



FCC TEST REPORT

**Test report
On Behalf of**

SHENZHEN JINGDU TECHNOLOGY CO.,LTD

For

XLR Wireless Transmitter and Receiver

**Model No.: WXM29, WXM29A, WXM29B, WXM29C, WXM29D,
WXM29-1, WXM29-2, WXM29-3, WXM29-4**

FCC ID: 2A085-WXM29

Prepared for : SHENZHEN JINGDU TECHNOLOGY CO.,LTD
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Date of Test: Apr. 18, 2022 ~ Apr. 25, 2022

Date of Report: Apr. 25, 2022

Report Number: HK2204181614-E



TEST RESULT CERTIFICATION


Applicant's name : SHENZHEN JINGDU TECHNOLOGY CO.,LTD
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Product description

Trade Mark : Bietrun, Kapebow
Product name..... : XLR Wireless Transmitter and Receiver
Model and/or type reference : WXM29, WXM29A, WXM29B, WXM29C, WXM29D, WXM29-1, WXM29-2, WXM29-3, WXM29-4
Standards : FCC Rules and Regulations Part 15 Subpart C Section 15.236
 ANSI C63.4: 2014

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Date of Test :
Date (s) of performance of tests..... : Apr. 18, 2022 ~ Apr. 25, 2022
Date of Issue : Apr. 25, 2022
Test Result..... : **Pass**

Testing Engineer : 

 (Gary Qian)

Technical Manager : 

 (Eden Hu)

Authorized Signatory : 

 (Jason Zhou)



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**** Modified History ****

| Revision | Description | Issued Data | Remark |
|---------------------|------------------------------------|----------------------|-------------------|
| Revision 1.0 | Initial Test Report Release | Apr. 25, 2022 | Jason Zhou |
| | | | |
| | | | |



1 TEST SUMMARY

1.1 TEST PROCEDURES AND RESULTS

| Requirement | CFR 47 Section | Result |
|-----------------------------|----------------|--------|
| Conducted Emission | 15.207 | PASS |
| Conducted Peak Output Power | 15.236(d)(1) | PASS |
| Occupied Bandwidth Emission | 15.236(f)(2) | PASS |
| Radiated Spurious Emission | 15.236(g) | PASS |
| Frequency Stability | 15.236(f)(3) | PASS |
| Antenna Requirement | 15.203 | PASS |

Note:

1. PASS: Test item meets the requirement.
2. Fail: Test item does not meet the requirement.
3. N/A: Test case does not apply to the test object.
4. The test result judgment is decided by the limit of test standard.

1.2 INFORMATION OF THE TEST LABORATORY

Shenzhen HUAK Testing Technology Co., Ltd.
 Add.: 1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Testing Laboratory Authorization :

A2LA Accreditation Code is 4781.01.
 FCC Designation Number is CN1229.
 Canada IC CAB identifier is CN0045.
 CNAS Registration Number is L9589.

1.3 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

| No. | Item | MU |
|-----|---|-------------------------|
| 1 | Conducted Emission | $\pm 2.56\text{dB}$ |
| 2 | RF power, conducted | $\pm 0.12\text{dB}$ |
| 3 | Spurious emissions, conducted | $\pm 0.11\text{dB}$ |
| 4 | All emissions, radiated($<1\text{G}$) | $\pm 3.92\text{dB}$ |
| 5 | All emissions, radiated($>1\text{G}$) | $\pm 4.28\text{dB}$ |
| 6 | Temperature | $\pm 0.1^\circ\text{C}$ |
| 7 | Humidity | $\pm 1.0\%$ |



2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

| | |
|----------------------|--|
| Equipment: | XLR Wireless Transmitter and Receiver |
| Model Name: | WXM29 |
| Series Model: | WXM29A, WXM29B, WXM29C, WXM29D, WXM29-1, WXM29-2, WXM29-3, WXM29-4 |
| Model Difference: | All model's the function, software and electric circuit are the same, only with a product color, appearance and model named different. Test sample model: WXM29. |
| Trade Mark: | Bietrun, Kapebow |
| FCC ID: | 2A085-WXM29 |
| Hardware Version: | V1.0 |
| Software Version: | V1.0 |
| Operation frequency: | 560.5MHz-589.5MHz |
| Number of Channels: | 30CH |
| Antenna Type: | Internal Antenna |
| Antenna Gain: | 1dBi |
| Modulation Type: | FM |
| Power Source: | DC 3.7V from battery or DC 5V from Type-C |



2.2 CARRIER FREQUENCY OF CHANNELS

| Channel | Frequency(MHz) | Channel | Frequency(MHz) |
|---------|----------------|---------|----------------|
| 1 | 560.5 | 16 | 575.5 |
| 2 | 561.5 | 17 | 576.5 |
| 3 | 562.5 | 18 | 577.5 |
| 4 | 563.5 | 19 | 578.5 |
| 5 | 564.5 | 20 | 579.5 |
| 6 | 565.5 | 21 | 580.5 |
| 7 | 566.5 | 22 | 581.5 |
| 8 | 567.5 | 23 | 582.5 |
| 9 | 568.5 | 24 | 583.5 |
| 10 | 569.5 | 25 | 584.5 |
| 11 | 570.5 | 26 | 585.5 |
| 12 | 571.5 | 27 | 586.5 |
| 13 | 572.5 | 28 | 587.5 |
| 14 | 573.5 | 29 | 588.5 |
| 15 | 574.5 | 30 | 589.5 |

2.3 OPERATION OF EUT DURING TESTING

Operating Mode

The mode is used: **Transmitting mode**

Low Channel: 560.5MHz

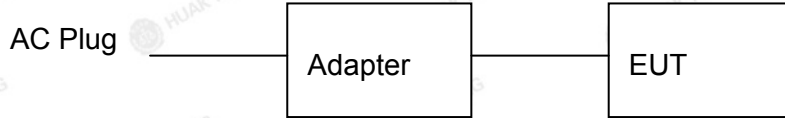
Middle Channel: 575.5MHz

High Channel: 589.5MHz



2.4 DESCRIPTION OF TEST SETUP

Operation of EUT during conducted and radiation below 1GHz testing:



Operation of EUT during radiation above 1GHz testing:



Adapter information
 Model: HW-059200CHQ
 Input: 100-240V, 50-60Hz, 0.5A
 Output: 5VDC, 2A

2.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Description | Model No. | Manufacturer | Remark | Certificate |
|-------------|--------------|--------------|--------|-------------|
| Adapter | HW-059200CHQ | / | / | / |
| / | / | / | / | / |

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
3. For conducted measurements (Output Power, 6dB Emission Bandwidth, Power Spectral Density, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

**2.6 MEASUREMENT INSTRUMENTS LIST**

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|---|-----------------|---------------------|------------|---------------|---------------|
| 1. | L.I.S.N. Artificial Mains Network | R&S | ENV216 | HKE-002 | Feb. 18, 2022 | 1 Year |
| 2. | Receiver | R&S | ESCI 7 | HKE-010 | Feb. 18, 2022 | 1 Year |
| 3. | RF automatic control unit | Tonscend | JS0806-2 | HKE-060 | Feb. 18, 2022 | 1 Year |
| 4. | Spectrum analyzer | R&S | FSP40 | HKE-025 | Feb. 18, 2022 | 1 Year |
| 5. | Spectrum analyzer | Agilent | N9020A | HKE-048 | Feb. 18, 2022 | 1 Year |
| 6. | Preamplifier | Schwarzbeck | BBV 9743 | HKE-006 | Feb. 18, 2022 | 1 Year |
| 7. | EMI Test Receiver | Rohde & Schwarz | ESCI 7 | HKE-010 | Feb. 18, 2022 | 1 Year |
| 8. | Bilog Broadband Antenna | Schwarzbeck | VULB9163 | HKE-012 | Feb. 18, 2022 | 1 Year |
| 9. | Loop Antenna | Schwarzbeck | FMZB 1519B | HKE-014 | Feb. 18, 2022 | 1 Year |
| 10. | Horn Antenna | Schwarzbeck | 9120D | HKE-013 | Feb. 18, 2022 | 1 Year |
| 11. | Pre-amplifier | EMCI | EMC051845SE | HKE-015 | Feb. 18, 2022 | 1 Year |
| 12. | Pre-amplifier | Agilent | 83051A | HKE-016 | Feb. 18, 2022 | 1 Year |
| 13. | EMI Test Software EZ-EMC | Tonscend | JS1120-B Version | HKE-083 | N/A | N/A |
| 14. | Power Sensor | Agilent | E9300A | HKE-086 | Feb. 18, 2022 | 1 Year |
| 15. | Spectrum analyzer | Agilent | N9020A | HKE-048 | Feb. 18, 2022 | 1 Year |
| 16. | Signal generator | Agilent | N5182A | HKE-029 | Feb. 18, 2022 | 1 Year |
| 17. | Signal Generator | Agilent | 83630A | HKE-028 | Feb. 18, 2022 | 1 Year |
| 18. | Shielded room | Shiel Hong | 4*3*3 | HKE-039 | Dec. 09, 2021 | 3 Year |
| 19. | Power Meter | R&S | NRVD | SEL0069 | Feb. 18, 2022 | 1 Year |
| 20. | High Gain Antenna | Schwarzbeck | LB-180400KF | HKE-054 | Feb. 18, 2022 | 1 Year |

3 TEST RESULTS AND MEASUREMENT DATA

3.1 CONDUCTED EMISSIONS TEST

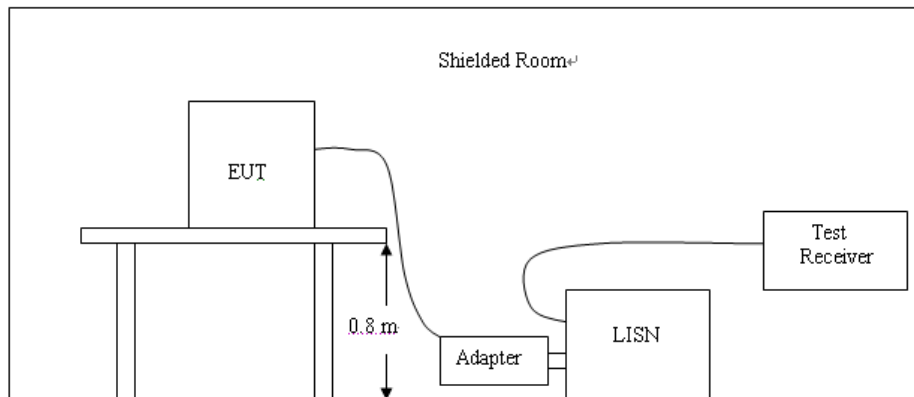
LIMIT

According to FCC CFR Title 47 Part 15 Subpart C Section 15.207 and RSS Gen 8.8, AC Power Line Conducted Emissions Limits for Licence-Exempt Radio Apparatus as below:

| 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 |

* Decreases with the logarithm of the frequency.

TEST CONFIGURATION



TEST PROCEDURE

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10:2013.
2. Support equipment, if needed, was placed as per ANSI C63.10:2013
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10:2013.
4. The adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.

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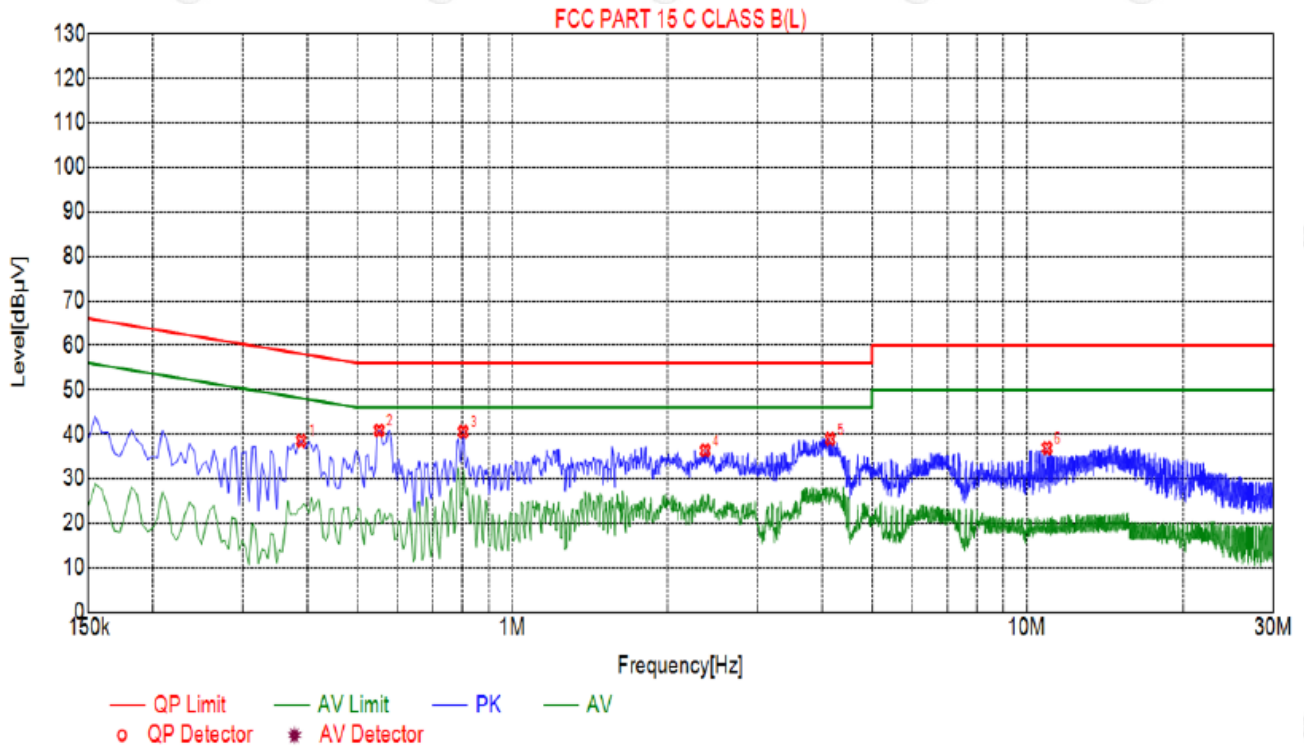
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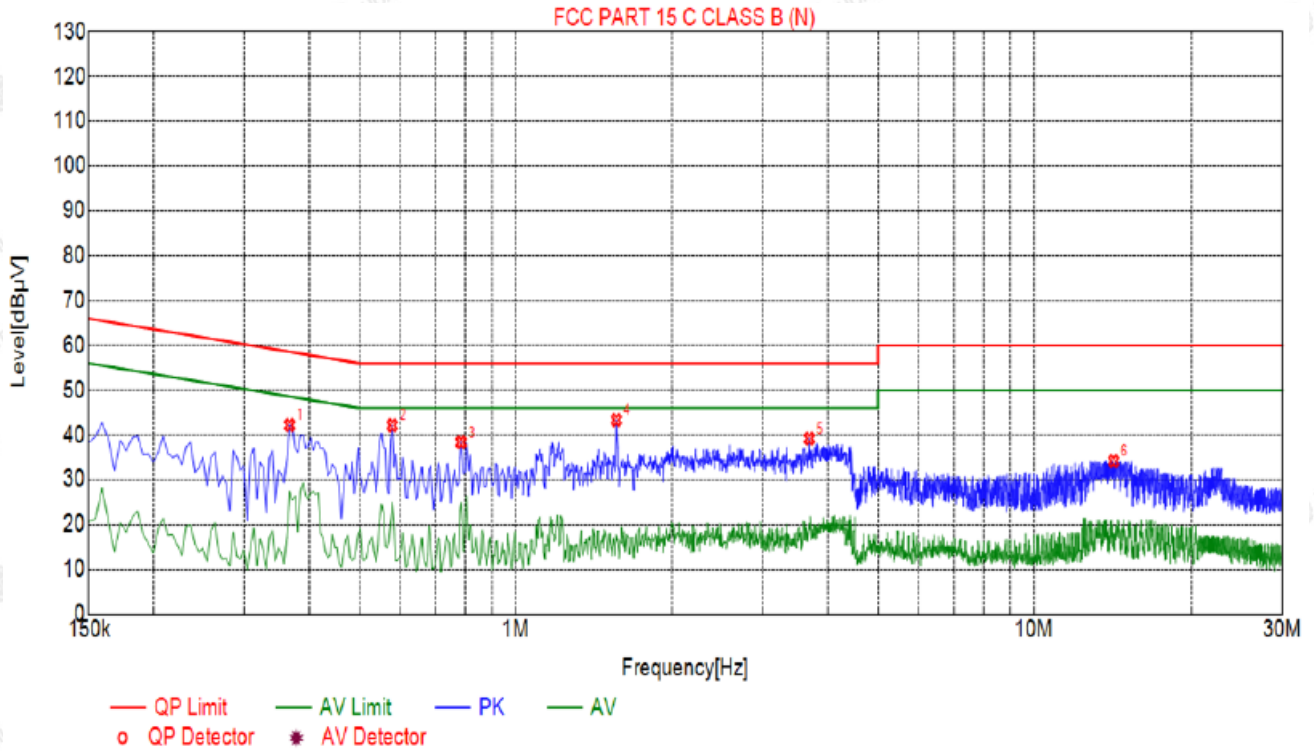
- 7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
- 8. During the above scans, the emissions were maximized by cable manipulation.

TEST RESULTS



| Suspected List | | | | | | | | |
|----------------|-------------|--------------|-------------|--------------|-------------|----------------|----------|------|
| NO. | Freq. [MHz] | Level [dBµV] | Factor [dB] | Limit [dBµV] | Margin [dB] | Reading [dBµV] | Detector | Type |
| 1 | 0.3885 | 38.56 | 20.04 | 58.10 | 19.54 | 18.52 | PK | L |
| 2 | 0.5505 | 40.88 | 20.06 | 56.00 | 15.12 | 20.82 | PK | L |
| 3 | 0.8025 | 40.57 | 20.06 | 56.00 | 15.43 | 20.51 | PK | L |
| 4 | 2.3730 | 36.36 | 20.18 | 56.00 | 19.64 | 16.18 | PK | L |
| 5 | 4.1460 | 38.92 | 20.25 | 56.00 | 17.08 | 18.67 | PK | L |
| 6 | 10.9545 | 36.92 | 20.01 | 60.00 | 23.08 | 16.91 | PK | L |

Remark: Margin = Limit – Level
 Correction factor = Cable lose + LISN insertion loss
 Level=Test receiver reading + correction factor



Suspected List

| NO. | Freq. [MHz] | Level [dBµV] | Factor [dB] | Limit [dBµV] | Margin [dB] | Reading [dBµV] | Detector | Type |
|-----|-------------|--------------|-------------|--------------|-------------|----------------|----------|------|
| 1 | 0.3660 | 42.20 | 20.04 | 58.59 | 16.39 | 22.16 | PK | N |
| 2 | 0.5775 | 42.15 | 20.05 | 56.00 | 13.85 | 22.10 | PK | N |
| 3 | 0.7845 | 38.38 | 20.05 | 56.00 | 17.62 | 18.33 | PK | N |
| 4 | 1.5630 | 43.35 | 20.11 | 56.00 | 12.65 | 23.24 | PK | N |
| 5 | 3.6870 | 39.19 | 20.25 | 56.00 | 16.81 | 18.94 | PK | N |
| 6 | 14.1495 | 34.16 | 19.96 | 60.00 | 25.84 | 14.20 | PK | N |

Remark: Margin = Limit – Level
 Correction factor = Cable lose + LISN insertion loss
 Level=Test receiver reading + correction factor

3.2 RADIATED EMISSION TEST

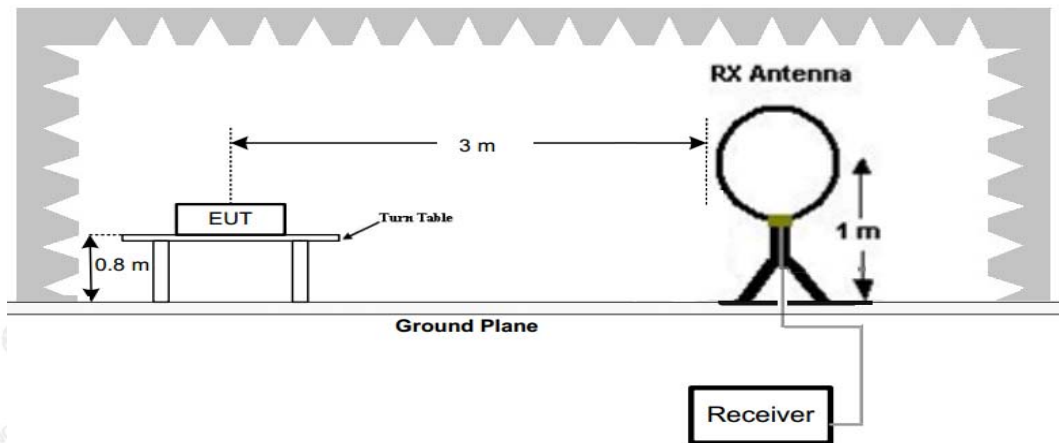
Limit

Emissions within the band from one megahertz below to one megahertz above the carrier frequency shall comply with the emission mask in §8.3 of ETSI EN 300 422-1 V1.4.2 (2011-08).

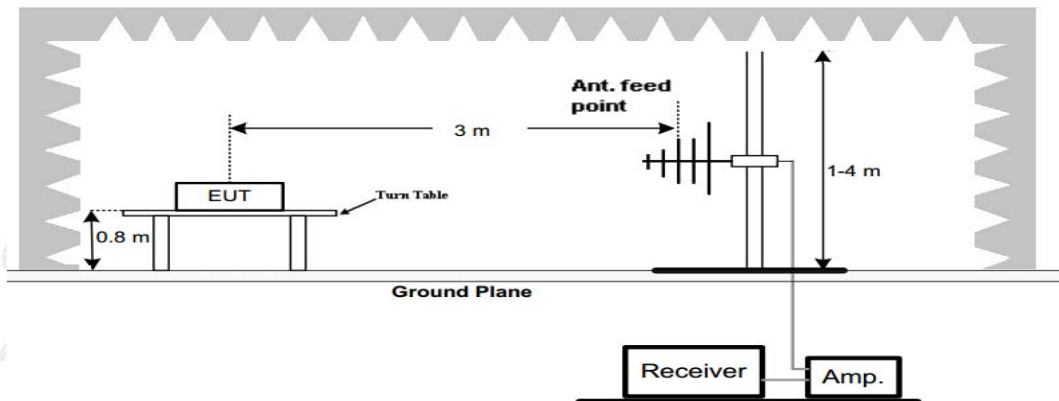
Emissions outside of this band shall comply with the limits specified in section 8.4 of ETSI EN 300 422-1 V1.4.2 (2011-08).

TEST CONFIGURATION

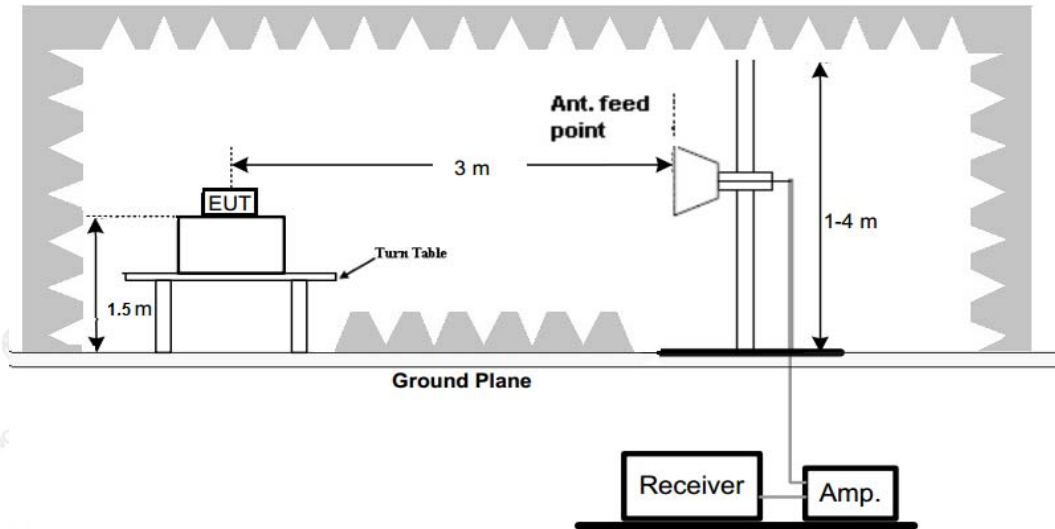
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz.



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



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz.



| | | |
|--------------------------|--------------------------|--------------------------|
| Frequency :9kHz-30MHz | Frequency :30MHz-1GHz | Frequency :Above 1GHz |
| RBW=10KHz, | RBW=120KHz, | RBW=1MHz, |
| VBW =30KHz | VBW=300KHz | VBW=3MHz(Peak) |
| Sweep time= Auto | Sweep time= Auto | Sweep time= Auto |
| Trace = max hold | Trace = max hold | Trace = max hold |
| Detector function = peak | Detector function = peak | Detector function = peak |

Test Procedure

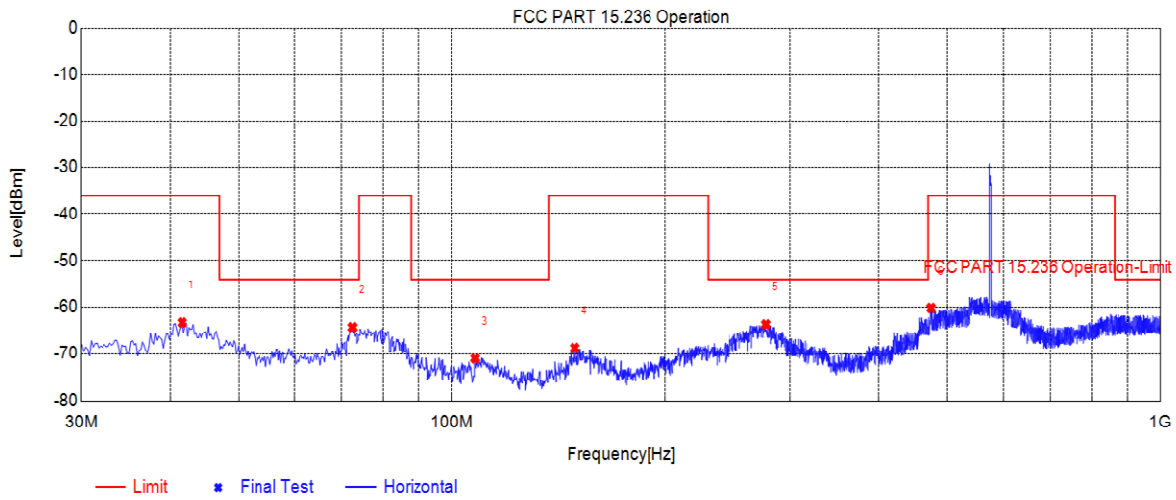
- 1.The setup of EUT is according with per TIA/EIA Standard 603 and ANSI C63.4-2014 measurement procedure.
- 2.The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.
- 3.The frequency range up to tenth harmonic of the fundamental frequency was investigated.
- 4.Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable.



TEST RESULTS

Below 1GHz Test Results:(Show only the worst test results)

Antenna polarity: H

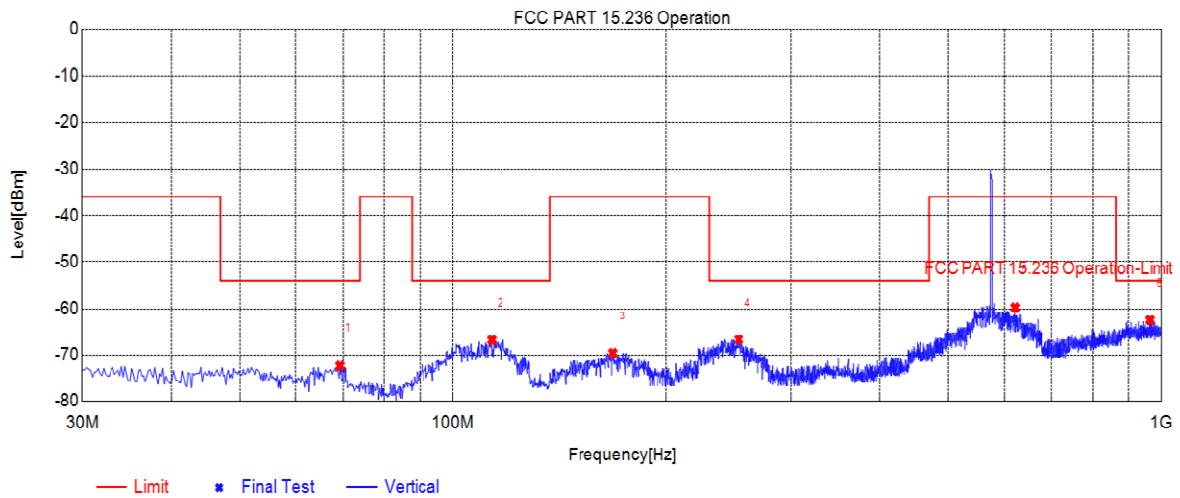


| Suspected List | | | | | | | |
|----------------|-------------|---------------|-------------|-------------|-------------|-------------|------------|
| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Polarity |
| 1 | 41.6423 | -67.47 | -63.36 | -36.00 | 27.36 | 4.11 | Horizontal |
| 2 | 72.4945 | -68.81 | -64.36 | -54.00 | 10.36 | 4.45 | Horizontal |
| 3 | 107.809 | -74.24 | -71.10 | -54.00 | 17.10 | 3.14 | Horizontal |
| 4 | 149.139 | -71.74 | -68.78 | -36.00 | 32.78 | 2.96 | Horizontal |
| 5 | 277.593 | -66.91 | -63.76 | -54.00 | 9.76 | 3.15 | Horizontal |
| 6 | 474.542 | -65.41 | -60.25 | -36.00 | 24.25 | 5.16 | Horizontal |

Remark: Factor = Cable loss + Antenna factor – Preamplifier; Level = Reading + Factor; Margin = Limit – Level;



Antenna polarity: V



| Suspected List | | | | | | | |
|----------------|-------------|---------------|-------------|-------------|-------------|-------------|----------|
| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Polarity |
| 1 | 69.1958 | -67.07 | -72.32 | -54.00 | 18.32 | -5.25 | Vertical |
| 2 | 113.436 | -77.59 | -66.83 | -54.00 | 12.83 | 10.76 | Vertical |
| 3 | 168.155 | -65.36 | -69.60 | -36.00 | 33.60 | -4.24 | Vertical |
| 4 | 253.144 | -66.47 | -66.73 | -54.00 | 12.73 | -0.26 | Vertical |
| 5 | 621.624 | -66.85 | -59.73 | -36.00 | 23.73 | 7.12 | Vertical |
| 6 | 963.908 | -73.07 | -62.58 | -54.00 | 8.58 | 10.49 | Vertical |

Remark: Factor = Cable loss + Antenna factor – Pre-amplifier; Level = Reading + Factor; Margin = Limit – Level;

Harmonics and Spurious Emissions

Frequency Range (9 kHz-30MHz)

| Frequency (MHz) | Level@3m (dBµV/m) | Limit@3m (dBµV/m) |
|-----------------|-------------------|-------------------|
| -- | -- | -- |
| -- | -- | -- |
| -- | -- | -- |
| -- | -- | -- |

Note: 1. Emission Level=Reading+ Cable loss+ Antenna factor-Amp factor

2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement



ABOVE 1GHz Test Results:

Transmitting at 560.5MHz

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Value Type |
|-----------|---------------|--------|----------------|--------|--------|------------|
| (MHz) | (dBm) | (dB) | (dBm) | (dBm) | (dB) | |
| 1121.00 | -36.23 | -5.81 | -42.04 | -30 | -12.04 | Horizontal |
| 1121.00 | -35.48 | -5.81 | -41.29 | -30 | -11.29 | Vertical |
| 1681.50 | -34.41 | -6.03 | -40.44 | -30 | -10.44 | Horizontal |
| 1681.50 | -34.77 | -6.03 | -40.8 | -30 | -10.8 | Vertical |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Transmitting at 589.5MHz

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Value Type |
|-----------|---------------|--------|----------------|--------|--------|------------|
| (MHz) | (dBm) | (dB) | (dBm) | (dBm) | (dB) | |
| 1179.00 | -37.12 | -6.35 | -43.47 | -30 | -13.47 | Horizontal |
| 1179.00 | -37.69 | -6.35 | -44.04 | -30 | -14.04 | Vertical |
| 1768.50 | -34.87 | -6.48 | -41.35 | -30 | -11.35 | Horizontal |
| 1768.50 | -34.37 | -6.48 | -40.85 | -30 | -10.85 | Vertical |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Remark:

- (1) Measuring frequencies from 1 GHz to the 18 GHz.
- (2) All modes of operation were investigated and the worst-case emissions are reported.
- (3) The emissions are attenuated more than 20dB below the permissible limits are not record in the report.

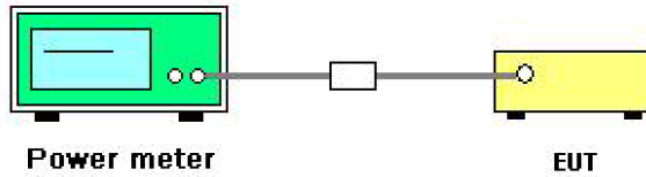


3.3 CONDUCTED OUTPUT POWER

Limit

According to FCC 15.236(d)(1), for low power auxiliary station operating in the 470-608, and 614-698 MHz bands, In the bands allocated and assigned for broadcast television and in the 600 MHz service band: 50 mW EIRP

TEST CONFIGURATION



Test Procedure:

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power sensor.

Test Results:

| Test Channel | frequency (MHz) | Conducted Output Power (dBm) | ANT Gain (dBi) | EIRP (dBm) | Limit (dBm) | Result |
|--------------|-----------------|------------------------------|----------------|------------|-------------|--------|
| Low | 560.5 | 3.40 | 1 | 4.40 | 17 | PASS |
| Middle | 575.5 | 3.15 | 1 | 4.15 | | PASS |
| High | 589.5 | 3.02 | 1 | 4.02 | | PASS |

3.4 OCCUPIED BANDWIDTH MEASUREMENT

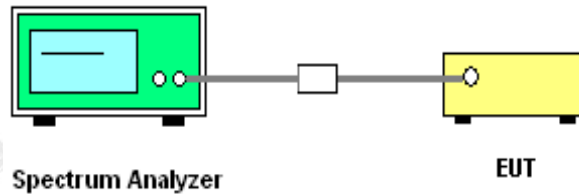
Limit

According to FCC 15.236(f)(2), The operating frequency within a permissible band of operation as defined in paragraph (c) must comply with the following requirements.

- (1) The frequency selection shall be offset from the upper or lower band limits by 25 kHz or an integral multiple thereof.
- (2) One or more adjacent 25 kHz segments within the assignable frequencies may be combined to form a channel whose maximum bandwidth shall not exceed 200 kHz. The operating bandwidth shall not exceed 200kHz.

Emissions within the band from one megahertz below to one megahertz above the carrier frequency shall comply with the emission mask in Section 8.3 of ETSI EN 300 422-1 V1.4.2 (2011-08) (incorporated by reference, see §15.38). Emissions outside this band shall comply with the limit specified at the edges of the ETSI mask

TEST CONFIGURATION

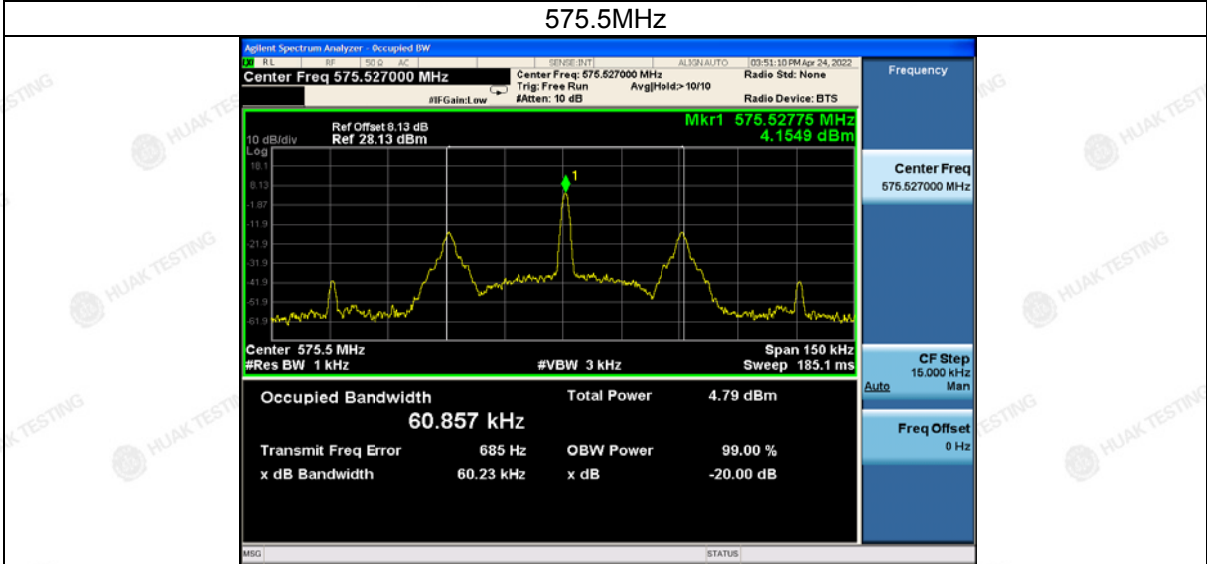
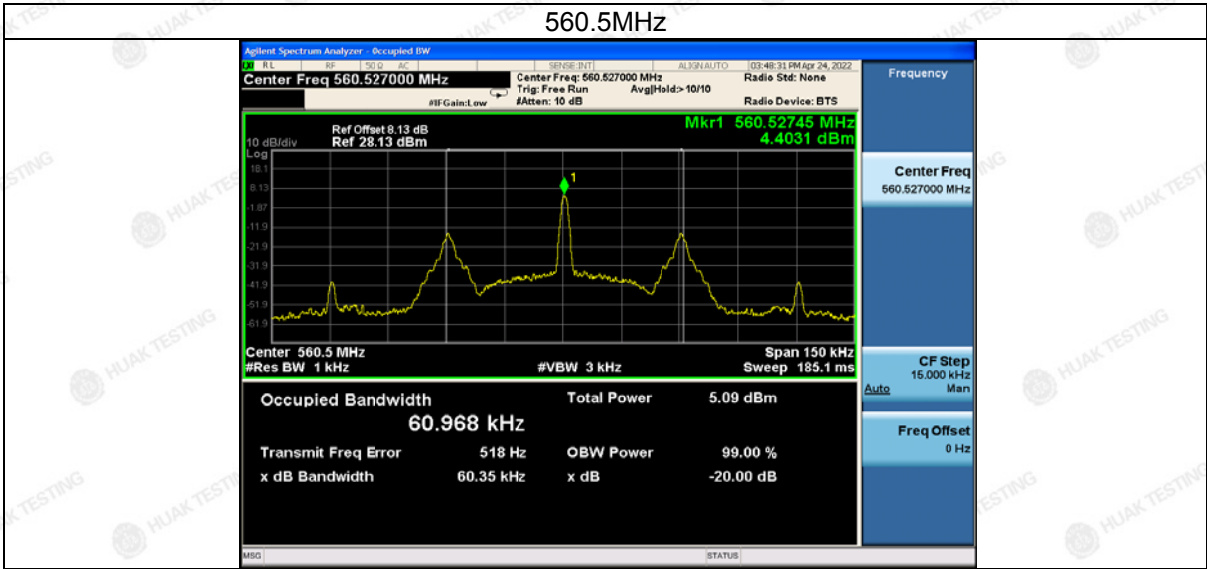


Test Procedure:

According to TIA-603 for additional Test Set-Up procedures, the occupied bandwidth of emission was measured with a Spectrum Analyzer connected to the antenna terminal while EUT was operating in 2.5kHz tone at an input level 16 dB greater than that necessary to produce 50 percent modulation. Then mark the -26dB Bandwidth and record it.

Test Results:

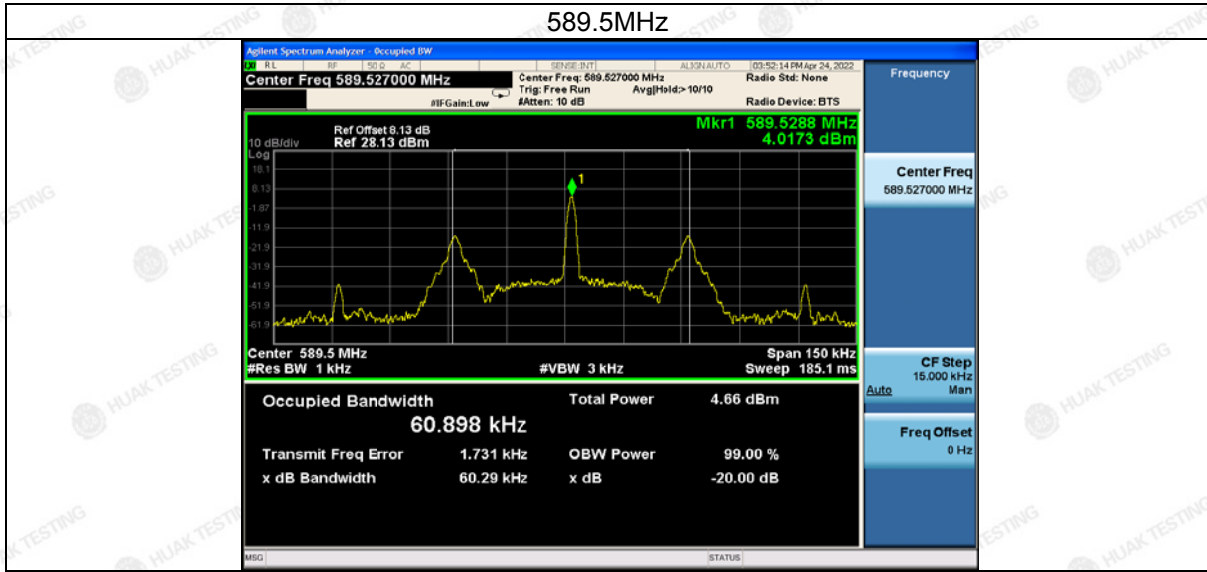
| Test Channel | frequency (MHz) | -20Bandwidth (kHz) | 99%Bandwidth (kHz) | Limit (kHz) | Result |
|--------------|-----------------|--------------------|--------------------|-------------|--------|
| Low | 560.5 | 60.35 | 60.968 | 200 | PASS |
| Middle | 575.5 | 60.23 | 60.857 | | PASS |
| High | 589.5 | 60.29 | 60.898 | | PASS |



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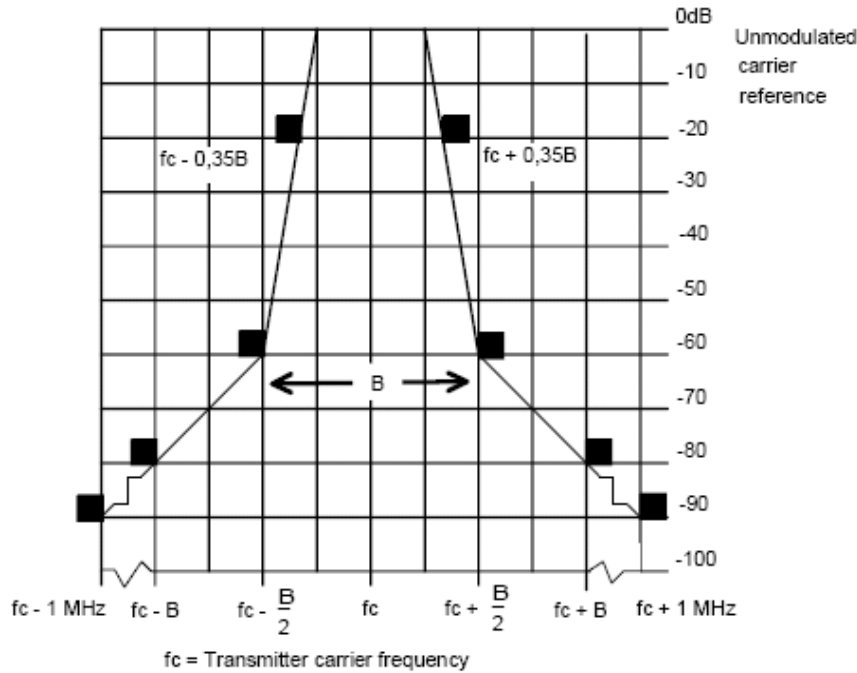
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3.5 NECESSARY BANDWIDTH

Limit

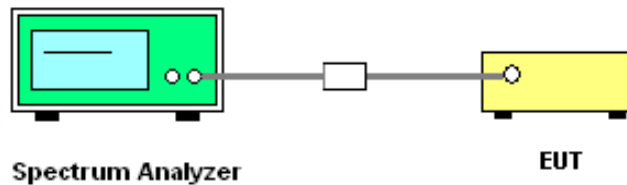


Standard Applicable

According to §15.236 (g) Emissions within the band from one megahertz below to one megahertz above the carrier frequency shall comply with the emission mask in §8.3 of ETSI EN 300 422-1 V1.4.2 (2011-08), Electromagnetic compatibility and Radio spectrum Matters (ERM); XLR Wireless Transmitter and Receiver s in the 25 MHz to 3GHz frequency range; Part 1: Technical characteristics and methods of measurement. Emissions outside of this band shall comply with the limits specified in section 8.4 of ETSI EN 300 422-1 V1.4.2 (2011-08).

According to ETSI EN 300 422-2 V2.1.1 section 8.3, the transmitter output spectrum shall be within the mask defined in the following figure.

TEST CONFIGURATION



Test Procedure:

The arrangement of test equipment as shown in figure B.1 shall be used. Note that the noise meter conforms to (quasi peak) without weighting filter (flat).

With the Low Frequency (LF) audio signal generator set to 500 Hz, the audio input level to the DUT shall be adjusted to 8 dB below the limiting threshold (-8 dB (lim)) as declared by the manufacturer.



The corresponding audio output level from the demodulator shall be measured and recorded.

The input impedance of the noise meter shall be sufficiently high to avoid more than 0,1 dB change in input level when the meter is switched between input and output.

The audio input level shall be increased by 20 dB, i.e. to +12 dB (lim), and the corresponding change in output level shall be measured.

It shall be checked that the audio output level has increased by ≤ 10 dB.

If this condition is not met, the initial audio input level shall be increased from -8 dB (lim) in 1 dB steps until the above condition is fulfilled, and the input level recorded in the test report. This level replaces the value derived from the manufacturer's declaration and is defined as -8 dB (lim).

Measure the input level at the transmitter required to give +12 dB (lim).

The LF generator shall be replaced with the weighted noise source to Recommendation ITU-R BS.559-2 [i.3], band-limited to 15 kHz as described in IEC 60244-13 [2], and the level shall be adjusted such that the measured input to the transmitter corresponds to +12 dB (lim).

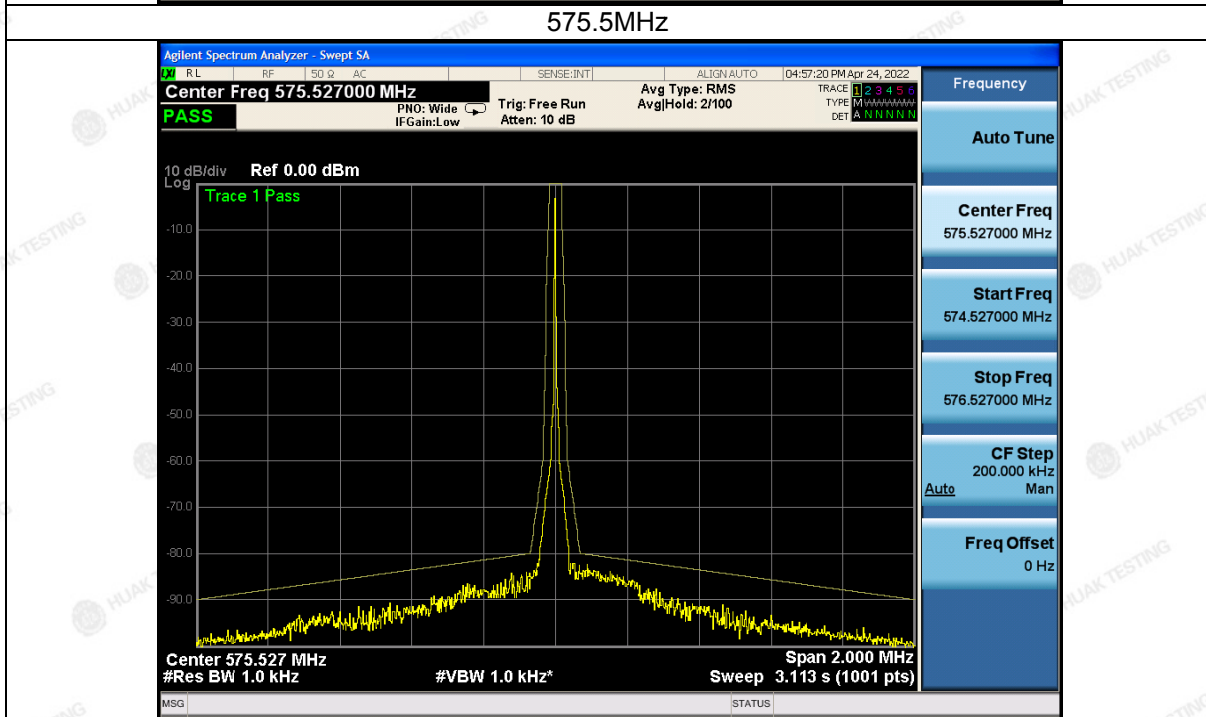
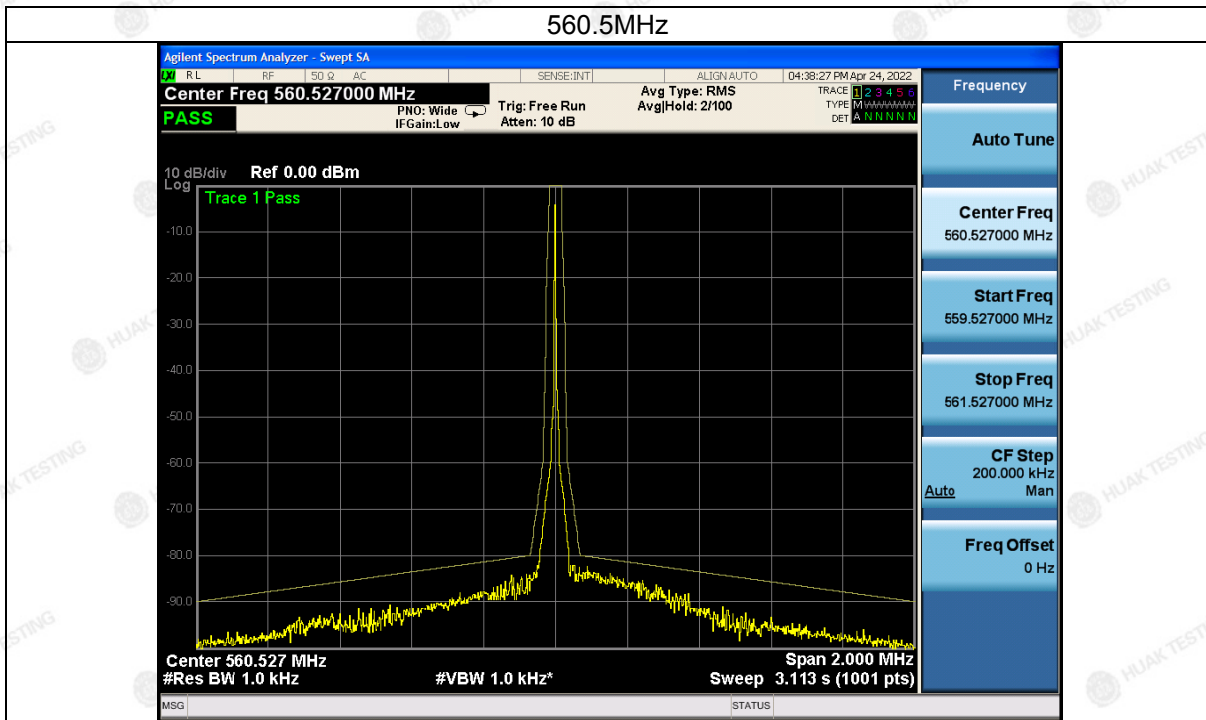
If the transmitter incorporates any ancillary coding or signalling channels (e.g. pilot-tones), these shall be enabled prior to any spectral measurements.

If the transmitter incorporates more than one audio input, e.g. stereo systems, the second and subsequent channels shall be simultaneously driven from the same noise source, attenuated to a level of -6 dB (lim).

- centre frequency: f_c : Transmitter (Tx) nominal frequency;
- dispersion (Span): $f_c - 1$ MHz to $f_c + 1$ MHz;
- Resolution Band Width (RBW): 1 kHz;
- Video Band Width (VBW): 1 kHz;
- detector: Peak hold.



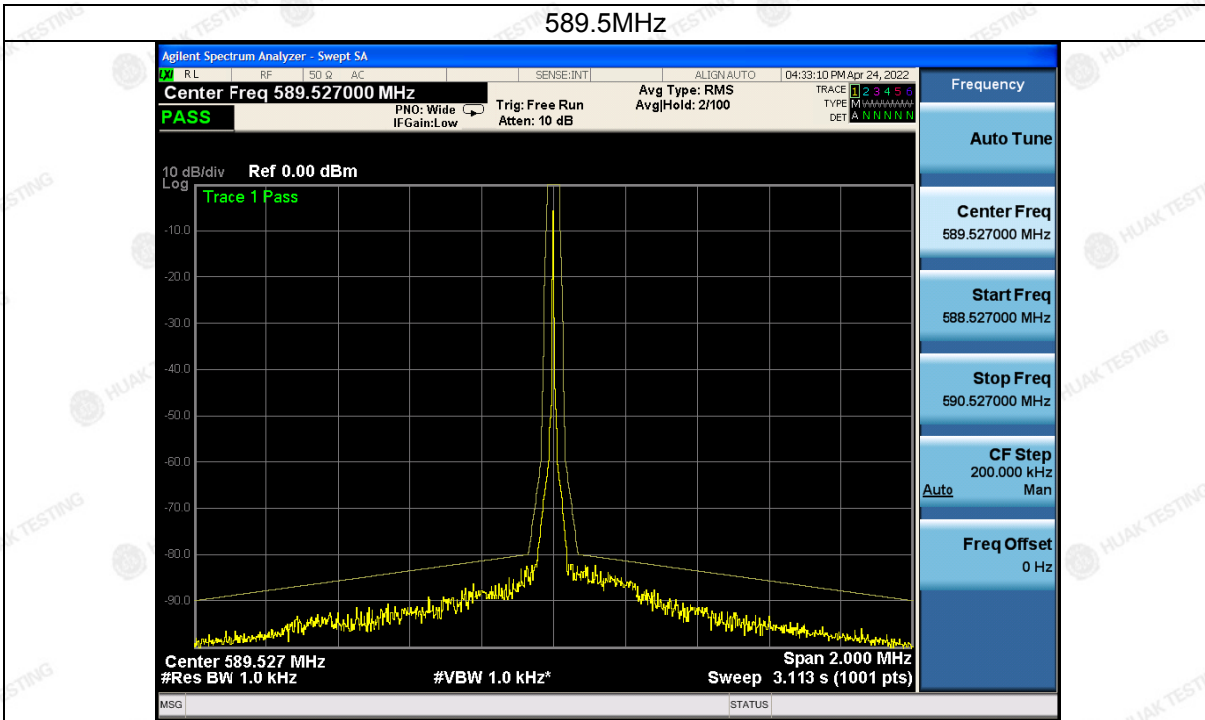
Test Result



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3.6 FREQUENCY STABILITY

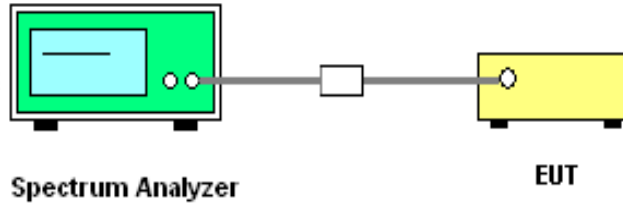
Limit

±50ppm

Standard Applicable

According to FCC 15.236(f)(3), The frequency tolerance of the carrier signal shall be maintained within ±0.005% 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. Battery operated equipment shall be tested using a new battery.

TEST CONFIGURATION



Test Procedure:

1. Setup the configuration of the ambient temperature from -20°C to 50°C with sufficient time. And measure the different power of the EUT with an artificial power from highest to end point voltage.
2. Set frequency counter center frequency to the right frequency needs to be measured band.

Test Result

| Test frequency (MHz) | Test Conditions | | Measure Frequency (MHz) | Frequency Error | | Limit ppm | Result |
|-------------------------|-----------------|------------------|----------------------------|-----------------|--------|--------------|--------|
| | Voltage (V) | Temperature (°C) | | (MHz) | ppm | | |
| 560.5MHz | N | N | 560.4964 | -0.0036 | -6.42 | ±50ppm | PASS |
| | | L | 560.4911 | -0.0089 | -15.88 | | |
| | | H | 560.4923 | -0.0077 | -13.74 | | |
| | L | N | 560.4953 | -0.0047 | -8.39 | | |
| | | L | 560.4935 | -0.0065 | -11.60 | | |
| | | H | 560.4937 | -0.0063 | -11.24 | | |
| | H | N | 560.4995 | -0.0005 | -0.89 | | |
| | | L | 560.4944 | -0.0056 | -9.99 | | |
| | | H | 560.4906 | -0.0094 | -16.77 | | |



| Test frequency (MHz) | Test Conditions | | Measure Frequency (MHz) | Frequency Error | | Limit ppm | Result |
|-------------------------|-----------------|------------------|----------------------------|-----------------|--------|--------------|--------|
| | Voltage (V) | Temperature (°C) | | (MHz) | ppm | | |
| 575.5MHz | N | N | 575.4935 | -0.0065 | -11.29 | ± 50ppm | PASS |
| | | L | 575.4992 | -0.0008 | -1.39 | | |
| | | H | 575.4927 | -0.0073 | -12.68 | | |
| | L | N | 575.4993 | -0.0007 | -1.22 | | |
| | | L | 575.4982 | -0.0018 | -3.13 | | |
| | | H | 575.4951 | -0.0049 | -8.51 | | |
| | H | N | 575.4966 | -0.0034 | -5.91 | | |
| | | L | 575.4941 | -0.0059 | -10.25 | | |
| | | H | 575.4924 | -0.0076 | -13.21 | | |
| 589.5MHz | N | N | 589.4993 | -0.0007 | -1.19 | ± 50ppm | PASS |
| | | L | 589.4924 | -0.0076 | -12.89 | | |
| | | H | 589.4985 | -0.0015 | -2.54 | | |
| | L | N | 589.4928 | -0.0072 | -12.21 | | |
| | | L | 589.4914 | -0.0086 | -14.59 | | |
| | | H | 589.4903 | -0.0097 | -16.45 | | |
| | H | N | 589.4994 | -0.0006 | -1.02 | | |
| | | L | 589.4902 | -0.0098 | -16.62 | | |
| | | H | 589.4994 | -0.0006 | -1.02 | | |

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3.7 ANTENNA REQUIREMENT

Standard Applicable

For intentional device, according to FCC 47 CFR 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.

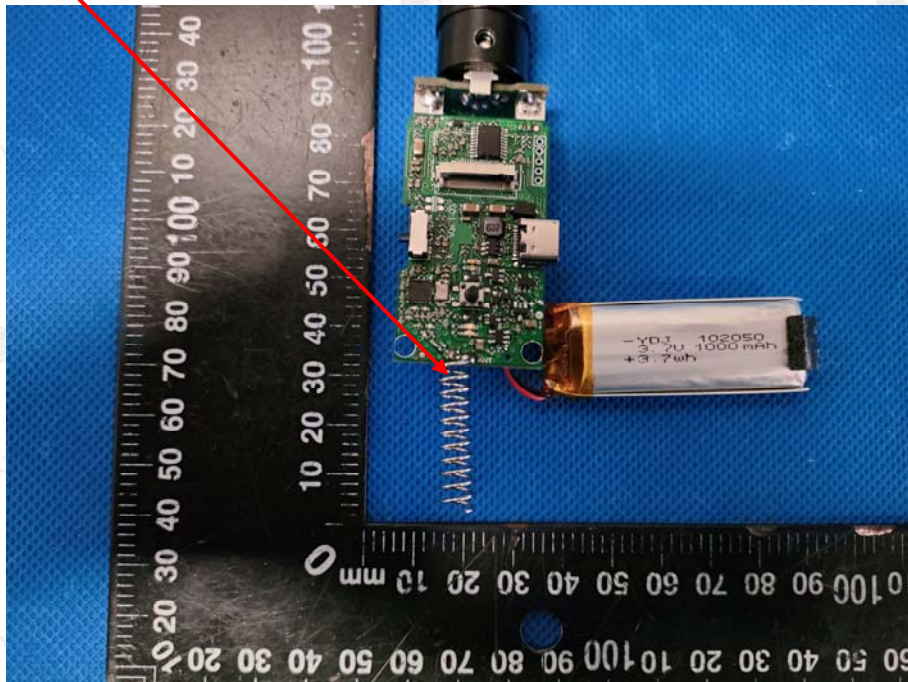
Refer to statement below for compliance.

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.

Antenna Connected Construction

The antenna used in this product is an Internal Antenna, need professional installation. It conforms to the standard requirements. The directional gains of antenna used for transmitting is 1dBi.

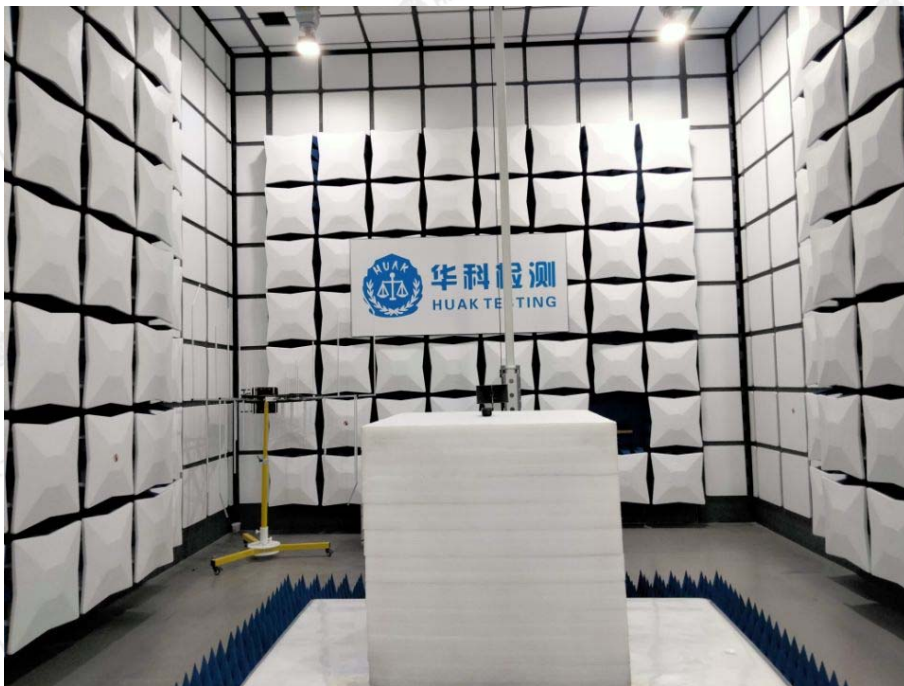
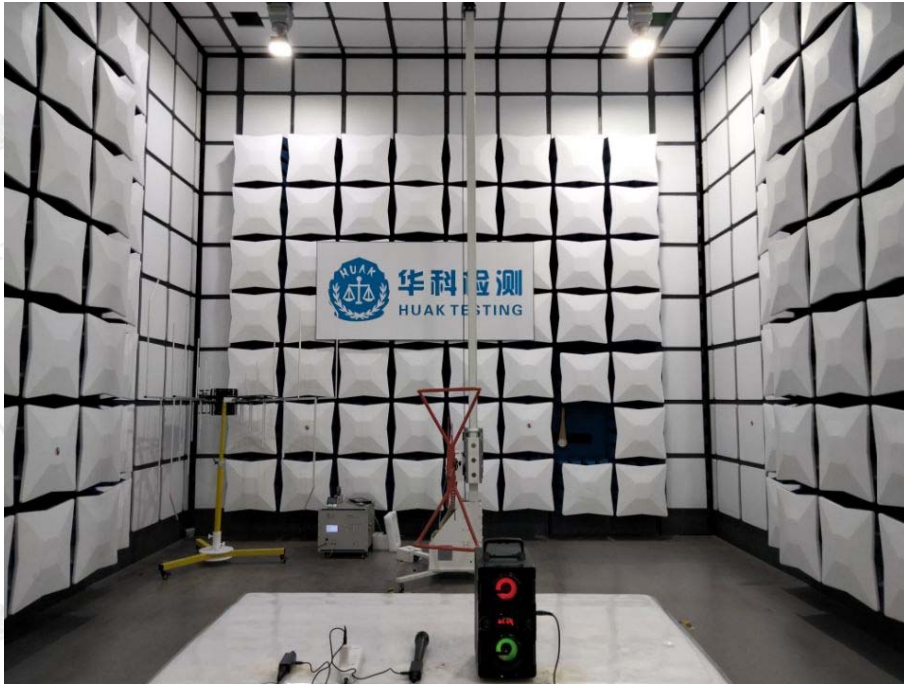
ANTENNA





4 PHOTOGRAPH OF TEST

Radiated Emission



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Conducted Emission



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5 PHOTOGRAPH OF EUT

Reference to the report: ANNEX A of external photos and ANNEX B of internal photos.

-----End of test report-----