

FCC

EMC

TEST REPORT

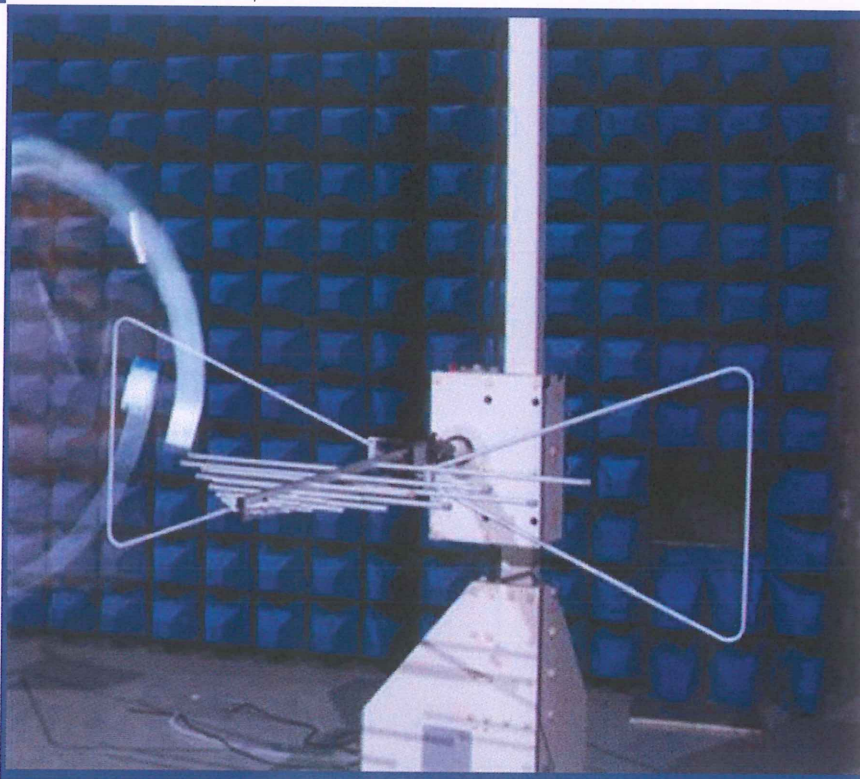
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
Mobile Phone

ISSUED TO
Realme Chongqing Mobile Telecommunications Corp., Ltd.

No.2 Building, No.24 Nichang Boulevard, Huixing Block, Yubei District,
Chongqing.



Tested by:

Xia Long

Date

Jan. 21, 2020

Approved by:

Liao Jianming

(Technical Director)

Date

Jan. 21, 2020

Report No.: BL-SZ19C0704-401

EUT Name: Mobile Phone

Model Name: RMX2040

Brand Name: realme

Test Standard: 47 CFR Part 15 Subpart B

FCC ID: 2AUYFRMX2040

Test Conclusion: Pass

Test Date: Dec. 27, 2019 ~ Jan. 08, 2020

Date of Issue: Jan. 21, 2020

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Revision History

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>Jan. 21, 2020</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 has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1. The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196. The laboratory is a testing organization accredited by American Association for Laboratory Accreditation(A2LA) according to ISO/IEC 17025.The accreditation certificate is 4344.01. The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Laboratory Condition

Ambient Temperature	20°C to 25°C
Ambient Relative Humidity	45% to 55%
Ambient Pressure	100 kPa to 102 kPa

1.4 Announce

- (1) The test report refer to the BALUN report mode v6.8.
- (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.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Realme Chongqing Mobile Telecommunications Corp., Ltd.
Address	No.2 Building, No.24 Nichang Boulevard, Huixing Block, Yubei District, Chongqing.

2.2 Manufacturer Information

Manufacturer	Realme Chongqing Mobile Telecommunications Corp., Ltd.
Address	No.2 Building, No.24 Nichang Boulevard, Huixing Block, Yubei District, Chongqing.

2.3 Factory Information

N/A	N/A
Address	N/A

2.4 General Description for Equipment under Test (EUT)

EUT Name	Mobile Phone
Model Name Under Test	RMX2040
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	11
Software Version	Color OS 7.0
Dimensions (Approx.)	75.4 x 164.4 x 9.0 mm
Weight (Approx.)	195g±5g(with battery)

2.5 Ancillary Equipment

Ancillary Equipment 1	Li-Polymer Battery	
	Brand Name	realme
	Model No.	BLP771
	Serial No.	N/A
	Capacitance	Rated: 4880mAh/18.889Wh Typical: 5000mAh/19.35Wh
	Rated Voltage	3.87 V
	Limited Voltage	4.45 V
	Manufacturer	Huizhou Desay Battery Co., LTD
Ancillary Equipment 2	Power Supply Unit	
	Brand Name	realme
	Model No.	OP92KAUH
	Serial No.	N/A
	Rated Input	100-240VAC 50-60Hz 0.5A
	Rated Output	5.0V $\overline{=}$ 2A or 9.0V $\overline{=}$ 2A(US Plug)
Ancillary Equipment 3	Power Supply Unit 2	
	Brand Name	realme
	Model No.	OP92JAUH
	Serial No.	N/A
	Rated Input	100-240VAC 50-60Hz 0.5A
	Rated Output	5.0V $\overline{=}$ 2A or 9.0V $\overline{=}$ 2A(US Plug)
Ancillary Equipment 4	USB Cable	
	Model No.	N/A
	Length (Approx.)	1.0 m
Note: Letter in () means plug type.		

2.6 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EDGE 850/900/1800/1900 MHz 3G Network WCDMA/HSDPA/HSUPA/HSPA+ Band 1/2/4/5/8 4G Network LTE FDD Band 1/2/3/4/5/7/8/20/28 LTE TDD Band 38/40/41 Bluetooth 5.0 (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20) GPS, GLONASS, BDS, FM, NFC
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3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	FCC 47 CFR Part 15 Subpart B (10-1-18 Edition)	Unintentional Radiators
2	ANSI C63.4-2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low- Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

3.2 Verdict

No.	Description	FCC Rule	Test Verdict	Result
1	Radiated Emission	15.109	Pass	Annex A .1
2	Conducted Emission, AC Ports	15.107	Pass	Annex A .2
Note: both power adapter model OP92KAUH and OP92JAUH had tested, report only record the worst case power adapter OP92KAUH.				

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)	3.66 dB
Radiated emissions (1 GHz-18 GHz)	5.57 dB
Radiated emissions (18 GHz-40 GHz)	6.12 dB

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

Environment Parameter	Selected Values During Tests			
	Temperature	Voltage	Relative Humidity	Ambient Pressure
Normal Temperature, Normal Voltage (NTNV)	23°C to 25°C	AC 120 V/60 Hz or AC 240 V/50 Hz or DC 3.87 V from Battery	50% to 55%	100 kPa to 102 kPa

4.2 Test Equipment List

Radiated Emission Test For Frequency Below 1 GHz (10 m)						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2019.07.04	2020.07.03	☐
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9168	9168-0883	2018.05.11	2020.05.10	☐
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60*7.35m	N/A	2018.08.08	2021.08.07	☐

Radiated Emission Test For Frequency Below 1 GHz (3 m)						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2019.10.29	2020.10.28	☒
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2018.08.22	2020.08.21	☒
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	9120D-1600	2018.07.12	2020.07.11	☐
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2017.02.21	2020.02.20	☒

Radiated Emission Test For Frequency 1 GHz-18 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2019.10.29	2020.10.28	☒
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2018.08.22	2020.08.21	☐
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	9120D-1148	2018.07.11	2020.07.10	☒
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2017.02.21	2020.02.20	☒

Radiated Emission Test For Frequency Above 18 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE & SCHWARZ	FSV40	101544	2019.02.15	2020.02.14	☒

Radiated Emission Test For Frequency Above 18 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
Test Antenna-Horn	A-INFOMW	LB-180400KF	J211060273	2020.01.04	2021.01.03	☒
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2017.02.21	2020.02.20	☒

Conducted disturbance Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9010B	MY57110309	2019.06.13	2020.06.12	☒
LISN	SCHWARZBECK	NSLK 8127	8127-687	2019.07.04	2020.07.03	☒
Shielded Enclosure	YiHeng Electronic Co., Ltd	3.4m*3.1m*2.8m	N/A	2018.08.16	2021.08.15	☒

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 2019.06.14	☒
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	☐

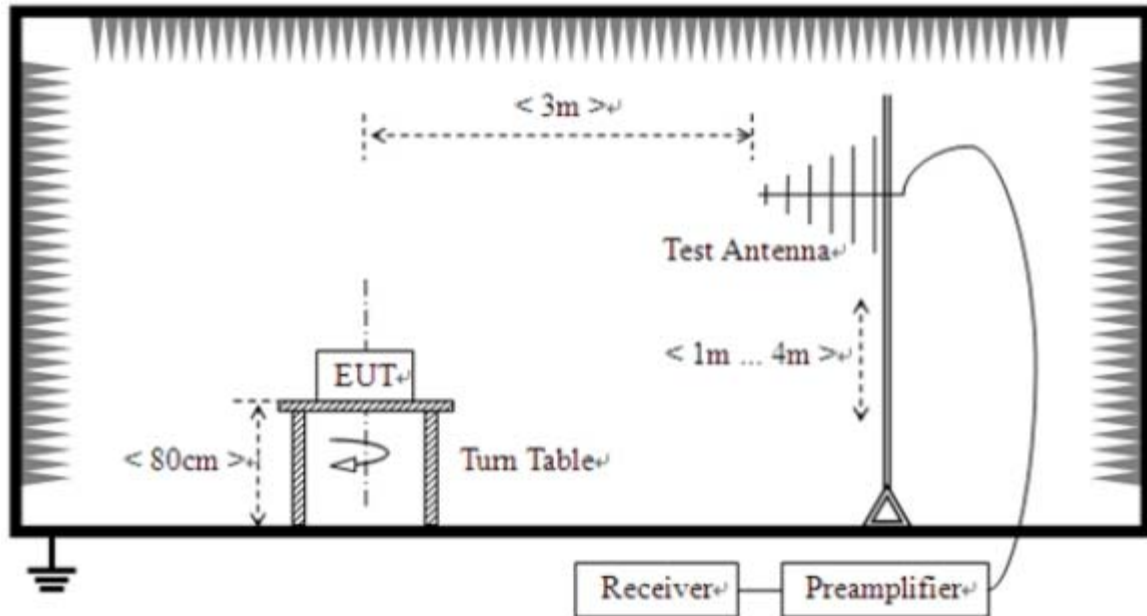
4.4 Test Configurations

Test Configurations (TC) No.	Description
Traffic Test Mode	
TC01	<u>The GSM 850 MHz Test Mode</u> GSM 850 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link (2.4G) + GPS RX
TC02	<u>The EDGE 850 MHz Test Mode</u> EDGE 850 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link (5G) + GLONASS RX
TC03	<u>The GSM 850 MHz Test Mode with internal speaker</u> GSM 850 Link + Adapter + USB Cable + Battery + BT Link + WIFI Link (2.4G) + Galileo RX
TC04	<u>The GSM 1900 MHz Test Mode</u> GSM 1900 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link (5G) + BDS RX
TC05	<u>The EDGE 1900 MHz Test Mode</u> GPRS 1900 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link (2.4G) + GPS RX
TC06	<u>The WCDMA Band 2 Test Mode</u> WCDMA Band 2 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link (5G) + GLONASS RX
TC07	<u>The WCDMA Band 4 Test Mode</u> WCDMA Band 4 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link (2.4G) + Galileo RX
TC08	<u>The WCDMA Band 5 Test Mode</u> WCDMA Band 5 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link (5G) + BDS RX
TC09	<u>The FDD LTE Band 2 Test Mode</u> LTE Band 2 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link (2.4G) + GPS RX
TC10	<u>The FDD LTE Band 4 Test Mode</u> LTE Band 4 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link (5G) + GLONASS RX
TC11	<u>The FDD LTE Band 5 Test Mode</u> LTE Band 5 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link (2.4G) + Galileo RX
TC12	<u>The FDD LTE Band 7 Test Mode</u> LTE Band 7 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link (5G) + BDS RX
TC13	<u>The FDD LTE Band 38 Test Mode</u> LTE Band 38 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link (2.4G) + GPS RX
TC14	<u>The FDD LTE Band 41 Test Mode</u> LTE Band 41 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link (5G)

	+ GLONASS RX
TC15	<u>The NFC Test Mode</u> EUT + Adapter + USB Cable + Battery + NFC
TC16	<u>The Idle Test Mode</u> GSM 850(Idle) + Adapter + Battery + Earphone + USB Cable + NFC RX
Amusement Test Mode	
TC17	<u>The Camera Test Mode</u> EUT + Adapter + USB Cable + Battery + Earphone + TF Card
TC18	<u>The Video Play Test Mode</u> EUT + Adapter + USB Cable + Battery + Earphone + TF Card
TC19	<u>The USB Test Mode</u> EUT + USB Cable + Battery + Earphone + Laptop+ TF Card

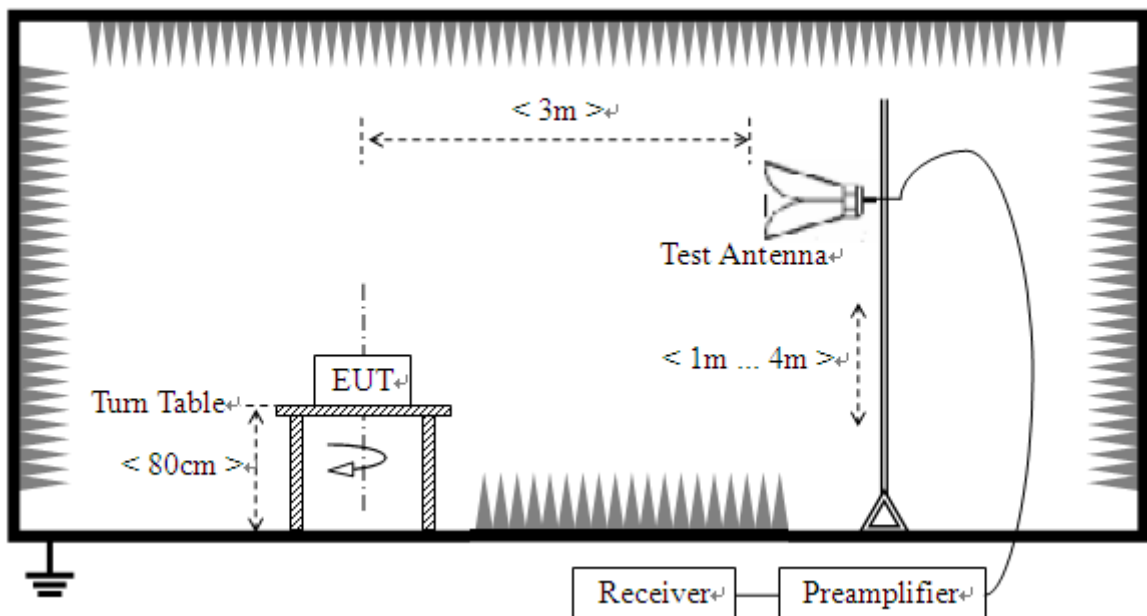
4.5 Test Setups

Test Setup 1



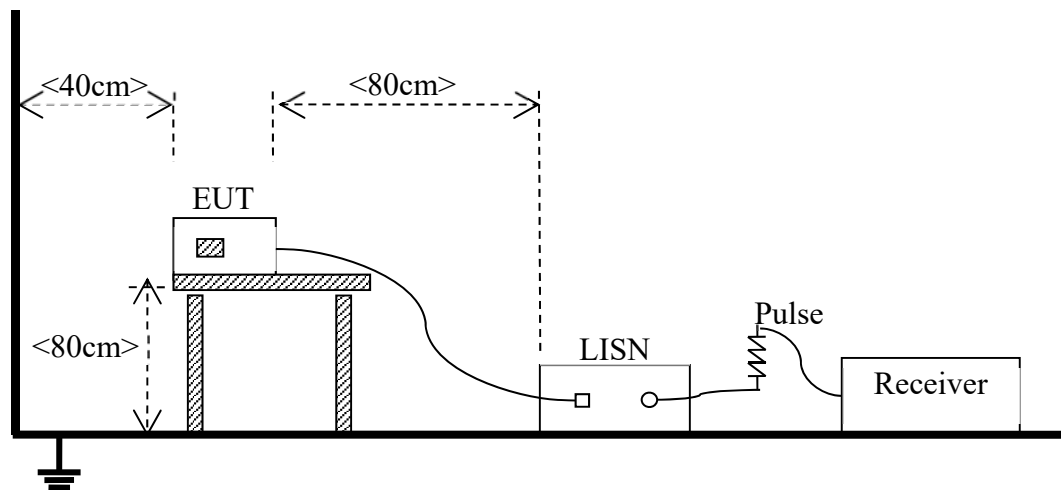
(For Radiated Emission Test (30 MHz-1 GHz))

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~TC19 ^{Note}
Conducted Emission, AC Ports	Test Env.	NTNV
	Test Setup	Test Setup 3
	Test Configuration	TC01~TC19 ^{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 GSM 850 MHz 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 $\mu\text{V/m}$) = $20 \times \log [\text{Field Strength } (\mu\text{V/m})]$.
- 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:

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

The reading level is calculated by software which is not shown in the sheet

$$2. \text{ Factor} = \text{Insertion loss} + \text{Cable loss}$$

$$3. \text{ Over limit} = \text{Results} - \text{Limit}.$$

ANNEX A TEST RESULTS

A.1 Radiated Emission

Note 1: The symbol of "--" in the table which means not application.

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

Note 3: This frequency which near 850 MHz with circle should be ignored because they are MS and SS carrier frequency, the marked spikes near 2400 MHz with circle should be ignored because they are Bluetooth or WIFI carrier frequency.

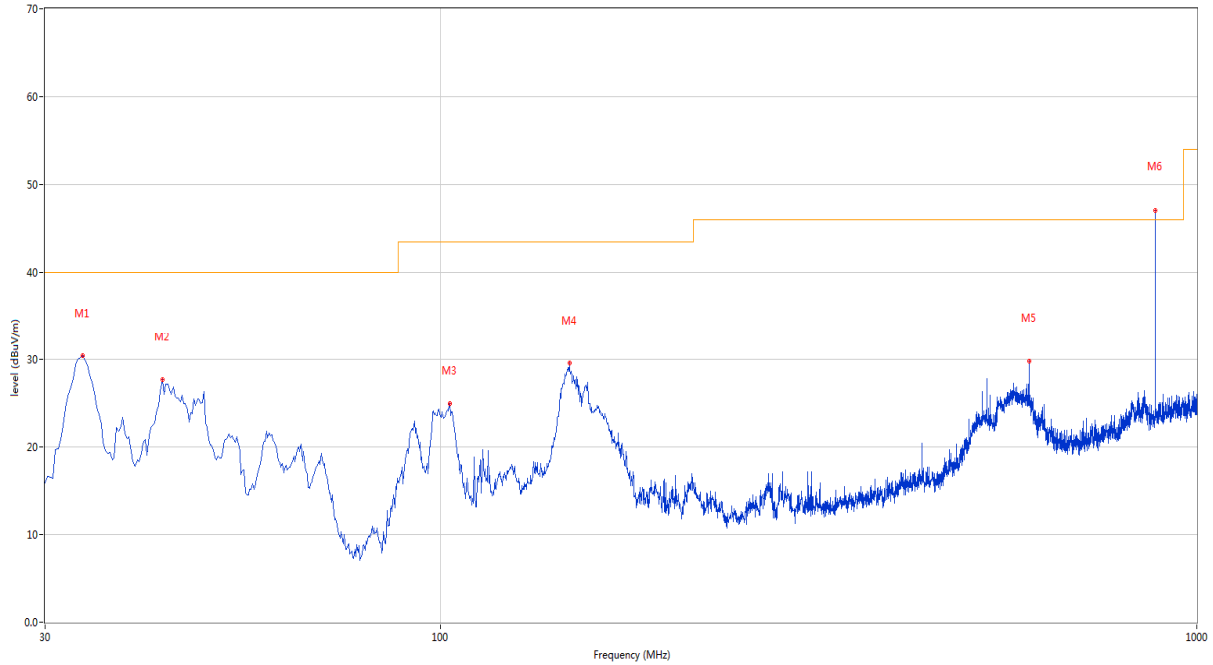
Note 4: The spurious from 18G-40G is noise only, do not show on the report.

Note 5: 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

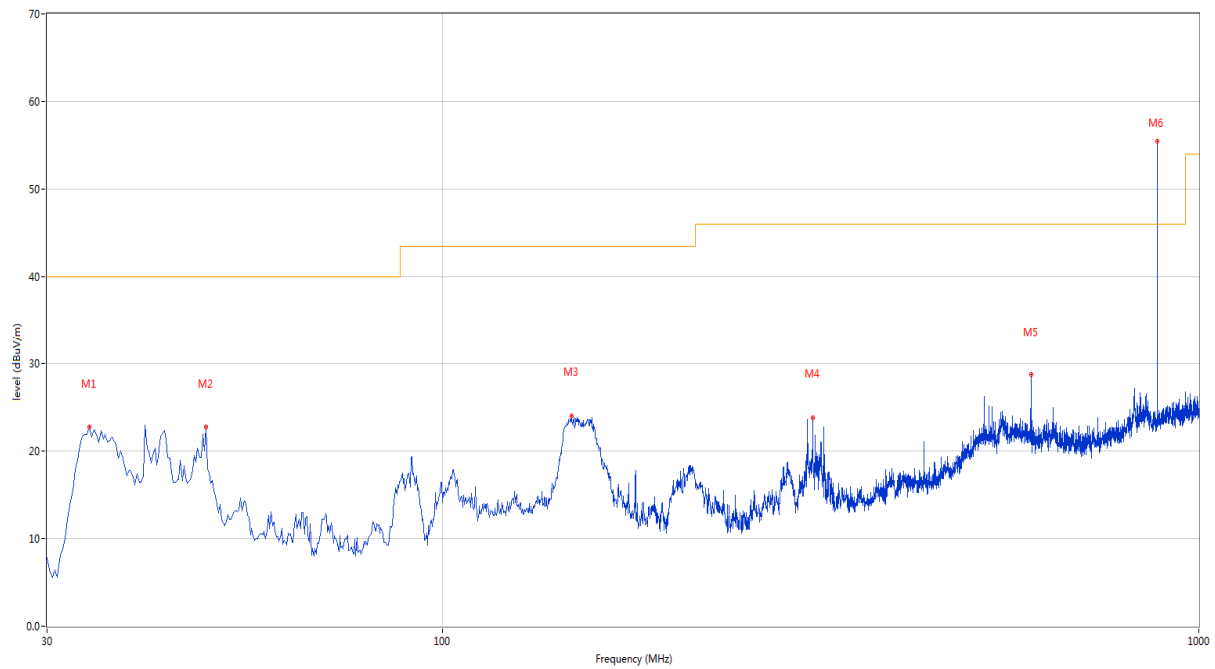
The GSM 850 MHz Test Mode

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



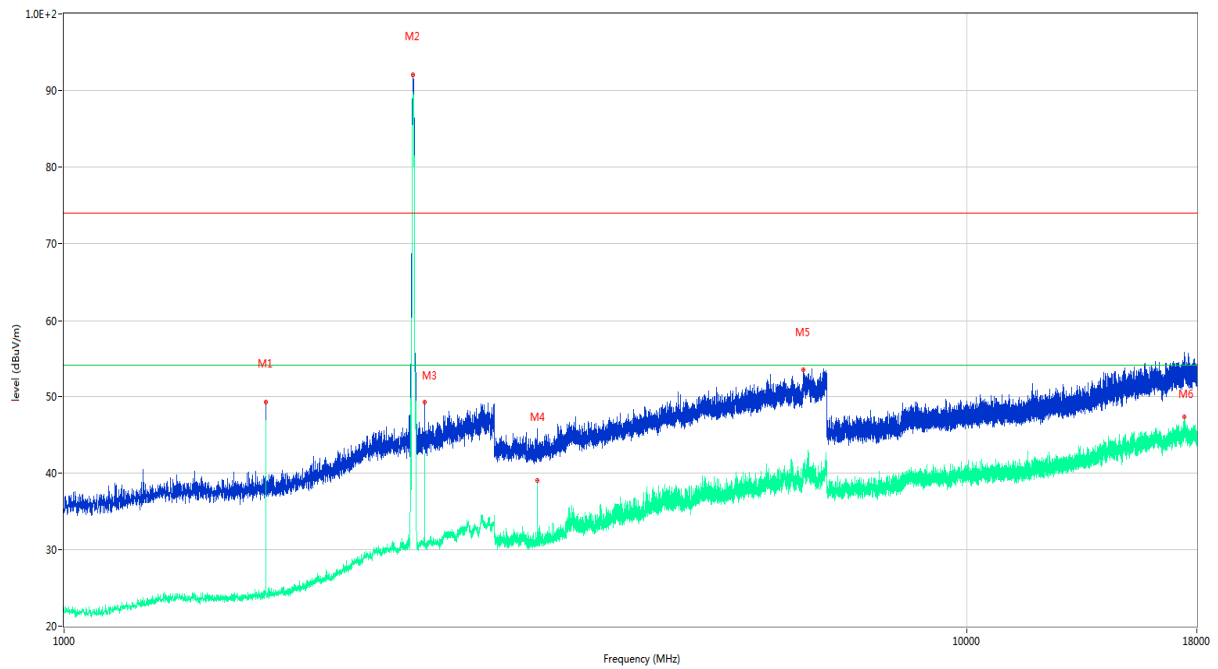
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	33.638	30.40	-25.94	40.0	-9.60	Peak	301.30	100	Vertical	Pass
2	42.852	27.63	-23.19	40.0	-12.37	Peak	339.20	100	Vertical	Pass
3	102.993	24.99	-24.33	43.5	-18.51	Peak	335.60	100	Vertical	Pass
4	148.098	29.57	-27.70	43.5	-13.93	Peak	325.10	100	Vertical	Pass
5	600.118	29.82	-14.40	46.0	-16.18	Peak	75.50	100	Vertical	Pass
6	881.660	47.08	-10.33	46.0	1.08	Peak	172.10	100	Vertical	N/A

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



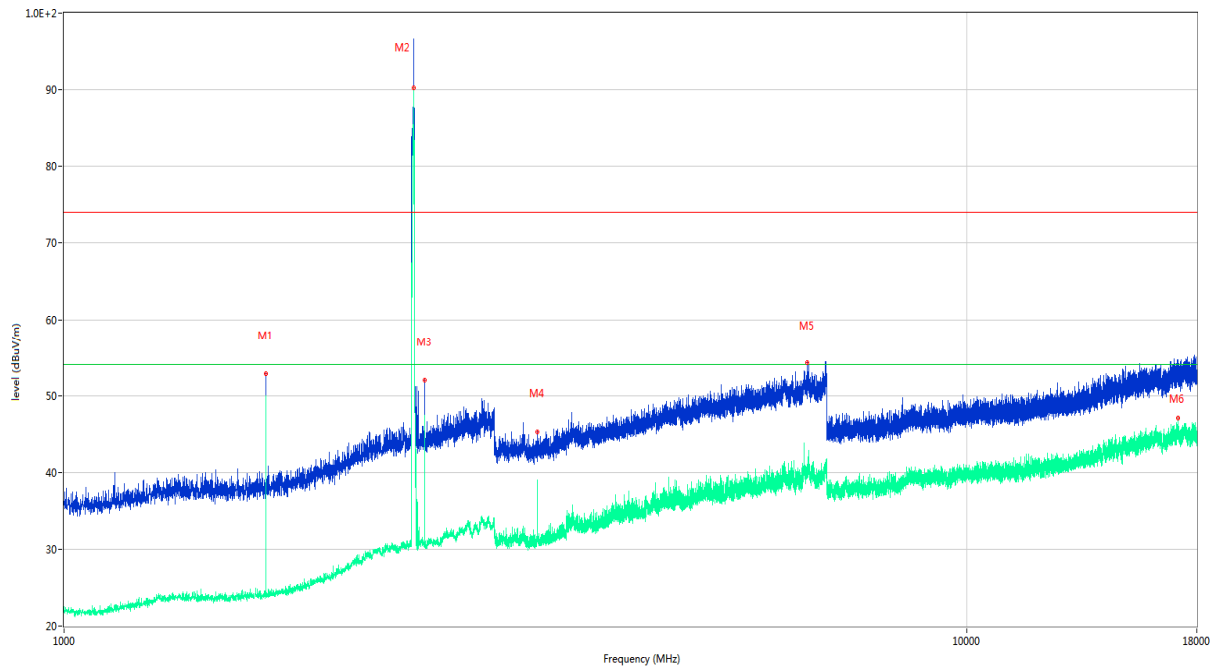
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	34.123	22.76	-25.79	40.0	-17.24	Peak	212.60	100	Horizontal	Pass
2	48.672	22.74	-22.44	40.0	-17.26	Peak	123.40	100	Horizontal	Pass
3	148.098	24.02	-27.70	43.5	-19.48	Peak	360.00	200	Horizontal	Pass
4	308.875	23.77	-21.67	46.0	-22.23	Peak	157.10	100	Horizontal	Pass
5	599.875	28.77	-14.39	46.0	-17.23	Peak	131.00	200	Horizontal	Pass
6	881.660	55.52	-10.33	46.0	9.52	Peak	98.70	100	Horizontal	N/A

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	1673.000	49.28	-16.97	74.0	-24.72	Peak	106.00	100	Vertical	N/A
1**	1673.000	40.12	-16.97	54.0	-13.88	AV	106.00	100	Vertical	N/A
2	2436.000	92.11	-11.50	74.0	18.11	Peak	237.00	100	Vertical	N/A
2**	2436.000	89.40	-11.50	54.0	35.40	AV	237.00	100	Vertical	N/A
3	2510.000	49.21	-11.71	74.0	-24.79	Peak	33.00	100	Vertical	N/A
3**	2510.000	39.09	-11.71	54.0	-14.91	AV	33.00	100	Vertical	N/A
4	3346.500	44.19	-7.55	74.0	-29.81	Peak	77.00	100	Vertical	N/A
4**	3346.500	38.98	-7.55	54.0	-15.02	AV	77.00	100	Vertical	N/A
5	6595.500	53.49	-0.57	74.0	-20.51	Peak	127.00	100	Vertical	Pass
5**	6595.500	39.58	-0.57	54.0	-14.42	AV	127.00	100	Vertical	Pass
6	17429.000	53.78	4.58	74.0	-20.22	Peak	201.00	100	Vertical	Pass
6**	17429.000	47.30	4.58	54.0	-6.70	AV	201.00	100	Vertical	Pass

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

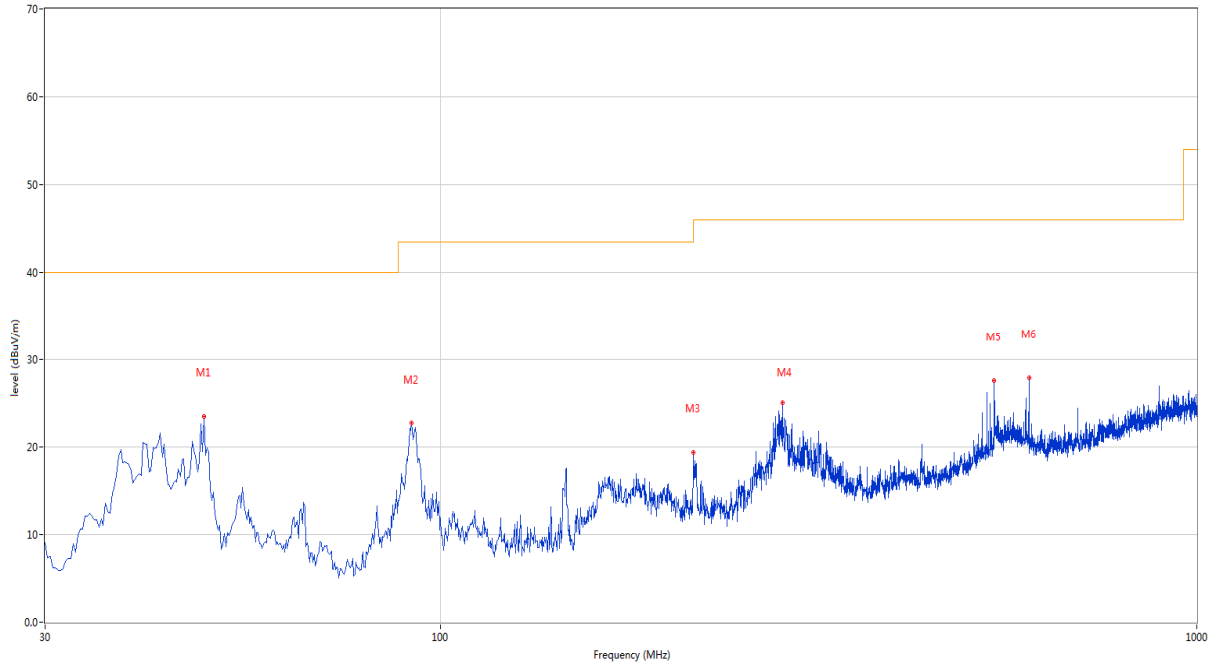


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1673.500	52.90	-16.98	74.0	-21.10	Peak	58.00	100	Horizontal	N/A
1**	1673.500	49.93	-16.98	54.0	-4.07	AV	58.00	100	Horizontal	N/A
2	2441.500	96.67	-11.90	74.0	22.67	Peak	319.00	100	Horizontal	N/A
2**	2441.500	90.23	-11.90	54.0	36.23	AV	319.00	100	Horizontal	N/A
3	2509.500	52.04	-11.70	74.0	-21.96	Peak	46.00	100	Horizontal	N/A
3**	2509.500	34.69	-11.70	54.0	-19.31	AV	46.00	100	Horizontal	N/A
4	3346.000	45.30	-7.51	74.0	-28.70	Peak	71.00	100	Horizontal	N/A
4**	3346.000	31.08	-7.51	54.0	-22.92	AV	71.00	100	Horizontal	N/A
5	6657.500	54.24	-0.43	74.0	-19.76	Peak	30.00	100	Horizontal	Pass
5**	6657.500	40.34	-0.43	54.0	-13.66	AV	30.00	100	Horizontal	Pass
6	17142.000	53.27	3.12	74.0	-20.73	Peak	69.00	100	Horizontal	Pass
6**	17142.000	47.05	3.12	54.0	-6.95	AV	69.00	100	Horizontal	Pass

Test Data and Plots

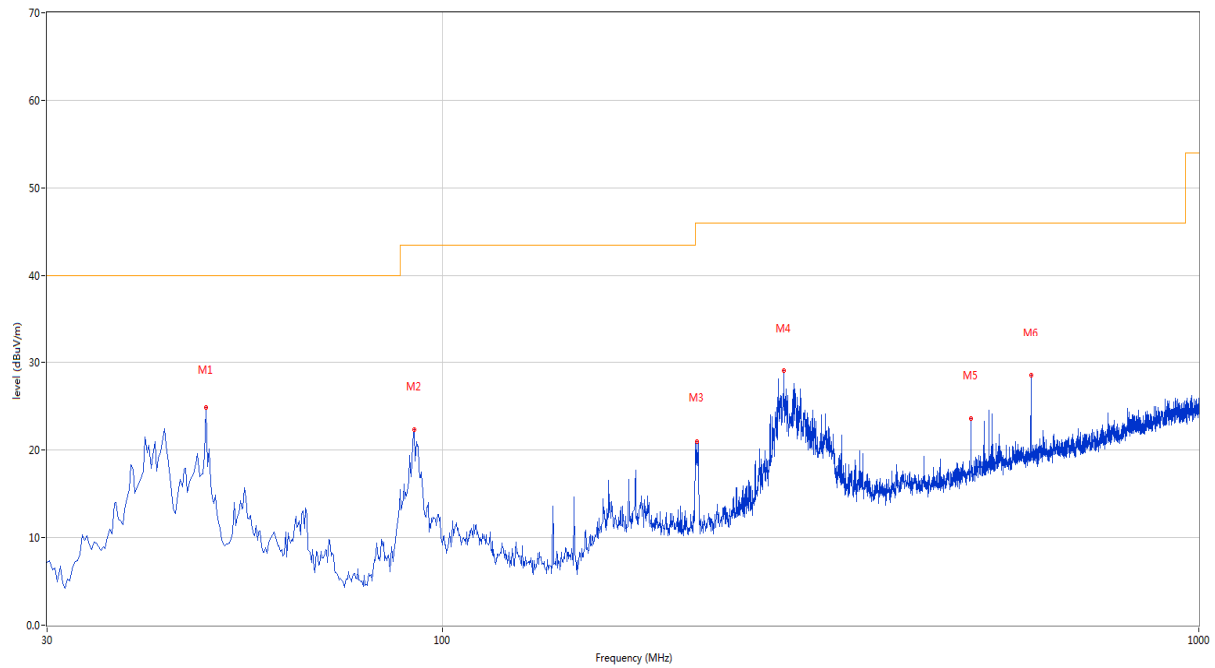
The USB Test Mode

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



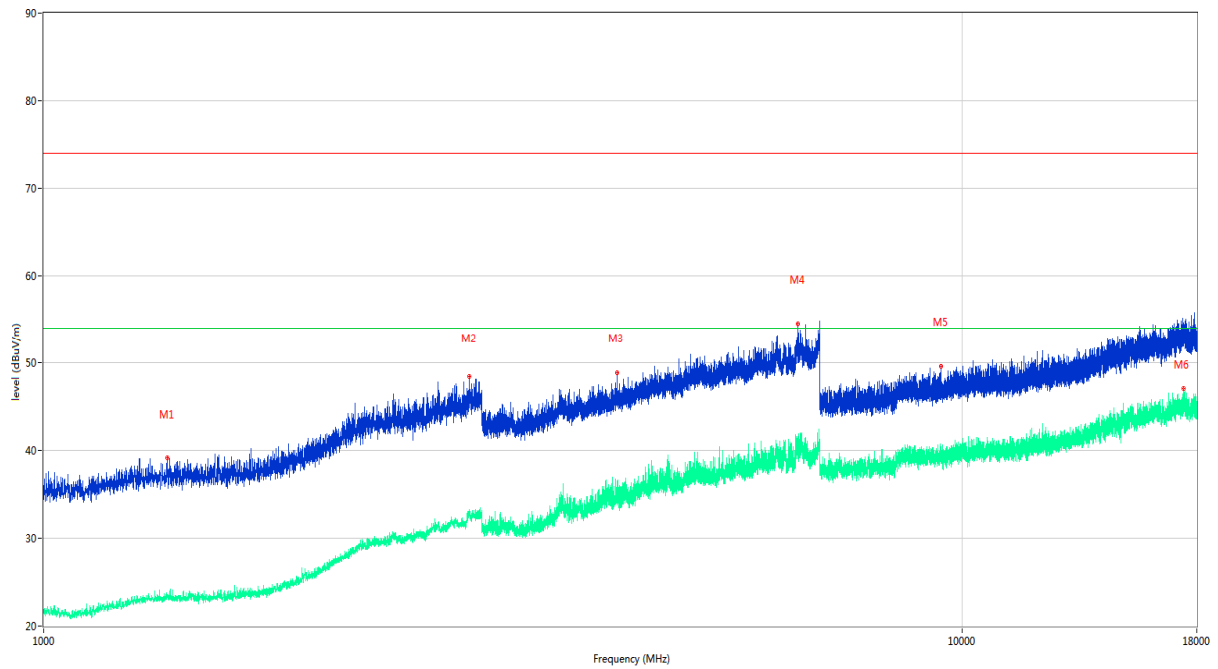
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	48.672	23.50	-22.50	40.0	-16.50	Peak	5.60	200	Vertical	Pass
2	91.595	22.73	-25.72	43.5	-20.77	Peak	27.40	100	Vertical	Pass
3	215.998	19.33	-23.92	43.5	-24.17	Peak	220.10	100	Vertical	Pass
4	283.170	25.03	-21.86	46.0	-20.97	Peak	44.50	200	Vertical	Pass
5	539.977	27.61	-15.85	46.0	-18.39	Peak	23.70	100	Vertical	Pass
6	600.118	27.93	-14.57	46.0	-18.07	Peak	335.30	100	Vertical	Pass

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



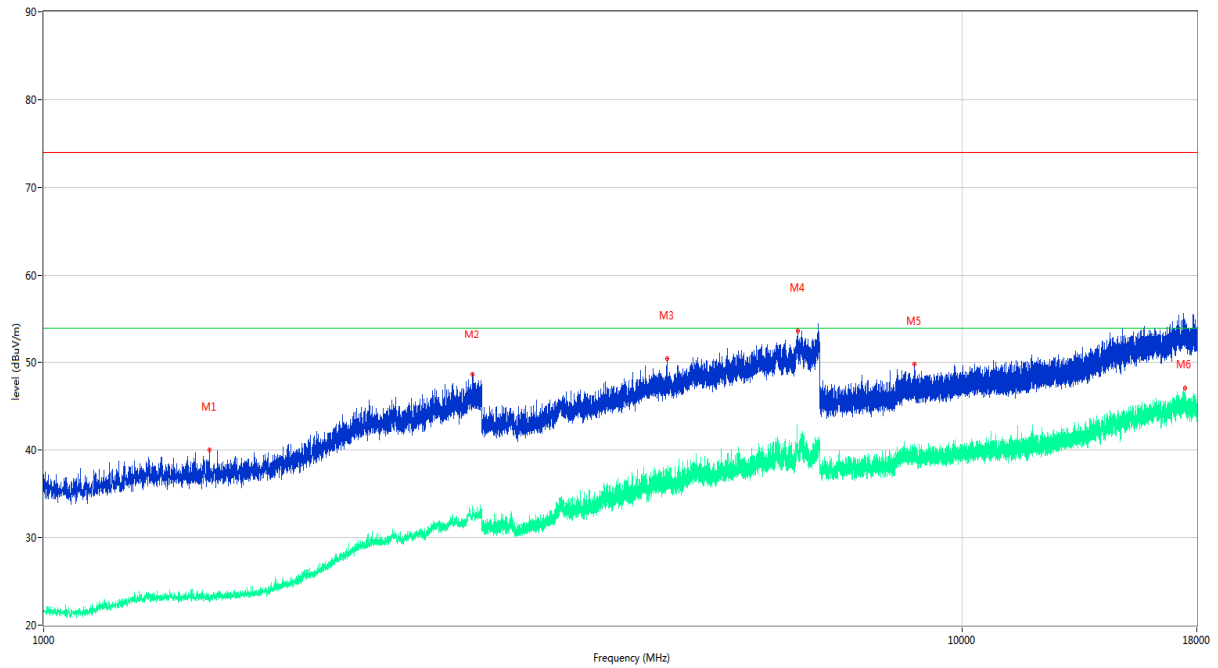
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	48.672	24.88	-22.50	40.0	-15.12	Peak	360.00	200	Horizontal	Pass
2	91.838	22.27	-25.67	43.5	-21.23	Peak	90.00	200	Horizontal	Pass
3	216.968	20.95	-24.07	46.0	-25.05	Peak	90.00	200	Horizontal	Pass
4	282.685	29.00	-21.81	46.0	-17.00	Peak	247.10	100	Horizontal	Pass
5	499.965	23.57	-16.92	46.0	-22.43	Peak	67.60	200	Horizontal	Pass
6	599.875	28.52	-14.56	46.0	-17.48	Peak	131.10	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	1362.000	39.12	-17.45	74.0	-34.88	Peak	190.00	100	Vertical	Pass
1**	1362.000	23.63	-17.45	54.0	-30.37	AV	190.00	100	Vertical	Pass
2	2905.000	48.43	-9.27	74.0	-25.57	Peak	360.00	100	Vertical	Pass
2**	2905.000	32.48	-9.27	54.0	-21.52	AV	360.00	100	Vertical	Pass
3	4208.000	48.83	-4.77	74.0	-25.17	Peak	116.00	100	Vertical	Pass
3**	4208.000	34.60	-4.77	54.0	-19.40	AV	116.00	100	Vertical	Pass
4	6615.500	54.57	0.60	74.0	-19.43	Peak	274.00	100	Vertical	Pass
4**	6615.500	40.38	0.60	54.0	-13.62	AV	274.00	100	Vertical	Pass
5	9480.500	49.53	-0.12	74.0	-24.47	Peak	192.00	100	Vertical	Pass
5**	9480.500	39.66	-0.12	54.0	-14.34	AV	192.00	100	Vertical	Pass
6	17415.500	53.26	4.74	74.0	-20.74	Peak	359.00	100	Vertical	Pass
6**	17415.500	47.05	4.74	54.0	-6.95	AV	359.00	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	1514.500	39.99	-17.75	74.0	-34.01	Peak	145.00	100	Horizontal	Pass
1**	1514.500	23.06	-17.75	54.0	-30.94	AV	145.00	100	Horizontal	Pass
2	2929.500	48.63	-9.54	74.0	-25.37	Peak	97.00	100	Horizontal	Pass
2**	2929.500	32.75	-9.54	54.0	-21.25	AV	97.00	100	Horizontal	Pass
3	4776.500	50.44	-2.50	74.0	-23.56	Peak	0.00	100	Horizontal	Pass
3**	4776.500	36.69	-2.50	54.0	-17.31	AV	0.00	100	Horizontal	Pass
4	6615.000	53.68	0.62	74.0	-20.32	Peak	240.00	100	Horizontal	Pass
4**	6615.000	40.37	0.62	54.0	-13.63	AV	240.00	100	Horizontal	Pass
5	8862.500	49.82	-0.41	74.0	-24.18	Peak	34.00	100	Horizontal	Pass
5**	8862.500	39.63	-0.41	54.0	-14.37	AV	34.00	100	Horizontal	Pass
6	17468.500	53.49	3.79	74.0	-20.51	Peak	236.00	100	Horizontal	Pass
6**	17468.500	47.02	3.79	54.0	-6.98	AV	236.00	100	Horizontal	Pass

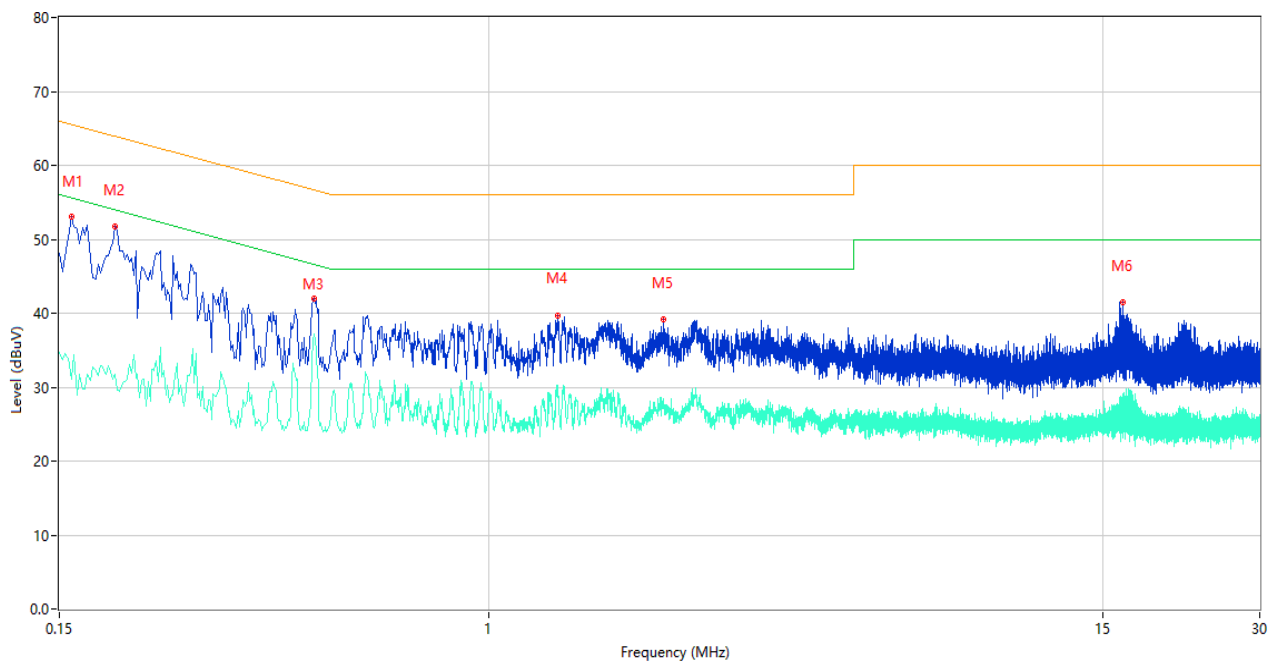
A.2 Conducted Emission

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 (240 VAC, 50 Hz) shown here.

Test Data and Plots

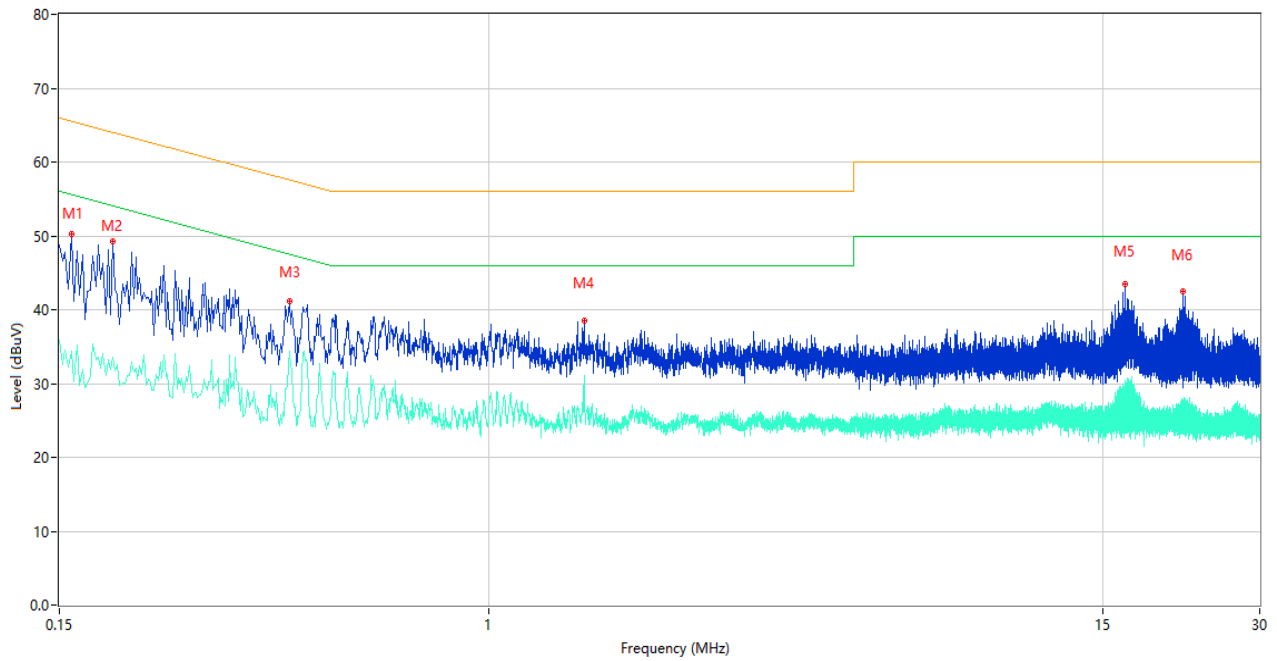
The GSM 850 MHz Test Mode

A.2.1 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.158	53.14	10.40	65.57	-12.43	Peak	L	Pass
1**	0.158	31.15	10.40	55.57	-24.42	AV	L	Pass
2	0.192	51.72	10.38	63.95	-12.23	Peak	L	Pass
2**	0.192	31.75	10.38	53.95	-22.20	AV	L	Pass
3	0.462	41.93	10.30	56.66	-14.73	Peak	L	Pass
3**	0.462	37.17	10.30	46.66	-9.49	AV	L	Pass
4	1.354	39.70	10.25	56.00	-16.30	Peak	L	Pass
4**	1.354	29.19	10.25	46.00	-16.81	AV	L	Pass
5	2.160	39.17	10.27	56.00	-16.83	Peak	L	Pass
5**	2.160	27.60	10.27	46.00	-18.40	AV	L	Pass
6	16.418	41.50	10.45	60.00	-18.50	Peak	L	Pass
6**	16.418	28.82	10.45	50.00	-21.18	AV	L	Pass

A.2.2 N Phase

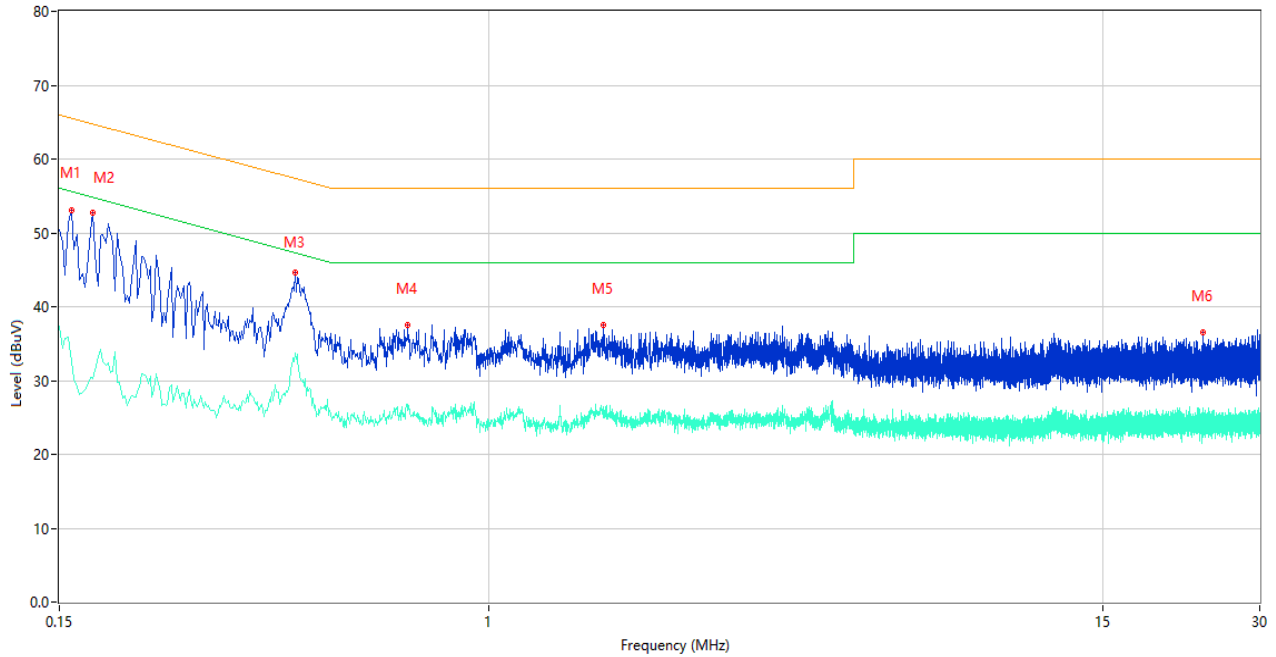


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.158	50.24	10.40	65.57	-15.33	Peak	N	Pass
1**	0.158	34.32	10.40	55.57	-21.25	AV	N	Pass
2	0.190	49.22	10.38	64.04	-14.82	Peak	N	Pass
2**	0.190	33.61	10.38	54.04	-20.43	AV	N	Pass
3	0.414	41.13	10.31	57.57	-16.44	Peak	N	Pass
3**	0.414	34.45	10.31	47.57	-13.12	AV	N	Pass
4	1.522	38.44	10.25	56.00	-17.56	Peak	N	Pass
4**	1.522	31.15	10.25	46.00	-14.85	AV	N	Pass
5	16.590	43.47	10.45	60.00	-16.53	Peak	N	Pass
5**	16.590	30.22	10.45	50.00	-19.78	AV	N	Pass
6	21.424	42.47	10.58	60.00	-17.53	Peak	N	Pass
6**	21.424	26.93	10.58	50.00	-23.07	AV	N	Pass

Test Data and Plots

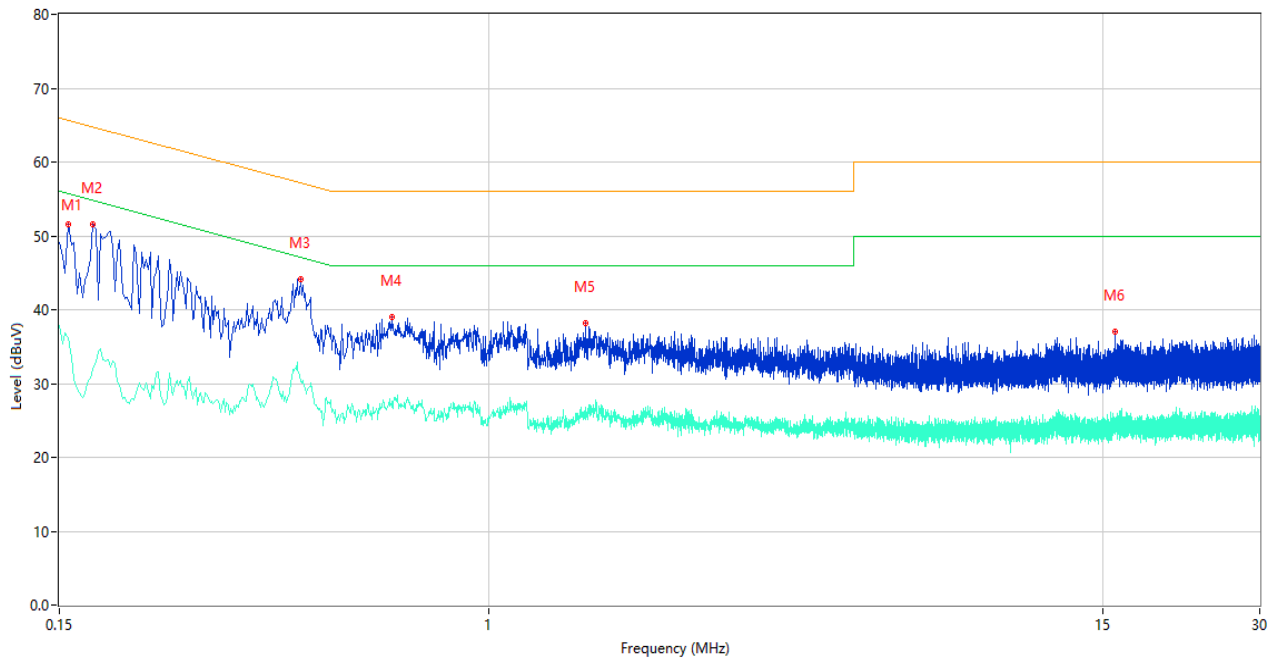
The USB Test Mode

A.2.3 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.152	48.83	10.41	65.89	-17.06	Peak	L	Pass
1**	0.152	34.45	10.41	55.89	-21.44	AV	L	Pass
2	0.174	52.68	10.39	64.77	-12.09	Peak	L	Pass
2**	0.174	30.23	10.39	54.77	-24.54	AV	L	Pass
3	0.424	44.62	10.31	57.37	-12.75	Peak	L	Pass
3**	0.424	33.70	10.31	47.37	-13.67	AV	L	Pass
4	0.698	37.57	10.26	56.00	-18.43	Peak	L	Pass
4**	0.698	26.79	10.26	46.00	-19.21	AV	L	Pass
5	1.658	37.60	10.26	56.00	-18.40	Peak	L	Pass
5**	1.658	25.17	10.26	46.00	-20.83	AV	L	Pass
6	23.406	36.51	10.62	60.00	-23.49	Peak	L	Pass
6**	23.406	23.92	10.62	50.00	-26.08	AV	L	Pass

A.2.4 N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.156	51.59	10.41	65.67	-14.08	Peak	N	Pass
1**	0.156	36.25	10.41	55.67	-19.42	AV	N	Pass
2	0.174	51.53	10.39	64.77	-13.24	Peak	N	Pass
2**	0.174	31.87	10.39	54.77	-22.90	AV	N	Pass
3	0.436	44.21	10.31	57.14	-12.93	Peak	N	Pass
3**	0.436	30.25	10.31	47.14	-16.89	AV	N	Pass
4	0.650	39.05	10.27	56.00	-16.95	Peak	N	Pass
4**	0.650	27.56	10.27	46.00	-18.44	AV	N	Pass
5	1.528	38.24	10.24	56.00	-17.76	Peak	N	Pass
5**	1.528	26.68	10.24	46.00	-19.32	AV	N	Pass
6	15.828	37.09	10.43	60.00	-22.91	Peak	N	Pass
6**	15.828	24.41	10.43	50.00	-25.59	AV	N	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ19C0704-AE-1.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ19C0704-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ19C0704-AI.PDF”.

--END OF REPORT--