

# TEST REPORT

|                        |                         |
|------------------------|-------------------------|
| EUT Description        | 5G DIGITAL MOBILE PHONE |
| Brand Name             | VERTU                   |
| Model Name             | VTL-202502              |
| FCC ID                 | 2BGHD-VTL202502         |
| IC ID                  | 32468-VTL202502         |
| Date of Test Start/End | 2026-03-13 / 2026-05-15 |

|               |                                                                                                                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------|
| Applicant     | Chengdu Xiaochen Technology Co., Ltd                                                                                         |
| Address       | 3rd Floor,Building B6,Ganzhizhongguo Chengdu Center,No.777 Huafu Avenue Shuangliu County,Chengdu City,Sichuan Province,China |
| Manufacturers | Same as Application                                                                                                          |
| Address       | Same as Application                                                                                                          |
| Factory       | Same as Application                                                                                                          |
| Address       | Same as Application                                                                                                          |

|                     |                                                                                                                                      |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Reference Standards | 47 CFR Part 15, Subpart C 15.247<br>RSS-247 Issue 4, July 24, 2025<br>RSS-Gen Issue 5 Amendment 2 (February 2021)<br>(see section 1) |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------|

|                            |                                                                                                 |
|----------------------------|-------------------------------------------------------------------------------------------------|
| Test Report identification | RL20260313003EC                                                                                 |
|                            | Rev. 00                                                                                         |
| Revision Control           | This test report revision replaces any previous test report revision.<br>(see Document Changes) |

**Test Result:** **Pass\***

\*The EUT complied with the test item(s) of the above standard (s), refer to the test summary for details.

Authorized for issue by:

Jim Chen

Jim Chen / Project Engineer



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Document Changes

| Status | Date of issue | Revision | Description of the performed changes |
|--------|---------------|----------|--------------------------------------|
| Active | 2025-08-26    | Rev. 00  | None (original version).             |
|        |               |          |                                      |
|        |               |          |                                      |
|        |               |          |                                      |
|        |               |          |                                      |
|        |               |          |                                      |



## 2 Test Summary

| Radio Spectrum Technical Requirement                                                     |                                                                    |        |                                                                        |        |
|------------------------------------------------------------------------------------------|--------------------------------------------------------------------|--------|------------------------------------------------------------------------|--------|
| Item                                                                                     | Standard                                                           | Method | Requirement                                                            | Result |
| Antenna Requirement                                                                      | 47 CFR Part 15, Subpart C 15.247<br>RSS-247 Issue 4, July 24, 2025 | N/A    | 47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)<br>RSS-Gen Section 6.8 | Pass   |
| Other requirements<br>Frequency Hopping<br>Spread Spectrum<br>System Hopping<br>Sequence |                                                                    | N/A    | 47 CFR Part 15, Subpart C 15.247(a)(1),(g),(h)                         | Pass   |

| Radio Spectrum Matter Part                            |                                                                    |                                                                                       |                                                                      |        |
|-------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------|--------|
| Item                                                  | Standard                                                           | Method                                                                                | Requirement                                                          | Result |
| Conducted Emissions at AC Power Line (150kHz-30MHz)   | 47 CFR Part 15, Subpart C 15.247<br>RSS-247 Issue 4, July 24, 2025 | ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 6.2     | 47 CFR Part 15, Subpart C 15.207<br>RSS-Gen Section 8.8              | Pass   |
| Radiated Emissions which fall in the restricted bands |                                                                    | ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 6.10.5  | 47 CFR Part 15, Subpart C 15.205 & 15.209<br>RSS-Gen Section 8.10    | Pass   |
| Radiated Spurious Emissions Below 1GHz                |                                                                    | ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 6.4,6.5 | 47 CFR Part 15, Subpart C 15.205 & 15.209<br>RSS-Gen Section 8.9     | Pass   |
| Radiated Spurious Emissions Above 1GHz                |                                                                    | ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 6.6     | 47 CFR Part 15, Subpart C 15.205 & 15.209<br>RSS-Gen Section 8.9     | Pass   |
| Conducted Peak Output Power                           |                                                                    | ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 7.8.5   | 47 CFR Part 15, Subpart C 15.247(b)(1)<br>RSS-247 Section 6.2.2.2(a) | Pass   |
| 20dB Bandwidth                                        |                                                                    | ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 6.9.2   | 47 CFR Part 15, Subpart C 15.247(a)(1)<br>RSS-247 Section 6.2.3.1(a) | Pass   |
| Carrier Frequencies Separation                        |                                                                    | ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 7.8.2   | 47 CFR Part 15, Subpart C 15.247a(1)<br>RSS-247 Section 6.2.3.1(a)   | Pass   |

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| Radio Spectrum Matter Part       |          |                                                                                       |                                                                         |        |
|----------------------------------|----------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------|
| Item                             | Standard | Method                                                                                | Requirement                                                             | Result |
| Hopping Channel Number           |          | ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 7.8.3   | 47 CFR Part 15, Subpart C 15.247a(1)(iii)<br>RSS-247 Section 6.2.3.1(b) | Pass   |
| Dwell Time                       |          | ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 7.8.4   | 47 CFR Part 15, Subpart C 15.247a(1)(iii)<br>RSS-247 Section 6.2.3.1(b) | Pass   |
| Conducted Band Edges Measurement |          | ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 7.8.7.2 | 47 CFR Part 15, Subpart C 15.247(d)<br>RSS-247 Section 6.6              | Pass   |
| Conducted Spurious Emissions     |          | ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 7.8.7   | 47 CFR Part 15, Subpart C 15.247(d)<br>RSS-247 Section 6.6              | Pass   |



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## 4 General Information

### 4.1 Details of E.U.T.

|                       |                                                                                                                          |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------|
| EUT Description:      | 5G DIGITAL MOBILE PHONE                                                                                                  |
| Model No.:            | VTL-202502                                                                                                               |
| Trade Mark:           | VERTU                                                                                                                    |
| Hardware Version:     | P10                                                                                                                      |
| Software Version:     | 15.0.2_6.01.01.01                                                                                                        |
| Power Supply:         | DC 3.83V from internal rechargeable battery which can be charge by AC/DC adapter                                         |
| Operation Frequency:  | 2402MHz to 2480MHz                                                                                                       |
| Bluetooth Version:    | V5.2                                                                                                                     |
| Modulation Technique: | Frequency Hopping Spread Spectrum(FHSS)                                                                                  |
| Modulation Type:      | GFSK, Pi/4DQPSK, 8DPSK                                                                                                   |
| Number of Channels:   | 79                                                                                                                       |
| Antenna Type:         | PIFA Antenna                                                                                                             |
| Antenna Gain*:        | <input checked="" type="checkbox"/> Provided by client                                                                   |
|                       | -1.7dBi(Ant4); -3.7dBi(Ant10)                                                                                            |
| Receiver Category:    | <input type="checkbox"/> Category 1, <input checked="" type="checkbox"/> Category 2, <input type="checkbox"/> Category 3 |
| RF Cable:             | 2000MHz ~ 3000MHz (1.0dB)                                                                                                |

Note: \*Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information , Radiolink test lab is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.

Remark:As above information is provided and confirmed by the applicant. Radiolink test lab is not liable to the accuracy, suitability, reliability or/and integrity of the information.

| Channel                   | Frequency |
|---------------------------|-----------|
| <b>BT:</b>                |           |
| The Lowest channel(CH0)   | 2402MHz   |
| The Middle channel(CH39)  | 2441MHz   |
| The Highest channel(CH78) | 2480MHz   |

### 4.2 Power Setting of Test Software

|                    |                                      |      |      |
|--------------------|--------------------------------------|------|------|
| Software Name      | Qualcomm3 Radio Control Toolkit v4.0 |      |      |
| Frequency(MHz)     | 2402                                 | 2441 | 2480 |
| GFSK DH5 Setting   | 10                                   | 10   | 10   |
| Frequency(MHz)     | 2402                                 | 2441 | 2480 |
| DQPSK 2DH5 Setting | 10                                   | 10   | 10   |
| Frequency(MHz)     | 2402                                 | 2441 | 2480 |
| 8DPSK 3DH5 Setting | 10                                   | 10   | 10   |

### 4.3 Environment Parameter

|                       |                                        |            |
|-----------------------|----------------------------------------|------------|
| Environment Parameter | 1020 mbar Selected Values During Tests |            |
| Relative Humidity     | 38.8-50.8 % RH Ambient                 |            |
| Value                 | Temperature(°C)                        | Voltage(V) |
| NTNV                  | 24.5~26.8                              | 3.83       |
| LTNV                  | 0                                      | 3.4        |
| HTNV                  | 40                                     | 4.3        |

Note:

NV:Normal Voltage                      LV:Low Extreme Test Voltage                      HV:High Extreme Test Voltage

NT:Normal Temperature                      LT:Low Extreme Test Temperature                      HT:High Extreme Test Temperature

### 4.4 Description of Support Units

| Description | Manufacturer | Model No. | Serial No. |
|-------------|--------------|-----------|------------|
| --          | --           | --        | --         |

The EUT has been tested as an independent unit.

### 4.5 Measurement Uncertainty

| Test Item                                             | Measurement Uncertainty                    |
|-------------------------------------------------------|--------------------------------------------|
| Conducted Emissions at AC Power Line (150kHz-30MHz)   | ± 3.2dB                                    |
| Radiated Emissions which fall in the restricted bands | ± 3.7dB (Below 1GHz), ± 4.7dB (Above 1GHz) |
| Radiated Spurious Emissions Below 1GHz                | ± 3.7dB                                    |
| Radiated Spurious Emissions Above 1GHz                | ± 4.7dB                                    |
| Conducted Peak Output Power                           | ± 0.8dB                                    |
| 20dB Bandwidth                                        | ± 3%                                       |
| Carrier Frequencies Separation                        | ± 7.25 x 10-8                              |
| Hopping Channel Number                                | ± 7.25 x 10-8                              |
| Dwell Time                                            | ± 0.37%                                    |
| Power Spectrum Density                                | ± 0.35dB                                   |
| Conducted Band Edges Measurement                      | ± 2.7dB                                    |
| Conducted Spurious Emissions                          | ± 2.7dB                                    |

Remark:

The  $U_{lab}$  (lab Uncertainty) is less than  $U_{CISPR/ETSI}$  (CISPR/ETSI Uncertainty), so the test results

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

### 4.6 Test Location

All tests were performed at:

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No tests were sub-contracted.

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#### 4.7 Test Facility

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

**. A2LA (Certificate No. 7572.01)**

Radiolink Testing (Shenzhen) Co., Ltd, Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 7572.01.

#### 4.8 Deviation from Standards

None

#### 4.9 Abnormalities from Standard Conditions

None



## 5 Equipment List

| Transmitter unwanted emissions in the spurious domain/ Receiver spurious emissions |              |             |               |            |              |
|------------------------------------------------------------------------------------|--------------|-------------|---------------|------------|--------------|
| Equipment                                                                          | Manufacturer | Model No.   | Inventory No. | Cal Date   | Cal Due Date |
| 3m Anechoic Chamber                                                                | TDK          | 966         | RL01-01       | 2024/11/22 | 2027/11/21   |
| Horn Antenna(1GHz-18GHz)                                                           | Schwarzbeck  | BBHA 9120D  | RL03-01       | 2025/3/28  | 2028/3/27    |
| BiConiLog Antenna(30MHz-3GHz)                                                      | Schwarzbeck  | VULB9163    | RL03-02       | 2025/4/7   | 2028/4/6     |
| Active Loop Antenna(9kHz-30MHz)                                                    | Schwarzbeck  | FMZB 1519B  | RL03-03       | 2025/3/28  | 2028/3/27    |
| Horn Antenna(15GHz-40GHz)                                                          | Schwarzbeck  | BBHA 9170   | RL03-05       | 2025/3/28  | 2028/3/27    |
| MXE EMI Receiver(3Hz-8.4GHz)                                                       | KEYSIGHT     | N9038A      | RL04-01       | 2026/4/03  | 2027/4/02    |
| EXA Signal Analyzer(10Hz-44GHz)                                                    | KEYSIGHT     | N9010B      | RL04-03       | 2026/4/3   | 2027/4/2     |
| Pre-Amplifier(500MHz-18GHz)                                                        | Tonscend     | TPA-011845  | RL06-02       | 2026/4/3   | 2027/4/2     |
| Pre-Amplifier(18GHz-26GHz)                                                         | Tonscend     | TPA-182645  | RL06-03       | 2026/4/3   | 2027/4/2     |
| Pre-Amplifier(26GHz-40GHz)                                                         | Tonscend     | TPA-184045  | RL06-04       | 2026/4/3   | 2027/4/2     |
| Pre-Amplifier(0.4GHz-8GHz)                                                         | TST PASS     | LNA04080G30 | RL06-05       | 2026/4/3   | 2027/4/2     |
| Attenuation Clamp(150kHz-1000MHz)                                                  | Teseq        | KEMA 801A   | RL07-09       | 2026/4/13  | 2027/4/12    |
| AC Power Source                                                                    | Preen        | KDF-11002G  | RL08-03       | 2026/4/3   | 2027/4/2     |
| Intelligent Line Power Conditioner                                                 | Preen        | APS-11040GG | RL08-04       | 2026/4/3   | 2027/4/2     |
| Coaxial Cable(9kHz-30MHz)                                                          | Radiolink    | N/A         | RL20-01       | N/A        | N/A          |
| Coaxial Cable(30MHz-1000MHz)                                                       | Radiolink    | N/A         | RL20-02       | N/A        | N/A          |
| Coaxial Cable(1GHz-18GHz)                                                          | Radiolink    | N/A         | RL20-03       | N/A        | N/A          |
| Coaxial Cable(18GHz-40GHz)                                                         | Radiolink    | N/A         | RL20-04       | N/A        | N/A          |
| Coaxial Cable(9kHz-30MHz)                                                          | Radiolink    | N/A         | RL20-05       | N/A        | N/A          |
| Measurement Software                                                               | AUDIX        | e3 V9       | N/A           | N/A        | N/A          |

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| Conducted Emissions at Mains Terminals (150kHz-30MHz) |                 |              |               |            |              |
|-------------------------------------------------------|-----------------|--------------|---------------|------------|--------------|
| Equipment                                             | Manufacturer    | Model No.    | Inventory No. | Cal Date   | Cal Due Date |
| Shielding Room                                        | TDK             | 643          | RL01-01       | 2025/03/31 | 2028/03/30   |
| EMI Test Receiver                                     | Rohde & Schwarz | ESPI-3       | RL04-02       | 2026/04/03 | 2027/04/02   |
| V-LISN(9kHz-30MHz)                                    | Rohde & Schwarz | NSLK 8127 RC | RL07-01       | 2026/04/03 | 2027/04/02   |
| Measurement Software                                  | AUDIX           | e3 V9        | N/A           | N/A        | N/A          |

| RF Conducted Test                        |                              |              |               |            |              |
|------------------------------------------|------------------------------|--------------|---------------|------------|--------------|
| Equipment                                | Manufacturer                 | Model No.    | Inventory No. | Cal Date   | Cal Due Date |
| EXA Signal Analyzer(10Hz-44GHz)          | KEYSIGHT                     | N9010B       | RL04-03       | 2026/4/3   | 2027/4/2     |
| DC Regulated Power Supply                | Radiolink                    | N/A          | RL13-01       | 2026/04/03 | 2027/04/02   |
| Humidity Chamber                         | Votsch Industrietechnik GmbH | VT 4002      | RL14-01       | 2026/04/03 | 2027/04/02   |
| MXG Vector Signal Generator(100kHz-6GHz) | N5182A                       | N5182A       | RL05-05       | 2026/4/3   | 2027/4/2     |
| SIGNAL GENERATOR(10MHz-20GHz)            | SMP22                        | SMP22        | RL05-06       | 2026/4/3   | 2027/4/2     |
| Wideband Radio Communication Tester      | CMW 500                      | CMW 500      | RL05-07       | 2026/4/3   | 2027/4/2     |
| Measurement Software                     | TST                          | TSTPASS V2.0 | N/A           | N/A        | N/A          |

| General used equipment      |                            |           |               |           |              |
|-----------------------------|----------------------------|-----------|---------------|-----------|--------------|
| Equipment                   | Manufacturer               | Model No. | Inventory No. | Cal Date  | Cal Due Date |
| Electronic Hygrothermograph | deli                       | 8838      | RL02-02       | 2026/5/7  | 2027/5/6     |
| Electronic Hygrothermograph | deli                       | 8838      | RL02-03       | 2026/4/23 | 2027/4/22    |
| Electronic Hygrothermograph | deli                       | 8838      | RL02-04       | 2026/4/23 | 2027/4/22    |
| Electronic Hygrothermograph | deli                       | 8838      | RL02-05       | 2026/4/8  | 2027/4/07    |
| Barometer                   | Shanghai Mengte Instrument | DYM3      | RL02-01       | 2026/4/8  | 2027/4/7     |

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## 6 Emission Test Results

### 6.1 Antenna Requirement

#### 6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)

RSS-Gen Section 6.8

FCC requirement:

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

IC requirement:

Measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

The antenna is PIFA Antenna and no consideration of replacement. The best case gain of the antenna is -1.7dBi(Ant4); -3.7dBi(Ant10).

Note:

*The antenna gain are derived from the gain information report provided by the manufacturer.*

Remark:

*As above information is provided and confirmed by the applicant. Radiolink test lab is not liable to the accuracy, suitability, reliability or/and integrity of the information.*

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## 6.2 Other requirements Frequency Hopping Spread Spectrum System Hopping Sequence

### 6.2.1 Test Requirement:

47 CFR Part 15, Subpart C 15.247(a)(1),(g),(h)

### 6.2.2 Conclusion

Standard Requirement:

The system shall hop to channel frequencies that are selected at the system hopping rate from a Pseudorandom ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. However, the system, consisting of both the transmitter and the receiver, must be designed to comply with all of the regulations in this section should the transmitter be presented with a continuous data (or information) stream. In addition, a system employing short transmission bursts must comply with the definition of a frequency hopping system and must distribute its transmissions over the minimum number of hopping channels specified in this section.

The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hopsets to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

Compliance for section 15.247(a)(1):

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

> Number of shift register stages: 9

> Length of pseudo-random sequence:  $2^9 - 1 = 511$  bits

> Longest sequence of zeros: 8 (non-inverted signal)

Linear Feedback Shift Register for Generation of the PRBS sequence

An example of Pseudorandom Frequency Hopping Sequence as follow:

Each frequency used equally on the average by each transmitter.

According to Technical Specification, the receivers are designed to have input and IF bandwidths that match the hopping channel bandwidths of any transmitters and shift frequencies in synchronization with the transmitted signals.

Compliance for section 15.247(g):

According to Technical Specification, the system transmits the packet with the pseudorandom hopping frequency with a continuous data and the short burst transmission from the Bluetooth system is also transmitted under the frequency hopping system with the pseudorandom hopping frequency system.

Compliance for section 15.247(h):

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According to Technical specification, the system incorporates with an adaptive system to detect other user within the spectrum band so that it individually and independently to avoid hopping on the occupied channels.

The system is designed not have the ability to coordinated with other FHSS System in an effort to avoid the simultaneous occupancy of individual hopping frequencies by multiple transmitter.



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## 7 Radio Spectrum Matter Test Results

### 7.1 Conducted Emissions at AC Power Line (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207  
RSS-Gen Section 8.8

Test Method: ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024  
Section 6.2

Limit:

| Frequency of emission(MHz)                                             |
|------------------------------------------------------------------------|
| 0.15-0.5                                                               |
| 0.5-5                                                                  |
| 5-30                                                                   |
| *Decreases with the logarithm of the frequency.                        |
| Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz |

#### 7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22.3 °C Humidity: 48 % RH Atmospheric Pressure: 1020 mbar

#### 7.1.2 Test Mode Description

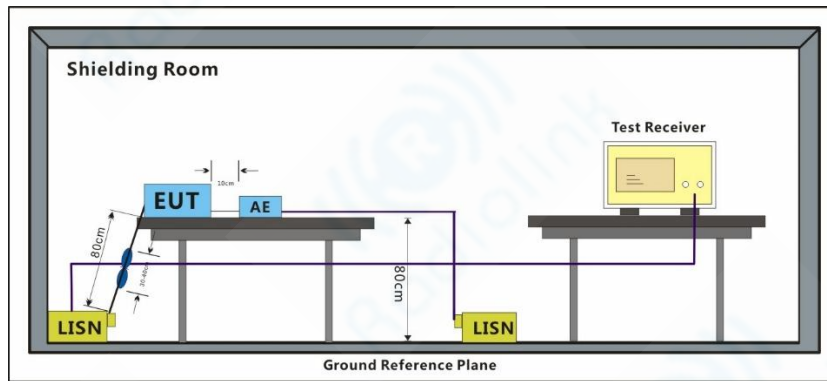
| Mode Code | Description                                                                                                                                                                                                        |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1         | TX_non-Hop mode_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report. |

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### 7.1.3 Test Setup Diagram



### 7.1.4 Measurement Procedure and Data

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a  $50\Omega/50\mu\text{H} + 50\Omega$  linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) 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 on conducted measurement.

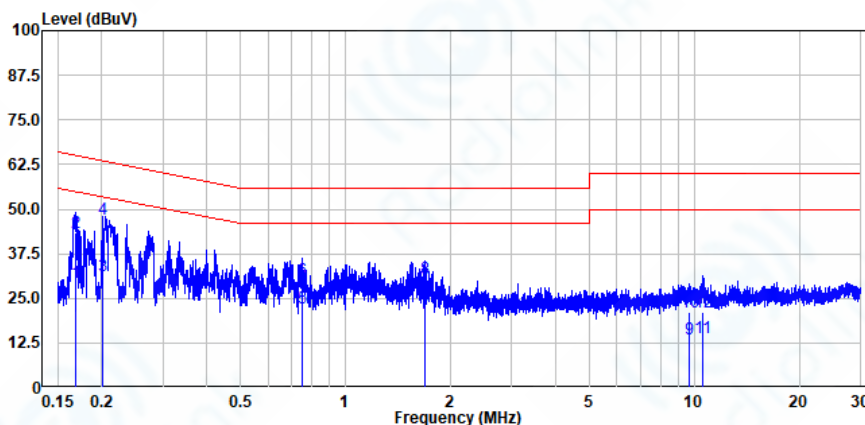
Remark : Level=Read Level+ Cable Loss+ LISN Factor

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Line: Live line



Site : chamber  
 Condition: Line  
 EUT : VTL-202502  
 Mode : WCDMA B5 Idle+Adapter+USB cable+SIM2+WIFI Idle+BT Idle+Glonass RX+NFC+EUT  
 Note : RL20260000301A

| Result  | Freq   | Level | Limit | LISN | Cable         | Read  | Over   | Pol/Phase |
|---------|--------|-------|-------|------|---------------|-------|--------|-----------|
|         | MHz    | dBuV  | dBuV  | dB   | Loss          | dBuV  | Limit  |           |
| 1 Pass  | 0.168  | 29.34 | 55.06 | 0.07 | 9.85 Average  | 19.42 | -25.72 | Line      |
| 2 Pass  | 0.168  | 43.29 | 65.06 | 0.07 | 9.85 QP       | 33.37 | -21.77 | Line      |
| 3 AV    | 0.201  | 31.46 | 53.55 | 0.10 | 9.92 Average  | 21.44 | -22.09 | Line      |
| 4 PP    | 0.201  | 47.30 | 63.55 | 0.10 | 9.92 QP       | 37.28 | -16.25 | Line      |
| 5 Pass  | 0.754  | 22.31 | 46.00 | 0.10 | 10.52 Average | 11.69 | -23.69 | Line      |
| 6 Pass  | 0.754  | 30.20 | 56.00 | 0.10 | 10.52 QP      | 19.58 | -25.80 | Line      |
| 7 Pass  | 1.692  | 20.80 | 46.00 | 0.12 | 10.63 Average | 10.05 | -25.20 | Line      |
| 8 Pass  | 1.692  | 30.71 | 56.00 | 0.12 | 10.63 QP      | 19.96 | -25.29 | Line      |
| 9 Pass  | 9.718  | 13.59 | 50.00 | 0.37 | 10.46 Average | 2.76  | -36.41 | Line      |
| 10 Pass | 9.718  | 20.95 | 60.00 | 0.37 | 10.46 QP      | 10.12 | -39.05 | Line      |
| 11 Pass | 10.571 | 14.03 | 50.00 | 0.40 | 10.45 Average | 3.18  | -35.97 | Line      |
| 12 Pass | 10.571 | 21.28 | 60.00 | 0.40 | 10.45 QP      | 10.43 | -38.72 | Line      |

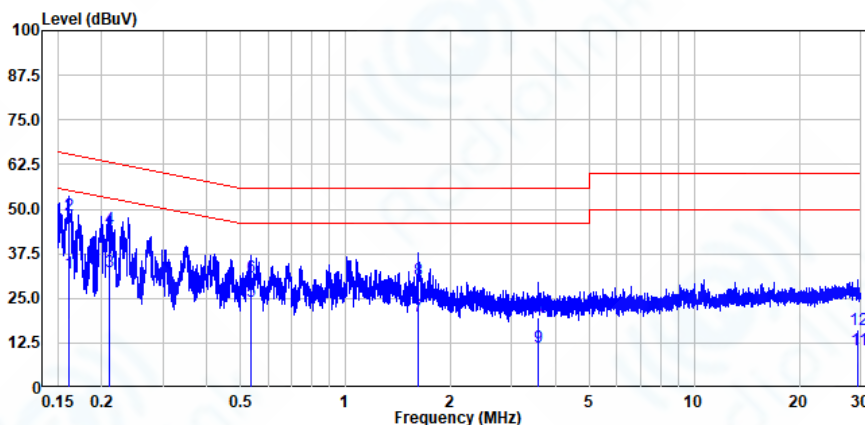


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Line: Neutral Line



Site : chamber  
 Condition: Neutral  
 EUT : VTL-202502  
 Mode : WCDMA B5 Idle+Adapter+USB cable+SIM2+WIFI Idle+BT Idle+Glonass RX+NFC+EUT  
 Note : RL20260000301A

| Result  | Freq   | Level | Limit | LISN | Cable         | Read  | Over   | Pol/Phase |
|---------|--------|-------|-------|------|---------------|-------|--------|-----------|
|         | MHz    | dBuV  | dBuV  | dB   | dB            | dBuV  | dB     |           |
| 1 Pass  | 0.161  | 32.10 | 55.42 | 0.16 | 9.83 Average  | 22.11 | -23.32 | Neutral   |
| 2 PP    | 0.161  | 48.34 | 65.42 | 0.16 | 9.83 QP       | 38.35 | -17.08 | Neutral   |
| 3 AV    | 0.211  | 32.45 | 53.15 | 0.15 | 9.94 Average  | 22.36 | -20.70 | Neutral   |
| 4 Pass  | 0.211  | 44.69 | 63.15 | 0.15 | 9.94 QP       | 34.60 | -18.46 | Neutral   |
| 5 Pass  | 0.534  | 23.99 | 46.00 | 0.16 | 10.41 Average | 13.42 | -22.01 | Neutral   |
| 6 Pass  | 0.534  | 30.92 | 56.00 | 0.16 | 10.41 QP      | 20.35 | -25.08 | Neutral   |
| 7 Pass  | 1.620  | 20.15 | 46.00 | 0.17 | 10.62 Average | 9.36  | -25.85 | Neutral   |
| 8 Pass  | 1.620  | 30.05 | 56.00 | 0.17 | 10.62 QP      | 19.26 | -25.95 | Neutral   |
| 9 Pass  | 3.568  | 11.19 | 46.00 | 0.21 | 10.61 Average | 0.37  | -34.81 | Neutral   |
| 10 Pass | 3.568  | 19.75 | 56.00 | 0.21 | 10.61 QP      | 8.93  | -36.25 | Neutral   |
| 11 Pass | 29.507 | 10.68 | 50.00 | 0.93 | 10.37 Average | -0.62 | -39.32 | Neutral   |
| 12 Pass | 29.507 | 16.27 | 60.00 | 0.93 | 10.37 QP      | 4.97  | -43.73 | Neutral   |



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## 7.2 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209  
RSS-Gen Section 8.10

Test Method: ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024  
Section 6.10.5

Measurement Distance: 3m

Limit:

| Frequency(MHz) | Field strength(microvolts/meter) | Measurement distance(meters) |
|----------------|----------------------------------|------------------------------|
| 0.009-0.490    | 2400/F(kHz)                      | 300                          |
| 0.490-1.705    | 24000/F(kHz)                     | 30                           |
| 1.705-30.0     | 30                               | 30                           |
| 30-88          | 100                              | 3                            |
| 88-216         | 150                              | 3                            |
| 216-960        | 200                              | 3                            |
| Above 960      | 500                              | 3                            |

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

### 7.2.1 E.U.T. Operation

Operating Environment:  
Temperature: 24.5 °C Humidity: 50.8 % RH Atmospheric Pressure: 1020 mbar

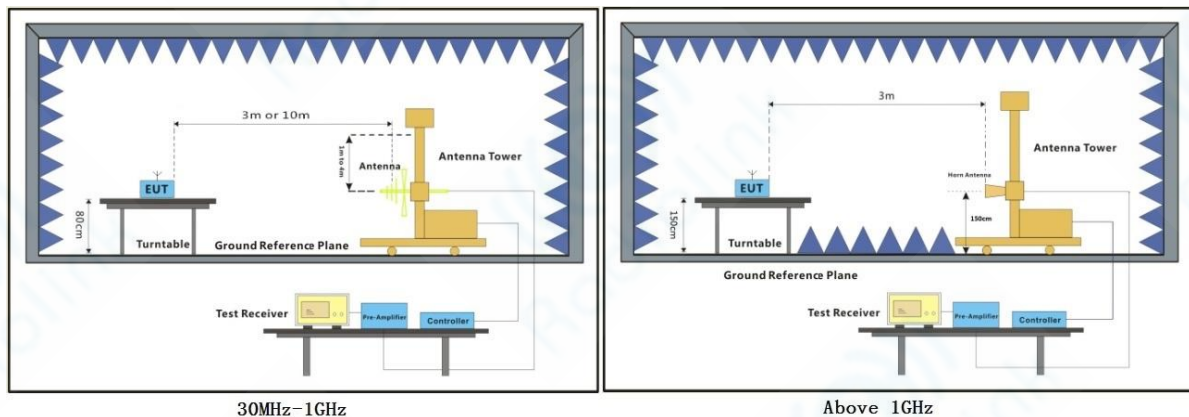
### 7.2.2 Test Mode Description

| Mode Code | Description                                                                                                                                                                                                        |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1         | TX_non-Hop mode_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report. |

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### 7.2.3 Test Setup Diagram



### 7.2.4 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. 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.
- e. 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.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. 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.
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

Remark 1:  $\text{Level} = \text{Read Level} + \text{Cable Loss} + \text{Antenna Factor} - \text{Preamp Factor}$

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

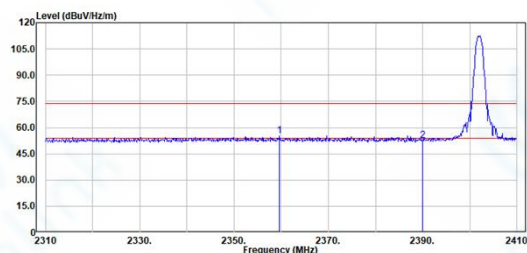
Remark 3: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.

Remark 4: For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle  $< 98\%$ ) or 10Hz (Duty cycle  $\geq 98\%$ ) for Average detection (AV) at frequency above 1GHz.

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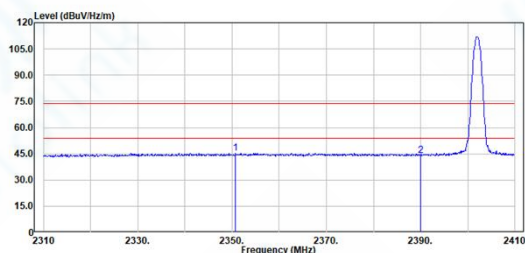
BT\_GFSK\_TX\_CH\_00\_Horizontal-Peak



Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_GFSK\_CH 00  
Power : 10  
Rate : DHS  
Note : IMEI:358028660010991

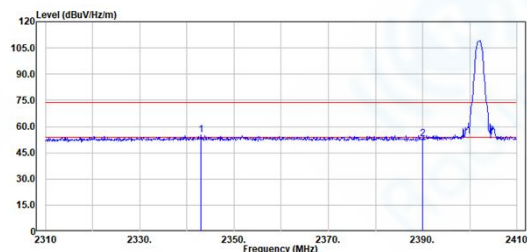
| Freq | Pol/Phase           | Read Level | Level  | Limit  | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|------|---------------------|------------|--------|--------|------------|--------|---------------|------------|------------|
| MHz  |                     | dBuV/H     | dBuV/H | dBuV/H | dB         |        | dB            | dB         | dB/m       |
| 1    | 2350.000 HORIZONTAL | 57.52      | 55.33  | 74.00  | -18.67     | Peak   | 46.43         | 5.24       | 28.52      |
| 2    | 2390.000 HORIZONTAL | 55.12      | 52.69  | 74.00  | -21.31     | Peak   | 46.43         | 5.24       | 28.28      |

BT\_GFSK\_TX\_CH\_00\_Horizontal-Avg



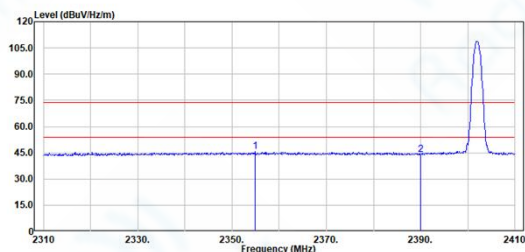
Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_GFSK\_CH 00  
Power : 10  
Rate : DHS  
Note : IMEI:358028660010991

| Freq | Pol/Phase           | Read Level | Level  | Limit  | Over Limit | Remark  | Preamp Factor | Cable Loss | Ant Factor |
|------|---------------------|------------|--------|--------|------------|---------|---------------|------------|------------|
| MHz  |                     | dBuV/H     | dBuV/H | dBuV/H | dB         |         | dB            | dB         | dB/m       |
| 1    | 2350.000 HORIZONTAL | 47.68      | 45.47  | 54.00  | -8.53      | Average | 46.43         | 5.23       | 28.59      |
| 2    | 2390.000 HORIZONTAL | 46.37      | 43.94  | 54.00  | -10.06     | Average | 46.43         | 5.24       | 28.28      |



Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_GFSK\_CH 00  
Power : 10  
Rate : DHS  
Note : IMEI:358028660010991

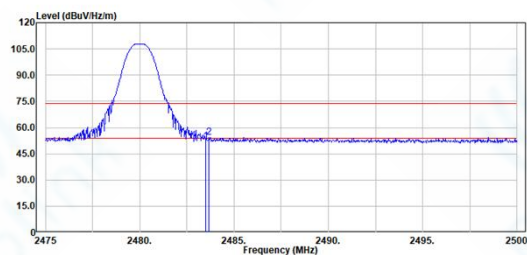
| Freq | Pol/Phase         | Read Level | Level  | Limit  | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|------|-------------------|------------|--------|--------|------------|--------|---------------|------------|------------|
| MHz  |                   | dBuV/H     | dBuV/H | dBuV/H | dB         |        | dB            | dB         | dB/m       |
| 1    | 2350.000 VERTICAL | 57.31      | 55.12  | 74.00  | -18.88     | Peak   | 46.43         | 5.23       | 28.54      |
| 2    | 2390.000 VERTICAL | 55.39      | 52.96  | 74.00  | -21.04     | Peak   | 46.43         | 5.24       | 28.28      |



Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_GFSK\_CH 00  
Power : 10  
Rate : DHS  
Note : IMEI:358028660010991

| Freq | Pol/Phase         | Read Level | Level  | Limit  | Over Limit | Remark  | Preamp Factor | Cable Loss | Ant Factor |
|------|-------------------|------------|--------|--------|------------|---------|---------------|------------|------------|
| MHz  |                   | dBuV/H     | dBuV/H | dBuV/H | dB         |         | dB            | dB         | dB/m       |
| 1    | 2350.000 VERTICAL | 47.93      | 45.77  | 54.00  | -8.23      | Average | 46.43         | 5.23       | 28.56      |
| 2    | 2390.000 VERTICAL | 46.52      | 44.09  | 54.00  | -9.91      | Average | 46.43         | 5.24       | 28.28      |

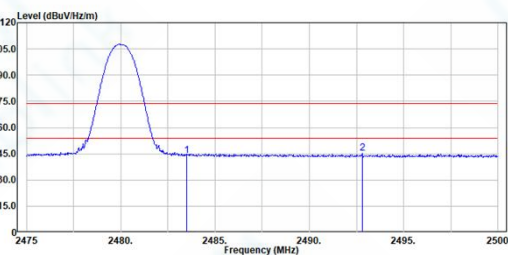
BT\_GFSK\_TX\_CH\_78\_Horizontal-Peak



Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_GFSK\_CH 78  
Power : 10  
Rate : DHS  
Note : IMEI:358028660010991

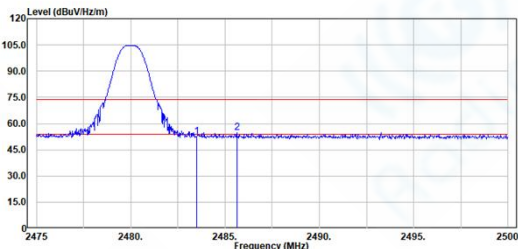
| Freq | Pol/Phase           | Read Level | Level | Limit Line | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|------|---------------------|------------|-------|------------|------------|--------|---------------|------------|------------|
| 1    | 2483.500 HORIZONTAL | 54.89      | 52.06 | 74.00      | -21.94     | Peak   | 46.41         | 5.27       | 27.86      |
| 2    | 2483.675 HORIZONTAL | 57.29      | 54.46 | 74.00      | -19.54     | Peak   | 46.41         | 5.27       | 27.86      |

BT\_GFSK\_TX\_CH\_78\_Horizontal-Avg



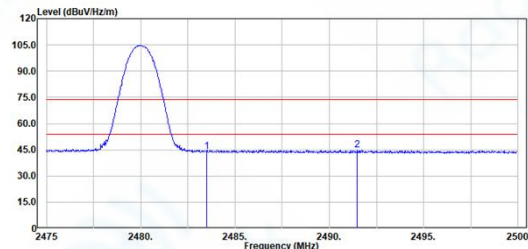
Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_GFSK\_CH 78  
Power : 10  
Rate : DHS  
Note : IMEI:358028660010991

| Freq | Pol/Phase           | Read Level | Level | Limit Line | Over Limit | Remark  | Preamp Factor | Cable Loss | Ant Factor |
|------|---------------------|------------|-------|------------|------------|---------|---------------|------------|------------|
| 1    | 2483.500 HORIZONTAL | 46.81      | 43.98 | 54.00      | -10.02     | Average | 46.41         | 5.27       | 27.86      |
| 2    | 2492.600 HORIZONTAL | 48.12      | 45.09 | 54.00      | -8.91      | Average | 46.41         | 5.28       | 27.66      |



Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_GFSK\_CH 78  
Power : 10  
Rate : DHS  
Note : IMEI:358028660010991

| Freq | Pol/Phase         | Read Level | Level | Limit Line | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|------|-------------------|------------|-------|------------|------------|--------|---------------|------------|------------|
| 1    | 2483.500 VERTICAL | 55.39      | 52.56 | 74.00      | -21.44     | Peak   | 46.41         | 5.27       | 27.86      |
| 2    | 2483.625 VERTICAL | 57.76      | 54.90 | 74.00      | -19.10     | Peak   | 46.41         | 5.28       | 27.82      |



Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_GFSK\_CH 78  
Power : 10  
Rate : DHS  
Note : IMEI:358028660010991

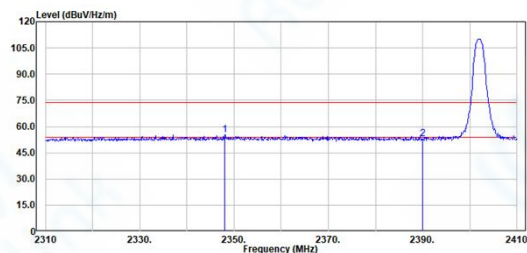
| Freq | Pol/Phase         | Read Level | Level | Limit Line | Over Limit | Remark  | Preamp Factor | Cable Loss | Ant Factor |
|------|-------------------|------------|-------|------------|------------|---------|---------------|------------|------------|
| 1    | 2483.500 VERTICAL | 46.67      | 43.84 | 54.00      | -10.16     | Average | 46.41         | 5.27       | 27.86      |
| 2    | 2491.475 VERTICAL | 47.93      | 44.93 | 54.00      | -9.07      | Average | 46.41         | 5.28       | 27.69      |

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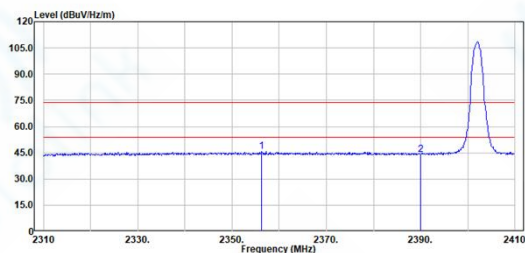
BT\_Pi/4DQPSK\_TX\_CH\_00\_Horizontal-Peak



Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_DQPSK\_CH 00  
Power : 10  
Rate : 2DH5  
Note : IMEI:358028660010991

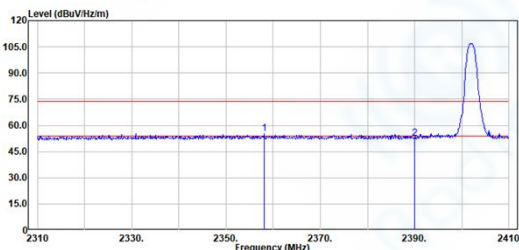
| Freq | Pol/Phase           | Read Level | Level  | Limit Line | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|------|---------------------|------------|--------|------------|------------|--------|---------------|------------|------------|
| MHz  |                     | dBuV/H     | dBuV/H | dBuV/H     | dB         |        | dB            | dB         | dB/m       |
| 1    | 2348.000 HORIZONTAL | 57.58      | 55.43  | 74.00      | -18.57     | Peak   | 46.43         | 5.23       | 28.58      |
| 2    | 2390.000 HORIZONTAL | 55.23      | 52.30  | 74.00      | -21.70     | Peak   | 46.43         | 5.24       | 28.28      |

BT\_Pi/4DQPSK\_TX\_CH\_00\_Horizontal-Avg



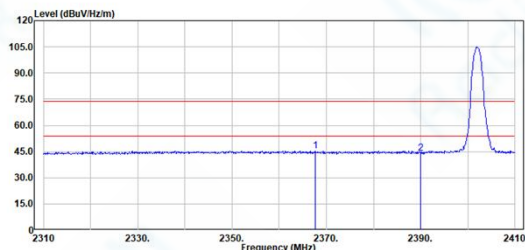
Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_DQPSK\_CH 00  
Power : 10  
Rate : 2DH5  
Note : IMEI:358028660010991

| Freq | Pol/Phase           | Read Level | Level  | Limit Line | Over Limit | Remark  | Preamp Factor | Cable Loss | Ant Factor |
|------|---------------------|------------|--------|------------|------------|---------|---------------|------------|------------|
| MHz  |                     | dBuV/H     | dBuV/H | dBuV/H     | dB         |         | dB            | dB         | dB/m       |
| 1    | 2356.300 HORIZONTAL | 47.87      | 45.70  | 54.00      | -8.30      | Average | 46.43         | 5.23       | 28.55      |
| 2    | 2390.000 HORIZONTAL | 46.38      | 43.95  | 54.00      | -10.05     | Average | 46.43         | 5.24       | 28.28      |



Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_DQPSK\_CH 00  
Power : 10  
Rate : 2DH5  
Note : IMEI:358028660010991

| Freq | Pol/Phase         | Read Level | Level  | Limit Line | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|------|-------------------|------------|--------|------------|------------|--------|---------------|------------|------------|
| MHz  |                   | dBuV/H     | dBuV/H | dBuV/H     | dB         |        | dB            | dB         | dB/m       |
| 1    | 2358.000 VERTICAL | 57.44      | 55.26  | 74.00      | -18.74     | Peak   | 46.43         | 5.23       | 28.54      |
| 2    | 2390.000 VERTICAL | 54.73      | 52.30  | 74.00      | -21.70     | Peak   | 46.43         | 5.24       | 28.28      |



Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_DQPSK\_CH 00  
Power : 10  
Rate : 2DH5  
Note : IMEI:358028660010991

| Freq | Pol/Phase         | Read Level | Level  | Limit Line | Over Limit | Remark  | Preamp Factor | Cable Loss | Ant Factor |
|------|-------------------|------------|--------|------------|------------|---------|---------------|------------|------------|
| MHz  |                   | dBuV/H     | dBuV/H | dBuV/H     | dB         |         | dB            | dB         | dB/m       |
| 1    | 2367.600 VERTICAL | 47.68      | 45.43  | 54.00      | -8.57      | Average | 46.43         | 5.24       | 28.46      |
| 2    | 2390.000 VERTICAL | 46.39      | 43.96  | 54.00      | -10.04     | Average | 46.43         | 5.24       | 28.28      |

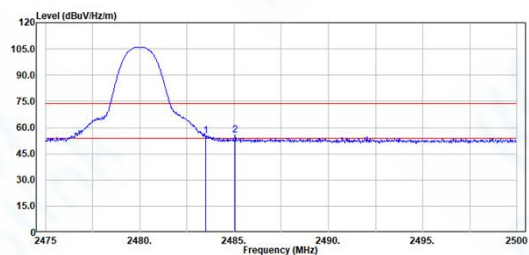


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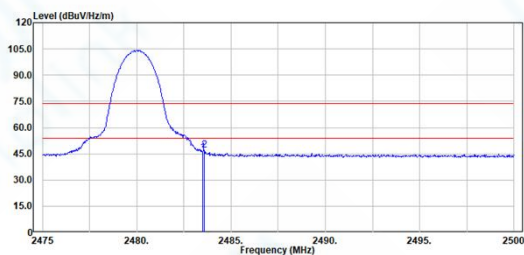
BT\_Pi/4DQPSK\_TX\_CH\_78\_Horizontal-Peak



Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_DQPSK\_CH 78  
Power : 10  
Rate : 2DHS  
Note : IMEI:358028660010991

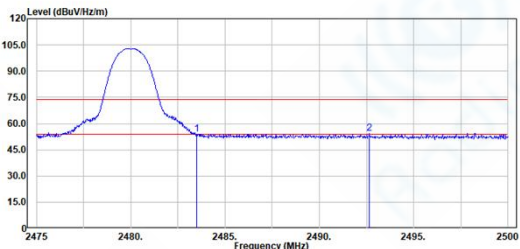
| Freq | Pol/Phase           | Read Level | Level | Limit Line | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|------|---------------------|------------|-------|------------|------------|--------|---------------|------------|------------|
| 1    | 2483.500 HORIZONTAL | 58.08      | 55.25 | 74.00      | -18.75     | Peak   | 46.41         | 5.27       | 27.86      |
| 2    | 2485.050 HORIZONTAL | 58.39      | 55.54 | 74.00      | -18.46     | Peak   | 46.41         | 5.28       | 27.83      |

BT\_Pi/4DQPSK\_TX\_CH\_78\_Horizontal-Avg



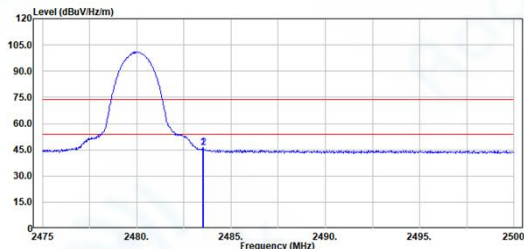
Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_DQPSK\_CH 78  
Power : 10  
Rate : 2DHS  
Note : IMEI:358028660010991

| Freq | Pol/Phase           | Read Level | Level | Limit Line | Over Limit | Remark  | Preamp Factor | Cable Loss | Ant Factor |
|------|---------------------|------------|-------|------------|------------|---------|---------------|------------|------------|
| 1    | 2483.500 HORIZONTAL | 48.69      | 45.86 | 54.00      | -8.14      | Average | 46.41         | 5.27       | 27.86      |
| 2    | 2483.575 HORIZONTAL | 50.00      | 47.17 | 54.00      | -6.83      | Average | 46.41         | 5.27       | 27.86      |



Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_DQPSK\_CH 78  
Power : 10  
Rate : 2DHS  
Note : IMEI:358028660010991

| Freq | Pol/Phase         | Read Level | Level | Limit Line | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|------|-------------------|------------|-------|------------|------------|--------|---------------|------------|------------|
| 1    | 2483.500 VERTICAL | 56.79      | 53.96 | 74.00      | -20.04     | Peak   | 46.41         | 5.27       | 27.86      |
| 2    | 2492.650 VERTICAL | 57.42      | 54.39 | 74.00      | -19.61     | Peak   | 46.41         | 5.28       | 27.66      |



Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_DQPSK\_CH 78  
Power : 10  
Rate : 2DHS  
Note : IMEI:358028660010991

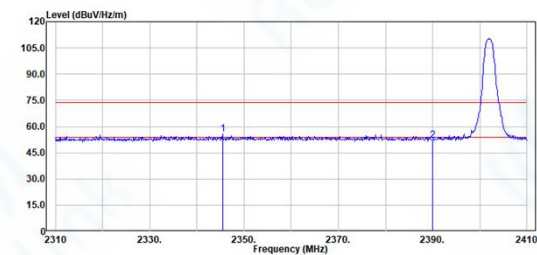
| Freq | Pol/Phase         | Read Level | Level | Limit Line | Over Limit | Remark  | Preamp Factor | Cable Loss | Ant Factor |
|------|-------------------|------------|-------|------------|------------|---------|---------------|------------|------------|
| 1    | 2483.500 VERTICAL | 48.79      | 45.96 | 54.00      | -8.04      | Average | 46.41         | 5.27       | 27.86      |
| 2    | 2483.525 VERTICAL | 49.14      | 46.31 | 54.00      | -7.69      | Average | 46.41         | 5.27       | 27.86      |

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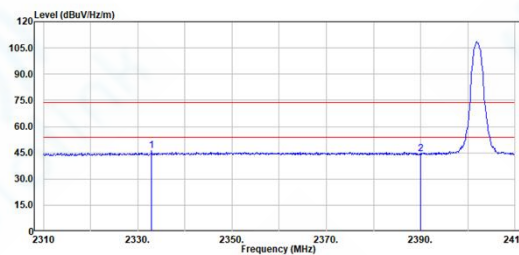
BT\_8DQPSK\_TX\_CH\_00\_Horizontal-Peak



Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_8DPSK\_CH 00  
Power : 10  
Rate : 3DH5  
Note : IMEI:358028660010991

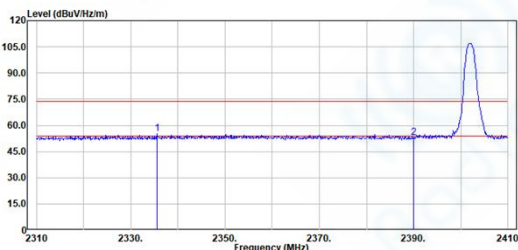
| Freq       | Pol/Phase  | Read Level | Level  | Limit Line | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|------------|------------|------------|--------|------------|------------|--------|---------------|------------|------------|
| MHz        |            | dBuV/H     | dBuV/H | dBuV/H     | dB         |        | dB            | dB         | dB/m       |
| 1 2345.400 | HORIZONTAL | 57.68      | 55.51  | 74.00      | -18.49     | Peak   | 46.43         | 5.23       | 28.56      |
| 2 2390.000 | HORIZONTAL | 54.63      | 52.20  | 74.00      | -21.80     | Peak   | 46.43         | 5.24       | 28.28      |

BT\_8DQPSK\_TX\_CH\_00\_Horizontal-Avg



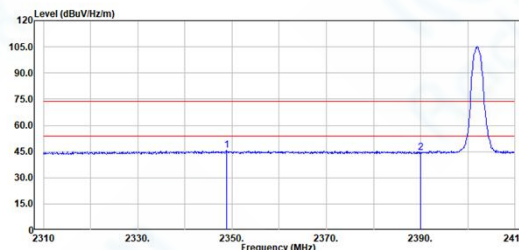
Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_8DPSK\_CH 00  
Power : 10  
Rate : 3DH5  
Note : IMEI:358028660010991

| Freq       | Pol/Phase  | Read Level | Level  | Limit Line | Over Limit | Remark  | Preamp Factor | Cable Loss | Ant Factor |
|------------|------------|------------|--------|------------|------------|---------|---------------|------------|------------|
| MHz        |            | dBuV/H     | dBuV/H | dBuV/H     | dB         |         | dB            | dB         | dB/m       |
| 1 2332.900 | HORIZONTAL | 48.27      | 46.00  | 54.00      | -8.00      | Average | 46.43         | 5.23       | 28.46      |
| 2 2390.000 | HORIZONTAL | 46.70      | 44.27  | 54.00      | -9.73      | Average | 46.43         | 5.24       | 28.28      |



Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_8DPSK\_CH 00  
Power : 10  
Rate : 3DH5  
Note : IMEI:358028660010991

| Freq       | Pol/Phase | Read Level | Level  | Limit Line | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|------------|-----------|------------|--------|------------|------------|--------|---------------|------------|------------|
| MHz        |           | dBuV/H     | dBuV/H | dBuV/H     | dB         |        | dB            | dB         | dB/m       |
| 1 2335.500 | VERTICAL  | 57.38      | 55.13  | 74.00      | -18.87     | Peak   | 46.43         | 5.23       | 28.48      |
| 2 2390.000 | VERTICAL  | 55.55      | 53.12  | 74.00      | -20.88     | Peak   | 46.43         | 5.24       | 28.28      |



Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_8DPSK\_CH 00  
Power : 10  
Rate : 3DH5  
Note : IMEI:358028660010991

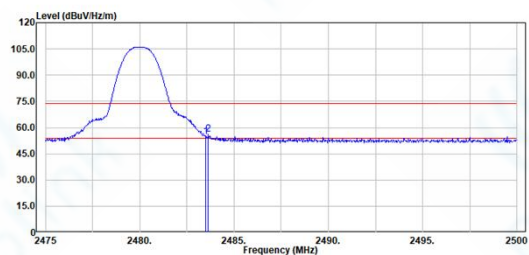
| Freq       | Pol/Phase | Read Level | Level  | Limit Line | Over Limit | Remark  | Preamp Factor | Cable Loss | Ant Factor |
|------------|-----------|------------|--------|------------|------------|---------|---------------|------------|------------|
| MHz        |           | dBuV/H     | dBuV/H | dBuV/H     | dB         |         | dB            | dB         | dB/m       |
| 1 2348.000 | VERTICAL  | 47.78      | 45.64  | 54.00      | -8.36      | Average | 46.43         | 5.23       | 28.59      |
| 2 2390.000 | VERTICAL  | 47.02      | 44.59  | 54.00      | -9.41      | Average | 46.43         | 5.24       | 28.28      |

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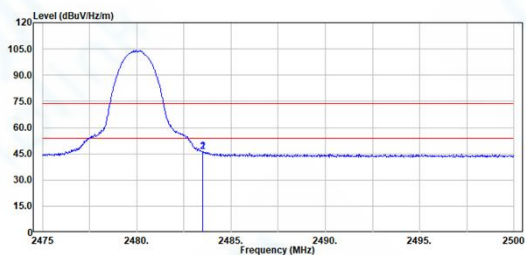
BT\_8DQPSK\_TX\_CH\_78\_Horizontal-Peak



Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_8DPSK\_CH 78  
Power : 10  
Rate : 3DHS  
Note : IMEI:358028660010991

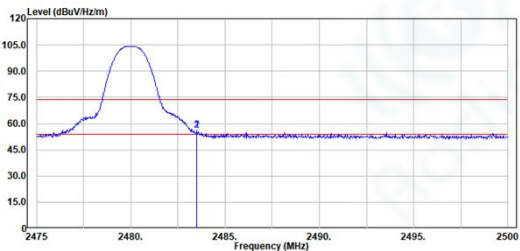
| Freq | Pol/Phase           | Read Level | Level | Limit Line | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|------|---------------------|------------|-------|------------|------------|--------|---------------|------------|------------|
| 1    | 2483.500 HORIZONTAL | 57.68      | 54.85 | 74.00      | -19.15     | Peak   | 46.41         | 5.27       | 27.86      |
| 2    | 2483.625 HORIZONTAL | 59.14      | 56.31 | 74.00      | -17.69     | Peak   | 46.41         | 5.27       | 27.86      |

BT\_8DQPSK\_TX\_CH\_78\_Horizontal-Avg



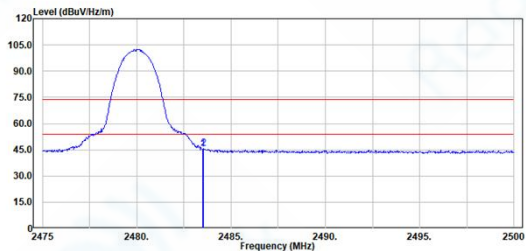
Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_8DPSK\_CH 78  
Power : 10  
Rate : 3DHS  
Note : IMEI:358028660010991

| Freq | Pol/Phase           | Read Level | Level | Limit Line | Over Limit | Remark  | Preamp Factor | Cable Loss | Ant Factor |
|------|---------------------|------------|-------|------------|------------|---------|---------------|------------|------------|
| 1    | 2483.500 HORIZONTAL | 49.82      | 46.19 | 54.00      | -7.81      | Average | 46.41         | 5.27       | 27.86      |
| 2    | 2483.500 HORIZONTAL | 49.82      | 46.19 | 54.00      | -7.81      | Average | 46.41         | 5.27       | 27.86      |



Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_8DPSK\_CH 78  
Power : 10  
Rate : 3DHS  
Note : IMEI:358028660010991

| Freq | Pol/Phase         | Read Level | Level | Limit Line | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|------|-------------------|------------|-------|------------|------------|--------|---------------|------------|------------|
| 1    | 2483.500 VERTICAL | 58.76      | 55.93 | 74.00      | -18.07     | Peak   | 46.41         | 5.27       | 27.86      |
| 2    | 2483.500 VERTICAL | 58.76      | 55.93 | 74.00      | -18.07     | Peak   | 46.41         | 5.27       | 27.86      |



Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_8DPSK\_CH 78  
Power : 10  
Rate : 3DHS  
Note : IMEI:358028660010991

| Freq | Pol/Phase         | Read Level | Level | Limit Line | Over Limit | Remark  | Preamp Factor | Cable Loss | Ant Factor |
|------|-------------------|------------|-------|------------|------------|---------|---------------|------------|------------|
| 1    | 2483.500 VERTICAL | 48.27      | 45.44 | 54.00      | -8.56      | Average | 46.41         | 5.27       | 27.86      |
| 2    | 2483.500 VERTICAL | 48.67      | 45.84 | 54.00      | -8.16      | Average | 46.41         | 5.27       | 27.86      |

### 7.3 Radiated Spurious Emissions Below 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209  
RSS-Gen Section 8.9

Test Method: ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024  
Section 6.4,6.5

Measurement Distance: 3m

Limit:

| Frequency(MHz) | Field strength(microvolts/meter) | Measurement distance(meters) |
|----------------|----------------------------------|------------------------------|
| 0.009-0.490    | 2400/F(kHz)                      | 300                          |
| 0.490-1.705    | 24000/F(kHz)                     | 30                           |
| 1.705-30.0     | 30                               | 30                           |
| 30-88          | 100                              | 3                            |
| 88-216         | 150                              | 3                            |
| 216-960        | 200                              | 3                            |
| 960-1000       | 500                              | 3                            |

#### 7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 23.5 °C

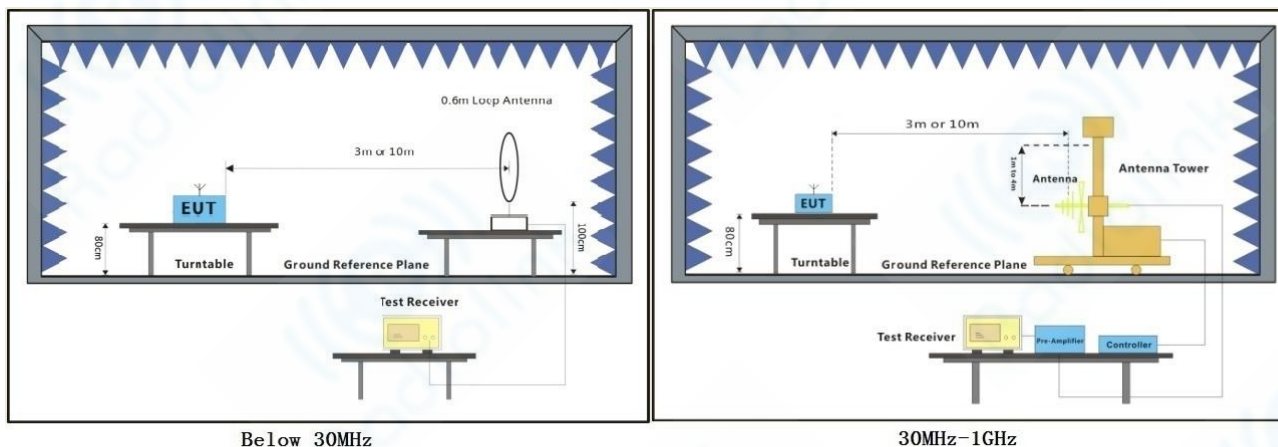
Humidity: 46.8 % RH

Atmospheric Pressure: 1020 mbar

#### 7.3.2 Test Mode Description

| Mode Code | Description                                                                                                                                                                                                        |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1         | TX_non-Hop mode_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report. |

#### 7.3.3 Test Setup Diagram



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#### 7.3.4 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 or 10 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 quasi-peak method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i. Repeat above procedures until all frequencies measured was complete.

Remark:

1.  $\text{Level} = \text{Read Level} + \text{Cable Loss} + \text{Antenna Factor} - \text{Preamp Factor}$
2. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

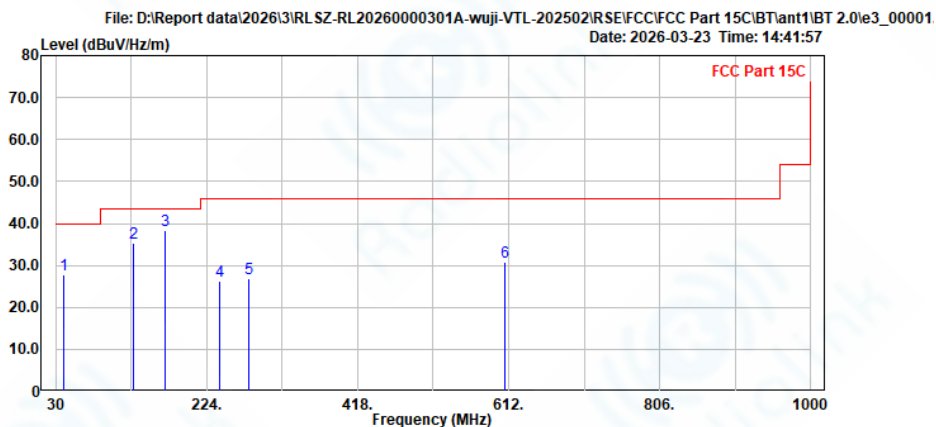


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Tel: +86 0755 23080694

Polarity: Horizontal



Site : chamber  
Condition: FCC Part 15C 3m ANT\_VULB9163-30M-1GHz-20250411-FCC HORIZONTAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_8DPSK\_CH 78 LF  
Power : 9  
Rate : 3DH5  
Note : IMEI:358028660010454

|   | Freq    | Pol/Phase  | Read Level | Limit Level | Limit Line | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|---|---------|------------|------------|-------------|------------|------------|--------|---------------|------------|------------|
|   | MHz     |            | dBuV/H     | dBuV/H      | dBuV/H     | dB         |        | dB            | dB         | dB/m       |
| 1 | 40.670  | HORIZONTAL | 30.04      | 27.92       | 40.00      | -12.08     | Peak   | 32.00         | 0.80       | 17.27      |
| 2 | 128.940 | HORIZONTAL | 29.94      | 35.19       | 43.50      | -8.31      | Peak   | 31.87         | 11.41      | 12.75      |
| 3 | 170.650 | HORIZONTAL | 29.33      | 38.41       | 43.50      | -5.09      | Peak   | 31.83         | 12.02      | 13.05      |
| 4 | 240.490 | HORIZONTAL | 30.94      | 26.33       | 46.00      | -19.67     | Peak   | 31.84         | 1.56       | 16.43      |
| 5 | 278.320 | HORIZONTAL | 33.42      | 26.98       | 46.00      | -19.02     | Peak   | 31.88         | 1.57       | 17.04      |
| 6 | 607.150 | HORIZONTAL | 31.28      | 30.88       | 46.00      | -15.12     | Peak   | 31.90         | 2.22       | 23.31      |

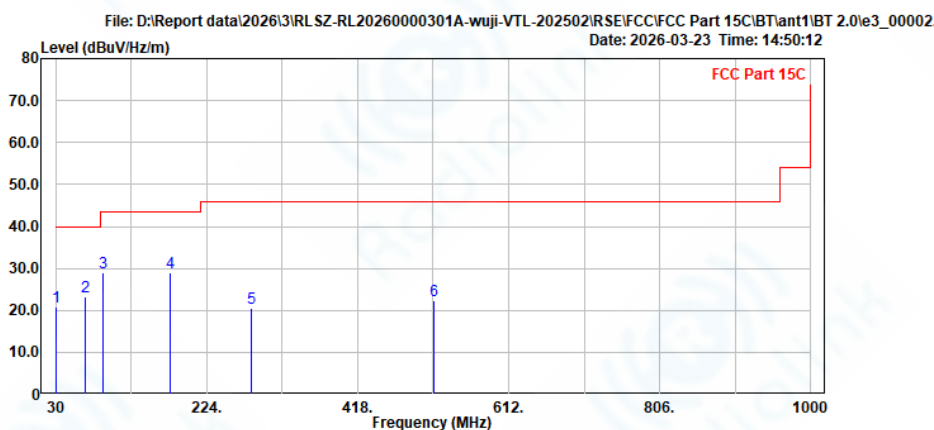


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Polarity: Vertical



Site : chamber  
Condition: FCC Part 15C 3m ANT\_VULB9163-30M-1GHz-20250411-FCC VERTICAL  
EUT : VTL-202502  
Mode : BT 2.0 TX\_8DPSK\_CH 78 LF  
Power : 9  
Rate : 3DH5  
Note : IMEI:358028660010454

|   | Freq    | Pol/Phase | Read Level | Level  | Limit  | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|---|---------|-----------|------------|--------|--------|------------|--------|---------------|------------|------------|
|   | MHz     |           | dBuV/H     | dBuV/H | dBuV/H | dB         |        | dB            | dB         | dB/m       |
| 1 | 30.970  | VERTICAL  | 36.46      | 20.69  | 40.00  | -19.31     | Peak   | 32.00         | 0.89       | 15.34      |
| 2 | 67.830  | VERTICAL  | 40.08      | 23.21  | 40.00  | -16.79     | Peak   | 32.00         | 0.92       | 14.21      |
| 3 | 90.140  | VERTICAL  | 46.02      | 29.01  | 43.50  | -14.49     | Peak   | 31.95         | 0.94       | 14.00      |
| 4 | 176.470 | VERTICAL  | 37.22      | 28.93  | 43.50  | -14.57     | Peak   | 31.82         | 10.21      | 13.32      |
| 5 | 281.230 | VERTICAL  | 33.61      | 20.38  | 46.00  | -25.62     | Peak   | 31.88         | 1.57       | 17.08      |
| 6 | 515.970 | VERTICAL  | 30.76      | 22.49  | 46.00  | -23.51     | Peak   | 31.82         | 1.88       | 21.67      |



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## 7.4 Radiated Spurious Emissions Above 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209  
RSS-Gen Section 8.9

Test Method: ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024  
Section 6.6

Measurement Distance: 3m

Limit:

| Frequency(MHz) | Field strength(microvolts/meter) | Measurement distance(meters) |
|----------------|----------------------------------|------------------------------|
| Above 1000     | 500                              | 3                            |

### 7.4.1 E.U.T. Operation

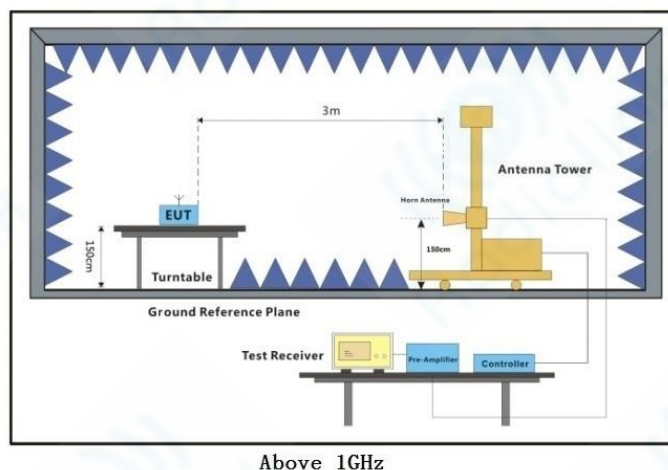
Operating Environment:

Temperature: 24.5 °C Humidity: 50.8 % RH Atmospheric Pressure: 1020 mbar

### 7.4.2 Test Mode Description

| Mode Code | Description                                                                                                                                                                                                        |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1         | TX_non-Hop mode_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report. |

### 7.4.3 Test Setup Diagram



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#### 7.4.4 Measurement Procedure and Data

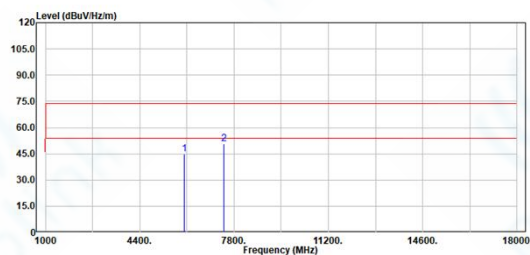
- a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which 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 or average method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
2. Scan from 1GHz to 25GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.
- 4: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.
- 5: For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle  $< 98\%$ ) or 10Hz (Duty cycle  $\geq 98\%$ ) for Average detection (AV) at frequency above 1GHz.



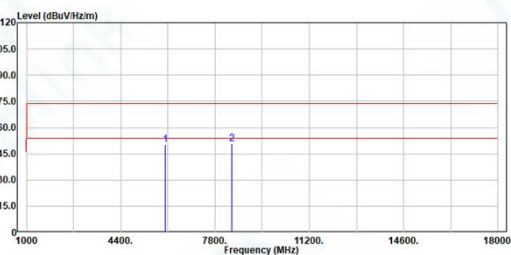
BT\_GFSK\_TX\_CH\_00\_Horizontal



Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT2.0 TX\_GFSK\_CH 00  
Power : 10  
Rate : DHS  
Note : IMEI:358028660010991

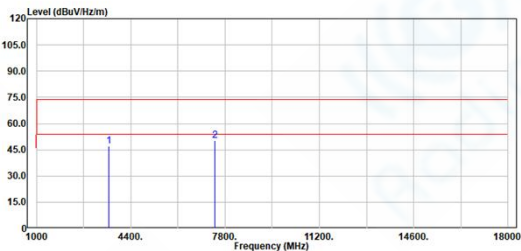
| Freq | Pol/Phase           | Read Level | Level  | Limit  | Over   | Remark | Preamp Factor | Cable Loss Factor | Ant   |
|------|---------------------|------------|--------|--------|--------|--------|---------------|-------------------|-------|
| MHz  |                     | dBuV/H     | dBuV/H | dBuV/H | dB     |        | dB            | dB                | dB/m  |
| 1    | 5993.750 HORIZONTAL | 39.96      | 44.06  | 74.00  | -29.14 | Peak   | 47.07         | 8.54              | 33.33 |
| 2    | 7439.000 HORIZONTAL | 37.97      | 50.61  | 74.00  | -23.39 | Peak   | 47.63         | 11.40             | 37.20 |

BT\_GFSK\_TX\_CH\_00\_Vertical



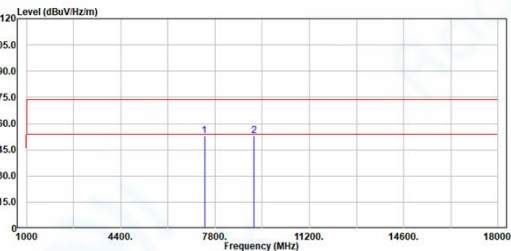
Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT2.0 TX\_GFSK\_CH 00  
Power : 10  
Rate : DHS  
Note : IMEI:358028660010991

| Freq | Pol/Phase         | Read Level | Level  | Limit  | Over   | Remark | Preamp Factor | Cable Loss Factor | Ant   |
|------|-------------------|------------|--------|--------|--------|--------|---------------|-------------------|-------|
| MHz  |                   | dBuV/H     | dBuV/H | dBuV/H | dB     |        | dB            | dB                | dB/m  |
| 1    | 5993.750 VERTICAL | 45.22      | 50.12  | 74.00  | -23.88 | Peak   | 47.07         | 8.54              | 33.33 |
| 2    | 8390.750 VERTICAL | 37.61      | 50.74  | 74.00  | -23.26 | Peak   | 47.10         | 11.95             | 37.34 |



Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT2.0 TX\_GFSK\_CH 39  
Power : 10  
Rate : DHS  
Note : IMEI:358028660010991

| Freq | Pol/Phase           | Read Level | Level  | Limit  | Over   | Remark | Preamp Factor | Cable Loss Factor | Ant   |
|------|---------------------|------------|--------|--------|--------|--------|---------------|-------------------|-------|
| MHz  |                     | dBuV/H     | dBuV/H | dBuV/H | dB     |        | dB            | dB                | dB/m  |
| 1    | 3596.750 HORIZONTAL | 46.34      | 47.06  | 74.00  | -26.94 | Peak   | 46.42         | 5.49              | 30.14 |
| 2    | 7427.250 HORIZONTAL | 37.61      | 50.25  | 74.00  | -23.75 | Peak   | 47.63         | 11.37             | 36.99 |



Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT2.0 TX\_GFSK\_CH 39  
Power : 10  
Rate : DHS  
Note : IMEI:358028660010991

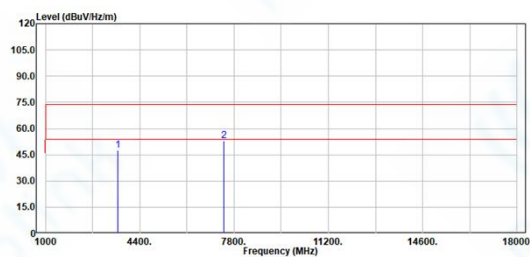
| Freq | Pol/Phase         | Read Level | Level  | Limit  | Over   | Remark | Preamp Factor | Cable Loss Factor | Ant   |
|------|-------------------|------------|--------|--------|--------|--------|---------------|-------------------|-------|
| MHz  |                   | dBuV/H     | dBuV/H | dBuV/H | dB     |        | dB            | dB                | dB/m  |
| 1    | 7415.500 VERTICAL | 40.12      | 52.77  | 74.00  | -21.23 | Peak   | 47.62         | 11.34             | 36.78 |
| 2    | 9201.500 VERTICAL | 36.95      | 52.81  | 74.00  | -21.19 | Peak   | 47.09         | 12.65             | 38.62 |

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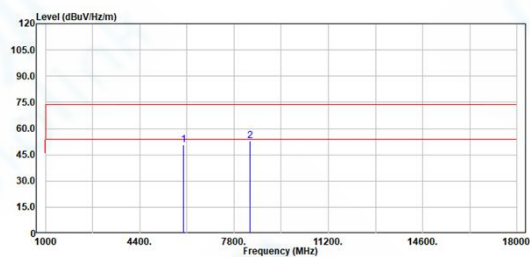
BT\_GFSK\_TX\_CH\_78\_Horizontal



Site : chamber  
Condition: 3m Horizontal  
EUT : VTL-202502  
Mode : BT2.0 TX\_GFSK\_CH 78  
Power : 10  
Rate : DHS  
Note : IMEI:358028660010991

|   | Freq     | Pol/Phase  | Read Level | Level  | Limit  | Over   | Remark | Preamp Factor | Cable Loss | Ant Factor |
|---|----------|------------|------------|--------|--------|--------|--------|---------------|------------|------------|
|   | MHz      |            | dBuV/H     | dBuV/H | dBuV/H | dB     |        | dB            | dB         | dB/m       |
| 1 | 3596.750 | Horizontal | 46.94      | 47.66  | 74.00  | -26.34 | Peak   | 46.42         | 5.49       | 30.14      |
| 2 | 7427.250 | Horizontal | 40.41      | 53.05  | 74.00  | -20.95 | Peak   | 47.63         | 11.37      | 36.99      |

BT\_GFSK\_TX\_CH\_78\_Vertical



Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT2.0 TX\_GFSK\_CH 78  
Power : 10  
Rate : DHS  
Note : IMEI:358028660010991

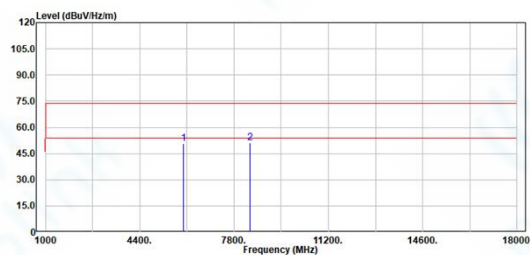
|   | Freq     | Pol/Phase | Read Level | Level  | Limit  | Over   | Remark | Preamp Factor | Cable Loss | Ant Factor |
|---|----------|-----------|------------|--------|--------|--------|--------|---------------|------------|------------|
|   | MHz      |           | dBuV/H     | dBuV/H | dBuV/H | dB     |        | dB            | dB         | dB/m       |
| 1 | 5982.000 | VERTICAL  | 45.77      | 50.00  | 74.00  | -23.20 | Peak   | 47.05         | 8.51       | 33.37      |
| 2 | 8367.250 | VERTICAL  | 39.85      | 53.00  | 74.00  | -20.92 | Peak   | 47.11         | 11.95      | 37.20      |

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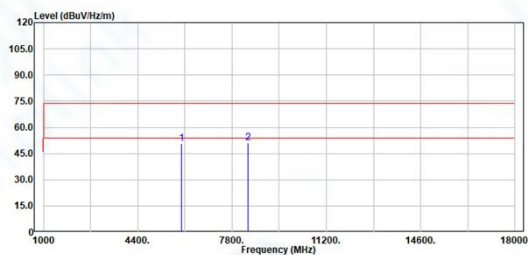
BT\_Pi/4DQPSK\_TX\_CH\_00\_Horizontal



Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT2.0 TX\_DQPSK\_CH 00  
Power : 10  
Rate : 2DH5  
Note : IMEI:358028660010991

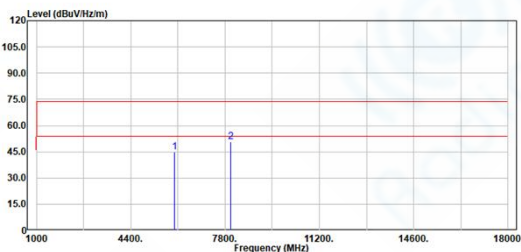
| Freq       | Pol/Phase  | Read Level | Level  | Limit  | Over   | Remark | Preamp Factor | Cable Loss Factor | Ant   |
|------------|------------|------------|--------|--------|--------|--------|---------------|-------------------|-------|
| MHz        |            | dBuV/H     | dBuV/H | dBuV/H | dB     |        | dB            | dB                | dB/m  |
| 1 5982.000 | HORIZONTAL | 45.78      | 50.81  | 74.00  | -23.19 | Peak   | 47.05         | 8.51              | 33.37 |
| 2 8367.250 | HORIZONTAL | 38.12      | 51.35  | 74.00  | -22.65 | Peak   | 47.11         | 11.95             | 37.20 |

BT\_Pi/4DQPSK\_TX\_CH\_00\_Vertical



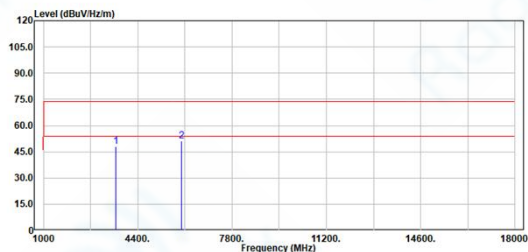
Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT2.0 TX\_DQPSK\_CH 00  
Power : 10  
Rate : 2DH5  
Note : IMEI:358028660010991

| Freq       | Pol/Phase | Read Level | Level  | Limit  | Over   | Remark | Preamp Factor | Cable Loss Factor | Ant   |
|------------|-----------|------------|--------|--------|--------|--------|---------------|-------------------|-------|
| MHz        |           | dBuV/H     | dBuV/H | dBuV/H | dB     |        | dB            | dB                | dB/m  |
| 1 5982.000 | VERTICAL  | 45.78      | 50.81  | 74.00  | -23.19 | Peak   | 47.05         | 8.51              | 33.37 |
| 2 8367.250 | VERTICAL  | 38.12      | 51.35  | 74.00  | -22.65 | Peak   | 47.11         | 11.95             | 37.20 |



Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT2.0 TX\_DQPSK\_CH 39  
Power : 10  
Rate : 2DH5  
Note : IMEI:358028660010991

| Freq       | Pol/Phase  | Read Level | Level  | Limit  | Over   | Remark | Preamp Factor | Cable Loss Factor | Ant   |
|------------|------------|------------|--------|--------|--------|--------|---------------|-------------------|-------|
| MHz        |            | dBuV/H     | dBuV/H | dBuV/H | dB     |        | dB            | dB                | dB/m  |
| 1 5982.000 | HORIZONTAL | 39.90      | 44.93  | 74.00  | -29.07 | Peak   | 47.05         | 8.51              | 33.37 |
| 2 7991.250 | HORIZONTAL | 37.00      | 50.57  | 74.00  | -23.43 | Peak   | 47.28         | 11.95             | 37.42 |



Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT2.0 TX\_DQPSK\_CH 39  
Power : 10  
Rate : 2DH5  
Note : IMEI:358028660010991

| Freq       | Pol/Phase | Read Level | Level  | Limit  | Over   | Remark | Preamp Factor | Cable Loss Factor | Ant   |
|------------|-----------|------------|--------|--------|--------|--------|---------------|-------------------|-------|
| MHz        |           | dBuV/H     | dBuV/H | dBuV/H | dB     |        | dB            | dB                | dB/m  |
| 1 3596.750 | VERTICAL  | 47.33      | 48.05  | 74.00  | -25.95 | Peak   | 46.42         | 5.49              | 30.14 |
| 2 5982.000 | VERTICAL  | 46.02      | 51.05  | 74.00  | -22.95 | Peak   | 47.05         | 8.51              | 33.37 |

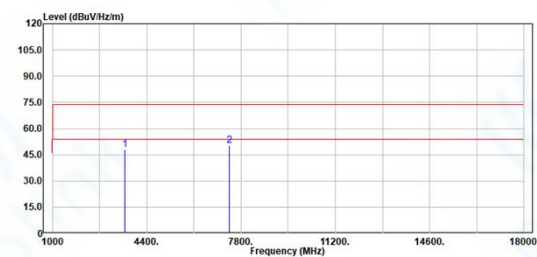


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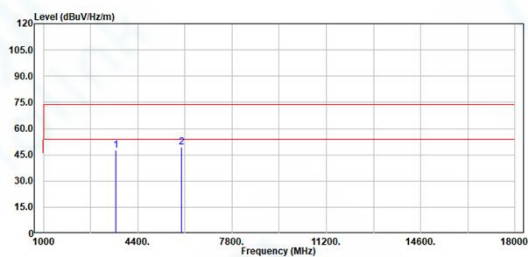
BT\_Pi/4DQPSK\_TX\_CH\_78\_Horizontal



Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT2.0 TX\_DQPSK\_CH 78  
Power : 10  
Rate : 2DH5  
Note : IMEI:358028660010991

| Freq | Pol/Phase           | Read Level | Level  | Limit  | Over   | Preamp | Cable | Ant    |
|------|---------------------|------------|--------|--------|--------|--------|-------|--------|
| MHz  |                     | dBuV/H     | dBuV/H | dBuV/H | dB     | Factor | Loss  | Factor |
| 1    | 3596.750 HORIZONTAL | 47.32      | 48.04  | 74.00  | -25.96 | 46.42  | 5.49  | 30.14  |
| 2    | 7300.250 HORIZONTAL | 37.24      | 50.13  | 74.00  | -23.87 | 47.00  | 11.25 | 36.97  |

BT\_Pi/4DQPSK\_TX\_CH\_78\_Vertical



Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT2.0 TX\_DQPSK\_CH 78  
Power : 10  
Rate : 2DH5  
Note : IMEI:358028660010991

| Freq | Pol/Phase         | Read Level | Level  | Limit  | Over   | Preamp | Cable | Ant    |
|------|-------------------|------------|--------|--------|--------|--------|-------|--------|
| MHz  |                   | dBuV/H     | dBuV/H | dBuV/H | dB     | Factor | Loss  | Factor |
| 1    | 3596.750 VERTICAL | 46.94      | 47.66  | 74.00  | -26.34 | 46.42  | 5.49  | 30.14  |
| 2    | 5982.000 VERTICAL | 44.51      | 49.54  | 74.00  | -24.46 | 47.05  | 8.51  | 33.37  |

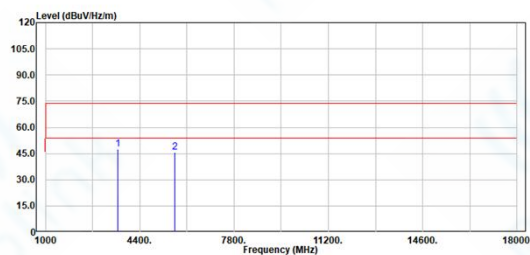


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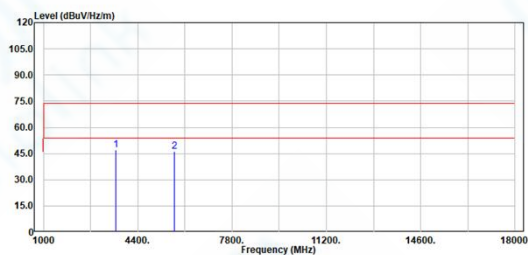
BT\_8DQPSK\_TX\_CH\_00\_Horizontal



Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT2.0 TX\_8DPSK\_Ch 00  
Power : 10  
Plan : X  
Note : IMEI:358028660010991

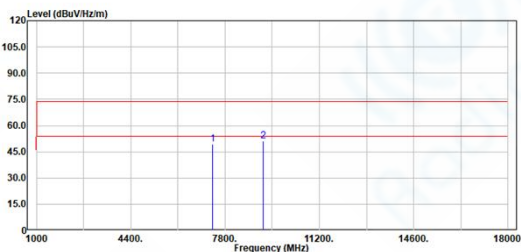
| Freq       | Pol/Phase  | Read Level | Level  | Limit Line | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|------------|------------|------------|--------|------------|------------|--------|---------------|------------|------------|
| MHz        |            | dBuV/H     | dBuV/H | dBuV/H     | dB         |        | dB            | dB         | dB/m       |
| 1 3596.750 | HORIZONTAL | 47.81      | 47.73  | 74.00      | -26.27     | Peak   | 46.42         | 5.49       | 30.14      |
| 2 5648.000 | HORIZONTAL | 40.52      | 45.58  | 74.00      | -28.42     | Peak   | 46.58         | 7.63       | 33.28      |

BT\_8DQPSK\_TX\_CH\_00\_Vertical



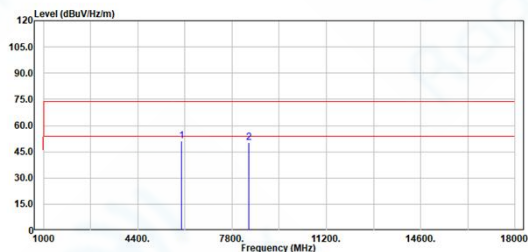
Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT2.0 TX\_8DPSK\_Ch 00  
Power : 10  
Plan : X  
Note : IMEI:358028660010991

| Freq       | Pol/Phase  | Read Level | Level  | Limit Line | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|------------|------------|------------|--------|------------|------------|--------|---------------|------------|------------|
| MHz        |            | dBuV/H     | dBuV/H | dBuV/H     | dB         |        | dB            | dB         | dB/m       |
| 1 3596.750 | HORIZONTAL | 46.27      | 46.99  | 74.00      | -27.01     | Peak   | 46.42         | 5.49       | 30.14      |
| 2 5729.000 | HORIZONTAL | 40.44      | 45.97  | 74.00      | -28.03     | Peak   | 46.70         | 7.84       | 33.58      |



Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT2.0 TX\_8DPSK\_Ch 39  
Power : 10  
Plan : X  
Note : IMEI:358028660010991

| Freq       | Pol/Phase  | Read Level | Level  | Limit Line | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|------------|------------|------------|--------|------------|------------|--------|---------------|------------|------------|
| MHz        |            | dBuV/H     | dBuV/H | dBuV/H     | dB         |        | dB            | dB         | dB/m       |
| 1 7333.250 | HORIZONTAL | 36.80      | 49.40  | 74.00      | -24.60     | Peak   | 47.58         | 11.12      | 37.26      |
| 2 9166.250 | HORIZONTAL | 35.09      | 51.15  | 74.00      | -22.85     | Peak   | 47.14         | 12.58      | 38.94      |



Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT2.0 TX\_8DPSK\_Ch 39  
Power : 10  
Plan : X  
Note : IMEI:358028660010991

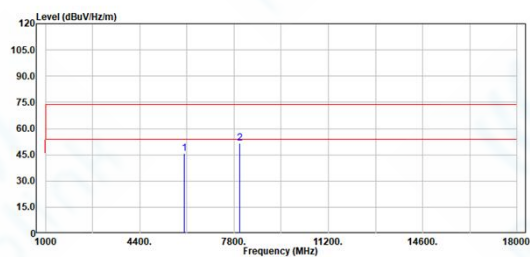
| Freq       | Pol/Phase | Read Level | Level  | Limit Line | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|------------|-----------|------------|--------|------------|------------|--------|---------------|------------|------------|
| MHz        |           | dBuV/H     | dBuV/H | dBuV/H     | dB         |        | dB            | dB         | dB/m       |
| 1 5982.000 | VERTICAL  | 46.11      | 51.14  | 74.00      | -22.86     | Peak   | 47.05         | 8.51       | 33.37      |
| 2 8402.500 | VERTICAL  | 37.28      | 50.38  | 74.00      | -23.62     | Peak   | 47.09         | 11.95      | 37.42      |

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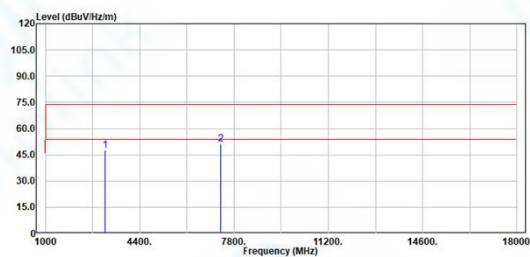
BT\_8DQPSK\_TX\_CH\_78\_Horizontal



Site : chamber  
Condition: 3m HORIZONTAL  
EUT : VTL-202502  
Mode : BT2.0 TX\_8DPSK\_Ch 78  
Power : 10  
Plan : X  
Note : IMEI:358028660010991

| Freq     | Pol/Phase  | Read Level | Level | Limit Line | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|----------|------------|------------|-------|------------|------------|--------|---------------|------------|------------|
| 5993.750 | HORIZONTAL | 48.83      | 45.73 | 74.00      | -28.27     | Peak   | 47.07         | 8.54       | 33.33      |
| 8003.000 | HORIZONTAL | 37.90      | 51.43 | 74.00      | -22.57     | Peak   | 47.27         | 11.96      | 37.43      |

BT\_8DQPSK\_TX\_CH\_78\_Vertical



Site : chamber  
Condition: 3m VERTICAL  
EUT : VTL-202502  
Mode : BT2.0 TX\_8DPSK\_Ch 78  
Power : 10  
Plan : X  
Note : IMEI:358028660010991

| Freq     | Pol/Phase | Read Level | Level | Limit Line | Over Limit | Remark | Preamp Factor | Cable Loss | Ant Factor |
|----------|-----------|------------|-------|------------|------------|--------|---------------|------------|------------|
| 3138.500 | VERTICAL  | 46.56      | 47.37 | 74.00      | -26.63     | Peak   | 46.47         | 5.44       | 28.99      |
| 7321.500 | VERTICAL  | 39.21      | 51.37 | 74.00      | -22.63     | Peak   | 47.57         | 11.09      | 36.96      |



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## 7.5 Conducted Peak Output Power

|                  |                                                                                         |
|------------------|-----------------------------------------------------------------------------------------|
| Test Requirement | 47 CFR Part 15, Subpart C 15.247(b)(3)<br>RSS-247 Section 6.2.2.2(a)                    |
| Test Method:     | ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024<br>Section 11.9.1 |

Limit:

| Frequency range(MHz) | Output power of the intentional radiator(watt)         |
|----------------------|--------------------------------------------------------|
| 902-928              | 1 for $\geq 50$ hopping channels                       |
|                      | 0.25 for $25 \leq$ hopping channels $< 50$             |
|                      | 1 for digital modulation                               |
| 2400-2483.5          | 1 for $\geq 75$ non-overlapping hopping channels       |
|                      | 0.125 for all other frequency hopping systems          |
|                      | 1 for digital modulation                               |
| 5725-5850            | 1 for frequency hopping systems and digital modulation |

### 7.5.1 E.U.T. Operation

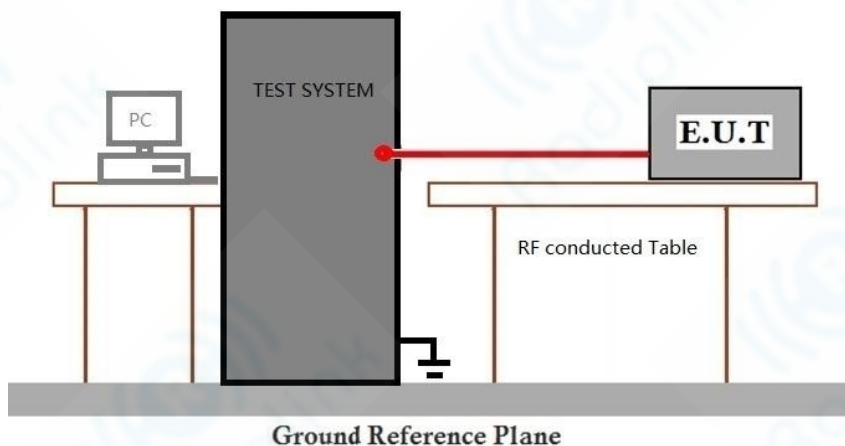
Operating Environment:

Temperature: 22.2 °C      Humidity: 40.0 % RH      Atmospheric Pressure: 1020 mbar

### 7.5.2 Test Mode Description

| Mode Code | Description                                                                                                                                                                                                        |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1         | TX_non-Hop mode_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report. |

### 7.5.3 Test Setup Diagram



### 7.5.4 Measurement Procedure and Data

Note: Since the verify power the same operating range bandwidth and smaller power can be covered by the higher power.

Please Refer to Appendix for Details



## 7.6 20dB Bandwidth

|                  |                                                                                        |
|------------------|----------------------------------------------------------------------------------------|
| Test Requirement | 47 CFR Part 15, Subpart C 15.247(a)(1)<br>RSS-247 Section 6.2.3.1(a)                   |
| Test Method:     | ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024<br>Section 6.9.2 |

Limit:

| 20 dB bandwidth of the hopping channel | Hopping frequencies          | Average time of occupancy                                        |
|----------------------------------------|------------------------------|------------------------------------------------------------------|
| less than 250 kHz                      | least 50 hopping frequencies | shall not be greater than 0.4 seconds within a 20 second period  |
| 250 kHz to 500kHz                      | least 25 hopping frequencies | shall not be greater than 0.4 seconds within a 10 second period. |

### 7.6.1 E.U.T. Operation

Operating Environment:

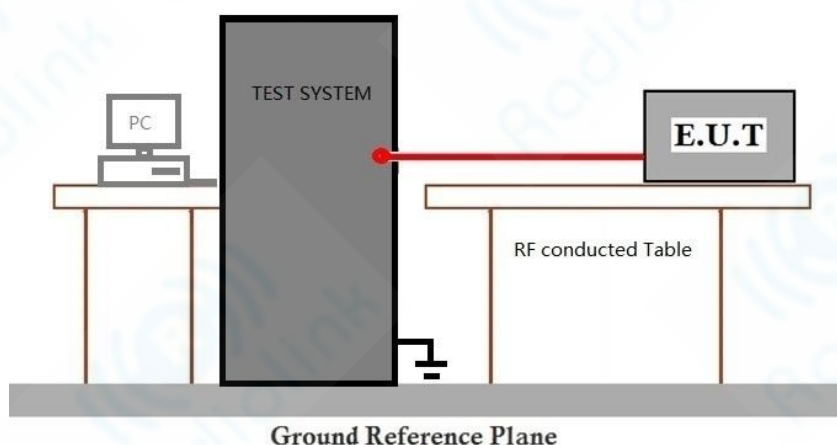
Temperature: 20.2 °C      Humidity: 52.0 % RH      Atmospheric Pressure: 1020 mbar

### 7.6.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description                                                                                                                                                                                                        |
|-----------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Final test            | 00        | TX_non-Hop mode_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report. |



### 7.6.3 Test Setup Diagram



### 7.6.4 Measurement Procedure and Data

Please Refer to Appendix for Details

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## 7.7 Carrier Frequencies Separation

Test Requirement 47 CFR Part 15, Subpart C 15.247a(1)  
RSS-247 Section 6.2.3.1(a)

Test Method: ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024  
Section 7.8.2

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 125 mW.

### 7.7.1 E.U.T. Operation

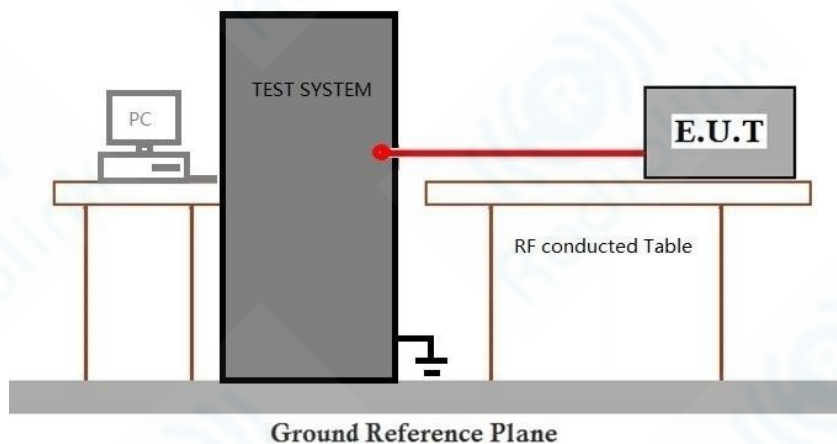
Operating Environment:

Temperature: 20.2 °C Humidity: 52.0 % RH Atmospheric Pressure: 1020 mbar

### 7.7.2 Test Mode Description

| Pre-scan /<br>Final test | Mode<br>Code | Description                                                                                                                                                                                            |
|--------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Final test               | 01           | TX_Hop mode_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report. |

### 7.7.3 Test Setup Diagram



### 7.7.4 Measurement Procedure and Data

Please Refer to Appendix for Details

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