



CTC Laboratories, Inc.

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TEST REPORT

Report No. : **CTC20211260E06**

FCC ID..... : **2AYD5-I21M02**

Applicant : **Imin Technology Pte Ltd**

Address..... : 11 Bishan Street 21, #03-05 Bosch Building, Singapore 573943

Manufacturer..... : Imin Technology Pte Ltd

Address..... : 11 Bishan Street 21, #03-05 Bosch Building, Singapore 573943

Product Name : **Mobile POS**

Trade Mark : iMin

Model/Type reference..... : I21M02

Listed Model(s)..... : N/A

Standard : **FCC CFR Title 47 Part 15 Subpart C Section 15.225**

Date of receipt of test sample..... : Jul. 20, 2021

Date of testing..... : Jul. 21, 2021 ~ Aug. 09, 2021

Date of issue..... : Aug. 26, 2021

Result..... : **PASS**

| | | |
|----------------------------|-------------|---|
| Compiled by: | | |
| (Printed name + signature) | Terry Su |  |
| Supervised by: | | |
| (Printed name + signature) | Miller Ma |  |
| Approved by: | | |
| (Printed name + signature) | Walter Chen |  |

Testing Laboratory Name..... : **CTC Laboratories, Inc.**

Address : 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

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1. TEST SUMMARY

1.1. Test Standards

The tests were performed according to following standards:

[FCC Rules Part 15.225](#): Operation within the band 13.110-14.010MHz.

[ANSI C63.10-2013](#): American National Standard for Testing Unlicensed Wireless Devices.

1.2. Report version

| Revised No. | Date of issue | Description |
|-------------|---------------|--|
| 01 | Aug. 10, 2021 | Original |
| 02 | Aug. 23, 2021 | Update application, manufacturer address |
| 03 | Aug. 26, 2021 | Increase the trademark |
| | | |



1.3. Test Description

| FCC Part 15.225 | | | |
|---------------------------------------|------------------|--------|---------------|
| Test Item | Standard Section | Result | Test Engineer |
| Conducted Emission | 15.207 | Pass | Terry Su |
| Radiated Emissions | 15.209&15.225(d) | Pass | Terry Su |
| Field Strength of the Fundamental | 15.209&15.225(d) | Pass | Terry Su |
| Occupied Bandwidth and 20dB Bandwidth | 15.215 | Pass | Terry Su |
| Antenna requirement | 15.203 | Pass | Terry Su |
| Frequency Stability | 15.225(e) | Pass | Terry Su |

Note: N/A: Not applicable.

The measurement uncertainty is not included in the test result.



1.4. Test Facility

Address of the report laboratory

CTC Laboratories, Inc.

Add: 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L5365

CTC Laboratories, Inc. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation. Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: 4340.01

CTC Laboratories, Inc. 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 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

Industry Canada (Registration No.: 9783A, CAB Identifier: CN0029)

CTC Laboratories, Inc. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 9783A on Jan, 2016.

FCC (Registration No.: 951311, Designation Number CN1208)

CTC Laboratories, Inc. 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 951311, Aug 26, 2017.

1.5. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to 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 CTC Laboratories, Inc. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Below is the best measurement capability for CTC Laboratories, Inc.



| Test Items | Measurement Uncertainty | Notes |
|---|-------------------------|-------|
| Transmitter power conducted | 0.42 dB | (1) |
| Transmitter power Radiated | 2.14 dB | (1) |
| Conducted spurious emissions 9kHz~40GHz | 1.60 dB | (1) |
| Radiated spurious emissions 9kHz~40GHz | 2.20 dB | (1) |
| Conducted Emissions 9kHz~30MHz | 3.20 dB | (1) |
| Radiated Emissions 30~1000MHz | 4.70 dB | (1) |
| Radiated Emissions 1~18GHz | 5.00 dB | (1) |
| Radiated Emissions 18~40GHz | 5.54 dB | (1) |
| Occupied Bandwidth | ----- | (1) |

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

1.6. 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 |

1.7. EUT Operation state

The EUT has been tested under typical operating condition. The Applicant provides software to control the EUT for staying in continuous transmitting mode for testing.



1. GENERAL INFORMATION

1.1. Client Information

| | |
|---------------|--|
| Applicant: | Imin Technology Pte Ltd |
| Address: | 11 Bishan Street 21, #03-05 Bosch Building, Singapore 573943 |
| Manufacturer: | Imin Technology Pte Ltd |
| Address: | 11 Bishan Street 21, #03-05 Bosch Building, Singapore 573943 |

1.2. General Description of EUT

| | |
|-----------------------|---|
| Product Name: | Mobile POS |
| Trade Mark: | iMin |
| Model/Type reference: | I21M02 |
| Listed Model(s): | N/A |
| Power supply: | 5Vdc/2A from AC/DC Adapter 7.4Vdc from 2600mAh Li-ion Battery |
| Adapter Model: | TPA-46050200UU Input:100-240V~ 50/60Hz 0.3A Output: 5Vdc/2A |
| Hardware version: | N/A |
| Software version: | N/A |
| RF Parameter | |
| Operation frequency: | 13.56MHz |
| Antenna type: | FPC Antenna |

1.3. Accessory Equipment information

| Equipment Information | | | |
|---|---------------|--------------|--------------|
| Name | Model | S/N | Manufacturer |
| / | / | / | / |
| Cable Information | | | |
| Name | Shielded Type | Ferrite Core | Length |
| / | / | / | / |
| Test Software Information | | | |
| Name | / | / | / |
| nfc-tools-pro-v3.4cn -2017-03-07.apk | / | / | / |



1.4. Measurement Instruments List

| Tonscend JS0806-2 Test system | | | | | |
|-------------------------------|-------------------------------------|-----------------|-----------|------------|------------------|
| Item | Test Equipment | Manufacturer | Model No. | Serial No. | Calibrated until |
| 1 | Spectrum Analyzer | Rohde & Schwarz | FSU26 | 100105 | Dec. 25, 2021 |
| 2 | Spectrum Analyzer | Rohde & Schwarz | FUV40-N | 101331 | Mar. 15, 2022 |
| 3 | MXG Vector Signal Generator | Agilent | N5182A | MY47420864 | Dec. 25, 2021 |
| 4 | Signal Generator | Agilent | E8257D | MY46521908 | Dec. 25, 2021 |
| 5 | Power Sensor | Agilent | U2021XA | MY5365004 | Dec. 25, 2021 |
| 6 | Power Sensor | Agilent | U2021XA | MY5365006 | Dec. 25, 2021 |
| 7 | Simultaneous Sampling DAQ | Agilent | U2531A | TW54493510 | Dec. 25, 2021 |
| 8 | Climate Chamber | TABAI | PR-4G | A8708055 | Dec. 25, 2021 |
| 9 | Wideband Radio Communication Tester | Rohde & Schwarz | CMW500 | 116410 | Dec. 25, 2021 |
| 10 | Climate Chamber | ESPEC | MT3065 | / | Dec. 25, 2021 |
| 11 | 300328 v2.2.2 test system | TONSCEND | v2.6 | / | / |

| Radiated emission(3m chamber 2) | | | | | |
|---------------------------------|--------------------------|--------------|------------|------------|------------------|
| Item | Test Equipment | Manufacturer | Model No. | Serial No. | Calibrated Until |
| 1 | Trilog-Broadband Antenna | Schwarzbeck | VULB 9168 | 9168-1013 | Jan.12, 2022 |
| 2 | Horn Antenna | Schwarzbeck | BBHA 9120D | 9120D-647 | Dec. 24, 2021 |
| 3 | Spectrum Analyzer | R&S | FSU26 | 100105 | Dec. 25, 2021 |
| 4 | Spectrum Analyzer | R&S | FSV40-N | 101331 | Mar. 15, 2022 |
| 5 | Pre-Amplifier | SONOMA | 310 | 186194 | Dec. 25, 2021 |
| 6 | Low Noise Pre-Amplifier | EMCI | EMC051835 | 980075 | Dec. 25, 2021 |
| 7 | Test Receiver | R&S | ESCI7 | 100967 | Dec. 25, 2021 |
| 8 | Loop Antenna | LAPLAC | RF300 | 9138 | Dec. 25, 2021 |
| 9 | Loop Antenna | ETS | 6507 | 146 | Dec. 25, 2021 |

Note:1. The Cal. Interval was one year.

2. The cable loss has calculated in test result which connection between each test instruments.

2. TEST ITEM AND RESULTS

2.1. Conducted Emission

Limit

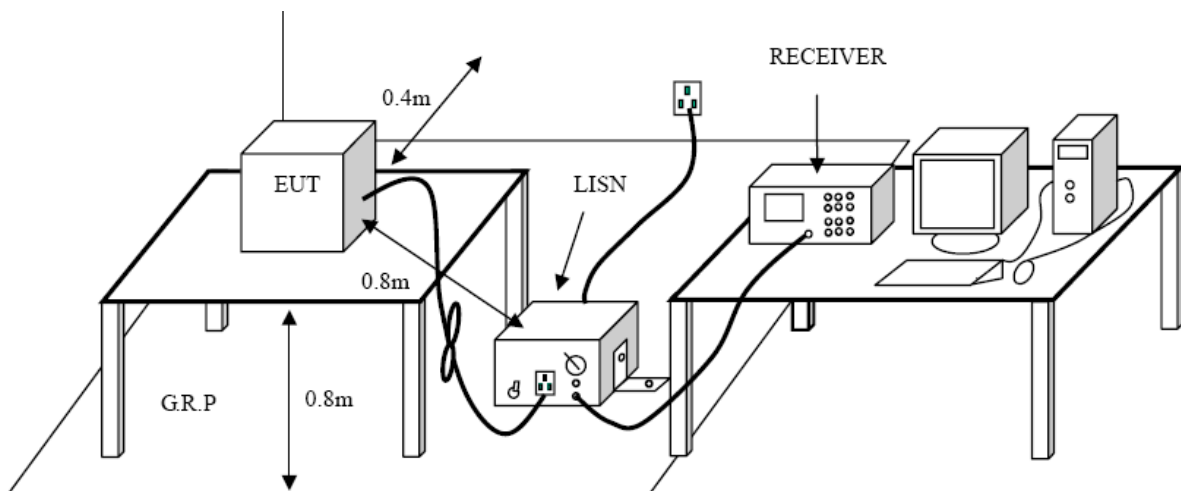
FCC CFR Title 47 Part 15 Subpart C Section 15.207/ RSS-Gen 7.2:

| 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 |

Notes:

- (1) *Decreasing linearly with logarithm of the frequency.
- (2) The lower limit shall apply at the transition frequencies.
- (3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

Test Configuration



Test Procedure

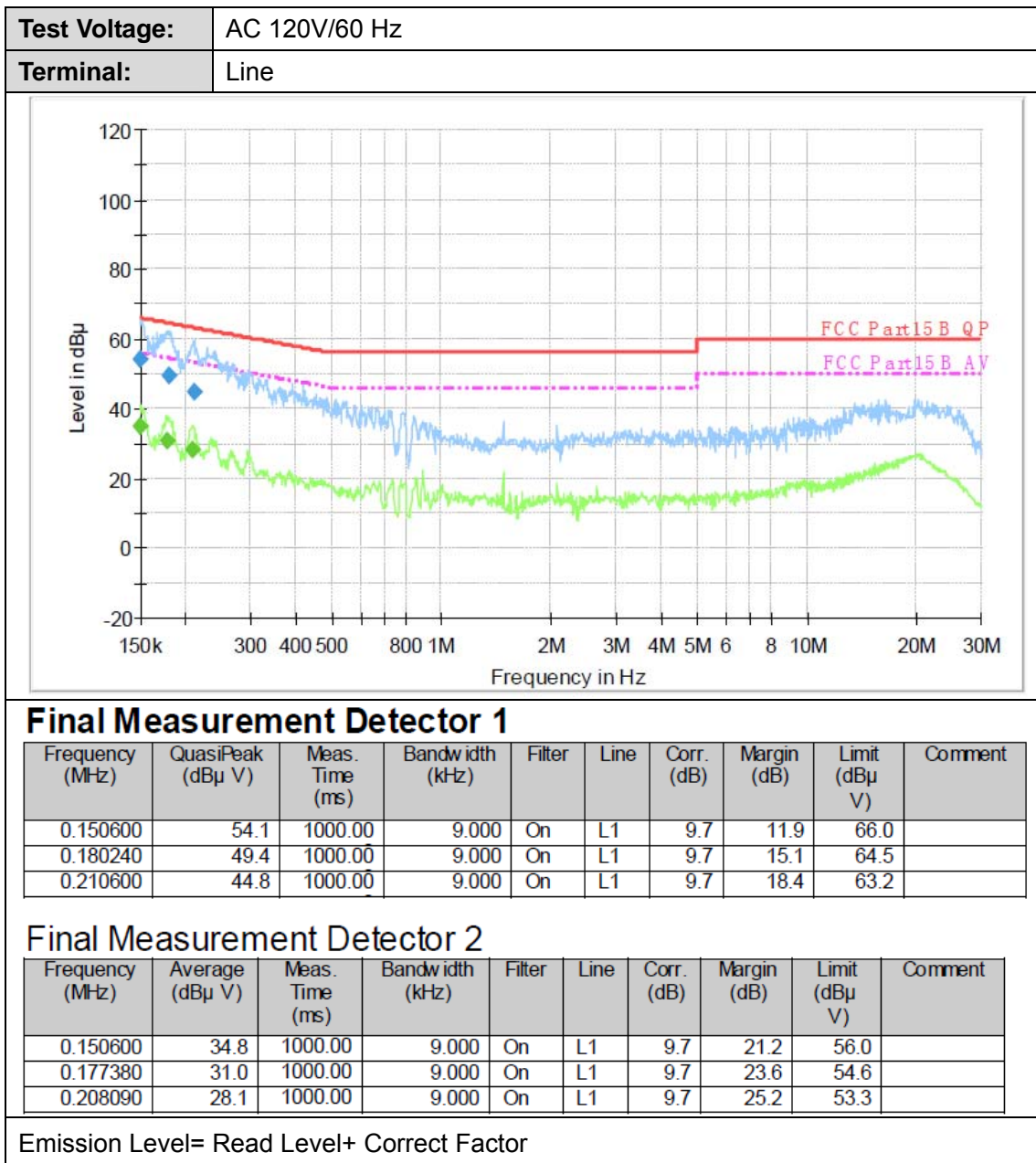
1. The EUT was setup according to ANSI C63.10:2013 requirements.
2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
3. The EUT and simulators are connected to the main power through a line impedances stabilization network (LISN). The LISN provides a 50ohm /50uH coupling impedance for the measuring equipment. 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)
4. 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.
5. 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.
6. Conducted Emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
7. During the above scans, the emissions were maximized by cable manipulation.



Test Mode:

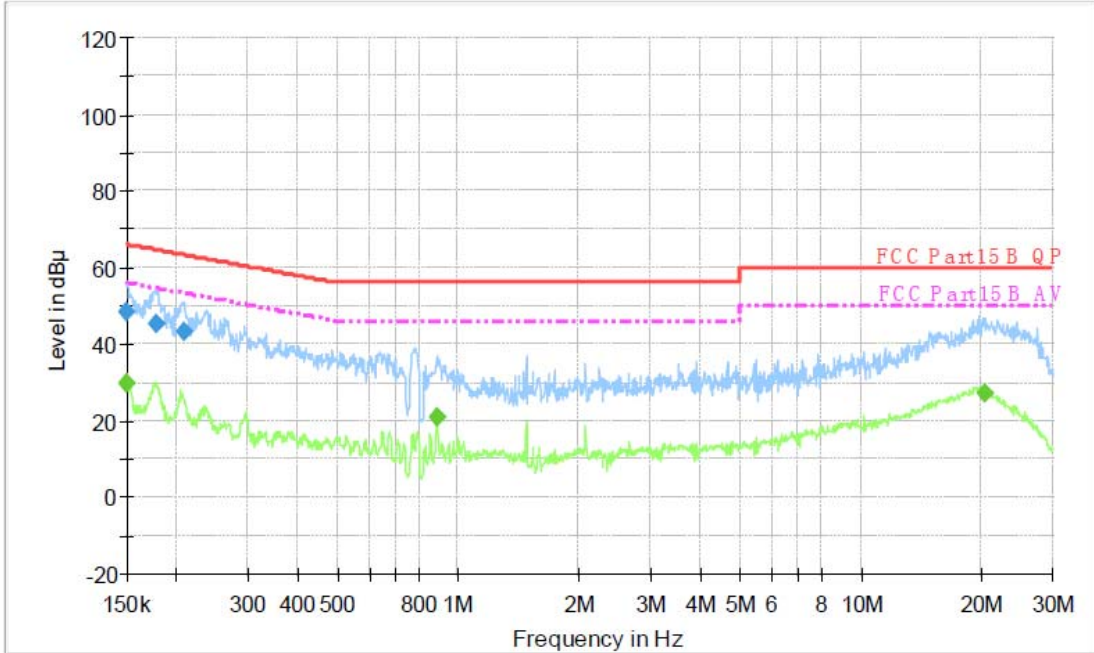
Please refer to the clause 1.7.

Test Results





| | |
|----------------------|---------------|
| Test Voltage: | AC 120V/60 Hz |
| Terminal: | Neutral |



Final Measurement Detector 1

| Frequency (MHz) | QuasiPeak (dBµ V) | Meas. Time (ms) | Bandwidth (kHz) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBµ V) | Comment |
|-----------------|-------------------|-----------------|-----------------|--------|------|------------|-------------|---------------|---------|
| 0.150600 | 48.4 | 1000.00 | 9.000 | On | N | 10.0 | 17.6 | 66.0 | |
| 0.178800 | 45.3 | 1000.00 | 9.000 | On | N | 10.0 | 19.2 | 64.5 | |
| 0.208090 | 43.2 | 1000.00 | 9.000 | On | N | 10.0 | 20.1 | 63.3 | |

Final Measurement Detector 2

| Frequency (MHz) | Average (dBµ V) | Meas. Time (ms) | Bandwidth (kHz) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBµ V) | Comment |
|-----------------|-----------------|-----------------|-----------------|--------|------|------------|-------------|---------------|---------|
| 0.150600 | 29.6 | 1000.00 | 9.000 | On | N | 10.0 | 26.4 | 56.0 | |
| 0.886330 | 21.0 | 1000.00 | 9.000 | On | N | 10.0 | 25.0 | 46.0 | |
| 20.349710 | 27.4 | 1000.00 | 9.000 | On | N | 10.0 | 22.6 | 50.0 | |

Emission Level= Read Level+ Correct Factor

2.2. Radiated Emission

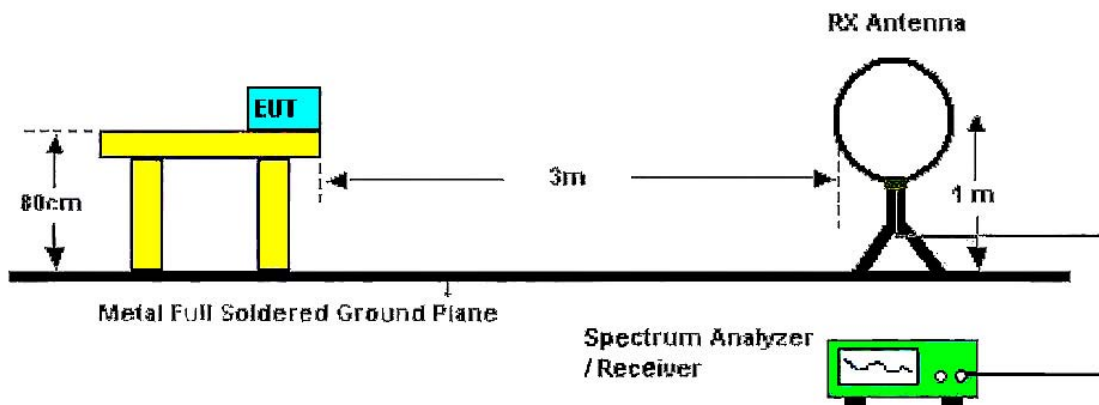
Limit

| FCC Part 15.209 | | | | |
|-----------------|---------------------------|------|--|-------------------------|
| Frequency (MHz) | Field Strength Limitation | | Field Strength Limitation 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 |

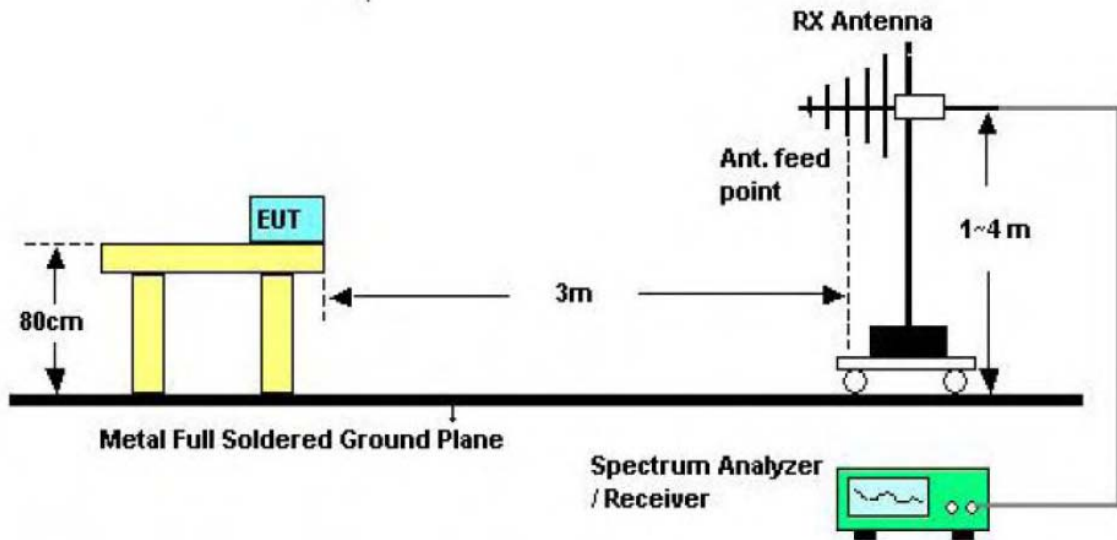
NOTE:

- (1) The tighter limit shall apply at the boundary between two frequency range.
- (2) Limitation expressed in dBuV/m is calculated by $20\log$ Emission Level (uV/m).
- (3) If measurement is made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula of $L_{d1} = L_{d2} * (d_2/d_1)^2$.
Example:
F.S Limit at 30m distance is 30uV/m , then F.S Limitation at 3m distance is adjusted as $L_{d1} = L_1 = 30\text{uV/m} * (10)^2 = 100 * 30 \text{ uV/m}$
- (4) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use)
Margin Level = Measurement Value – Limit Value

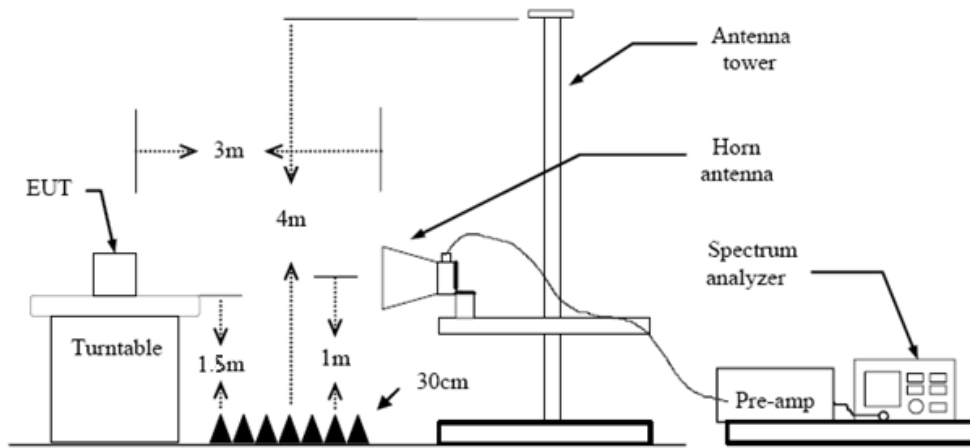
Test Configuration



Below 30MHz Test Setup



Below 1000MHz Test Setup



Above 1GHz Test Setup

Test Procedure

1. The EUT was setup and tested according to ANSI C63.10:2013
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) 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.
 - (3) From 1 GHz to 10th harmonic:



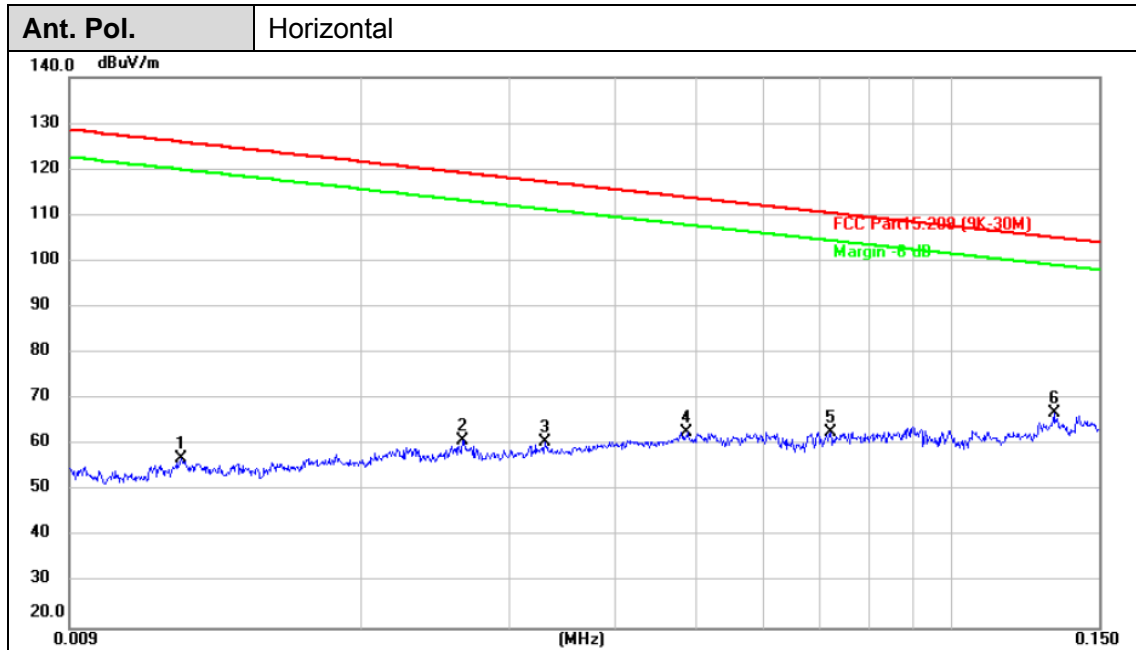
RBW=1MHz, VBW=3MHz Peak detector for Peak value.
RBW=1MHz, VBW=3MHz RMS detector for Average value.

Test Mode

Please refer to the clause 1.7.

Test Result

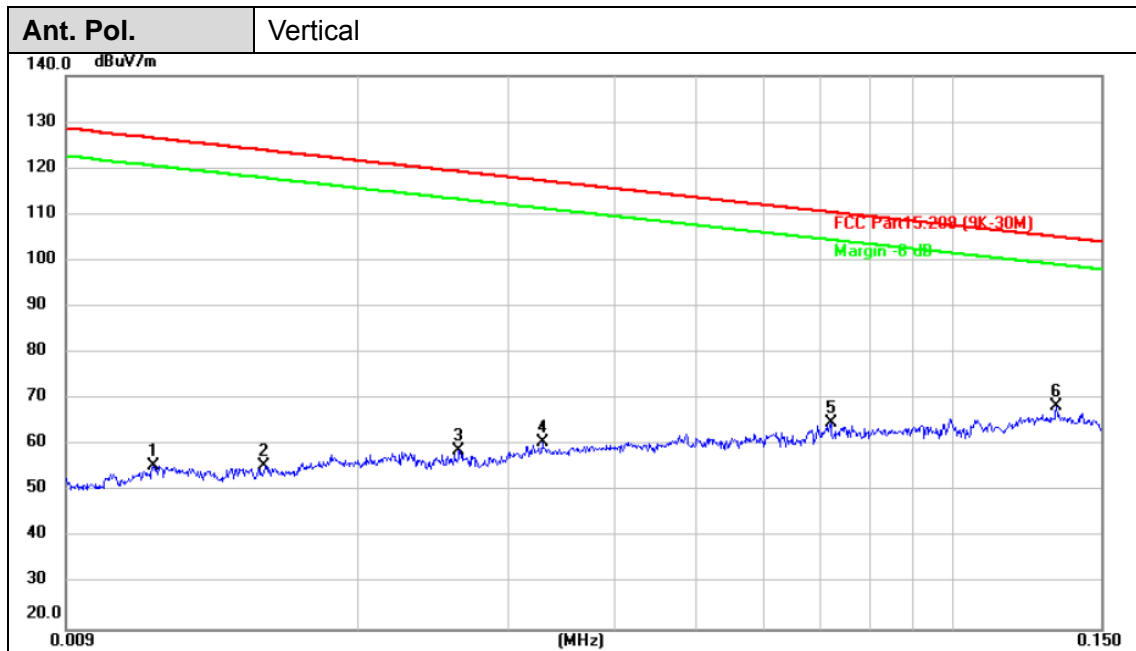
9 KHz~150 KHz



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1 | 0.0122 | 63.13 | -6.20 | 56.93 | 125.86 | -68.93 | peak |
| 2 | 0.0263 | 70.68 | -9.76 | 60.92 | 119.19 | -58.27 | peak |
| 3 | 0.0330 | 71.55 | -10.77 | 60.78 | 117.22 | -56.44 | peak |
| 4 | 0.0485 | 74.26 | -11.39 | 62.87 | 113.88 | -51.01 | peak |
| 5 | 0.0719 | 74.51 | -11.76 | 62.75 | 110.46 | -47.71 | peak |
| 6 * | 0.1324 | 80.53 | -13.47 | 67.06 | 105.16 | -38.10 | peak |

Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2. Margin value = Level -Limit value



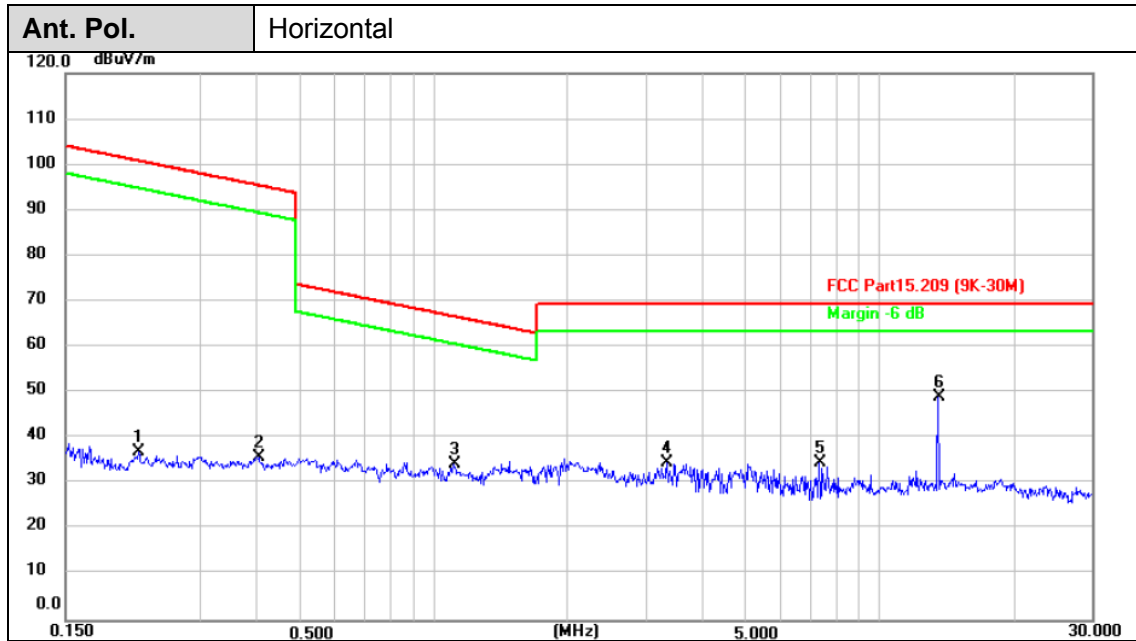
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1 | 0.0114 | 61.48 | -5.99 | 55.49 | 126.45 | -70.96 | peak |
| 2 | 0.0154 | 62.60 | -7.00 | 55.60 | 123.84 | -68.24 | peak |
| 3 | 0.0262 | 68.70 | -9.73 | 58.97 | 119.22 | -60.25 | peak |
| 4 | 0.0328 | 71.56 | -10.76 | 60.80 | 117.27 | -56.47 | peak |
| 5 | 0.0719 | 76.51 | -11.76 | 64.75 | 110.46 | -45.71 | peak |
| 6 * | 0.1327 | 82.03 | -13.47 | 68.56 | 105.14 | -36.58 | peak |

Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2. Margin value = Level -Limit value



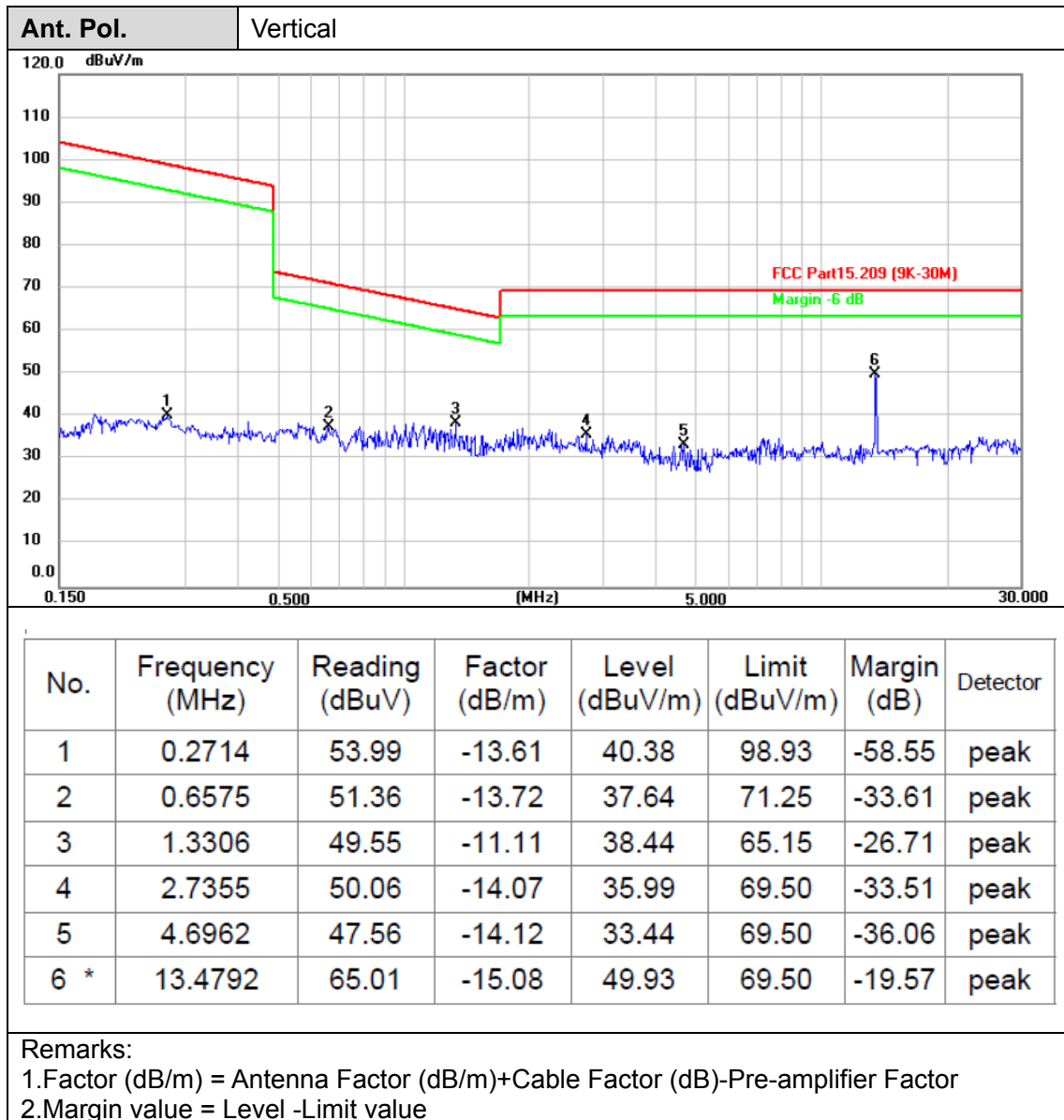
150 KHz~30 MHz



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1 | 0.2184 | 50.56 | -13.59 | 36.97 | 100.82 | -63.85 | peak |
| 2 | 0.4061 | 49.53 | -13.67 | 35.86 | 95.43 | -59.57 | peak |
| 3 | 1.1112 | 45.87 | -11.48 | 34.39 | 66.71 | -32.32 | peak |
| 4 | 3.3456 | 48.93 | -14.13 | 34.80 | 69.50 | -34.70 | peak |
| 5 | 7.3289 | 49.19 | -14.68 | 34.51 | 69.50 | -34.99 | peak |
| 6 * | 13.5524 | 64.14 | -15.08 | 49.06 | 69.50 | -20.44 | peak |

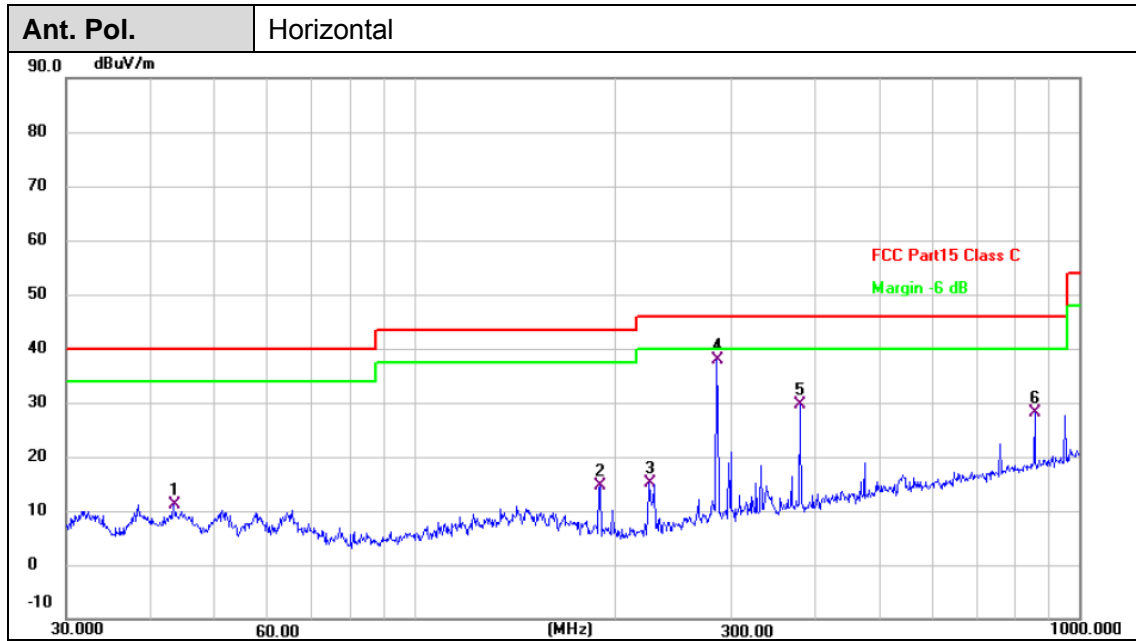
Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2. Margin value = Level -Limit value





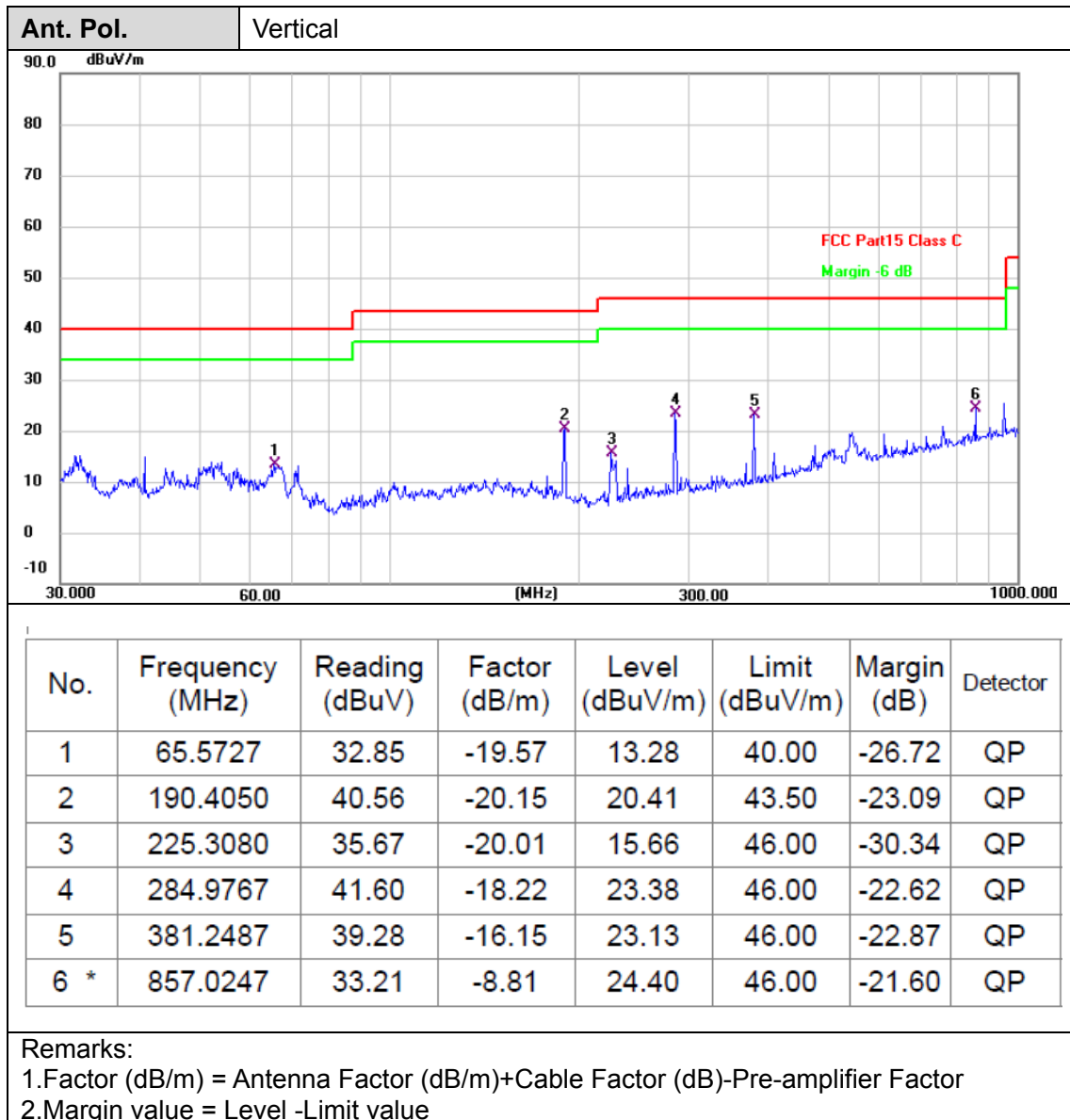
30MHz-1GHz



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1 | 43.5057 | 28.70 | -17.55 | 11.15 | 40.00 | -28.85 | QP |
| 2 | 190.4050 | 34.76 | -20.15 | 14.61 | 43.50 | -28.89 | QP |
| 3 | 225.3080 | 35.18 | -20.01 | 15.17 | 46.00 | -30.83 | QP |
| 4 * | 284.9767 | 56.03 | -18.22 | 37.81 | 46.00 | -8.19 | QP |
| 5 | 379.9141 | 45.86 | -16.18 | 29.68 | 46.00 | -16.32 | QP |
| 6 | 857.0247 | 36.84 | -8.81 | 28.03 | 46.00 | -17.97 | QP |

Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2. Margin value = Level -Limit value



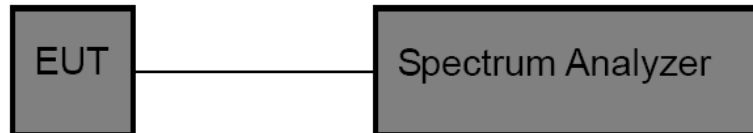
2.3. 20dB Bandwidth

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.215

Intentional radiators must be designed to ensure that the 20dB emission bandwidth in the specific band. 13.553~13.567MHz.

Test Configuration



Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
2. Spectrum Setting:
 - (1) Set RBW \geq 1% of the 20dB bandwidth.
 - (2) Set the video bandwidth (VBW) \geq RBW.
 - (3) Detector = Peak.
 - (4) Trace mode = Max hold.
 - (5) Sweep = Auto couple.

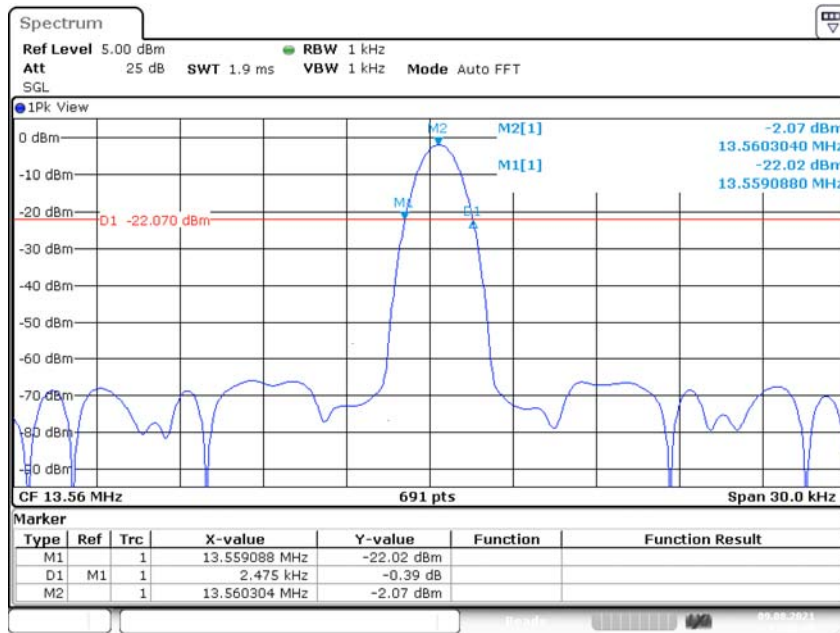
Test Mode

Please refer to the clause 1.7.

Test Results



| Channel Frequency(MHz) | $F_L > 13.553$ | $F_H < 13.567$ | 20dB Bandwidth (kHz) | Result |
|------------------------|----------------|----------------|----------------------|--------|
| 13.56 | 13.559 | 13.561 | 2.475 | PASS |



Date: 9.AUG.2021 15:32:48

2.4. Field Strength of the Fundamental

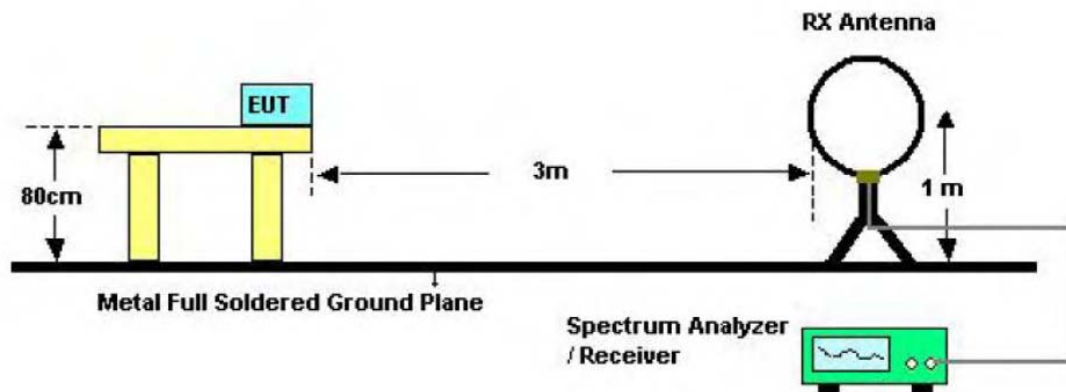
Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.225(a)(b)(c)

| Fundamental frequency(MHz) | Field strength of fundamental (uV/m @30m) | Field strength of fundamental (dBuV/m @3m) |
|-----------------------------|---|--|
| 13.553-13.567 | 15848 | 124.0 |
| 13.410-13.553&13.567-13.710 | 334 | 90.5 |
| 13.110-13.410&13.710-14.010 | 106 | 80.5 |

Note: Limit dBuV/m @3m =Limit dBuV/m @30m +40*log(30/3)= Limit dBuV/m @30m + 40.

Test Configuration



Below 30MHz Test Setup

Test Procedure

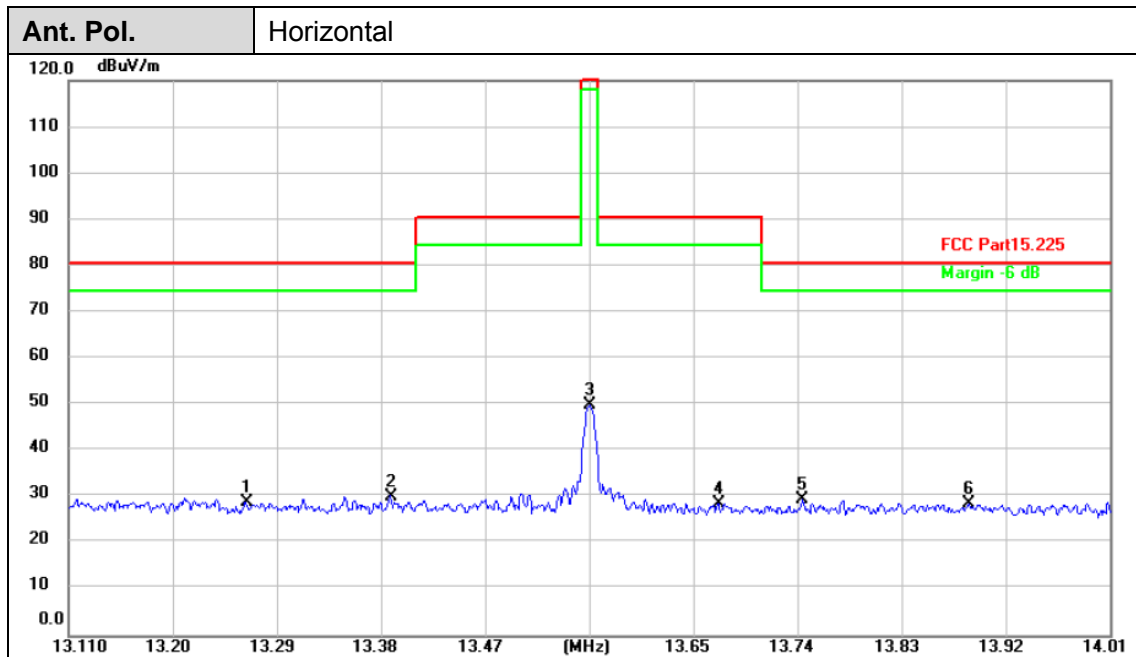
1. The EUT was setup and tested according to ANSI C63.10:2013 requirements.
2. The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.

Test Mode

Please refer to the clause 1.7.



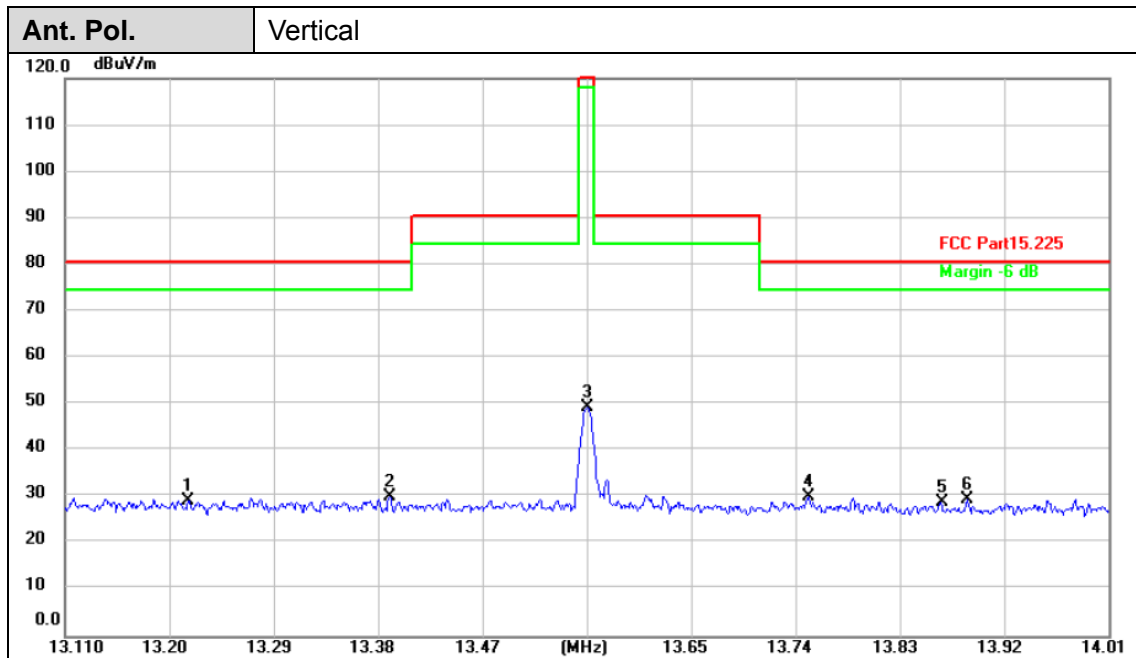
Test Result



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1 | 13.2630 | 44.08 | -15.09 | 28.99 | 80.50 | -51.51 | peak |
| 2 * | 13.3881 | 45.38 | -15.08 | 30.30 | 80.50 | -50.20 | peak |
| 3 | 13.5600 | 64.97 | -15.08 | 49.89 | 124.00 | -74.11 | peak |
| 4 | 13.6716 | 43.75 | -15.08 | 28.67 | 90.50 | -61.83 | peak |
| 5 | 13.7445 | 44.53 | -15.07 | 29.46 | 80.50 | -51.04 | peak |
| 6 | 13.8876 | 43.63 | -15.07 | 28.56 | 80.50 | -51.94 | peak |

Remarks:

- 1. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- 2. Margin value = Level -Limit value



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1 | 13.2162 | 44.32 | -15.09 | 29.23 | 80.50 | -51.27 | peak |
| 2 * | 13.3899 | 45.18 | -15.08 | 30.10 | 80.50 | -50.40 | peak |
| 3 | 13.5600 | 64.40 | -15.08 | 49.32 | 124.00 | -74.68 | peak |
| 4 | 13.7508 | 45.12 | -15.07 | 30.05 | 80.50 | -50.45 | peak |
| 5 | 13.8651 | 43.95 | -15.07 | 28.88 | 80.50 | -51.62 | peak |
| 6 | 13.8876 | 44.67 | -15.07 | 29.60 | 80.50 | -50.90 | peak |

Remarks:

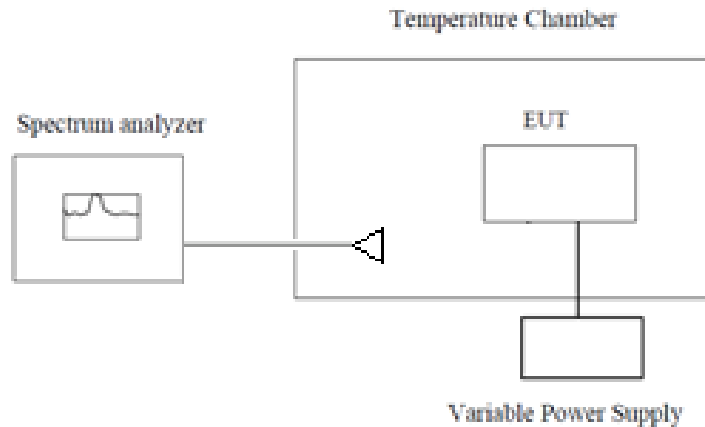
- 1. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- 2. Margin value = Level -Limit value

2.5. Frequency Stability

Limit

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency over a temperature variation of -20 degrees to $+ 50$ degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

Test Configuration



Test Procedure

1. The equipment under test was connected to an external power supply.
2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.
3. The EUT was placed inside the temperature chamber.
4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency.
5. Turn EUT off and set the chamber temperature to -10°C . After the temperature stabilized for approximately 30 minutes recorded the frequency.
6. Repeat step measure with 10°C increased per stage until the highest temperature of $+40^{\circ}\text{C}$ reached.

Test Mode

Please refer to the clause 1.7

**Test Result**

| Test Environment | | Frequency Reading(MHz) | Frequency Error(%) | Limit | Result |
|------------------|-----------------|------------------------|--------------------|--------|--------|
| Voltage | Temperature(°C) | | | | |
| DC 7.40V | 0 | 13.56012 | 0.0009% | ±0.01% | Pass |
| | 10 | 13.56008 | 0.0006% | ±0.01% | Pass |
| | 20 | 13.56007 | 0.0005% | ±0.01% | Pass |
| | 30 | 13.56011 | 0.0008% | ±0.01% | Pass |
| | 40 | 13.56005 | 0.0004% | ±0.01% | Pass |
| | 50 | 13.56013 | 0.0010% | ±0.01% | Pass |
| DC 8.14V | 25 | 13.56018 | 0.0013% | ±0.01% | Pass |
| DC 6.66V | 25 | 13.56016 | 0.0012% | ±0.01% | Pass |



2.6. Antenna requirement

Requirement

FCC CFR Title 47 Part 15 Subpart C Section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Refer to statement below for compliance.

The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

The directional gain of the antenna less than 6dBi, please refer to the below antenna photo.

*****THE END*****