

FCC - TEST REPORT

Report Number : **68.910.24.0004.01** Date of Issue: **2024-03-19**

Model/HVIN : **ESF93**

Product Type : Etekcite Smart Fitness Scale

Applicant : Etekcite Corporation

Address : 1202 N. Miller St. Suite A, Anaheim, CA 92806, USA

Manufacturer : Etekcite Corporation

Address : 1202 N. Miller St. Suite A, Anaheim, CA 92806, USA

Factory : Shenzhen Unique Scales Co., Ltd

Address : 6th FL., Building A, Huafeng Green Energy Innovation Park,
No.22 Longteng Road, Pingdi Street,
Longgang District 518117, Shenzhen, China

Test Result : ☒ **Positive** ☐ **Negative**

Total pages including
Appendices : **37**

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation chapter A-3.4.

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2 Details about the Test Laboratory

Details about the Test Laboratory

Test Site 1

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
Building 12 & 13, Zhiheng Wisdomland Business Park,
Guankou Erlu, Nantou, Nanshan District,
Shenzhen, Guangdong, China

Telephone: 86 755 8828 6998

Fax: 86 755 8828 5299

FCC Registration No.: 514049

FCC Designation Number: CN5009

3 Description of the Equipment Under Test

| | |
|----------------------------|---|
| Product: | Etekcitey Smart Fitness Scale |
| Model no.: | ESF93 |
| FCC ID: | 2AB22-ESF932 |
| Options and accessories: | NIL |
| Ratings: | DC 5V, 500mA Battery type: DC 3.7V, 300mAh Li-ion battery |
| RF Transmission Frequency: | 2402MHz-2480MHz (for BLE-1Mbps) |
| No. of Operated Channel: | 40 |
| Modulation: | GFSK |
| Antenna Type: | PCB antenna |
| Antenna Gain: | -0.29dBi |
| Description of the EUT: | The EUT is an Etekcitey Smart Fitness Scale, supports BLE-1Mbps function, operates at 2402 – 2480MHz. |

NOTE 1: The above EUT's information is declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

4 Summary of Test Standards

| Test Standards | |
|--|--|
| FCC Part 15 Subpart C 10-1-2023 Edition | PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators |

All the test methods were according to KDB 558074 D01 15.247 Meas Guidance v05r02 Measurement Guidance and ANSI C63.10-2020.

5 Summary of Test Results

| Technical Requirements | | | | | | |
|--------------------------------------|---|------------|-------------------------------------|--------------------------|--------------------------|-----------------------|
| FCC Part 15 Subpart C | | | | | | |
| Test Condition | | Test Site | Test Result | | | Test Environment |
| | | | Pass | Fail | N/A | |
| §15.207 | Conducted emission AC power port | Site 1 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | T: 23.1°C H: 51.2% |
| §15.247 (b) (3) | Conducted peak output power | Site 1 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | T: 23.4°C H: 52.7% |
| §15.247(a)(2) | 6dB bandwidth and 99% Occupied Bandwidth | Site 1 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | T: 23.4°C H: 52.7% |
| §15.247(e) | Power spectral density | Site 1 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | T: 23.7°C H: 52.7% |
| §15.247(d) | Spurious RF conducted emissions | Site 1 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | T: 23.8°C H: 52.7% |
| §15.247(d) | Band edge | Site 1 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | T: 23.1°C H: 58.0% |
| §15.247(d) & §15.209 & §15.205 | Spurious radiated emissions for transmitter | Site 1 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | T: 23.2°C H: 58.1% |
| §15.203 | Antenna requirement | See note 2 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | -- |

Note 1: N/A=Not Applicable.

Note 2: The EUT use a PCB antenna, which gain of antenna is -0.29dBi. In accordance to §15.203, it is considered sufficiently to comply with the provisions of this section.

Note 3: T=Temperature, H=Humidity

6 General Remarks

This submittal(s) (test report) is intended for FCC ID: 2AB22-ESF932 complies with Section 15.207, 15.205, 15.209, 15.247 of the FCC Part 15, Subpart C rules.

SUMMARY:

All tests according to the regulations cited on page 5 were:

■ - Performed

□ - **Not** Performed

The Equipment under Test

■ - **Fulfills** the general approval requirements.

□ - **Does not** fulfill the general approval requirements.

Sample Received Date: 2023-06-05

Testing Start Date: 2023-06-12

Testing End Date: 2023-06-25

- TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch –

Reviewed by:

Prepared by:

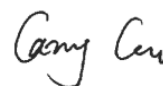
Tested by:



Jessie He
Project Manager



Myron Yu
Project Engineer

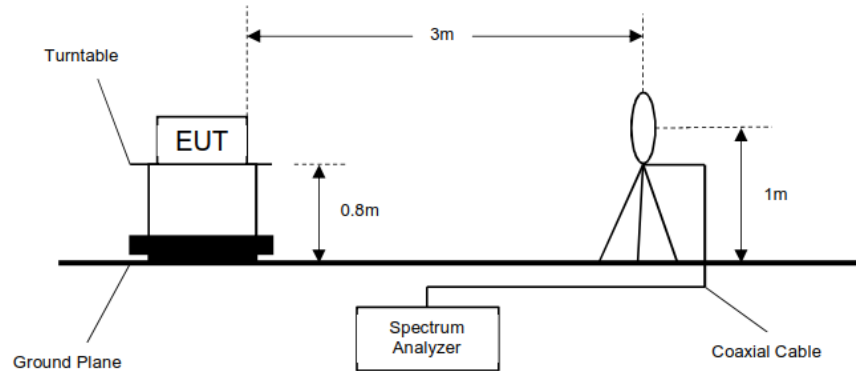


Carry Cai
Test Engineer

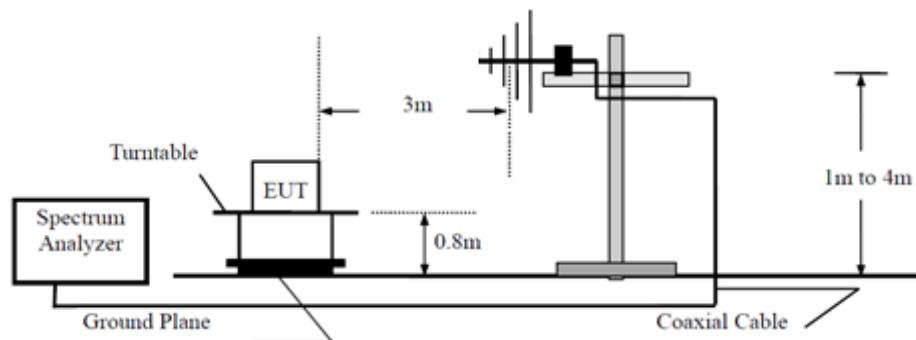
7 Test Setups

7.1 Radiated test setups

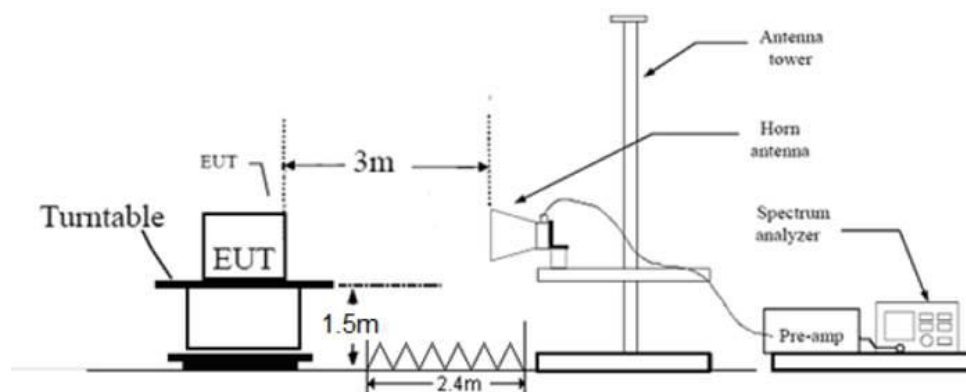
9kHz - 30MHz



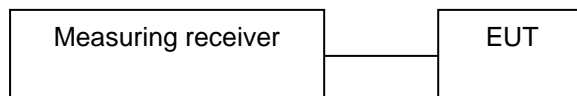
Below 1GHz



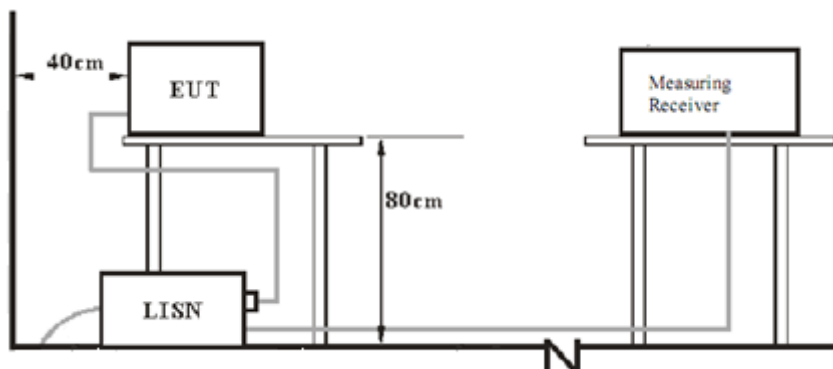
Above 1GHz



7.2 Conducted RF test setups



7.3 AC Power Line Conducted Emission test setups



8 Systems test configuration

Auxiliary Equipment Used during Test:

| DESCRIPTION | MANUFACTURER | MODEL NO. | REMARK |
|-------------|--------------|-----------|--------|
| Notebook | LENOVO | X220 | --- |

Test software information:

| | | |
|-----------------------|-----------------------|-------------|
| Test Software Version | BK32xx RF Test_V1.8.2 | |
| Modulation | Setting TX Power | Packet Type |
| GFSK | 3 | Pn9 |

The system was configured to non-hopping mode, testing channel 0, 19, 39.

9 Technical Requirement

9.1 Conducted Emission

Test Method

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. Both sides of AC line were checked for maximum conducted interference.
6. The frequency range from 150 kHz to 30 MHz was searched.
7. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

Limit

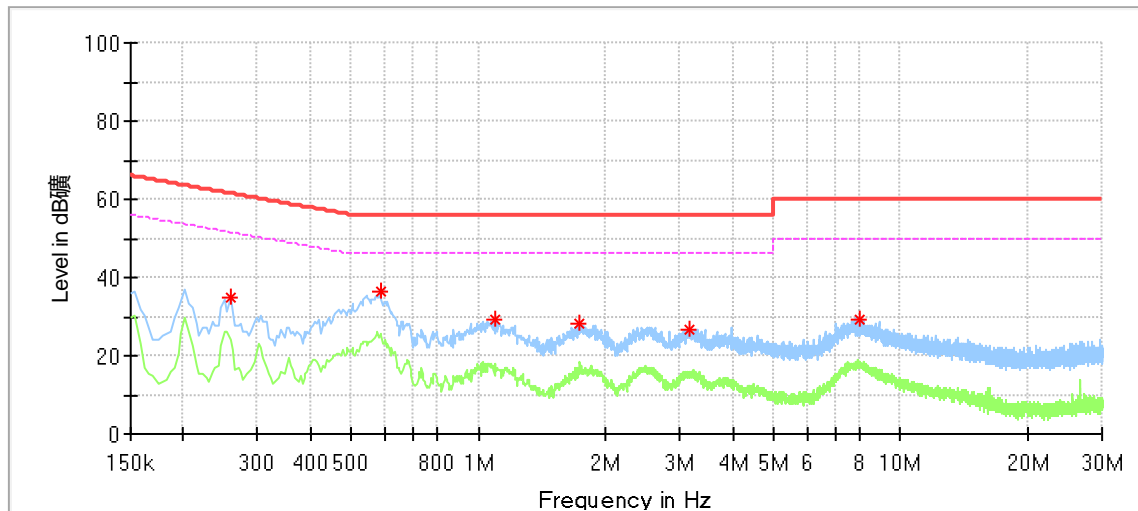
According to §15.207, conducted emissions limit as below:

| Frequency MHz | QP Limit dB μ V | AV Limit dB μ V |
|------------------|------------------------|------------------------|
| 0.150-0.500 | 66-56* | 56-46* |
| 0.500-5 | 56 | 46 |
| 5-30 | 60 | 50 |

Remark: “*” Decreasing linearly with logarithm of the frequency

Conducted Emission

Product Type : Etekcity Smart Fitness Scale
 M/N : ESF93
 Operating Condition : BLE communication mode
 Test Specification : L
 Comment : AC 120V/60Hz

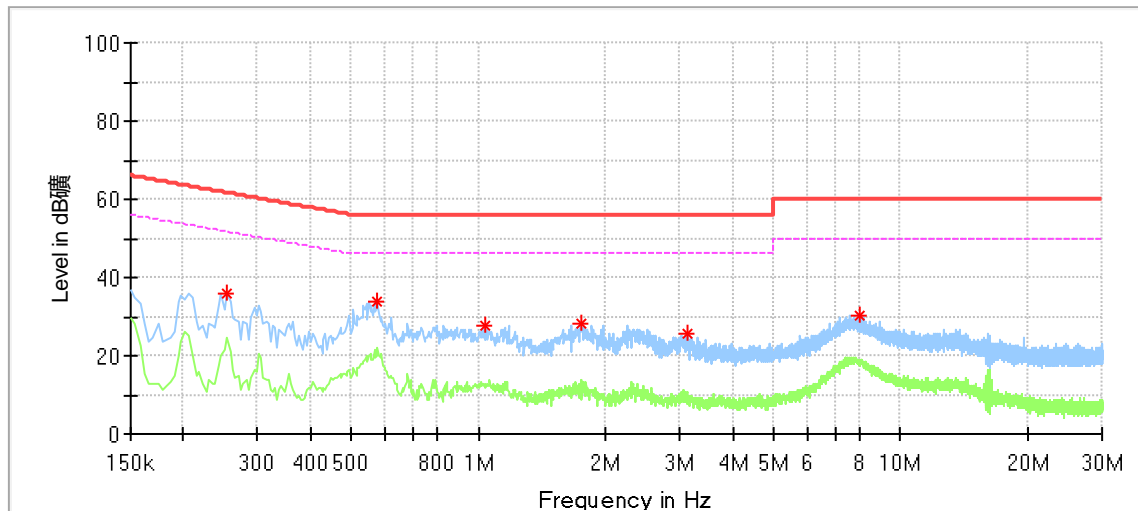


Critical_Freqs

| Frequency (MHz) | MaxPeak (dBμV) | Average (dBμV) | Limit (dBμV) | Margin (dB) | Line | Corr. (dB) |
|-----------------|----------------|----------------|--------------|-------------|------|------------|
| 0.258000 | 34.69 | --- | 61.50 | 26.80 | L1 | 9.56 |
| 0.586000 | 36.31 | --- | 56.00 | 19.69 | L1 | 9.60 |
| 1.094000 | 29.11 | --- | 56.00 | 26.89 | L1 | 9.60 |
| 1.742000 | 28.39 | --- | 56.00 | 27.61 | L1 | 9.61 |
| 3.154000 | 26.77 | --- | 56.00 | 29.23 | L1 | 9.66 |
| 7.966000 | 29.43 | --- | 60.00 | 30.57 | L1 | 9.88 |

Conducted Emission

Product Type : Etekcity Smart Fitness Scale
 M/N : ESF93
 Operating Condition : BLE communication mode
 Test Specification : N
 Comment : AC 120V/60Hz



Critical_Freqs

| Frequency (MHz) | MaxPeak (dBμV) | Average (dBμV) | Limit (dBμV) | Margin (dB) | Line | Corr. (dB) |
|-----------------|----------------|----------------|--------------|-------------|------|------------|
| 0.254000 | 35.89 | --- | 61.63 | 25.74 | N | 9.59 |
| 0.578000 | 34.00 | --- | 56.00 | 22.00 | N | 9.63 |
| 1.034000 | 27.82 | --- | 56.00 | 28.18 | N | 9.63 |
| 1.746000 | 27.96 | --- | 56.00 | 28.04 | N | 9.65 |
| 3.122000 | 25.68 | --- | 56.00 | 30.32 | N | 9.69 |
| 7.990000 | 30.12 | --- | 60.00 | 29.88 | N | 9.90 |

9.2 Conducted Output Power

Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Use the following test receiver settings:
Span = approximately 5 times the 6dB bandwidth, centered on a channel need to test,
RBW > the 6dB bandwidth of the emission being measured, VBW \geq 3RBW,
Sweep = auto, Detector function = peak, Trace = max hold
4. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power and record the results in the test report.
5. Repeat above procedures until all frequencies measured were complete.

Limit

According to §15.247 (b) (3), conducted output power limit as below:

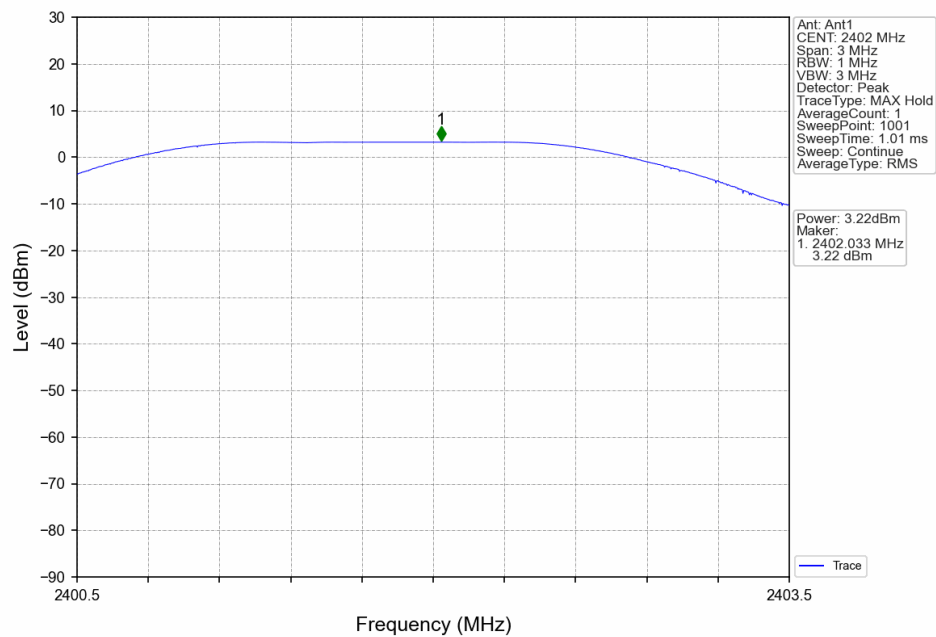
| Frequency Range MHz | Limit W | Limit dBm |
|------------------------|------------|--------------|
| 2400-2483.5 | ≤ 1 | ≤ 30 |

Test Results

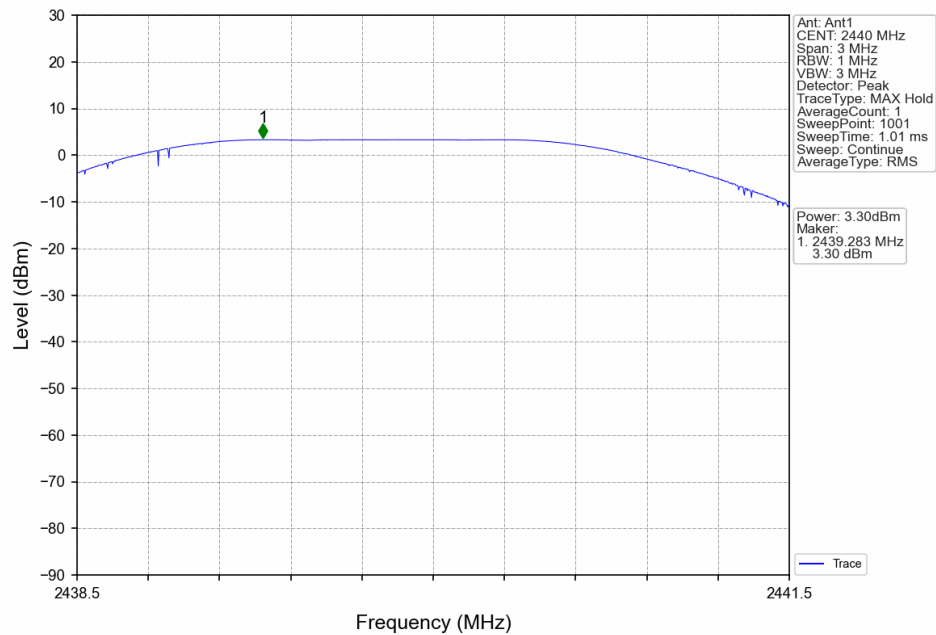
| Mode | TX Type | Frequency (MHz) | Maximum Peak Conducted Output Power (dBm) | | Verdict |
|------|------------|--------------------|---|-----------|---------|
| | | | ANT1 | Limit | |
| 1M | SISO | 2402 | 3.22 | ≤ 30 | Pass |
| | | 2440 | 3.30 | ≤ 30 | Pass |
| | | 2480 | 3.06 | ≤ 30 | Pass |



1M_LCH_2402MHz_Ant1_NTNV

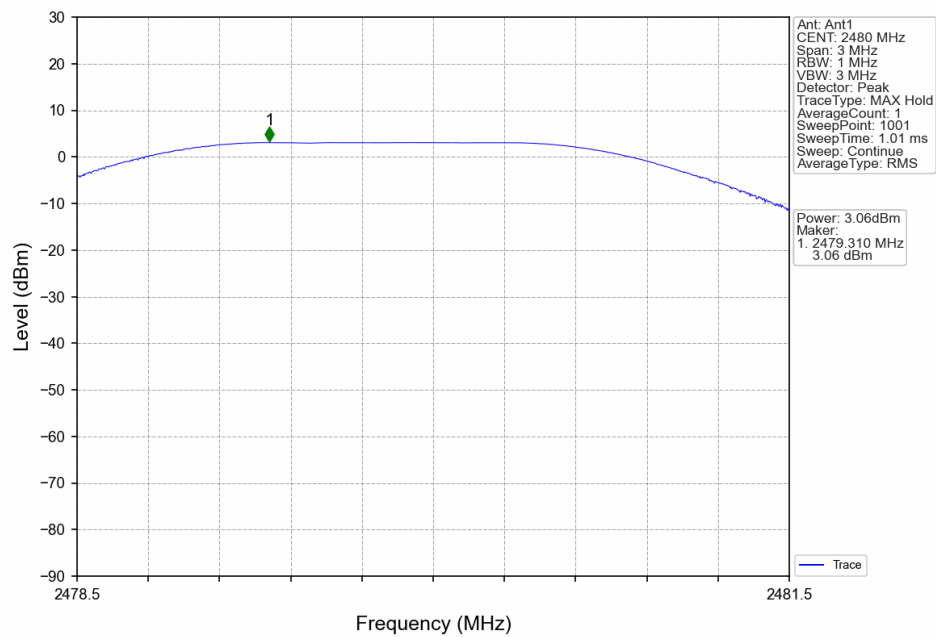


1M_MCH_2440MHz_Ant1_NTNV





1M_HCH_2480MHz_Ant1_NTNV



9.3 6 dB Bandwidth

Test Method for 6 dB Bandwidth

1. The RF output of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings:
RBW=1% to 5% of the actual occupied, VBW \geq 3RBW, Sweep = auto, Detector function = peak, Trace = max hold
4. Use the automatic bandwidth measurement capability of an instrument, use the X dB bandwidth mode with X set to 6 dB.
5. Allow the trace to stabilize, record the 6 dB Bandwidth value.

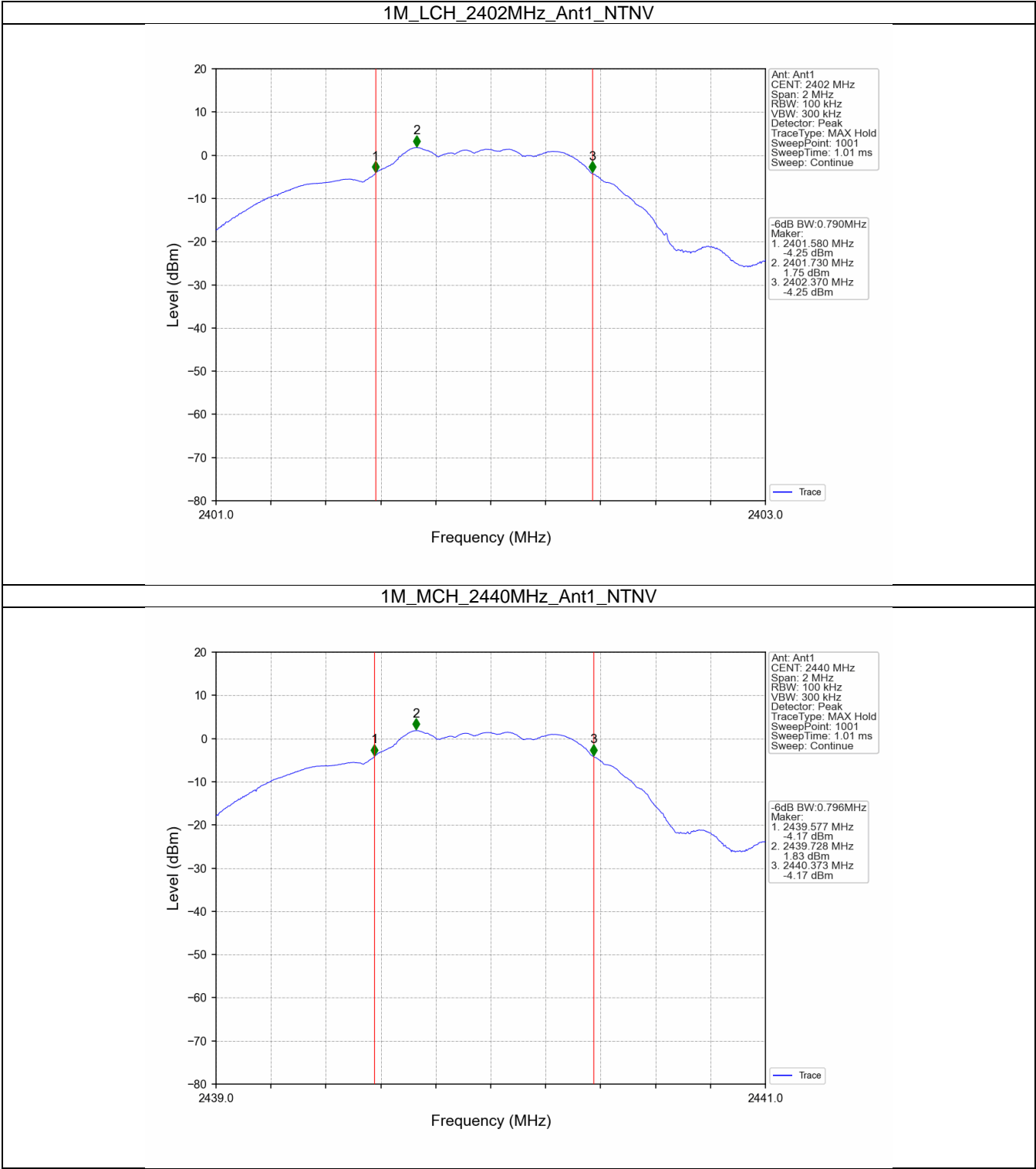
Limit

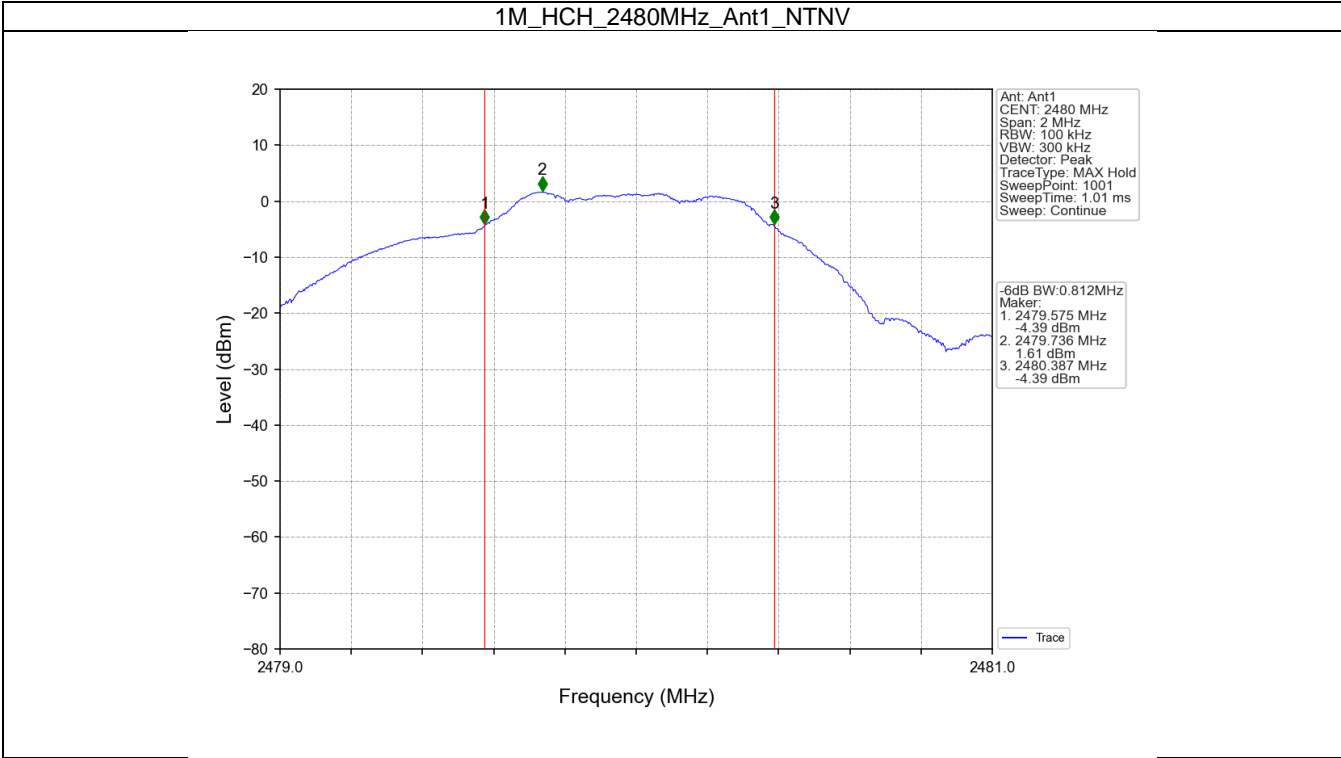
6dB bandwidth Limit [kHz]

≥ 500

Test result for 6 dB Bandwidth

| Mode | TX Type | Frequency (MHz) | ANT | 6dB Bandwidth (MHz) | | Verdict |
|------|---------|-----------------|-----|---------------------|------------|---------|
| | | | | Result | Limit | |
| 1M | SISO | 2402 | 1 | 0.790 | ≥ 0.5 | Pass |
| | | 2440 | 1 | 0.796 | ≥ 0.5 | Pass |
| | | 2480 | 1 | 0.812 | ≥ 0.5 | Pass |





9.4 Power spectral density

Test Method

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance:

1. The RF output of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings:
4. Set analyzer center frequency to DTS channel center frequency. RBW=3kHz, VBW \geq 3RBW, Span=1.5 times DTS bandwidth, Detector=Peak, Sweep=auto, Trace= max hold.
5. Allow trace to fully stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.
6. Repeat above procedures until other frequencies measured were completed.

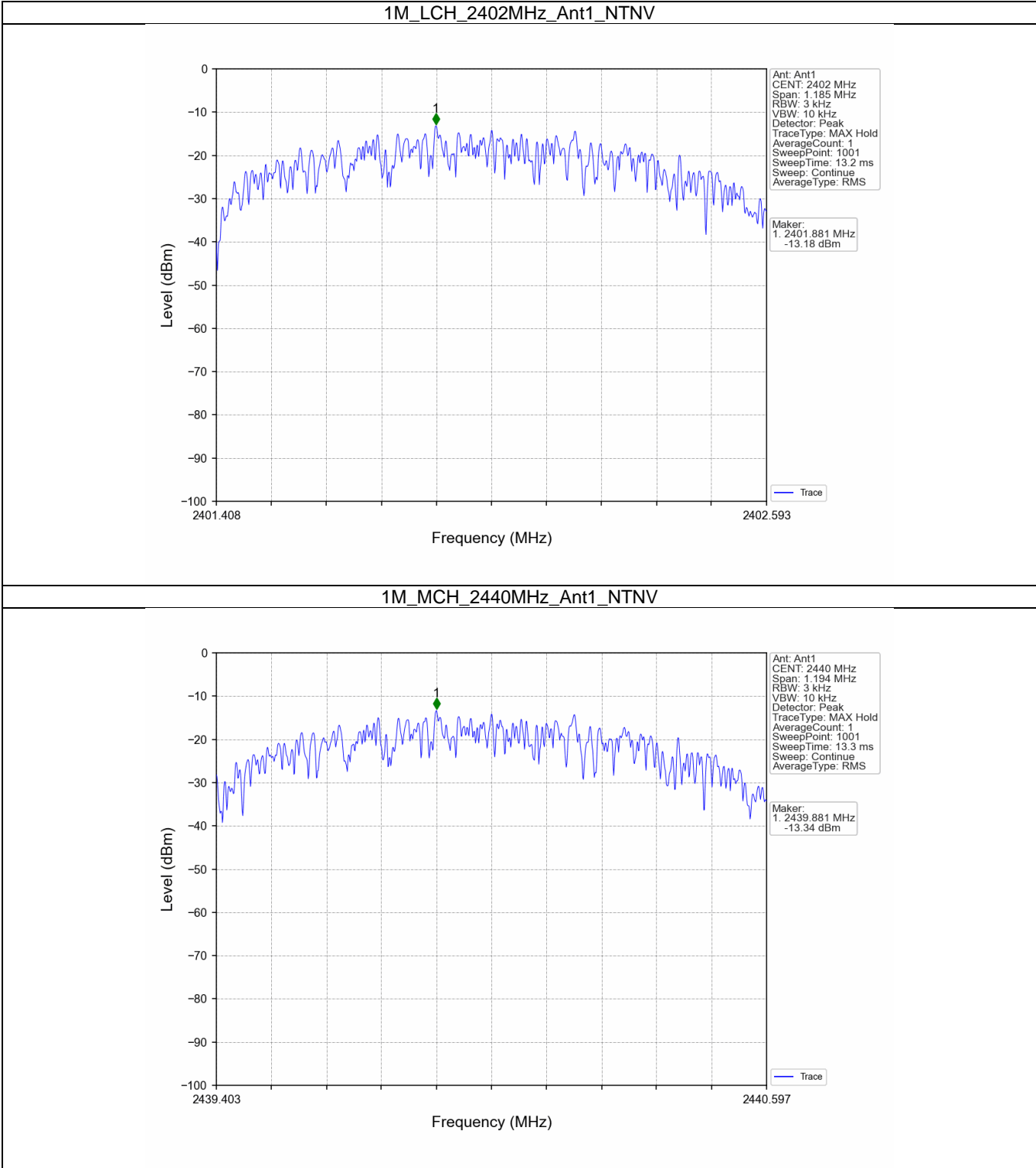
Limit

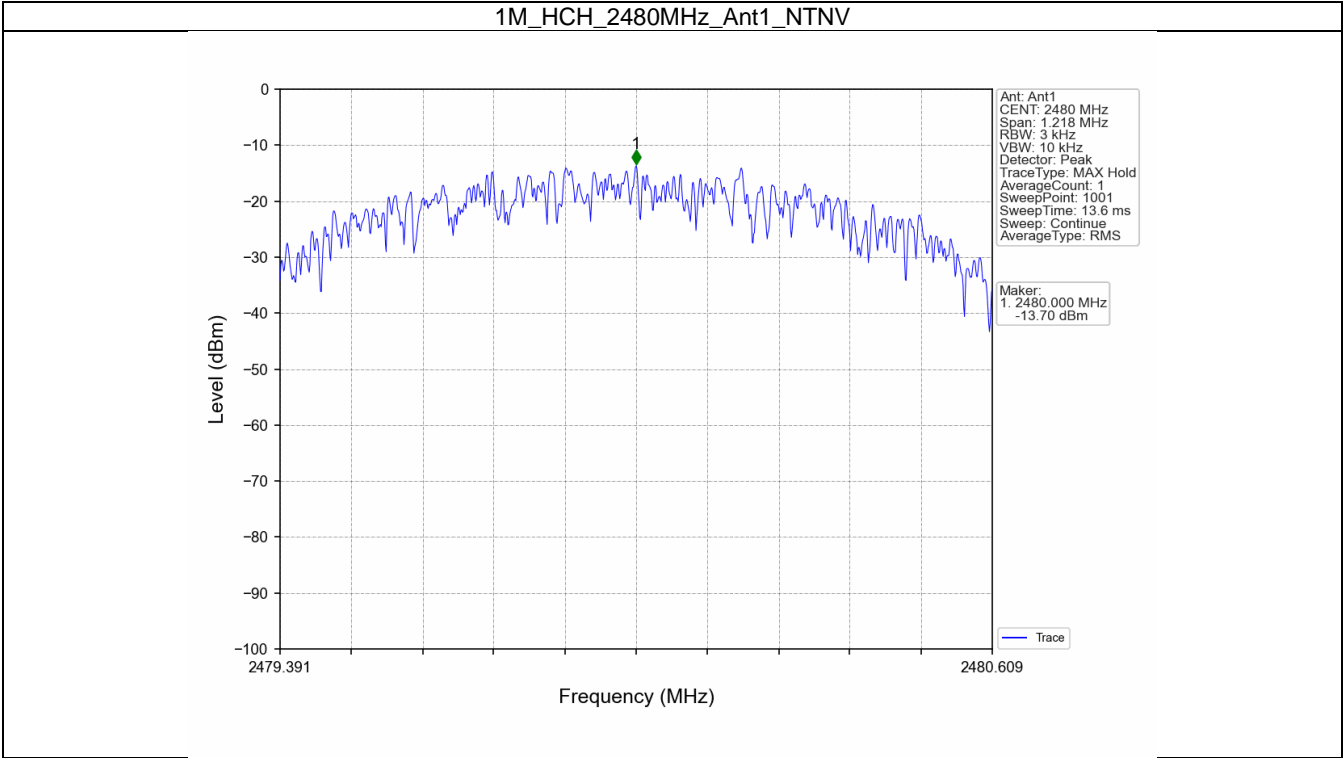
Limit [dBm/3kHz]

≤ 8

Test Results

| Mode | TX Type | Frequency (MHz) | Maximum PSD (dBm/3kHz) | | Verdict |
|------|---------|-----------------|------------------------|----------|---------|
| | | | ANT1 | Limit | |
| 1M | SISO | 2402 | -13.18 | ≤ 8 | Pass |
| | | 2440 | -13.34 | ≤ 8 | Pass |
| | | 2480 | -13.70 | ≤ 8 | Pass |





9.5 Spurious RF conducted emissions

Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings:
Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.
RBW = 100 kHz, VBW \geq 3RBW, Sweep = auto, Detector function = peak, Trace = max hold
4. Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded.
5. The level displayed must comply with the limit specified in this Section. Submit these plots.
6. Repeat above procedures until all frequencies measured were complete.

Limit

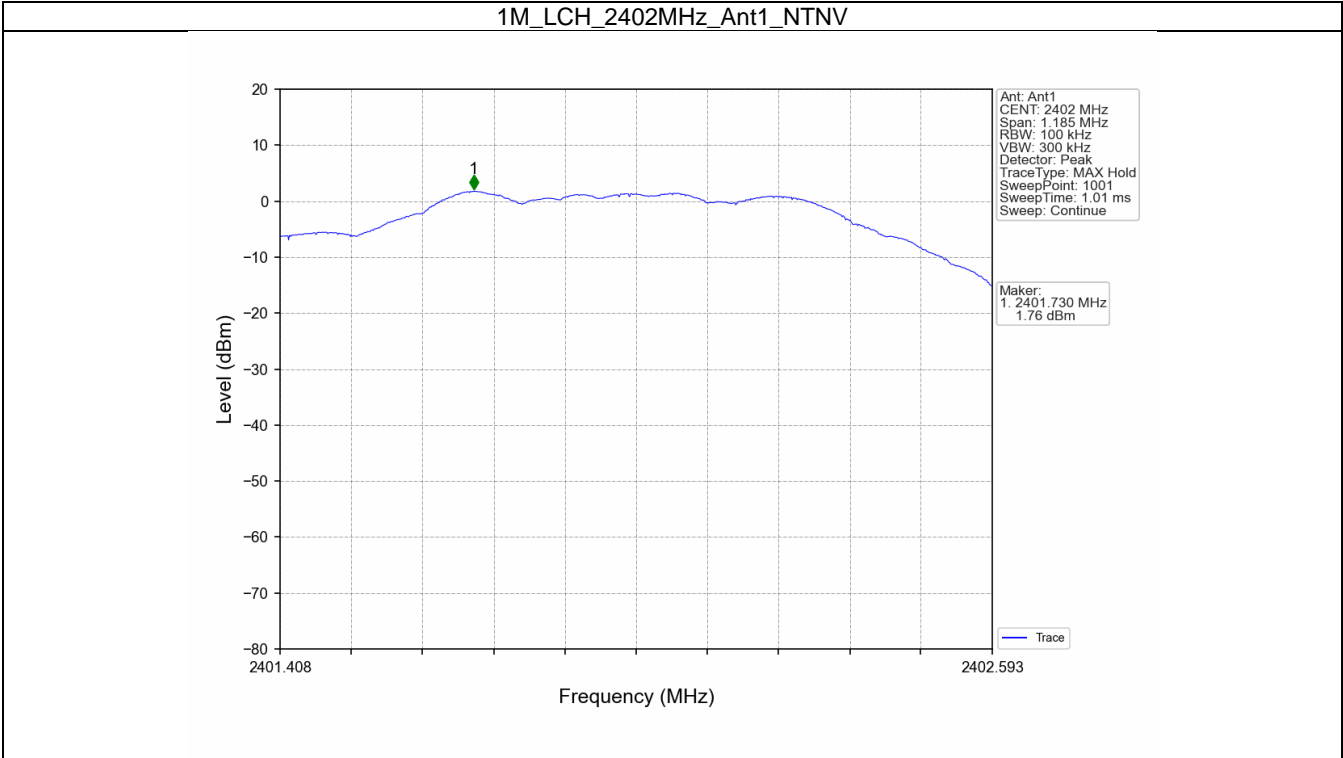
| Frequency Range MHz | Limit (dBc) |
|------------------------|-------------|
| 30-25000 | -20 |



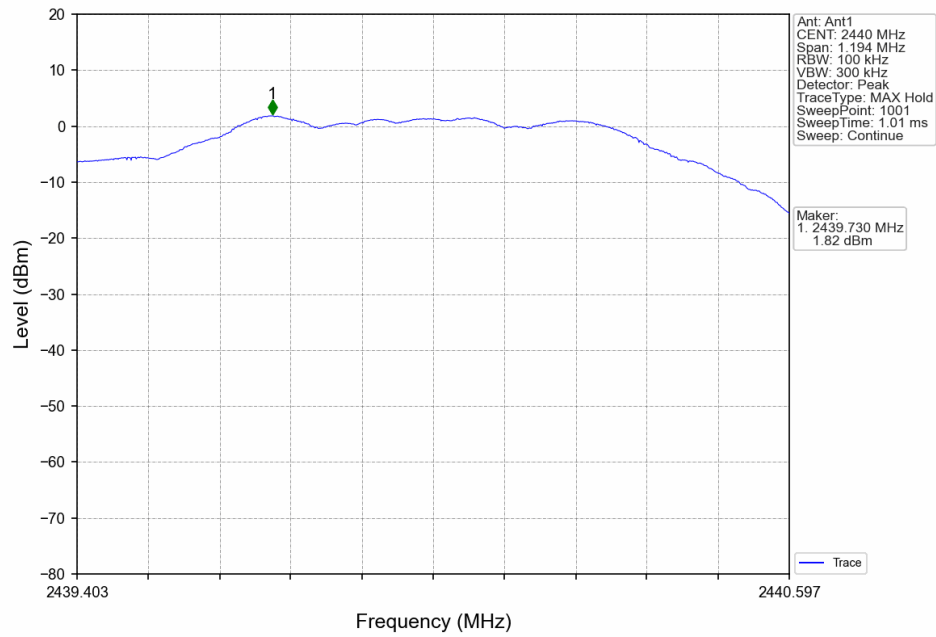
Test Result

Reference level:

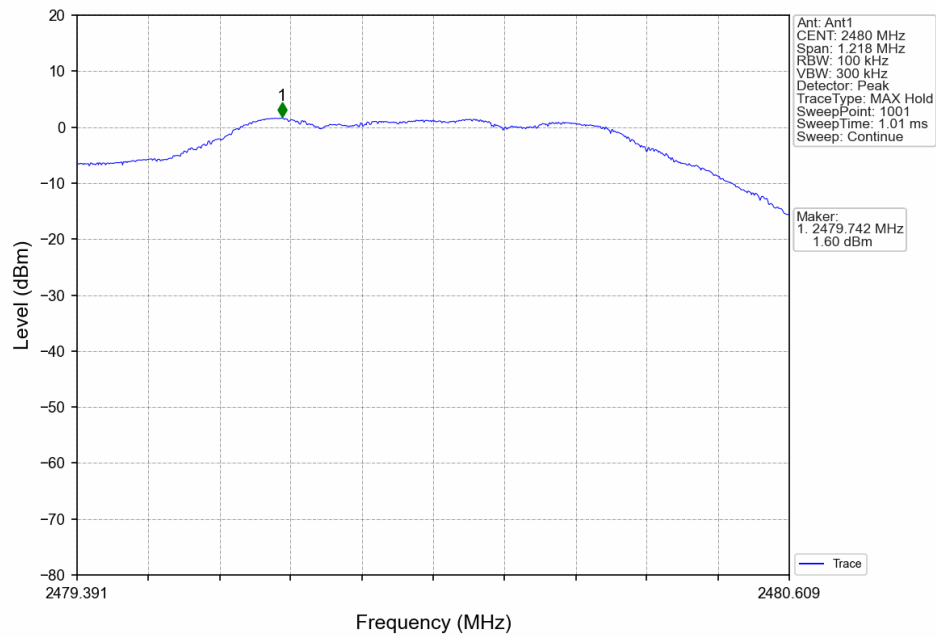
| Mode | TX Type | Frequency (MHz) | ANT | Level of Reference (dBm) |
|---|---------|-----------------|-----|--------------------------|
| 1M | SISO | 2402 | 1 | 1.76 |
| | | 2440 | 1 | 1.82 |
| | | 2480 | 1 | 1.60 |
| Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level. | | | | |



1M_MCH_2440MHz_Ant1_NTNV



1M_HCH_2480MHz_Ant1_NTNV

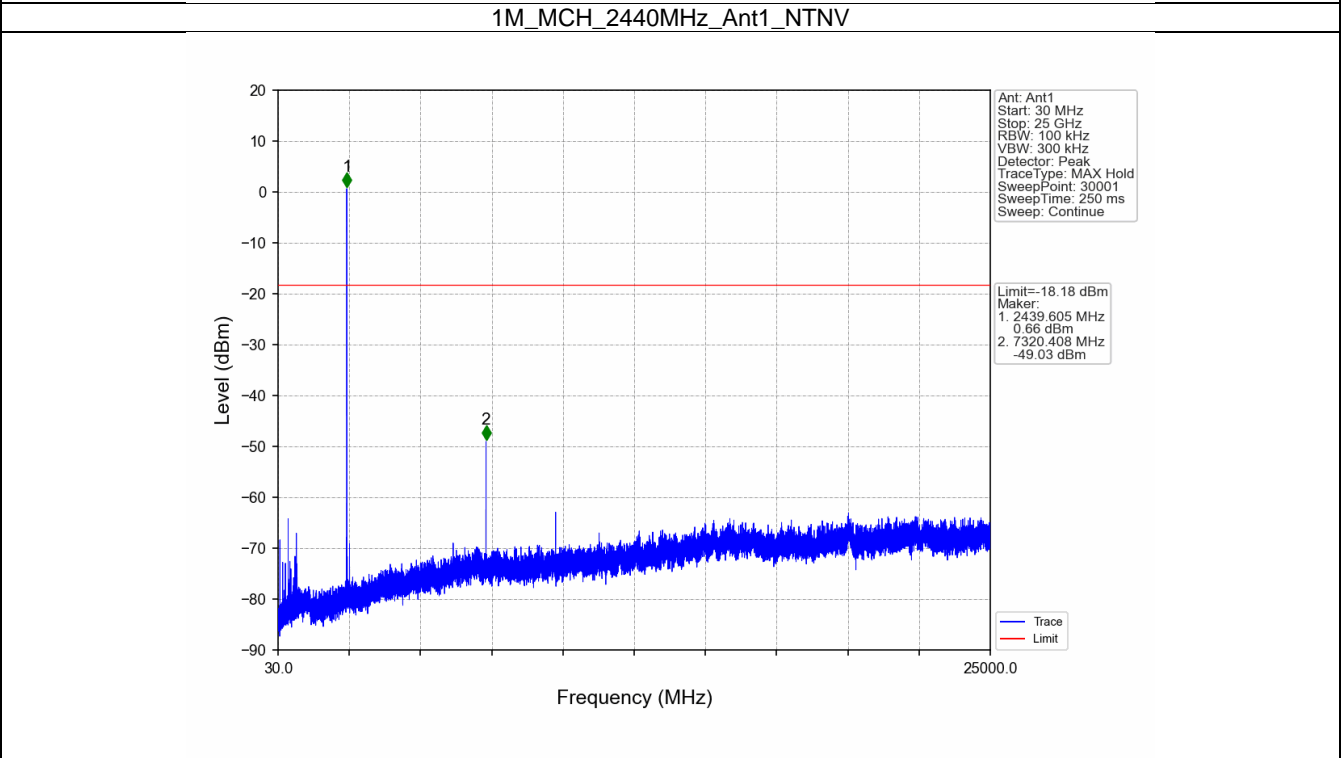
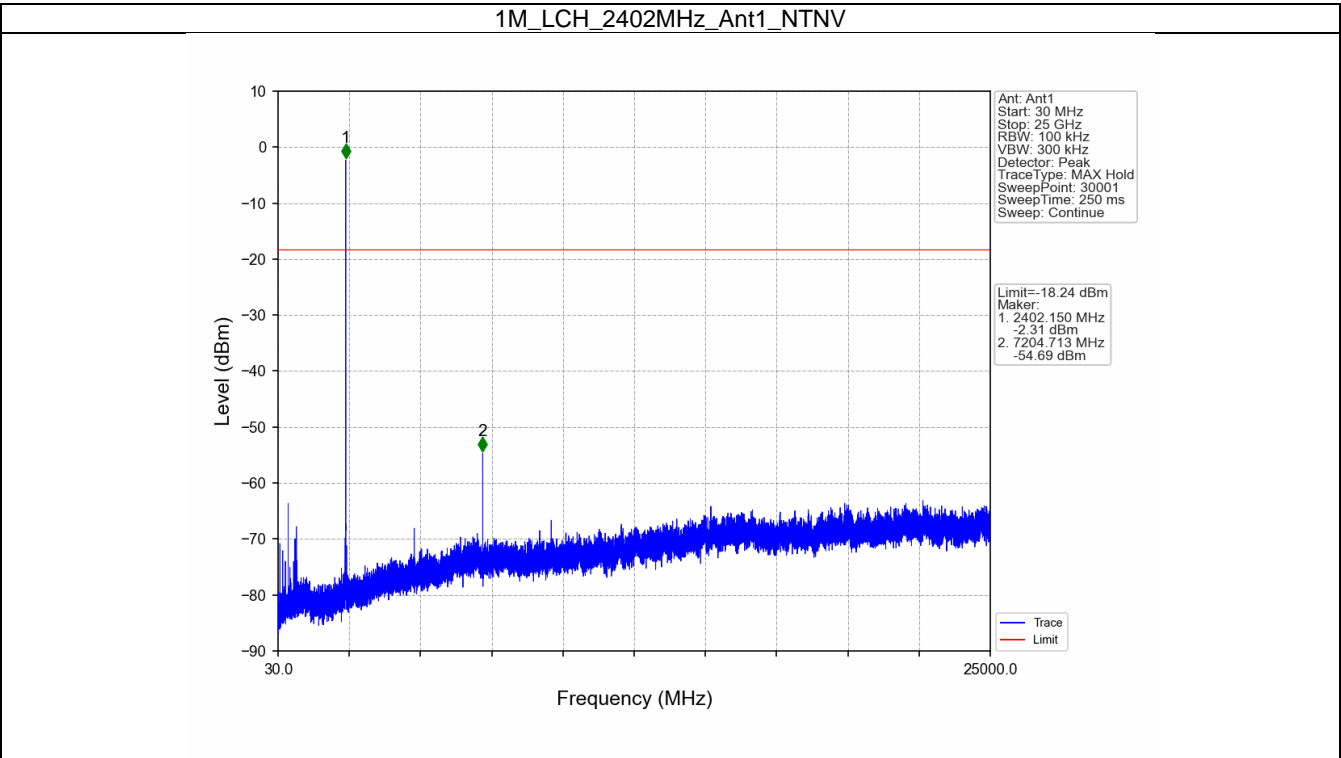


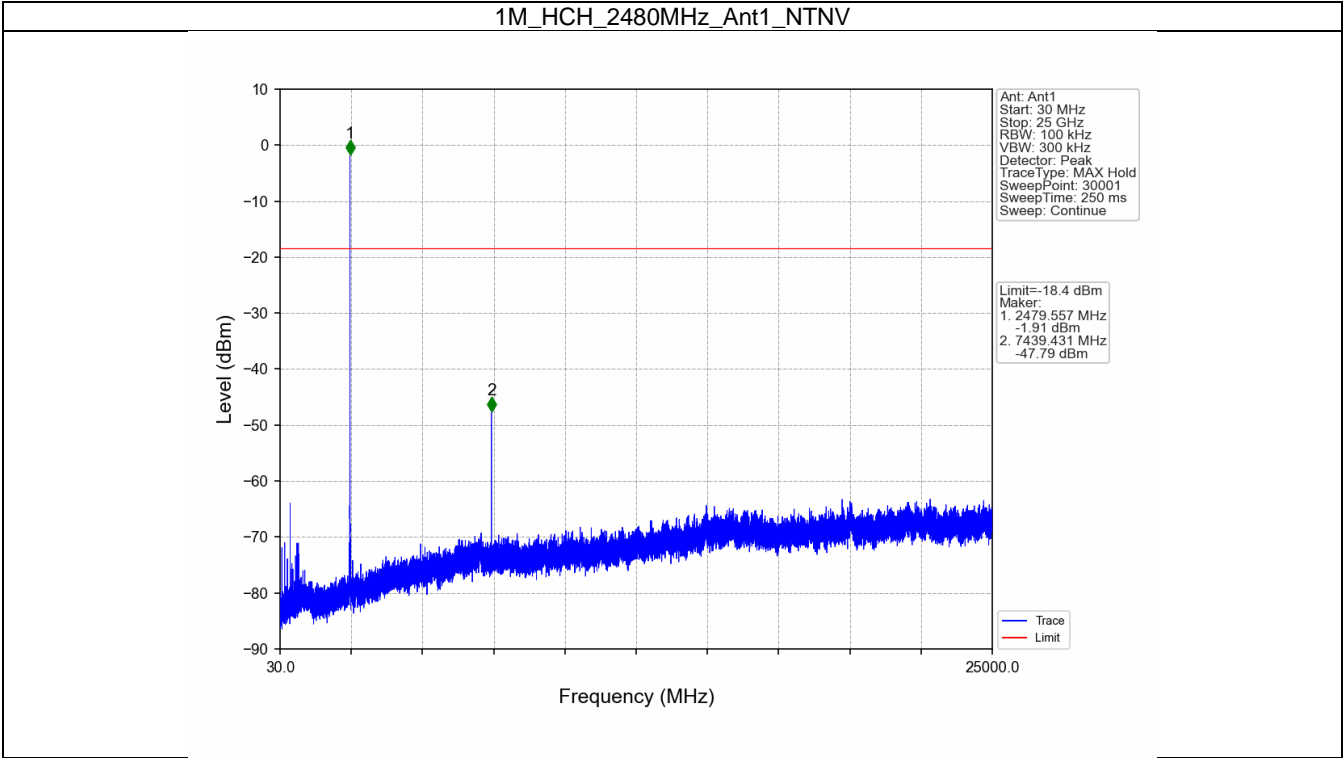


Conducted spurious emissions:

| Mode | TX Type | Frequency (MHz) | ANT | Level of Reference (dBm) | Limit (dBm) | Verdict |
|------|---------|-----------------|-----|--------------------------|-------------|---------|
| 1M | SISO | 2402 | 1 | 1.76 | -18.24 | Pass |
| | | 2440 | 1 | 1.82 | -18.18 | Pass |
| | | 2480 | 1 | 1.60 | -18.40 | Pass |

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.





9.6 Band edge testing

Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings:
Span = wide enough to capture the peak level of the in-band emission and all spurious
RBW = 100 kHz, VBW \geq 3RBW, Sweep = auto, Detector function = peak, Trace = max hold
4. Allow the trace to stabilize, use the peak and delta measurement to record the result.
5. The level displayed must comply with the limit specified in this Section.
6. Repeat above procedures until all frequencies measured were complete and submit all the plots.

Limit

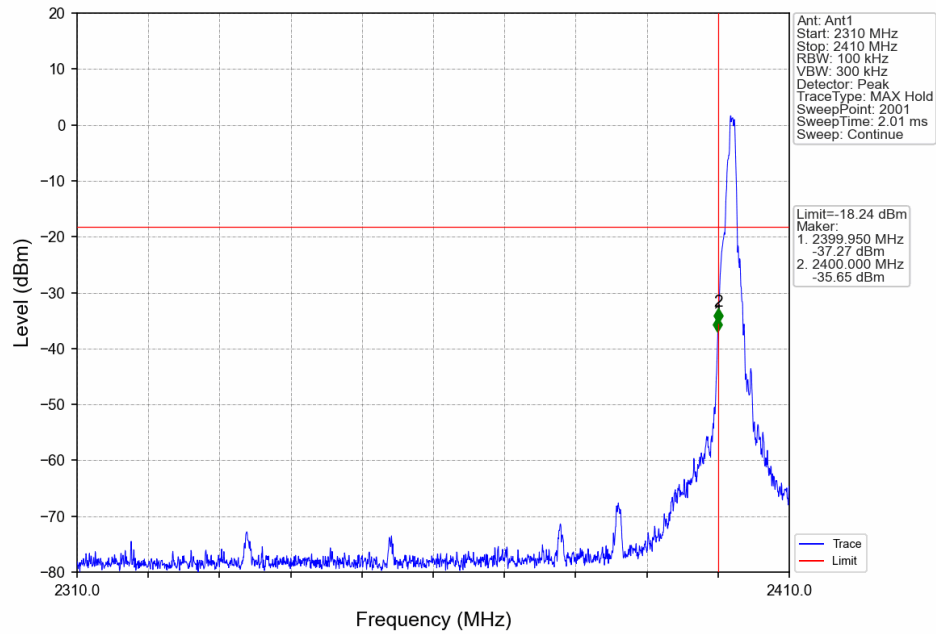
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under § 15.247(b)(3), the attenuation required shall be 30 dB instead of 20 dB.

| Frequency Range MHz | Limit (dBc) |
|------------------------|-------------|
| 30-25000 | -20 |

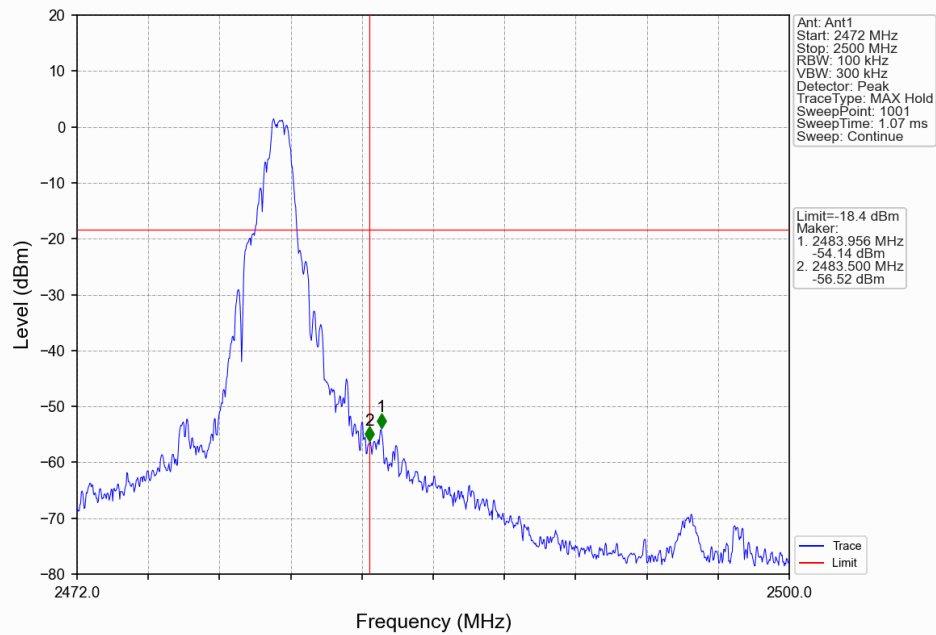
Test result

| Mode | TX Type | Frequency (MHz) | ANT | Level of Reference (dBm) | Limit (dBm) | Verdict |
|------|---------|-----------------|-----|--------------------------|-------------|---------|
| 1M | SISO | 2402 | 1 | 1.76 | -18.24 | Pass |
| | | 2440 | 1 | 1.82 | -18.18 | Pass |
| | | 2480 | 1 | 1.60 | -18.40 | Pass |

1M_LCH_2402MHz_Ant1_NTNV



1M_HCH_2480MHz_Ant1_NTNV



9.7 Spurious radiated emissions for transmitter

Test Method

1. The EUT was placed on a turn table which is 1.5m above ground plane for above 1GHz and 0.8m above ground for below 1GHz at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.
3. The height of antenna 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.
4. 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 and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. Use the following spectrum analyzer settings According to C63.10:
 - 1) Procedure for Unwanted Emissions Measurements Below 1000 MHz
Span = wide enough to capture the peak level of the in-band emission and all spurious
RBW = 100 KHz to 120KHz, VBW ≥ RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.
 - 2) For Peak unwanted emissions Above 1GHz:
Span = wide enough to capture the peak level of the in-band emission and all spurious
RBW = 1MHz, VBW ≥ RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.
 - 3) Procedures for average unwanted emissions measurements above 1000 MHz
 - a) RBW = 1MHz.
 - b) VBW \ [3 × RBW].
 - c) Detector = RMS (power averaging), if [span / (# of points in sweep)] \ RBW / 2. Satisfying this condition can require increasing the number of points in the sweep or reducing the span. If the condition is not satisfied, then the detector mode shall be set to peak.
 - d) Averaging type = power (i.e., rms) (As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.)
 - e) Sweep time = auto.
 - f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, then the number of traces shall be increased by a factor of 1 / D, where D is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—then rather than turning ON and OFF with the transmit cycle, at least 100 traces shall be averaged.)
 - g) If tests are performed with the EUT transmitting at a duty cycle less than 98%, then a correction factor shall be added to the measurement results prior to comparing with the emission limit, to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:
 - 1) If power averaging (rms) mode was used in the preceding step e), then the correction factor is $[10 \log (1 / D)]$, where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB shall be added to the measured emission levels.

- 2) If linear voltage averaging mode was used in the preceding step e), then the correction factor is $[20 \log (1 / D)]$, where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB shall be added to the measured emission levels.
- 3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission(AV) at frequency above 1GHz.

Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under § 15.247(b)(3), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a).

| Frequency MHz | Field Strength μV/m | Field Strength dBμV/m | Detector | Measurement distance meters |
|------------------|------------------------|--------------------------|----------|--------------------------------|
| 0.009-0.490 | 2400/F(kHz) | 48.5-13.8 | AV | 300 |
| 0.490-1.705 | 24000/F(kHz) | 33.8-23.0 | QP | 30 |
| 1.705-30 | 30 | 29.5 | QP | 30 |
| 30-88 | 100 | 40 | QP | 3 |
| 88-216 | 150 | 43.5 | QP | 3 |
| 216-960 | 200 | 46 | QP | 3 |
| 960-1000 | 500 | 54 | QP | 3 |
| Above 1000 | 500 | 54 | AV | 3 |
| Above 1000 | 5000 | 74 | PK | 3 |

Note 1: Limit 3m(dBμV/m)=Limit 300m(dBμV/m)+40Log(300m/3m) (Below 30MHz)

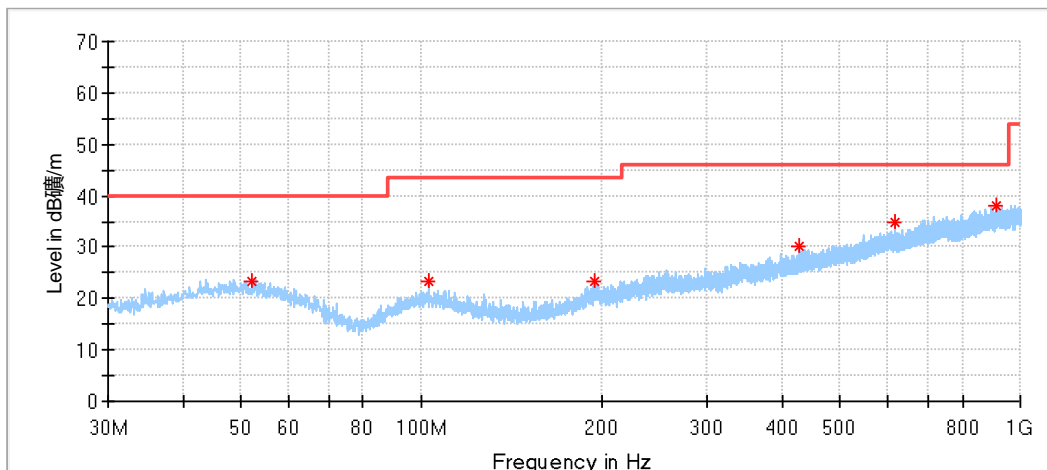
Note 2: Limit 3m(dBμV/m)=Limit 30m(dBμV/m)+40Log(30m/3m) (Below 30MHz)

Spurious radiated emissions for transmitter

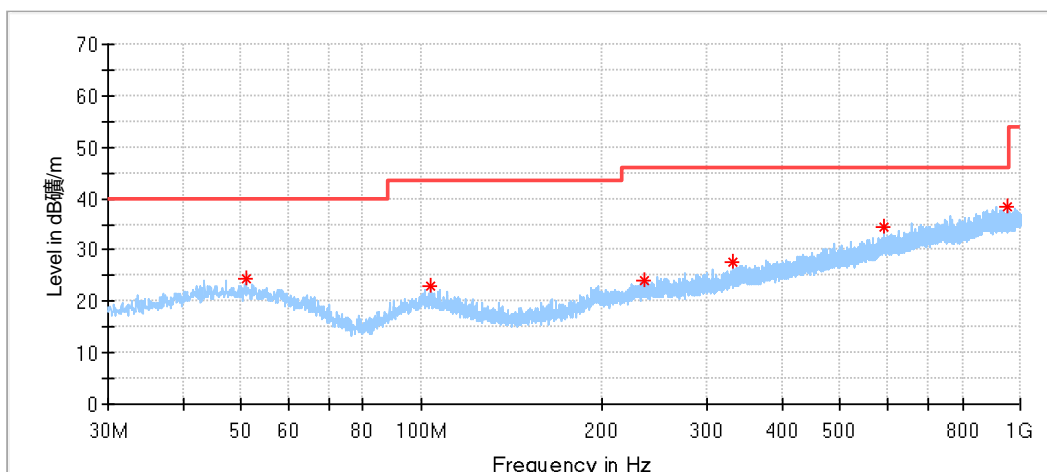
According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

Transmitting spurious emission test result as below:

Emission below 1GHz



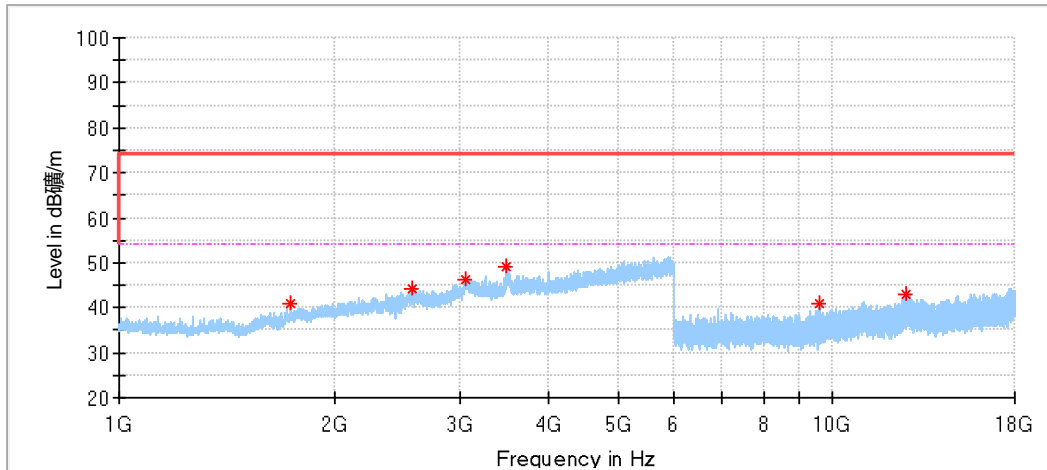
| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 52.310000 | 23.33 | 40.00 | 16.67 | 100.0 | H | 321.0 | 18.20 |
| 103.127222 | 23.19 | 43.50 | 20.31 | 100.0 | H | 279.0 | 16.00 |
| 194.199444 | 23.24 | 43.50 | 20.26 | 100.0 | H | 0.0 | 16.25 |
| 427.915556 | 30.28 | 46.00 | 15.72 | 100.0 | H | 263.0 | 21.73 |
| 615.987778 | 34.85 | 46.00 | 11.15 | 100.0 | H | 247.0 | 25.31 |
| 912.376667 | 37.93 | 46.00 | 8.07 | 100.0 | H | 4.0 | 29.43 |



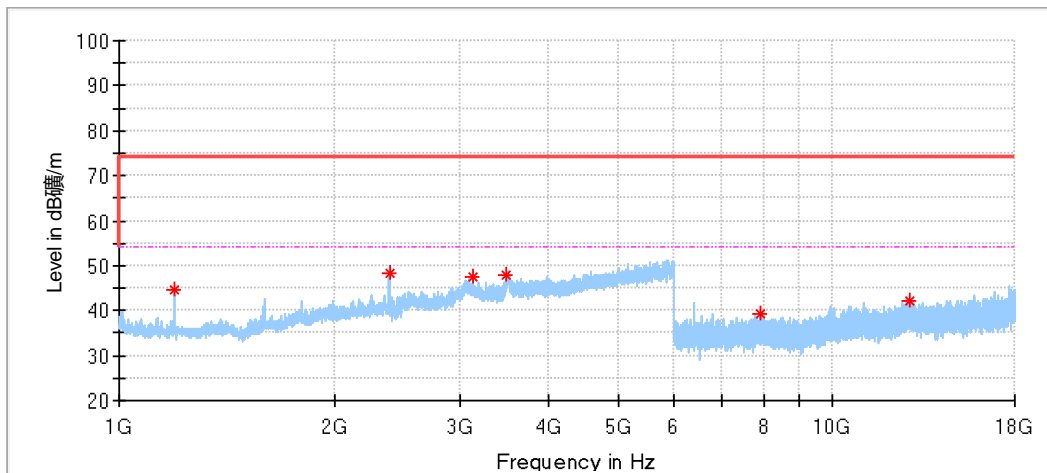
| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 50.908889 | 24.58 | 40.00 | 15.42 | 100.0 | V | 229.0 | 18.22 |
| 103.989444 | 22.83 | 43.50 | 20.67 | 100.0 | V | 326.0 | 16.10 |
| 235.316667 | 24.10 | 46.00 | 21.90 | 100.0 | V | 137.0 | 17.04 |
| 332.155000 | 27.51 | 46.00 | 18.49 | 100.0 | V | 271.0 | 19.46 |
| 591.306667 | 34.42 | 46.00 | 11.58 | 100.0 | V | 167.0 | 24.95 |
| 953.493889 | 38.40 | 46.00 | 7.60 | 100.0 | V | 14.0 | 29.59 |

Emission above 1GHz

BLE_1Mbps_Low Channel: 2402MHz

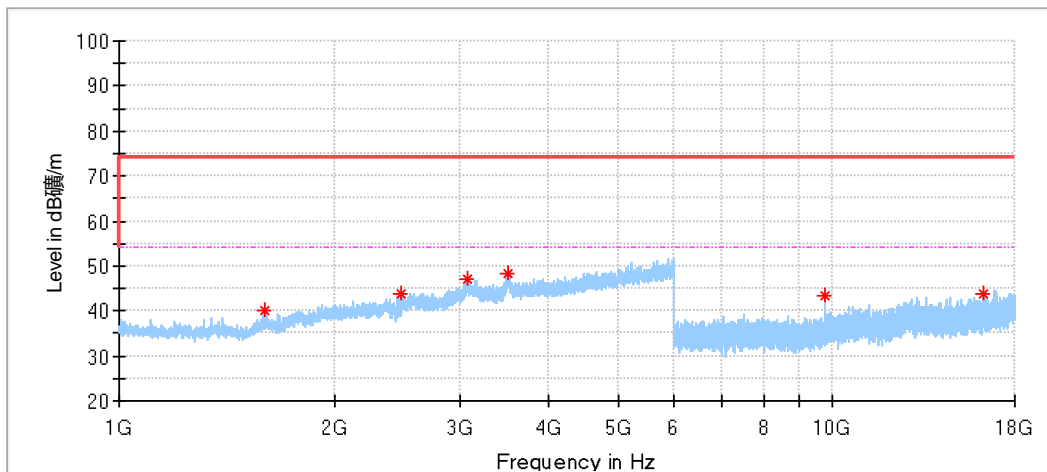


| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 1740.500000 | 40.93 | 74.00 | 33.07 | 150.0 | H | 4.0 | -5.99 |
| 2571.000000 | 44.30 | 74.00 | 29.70 | 150.0 | H | 271.0 | -1.21 |
| 3060.000000 | 46.31 | 74.00 | 27.69 | 150.0 | H | 66.0 | 1.61 |
| 3491.000000 | 49.18 | 74.00 | 24.82 | 150.0 | H | 148.0 | 3.80 |
| 9608.000000 | 40.85 | 74.00 | 33.15 | 150.0 | H | 240.0 | 8.87 |
| 12710.500000 | 42.91 | 74.00 | 31.09 | 150.0 | H | 6.0 | 12.82 |

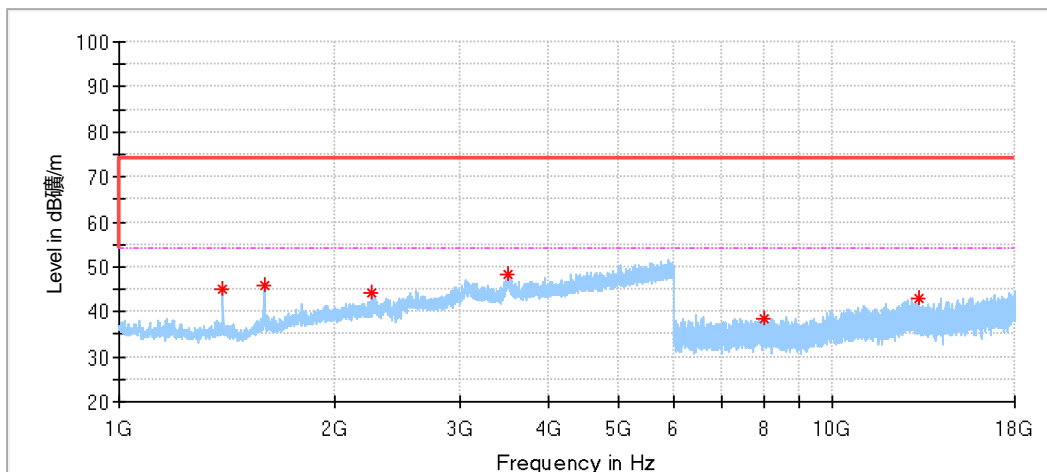


| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 1194.500000 | 44.46 | 74.00 | 29.54 | 150.0 | V | 247.0 | -8.77 |
| 2390.000000 | 48.34 | 74.00 | 25.66 | 150.0 | V | 233.0 | -2.45 |
| 3133.000000 | 47.42 | 74.00 | 26.58 | 150.0 | V | 358.0 | 1.24 |
| 3494.000000 | 48.02 | 74.00 | 25.98 | 150.0 | V | 52.0 | 4.03 |
| 7916.500000 | 39.26 | 74.00 | 34.74 | 150.0 | V | 302.0 | 7.22 |
| 12818.000000 | 42.31 | 74.00 | 31.69 | 150.0 | V | 302.0 | 12.96 |

BLE_1Mbps_Middle Channel: 2440MHz

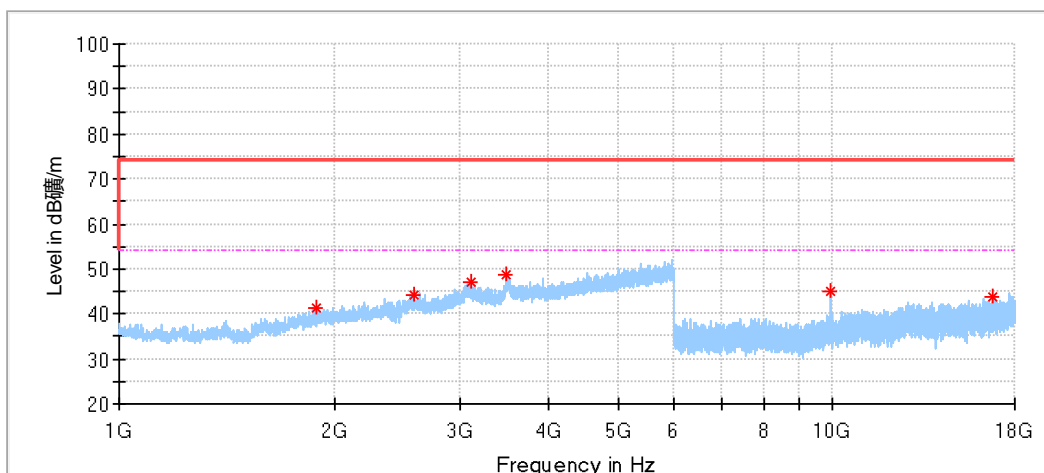


| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 1600.000000 | 39.96 | 74.00 | 34.04 | 150.0 | H | 233.0 | -6.84 |
| 2491.000000 | 43.88 | 74.00 | 30.12 | 150.0 | H | 4.0 | -1.83 |
| 3080.000000 | 47.23 | 74.00 | 26.77 | 150.0 | H | 189.0 | 1.53 |
| 3501.500000 | 48.39 | 74.00 | 25.61 | 150.0 | H | 274.0 | 4.41 |
| 9760.000000 | 43.29 | 74.00 | 30.71 | 150.0 | H | 215.0 | 9.20 |
| 16272.000000 | 43.74 | 74.00 | 30.26 | 150.0 | H | 55.0 | 16.77 |

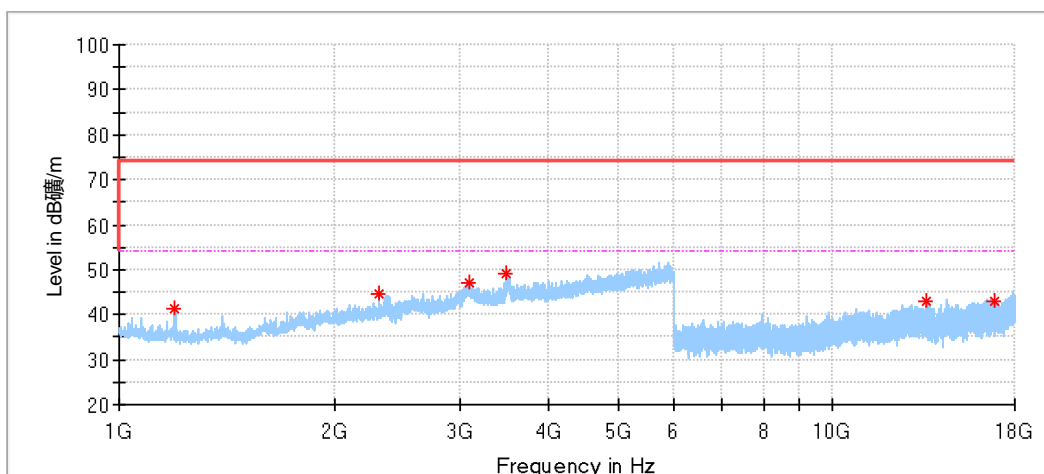


| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 1397.500000 | 45.16 | 74.00 | 28.84 | 150.0 | V | 216.0 | -7.99 |
| 1595.000000 | 45.85 | 74.00 | 28.15 | 150.0 | V | 203.0 | -6.92 |
| 2259.000000 | 44.14 | 74.00 | 29.86 | 150.0 | V | 203.0 | -3.25 |
| 3501.000000 | 48.19 | 74.00 | 25.81 | 150.0 | V | 107.0 | 4.43 |
| 7995.000000 | 38.60 | 74.00 | 35.40 | 150.0 | V | 216.0 | 7.45 |
| 13224.000000 | 43.15 | 74.00 | 30.85 | 150.0 | V | 190.0 | 12.89 |

BLE_1Mbps_High Channel: 2480MHz



| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 1884.500000 | 41.27 | 74.00 | 32.73 | 150.0 | H | 78.0 | -5.07 |
| 2591.500000 | 44.20 | 74.00 | 29.80 | 150.0 | H | 92.0 | -1.09 |
| 3119.500000 | 46.97 | 74.00 | 27.03 | 150.0 | H | 133.0 | 1.39 |
| 3496.500000 | 48.53 | 74.00 | 25.47 | 150.0 | H | 215.0 | 4.22 |
| 9920.000000 | 45.02 | 74.00 | 28.98 | 150.0 | H | 216.0 | 9.39 |
| 16803.000000 | 43.92 | 74.00 | 30.08 | 150.0 | H | 246.0 | 18.41 |



| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 1198.000000 | 41.42 | 74.00 | 32.58 | 150.0 | V | 189.0 | -8.77 |
| 2313.000000 | 44.66 | 74.00 | 29.34 | 150.0 | V | 203.0 | -3.16 |
| 3102.500000 | 47.28 | 74.00 | 26.72 | 150.0 | V | 13.0 | 1.61 |
| 3496.000000 | 49.10 | 74.00 | 24.90 | 150.0 | V | 25.0 | 4.18 |
| 13547.000000 | 43.13 | 74.00 | 30.87 | 150.0 | V | 109.0 | 12.84 |
| 16816.500000 | 43.18 | 74.00 | 30.82 | 150.0 | V | 302.0 | 18.43 |

Remark:

- (1) "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.
- (2) Data of measurement within frequency ranges 9kHz-30MHz and 18-26GHz are the noise floor or attenuated more than 20dB below the permissible limits or the field strength is too small to be measured, so test data does not present in this report,
- (3) Level= Reading Level + Correction Factor
- (4) Above 1GHz: Corrector factor = Antenna Factor + Cable Loss- Amplifier Gain
Below 1GHz: Corrector factor = Antenna Factor + Cable Loss
(The Reading Level is recorded by software which is not shown in the sheet)

10 Test Equipment List

Conducted Emission Test

| Description | Manufacturer | Model no. | Equipment ID | Serial no. | Cal interval (year) | Cal. due date |
|-------------------|-------------------|-----------|--------------------|------------------|---------------------|---------------|
| EMI Test Receiver | Rohde & Schwarz | ESR 3 | 68-4-74-19-002 | 102590 | 1 | 2024-5-19 |
| LISN | Rohde & Schwarz | ENV216 | 68-4-87-19-001 | 102472 | 1 | 2024-5-20 |
| Attenuator | Shanghai Huaxiang | TS2-26-3 | 68-4-81-16-003 | 080928189 | 1 | 2024-5-19 |
| Test software | Rohde & Schwarz | EMC32 | 68-4-90-19-005-A01 | Version 10.35.02 | N/A | N/A |
| Shielding Room | TDK | CSR #2 | 68-4-90-19-005 | ---- | 3 | 2025-10-15 |

Radiated Emission Test, SAC-3 #1

| Description | Manufacturer | Model no. | Equipment ID | Serial no. | Cal interval (year) | Cal. due date |
|--------------------------|-----------------|-----------|--------------------|------------------|---------------------|---------------|
| EMI Test Receiver | Rohde & Schwarz | ESR 7 | 68-4-74-19-001 | 102176 | 1 | 2024-5-20 |
| Loop Antenna | Rohde & Schwarz | HFH2-Z2 | 68-4-80-14-006 | 100398 | 1 | 2024-8-7 |
| Pre-amplifier | Rohde & Schwarz | SCU 18 | 68-4-29-14-001 | 102230 | 1 | 2024-5-19 |
| Attenuator | Mini-circuits | UNAT-6+ | 68-4-81-21-001 | 15542 | 1 | 2024-5-19 |
| 3m Semi-anechoic chamber | TDK | SAC-3 #1 | 68-4-90-14-001 | ---- | 3 | 2024-5-28 |
| Test software | Rohde & Schwarz | EMC32 | 68-4-90-14-001-A10 | Version 10.35.02 | N/A | N/A |

Radiated Emission Test, SAC-3 #2

| Description | Manufacturer | Model no. | Equipment ID | Serial no. | Cal interval (year) | Cal. due date |
|-------------------------------------|-----------------|-------------------|--------------------|------------------|---------------------|---------------|
| EMI Test Receiver | Rohde & Schwarz | ESR 26 | 68-4-74-14-002 | 101269 | 1 | 2024-5-20 |
| Trilog Super Broadband Test Antenna | Schwarzbeck | VULB 9162 | 68-4-80-19-003 | 284 | 1 | 2024-3-5 |
| Wave Guide Antenna | ETS | 3117 | 68-4-80-19-001 | 00218954 | 1 | 2024-4-26 |
| Pre-amplifier | Rohde & Schwarz | SCU 18F | 68-4-29-19-001 | 100745 | 1 | 2024-5-19 |
| Pre-amplifier | Rohde & Schwarz | SCU 18F | 68-4-29-19-002 | 100746 | 1 | 2024-5-19 |
| Sideband Horn Antenna | Q-PAR | QWH-SL-18-40-K-SG | 68-4-80-14-008 | 12827 | 1 | 2024-7-11 |
| Pre-amplifier | Rohde & Schwarz | SCU 40A | 68-4-29-14-002 | 100432 | 1 | 2024-8-1 |
| Attenuator | Mini-circuits | UNAT-6+ | 68-4-81-21-002 | 15542 | 1 | 2024-5-19 |
| 3m Semi-anechoic chamber | TDK | SAC-3 #2 | 68-4-90-19-006 | ---- | 2 | 2024-5-28 |
| Test software | Rohde & Schwarz | EMC32 | 68-4-90-19-006-A01 | Version 10.35.02 | N/A | N/A |

RF Conducted Test

| Description | Manufacturer | Model no. | Equipment ID | Serial no. | Cal interval (year) | Cal. due date |
|-----------------|-----------------|--------------------|--------------------|---------------------|---------------------|---------------|
| Signal Analyzer | Rohde & Schwarz | FSV40 | 68-4-74-14-004 | 101030 | 1 | 2024-5-19 |
| Test software | Tonscend | System for BT/WIFI | 68-4-74-14-006-A13 | Version 2.6.77.0518 | N/A | N/A |

11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

| System Measurement Uncertainty | |
|--|--|
| Test Items | Extended Uncertainty |
| Uncertainty for Conducted Emission in new shielding room (68-4-90-19-005) 150kHz-30MHz (for test using AMN ENV216) | 3.33dB |
| Uncertainty for Radiated Emission in 3m chamber (68-4-90-14-001) 9kHz-30MHz | 4.70dB |
| Uncertainty for Radiated Emission in new 3m chamber (68-4-90-19-006) 30MHz-1000MHz | Horizontal: 4.59dB; Vertical: 4.75dB |
| Uncertainty for Radiated Emission in new 3m chamber (68-4-90-19-006) 1000MHz-18000MHz | Horizontal: 5.08dB; Vertical: 5.09dB |
| Uncertainty for Radiated Emission in new 3m chamber (68-4-90-19-006) above 18000MHz | Horizontal: 3.14dB; Vertical: 3.12dB |
| Uncertainty for Conducted RF test with TS 8997 | RF Power Conducted: 1.31dB Frequency test involved: 0.6×10 ⁻⁸ or 1% |

Measurement Uncertainty Decision Rule:

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115:2021, clause 4.4.3 and 4.5.1.

--- END OF REPORT---