

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT  
INTENTIONAL RADIATOR CERTIFICATION TO  
FCC PART 15 SUBPART C

Product Name: Wireless charger

MODEL No.: XTCG009

Trademark: N/A

FCC ID: 2ASHX-XTCG009

REPORT NO.: ES181225012W01

ISSUE DATE: March 26, 2019

*Prepared for*

BEL USA,LLC.

12610 NW 115 Avenue, Bldg. 200 Medley, FL 33178, USA

*Prepared by*

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## TEST REPORT DESCRIPTION

Applicant : BEL USA,LLC.  
12610 NW 115 Avenue, Bldg. 200 Medley, FL 33178, USA

Manufacturer : JMTEK Technology Co., Limited  
14G, Innovation Tech building, Quanzhi Science and Technology  
innovation Park, Shajin Street, Bao'an District, Shenzhen, China

Trade Mark : N/A

EUT : Wireless charger


Model No. : XTCG009

### We hereby certify that:


The above equipment was tested by EMTEK (SHENZHEN) CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15C

The test results of this report relate only to the tested sample identified in this report.

Date of Test : December 25, 2018 to March 22, 2019

Prepared by :   
Yaping Shen/Editor

Reviewer :   
Joe Xia/Supervisor

Approved & Authorized Signer :   
Lisa Wang/Manager



## Modified Information

| Version | Report No.     | Revision Data | Summary          |
|---------|----------------|---------------|------------------|
| Ver.1.0 | ES181225012W01 | /             | Original Version |

## 1. SUMMARY OF TEST RESULTS

| <b>EMISSION</b>   |  |                     |
|---|--|---------------------|
| Description of Test Item  | Standard & Limits  | Results             |
| Conducted Emission  | FCC Part 15, Subpart C- Section 15.207<br>ANSI C63.10-2013 | Pass                |
| Radiated Emission   | FCC Part 15, Subpart C- Section 15.209<br>ANSI C63.10-2013 | Pass                |
| 20 dB Bandwidth   | FCC Part 15, Subpart C- Section 15.215                     | Pass                |
| Antenna Requirement   | FCC Part 15, Subpart C- Section 15.203                     | Pass<br>(See Notes) |
| Notes: The EUT uses an Integral Antenna which in accordance to Section 15.203 is considered sufficient to comply with the provisions of this section. |  |                     |

## 2. GENERAL INFORMATION

### 2.1. Description of Device (EUT)

|                      |   |   |
|----------------------|---|---|
| EUT                  | : | Wireless charger                            |
| Model Number         | : | XTCG009                                     |
| Power Supply         | : | Input: DC 5V 2A<br>Output: DC 5V 1000mA Max |
| Operating Frequency  | : | 112-205KHz                                  |
| Modulation Technique | : | Induction                                   |
| Classification       | : | Type 3 (Category I Radio Apparatus)         |
| Antenna Type         | : | Integral Antenna(Induction coil)            |
| Date of Received     | : | December 25, 2018                           |
| Date of Test         | : | December 25, 2018 to March 22, 2019         |

### 2.2. Input / Output Ports

| Port #   | Name        | Type* | Cable Max. >3m | Cable Shielded | Comments |
|--|-------------|-------|----------------|----------------|----------|
| 1  | Enclosure   | N/E   | --             | --             | None     |
| 2  | Type-C port | I/O   | No             | Shielded(1.2m) | 1 ports  |
| <p>* Note: For the purposes of the present document, the following symbols apply:</p> <p>AC AC Power Port<br/> DC DC Power Port<br/> N/E Non-Electrical<br/> I/O Signal Input or Output Port (Not Involved in Process Control)<br/> TP Telecommunication Ports</p> |             |       |                |                |          |

### 2.3. Independent Operation Modes

| Pertest mode   | Description                                   |
|--|---|
| Mode 1   | Standby mode                                  |
| Mode 2   | Mobile phone is charging at 1% battery power  |
| Mode 3   | Mobile phone is charging at 50% battery power |
| Mode 4   | Mobile phone is charging at 99% battery power |
| Note: Only the worst case data is shown in the report. |   |

### 2.4. Description of Test Facility

#### Site Description

EMC Lab. : Accredited by CNAS, 2016.10.24  
The certificate is valid until 2022.10.28  
The Laboratory has been assessed and proved to be in compliance with  
CNAS-CL01:2006 (identical to ISO/IEC 17025:2005)  
The Certificate Registration Number is L2291.

Accredited by TUV Rheinland Shenzhen 2016.5.19  
The Laboratory has been assessed according to the requirements  
ISO/IEC 17025.

Accredited by FCC, August 06, 2018  
The certificate is valid until August 07, 2020  
Designation Number: CN1204  
Test Firm Registration Number: 882943

Accredited by Industry Canada, November 09, 2018  
The Conformity Assessment Body Identifier is CN0008.

Accredited by A2LA, July 31, 2017  
The Certificate Number is 4321.01.

Name of Firm : EMTEK (SHENZHEN) CO., LTD.

Site Location : Bldg 69, Majialong Industry Zone, Nanshan District, Shenzhen,  
Guangdong, China

### 2.5. Test Software

| Item               | Software                       |
|--------------------|--------------------------------|
| Conducted Emission | : EMTEK(Ver.CON-03A1)-Shenzhen |
| Radiated Emission  | : EMTEK(Ver.RA-03A1)-Shenzhen  |

## 2.6. Description of Support Device

| No. | Equipment | Trade name | Model    | S/N | Power Cord |
|-----|-----------|------------|----------|-----|------------|
| 1.  | Adapter   | BULL       | GN-U2000 | N/A | N/A        |

## 2.7. Measurement Uncertainty

| Test Item                                     | Uncertainty   |
|---|---|
| Conducted Emission Uncertainty                | 3.16dB(9k~150kHz Conduction 2#)<br>2.90dB(150k-30MHz Conduction 2#)               |
| Radiated Emission Uncertainty<br>(3m Chamber) | 3.78dB (30M~1GHz Polarize: H)<br>4.27dB (30M~1GHz Polarize: V)<br>4.46dB (1~6GHz) |



### 3. MEASURING DEVICE AND TEST EQUIPMENT

#### 3.1. For Power Line Conducted Emission Measurement

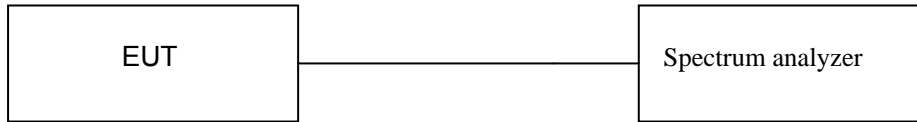
| Used                                | Equipment          | Manufacturer    | Model No. | Serial No. | Last Cal.    | Cal. Interval |
|-------------------------------------|--------------------|-----------------|-----------|------------|--------------|---------------|
| <input checked="" type="checkbox"/> | Test Receiver      | Rohde & Schwarz | ESCS30    | 828985/018 | May 20, 2018 | 1 Year        |
| <input checked="" type="checkbox"/> | L.I.S.N.           | Rohde & Schwarz | ESH3-Z5   | 100191     | May 20, 2018 | 1 Year        |
| <input checked="" type="checkbox"/> | 50Ω Coaxial Switch | Anritsu         | MP59B     | M20531     | May 20, 2018 | 1 Year        |
| <input checked="" type="checkbox"/> | Pulse Limiter      | Rohde & Schwarz | ESH3-Z2   | 100006     | May 20, 2018 | 1 Year        |

#### 3.2. For Radiated Emission Measurement

| Used                                | Equipment         | Manufacturer    | Model No.          | Serial No.   | Last Cal.    | Cal. Interval |
|-------------------------------------|-------------------|-----------------|--------------------|--------------|--------------|---------------|
| <input checked="" type="checkbox"/> | EMI Test Receiver | Rohde & Schwarz | ESU                | 1302.6005.26 | May 20, 2018 | 1 Year        |
| <input checked="" type="checkbox"/> | Pre-Amplifier     | HP              | 8447F              | 2944A07999   | May 20, 2018 | 1 Year        |
| <input checked="" type="checkbox"/> | Bilog Antenna     | Schwarzbeck     | VULB9163           | 142          | May 20, 2018 | 1 Year        |
| <input checked="" type="checkbox"/> | Cable             | Schwarzbeck     | AK9513             | ACRX1        | May 20, 2018 | 1 Year        |
| <input checked="" type="checkbox"/> | Cable             | Rosenberger     | N/A                | FP2RX2       | May 20, 2018 | 1 Year        |
| <input checked="" type="checkbox"/> | Cable             | Schwarzbeck     | AK9513             | CRPX1        | May 20, 2018 | 1 Year        |
| <input checked="" type="checkbox"/> | Cable             | Schwarzbeck     | AK9513             | CRRX2        | May 20, 2018 | 1 Year        |
| <input checked="" type="checkbox"/> | EMI Test Receiver | Rohde & Schwarz | ESU                | 1302.6005.26 | May 20, 2018 | 1 Year        |
| <input checked="" type="checkbox"/> | Pre-Amplifier     | A.H.            | PAM-0126           | 1415261      | May 20, 2018 | 1 Year        |
| <input checked="" type="checkbox"/> | Horn Antenna      | Schwarzbeck     | BBHA 9120          | 707          | May 20, 2018 | 1 Year        |
| <input checked="" type="checkbox"/> | Cable             | H+B             | 0.5M<br>SF104-26.5 | 289147/4     | May 20, 2018 | 1 Year        |
| <input checked="" type="checkbox"/> | Cable             | H+B             | 3M SF104-26.5      | 295838/4     | May 20, 2018 | 1 Year        |
| <input checked="" type="checkbox"/> | Cable             | H+B             | 6M SF104-26.5      | 295840/4     | May 20, 2018 | 1 Year        |

## 4. 20 DB BANDWIDTH

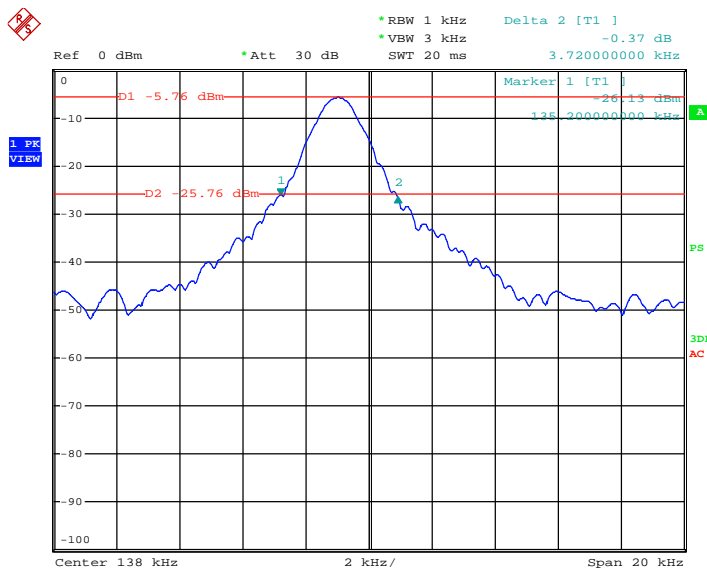
### 4.1. Block Diagram of Test Setup



### 4.2. Test set-up

- a. Span = approximately 2 to 3 times the 20 dB bandwidth, RBW = greater than 1 % of the 20 dB bandwidth, VBW = RBW, Sweep = auto, Detector = peak, Trace = max hold.
- b. The marker-to-peak function to set the mark to the peak of the emission. Use the marker-delta function to measure 20 dB down one side of the emission. Reset the function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is 20 dB bandwidth of the emission.

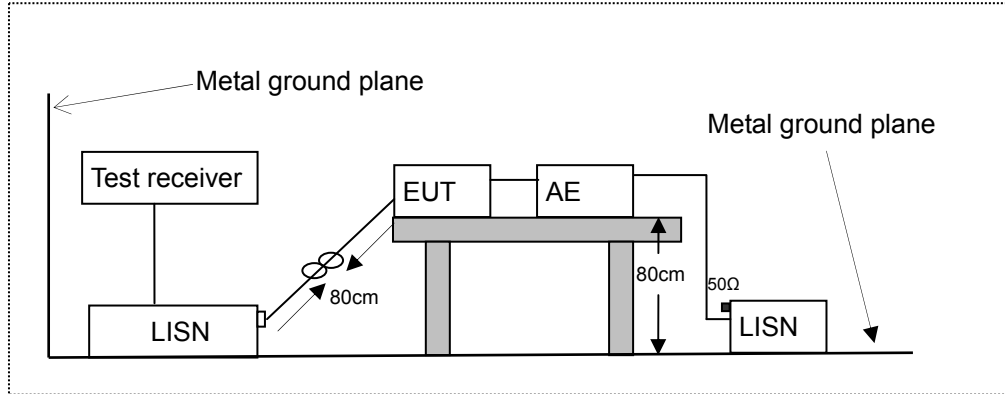
### 4.3. Test Results



Date: 19.MAR.2019 10:25:49

## 5. POWER LINE CONDUCTED EMISSION MEASUREMENT

### 5.1. Block Diagram of Test Setup



LISN: Line Impedance Stabilization Network  
 AE: Associated equipment  
 EUT: Equipment under test

### 5.2. Limits

FCC Part 15.207

| Frequency<br>(MHz) | Limit (dB $\mu$ V) |               |
|--------------------|--------------------|---------------|
|                    | Quasi-peak Level   | Average Level |
| 0.15 ~ 0.50        | 66.0 ~ 56.0 *      | 56.0 ~ 46.0 * |
| 0.50 ~ 5.00        | 56.0               | 46.0          |
| 5.00 ~ 30.00       | 60.0               | 50.0          |

NOTE1-The lower limit shall apply at the transition frequencies.  
 NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

### 5.3. Test Procedure

The EUT was placed on a desk 0.8 m height from the metal ground plane and 0.4 m from the conducting wall of the shielding room and it was kept at least 0.8 m from any other grounded conducting surface. The size of the table will nominally be 1.5 m x1.0 m.

The rear of the arrangement shall be flush with the back of the supporting tabletop unless that would not be possible or typical of normal use.

All units of equipment forming the system under test (includes the EUT as well as connected peripherals and associated equipment or devices) shall be arranged such that a nominal 0.1 m separation is achieved between the neighboring units.

Connect EUT to the power mains through a line impedance stabilization network (LISN). Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the centre into a bundle no longer than 0.4 m, so that its length is shortened to 1 m.

All the support units are connecting to the other LISN.

The LISN provides 50 ohm coupling impedance for the measuring instrument.

Both sides of AC line were checked for maximum conducted interference.

The frequency range from 150 kHz to 30 MHz was sweep.

Set the test-receiver system to quasi peak detect function and average detect function, and to measure the conducted emissions values.

Test results were obtained from the following equation:

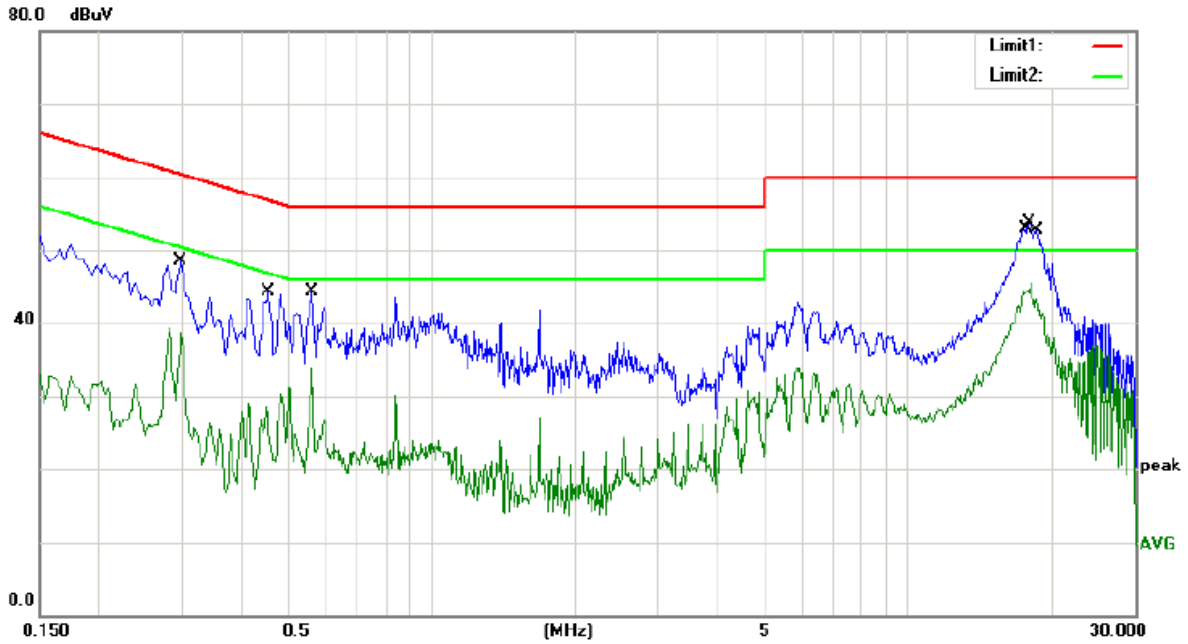
Emission Level (dB $\mu$ V) = LISN Factor (dB) + Cable Loss (dB) + Reading (dB $\mu$ V)

Margin (dB) = Emission Level (dB $\mu$ V) - Limit (dB $\mu$ V)

#### 5.4. Measuring Results

**PASS.**

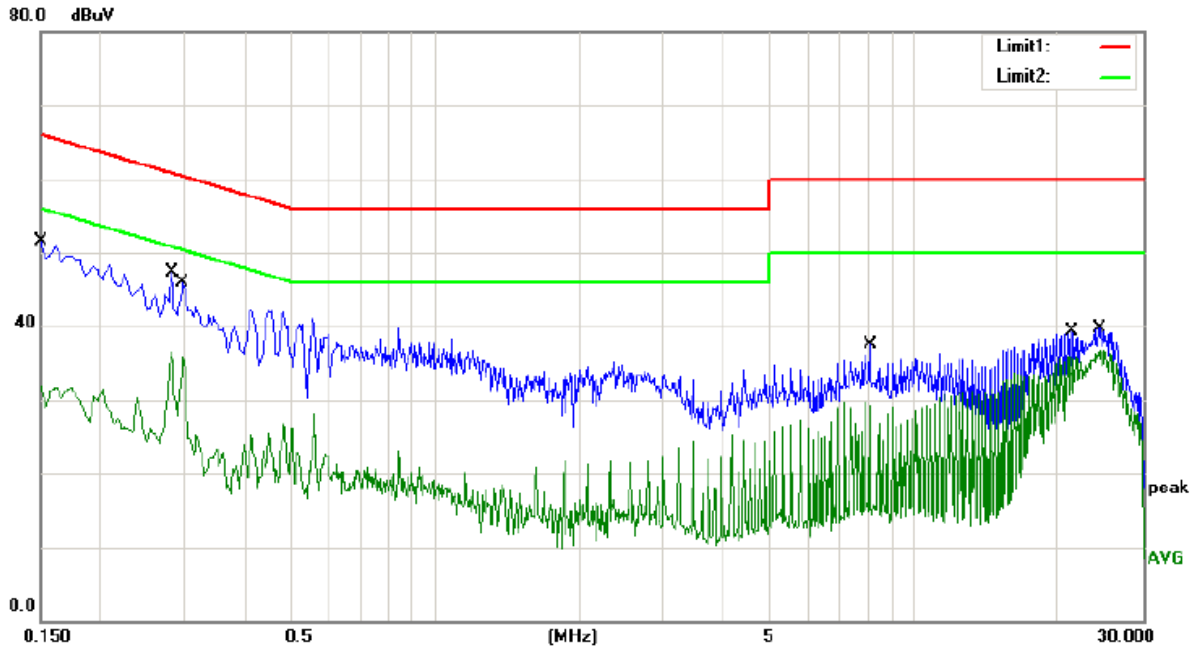
Worst Case Operating Mode: Mode 2



Site site #1 Phase: **L1** Temperature: 21  
 Limit: (CE)FCC PART 15 class B\_QP Power: AC 120V/60Hz Humidity: 55 %  
 Mode: Mode 2  
 Note:

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   |     | 0.2980       | 38.30                    | 10.09                   | 48.39                    | 60.30         | -11.91     | QP       |         |
| 2   |     | 0.2980       | 28.50                    | 10.09                   | 38.59                    | 50.30         | -11.71     | AVG      |         |
| 3   |     | 0.4540       | 34.10                    | 10.07                   | 44.17                    | 56.80         | -12.63     | QP       |         |
| 4   |     | 0.4540       | 15.40                    | 10.07                   | 25.47                    | 46.80         | -21.33     | AVG      |         |
| 5   |     | 0.5620       | 34.10                    | 10.06                   | 44.16                    | 56.00         | -11.84     | QP       |         |
| 6   |     | 0.5620       | 23.80                    | 10.06                   | 33.86                    | 46.00         | -12.14     | AVG      |         |
| 7   |     | 17.6360      | 42.10                    | 10.58                   | 52.68                    | 60.00         | -7.32      | QP       |         |
| 8   | *   | 17.6360      | 33.50                    | 10.58                   | 44.08                    | 50.00         | -5.92      | AVG      |         |
| 9   |     | 17.9880      | 43.10                    | 10.58                   | 53.68                    | 60.00         | -6.32      | QP       |         |
| 10  |     | 17.9880      | 33.50                    | 10.58                   | 44.08                    | 50.00         | -5.92      | AVG      |         |
| 11  |     | 18.6400      | 42.10                    | 10.59                   | 52.69                    | 60.00         | -7.31      | QP       |         |
| 12  |     | 18.6400      | 32.60                    | 10.59                   | 43.19                    | 50.00         | -6.81      | AVG      |         |

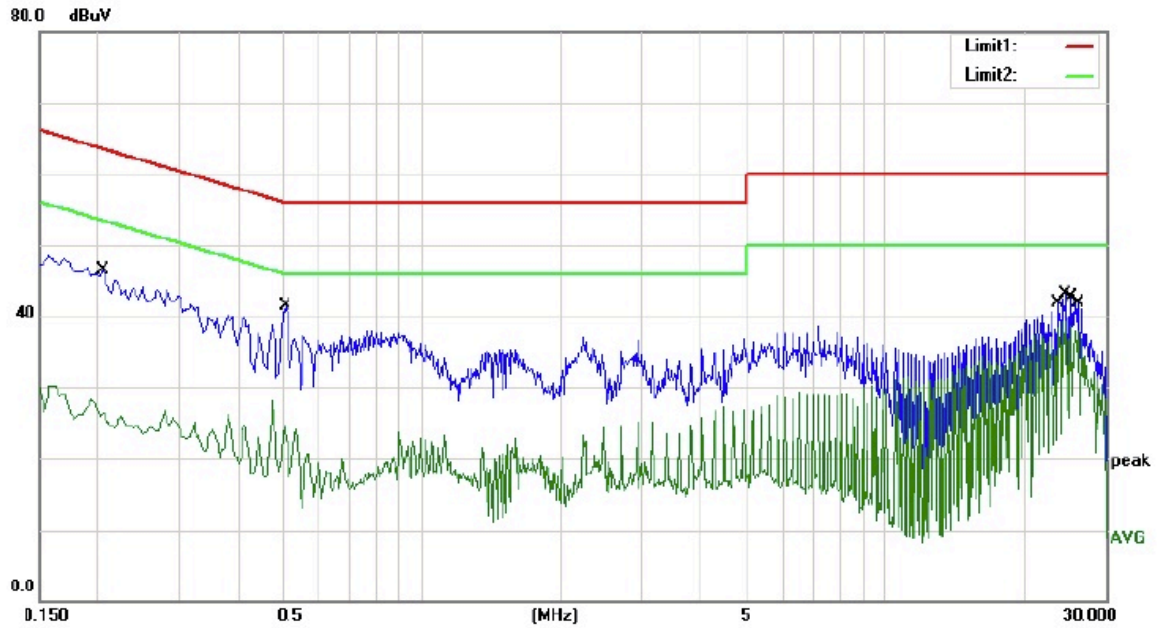
\*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: YYF



Site site #1 Phase: **N** Temperature: 18  
 Limit: (CE)FCC PART 15 class B\_QP Power: AC 120V/60Hz Humidity: 43 %  
 Mode: Mode 2  
 Note:

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   |     | 0.1500       | 41.40                    | 10.07                   | 51.47                    | 66.00         | -14.53     | QP       |         |
| 2   |     | 0.1500       | 21.80                    | 10.07                   | 31.87                    | 56.00         | -24.13     | AVG      |         |
| 3   |     | 0.2820       | 37.10                    | 10.09                   | 47.19                    | 60.76         | -13.57     | QP       |         |
| 4   |     | 0.2820       | 26.40                    | 10.09                   | 36.49                    | 50.76         | -14.27     | AVG      |         |
| 5   |     | 0.2980       | 35.70                    | 10.09                   | 45.79                    | 60.30         | -14.51     | QP       |         |
| 6   |     | 0.2980       | 25.80                    | 10.09                   | 35.89                    | 50.30         | -14.41     | AVG      |         |
| 7   |     | 8.0880       | 26.90                    | 10.46                   | 37.36                    | 60.00         | -22.64     | QP       |         |
| 8   |     | 8.0880       | 5.20                     | 10.46                   | 15.66                    | 50.00         | -34.34     | AVG      |         |
| 9   |     | 21.2960      | 28.50                    | 10.62                   | 39.12                    | 60.00         | -20.88     | QP       |         |
| 10  |     | 21.2960      | 25.20                    | 10.62                   | 35.82                    | 50.00         | -14.18     | AVG      |         |
| 11  |     | 24.4400      | 29.20                    | 10.53                   | 39.73                    | 60.00         | -20.27     | QP       |         |
| 12  | *   | 24.4400      | 26.10                    | 10.53                   | 36.63                    | 50.00         | -13.37     | AVG      |         |

\*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: YYF



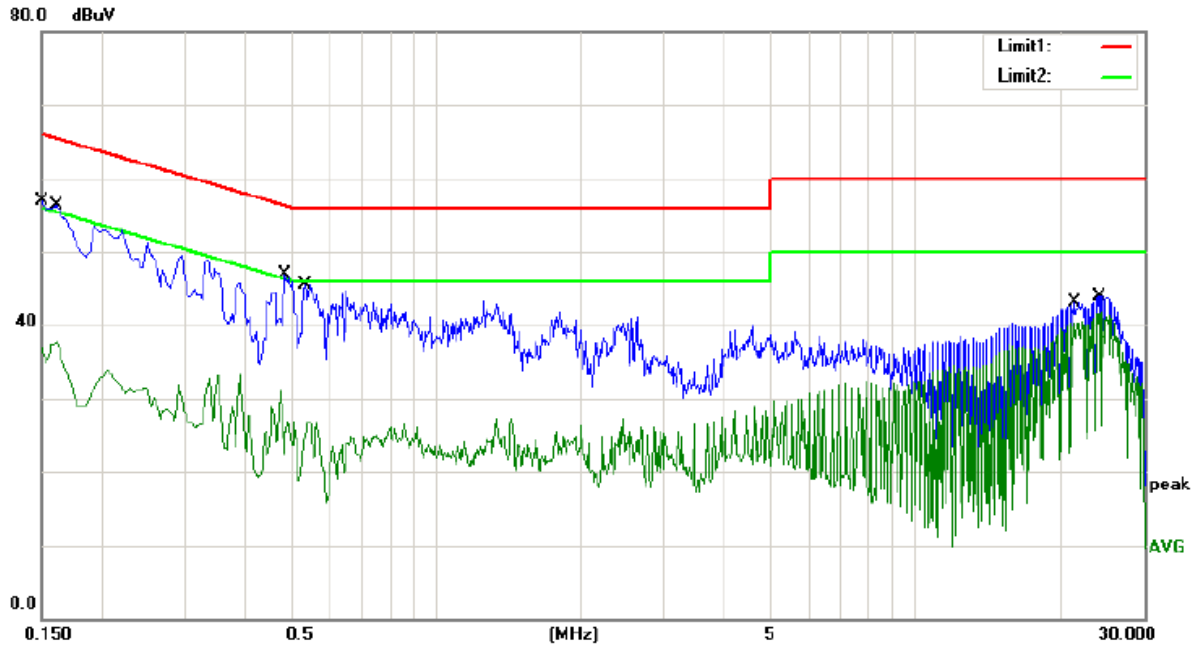
Site site #1 Phase: **L** Temperature: 21  
 Limit: (CE)FCC PART 15 class B\_QP Power: AC 240V/60Hz Humidity: 55 %

Mode: Mode 2

Note:

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   |     | 0.2060       | 36.30                    | 10.08                   | 46.38                    | 63.37         | -16.99     | QP       |         |
| 2   |     | 0.2060       | 16.20                    | 10.08                   | 26.28                    | 53.37         | -27.09     | AVG      |         |
| 3   |     | 0.5100       | 31.30                    | 10.10                   | 41.40                    | 56.00         | -14.60     | QP       |         |
| 4   |     | 0.5100       | 12.40                    | 10.10                   | 22.50                    | 46.00         | -23.50     | AVG      |         |
| 5   |     | 23.5920      | 31.20                    | 10.56                   | 41.76                    | 60.00         | -18.24     | QP       |         |
| 6   |     | 23.5920      | 27.90                    | 10.56                   | 38.46                    | 50.00         | -11.54     | AVG      |         |
| 7   |     | 24.4880      | 32.50                    | 10.53                   | 43.03                    | 60.00         | -16.97     | QP       |         |
| 8   | *   | 24.4880      | 28.80                    | 10.53                   | 39.33                    | 50.00         | -10.67     | AVG      |         |
| 9   |     | 25.1640      | 32.20                    | 10.51                   | 42.71                    | 60.00         | -17.29     | QP       |         |
| 10  |     | 25.1640      | 28.20                    | 10.51                   | 38.71                    | 50.00         | -11.29     | AVG      |         |
| 11  |     | 26.0600      | 31.40                    | 10.48                   | 41.88                    | 60.00         | -18.12     | QP       |         |
| 12  |     | 26.0600      | 27.60                    | 10.48                   | 38.08                    | 50.00         | -11.92     | AVG      |         |

\*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: YYF



Site site #1 Phase: **N** Temperature: 21  
 Limit: (CE)FCC PART 15 class B\_QP Power: AC 240V/60Hz Humidity: 55 %  
 Mode: Mode 2  
 Note:

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   |     | 0.1500       | 46.80                    | 10.07                   | 56.87                    | 66.00         | -9.13      | QP       |         |
| 2   |     | 0.1500       | 26.80                    | 10.07                   | 36.87                    | 56.00         | -19.13     | AVG      |         |
| 3   |     | 0.1620       | 46.20                    | 10.08                   | 56.28                    | 65.36         | -9.08      | QP       |         |
| 4   |     | 0.1620       | 27.50                    | 10.08                   | 37.58                    | 55.36         | -17.78     | AVG      |         |
| 5   |     | 0.4860       | 36.70                    | 10.11                   | 46.81                    | 56.24         | -9.43      | QP       |         |
| 6   |     | 0.4860       | 15.30                    | 10.11                   | 25.41                    | 46.24         | -20.83     | AVG      |         |
| 7   |     | 0.5340       | 35.40                    | 10.09                   | 45.49                    | 56.00         | -10.51     | QP       |         |
| 8   |     | 0.5340       | 15.10                    | 10.09                   | 25.19                    | 46.00         | -20.81     | AVG      |         |
| 9   |     | 21.4880      | 32.50                    | 10.62                   | 43.12                    | 60.00         | -16.88     | QP       |         |
| 10  |     | 21.4880      | 29.50                    | 10.62                   | 40.12                    | 50.00         | -9.88      | AVG      |         |
| 11  |     | 24.2600      | 33.40                    | 10.54                   | 43.94                    | 60.00         | -16.06     | QP       |         |
| 12  | *   | 24.2600      | 30.90                    | 10.54                   | 41.44                    | 50.00         | -8.56      | AVG      |         |

\*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: YYF



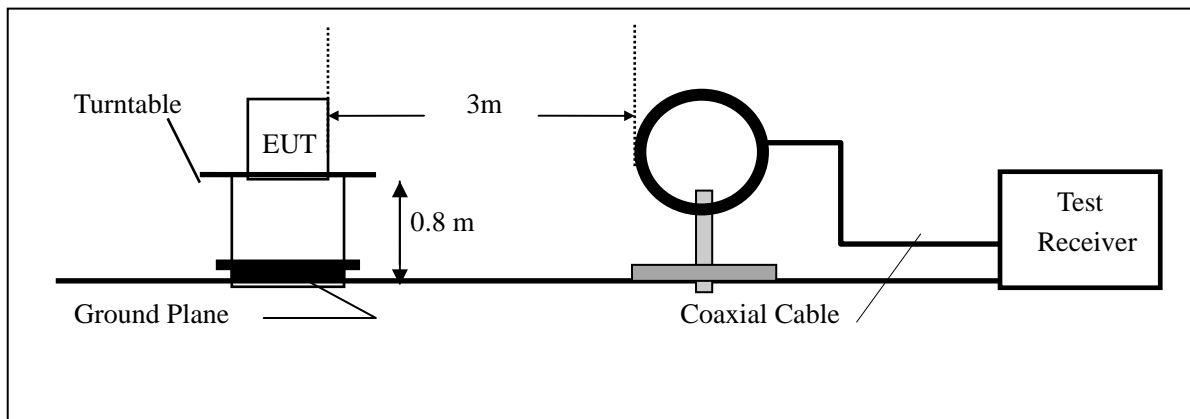
## 6. RADIATED EMISSION TEST

### 6.1. Measurement Procedure

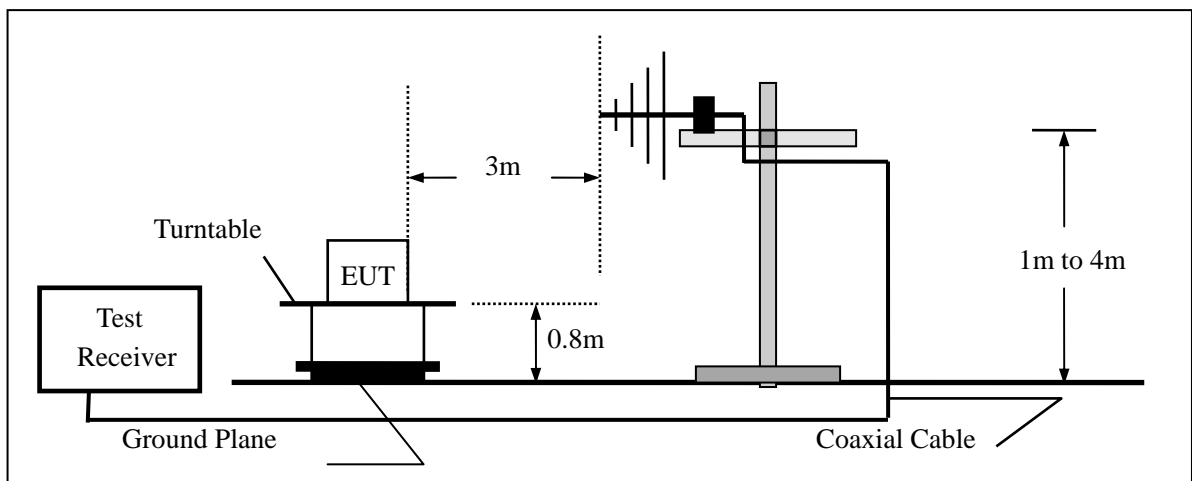
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured were complete.
5. Average detector is used for 9–90 KHz, 110–490 KHz and Quasi-Peak detector is used for their frequency band. The IF bandwidth used for measurement of radiated signal strength was 10 KHz for emission below 30 MHz and 120 KHz for emission from 30 MHz to 1000 MHz.

### 6.2. Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency Below 1000MHz



### 6.3. Measurement Equipment Used

| EQUIPMENT TYPE    | MFR             | MODEL NUMBER | SERIAL NUMBER | LAST CAL.  | CAL DUE.   |
|-------------------|-----------------|--------------|---------------|------------|------------|
| EMI Test Receiver | Rohde & Schwarz | ESU          | 1302.6005.26  | 05/20/2018 | 05/19/2019 |
| Pre-Amplifier     | HP              | 8447D        | 2944A07999    | 05/20/2018 | 05/19/2019 |
| Bilog Antenna     | Schwarzbeck     | VULB9163     | 142           | 05/20/2018 | 05/19/2019 |
| Loop Antenna      | ARA             | PLA-1030/B   | 1029          | 05/20/2018 | 05/19/2019 |
| Horn Antenna      | Schwarzbeck     | BBHA 9170    | BBHA9170399   | 05/20/2018 | 05/19/2019 |
| Horn Antenna      | Schwarzbeck     | BBHA 9120    | D143          | 05/20/2018 | 05/19/2019 |
| Cable             | Schwarzbeck     | AK9513       | ACRX1         | 05/20/2018 | 05/19/2019 |
| Cable             | Rosenberger     | N/A          | FP2RX2        | 05/20/2018 | 05/19/2019 |
| Cable             | Schwarzbeck     | AK9513       | CRPX1         | 05/20/2018 | 05/19/2019 |
| Cable             | Schwarzbeck     | AK9513       | CRRX2         | 05/20/2018 | 05/19/2019 |

### 6.4. Radiated Emission Limit

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

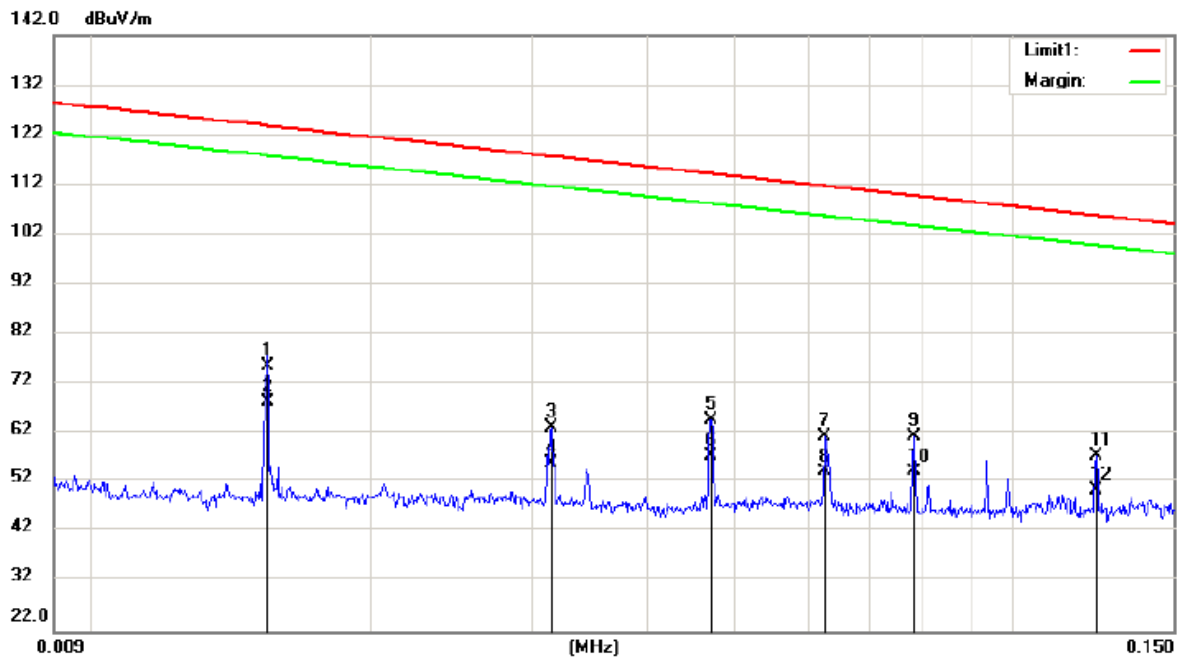
| FCC Part 15.209 |                           |      |   |                         |
|-----------------|---------------------------|------|---|-------------------------|
| Frequency (MHz) | Field Strength Limitation |      | Field Strength Limitation Frequency tion at 3m Measurement Dist |                         |
|                 | (uV/m)                    | Dist | (uV/m)  | (dBuV/m)                |
| 0.009 – 0.490   | 2400 / F(KHz)             | 300m | 10000 * 2400/F(KHz)   | 20log 2400/F(KHz) + 80  |
| 0.490 – 1.705   | 24000 / F(KHz)            | 30m  | 100 * 24000/F(KHz)  | 20log 24000/F(KHz) + 40 |
| 1.705 – 30.00   | 30                        | 30m  | 100* 30   | 20log 30 + 40           |
| 30.0 – 88.0     | 100                       | 3m   | 100   | 20log 100               |
| 88.0 – 216.0    | 150                       | 3m   | 150   | 20log 150               |
| 216.0 – 960.0   | 200                       | 3m   | 200   | 20log 200               |
| Above 960.0     | 500                       | 3m   | 500   | 20log 500               |

## 15.205 Restricted bands of operation

| MHz                        | MHz                   | MHz             | GHz              |
|----------------------------|-----------------------|-----------------|------------------|
| 0.090 - 0.110              | 16.42 - 16.423        | 399.9 - 410     | 4.5 - 5.15       |
| <sup>1</sup> 0.495 - 0.505 | 16.69475 - 16.69525   | 608 - 614       | 5.35 - 5.46      |
| 2.1735 - 2.1905            | 16.80425 - 16.80475   | 960 - 1240      | 7.25 - 7.75      |
| 4.125 - 4.128              | 25.5 - 25.67          | 1300 - 1427     | 8.025 - 8.5      |
| 4.17725 - 4.17775          | 37.5 - 38.25          | 1435 - 1626.5   | 9.0 - 9.2        |
| 4.20725 - 4.20775          | 73 - 74.6             | 1645.5 - 1646.5 | 9.3 - 9.5        |
| 6.215 - 6.218              | 74.8 - 75.2           | 1660 - 1710     | 10.6 - 12.7      |
| 6.26775 - 6.26825          | 108 - 121.94          | 1718.8 - 1722.2 | 13.25 - 13.4     |
| 6.31175 - 6.31225          | 123 - 138             | 2200 - 2300     | 14.47 - 14.5     |
| 8.291 - 8.294              | 149.9 - 150.05        | 2310 - 2390     | 15.35 - 16.2     |
| 8.362 - 8.366              | 156.52475 - 156.52525 | 2483.5 - 2500   | 17.7 - 21.4      |
| 8.37625 - 8.38675          | 156.7 - 156.9         | 2690 - 2900     | 22.01 - 23.12    |
| 8.41425 - 8.41475          | 162.0125 - 167.17     | 3260 - 3267     | 23.6 - 24.0      |
| 12.29 - 12.293             | 167.72 - 173.2        | 3332 - 3339     | 31.2 - 31.8      |
| 12.51975 - 12.52025        | 240 - 285             | 3345.8 - 3358   | 36.43 - 36.5     |
| 12.57675 - 12.57725        | 322 - 335.4           | 3600 - 4400     | ( <sup>2</sup> ) |

- Remark:
1. Emission level in dBuV/m=20 log (uV/m)
  2. Measurement was performed at an antenna to the closed point of EUT distance of meters.
  3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of  $\xi$  15.205, and the emissions located in restricted bands also comply with 15.209 limit.



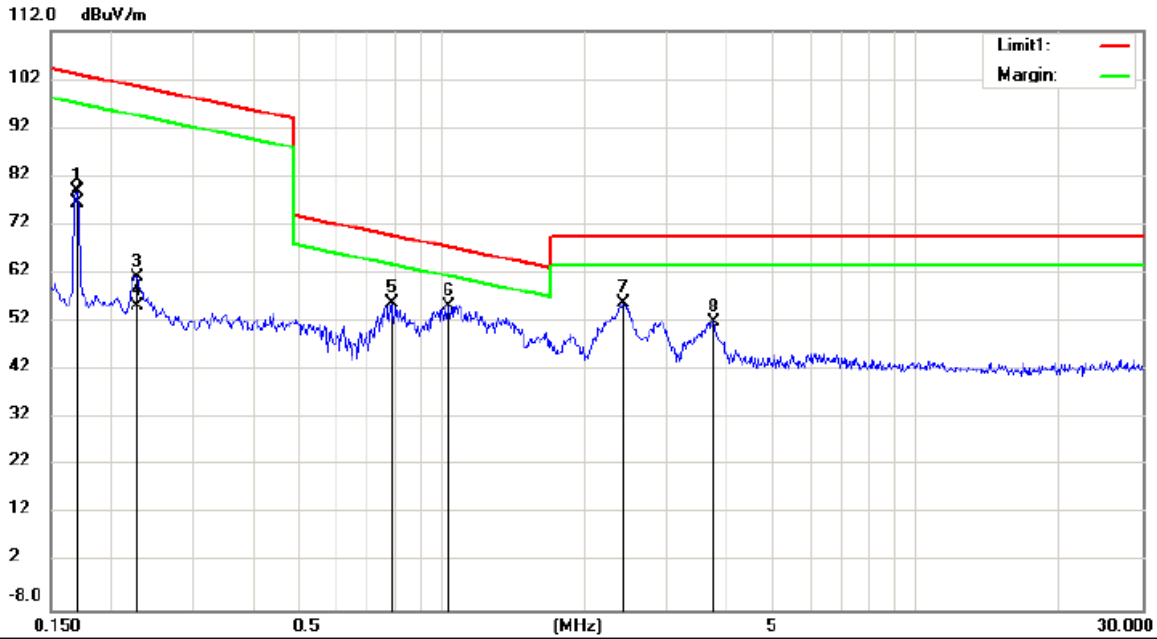


Site site #1 Polarization: **Horizontal** Temperature: 27 C  
 Limit: (RE)FCC PART 15.209(9K-30M) Power: AC 120V/60Hz Humidity: 43 %  
 Mode:Mode 2  
 Note:

| No. | Mk. | Freq.  | Reading Level | Correct Factor | Measurement | Limit  | Over   | Antenna Height | Table Degree |         |
|-----|-----|--------|---------------|----------------|-------------|--------|--------|----------------|--------------|---------|
|     |     | MHz    | dBuV          | dB             | dBuV/m      | dBuV/m | dB     | cm             | degree       | Comment |
| 1   |     | 0.0154 | 54.71         | 20.74          | 75.45       | 123.84 | -48.39 |                |              | peak    |
| 2   |     | 0.0154 | 47.62         | 20.74          | 68.36       | 123.84 | -55.48 |                |              | AVG     |
| 3   |     | 0.0313 | 42.36         | 20.84          | 63.20       | 117.68 | -54.48 |                |              | peak    |
| 4   |     | 0.0313 | 35.31         | 20.84          | 56.15       | 117.68 | -61.53 |                |              | AVG     |
| 5   |     | 0.0470 | 43.67         | 21.10          | 64.77       | 114.15 | -49.38 |                |              | peak    |
| 6   |     | 0.0470 | 36.39         | 21.10          | 57.49       | 114.15 | -56.66 |                |              | AVG     |
| 7   |     | 0.0625 | 40.65         | 20.75          | 61.40       | 111.68 | -50.28 |                |              | peak    |
| 8   |     | 0.0625 | 33.46         | 20.75          | 54.21       | 111.68 | -57.47 |                |              | AVG     |
| 9   |     | 0.0782 | 41.07         | 20.41          | 61.48       | 109.73 | -48.25 |                |              | peak    |
| 10  |     | 0.0782 | 33.94         | 20.41          | 54.35       | 109.73 | -55.38 |                |              | AVG     |
| 11  | *   | 0.1234 | 36.74         | 20.85          | 57.59       | 105.77 | -48.18 |                |              | peak    |
| 12  |     | 0.1234 | 29.50         | 20.85          | 50.35       | 105.77 | -55.42 |                |              | AVG     |

\*:Maximum data x:Over limit !:over margin

Operator: KK

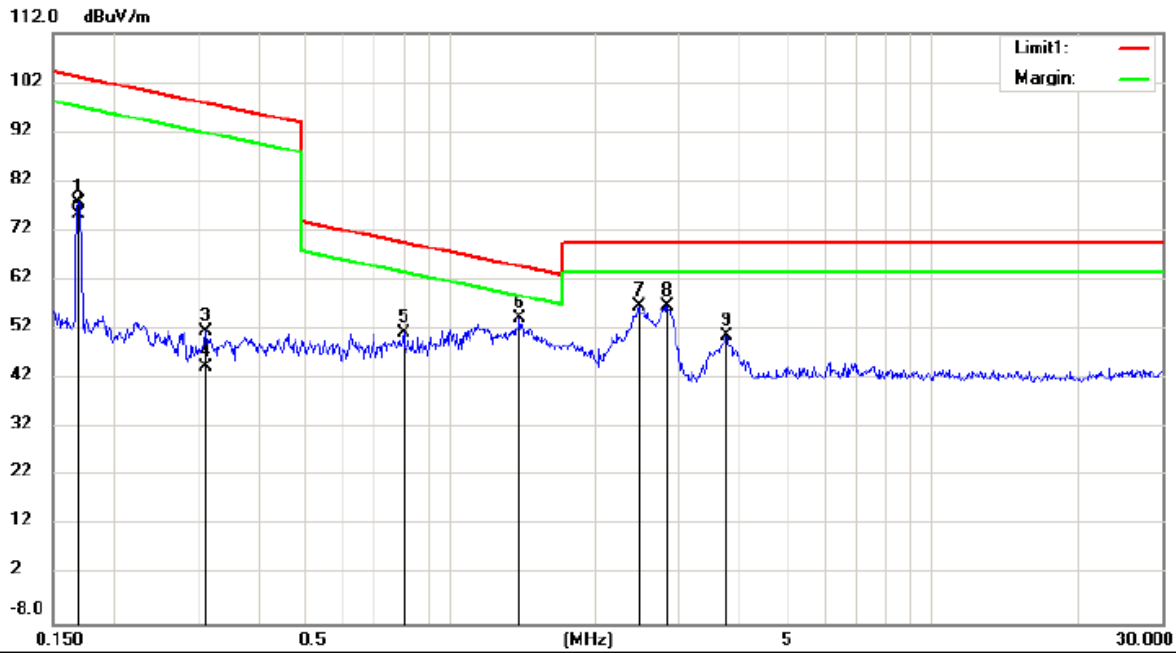


Site site #1 Polarization: **Vertical** Temperature: 27 C  
 Limit: (RE)FCC PART 15.209(9K-30M) Power: AC 120V/60Hz Humidity: 43 %  
 Mode: Mode 2  
 Note:

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV/m | Limit<br>dBuV/m | Over<br>dB | Detector | Antenna<br>Height<br>cm | Table<br>Degree | Comment |
|-----|-----|--------------|--------------------------|-------------------------|----------------------------|-----------------|------------|----------|-------------------------|-----------------|---------|
| 1   |     | 0.1700       | 57.93                    | 20.89                   | 78.82                      | 102.99          | -24.17     | peak     |                         |                 |         |
| 2   |     | 0.1700       | 55.46                    | 20.89                   | 76.35                      | 102.99          | -26.64     | AVG      |                         |                 |         |
| 3   |     | 0.2280       | 40.20                    | 21.01                   | 61.21                      | 100.44          | -39.23     | peak     |                         |                 |         |
| 4   |     | 0.2280       | 34.11                    | 21.01                   | 55.12                      | 100.44          | -45.32     | AVG      |                         |                 |         |
| 5   |     | 0.7832       | 34.65                    | 20.96                   | 55.61                      | 69.74           | -14.13     | QP       |                         |                 |         |
| 6   | *   | 1.0374       | 34.27                    | 20.95                   | 55.22                      | 67.30           | -12.08     | QP       |                         |                 |         |
| 7   |     | 2.4216       | 35.17                    | 20.54                   | 55.71                      | 69.50           | -13.79     | QP       |                         |                 |         |
| 8   |     | 3.7395       | 31.47                    | 20.39                   | 51.86                      | 69.50           | -17.64     | QP       |                         |                 |         |

\*:Maximum data x:Over limit !:over margin

Operator: KK



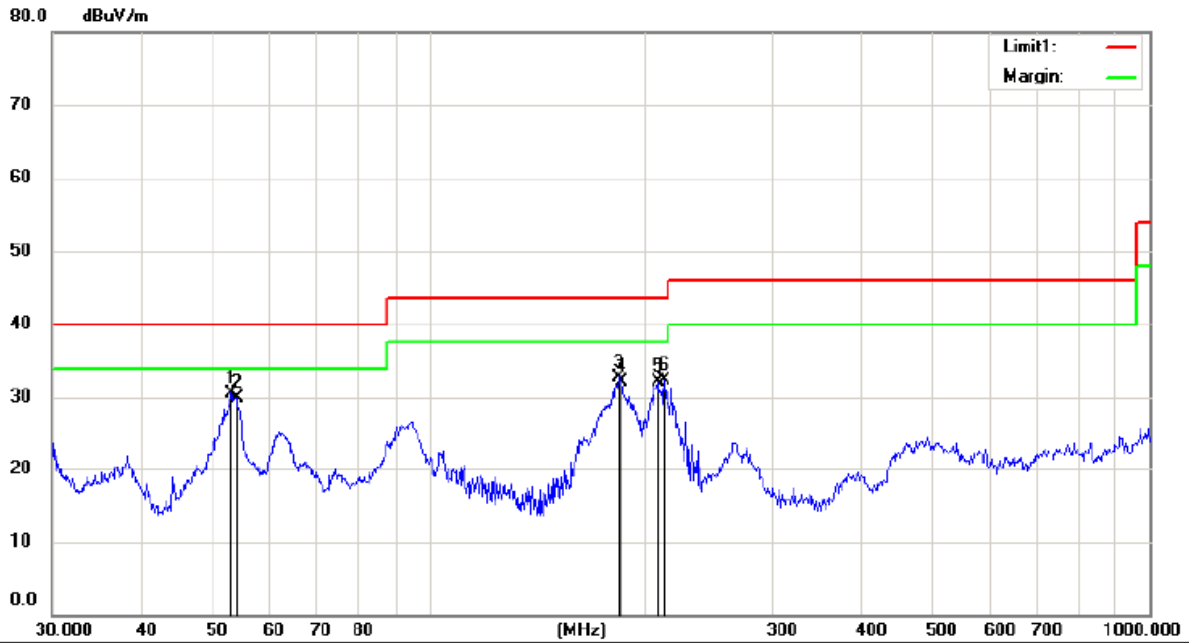
Site site #1 Polarization: **Horizontal** Temperature: 27 C  
 Limit: (RE)FCC PART 15.209(9K-30M) Power: AC 120V/60Hz Humidity: 43 %  
 Mode: Mode 2  
 Note:

| No. | Mk. | Freq.  | Reading Level | Correct Factor | Measurement | Limit  | Over   | Antenna Height | Table Degree |         |
|-----|-----|--------|---------------|----------------|-------------|--------|--------|----------------|--------------|---------|
|     |     | MHz    | dBuV          | dB             | dBuV/m      | dBuV/m | dB     | cm             | degree       | Comment |
| 1   |     | 0.1700 | 56.63         | 20.89          | 77.52       | 102.99 | -25.47 |                |              | peak    |
| 2   |     | 0.1700 | 54.37         | 20.89          | 75.26       | 102.99 | -27.73 |                |              | AVG     |
| 3   |     | 0.3116 | 30.48         | 21.05          | 51.53       | 97.73  | -46.20 |                |              | peak    |
| 4   |     | 0.3116 | 23.30         | 21.05          | 44.35       | 97.73  | -53.38 |                |              | AVG     |
| 5   |     | 0.8002 | 30.32         | 20.96          | 51.28       | 69.55  | -18.27 |                |              | QP      |
| 6   | *   | 1.3958 | 33.39         | 20.84          | 54.23       | 64.73  | -10.50 |                |              | QP      |
| 7   |     | 2.4605 | 36.22         | 20.53          | 56.75       | 69.50  | -12.75 |                |              | QP      |
| 8   |     | 2.8240 | 36.22         | 20.43          | 56.65       | 69.50  | -12.85 |                |              | QP      |
| 9   |     | 3.7395 | 30.33         | 20.39          | 50.72       | 69.50  | -18.78 |                |              | QP      |

\*:Maximum data x:Over limit !:over margin

Operator: KK

## 30MHz-1GHz:



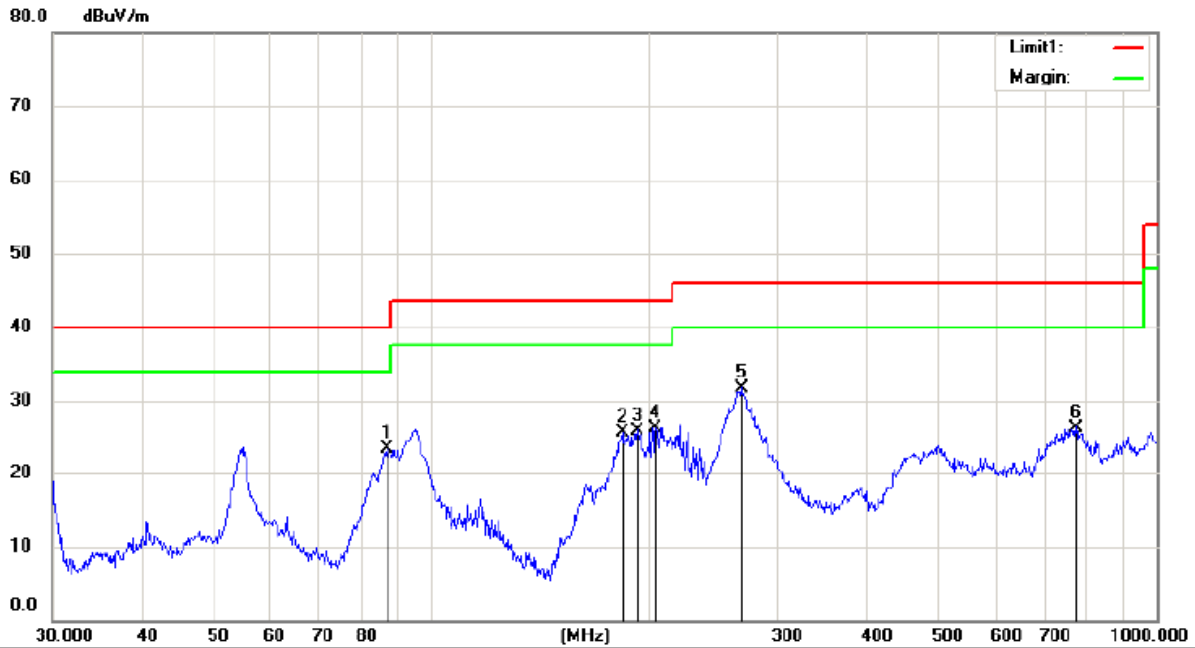
Site site #1      Polarization: **Vertical**      Temperature: 18 C  
 Limit: FCC Part15 Class B 3M Radiation      Power: AC 120V/60Hz      Humidity: 42 %  
 Mode: Mode 2  
 Note:

| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measure-ment | Limit  | Over   | Antenna Height | Table Degree |         |
|-----|-----|----------|---------------|----------------|--------------|--------|--------|----------------|--------------|---------|
|     |     | MHz      | dBuV          | dB             | dBuV/m       | dBuV/m | dB     | cm             | degree       | Comment |
| 1   | *   | 53.1313  | 50.16         | -19.56         | 30.60        | 40.00  | -9.40  | QP             |              |         |
| 2   |     | 54.0711  | 49.47         | -19.57         | 29.90        | 40.00  | -10.10 | QP             |              |         |
| 3   |     | 183.8440 | 56.75         | -23.95         | 32.80        | 43.50  | -10.70 | QP             |              |         |
| 4   |     | 185.1380 | 55.97         | -23.77         | 32.20        | 43.50  | -11.30 | QP             |              |         |
| 5   |     | 207.8501 | 54.54         | -22.44         | 32.10        | 43.50  | -11.40 | QP             |              |         |
| 6   |     | 212.2695 | 55.03         | -22.63         | 32.40        | 43.50  | -11.10 | QP             |              |         |

\*:Maximum data    x:Over limit    !:over margin

Operator: KK





Site site #1 Polarization: **Horizontal** Temperature: 18 C  
 Limit: FCC Part15 Class B 3M Radiation Power: AC 120V/60Hz Humidity: 42 %  
 Mode:Mode 2  
 Note:

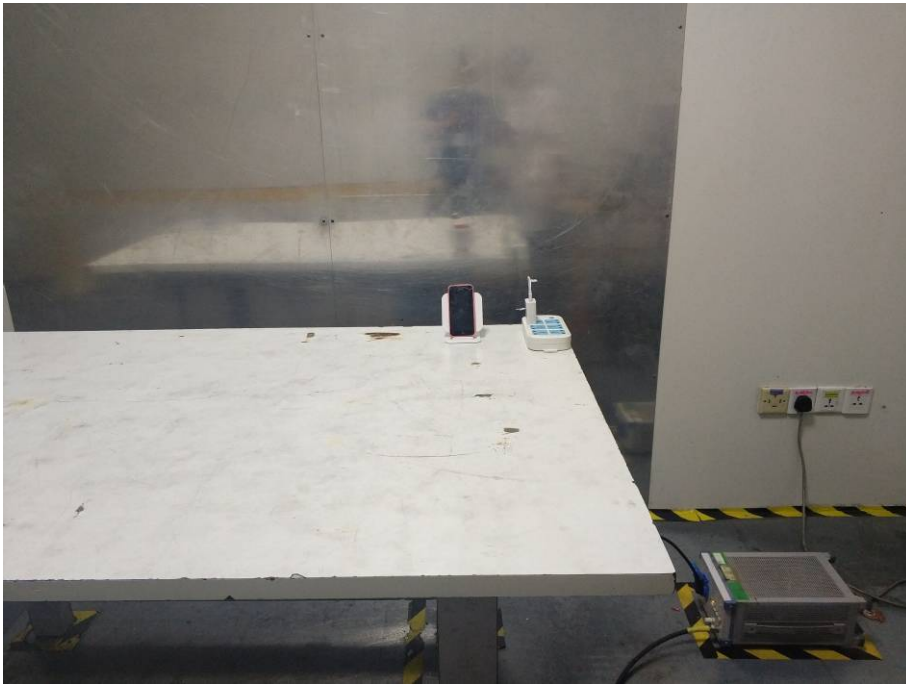
| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit  | Over   | Antenna Height | Table Degree |
|-----|-----|----------|---------------|----------------|-------------|--------|--------|----------------|--------------|
|     |     | MHz      | dBuV          | dB             | dBuV/m      | dBuV/m | dB     | cm             | degree       |
| 1   |     | 86.8068  | 48.11         | -24.61         | 23.50       | 40.00  | -16.50 | QP             |              |
| 2   |     | 183.2005 | 49.73         | -24.03         | 25.70       | 43.50  | -17.80 | QP             |              |
| 3   |     | 192.4186 | 47.95         | -21.95         | 26.00       | 43.50  | -17.50 | QP             |              |
| 4   |     | 203.5228 | 48.59         | -22.29         | 26.30       | 43.50  | -17.20 | QP             |              |
| 5   | *   | 267.5455 | 52.05         | -20.25         | 31.80       | 46.00  | -14.20 | QP             |              |
| 6   |     | 774.1584 | 34.57         | -8.17          | 26.40       | 46.00  | -19.60 | QP             |              |

\*:Maximum data x:Over limit !:over margin

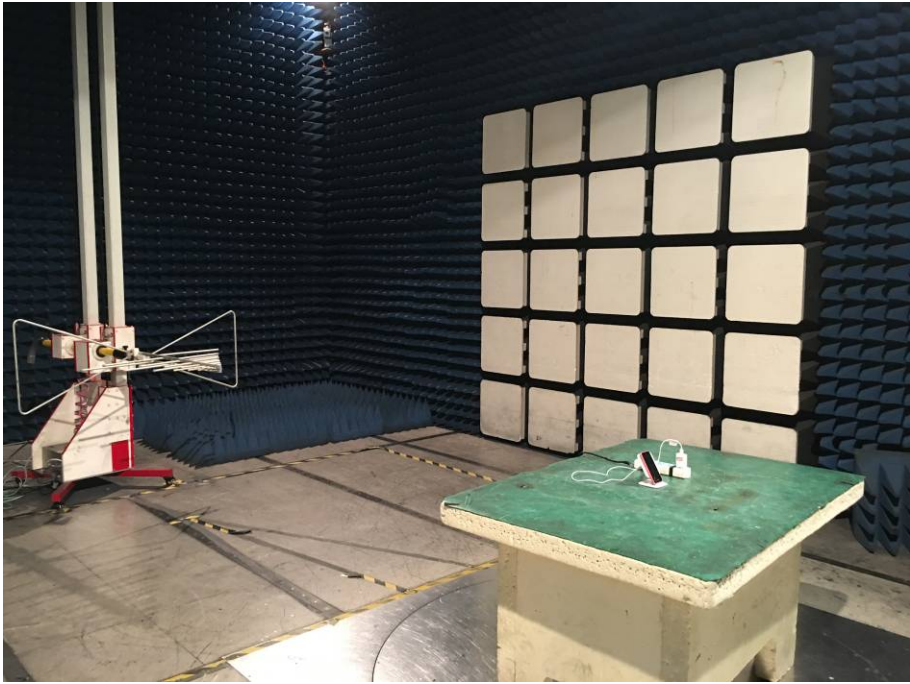
Operator: KK

## 7. PHOTOS OF SETUP

### CONDUCTED EMISSION TEST



**Radiated Measurement Photos**



-----The end-----