

TEST REPORT

| Report No.: | BCTC2502627448E |
|----------------------|-----------------------------------|
| Applicant: | SHENZHEN JUNYE ELECTRONICS CO LTD |
| Product Name: | TWS Earbuds |
| Test Model: | Y96 |
| Tested Date: | 2025-02-12 to 2025-02-14 |
| Issued Date: | 2025-03-04 |
| | |
| She 미상(21回 | nzhen BCTC Testing Co., Ltd. |
| | |
| No.: BCTC/RF-EMC-005 | Page: 1 of 81 |



FCC ID: 2BB3B-TWSY96

| Product Name: | TWS Earbuds |
|-----------------------|---|
| Trademark: | N/A |
| Model/Type Reference: | Y96,V40057W2-BLK,SKU#2199136 |
| Prepared For: | SHENZHEN JUNYE ELECTRONICS CO LTD |
| Address: | 201,Building 7,Xingye er Road,Fenghuang Village, Fuyong Town,Baoan District, Shenzhen City,Guangdong Province,China |
| Manufacturer: | SHENZHEN JUNYE ELECTRONICS CO LTD |
| Address: | 201,Building 7,Xingye er Road,Fenghuang Village, Fuyong Town,Baoan District, Shenzhen City,Guangdong Province,China |
| Prepared By: | Shenzhen BCTC Testing Co., Ltd |
| Address: | 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China |
| Sample Received Date: | 2025-02-12 |
| Sample Tested Date: | 2025-02-12 to 2025-02-14 |
| Report No.: | BCTC2502627448E |
| Test Standards | FCC Part15.247 ANSI C63.10-2013 |
| Test Results | PASS |
| Remark: | This is Bluetooth Classic radio test report. |

Tested by:

Vave

Brave Zeng/ Project Handler

Approved by: Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

Page: 2 of 81



Table of Content

| Test | Report Declaration F | Page |
|------|--|-------------|
| 1. | Version | 5 |
| 2. | Test Summary | 6 |
| 3. | Measurement Uncertainty | 7 |
| 4. | Product Information and Test Setup | |
| 4.1 | Product Information | |
| 4.2 | Test Setup Configuration | 8 |
| 4.3 | Support Equipment | |
| 4.4 | Channel List | |
| 4.5 | Test Mode | |
| 4.6 | Table Of Parameters Of Text Software Setting | |
| 5. | Test Facility And Test Instrument Used | |
| 5.1 | Test Facility | |
| 5.2 | Test Instrument Used | |
| 6. | Conducted Emissions | |
| 6.1 | Block Diagram Of Test Setup | |
| 6.2 | Limit | |
| 6.3 | Test procedure | |
| 6.4 | EUT operating Conditions | |
| 6.5 | Test Result | |
| 7. | Radiated emissions | |
| 7.1 | Block Diagram Of Test Setup | |
| 7.2 | Limit | |
| 7.3 | Test procedure | |
| 7.4 | EUT operating Conditions | |
| 7.5 | Test Result | |
| 8. | Radiated Band Emission Measurement and Restricted Bands of Operation | |
| 8.1 | Block Diagram Of Test Setup. | |
| 8.2 | Limit | |
| 8.3 | Test procedure | |
| 8.4 | EUT operating Conditions | |
| 8.5 | Test Result. | |
| 9. | Spurious RF Conducted Emissions | |
| 9.1 | Block Diagram Of Test Setup | 27 |
| 9.2 | Limit | |
| 9.3 | Test procedure | 27 |
| 0.1 | Test procedure Test Result | 28 |
| 10. | 20 dB Bandwidth | 49 |
| 10.1 | Block Diagram Of Test Setun | 49 |
| 10.2 | Limit | 49 |
| 10.2 | Tast procedure | 49 |
| 10.5 | Test Result Maximum Peak Output Power Block Diagram Of Test Setup Limit | |
| 11. | Maximum Peak Output Power | |
| 11.1 | Block Diagram Of Test Setup | |
| 11.2 | | |
| 11.3 | Test procedure | |
| 11.0 | | |

JC JC JC

еро



| 11.4 Test Result | |
|----------------------------------|----|
| 12. Hopping Channel Separation | |
| 12.1 Block Diagram Of Test Setup | 62 |
| 12.2 Limit | 62 |
| 12.3 Test procedure | 62 |
| 12.4 Test Result | 62 |
| 13. Number of Hopping Frequency | 68 |
| 13.1 Block Diagram Of Test Setup | 68 |
| 13.2 Limit | 68 |
| 13.3 Test procedure | 68 |
| 13.4 Test Result | 68 |
| 14. Dwell Time | 71 |
| 14.1 Block Diagram Of Test Setup | 71 |
| 14.2 Limit | 71 |
| 14.3 Test procedure | 71 |
| 14.4 Test Result | 71 |
| 15. Antenna Requirement | 78 |
| 15.1 Limit | 78 |
| 15.2 Test Result | 78 |
| 16. EUT Test Setup Photographs | 79 |

t Sea

Page: 4 of 81



1. Version

| Report No. | Issue Date | Description | Approved |
|-----------------|------------|-------------|----------|
| BCTC2502627448E | 2025-03-04 | Original | Valid |



Page: 5 of 81



Test Summary 2.

The Product has been tested according to the following specifications:

| No. | Test Parameter | Clause No. | Results |
|-----|---|-----------------------------------|---------|
| 1 | Conducted emission AC power port | §15.207 | PASS |
| 2 | Conducted peak output power for FHSS | §15.247(b)(1) | PASS |
| 3 | 20dB Occupied bandwidth | §15.247(a)(1) | PASS |
| 4 | Number of hopping frequencies | §15.247(a)(1)(iii) | PASS |
| 5 | Dwell Time | §15.247(a)(1)(iii) | PASS |
| 6 | Spurious RF conducted emissions | §15.247(d) | PASS |
| 7 | Band edge | §15.247(d) | PASS |
| 8 | Spurious radiated emissions for transmitter | §15.247(d) & §15.209 & §15.205 | PASS |
| 9 | Antenna Requirement | 15.203 | PASS |
| | N/A (Not Applicable) | | |

NOTE1: N/A (Not Applicable) NOTE2: According to FCC OET KDB 558074, the report use radiated measurements in the restricted frequency bands. In addition, the radiated test is also performed to ensure the emissions emanating from the device cabinet also comply with the applicable limits.

Page: 6 of 81



3. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

| No. | Item | Uncertainty |
|-----|--|-------------|
| 1 | 3m chamber Radiated spurious emission(30MHz-1GHz) | U=4.3dB |
| 2 | 3m chamber Radiated spurious emission(9KHz-30MHz) | U=3.7dB |
| 3 | 3m chamber Radiated spurious emission(1GHz-18GHz) | U=4.5dB |
| 4 | 3m chamber Radiated spurious emission(18GHz-40GHz) | U=3.34dB |
| 5 | Conducted Emission (150kHz-30MHz) | U=3.20dB |
| 6 | Conducted Adjacent channel power | U=1.38dB |
| 7 | Conducted output power uncertainty Above 1G | U=1.576dB |
| 8 | Conducted output power uncertainty below 1G | U=1.28dB |
| 9 | humidity uncertainty | U=5.3% |
| 10 | Temperature uncertainty | U=0.59°C |



No.: BCTC/RF-EMC-005

Page: 7 of 81



4. Product Information and Test Setup

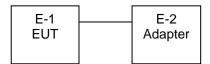
4.1 Product Information

| Model/Type reference: | Y96,V40057W2-BLK,SKU#2199136 |
|-----------------------|---|
| Model differences: | The following models of units we produce are identical in electrical, mechanical and physical structure; The difference is only in the model name, we finally have Y96 as test model. |
| Hardware Version: | N/A |
| Software Version: | N/A |
| Operation Frequency: | Bluetooth: 2402-2480MHz |
| Type of Modulation: | Bluetooth: GFSK, π/ 4 DQPSK,8DPSK |
| Number Of Channel | 79CH |
| Antenna installation: | Internal antenna |
| Antenna Gain: | 2.7dBi |
| Remark: | The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information. |
| power supply: | DC 5V,1A |
| Battery: | DC 3.7V/30mAh |

4.2 Test Setup Configuration

See test photographs attached in eut test setup photographs for the actual connections between product and support equipment.

Conducted Emission:



Radiated Spurious Emission



Page: 8 of 81

Edition: B.2

E



4.3 Support Equipment

| No. | Device Type | Brand | Model | Series No. | Note |
|-----|-------------|-------|-------|------------|-----------|
| E-1 | TWS Earbuds | N/A | Y96 | N/A | EUT |
| E-2 | Adapter | N/A | N/A | N/A | Auxiliary |

| ltem | Shielded Type | Ferrite Core | Length | Note |
|------|---------------|--------------|--------|------|
| C-1 | N/A | N/A | N/A | N/A |

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Channel List

| СН | Frequency (MHz) | СН | Frequency (MHz) | СН | Frequency (MHz) | СН | Frequency (MHz) |
|----|--------------------|----|--------------------|----|--------------------|----|--------------------|
| 0 | 2402 | 1 | 2403 | 2 | 2404 | 3 | 2405 |
| 4 | 2406 | 5 | 2407 | 6 | 2408 | 7 | 2409 |
| 8 | 2410 | 9 | 2411 | 10 | 2412 | 11 | 2413 |
| 12 | 2414 | 13 | 2415 | 14 | 2416 | 15 | 2417 |
| 16 | 2418 | 17 | 2419 | 18 | 2420 | 19 | 2421 |
| 20 | 2422 | 21 | 2423 | 22 | 2424 | 23 | 2425 |
| 24 | 2426 | 25 | 2427 | 26 | 2428 | 27 | 2429 |
| 28 | 2430 | 29 | 2431 | 30 | 2432 | 31 | 2433 |
| 32 | 2434 | 33 | 2435 | 34 | 2436 | 35 | 2437 |
| 36 | 2438 | 37 | 2439 | 38 | 2440 | 39 | 2441 |
| 40 | 2442 | 41 | 2443 | 42 | 2444 | 43 | 2445 |
| 44 | 2446 | 45 | 2447 | 46 | 2448 | 47 | 2449 |
| 48 | 2450 | 49 | 2451 | 50 | 2452 | 51 | 2453 |
| 52 | 2454 | 53 | 2455 | 54 | 2456 | 55 | 2457 |
| 56 | 2458 | 57 | 2459 | 58 | 2460 | 59 | 2461 |
| 60 | 2462 | 61 | 2463 | 62 | 2464 | 63 | 2465 |
| 64 | 2466 | 65 | 2467 | 66 | 2468 | 67 | 2469 |
| 68 | 2470 | 69 | 2471 | 70 | 2472 | 71 | 2473 |
| 72 | 2474 | 73 | 2475 | 74 | 2476 | 75 | 2477 |
| 76 | 2478 | 77 | 2479 | 78 | 2480 | 79 | |

,TC 3C PR





4.5 Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

| Test Mode | Test mode | Low channel | Middle channel | High channel | | | |
|-----------|--------------------------|---|----------------|--------------|--|--|--|
| 1 | Transmitting(GFSK) | 2402MHz | 2441MHz | 2480MHz | | | |
| 2 | Transmitting(π/ 4 DQPSK) | 2402MHz | 2441MHz | 2480MHz | | | |
| 3 | Transmitting(8DPSK) | 2402MHz | 2441MHz | 2480MHz | | | |
| 4 | Transmitting (Co | Transmitting (Conducted emission & Radiated emission) | | | | | |

Note:

(1) The measurements are performed at the highest, middle, lowest available channels.

(2) Fully-charged battery is used during the test

4.6 Table Of Parameters Of Text Software Setting

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters

| Test software Version | FCC_assist 1.0.1.2 | | | | |
|-----------------------|----------------------------|-----|-----|--|--|
| Frequency | 2402 MHz 2441 MHz 2480 MHz | | | | |
| Parameters | DEF | DEF | DEF | | |

t Se

Page: 10 of 81



5. Test Facility And Test Instrument Used

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards. FCC Test Firm Registration Number: 712850 IC Registered No.: 23583

5.2 Test Instrument Used

| Conducted Emissions Test | | | | | | | | |
|--|-------------|-------------|----------------|--------------|--------------|--|--|--|
| Equipment Manufacturer Model# Serial# Last Cal. Next | | | | | | | | |
| Receiver | R&S | ESR3 | 102075 | May 16, 2024 | May 15, 2025 | | | |
| LISN | R&S | ENV216 | 101375 | May 16, 2024 | May 15, 2025 | | | |
| Software | Frad | EZ-EMC | EMC-CON 3A1 | ١ | \ | | | |
| Pulse limiter | Schwarzbeck | VTSD 9561-F | 01323 | May 16, 2024 | May 15, 2025 | | | |

| | RF Conducted Test | | | | | | | | |
|-------------------------------------|-------------------|--------|------------|--------------|--------------|--|--|--|--|
| Equipment | Manufacturer | Model# | Serial# | Last Cal. | Next Cal. | | | | |
| Power meter | Keysight | E4419 | \ | May 16, 2024 | May 15, 2025 | | | | |
| Power Sensor (AV) | Keysight | E9300A | / | May 16, 2024 | May 15, 2025 | | | | |
| Signal Analyzer20kH z-26.5GHz | Keysight | N9020A | MY49100060 | May 16, 2024 | May 15, 2025 | | | | |
| Spectrum Analyzer9kHz- 40GHz | R&S | FSP40 | 100363 | May 16, 2024 | May 15, 2025 | | | | |

Page: 11 of 81



| | Radiated Emissions Test (966 Chamber) | | | | | | | |
|------------------------------------|---------------------------------------|----------------------|------------------|--------------|--------------|--|--|--|
| Equipment | Manufacturer | Model# | Serial# | Last Cal. | Next Cal. | | | |
| 966 chamber | ChengYu | 966 Room | 966 | May 16, 2024 | May 15, 2025 | | | |
| Receiver | R&S | ESR3 | 102075 | May 16, 2024 | May 15, 2025 | | | |
| Receiver | R&S | ESRP | 101154 | May 16, 2024 | May 15, 2025 | | | |
| Amplifier | Schwarzbeck | BBV9744 | 9744-0037 | May 16, 2024 | May 15, 2025 | | | |
| TRILOG Broadband Antenna | Schwarzbeck | VULB9163 | 942 | May 21, 2024 | May 20, 2025 | | | |
| Loop Antenna(9KHz -30MHz) | Schwarzbeck | FMZB1519B | 00014 | May 21, 2024 | May 20, 2025 | | | |
| Amplifier | SKET | LAPA_01G1 8G-45dB | SK202104090 1 | May 16, 2024 | May 15, 2025 | | | |
| Horn Antenna | Schwarzbeck | BBHA9120D | 1541 | May 30, 2024 | May 29, 2025 | | | |
| Amplifier(18G Hz-40GHz) | MITEQ | TTA1840-35- HG | 2034381 | May 16, 2024 | May 15, 2025 | | | |
| Horn Antenn(18GH z-40GHz) | Schwarzbeck | BBHA9170 | 00822 | May 21, 2024 | May 20, 2025 | | | |
| Spectrum Analyzer9kHz- 40GHz | R&S | FSP40 | 100363 | May 16, 2024 | May 15, 2025 | | | |
| Software | Frad | EZ-EMC | FA-03A2 RE | \ | \ | | | |

C 00.,LT

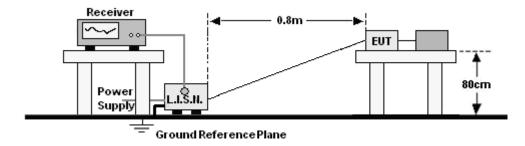
No.: BCTC/RF-EMC-005

Page: 12 of 81



6. Conducted Emissions

6.1 Block Diagram Of Test Setup



6.2 Limit

| | Limit (dBuV) | | |
|-----------------|--------------|-----------|--|
| Frequency (MHz) | Quas-peak | Average | |
| 0.15 -0.5 | 66 - 56 * | 56 - 46 * | |
| 0.50 -5.0 | 56.00 | 46.00 | |
| 5.0 -30.0 | 60.00 | 50.00 | |

Notes:

1. *Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

6.3 Test procedure

| Receiver Parameters | Setting |
|---------------------|----------|
| Attenuation | 10 dB |
| Start Frequency | 0.15 MHz |
| Stop Frequency | 30 MHz |
| IF Bandwidth | 9 kHz |

a. The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).

b. The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.

c. For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

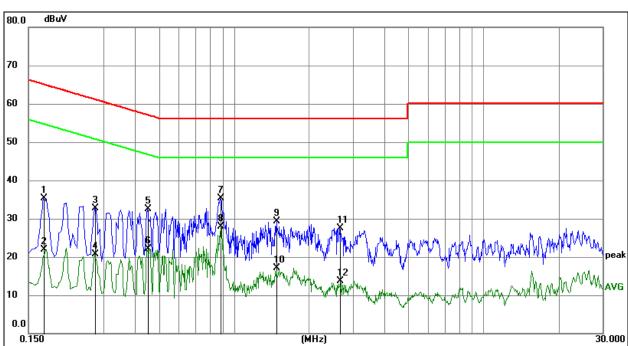
6.4 EUT operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



6.5 Test Result

| Temperature: | 26 ℃ | Relative Humidity: | 54% |
|--------------|-------------|--------------------|-------------|
| Pressure: | 101KPa | Phase : | L |
| Test Mode: | Mode 4 | Test Voltage : | AC120V/60Hz |



Remark:

All readings are Quasi-Peak and Average values.
Factor = Insertion Loss + Cable Loss.

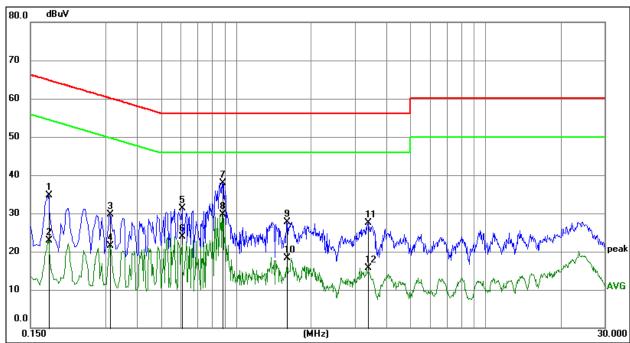
4. Over = Measurement - Limit

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|--------------------|-------------------|----------------|-----------------|-----------------|----------------|----------|
| 1 | 0.1725 | 24.64 | 10.58 | 35.22 | 64.84 | -29.62 | QP |
| 2 | 0.1725 | 11.35 | 10.58 | 21.93 | 54.84 | -32.91 | AVG |
| 3 | 0.2760 | 22.18 | 10.60 | 32.78 | 60.94 | -28.16 | QP |
| 4 | 0.2760 | 10.17 | 10.60 | 20.77 | 50.94 | -30.17 | AVG |
| 5 | 0.4515 | 21.95 | 10.62 | 32.57 | 56.85 | -24.28 | QP |
| 6 | 0.4515 | 11.56 | 10.62 | 22.18 | 46.85 | -24.67 | AVG |
| 7 | 0.8835 | 24.60 | 10.61 | 35.21 | 56.00 | -20.79 | QP |
| 8 * | 0.8835 | 17.32 | 10.61 | 27.93 | 46.00 | -18.07 | AVG |
| 9 | 1.4865 | 18.62 | 10.68 | 29.30 | 56.00 | -26.70 | QP |
| 10 | 1.4865 | 6.33 | 10.68 | 17.01 | 46.00 | -28.99 | AVG |
| 11 | 2.6520 | 16.70 | 10.86 | 27.56 | 56.00 | -28.44 | QP |
| 12 | 2.6520 | 2.90 | 10.86 | 13.76 | 46.00 | -32.24 | AVG |

E



| Temperature: | 26 ℃ | Relative Humidity: | 54% |
|--------------|-------------|--------------------|-------------|
| Pressure: | 101KPa | Phase : | N |
| Test Mode: | Mode 4 | Test Voltage : | AC120V/60Hz |



Remark:

All readings are Quasi-Peak and Average values.
Factor = Insertion Loss + Cable Loss.
Measurement = Reading Level + Correct Factor

| 4. | Over | = Measurement - | Limit |
|----|------|-----------------|-------|
| | | | |

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|--------------------|-------------------|----------------|-----------------|-----------------|----------------|----------|
| 1 | 0.1770 | 24.07 | 10.58 | 34.65 | 64.63 | -29.98 | QP |
| 2 | 0.1770 | 12.36 | 10.58 | 22.94 | 54.63 | -31.69 | AVG |
| 3 | 0.3120 | 19.17 | 10.60 | 29.77 | 59.92 | -30.15 | QP |
| 4 | 0.3120 | 10.97 | 10.60 | 21.57 | 49.92 | -28.35 | AVG |
| 5 | 0.6090 | 20.74 | 10.66 | 31.40 | 56.00 | -24.60 | QP |
| 6 | 0.6090 | 13.21 | 10.66 | 23.87 | 46.00 | -22.13 | AVG |
| 7 | 0.8835 | 27.37 | 10.61 | 37.98 | 56.00 | -18.02 | QP |
| 8 * | 0.8835 | 19.17 | 10.61 | 29.78 | 46.00 | -16.22 | AVG |
| 9 | 1.5945 | 17.06 | 10.70 | 27.76 | 56.00 | -28.24 | QP |
| 10 | 1.5945 | 7.51 | 10.70 | 18.21 | 46.00 | -27.79 | AVG |
| 11 | 3.3855 | 16.56 | 10.94 | 27.50 | 56.00 | -28.50 | QP |
| 12 | 3.3855 | 4.69 | 10.94 | 15.63 | 46.00 | -30.37 | AVG |

ероі



TE.

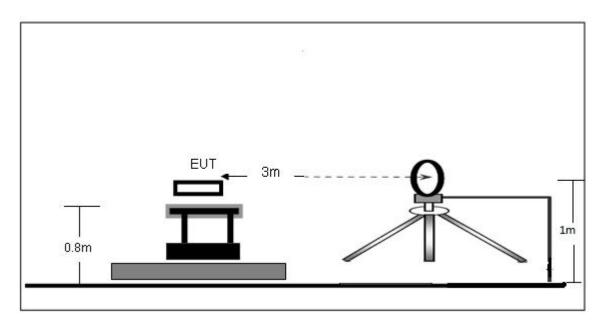
T(

t Sea

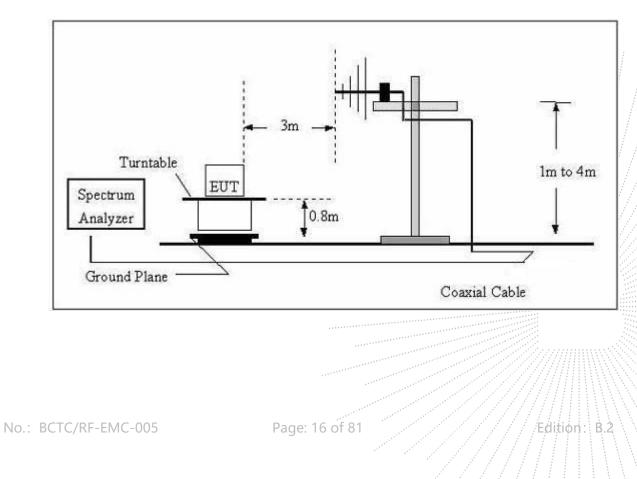
7. Radiated emissions

7.1 Block Diagram Of Test Setup

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

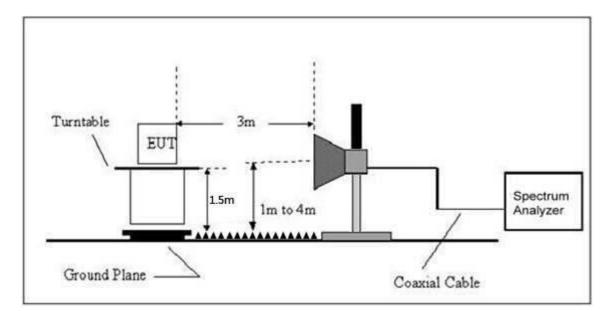


(B) Radiated Emission Test-Up Frequency 30MHz~1GHz





(C) Radiated Emission Test-Up Frequency Above 1GHz



7.2 Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

| Frequency | Field Strength | Distance | Field Strength Limit at 3m Distance | | |
|---------------|----------------|----------|-------------------------------------|--------------------------------------|--|
| (MHz) | uV/m | (m) | uV/m | dBuV/m | |
| 0.009 ~ 0.490 | 2400/F(kHz) | 300 | 10000 * 2400/F(kHz) | 20log ^{(2400/F(kHz))} + 80 | |
| 0.490 ~ 1.705 | 24000/F(kHz) | 30 | 100 * 24000/F(kHz) | 20log ^{(24000/F(kHz))} + 40 | |
| 1.705 ~ 30 | 30 | 30 | 100 * 30 | 20log ⁽³⁰⁾ + 40 | |
| 30 ~ 88 | 100 | 3 | 100 | 20log ⁽¹⁰⁰⁾ | |
| 88 ~ 216 | 150 | 3 | 150 | 20log ⁽¹⁵⁰⁾ | |
| 216 ~ 960 | 200 | 3 | 200 | 20log ⁽²⁰⁰⁾ | |
| Above 960 | 500 | 3 | 500 | 20log ⁽⁵⁰⁰⁾ | |

Limits Of Radiated Emission Measurement (Above 1000MHz)

| Frequency (MHz) | Limit (dBuV/m) (at 3M) |
|-----------------|------------------------|
| | Peak Average |
| Above 1000 | 74 54 |

Notes:

(1)The limit for radiated test was performed according to FCC PART 15C.

(2)The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

Page: 17 of 81



Frequency Range Of Radiated Measurement

(a) For an intentional radiator the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to at least the frequency shown in this paragraph:

(1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

(2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.

(3) If the intentional radiator operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.

(4) If the intentional radiator operates at or above 95 GHz: To the third harmonic of the highest fundamental frequency or to 750 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.

(5) If the intentional radiator contains a digital device, regardless of whether this digital device controls the functions of the intentional radiator or the digital device is used for additional control or function purposes other than to enable the operation of the intentional radiator, the frequency range shall be investigated up to the range specified in paragraphs (a) (1)through (4) of this section or the range applicable to the digital device, as shown in paragraph (b)(1) of this section, whichever is the higher frequency range of investigation.

7.3 Test procedure

| Receiver Parameter | Setting |
|--------------------|-------------------|
| Attenuation | Auto |
| 9kHz~150kHz | RBW 200Hz for QP |
| 150kHz~30MHz | RBW 9kHz for QP |
| 30MHz~1000MHz | RBW 120kHz for QP |

| Spectrum Parameter | Setting |
|--------------------|----------------------------------|
| 1-25GHz | RBW 1 MHz /VBW 1 MHz for Peak, |
| 1 200112 | RBW 1 MHz / VBW 10Hz for Average |

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.



d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c.The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d.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 rota table was turned from 0 degrees to 360 degrees to find the maximum reading.

e.The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middlest channel, the Highest channel.

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

7.4 EUT operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

Page: 19 of 81



7.5 Test Result

Below 30MHz

| Temperature: | 26 ℃ | Relative Humidity: | 54% | |
|--------------|-------------|--------------------|---------|--|
| Pressure: | 101KPa | Test Voltage : | DC 3.7V | |
| Test Mode: | Mode 4 | Test vollage. | | |

| Freq. | Reading | Limit | Margin | State |
|-------|----------|----------|--------|-------|
| (MHz) | (dBuV/m) | (dBuV/m) | (dB) | P/F |
| | | | | PASS |
| | | | | PASS |

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the

permissible value has no need to be reported.

Distance extrapolation factor =40 log (specific distance/test distance)(dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.

No.: BCTC/RF-EMC-005

Page: 20 of 81

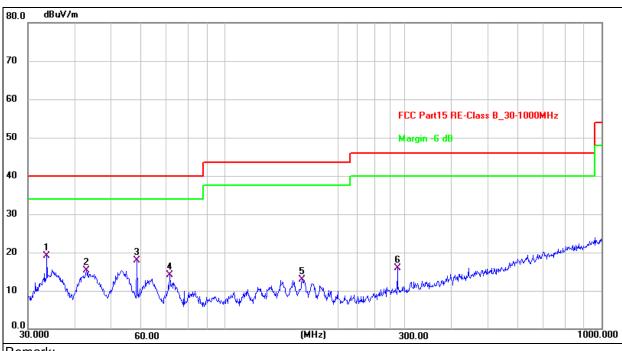
Edition: B.2

E



Between 30MHz – 1GHz

| Temperature: | 26 ℃ | Relative Humidity: | 54% |
|--------------|-------------|--------------------|------------|
| Pressure: | 101KPa | Phase : | Horizontal |
| Test Mode: | Mode 4 | Test Voltage : | DC 3.7V |



Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

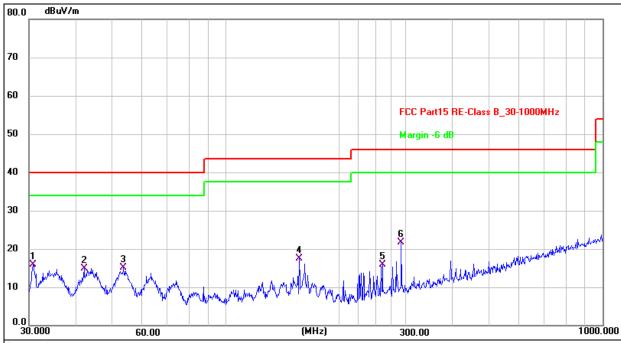
Measurement = Reading Level + Correct Factor
Over = Measurement - Limit

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|--------------------|-------------------|------------------|-------------------|-------------------|----------------|----------|
| 1 * | 33.6802 | 36.71 | -17.63 | 19.08 | 40.00 | -20.92 | QP |
| 2 | 42.8998 | 32.64 | -17.25 | 15.39 | 40.00 | -24.61 | QP |
| 3 | 58.4074 | 35.67 | -17.75 | 17.92 | 40.00 | -22.08 | QP |
| 4 | 71.3300 | 33.43 | -19.25 | 14.18 | 40.00 | -25.82 | QP |
| 5 | 160.3456 | 29.93 | -17.08 | 12.85 | 43.50 | -30.65 | QP |
| 6 | 286.9823 | 33.20 | -17.34 | 15.86 | 46.00 | -30.14 | QP |

ероі



| Temperature: | 26 ℃ | Relative Humidity: | 54% |
|--------------|-------------|--------------------|----------|
| Pressure: | 101KPa | Phase : | Vertical |
| Test Mode: | Mode 4 | Test Voltage : | DC 3.7V |



Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier. Measurement = Reading Level + Correct Factor Over = Measurement - Limit

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|--------------------|-------------------|------------------|-------------------|-------------------|----------------|----------|
| 1 * | 30.7455 | 33.46 | -17.47 | 15.99 | 40.00 | -24.01 | QP |
| 2 | 42.0066 | 32.24 | -17.26 | 14.98 | 40.00 | -25.02 | QP |
| 3 | 53.5052 | 32.38 | -17.32 | 15.06 | 40.00 | -24.94 | QP |
| 4 | 156.4578 | 34.56 | -17.15 | 17.41 | 43.50 | -26.09 | QP |
| 5 | 260.1444 | 34.34 | -18.34 | 16.00 | 46.00 | -30.00 | QP |
| 6 | 292.0583 | 38.82 | -17.17 | 21.65 | 46.00 | -24.35 | QP |
| | | | | | | | |

No.: BCTC/RF-EMC-005

Page: 22 of 81

Edition: B.2

t Sea



| Polar | Frequency | Reading Level | Correct Factor | Measure- ment | Limits | Over | Detector |
|-------|-----------|------------------|-------------------|------------------|--------------|--------|----------|
| (H/V) | (MHz) | (dBuV/m) | (dB) | (dBuV/m) | (dBuV/ m) | (dB) | Туре |
| | | | GFSK Low ch | annel | | | |
| V | 4804.00 | 71.66 | -19.99 | 51.67 | 74.00 | -22.33 | PK |
| V | 4804.00 | 61.19 | -19.99 | 41.20 | 54.00 | -12.80 | AV |
| V | 7206.00 | 63.28 | -14.22 | 49.06 | 74.00 | -24.94 | PK |
| V | 7206.00 | 53.77 | -14.22 | 39.55 | 54.00 | -14.45 | AV |
| Н | 4804.00 | 70.23 | -19.99 | 50.24 | 74.00 | -23.76 | PK |
| Н | 4804.00 | 60.72 | -19.99 | 40.73 | 54.00 | -13.27 | AV |
| Н | 7206.00 | 61.78 | -14.22 | 47.56 | 74.00 | -26.44 | PK |
| Н | 7206.00 | 52.84 | -14.22 | 38.62 | 54.00 | -15.38 | AV |
| | | G | FSK Middle c | hannel | | | |
| V | 4882.00 | 69.22 | -19.84 | 49.38 | 74.00 | -24.62 | PK |
| V | 4882.00 | 61.07 | -19.84 | 41.23 | 54.00 | -12.77 | AV |
| V | 7323.00 | 60.74 | -13.90 | 46.84 | 74.00 | -27.16 | PK |
| V | 7323.00 | 51.02 | -13.90 | 37.12 | 54.00 | -16.88 | AV |
| Н | 4882.00 | 66.62 | -19.84 | 46.78 | 74.00 | -27.22 | PK |
| Н | 4882.00 | 56.67 | -19.84 | 36.83 | 54.00 | -17.17 | AV |
| Н | 7323.00 | 58.16 | -13.90 | 44.26 | 74.00 | -29.74 | PK |
| Н | 7323.00 | 50.40 | -13.90 | 36.50 | 54.00 | -17.50 | AV |
| | | | GFSK High ch | annel | | | |
| V | 4960.00 | 72.01 | -19.68 | 52.33 | 74.00 | -21.67 | PK |
| V | 4960.00 | 61.01 | -19.68 | 41.33 | 54.00 | -12.67 | AV |
| V | 7440.00 | 65.23 | -13.57 | 51.66 | 74.00 | -22.34 | PK |
| V | 7440.00 | 55.35 | -13.57 | 41.78 | 54.00 | -12,22 | AV |
| Н | 4960.00 | 70.14 | -19.68 | 50.46 | 74.00 | -23.54 | PK |
| Н | 4960.00 | 59.59 | -19.68 | 39.91 | 54.00 | -14.09 | AV |
| Н | 7440.00 | 63.30 | -13.57 | 49.73 | 74.00 | -24.27 | PK |
| Н | 7440.00 | 55.18 | -13.57 | 41.61 | 54.00 | -12.39 | AV |

Between 1GHz – 25GHz

Remark:

1.Emission Level = Meter Reading + Factor, Factor = Antenna Factor + Cable Loss - Pre-amplifier. Over= Emission Level - Limit

2.If peak below the average limit, the average emission was no test.

3. In restricted bands of operation, The spurious emissions below the permissible value more than 20dB

4. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

5.All the Modulation are test, the worst mode is GFSK, the data recording in the report:

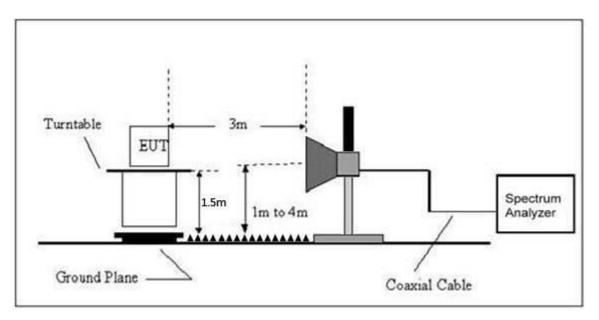
) ED



8. Radiated Band Emission Measurement and Restricted Bands of Operation

8.1 Block Diagram Of Test Setup

Radiated Emission Test-Up Frequency Above 1GHz



8.2 Limit

FCC Part15 C Section 15.209 and 15.205

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

| MHz | MHz | MHz | GHz |
|--------------------------|---------------------|---------------|----------------|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| ¹ 0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.17725-4.17775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 |
| 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2690-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293 | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | (² |
| 13.36-13.41 | | | |



Limits Of Radiated Emission Measurement (Above 1000MHz)

| Frequency (MHz) | Limit (dBuV/m) (at 3M) | | | |
|-----------------|------------------------|---------|--|--|
| | Peak | Average | | |
| Above 1000 | 74 | 54 | | |

Notes:

(1)The limit for radiated test was performed according to FCC PART 15C.

(2)The tighter limit applies at the band edges.

(3)Emission level (dBuV/m)=20log Emission level (uV/m).

8.3 Test procedure

| Receiver Parameter | Setting | | | | |
|---------------------------------------|--|--|--|--|--|
| Attenuation | Auto | | | | |
| Start Frequency | 2300MHz | | | | |
| Stop Frequency | 2520 | | | | |
| RB / VB (Emission In Restricted Band) | 1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average | | | | |

Above 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b.The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c.The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d.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 rota table was turned from 0 degrees to 360 degrees to find the maximum reading.

e.The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middlest channel, the Highest channel.

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

8.4 EUT operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



8.5 Test Result

| Test mode | Polar (H/V) | Frequency (MHz) | Frequency (MHz) Reading Level (dBuV/m) | Correct Factor (dB) | Measure- ment (dBuV/m) | Limits (dBuV/m) | | Result | | | |
|-----------|----------------------|--------------------|---|---------------------------|------------------------------|--------------------|---------------------------------------|--------|--|--|--|
| | (1) | () | | | PK | PK | AV | | | | |
| | Low Channel 2402MHz | | | | | | | | | | |
| | Н | 2390.00 | 73.96 | -25.43 | 48.53 | 74.00 | 54.00 | PASS | | | |
| | Н | 2400.00 | 75.50 | -25.40 | 50.10 | 74.00 | 54.00 | PASS | | | |
| | V | 2390.00 | 74.02 | -25.43 | 48.59 | 74.00 | 54.00 | PASS | | | |
| GFSK | V | 2400.00 | 74.93 | -25.40 | 49.53 | 74.00 | 54.00 | PASS | | | |
| | High Channel 2480MHz | | | | | | | | | | |
| | Н | 2483.50 | 72.46 | -25.15 | 47.31 | 74.00 | 54.00 | PASS | | | |
| | Н | 2500.00 | 70.38 | -25.10 | 45.28 | 74.00 | 54.00 | PASS | | | |
| | V | 2483.50 | 73.58 | -25.15 | 48.43 | 74.00 | 54.00 | PASS | | | |
| | V | 2500.00 | 69.31 | -25.10 | 44.21 | 74.00 | 54.00 | PASS | | | |
| | | | Low | v Channel 2 ⁴ | 402MHz | | | | | | |
| | Н | 2390.00 | 72.97 | -25.43 | 47.54 | 74.00 | 54.00 | PASS | | | |
| | Н | 2400.00 | 75.19 | -25.40 | 49.79 | 74.00 | 54.00 | PASS | | | |
| | V | 2390.00 | 72.80 | -25.43 | 47.37 | 74.00 | 54.00 | PASS | | | |
| π/4DQPSK | V | 2400.00 | 74.34 | -25.40 | 48.94 | 74.00 | 54.00 | PASS | | | |
| | High Channel 2480MHz | | | | | | | | | | |
| | Н | 2483.50 | 73.40 | -25.15 | 48.25 | 74.00 | 54.00 | PASS | | | |
| | Н | 2500.00 | 68.53 | -25.10 | 43.43 | 74.00 | 54.00 | PASS | | | |
| | V | 2483.50 | 72.70 | -25.15 | 47.55 | 74.00 | 54.00 | PASS | | | |
| | V | 2500.00 | 68.36 | -25.10 | 43.26 | 74.00 | 54.00 | PASS | | | |
| 8DPSK | Low Channel 2402MHz | | | | | | | | | | |
| | Н | 2390.00 | 73.63 | -25.43 | 48.20 | 74.00 | 54.00 | PASS | | | |
| | Н | 2400.00 | 75.35 | -25.40 | 49.95 | 74.00 | 54.00 | PASS | | | |
| | V | 2390.00 | 73.93 | -25.43 | 48.50 | 74.00 | 54.00 | PASS | | | |
| | V | 2400.00 | 75.49 | -25.40 | 50.09 | 74.00 | 54.00 | PASS | | | |
| | | | High | h Channel 2 | 480MHz | | 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 | | | | |
| | Н | 2483.50 | 71.96 | -25.15 | 46.81 | 74.00 | 54.00 | PASS | | | |
| | Н | 2500.00 | 68.93 | -25.10 | 43.83 | 74.00 | 54.00 | PASS | | | |
| | V | 2483.50 | 73.70 | -25.15 | 48.55 | 74.00 | 54.00 | PASS | | | |
| | V | 2500.00 | 69.29 | -25.10 | 44.19 | 74.00 | 54.00 | PASS | | | |

Remark:

1. Emission Level = Meter Reading + Factor, Factor = Antenna Factor + Cable Loss – Pre-amplifier. Over= Emission Level - Limit

2. If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

3 In restricted bands of operation, The spurious emissions below the permissible value more than 20dB

4. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

E



9. Spurious RF Conducted Emissions

9.1 Block Diagram Of Test Setup



9.2 Limit

Regulation 15.247 (d),In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator 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 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 paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general 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 §15.205(c))

9.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;

2. Set the spectrum analyzer: Below 30MHz: RBW = 100kHz, VBW = 300kHz, Sweep = auto Detector function = peak, Trace = max hold Above 30MHz: RBW = 100KHz, VBW = 300KHz, Sweep = auto Detector function = peak, Trace = max hold JC JC JPR

epoi

Page: 27 of 81



9.4 Test Result























Page: 32 of 81





epoi





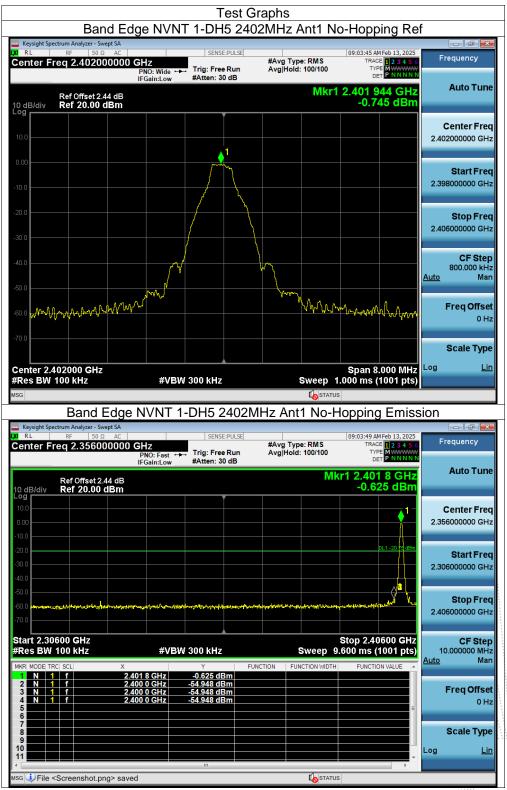










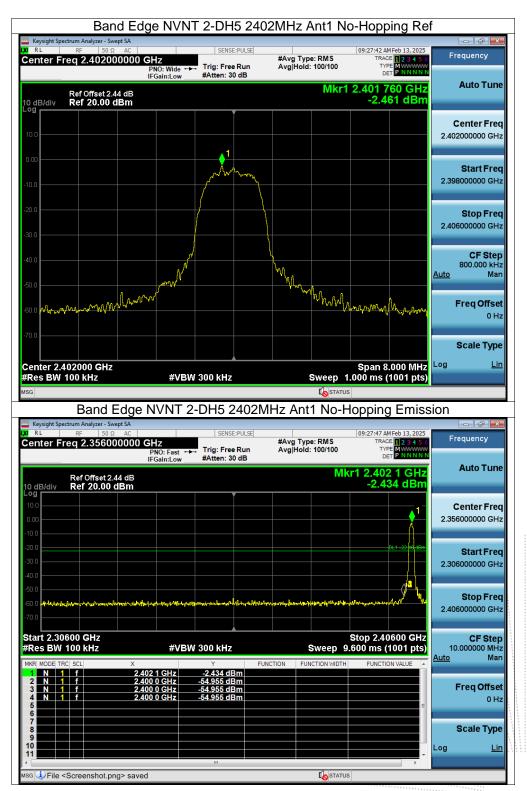


Page: 37 of 81





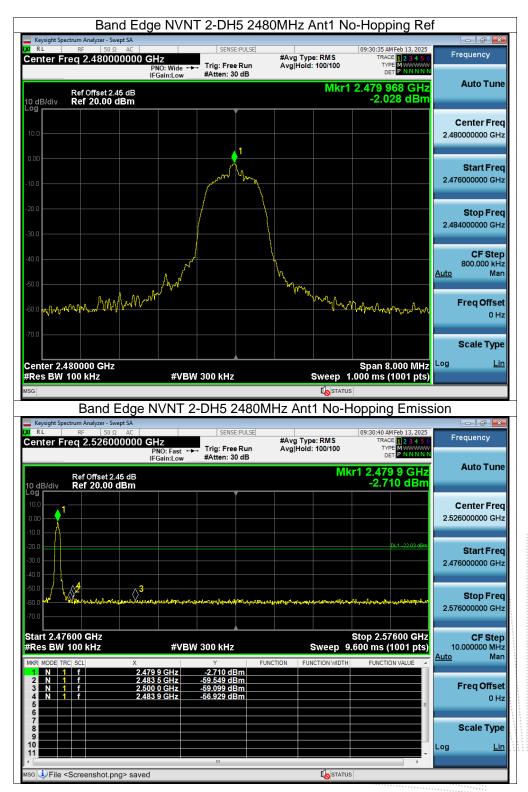




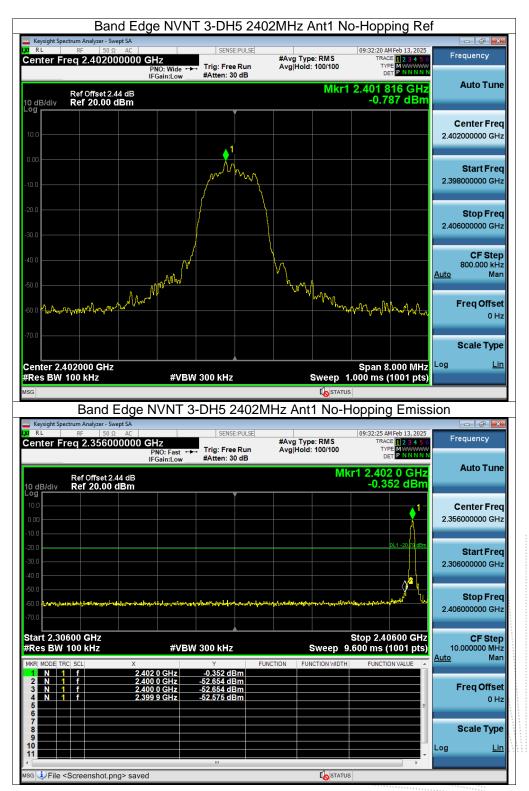


epoi

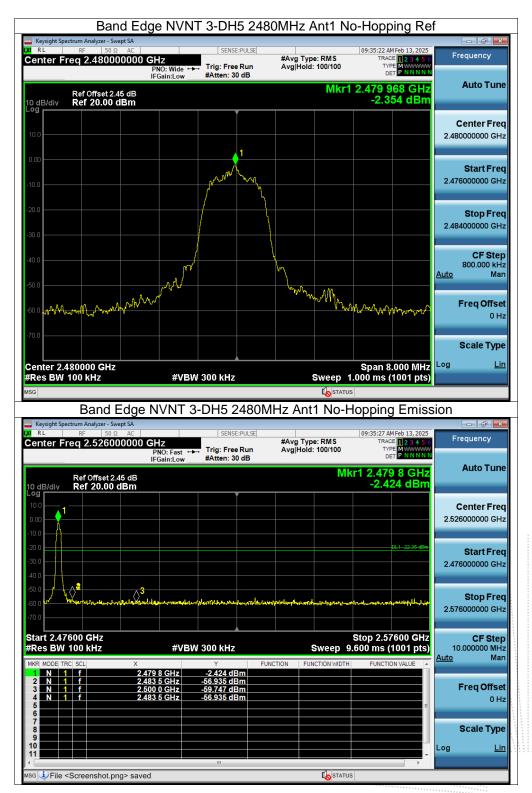






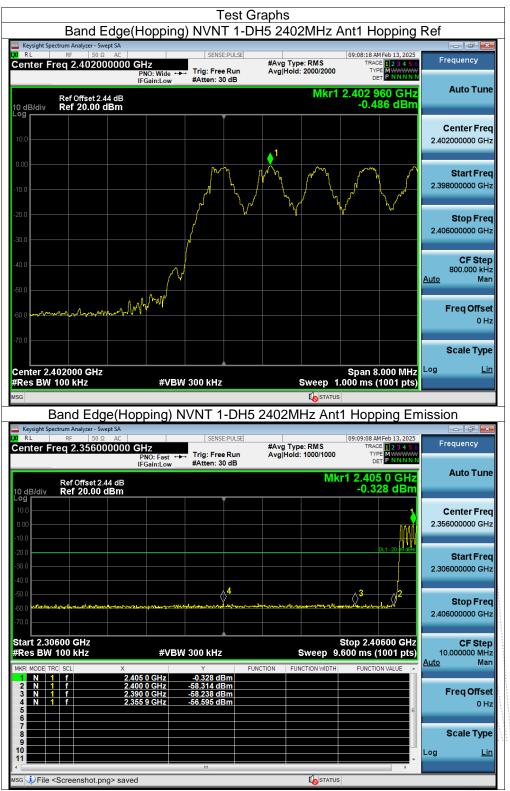






C 00.,LTA









Page: 44 of 81







'epoi















10. 20 dB Bandwidth

10.1 Block Diagram Of Test Setup



10.2 Limit

N/A

- 10.3 Test procedure
- 1. Set RBW = 30kHz.
- 2. Set the video bandwidth (VBW) \ge 3 x RBW.
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.

6. Allow the trace to stabilize.

7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

CHENZHE.

Page: 49 of 81



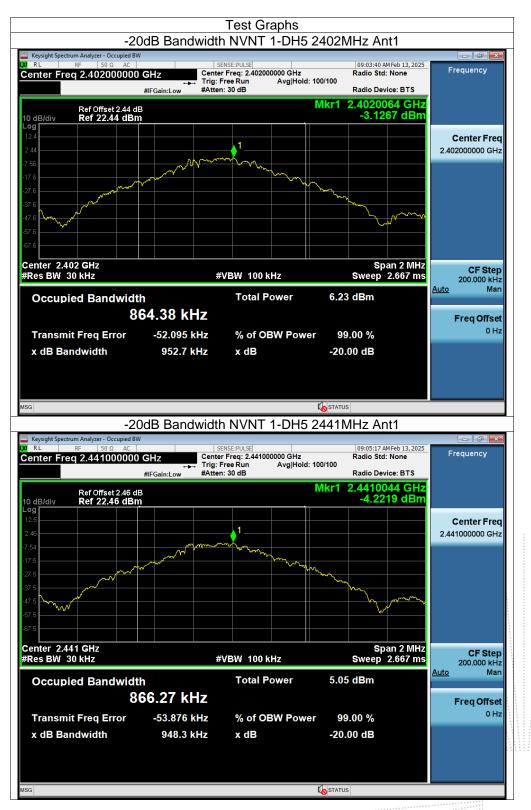
10.4 Test Result

| Condition | Mode | Frequency (MHz) | -20 dB Bandwidth (MHz) | Verdict |
|-----------|-------|-----------------|------------------------|---------|
| NVNT | 1-DH5 | 2402 | 0.953 | Pass |
| NVNT | 1-DH5 | 2441 | 0.948 | Pass |
| NVNT | 1-DH5 | 2480 | 0.944 | Pass |
| NVNT | 2-DH5 | 2402 | 1.282 | Pass |
| NVNT | 2-DH5 | 2441 | 1.274 | Pass |
| NVNT | 2-DH5 | 2480 | 1.270 | Pass |
| NVNT | 3-DH5 | 2402 | 1.243 | Pass |
| NVNT | 3-DH5 | 2441 | 1.270 | Pass |
| NVNT | 3-DH5 | 2480 | 1.270 | Pass |

No.: BCTC/RF-EMC-005

Page: 50 of 81

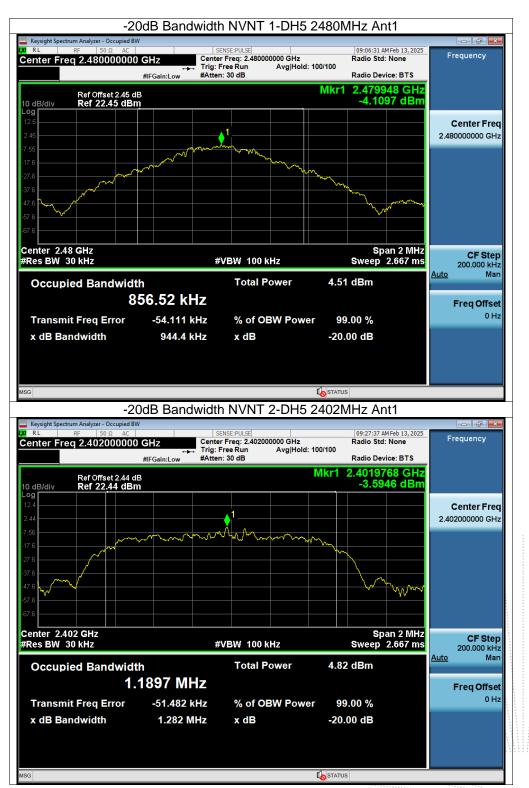




epor

Page: 51 of 81









Page: 52 of 81





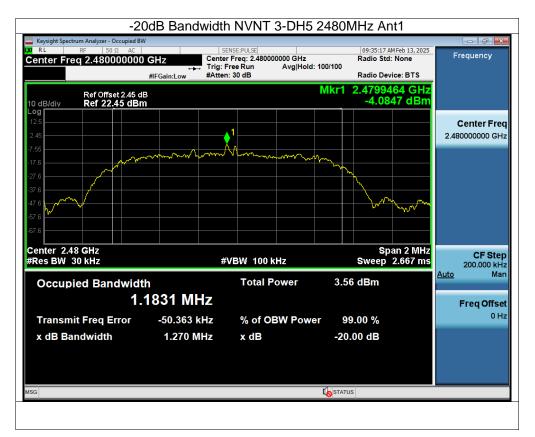
Page: 53 of 81





Page: 54 of 81







Page: 55 of 81



11. Maximum Peak Output Power

11.1 Block Diagram Of Test Setup



11.2 Limit

| FCC Part15 (15.247) , Subpart C | | | | | | |
|---------------------------------|----------------------|---------------------|-----------------------|--------|--|--|
| Section | Test Item | Limit | Frequency Range (MHz) | Result | | |
| 15.247(b)(1) | Peak Output Power | 0.125 watt or 21dBm | 2400-2483.5 | PASS | | |

11.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 2MHz. VBW = 6MHz. Sweep = auto; Detector Function = Peak.

3. Keep the EUT in transmitting at lowest, medium and highest channel individually. Record the max value.

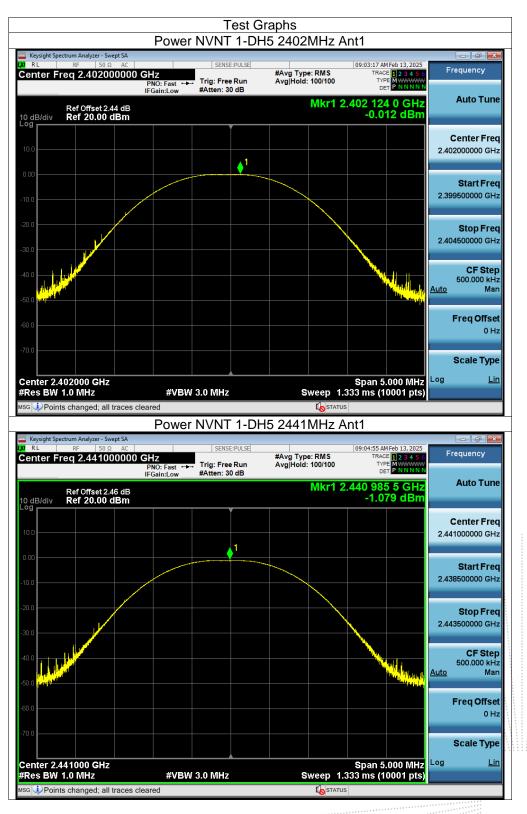
11.4 Test Result

| Condition | Mode | Frequency (MHz) | Conducted Power (dBm) | Limit (dBm) | Verdict |
|-----------|-------|-----------------|-----------------------|-------------|---------|
| NVNT | 1-DH5 | 2402 | -0.01 | 21 | Pass |
| NVNT | 1-DH5 | 2441 | -1.08 | 21 | Pass |
| NVNT | 1-DH5 | 2480 | -1.87 | 21 | Pass |
| NVNT | 2-DH5 | 2402 | 0.56 | 21 | Pass |
| NVNT | 2-DH5 | 2441 | -0.46 | 21 | Pass |
| NVNT | 2-DH5 | 2480 | -1:31 | 21 | Pass |
| NVNT | 3-DH5 | 2402 | 0.88 | 21 | Pass |
| NVNT | 3-DH5 | 2441 | -0.17 | 21 | Pass |
| NVNT | 3-DH5 | 2480 | -1.01 | 21 | Pass |

Page: 56 of 81

E





JC JC PPR

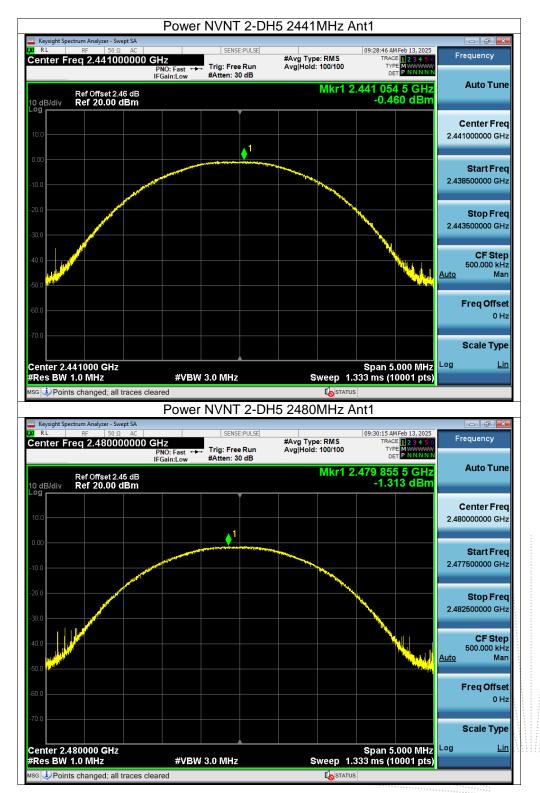
epoi







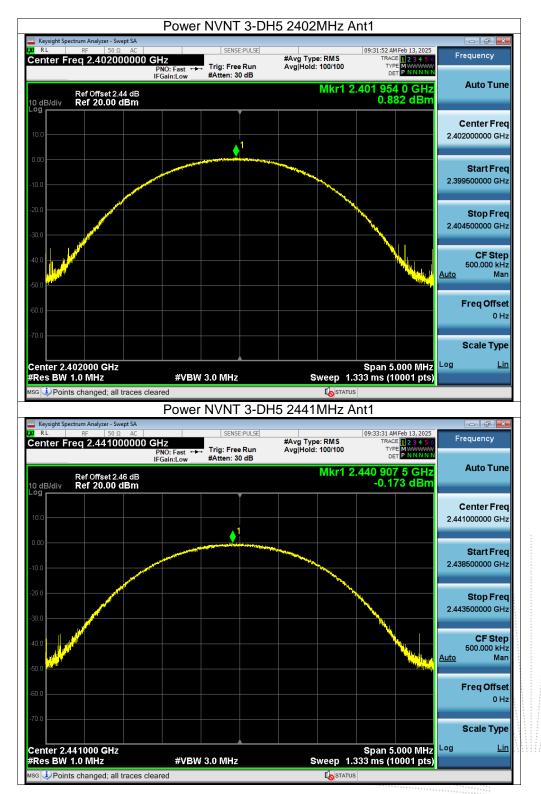






Page: 59 of 81

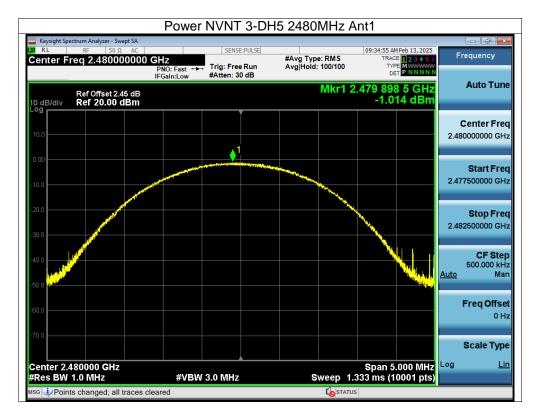




C. CO.,LTA

Page: 60 of 81





No.: BCTC/RF-EMC-005

Page: 61 of 81



E

12. Hopping Channel Separation

12.1 Block Diagram Of Test Setup



12.2 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 0.125W.

12.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 30kHz. VBW = 100kHz , Span = 2.0MHz. Sweep = auto; Detector Function = Peak. Trace = Max hold.

3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section Submit this plot.

| Mode | Hopping Freq1 (MHz) | Hopping Freq2 (MHz) | HFS (MHz) | Limit (MHz) | Verdict |
|-------|---|--|--|--|--|
| 1-DH5 | 2401.952 | 2402.948 | 0.996 | 0.635 | Pass |
| 1-DH5 | 2440.954 | 2441.962 | 1.008 | 0.632 | Pass |
| 1-DH5 | 2478.92 | 2479.948 | 1.028 | 0.629 | Pass |
| 2-DH5 | 2401.942 | 2402.98 | 1.038 | 0.855 | Pass |
| 2-DH5 | 2440.942 | 2441.95 | 1.008 | 0.849 | Pass |
| 2-DH5 | 2478.974 | 2479.97 | 0.996 | 0.847 | Pass |
| 3-DH5 | 2401.952 | 2402.952 | 1.000 | 0.829 | Pass |
| 3-DH5 | 2440.96 | 2441.958 | 0.998 | 0.847 | Pass |
| 3-DH5 | 2478.96 | 2479.954 | 0.994 | 0.847 | Pass |
| | 1-DH5 1-DH5 2-DH5 2-DH5 2-DH5 3-DH5 3-DH5 | Mode (MHz) 1-DH5 2401.952 1-DH5 2440.954 1-DH5 2478.92 2-DH5 2401.942 2-DH5 2440.942 2-DH5 2478.974 3-DH5 2401.952 3-DH5 2440.96 | Mode (MHz) (MHz) 1-DH5 2401.952 2402.948 1-DH5 2440.954 2441.962 1-DH5 2478.92 2479.948 2-DH5 2401.942 2402.98 2-DH5 2440.942 2441.95 2-DH5 2478.974 2479.97 3-DH5 2401.952 2402.952 3-DH5 2401.952 2402.952 | Mode(MHz)(MHz)(MHz)1-DH52401.9522402.9480.9961-DH52440.9542441.9621.0081-DH52478.922479.9481.0282-DH52401.9422402.981.0382-DH52440.9422441.951.0082-DH52478.9742479.970.9963-DH52401.9522402.9521.0003-DH52440.962441.9580.998 | Mode(MHz)(MHz)(MHz)1-DH52401.9522402.9480.9960.6351-DH52440.9542441.9621.0080.6321-DH52478.922479.9481.0280.6292-DH52401.9422402.981.0380.8552-DH52440.9422441.951.0080.8492-DH52478.9742479.970.9960.8473-DH52401.9522402.9521.0000.8293-DH52440.962441.9580.9980.847 |

12.4 Test Result





JC JC PPR

'epoi





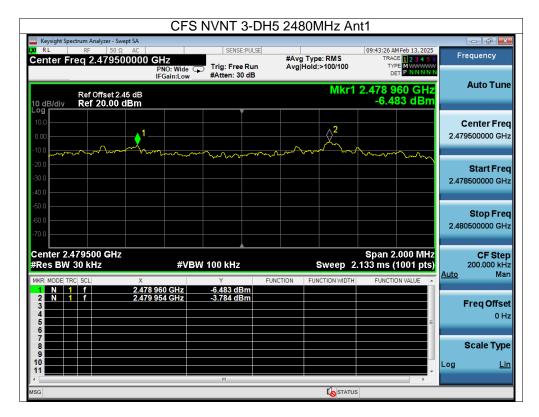












No.: BCTC/RF-EMC-005

Page: 67 of 81



13. Number of Hopping Frequency

13.1 Block Diagram Of Test Setup



13.2 Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

13.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 100kHz. VBW = 300kHz. Sweep = auto; Detector Function = Peak. Trace = Max hold.

3. Allow the trace to stabilize. It may prove necessary to break the span up to sections. in order to clearly show all of the hopping frequencies. The limit is specified in one of the subparagraphs of this Section.

4. Set the spectrum analyzer: Start Frequency = 2.4GHz, Stop Frequency = 2.4835GHz. Sweep=auto;

13.4 Test Result

| Condition | Mode | Hopping Number | Limit | Verdict |
|-----------|-------|----------------|-------|---------|
| NVNT | 1-DH5 | 79 | 15 | Pass |
| NVNT | 2-DH5 | 79 | 15 | Pass |
| NVNT | 3-DH5 | 79 | 15 | Pass |

E



| Hopping No. NVNT 1-DH5 2402MHz Ant1 |
|---|
| MRL RF S0 0 AC SENSE:PULSE 109:08:03 AMFeb 13,2025 Frequency Center Freq 2.441750000 GHz Trig: Free Run IFGain:Low Trig: Free Run #Atten: 30 dB #Avg Type: RMS Avg Hold:>100/100 Trig: Tree I 2: 4: 50 Dot Frequency Frequency Ref Offset 2.44 dB 0 dB/div Mkr1 2.401 920 5 GHz -0.297 dBm Auto Tul 0 dB/div Ref 20.00 dBm -0.297 dBm Center Fre 2.441750000 G 10 0 0 00 0 00 0 00 0 00 0 00 0 00 0 00 |
| Ref Offset 2.44 dB Mkr1 2.401 920 5 GHz Auto Tur 10 dB/div Ref 20.00 dBm -0.297 dBm -0.297 dBm 10 dB/div Ref 20.00 dBm -0.297 dBm -0.297 dBm 10 dB/div Ref 20.00 dBm -0.297 dBm -0.297 dBm 10 dB/div Ref 20.00 dBm -0.297 dBm -0.297 dBm 10 dB/div Ref 20.00 dBm -0.297 dBm -0.297 dBm 10 dB/div Ref 20.00 dBm -0.297 dBm -0.297 dBm 10 dB/div Ref 20.00 dBm -0.297 dBm -0.297 dBm 2.00 -0.297 dBm -0.297 dBm -0.241750000 G 2.00 -0.297 dBm -0.297 dBm -0.297 dBm -0.00 -0.100 dBm -0.297 dBm -0.297 dBm -0.00 -0.100 dBm -0.297 dBm -0.297 dBm -0.00 -0.100 dBm -0.100 dBm -0.297 dBm -0.00 -0.100 dBm -0.100 dBm -0.100 dBm -0.00 -0.100 dBm -0.100 dBm -0.100 dBm -0.00 -0.100 dBm -0.100 dBm -0.100 dBm |
| 1 Center Fm 200 Canter Fm 2 |
| Start 2.40000 GHz Start 2.48350 GHz CF Start |
| 600 2.483500000 G 700 Start 2.40000 GHz Stop 2.48350 GHz CF Stop |
| Start 2.40000 GHz Stop 2.48350 GHz CF Str #Res BW 100 kHz #VBW 300 kHz <u>Sweep 8.000 ms (1001 pts)</u> 8.350000 M |
| MKR MODE[TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE Auto M 1 N 1 f 2.401 920 5 GHz -0.297 dBm |
| N 1 2.401 520 3 GHz -0.250 GHz |
| 7 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 |
| |
| |
| Hopping No. NVNT 2-DH5 2402MHz Ant1 |
| Center Freq 2.441750000 GHz SENSE:PULSE 09:20:57 AMFeb 13,2025 PN0: Fast PN0: Fast #Avg Type: RMS Trace [] 2:3:4:5 G IFGain:Low #Atten: 30 dB Avg Hold:>100/100 Type [Minimum Ninh] |
| Ref Offset 2.44 dB Mkr1 2.401 753 5 GHz Auto Tur 10 dB/div Ref 20.00 dBm -4.109 dBm |
| 100 0.00 -100 -100 |
| -20.0 |
| -50.0 C Stop Fr -60.0 C Stop Fr 2.483500000 G |
| Start 2.40000 GHz #Res BW 100 kHz Stop 2.48350 GHz #VBW 300 kHz Stop 2.48350 GHz Sweep CF Stop 3.48350 GHz 8.350000 M MKR_MODE[TRC SCL] X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE Auto M |
| 1 N 1 f 2.4017535GHz -4.109dBm 2 N 1 f 2.4803270GHz -7.123dBm 3 - - - - - Freq Offs 4 - - - - - 0 |
| |
| |

ероі



| H | lopping No. NVNT | 3-DH5 2402MH | z Ant1 | |
|---|--|-------------------------|--|--|
| Keysight Spectrum Analyzer - Swept SA Μ RL RF 50 Ω AC Center Freg 2.441750000 (| GH7 | #Avg Type: RMS | 09:37:17 AM Feb 13, 2025 | Frequency |
| • | PNO: Fast Trig: Free Run IFGain:Low #Atten: 30 dB | Avg Hold:>100/100 | TYPE MWWWW DET PNNNNN | Auto Tune |
| Ref Offset 2.44 dB 10 dB/div Ref 20.00 dBm | | Mkr1 2 | .401 837 0 GHz -4.063 dBm | |
| | water and the second second | hunhanandhanan | mmmm 2 | Center Freq 2.441750000 GHz |
| -20.0 | | | | Start Freq 2.400000000 GHz |
| -50.0 | | | \ | Stop Freq 2.483500000 GHz |
| Start 2.40000 GHz #Res BW 100 kHz | #VBW 300 kHz | | Stop 2.48350 GHz .000 ms (1001 pts) | CF Step 8.350000 MHz |
| | 37 0 GHz -4.063 dBm 27 0 GHz -6.735 dBm | FUNCTION FUNCTION WIDTH | FUNCTION VALUE | <u>Auto</u> Man Freq Offset 0 Hz |
| 7 8 9 9 10 | | | | Scale Type |
| MSG | III | STATUS | • • • • • | |

No.: BCTC/RF-EMC-005

Page: 70 of 81



14. Dwell Time

14.1 Block Diagram Of Test Setup



14.2 Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. 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. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

14.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set spectrum analyzer span = 0. Centred on a hopping channel;

3. Set RBW = 1MHz and VBW = 3MHz.Sweep = as necessary to capture the entire dwell time per hopping channel. Set the EUT for DH5, DH3 and DH1 packet transmitting.

4. Use the marker-delta function to determine the dwell time. If this value varies with different modes of operation (e.g., data rate, modulation format, etc.), repeat this test for each variation. The limit is specified in one of the subparagraphs of this Section. Submit this plot(s).

14.4 Test Result

DH5 Packet permit maximum 1600 / 79 / 6 hops per second in each channel (5 time slots RX, 1 time slot TX).

DH3 Packet permit maximum 1600 / 79 / 4 hops per second in each channel (3 time slots RX, 1 time slot TX).

DH1 Packet permit maximum 1600 / 79 /2 hops per second in each channel (1 time slot RX, 1 time slot TX). So, the Dwell Time can be calculated as follows:

DH5:1600/79/6*0.4*79*(MkrDelta)/1000 DH3:1600/79/4*0.4*79*(MkrDelta)/1000 DH1:1600/79/2*0.4*79*(MkrDelta)/1000 Remark: Mkr Delta is once pulse time.

Page: 71 of 81



| Condition | Mode | Frequency (MHz) | Pulse Time (ms) | Total Dwell Time (ms) | Limit (ms) | Verdict |
|-----------|-------|--------------------|--------------------|--------------------------|---------------|---------|
| NVNT | 1-DH1 | 2441 | 0.404 | 128.068 | 400 | Pass |
| NVNT | 1-DH3 | 2441 | 1.657 | 263.463 | 400 | Pass |
| NVNT | 1-DH5 | 2441 | 2.905 | 278.880 | 400 | Pass |
| NVNT | 2-DH1 | 2441 | 0.413 | 131.334 | 400 | Pass |
| NVNT | 2-DH3 | 2441 | 1.662 | 255.948 | 400 | Pass |
| NVNT | 2-DH5 | 2441 | 2.913 | 320.430 | 400 | Pass |
| NVNT | 3-DH1 | 2441 | 0.412 | 131.016 | 400 | Pass |
| NVNT | 3-DH3 | 2441 | 1.664 | 262.912 | 400 | Pass |
| NVNT | 3-DH5 | 2441 | 2.913 | 302.952 | 400 | Pass |

n 00.,LT

No.: BCTC/RF-EMC-005

Page: 72 of 81



| Test Gr Dwell NVNT 1-DH1 244 | | |
|---|--|------------------------------------|
| Keysight Spectrum Analyzer - Swept SA SENSE:PULSE X RL RF 50.0 AC SENSE:PULSE Center Freq 2.441000000 GHz Trig Delay-500.0 µs PNO: Fast → Trig: Video | 09:44:52 AM Feb 13, 2025 | auency |
| IFGain:Low #Atten: 30 dB Ref Offset 2.46 dB 10 dB/div Ref 20.00 dBm | | uto Tune |
| | | enter Freq 000000 GHz |
| -20.0 | | Start Freq 000000 GHz |
| | ali a ca subat di 📕 da banan a sa addi ali ata a sa sa kasa basa bat | Stop Freq 000000 GHz |
| | Span 0 Hz Sweep 10.00 ms (10001 pts) Auto | CF Step 00000 MHz Man |
| 1 Δ2 1 t Δ00.0 μs Δ0.0 μs Δ0.0 μs -0.68 dB -0.68 dB | Fr | r eq Offset 0 Hz |
| 7 8 9 10 11 | Log | cale Type <u>Lin</u> |
| Msg Doints changed; all traces cleared | , Kostatus | |
| Dwell NVNT 1-DH3 244 Keysight Spectrum Analyzer - Swept SA RL RF 50 Ω AC SENSE:PULSE | 09:48:26 AM Feb 13, 2025 | |
| Center Freq 2.441000000 GHz PN0; Fast IFGain:Low Trig: Video #Atten: 30 dB | | uto Tune |
| Ref Offset 2.46 dB 10 dB/div Ref 20.00 dBm | ΔMkr1 1.656 ms -0.54 dB | |
| 10.0 0.00 -10.0 | | enter Freq 000000 GHz |
| -20.0 X | | Start Freq 000000 GHz |
| | | Stop Freq 000000 GHz |
| Center 2.441000000 GHz Res BW 1.0 MHz #VBW 3.0 MHz | Auto | CF Step 00000 MHz Man |
| Δ2 1 t (Δ) 1.656 ms (Δ) -0.54 dB 2 F 1 t 477.0 μs -18.98 dBm 3 4 - - - - 4 - - - - - 5 - - - - - 6 - - - - - | CTION FUNCTION WIDTH FUNCTION VALUE | r eq Offset 0 Hz |
| 7 8 8 9 9 9 9 9 10 10 10 10 10 10 10 10 10 10 10 10 10 | Log | cale Type Lin |
| 11 ™ Msc JPoints changed; all traces cleared | STATUS | |

12 M 74

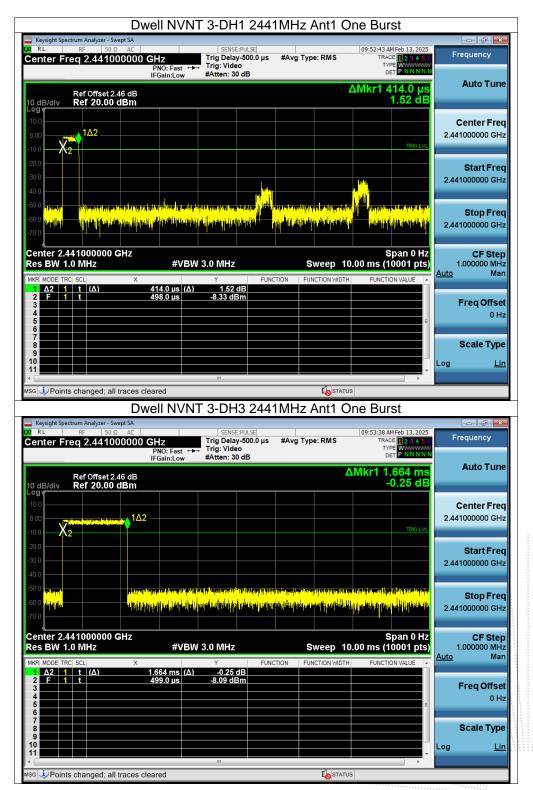


| | Dwell NVN | T 1-DH5 244 | 1MHz Ant1 O | ne Burst | |
|--|---|---|--|---|--------------------------------------|
| Keysight Spectrum Analyzer - Sv KIRL RF 50 G | vept SA | SENSE:PULSE | | 09:12:41 AM Feb 13, 2025 | |
| Center Freq 2.4410 | | Trig Delay-500.0 μs Trig: Video #Atten: 30 dB | #Avg Type: RMS | TRACE 1 2 3 4 5 6 TYPE WWWWW DET P N N N N N | Frequency |
| Ref Offset 2. 10 dB/div Ref 20.00 | | | Δ | Mkr1 2.905 ms 6.18 dB | Auto Tune |
| - 0 | 1Δ2 | | | TRIG LVL | Center Fred 2.441000000 GH; |
| 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 | 1,41,10);10,00,101,01,01,01 | | | | Start Free 2.441000000 GH: |
| 50.0 (1) He (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) | | angay <mark>di se nga kangkerak ka</mark> Kana mutakan kangkerakan | ar fann an fan hwer in ter fran yn fer ann yn gener. Dy'r fel yn ar fran yn fer yn yn fer an fan gener fan gener. | an a calmara da magna da fariga. Nan a calmara da magna da sa da sa sa | Stop Fre 2.441000000 GH |
| 2enter 2.441000000 Res BW 1.0 MHz | | 3.0 MHz | Sweep 10 | Span 0 Hz .00 ms (10001 pts) | CF Step 1.000000 MH |
| KR MODE TRC SCL 1 Δ2 1 t (Δ) 2 F 1 t (Δ) 3 - - - - 4 - - - - 5 - - - - | × 2.905 ms (Δ) 481.0 μs | Y FUN 6.18 dB -16.86 dBm | ICTION FUNCTION WIDTH | FUNCTION VALUE | Auto Mar Freq Offse 0 H |
| 6 7 8 9 10 | | | | | Scale Typ |
| | | | | | |
| sg 🗼 Points changed; all | traces cleared | | | 3 | |
| | Dwell NVN | T 2-DH1 244 | 1MHz Ant1 O | ne Burst | |
| Keysight Spectrum Analyzer - Sv RL RF 50 C Center Freq 2.4410 | 2 AC | SENSE:PULSE Trig Delay-500.0 µs Trig: Video | #Avg Type: RMS | 09:50:56 AM Feb 13, 2025 TRACE 1 2 3 4 5 6 TYPE WWWWW DET P N N N N N | Frequency |
| Ref Offset 2. 0 dB/div Ref 20.00 | | #Atten: 30 dB | | ΔMkr1 404.0 μs -2.16 dB | Auto Tun |
| οg 10.0 0.00 10.0η <u>ντη</u> 1Δ2 | | | | TRIG LVL | Center Fre 2.441000000 GH |
| | | () ฝั่งยุ | | | Start Fre 2.441000000 GH |
| | alling in the second | Bard Alth Country Courts and a fight and and substitution | ana na na tanàna harana ara an Ny INSEE dia mampina mandritra mandritra mandritra mandritra mandritra mandritra Ny INSEE dia mandritra | etter the heart all all the test of some and the test and a state of the test of | Stop Fre 2.441000000 GH |
| Center 2.441000000 Res BW 1.0 MHz | | 3.0 MHz | Sweep 10 | Span 0 Hz .00 ms (10001 pts) | CF Step 1.000000 MH |
| KR MODE TRC SCL 1 Δ2 1 t (Δ) 2 F 1 t 3 4 5 5 | X 404.0 μs 482.0 μs | Y FUN -2.16 dB -14.08 dBm | ICTION FUNCTION WIDTH | FUNCTION VALUE | Auto Ma Freq Offse 0 H |
| 6 7 8 9 10 | | | | | Scale Type |
| | | | | | Log <u>Lir</u> |
| sg i Points changed: all | traces cleared | | | | |



| | Dwel | INVN | T 2-DH | 3 2441 | MHz / | Ant1 C | ne Bu | rst | |
|---|--------------------------|-----------------------------|---|---|-----------------|---------------------------------------|--|---|---|
| Keysight Spectrum Analyz | er - Swept SA 50 Ω AC | | SENSE | ou cr | | | 00/51-50 | MEeb 12, 2025 | - ē - |
| enter Freq 2.44 | 1000000 GH | Z NO: Fast ↔ Gain:Low | Trig Delay Trig: Video #Atten: 30 | -500.0 µs o | #Avg Typ | e: RMS | TRA T) | M Feb 13, 2025 CE 1 2 3 4 5 6 PE WWWWWW ET P N N N N N | Frequency |
| | et 2.46 dB .00 dBm | am.cow | writen. oo | | | L | Mkr1 1 | .661 ms 1.09 dB | Auto Tuno |
| .og 10.0 | | | | | | | | | |
| | | | | | | | | | Center Free 2.441000000 GH |
| 0.00 | 1Δ2 | | | | | | | TRIG LVL | 2.441000000 GH |
| | | | | | | | | | |
| | | | | | | | | | Start Free |
| 30.0 | | | | | | | | | 2.441000000 GH |
| 40.0 | | | | | | | | | |
| | فرويه المندين ويقدرونه | AN TRANSPORT | | 1 A A A A A A A A A A A A A A A A A A A | | 1 | a na an ann an ann ann ann ann ann ann | and the second secon | Stop Free |
| 70.0 | | Made Ma h | | | 400000-100-00 | n n n n n n n n n n n n n n n n n n n | hte he filt | | 2.441000000 GH |
| /0.0 | | | | | | | | | |
| enter 2.4410000 | 00 GHz | | | | | | | Span 0 Hz | CF Ste |
| Res BW 1.0 MHz | | #VBW | 3.0 MHz | | S | weep 10 | 0.00 ms (1 | 0001 pts) | 1.000000 MH Auto Mar |
| MKR MODE TRC SCL | х | | Y | FUNC | TION FUN | ICTION WIDTH | FUNCT | ON VALUE | Adto Ma |
| 1 Δ2 1 t (Δ) 2 F 1 t | | 61 ms (Δ) 2.0 μs | <u>1.09 c</u> -15.35 dB | m | | | | | F |
| 3 4 | | | | | | | | | Freq Offse 0 H |
| 5 | | | | | | | | = | UH |
| 6 7 | | | | | | | | | |
| 8 | | | | | | | | | Scale Type |
| 10 | | | | | | | | | Log <u>Lii</u> |
| | | | | | | | | | |
| sg 🔱 Points changed | d; all traces cleare | əd | | | | I o STATU | s | | |
| | Dwel | | T 2-DH | 5 2441 | MHz | Ant1 O | ne Ru | ret | |
| Keysight Spectrum Analyz | | | | 52441 | 1111127 | | | 51 | - 6 - |
| RL RF | 50 Ω AC | | SENSE | | | | | M Feb 13, 2025 | Frequency |
| enter Freq 2.44 | | Z Ю:Fast ⊶⊷ | Trig Delay Trig: Video | • | #Avg Typ | e: RIVIS | T | CE 123456 PE WWWWW | |
| | IFG | Gain:Low | #Atten: 30 | dB | | | | | Auto Tune |
| | et 2.46 dB | | | | | Δ | | .904 ms | Auto Tun |
| 0 dB/div Ref 20 | .00 dBm | | | | | | - | 1.93 dB | |
| 10.0 | | | | | | | | | Center Free |
| 0.00 | | | | | | | | | 2.441000000 GH |
| | <u>nacutro</u> 1∆2 | | | | | | | TRIG LVL | |
| 20.0 X 20.01 A 10 | | | | | | | | | Stort Ero |
| 30.0 | <u>کھو</u> روپ | | | | | | | | Start Free 2.441000000 GH |
| 40.0 | | | | | | | | | 2.44100000 00 |
| 50.0 | | | | distant to the second | ter kast og Hun | hilitatil some f | | a dink is transfer a film | |
| | | nis databilita ana las | | dinalah kanada ka | | | | | Stop Free |
| 60.0 <mark>044</mark> | | or showing a | Let MI | discrimination of | | . 11 1 | and the state of the dis | I to dout the | 2.441000000 GH |
| h | | | | | | · · | | | |
| 70.0 | | | | | | | | | |
| 70.0 | 00 GHz | | | | | | | Span 0 Hz | |
| 20.0 Center 2.4410000 Res BW 1.0 MHz | | #VBW | 3.0 MHz | | | | i.33 ms (1 | 0001 pts) | 1.000000 MH |
| 70.0 Center 2.4410000 Res BW 1.0 MHz | X | | Y | FUNC | | weep 15 | i.33 ms (1 | | 1.000000 MH |
| 70.0 Center 2.4410000 Res BW 1.0 MHz MKR MODE TRC scL 1 Δ2 1 t (Δ) 2 F 1 t | X | #VBW 04 ms (Δ) 9.9 μs | / 3.0 MHz Y -1.93 d -13.89 dB | B | | | i.33 ms (1 | 0001 pts) | 1.000000 MH <u>Auto</u> Mar I |
| 70.0 Δ Center 2.4410000 Res BW 1.0 MHz MKR MODE TRC SCL 1 1 Δ2 1 t 2 F 1 t 3 4 4 Δ | X | | ۲ -1.93 d | B | | | i.33 ms (1 | 0001 pts) | 1.000000 MH <u>Auto</u> Ma Freq Offse |
| 2 F 1 t 3 4 5 | X | | ۲ -1.93 d | B | | | i.33 ms (1 | 0001 pts) | 1.000000 MH <u>Auto</u> Mar Freq Offse |
| 70.0 Center 2.44 10000 tes BW 1.0 MHz MKR MODE TRC SCL 1 Δ2 1 t (Δ) 2 F 1 t 3 4 5 6 6 7 | X | | ۲ -1.93 d | B | | | i.33 ms (1 | ON VALUE | 1.000000 MH <u>Auto</u> Ma Freq Offse 0 H |
| 70.0 Center 2.4410000 Res BW 1.0 MHz MKR MODE TRC SCL 1 Δ2 1 t (Δ) 2 F 1 t 3 4 5 6 7 8 9 | X | | ۲ -1.93 d | B | | | i.33 ms (1 | ON VALUE | 1.000000 MH <u>Auto</u> Mar Freq Offse 0 H |
| Δ2 1 t Δ2 1 t Δ3 Δ2 1 t Δ3 Δ3 Δ4 Δ5 Δ6 Δ7 7 Δ8 Δ9 Δ1 1 Δ2 1 t 3 Δ3 Δ4 Δ5 Δ5 Δ4 Δ5 Δ6 Δ6< | X | | ۲ -1.93 d | B | | | i.33 ms (1 | ON VALUE | CF Step 1.000000 MH Auto Freq Offse 0 H Scale Type Log <u>Lin</u> |
| 70.0 Δ Center 2.4410000 Res BW 1.0 MHz MKR MODE 1 Δ2 1 Δ2 2 F 1 t 3 4 5 6 7 8 9 9 10 | X | | ۲ -1.93 d | B | | | i.33 ms (1 | ON VALUE | 1.000000 MH Auto Mar Freq Offse 0 H Scale Type |





ер

Edition: B.2

Page: 76 of 81



| Dwe | II NVNT 3-DH5 2 | 441MHz Ant1 C | One Burst | |
|--|---|-------------------------|---|-------------------------------------|
| Keysight Spectrum Analyzer - Swept SA RL RF 50 Ω AC Center Freq 2.441000000 GH PP | NO: Fast +++ Trig: Video | 0 μs #Avg Type: RMS | 09:41:40 AM Feb 13, 2025 TRACE 1 2 3 4 5 6 TYPE | Frequency |
| Ref Offset 2.46 dB | Gain:Low #Atten: 30 dB | | ΔMkr1 2.912 ms -0.64 dB | Auto Tune |
| | ι <u></u> | | TRIG LVL | Center Freq 2.441000000 GHz |
| -200 X ()(11 ()) | | | | Start Free 2.441000000 GHz |
| -60.0 | The second se | | n <mark>halister som som som som som som som som som som</mark> | Stop Fred 2.441000000 GH2 |
| Center 2.441000000 GHz Res BW 1.0 MHz | #VBW 3.0 MHz | Sweep 1 | Span 0 Hz 0.00 ms (10001 pts) | CF Step 1.000000 MHz Auto Mar |
| | 12 ms (Δ) -0.64 dB 0.0 μs -15.76 dBm | FUNCTION FUNCTION WIDTH | FUNCTION VALUE | Freq Offset |
| 7 8 9 10 11 | | | · · · · · · · · · · · · · · · · · · · | Scale Type |
| MSG Doints changed; all traces clear | ed | to statu | JS | |

Page: 77 of 81



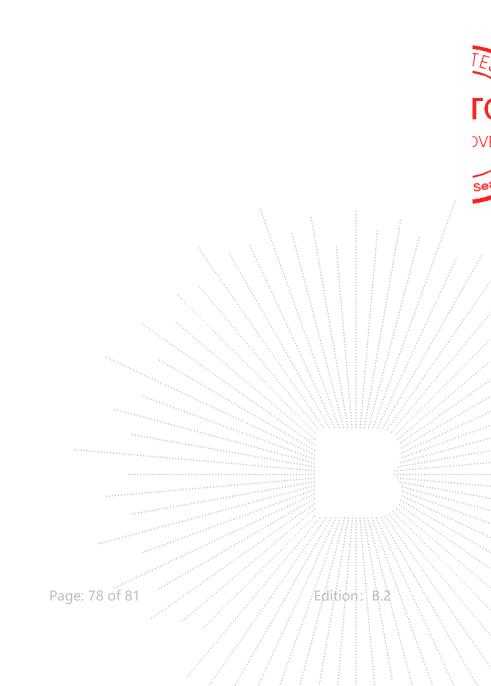
15. Antenna Requirement

15.1 Limit

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

15.2 Test Result

The EUT antenna is internal antenna, fulfill the requirement of this section.





16. EUT Test Setup Photographs

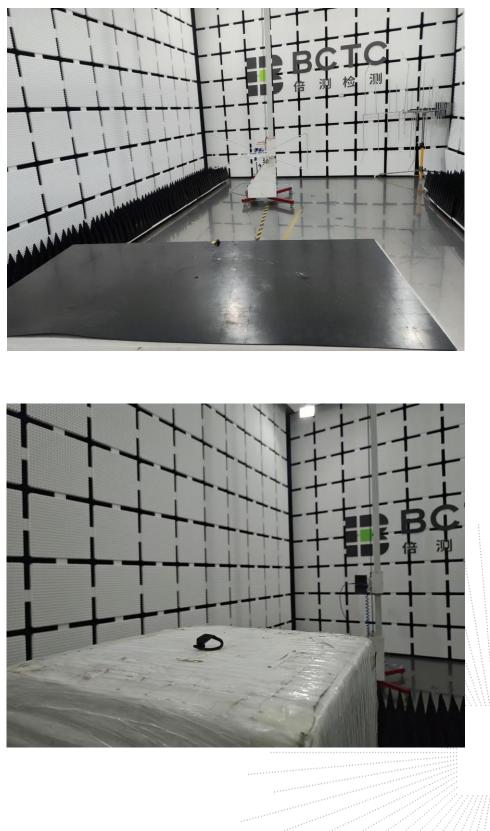
Conducted Emission Measurement Photos



Page: 79 of 81



Radiated Measurement Photos



Page: 80 of 81



STATEMENT

1. The equipment lists are traceable to the national reference standards.

2. The test report can not be partially copied unless prior written approval is issued from our lab.

3. The test report is invalid without stamp of laboratory.

4. The test report is invalid without signature of person(s) testing and authorizing.

5. The test process and test result is only related to the Unit Under Test.

6.The quality system of our laboratory is in accordance with ISO/IEC17025.

7.If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:

1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

TEL: 400-788-9558

P.C.: 518103

FAX: 0755-33229357

Website: http://www.chnbctc.com

Consultation E-mail: bctc@bctc-lab.com.cn

Complaint/Advice E-mail: advice@bctc-lab.com.cn

******** END ******

Page: 81 of 81