




# TEST REPORT



**Report No.**.....: **CHTEW19120017** Report Verification:   
**Project No.**.....: **SHT1911050601EW**  
**FCC ID**..... : **2ADK3XO-9888**  
**Applicant's name**..... : **XING DA INTERNATIONAL ELECTRONICS LIMITED**  
**Address**.....: #98 LiWu Swan Industrial District, Qiao Tou Town, Dong Guan City, Guang Dong, China  
**Manufacturer**.....: XING DA INTERNATIONAL ELECTRONICS LIMITED  
**Address**.....: #98 LiWu Swan Industrial District, Qiao Tou Town, Dong Guan City, Guang Dong, China  
**Test item description** ..... : **Bluetooth Speaker and Wireless Charging Pad**  
**Trade Mark** .....: -  
**Model/Type reference**.....: XO-9888  
**Listed Model(s)** .....: -  
**Standard** ..... : **FCC CFR Title 47 Part 15 Subpart C**  
**Date of receipt of test sample**.....: Nov.20,2019  
**Date of testing**.....: Nov.20,2019 ~ Dec.02,2019  
**Date of issue**.....: Dec.03,2019  
**Result**.....: **PASS**

**Compiled by**  
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*Yueming Li*

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 (position+printedname+signature).....: Project Engineer Edward Pan

*Edward Pan*

**Approved by**  
 (position+printedname+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

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

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## 1. TEST STANDARDS AND REPORT VERSION

### 1.1. Test Standards

The tests were performed according to following standards:

[FCC CFR Title 47 Part 15 Subpart C](#):Intentional Radiators.

[ANSI C63.10-2013](#):AmericanNationalStandardforTestingUnlicensedWirelessDevices.

### 1.2. Report version information

Revision No.	Date of issue	Description
N/A	2019-12-03	Original

## 2. TESTDESCRIPTION

Test Item	Section in CFR 47	Result	Test Engineer
AC Power Line Conducted Emissions	15.207	PASS	Jianquan Wu
20dB Occupied Bandwidth	2.1049	PASS	Jian Li
Spurious Emissions	15.209	PASS	Kang Yang

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

### 3. SUMMARY

#### 3.1. Client Information

Applicant:	XING DA INTERNATIONAL ELECTRONICS LIMITED
Address:	#98 LiWu Swan Industrial District, Qiao Tou Town, Dong Guan City, Guang Dong, China
Manufacturer:	XING DA INTERNATIONAL ELECTRONICS LIMITED
Address:	#98 LiWu Swan Industrial District, Qiao Tou Town, Dong Guan City, Guang Dong, China

#### 3.2. Product Description

Name of EUT:	Bluetooth Speaker and Wireless Charging Pad
Trade Mark:	-
Model No.:	XO-9888
Listed Model(s):	-
Power supply:	DC 5V
Hardware version:	VER1.0
Software version:	VER1.0
<b>RF Specification</b>	
Operation frequency:	110-205KHz
Modulation Type:	FSK

#### 3.3. EUT operation mode

- Test frequency list

Frequency (MHz)
0.127

- TEST MODE

For RF test items
The EUT was programmed to be in continuously transmitting mode with rating output(5V) for charging
For AC power line conducted emissions:
The EUT was programmed to be in continuously transmitting mode with rating output(5V) for charging

### 3.4. EUT configuration

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

- - supplied by the manufacturer
- - supplied by the lab

○ Adapter	Manufacturer :	-
	Model No. :	-
○ Load	Manufacturer :	-
	Model No. :	-
● USB Cable	Length(m) :	-
	Shield :	-

### 3.5. Modifications

No modifications were implemented to meet testing criteria.

## **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 in calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report according to TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2" and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system according to 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 is reported:

Test Items	Measurement Uncertainty	Notes
Conducted spurious emissions 9KHz-30MHz	3.39 dB	(1)
Radiated Emissions 30~1000MHz	4.24 dB	(1)
Occupied Bandwidth	-----	(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	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Shielded Room	Albatross projects	HTWE0114	N/A	N/A	2018/09/28	2023/09/27
●	EMI Test Receiver	R&S	HTWE0111	ESCI	101247	2019/10/26	2020/10/25
●	Artificial Mains	SCHWARZBECK	HTWE0113	NNLK 8121	573	2019/10/23	2020/10/22
●	Pulse Limiter	R&S	HTWE0033	ESH3-Z2	100499	2019/10/23	2020/10/22
●	RF Connection Cable	HUBER+SUHNER	HTWE0113-02	ENVIROFLEX_142	EF-NM-BNCM-2M	2019/10/23	2020/10/22
●	Test Software	R&S	N/A	ES-K1	N/A	N/A	N/A

● 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	2019/10/26	2020/10/25
●	Loop Antenna	R&S	HTWE0170	HFH2-Z2	100020	2018/04/02	2021/04/01
●	Ultra-Broadband Antenna	SCHWARZBECK	HTWE0119	VULB9163	546	2017/04/05	2020/04/04
●	Pre-Amplifier	SCHWARZBECK	HTWE0295	BBV 9742	N/A	2019/11/14	2020/11/13
●	RF Connection Cable	HUBER+SUHNER	HTWE0062-01	N/A	N/A	2019/08/21	2020/08/20
●	RF Connection Cable	HUBER+SUHNER	HTWE0062-02	SUCOFLEX 104	501184/4	2019/05/27	2020/05/26
●	Test Software	R&S	N/A	ES-K1	N/A	N/A	N/A

● Radiated emission-7th test site							
Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Semi-Anechoic Chamber	Albatross projects	HTWE0122	SAC-3m-01	N/A	2018/09/27	2021/09/26
●	Spectrum Analyzer	R&S	HTWE0098	FSP40	100597	2019/10/26	2020/10/25
●	Horn Antenna	SCHWARZBECK	HTWE0126	9120D	1011	2017/04/01	2020/03/31
●	Horn Antenna	SCHWARZBECK	HTWE0103	BBHA9170	25841	2017/03/27	2020/03/26
●	Broadband Horn Antenna	SCHWARZBECK	HTWE0103	BBHA9170	BBHA9170472	2018/10/11	2021/10/11
●	Pre-amplifier	CD	HTWE0071	PAP-0102	12004	2019/11/14	2020/11/13
●	Broadband Pre-amplifier	SCHWARZBECK	HTWE0201	BBV 9718	9718-248	2019/05/23	2020/05/22
●	RF Connection Cable	HUBER+SUHNER	HTWE0120-01	6m 18GHz S Serisa	N/A	2019/05/10	2020/05/09
●	RF Connection Cable	HUBER+SUHNER	HTWE0120-02	6m 3GHz RG Serisa	N/A	2019/05/10	2020/05/09
●	RF Connection Cable	HUBER+SUHNER	HTWE0120-03	6m 3GHz RG Serisa	N/A	2019/05/10	2020/05/09
●	RF Connection Cable	HUBER+SUHNER	HTWE0120-04	6m 3GHz RG Serisa	N/A	2019/05/10	2020/05/09
●	RF Connection Cable	HUBER+SUHNER	HTWE0121-01	6m 18GHz S Serisa	N/A	2019/05/10	2020/05/09
●	Test Software	Audix	N/A	E3	N/A	N/A	N/A

● RF Conducted Method						
Used	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Signal and spectrum Analyzer	R&S	FSV40	100048	2019/10/26	2020/10/25
●	Spectrum Analyzer	Agilent	N9020A	MY50510187	2019/10/26	2020/10/25
○	Radio communication tester	R&S	CMW500	137688-Lv	2019/10/26	2020/10/25

## 5. TEST CONDITIONS AND RESULTS

### 5.1. AC Power Conducted Emissions

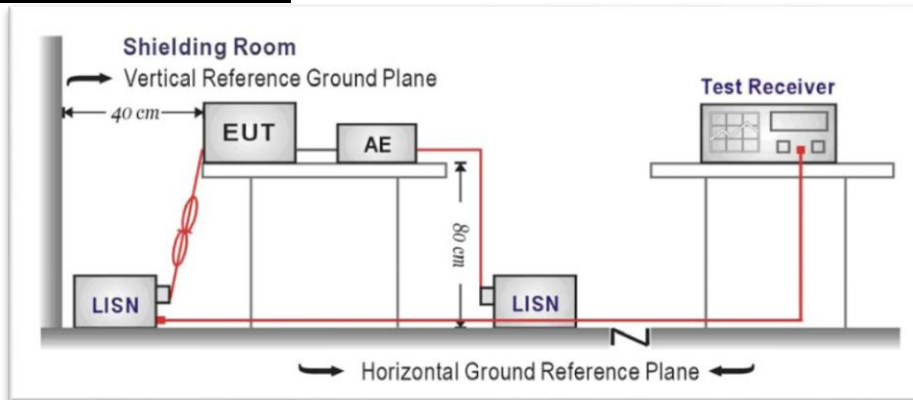
#### LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.207:

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 C63.10:2013
2. The EUT was placed on a platform 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

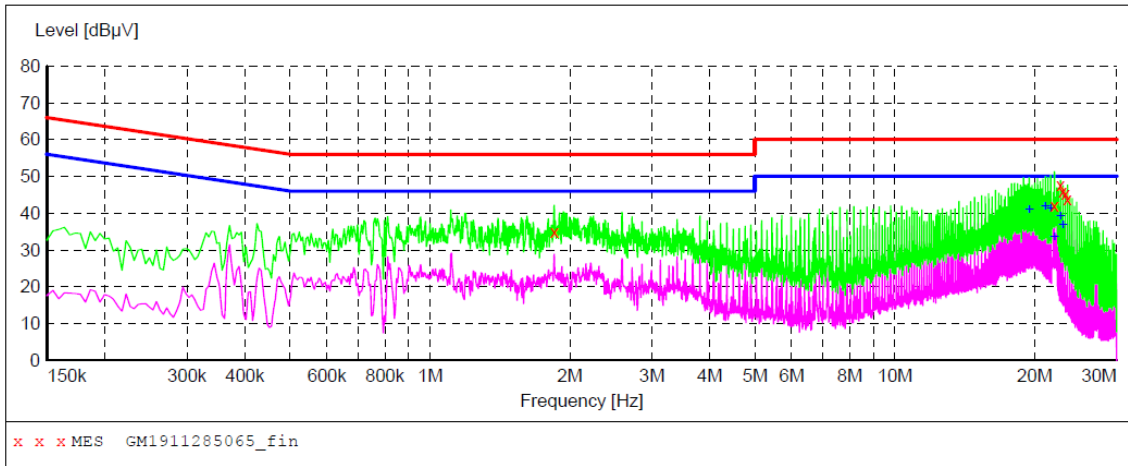
Passed       Not Applicable

Note:

- 1) Transd= Cable lose +Pulse Limiter Factor + Artificial Mains Factor
- 2) Margin= Limit - Level

Test Line:

L



**MEASUREMENT RESULT: "GM1911285065\_fin"**

11/28/2019 7:25PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
1.851000	34.90	10.1	56	21.1	QP	L1	GND
22.042500	42.10	10.2	60	17.9	QP	L1	GND
22.722000	47.80	10.2	60	12.2	QP	L1	GND
22.996500	46.00	10.2	60	14.0	QP	L1	GND
23.316000	45.30	10.2	60	14.7	QP	L1	GND
23.541000	43.80	10.2	60	16.2	QP	L1	GND

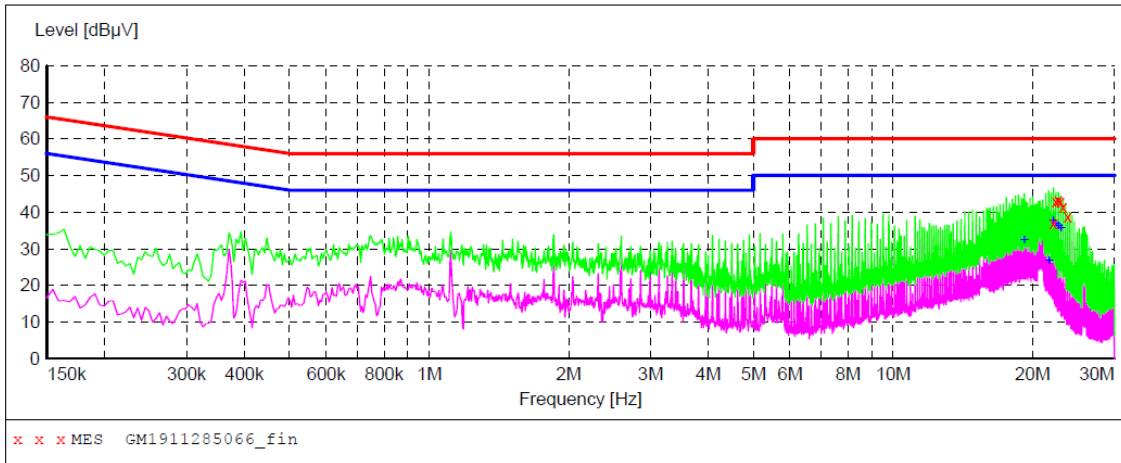
**MEASUREMENT RESULT: "GM1911285065\_fin2"**

11/28/2019 7:25PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
19.459500	40.80	10.2	50	9.2	AV	L1	GND
21.088500	41.70	10.2	50	8.3	AV	L1	GND
21.633000	41.20	10.2	50	8.8	AV	L1	GND
22.042500	33.50	10.2	50	16.5	AV	L1	GND
22.722000	39.10	10.2	50	10.9	AV	L1	GND
22.996500	36.80	10.2	50	13.2	AV	L1	GND

Test Line:

N



**MEASUREMENT RESULT: "GM1911285066\_fin"**

11/28/2019 7:29PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
22.141500	37.10	10.2	60	22.9	QP	N	GND
22.447500	43.00	10.2	60	17.0	QP	N	GND
22.722000	43.20	10.2	60	16.8	QP	N	GND
22.992000	42.80	10.2	60	17.2	QP	N	GND
23.266500	41.40	10.2	60	18.6	QP	N	GND
23.811000	38.70	10.2	60	21.3	QP	N	GND

**MEASUREMENT RESULT: "GM1911285066\_fin2"**

11/28/2019 7:29PM

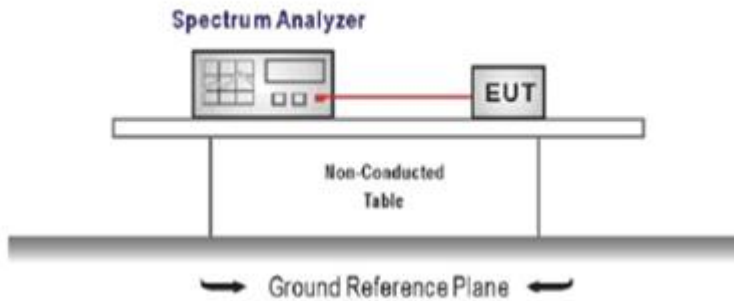
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
19.185000	32.20	10.2	50	17.8	AV	N	GND
21.660000	26.60	10.2	50	23.4	AV	N	GND
22.177500	37.60	10.2	50	12.4	AV	N	GND
22.447500	36.60	10.2	50	13.4	AV	N	GND
22.722000	36.10	10.2	50	13.9	AV	N	GND
22.992000	35.60	10.2	50	14.4	AV	N	GND

## 5.2. 20 dB Occupied Bandwidth

### Limit

FCC Part 2.1049, Only applicable to report.

### TEST CONFIGURATION



### TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer through an attenuator, the pathloss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously
3. Use the following spectrum analyzer settings:  
 Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel  
 RBW  $\geq$  1% of the 20 dB bandwidth, VBW  $\geq$  RBW  
 Sweep = auto, Detector function = peak, Trace = max hold
4. Measure and record the results in the test report(5V rating output).

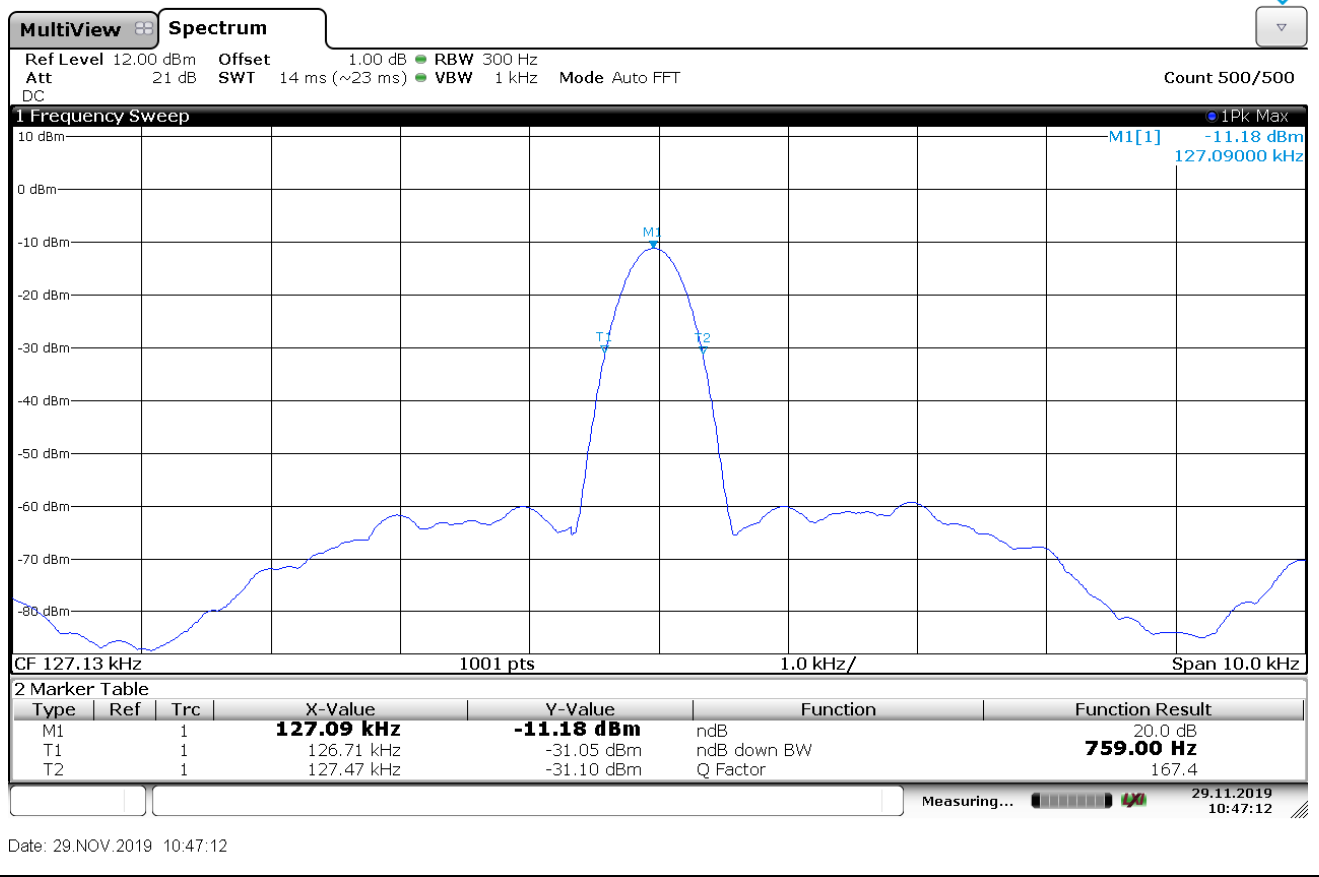
### TEST MODE:

Please refer to the clause 3.3

### TEST RESULTS

Passed       Not Applicable

Test Channel	20dB Bandwidth (KHz)	Limit (KHz)	Result
0.127MHz	0.759	-	Pass



### 5.3. Radiated Spurious Emissions

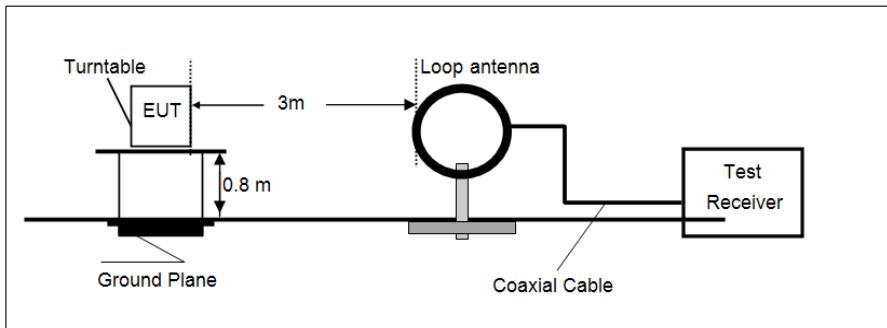
#### LIMIT

#### FCC CFR Title 47 Part 15 Subpart C Section 15.209

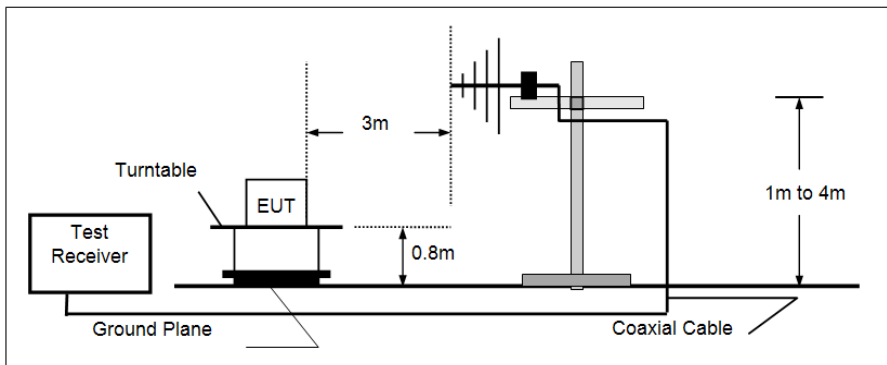
Frequency[MHz]	Field Strength [uV/m]	Measurement Distance [Meters]
0.009 ~ 0.490	2400/F (kHz)	300
0.490 ~ 1.705	24000/F (kHz)	30
1.705 ~ 30	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

#### TEST CONFIGURATION

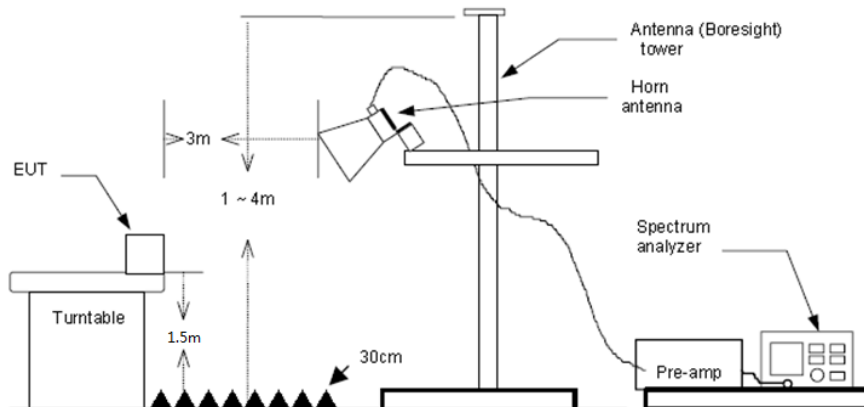
- 9 kHz ~ 30 MHz



- 30 MHz ~ 1 GHz



- Above 1 GHz





**TEST PROCEDURE**

1. The EUT was setup and tested according to ANSI C63.10:2013 requirements.
2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
5. Set to the maximum power setting and enable the EUT transmit continuously.
6. Use the following spectrum analyzer settings
  - (1) Span shall wide enough to fully capture the emission being measured;
  - (2) From 9KHz to 30MHz:  
RBW=10KHz, VBW =30KHz, Sweep time= Auto, Trace = max hold, Detector function = peak  
§ 15.209(d) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
  - (3) Below 1 GHz:  
RBW=120 kHz, VBW=300 kHz, 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.
  - (4) From 1 GHz to 10<sup>th</sup> harmonic:  
RBW=1MHz, VBW=3MHz Peak detector for Peak value.  
RBW=1MHz, VBW=3MHz RMS detector for Average value.

**TEST MODE:**

Please refer to the clause 3.3

**TEST RESULTS**

**Passed**             **Not Applicable**

Note:

- 1) Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

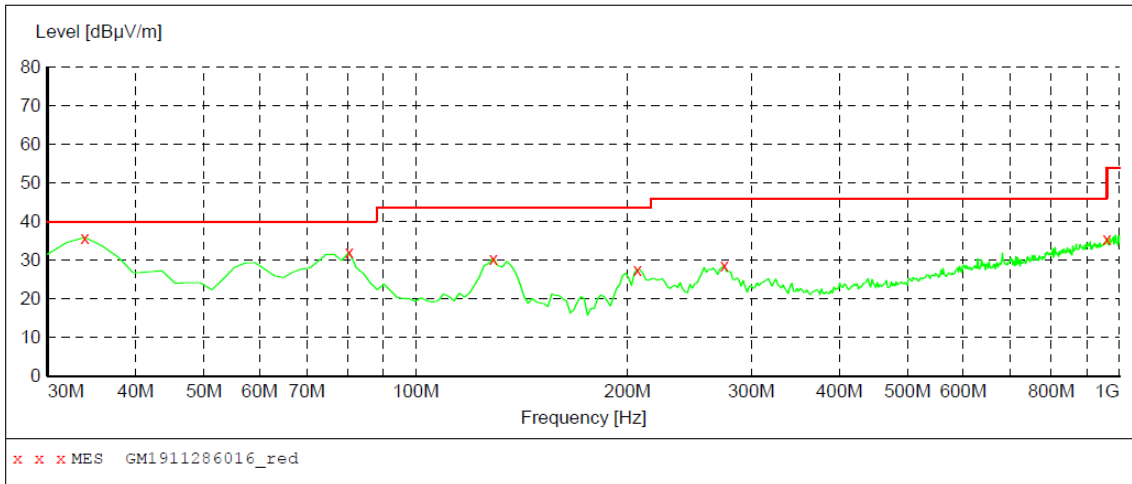
**Radiated Spurious Emissions****9 kHz ~ 30 MHz**

Suspected Data List								
NO.	Freq. [MHz]	Reading [dB $\mu$ V/m]	Factor [dB]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Polarity	Detector
1	0.0251	16.82	26.84	43.66	119.62	75.96	Horizontal	PK
2	0.0347	21.99	26.91	48.90	116.81	67.91	Horizontal	PK
3	0.1272	46.23	27.22	73.45	105.52	32.07	Horizontal	PK
4	0.3590	25.97	27.45	53.42	96.50	43.08	Horizontal	PK
5	0.8664	21.18	27.72	48.90	68.85	19.95	Horizontal	PK
6	4.5977	11.91	28.21	40.12	69.54	29.42	Horizontal	PK

■ 30 MHz ~ 1 GHz

Polarization:

Vertical



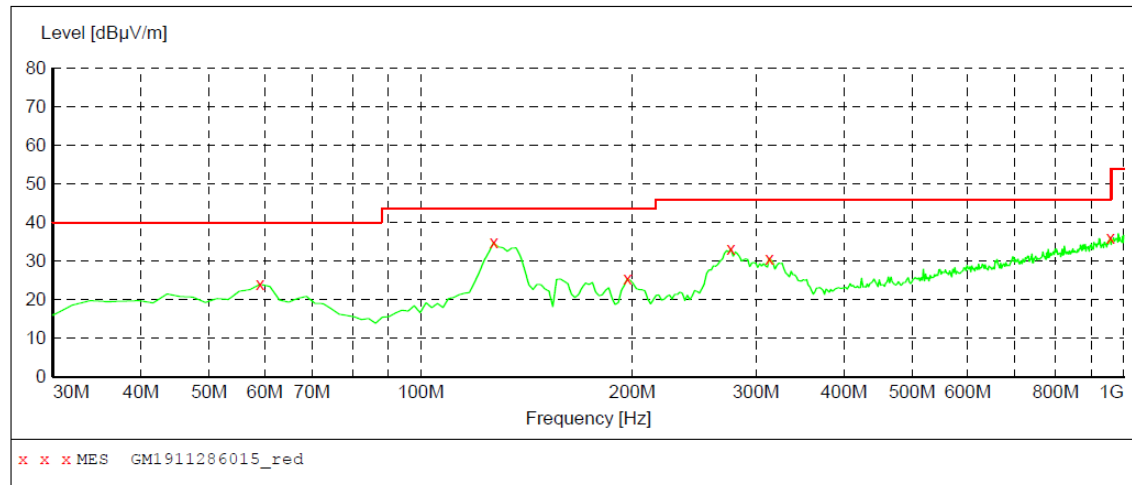
**MEASUREMENT RESULT: "GM1911286016\_red"**

11/28/2019 10:56AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
33.880000	35.90	-12.1	40.0	4.1	QP	100.0	0.00	VERTICAL
80.440000	32.10	-15.0	40.0	7.9	QP	100.0	360.00	VERTICAL
128.940000	30.50	-12.7	43.5	13.0	QP	100.0	0.00	VERTICAL
206.540000	27.60	-9.9	43.5	15.9	QP	100.0	154.00	VERTICAL
274.440000	28.60	-7.3	46.0	17.4	QP	100.0	47.00	VERTICAL
959.260000	35.40	8.4	46.0	10.6	QP	100.0	333.00	VERTICAL

Polarization:

Horizontal



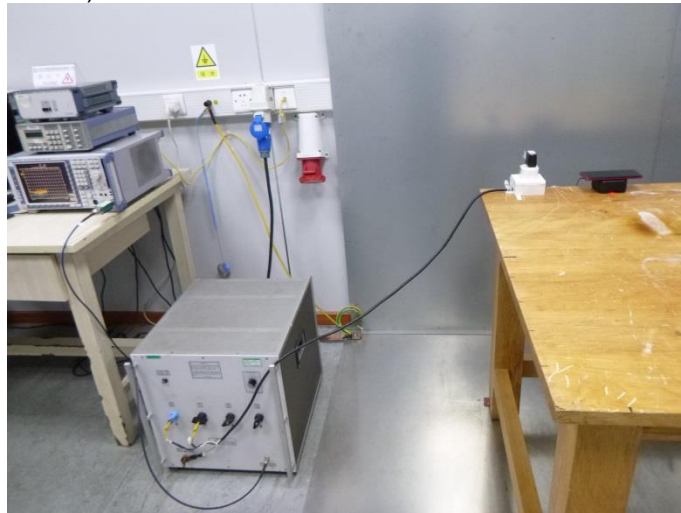
**MEASUREMENT RESULT: "GM1911286015\_red"**

11/28/2019 10:53AM

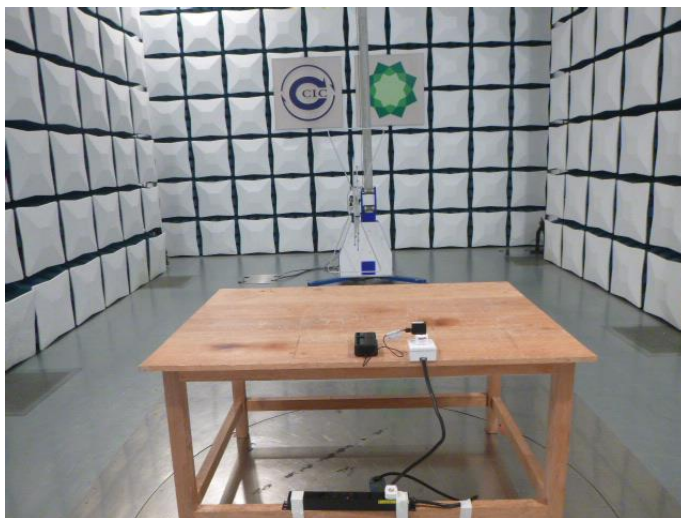
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
59.100000	24.00	-9.1	40.0	16.0	QP	300.0	360.00	HORIZONTAL
127.000000	34.80	-12.5	43.5	8.7	QP	300.0	360.00	HORIZONTAL
196.840000	25.40	-9.1	43.5	18.1	QP	100.0	28.00	HORIZONTAL
276.380000	33.20	-7.2	46.0	12.8	QP	100.0	255.00	HORIZONTAL
313.240000	30.80	-6.2	46.0	15.2	QP	100.0	121.00	HORIZONTAL
957.320000	36.20	8.3	46.0	9.8	QP	100.0	14.00	HORIZONTAL

## 6. TEST SETUP PHOTOS OF THE EUT

### Conducted Emissions (AC Mains)



### Radiated Emissions



## **7. EXTERNAL AND INTERNAL PHOTOS OF THE EUT**

Reference to the test report No.: CHTEW19120016.

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