



Report No.: SZEM190601492902
Page: 1 of 30

TEST REPORT

Application No.:

SZEM1906014929CR

Applicant:

Shenzhen Trainertec Electronic Co., Ltd

Address of Applicant:

4F, 1B1g, Dezhong Industry Park, Bantian District, Shenzhen, China

Manufacturer:

Shenzhen Trainertec Electronic Co., Ltd

Address of Manufacturer:

4F, 1B1g, Dezhong Industry Park, Bantian District, Shenzhen, China

Equipment Under Test (EUT):

EUT Name: remote spray dog training collar

Model No.: SP13, SP14, SP15 *

*

Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.

FCC ID:

2AG8M-SP13

Standard(s) :

47 CFR Part 15, Subpart C 15.231

Date of Receipt:

2019-06-06

Date of Test:

2019-06-07 to 2019-06-14

Date of Issue:

2019-06-18

Test Result:

Pass*

* In the configuration tested, the EUT complied with the standards specified above.

Keny. Xu
EMC Laboratory Manager

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| Revision Record | | | | |
|------------------------|----------------|-------------|-----------------|---------------|
| Version | Chapter | Date | Modifier | Remark |
| 01 | | 2019-06-18 | | Original |
| | | | | |
| | | | | |

| | | | |
|---------------------------------|--|-----------------------------------|--|
| Authorized for issue by: | | | |
| | | Bill Chen | |
| | | <hr/> Bill Chen /Project Engineer | |
| | | Eric Fu | |
| | | <hr/> Eric Fu /Reviewer | |

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2 Test Summary

| Radio Spectrum Technical Requirement | | | | |
|---|----------------------------------|---------------|----------------------------------|---------------|
| Item | Standard | Method | Requirement | Result |
| Antenna Requirement | 47 CFR Part 15, Subpart C 15.231 | N/A | 47 CFR Part 15, Subpart C 15.203 | Pass |

N/A: Not applicable

| Radio Spectrum Matter Part | | | | |
|--|----------------------------------|--|--|---------------|
| Item | Standard | Method | Requirement | Result |
| 20dB Bandwidth | 47 CFR Part 15, Subpart C 15.231 | ANSI C63.10 (2013) Section 6.9 | 47 CFR Part 15, Subpart C 15.231(c) | Pass |
| Dwell Time (15.231(a)) | 47 CFR Part 15, Subpart C 15.231 | ANSI C63.10 (2013) Section 7.8.4 | 47 CFR Part 15, Subpart C 15.231(a) | Pass |
| Field Strength of the Fundamental Signal (15.231(b)) | 47 CFR Part 15, Subpart C 15.231 | ANSI C63.10 (2013) Section 6.5 | 47 CFR Part 15C Section 15.231(b) | Pass |
| Radiated Emissions | 47 CFR Part 15, Subpart C 15.231 | ANSI C63.10 (2013) Section 6.4&6.5&6.6 | 47 CFR Part 15C Section 15.231(b) and 15.209 | Pass |

N/A: Not applicable

Declaration of EUT Family Grouping:

Model No.: SP13, SP14, SP15

Only the model SP13 was tested, since the electrical circuit design, layout, components used, internal wiring and functions were identical for the above models, with only difference on appearance with color and logo(trade mark).

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4 General Information

4.1 Details of E.U.T.

| | |
|----------------------|---------------------------------------|
| Power supply: | Tx:DC 3.0V by 1.5V x 2"AAA" batteries |
| Operation Frequency: | 433.91MHz |
| Modulation Type: | FSK |
| Sample Type: | Portable production |
| Antenna Type: | Spring Antenna |
| Antenna Gain: | 1.5dBi |

4.2 Description of Support Units

The EUT has been tested as an independent unit.

4.3 Measurement Uncertainty

| No. | Item | Measurement Uncertainty |
|-----|---------------------------------|--|
| 1 | Duty cycle | ± 0.37% |
| 2 | 20dB Bandwidth | ± 3% |
| 3 | Dwell Time | ± 3% |
| 4 | E-Field | ± 4.5dB (Below 1GHz) |
| 5 | RF power density | ± 2.84dB |
| 6 | Radiated Spurious emission test | ± 4.5dB (Below 1GHz) ± 4.8dB (Above 1GHz) |
| 7 | Temperature test | ± 1 °C |
| 8 | Humidity test | ± 3% |
| 9 | Supply voltages | ± 1.5% |
| 10 | Time | ± 3% |

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4.4 Test Location

All tests were performed at:

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518057.
Tel: +86 755 2601 2053 Fax: +86 755 2671 0594
No tests were sub-contracted.

4.5 Test Facility

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

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

- **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

- **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

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5 Equipment List

| 20dB Bandwidth | | | | | |
|-----------------------|----------------------|-------------------------|---------------------|-----------------|---------------------|
| Equipment | Manufacturer | Model No | Inventory No | Cal Date | Cal Due Date |
| DC Power Supply | ZhaoXin | RXN-305D | SEM011-02 | 2018-09-25 | 2019-09-24 |
| Spectrum Analyzer | Rohde & Schwarz | FSP | SEM004-06 | 2018-09-27 | 2019-09-26 |
| Measurement Software | JS Tonscend | JS1120-2 BT/WIFI V2. | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM031-02 | 2018-07-12 | 2019-07-11 |
| Attenuator | Weinschel Associates | WA41 | SEM021-09 | N/A | N/A |
| Signal Generator | KEYSIGHT | N5173B | SEM006-05 | 2018-09-27 | 2019-09-26 |
| Power Meter | Rohde & Schwarz | NRVS | SEM014-02 | 2018-09-25 | 2019-09-24 |

| Dwell Time (15.231(a)) | | | | | |
|-------------------------------|----------------------|-------------------------|---------------------|-----------------|---------------------|
| Equipment | Manufacturer | Model No | Inventory No | Cal Date | Cal Due Date |
| DC Power Supply | ZhaoXin | RXN-305D | SEM011-02 | 2018-09-25 | 2019-09-24 |
| Spectrum Analyzer | Rohde & Schwarz | FSP | SEM004-06 | 2018-09-27 | 2019-09-26 |
| Measurement Software | JS Tonscend | JS1120-2 BT/WIFI V2. | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM031-02 | 2018-07-12 | 2019-07-11 |
| Attenuator | Weinschel Associates | WA41 | SEM021-09 | N/A | N/A |
| Signal Generator | KEYSIGHT | N5173B | SEM006-05 | 2018-09-27 | 2019-09-26 |
| Power Meter | Rohde & Schwarz | NRVS | SEM014-02 | 2018-09-25 | 2019-09-24 |

| Field Strength of the Fundamental Signal (15.231(b)) | | | | | |
|---|----------------------|-----------------|---------------------|-----------------|---------------------|
| Equipment | Manufacturer | Model No | Inventory No | Cal Date | Cal Due Date |
| 3m Semi-Anechoic Chamber | ETS-LINDGREN | N/A | SEM001-01 | 2017-08-05 | 2020-08-04 |
| Measurement Software | AUDIX | e3 V8.2014-6-27 | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM025-01 | 2018-07-12 | 2019-07-11 |
| EMI Test Receiver | Agilent Technologies | N9038A | SEM004-05 | 2018-09-25 | 2019-09-24 |
| BiConiLog Antenna (26-3000MHz) | ETS-LINDGREN | 3142C | SEM003-01 | 2017-06-27 | 2020-06-26 |
| Pre-amplifier (0.1-1300MHz) | Agilent Technologies | 8447D | SEM005-01 | 2019-04-01 | 2020-03-31 |



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| RE in Chamber | | | | | |
|--------------------------------|----------------------|------------------|----------------------|------------------|----------------------|
| Test Equipment | Manufacturer | Model No. | Inventory No. | Cal. Date | Cal. Due date |
| 3m Semi-Anechoic Chamber | ETS-LINDGREN | N/A | SEM001-01 | 2017-08-05 | 2020-08-04 |
| MXE EMI Receiver (20Hz-8.4GHz) | Agilent Technologies | N9038A | SEM004-05 | 2018-09-25 | 2019-09-24 |
| BiConiLog Antenna (26-3000MHz) | ETS-LINDGREN | 3142C | SEM003-01 | 2017-06-27 | 2020-06-26 |
| Pre-amplifier (0.1-1300MHz) | Agilent Technologies | 8447D | SEM005-01 | 2019-04-01 | 2020-03-31 |
| Measurement Software | AUDIX | e3 V8.2014-6-27 | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM025-01 | 2018-07-12 | 2019-07-11 |

| General used equipment | | | | | |
|---------------------------------|---|-----------------|---------------------|-----------------|---------------------|
| Equipment | Manufacturer | Model No | Inventory No | Cal Date | Cal Due Date |
| Humidity/ Temperature Indicator | Shanghai Meteorological Industry Factory | ZJ1-2B | SEM002-03 | 2018-09-27 | 2019-09-26 |
| Humidity/ Temperature Indicator | Shanghai Meteorological Industry Factory | ZJ1-2B | SEM002-04 | 2018-09-27 | 2019-09-26 |
| Humidity/ Temperature Indicator | Mingle | N/A | SEM002-08 | 2018-09-27 | 2019-09-26 |
| Barometer | Changchun Meteorological Industry Factory | DYM3 | SEM002-01 | 2019-04-04 | 2020-04-03 |

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6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

6.1.2 Conclusion

Standard Requirement:

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 antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 1.5dBi

Antenna location: Refer to Appendix(Internal photos)

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7 Radio Spectrum Matter Test Results

7.1 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.231(c)
Test Method: ANSI C63.10 (2013) Section 6.9
Limit:

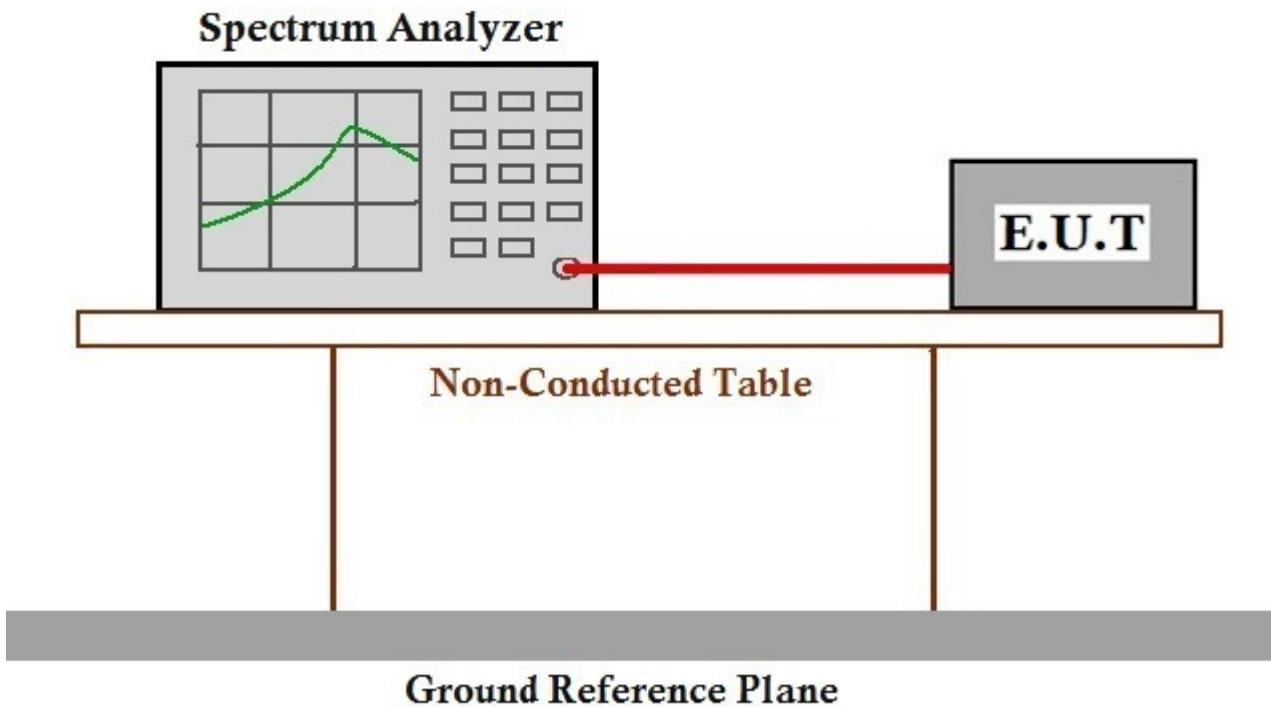
| Frequency range(MHz) | Limit |
|----------------------|---|
| 70-900 | No wider than 0.25% of the center frequency |
| Above 900 | No wider than 0.5% of the center frequency |

7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 24.6 °C Humidity: 53.5 % RH Atmospheric Pressure: 1005 mbar
Test mode a:TX mode_Keep the EUT in transmitting with modulation mode.

7.1.2 Test Setup Diagram



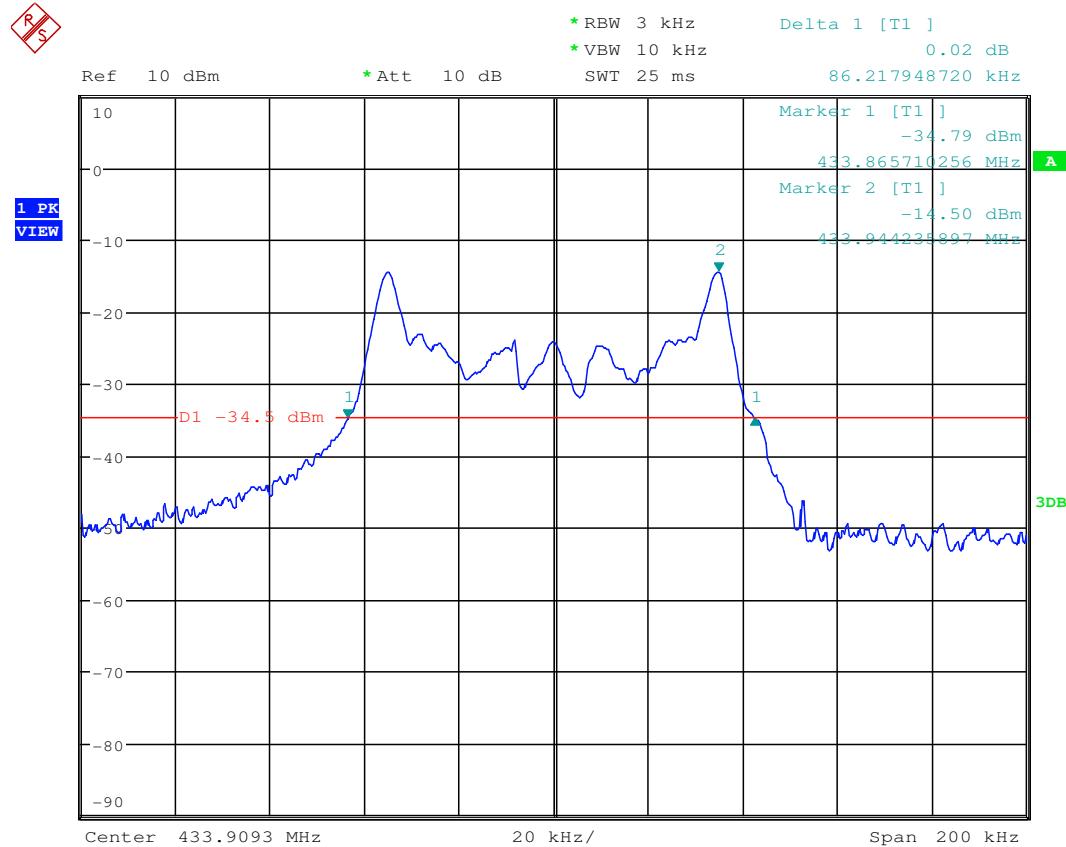
7.1.3 Measurement Procedure and Data

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| Test channel | 20dB Bandwidth (KHz) | Limit (KHz) | Results |
|--------------|----------------------|-------------|---------|
| 433.91MHz | 86.218 | 1084.775 | Pass |

Mode:a



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7.2 Dwell Time (15.231(a))

Test Requirement 47 CFR Part 15, Subpart C 15.231(a)

Test Method: ANSI C63.10 (2013) Section 7.8.4

Limit:

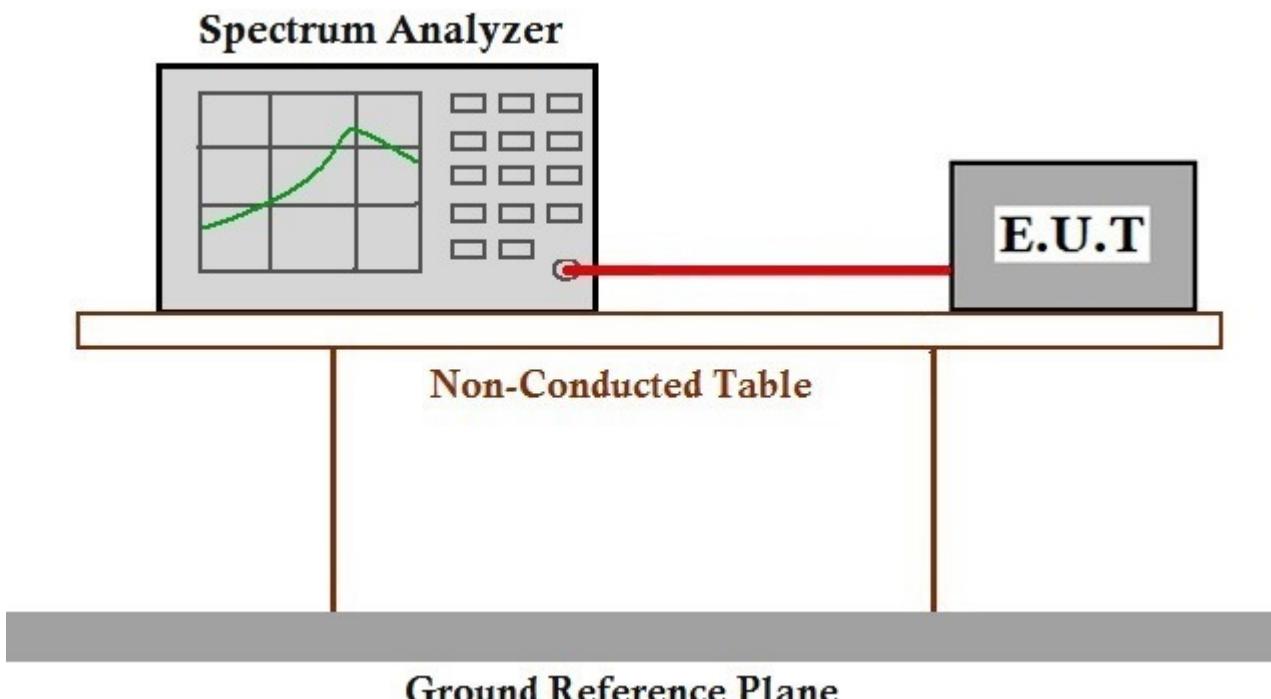
| Device type | Limit |
|--|--|
| Manually operated transmitter | The switch automatically deactivate the transmitter within not more than 5 seconds of being released |
| Automatically activated transmitter | Cease transmission within 5 seconds after activation |
| Periodic transmissions to determine system integrity of transmitters used in security or safety applications | The total transmission time does not exceed 2 seconds per hour |

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 24.6 °C Humidity: 53.5 % RH Atmospheric Pressure: 1005 mbar

Test mode a:TX mode_Keep the EUT in transmitting with modulation mode.

7.2.2 Test Setup Diagram**7.2.3 Measurement Procedure and Data**

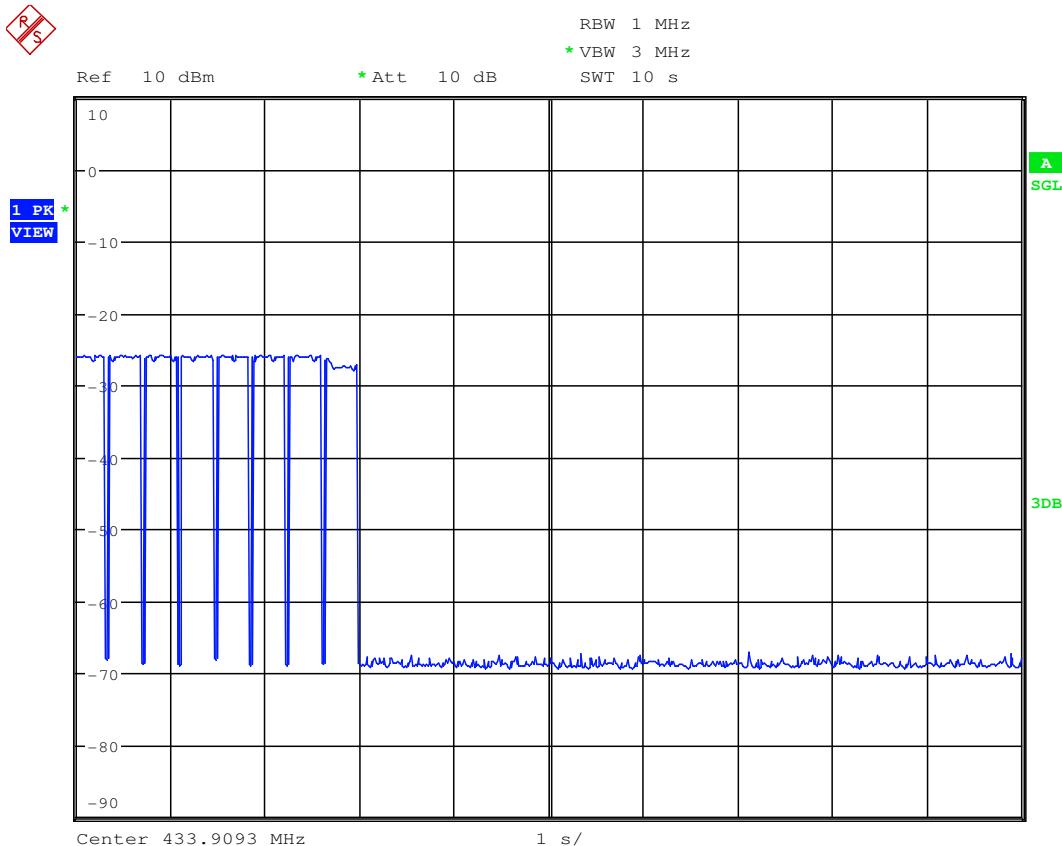
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| Test item | Limit (MHz) | Results |
|-------------------|-------------|---------|
| Transmitting time | ≤5S | Pass |



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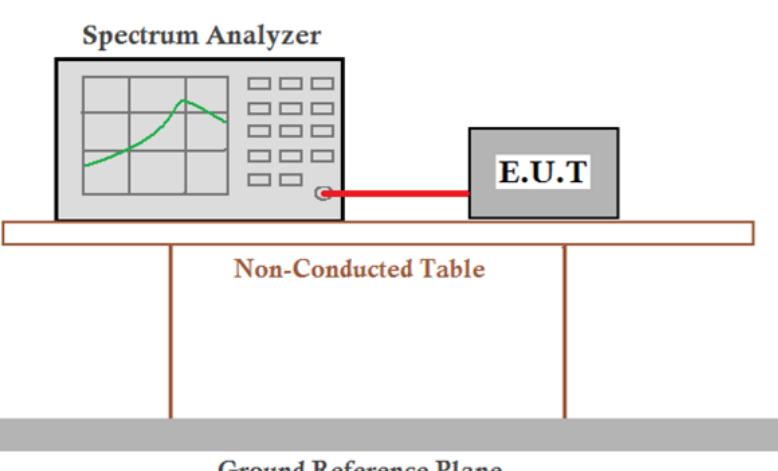
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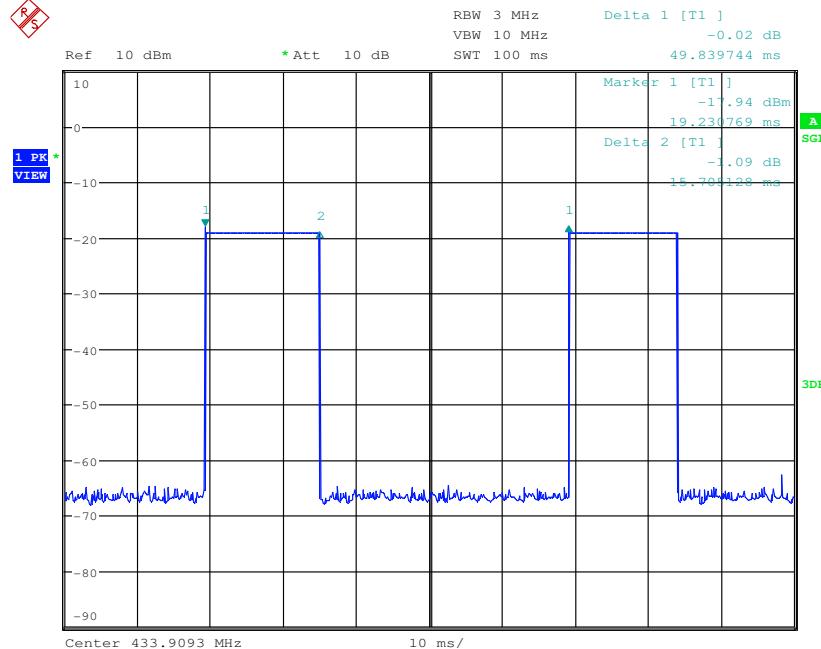
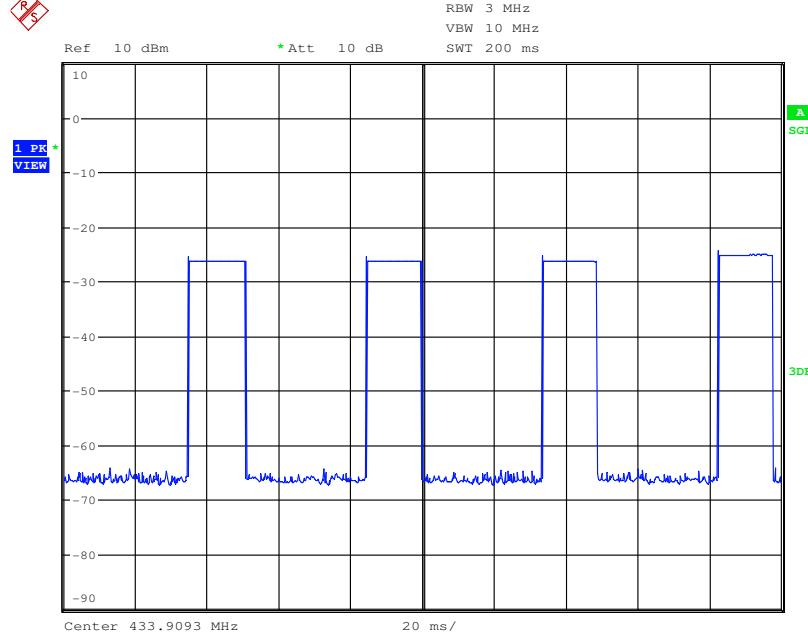
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7.3 Duty Cycle

| | |
|-------------------|--|
| Test Requirement: | 47 CFR Part 15C Section 15.35 (c) |
| Test Method: | ANSI C63.10:2013 |
| Test Setup: |  |
| Limit: | N/A |
| Test Mode: | Transmitting mode |
| Instruments Used: | Refer to section 5 for details |
| Test Results: | Pass |

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Test plot as follows:**Duty cycle numbers**

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7.4 Field Strength of the Fundamental Signal (15.231(b))

Test Requirement 47 CFR Part 15, Subpart C 15.231(b)

Test Method: ANSI C63.10 (2013) Section 6.5

Measurement Distance: 3m

Limit:

| Fundamental frequency(MHz) | Field strength of fundamental(microvolts/meter) | Field strength of spurious emissions(microvolts/meter) |
|----------------------------|---|--|
| 40.66-40.70 | 2250 | 225 |
| 70-130 | 1250 | 125 |
| 130-174 | 1250 to 3750 | 125 to 375 |
| 174-260 | 3750 | 375 |
| 260-470 | 3750 to 12500 | 375 to 1250 |
| Above 470 | 12500 | 1250 |

Remark: the emission limit is based on measurement instrumentation employing an average detector at a distance of 3 meters. The frequencies above 1000MHz are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

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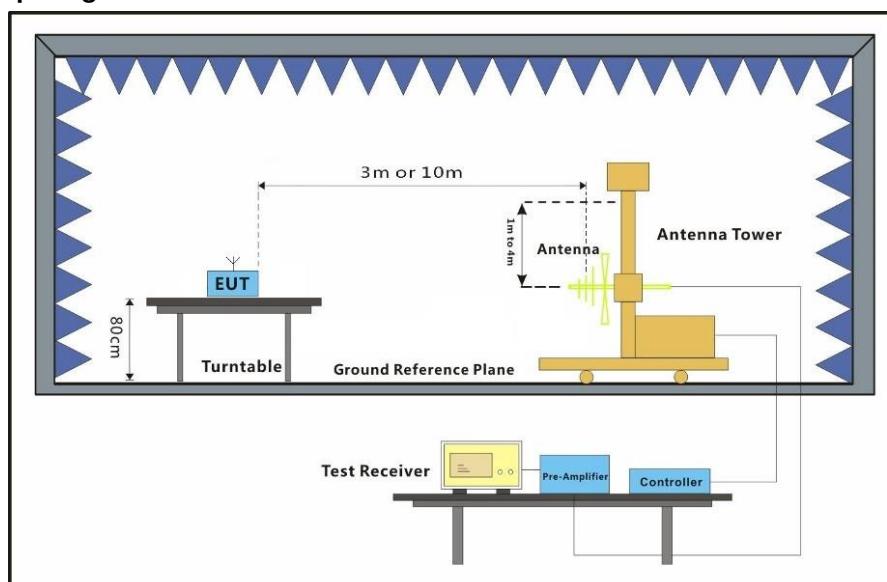
7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 23.7 °C Humidity: 54.1 % RH Atmospheric Pressure: 1005 mbar

Test mode a:TX mode_Keep the EUT in transmitting with modulation mode.

7.4.2 Test Setup Diagram



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7.4.3 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- h. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor



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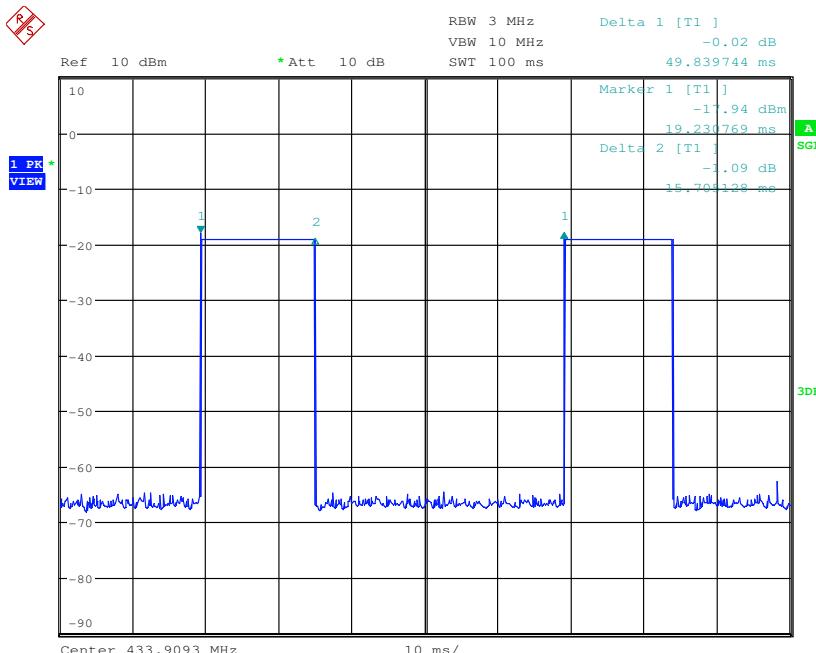
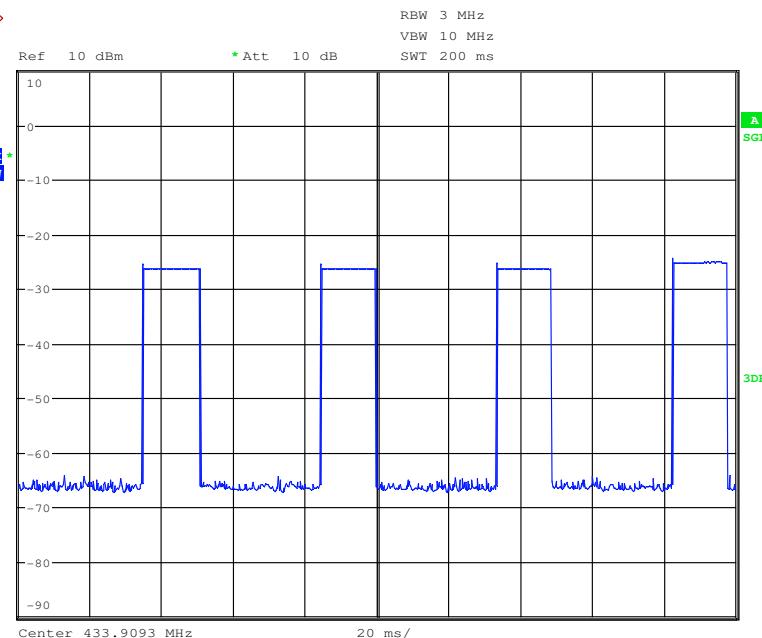
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Average value:

| | |
|--------------------|---|
| Calculate Formula: | Average value=Peak value + PDCF |
| | PDCF=20 log(Duty cycle)= 20 log(15.71/49.84)=-10.03 |
| | Duty cycle= T on time / T period |
| Test data: | T _{on} time = 15.71ms |
| | T period =49.84ms |

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Peak value:

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-----------------|-----------------------|--------------------|-------------------|----------------|---------------------|-----------------|--------------|
| 433.91 | 2.35 | 23.2 | 27.57 | 89.85 | 87.83 | 100.82 | -12.99 | Horizontal |
| 433.91 | 2.35 | 23.2 | 27.57 | 80.17 | 78.15 | 100.82 | -22.67 | Vertical |

Average Value:

| Frequency (MHz) | PCDF | Average Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|--------|------------------------|---------------------|-----------------|--------------|
| 433.91 | -10.03 | 77.8 | 80.82 | -3.02 | Horizontal |
| 433.91 | | 68.12 | 80.82 | -12.7 | Vertical |

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7.5 Radiated Emissions

Test Requirement 47 CFR Part 15, Subpart C Section 15.231 (b)/15.209

Test Method: ANSI C63.10 (2013) Section 6.4&6.5&6.6

Measurement Distance: 3m

Limit:

| Frequency(MHz) | Field strength(microvolts/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 |
| Above 960 | 500 | 3 |

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

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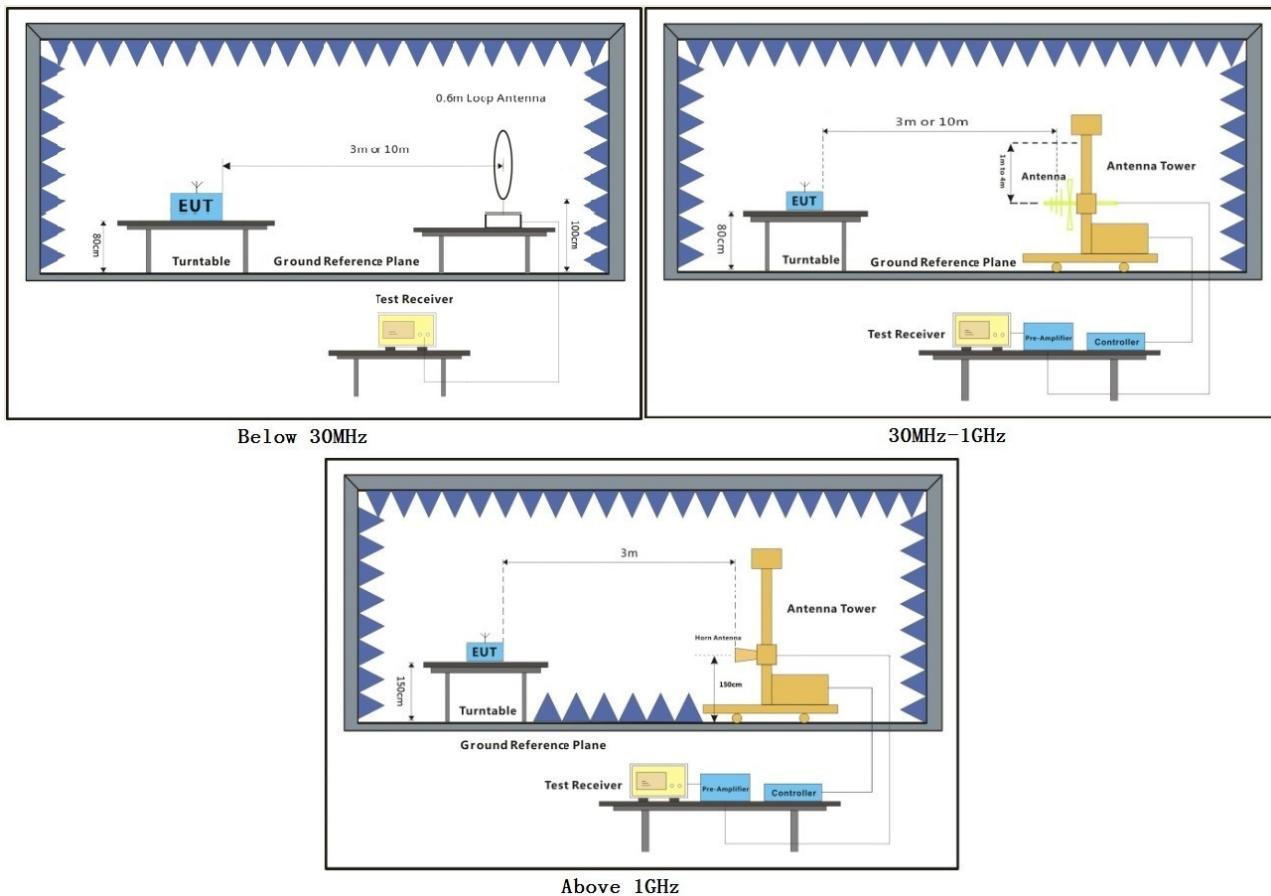
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7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 20 °C Humidity: 54 % RH Atmospheric Pressure: 1005 mbar
Test mode a:TX mode_Keep the EUT in transmitting with modulation mode.**7.5.2 Test Setup Diagram**

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7.5.3 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- h. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor



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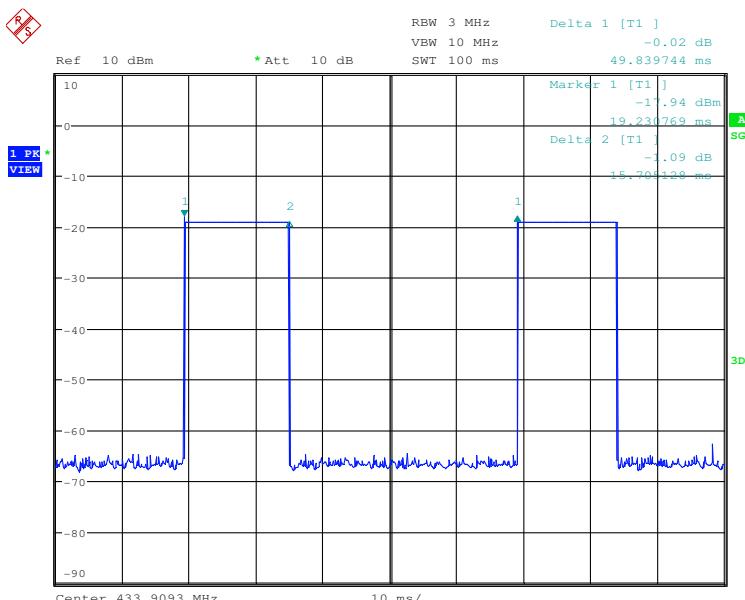
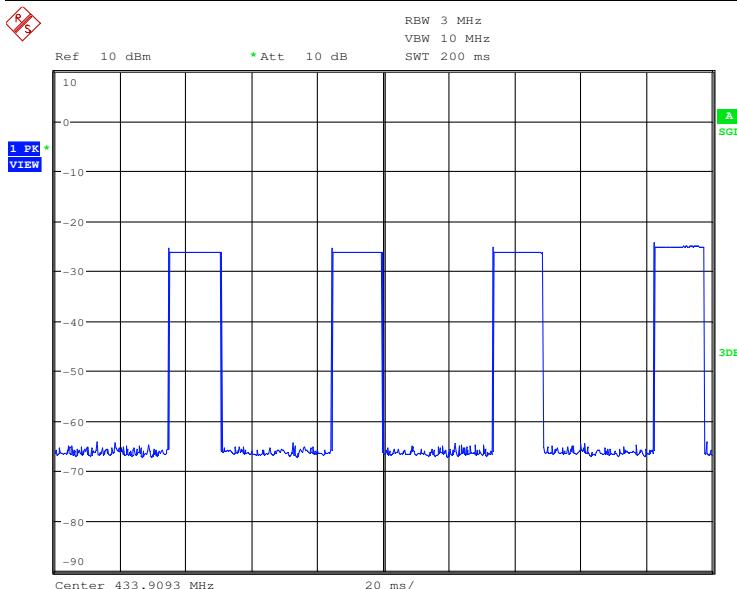
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Average value:

| | |
|--------------------|---|
| Calculate Formula: | Average value=Peak value + PDCF |
| | PDCF=20 log(Duty cycle)= 20 log(15.71/49.84)=-10.03 |
| | Duty cycle= T on time / T period |
| Test data: | T _{on} time = 15.71ms |
| | T period =49.84ms |


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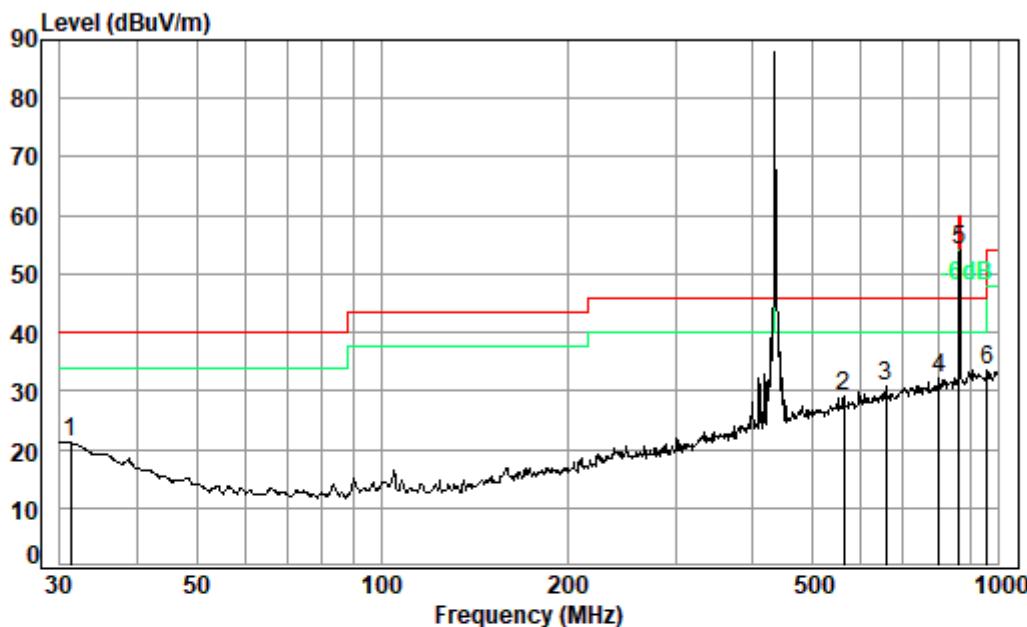
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30MHz~1GHz

QP value:

Mode: a; Polarization: Horizontal



Condition: 3m HORIZONTAL

Job No. : 14929CR

Test Mode: a

| Freq | Cable | Ant | Preamp | Read | Limit | Over | Over | |
|------|--------|--------|--------|-------|-------|--------|--------|--------|
| | Loss | Factor | Factor | Level | | | | |
| | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB |
| 1 | 31.29 | 0.60 | 21.77 | 27.73 | 26.46 | 21.10 | 40.00 | -18.90 |
| 2 | 562.66 | 2.67 | 25.90 | 28.05 | 28.72 | 29.24 | 46.00 | -16.76 |
| 3 | 658.84 | 2.82 | 27.39 | 28.02 | 28.57 | 30.76 | 46.00 | -15.24 |
| 4 | 801.79 | 3.21 | 28.52 | 27.71 | 28.02 | 32.04 | 46.00 | -13.96 |
| 5 pp | 866.00 | 3.49 | 29.41 | 27.42 | 48.61 | 54.09 | 60.62 | -6.53 |
| 6 | 958.79 | 3.66 | 30.10 | 27.06 | 26.91 | 33.61 | 46.00 | -12.39 |

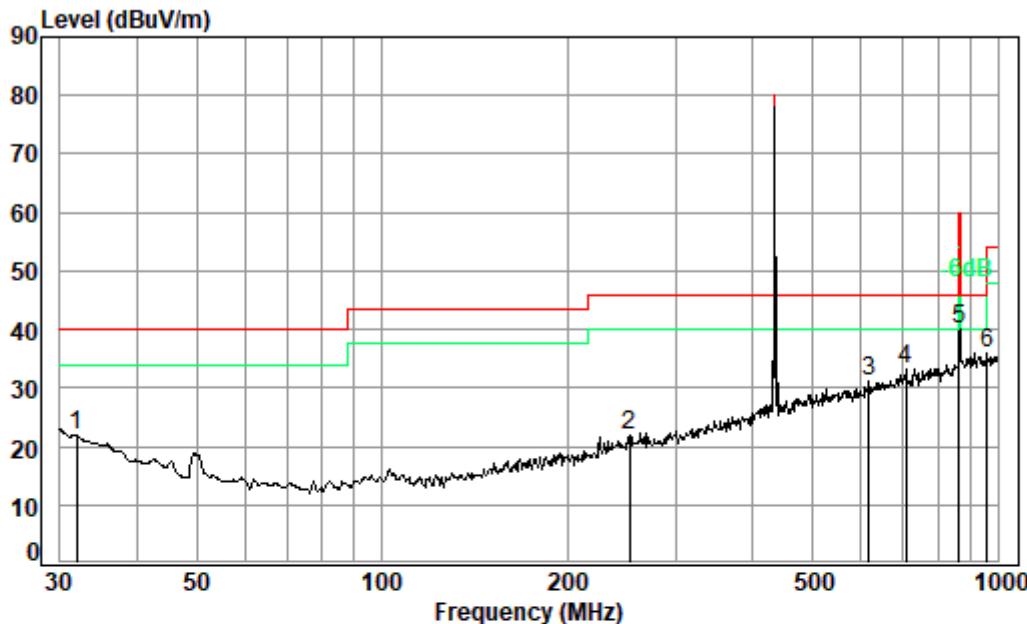
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Mode: a; Polarization: Vertical



Condition: 3m VERTICAL

Job No. : 14929CR

Test Mode: a

| Freq | Cable | Ant | Preamp | Read | Limit | Over | | |
|------|--------|--------|--------|-------|-------|--------|--------|--------|
| | Loss | Factor | Factor | Level | | | | |
| | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB |
| 1 | 31.95 | 0.60 | 21.40 | 27.72 | 27.56 | 21.84 | 40.00 | -18.16 |
| 2 | 252.06 | 1.68 | 18.98 | 27.01 | 28.29 | 21.94 | 46.00 | -24.06 |
| 3 | 618.54 | 2.74 | 26.86 | 28.12 | 29.75 | 31.23 | 46.00 | -14.77 |
| 4 pp | 709.18 | 2.93 | 27.96 | 27.91 | 30.37 | 33.35 | 46.00 | -12.65 |
| 5 | 866.00 | 3.49 | 29.41 | 27.42 | 34.51 | 39.99 | 60.62 | -20.63 |
| 6 | 962.16 | 3.67 | 30.12 | 27.05 | 29.11 | 35.85 | 54.00 | -18.15 |

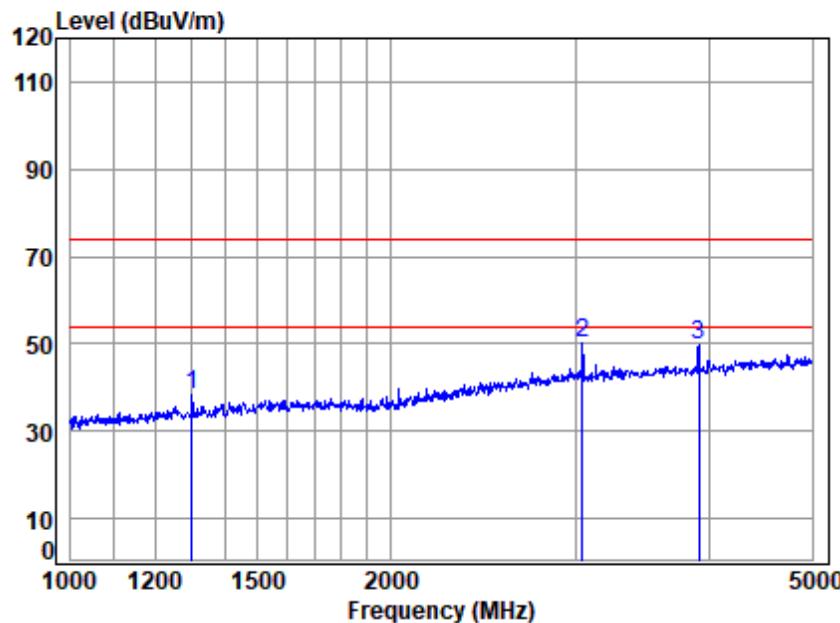


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Above 1GHz

Mode:a; Polarization:Horizontal



Site : chamber
Condition: 3m HORIZONTAL
Job No : 14929CR
Mode : 433 TX RSE
Note :

| Freq | Cable | Ant | Preamp | Read | Limit | Over | Remark |
|------------|-------|--------|--------|-------|--------|--------|-------------|
| | Loss | Factor | Factor | Level | Level | Line | |
| MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB |
| 1 1302.060 | 4.81 | 24.96 | 40.56 | 49.12 | 38.33 | 74.00 | -35.67 Peak |
| 2 3035.913 | 6.02 | 31.37 | 41.46 | 54.23 | 50.16 | 74.00 | -23.84 Peak |
| 3 3908.657 | 6.89 | 33.36 | 42.64 | 51.94 | 49.55 | 74.00 | -24.45 Peak |



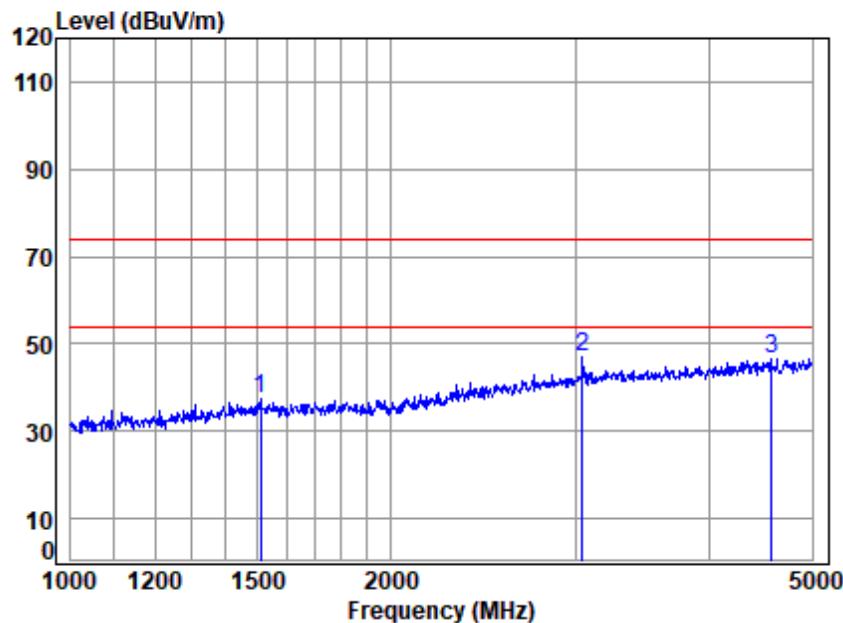
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Mode:a; Polarization:Vertical



Site : chamber
Condition: 3m VERTICAL
Job No : 14929CR
Mode : 433 TX RSE
Note :

| Freq | Cable | Ant | Preamp | Read | Limit | Over | Remark |
|------------|-------|--------|--------|-------|--------|--------|-------------|
| | Loss | Factor | Factor | Level | | | |
| MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB |
| 1 1509.859 | 5.47 | 25.85 | 40.71 | 46.65 | 37.26 | 74.00 | -36.74 Peak |
| 2 3035.913 | 6.02 | 31.37 | 41.46 | 50.98 | 46.91 | 74.00 | -27.09 Peak |
| 3 4576.428 | 7.64 | 33.74 | 43.38 | 48.52 | 46.52 | 74.00 | -27.48 Peak |

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Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

2) Scan from 9kHz to 5GHz, the disturbance below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

3) As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.

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8 Photographs

8.1 Test Setup

Refer to Setup Photos

8.2 EUT Constructional Details (EUT Photos)

Refer to EUT external and internal photos

- End of the Report -



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