



Test Report No.:
FCC2023-0062-RF

TEST REPORT

FCC ID : 2AI7A22210
Applicant : Kidz Toyz USA LLC
Product Name : Kawasaki 200ft. Walkie Talkies
Mode No. : 22210
Classification Of Test: **COMMISSION TEST**

CVC Testing Technology Co., Ltd.




| | | | |
|--|------------|---|------------|
| Applicant | | Name: Kidz Toyz USA LLC Address: 700 Fairfield Avenue Stamford CT 06902 | |
| Manufacturer | | Name: Kidz Toyz USA LLC Address: 700 Fairfield Avenue Stamford CT 06902 | |
| Equipment Under Test | | Product Name : Kawasaki 200ft. Walkie Talkies Model No. : 22210 Trade mark : N/A Serial no. : N/A Sampling : 1-1 | |
| Date of Receipt. | 2023.10.21 | Date of Testing | 2023.10.24 |
| Test Specification | | Test Result | |
| FCC CFR47 Part 15C (2020) Radio Frequency Devices ANSI C63.10 (2013) | | PASS | |
| Evaluation of Test Result | | The equipment under test was found to comply with the requirements of the standards applied. <div style="text-align: right;"> Seal of CVC Issue Date: 2023.10.27 </div> | |
| Approved by: Chen HuaWen  | | Reviewed by: Xu Zhenfei  | |
| | | Tested by: Lu WeiJi  | |
| Other Aspects: NONE. | | | |
| Abbreviations:OK, Pass= passed Fail = failed N/A= not applicable EUT= equipment, sample(s) under tested | | | |
| This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC . | | | |

TABLE OF CONTENTS

1. GENERAL PRODUCT INFORMATION..... 4

1.1 GENERAL INFORMATION 4

2. TEST SITES 5

2.1 TEST FACILITIES 5

2.2 DESCRIPTION OF NON-STANDARD METHOD AND DEVIATIONS..... 5

2.3 LIST OF TEST AND MEASUREMENT INSTRUMENTS 5

3. TEST CONFIGURATION 6

3.1 TEST MODE 6

4. SUMMARY OF MEASUREMENT RESULTS..... 7

5. MEASUREMENT PROCEDURE 8

5.1 CONDUCTED EMISSION 8

5.2 RADIATED EMISSION 11

5.3 FIELD STRENGTH OF FUNDAMENTAL EMISSIONS 15

5.4 20DB BANDWIDTH MEASUREMENT 19

5.5 26DB BANDWIDTH MEASUREMENT 21

6. APPENDIX A..... 23

1. General Product Information

1.1 General information

| | |
|-------------------------|----------------------------------|
| Product Name | Kawasaki 200ft. Walkie Talkies |
| Model No. | 22210 |
| Additional model | N/A |
| Power Supply | DC 9.0V |
| Serial Number(SN) | N/A |
| firmware | V1.0 |
| software | V1.0 |
| specific power settings | Default |
| Antenna Type | External Antenna |
| Antenna Connector | A permanently attached antenna |
| Antenna Gain | 0 dBi (provided by client) |
| Beamforming gain | Unsupported (provided by client) |
| Frequency Range | 49.86 MHz |
| Channel Number | 1 Channel |
| Type of Modulation | F3E |
| Max. Power | -38.75dBm |
| Operate Temp.Range | -5~70℃ |

Note:

1. The information of the EUT is declared by the manufacturer.
2. The laboratory is not responsible for the product technical specification provided by the client.

2. Test Sites

2.1 Test Facilities

The tests and measurements refer to this report were performed by RF testing Lab. of CVC Testing Technology Co., Ltd.

Add.: No.3, Tiantaiyi Road, Kaitai Avenue, Science City, Guangzhou, Guangdong, 510663, People's Republic of China

Telephone : +86-20-32293888

Fax : +86-20-32293889

FCC(Test firm designation number: CN1282)

IC(Test firm CAB identifier number: CN0103)

2.2 Description of Non-standard Method and Deviations

The testing and measurement methods used in this report are applied by all standard methods. Not any non-standard method or deviation from the used standards was used.

2.3 List of Test and Measurement Instruments

Refer to **Appendix A**.

3. Test Configuration

3.1 Test Mode

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

| Test Mode | Antenna Delivery | Test Channel |
|-----------|------------------|--------------|
| Tx mode | 1TX | 49.86MHz |

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (X axis) and the worst case was recorded.

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate and different channels. Preliminary tests have been done on all the configurations for confirming worst case. Data rate below means worst-case rate of each test item.

Worst-case data rates and channels are shown as following table.

| Test Mode | Data Rate | | |
|-----------|-----------|-----------|------|
| | Antenna 1 | Antenna 2 | MIMO |
| Tx mode | / | / | / |

| Test Items | Test Antenna | Test Mode | Test Channel |
|---|--------------|-----------|--------------|
| Radiated Emissions | Antenna 1 | Tx mode | 49.86MHz |
| Field Strength of Fundamental Emissions | Antenna 1 | Tx mode | 49.86MHz |
| 20dB Bandwidth measurement | Antenna 1 | Tx mode | 49.86MHz |
| 26dB Bandwidth measurement | Antenna 1 | Tx mode | 49.86MHz |

4. Summary of measurement results

| Summary of measurements of results | Clause in FCC rules | Verdict | Note |
|---|---------------------|---------|------------------------------|
| Conducted Emissions | 15.207 | N/A | See Note1 |
| Radiated Emissions | 15.209 | PASS | / |
| Field Strength of Fundamental Emissions | 15.235(a) | PASS | / |
| 20dB Bandwidth measurement | 15.235(c) | PASS | / |
| 26dB Bandwidth measurement | 15.235(b) | PASS | / |
| Antenna Requirement | 15.203 | PASS | No antenna connector is used |

Note1: The device is not connected to the AC power line, there are no testing requirements.

5. Measurement procedure

5.1 Conducted Emission

Ambient condition:

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.3kPa |

Method of Measurement:

The EUT was setup according to ANSI C63.10, 2013 for compliance to FCC 47CFR 15.247 requirements. 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. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /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) 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.

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.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

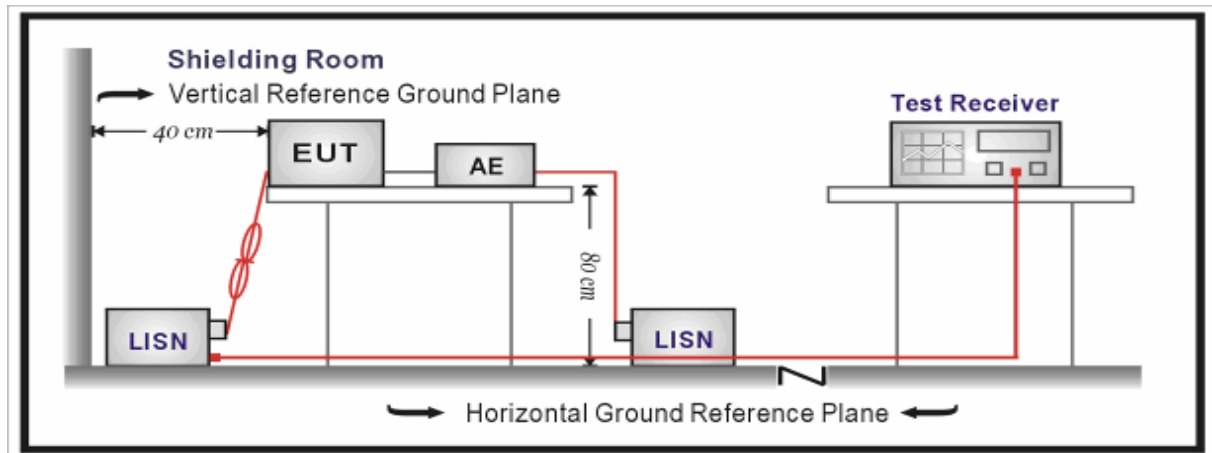
Limits:

| Frequency (MHz) | Conducted Limits(dBμV) | |
|-----------------|------------------------|-----------|
| | Quasi-peak | Average |
| 0.15 - 0.5 | 66 to 56 * | 56 to 46* |
| 0.5 - 5 | 56 | 46 |
| 5 - 30 | 60 | 50 |

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

Test Setup:



Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Level = Reading + Factor.

Measurement Uncertainty:

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$. $U = 3.12$ dB.

Test Results:

Conducted Emission applies to an intentional radiator that is designed to be connected to the public utility (AC) power line. Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.

5.2 Radiated Emission

Ambient condition:

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.3kPa |

Method of Measurement:

The EUT was setup and tested according to ANSI C63.10, 2013.

For emissions testing at or below 1 GHz, the EUT is placed on a turn table which is 0.8 meter above ground. For emissions testing above 1 GHz, the EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from Antenna to the EUT was 3 meters.

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.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

The frequency range from 30MHz to 10th harmonic is checked.

Note: When doing emission measurement above 1GHz, the horn Antenna will be bended down a little (as horn Antenna has the narrow beamwidth) in order to keeping the Antenna in the “cone of radiation” of EUT. The 3dB beamwidth is 10~60 degrees for H-plane and 10~90 degrees for E-plane.

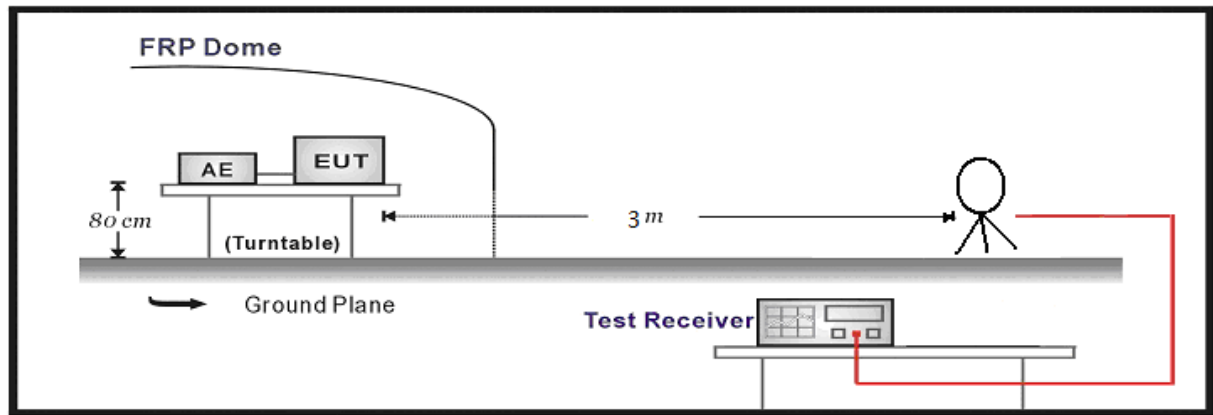
Limits:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

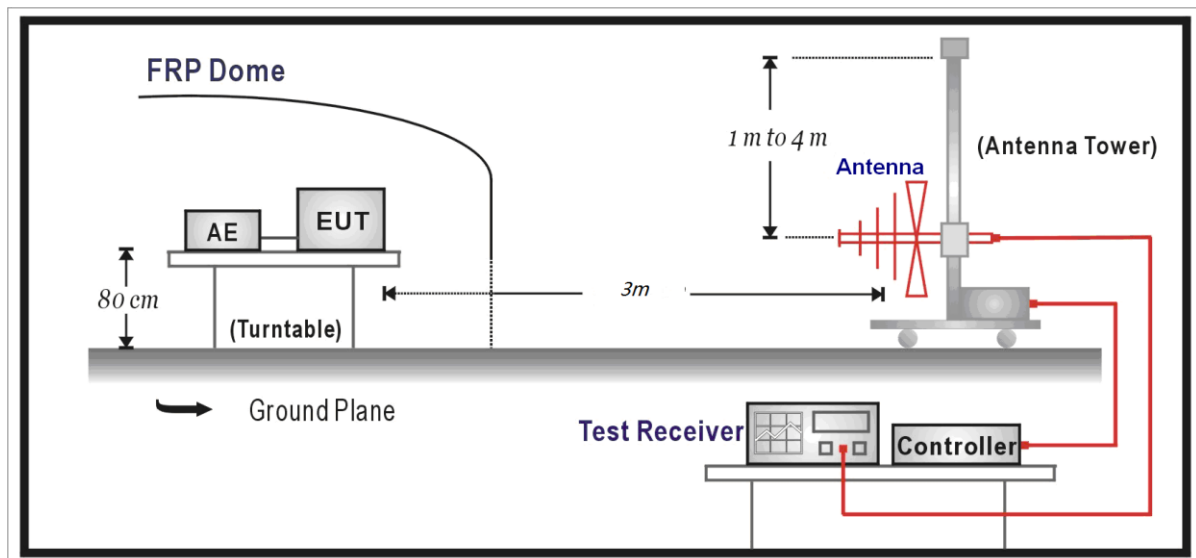
| Frequency | Limit ($\mu\text{V/m}$) | Limit ($\text{dB}\mu\text{V/m}$ @3m) | Remark |
|-------------------|---------------------------|---------------------------------------|------------------|
| 0.009MHz-0.490MHz | 2400/F(kHz)@300m | $20\lg(240000/F(\text{kHz}))$ | Quasi-peak Level |
| 0.490MHz~1.705MHz | 24000/F(kHz)@30m | $20\lg(240000/F(\text{kHz}))$ | Quasi-peak Level |
| 1.705MHz~30.0MHz | 30@30m | 49.54 | Quasi-peak Level |
| 30MHz-88MHz | 100@3m | 40.0 | Quasi-peak Level |
| 88MHz-216MHz | 150@3m | 43.5 | Quasi-peak Level |
| 216MHz-960MHz | 200@3m | 46.0 | Quasi-peak Level |
| 960MHz-1GHz | 500@3m | 54.0 | Quasi-peak Level |
| Above 1GHz | 500@3m | 54.0 | Average Level |
| | 5000@3m | 74.0 | Peak Level |

Test Setup:

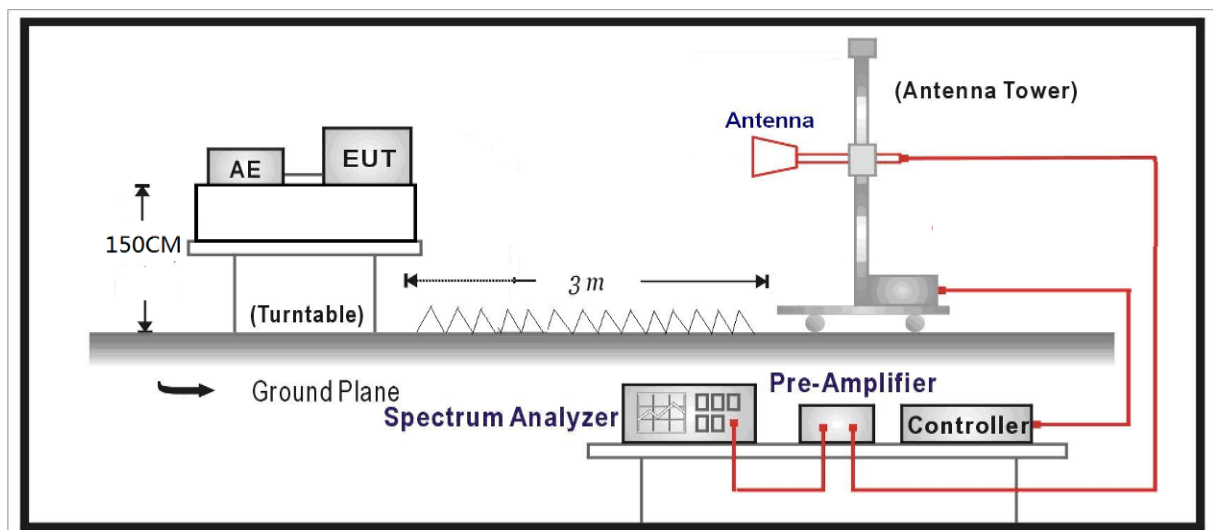
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:



Measurement Data:

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

Final Level = Reading - Factor

Factor = Preamplifier Factor – Antenna Factor–Cable Loss

Measurement Uncertainty:

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

| Frequency | Uncertainty |
|--------------|-------------|
| 9KHz-30MHz | 3.55 dB |
| 30MHz-200MHz | 4.19 dB |
| 200MHz-1GHz | 3.63 dB |
| Above 1GHz | 3.68 dB |

Test Results:

BELOW 1GHz WORST-CASE DATA:

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M | | | | | | | | | |
|--|-------------|--------------------------|-------------------------|----------------|-------------|-----------|---------------------|----------------------|-----------|
| No. | Freq. (MHz) | Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detect or | Antenna Height (cm) | Table Angle (Degree) | Pass/Fail |
| 1 | 149.516 | 20.69 | 33.13 | 43.50 | 10.37 | PK | 100 | 92 | Pass |
| 2 | 249.2419 | 19.36 | 37.51 | 46.00 | 8.49 | PK | 100 | 99 | Pass |
| 3 | 348.9679 | 22.66 | 44.37 | 46.00 | 1.63 | PK | 100 | 92 | Pass |
| 4 | 448.6939 | 25.25 | 40.25 | 46.00 | 5.75 | PK | 100 | 277 | Pass |
| 5 | 498.5569 | 26.61 | 37.28 | 46.00 | 8.72 | PK | 100 | 284 | Pass |
| 6 | 698.0088 | 30.31 | 40.62 | 46.00 | 5.38 | PK | 100 | 350 | Pass |
| 7 | 149.5657 | 20.69 | 15.94 | 43.50 | 27.56 | QP | 110 | 92 | Pass |
| 8 | 249.2744 | 19.36 | 24.12 | 46.00 | 21.88 | QP | 370 | 99 | Pass |
| 9 | 348.9679 | 22.66 | 28.67 | 46.00 | 17.33 | QP | 390 | 92 | Pass |
| 10 | 448.6809 | 25.25 | 25.82 | 46.00 | 20.18 | QP | 190 | 277 | Pass |
| 11 | 498.5208 | 26.61 | 28.82 | 46.00 | 17.18 | QP | 380 | 284 | Pass |
| 12 | 697.9478 | 30.31 | 38.34 | 46.00 | 7.66 | QP | 330 | 350 | Pass |

| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M | | | | | | | | | |
|--|-------------|--------------------------|-------------------------|----------------|-------------|-----------|---------------------|----------------------|-----------|
| No. | Freq. (MHz) | Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detect or | Antenna Height (cm) | Table Angle (Degree) | Pass/Fail |
| 1 | 99.653 | 15.90 | 33.49 | 43.50 | 10.01 | PK | 100 | 66 | Pass |
| 2 | 348.9679 | 22.66 | 42.22 | 46.00 | 3.78 | PK | 100 | 203 | Pass |
| 3 | 398.8309 | 23.92 | 41.21 | 46.00 | 4.79 | PK | 100 | 92 | Pass |
| 4 | 448.6939 | 25.25 | 42.71 | 46.00 | 3.29 | PK | 100 | 112 | Pass |
| 5 | 498.5569 | 26.61 | 45.17 | 46.00 | 0.83 | PK | 100 | 92 | Pass |
| 6 | 548.4198 | 27.65 | 41.75 | 46.00 | 4.25 | PK | 100 | 125 | Pass |
| 7 | 99.7121 | 15.90 | 32.56 | 43.50 | 10.94 | QP | 380 | 66 | Pass |
| 8 | 348.9679 | 22.66 | 34.28 | 46.00 | 11.72 | QP | 210 | 203 | Pass |
| 9 | 398.8193 | 23.92 | 37.93 | 46.00 | 8.07 | QP | 310 | 92 | Pass |
| 10 | 448.6809 | 25.25 | 36.82 | 46.00 | 9.18 | QP | 330 | 112 | Pass |
| 11 | 498.5352 | 26.61 | 42.99 | 46.00 | 3.01 | QP | 320 | 92 | Pass |
| 12 | 548.3801 | 27.65 | 40.30 | 46.00 | 5.70 | QP | 250 | 125 | Pass |

NOTE:

1. Margin value = Limit value - Emission level.
2. The emission levels of other frequencies were less than 20dB margin against the limit.

5.3 Field Strength of Fundamental Emissions

Ambient condition:

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.3kPa |

Method of Measurement:

The EUT was setup and tested according to ANSI C63.10, 2013.

For emissions testing at or below 1 GHz, the EUT is placed on a turn table which is 0.8 meter above ground. For emissions testing above 1 GHz, the EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.

The EUT was positioned such that the distance from Antenna to the EUT was 3 meters.

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.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

The frequency range from 30MHz to 10th harmonic is checked.

Note: When doing emission measurement above 1GHz, the horn Antenna will be bended down a little (as horn Antenna has the narrow beamwidth) in order to keeping the Antenna in the “cone of radiation” of EUT.

The 3dB beamwidth is 10~60 degrees for H-plane and 10~90 degrees for E-plane.

Limits:

According to 15.235, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

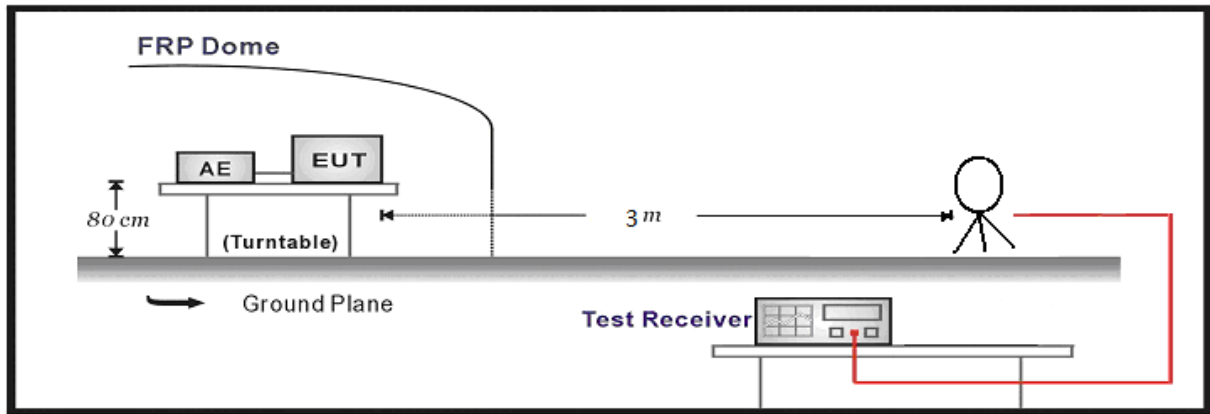
| Fundamental frequency (MHz) | Field strength of fundamental | | | |
|--------------------------------|-------------------------------|-----------------------|------------------------|--------------------------|
| | Peak Level(uV/m) | Peak Level(dBuV/m) | Average Level(uV/m) | Average Level(dBuV/m) |
| 49.82-49.90 | 100,000 | 100 | 10,000 | 80 |

NOTE:

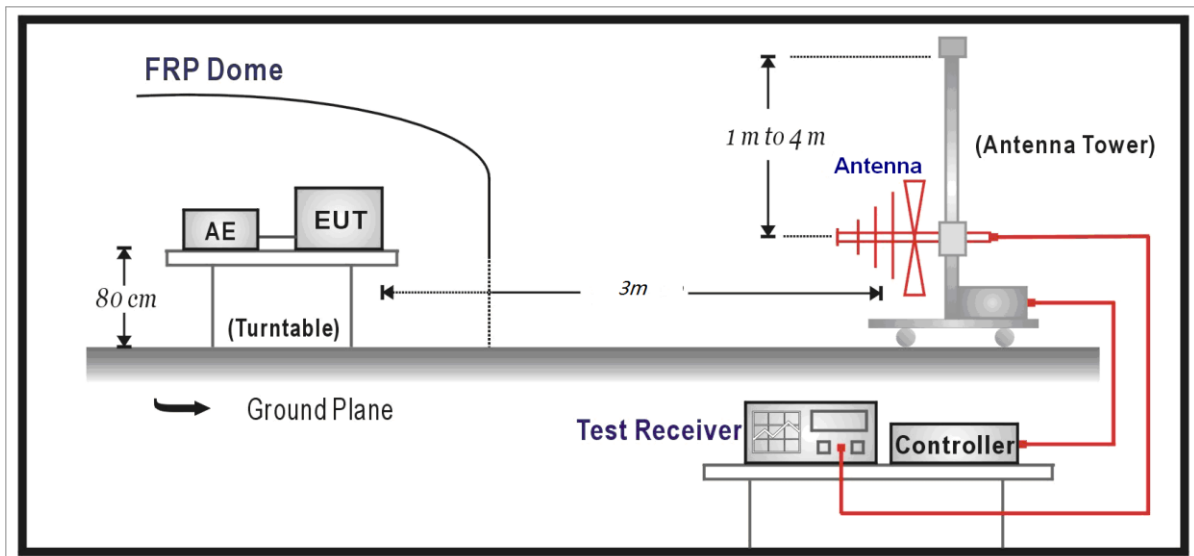
1. Emission level (dBuV/m) = 20 log Emission level (uV/m).
2. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation. When average radiated emission measurements are specified in this part, including average emission measurements below 1000 MHz, there also is a limit on the peak level of the radio frequency emissions.

Test Setup:

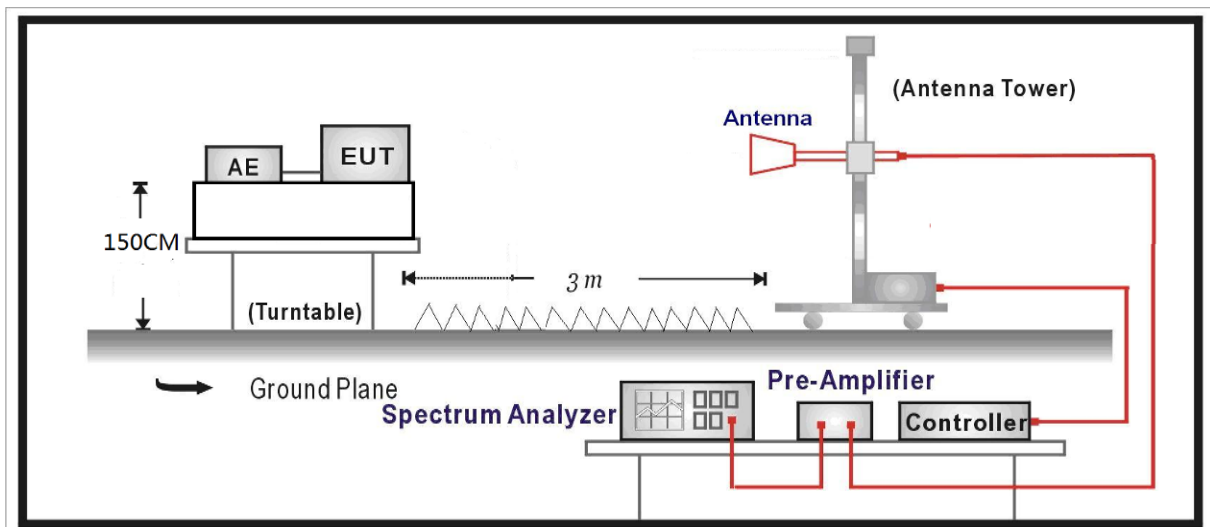
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:



Measurement Data:

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

Final Level = Reading - Factor

Factor = Preamplifier Factor – Antenna Factor–Cable Loss

Measurement Uncertainty:

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

| Frequency | Uncertainty |
|--------------|-------------|
| 9KHz-30MHz | 3.55 dB |
| 30MHz-200MHz | 4.19 dB |
| 200MHz-1GHz | 3.63 dB |
| Above 1GHz | 3.68 dB |

Test Results:

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M | | | | | | | | | |
|--|-------------|--------------------------|-------------------------|----------------|-------------|-----------|---------------------|----------------------|-----------|
| No. | Freq. (MHz) | Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detect or | Antenna Height (cm) | Table Angle (Degree) | Pass/Fail |
| 1 | 49.86 | 20.44 | 42.92 | 100.00 | 57.08 | PK | 100 | 4 | Pass |
| 2 | 49.86 | 20.44 | 39.34 | 80.00 | 40.66 | AV | 110 | 4 | Pass |

| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M | | | | | | | | | |
|--|-------------|--------------------------|-------------------------|----------------|-------------|-----------|---------------------|----------------------|-----------|
| No. | Freq. (MHz) | Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detect or | Antenna Height (cm) | Table Angle (Degree) | Pass/Fail |
| 1 | 49.86 | 20.44 | 56.45 | 100.00 | 43.55 | PK | 100 | 108 | Pass |
| 2 | 49.86 | 20.44 | 56.08 | 80.00 | 23.92 | AV | 140 | 115 | Pass |

NOTE: Margin value = Limit value - Emission level.

5.4 20dB Bandwidth measurement

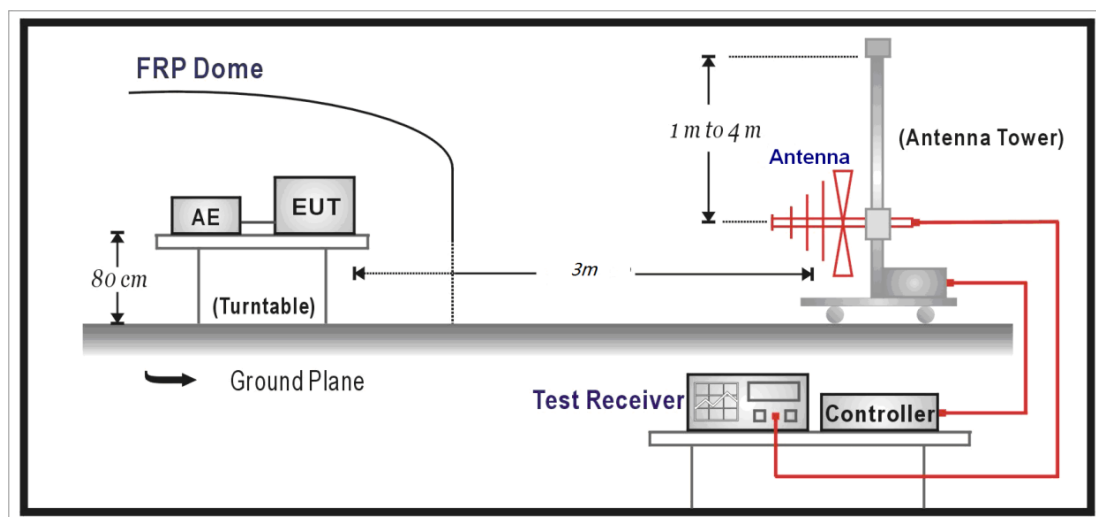
Ambient condition:

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.3kPa |

Method of Measurement:

The spectrum analyzer was receiving the maximum emission level. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

Test Setup:



Limits:

According to FCC 15.235(c), The RF carrier and modulation products shall be maintained within the band 49.82–49.90 MHz.

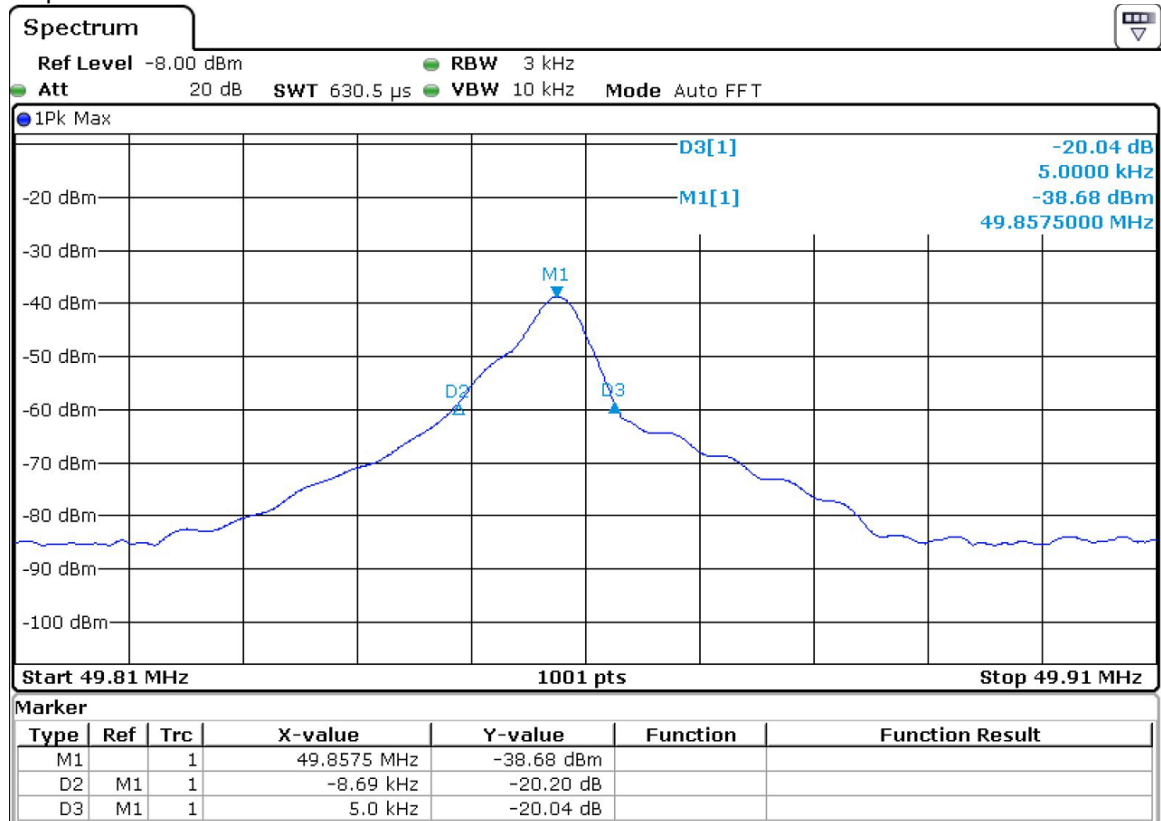
Measurement Uncertainty:

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 936$ Hz.

Test Results:

| Frequency (MHz) | 20dB Bandwidth (kHz) | Limit (MHz) | PASS/FAIL |
|-----------------|----------------------|--------------------|-----------|
| 49.86 | 13.69 | within 49.82-49.90 | PASS |

The plots of test results are attached as below.



5.5 26dB Bandwidth measurement

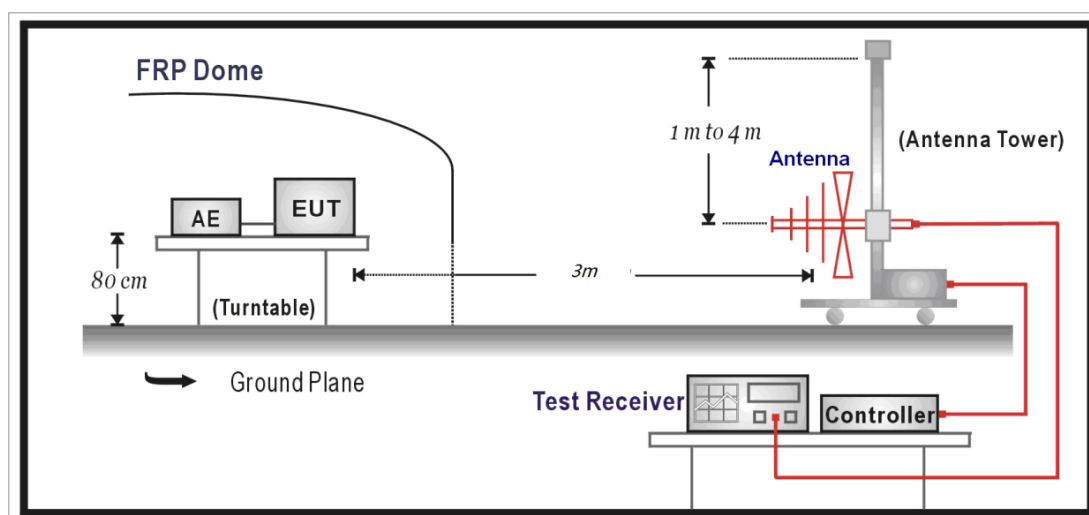
Ambient condition:

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.3kPa |

Method of Measurement:

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency.

Test Setup:



Limits:

According to FCC 15.235(b), The field strength of any emissions appearing between the band edges and up to 10 kHz above and below the band edges shall be attenuated at least 26 dB below the level of the unmodulated carrier or to the general limits in § 15.209, whichever permits the higher emission levels.

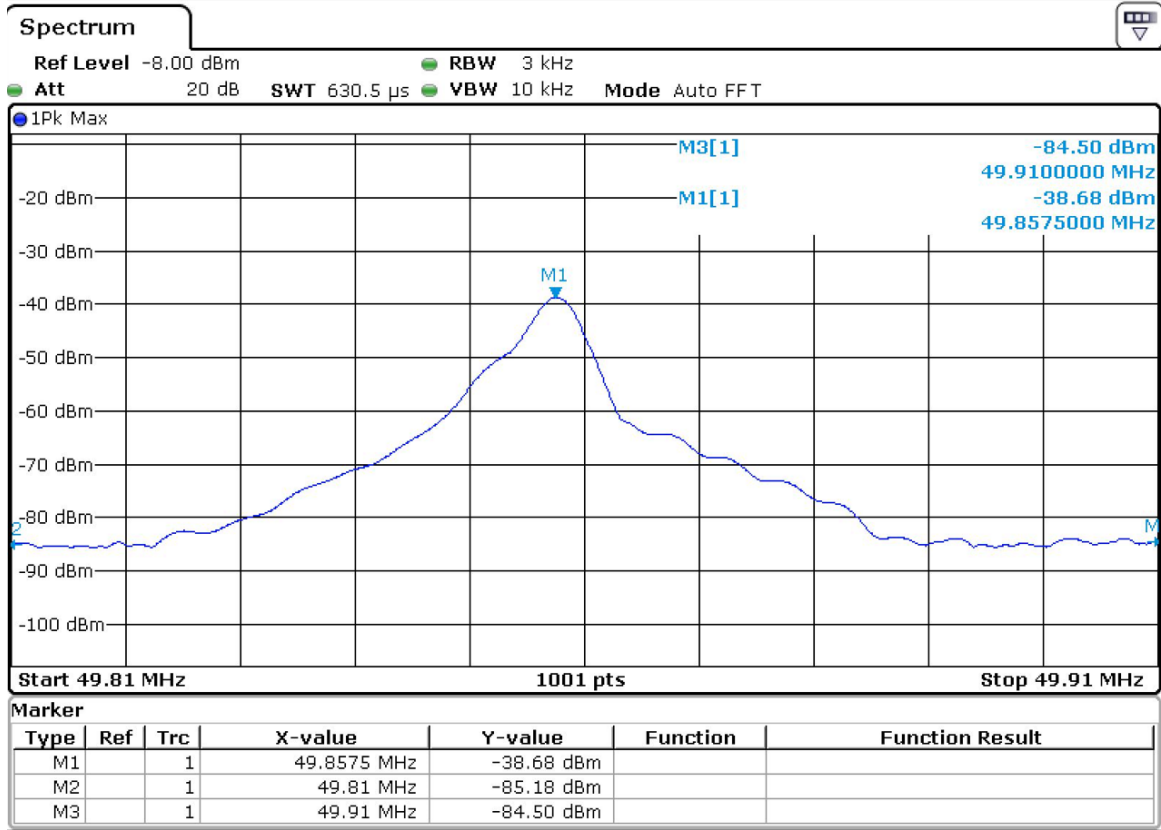
Measurement Uncertainty:

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 936$ Hz.

Test Results:

| Frequency (MHz) | Reading(dBm) | Results(dB) | Limit (dB) | PASS/FAIL |
|-----------------|--------------|-------------|------------|-----------|
| 49.81 | -85.18 | 46.50 | ≥26 | PASS |
| 49.91 | -84.50 | 45.82 | ≥26 | PASS |

The plots of test results are attached as below.



6. Appendix A

| Test Equipment | Type/Mode | SERIAL NO. | Equipment No. | Manufacturer | Cal. Due |
|--------------------------------|-----------|------------|---------------|--------------|------------|
| 5m Semi-Anechoic Chamber | SAC-5 | SAC-5-2.0 | EM-000557 | COMTEST | 2024/11/02 |
| EMI Test Receiver | ESR7 | 102235 | VGDY-0956 | R&S | 2024/02/22 |
| loop antenna | HLA 6121 | 540046 | EM-000546 | TESEQ | 2024/06/05 |
| Broadband Antenna | VULB 9163 | 9163-676 | EM-000382 | SCHWARZBECK | 2024/06/10 |
| Temperature and humidity meter | MHO-C201 | / | DZ-000249-2 | Seconds test | 2024/09/23 |

The End

Important

- 1.The test report is invalid without the official stamp of CVC;
- 2.Any part photocopies of the test report are forbidden without the written permission from CVC;
- 3.The test report is invalid without the signatures of Approval and Reviewer;
- 4.The test report is invalid if altered;
- 5.Objections to the test report must be submitted to CVC within 15 days;
- 6.Generally, commission test is responsible for the tested samples only;
- 7.As for the test result, “—”or “N” means “not applicable” , “ / ”means “not test”, “P” means “pass” and “F” means “fail”.

The test data and test results given in this test report should only be used for purposes of scientific research, teaching and internal quality control when the CMA symbol is not presented.

Lab address: No.3, Tiantaiyi Road, Kaitai Avenue, Science City, Guangzhou, Guangdong , P.R. China

Post Code: 510663

Tel: 020 32293888

Fax: 020 32293889

E-mail: office@cvc.org.cn

<http://www.cvc.org.cn>