# TEST REPORT

| | |
|---|---|
| **Applicant:** | Sinco Intelligent Technology Co., Ltd. |
| **Address of Applicant:** | Room 805-807, No. 17, Wenheng Street, Sanzao Town, Jinwan District, Zhuhai City, China |
| **Manufacturer/Factory:** | Sinco Intelligent Technology Co., Ltd. |
| **Address of Manufacturer/Factory:** | Room 805-807, No. 17, Wenheng Street, Sanzao Town, Jinwan District, Zhuhai City, China |

**Equipment Under Test (EUT)**

| | |
|---|---|
| Product Name: | Guitar/Bass Intelligent Pedal |
| Model No.: | TANK MINI, GK-67, PD43, VOLT V200, POCKET GO |
| Trade Mark: | M-VAVE, LEKATO, Leo Jaymz, Yuimer, AZOR, Ziron, GOKKO, EROK, UTIMO, CASON, DONNER, Btuty, SquareMoon |
| **FCC ID:** | 2ARCP-TANK-MINI |
| **Applicable standards:** | FCC CFR Title 47 Part 15 Subpart C Section 15.249 |
| **Date of sample receipt:** | Nov. 26, 2024 |
| **Date of Test:** | Nov. 26, 2024 to Nov. 30, 2024 |
| **Date of report issued:** | Apr. 11, 2025 |
| **Test Result :** | PASS * |

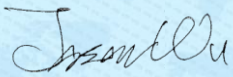
* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

**Robinson Luo**
**Laboratory Manager**

## 2 Version

| Version No. | Date | Description |
|---|---|---|
| *00* | *Apr. 11, 2025* | *Original* |
| | | |
| | | |
| | | |
| | | |

***Prepared By:***  ***Date:*** *2025-04-11*

***Project Engineer***

***Check By:***  ***Date:*** *2025-04-11*

***Reviewer***

# 3 Contents

Page

# 4 Test Summary

| Test Item | Section in CFR 47 | Result |
|---|---|---|
| Antenna requirement | 15.203 | Pass |
| AC Power Line Conducted Emission | 15.207 | Pass |
| Field strength of the fundamental signal | 15.249 (a) | Pass |
| Spurious emissions | 15.249 (a) (d)/15.209 | Pass |
| Band edge | 15.249 (d)/15.205 | Pass |
| 20dB Occupied Bandwidth | 15.215 (c) | Pass |

*Remarks:*

1. *Pass: The EUT complies with the essential requirements in the standard.*
2. *N/A: Not applicable.*
3. *Test according to ANSI C63.10:2013*

## 4.1 Measurement Uncertainty

| No. | Item | Measurement Uncertainty |
|---|---|---|
| 1 | Radio Frequency | $\pm 7.25\times10^{-8}$ |
| 2 | Duty cycle | ±0.37% |
| 3 | Occupied Bandwidth | ±3% |
| 4 | RF conducted power | ±0.75dB |
| 5 | RF power density | ±3dB |
| 6 | Conducted Spurious emissions | ±2.58dB |
| 7 | AC Power Line Conducted Emission | ±3.44dB (0.15MHz ~ 30MHz) |
| 8 | Radiated Spurious emission test | ±3.1dB (9kHz-30MHz) |
| | | ±3.8039dB (30MHz-200MHz) |
| | | ±3.9679dB (200MHz-1GHz) |
| | | ±4.29dB (1GHz-18GHz) |
| | | ±3.30dB (18GHz-40GHz) |
| 9 | Temperature test | ±1°C |
| 10 | Humidity test | ±3% |
| 11 | Time | ±3% |

# 5 General Information

## 5.1 General Description of EUT

| | |
|---|---|
| Product Name: | Guitar/Bass Intelligent Pedal |
| Model No.: | TANK MINI, GK-67, PD43, VOLT V200, POCKET GO |
| Test Model No.: | TANK MINI |
| Remark: All model's the function, software and electric circuit are the same, only with a product colors, patterns and model names different. | |
| Serial No.: | GK-67, PD43, VOLT V200, POCKET GO |
| Test sample(s) ID: | GTSL2025040088-1 |
| Sample(s) Status | Engineered sample |
| Operation Frequency: | 2402MHz~2480MHz |
| Channel numbers: | 79 |
| Modulation type: | GFSK, π /4 DQPSK, 8DPSK |
| Antenna Type: | Internal Antenna |
| Antenna gain: | 3.04dBi(declare by applicant) |
| Power supply: | DC 5.0V from adapter or DC 3.7V from Li-battery |

Remark:
1. Antenna gain information provided by the customer
2. The relevant information of the sample is provided by the entrusting company, and the laboratory is not responsible for its authenticity.

| Operation Frequency each of channel | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 00 | 2402 | 21 | 2423 | 42 | 2444 | 63 | 2465 |
| 01 | 2403 | 22 | 2424 | 43 | 2445 | 64 | 2466 |
| 02 | 2404 | 23 | 2425 | 44 | 2446 | 65 | 2467 |
| 03 | 2405 | 24 | 2426 | 45 | 2447 | 66 | 2468 |
| 04 | 2406 | 25 | 2427 | 46 | 2448 | 67 | 2469 |
| 05 | 2407 | 26 | 2428 | 47 | 2449 | 68 | 2470 |
| 06 | 2408 | 27 | 2429 | 48 | 2450 | 69 | 2471 |
| 07 | 2409 | 28 | 2430 | 49 | 2451 | 70 | 2472 |
| 08 | 2410 | 29 | 2431 | 50 | 2452 | 71 | 2473 |
| 09 | 2411 | 30 | 2432 | 51 | 2453 | 72 | 2474 |
| 10 | 2412 | 31 | 2433 | 52 | 2454 | 73 | 2475 |
| 11 | 2413 | 32 | 2434 | 53 | 2455 | 74 | 2476 |
| 12 | 2414 | 33 | 2435 | 54 | 2456 | 75 | 2477 |
| 13 | 2415 | 34 | 2436 | 55 | 2457 | 76 | 2478 |
| 14 | 2416 | 35 | 2437 | 56 | 2458 | 77 | 2479 |
| 15 | 2417 | 36 | 2438 | 57 | 2459 | 78 | 2480 |
| 16 | 2418 | 37 | 2439 | 58 | 2460 | | |
| 17 | 2419 | 38 | 2440 | 59 | 2461 | | |
| 18 | 2420 | 39 | 2441 | 60 | 2462 | | |
| 19 | 2421 | 40 | 2442 | 61 | 2463 | | |
| 20 | 2422 | 41 | 2443 | 62 | 2464 | | |

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

| Channel | Frequency |
|---|---|
| The lowest channel | 2402MHz |
| The middle channel | 2441MHz |
| The highest channel | 2480MHz |

## 5.2 Test mode

| | |
|---|---|
| Transmitting mode | Keep the EUT in continuously transmitting mode. |
| Remark: New battery is used during all test. | |

## 5.3 Description of Support Units

None.

## 5.4 Deviation from Standards

None.

## 5.5 Abnormalities from Standard Conditions

None.

## 5.6 Test Facility

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

● **FCC—Registration No.: 381383**

Designation Number: CN5029

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files.

● **ISED —Registration No.: 9079A**

CAB identifier: CN0091

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of ISED for radio equipment testing

● **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

## 5.7 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

## 5.8 Additional Instructions

| | |
|---|---|
| Test Software | Special test command provided by manufacturer |
| Power level setup | Default |

# 6 Test Instruments list

| Radiated Emission: | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal.Date (mm-dd-yy)** | **Cal.Due date (mm-dd-yy)** |
| 1 | 3m Semi- Anechoic Chamber | ZhongYu Electron | 9.2(L)*6.2(W)* 6.4(H) | GTS250 | Jun. 22, 2024 | Jun. 21, 2027 |
| 2 | Control Room | ZhongYu Electron | 6.2(L)*2.5(W)* 2.4(H) | GTS251 | N/A | N/A |
| 3 | EMI Test Receiver | Rohde & Schwarz | ESU26 | GTS203 | Apr. 11, 2024 | Apr. 10, 2025 |
| 4 | BiConiLog Antenna | SCHWARZBECK MESS-ELEKTRONIK | VULB9168 | GTS640 | Mar. 19, 2023 | Mar. 18, 2025 |
| 5 | Double -ridged waveguide horn | SCHWARZBECK MESS-ELEKTRONIK | BBHA 9120 D | GTS208 | Apr. 17, 2023 | Apr. 16, 2025 |
| 6 | Wideband Radio Communication Tester | Rohde & Schwarz | CMW500 | GTS575 | Apr. 11, 2024 | Apr. 10, 2025 |
| 7 | Loop Antenna | ZHINAN | ZN30900A | GTS534 | Nov.12, 2024 | Nov.11, 2025 |
| 8 | Broadband Preamplifier | SCHWARZBECK | BBV9718 | GTS535 | Apr. 11, 2024 | Apr. 10, 2025 |
| 9 | Amplifier(1GHz-26.5GHz) | HP | 8449B | GTS601 | Apr. 11, 2024 | Apr. 10, 2025 |
| 10 | Horn Antenna (15GH-40GHz) | SCHWARZBECK | 01296 | GTS691 | Mar. 07, 2024 | Mar. 06, 2025 |
| 11 | FSV·Signal Analyzer (10Hz-40GHz) | Keysight | FSV-40-N | GTS666 | Mar. 12, 2024 | Mar. 11, 2025 |
| 12 | Amplifier | / | LNA-1000-30S | GTS650 | Apr. 11, 2024 | Apr. 10, 2025 |
| 13 | CDNE M2+M3-16A | HCT | 30MHz-300MHz | GTS692 | Nov. 07, 2024 | Nov. 06, 2025 |
| 14 | Wideband Amplifier | / | WDA-01004000-15P35 | GTS602 | Apr. 11, 2024 | Apr. 10, 2025 |
| 15 | Thermo meter | JINCHUANG | GSP-8A | GTS643 | Apr. 18, 2024 | Apr. 17, 2025 |
| 16 | RE cable 1 | GTS | N/A | GTS675 | Jul. 02, 2024 | Jul. 01, 2025 |
| 17 | RE cable 2 | GTS | N/A | GTS676 | Jul. 02, 2024 | Jul. 01, 2025 |
| 18 | RE cable 3 | GTS | N/A | GTS677 | Jul. 02, 2024 | Jul. 01, 2025 |
| 19 | RE cable 4 | GTS | N/A | GTS678 | Jul. 02, 2024 | Jul. 01, 2025 |
| 20 | RE cable 5 | GTS | N/A | GTS679 | Jul. 02, 2024 | Jul. 01, 2025 |
| 21 | RE cable 6 | GTS | N/A | GTS680 | Jul. 02, 2024 | Jul. 01, 2025 |
| 22 | RE cable 7 | GTS | N/A | GTS681 | Jul. 05, 2024 | Jul. 04, 2025 |
| 23 | RE cable 8 | GTS | N/A | GTS682 | Jul. 05, 2024 | Jul. 04, 2025 |
| 24 | EMI Test Software | AUDIX | E3-6.100614a | GTS725 | N/A | N/A |

| Conducted Emission | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal.Date (mm-dd-yy)** | **Cal.Due date (mm-dd-yy)** |
| 1 | Shielding Room | ZhongYu Electron | 7.3(L)x3.1(W)x2.9(H) | GTS252 | Jul. 12, 2022 | Jul. 11, 2027 |
| 2 | EMI Test Receiver | R&S | ESCI 7 | GTS552 | Apr. 11, 2024 | Apr. 10, 2025 |
| 3 | LISN | ROHDE & SCHWARZ | ENV216 | GTS226 | Apr. 11, 2024 | Apr. 10, 2025 |
| 4 | Coaxial Cable | GTS | N/A | GTS227 | N/A | N/A |
| 5 | Thermo meter | JINCHUANG | GSP-8A | GTS642 | Apr. 18, 2024 | Apr. 17, 2025 |
| 6 | Absorbing clamp | Elektronik-Feinmechanik | MDS21 | GTS229 | Apr. 11, 2024 | Apr. 10, 2025 |
| 7 | ISN | SCHWARZBECK | NTFM 8158 | GTS565 | Apr. 11, 2024 | Apr. 10, 2025 |
| 8 | High voltage probe | SCHWARZBECK | TK9420 | GTS537 | Apr. 11, 2024 | Apr. 10, 2025 |
| 9 | Antenna end assembly | Weinschel | 1870A | GTS560 | Apr. 11, 2024 | Apr. 10, 2025 |
| 10 | EMI Test Software | AUDIX | E3-6.100622 | GTS726 | N/A | N/A |

| RF Conducted Test: | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Test Equipment** | **Manufacturer** | **Model No.** | **Serial No.** | **Cal.Date (mm-dd-yy)** | **Cal.Due date (mm-dd-yy)** |
| 1 | MXA Signal Analyzer | Agilent | N9020A | GTS566 | Apr. 13, 2024 | Apr. 12, 2025 |
| 2 | EMI Test Receiver | R&S | ESCI 7 | GTS552 | Apr. 13, 2024 | Apr. 12, 2025 |
| 3 | PSA Series Spectrum Analyzer | Agilent | E4440A | GTS536 | Apr. 13, 2024 | Apr. 12, 2025 |
| 4 | MXG vector Signal Generator | Agilent | N5182A | GTS567 | Apr. 13, 2024 | Apr. 12, 2025 |
| 5 | ESG Analog Signal Generator | Agilent | E4428C | GTS568 | Apr. 13, 2024 | Apr. 12, 2025 |
| 6 | USB RF Power Sensor | DARE | RPR3006W | GTS569 | Apr. 13, 2024 | Apr. 12, 2025 |
| 7 | RF Switch Box | Shongyi | RFSW3003328 | GTS571 | Apr. 13, 2024 | Apr. 12, 2025 |
| 8 | Programmable Constant Temp & Humi Test Chamber | WEWON | WHTH-150L-40-880 | GTS572 | Apr. 13, 2024 | Apr. 12, 2025 |
| 9 | Thermo meter | JINCHUANG | GSP-8A | GTS641 | Apr. 18, 2024 | Apr. 17, 2025 |

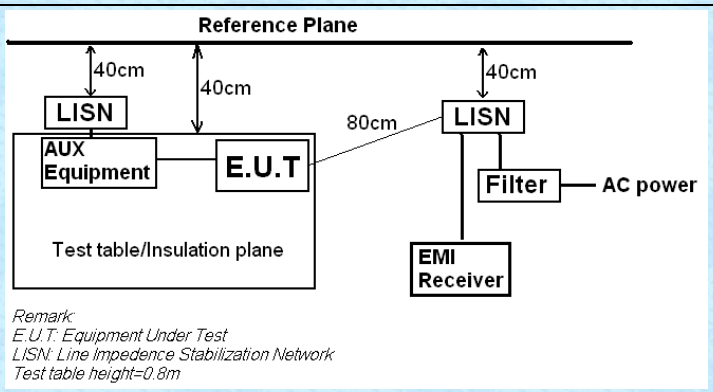
| General used equipment: | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal.Date (mm-dd-yy)** | **Cal.Due date (mm-dd-yy)** |
| 1 | Barometer | KUMAO | SF132 | GTS647 | Apr. 18, 2024 | Apr. 17, 2025 |

# 7 Test results and Measurement Data

## 7.1 Antenna requirement

| | |
|---|---|
| **Standard requirement:** | FCC Part15 C Section 15.203 |
| **15.203 requirement:**<br>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. | |
| **EUT Antenna:** | |
| The antenna is internal antenna, reference to the appendix II for details. | |

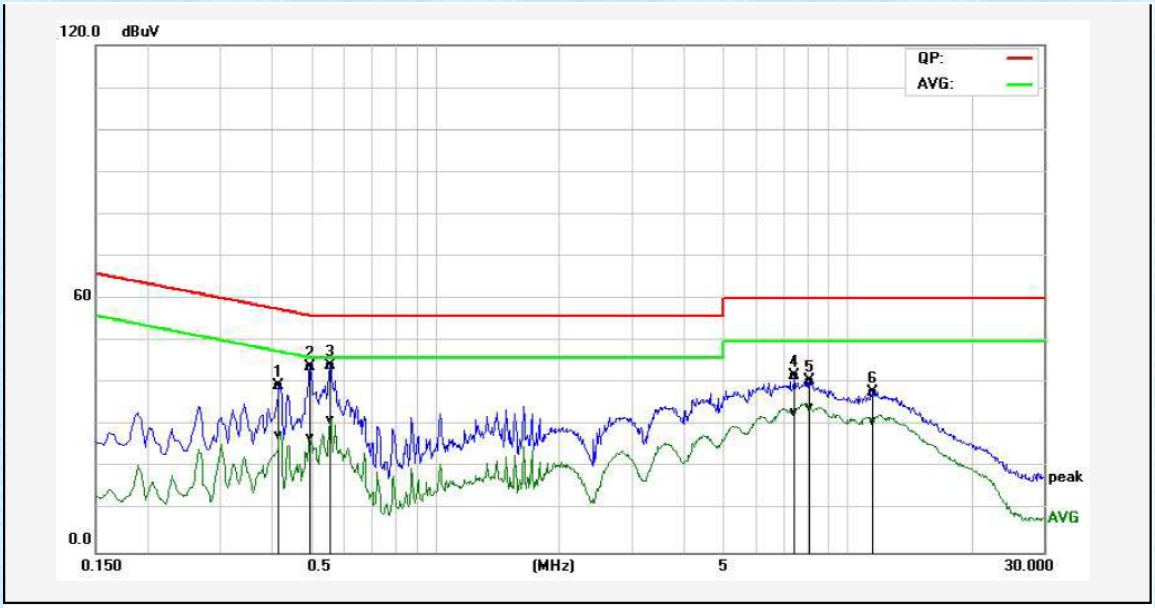
## 7.2 Conducted Emissions

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.207</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</td><td>150KHz to 30MHz</td></tr>
<tr><td>Class / Severity:</td><td>Class B</td></tr>
<tr><td>Receiver setup:</td><td>RBW=9KHz, VBW=30KHz, Sweep time=auto</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
</table>
* Decreases with the logarithm of the frequency.
</td></tr>
<tr><td>Test setup:</td><td> 
</td></tr>
<tr><td>Test procedure:</td><td>1. The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.<br>2. 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).<br>3. 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.</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 6.0 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 5.2 for details</td></tr>
<tr><td>Test environment:</td><td>Temp.:</td><td>25 °C</td><td>Humid.:</td><td>52%</td><td>Press.:</td><td>1012mbar</td></tr>
<tr><td>Test voltage:</td><td>AC 120V, 60Hz</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

Remark: Both high and low voltages have been tested to show only the worst low voltage test data.

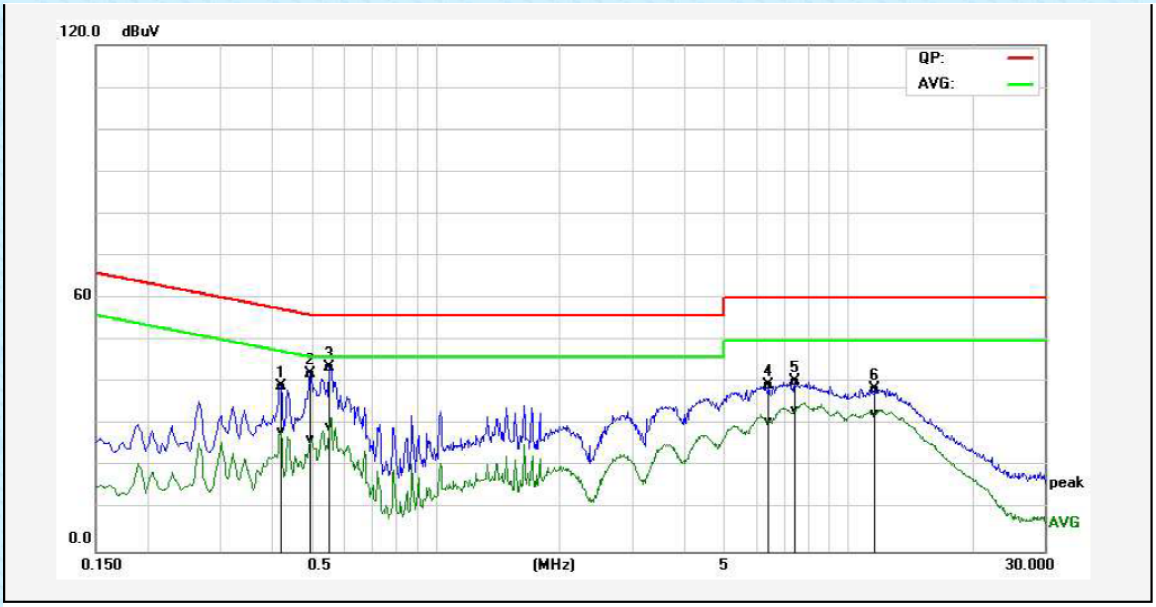
**Measurement data**

**Line:**




| No. | Frequency | QuasiPeak reading | Average reading | Correction factor | QuasiPeak result | Average result | QuasiPeak limit | Average limit | QuasiPeak margin | Average margin | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | (MHz) | (dBuV) | (dBuV) | (dB) | (dBuV) | (dBuV) | (dBuV) | (dBuV) | (dB) | (dB) | |
| 1P | 0.4180 | 29.46 | 17.74 | 10.11 | 39.57 | 27.85 | 57.49 | 47.49 | -17.92 | -19.64 | Pass |
| 2P | 0.4980 | 33.93 | 17.19 | 10.08 | 44.01 | 27.27 | 56.03 | 46.03 | -12.02 | -18.76 | Pass |
| 3* | 0.5580 | 34.20 | 21.36 | 10.08 | 44.28 | 31.44 | 56.00 | 46.00 | -11.72 | -14.56 | Pass |
| 4P | 7.4500 | 31.32 | 22.65 | 10.53 | 41.85 | 33.18 | 60.00 | 50.00 | -18.15 | -16.82 | Pass |
| 5P | 8.0820 | 30.16 | 23.77 | 10.52 | 40.68 | 34.29 | 60.00 | 50.00 | -19.32 | -15.71 | Pass |
| 6P | 11.5140 | 27.44 | 20.56 | 10.62 | 38.06 | 31.18 | 60.00 | 50.00 | -21.94 | -18.82 | Pass |

**Neutral:**




| No. | Frequency | QuasiPeak reading | Average reading | Correction factor | QuasiPeak result | Average result | QuasiPeak limit | Average limit | QuasiPeak margin | Average margin | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | (MHz) | (dBuV) | (dBuV) | (dB) | (dBuV) | (dBuV) | (dBuV) | (dBuV) | (dB) | (dB) | |
| 1P | 0.4220 | 28.95 | 18.28 | 10.10 | 39.05 | 28.38 | 57.41 | 47.41 | -18.36 | -19.03 | Pass |
| 2P | 0.4980 | 32.17 | 16.57 | 10.08 | 42.25 | 26.65 | 56.03 | 46.03 | -13.78 | -19.38 | Pass |
| 3* | 0.5540 | 33.57 | 19.37 | 10.08 | 43.65 | 29.45 | 56.00 | 46.00 | -12.35 | -16.55 | Pass |
| 4P | 6.4420 | 28.97 | 20.19 | 10.52 | 39.49 | 30.71 | 60.00 | 50.00 | -20.51 | -19.29 | Pass |
| 5P | 7.4180 | 29.87 | 22.82 | 10.52 | 40.39 | 33.34 | 60.00 | 50.00 | -19.61 | -16.66 | Pass |
| 6P | 11.6540 | 27.97 | 22.00 | 10.62 | 38.59 | 32.62 | 60.00 | 50.00 | -21.41 | -17.38 | Pass |

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss
4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

## 7.3 Radiated Emission Method

| | |
|---|---|
| Test Requirement: | FCC Part15 C Section 15.209 |
| Test Method: | ANSI C63.10:2013 |
| Test Frequency Range: | 9kHz to 25GHz |
| Test site: | Measurement Distance: 3m |
| Receiver setup: | |

| Frequency | Detector | RBW | VBW | Remark |
|---|---|---|---|---|
| 9kHz-150kHz | Quasi-peak | 200Hz | 300Hz | Quasi-peak Value |
| 150kHz-30MHz | Quasi-peak | 9kHz | 10kHz | Quasi-peak Value |
| 30MHz-1GHz | Quasi-peak | 120KHz | 300KHz | Quasi-peak Value |
| Above 1GHz | Peak | 1MHz | 3MHz | Peak Value |
| | Peak | 1MHz | 10Hz | Average Value |

Note: For Duty cycle ⩾ 98%, average detector set as above, For Duty cycle < 98%, average detector set as below: VBW ⩾ 1 / T

Limit:
(Field strength of the fundamental signal)

| Frequency | imit (dBuV/m @3m) | Re ark |
|---|---|---|
| 2400 Hz-2483.5MHz | 94.00 | Avera e Value |
| | 114.00 | Peak Va ue |

Limit:
(Spurious Emissions)

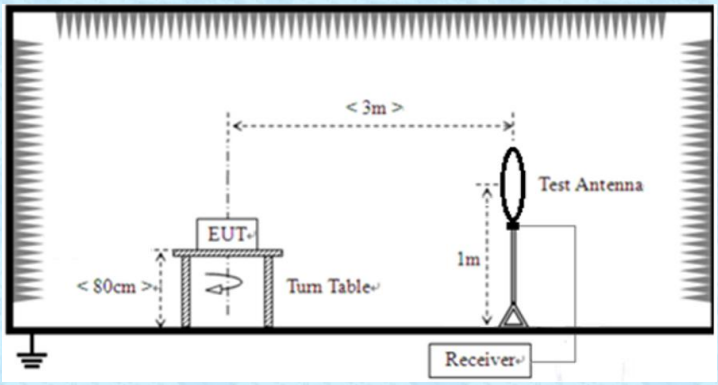
| Frequency | Limit ( V/m) | Remark |
|---|---|---|
| 0.009MH -0.490MHz | 2400 F(kHz) @300m | Quasi-peak Value |
| 0.490MHz-1.705MHz | 24000/F(kHz) @30m | Quasi-peak Value |
| 1.705MHz-30.0MHz | 30 @30m | Quasi-peak Value |
| 30MHz-88MHz | 100 @3m | Quasi-peak Value |
| 88MHz-216MHz | 150 @3m | Quasi-peak Value |
| 216MHz-960MHz | 200 @3m | Quasi-peak Value |
| 960MHz-1GHz | 500 @3m | Quasi-peak Value |
| Above 1GHz | 500 @3m | Average Value |
| | 5000 @3m | Peak Value |

Limit:
(band edge)

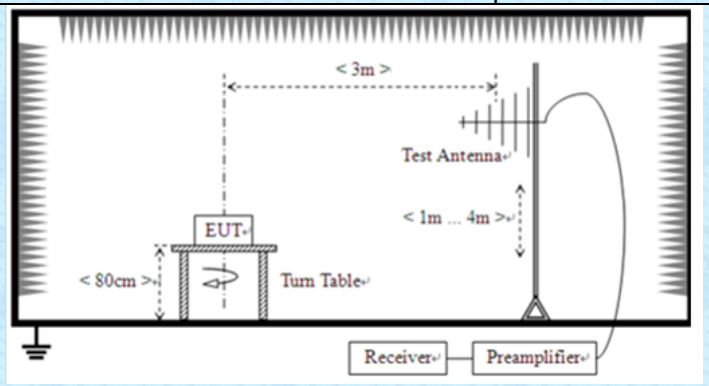
Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

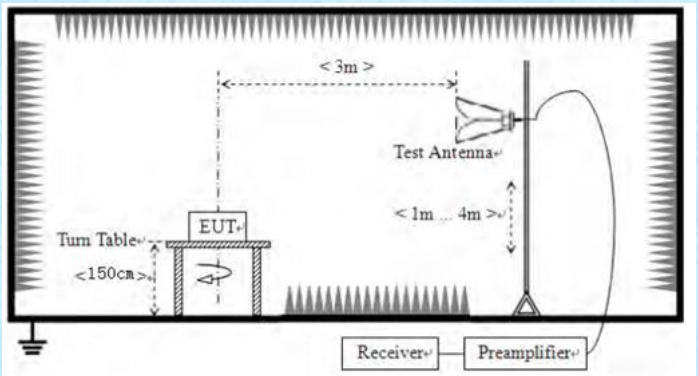
Test setup:

For radiated emissions from 9kHz to 30MHz




For radiated emissions from 30MHz to1GHz

<table>
<tr><td></td><td>


<br>For radiated emissions above 1GHz<br>


</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.<br>2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.<br>3. 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.<br>4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.<br>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.<br>6. 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.</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 6.0 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 5.2 for details</td></tr>
<tr><td>Test environment:</td><td>Temp.: | 25 °C | Humid.: | 52% | Press.: | 1012mbar</td></tr>
<tr><td>Test voltage:</td><td>AC 120V, 60Hz</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

**Measurement data:**

### 7.3.1 Field Strength of The Fundamental Signal

GFSK:

| Test frequency (MHz) | Fundamental Frequency (MHz) | Field strength of fundamental level (dBμV/m) | | Limit (dBuV) | | Result | Antenna Pole (H/V) |
|---|---|---|---|---|---|---|---|
| | | AVG | Peak | AVG | Peak | | |
| 2402 | 2401.783 | 75.71 | 99.72 | 94 | 114 | Pass | H |
| | 2401.852 | 75.59 | 95.89 | 94 | 114 | Pass | V |
| 2441 | 2440.912 | 80.09 | 100.63 | 94 | 114 | Pass | H |
| | 2440.894 | 80.16 | 100.46 | 94 | 114 | Pass | V |
| 2480 | 2479.817 | 80.23 | 100.68 | 94 | 114 | Pass | H |
| | 2479.914 | 80.12 | 100.43 | 94 | 114 | Pass | V |

π/4 DQPSK:

| Test frequency (MHz) | Fundamental Frequency (MHz) | Field strength of fundamental level (dBμV/m) | | Limit (dBuV) | | Result | Antenna Pole (H/V) |
|---|---|---|---|---|---|---|---|
| | | AVG | Peak | AVG | Peak | | |
| 2402 | 2401.847 | 79.99 | 100.36 | 94 | 114 | Pass | H |
| | 2402.938 | 79.9 | 100.17 | 94 | 114 | Pass | V |
| 2441 | 2440.822 | 80.75 | 101.17 | 94 | 114 | Pass | H |
| | 2440.797 | 80.68 | 100.92 | 94 | 114 | Pass | V |
| 2480 | 2480.044 | 80.96 | 101.27 | 94 | 114 | Pass | H |
| | 2480.026 | 80.82 | 101.09 | 94 | 114 | Pass | V |

8DPSK:

| Test frequency (MHz) | Fundamental Frequency (MHz) | Field strength of fundamental level (dBμV/m) | | Limit (dBuV) | | Result | Antenna Pole (H/V) |
|---|---|---|---|---|---|---|---|
| | | AVG | Peak | AVG | Peak | | |
| 2402 | 2401.876 | 80.25 | 100.61 | 94 | 114 | Pass | H |
| | 2401.788 | 80.1 | 100.56 | 94 | 114 | Pass | V |
| 2441 | 2440.945 | 81.12 | 101.5 | 94 | 114 | Pass | H |
| | 2440.907 | 80.81 | 101.05 | 94 | 114 | Pass | V |
| 2480 | 2479.895 | 80.97 | 101.59 | 94 | 114 | Pass | H |
| | 2479.885 | 80.98 | 101.27 | 94 | 114 | Pass | V |

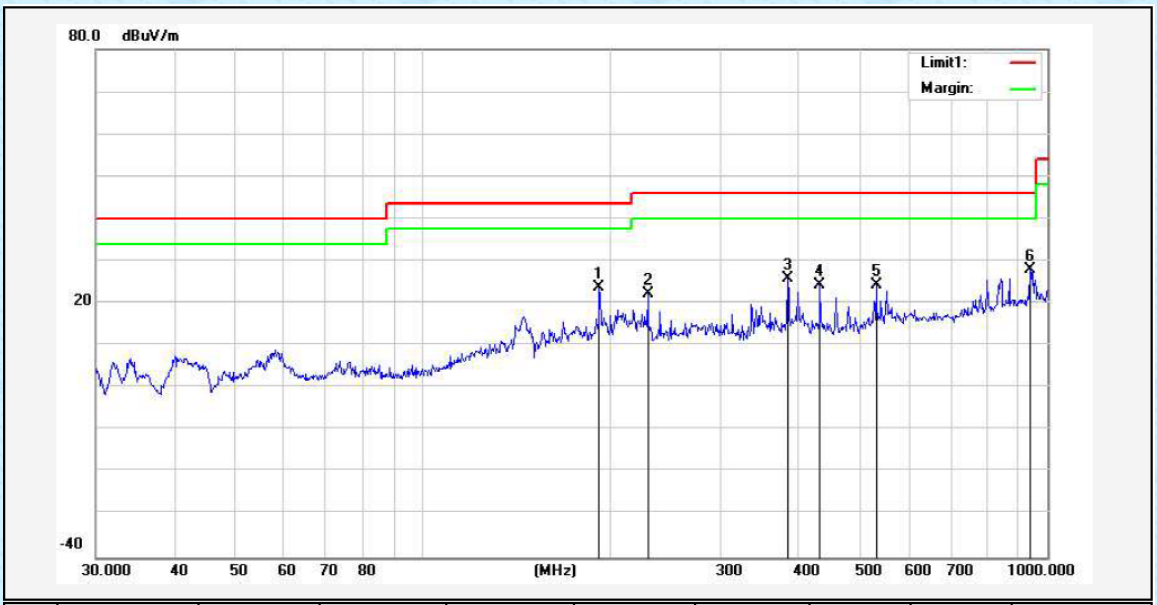
### 7.3.2 Spurious emissions

■ **Below 30MHz**

The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o), the test result no need to reported.

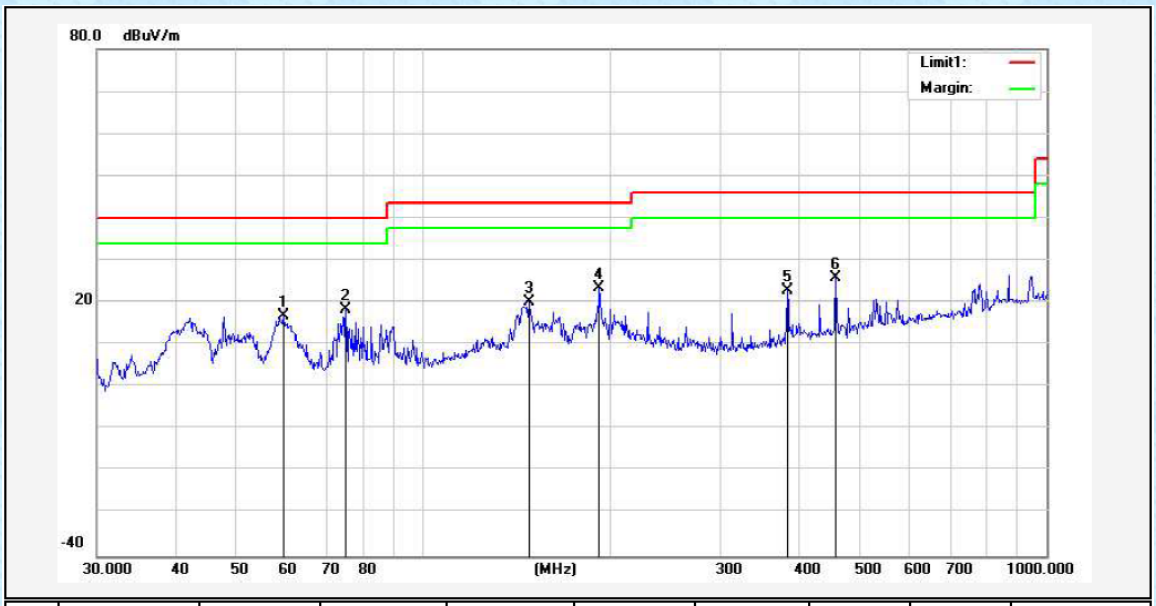
■ **Below 1GHz**

**Horizontal:**




| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Degree (deg.) | Height (cm) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 191.7450 | 44.27 | -20.65 | 23.62 | 43.50 | -19.88 | 103 | 100 | QP |
| 2 | 229.2931 | 42.06 | -19.88 | 22.18 | 46.00 | -23.82 | 157 | 100 | QP |
| 3 | 383.9318 | 41.56 | -15.74 | 25.82 | 46.00 | -20.18 | 186 | 100 | QP |
| 4 | 432.5457 | 39.63 | -15.20 | 24.43 | 46.00 | -21.57 | 124 | 100 | QP |
| 5 | 531.9635 | 37.14 | -12.93 | 24.21 | 46.00 | -21.79 | 133 | 100 | QP |
| 6* | 938.8326 | 34.85 | -6.86 | 27.99 | 46.00 | -18.01 | 149 | 100 | QP |

**Vertical:**




| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Degree (deg.) | Height (cm) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 59.6493 | 43.03 | -26.11 | 16.92 | 40.00 | -23.08 | 67 | 100 | QP |
| 2 | 75.1823 | 43.53 | -25.30 | 18.23 | 40.00 | -21.77 | 189 | 100 | QP |
| 3 | 147.9214 | 39.55 | -19.49 | 20.06 | 43.50 | -23.44 | 46 | 100 | QP |
| 4* | 191.7450 | 44.02 | -20.65 | 23.37 | 43.50 | -20.13 | 130 | 100 | QP |
| 5 | 383.9318 | 38.54 | -15.74 | 22.80 | 46.00 | -23.20 | 190 | 100 | QP |
| 6 | 459.1144 | 40.78 | -14.96 | 25.82 | 46.00 | -20.18 | 58 | 100 | QP |

Above 1GHz
GFSK Modulation:
CH00 (2402MHz)

Horizontal:

| Frequency | Reading Result | Factor | Emission Level | Limits | Margin | Detector Type |
|---|---|---|---|---|---|---|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 2402 | 105.56 | -5.84 | 99.72 | 114 | -14.28 | PK |
| 2402 | 81.5 | -5.84 | 75.66 | 94 | -18.34 | AV |
| 4804 | 58.72 | -3.64 | 55.08 | 74 | -18.92 | PK |
| 4804 | 38.61 | -3.64 | 34.97 | 54 | -19.03 | AV |
| 7206 | 55.62 | -0.95 | 54.67 | 74 | -19.33 | PK |
| 7206 | 35.29 | -0.95 | 34.34 | 54 | -19.66 | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Emission Level – Limit | | | | | | |

Vertical:

| Frequency | Reading Result | Factor | Emission Level | Limits | Margin | Detector Type |
|---|---|---|---|---|---|---|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 2402 | 101.73 | -5.84 | 95.89 | 114 | -18.11 | PK |
| 2402 | 81.43 | -5.84 | 75.59 | 94 | -18.41 | AV |
| 4804 | 58.78 | -3.64 | 55.14 | 74 | -18.86 | PK |
| 4804 | 38.57 | -3.64 | 34.93 | 54 | -19.07 | AV |
| 7206 | 55.49 | -0.95 | 54.54 | 74 | -19.46 | PK |
| 7206 | 34.93 | -0.95 | 33.98 | 54 | -20.02 | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Emission Level – Limit | | | | | | |

CH39 (2441MHz)

Horizontal:

| Frequency | Reading Result | Factor | Emission Level | Limits | Margin | Detector Type |
|---|---|---|---|---|---|---|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 2441 | 106.34 | -5.71 | 100.63 | 114 | -13.37 | PK |
| 2441 | 85.82 | -5.71 | 80.11 | 94 | -13.89 | AV |
| 4882 | 62.99 | -3.51 | 59.48 | 74 | -14.52 | PK |
| 4882 | 42.92 | -3.51 | 39.41 | 54 | -14.59 | AV |
| 7323 | 59.91 | -0.82 | 59.09 | 74 | -14.91 | PK |
| 7323 | 39.63 | -0.82 | 38.81 | 54 | -15.19 | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Emission Level – Limit | | | | | | |

Vertical:

| Frequency | Reading Result | Factor | Emission Level | Limits | Margin | Detector Type |
|---|---|---|---|---|---|---|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 2441 | 106.17 | -5.71 | 100.46 | 114 | -13.54 | PK |
| 2441 | 85.87 | -5.71 | 80.16 | 94 | -13.84 | AV |
| 4882 | 63.21 | -3.51 | 59.7 | 74 | -14.3 | PK |
| 4882 | 43.03 | -3.51 | 39.52 | 54 | -14.48 | AV |
| 7323 | 59.94 | -0.82 | 59.12 | 74 | -14.88 | PK |
| 7323 | 39.4 | -0.82 | 38.58 | 54 | -15.42 | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Emission Level – Limit | | | | | | |

CH78 (2480MHz)

Horizontal:

| Frequency | Reading Result | Factor | Emission Level | Limits | Margin | Detector Type |
|---|---|---|---|---|---|---|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 2480 | 106.33 | -5.65 | 100.68 | 114 | -13.32 | PK |
| 2480 | 85.88 | -5.65 | 80.23 | 94 | -13.77 | AV |
| 4960 | 63.15 | -3.43 | 59.72 | 74 | -14.28 | PK |
| 4960 | 43.1 | -3.43 | 39.67 | 54 | -14.33 | AV |
| 7440 | 60.09 | -0.75 | 59.34 | 74 | -14.66 | PK |
| 7440 | 39.79 | -0.75 | 39.04 | 54 | -14.96 | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Emission Level – Limit | | | | | | |

Vertical:

| Frequency | Reading Result | Factor | Emission Level | Limits | Margin | Detector Type |
|---|---|---|---|---|---|---|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 2480 | 106.06 | -5.63 | 100.43 | 114 | -13.57 | PK |
| 2480 | 85.77 | -5.65 | 80.12 | 94 | -13.88 | AV |
| 4960 | 63.09 | -3.43 | 59.66 | 74 | -14.34 | PK |
| 4960 | 42.89 | -3.43 | 39.46 | 54 | -14.54 | AV |
| 7440 | 59.82 | -0.75 | 59.07 | 74 | -14.93 | PK |
| 7440 | 39.29 | -0.75 | 38.54 | 54 | -15.46 | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Emission Level – Limit | | | | | | |

π/4 DQPSK Modulation:
CH00 (2402MHz)

Horizontal:

| Frequency | Reading Result | Factor | Emission Level | Limits | Margin | Detector Type |
|---|---|---|---|---|---|---|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 2402 | 106.2 | -5.84 | 100.36 | 114 | -13.64 | PK |
| 2402 | 85.77 | -5.84 | 79.93 | 94 | -14.07 | AV |
| 4804 | 63.05 | -3.64 | 59.41 | 74 | -14.59 | PK |
| 4804 | 42.93 | -3.64 | 39.29 | 54 | -14.71 | AV |
| 7206 | 59.91 | -0.95 | 58.96 | 74 | -15.04 | PK |
| 7206 | 39.62 | -0.95 | 38.67 | 54 | -15.33 | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Emission Level – Limit | | | | | | |

Vertical:

| Frequency | Reading Result | Factor | Emission Level | Limits | Margin | Detector Type |
|---|---|---|---|---|---|---|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 2402 | 106.01 | -5.84 | 100.17 | 114 | -13.83 | PK |
| 2402 | 85.74 | -5.84 | 79.9 | 94 | -14.1 | AV |
| 4804 | 63.03 | -3.64 | 59.39 | 74 | -14.61 | PK |
| 4804 | 42.88 | -3.64 | 39.24 | 54 | -14.76 | AV |
| 7206 | 59.74 | -0.95 | 58.79 | 74 | -15.21 | PK |
| 7206 | 39.61 | -0.95 | 38.66 | 54 | -15.34 | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Emission Level – Limit | | | | | | |

CH39 (2441MHz)

Horizontal:

| Frequency | Reading Result | Factor | Emission Level | Limits | Margin | Detector Type |
|---|---|---|---|---|---|---|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 2441 | 106.88 | -5.71 | 101.17 | 114 | -12.83 | PK |
| 2441 | 86.46 | -5.71 | 80.75 | 94 | -13.25 | AV |
| 4882 | 63.67 | -3.51 | 60.16 | 74 | -13.84 | PK |
| 4882 | 43.59 | -3.51 | 40.08 | 54 | -13.92 | AV |
| 7323 | 60.63 | -0.82 | 59.81 | 74 | -14.19 | PK |
| 7323 | 40.28 | -0.82 | 39.46 | 54 | -14.54 | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Emission Level – Limit | | | | | | |

Vertical:

| Frequency | Reading Result | Factor | Emission Level | Limits | Margin | Detector Type |
|---|---|---|---|---|---|---|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 2441 | 106.63 | -5.71 | 100.92 | 114 | -13.08 | PK |
| 2441 | 86.39 | -5.71 | 80.68 | 94 | -13.32 | AV |
| 4882 | 63.68 | -3.51 | 60.17 | 74 | -13.83 | PK |
| 4882 | 43.47 | -3.51 | 39.96 | 54 | -14.04 | AV |
| 7323 | 60.38 | -0.82 | 59.56 | 74 | -14.44 | PK |
| 7323 | 39.84 | -0.82 | 39.02 | 54 | -14.98 | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Emission Level – Limit | | | | | | |

CH78 (2480MHz)

Horizontal:

| Frequency | Reading Result | Factor | Emission Level | Limits | Margin | Detector Type |
|---|---|---|---|---|---|---|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 2480 | 106.92 | -5.65 | 101.27 | 114 | -12.73 | PK |
| 2480 | 86.61 | -5.65 | 80.96 | 94 | -13.04 | AV |
| 4960 | 63.9 | -3.43 | 60.47 | 74 | -13.53 | PK |
| 4960 | 43.82 | -3.43 | 40.39 | 54 | -13.61 | AV |
| 7440 | 60.81 | -0.75 | 60.06 | 74 | -13.94 | PK |
| 7440 | 40.54 | -0.75 | 39.79 | 54 | -14.21 | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Emission Level – Limit | | | | | | |

Vertical:

| Frequency | Reading Result | Factor | Emission Level | Limits | Margin | Detector Type |
|---|---|---|---|---|---|---|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 2480 | 106.72 | -5.63 | 101.09 | 114 | -12.91 | PK |
| 2480 | 86.47 | -5.65 | 80.82 | 94 | -13.18 | AV |
| 4960 | 63.73 | -3.43 | 60.3 | 74 | -13.7 | PK |
| 4960 | 43.49 | -3.43 | 40.06 | 54 | -13.94 | AV |
| 7440 | 60.46 | -0.75 | 59.71 | 74 | -14.29 | PK |
| 7440 | 39.98 | -0.75 | 39.23 | 54 | -14.77 | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Emission Level – Limit | | | | | | |

8DPSK Modulation:
CH00 (2402MHz)

Horizontal:

| Frequency | Reading Result | Factor | Emission Level | Limits | Margin | Detector Type |
|---|---|---|---|---|---|---|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 2402 | 106.45 | -5.84 | 100.61 | 114 | -13.39 | PK |
| 2402 | 86.09 | -5.84 | 80.25 | 94 | -13.75 | AV |
| 4804 | 63.35 | -3.64 | 59.71 | 74 | -14.29 | PK |
| 4804 | 43.19 | -3.64 | 39.55 | 54 | -14.45 | AV |
| 7206 | 60.17 | -0.95 | 59.22 | 74 | -14.78 | PK |
| 7206 | 39.91 | -0.95 | 38.96 | 54 | -15.04 | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Emission Level – Limit | | | | | | |

Vertical:

| Frequency | Reading Result | Factor | Emission Level | Limits | Margin | Detector Type |
|---|---|---|---|---|---|---|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 2402 | 106.4 | -5.84 | 100.56 | 114 | -13.44 | PK |
| 2402 | 85.94 | -5.84 | 80.1 | 94 | -13.9 | AV |
| 4804 | 63.38 | -3.64 | 59.74 | 74 | -14.26 | PK |
| 4804 | 43.16 | -3.64 | 39.52 | 54 | -14.48 | AV |
| 7206 | 60.07 | -0.95 | 59.12 | 74 | -14.88 | PK |
| 7206 | 39.61 | -0.95 | 38.66 | 54 | -15.34 | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Emission Level – Limit | | | | | | |

CH39 (2441MHz)

Horizontal:

| Frequency | Reading Result | Factor | Emission Level | Limits | Margin | Detector Type |
|---|---|---|---|---|---|---|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 2441 | 107.21 | -5.71 | 101.5 | 114 | -12.5 | PK |
| 2441 | 86.83 | -5.71 | 81.12 | 94 | -12.88 | AV |
| 4882 | 63.96 | -3.51 | 60.45 | 74 | -13.55 | PK |
| 4882 | 43.79 | -3.51 | 40.28 | 54 | -13.72 | AV |
| 7323 | 60.91 | -0.82 | 60.09 | 74 | -13.91 | PK |
| 7323 | 40.63 | -0.82 | 39.81 | 54 | -14.19 | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Emission Level – Limit | | | | | | |

Vertical:

| Frequency | Reading Result | Factor | Emission Level | Limits | Margin | Detector Type |
|---|---|---|---|---|---|---|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 2441 | 106.76 | -5.71 | 101.05 | 114 | -12.95 | PK |
| 2441 | 86.52 | -5.71 | 80.81 | 94 | -13.19 | AV |
| 4882 | 63.82 | -3.51 | 60.31 | 74 | -13.69 | PK |
| 4882 | 43.58 | -3.51 | 40.07 | 54 | -13.93 | AV |
| 7323 | 60.51 | -0.82 | 59.69 | 74 | -14.31 | PK |
| 7323 | 39.96 | -0.82 | 39.14 | 54 | -14.86 | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Emission Level – Limit | | | | | | |

CH78 (2480MHz)

Horizontal:

| Frequency | Reading Result | Factor | Emission Level | Limits | Margin | Detector Type |
|---|---|---|---|---|---|---|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 2480 | 107.24 | -5.65 | 101.59 | 114 | -12.41 | PK |
| 2480 | 86.62 | -5.65 | 80.97 | 94 | -13.03 | AV |
| 4960 | 64.1 | -3.43 | 60.67 | 74 | -13.33 | PK |
| 4960 | 43.96 | -3.43 | 40.53 | 54 | -13.47 | AV |
| 7440 | 61.01 | -0.75 | 60.26 | 74 | -13.74 | PK |
| 7440 | 40.73 | -0.75 | 39.98 | 54 | -14.02 | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Emission Level – Limit | | | | | | |

Vertical:

| Frequency | Reading Result | Factor | Emission Level | Limits | Margin | Detector Type |
|---|---|---|---|---|---|---|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 2480 | 106.9 | -5.63 | 101.27 | 114 | -12.73 | PK |
| 2480 | 86.63 | -5.65 | 80.98 | 94 | -13.02 | AV |
| 4960 | 63.89 | -3.43 | 60.46 | 74 | -13.54 | PK |
| 4960 | 43.73 | -3.43 | 40.3 | 54 | -13.7 | AV |
| 7440 | 60.65 | -0.75 | 59.9 | 74 | -14.1 | PK |
| 7440 | 40.09 | -0.75 | 39.34 | 54 | -14.66 | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Emission Level – Limit | | | | | | |

Remark:
1. Measuring frequencies from 1 GHz to the 25 GHz.
2. “F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency.
3. * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
4. Data of measurement within this frequency range shown “--- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120kHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10kHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
6. When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.
7. For fundamental frequency, RBW >20dB BW, VBW>=3XRBW, PK detector for PK value, AV detector for AV value.

### 7.3.3 Bandedge emissions

*All of the restriction bands were tested, and only the data of worst case was exhibited.*

| Test channel: | Lowest channel |
|---|---|

Horizontal:

| Frequency (MHz) | Reading Result (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector Type |
|---|---|---|---|---|---|---|
| 2310 | 58.09 | -5.81 | 52.28 | 74 | -21.72 | PK |
| 2310 | / | -5.81 | / | 54 | / | AV |
| 2390 | 58.2 | -5.84 | 52.36 | 74 | -21.64 | PK |
| 2390 | / | -5.84 | / | 54 | / | AV |
| 2400 | 58.15 | -5.84 | 52.31 | 74 | -21.69 | PK |
| 2400 | / | -5.84 | / | 54 | / | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

Vertical:

| Frequency (MHz) | Reading Result (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector Type |
|---|---|---|---|---|---|---|
| 2310 | 57.94 | -5.81 | 52.13 | 74 | -21.87 | PK |
| 2310 | / | -5.81 | / | 54 | / | AV |
| 2390 | 58.02 | -5.84 | 52.18 | 74 | -21.82 | PK |
| 2390 | / | -5.84 | / | 54 | / | AV |
| 2400 | 58.22 | -5.84 | 52.38 | 74 | -21.62 | PK |
| 2400 | / | -5.84 | / | 54 | / | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| Test channel: | Highest channel |
|---|---|

Horizontal:

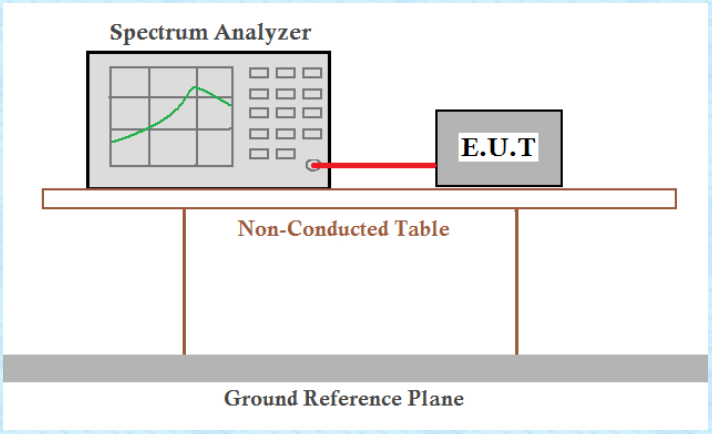
| Frequency (MHz) | Reading Result (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector Type |
|---|---|---|---|---|---|---|
| 2483.5 | 56.72 | -5.65 | 51.07 | 74 | -22.93 | PK |
| 2483.5 | / | -5.65 | / | 54 | / | AV |
| 2500 | 57.78 | -5.72 | 52.06 | 74 | -21.94 | PK |
| 2500 | / | -5.72 | / | 54 | / | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

Vertical:

| Frequency (MHz) | Reading Result (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector Type |
|---|---|---|---|---|---|---|
| 2483.5 | 58.26 | -5.65 | 52.61 | 74 | -21.39 | PK |
| 2483.5 | / | -5.65 | / | 54 | / | AV |
| 2500 | 57.75 | -5.72 | 52.03 | 74 | -21.97 | PK |
| 2500 | / | -5.72 | / | 54 | / | AV |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

Note:
1. Since the peak value is less than the average limit, the average value does not reflected in the report.

## 7.4 20dB Occupy Bandwidth

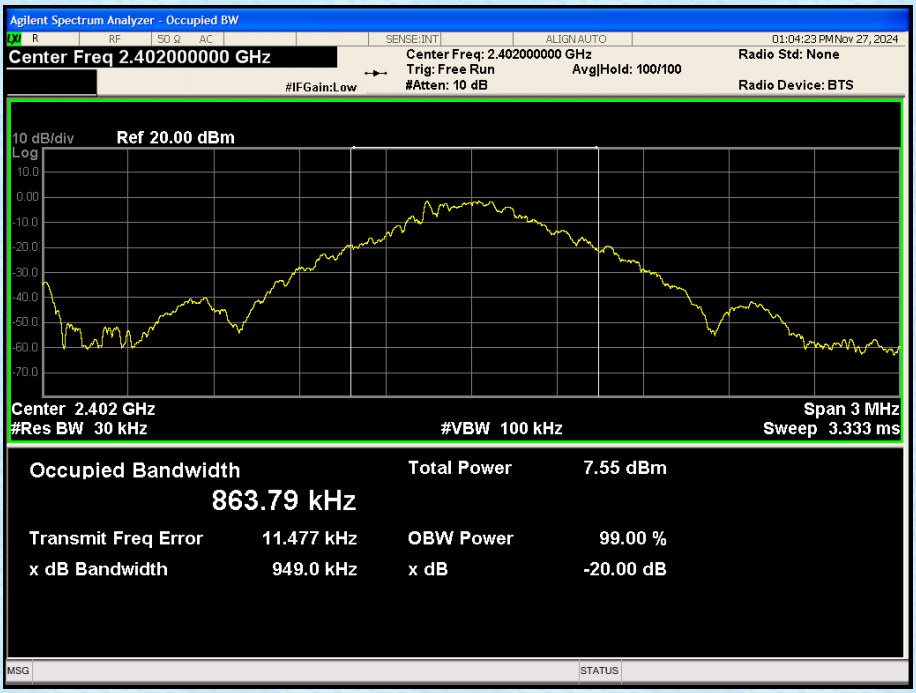
| | |
|---|---|
| Test Requirement: | FCC Part15 C Section 15.249/15.215 |
| Test Method: | ANSI C63.10:2013 |
| Limit: | Operation Frequency range 2400MHz~2483.5MHz |
| Test setup: |  |
| Test Instruments: | Refer to section 6.0 for details |
| Test mode: | Refer to section 5.2 for details |
| Test results: | Pass |

**Measurement Data**

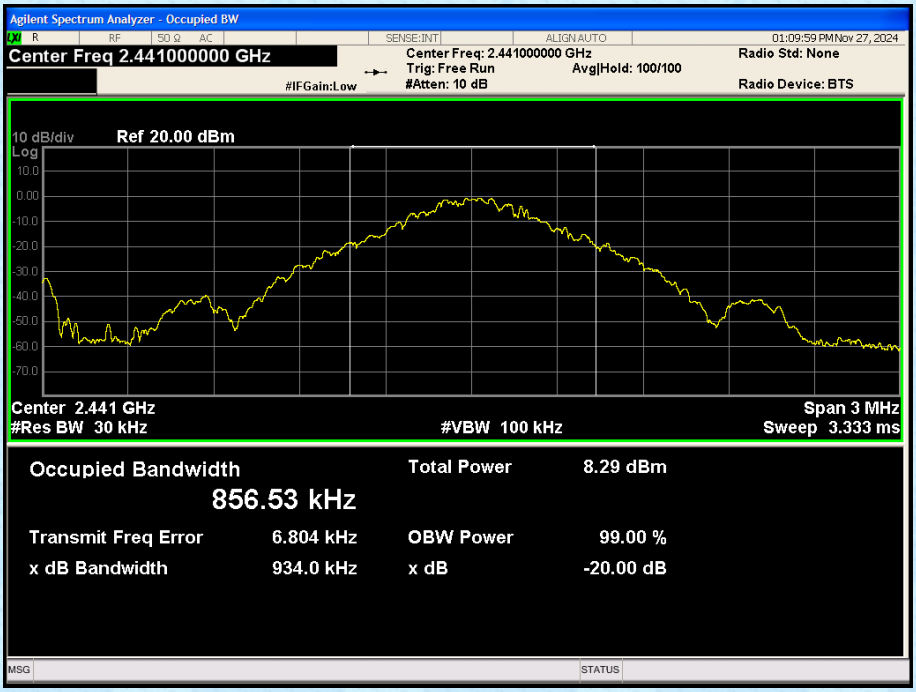
GFSK Modulation:

| Channel | Frequency (MHz) | 20dB Bandwidth (MHz) | Result |
|---|---|---|---|
| CH00 | 2402 | 0.949 | PASS |
| CH39 | 2441 | 0.934 | PASS |
| CH78 | 2480 | 0.936 | PASS |

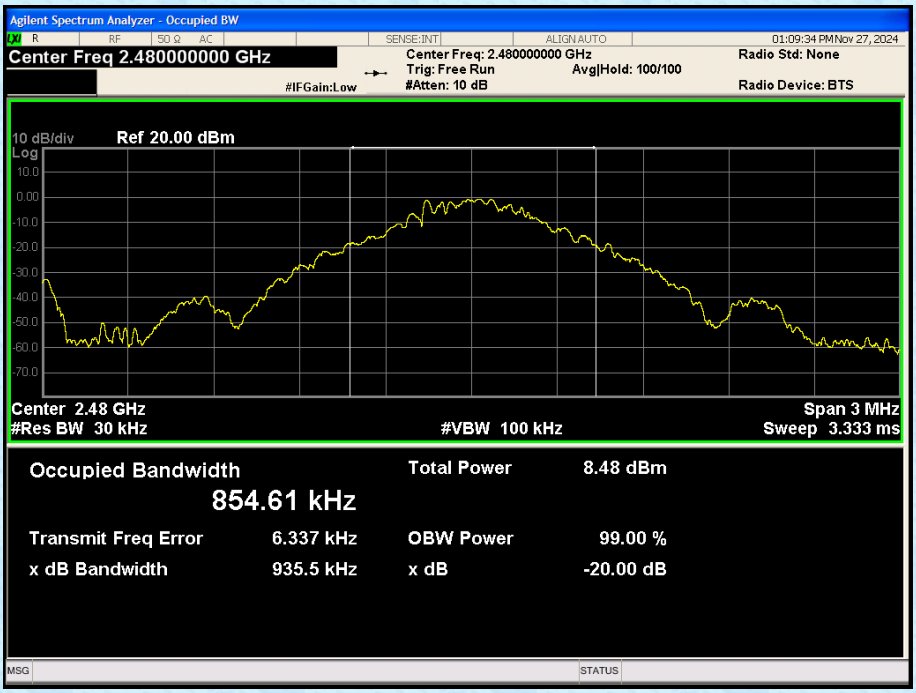
CH00: 2402MHz



CH39: 2441MHz



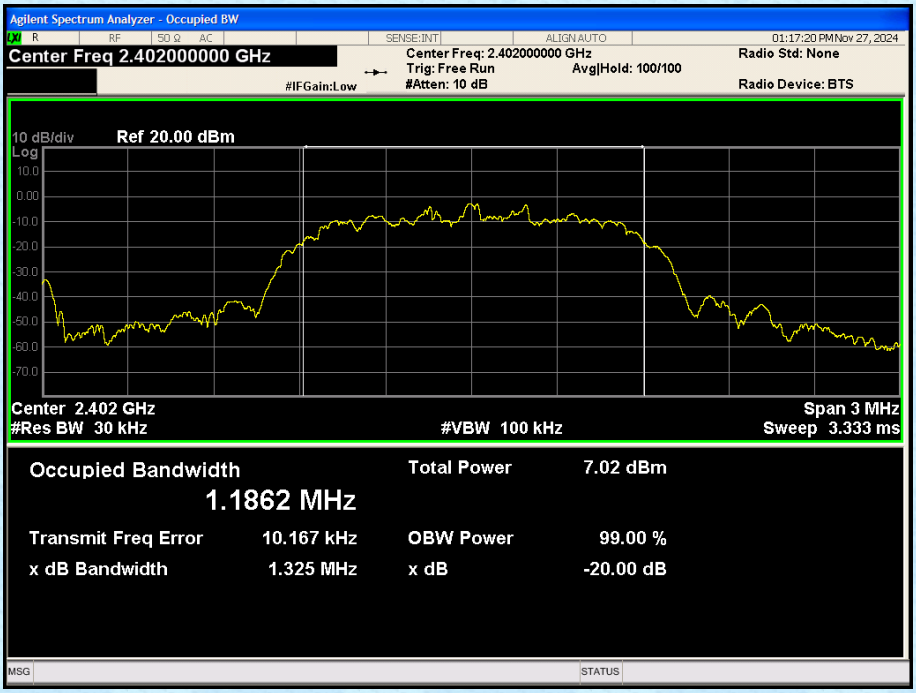

CH78: 2480MHz



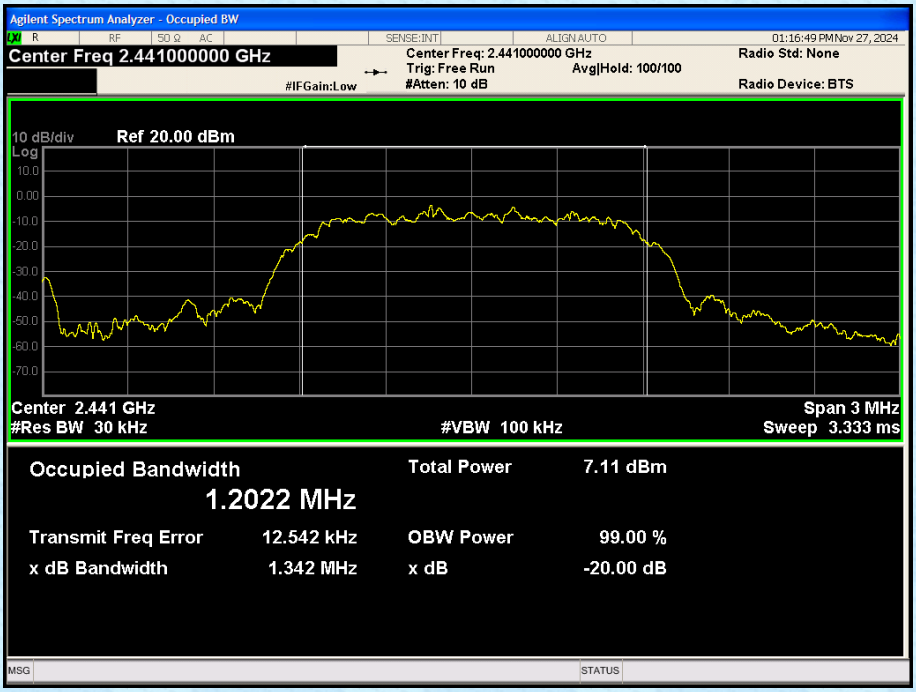
π/4 DQPSK Modulation:

| Channel | Frequency (MHz) | 20dB Bandwidth (MHz) | Result |
|---|---|---|---|
| CH00 | 2402 | 1.325 | PASS |
| CH39 | 2441 | 1.342 | PASS |
| CH78 | 2480 | 1.322 | PASS |

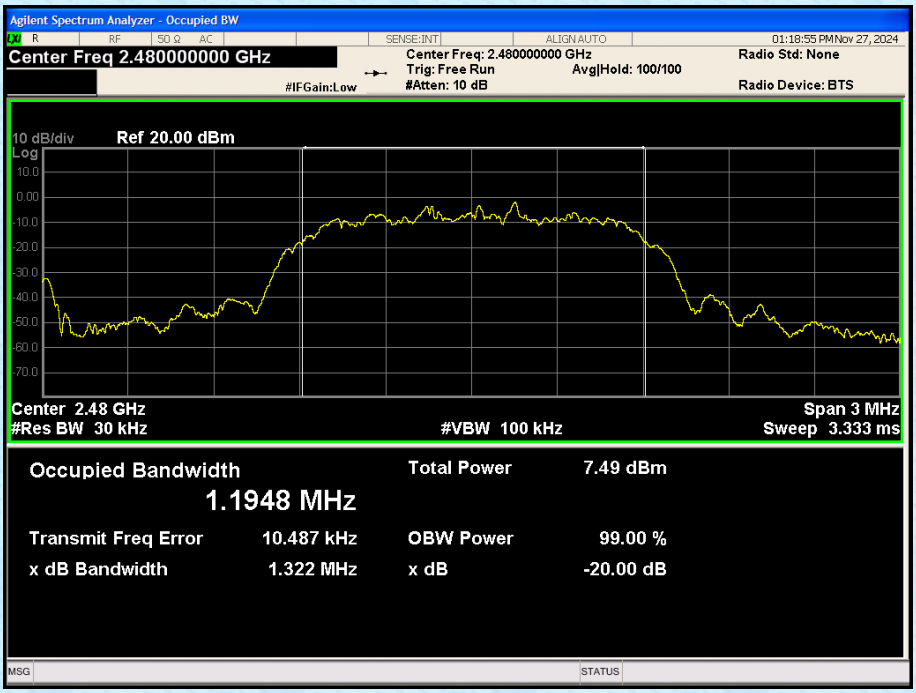
CH00: 2402MHz



CH39: 2441MHz



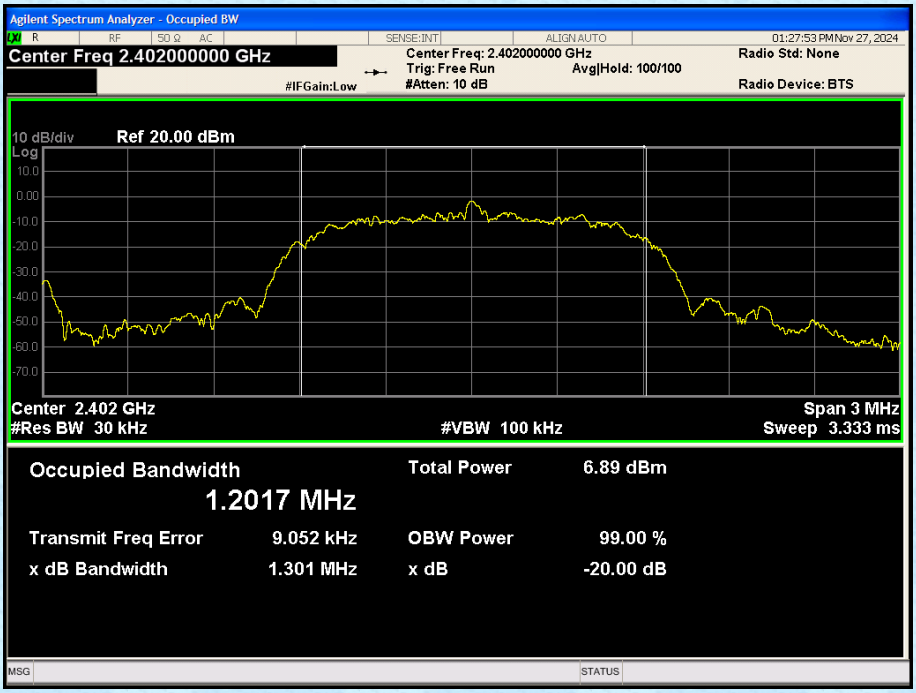

CH78: 2480MHz



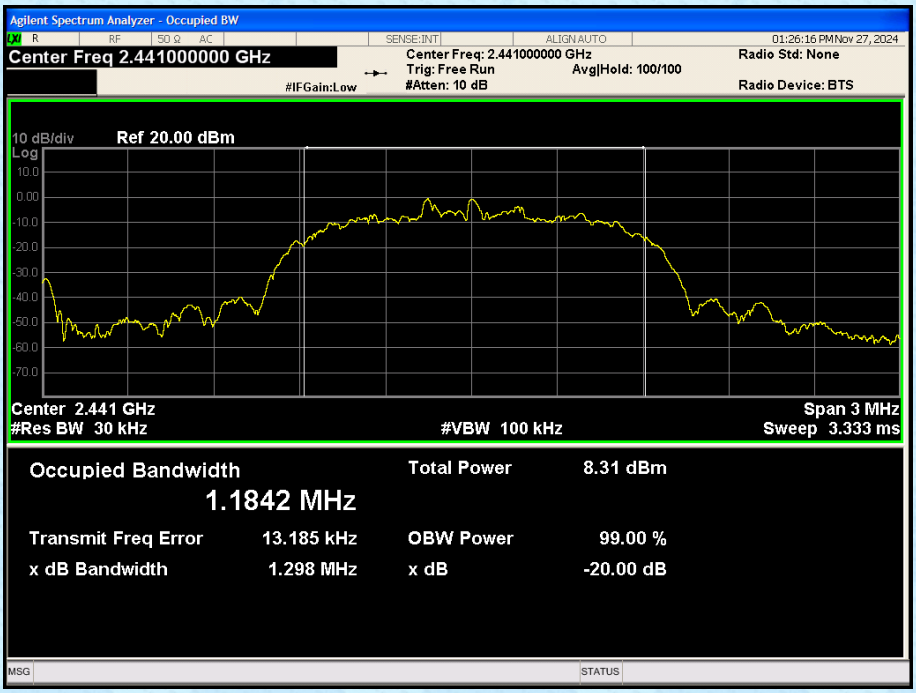
8DPSK Modulation:

| Channel | Frequency (MHz) | 20dB Bandwidth (MHz) | Result |
|---|---|---|---|
| CH00 | 2402 | 1.301 | PASS |
| CH39 | 2441 | 1.298 | PASS |
| CH78 | 2480 | 1.296 | PASS |

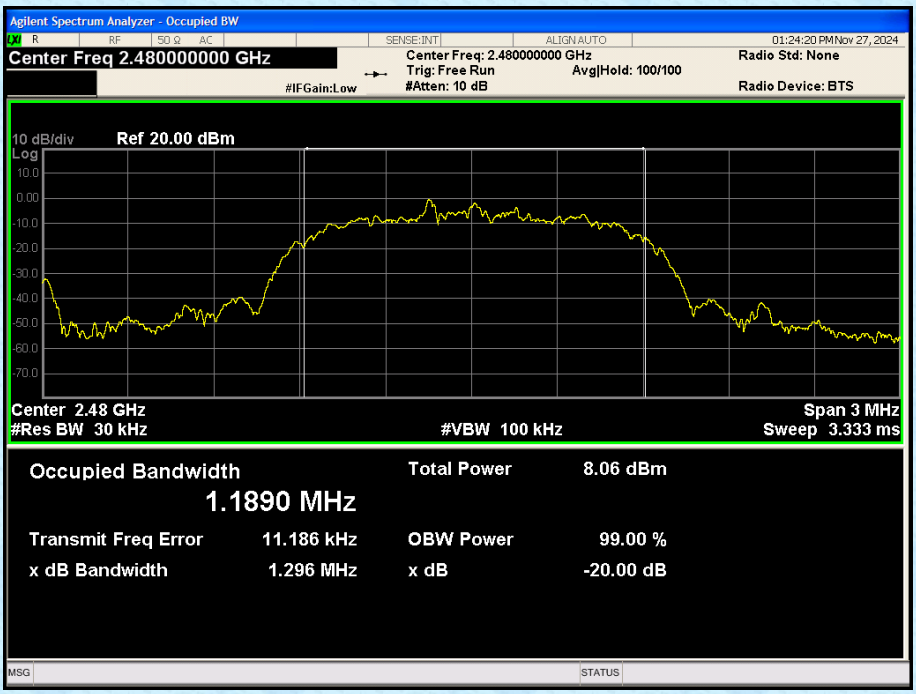
CH00: 2402MHz



CH39: 2441MHz




CH78: 2480MHz



# 8 Test Setup Photo

Reference to the **appendix I** for details.

# 9 EUT Constructional Details

Reference to the **appendix II** for details.

------End------