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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TEST REPORT

Report Reference No. ..... :	**CHTEW2012012805**	Report verification:
Project No. ..... :	**SHT2012030403EW**	
FCC ID ..... :	**ZSW-30-089**	
Applicant's name ..... :	**b mobile HK Limited**	
Address.....:	Flat 18; 14/F Block 1; Golden Industrial Building;16-26 Kwai Tak Street; Kwai Chung; New Territories; Hong Kong.	
Manufacturer.....:	b mobile HK Limited	
Address.....:	Flat 18; 14/F Block 1; Golden Industrial Building;16-26 Kwai Tak Street; Kwai Chung; New Territories; Hong Kong.	
Test item description ..... :	**Mobile Phone**	
Trade Mark .....:	Bmobile	
Model/Type reference.....:	AX688	
Listed Model(s) .....:	AX688+	
Standard ..... :	**47 CFR FCC Part 15 Subpart B**	
Date of receipt of test sample.....:	Dec. 09, 2020	
Date of testing.....:	Dec. 10, 2020- Dec. 17, 2020	
Date of issue.....:	Dec. 18, 2020	
Result.....:	**Pass**	

Compiled by (position+printed name+signature)..:	File administrators Silvia Li	Silvia Li
Supervised by (position+printed name+signature)..:	Project Engineer Xiaodong Zhao	Xiaodong Zhao
Approved by (position+printed name+signature)..:	RF Manager Hans Hu	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

Contents

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 information

Revision No.	Date of issue	Description
N/A	2020-12-18	Add list models, update supplier of power IC,make difference test on Radiated Emissions, others are the same as report No. CHTEW19070028

2. TEST DESCRIPTION

Test Item	Section in CFR 47	Result	Test Engineer
Conducted Emissions	15.107(a)	PASS	ZhiWen Liu
Radiated Emissions	15.109(a)	PASS	Pan Xie

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

3. SUMMARY

3.1. Client Information

Applicant:	b mobile HK Limited
Address:	Flat 18; 14/F Block 1; Golden Industrial Building;16-26 Kwai Tak Street; Kwai Chung; New Territories; Hong Kong.
Manufacturer:	b mobile HK Limited
Address:	Flat 18; 14/F Block 1; Golden Industrial Building;16-26 Kwai Tak Street; Kwai Chung; New Territories; Hong Kong.

3.2. Product Description

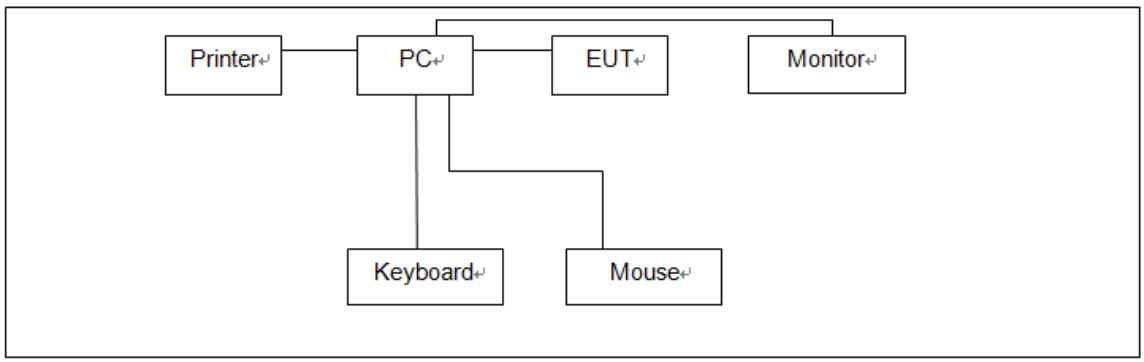
Name of EUT:	Mobile Phone
Trade Mark:	Bmobile
Model No.:	AX688
Listed Model(s)	AX688+
Power supply:	DC 3.7V
Adapter information:	Input:100-240Va.c., 50/60Hz, 0.15A Output:5.0Vd.c., 500mA

3.3. EUT operation mode

Test mode	Describe
Camera recording mode	Keep the EUT in Camera recording status
Video Playing mode	Keep the EUT in Video Playing status
Data exchange mode	Keep the EUT in Data exchange with PC status
Video Playing mode	C2PC difference test

Pre-scan all of above modes. Only show Video Playing mode for radiated emission as C2PC test, and dated exchange mode for radiated emission, which is the worst case on the report.

3.4. Configuration of Tested System



3.5. Support unit used in test configuration

Item	Equipment	Manufacturer	Model No.	FCC ID / FCC DoC	Data Cable	Power Cord
1	PC	DELL	OptiPlex 3020 MT	FCC DoC	N/A	Unshielded 1.8m
2	Monitor	DELL	E1912Hf	FCC DoC	N/A	Unshielded 1.8m
3	Keyboard	DELL	SK8115	FCC DoC	Unshielded, 1.5m	N/A
4	Mouse	DELL	MS111-T	FCC DoC	Unshielded, 1.5m	N/A
5	Printer	EPSON	L101	FCC DoC	N/A	Unshielded 1.8m

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.: 762235

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 762235.

IC-Registration No.: 5377A

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. 5377A.

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. Environmental conditions

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

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

4.4. 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 Emissions	30~1000MHz	4.90 dB	(1)
Radiated Emissions	1~18GHz	4.96 dB	(1)
Conducted Disturbance	0.15~30MHz	3.02 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

4.5. Equipments Used during the Test

●	Conducted Emission					
Used	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Shielded Room	Albatross projects	N/A	N/A	2018/09/28	2023/09/27
●	EMI Test Receiver	R&S	ESCI	101247	2018/10/27	2019/10/26
●	Artificial Mains	SCHWARZBECK	NNLK 8121	573	2018/10/27	2019/10/26
●	Pulse Limiter	R&S	ESH3-Z2	100499	2018/10/27	2019/10/26
●	RF Connection Cable	HUBER+SUHNER	EF400	N/A	2018/11/15	2019/11/14
●	Test Software	R&S	ES-K1	N/A	N/A	N/A
○	Single Balanced Telecom Pair ISN	FCC	FCC-TLISN-T2-02	20371	2018/10/28	2019/10/27
○	Two Balanced Telecom Pairs ISN	FCC	FCC-TLISN-T4-02	20373	2018/10/28	2019/10/27
○	Four Balanced Telecom Pairs ISN	FCC	FCC-TLISN-T8-02	20375	2018/10/28	2019/10/27
○	V-Network	R&S	ESH3-Z6	100211	2018/10/27	2019/10/26
○	V-Network	R&S	ESH3-Z6	100210	2018/10/27	2019/10/26
○	2-Line V-Network	R&S	ESH3-Z5	100049	2018/10/27	2019/10/26
●	Radiated emission-6th test site					
Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Semi-Anechoic Chamber	Albatross projects	HTWE0127	SAC-3m-02	C11121	2018/09/30	2021/09/29
●	EMI Test Receiver	R&S	HTWE0099	ESCI	100900	2020/10/19	2021/10/18
●	Loop Antenna	R&S	HTWE0170	HFH2-Z2	100020	2018/04/02	2021/04/01
●	Ultra-Broadband Antenna	SCHWARZBECK	HTWE0119	VULB9163	546	2020/04/28	2023/04/27
●	Pre-Amplifer	SCHWARZBECK	HTWE0295	BBV 9742	N/A	2020/11/12	2021/11/11
●	RF Connection Cable	HUBER+SUHNER	HTWE0062-01	N/A	N/A	2020/05/27	2021/05/26
●	RF Connection Cable	HUBER+SUHNER	HTWE0062-02	SUCOFLEX104	501184/4	2020/05/27	2021/05/26
●	Test Software	R&S	N/A	ES-K1	N/A	N/A	N/A
●	Radiated emission-7th test site					
Used	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Semi-Anechoic Chamber	Albatross projects	SAC-3m-01	N/A	2018/09/30	2021/09/29
●	Spectrum Analyzer	R&S	FSP40	100597	2018/10/27	2019/10/26
●	Horn Antenna	SCHWARZBECK	9120D	1011	2017/03/27	2020/03/26
○	Pre-amplifier	BONN	BLWA0160-2M	1811887	2018/11/14	2019/11/13
●	Pre-amplifier	CD	PAP-0102	12004	2018/11/14	2019/11/13
●	Broadband Pre-amplifier	SCHWARZBECK	BBV 9718	9718-248	2019/04/26	2020/04/25
●	RF Connection Cable	HUBER+SUHNER	RE-7-FH	N/A	2018/11/15	2019/11/14
●	RF Connection Cable	HUBER+SUHNER	RE-7-FL	N/A	2018/11/15	2019/11/14
●	Test Software	Audix	E3	N/A	N/A	N/A
●	Turntable	Maturo Germany	TT2.0-1T	N/A	N/A	N/A
●	Antenna Mast	Maturo Germany	CAM-4.0-P-12	N/A	N/A	N/A

5. TEST CONDITIONS AND RESULTS

5.1. Conducted Emissions Test

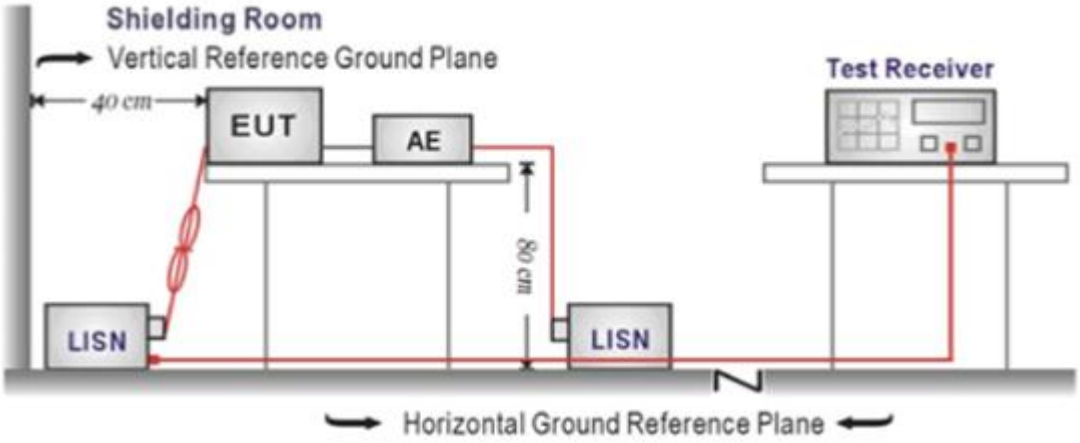
LIMIT

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 plat form of nominal size, 1 m by 1.5 m, raised 10 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 10 cm from any other grounded conducting surface.
3. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50ohm / 50uH coupling impedance for the measuring equipment.
4. The peripheral devices are also connected to the main power through a LISN. (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 folded back 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 30MHz using a receiver bandwidth of 9 kHz.
8. During the above scans, the emissions were maximized by cable manipulation.

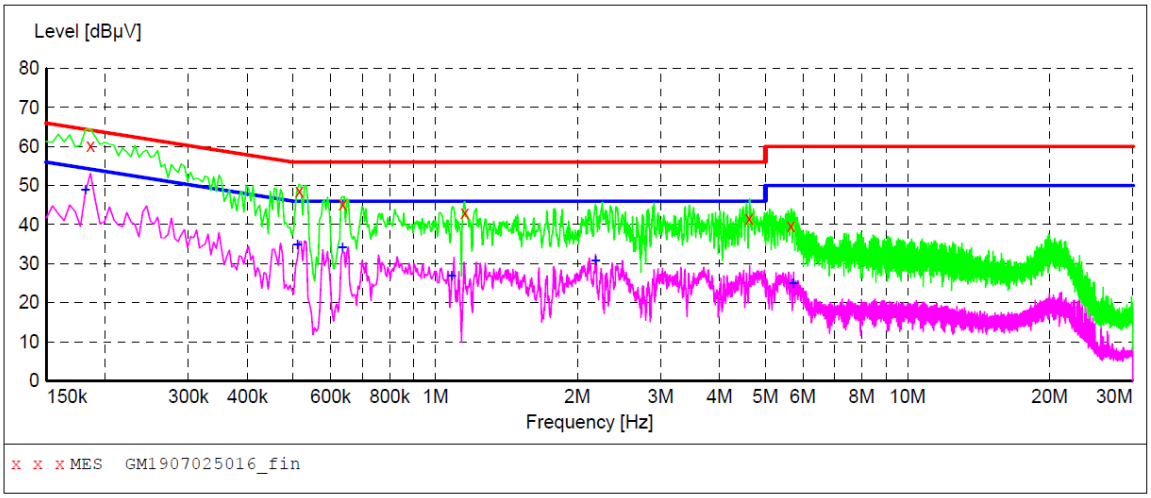
TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Test Line:	L



MEASUREMENT RESULT: "GM1907025016_fin"

7/2/2019 4:07PM

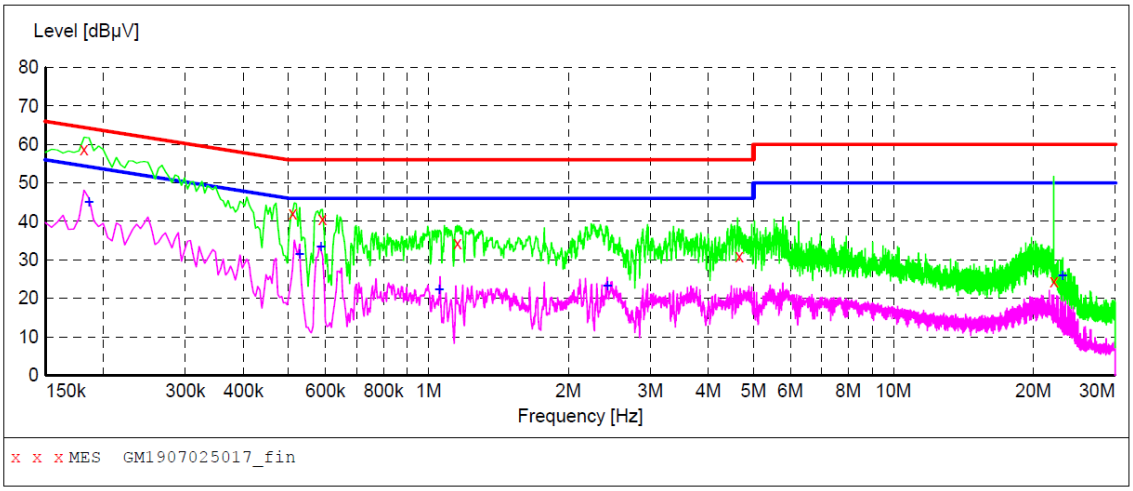
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.186000	60.30	9.9	64	3.9	QP	L1	GND
0.514500	48.70	9.9	56	7.3	QP	L1	GND
0.636000	45.20	9.9	56	10.8	QP	L1	GND
1.153500	43.20	9.9	56	12.8	QP	L1	GND
4.618500	41.50	9.9	56	14.5	QP	L1	GND
5.658000	39.60	10.0	60	20.4	QP	L1	GND

MEASUREMENT RESULT: "GM1907025016_fin2"

7/2/2019 4:07PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.181500	48.80	9.9	54	5.6	AV	L1	GND
0.510000	34.80	9.9	46	11.2	AV	L1	GND
0.636000	34.10	9.9	46	11.9	AV	L1	GND
1.081500	26.90	9.9	46	19.1	AV	L1	GND
2.184000	30.80	9.9	46	15.2	AV	L1	GND
5.721000	24.90	10.0	50	25.1	AV	L1	GND

Test Line:	N



MEASUREMENT RESULT: "GM1907025017_fin"

7/2/2019 4:10PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.181500	58.80	9.9	64	5.6	QP	N	GND
0.510000	42.10	9.9	56	13.9	QP	N	GND
0.591000	40.60	9.9	56	15.4	QP	N	GND
1.153500	34.40	9.9	56	21.6	QP	N	GND
4.654500	31.00	9.9	56	25.0	QP	N	GND
22.150500	24.40	10.3	60	35.6	QP	N	GND

MEASUREMENT RESULT: "GM1907025017_fin2"

7/2/2019 4:10PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.186000	45.00	9.9	54	9.2	AV	N	GND
0.528000	31.50	9.9	46	14.5	AV	N	GND
0.586500	33.40	9.9	46	12.6	AV	N	GND
1.054500	22.20	9.9	46	23.8	AV	N	GND
2.422500	23.30	9.9	46	22.7	AV	N	GND
23.127000	25.80	10.3	50	24.2	AV	N	GND

5.2. Radiated Emissions Test

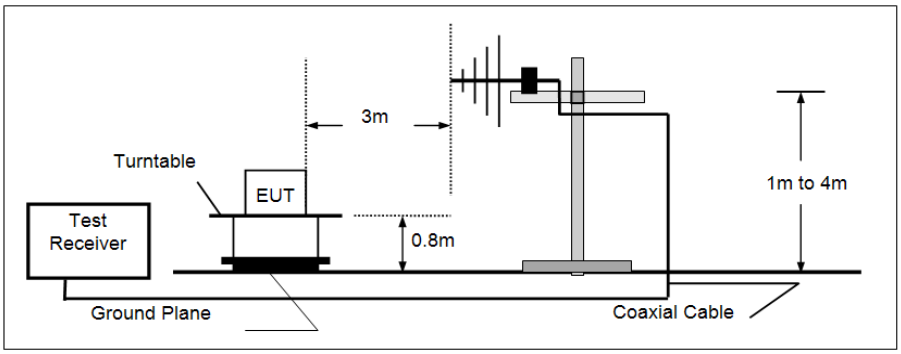
LIMIT

FCC CFR Title 47 Part 15 Subpart B Section 15.109

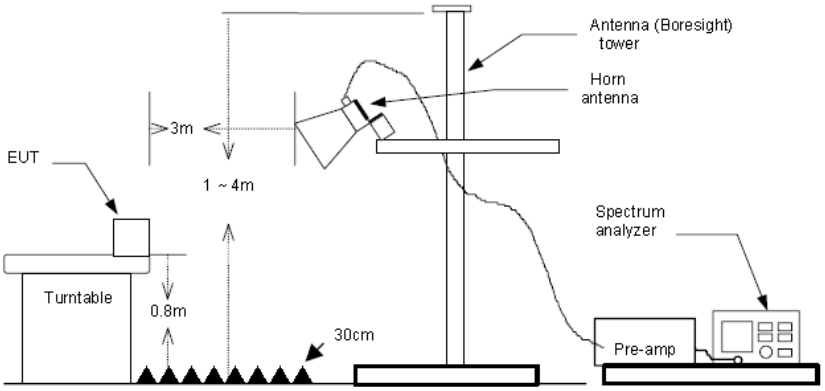
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

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.
3. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
4. The EUT waspositioned such that the distance from antenna to the EUT was 3 meters.
5. 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.
6. 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) From 1GHz to 5th harmonic, RBW=1MHz, VBW=3MHz

TEST MODE:

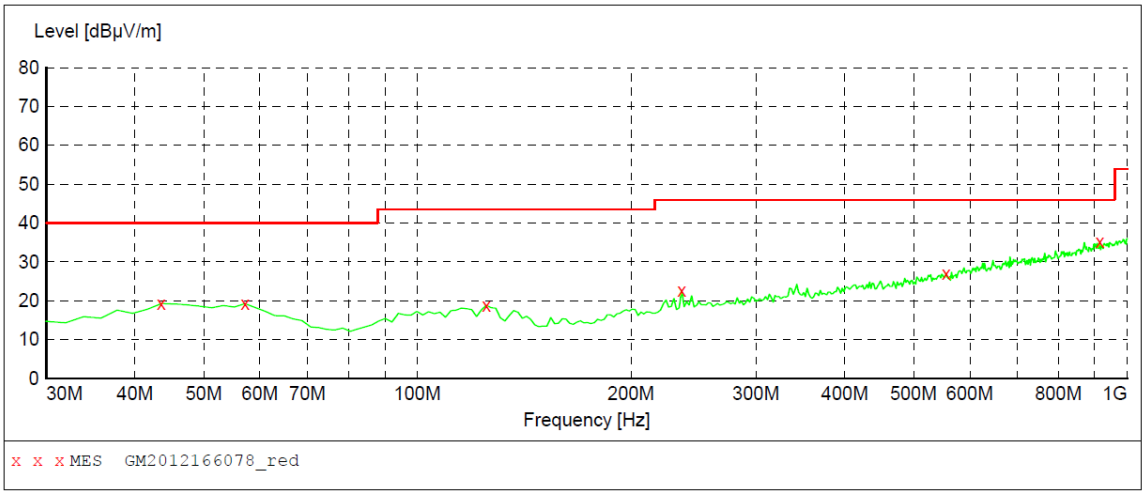
Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

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

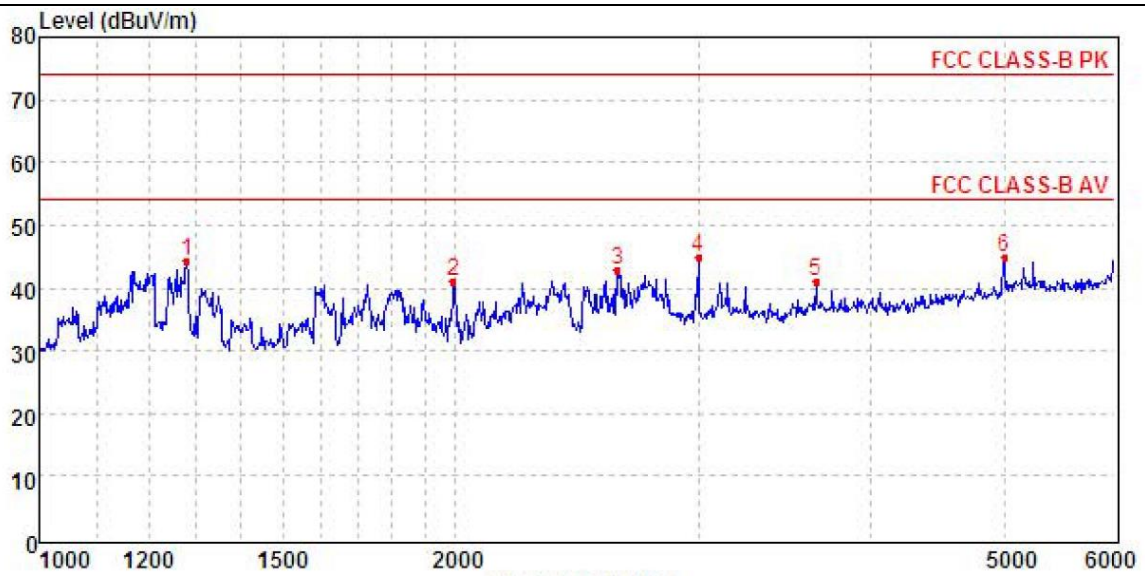
Polarization:	Horizontal



MEASUREMENT RESULT: "GM2012166078_red"

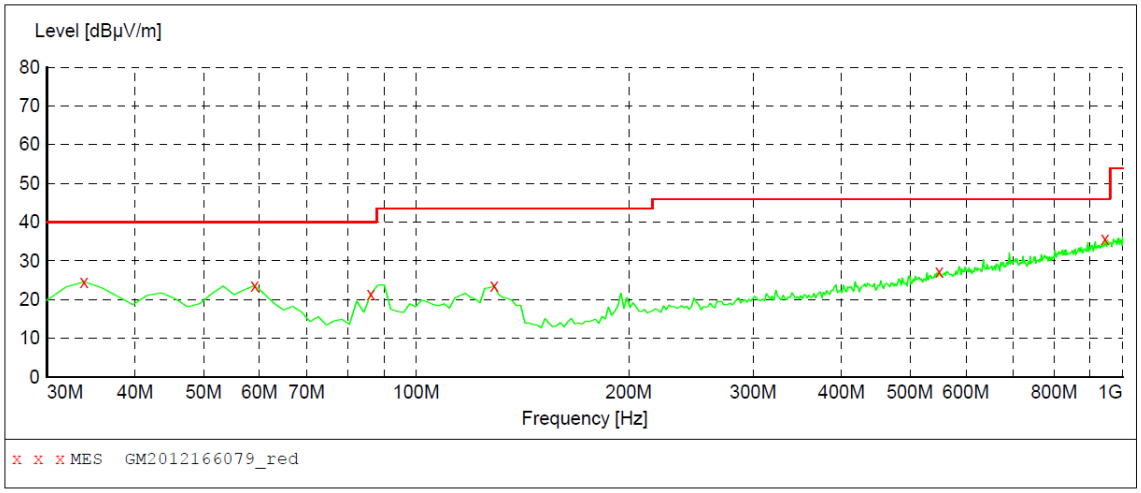
12/16/2020 8:03PM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
43.580000	19.30	-8.7	40.0	20.7	QP	300.0	145.00	HORIZONTAL
57.160000	19.30	-8.7	40.0	20.7	QP	300.0	359.00	HORIZONTAL
125.060000	18.80	-12.3	43.5	24.7	QP	300.0	18.00	HORIZONTAL
235.640000	22.70	-8.6	46.0	23.3	QP	100.0	80.00	HORIZONTAL
555.740000	27.10	0.3	46.0	18.9	QP	100.0	360.00	HORIZONTAL
914.640000	35.10	7.5	46.0	10.9	QP	300.0	269.00	HORIZONTAL



Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1278.22	50.01	26.22	5.73	37.61	44.35	74.00	-29.65	Peak
2	1993.37	45.90	26.24	7.14	38.18	41.10	74.00	-32.90	Peak
3	2622.08	43.98	27.87	8.44	37.40	42.89	74.00	-31.11	Peak
4	2999.21	44.95	28.60	8.95	37.67	44.83	74.00	-29.17	Peak
5	3646.07	39.61	29.30	9.99	37.92	40.98	74.00	-33.02	Peak
6	4988.86	37.27	31.49	11.88	35.59	45.05	74.00	-28.95	Peak

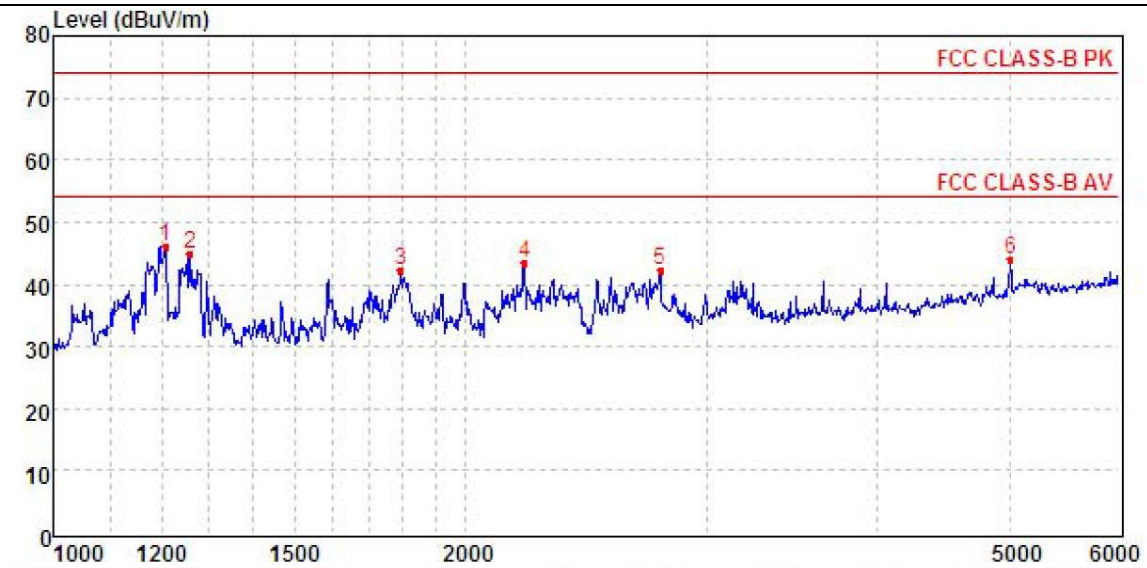
Polarization:	Vertical



MEASUREMENT RESULT: "GM2012166079_red"

12/16/2020 8:06PM

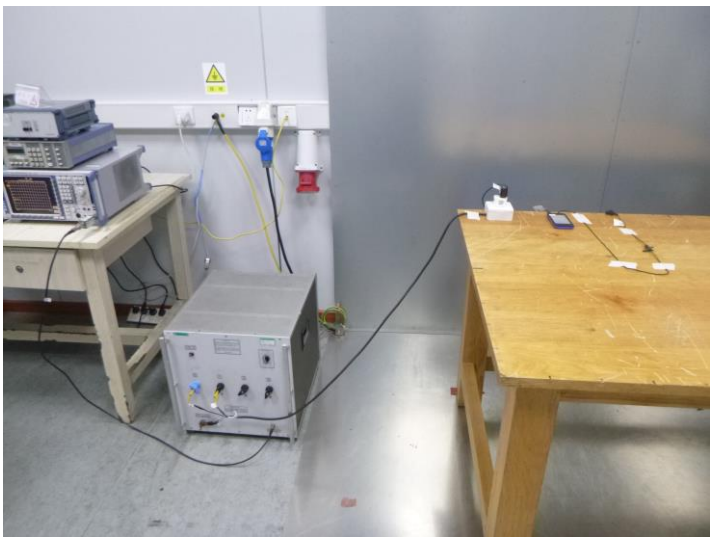
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
33.880000	24.60	-12.1	40.0	15.4	QP	100.0	245.00	VERTICAL
59.100000	23.60	-9.1	40.0	16.4	QP	100.0	0.00	VERTICAL
86.260000	21.40	-13.4	40.0	18.6	QP	100.0	274.00	VERTICAL
128.940000	23.60	-12.7	43.5	19.9	QP	100.0	195.00	VERTICAL
549.920000	27.20	0.2	46.0	18.8	QP	100.0	207.00	VERTICAL
943.740000	35.70	8.0	46.0	10.3	QP	100.0	324.00	VERTICAL



Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1207.00	51.88	26.29	5.54	37.65	46.06	74.00	-27.94	Peak
2	1260.03	50.51	26.24	5.68	37.65	44.78	74.00	-29.22	Peak
3	1793.40	47.94	25.39	6.73	37.94	42.12	74.00	-31.88	Peak
4	2207.71	46.30	27.55	7.66	38.11	43.40	74.00	-30.60	Peak
5	2776.81	40.03	28.10	8.87	34.79	42.21	74.00	-31.79	Peak
6	4997.81	36.16	31.50	11.90	35.56	44.00	74.00	-30.00	Peak

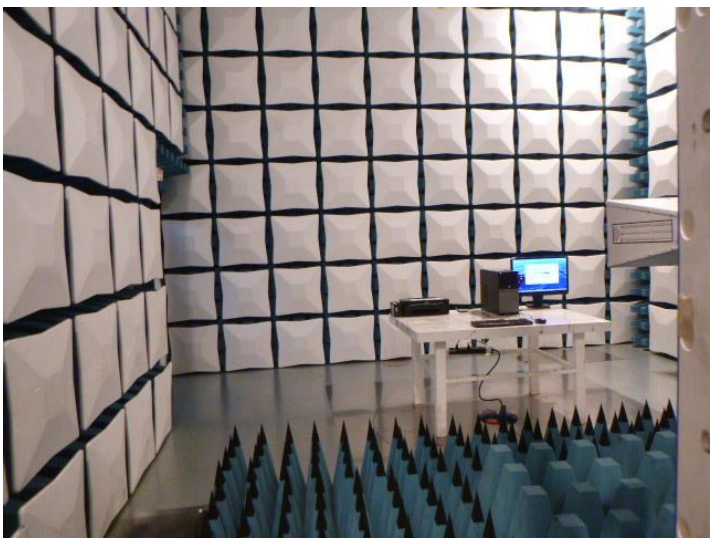
6. TEST SETUP PHOTOS OF THE EUT

Conducted Emissions (AC Mains)



Radiated Emissions (30MHz-1GHz)

Radiated Emissions (Above 1GHz)



7. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

Reference to the test report No.: CHTEW20120128

--------End of Report--------