

| TESTING CENTRE TE | TEST REPOR | Т | | | | |
|----------------------------------|---|-------------------|--|--|--|--|
| FCC ID: | 2A6B4-F45II | · • | | | | |
| Test Report No:: | TCT240812E024 | | | | | |
| Date of issue:: | Sep. 04, 2024 | | | | | |
| Testing laboratory: | SHENZHEN TONGCE TESTING | G LAB | | | | |
| Testing location/ address: | 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China | | | | | |
| Applicant's name:: | Mulberry tech group LLC | | | | | |
| Address:: | 108 Wall st, lakewood, New Jers | sey, 08701, USA | | | | |
| Manufacturer's name: | Shenzhen Qimei Electronic Tec | hnology Co., Ltd. | | | | |
| Address:: | B307, Building G, No. 13, Second Industrial Zone, Xiacun Community, Gongming Street, Guangming District, Shenzhen, China | | | | | |
| Standard(s): | FCC CFR Title 47 Part 15 Subp FCC KDB 558074 D01 15.247 M ANSI C63.10:2013 | | | | | |
| Product Name:: | Mobile Phone | | | | | |
| Trade Mark: | fig (C) | (sc) | | | | |
| Model/Type reference: | F45X, F45II | | | | | |
| Rating(s):: | Rechargeable Li-ion Battery DC | 3.8V | | | | |
| Date of receipt of test item: | Aug. 12, 2024 | | | | | |
| Date (s) of performance of test: | Aug. 12, 2024 ~ Sep. 04, 2024 | | | | | |
| Tested by (+signature): | RIeo LIU PRO WORDE | | | | | |
| Check by (+signature): | Beryl ZHAO | BoyC TCT) | | | | |
| Approved by (+signature): | Tomsin | Tomsies & | | | | |

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1. General Product Information

1.1. EUT description

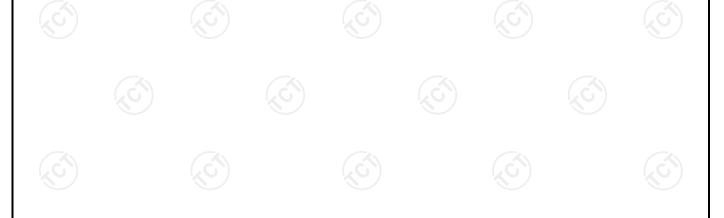
| Product Name: | Mobile Phone | | |
|------------------------|-------------------------------------|-----|--|
| Model/Type reference: | F45X | | |
| Sample Number: | TCT240812E024-0101 | | |
| Bluetooth Version: | V5.0 (This report is for BDR+EDR) | | |
| Operation Frequency: | 2402MHz~2480MHz | | |
| Transfer Rate: | 1/2/3 Mbits/s | | |
| Number of Channel: | 79 | | |
| Modulation Type: | GFSK, π/4-DQPSK, 8DPSK | (3) | |
| Modulation Technology: | FHSS | | |
| Antenna Type: | Internal Antenna | | |
| Antenna Gain: | 1.09dBi | | |
| Rating(s):: | Rechargeable Li-ion Battery DC 3.8V | | |

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

1.2. Model(s) list

| No. | Model No. | Tested with |
|--------------|-----------|-------------|
| 1 | F45X | \boxtimes |
| Other models | F45II | |

Note: F45X is tested model, other models are derivative models. The models are identical in circuit and PCB layout, only different on the model names. So the test data of F45X can represent the remaining models.



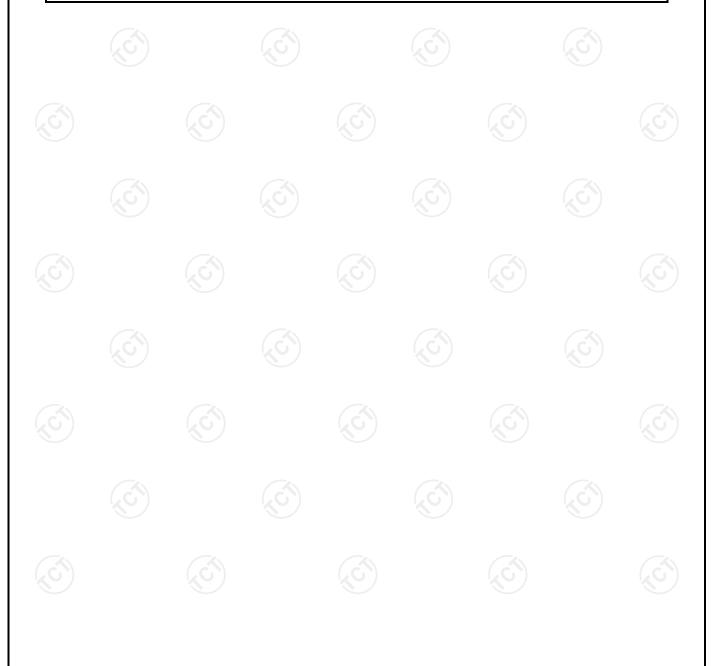
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1.3. Operation Frequency

| Channel | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|---------|-----------|---------|-----------|
| _ 0 | 2402MHz | 20 | 2422MHz | 40 | 2442MHz | _ 60 | 2462MHz |
| (C) 1 | 2403MHz | 21 | 2423MHz | 41 | 2443MHz | 61 | 2463MHz |
| ··· | | · | | · | | · | |
| 10 | 2412MHz | 30 | 2432MHz | 50 | 2452MHz | 70 | 2472MHz |
| 11 | 2413MHz | 31 | 2433MHz | 51 | 2453MHz | 71 | 2473MHz |
| | <u></u> | | | | <u> </u> | | |
| 18 | 2420MHz | 38 | 2440MHz | 58 | 2460MHz | 78 | 2480MHz |
| 19 | 2421MHz | 39 | 2441MHz | - 59 | 2461MHz | 7 | - |

Remark: Channel 0, 39 & 78 have been tested for GFSK, $\pi/4$ -DQPSK, 8DPSK modulation mode.





2. Test Result Summary

| Requirement | CFR 47 Section | Result |
|-----------------------------------|---------------------|--------|
| Antenna Requirement | §15.203/§15.247 (c) | PASS |
| AC Power Line Conducted Emission | §15.207 | PASS |
| Conducted Peak Output Power | §15.247 (b)(1) | PASS |
| 20dB Occupied Bandwidth | §15.247 (a)(1) | PASS |
| Carrier Frequencies Separation | §15.247 (a)(1) | PASS |
| Hopping Channel Number | §15.247 (a)(1) | PASS |
| Dwell Time | §15.247 (a)(1) | PASS |
| Radiated Emission | §15.205/§15.209 | PASS |
| Band Edge | §15.247(d) | 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.





3. General Information

3.1. Test environment and mode

| Operating Environment: | | | | | | |
|--|--------------------|-------------------|--|--|--|--|
| Condition | Conducted Emission | Radiated Emission | | | | |
| Temperature: | 23.6 °C | 25.7 °C | | | | |
| Humidity: | 51 % RH | 51 % RH | | | | |
| Atmospheric Pressure: | 1010 mbar | 1010 mbar | | | | |
| Test Software: | | | | | | |
| Software Information: | Engineering Mode | | | | | |
| Power Level: | Default | | | | | |
| Test Mode: | | | | | | |
| Engineering mode: Keep the EUT in continuous transmitting by select channel and modulations with Fully-charged battery. | | | | | | |

The sample was placed 0.8m & 1.5m for the measurement below & above 1GHz above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case (Z axis) are shown in Test Results of the following pages.

DH1 DH3 DH5 all have been tested, only worse case DH1 is reported.

3.2. 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.

| Equipment | Model No. | Serial No. | FCC ID | Trade Name |
|-----------|-----------|--------------------|--------|------------|
| Adapter | EP-TA200 | R37M4PR7QD4 SE3 | 1 | SAMSUNG |

Note:

- 1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
- 3. For conducted measurements (Output Power, 20dB Occupied Bandwidth, Carrier Frequencies Separation, Hopping Channel Number, Dwell Time, 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.

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4. Facilities and Accreditations

4.1. Facilities

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

• FCC - Registration No.: 645098

SHENZHEN TONGCE TESTING LAB

Designation Number: CN1205

The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

IC - Registration No.: 10668A

SHENZHEN TONGCE TESTING LAB

CAB identifier: CN0031

The testing lab has been registered by Innovation, Science and Economic Development Canada for radio equipment testing.

4.2. Location

SHENZHEN TONGCE TESTING LAB

Address: 2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

4.3. 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 | ± 3.32dB |
| 2 | RF power, conducted | ± 1.08dB |
| 3 | Spurious emissions, conducted | ± 2.94 dB |
| 4 | All emissions, radiated(<1 GHz) | ± 4.86dB |
| 5 | All emissions, radiated(1 GHz - 18 GHz) | ± 4.91 dB |
| 6 | All emissions, radiated(18 GHz- 40 GHz) | ± 5.32 dB |

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5. Test Results and Measurement Data

5.1. Antenna requirement

Standard requirement: FCC Part15 C Section 15.203 /247(c)

15.203 requirement:

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

15.247(c) (1)(i) requirement:

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

E.U.T Antenna:

The Bluetooth antenna is Internal antenna which permanently attached, and the best case gain of the antenna is 1.09dBi.



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5.2. Conducted Emission

5.2.1. Test Specification

| <u> </u> | | | | | | |
|-------------------|---|--|-------------------------------|--|--|--|
| Test Requirement: | FCC Part15 C Section 15.207 | | | | | |
| Test Method: | ANSI C63.10:2013 | | | | | |
| Frequency Range: | 150 kHz to 30 MHz | | | | | |
| Receiver setup: | RBW=9 kHz, VBW=30 | kHz, Sweep time | e=auto | | | |
| Limits: | Frequency range (MHz) 0.15-0.5 0.5-5 5-30 | Limit (Quasi-peak 66 to 56* 56 60 | dBuV) Average 56 to 46* 46 50 | | | |
| Test Setup: | Reference Plane 40cm E.U.T AC power Test table/Insulation plane Remark E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m | | | | | |
| Test Mode: | Charging + Transmittin | g Mode | | | | |
| Test Procedure: | The E.U.T is connected to an adapter through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement. | | | | | |
| Test Result: | PASS | | | | | |



5.2.2. Test Instruments

| Conducted Emission Shielding Room Test Site (843) | | | | | | | | | |
|---|--|-----------|---------|---------------|--|--|--|--|--|
| Equipment | Equipment Manufacturer Model Serial Number Calibration | | | | | | | | |
| EMI Test Receiver | R&S | ESCI3 | 100898 | Jun. 26, 2025 | | | | | |
| LISN | Schwarzbeck | NSLK 8126 | 8126453 | Jan. 31, 2025 | | | | | |
| Attenuator | N/A | 10dB | 164080 | Jun. 26, 2025 | | | | | |
| Line-5 | TCT | CE-05 | / | Jun. 26, 2025 | | | | | |
| EMI Test Software | EZ_EMC | EMEC-3A1 | 1.1.4.2 | 1 (6 | | | | | |

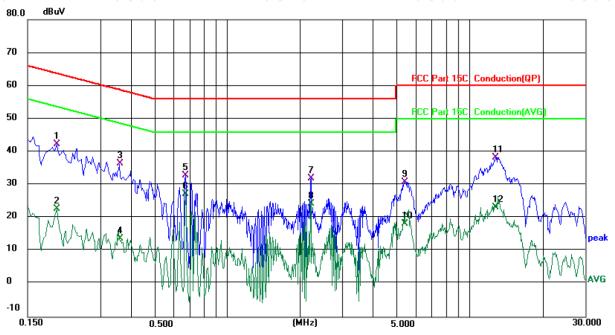




5.2.3. Test data

Please refer to following diagram for individual

Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)



Site 844 Shielding Room

Phase: L1

Temperature: 23.6 (℃)

Humidity: 51 %

Report No.: TCT240812E024

Limit: FCC Part 15C Conduction(QP)

Power: DC 5V(Adapter Input AC 120V/60Hz)

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure- ment | Limit | Over | | |
|-----|-----|---------|------------------|-------------------|------------------|-------|--------|----------|---------|
| | | MHz | dBu∀ | dB | dBu∀ | dBu∀ | dB | Detector | Comment |
| 1 | | 0.1980 | 32.74 | 9.63 | 42.37 | 63.69 | -21.32 | QP | |
| 2 | | 0.1980 | 13.04 | 9.63 | 22.67 | 53.69 | -31.02 | AVG | |
| 3 | | 0.3579 | 26.36 | 9.99 | 36.35 | 58.78 | -22.43 | QP | |
| 4 | | 0.3579 | 3.64 | 9.99 | 13.63 | 48.78 | -35.15 | AVG | |
| 5 | | 0.6740 | 22.64 | 10.33 | 32.97 | 56.00 | -23.03 | QP | |
| 6 | * | 0.6740 | 17.01 | 10.33 | 27.34 | 46.00 | -18.66 | AVG | |
| 7 | | 2.2139 | 22.05 | 9.82 | 31.87 | 56.00 | -24.13 | QP | |
| 8 | | 2.2139 | 14.59 | 9.82 | 24.41 | 46.00 | -21.59 | AVG | |
| 9 | | 5.3900 | 20.76 | 10.12 | 30.88 | 60.00 | -29.12 | QP | |
| 10 | | 5.3900 | 8.14 | 10.12 | 18.26 | 50.00 | -31.74 | AVG | |
| 11 | | 12.8100 | 27.99 | 10.27 | 38.26 | 60.00 | -21.74 | QP | |
| 12 | | 12.8100 | 12.94 | 10.27 | 23.21 | 50.00 | -26.79 | AVG | |

Note:

Freq. = Emission frequency in MHz

Reading level $(dB\mu V)$ = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement $(dB\mu V)$ = Reading level $(dB\mu V)$ + Corr. Factor (dB)

Limit (dBµV) = Limit stated in standard

 $Margin (dB) = Measurement (dB\mu V) - Limits (dB\mu V)$

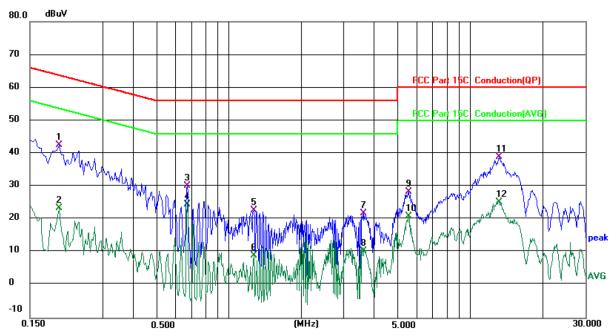
Q.P. =Quasi-Peak

AVG =average

^{*} is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.



Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)



Site 844 Shielding Room

Phase: N

Temperature: 23.6 (℃)

Humidity: 51 %

Limit: FCC Part 15C Conduction(QP)

Power: DC 5V(Adapter Input AC 120V/60Hz)

| | • • | | | J() | | | | | * |
|-----|-----|---------|------------------|-------------------|------------------|-------|--------|----------|---------|
| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure- ment | Limit | Over | | |
| | | MHz | dBu∀ | dB | dBu∀ | dBu∀ | dB | Detector | Comment |
| 1 | | 0.1980 | 32.82 | 9.63 | 42.45 | 63.69 | -21.24 | QP | |
| 2 | | 0.1980 | 13.68 | 9.63 | 23.31 | 53.69 | -30.38 | AVG | |
| 3 | | 0.6740 | 19.94 | 10.33 | 30.27 | 56.00 | -25.73 | QP | |
| 4 | | 0.6740 | 14.17 | 10.33 | 24.50 | 46.00 | -21.50 | AVG | |
| 5 | | 1.2700 | 13.03 | 9.72 | 22.75 | 56.00 | -33.25 | QP | |
| 6 | | 1.2700 | -0.69 | 9.72 | 9.03 | 46.00 | -36.97 | AVG | |
| 7 | | 3.6379 | 11.91 | 9.97 | 21.88 | 56.00 | -34.12 | QP | |
| 8 | | 3.6379 | 0.33 | 9.97 | 10.30 | 46.00 | -35.70 | AVG | |
| 9 | | 5.5819 | 18.15 | 10.14 | 28.29 | 60.00 | -31.71 | QP | |
| 10 | | 5.5819 | 10.81 | 10.14 | 20.95 | 50.00 | -29.05 | AVG | |
| 11 | * | 13.2660 | 28.59 | 10.26 | 38.85 | 60.00 | -21.15 | QP | |
| 12 | | 13.2660 | 15.05 | 10.26 | 25.31 | 50.00 | -24.69 | AVG | |
| | | | | | | | | | |

Note1:

Freq. = Emission frequency in MHz

Reading level $(dB\mu V)$ = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement ($dB\mu V$) = Reading level ($dB\mu V$) + Corr. Factor (dB)

Limit $(dB\mu V) = Limit$ stated in standard

 $Margin (dB) = Measurement (dB\mu V) - Limits (dB\mu V)$

Q.P. =Quasi-Peak AVG =average

* is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.

Note2:

Measurements were conducted in all three channels (high, middle, low) and three modulation (GFSK, Pi/4 DQPSK, 8DPSK), and the worst case Mode (Lowest channel and GFSK) was submitted only.

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5.3. Conducted Output Power

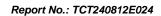
5.3.1. Test Specification

| FCC Part15 C Section 15.247 | (b)(1) | | |
|---|--|--|--|
| KDB 558074 D01 v05r02 | | | |
| Section 15.247 (b) The maximpower of the intentional radiat following: (1) For frequency he in the 2400-2483.5 MHz band non-overlapping hopping char hopping systems in the 5725-For all other frequency hopping 2400-2483.5 MHz band 0.125 | or shall not exceed the opping systems operating employing at least 75 nnels, and all frequency 5850 MHz band: 1 watt. | | |
| Spectrum Analyzer | EUT | | |
| Transmitting mode with modu | lation | | |
| Use the following spectrum ar Span = approximately 5 tim centered on a hopping channed RBW > the 20 dB bandwidth of measured VBW ≥ RBW Sweep = auto Detector function = peak Trace = max hold Allow the trace to stabilize. Use the marker-to-peak function peak of the emission. | nes the 20 dB bandwidth, el of the emission being | | |
| PASS | | | |
| | Section 15.247 (b) The maxim power of the intentional radiate following: (1) For frequency he in the 2400-2483.5 MHz band non-overlapping hopping characteristic hopping systems in the 5725-For all other frequency hopping 2400-2483.5 MHz band 0.125 Spectrum Analyzer Transmitting mode with modu Use the following spectrum ar Span = approximately 5 time centered on a hopping channer RBW > the 20 dB bandwidth of measured VBW ≥ RBW Sweep = auto Detector function = peak Trace = max hold Allow the trace to stabilize. Use the marker-to-peak function peak of the emission. | | |

5.3.2. Test Instruments

| Name | Manufacturer | Model No. | Serial Number | Calibration Due |
|----------------------|--------------|-----------|---------------|------------------------|
| Spectrum Analyzer | Agilent | N9020A | MY49100619 | Jun. 26, 2025 |
| Combiner Box | Ascentest | AT890-RFB | | 1 |

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5.4. 20dB Occupy Bandwidth

5.4.1. Test Specification

| Test Requirement: | ECC Part15 | C Section 15 24 | 17 (2)(1) | (.c. | |
|-------------------|---|-----------------|-----------|--|--|
| rest Nequirement. | FCC Part15 C Section 15.247 (a)(1) | | | | |
| Test Method: | KDB 558074 | D01 v05r02 | | | |
| Limit: | N/A | | | | |
| Test Setup: | Spectrum Analy | | EUT | | |
| Test Mode: | Transmitting mode with modulation | | | | |
| Test Procedure: | Transmitting mode with modulation 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. Set to the maximum power setting and enable the EUT transmit continuously. Use the following spectrum analyzer settings for 20dE Bandwidth measurement. Span = approximately 2 to 5 times the 20 dB bandwidth, centered on a hopping channel; 1%≤RBW≤5% of the 20 dB bandwidth; VBW≥3RBW Sweep = auto; Detector function = peak; Trace = mathold. Measure and record the results in the test report. | | | was neasurement. I enable the ettings for 20dB e 20 dB annel; n; VBW≥3RBW; ak; Trace = max | |
| Test Result: | PASS | \mathcal{O} | (0) | 100 | |

5.4.2. Test Instruments

| Name | Manufacturer | Model No. | Serial Number | Calibration Due |
|----------------------|--------------|-----------|---------------|------------------------|
| Spectrum Analyzer | Agilent | N9020A | MY49100619 | Jun. 26, 2025 |
| Combiner Box | Ascentest | AT890-RFB | 1 | 1 |

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5.5. Carrier Frequencies Separation

5.5.1. Test Specification

| Test Requirement: | FCC Part15 C Section 15.247 (a)(1) | | | |
|-------------------|--|--|--|--|
| Test Method: | KDB 558074 D01 v05r02 | | | |
| Limit: | Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. | | | |
| Test Setup: | Spectrum Analyzer EUT | | | |
| Test Mode: | Hopping mode | | | |
| Test Procedure: | 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. Set to the maximum power setting and enable the EUT transmit continuously. Enable the EUT hopping function. Use the following spectrum analyzer settings: Span = wide enough to capture the peaks of two adjacent channels; RBW is set to approximately 30% | | | |
| | of the channel spacing, adjust as necessary to best identify the center of each individual channel; VBW≥RBW; Sweep = auto; Detector function = peak; Trace = max hold. 5. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. Record the value in report. | | | |
| Test Result: | of the channel spacing, adjust as necessary to best identify the center of each individual channel; VBW≥RBW; Sweep = auto; Detector function = peak; Trace = max hold. 5. Use the marker-delta function to determine the separation between the peaks of the adjacent | | | |

5.5.2. Test Instruments

| Name | Manufacturer | Model No. | Serial Number | Calibration Due |
|----------------------|--------------|-----------|---------------|------------------------|
| Spectrum Analyzer | Agilent | N9020A | MY49100619 | Jun. 26, 2025 |
| Combiner Box | Ascentest | AT890-RFB | / | / |



5.6. Hopping Channel Number

5.6.1. Test Specification

| <u> </u> | | | | | |
|-------------------|--|--|--|--|--|
| Test Requirement: | FCC Part15 C Section 15.247 (a)(1) | | | | |
| Test Method: | KDB 558074 D01 v05r02 | | | | |
| Limit: | Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. | | | | |
| Test Setup: | Spectrum Analyzer EUT | | | | |
| Test Mode: | Hopping mode | | | | |
| Test Procedure: | 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. Set to the maximum power setting and enable the EUT transmit continuously. Enable the EUT hopping function. Use the following spectrum analyzer settings: Span = the frequency band of operation; set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller; VBW≥RBW; Sweep = auto; Detector function = peak; Trace = max hold. The number of hopping frequency used is defined as the number of total channel. Record the measurement data in report. | | | | |
| Test Result: | PASS | | | | |
| | | | | | |

5.6.2. Test Instruments

| Name | Manufacturer | Model No. | Serial Number | Calibration Due |
|----------------------|--------------|-----------|---------------|-----------------|
| Spectrum Analyzer | Agilent | N9020A | MY49100619 | Jun. 26, 2025 |
| Combiner Box | Ascentest | AT890-RFB | / | / |

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5.7. Dwell Time

5.7.1. Test Specification

| Test Requirement: | FCC Part15 C Section 15.247 (a)(1) | | |
|---|---|--|--|
| Test Method: KDB 558074 D01 v05r02 | | | |
| Limit: | The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. | | |
| Test Setup: | Spectrum Analyzer EUT | | |
| Test Mode: | Hopping mode | | |
| Test Procedure: | 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. Set to the maximum power setting and enable the EUT transmit continuously. Enable the EUT hopping function. Use the following spectrum analyzer settings: Span = zero span, centered on a hopping channel; RBW shall be ≤ channel spacing and where possible RBW should be set >> 1 / T, where T is the expected dwell time per channel; VBW≥RBW; Sweep = as necessary to capture the entire dwell time per hopping channel; Detector function = peak; Trace = max hold. Measure and record the results in the test report. | | |
| Test Result: | PASS | | |

5.7.2. Test Instruments

| Name | Manufacturer | Model No. | Serial Number | Calibration Due |
|----------------------|--------------|-----------|---------------|------------------------|
| Spectrum Analyzer | Agilent | N9020A | MY49100619 | Jun. 26, 2025 |
| Combiner Box | Ascentest | AT890-RFB | | (6) |

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5.8. Pseudorandom Frequency Hopping Sequence

Test Requirement: FCC Part15 C Section 15.247 (a)(1) requirement:

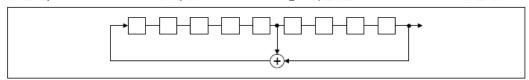
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

Alternatively. Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a Pseudorandom ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

EUT Pseudorandom Frequency Hopping Sequence

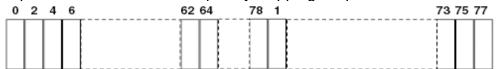
The pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first one of 9 consecutive ones; i.e. the shift register is initialized with nine ones.

- Number of shift register stages: 9
- Length of pseudo-random sequence: 29-1 = 511 bits
- Longest sequence of zeros: 8 (non-inverted signal)



Linear Feedback Shift Register for Generation of the PRBS sequence

An example of Pseudorandom Frequency Hopping Sequence as follow:



Each frequency used equally on the average by each transmitter. The system receivers have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

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5.9. Conducted Band Edge Measurement

5.9.1. Test Specification

| 5.5.1. Test opecification | |
|---------------------------|--|
| Test Requirement: | FCC Part15 C Section 15.247 (d) |
| Test Method: | KDB 558074 D01 v05r02 |
| Limit: | In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits. |
| Test Setup: | Spectrum Analyzer EUT |
| Test Mode: | Transmitting mode with modulation |
| Test Procedure: | Set to the maximum power setting and enable the EUT transmit continuously. Set RBW = 100 kHz (≥1% span=10MHz), VBW = 300 kHz (≥RBW). Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100kHz RBW. The attenuation shall be 30 dB instead of 20 dB when RMS conducted output power procedure is used. Enable hopping function of the EUT and then repeat step 2 and 3. Measure and record the results in the test report. |
| Test Result: | PASS |

5.9.2. Test Instruments

| Name | Manufacturer | Model No. | Serial Number | Calibration Due |
|----------------------|--------------|-----------|---------------|------------------------|
| Spectrum Analyzer | Agilent | N9020A | MY49100619 | Jun. 26, 2025 |
| Combiner Box | Ascentest | AT890-RFB | 3) / | |

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5.10. Conducted Spurious Emission Measurement

5.10.1. Test Specification

| Test Requirement: | FCC Part15 C Section 15.247 (d) |
|-------------------|--|
| Test Method: | KDB 558074 D01 v05r02 |
| Limit: | In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits. |
| Test Setup: | Spectrum Analyzer EUT |
| Test Mode: | Transmitting mode with modulation |
| Test Procedure: | 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. Set to the maximum power setting and enable the EUT transmit continuously. Set RBW = 100 kHz, VBW = 300kHz, scan up through 10th harmonic. All harmonics / spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW. Measure and record the results in the test report. The RF fundamental frequency should be excluded against the limit line in the operating frequency band. |
| Test Result: | PASS |

5.10.2. Test Instruments

| Name | Manufacturer | Model No. | Serial Number | Calibration Due |
|----------------------|--------------|-----------|---------------|------------------------|
| Spectrum Analyzer | Agilent | N9020A | MY49100619 | Jun. 26, 2025 |
| Combiner Box | Ascentest | AT890-RFB | | (C) |

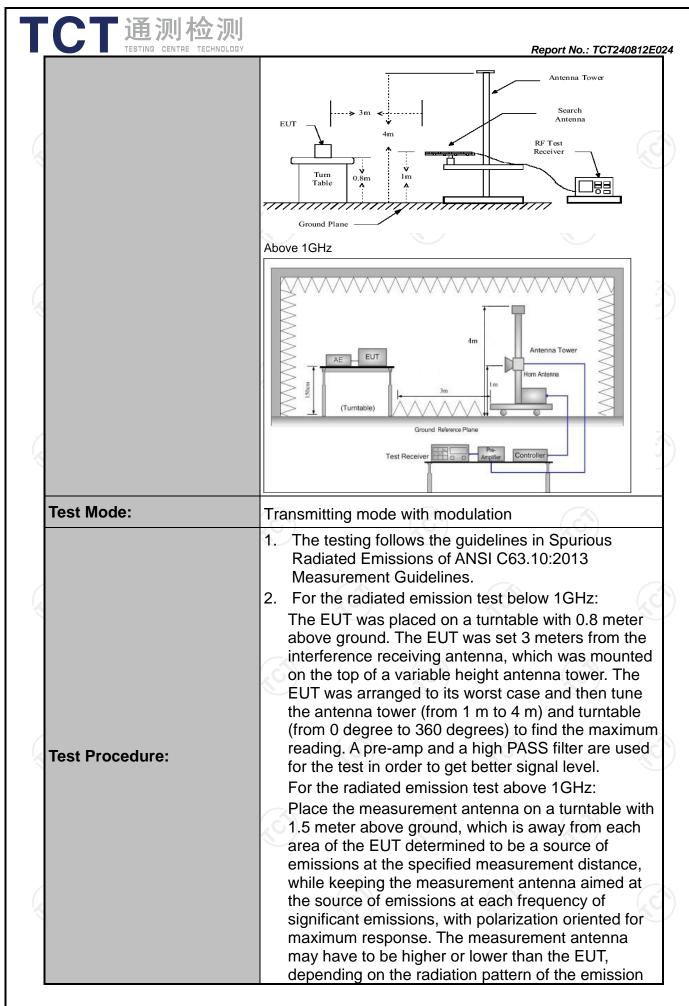
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5.11. Radiated Spurious Emission Measurement

5.11.1. Test Specification

| | | <u> </u> | | | | | | | | |
|-----------------------|-------------------------------------|------------------------------------|-----------------------------------|----------------------|-------------------|--|--|--|--|--|
| Test Requirement: | FCC Part15 | FCC Part15 C Section 15.209 | | | | | | | | |
| Test Method: | ANSI C63.10 | 0:2013 | | | | | | | | |
| Frequency Range: | 9 kHz to 25 (| GHz | | | | | | | | |
| Measurement Distance: | 3 m | | | | 100 |) | | | | |
| Antenna Polarization: | Horizontal & | Vertical | | | | | | | | |
| | Frequency 9kHz-150kHz 150kHz- | 9kHz- 150kHz Quasi-pea | | VBW 1kHz 30kHz | Quas | Remark si-peak Value si-peak Value | | | | |
| Receiver Setup: | 30MHz 30MHz-1GHz | Quasi-pea | | 300KHz 3MHz | Quas | si-peak Value eak Value | | | | |
| | Above 1GHz | Peak | 1MHz | 10Hz | | erage Value | | | | |
| | Frequen | | Field Stre | /meter) | | asurement nce (meters) | | | | |
| | 0.009-0.4 0.490-1.7 | | 2400/F(F 24000/F(| | | 300 | | | | |
| | 1.705-3 | | 30 | 1(112) | 30 | | | | | |
| | 30-88 | | 100 | | 3 | | | | | |
| | 88-216 | 6 | 150 | | (.c. | 3 | | | | |
| Limit: | 216-96 | | 200 | | 3 | | | | | |
| | Above 9 | 60 | 500 | | | 3 | | | | |
| | Frequency | | Field Strength (microvolts/meter) | | ment ce rs) | Detector | | | | |
| | Above 1GH | z - | 500 | 3 | | Average | | | | |
| | | | 5000 | 3 | C | Peak | | | | |
| | | For radiated emissions below 30MHz | | | | | | | | |
| | Distance = 3m | | | | | | | | | |
| Test setup: | 0.8m | Turn table 1m | | | | | | | | |
| | 30MHz to 1GHz | | | | | | | | | |
| A) A) | | A | | | | | | | | |



| 「 「 | |
|---------------------------|--|
| TESTING CENTRE TECHNOLOGY | Report No.: TCT240812E024 |
| | and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. 3. Set to the maximum power setting and enable the |
| | EUT transmit continuously. 4. Use the following spectrum analyzer settings: (1) Span shall wide enough to fully capture the emission being measured; (2) Set RBW=120 kHz for f < 1 GHz, RBW=1MHz for f>1GHz; VBW≥RBW; |
| | Sweep = auto; Detector function = peak; Trace = max hold for peak (3) For average measurement: use duty cycle correction factor method per |
| | 15.35(c). Duty cycle = On time/100 milliseconds On time =N1*L1+N2*L2++Nn-1*LNn-1+Nn*Ln Where N1 is number of type 1 pulses, L1 is length of type 1 pulses, etc. Average Emission Level = Peak Emission Level + 20*log(Duty cycle) |
| | Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level |
| Test results: | PASS |

Fax: 86-755-27673332

Tel: 86-755-27673339

Hotline: 400-6611-140

http://www.tct-lab.com





5.11.2. Test Instruments

| | Radiated Em | nission Test Site | e (966) | |
|-------------------|--------------|-------------------|--------------------|-----------------|
| Name of Equipment | Manufacturer | Model | Serial Number | Calibration Due |
| EMI Test Receiver | R&S | ESCI7 | 100529 | Jan. 31, 2025 |
| Spectrum Analyzer | R&S | FSQ40 | 200061 | Jun. 26, 2025 |
| Pre-amplifier | SKET | LNPA_0118G- 45 | SK2021012 102 | Jan. 31, 2025 |
| Pre-amplifier | SKET | LNPA_1840G- 50 | SK2021092 03500 | Jan. 31, 2025 |
| Pre-amplifier | HP | 8447D | 2727A05017 | Jun. 26, 2025 |
| Loop antenna | Schwarzbeck | FMZB1519B | 00191 | Jun. 26, 2025 |
| Broadband Antenna | Schwarzbeck | VULB9163 | 340 | Jun. 28, 2025 |
| Horn Antenna | Schwarzbeck | BBHA 9120D | 631 | Jun. 28, 2025 |
| Horn Antenna | Schwarzbeck | BBHA 9170 | 00956 | Feb. 02, 2025 |
| Coaxial cable | SKET | RE-03-D | 1 | Jun. 26, 2025 |
| Coaxial cable | SKET | RE-03-M |) / | Jun. 26, 2025 |
| Coaxial cable | SKET | RE-03-L | / | Jun. 26, 2025 |
| Coaxial cable | SKET | RE-04-D | | Jun. 26, 2025 |
| Coaxial cable | SKET | RE-04-M | | Jun. 26, 2025 |
| Coaxial cable | SKET | RE-04-L | / | Jun. 26, 2025 |
| Antenna Mast | Keleto | RE-AM | 1 | (3) |
| EMI Test Software | EZ_EMC | FA-03A2 RE+ | 1.1.4.2 | |

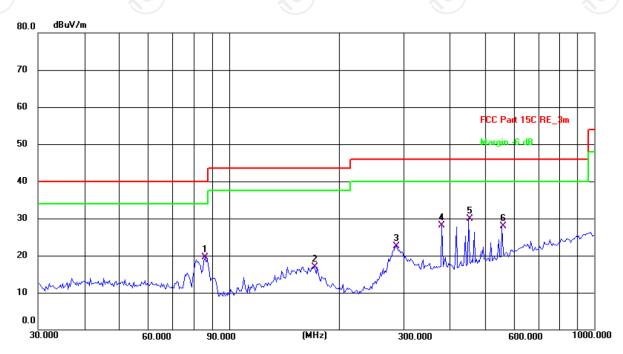


5.11.3. Test Data

Please refer to following diagram for individual

Below 1GHz

Horizontal:



Site: 3m Anechoic Chamber1 Polarization: Horizontal Temperature: 25.7(C) Humidity: 51 %

Limit: FCC Part 15C RE_3m

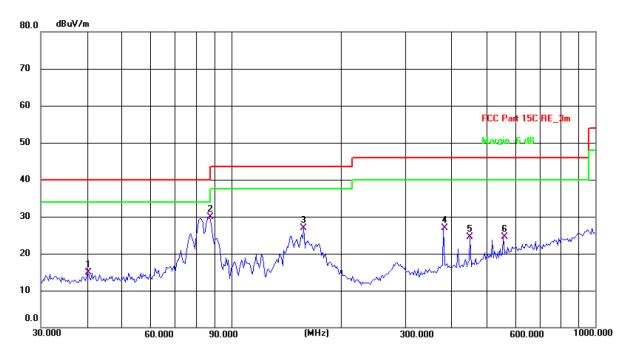
Power: DC 5 V(Adapter Input AC 120 V/60 Hz)

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | | Margin (dB) | Detector | P/F | Remark |
|-----|--------------------|-------------------|------------------|-------------------|-------|----------------|----------|-----|--------|
| 1 | 85.8983 | 36.11 | -16.54 | 19.57 | 40.00 | -20.43 | QP | Р | |
| 2 | 170.7926 | 28.63 | -11.68 | 16.95 | 43.50 | -26.55 | QP | Р | |
| 3 | 286.9823 | 33.77 | -11.33 | 22.44 | 46.00 | -23.56 | QP | Р | |
| 4 | 382.5878 | 37.52 | -9.47 | 28.05 | 46.00 | -17.95 | QP | Р | |
| 5 * | 452.7197 | 38.14 | -8.20 | 29.94 | 46.00 | -16.06 | QP | Р | |
| 6 | 558.7301 | 34.08 | -6.19 | 27.89 | 46.00 | -18.11 | QP | Р | |





Vertical:



Site: 3m Anechoic Chamber1 Polarization: Vertical Temperature: 25.7(C) Humidity: 51 %

Limit: FCC Part 15C RE 3m

Power: DC 5 V(Adapter Input AC 120 V/60 Hz)

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|-----|--------------------|-------------------|------------------|-------------------|-------------------|----------------|----------|-----|--------|
| 1 | 40.2757 | 26.79 | -11.83 | 14.96 | 40.00 | -25.04 | QP | Р | |
| 2 * | 87.1117 | 46.43 | -16.56 | 29.87 | 40.00 | -10.13 | QP | Р | |
| 3 | 158.1123 | 38.20 | -11.29 | 26.91 | 43.50 | -16.59 | QP | Р | |
| 4 | 382.5879 | 36.45 | -9.47 | 26.98 | 46.00 | -19.02 | QP | Р | |
| 5 | 452.7197 | 32.75 | -8.20 | 24.55 | 46.00 | -21.45 | QP | Р | |
| 6 | 558.7302 | 30.62 | -6.19 | 24.43 | 46.00 | -21.57 | QP | Р | |

Note: 1. The low frequency, which started from 9KHz~30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

- 2. Measurements were conducted in all three channels (high, middle, low) and three modulation (GFSK, Pi/4 DQPSK, 8DPSK) and the worst case Mode (Lowest channel and GFSK) was submitted only.
- 3. Freq. = Emission frequency in MHz

Measurement $(dB\mu V/m) = Reading level (dB\mu V) + Corr. Factor (dB)$

Correction Factor= Antenna Factor + Cable loss - Pre-amplifier

 $Limit (dB\mu V/m) = Limit stated in standard$

Over (dB) = Measurement $(dB\mu V/m)$ – Limits $(dB\mu V/m)$

* is meaning the worst frequency has been tested in the test frequency range.

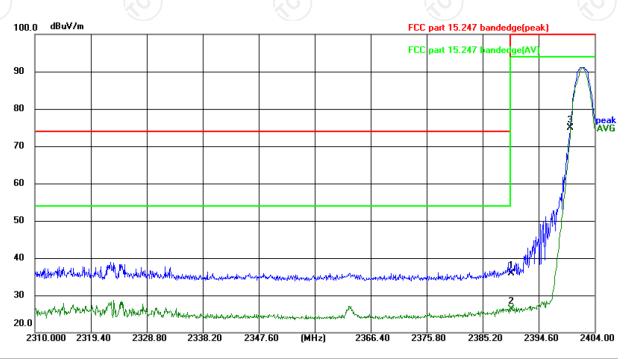
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Test Result of Radiated Spurious at Band edges

Lowest channel 2402:

Horizontal:



Site: 3m Anechoic Chamber Polarization: Horizontal Temperature: 25.3(°C) Humidity: 52 %

Limit: FCC part 15.247 bandedge(peak)

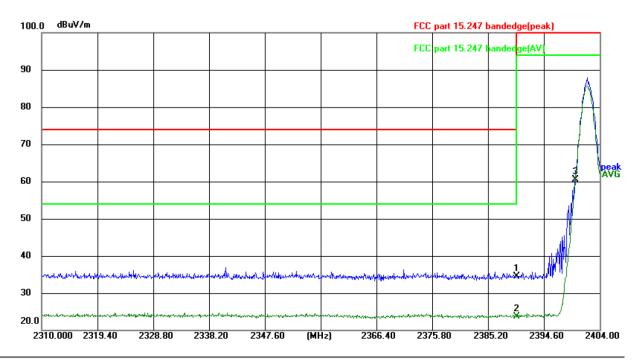
Power:DC 3.8 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | | Margin (dB) | Detector | P/F | Remark |
|-----|--------------------|-------------------|------------------|-------------------|--------|----------------|----------|-----|--------|
| 1 | 2390.000 | 52.62 | -16.70 | 35.92 | 74.00 | -38.08 | peak | Р | |
| 2 * | 2390.000 | 42.96 | -16.70 | 26.26 | 54.00 | -27.74 | AVG | Р | |
| 3 | 2400.000 | 91.52 | -16.67 | 74.85 | 114.00 | -39.15 | peak | Р | |





Vertical:



Site: 3m Anechoic Chamber Polarization: Vertical Temperature: 25.3(°C) Humidity: 52 %

Limit: FCC part 15.247 bandedge(peak)

| Power | ·DC | 20 | ١/ |
|-------|-----|-----|----|
| Power | טט. | 3.0 | V |

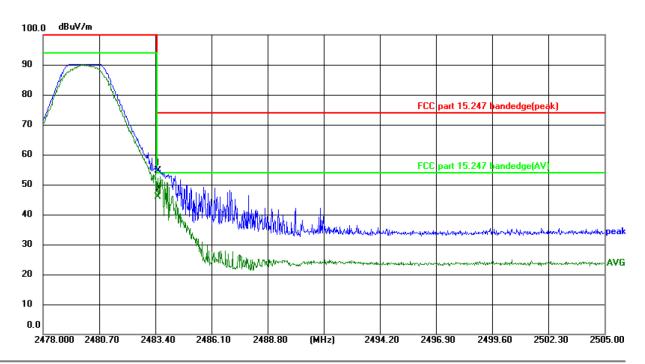
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | | Margin (dB) | Detector | P/F | Remark |
|------|--------------------|-------------------|------------------|-------------------|--------|----------------|----------|-----|--------|
| 1 | 2390.000 | 51.13 | -16.70 | 34.43 | 74.00 | -39.57 | peak | Р | |
| 2 * | 2390.000 | 40.41 | -16.70 | 23.71 | 54.00 | -30.29 | AVG | Р | |
| 3 | 2400.000 | 77.18 | -16.67 | 60.51 | 114.00 | -53.49 | peak | Р | |
| | | | | | | | | | |





Highest channel 2480:

Horizontal:



Site: 3m Anechoic Chamber Polarization: *Horizontal* Temperature: 25.3(℃) Humidity: 52 %

Limit: FCC part 15.247 bandedge(peak)

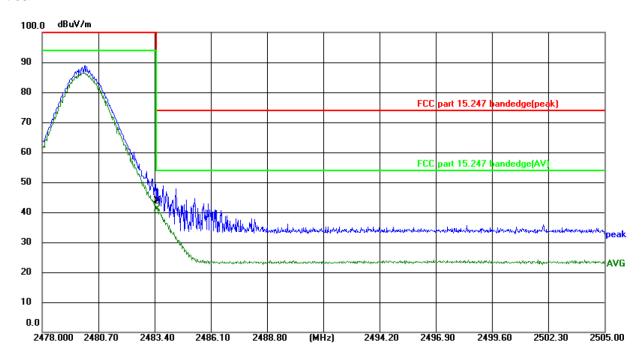
Power:DC 3.8 V

| No. | Frequency (MHz) | Reading (dBuV) | | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|-----|--------------------|-------------------|--------|-------------------|-------------------|----------------|----------|-----|--------|
| 1 | 2483.500 | 71.17 | -16.65 | 54.52 | 74.00 | -19.48 | peak | Р | |
| 2 * | 2483.500 | 62.50 | -16.65 | 45.85 | 54.00 | -8.15 | AVG | Р | |





Vertical:



Site: 3m Anechoic Chamber Polarization: Vertical Temperature: 25.3(℃) Humidity: 52 %

Limit: FCC part 15.247 bandedge(peak)

Power:DC 3.8 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|-----|--------------------|-------------------|------------------|-------------------|-------------------|----------------|----------|-----|--------|
| 1 | 2483.500 | 60.48 | -16.65 | 43.83 | 74.00 | -30.17 | peak | Р | |
| 2 * | 2483.500 | 57.75 | -16.65 | 41.10 | 54.00 | -12.90 | AVG | Р | |

Note: Measurements were conducted in all three modulation (GFSK, Pi/4 DQPSK, 8DPSK), and the worst case Mode (GFSK) was submitted only.





Above 1GHz

| | | | | 710010 | . • | | | | | |
|--------------------|-----------------------|---------------------------|-------------------------|--------------------------------|-----------------------------|---------|------------------------|----------------------|----------------|--|
| Modulation | Modulation Type: GFSK | | | | | | | | | |
| Low channe | Low channel: 2402 MHz | | | | | | | | | |
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBµV) | AV reading (dBuV) | Correction Factor (dB/m) | Emissic Peak (dBµV/m) | AV | Peak limit (dBµV/m) | AV limit (dBµV/m) | Margin (dB) | |
| 4804 | Н | 56.13 | ŀ | -9.51 | 46.62 | - | 74 | 54 | -7.38 | |
| 7206 | Н | 46.02 | ŀ | -1.41 | 44.61 | - | 74 | 54 | -9.39 | |
| | H | | | | | | - | 7-7 | | |
| (| .G') | | (,C) | | | ·C') | | (, (, ') | | |
| 4804 | V | 55.74 | | -9.51 | 46.23 | <u></u> | 74 | 54 | -7.77 | |
| 7206 | V | 46.15 | | -1.41 | 44.74 | | 74 | 54 | -9.26 | |
| | V | | | | | | | | | |

| Middle cha | iddle channel: 2441 MHz | | | Z.C | | (0) | | | Z.C |
|--------------------|-------------------------|---------------------------|-------------------------|--------------------------------|-------|---------|------------------------|----------------------|----------------|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBµV) | AV reading (dBµV) | Correction Factor (dB/m) | Peak | | Peak limit (dBµV/m) | AV limit (dBµV/m) | Margin (dB) |
| 4882 | H | 55.93 | - | -9.36 | 46.57 | - | 74 | 54 | -7.43 |
| 7323 | H | 45.85 | | -1.14 | 44.71 | 1 | 74 | 54 | -9.29 |
| | H | | | | | <u></u> | | | |
| | | | | | | | | | |
| 4882 | V | 55.20 | | -9.36 | 45.84 | | 74 | 54 | -8.16 |
| 7323 | V | 46.37 | | -1.14 | 45.23 | | 74 | 54 | -8.77 |
| | V | (A-2) | | |) | | \\\\ | | |

| High channel: 2480 MHz | | | | | | | | | |
|------------------------|------------------|---------------------------|-------------------------|--------------------------------|-----------------------------|----|------------------------|----------------------|----------------|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBµV) | AV reading (dBµV) | Correction Factor (dB/m) | Emissic Peak (dBµV/m) | AV | Peak limit (dBµV/m) | AV limit (dBµV/m) | Margin (dB) |
| 4960 | Η | 55.58 | } | -9.20 | 46.38 | 1 | 74 | 54 | -7.62 |
| 7440 | Ι | 46.01 | | -0.96 | 45.05 | | 74 | 54 | -8.95 |
| | Η | <i></i> | | | | | | | |
| | | $(.\dot{G})$ | | (, 0 | | | (G) | | (,c) |
| 4960 | V | 55.57 | | -9.20 | 46.37 | | 74 | 54 | -7.63 |
| 7440 | V | 45.49 | | -0.96 | 44.53 | | 74 | 54 | -9.47 |
| | V | | | | | | | | |

Note:

- 1. Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss Pre-amplifier
- 2. Margin (dB) = Emission Level (Peak) (dB μ V/m)-Average limit (dB μ V/m)
- 3. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 5. Data of measurement shown "---"in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.
- 6. Measurements were conducted in all three modulation (GFSK, Pi/4 DQPSK, 8DPSK), and the worst case Mode (GFSK) was submitted only.
- 7. All the restriction bands are compliance with the limit of 15.209.





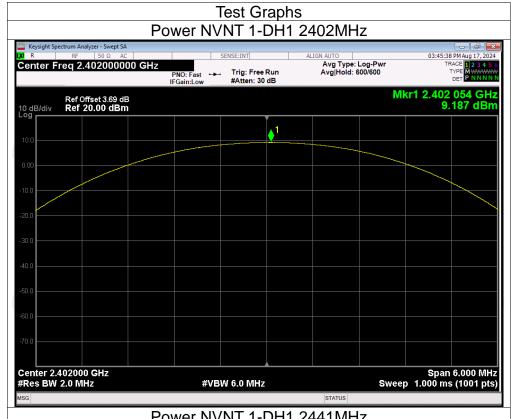
Appendix A: Test Result of Conducted Test

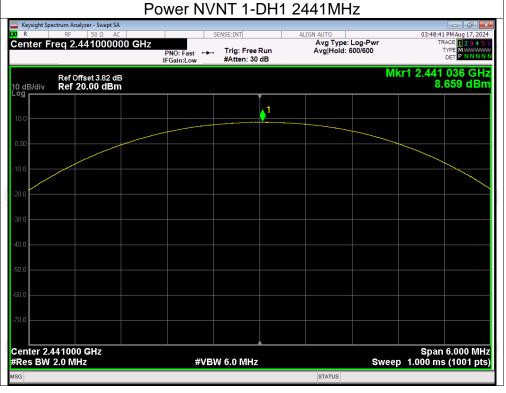
Maximum Conducted Output Power

| maximum conductod catpat i choi | | | | | | | | | | |
|---------------------------------|--------|--------------------|--------------------------|----------------|---------|--|--|--|--|--|
| Condition | Mode | Frequency (MHz) | Conducted Power (dBm) | Limit (dBm) | Verdict | | | | | |
| NVNT | 1-DH1 | 2402 | 9.19 | 30 | Pass | | | | | |
| NVNT | 1-DH1 | 2441 | 8.66 | 30 | Pass | | | | | |
| NVNT | 1-DH1 | 2480 | 8.25 | 30 | Pass | | | | | |
| NVNT | 2-DH1 | 2402 | 8.34 | 21 | Pass | | | | | |
| NVNT | 2-DH1 | 2441 | 8.24 | 21 | Pass | | | | | |
| NVNT | 2-DH1 | 2480 | 8.19 | 21 | Pass | | | | | |
| NVNT | 3-DH1 | 2402 | 8.24 | 21 | Pass | | | | | |
| NVNT | 3-DH1 | 2441 | 8.20 | 21 | Pass | | | | | |
| NVNT | 3-DH1 | 2480 | 8.19 | 21 | Pass | | | | | |
| INVINI | 3-0111 | 2400 | 0.19 | <u> </u> | 1 033 | | | | | |



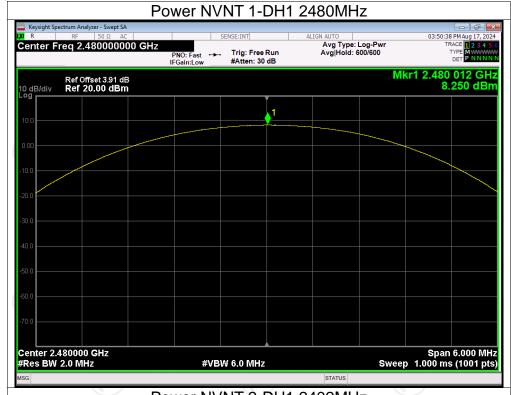


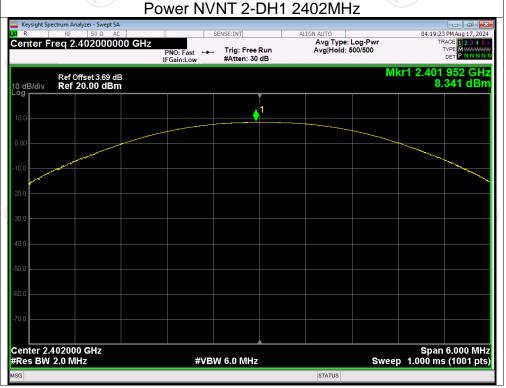






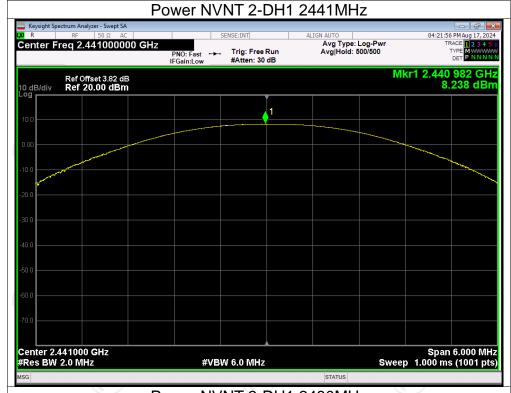


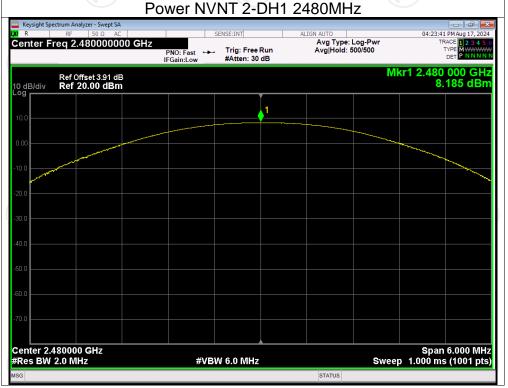






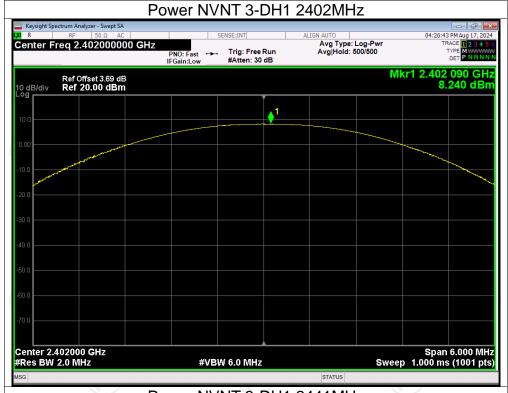


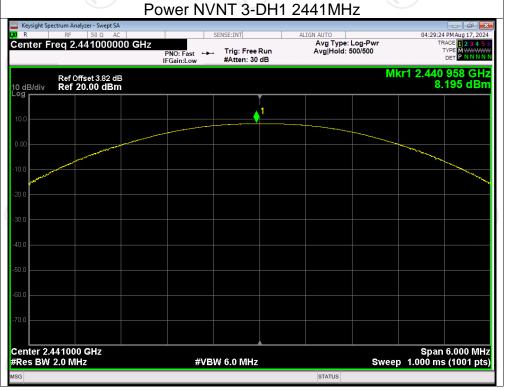




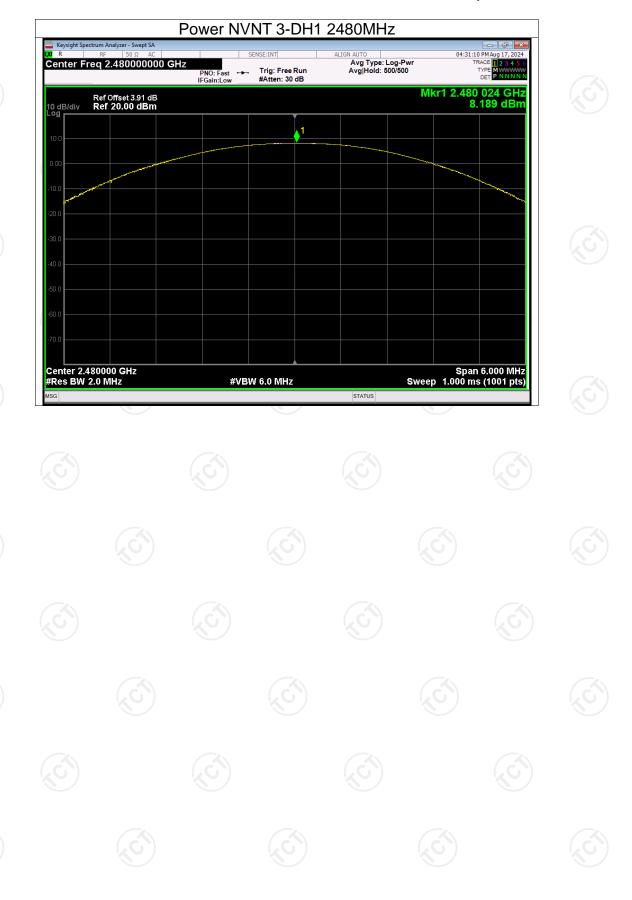














-20dB Bandwidth

| Condition | Mode | Frequency (MHz) | -20 dB Bandwidth (MHz) | Verdict |
|-----------|-------|--------------------|---------------------------|---------|
| NVNT | 1-DH1 | 2402 | 0.797 | Pass |
| NVNT | 1-DH1 | 2441 | 0.843 | Pass |
| NVNT | 1-DH1 | 2480 | 0.839 | Pass |
| NVNT | 2-DH1 | 2402 | 1.244 | Pass |
| NVNT | 2-DH1 | 2441 | 1.248 | Pass |
| NVNT | 2-DH1 | 2480 | 1.250 | Pass |
| NVNT | 3-DH1 | 2402 | 1.248 | Pass |
| NVNT | 3-DH1 | 2441 | 1.251 | Pass |
| NVNT | 3-DH1 | 2480 | 1.254 | Pass |

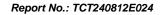








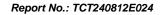








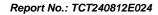








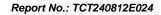




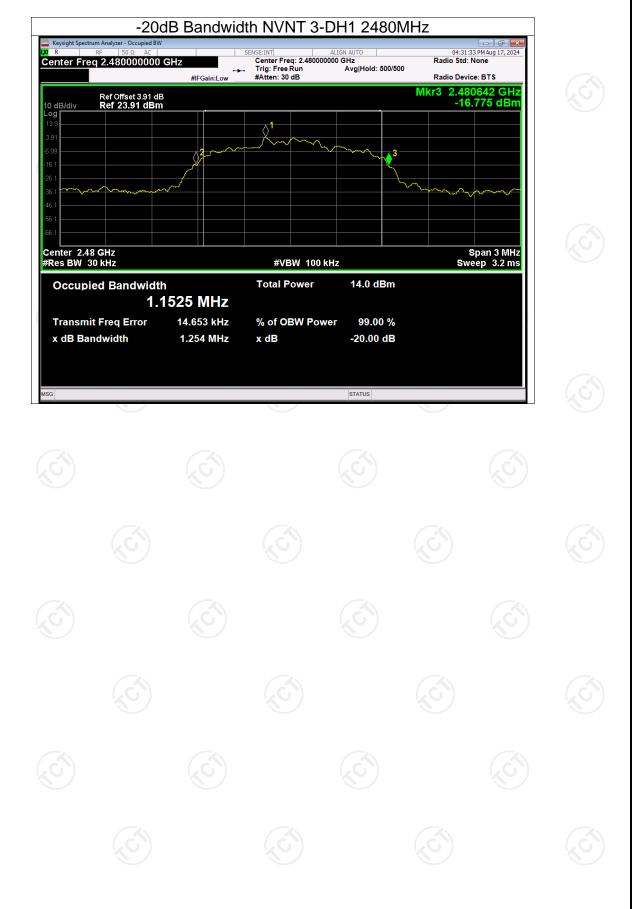














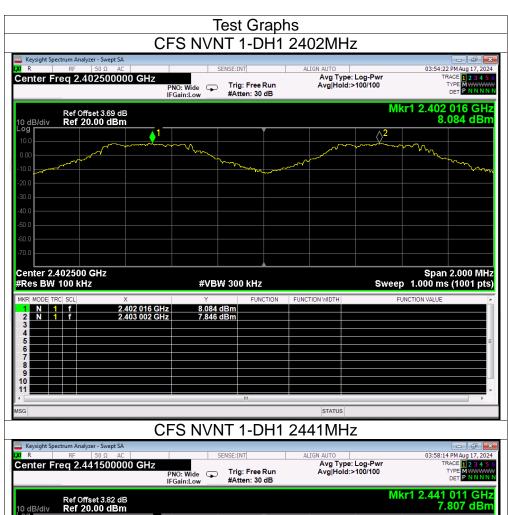
Carrier Frequencies Separation

| Condition Mode | | Hopping Freq1 (MHz) | Hopping Freq2 (MHz) | HFS (MHz) | Limit (MHz) | Verdict |
|----------------|-------|------------------------|------------------------|--------------|----------------|---------|
| NVNT | 1-DH1 | 2402.016 | 2403.002 | 0.986 | 0.843 | Pass |
| NVNT | 1-DH1 | 2441.011 | 2441.997 | 0.986 | 0.843 | Pass |
| NVNT | 1-DH1 | 2479.02 | 2480.019 | 0.999 | 0.843 | Pass |
| NVNT | 2-DH1 | 2401.848 | 2402.848 | 1.000 | 0.833 | Pass |
| NVNT | 2-DH1 | 2440.842 | 2441.852 | 1.010 | 0.833 | Pass |
| NVNT | 2-DH1 | 2478.838 | 2479.856 | 1.018 | 0.833 | Pass |
| NVNT | 3-DH1 | 2401.844 | 2402.848 | 1.004 | 0.836 | Pass |
| NVNT | 3-DH1 | 2440.852 | 2441.850 | 0.998 | 0.836 | Pass |
| NVNT | 3-DH1 | 2478.852 | 2479.850 | 0.998 | 0.836 | Pass |





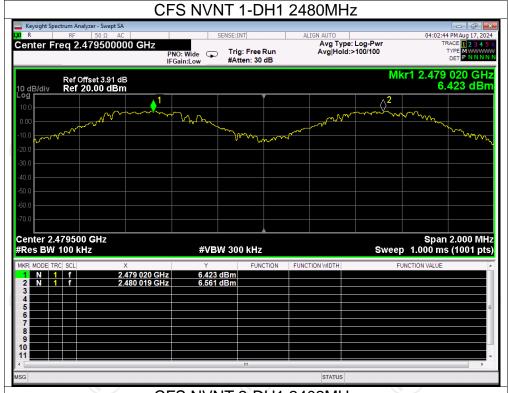


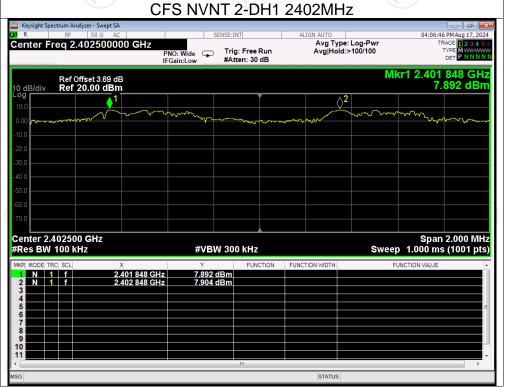






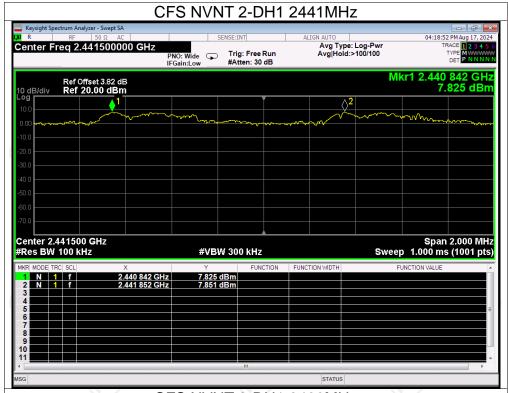


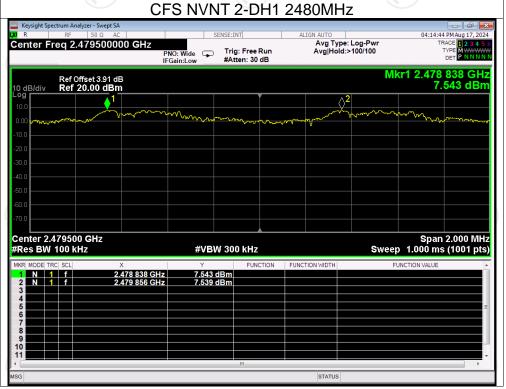






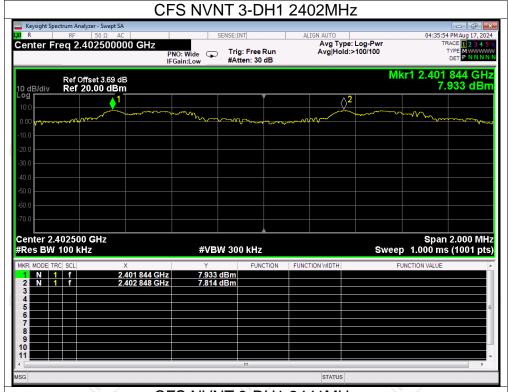


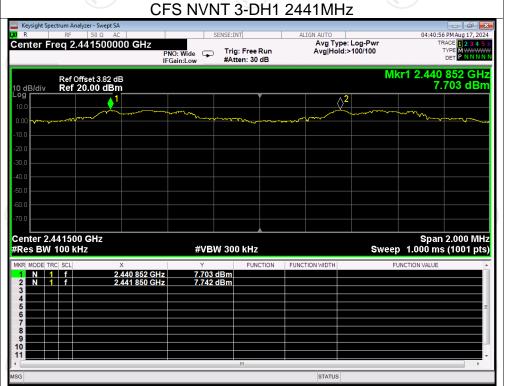


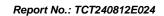




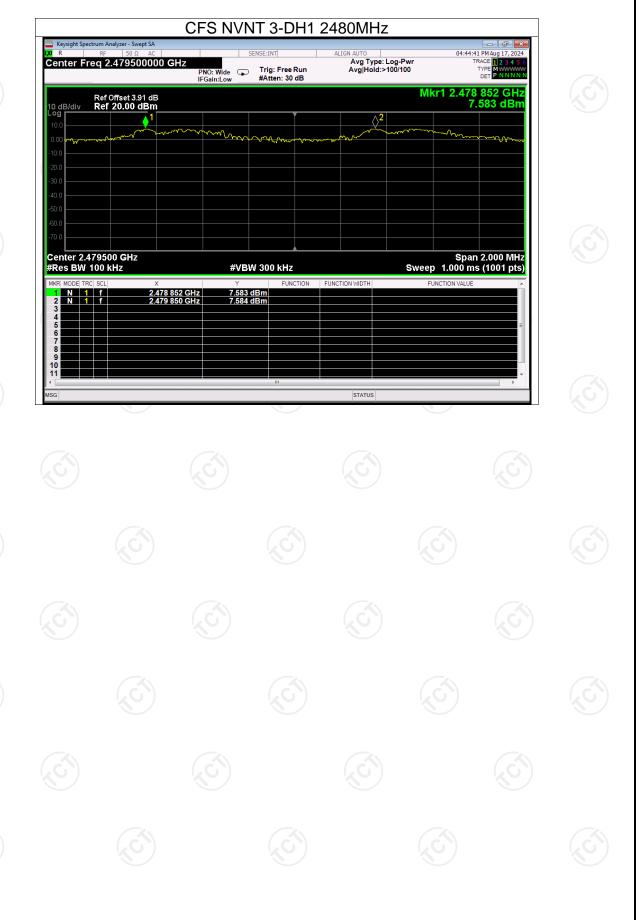








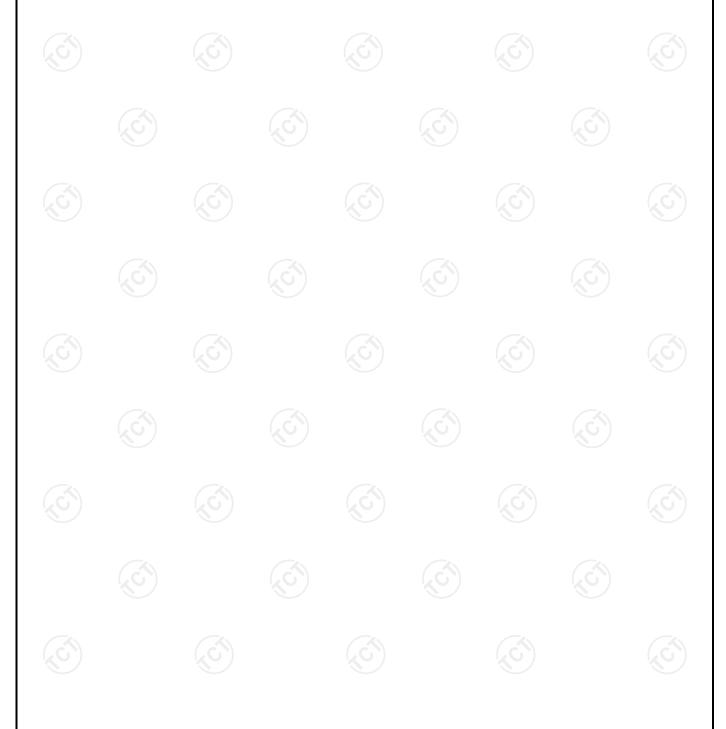


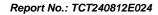




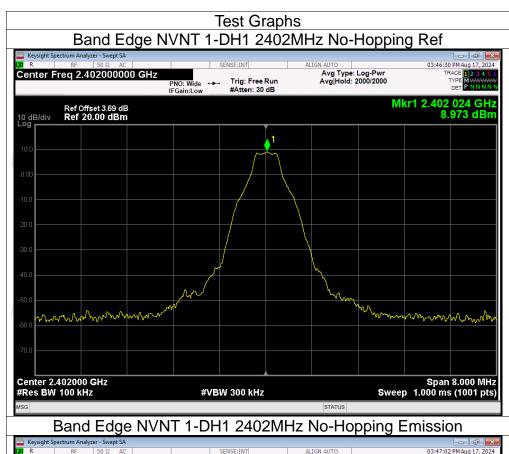
Band Edge

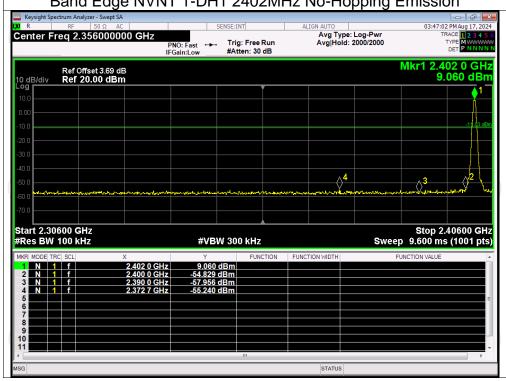
| | | | | | | |
|-------------|-------|--------------------|-----------------|--------------------|----------------|---------|
| Condition | Mode | Frequency (MHz) | Hopping Mode | Max Value (dBc) | Limit (dBc) | Verdict |
| NVNT | 1-DH1 | 2402 | No-Hopping | -64.21 | -20 | Pass |
| NVNT | 1-DH1 | 2480 | No-Hopping | -63.25 | -20 | Pass |
| NVNT | 2-DH1 | 2402 | No-Hopping | -63.16 | -20 | Pass |
| NVNT | 2-DH1 | 2480 | No-Hopping | -61.80 | -20 | Pass |
| NVNT | 3-DH1 | 2402 | No-Hopping | -61.65 | -20 | Pass |
| NVNT | 3-DH1 | 2480 | No-Hopping | -63.10 | -20 | Pass |

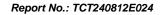




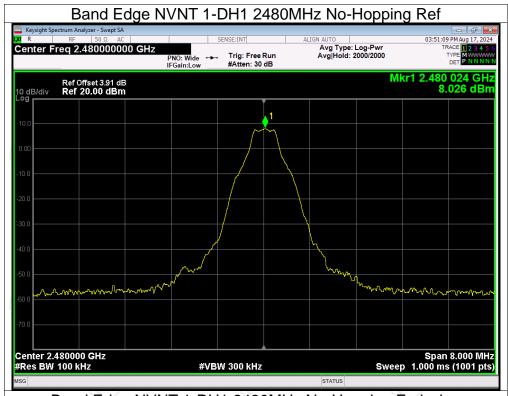


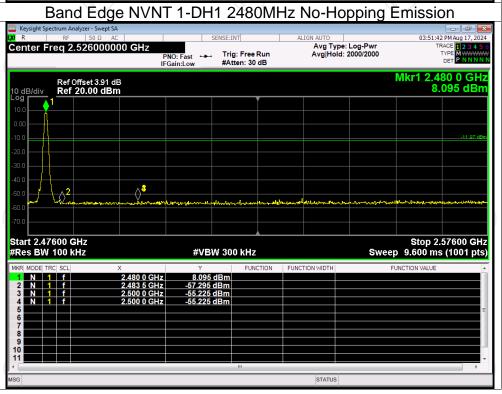


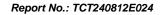




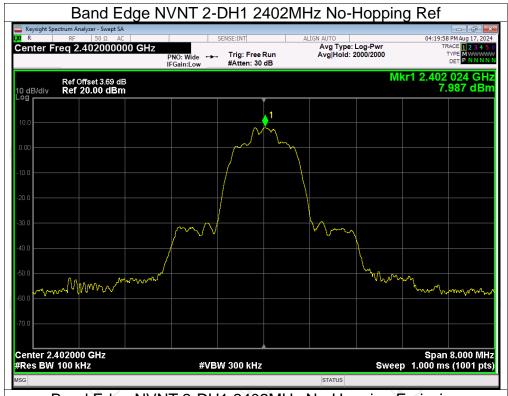


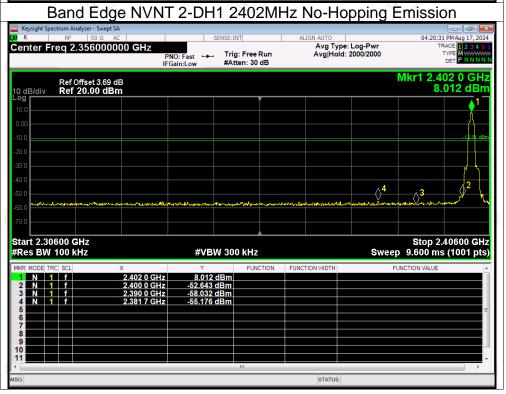


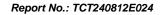




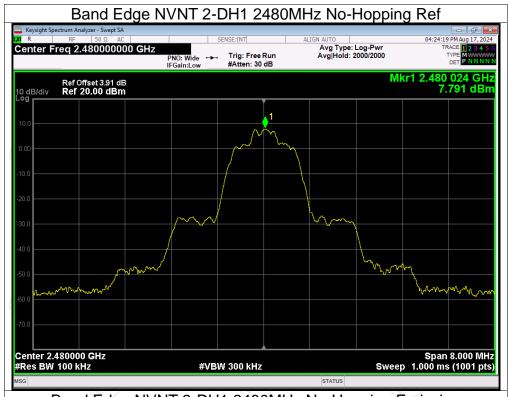


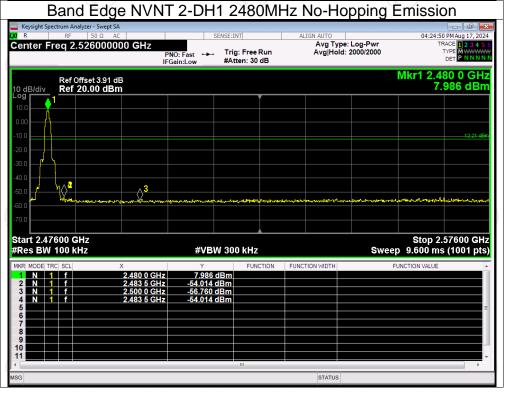


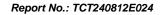




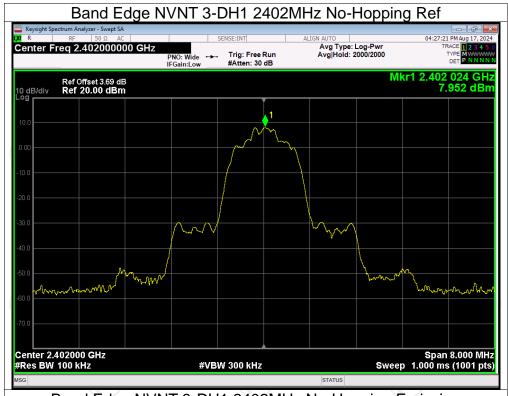


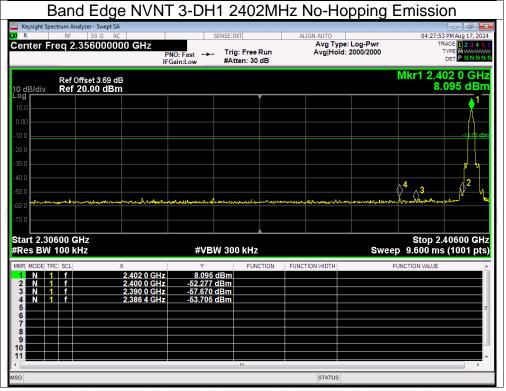


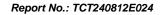




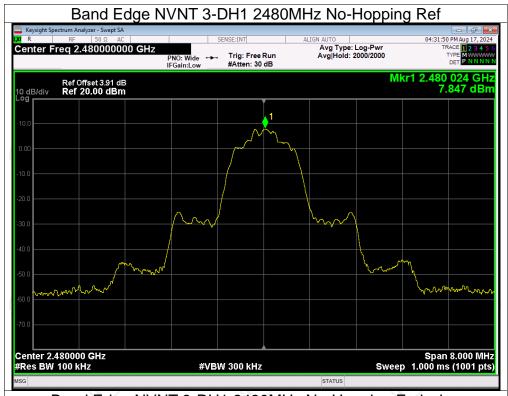


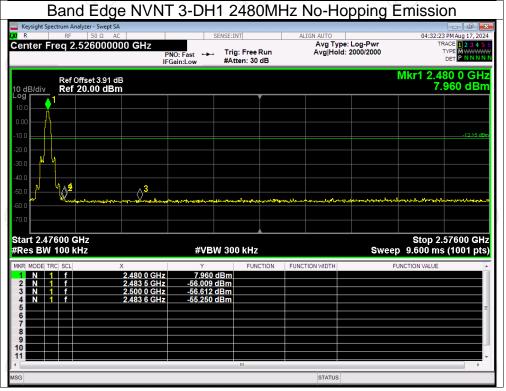








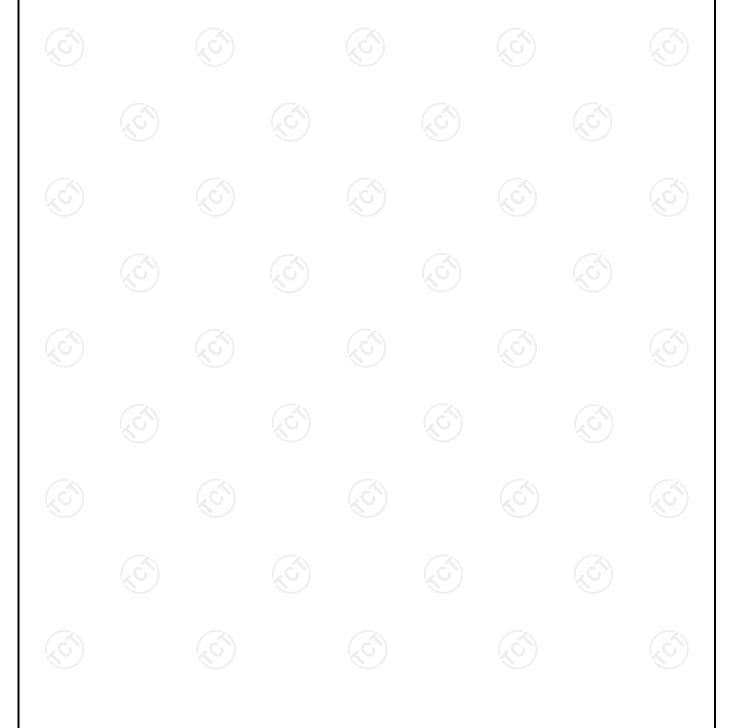


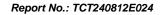




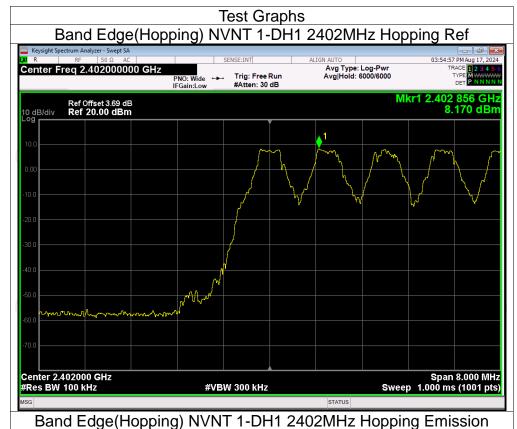
Band Edge(Hopping)

| = = = = = = = = = = = = = = = = = = = | | | | | | | |
|---------------------------------------|-------|--------------------|-----------------|--------------------|----------------|---------|--|
| Condition | Mode | Frequency (MHz) | Hopping Mode | Max Value (dBc) | Limit (dBc) | Verdict | |
| NVNT | 1-DH1 | 2402 | Hopping | -63.35 | -20 | Pass | |
| NVNT | 1-DH1 | 2480 | Hopping | -62.66 | -20 | Pass | |
| NVNT | 2-DH1 | 2402 | Hopping | -63.16 | -20 | Pass | |
| NVNT | 2-DH1 | 2480 | Hopping | -62.97 | -20 | Pass | |
| NVNT | 3-DH1 | 2402 | Hopping | -62.61 | -20 | Pass | |
| NVNT | 3-DH1 | 2480 | Hopping | -62.95 | -20 | Pass | |

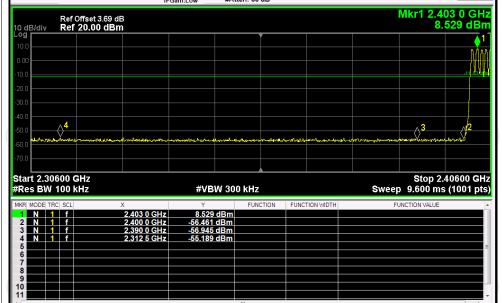


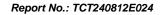




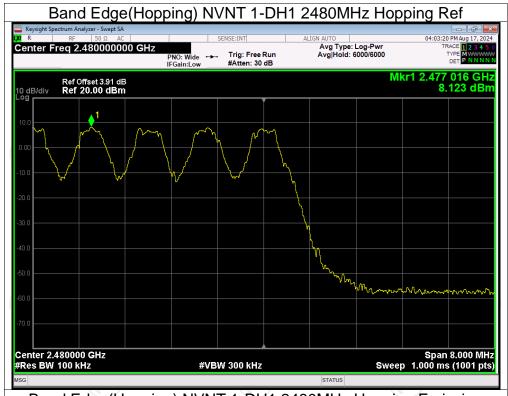


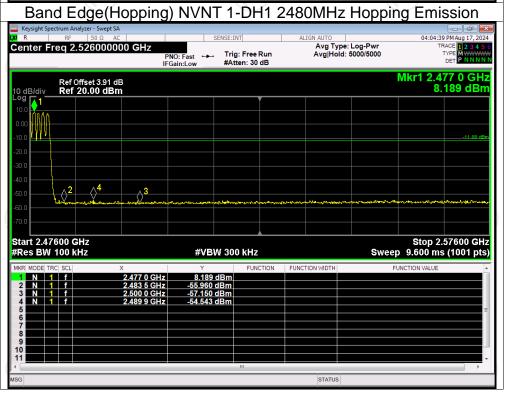








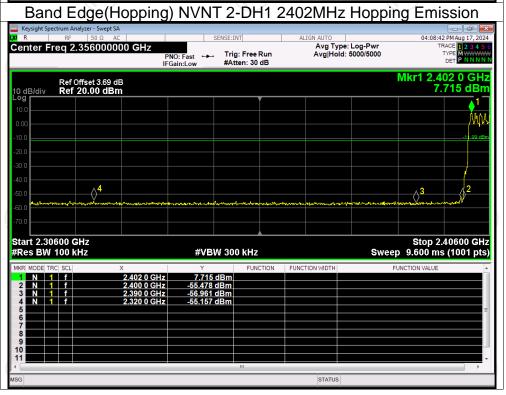






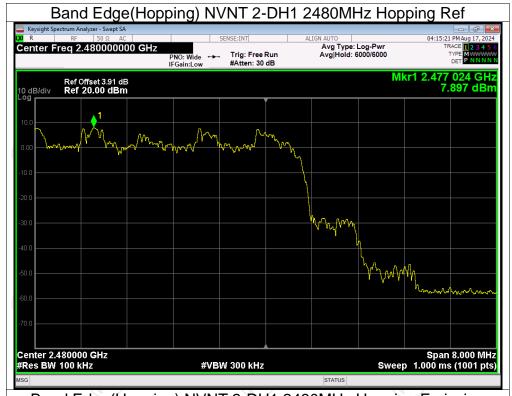


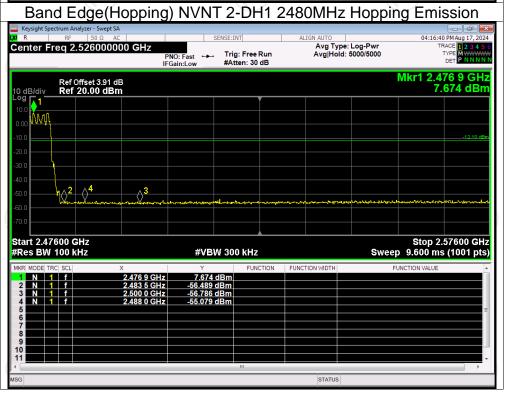








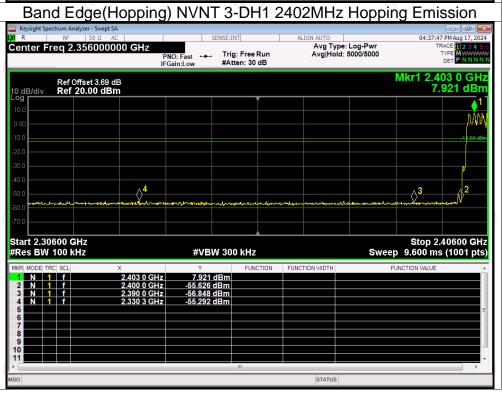


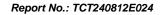




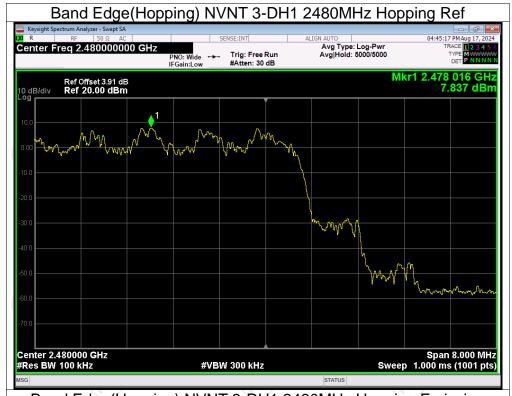


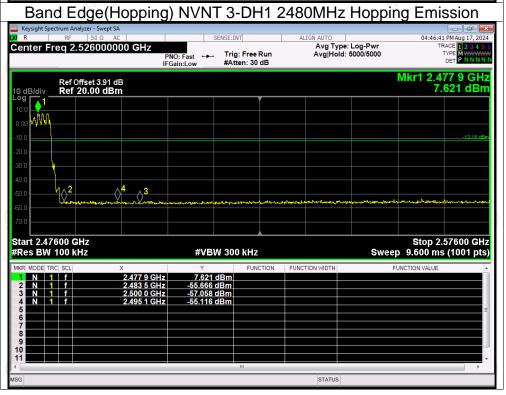














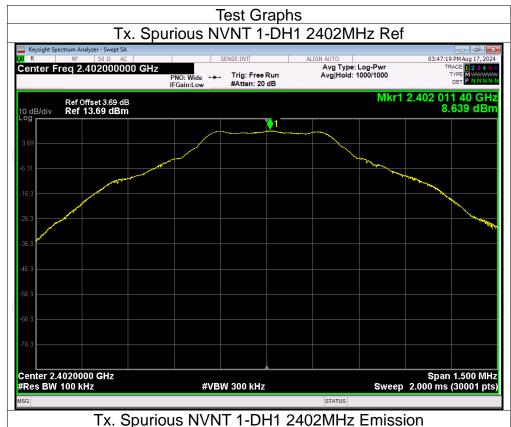
Conducted RF Spurious Emission

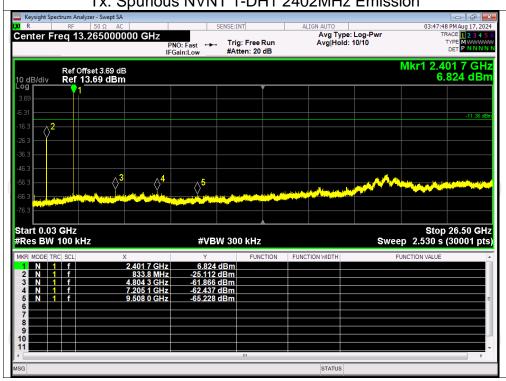
| Condition | Mode | Frequency (MHz) | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-------|-----------------|-----------------|-------------|---------|
| NVNT | 1-DH1 | 2402 | -33.75 | -20 | Pass |
| NVNT | 1-DH1 | 2441 | -41.70 | -20 | Pass |
| NVNT | 1-DH1 | 2480 | -58.39 | -20 | Pass |
| NVNT | 2-DH1 | 2402 | -37.90 | -20 | Pass |
| NVNT | 2-DH1 | 2441 | -58.59 | -20 | Pass |
| NVNT | 2-DH1 | 2480 | -58.19 | -20 | Pass |
| NVNT | 3-DH1 | 2402 | -30.47 | -20 | Pass |
| NVNT | 3-DH1 | 2441 | -51.33 | -20 | Pass |
| NVNT | 3-DH1 | 2480 | -52.16 | -20 | Pass |







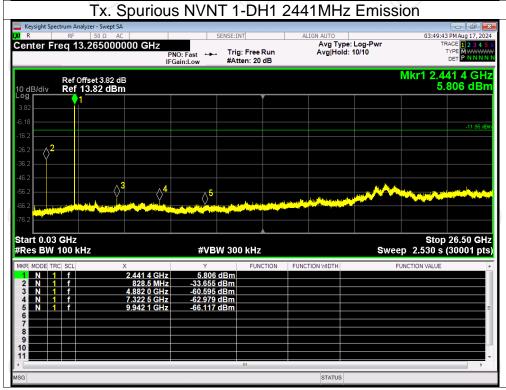






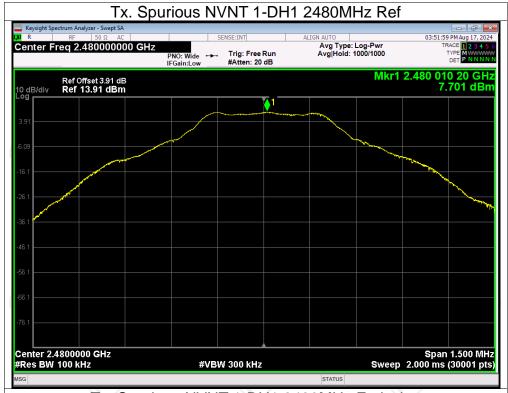


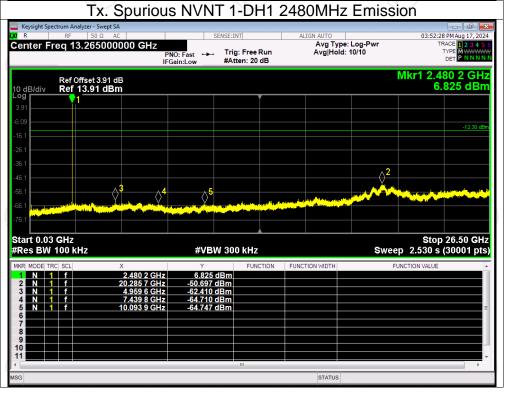






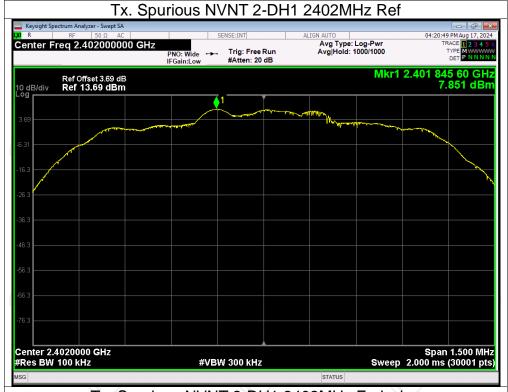


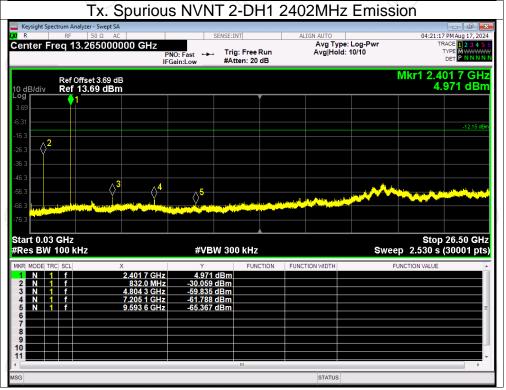


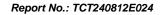




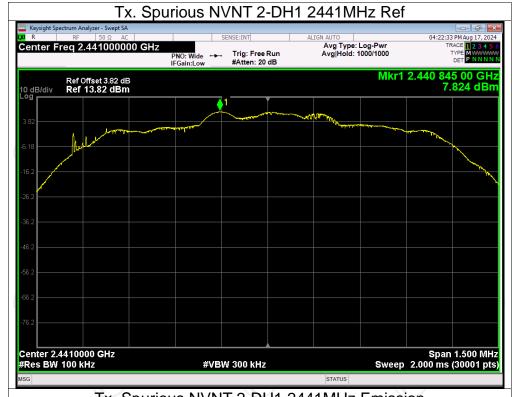


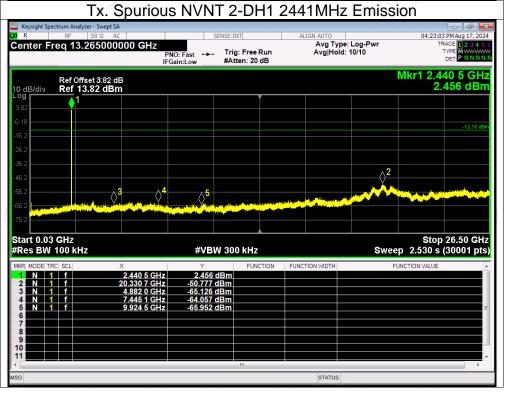








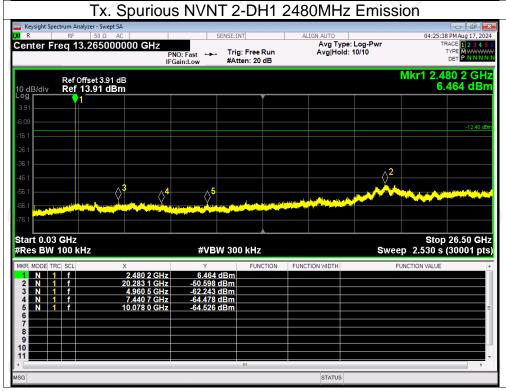






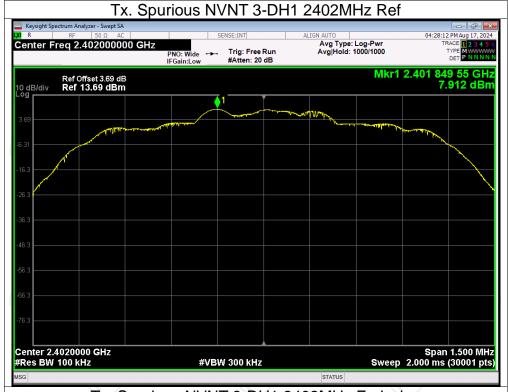


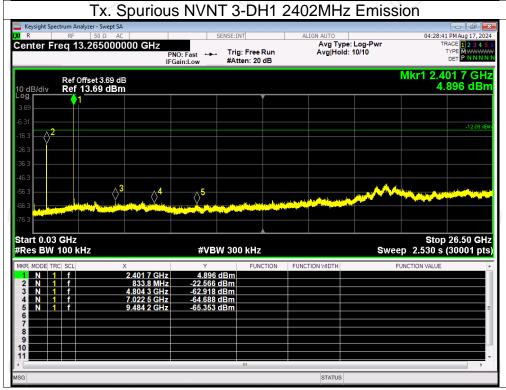






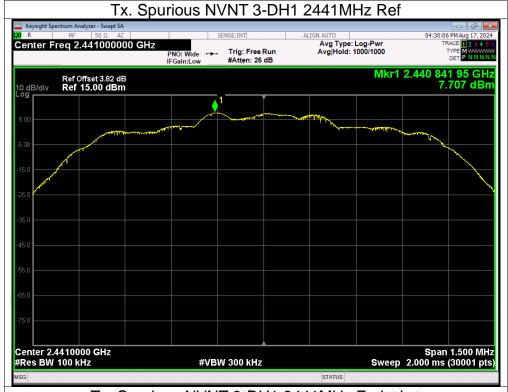


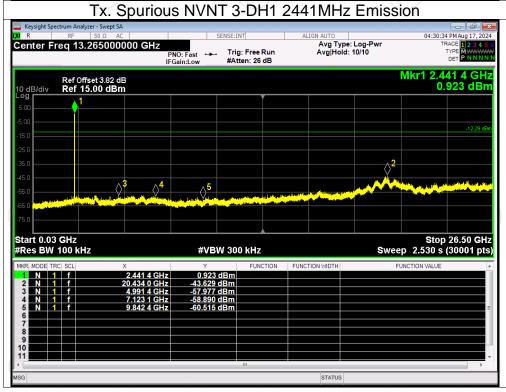








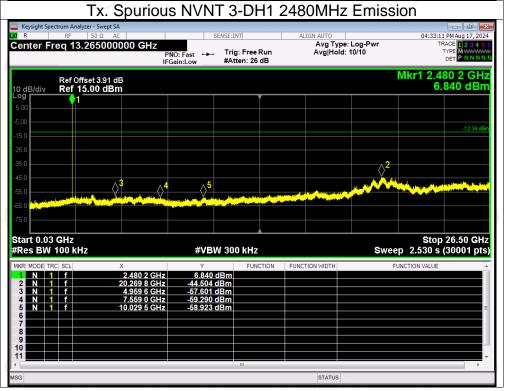








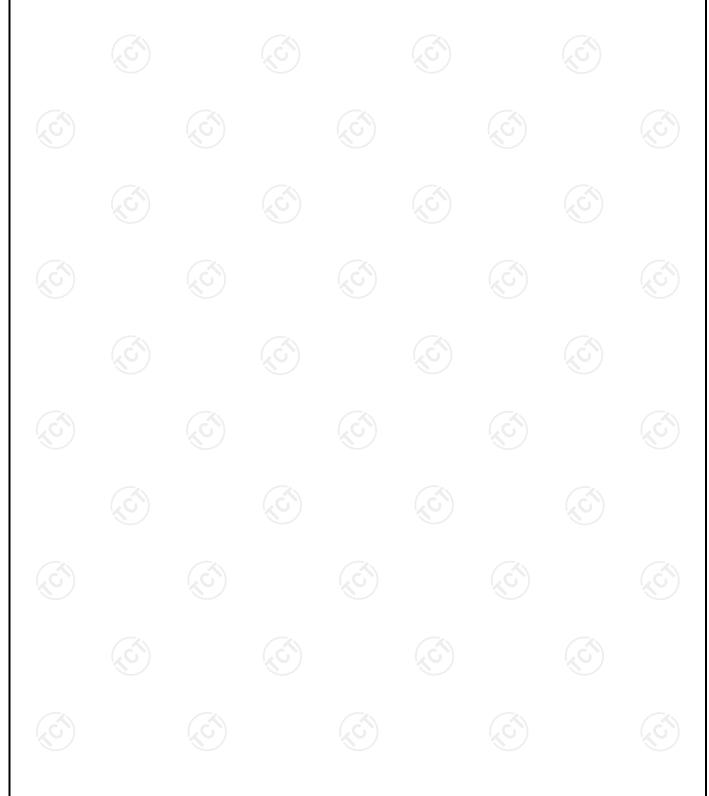






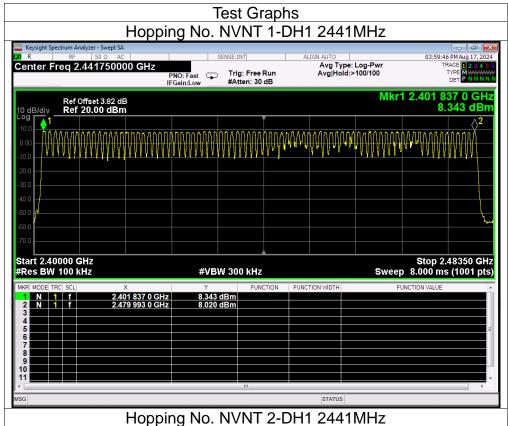
Number of Hopping Channel

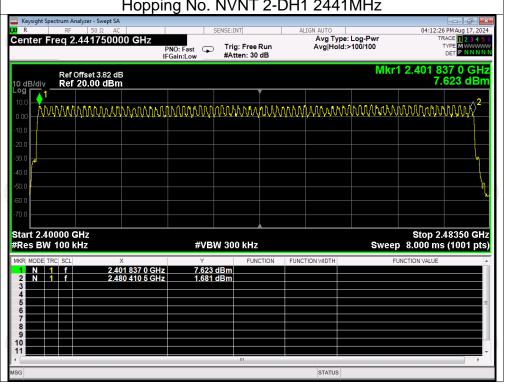
| Condition | Mode | Hopping Number | Limit | Verdict |
|-----------|-------|----------------|-------|---------|
| NVNT | 1-DH1 | 79 | 15 | Pass |
| NVNT | 2-DH1 | 79 | 15 | Pass |
| NVNT | 3-DH1 | 79 | 15 | Pass |





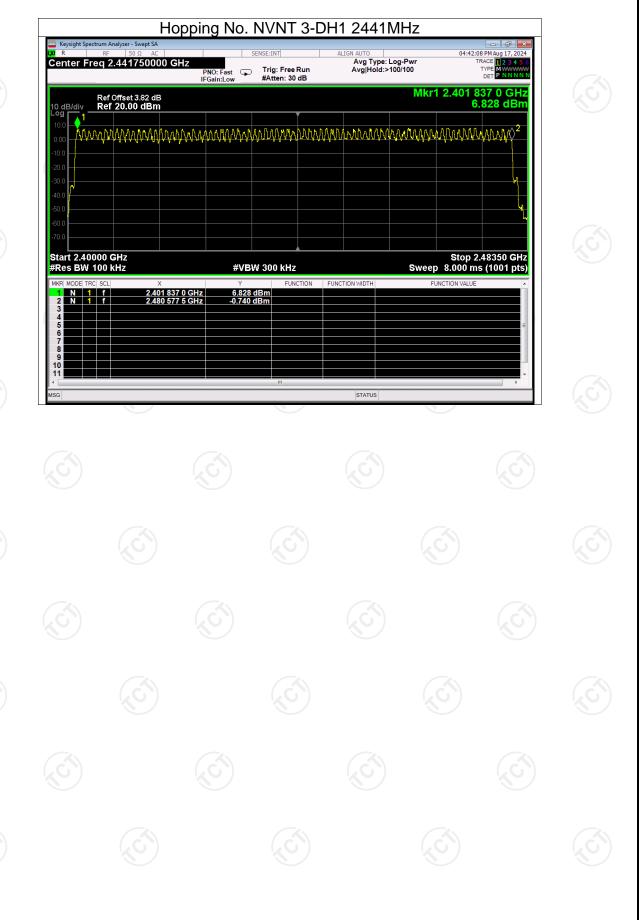














Dwell Time

| C | ondition | Mode | Frequency (MHz) | Antenna | Pulse Time (ms) | Total Dwell Time (ms) | Burst Count | Period Time (ms) | Limit (ms) | Verdict |
|---|----------|-------|--------------------|---------|-----------------------|--------------------------------|----------------|------------------------|---------------|---------|
| | NVNT | 1-DH1 | 2441 | Ant1 | 0.38 | 120.46 | 317 | 31600 | 400 | Pass |
| | NVNT | 1-DH3 | 2441 | Ant1 | 1.63 | 254.28 | 156 | 31600 | 400 | Pass |
| | NVNT | 1-DH5 | 2441 | Ant1 | 2.88 | 293.76 | 102 | 31600 | 400 | Pass |
| | NVNT | 2-DH1 | 2441 | Ant1 | 0.39 | 123.24 | 316 | 31600 | 400 | Pass |
| | NVNT | 2-DH3 | 2441 | Ant1 | 1.64 | 244.36 | 149 | 31600 | 400 | Pass |
| | NVNT | 2-DH5 | 2441 | Ant1 | 2.89 | 306.34 | 106 | 31600 | 400 | Pass |
| | NVNT | 3-DH1 | 2441 | Ant1 | 0.39 | 120.51 | 309 | 31600 | 400 | Pass |
| | NVNT | 3-DH3 | 2441 | Ant1 | 1.64 | 254.2 | 155 | 31600 | 400 | Pass |
| | NVNT | 3-DH5 | 2441 | Ant1 | 2.89 | 306.34 | 106 | 31600 | 400 | Pass |







