Shenzhen Huatongwei International Inspection Co., Ltd.
1/F,Bldg 3,Hongfa Hi-tech Industrial Park,Genyu Road,Tianliao,Gongming,Shenzhen,China
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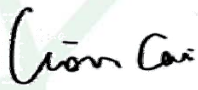
FCC REPORT

Report Reference No. .....:	**TRE1706023402**	R/C…….: 84619
FCC ID .....:	**2AMNORLTP169B-BLACK**	
Applicant's name .....:	**Shenzhen Guarantee Science & technology Co.,Ltd.**	
Address .....:	5F,Bldg D/5F,Bldg.1,Huawan Industry Park, Xixiang Street, Bao'an Dist.ShenZhen City,GuangDong Province,China.	
Manufacturer.....:	Shenzhen Guarantee Science & technology Co.,Ltd.	
Address.....:	5F,Bldg.D/5F,Bldg.1,Huawan Industry Park, Xixiang Street, Bao'an Dist.ShenZhen City,GuangDong Province,China.	
Test item description.....:	**Mobile phone**	
Trade Mark.....:	-	
Model/Type reference .....:	L91C	
Listed Model(s).....:	L9,L92,RLTP169-B-BLACK	
Standard.....:	**47 CFR FCC Part 15 Subpart B - Unintentional Radiators** **ANSI C63.4: 2014**	
Date of receipt of test sample…….....:	Jun.22, 2017	
Date of testing……...:	Jun.23, 2017 - Jun.30, 2017	
Date of issue……:	Jul.01, 2017	
Result .....:	**Pass**	

Compiled by (position+printed name+signature) . :	File administrators Candy Liu	
Supervised by (position+printed name+signature) . :	Project Engineer Lion Cai	
Approved by (position+printed name+signature) . :	RF Manager Hans Hu	

Testing Laboratory Name.....:	**Shenzhen Huatongwei International Inspection Co., Ltd.**
Address .....:	1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China

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The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1. Test standards and Report version

1.1. Test Standards

The tests were performed according to following standards:

47 CFR FCC Part 15 Subpart B - Unintentional Radiators

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 40GHz

1.2. Report version

Version No.	Date of issue	Description
00	Jul.01, 2017	Original

2. Test Description

Test Item	FCC Rule	Result
Conducted Emissions Test	15.107	Pass
Radiated Emission Test	15.109	Pass

Note: The measurement uncertainty is not included in the test result.

3. SUMMARY

3.1. Client Information

Applicant:	Shenzhen Guarantee Science & technology Co.,Ltd.
Address:	5F,Bldg.D/5F,Bldg.1,Huawan Industry Park, Xixiang Street, Bao'an Dist.ShenZhen City,GuangDong Province,China.
Manufacturer:	Shenzhen Guarantee Science & technology Co.,Ltd.
Address:	5F,Bldg.D/5F,Bldg.1,Huawan Industry Park, Xixiang Street, Bao'an Dist.ShenZhen City,GuangDong Province,China.

3.2. Product Description

Name of EUT:	Mobile phone
Trade Mark:	-
Model No.:	L91C
Listed Model(s):	L9,L92,RLTP169-B-BLACK
IMEI:	3522730173863
Power supply:	DC 3.7V From internal battery
Adapter information:	Input: 100-240Va.c., 50/60Hz, 0.3A Output: 5Vd.c., 700mA
Hardware version:	L8_MB_V1.01
Software version:	L91C_113_V1.0.005_20170614

3.3. EUT operation mode

Test mode	Playing Music	Connect to PC (Down loading)	Adapter
1	■		■
2		■	

Note:
1. ■ is operation mode.
Pre-scan above all test mode, found below test mode which it was worse case mode.

Test item	Test mode (Worse case mode)
Conducted emission	Mode 2
Radiated emission	Mode 2

3.4. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

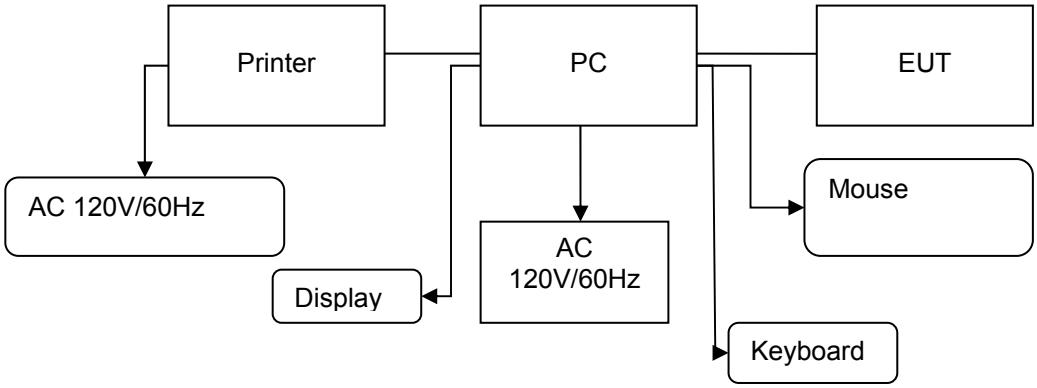
● - supplied by the manufacturer

○ - supplied by the lab

		Length (m) :	
		Shield :	
		Detachable :	
		Manufacturer :	
		Model No. :	-

3.5. Configuration of Tested System

Configuration of Tested System



Equipment Used in Tested System

No.	Equipment	Manufacturer	Model No.	Serial No.	Length	shielded/unshielded	Notes
1	PC	DELL	DIMENSION E520	1RNN42X	/	/	DOC
2	Printer	ESPOn	C3990	C3990A	/	/	DOC
3	Mouse	DELL	MO56UOA	G0E02SY7	1.00m	unshielded	DOC
4	Display	DELL	1707FPt	CN-OFC237-71618-65G-AAKC	/	/	DOC
5	Keyboard	DELL	L100	CNRH65665890726009L	/	/	DOC
6	USB Cable (EUT to PC)	ITALCOM GROUP	USB 2.0	N/A	0.80m	unshielded	N/A
7	USB Cable (Printer to PC)	Genshuo	USB 2.0	N/A	1.20m	unshielded	N/A
8	Power line	/	/	N/A	1.00m	unshielded	N/A

4. TEST ENVIRONMENT

4.1. Address of the test laboratory

Laboratory:Shenzhen Huatongwei International Inspection Co., Ltd.
Address: 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China
Phone: 86-755-26748019 Fax: 86-755-26748089

4.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: 3902.01

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 317478

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 317478.

IC-Registration No.: 5377B

Two 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377B.

ACA

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

4.3. Equipments Used during the Test

Conducted Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI TEST RECEIVER	Rohde & Schwarz	ESCI	100106	2016/11/13
2	ARTIFICIAL MAINS	Rohde & Schwarz	ESH2-Z5	100028	2016/11/13
3	PULSE LIMITER	Rohde & Schwarz	ESHSZ2	100044	2016/11/13
4	EMI TEST SOFTWARE	Rohde & Schwarz	ES-K1	N/A	N/A

Radiated Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ULTRA-BROADBAND ANTENNA	ShwarzBeck	VULB9163	538	2016/11/13
2	EMI TEST RECEIVER	Rohde & Schwarz	ESI 26	100009	2016/11/13
3	EMI TEST Software	Audix	E3	N/A	N/A
4	TURNTABLE	MATURO	TT2.0	----	N/A
5	ANTENNA MAST	MATURO	TAM-4.0-P	----	N/A
6	EMI TEST Software	Rohde & Schwarz	ESK1	N/A	N/A
7	ULTRA-BROADBAND ANTENNA	Rohde&Schwarz	HL562	100015	2016/11/13
8	Amplifer	Sonoma	310N	E009-13	2016/11/13
9	JS amplifer	Rohde & Schwarz	JS4-00101800-28-5A	F201504	2016/11/13
11	TURNTABLE	ETS	2088	2149	N/A
12	ANTENNA MAST	ETS	2075	2346	N/A
13	HORN ANTENNA	Rohde&Schwarz	HF906	100039	2016/11/13

The calibration interval was one year.

4.4. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35°C
lative Humidity:	30~60 %
Air Pressure:	950~1050mba

4.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.24 dB	(1)
Radiated Emission	1~18GHz	5.16 dB	(1)
Radiated Emission	18-40GHz	5.54 dB	(1)
Conducted Disturbance	0.15~30MHz	3.39 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

5. TEST CONDITIONS AND RESULTS

5.1. Conducted Emissions Test

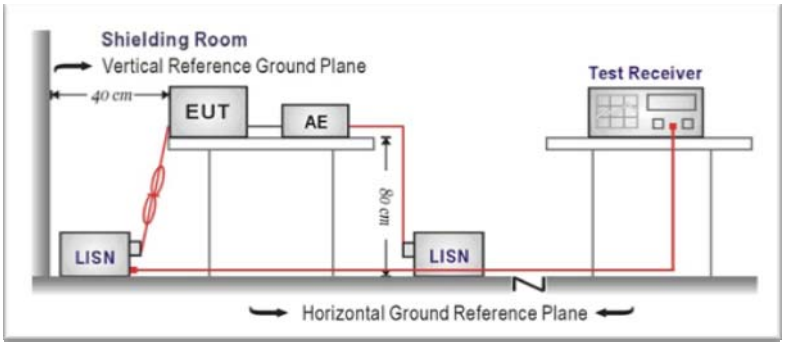
LIMIT

FCC CFR Title 47 Part 15 Subpart B Section 15.107:

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST CONFIGURATION



TEST PROCEDURE

1. The EUT was setup according to ANSI C63.4-2014.
2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above theconducting ground plane. The vertical conducting plane was located 40 cm to the rear of theEUT. All other surfaces of EUT were at least 80 cm from any other grounded conductingsurface.
3. The EUT and simulators are connected to the main power through a line impedancestabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for themeasuring equipment.
4. The peripheral devices are also connected to the main power through aLISN. (Please refer to the block diagram of the test setup and photographs)
5. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor,was individually connected through a LISN to the input power source.
6. The excess length of the power cord between the EUT and the LISN receptacle were foldedback and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
7. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHzusing a receiver bandwidth of 9 kHz.
8. During the above scans, the emissions were maximized by cable manipulation.

TEST MODE:

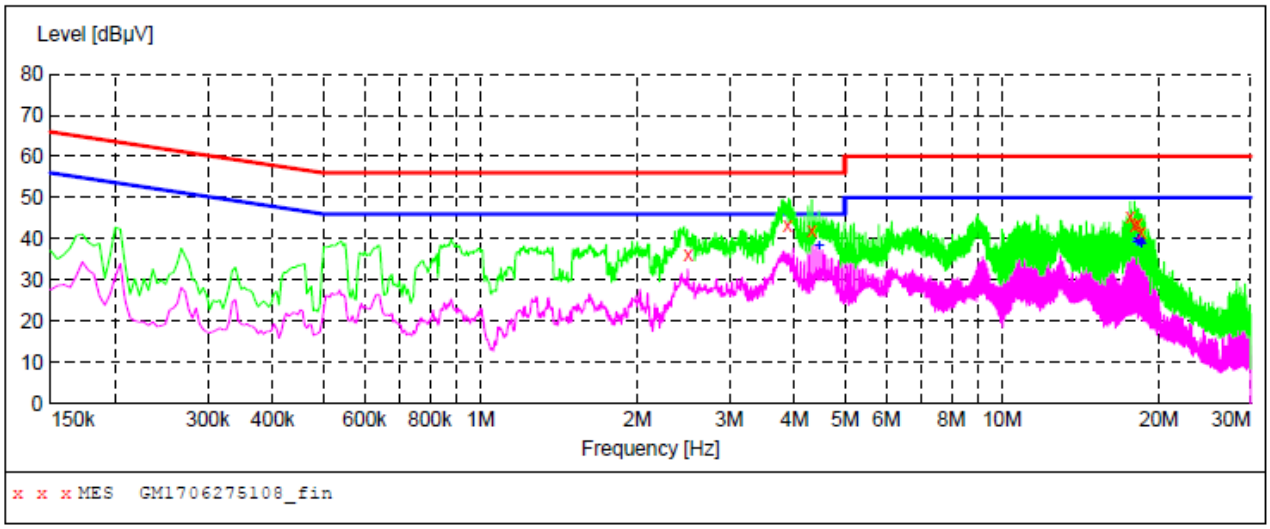
Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note:Transd=Cable lose+ PULSE LIMITER factor+ ARTIFICIAL MAINS factor; Margin= Limit -Level

Test Line:	L



MEASUREMENT RESULT: "GM1706275108_fin"

6/27/2017 10:37PM

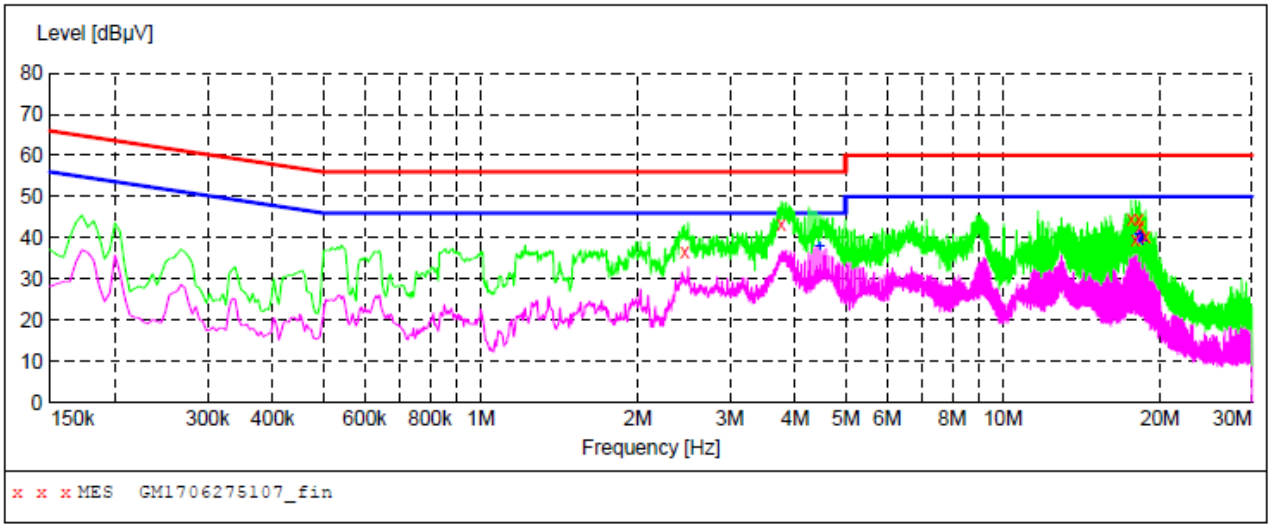
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
2.503500	36.20	10.2	56	19.8	QP	L1	GND
3.889500	43.30	10.3	56	12.7	QP	L1	GND
4.317000	42.20	10.3	56	13.8	QP	L1	GND
17.619000	45.20	10.5	60	14.8	QP	L1	GND
17.956500	43.50	10.5	60	16.5	QP	L1	GND
18.222000	43.90	10.5	60	16.1	QP	L1	GND
18.492000	41.80	10.5	60	18.2	QP	L1	GND

MEASUREMENT RESULT: "GM1706275108_fin2"

6/27/2017 10:37PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
4.456500	38.10	10.3	46	7.9	AV	L1	GND
18.159000	39.00	10.5	50	11.0	AV	L1	GND
18.226500	40.10	10.5	50	9.9	AV	L1	GND
18.294000	40.10	10.5	50	9.9	AV	L1	GND
18.361500	39.60	10.5	50	10.4	AV	L1	GND
18.429000	38.90	10.5	50	11.1	AV	L1	GND
18.496500	38.50	10.5	50	11.5	AV	L1	GND

Test Line:	N



MEASUREMENT RESULT: "GM1706275107_fin"

6/27/2017 10:33PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
2.463000	36.80	10.2	56	19.2	QP	N	GND
3.763500	43.10	10.3	56	12.9	QP	N	GND
17.614500	44.60	10.5	60	15.4	QP	N	GND
17.961000	39.40	10.5	60	20.6	QP	N	GND
18.222000	44.40	10.5	60	15.6	QP	N	GND
18.289500	43.00	10.5	60	17.0	QP	N	GND
18.762000	40.20	10.5	60	19.8	QP	N	GND

MEASUREMENT RESULT: "GM1706275107_fin2"

6/27/2017 10:33PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
4.456500	37.80	10.3	46	8.2	AV	N	GND
18.159000	39.70	10.5	50	10.3	AV	N	GND
18.226500	40.90	10.5	50	9.1	AV	N	GND
18.294000	40.80	10.5	50	9.2	AV	N	GND
18.361500	40.30	10.5	50	9.7	AV	N	GND
18.429000	39.70	10.5	50	10.3	AV	N	GND
18.496500	39.20	10.5	50	10.8	AV	N	GND

5.2. Radiated Emission Test

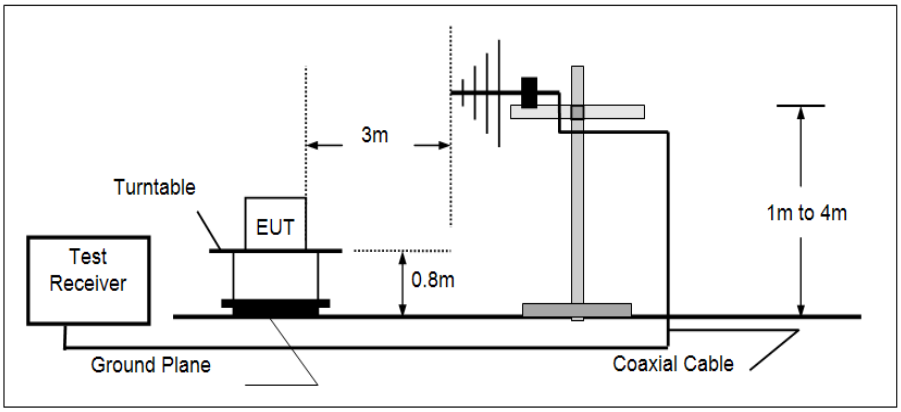
LIMIT

FCC CFR Title 47 Part 15 Subpart B Section 15.109

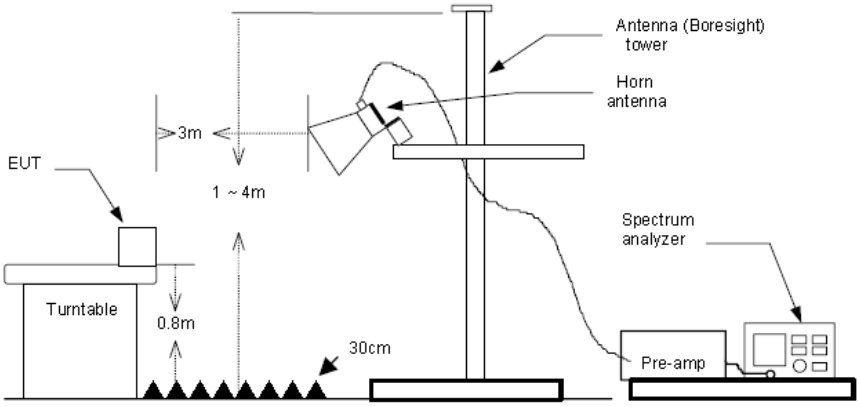
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

TEST CONFIGURATION

- 30MHz ~ 1GHz



- Above 1GHz



TEST PROCEDURE

1. The EUT was tested according to ANSI C63.4:2014.
2. The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated360 degrees to determine the position of the maximum emission level.
3. The EUT waspositioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. Thisis repeated for both horizontal and vertical polarization of the antenna.
5. Use the following spectrum analyzer settings
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Below 1GHz, RBW=120KHz, VBW=300KHz, Sweep=auto, Detector function=peak, Trace=max hold; If the emission level of the EUT measured by the peak detectoris 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, theemission measurement will be repeated using the quasi-peak detector and reported.
   (3) Above 1GHz, RBW=1MHz, VBW=3MHz

TEST MODE:

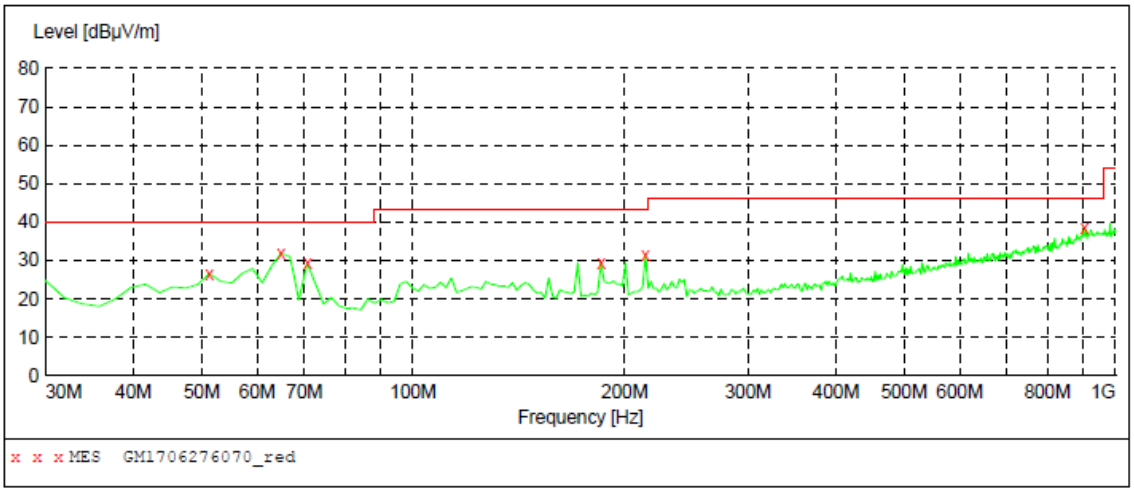
Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note: Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor

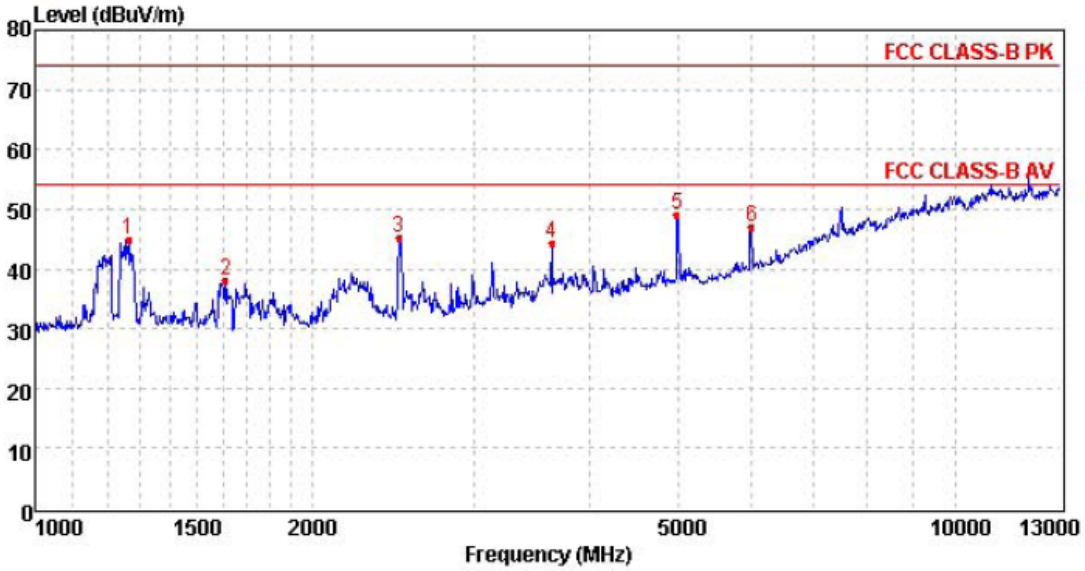
➢ Vertical



MEASUREMENT RESULT: "GM1706276070_red"

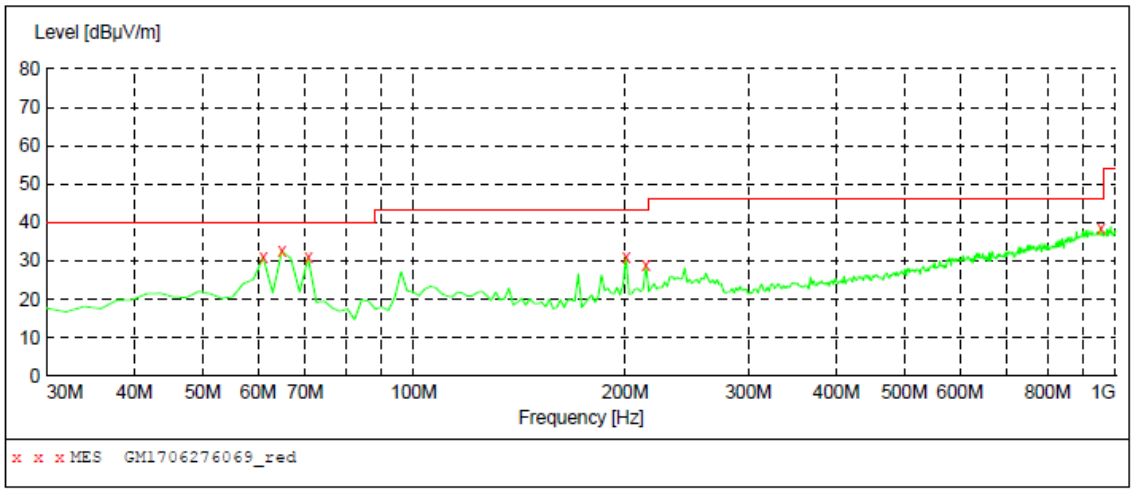
6/27/2017 5:34PM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
51.340000	26.60	-8.8	40.0	13.4	QP	100.0	88.00	VERTICAL
64.920000	31.90	-11.4	40.0	8.1	QP	100.0	3.00	VERTICAL
70.740000	29.20	-13.3	40.0	10.8	QP	100.0	360.00	VERTICAL
185.200000	29.60	-11.7	43.5	13.9	QP	100.0	77.00	VERTICAL
214.300000	31.60	-10.3	43.5	11.9	QP	100.0	0.00	VERTICAL
903.000000	38.60	6.8	46.0	7.4	QP	100.0	254.00	VERTICAL



Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1262.90	50.47	26.24	4.77	36.54	44.94	74.00	-29.06	Peak
2	1611.36	44.18	24.94	5.59	36.74	37.97	74.00	-36.03	Peak
3	2485.71	48.89	27.26	6.83	37.87	45.11	74.00	-28.89	Peak
4	3642.73	44.97	29.30	8.32	38.26	44.33	74.00	-29.67	Peak
5	4981.14	44.35	31.48	9.66	36.45	49.04	74.00	-24.96	Peak
6	6006.85	39.31	32.50	10.68	35.44	47.05	74.00	-26.95	Peak

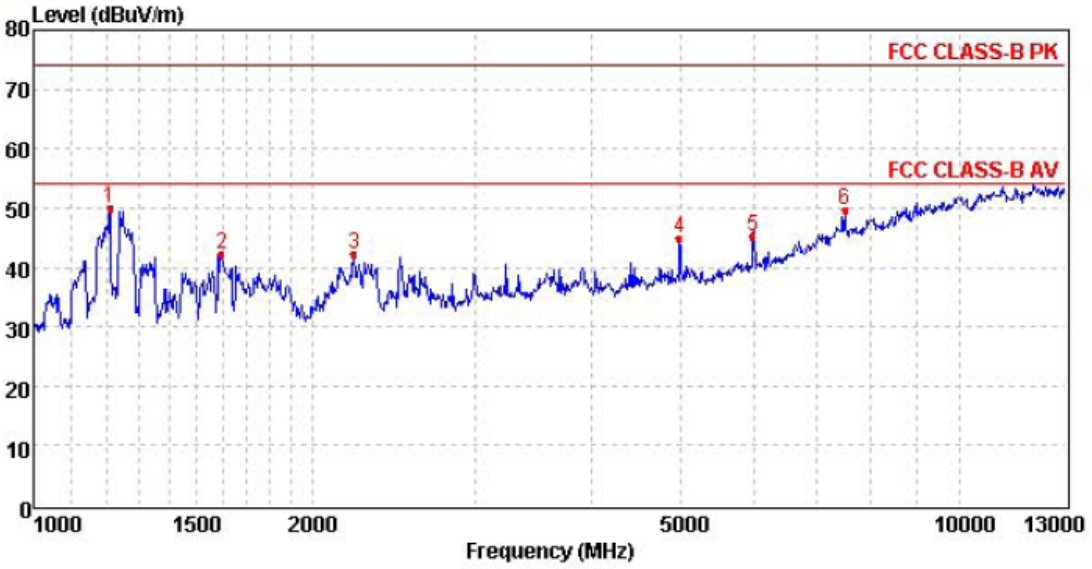
➢ Horizontal



MEASUREMENT RESULT: "GM1706276069_red"

6/27/2017 5:31PM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
61.040000	31.00	-10.3	40.0	9.0	QP	100.0	261.00	HORIZONTAL
64.920000	32.60	-11.4	40.0	7.4	QP	300.0	304.00	HORIZONTAL
70.740000	30.90	-13.3	40.0	9.1	QP	300.0	328.00	HORIZONTAL
200.720000	31.20	-9.9	43.5	12.3	QP	100.0	160.00	HORIZONTAL
214.300000	28.90	-10.3	43.5	14.6	QP	100.0	148.00	HORIZONTAL
953.440000	38.50	7.3	46.0	7.5	QP	300.0	359.00	HORIZONTAL



Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1209.02	55.55	26.29	4.68	36.57	49.95	74.00	-24.05	Peak
2	1594.92	48.53	24.94	5.56	36.71	42.32	74.00	-31.68	Peak
3	2220.43	45.49	27.62	6.47	37.40	42.18	74.00	-31.82	Peak
4	4981.14	40.16	31.48	9.66	36.45	44.85	74.00	-29.15	Peak
5	5976.11	37.55	32.45	10.66	35.43	45.23	74.00	-28.77	Peak
6	7508.61	36.13	36.11	12.42	34.91	49.75	74.00	-24.25	Peak

6. Test Setup Photos of the EUT

Conducted Emission Connect to PC

Radiated Emission (30MHz-1GHz) Connect to PC

Radiated Emission (above 1GHz) Connect to PC

7. External and Internal photos of the EUT

Reference to Test Report No.: TRE1706023401.

.....End of Report.....