

FCC

EMC

TEST REPORT

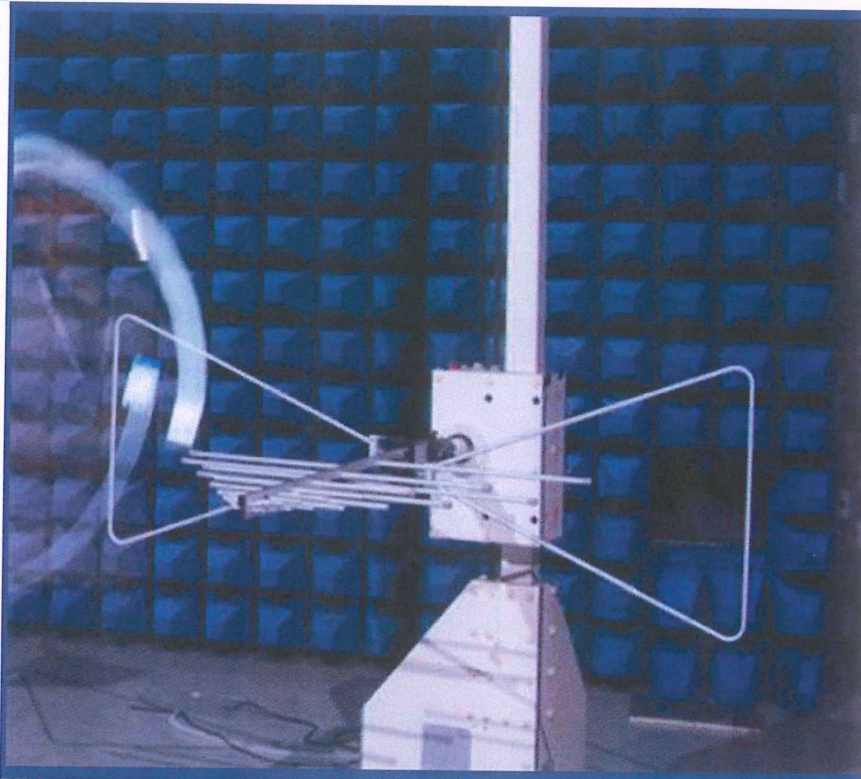
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
4G Smart phone

ISSUED TO
CommuniTake Technologies Ltd.

Yokneam Star Building, High-Tech Park, POB 344, Yokneam,
Israel 2069205



Tested by: Xia Long
Xia Long
Date: Feb. 18, 2020

Approved by: Wei Yanquan
Wei Yanquan
(Chief Engineer)

Date: Feb. 18, 2020

Report No.: BL-SZ2010032-401
EUT Name: 4G Smart phone
Model Name: CTGED01
Brand Name: CommuniTake
Test Standard: 47 CFR Part 15 Subpart B
FCC ID: 2AUHC-CTGED01

Test Conclusion: Pass
Test Date: Jan. 17, 2020 ~ Jan. 21, 2020
Date of Issue: Feb. 18, 2020

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Revision History

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>Feb. 18, 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	CommuniTake Technologies Ltd.
Address	Yokneam Star Building, High-Tech Park, POB 344, Yokneam, Israel 2069205

2.2 Manufacturer Information

Manufacturer	CommuniTake Technologies Ltd.
Address	Yokneam Star Building, High-Tech Park, POB 344, Yokneam, Israel 2069205

2.3 Factory Information

Factory	Shenzhen Joyhong Technology Co., Ltd.
Address	4/F., Building A2, Zhengfeng Industrial Park, Fengtang Road, Fuyong, Bao'an, Shenzhen, China

2.4 General Description for Equipment under Test (EUT)

EUT Name	4G Smart phone
Model Name Under Test	CTGED01
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	N/A
Software Version	N/A
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.5 Ancillary Equipment

Ancillary Equipment 1	Li ion Rechargeable Battery	
	Brand Name	N/A
	Model No.	CTGED01
	Serial No.	N/A
	Capacity	2500mAh
	Charging Voltage	4.35 V/9.5Wh
	Nominal Voltage	3.8 V
Ancillary Equipment 2	Adapter	
	Brand Name	N/A
	Model No.	SR-C50501000U1
	Serial No.	N/A
	Rated Input	100-240VAC 50-60Hz 0.2A
	Rated Output	5 V $\equiv$ 1000 mA (US Plug)
Ancillary Equipment 3	USB Cable	
	Model No.	N/A
	Length (Approx.)	1.0 m
Ancillary Equipment 4	Earphone	
	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/EGPRS 850/1900 MHz 3G Network WCDMA/HSDPA/HSUPA Band 2/4/5 4G Network FDD LTE Band 2/4/5/7/12/17 Bluetooth 4.2 (BR+EDR+BLE) WIFI 802.11b, 802.11g, 802.11n
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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

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 DC 3.8 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 Above 1 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	2018.07.12	2020.07.11	☒
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	☒

Conducted disturbance Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
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

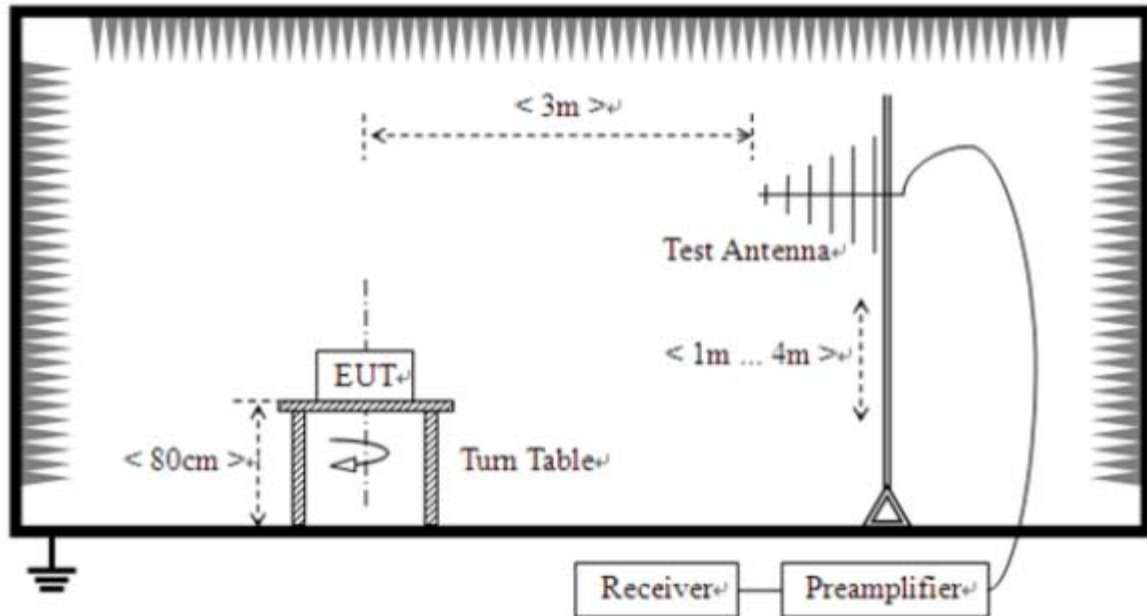
Description	Manufacturer	Model	Serial No.	Length	Description	Use
PC	Dell	015K3N	N/A	N/A	Special Handled	☐
Laptop	Apple	A1465	N/A	N/A	N/A	☒
Printer	HP	DESKJET 1000	N/A	N/A	N/A	☐
Keyboard	Logitech	Y-BP62a	N/A	N/A	N/A	☐
Mouse	Logitech	M100	N/A	N/A	N/A	☐
USB disk	Kingston	N/A	N/A	N/A	N/A	☐
TF Card	Kingston	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 2020.06.13	☒
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
Traffic Test Mode	
TC01	<u>The GSM 850 MHz Test Mode</u> GSM 850 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link
TC02	<u>The EDGE 850 MHz Test Mode</u> EDGE 850 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link
TC03	<u>The GSM 850 MHz Test Mode with internal speaker</u> GSM 850 Link + Adapter + USB Cable + Battery + BT Link + WIFI Link
TC04	<u>The GSM 1900 MHz Test Mode</u> GSM 1900 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link
TC05	<u>The GPRS 1900 MHz Test Mode</u> GPRS 1900 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link
TC06	<u>The WCDMA Band 1 Test Mode</u> WCDMA Band 1 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link
TC07	<u>The WCDMA Band 2 Test Mode</u> WCDMA Band 2 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link
TC08	<u>The WCDMA Band 4 Test Mode</u> WCDMA Band 4 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link
TC09	<u>The WCDMA Band 5 Test Mode</u> WCDMA Band 5 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link
TC10	<u>The FDD LTE Band 2 Test Mode</u> LTE Band 2 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link
TC11	<u>The FDD LTE Band 4 Test Mode</u> LTE Band 4 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link
TC12	<u>The FDD LTE Band 5 Test Mode</u> LTE Band 5 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link
TC13	<u>The FDD LTE Band 7 Test Mode</u> LTE Band 7 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link
TC14	<u>The FDD LTE Band 12 Test Mode</u> LTE Band 12 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link
TC15	<u>The FDD LTE Band 17 Test Mode</u> LTE Band 17 Link + Adapter + USB Cable + Battery + Earphone + BT Link + WIFI Link
TC16	<u>The Idle Test Mode</u> GSM 850(Idle) + Adapter + Battery + Earphone + USB Cable
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

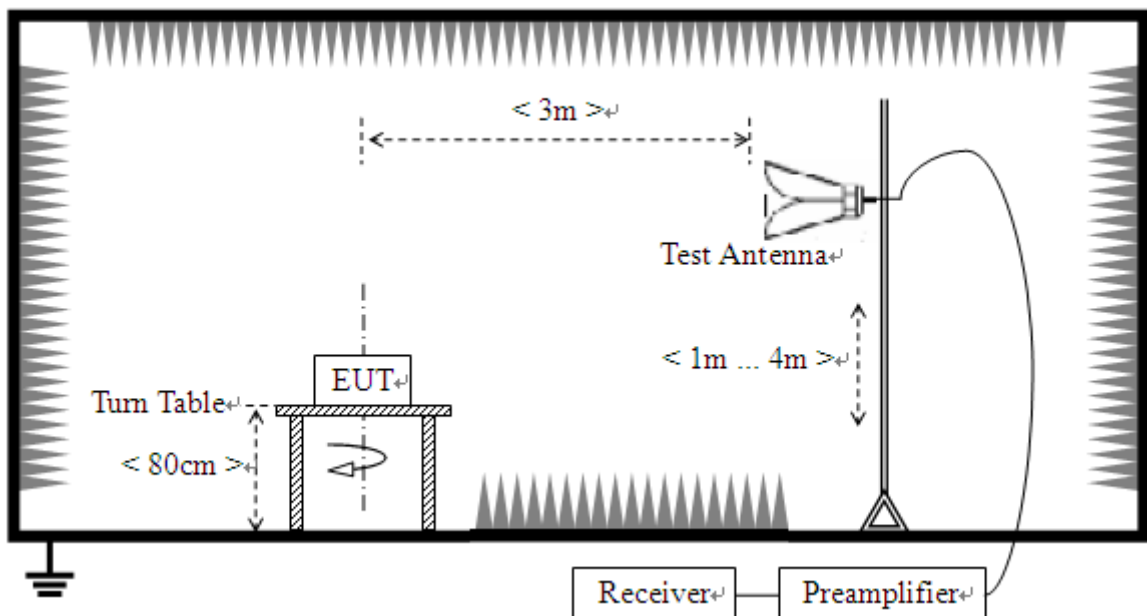
4.5 Test Setups

Test Setup 1



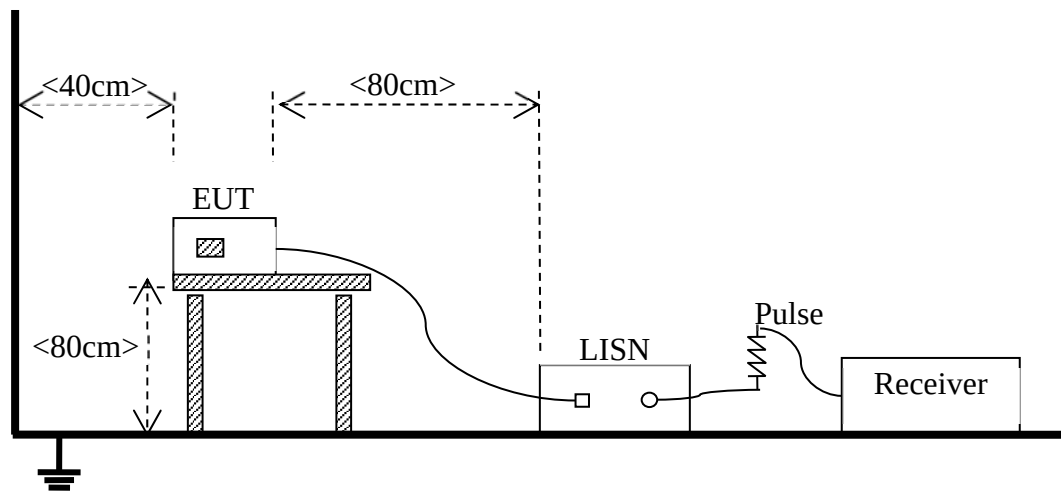
(For Radiated Emission Test (30 MHz-1 GHz))

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 (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:

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

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.

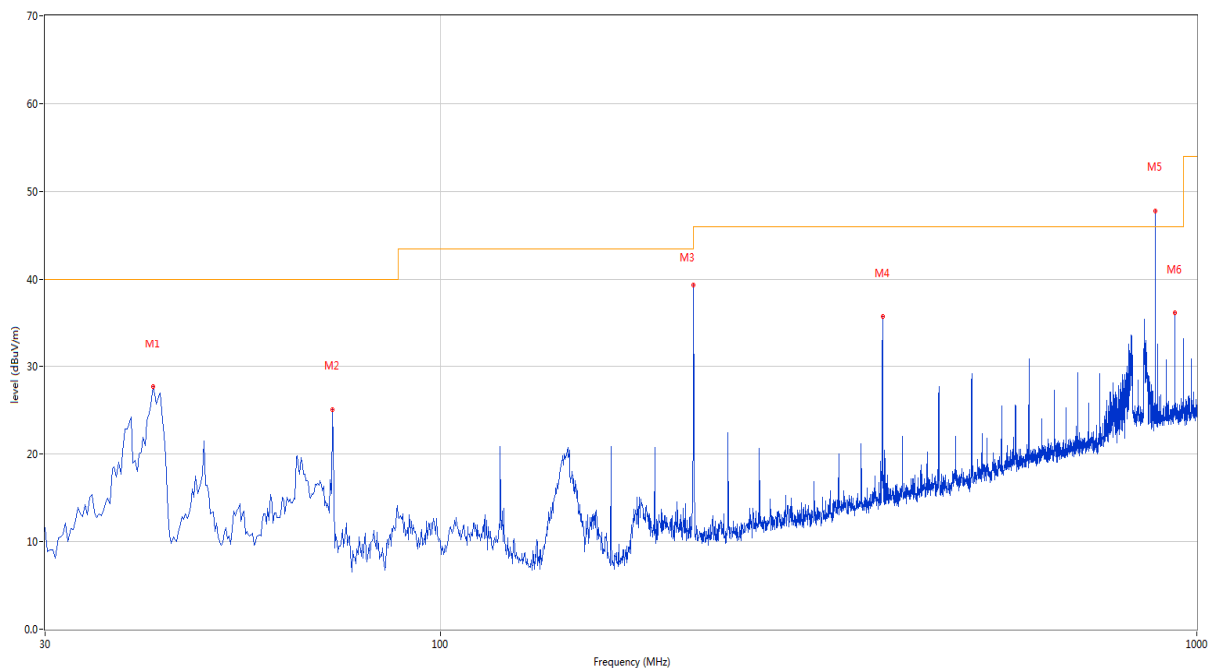
Note 2: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

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.

Test Data and Plots

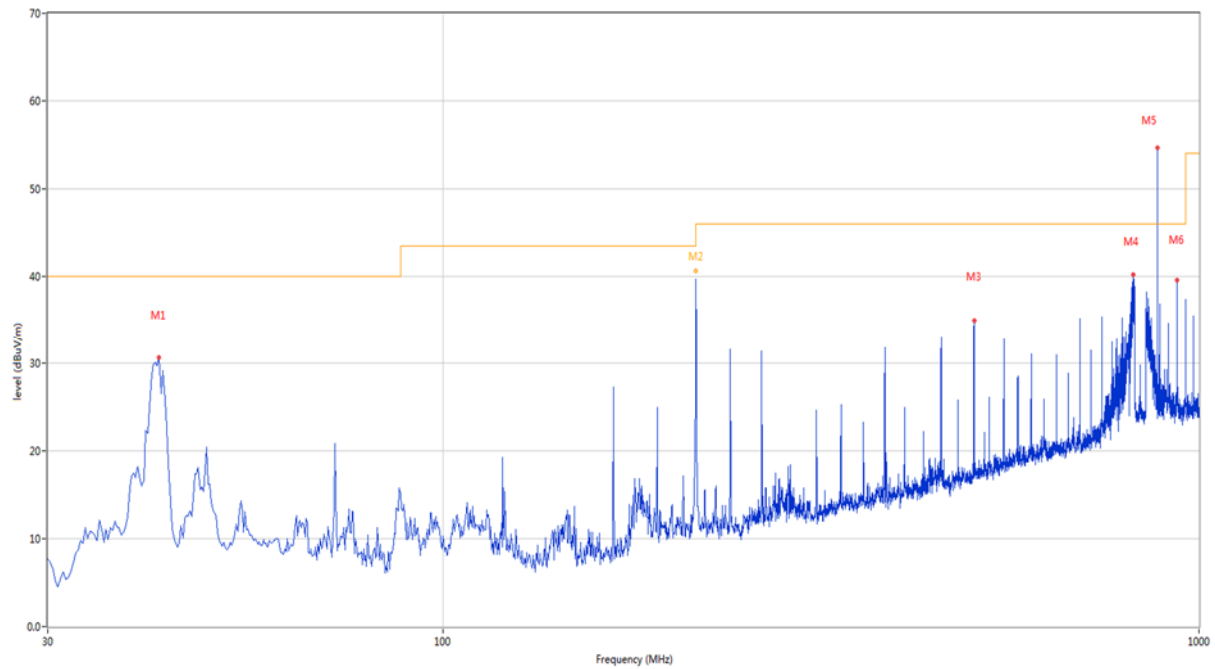
The GSM 850 MHz Test Mode

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



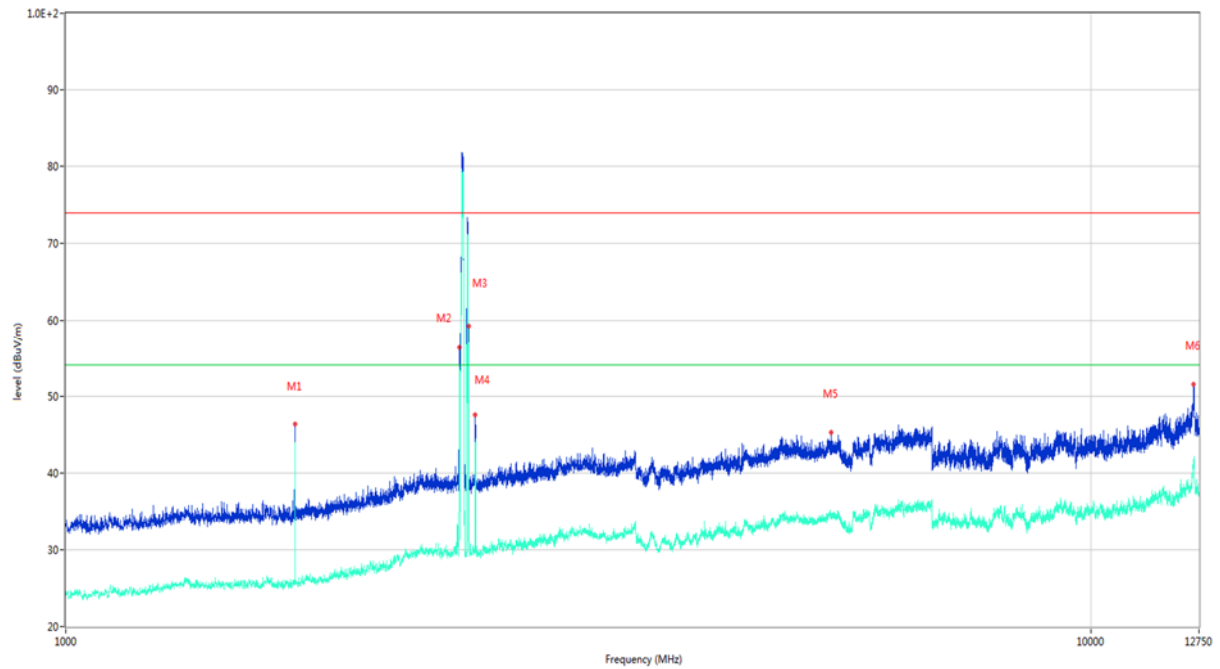
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	41.640	27.69	-23.50	40.0	-12.31	Peak	18.40	100	Vertical	Pass
2	71.952	25.09	-28.28	40.0	-14.91	Peak	0.40	100	Vertical	Pass
3	215.998	39.41	-24.02	43.5	-4.09	Peak	158.80	200	Vertical	Pass
4	384.050	35.76	-19.32	46.0	-10.24	Peak	151.10	100	Vertical	Pass
5	881.660	47.74	-10.33	46.0	1.74	Peak	92.00	100	Vertical	N/A
6	935.980	36.21	-9.28	46.0	-9.79	Peak	68.60	100	Vertical	Pass

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



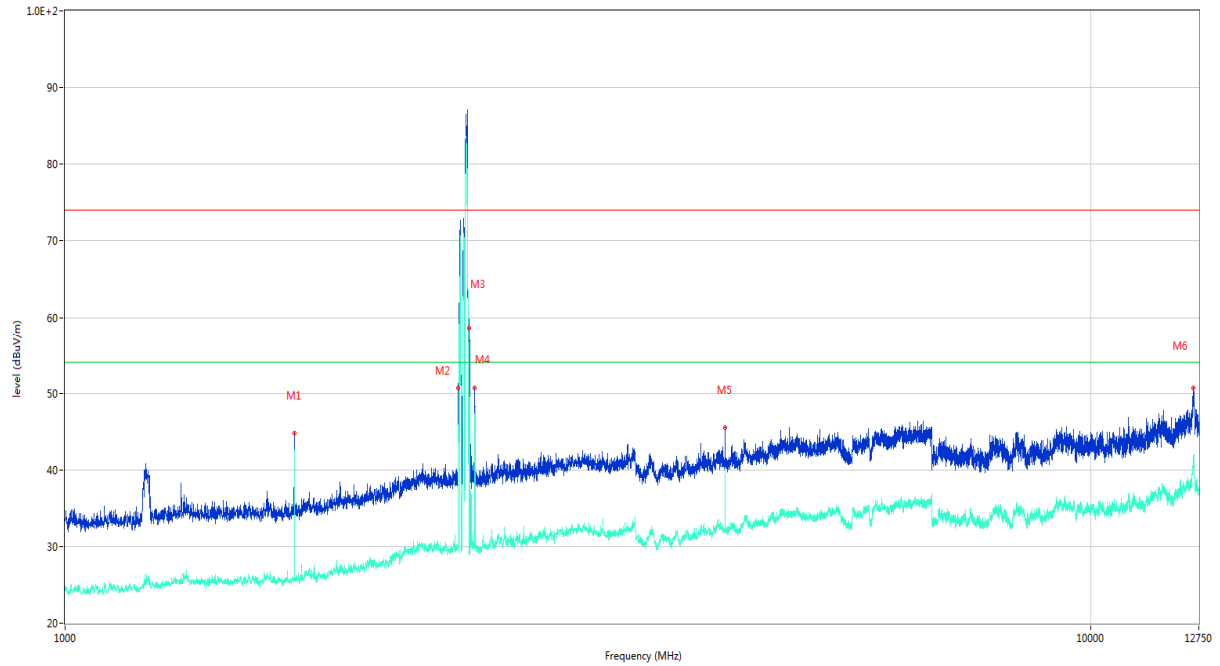
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	42.125	30.62	-23.32	40.0	-9.38	Peak	93.80	100	Horizontal	Pass
2	215.998	42.38	-24.02	43.5	-1.12	Peak	276.20	148	Horizontal	N/A
2*	215.998	40.45	-24.02	43.5	-3.05	QP	276.20	148	Horizontal	Pass
3	504.087	34.92	-16.59	46.0	-11.08	Peak	64.70	200	Horizontal	Pass
4	818.610	40.22	-9.72	46.0	-5.78	Peak	132.90	100	Horizontal	Pass
5	881.660	54.60	-10.33	46.0	8.60	Peak	265.40	100	Horizontal	N/A
6	935.980	39.58	-9.28	46.0	-6.42	Peak	243.80	100	Horizontal	Pass

A.1.3 Test Antenna Vertical, 1 GHz – 12.75 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	46.38	-17.81	74.0	-27.62	Peak	242.30	100	Vertical	N/A
1**	1673.000	35.37	-17.81	54.0	-18.63	AV	242.30	100	Vertical	N/A
2	2422.000	56.31	-13.38	74.0	-17.69	Peak	254.60	100	Vertical	N/A
2**	2422.000	50.56	-13.38	54.0	-3.44	AV	254.60	100	Vertical	N/A
3	2473.000	59.19	-13.64	74.0	-14.81	Peak	272.50	100	Vertical	N/A
3**	2473.000	53.41	-13.64	54.0	-0.59	AV	272.50	100	Vertical	N/A
4	2510.000	47.58	-12.58	74.0	-26.42	Peak	114.20	100	Vertical	N/A
4**	2510.000	43.57	-12.58	54.0	-10.43	AV	114.20	100	Vertical	N/A
5	5576.000	45.20	-6.01	74.0	-28.80	Peak	15.60	100	Vertical	Pass
5**	5576.000	34.25	-6.01	54.0	-19.75	AV	15.60	100	Vertical	Pass
6	12601.938	51.51	21.77	74.0	-22.49	Peak	0.00	100	Vertical	Pass
6**	12601.938	40.97	21.77	54.0	-13.03	AV	0.00	100	Vertical	Pass

A.1.4 Test Antenna Horizontal, 1 GHz – 12.75 GHz

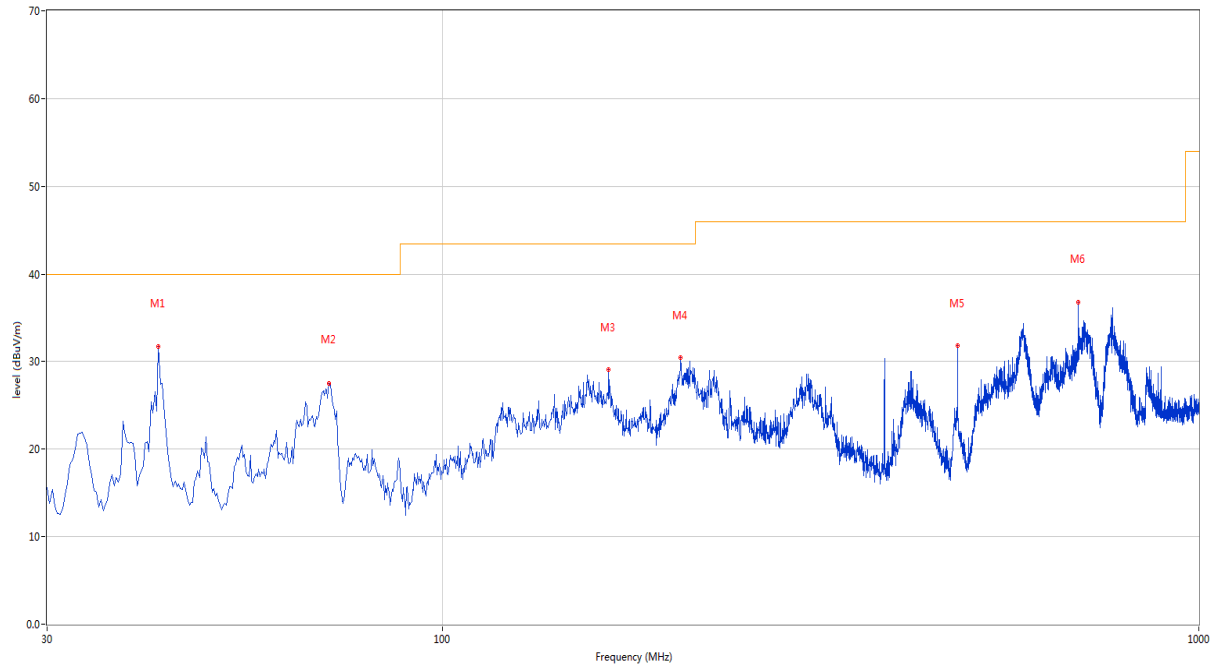


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1673.000	44.79	-17.81	74.0	-29.21	Peak	95.90	100	Horizontal	N/A
1**	1673.000	34.54	-17.81	54.0	-19.46	AV	95.90	100	Horizontal	N/A
2	2419.000	50.65	-13.30	74.0	-23.35	Peak	274.30	100	Horizontal	N/A
2**	2419.000	44.32	-13.30	54.0	-9.68	AV	274.30	100	Horizontal	N/A
3	2475.000	58.63	-13.63	74.0	-15.37	Peak	325.30	100	Horizontal	N/A
3**	2475.000	53.63	-13.63	54.0	-0.37	AV	325.30	100	Horizontal	N/A
4	2510.000	50.64	-12.58	74.0	-23.36	Peak	309.70	100	Horizontal	N/A
4**	2510.000	46.64	-12.58	54.0	-7.36	AV	309.70	100	Horizontal	N/A
5	4400.000	44.41	-6.51	74.0	-29.59	Peak	14.40	100	Horizontal	Pass
5**	4400.000	32.51	-6.51	54.0	-21.49	AV	14.40	100	Horizontal	Pass
6	12601.938	50.65	21.77	74.0	-23.35	Peak	355.20	100	Horizontal	Pass
6**	12601.938	41.16	21.77	54.0	-12.84	AV	355.20	100	Horizontal	Pass

Test Data and Plots

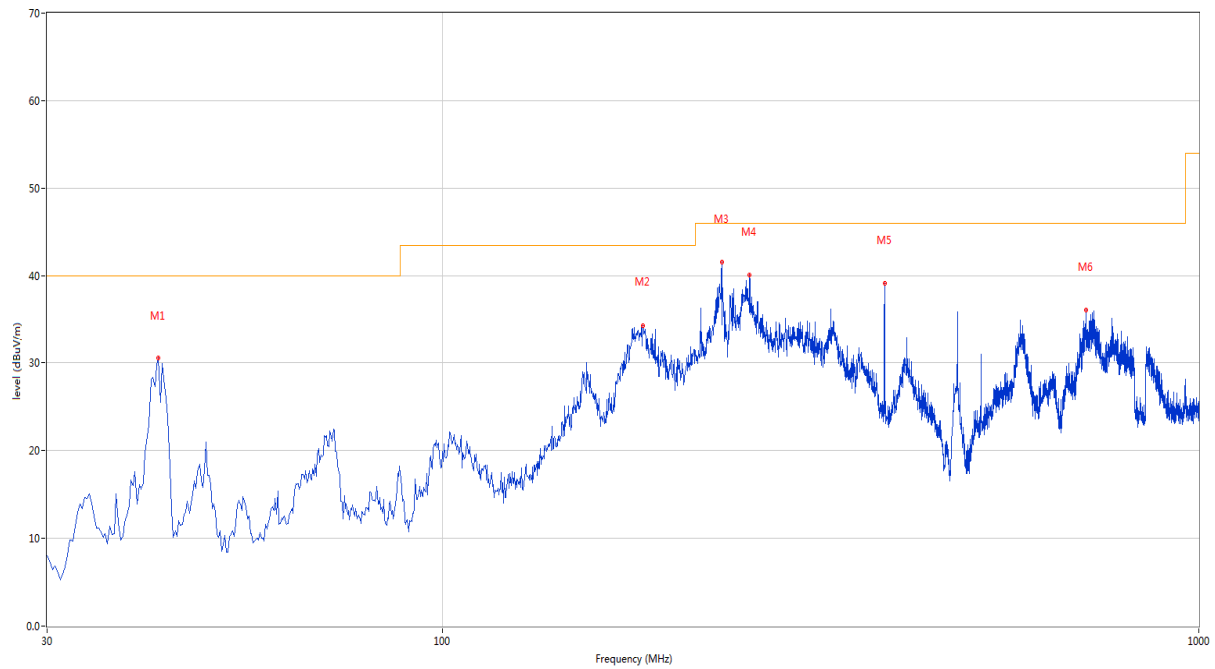
The USB Test Mode

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



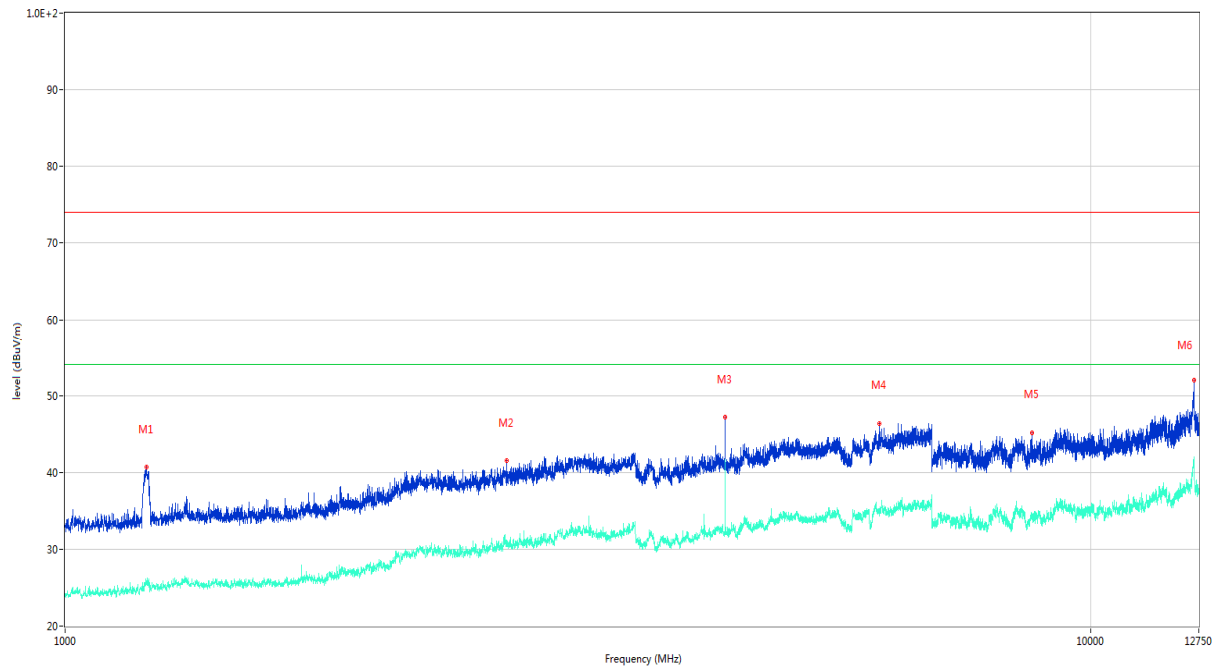
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	42.125	31.73	-23.32	40.0	-8.27	Peak	334.00	200	Vertical	Pass
2	70.740	27.51	-27.89	40.0	-12.49	Peak	107.00	100	Vertical	Pass
3	165.800	29.01	-26.86	43.5	-14.49	Peak	54.70	300	Vertical	Pass
4	206.540	30.39	-24.06	43.5	-13.11	Peak	140.50	200	Vertical	Pass
5	480.080	31.80	-16.83	46.0	-14.20	Peak	290.80	200	Vertical	Pass
6	693.480	36.83	-13.11	46.0	-9.17	Peak	184.20	100	Vertical	Pass

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



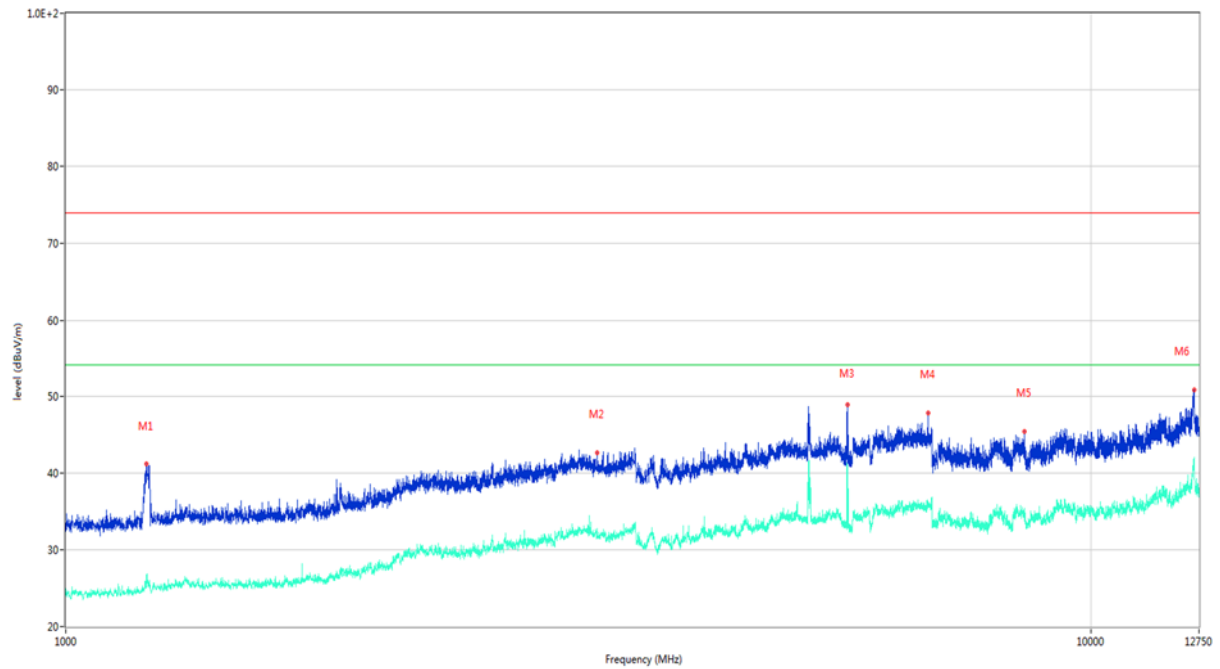
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	42.125	30.47	-23.32	40.0	-9.53	Peak	92.40	100	Horizontal	Pass
2	183.988	34.35	-25.40	43.5	-9.15	Peak	92.40	100	Horizontal	Pass
3	233.943	41.53	-23.30	46.0	-4.47	Peak	296.60	200	Horizontal	Pass
4	254.798	40.08	-22.29	46.0	-5.92	Peak	150.80	200	Horizontal	Pass
5	384.050	39.15	-19.32	46.0	-6.85	Peak	103.40	300	Horizontal	Pass
6	708.758	36.06	-12.88	46.0	-9.94	Peak	65.80	100	Horizontal	Pass

A.1.7 Test Antenna Vertical, 1 GHz – 12.75 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1200.000	40.68	-18.62	74.0	-33.32	Peak	299.00	100	Vertical	Pass
1**	1200.000	25.74	-18.62	54.0	-28.26	AV	299.00	100	Vertical	Pass
2	2697.000	41.49	-11.25	74.0	-32.51	Peak	94.10	100	Vertical	Pass
2**	2697.000	30.51	-11.25	54.0	-23.49	AV	94.10	100	Vertical	Pass
3	4400.000	45.47	-6.51	74.0	-28.53	Peak	358.50	100	Vertical	Pass
3**	4400.000	33.55	-6.51	54.0	-20.45	AV	358.50	100	Vertical	Pass
4	6223.000	46.37	-5.03	74.0	-27.63	Peak	231.90	100	Vertical	Pass
4**	6223.000	35.08	-5.03	54.0	-18.92	AV	231.90	100	Vertical	Pass
5	8772.437	45.15	16.19	74.0	-28.85	Peak	0.60	100	Vertical	Pass
5**	8772.437	33.83	16.19	54.0	-20.17	AV	0.60	100	Vertical	Pass
6	12619.187	51.96	21.64	74.0	-22.04	Peak	4.70	100	Vertical	Pass
6**	12619.187	42.01	21.64	54.0	-11.99	AV	4.70	100	Vertical	Pass

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



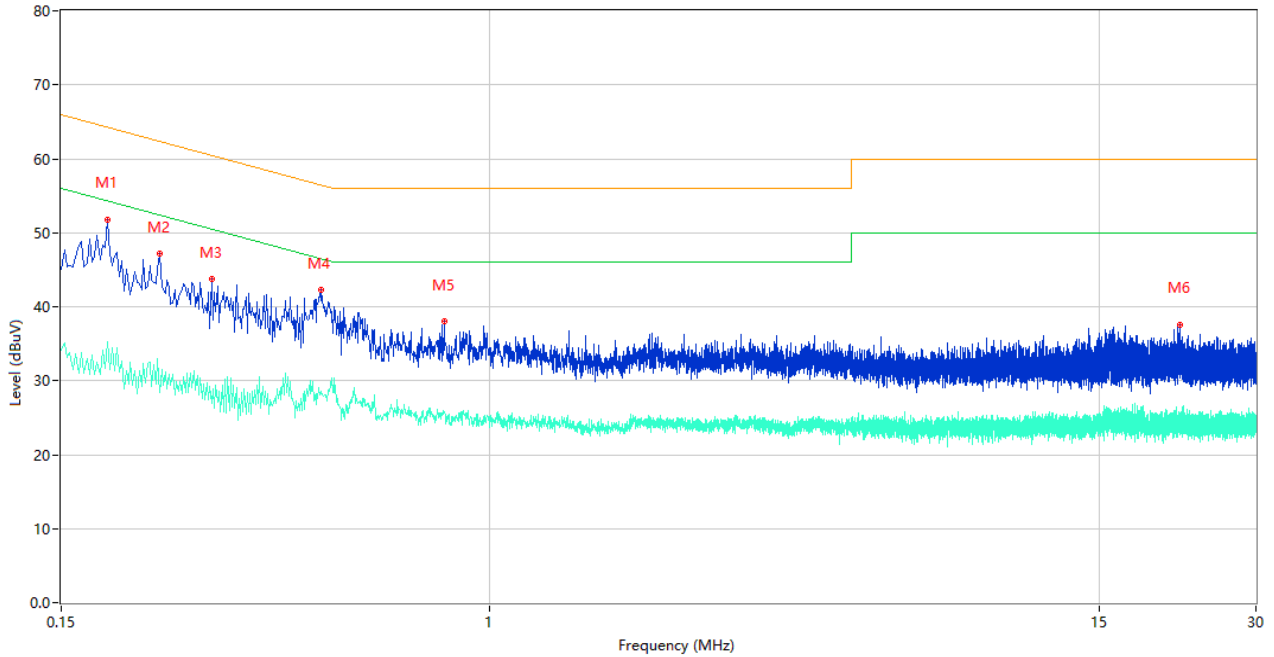
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1198.000	41.13	-18.65	74.0	-32.87	Peak	284.90	100	Horizontal	Pass
1**	1198.000	25.00	-18.65	54.0	-29.00	AV	284.90	100	Horizontal	Pass
2	3302.000	42.60	-9.67	74.0	-31.40	Peak	350.70	100	Horizontal	Pass
2**	3302.000	31.43	-9.67	54.0	-22.57	AV	350.70	100	Horizontal	Pass
3	5788.000	48.82	-6.76	74.0	-25.18	Peak	91.70	100	Horizontal	Pass
3**	5788.000	39.88	-6.76	54.0	-14.12	AV	91.70	100	Horizontal	Pass
4	6939.000	47.83	-4.65	74.0	-26.17	Peak	360.60	100	Horizontal	Pass
4**	6939.000	36.19	-4.65	54.0	-17.81	AV	360.60	100	Horizontal	Pass
5	8612.875	45.41	15.37	74.0	-28.59	Peak	0.80	100	Horizontal	Pass
5**	8612.875	33.86	15.37	54.0	-20.14	AV	0.80	100	Horizontal	Pass
6	12607.688	50.84	21.73	74.0	-23.16	Peak	1.60	100	Horizontal	Pass
6**	12607.688	41.52	21.73	54.0	-12.48	AV	1.60	100	Horizontal	Pass

A.2 Conducted Emission

Test Data and Plots

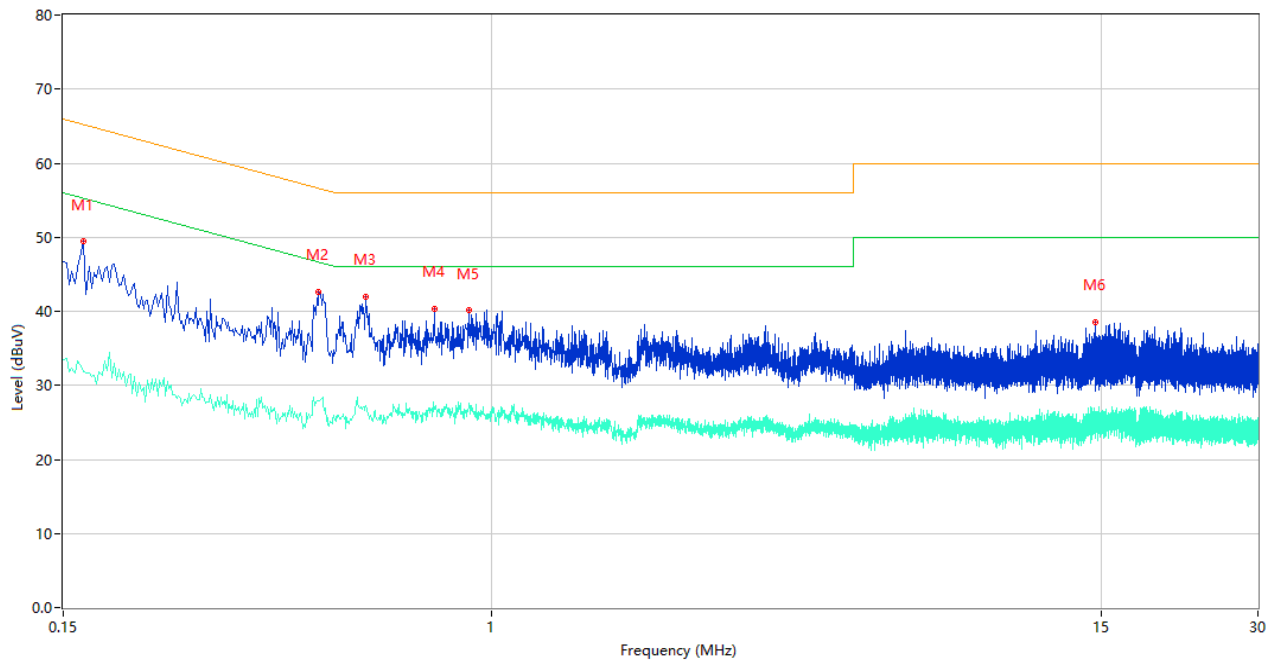
The GSM 850 MHz Test Mode

A.2.1 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.184	51.83	10.39	64.30	-12.47	Peak	L	Pass
1**	0.184	35.28	10.39	54.30	-19.02	AV	L	Pass
2	0.232	47.19	10.36	62.38	-15.19	Peak	L	Pass
2**	0.232	28.46	10.36	52.38	-23.92	AV	L	Pass
3	0.292	43.73	10.34	60.47	-16.74	Peak	L	Pass
3**	0.292	26.98	10.34	50.47	-23.49	AV	L	Pass
4	0.476	42.36	10.29	56.41	-14.05	Peak	L	Pass
4**	0.476	28.60	10.29	46.41	-17.81	AV	L	Pass
5	0.820	38.01	10.27	56.00	-17.99	Peak	L	Pass
5**	0.820	25.79	10.27	46.00	-20.21	AV	L	Pass
6	21.468	37.49	10.58	60.00	-22.51	Peak	L	Pass
6**	21.468	24.61	10.58	50.00	-25.39	AV	L	Pass

A.2.2 N Phase

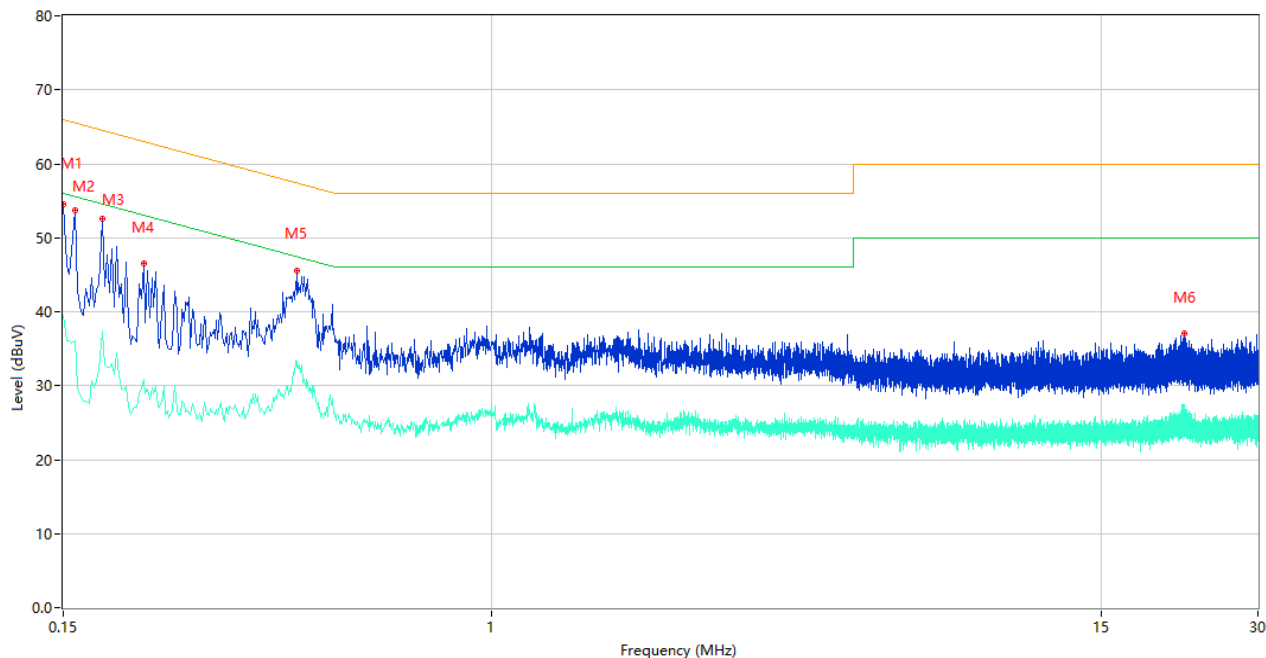


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.164	49.41	10.40	65.26	-15.85	Peak	N	Pass
1**	0.164	31.79	10.40	55.26	-23.47	AV	N	Pass
2	0.466	42.61	10.30	56.58	-13.97	Peak	N	Pass
2**	0.466	27.92	10.30	46.58	-18.66	AV	N	Pass
3	0.574	42.03	10.27	56.00	-13.97	Peak	N	Pass
3**	0.574	27.29	10.27	46.00	-18.71	AV	N	Pass
4	0.778	40.32	10.26	56.00	-15.68	Peak	N	Pass
4**	0.778	26.79	10.26	46.00	-19.21	AV	N	Pass
5	0.906	40.11	10.24	56.00	-15.89	Peak	N	Pass
5**	0.906	27.18	10.24	46.00	-18.82	AV	N	Pass
6	14.570	38.57	10.40	60.00	-21.43	Peak	N	Pass
6**	14.570	26.44	10.40	50.00	-23.56	AV	N	Pass

Test Data and Plots

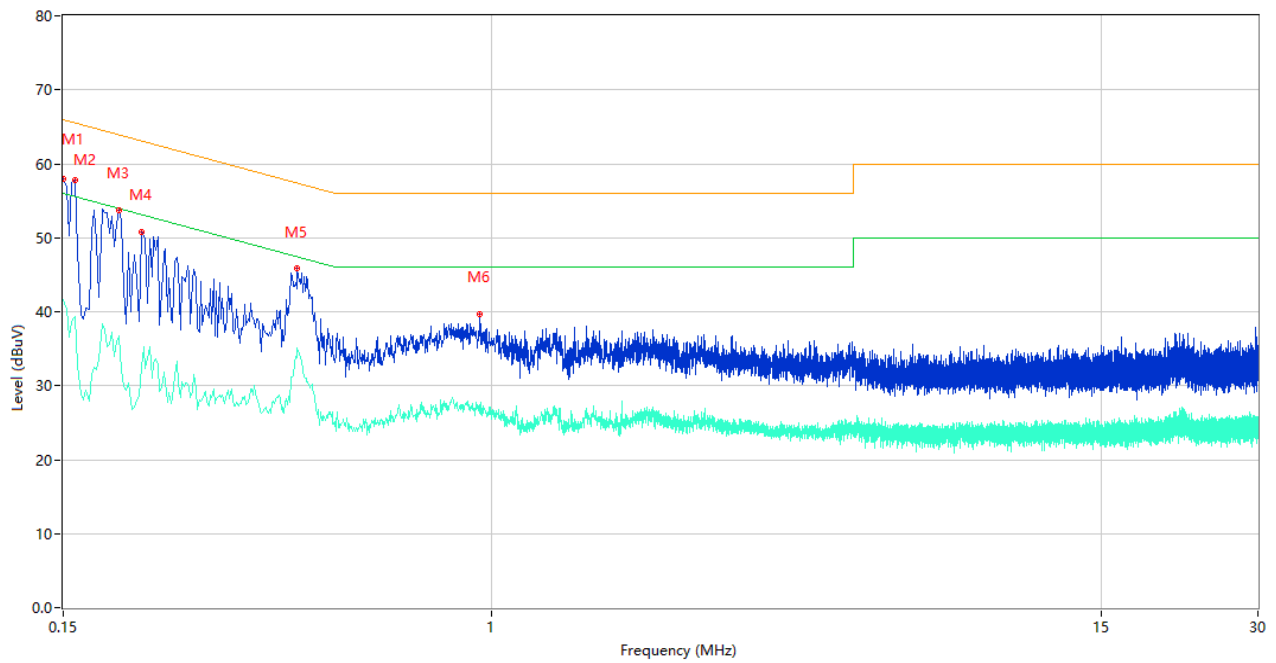
The USB Test Mode

A.2.3 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.150	54.60	10.41	66.00	-11.40	Peak	L	Pass
1**	0.150	39.44	10.41	56.00	-16.56	AV	L	Pass
2	0.158	53.67	10.40	65.57	-11.90	Peak	L	Pass
2**	0.158	36.10	10.40	55.57	-19.47	AV	L	Pass
3	0.178	52.50	10.39	64.58	-12.08	Peak	L	Pass
3**	0.178	37.40	10.39	54.58	-17.18	AV	L	Pass
4	0.214	46.47	10.38	63.05	-16.58	Peak	L	Pass
4**	0.214	30.92	10.38	53.05	-22.13	AV	L	Pass
5	0.424	45.54	10.31	57.37	-11.83	Peak	L	Pass
5**	0.424	33.31	10.31	47.37	-14.06	AV	L	Pass
6	21.702	37.13	10.59	60.00	-22.87	Peak	L	Pass
6**	21.702	24.74	10.59	50.00	-25.26	AV	L	Pass

A.2.4 N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.150	57.90	10.41	66.00	-8.10	Peak	N	Pass
1**	0.150	41.70	10.41	56.00	-14.30	AV	N	Pass
2	0.158	57.73	10.40	65.57	-7.84	Peak	N	Pass
2**	0.158	39.38	10.40	55.57	-16.19	AV	N	Pass
3	0.192	53.68	10.38	63.95	-10.27	Peak	N	Pass
3**	0.192	36.75	10.38	53.95	-17.20	AV	N	Pass
4	0.212	50.83	10.38	63.13	-12.30	Peak	N	Pass
4**	0.212	32.49	10.38	53.13	-20.64	AV	N	Pass
5	0.424	45.80	10.31	57.37	-11.57	Peak	N	Pass
5**	0.424	35.13	10.31	47.37	-12.24	AV	N	Pass
6	0.952	39.69	10.24	56.00	-16.31	Peak	N	Pass
6**	0.952	26.27	10.24	46.00	-19.73	AV	N	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ2010032-AE.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ2010032-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ2010032-AI.PDF”.

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