

# FCC Radio Test Report

## FCC ID: 2AG7CBELL9

This report concerns: Original Grant

**Project No.** : 2012H015  
**Equipment** : Wireless DoorBell  
**Brand Name** : N/A  
**Test Model** : Bell 9S  
**Series Model** : MI-CW024-101W, MIC-CW024-101W, Bell12S, GNC-CW025-101, GN-CW025-101  
**Applicant** : Hangzhou Meari Technology Co., Ltd.  
**Address** : Room 604-605, Building 1, No.768 Jianghong Road, Changhe street, Binjiang District, Hangzhou, Zhejiang, China  
**Manufacturer** : Hangzhou Meari Technology Co., Ltd.  
**Address** : No. 91 Chutian Road, Xixing Street, Binjiang District, Hangzhou, Zhejiang, China  
**Factory** : Hangzhou Meari Technology Co., Ltd.  
**Address** : No. 91 Chutian Road, Xixing Street, Binjiang District, Hangzhou, Zhejiang, China  
**Date of Receipt** : Nov. 03, 2020  
Dec. 22, 2020  
**Date of Test** : Nov. 03, 2020~Dec. 28, 2020  
Dec. 22, 2020~Jan. 11, 2021  
**Issued Date** : Jan. 20, 2021  
**Report Version** : R01  
**Test Sample** : Engineering Sample No.: SH2020121138, SH2020121140  
SH2020110266-6, SH2020110266, SH2020110266-4,  
SH2020110266-6  
**Standard(s)** : FCC Part15, Subpart C(15.249)  
ANSI C63.10-2013

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

Maker Qi

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Ryan. Wang

Approved by : Ryan Wang



Certificate # 5123.03

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**Declaration**

**BTL** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

**BTL's** reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

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**BTL's** laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

**BTL** is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

**Limitation**

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

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**REPORT ISSUED HISTORY**

| Report Version | Description                                                                                                                                                                                                                                                                                                                                   | Issued Date   |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| R00            | The hardware of this device are identical to the build-in antenna type of the implementation in FCC ID: 2AG7CBELL5.<br>The product change items are changed the capacitance and resistor positions of the module. The data from that application has been verified through appropriate spot checks to demonstrate compliance for this device. | Jan. 18, 2021 |
| R01            | Add the parameter change of capacitance:<br>Original: 1*50V 470uF + 2* 3.3V 2.7F;<br>New: 1*50V 470uF + 2* 3.3V 10F                                                                                                                                                                                                                           | Jan. 20, 2021 |

## 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

| FCC Part15, Subpart C (15.249) |                            |                          |          |        |
|--------------------------------|----------------------------|--------------------------|----------|--------|
| Standard(s) Section            | Test Item                  | Test Result              | Judgment | Remark |
| 15.207                         | Conducted Emission         | APPENDIX A               | PASS     | -----  |
| 15.209<br>15.249               | Radiated Spurious Emission | APPENDIX B<br>APPENDIX C | PASS     | -----  |
| -                              | Bandwidth                  | APPENDIX D               | PASS     | -----  |

### 1.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai 201210, China

BTL's Test Firm Registration Number for FCC: 476765

BTL's Designation Number for FCC: CN1241

## 1.2 MEASUREMENT UNCERTAINTY

The measurement uncertainty figures shall be calculated according the methods described in the ETSI TR 100 028 and shall correspond to an expansion factor (coverage factor)  $k=1.96$  or  $k=2$  (which provide confidence levels of respectively 90% and 95.45% in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

Measurement Uncertainty for a Level of Confidence of 95 %,  $U=2 \times U_c(y)$ .

### A. Radiated emissions test:

| Test Site | Method | Measurement Frequency Range | Ant.<br>H / V | U, (dB) |
|-----------|--------|-----------------------------|---------------|---------|
| SH-CB01   | CISPR  | 9 KHz~30 MHz                | V             | 3.79    |
|           |        | 9 KHz~30 MHz                | H             | 3.57    |
|           |        | 30 MHz~200 MHz              | V             | 4.04    |
|           |        | 30 MHz~200 MHz              | H             | 3.76    |
|           |        | 200 MHz~1,000 MHz           | V             | 4.24    |
|           |        | 200 MHz~1,000 MHz           | H             | 3.84    |
|           |        | 1 GHz~18 GHz                | V             | 4.46    |
|           |        | 1 GHz~18 GHz                | H             | 4.40    |
|           |        | 18 GHz~40 GHz               | V             | 3.95    |
|           |        | 18 GHz~40 GHz               | H             | 3.95    |

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

## 1.3 TEST ENVIRONMENT CONDITIONS

| Test Item                         | Temperature | Humidity | Test Voltage | Tested By   |
|-----------------------------------|-------------|----------|--------------|-------------|
| Conducted Emission                | 23°C        | 55%      | AC 120V/60Hz | Joven Xiong |
| Radiated Emission -30 MHz to 1GHz | 24°C        | 58%      | AC 120V/60Hz | Forest Li   |
| Radiated Emission -Above 1000 MHz | 24°C        | 58%      | AC 120V/60Hz | Forest Li   |
| Bandwidth                         | 22°C        | 48%      | AC 120V/60Hz | Vince Zong  |

## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

|                     |                                                                                                                                                                                                                                                           |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Equipment           | Wireless DoorBell                                                                                                                                                                                                                                         |
| Brand Name          | N/A                                                                                                                                                                                                                                                       |
| Test Model          | Bell 9S                                                                                                                                                                                                                                                   |
| Series Model        | MI-CW024-101W,MIC-CW024-101W,Bell12S,GNC-CW025-101,GN-CW025-101                                                                                                                                                                                           |
| Model Difference(s) | The series models BELL 9S and BELL 12S are just slightly different in appearance; Other models are identical except for model name.                                                                                                                       |
| Software Version    | Smart life                                                                                                                                                                                                                                                |
| Hardware Version    | PCB-BELL9S-S1MB_GC2063 REV1_0                                                                                                                                                                                                                             |
| Power Source        | DC voltage supplied from AC/DC adapter.<br>#1 Brand/Mode:STZY/ TPA-46B050100UU<br>#2 Brand/Mode:GPO/ GTA92-0501000US<br>AC/DC voltage supplied from AC/DC source.<br>#3 AC voltage supplied from AC/AC source<br>#4 DC voltage supplied from AC/DC source |
| Power Rating        | #1 I/P: 100V-240V ~ 50Hz/60Hz 0.2A<br>O/P:5.0V --- 1000mA.<br>#2 I/P: 100V-240V ~ 50Hz/60Hz 0.3A<br>O/P:USB-A 5.0V --- 1.0A, 5.0W<br>#3 I/P: 100V-240V ~ 50Hz/60Hz<br>O/P: AC 12-24V<br>#4 I/P: 100V-240V ~ 50Hz/60Hz<br>O/P: DC 12-24V                   |
| Operation Frequency | 915 MHz                                                                                                                                                                                                                                                   |
| Modulation Type     | OOK                                                                                                                                                                                                                                                       |
| Field Strength      | 92.08 dBuV/m                                                                                                                                                                                                                                              |

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- Channel List:

| Channel | Channel Frequency (MHz) |
|---------|-------------------------|
| 01      | 915                     |

### 3. Antenna Specification:

| Ant. | Brand | Model Name | Antenna Type | Connector | Gain (dBi) | Note |
|------|-------|------------|--------------|-----------|------------|------|
| 1    | N/A   | N/A        | FPC          | N/A       | 2          | N/A  |

Note:

The antenna gain is provided by the manufacturer.

## 2.2 DESCRIPTION OF TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

| Pretest Mode | Description |
|--------------|-------------|
| Mode 1       | TX_915      |

Following mode(s) as (were) found to be the worst case(s) and selected for the final test.

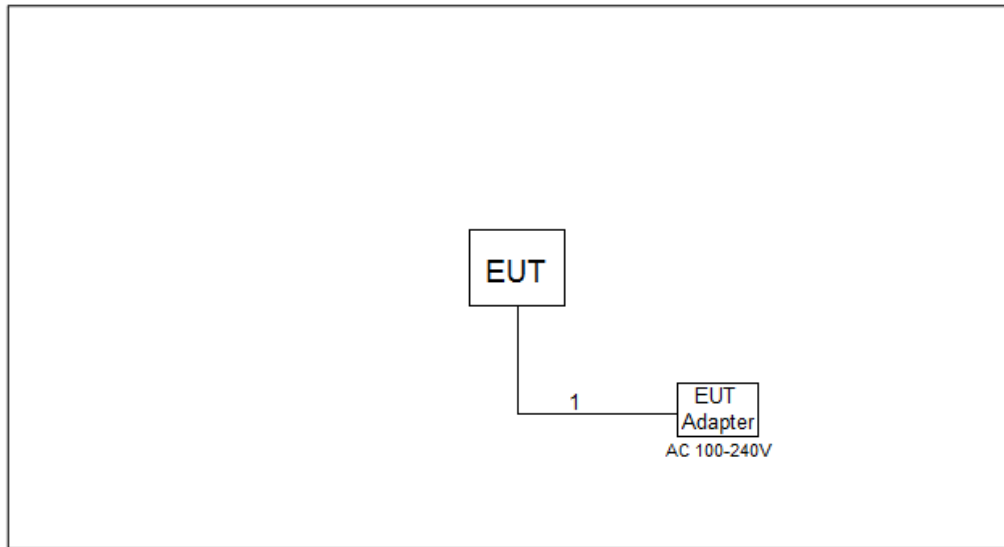
| Conducted emissions test |             |
|--------------------------|-------------|
| Final Test Mode:         | Description |
| Mode 5                   | TX_915      |

| Radiated emissions test - Below 1GHz |             |
|--------------------------------------|-------------|
| Final Test Mode:                     | Description |
| Mode 1                               | TX_915      |

| Radiated emissions test- Above 1GHz |             |
|-------------------------------------|-------------|
| Final Test Mode:                    | Description |
| Mode 1                              | TX_915      |

| Conducted test   |             |
|------------------|-------------|
| Final Test Mode: | Description |
| Mode 1           | TX_915      |

### 2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



### 2.4 SUPPORT UNITS

| Item | Equipment | Brand | Model No. | Series No. |
|------|-----------|-------|-----------|------------|
| -    | -         | -     | -         | -          |

| Item | Cable Type | Shielded Type | Ferrite Core | Length |
|------|------------|---------------|--------------|--------|
| 1    | DC Cable   | NO            | NO           | 1m     |

### 3. CONDUCTED EMISSIONS TEST

#### 3.1 LIMIT

| Frequency of Emission (MHz) | Limit (dB $\mu$ V) |           |
|-----------------------------|--------------------|-----------|
|                             | Quasi-peak         | Average   |
| 0.15 - 0.50                 | 66 to 56*          | 56 to 46* |
| 0.50 - 5.0                  | 56                 | 46        |
| 5.0 - 30.0                  | 60                 | 50        |

**NOTE:**

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

| Receiver Parameters | Setting  |
|---------------------|----------|
| Attenuation         | 10 dB    |
| Start Frequency     | 0.15 MHz |
| Stop Frequency      | 30 MHz   |
| IF Bandwidth        | 9 kHz    |

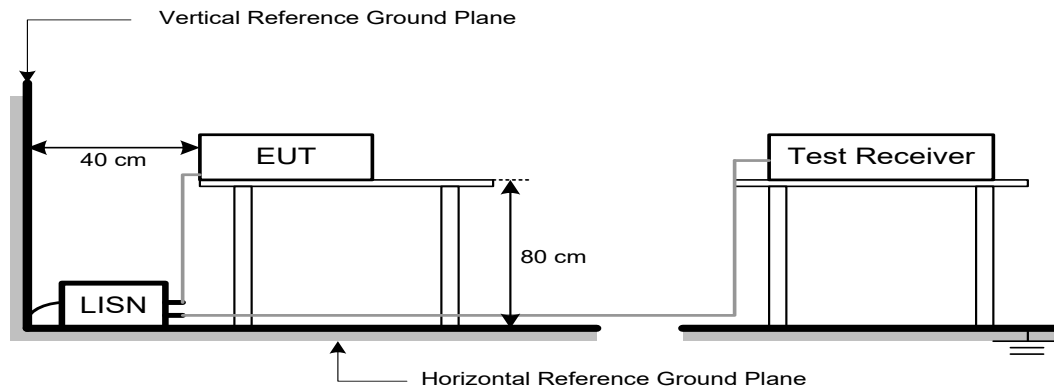
#### 3.2 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

#### 3.3 DEVIATION FROM TEST STANDARD

No deviation

### 3.4 TEST SETUP



### 3.5 EUT OPERATION CONDITIONS

EUT was programmed to be in continuously transmitting mode.

### 3.6 TEST RESULTS

Please refer to the APPENDIX A.

## 4. EMC EMISSION TEST

### 4.1 RADIATED EMISSION MEASUREMENT

#### 4.1.1 RADIATED EMISSION LIMITS (FCC 15.209 and 15.249)

| Frequencies (MHz) | Field Strength (micorvolts/meter) | Measurement Distance (meters) |
|-------------------|-----------------------------------|-------------------------------|
| 0.009~0.490       | 2400/F(KHz)                       | 300                           |
| 0.490~1.705       | 24000/F(KHz)                      | 30                            |
| 1.705~30.0        | 30                                | 30                            |
| 30~88             | 100                               | 3                             |
| 88~216            | 150                               | 3                             |
| 216~960           | 200                               | 3                             |
| 960~1000          | 500                               | 3                             |

Harmonic emissions limits comply with below 54dBuV/m at 3m. Other emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or comply with the radiated emissions limits specified in section 15.209(a) limit in the table below has to be followed.

| Fundamental Frequency | Field Strength of Fundamental (micorvolts/meter) | Field Strength of Harmonics (micorvolts/meter) |
|-----------------------|--------------------------------------------------|------------------------------------------------|
| 902-928 MHz           | 50                                               | 500                                            |

#### LIMITS OF RADIATED EMISSION MEASUREMENT (FCC 15.209 )

| FREQUENCY (MHz) | (dBuV/m) (at 3m) |         |
|-----------------|------------------|---------|
|                 | PEAK             | AVERAGE |
| Above 1000      | 74               | 54      |

#### Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

| Spectrum Parameter | Setting               |
|--------------------|-----------------------|
| Attenuation        | Auto                  |
| Start Frequency    | 1000 MHz              |
| Stop Frequency     | 10th carrier harmonic |

| Receiver Parameter     | Setting                       |
|------------------------|-------------------------------|
| Attenuation            | Auto                          |
| Start ~ Stop Frequency | 30MHz~1000MHz for QP detector |

## DWELL TIME OF PERIODIC OPERATION MEASUREMENT

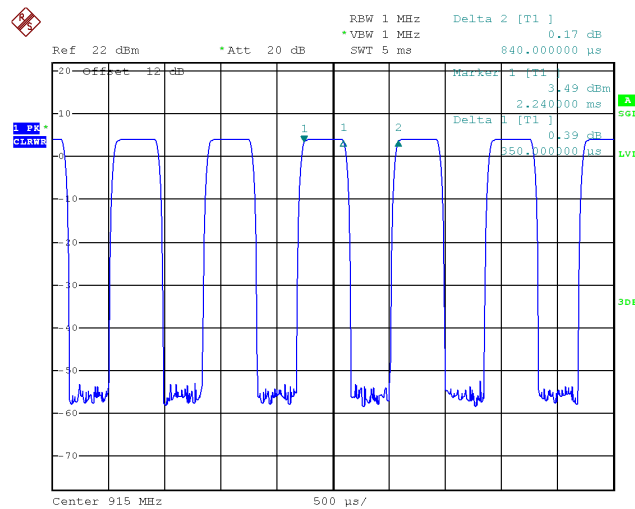
Duty Cycle = On Time/Total Time

$T_{ON}$ : 0.350ms

$T_{Total}$ : 0.840ms

Duty cycle=  $0.350/0.840 = 41.7\%$

Average Reading = Peak value +  $20\log(\text{Duty cycle})$  ,  $AV = \text{Peak} - 7.60$



Date: 25.NOV.2020 14:58:44

**4.1.2 TESTPROCEDURE**

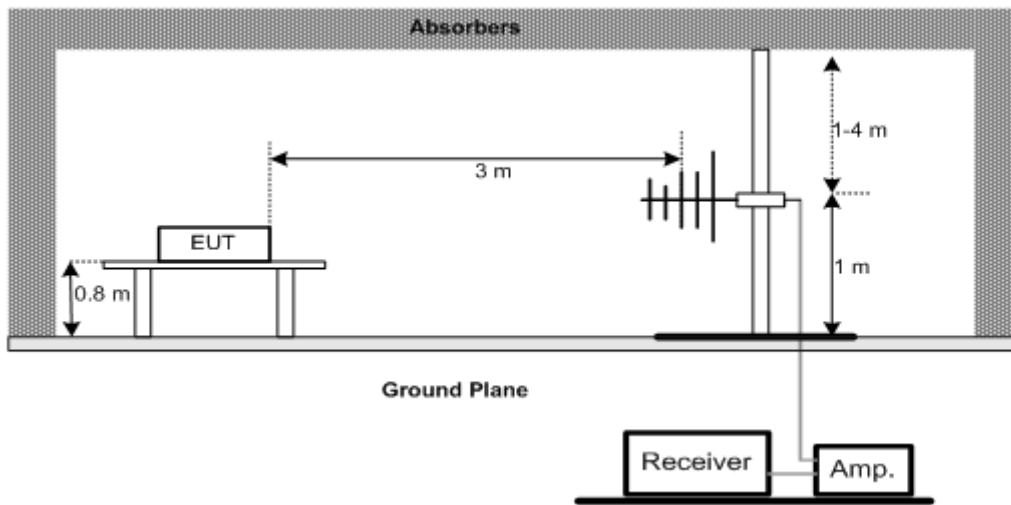
- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
- c. The height of the equipment or of the substitution antenna shall be 0.8 m or 1.5m,the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
- f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.  
(below 1GHz)
- h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1GHz)
- i. For the actual test configuration, please refer to the related Item –EUT Test Photos.

**4.1.3 DEVIATIONFROMTESTSTANDARD**

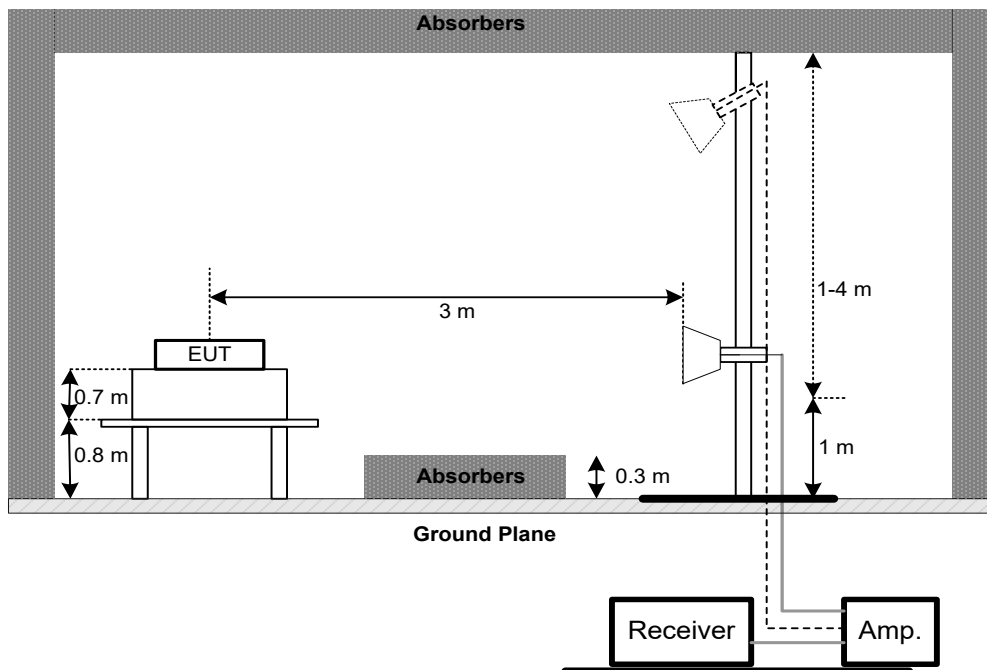
No deviation

## 4.1.4 TESTSETUP

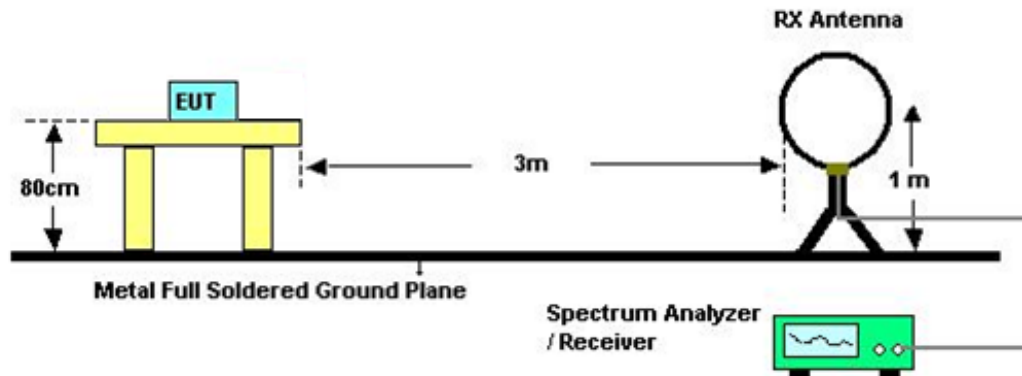
### (A) Radiated Emission Test Set-Up Frequency Below 1 GHz



### (B) Radiated Emission Test Set-Up Frequency Above 1 GHz



(C) For radiated emissions below 30MHz



#### 4.1.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

#### 4.1.6 TEST RESULTS (30 TO 1000 MHZ)

Please refer to the Appendix B.

#### 4.1.7 TEST RESULTS (ABOVE 1000 MHZ)

Please refer to the Appendix C.

Remark:

- (1) EUT Orthogonal Axis:  
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (2) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

## **5. BANDWIDTH TEST**

### **5.1 TEST PROCEDURE**

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- b. Spectrum Setting: RBW= 3kHz, VBW=3kHz, Sweep time = Auto.

### **5.2 DEVIATION FROM STANDARD**

No deviation.

### **5.3 TEST SETUP**



### **5.4 EUT OPERATION CONDITIONS**

The EUT tested system was configured as the statements of 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

### **5.5 TEST RESULTS**

Please refer to the Appendix D.

## 6. MEASUREMENT INSTRUMENTS LIST

| Conducted Emissions |                                      |              |                       |            |                  |
|---------------------|--------------------------------------|--------------|-----------------------|------------|------------------|
| Item                | Kind of Equipment                    | Manufacturer | Type No.              | Serial No. | Calibrated until |
| 1                   | Line Impedance Stabilisation Network | Schwarzbeck  | NNLK 8121             | 8121-822   | Mar. 21, 2021    |
| 2                   | TWO-LINE V-NETWORK                   | R&S          | ENV216                | 101340     | Aug. 23, 2021    |
| 3                   | Test Cable                           | emci         | EMCRG400-BM-N M-10000 | 170628     | Jul. 15, 2021    |
| 4                   | EMI Test Receiver                    | R&S          | ESCI                  | 100082     | Mar. 21, 2021    |
| 5                   | 50Ω Terminator                       | SHX          | TF2-1G-A              | 17051602   | Mar. 21, 2021    |
| 6                   | 50Ω coaxial switch                   | Anritsu      | MP59B                 | 6201750902 | Mar. 21, 2021    |
| 7                   | Measurement Software                 | Farad        | EZ-EMC Ver.NB-03A1-01 | N/A        | N/A              |

| Radiated Emissions - 30 MHz to 1 GHz |                          |              |                       |            |                  |
|--------------------------------------|--------------------------|--------------|-----------------------|------------|------------------|
| Item                                 | Kind of Equipment        | Manufacturer | Type No.              | Serial No. | Calibrated until |
| 1                                    | TRILOG Broadband Antenna | Schwarzbeck  | VULB 9168             | 719        | Apr. 02, 2021    |
| 2                                    | Pre-Amplifier            | emci         | EMC9135               | 980400     | Mar. 21, 2021    |
| 3                                    | MXE EMI Receiver         | Keysight     | N9038A                | MY57150106 | Mar. 21, 2021    |
| 4                                    | Test Cable               | emci         | EMC104-SM-SM-7 000    | 170330     | Apr. 13, 2021    |
| 5                                    | Test Cable               | emci         | EMC104-SM-SM-1 000    | 170331     | Apr. 13, 2021    |
| 6                                    | Test Cable               | emci         | EMC104-SM-NM-3 500    | 170621     | Apr. 13, 2021    |
| 7                                    | Measurement Software     | Farad        | EZ-EMC Ver.NB-03A1-01 | N/A        | N/A              |

| Radiated Emissions - Above 1 GHz |                                      |              |                              |             |                  |
|----------------------------------|--------------------------------------|--------------|------------------------------|-------------|------------------|
| Item                             | Kind of Equipment                    | Manufacturer | Type No.                     | Serial No.  | Calibrated until |
| 1                                | Double-Ridged Waveguide Horn Antenna | ETS-Lindgren | 9120D                        | 00206960    | Apr. 02, 2021    |
| 2                                | Pre-Amplifier                        | emci         | EMC012645SE                  | 980421      | May. 11, 2021    |
| 3                                | EXA Spectrum Analyzer                | Keysight     | N9010A                       | MY56480545  | Mar. 21, 2021    |
| 4                                | Test Cable                           | emci         | EMC104-SM-SM-7000            | 170330      | Apr. 13, 2021    |
| 5                                | Test Cable                           | emci         | EMC104-SM-SM-1000            | 170331      | Apr. 13, 2021    |
| 6                                | Test Cable                           | emci         | EMC104-SM-NM-3500            | 170621      | Apr. 13, 2021    |
| 7                                | Measurement Software                 | Farad        | EZ-EMC Ver.NB-03A1-01        | N/A         | N/A              |
| 8                                | MXE EMI Receiver                     | Keysight     | N9038A                       | MY57150106  | May. 06, 2021    |
| 9                                | Double-Ridged Waveguide Horn Antenna | ETS-Lindgren | 3116C                        | 00203919    | Jul. 20, 2021    |
| 10                               | Pre-Amplifier                        | emci         | EMC184045SE                  | 980409      | Mar. 21, 2021    |
| 11                               | EXA Spectrum Analyzer                | Keysight     | N9010A                       | MY56480579  | Mar. 21, 2021    |
| 12                               | Test Cable                           | emci         | EMC102-KM-KM-800             | 170654      | Apr. 13, 2021    |
| 13                               | Test Cable                           | emci         | Super Reliable-40G-SS11-7000 | W0030860001 | Apr. 13, 2021    |
| 14                               | Measurement Software                 | Farad        | EZ-EMC Ver.NB-03A1-01        | N/A         | N/A              |

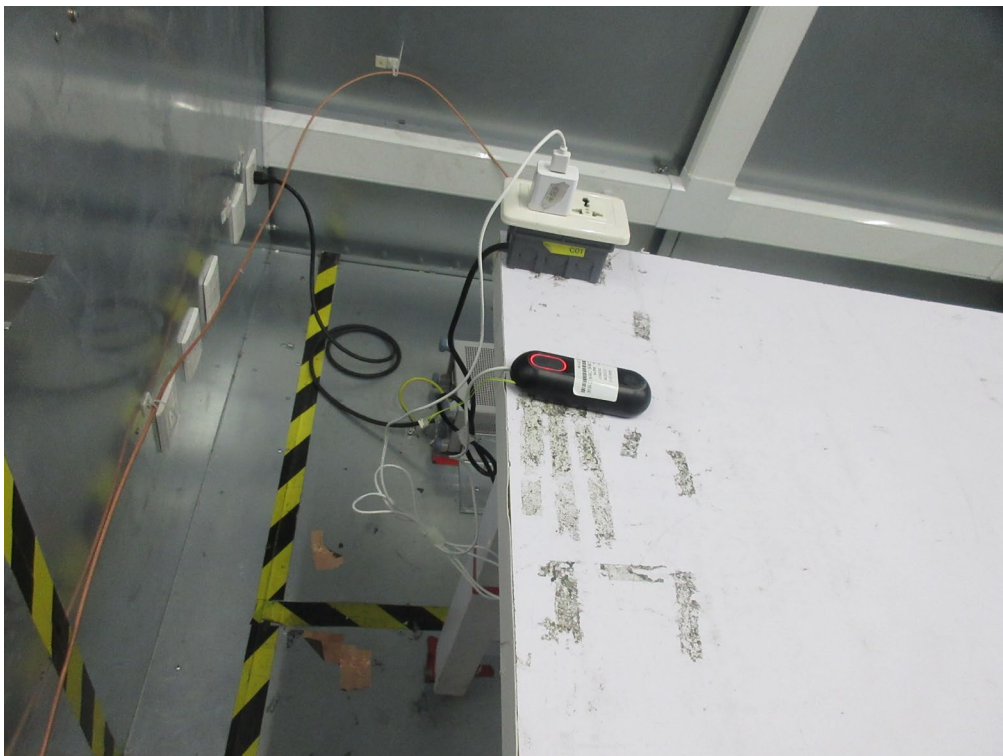
| Bandwidth |                   |              |          |            |                  |
|-----------|-------------------|--------------|----------|------------|------------------|
| Item      | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
| 1         | Spectrum Analyzer | R&S          | FSP40    | 100626     | May. 06, 2021    |

Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

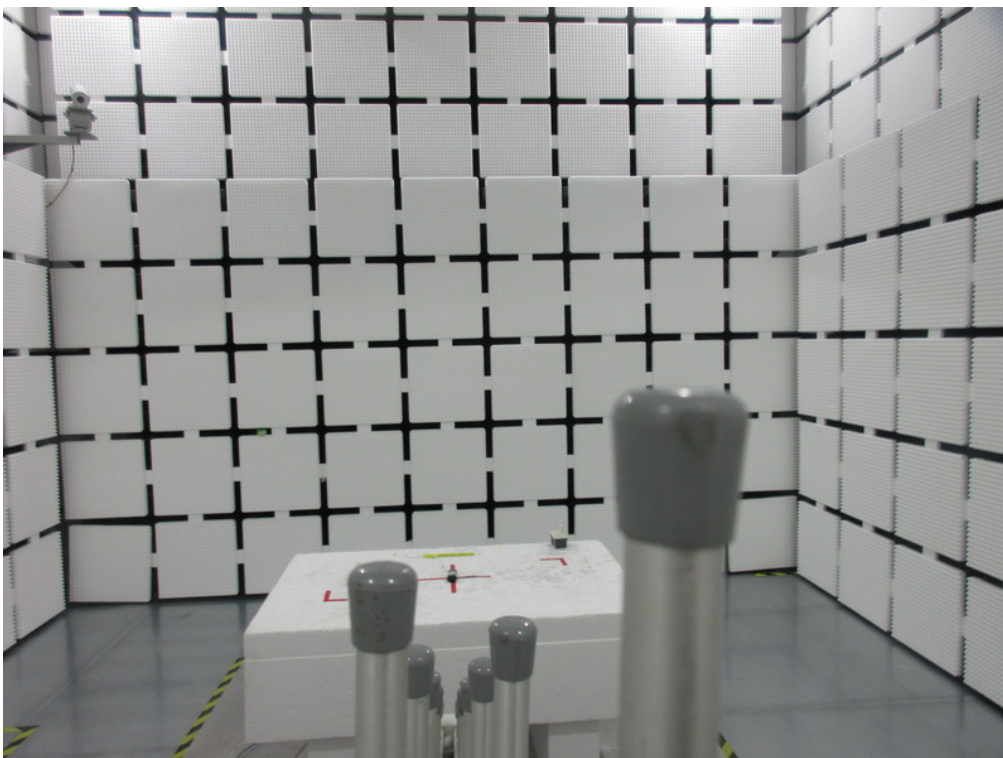
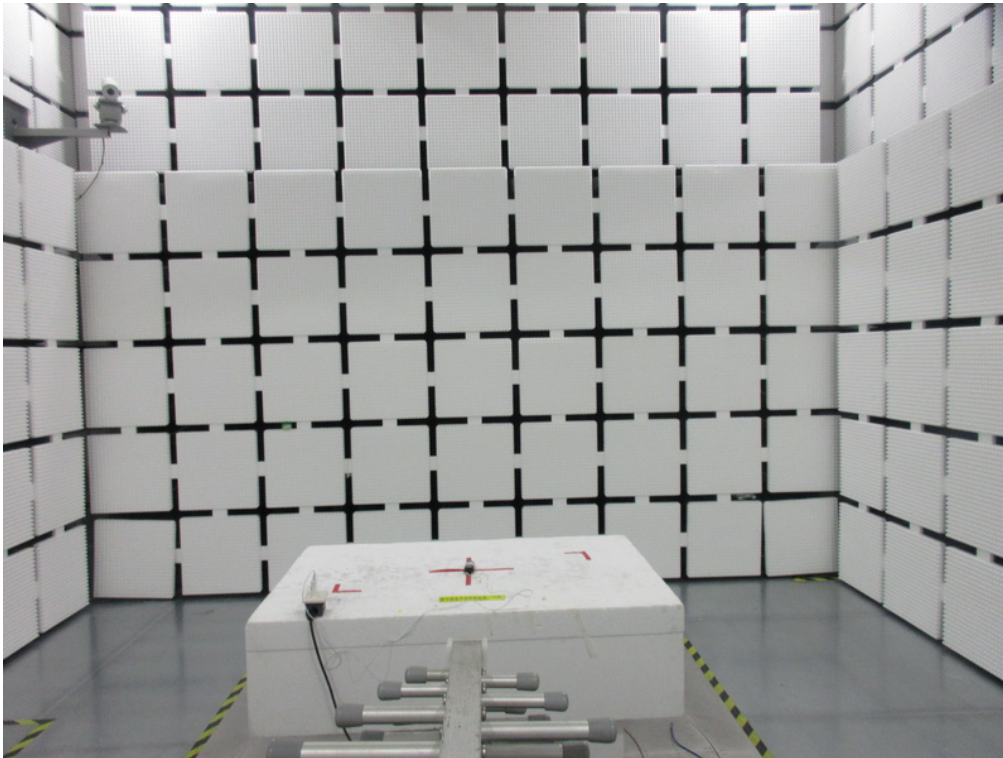
## 7. EUT TEST PHOTO

### Conducted Emissions Test Photos



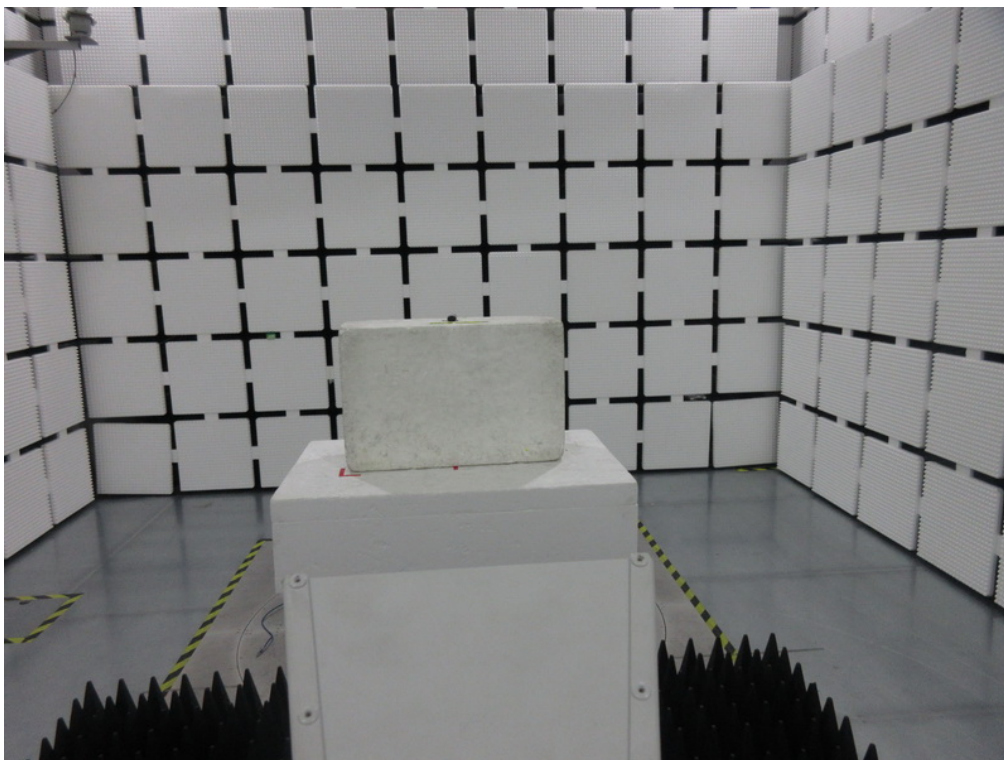
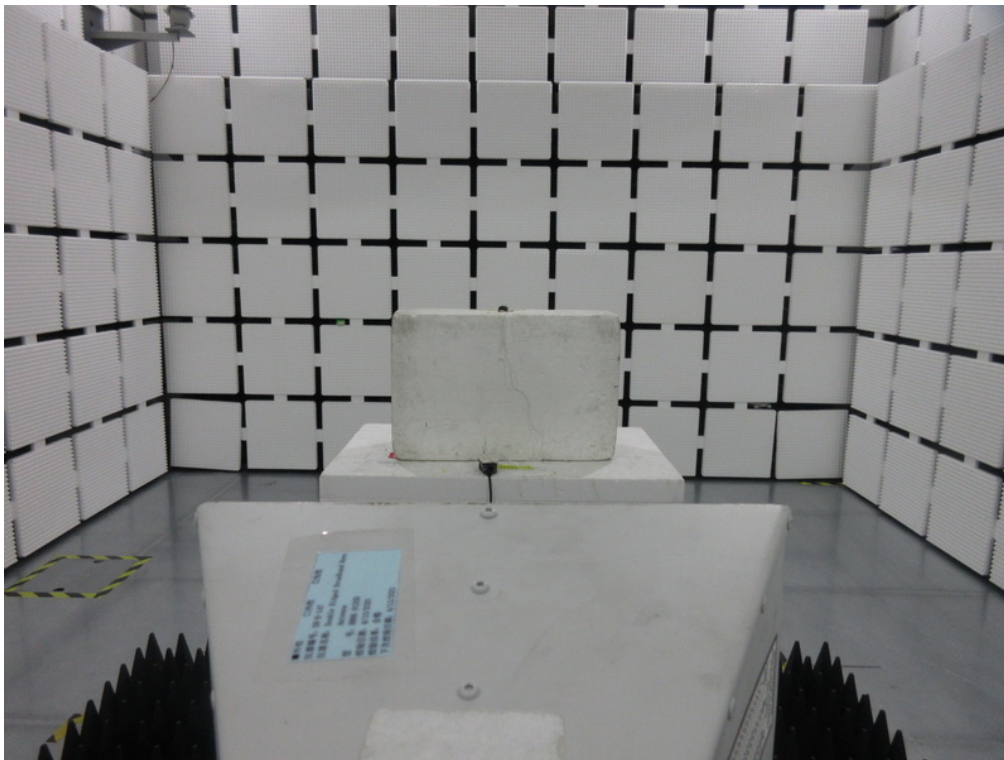
# Radiated Emissions Test Photos

30 MHz to 1 GHz



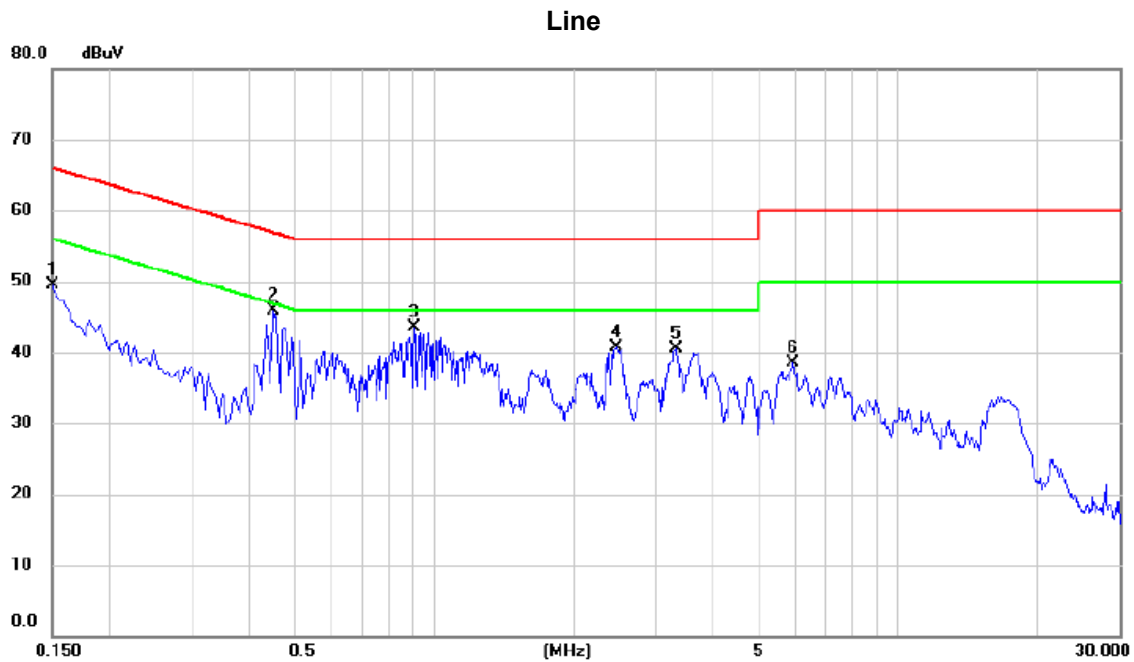
# Radiated Emissions Test Photos

## Above 1 GHz



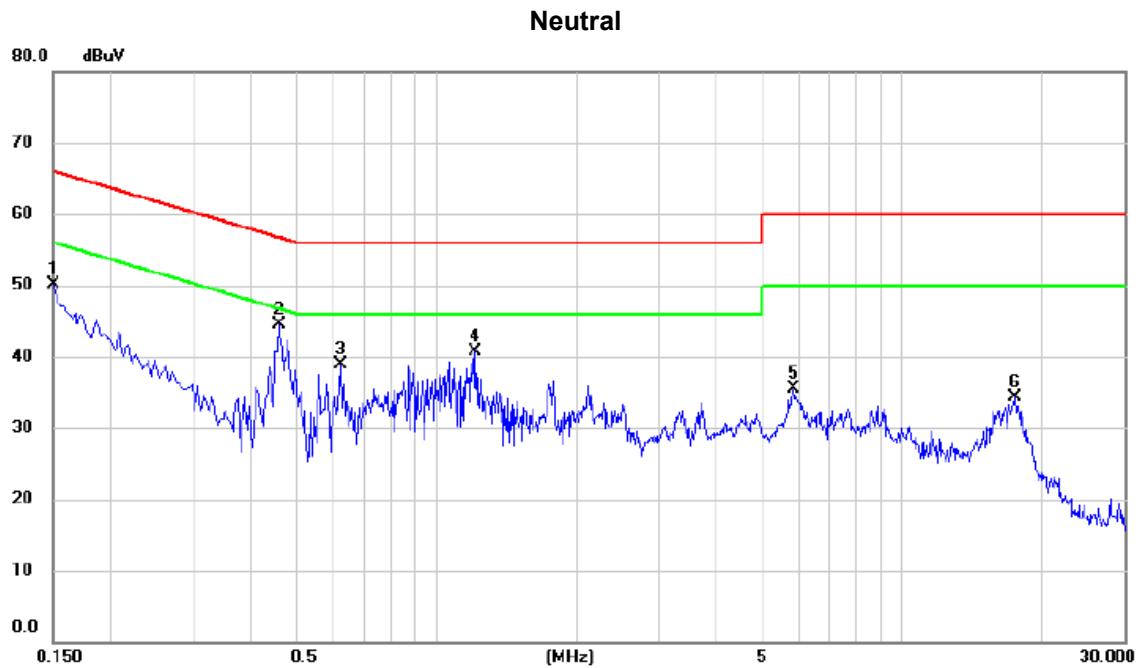
## **APPENDIX A - CONDUCTED EMISSIONS**

|            |        |
|------------|--------|
| Test Mode: | TX_915 |
|------------|--------|



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Margin<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|--------------|----------|---------|
| 1   |     | 0.1500       | 39.74                    | 9.71                    | 49.45                    | 66.00         | -16.55       | peak     |         |
| 2   | *   | 0.4515       | 36.08                    | 9.79                    | 45.87                    | 56.85         | -10.98       | peak     |         |
| 3   |     | 0.9060       | 33.68                    | 9.82                    | 43.50                    | 56.00         | -12.50       | peak     |         |
| 4   |     | 2.4765       | 30.69                    | 9.93                    | 40.62                    | 56.00         | -15.38       | peak     |         |
| 5   |     | 3.3180       | 30.47                    | 9.98                    | 40.45                    | 56.00         | -15.55       | peak     |         |
| 6   |     | 5.9460       | 28.50                    | 10.07                   | 38.57                    | 60.00         | -21.43       | peak     |         |

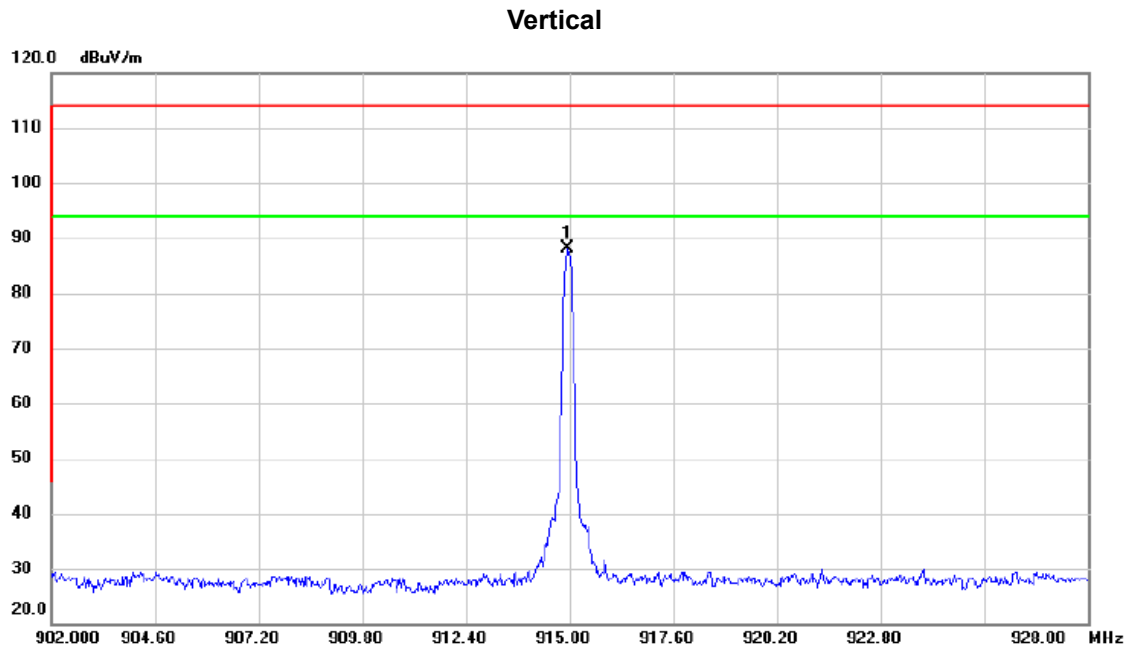
|            |        |
|------------|--------|
| Test Mode: | TX_915 |
|------------|--------|



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Margin<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|--------------|----------|---------|
| 1   |     | 0.1500       | 40.44                    | 9.68                    | 50.12                    | 66.00         | -15.88       | peak     |         |
| 2   | *   | 0.4605       | 34.81                    | 9.76                    | 44.57                    | 56.68         | -12.11       | peak     |         |
| 3   |     | 0.6224       | 29.10                    | 9.80                    | 38.90                    | 56.00         | -17.10       | peak     |         |
| 4   |     | 1.2074       | 30.94                    | 9.83                    | 40.77                    | 56.00         | -15.23       | peak     |         |
| 5   |     | 5.8380       | 25.47                    | 10.04                   | 35.51                    | 60.00         | -24.49       | peak     |         |
| 6   |     | 17.4975      | 23.81                    | 10.56                   | 34.37                    | 60.00         | -25.63       | peak     |         |

## **APPENDIX B - RADIATED EMISSION - 30 MHZ TO 1000 MHZ**

|            |        |
|------------|--------|
| Test Mode: | TX_915 |
|------------|--------|



| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit  | Margin |          |         |
|-----|-----|----------|---------------|----------------|-------------|--------|--------|----------|---------|
|     |     | MHz      | dBuV          | dB             | dBuV/m      | dBuV/m | dB     | Detector | Comment |
| 1   | *   | 914.9610 | 93.84         | -5.66          | 88.18       | 114.00 | -25.82 | peak     |         |

Remark:

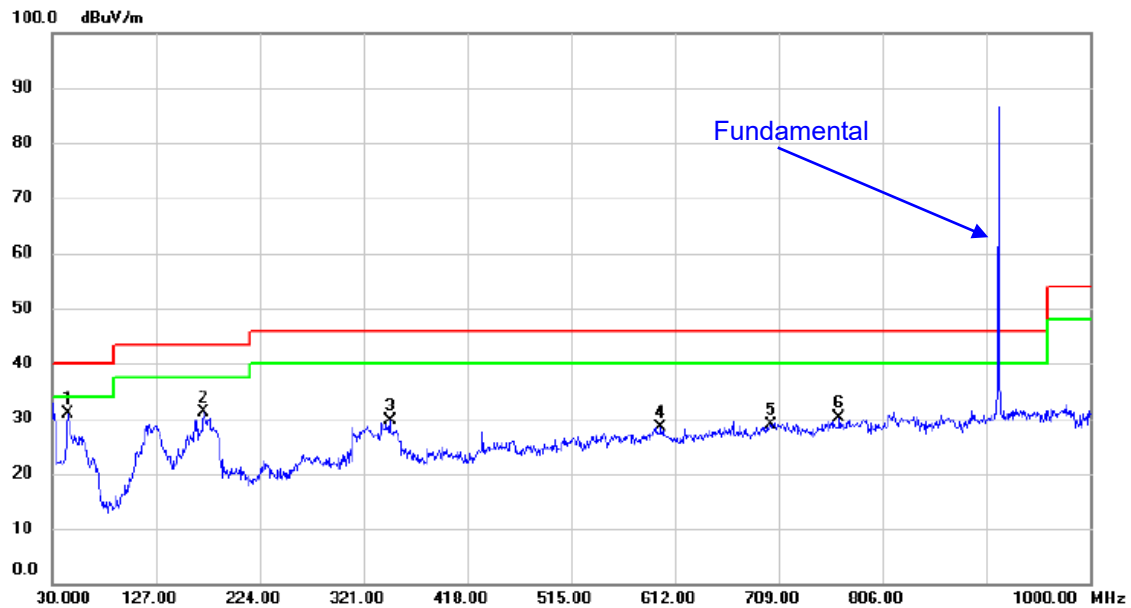
(1) The average of fundamental frequency is:

Average Reading = Peak value + 20log(Duty cycle) , AV=Peak-7.6

| Frequency<br>(MHz) | Peak value<br>(dBuV/m) | AV value<br>(dBuV/m) | AV Limit<br>(dBuV/m) | Result |
|--------------------|------------------------|----------------------|----------------------|--------|
| 915                | 88.18                  | 80.58                | 94                   | PASS   |

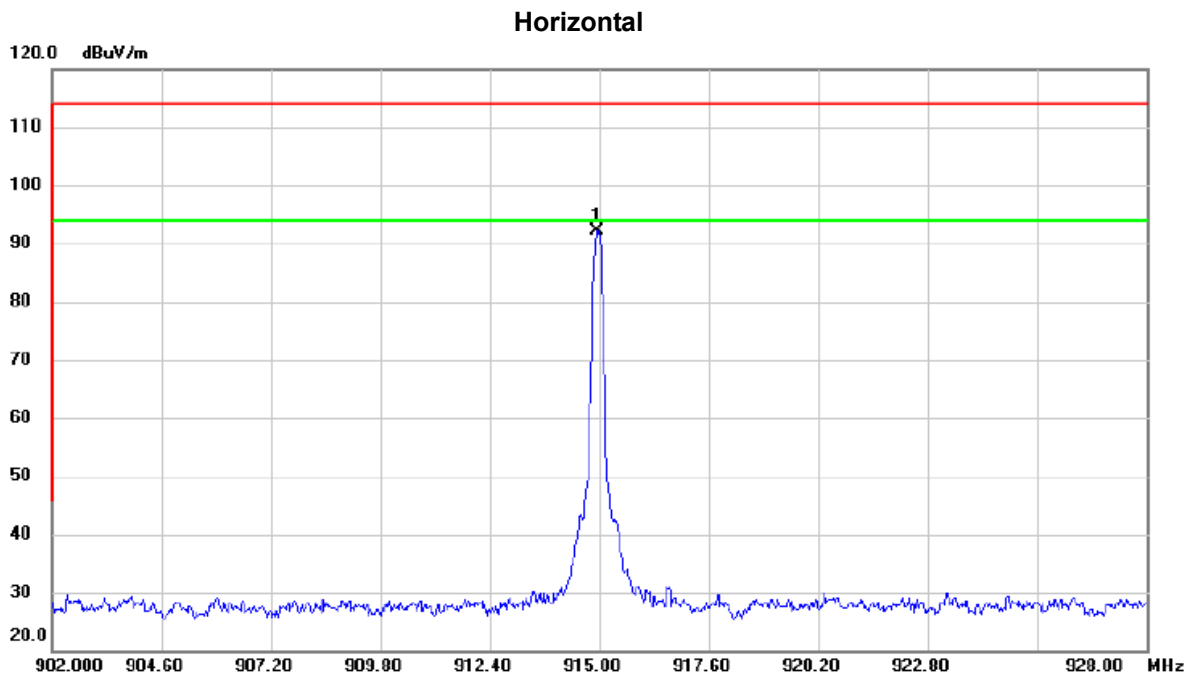
Test Mode: TX\_915

## Vertical



| 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 | Margin<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|----------------------------|-----------------|--------------|----------|---------|
| 1   | *   | 45.0350      | 47.65                    | -16.89                  | 30.76                      | 40.00           | -9.24        | peak     |         |
| 2   |     | 171.6200     | 47.56                    | -16.51                  | 31.05                      | 43.50           | -12.45       | peak     |         |
| 3   |     | 345.7350     | 44.15                    | -14.55                  | 29.60                      | 46.00           | -16.40       | peak     |         |
| 4   |     | 598.4200     | 37.63                    | -9.20                   | 28.43                      | 46.00           | -17.57       | peak     |         |
| 5   |     | 701.7250     | 36.76                    | -8.00                   | 28.76                      | 46.00           | -17.24       | peak     |         |
| 6   |     | 765.7450     | 37.07                    | -6.96                   | 30.11                      | 46.00           | -15.89       | peak     |         |

|            |        |
|------------|--------|
| Test Mode: | TX_915 |
|------------|--------|



| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit  | Margin |          |         |
|-----|-----|----------|---------------|----------------|-------------|--------|--------|----------|---------|
|     |     | MHz      | dBuV          | dB             | dBuV/m      | dBuV/m | dB     | Detector | Comment |
| 1   | *   | 914.9610 | 97.74         | -5.66          | 92.08       | 114.00 | -21.92 | peak     |         |

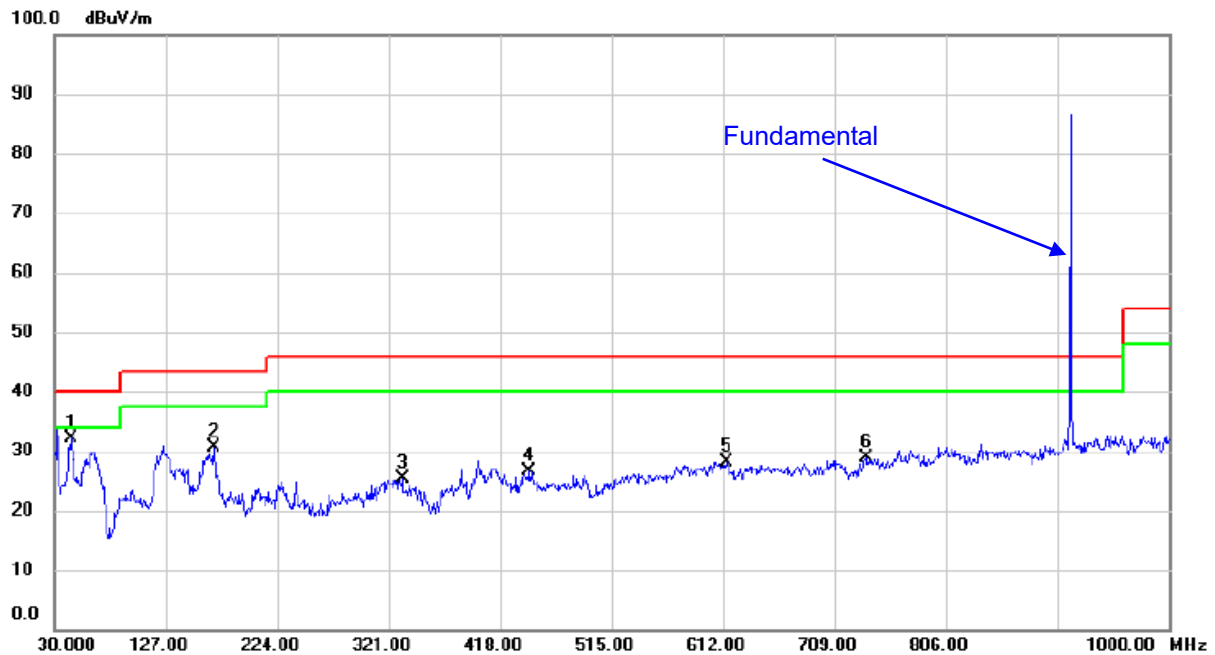
Remark:

- (1) The average value of fundamental frequency is:  
Average Reading = Peak value + 20log(Duty cycle) , AV=Peak-7.6

| Frequency<br>(MHz) | Peak value<br>(dBuV/m) | AV value<br>(dBuV/m) | AV Limit<br>(dBuV/m) | Result |
|--------------------|------------------------|----------------------|----------------------|--------|
| 915                | 92.08                  | 84.48                | 94                   | PASS   |

|            |        |
|------------|--------|
| Test Mode: | TX_915 |
|------------|--------|

## Horizontal

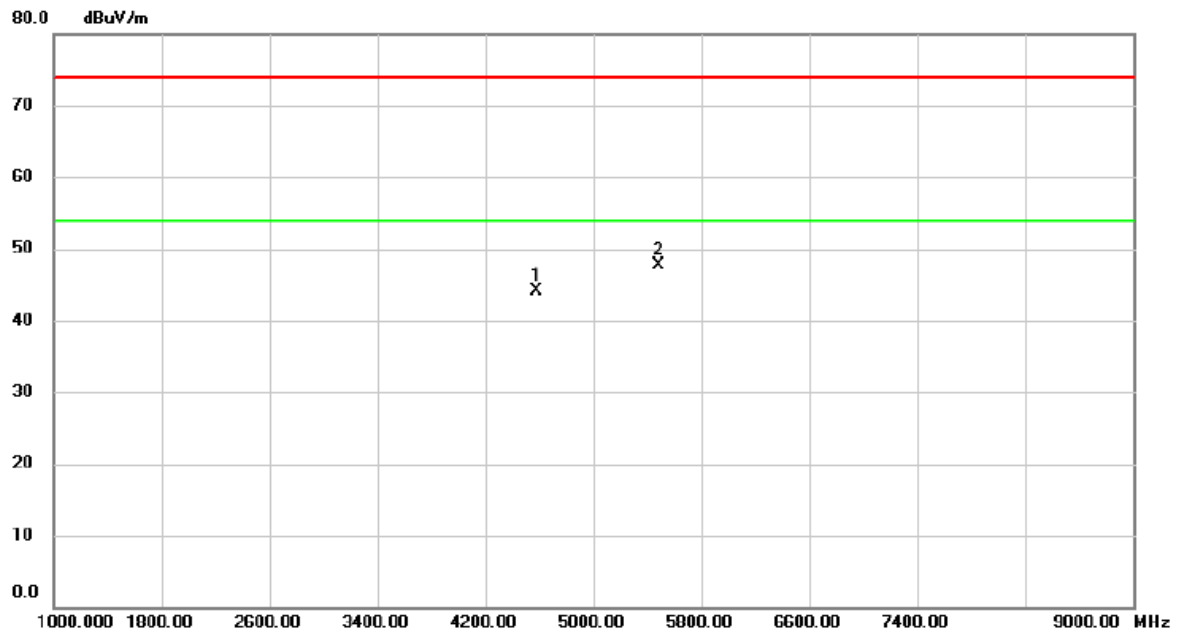


| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|----------------------------|-----------------|--------------|----------|---------|
| 1   | *   | 44.5500      | 49.12                    | -16.94                  | 32.18                      | 40.00           | -7.82        | peak     |         |
| 2   |     | 168.7100     | 46.94                    | -16.30                  | 30.64                      | 43.50           | -12.86       | peak     |         |
| 3   |     | 332.6400     | 40.08                    | -14.78                  | 25.30                      | 46.00           | -20.70       | peak     |         |
| 4   |     | 443.2200     | 38.77                    | -12.11                  | 26.66                      | 46.00           | -19.34       | peak     |         |
| 5   |     | 615.3950     | 37.19                    | -8.98                   | 28.21                      | 46.00           | -17.79       | peak     |         |
| 6   |     | 736.1600     | 36.15                    | -7.39                   | 28.76                      | 46.00           | -17.24       | peak     |         |

## **APPENDIX C- RADIATED EMISSION- ABOVE 1000 MHZ**

|            |        |
|------------|--------|
| Test Mode: | TX_915 |
|------------|--------|

## Vertical



| 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 | Margin<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|----------------------------|-----------------|--------------|----------|---------|
| 1   |     | 4574.400     | 55.67                    | -11.47                  | 44.20                      | 74.00           | -29.80       | peak     |         |
| 2   | *   | 5490.000     | 57.35                    | -9.62                   | 47.73                      | 74.00           | -26.27       | peak     |         |

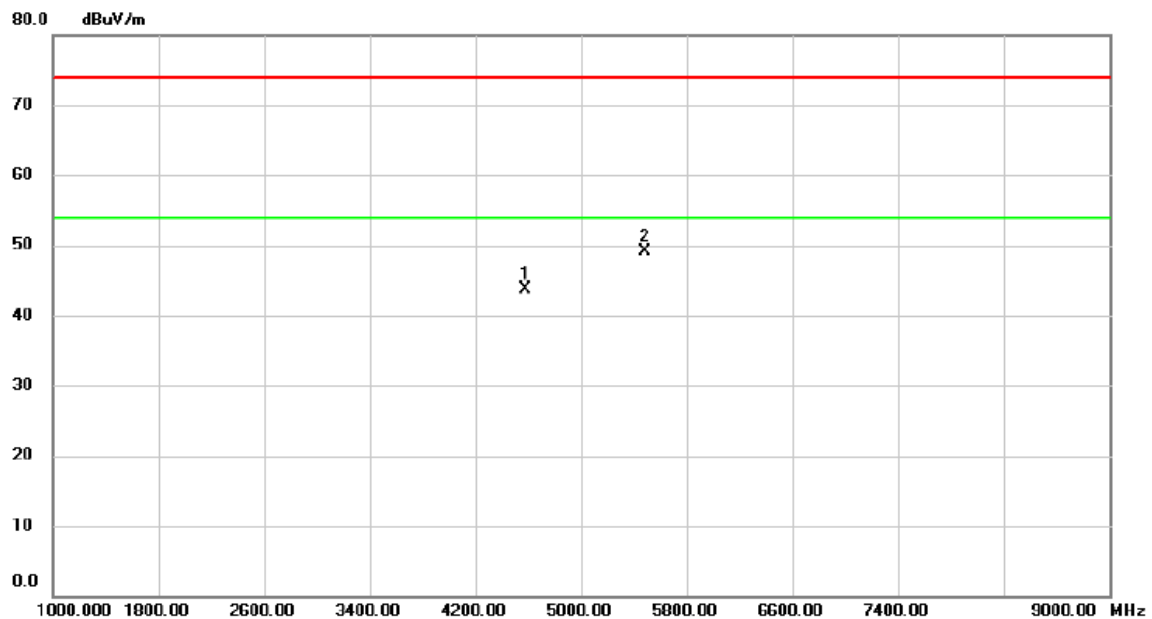
## Remark:

- (1) The average value of fundamental frequency is:  
Average Reading = Peak value + 20log(Duty cycle) , AV =Peak-7.60

| Frequency<br>(MHz) | Peak value<br>(dBuV/m) | AV value<br>(dBuV/m) | AV Limit<br>(dBuV/m) | Result |
|--------------------|------------------------|----------------------|----------------------|--------|
| 5490               | 47.73                  | 40.13                | 54                   | PASS   |

|            |        |
|------------|--------|
| Test Mode: | TX_915 |
|------------|--------|

## Horizontal



| 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 | Margin<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|----------------------------|-----------------|--------------|----------|---------|
| 1   |     | 4574.400     | 55.17                    | -11.47                  | 43.70                      | 74.00           | -30.30       | peak     |         |
| 2   | *   | 5490.000     | 58.70                    | -9.62                   | 49.08                      | 74.00           | -24.92       | peak     |         |

### Remark:

(1) The average value of fundamental frequency is:

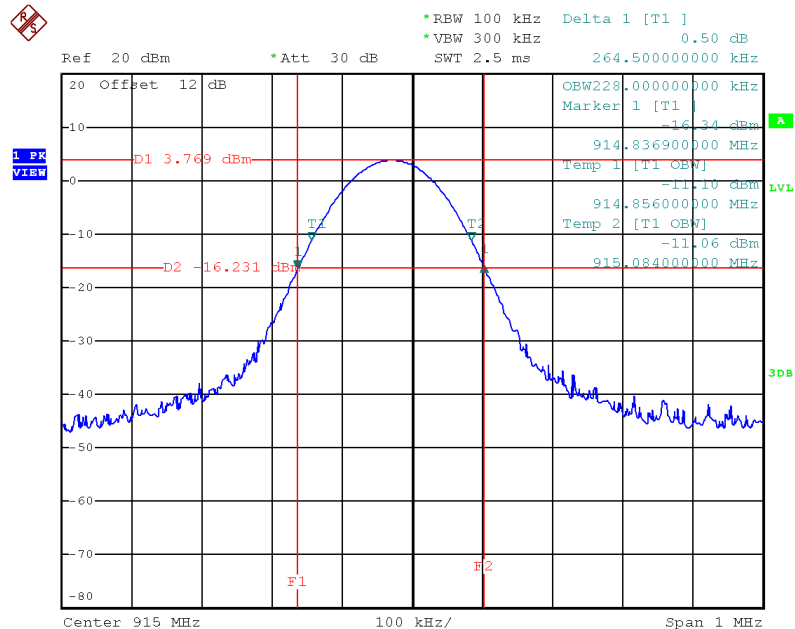
Average Reading = Peak value +  $20\log(\text{Duty cycle})$ , AV = Peak-7.60

| Frequency<br>(MHz) | Peak value<br>(dBuV/m) | AV value<br>(dBuV/m) | AV Limit<br>(dBuV/m) | Result |
|--------------------|------------------------|----------------------|----------------------|--------|
| 5490               | 49.08                  | 41.48                | 54                   | PASS   |

## **APPENDIX D - BANDWIDTH**

|           |        |
|-----------|--------|
| Test Mode | TX_915 |
|-----------|--------|

| Channel | Frequency (MHz) | 20 dB Bandwidth (MHz) | 99% Occupied BW (MHz) |
|---------|-----------------|-----------------------|-----------------------|
| 01      | 915             | 0.2645                | 0.228                 |



Date: 25.NOV.2020 14:40:46

## End of Test Report