




# TEST REPORT

Report Reference No. .... : CHTEW2012013404 Report verification: 

Project No. .... : SHT2012030405EW

FCC ID .... : QRP-SP-003

Applicant's name .... : Azumi S.A

Address .... : Avenida Aquilino de la Guardia con Calle 47, PH Ocean Plaza, Piso 16 of. 16-01, Marbella, Ciudad de Panama, Panama

Manufacturer .... : AZUMI HK LTD

Address .... : FLAT/RM 18 BLK 1 14/F GOLDEN INDUSTRIAL BUILDING 16-26 KWAI TAK STREET KWAI CHUNG, HK

Test item description .... : Mobile Phone

Trade Mark .... : AZUMI

Model/Type reference .... : A4

Listed Model(s) .... : A4+

Standard .... : 47 CFR FCC Part 15 Subpart B

Date of receipt of test sample .... : Dec. 09, 2020

Date of testing .... : Dec. 10, 2020- Dec. 21, 2020

Date of issue .... : Dec. 22, 2020

Result .... : Pass

Compiled by  
( position+printed name+signature) .. : File administrators Silvia Li

Supervised by  
( position+printed name+signature) .. : Project Engineer Aaron Fang

Approved by  
( position+printed name+signature) .. : RF Manager Hans Hu

*Silvia Li*

*Aaron Fang*

*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

**Shenzhen Huatongwei International Inspection Co., Ltd. All rights reserved.**

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen Huatongwei International Inspection Co., Ltd. is acknowledged as copyright owner and source of the material. Shenzhen Huatongwei International Inspection Co., Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

*The test report merely corresponds to the test sample.*

## Contents

<b><u>1.</u></b>	<b><u>TEST STANDARDS AND REPORT VERSION .....</u></b>	<b><u>3</u></b>
1.1.	Test Standards	3
1.2.	Report version information	3
<b><u>2.</u></b>	<b><u>TEST DESCRIPTION .....</u></b>	<b><u>4</u></b>
<b><u>3.</u></b>	<b><u>SUMMARY.....</u></b>	<b><u>5</u></b>
3.1.	Client Information	5
3.2.	Product Description	5
3.3.	EUT operation mode	5
3.4.	Configuration of Tested System	5
3.5.	Support unit used in test configuration	6
<b><u>4.</u></b>	<b><u>TEST ENVIRONMENT .....</u></b>	<b><u>7</u></b>
4.1.	Address of the test laboratory	7
4.2.	Test Facility	7
4.3.	Environmental conditions	8
4.4.	Statement of the measurement uncertainty	8
4.5.	Equipments Used during the Test	9
<b><u>6.</u></b>	<b><u>TEST CONDITIONS AND RESULTS .....</u></b>	<b><u>10</u></b>
6.1.	Conducted Emissions Test	10
6.2.	Radiated Emissions Test	13
<b><u>7.</u></b>	<b><u>TEST SETUP PHOTOS OF THE EUT .....</u></b>	<b><u>17</u></b>
<b><u>8.</u></b>	<b><u>EXTERNAL AND INTERNAL PHOTOS OF THE EUT .....</u></b>	<b><u>18</u></b>

## 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	2020-12-21	Add list models, update supplier of power IC,make difference test on Radiated Emissions Test, others are the same as report No. CHTEW19020083

## 2. TEST DESCRIPTION

Test Item	Section in CFR 47	Result	Test Engineer
Conducted Emissions	15.107(a)	Pass	Tony Duan
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:	Azumi S.A
Address:	Avenida Aquilino de la Guardia con Calle 47, PH Ocean Plaza, Piso 16 of. 16-01, Marbella, Ciudad de Panama, Panama
Manufacturer:	AZUMI HK LTD
Address:	FLAT/RM 18 BLK 1 14/F GOLDEN INDUSTRIAL BUILDING 16-26 KWAI TAK STREET KWAI CHUNG,HK

#### 3.2. Product Description

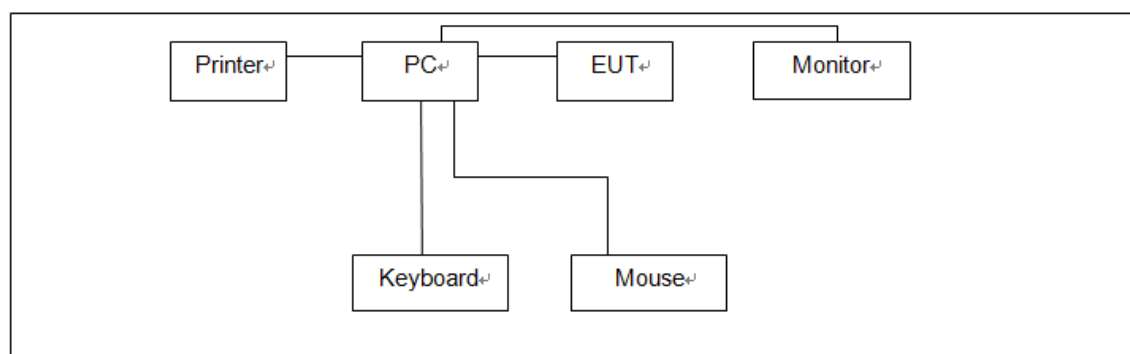
Name of EUT:	Mobile Phone
Trade Mark:	AZUMI
Model No.:	A4
Listed Model(s)	A4+
Power supply:	DC 3.7V
Adapter information:	Input:100-240Va.c., 50/60Hz, 0.15A Output:5.0Vd.c., 0.5A

#### 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 data exchange mode 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	4.28 dB	(1)
Radiated Emissions	1~18GHz	5.16 dB	(1)
Conducted Disturbance	0.15~30MHz	3.35 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

5. Conducted Emissions						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. (mm-dd-yy)	Next Cal. (mm-dd-yy)
1	EMI Test Receiver	R&S	ESCI	101247	10/27/2018	10/26/2019
2	Artificial Mains	SCHWARZBECK	NNLK 8121	573	10/27/2018	10/26/2019
3	Pulse Limiter	R&S	ESH3-Z2	101488	10/27/2018	10/26/2019
4	RF Connection Cable	HUBER+SUHNER	EF400	N/A	11/14/2017	11/13/2019
5	Test Software	R&S	ES-K1	N/A	N/A	N/A
6	Temperature and Humidity Meter	MIAOXIN	TH10R	N/A	10/30/2018	10/29/2019

Radiated Emissions(Below 1GHz)						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. (mm-dd-yy)	Next Cal. (mm-dd-yy)
1	Semi-Anechoic Chamber	Albatross projects	SAC-3m-02	C11121	2018/09/30	2021/09/29
2	EMI Test Receiver	R&S	ESCI	100900	2020/10/19	2021/10/18
3	Loop Antenna	R&S	HFH2-Z2	100020	2018/04/02	2021/04/02
4	Ultra-Broadband Antenna	SCHWARZBECK	VULB9163	546	2020/04/28	2023/04/27
5	Pre-amplifier	SCHWARZBECK	BBV 9742	N/A	2020/11/12	2021/11/11
6	RF Connection Cable	HUBER+SUHNER	N/A	N/A	2020/05/27	2021/05/26
7	RF Connection Cable	HUBER+SUHNER	SUCOFLEX104	501184/4	2020/05/27	2021/05/26
8	Test Software	R&S	ES-K1	N/A	N/A	N/A
9	Turntable	Maturo Germany	TT2.0-1T	N/A	N/A	N/A
10	Antenna Mast	Maturo Germany	TAM-4.0-P	N/A	N/A	N/A
11	Temperature and Humidity Meter	KEJIAN	KJ03	N/A	N/A	N/A

Radiated Emissions(Above 1GHz)						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. (mm-dd-yy)	Next Cal. (mm-dd-yy)
1	Anechoic Chamber	Albatross projects	SAC-3m-01	C11121	09/30/2018	09/29/2021
2	Horn Antenna	SCHWARZBECK	9120D	1011	03/27/2017	03/26/2020
3	Preamplifier	BONN	BLWA0160-2M	1811887	11/14/2018	11/13/2019
4	Broadband Pre-amplifier	SCHWARZBECK	BBV 9718	9718-248	04/28/2018	04/27/2019
5	Spectrum Analyzer	R&S	FSP40	100597	10/27/2018	10/26/2019
6	RF Connection Cable	HUBER+SUHNER	RE-7-FL	N/A	11/15/2018	11/14/2019
7	RF Connection Cable	HUBER+SUHNER	RE-7-FH	N/A	11/15/2018	11/14/2019
8	Test Software	Audix	E3	N/A	N/A	N/A
9	Turntable	Maturo Germany	TT2.0-1T	N/A	N/A	N/A
10	Antenna Mast	Maturo Germany	CAM-4.0-P-12	N/A	N/A	N/A
11	Temperature and Humidity Meter	MINGLE	YH101	N/A	10/30/2018	10/29/2019

## 6. TEST CONDITIONS AND RESULTS

### 6.1. Conducted Emissions Test

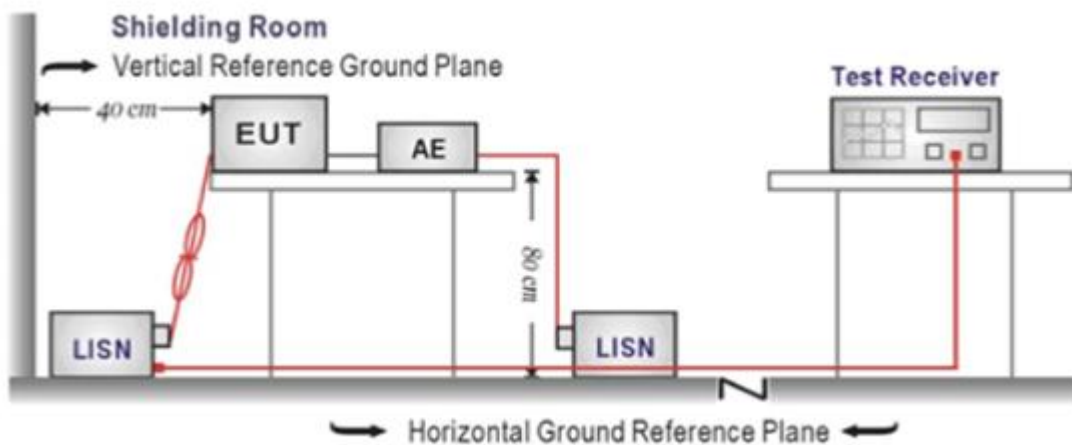
#### LIMIT

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:

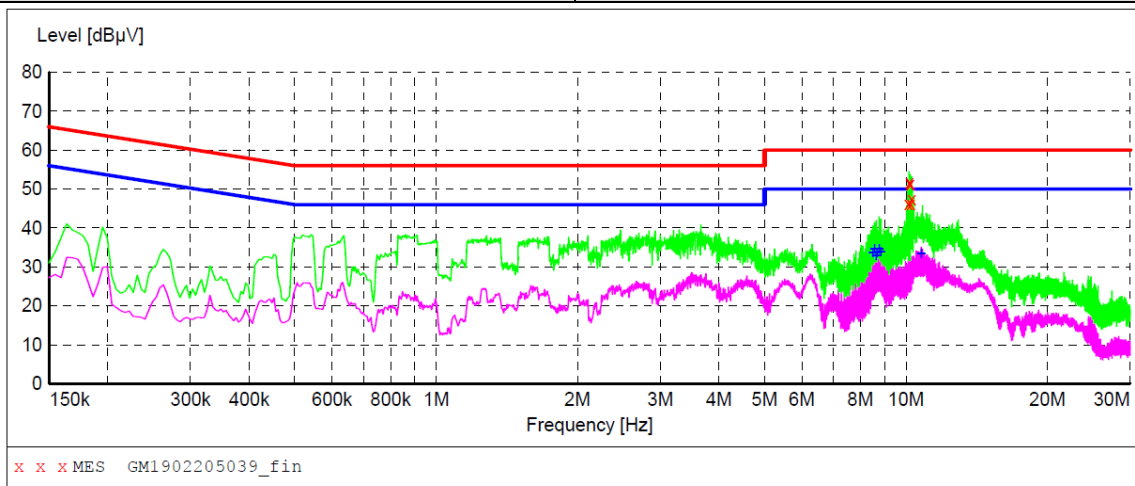
Please refer to the clause 3.3

#### TEST RESULTS

☒ Passed ☐ Not Applicable

Test Line:

L

**MEASUREMENT RESULT: "GM1902205039\_fin"**

2/20/2019 2:09PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
10.117500	46.10	10.2	60	13.9	QP	L1	GND
10.180500	51.80	10.2	60	8.2	QP	L1	GND
10.185000	51.30	10.2	60	8.7	QP	L1	GND
10.203000	51.20	10.2	60	8.8	QP	L1	GND
10.239000	46.10	10.2	60	13.9	QP	L1	GND
10.284000	47.50	10.2	60	12.5	QP	L1	GND

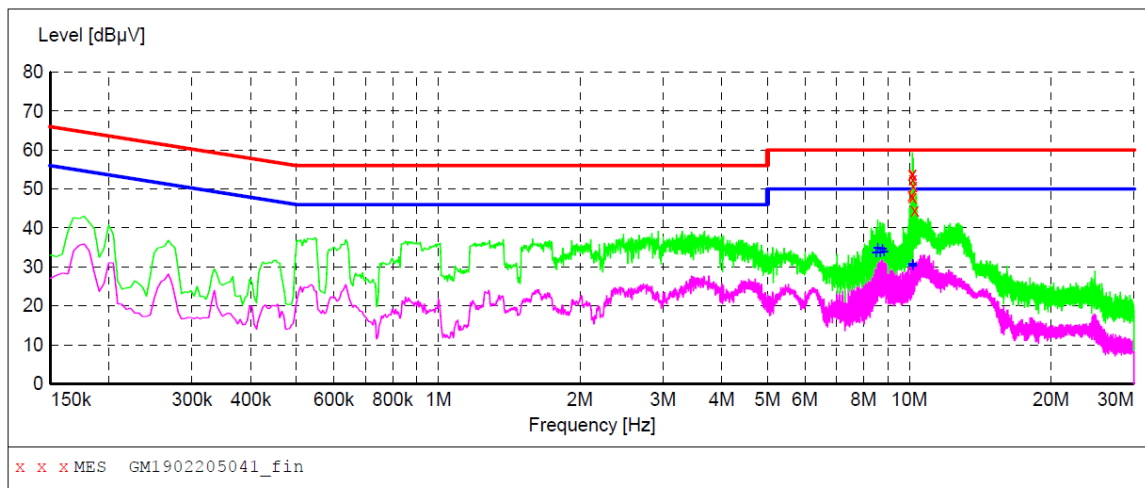
**MEASUREMENT RESULT: "GM1902205039\_fin2"**

2/20/2019 2:09PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
8.506500	33.60	10.2	50	16.4	AV	L1	GND
8.574000	34.70	10.2	50	15.3	AV	L1	GND
8.641500	33.00	10.2	50	17.0	AV	L1	GND
8.673000	33.70	10.2	50	16.3	AV	L1	GND
8.776500	34.50	10.2	50	15.5	AV	L1	GND
8.844000	34.00	10.2	50	16.0	AV	L1	GND

Test Line:

N

**MEASUREMENT RESULT: "GM1902205041\_fin"**

2/20/2019 2:14PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
10.113000	48.50	10.2	60	11.5	QP	N	GND
10.149000	53.60	10.2	60	6.4	QP	N	GND
10.153500	47.80	10.2	60	12.2	QP	N	GND
10.167000	54.00	10.2	60	6.0	QP	N	GND
10.171500	52.40	10.2	60	7.6	QP	N	GND
10.185000	50.70	10.2	60	9.3	QP	N	GND

**MEASUREMENT RESULT: "GM1902205041\_fin2"**

2/20/2019 2:14PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
8.506500	33.50	10.2	50	16.5	AV	N	GND
8.574000	34.90	10.2	50	15.1	AV	N	GND
8.673000	33.50	10.2	50	16.5	AV	N	GND
8.776500	34.60	10.2	50	15.4	AV	N	GND
8.844000	34.00	10.2	50	16.0	AV	N	GND
10.162500	30.80	10.2	50	19.2	AV	N	GND

## 6.2. Radiated Emissions Test

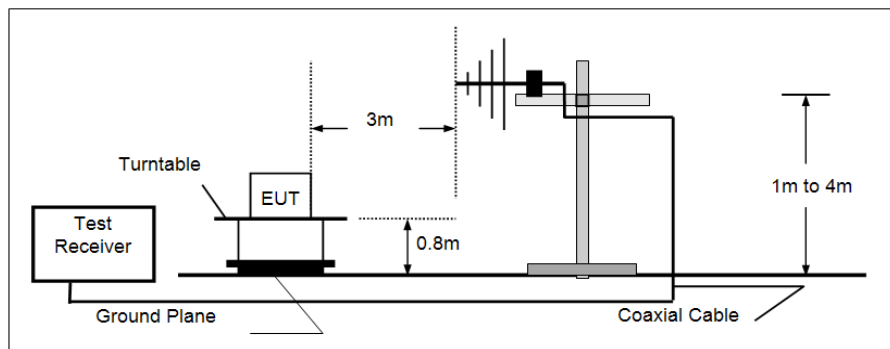
### LIMIT

#### FCC CFR Title 47 Part 15 Subpart B Section 15.109

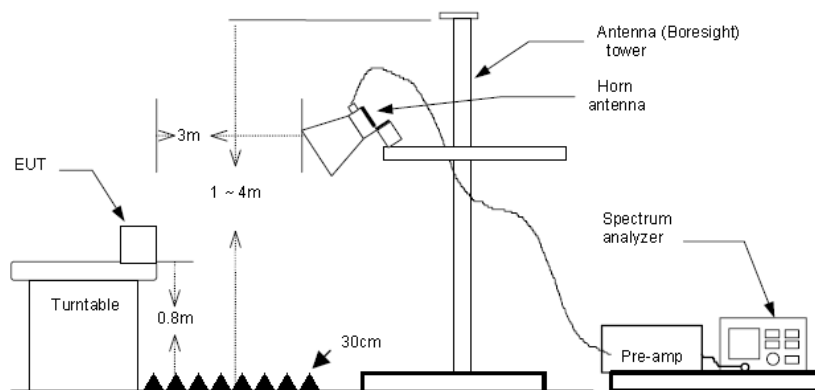
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

### 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 was positioned 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. This is 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 detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission 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

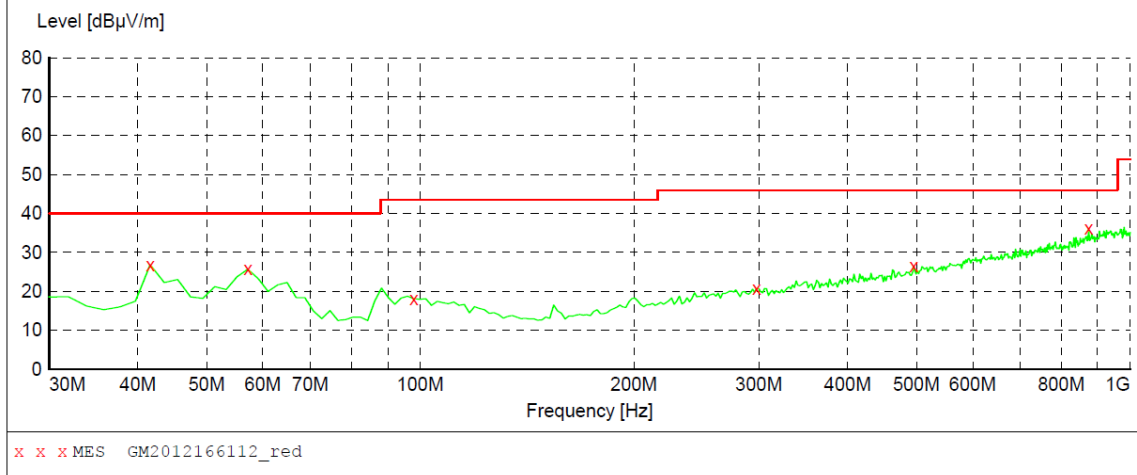
**TEST RESULTS**

☒ **Passed**      ☐ **Not Applicable**

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

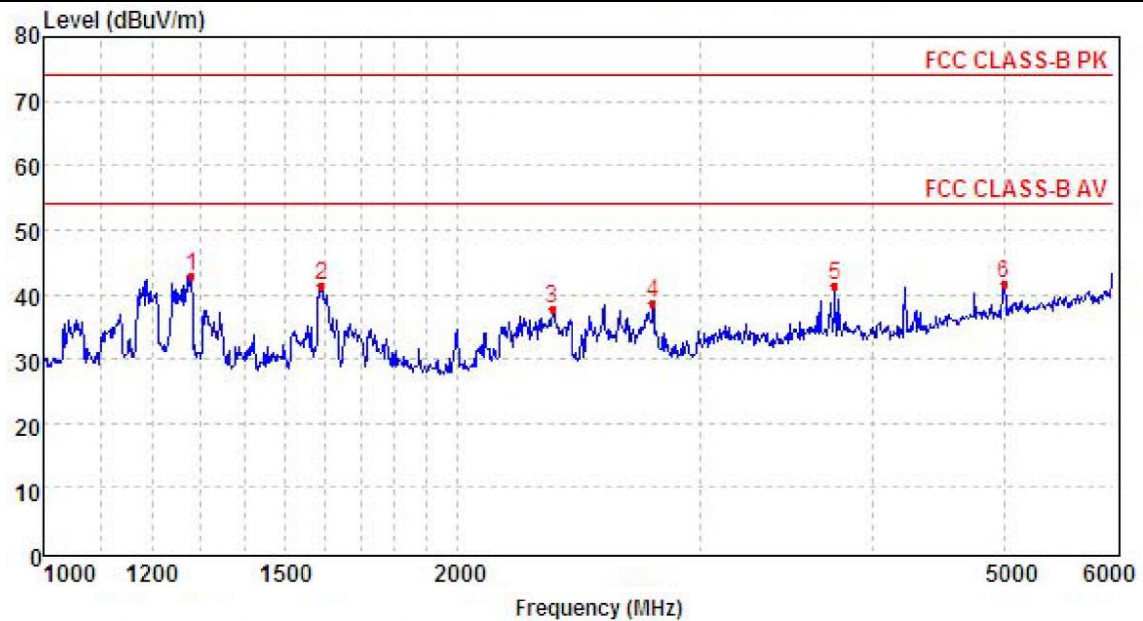
Polarization:

Horizontal

**MEASUREMENT RESULT: "GM2012166112\_red"**

12/16/2020 9:53PM

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
41.640000	26.80	-9.5	40.0	13.2	QP	100.0	360.00	HORIZONTAL
57.160000	25.70	-9.3	40.0	14.3	QP	100.0	127.00	HORIZONTAL
97.900000	18.10	-10.6	43.5	25.4	QP	100.0	222.00	HORIZONTAL
297.720000	20.70	-7.0	46.0	25.3	QP	100.0	106.00	HORIZONTAL
495.600000	26.50	-1.4	46.0	19.5	QP	100.0	47.00	HORIZONTAL
873.900000	36.10	6.9	46.0	9.9	QP	300.0	299.00	HORIZONTAL

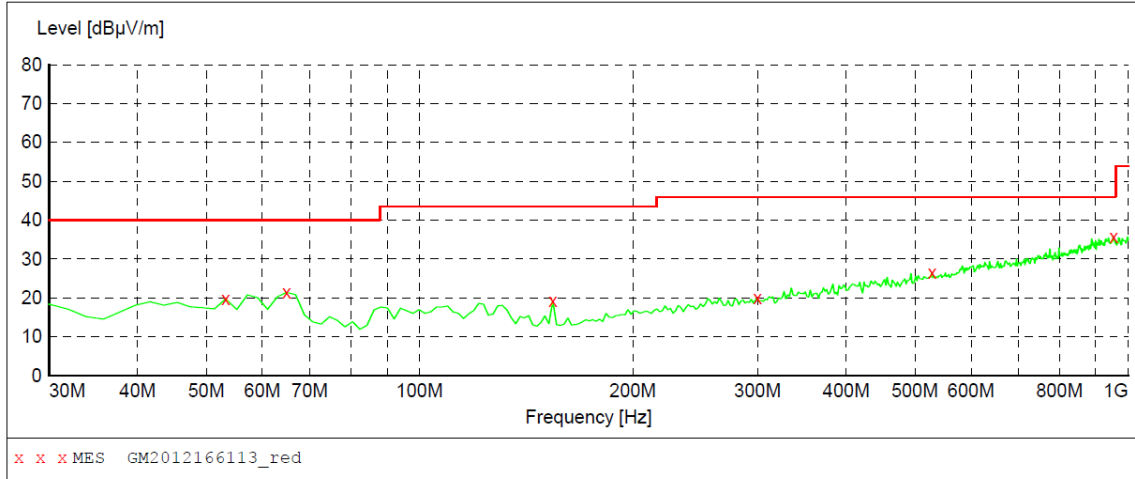


Mark	Frequency MHz	Reading dBuV/m	Antenna dB/m	Cable dB	Preamplifier dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1280.52	49.0	26.2	4.8	37.2	42.8	74.0	-31.2	Peak
2	1593.38	47.8	25.0	5.6	37.2	41.2	74.0	-32.8	Peak
3	2342.19	40.8	27.9	6.7	37.6	37.8	74.0	-36.2	Peak
4	2771.84	41.0	28.1	7.3	37.6	38.8	74.0	-35.2	Peak
5	3758.84	40.2	29.5	8.5	36.9	41.3	74.0	-32.7	Peak
6	4997.81	35.7	31.5	9.7	35.4	41.5	74.0	-32.5	Peak



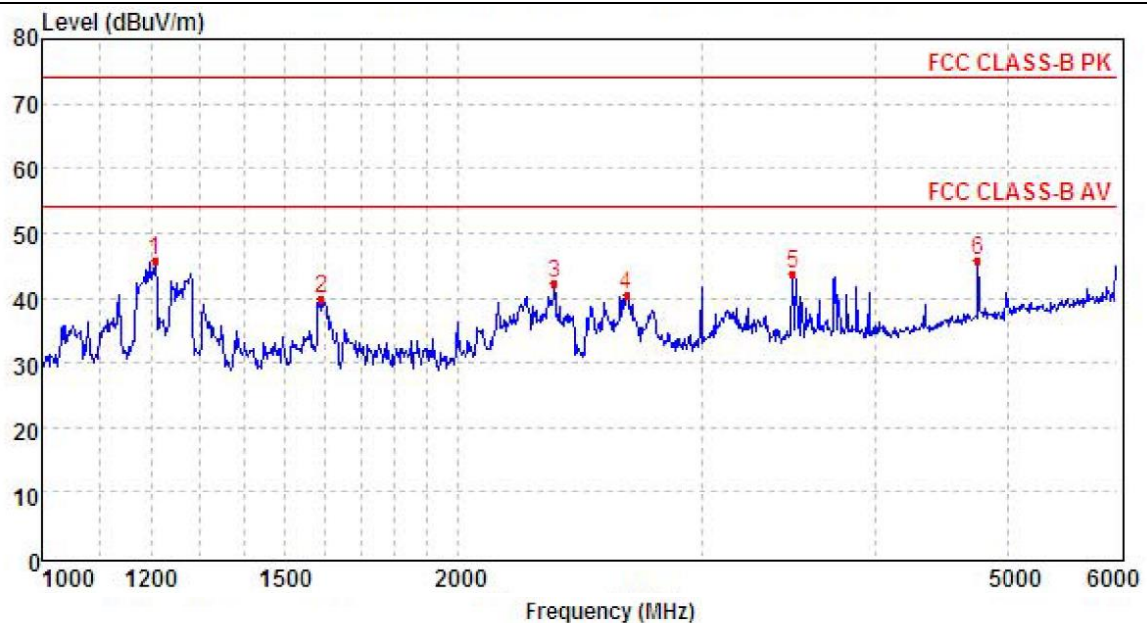
Polarization:

Vertical

**MEASUREMENT RESULT: "GM2012166113\_red"**

12/16/2020 9:56PM

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
53.280000	19.70	-9.0	40.0	20.3	QP	100.0	0.00	VERTICAL
64.920000	21.40	-11.2	40.0	18.6	QP	100.0	360.00	VERTICAL
154.160000	19.20	-13.5	43.5	24.3	QP	100.0	134.00	VERTICAL
299.660000	19.90	-6.9	46.0	26.1	QP	100.0	183.00	VERTICAL
528.580000	26.50	-0.6	46.0	19.5	QP	100.0	10.00	VERTICAL
953.440000	35.80	8.2	46.0	10.2	QP	100.0	0.00	VERTICAL

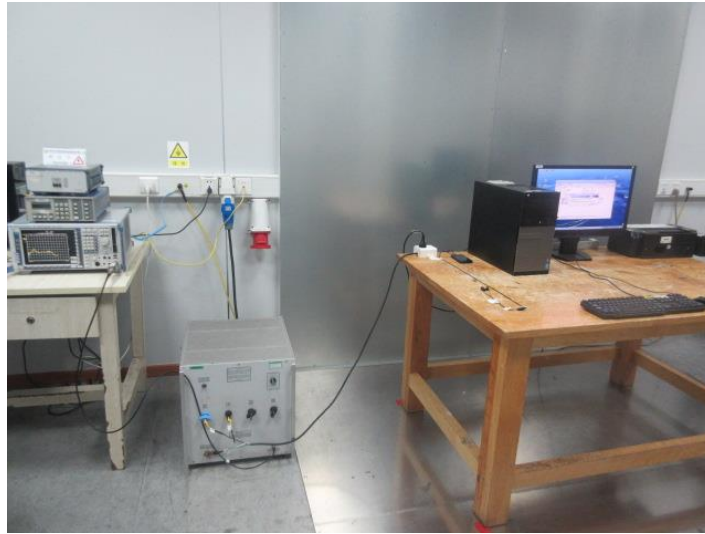


Mark	Frequency MHz	Reading dBuV/m	Antenna dB/m	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1207.00	51.9	26.3	4.7	37.2	45.7	74.0	-28.3	Peak
2	1593.38	46.4	25.0	5.6	37.2	39.8	74.0	-34.2	Peak
3	2346.39	45.3	27.9	6.7	37.6	42.3	74.0	-31.7	Peak
4	2645.67	43.1	27.9	7.0	37.6	40.4	74.0	-33.6	Peak
5	3492.61	43.9	28.9	8.1	37.1	43.8	74.0	-30.2	Peak
6	4753.26	40.6	31.4	9.5	35.8	45.7	74.0	-28.3	Peak



## 7. TEST SETUP PHOTOS OF THE EUT

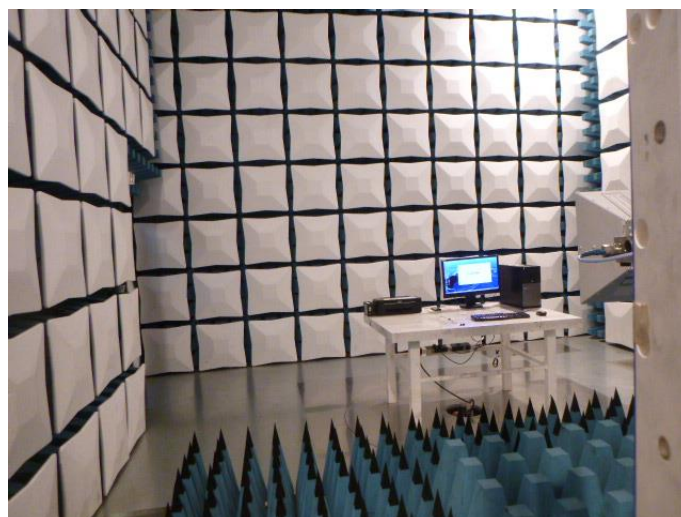
### Conducted Emissions (AC Mains)



### Radiated Emissions (30MHz-1GHz)



### Radiated Emissions (Above 1GHz)





## 8. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

Reference to the test report No.: CHTEW20120134

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