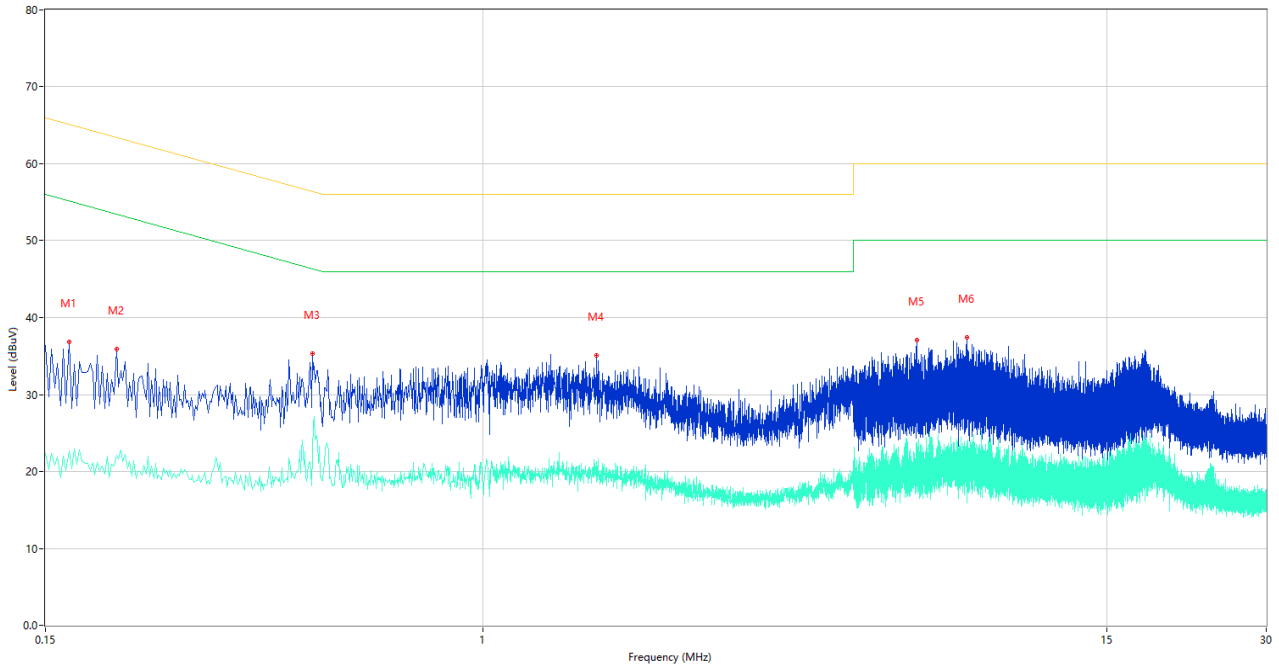
The Camera Test Mode

A.2.1 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.150	49.10	10.19	66.00	-16.90	Peak	L	Pass
1**	0.150	34.31	10.19	56.00	-21.69	AV	L	Pass
2	0.216	44.82	10.09	62.97	-18.15	Peak	L	Pass
2**	0.216	28.54	10.09	52.97	-24.43	AV	L	Pass
3	0.420	38.18	10.09	57.45	-19.27	Peak	L	Pass
3**	0.420	23.83	10.09	47.45	-23.62	AV	L	Pass
4	1.746	40.82	9.90	56.00	-15.18	Peak	L	Pass
4**	1.746	25.06	9.90	46.00	-20.94	AV	L	Pass
5	6.202	38.57	10.03	60.00	-21.43	Peak	L	Pass
5**	6.202	25.45	10.03	50.00	-24.55	AV	L	Pass
6	18.622	49.08	10.21	60.00	-10.92	Peak	L	Pass
6**	18.622	36.89	10.21	50.00	-13.11	AV	L	Pass

A.2.2 N Phase

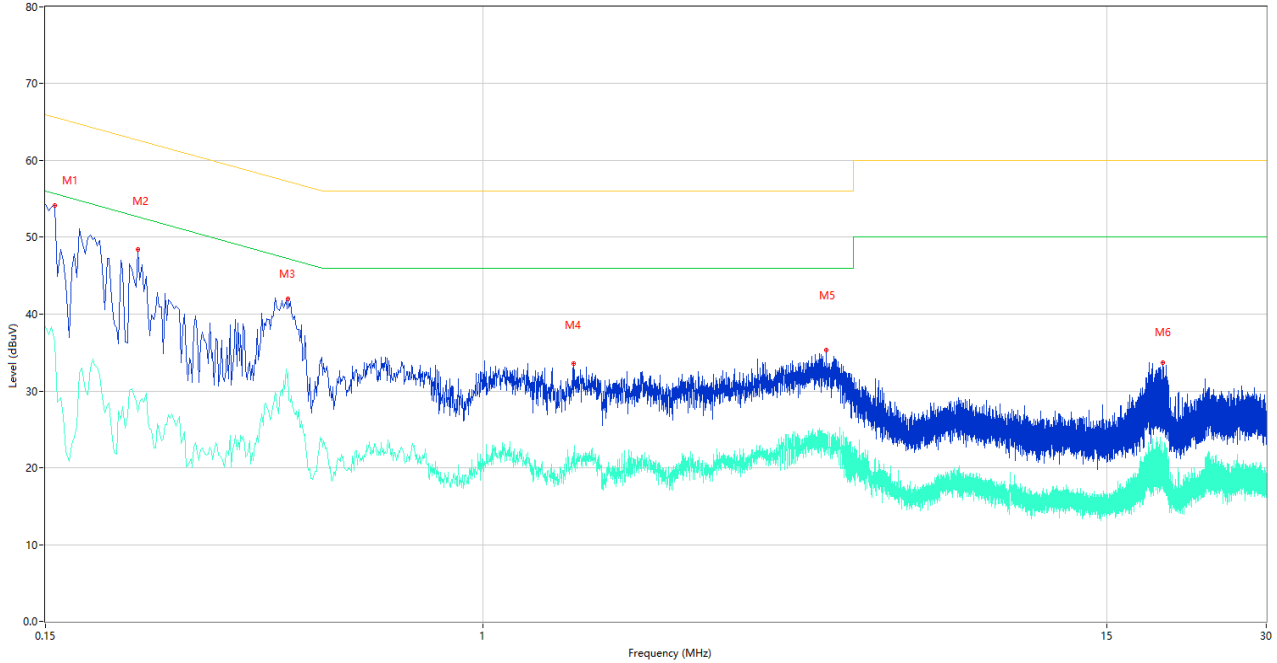


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.166	36.84	10.16	65.16	-28.32	Peak	N	Pass
1**	0.166	22.71	10.16	55.16	-32.45	AV	N	Pass
2	0.204	35.94	10.10	63.45	-27.51	Peak	N	Pass
2**	0.204	22.05	10.10	53.45	-31.40	AV	N	Pass
3	0.478	35.30	10.11	56.37	-21.07	Peak	N	Pass
3**	0.478	22.48	10.11	46.37	-23.89	AV	N	Pass
4	1.642	35.05	9.92	56.00	-20.95	Peak	N	Pass
4**	1.642	20.76	9.92	46.00	-25.24	AV	N	Pass
5	6.590	37.10	9.93	60.00	-22.90	Peak	N	Pass
5**	6.590	23.72	9.93	50.00	-26.28	AV	N	Pass
6	8.190	37.46	10.10	60.00	-22.54	Peak	N	Pass
6**	8.190	23.85	10.10	50.00	-26.15	AV	N	Pass

Test Data and Plots

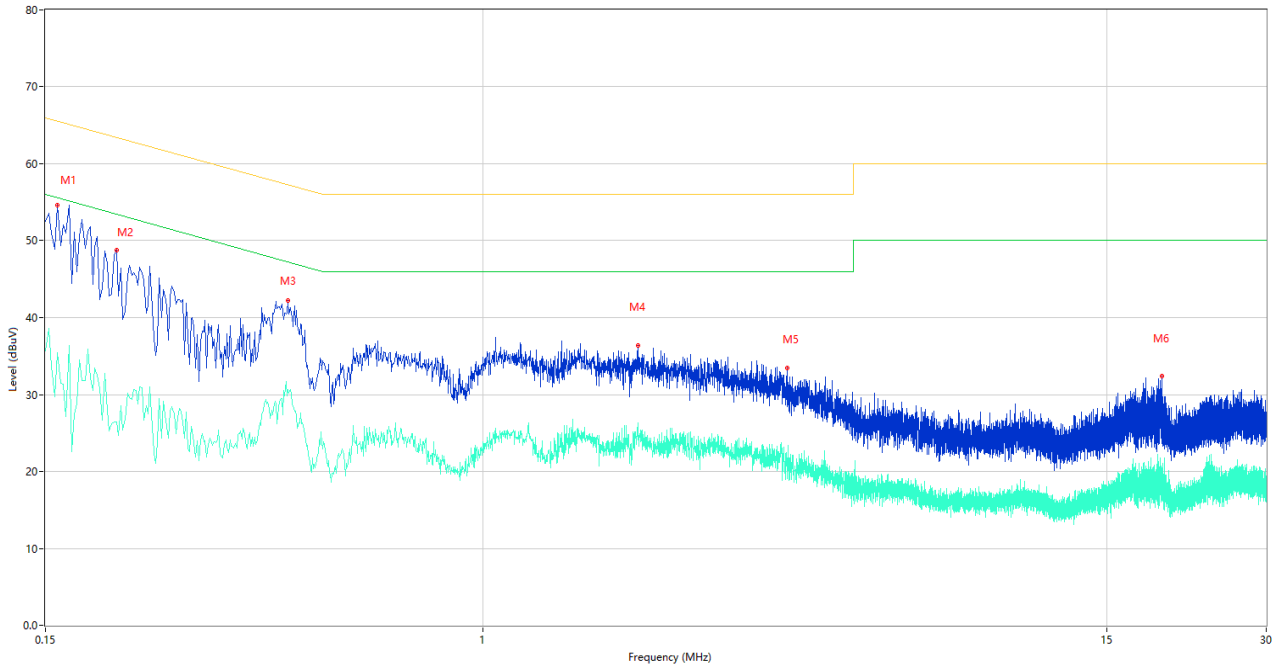
The USB Test Mode

A.2.3 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.156	54.13	10.18	65.67	-11.54	Peak	L	Pass
1**	0.156	36.35	10.18	55.67	-19.32	AV	L	Pass
2	0.224	48.42	10.09	62.67	-14.25	Peak	L	Pass
2**	0.224	27.26	10.09	52.67	-25.41	AV	L	Pass
3	0.430	41.94	10.10	57.25	-15.31	Peak	L	Pass
3**	0.430	32.38	10.10	47.25	-14.87	AV	L	Pass
4	1.482	33.59	9.95	56.00	-22.41	Peak	L	Pass
4**	1.482	21.96	9.95	46.00	-24.04	AV	L	Pass
5	4.446	35.31	10.02	56.00	-20.69	Peak	L	Pass
5**	4.446	23.79	10.02	46.00	-22.21	AV	L	Pass
6	19.174	33.68	10.23	60.00	-26.32	Peak	L	Pass
6**	19.174	21.22	10.23	50.00	-28.78	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	49.36	10.17	65.46	-16.10	Peak	N	Pass
1**	0.160	31.42	10.17	55.46	-24.04	AV	N	Pass
2	0.204	48.74	10.10	63.45	-14.71	Peak	N	Pass
2**	0.204	26.43	10.10	53.45	-27.02	AV	N	Pass
3	0.430	42.22	10.10	57.25	-15.03	Peak	N	Pass
3**	0.430	30.61	10.10	47.25	-16.64	AV	N	Pass
4	1.960	36.39	9.87	56.00	-19.61	Peak	N	Pass
4**	1.960	26.35	9.87	46.00	-19.65	AV	N	Pass
5	3.748	33.44	10.08	56.00	-22.56	Peak	N	Pass
5**	3.748	21.75	10.08	46.00	-24.25	AV	N	Pass
6	19.100	32.41	10.23	60.00	-27.59	Peak	N	Pass
6**	19.100	20.52	10.23	50.00	-29.48	AV	N	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document "BL-SZ21B0700-AE.PDF".

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document "BL-SZ21B0700-AW.PDF".

ANNEX D EUT INTERNAL PHOTOS

Please refer the document "BL-SZ21B0700-AI.PDF".

--END OF REPORT--