# FCC Radio Test Report

## FCC ID: N7NRC76C

| | | |
|---|---|---|
| **Report No.** | : | BTL-FCCP-2-2203T030 |
| **Equipment** | : | Module |
| **Model Name** | : | RC7612, RC7612-1 |
| **Brand Name** | : | AirPrime |
| **Applicant** | : | Sierra Wireless, Inc. |
| **Address** | : | 13811 Wireless Way, Richmond, BC V6V 3A4, Canada |
| **Manufacturer** | : | Sierra Wireless, Inc. |
| **Address** | : | 13811 Wireless Way, Richmond, BC V6V 3A4, Canada |
| **Radio Function** | : | WCDMA Band II, LTE Band 2 |
| **FCC Rule Part(s)** | : | FCC CFR Title 47, Part 24, Subpart E |
| **Measurement Procedure(s)** | : | ANSI C63.26-2015<br>ANSI/TIA-603-E-2016<br>FCC KDB 971168 D01 Power Meas License Digital Systems v03r01 |
| **Date of Receipt** | : | 2022/3/4 |
| **Date of Test** | : | 2022/3/4 ~ 2022/4/26 |
| **Issued Date** | : | 2022/6/21 |

The above equipment has been tested and found in compliance with the requirement of the above standards by BTL Inc.

**Prepared by** : Eric Lee
Eric Lee, Engineer

**Approved by** : Jerry Chuang
Jerry Chuang, Supervisor

Testing Laboratory 0659

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**Declaration**

**BTL** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

**BTL**'s reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

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**BTL**'s laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

**BTL** is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

**Limitation**

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

**CONTENTS**

## REVISION HISTORY

| Report No. | Version | Description | Issued Date | Note |
|---|---|---|---|---|
| BTL-FCCP-2-2203T030 | R00 | Original Report. | 2022/6/21 | Valid |

# 1 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards.

| FCC Clause No | Description | Test Result | Judgement | Remark |
|---|---|---|---|---|
| 15.207 | AC Power Line Conducted Emissions | ------ | N/A | NOTE (3) |
| 2.1046<br>24.232(c) | Conducted Output Power<br>Equivalent Isotropic Radiated Power (EIRP) | APPENDIX A | Pass | ------ |
| 2.1049 | Occupied Bandwidth | APPENDIX B | Pass | ------ |
| 2.1051<br>24.238(a) | Conducted Spurious Emissions | APPENDIX C | Pass | ------ |
| 2.1053<br>24.238(a) | Radiated Spurious Emissions | APPENDIX D | Pass | ------ |
| 24.238(a) | Band Edge Measurements | APPENDIX E | Pass | ------ |
| 24.232(d) | Peak To Average Ratio | APPENDIX F | Pass | ------ |
| 2.1055<br>24.235 | Frequency Stability | APPENDIX G | Pass | ------ |

NOTE:
(1) ”N/A” denotes test is not applicable in this Test Report.
(2) The report format version is TP.1.1.1.
(3) This is a DC input device.

## 1.1 TEST FACILITY

The test facilities used to collect the test data in this report:

No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan
The test sites and facilities are covered under FCC RN: 674415 and DN: TW0659.

☐ C05 ☐ CB08 ☐ CB11 ☒ CB15 ☐ CB16
☒ SR05

## 1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y ± U**, where expanded uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k = 2**, providing a level of confidence of approximately **95 %**. The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2 $U_{cispr}$ requirement.

A. Radiated Spurious Emissions test:

| Test Site | Measurement Frequency Range | U,(dB) |
|---|---|---|
| CB15 | 0.03 GHz ~ 0.2 GHz | 4.17 |
| | 0.2 GHz ~ 1 GHz | 4.72 |
| | 1 GHz ~ 6 GHz | 5.21 |
| | 6 GHz ~ 18 GHz | 5.51 |
| | 18 GHz ~ 26 GHz | 3.69 |
| | 26 GHz ~ 40 GHz | 4.23 |

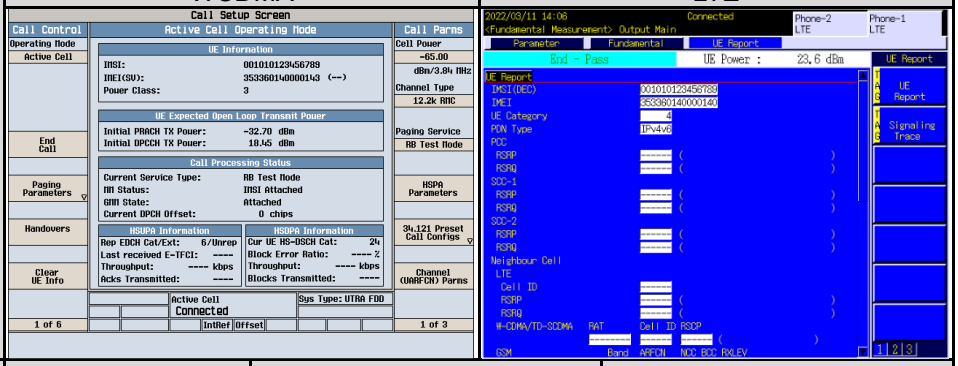
NOTE:
Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

## 1.3 TEST ENVIRONMENT CONDITIONS

| Test Item | Environment Condition | Test Voltage | Tested by |
|---|---|---|---|
| Conducted Output Power | 24.6 °C, 67 % | DC 3.7V | Paul Shen |
| Occupied Bandwidth | 24.6 °C, 67 % | DC 3.7V | Paul Shen |
| Conducted Spurious Emissions | 24.6 °C, 67 % | DC 3.7V | Paul Shen |
| Radiated Spurious Emissions and Effective Isotropic Radiated Power | Refer to data | DC 3.7V | Vincent Lee |
| Band Edge | 24.6 °C, 67 % | DC 3.7V | Paul Shen |
| Peak to Average Ratio | 24.6 °C, 67 % | DC 3.7V | Paul Shen |
| Frequency Stability | Normal and Extreme | | Paul Shen |

# 2 GENERAL INFORMATION

## 2.1 DESCRIPTION OF EUT

| | |
|---|---|
| Equipment | Module |
| Model Name | RC7612, RC7612-1 |
| Brand Name | AirPrime |
| Model Difference | The hardware of the two models is the same, only the software is different.<br>RC7612 is LTE Category 4<br>RC7612-1 is LTE Category 1 |
| Power Source | DC Voltage supplied from host equipment. |
| Power Rating | DC 3.7V |
| Products Covered | N/A |
| IEMI No. | WCDMA / LTE  |



| Operation Frequency | Band | UL Frequency (MHz) | DL Frequency (MHz) |
|---|---|---|---|
| | WCDMA II | 1850 ~ 1910 | 1930 ~ 1990 |
| | LTE 2 | 1850 ~ 1910 | 1930 ~ 1990 |

| Maximum EIRP | Band | BW (MHz) | Mode | Power (W) |
|---|---|---|---|---|
| | WCDMA II | - | - | 0.303 |
| | LTE 2 | 1.4 | QPSK | 0.212 |
| | | | 16QAM | 0.175 |
| | | 3 | QPSK | 0.215 |
| | | | 16QAM | 0.177 |
| | | 5 | QPSK | 0.217 |
| | | | 16QAM | 0.179 |
| | | 10 | QPSK | 0.220 |
| | | | 16QAM | 0.181 |
| | | 15 | QPSK | 0.222 |
| | | | 16QAM | 0.183 |
| | | 20 | QPSK | 0.224 |
| | | | 16QAM | 0.184 |

| | |
|---|---|
| Test Model | RC7612 |
| Sample Status | Engineering Sample |
| EUT Modification(s) | N/A |

NOTE:
(1) For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

(2) Channel List:

| WCDMA Band II | | | | |
|---|---|---|---|---|
| Test Frequency ID | UARFCN | Frequency of Uplink (MHz) | UARFCN | Frequency of Downlink (MHz) |
| Low Range | 9262 | 1852.4 | 9662 | 1932.4 |
| Mid Range | 9400 | 1880.0 | 9800 | 1960.0 |
| High Range | 9538 | 1907.6 | 9938 | 1987.6 |

| LTE Band 2 | | | | | |
|---|---|---|---|---|---|
| Test Frequency ID | Bandwidth (MHz) | $N_{UL}$ | Frequency of Uplink (MHz) | $N_{DL}$ | Frequency of Downlink (MHz) |
| Low Range | 1.4 | 18607 | 1850.7 | 607 | 1930.7 |
| | 3 | 18615 | 1851.5 | 615 | 1931.5 |
| | 5 | 18625 | 1852.5 | 625 | 1932.5 |
| | 10 | 18650 | 1855 | 650 | 1935 |
| | 15 | 18675 | 1857.5 | 675 | 1937.5 |
| | 20 | 18700 | 1860 | 700 | 1940 |
| Mid Range | 1.4/3/5/10/15/20 | 18900 | 1880 | 900 | 1960 |
| High Range | 1.4 | 19193 | 1909.3 | 1193 | 1989.3 |
| | 3 | 19185 | 1908.5 | 1185 | 1988.5 |
| | 5 | 19175 | 1907.5 | 1175 | 1987.5 |
| | 10 | 19150 | 1905 | 1150 | 1985 |
| | 15 | 19125 | 1902.5 | 1125 | 1982.5 |
| | 20 | 19100 | 1900 | 1100 | 1980 |

(3) Table for Filed Antenna:

| Antenna | Manufacture | Part Number | Type | Connector | Gain (dBi) | Note |
|---|---|---|---|---|---|---|
| 1 | PulseLARSEN Antennas | SPDA24617/3900 | Dipole | SMA-M | 2.5 | WCDMA Band II |
| | | | | | 2.5 | LTE Band 2 |

## 2.2 TEST MODES

| WCDMA BAND II MODE | | | |
|---|---|---|---|
| Test Item | Available Channel | Tested Channel | Mode |
| Conducted Output Power and Effective Isotropic Radiated Power | 9262 to 9538 | 9262, 9400, 9538 | WCDMA, HSDPA, HSUPA, HSPA+ |
| Occupied Bandwidth | 9262 to 9538 | 9262, 9400, 9538 | WCDMA |
| Conducted Spurious Emissions | 9262 to 9538 | 9400 | WCDMA |
| Radiated Spurious Emissions | 9262 to 9538 | 9400 | WCDMA |
| Band Edge | 9262 to 9538 | 9262, 9538 | WCDMA |
| Peak to Average Ratio | 9262 to 9538 | 9262, 9400, 9538 | WCDMA |
| Frequency Stability | 9262 to 9538 | 9400 | WCDMA |

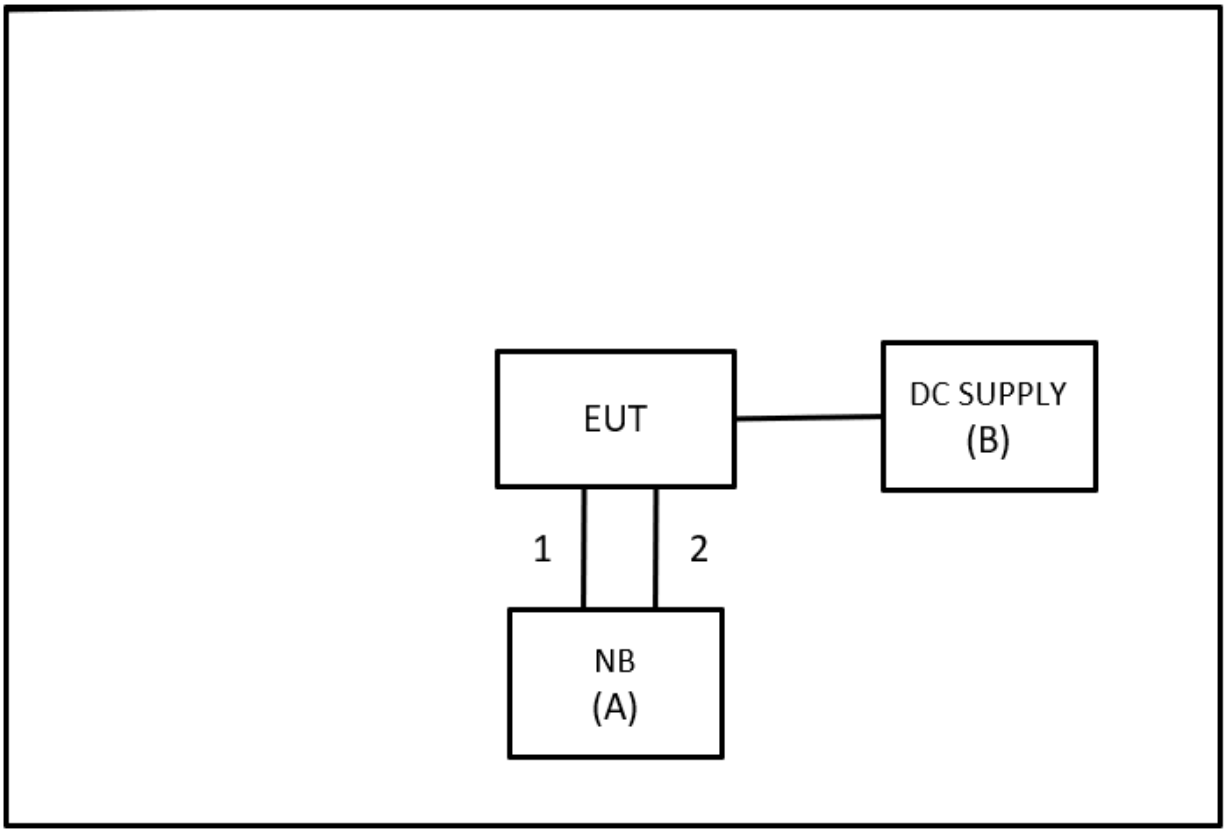
| LTE BAND 2 MODE | | | | | |
|---|---|---|---|---|---|
| Test Item | Available Channel | Tested Channel | Channel Bandwidth | Modulation | Mode |
| Conducted Output Power | 18607 to 19193 | 18607, 18900, 19193 | 1.4MHz | QPSK, 16QAM | 1RB/3RB/6RB |
| | 18615 to 19185 | 18615 , 18900, 19185 | 3MHz | QPSK, 16QAM | 1RB/8RB/15RB |
| | 18625 to 19175 | 18625, 18900, 19175 | 5MHz | QPSK, 16QAM | 1RB/12RB/25RB |
| | 18650 to 19150 | 18650, 18900, 19150 | 10MHz | QPSK, 16QAM | 1RB/25RB/50RB |
| | 18675 to 19125 | 18675, 18900, 19125 | 15MHz | QPSK, 16QAM | 1RB/36RB/75RB |
| | 18700 to 19100 | 18700, 18900, 19100 | 20MHz | QPSK, 16QAM | 1RB/50RB/100RB |
| Effective Isotropic Radiated Power | 18700 to 19100 | 18700, 18900, 19100 | 20MHz | QPSK | 1RB/50RB/100RB |
| Occupied Bandwidth | 18607 to 19193 | 18607, 18900, 19193 | 1.4MHz | QPSK, 16QAM | 6RB |
| | 18615 to 19185 | 18615 , 18900, 19185 | 3MHz | QPSK, 16QAM | 15RB |
| | 18625 to 19175 | 18625, 18900, 19175 | 5MHz | QPSK, 16QAM | 25RB |
| | 18650 to 19150 | 18650, 18900, 19150 | 10MHz | QPSK, 16QAM | 50RB |
| | 18675 to 19125 | 18675, 18900, 19125 | 15MHz | QPSK, 16QAM | 75 RB |
| | 18700 to 19100 | 18700, 18900, 19100 | 20MHz | QPSK, 16QAM | 100RB |

| LTE BAND 2 MODE | | | | | |
|---|---|---|---|---|---|
| Test Item | Available Channel | Tested Channel | Channel Bandwidth | Modulation | Mode |
| Conducted Spurious Emissions | 18607 to 19193 | 18900 | 1.4MHz | QPSK | 1RB |
| | 18615 to 19185 | 18900 | 3MHz | QPSK | 1RB |
| | 18625 to 19175 | 18900 | 5MHz | QPSK | 1RB |
| | 18650 to 19150 | 18900 | 10MHz | QPSK | 1RB |
| | 18675 to 19125 | 18900 | 15MHz | QPSK | 1RB |
| | 18700 to 19100 | 18900 | 20MHz | QPSK | 1RB |
| Radiated Spurious Emissions | 18607 to 19193 | 18900 | 1.4MHz | QPSK | 1RB |
| | 18615 to 19185 | 18900 | 3MHz | QPSK | 1RB |
| | 18625 to 19175 | 18900 | 5MHz | QPSK | 1RB |
| | 18650 to 19150 | 18900 | 10MHz | QPSK | 1RB |
| | 18675 to 19125 | 18900 | 15MHz | QPSK | 1RB |
| | 18700 to 19100 | 18900 | 20MHz | QPSK | 1RB |
| Band Edge | 18607 to 19193 | 18607, 19193 | 1.4MHz | QPSK | 1RB/6RB |
| | 18615 to 19185 | 18615, 19185 | 3MHz | QPSK | 1RB/15RB |
| | 18625 to 19175 | 18625, 19175 | 5MHz | QPSK | 1RB/25RB |
| | 18650 to 19150 | 18650, 19150 | 10MHz | QPSK | 1RB/50RB |
| | 18675 to 19125 | 18675, 19125 | 15MHz | QPSK | 1RB/75RB |
| | 18700 to 19100 | 18700, 19100 | 20MHz | QPSK | 1RB/100RB |
| Peak To Average Ratio | 18607 to 19193 | 18607, 18900, 19193 | 1.4MHz | QPSK, 16QAM | 1RB |
| | 18615 to 19185 | 18615, 18900, 19185 | 3MHz | QPSK, 16QAM | 1RB |
| | 18625 to 19175 | 18625, 18900, 19175 | 5MHz | QPSK, 16QAM | 1RB |
| | 18650 to 19150 | 18650, 18900, 19150 | 10MHz | QPSK, 16QAM | 1RB |
| | 18675 to 19125 | 18675, 18900, 19125 | 15MHz | QPSK, 16QAM | 1RB |
| | 18700 to 19100 | 18700, 18900, 19100 | 20MHz | QPSK, 16QAM | 1RB |
| Frequency Stability | 18607 to 19193 | 18900 | 1.4MHz | QPSK | 1RB |
| | 18615 to 19185 | 18900 | 3MHz | QPSK | 1RB |
| | 18625 to 19175 | 18900 | 5MHz | QPSK | 1RB |
| | 18650 to 19150 | 18900 | 10MHz | QPSK | 1RB |
| | 18675 to 19125 | 18900 | 15MHz | QPSK | 1RB |
| | 18700 to 19100 | 18900 | 20MHz | QPSK | 1RB |

NOTE:
(1) The Radiated emissions test was verified based on the worst conducted power and Bandwidth test results reported in the original report.
(2) All X, Y and Z axes are evaluated, but only the worst case (Y axis) is recorded.
(3) For Radiated Spurious Emissions both QPSK and 16QAM are evaluated, but only the worst case (QPSK) is recorded.

## 2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Equipment letters and Cable numbers refer to item numbers described in the tables of clause 2.4.




## 2.4 SUPPORT UNITS

| Item | Equipment | Brand | Model No. | Series No. | Remarks |
|---|---|---|---|---|---|
| A | NB | HP | TPN-I119 | N/A | Furnished by test lab. |
| B | DC Power Supply | ABM | 8303D | N/A | Furnished by test lab. |

| Item | Shielded | Ferrite Core | Length | Cable Type | Remarks |
|---|---|---|---|---|---|
| 1 | N/A | N/A | 0.5m | Micro USB Cable | Furnished by test lab. |
| 2 | N/A | N/A | 1m | Micro USB Cable | Furnished by test lab. |

# 3 CONDUCTED OUTPUT POWER AND EFFECTIVE ISOTROPIC RADIATED POWER MEASUREMENT

## 3.1 LIMIT

Mobile / Portable station are limited to 2 watts e.i.r.p.

NOTE:
(1) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
Margin Level = Measurement Value - Limit Value
Calculation example:

| Reading Level | | Correct Factor | | Measurement Value |
|---|---|---|---|---|
| -29.66 | + | 34.26 | = | 4.60 |

| Measurement Value | | Limit Value | | Margin Level |
|---|---|---|---|---|
| 4.60 | - | 38.45 | = | -33.85 |

## 3.2 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 5.

**EIRP / ERP Power Measurement:**
EIRP = Conducted Power + Antenna gain.
ERP power = EIPR power - 2.15 dBi.

**Conducted Measurement:**

The EUT was set up for the maximum power with WCDMA and LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

**Radiated Measurement:**

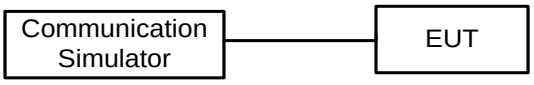
a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value “ of step a. Record the power level of S.G
c. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.
d. ERP can be calculated form EIRP by subtracting the gain of dipole, ERP = EIPR - 2.15dBi..
e. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

## 3.3 DEVIATION FROM TEST STANDARD

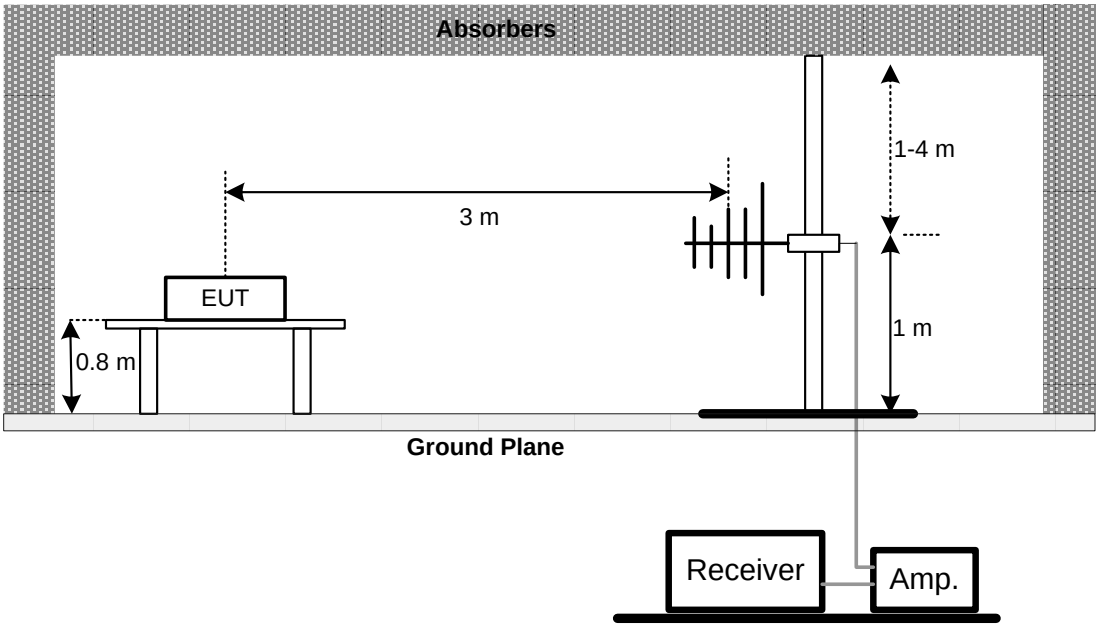
No deviation.

### 3.4 TEST SETUP

**Conducted Measurement:**




**Radiated Measurement:**




### 3.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

### 3.6 TEST RESULT

Please refer to the APPENDIX A.

# 4 OCCUPIED BANDWIDTH MEASUREMENT

## 4.1 TEST PROCEDURE

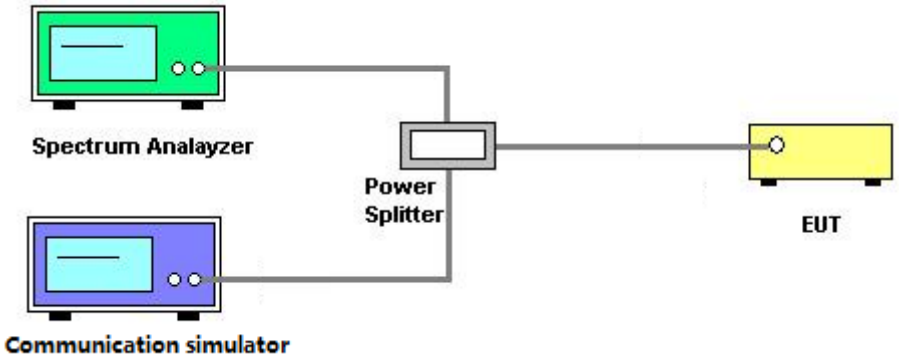
The testing follows FCC KDB 971168 v03r01 Section 4.

a. The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth and 26dB bandwidth.
b. The EUT was connected to spectrum analyzer and system simulator via a power divider.
c. RBW=(1% ~ 5%)*EBW
   VBW≥3* RBW.
d. Set spectrum analyzer with Peak detector.

## 4.2 DEVIATION FROM TEST STANDARD

No deviation.

## 4.3 TEST SETUP




## 4.4 TEST RESULT

Please refer to the APPENDIX B

# 5 CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

## 5.1 LIMIT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to -13dBm.

## 5.2 TEST PROCEDURE

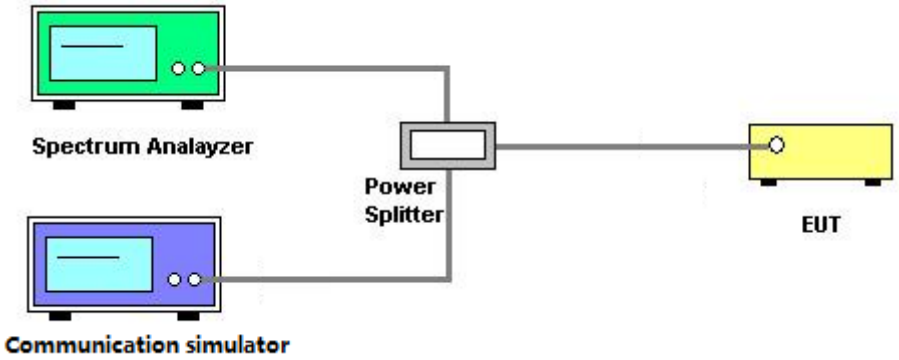
The testing follows FCC KDB 971168 v03r01 Section 6.

a. The EUT was connected to spectrum analyzer and system simulator via a power divider.
b. The band edges of low and high channels for the highest RF powers were measured. Set RBW>=1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
c. Set spectrum analyzer with Peak detector.
d. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

## 5.3 DEVIATION FROM TEST STANDARD

No deviation.

## 5.4 TEST SETUP




## 5.5 TEST RESULT

Please refer to the APPENDIX C.

# 6 RADIATED SPURIOUS EMISSIONS TEST

## 6.1 LIMIT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to -13dBm.

NOTE:
(1) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
Margin Level = Measurement Value - Limit Value
Calculation example:

| Reading Level | | Correct Factor | | Measurement Value |
|---|---|---|---|---|
| -50.43 | + | -2.11 | = | -52.54 |

| Measurement Value | | Limit Value | | Margin Level |
|---|---|---|---|---|
| -52.54 | - | -13 | = | -39.54 |

## 6.2 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 6.2.

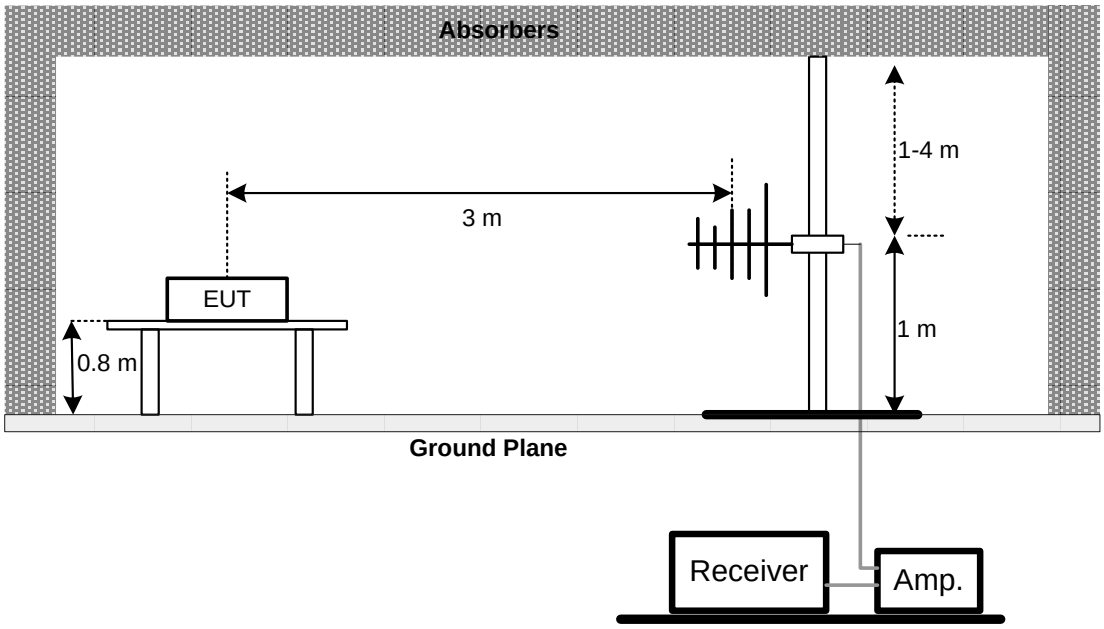
a. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value “ of step a. Record the power level of S.G
c. EIRP = Output power level of S.G - TX cable loss + Antenna gain of substitution horn.
d. ERP can be calculated form EIRP by subtracting the gain of dipole, ERP = EIPR - 2.15dBi.
e. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

## 6.3 DEVIATION FROM TEST STANDARD

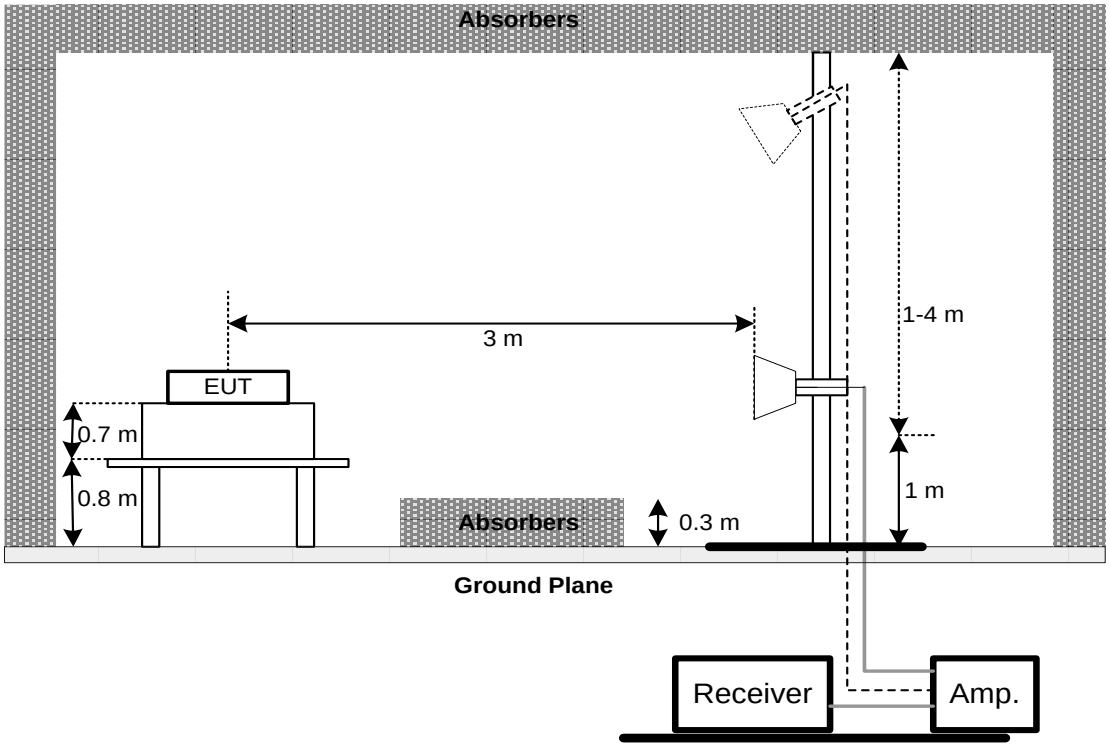
No deviation.

## 6.4 TEST SETUP

**30 MHz to 1 GHz**




**Above 1 GHz**




## 6.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

## 6.6 TEST RESULT

Please refer to the APPENDIX D.

# 7 BAND EDGE MEASUREMENT

## 7.1 LIMIT

A Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

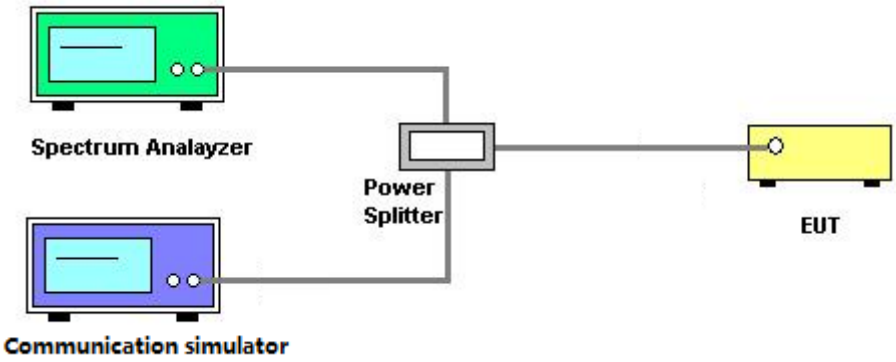
## 7.2 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 6.
a. All measurements were done at low and high operational frequency range.
b. Record the max trace plot into the test report.

## 7.3 DEVIATION FROM TEST STANDARD

No deviation.

## 7.4 TEST SETUP




## 7.5 TEST RESULT

Please refer to the APPENDIX E

# 8 PEAK TO AVERAGE RATIO MEASUREMENT

## 8.1 LIMIT

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB.

## 8.2 TEST PROCEDURE

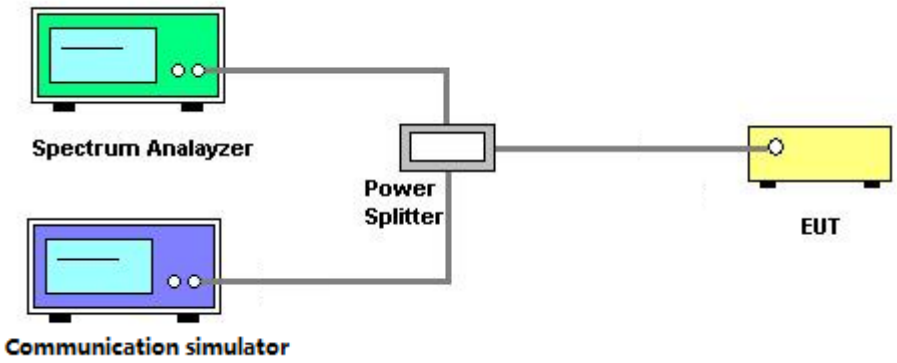
The testing follows FCC KDB 971168 v03r01 Section 5.7.

a. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth.
b. Set the number of counts to a value that stabilizes the measured CCDF curve.
c. Record the maximum PAPR level associated with a probability of 0.1%.

## 8.3 DEVIATION FROM TEST STANDARD

No deviation.

## 8.4 TEST SETUP




## 8.5 TEST RESULT

Please refer to the APPENDIX F.

# 9 FREQUENCY STABILITY MEASUREMENT

## 9.1 LIMIT

±1.5 ppm is for base and fixed station. ±2.5 ppm is for mobile station.

## 9.2 TEST PROCEDURE

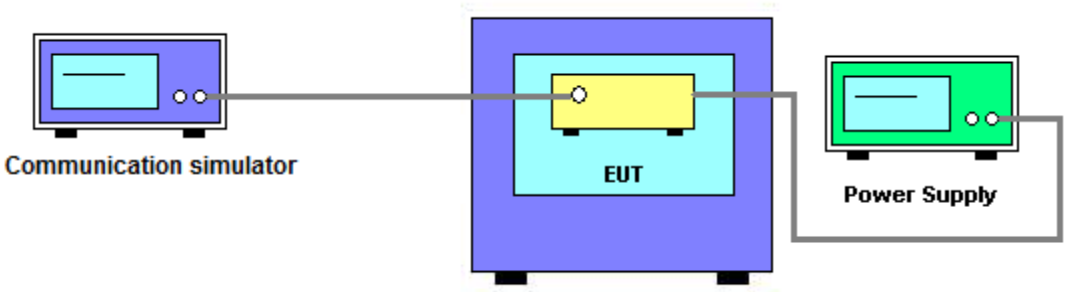
The testing follows FCC KDB 971168 v03r01 Section 9.

a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5°C during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.
d. The frequency error was recorded frequency error from the communication simulator.

## 9.3 DEVIATION FROM TEST STANDARD

No deviation.

## 9.4 TEST SETUP




## 9.5 TEST RESULT

Please refer to the APPENDIX G

## 10 LIST OF MEASURING EQUIPMENTS

| Conducted Output Power | | | | | | |
|---|---|---|---|---|---|---|
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated Date | Calibrated Until |
| 1 | 8960 Series 10 Wireless Com Test Set | Agilent | E5515C | GB47390193 | 2021/7/23 | 2022/7/22 |
| 2 | Radio Communication Analyzer | Anritsu | MT8820C | 6201381608 | 2021/12/15 | 2022/12/14 |

| Effective Radiated Power and Radiated Spurious Emissions | | | | | | |
|---|---|---|---|---|---|---|
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated Date | Calibrated Until |
| 1 | Preamplifier | EMCI | EMC02325 | 980217 | 2021/4/8 | 2022/4/7 |
| 2 | Preamplifier | EMCI | EMC012645B | 980222 | 2021/4/8 | 2022/4/7 |
| 3 | Test Cable | EMCI | EMC104-SM-100 0 | 180809 | 2021/4/8 | 2022/4/7 |
| 4 | Test Cable | EMCI | EMC104-SM-SM-3000 | 151205 | 2021/4/8 | 2022/4/7 |
| 5 | Test Cable | EMCI | EMC-SM-SM-700 0 | 180408 | 2021/4/8 | 2022/4/7 |
| 6 | MXE EMI Receiver | Agilent | N9038A | MY56400087 | 2021/5/27 | 2022/5/26 |
| 7 | Signal Analyzer | Agilent | N9010A | MY56480554 | 2021/8/25 | 2022/8/24 |
| 8 | Horn Ant | SCHWARZBECK | BBHA 9120D | 9120D-1342 | 2021/6/2 | 2022/6/1 |
| 9 | Horn Ant | Schwarzbeck | BBHA 9170 | 340 | 2021/7/9 | 2022/7/8 |
| 10 | Trilog-Broadband Antenna | Schwarzbeck | VULB 9168 | 9168-352 | 2021/8/11 | 2022/8/10 |
| 11 | 5dB Attenuator | EMCI | EMCI-N-6-05 | AT-N0625 | 2021/8/11 | 2022/8/10 |
| 12 | Measurement Software | EZ | EZ_EMC (Version NB-03A1-01) | N/A | N/A | N/A |
| 13 | 8960 Series 10 Wireless Com Test Set | Agilent | E5515C | GB47390193 | 2021/7/23 | 2022/7/22 |
| 14 | Radio Communication Analyzer (LTE) | Anritsu | MT8821C | 6262044728 | 2021/11/28 | 2022/11/27 |

| Frequency Stability Measurement | | | | | | |
|---|---|---|---|---|---|---|
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated Date | Calibrated Until |
| 1 | 8960 Series 10 Wireless Com Test Set | Agilent | E5515C | GB47390193 | 2021/7/23 | 2022/7/22 |
| 2 | Radio Communication Analyzer | Anritsu | MT8820C | 6201381608 | 2021/5/27 | 2022/5/26 |
| 3 | Thermal Chamber | HOLINK | H-T-1F-D | BA03101701 | 2021/6/28 | 2022/6/27 |

| Others Conducted Measurement | | | | | | |
|---|---|---|---|---|---|---|
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated Date | Calibrated Until |
| 1 | 8960 Series 10 Wireless Com Test Set | Agilent | E5515C | GB47390193 | 2021/6/8 | 2022/6/7 |
| 2 | Radio Communication Analyzer | Anritsu | MT8820C | 6201381608 | 2021/5/27 | 2022/5/26 |
| 3 | Spectrum Analyzer | Agilent | N9010A | MY54200240 | 2021/5/27 | 2022/5/26 |

Remark: "N/A" denotes no model name, no serial no. or no calibration specified.
All calibration period of equipment list is one year.

## 11 EUT TEST PHOTO

Please refer to document Appendix No.: TP-2203T030-FCCP-1 (APPENDIX-TEST PHOTOS).

## 12 EUT PHOTOS

Please refer to document Appendix No.: EP-2203T030-2 (APPENDIX-EUT PHOTOS).

# APPENDIX A CONDUCTED OUTPUT POWER AND EFFECTIVE RADIATED POWER

**Conducted Output Power:**

| Band | Mode | UL/DL Channel No. | Frequency(MHz) | Average power(dBm) | EIRP power (dBm) | EIRP power (W) |
|---|---|---|---|---|---|---|
| WCDMA Band II | Rel 99 | 9262/9662 | 1852.4 | 22.28 | 24.78 | 0.301 |
| | | 9400/9800 | 1880.0 | 22.30 | 24.80 | 0.302 |
| | | 9538/9938 | 1907.6 | 22.31 | 24.81 | 0.303 |

| Band | Sub-test | UL/DL Channel No. | Frequency(MHz) | Average power(dBm) | EIRP power (dBm) | EIRP power (W) |
|---|---|---|---|---|---|---|
| HSDPA II | 1 | 9262/9662 | 1852.4 | 22.22 | 24.72 | 0.296 |
| | | 9400/9800 | 1880.0 | 22.24 | 24.74 | 0.298 |
| | | 9538/9938 | 1907.6 | 22.29 | 24.79 | 0.301 |
| | 2 | 9262/9662 | 1852.4 | 21.94 | 24.44 | 0.278 |
| | | 9400/9800 | 1880.0 | 21.76 | 24.26 | 0.267 |
| | | 9538/9938 | 1907.6 | 21.81 | 24.31 | 0.270 |
| | 3 | 9262/9662 | 1852.4 | 21.52 | 24.02 | 0.252 |
| | | 9400/9800 | 1880.0 | 21.34 | 23.84 | 0.242 |
| | | 9538/9938 | 1907.6 | 21.39 | 23.89 | 0.245 |
| | 4 | 9262/9662 | 1852.4 | 22.33 | 24.83 | 0.304 |
| | | 9400/9800 | 1880.0 | 22.15 | 24.65 | 0.292 |
| | | 9538/9938 | 1907.6 | 22.20 | 24.70 | 0.295 |

| Band | Sub-test | UL/DL Channel No. | Frequency(MHz) | Average power(dBm) | EIRP power (dBm) | EIRP power (W) |
|---|---|---|---|---|---|---|
| HSUPA II | 1 | 9262/9662 | 1852.4 | 22.21 | 24.71 | 0.296 |
| | | 9400/9800 | 1880.0 | 22.23 | 24.73 | 0.297 |
| | | 9538/9938 | 1907.6 | 22.24 | 24.74 | 0.298 |
| | 2 | 9262/9662 | 1852.4 | 20.27 | 22.77 | 0.189 |
| | | 9400/9800 | 1880.0 | 20.29 | 22.79 | 0.190 |
| | | 9538/9938 | 1907.6 | 20.30 | 22.80 | 0.191 |
| | 3 | 9262/9662 | 1852.4 | 21.33 | 23.83 | 0.242 |
| | | 9400/9800 | 1880.0 | 21.35 | 23.85 | 0.243 |
| | | 9538/9938 | 1907.6 | 21.36 | 23.86 | 0.243 |
| | 4 | 9262/9662 | 1852.4 | 20.21 | 22.71 | 0.187 |
| | | 9400/9800 | 1880.0 | 20.23 | 22.73 | 0.187 |
| | | 9538/9938 | 1907.6 | 20.24 | 22.74 | 0.188 |
| | 5 | 9262/9662 | 1852.4 | 22.12 | 24.62 | 0.290 |
| | | 9400/9800 | 1880.0 | 22.14 | 24.64 | 0.291 |
| | | 9538/9938 | 1907.6 | 22.15 | 24.65 | 0.292 |

| Band | UL/DL Channel No. | Frequency(MHz) | Average power(dBm) | EIRP power (dBm) | EIRP power (W) |
|---|---|---|---|---|---|
| HSPA+ II | 9262/9662 | 1852.4 | 22.21 | 24.71 | 0.296 |
| | 9400/9800 | 1880.0 | 22.22 | 24.72 | 0.296 |
| | 9538/9938 | 1907.6 | 22.27 | 24.77 | 0.300 |

NOTE:
(1) EIRP = Average power + Antenna gain.
(2) ERP = EIRP - 2.15.
(3) P(W) = 1 W · $10^{(P(dBm)/10)}$ / 1000
(4) The maximum antenna gain is applied.

| Band | BW (MHz) | Channel | Frequency (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | EIRP power (dBm) | EIRP power (W) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 1.4 | 18607 | 1850.7 | QPSK | 1 | 0 | 0 | 22.37 | 23.1 | 0.202 |
| | | | | | 1 | 2 | 0 | 22.56 | 23.3 | 0.211 |
| | | | | | 1 | 5 | 0 | 22.28 | 23.0 | 0.198 |
| | | | | | 3 | 0 | 0 | 22.37 | 23.1 | 0.202 |
| | | | | | 3 | 1 | 0 | 22.56 | 23.3 | 0.211 |
| | | | | | 3 | 2 | 0 | 22.28 | 23.0 | 0.198 |
| | | | | | 6 | 0 | 1 | 21.38 | 22.1 | 0.161 |
| | | | | 16QAM | 1 | 0 | 1 | 21.59 | 22.3 | 0.169 |
| | | | | | 1 | 2 | 1 | 21.74 | 22.4 | 0.175 |
| | | | | | 1 | 5 | 1 | 21.39 | 22.1 | 0.161 |
| | | | | | 3 | 0 | 1 | 21.59 | 22.3 | 0.169 |
| | | | | | 3 | 1 | 1 | 21.74 | 22.4 | 0.175 |
| | | | | | 3 | 2 | 1 | 21.39 | 22.1 | 0.161 |
| | | | | | 6 | 0 | 2 | 20.47 | 21.2 | 0.131 |
| | | 18900 | 1880.0 | QPSK | 1 | 0 | 0 | 22.41 | 23.1 | 0.204 |
| | | | | | 1 | 2 | 0 | 22.58 | 23.3 | 0.212 |
| | | | | | 1 | 5 | 0 | 22.05 | 22.7 | 0.188 |
| | | | | | 3 | 0 | 0 | 22.41 | 23.1 | 0.204 |
| | | | | | 3 | 1 | 0 | 22.58 | 23.3 | 0.212 |
| | | | | | 3 | 2 | 0 | 22.05 | 22.7 | 0.188 |
| | | | | | 6 | 0 | 1 | 21.47 | 22.2 | 0.164 |
| | | | | 16QAM | 1 | 0 | 1 | 21.59 | 22.3 | 0.169 |
| | | | | | 1 | 2 | 1 | 21.65 | 22.3 | 0.171 |
| | | | | | 1 | 5 | 1 | 21.12 | 21.8 | 0.152 |
| | | | | | 3 | 0 | 1 | 21.59 | 22.3 | 0.169 |
| | | | | | 3 | 1 | 1 | 21.65 | 22.3 | 0.171 |
| | | | | | 3 | 2 | 1 | 21.12 | 21.8 | 0.152 |
| | | | | | 6 | 0 | 2 | 20.50 | 21.2 | 0.132 |
| | | 19193 | 1909.3 | QPSK | 1 | 0 | 0 | 22.31 | 23.0 | 0.200 |
| | | | | | 1 | 2 | 0 | 22.33 | 23.0 | 0.200 |
| | | | | | 1 | 5 | 0 | 22.11 | 22.8 | 0.191 |
| | | | | | 3 | 0 | 0 | 22.31 | 23.0 | 0.200 |
| | | | | | 3 | 1 | 0 | 22.33 | 23.0 | 0.200 |
| | | | | | 3 | 2 | 0 | 22.11 | 22.8 | 0.191 |
| | | | | | 6 | 0 | 1 | 21.37 | 22.1 | 0.161 |
| | | | | 16QAM | 1 | 0 | 1 | 21.49 | 22.2 | 0.165 |
| | | | | | 1 | 2 | 1 | 21.45 | 22.1 | 0.164 |
| | | | | | 1 | 5 | 1 | 21.18 | 21.9 | 0.154 |
| | | | | | 3 | 0 | 1 | 21.49 | 22.2 | 0.165 |
| | | | | | 3 | 1 | 1 | 21.45 | 22.1 | 0.164 |
| | | | | | 3 | 2 | 1 | 21.18 | 21.9 | 0.154 |
| | | | | | 6 | 0 | 2 | 20.60 | 21.3 | 0.135 |

NOTE:
(1) EIRP = Average power + Antenna gain.
(2) ERP = EIRP - 2.15.
(3) $P(W) = 1\ W \cdot 10^{(P(dBm)\ /\ 10)} / 1000$
(4) The maximum antenna gain is applied.

| Band | BW (MHz) | Channel | Frequency (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | EIRP power (dBm) | EIRP power (W) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 3 | 18615 | 1851.5 | QPSK | 1 | 0 | 0 | 22.42 | 23.1 | 0.205 |
| | | | | | 1 | 7 | 0 | 22.61 | 23.3 | 0.214 |
| | | | | | 1 | 14 | 0 | 22.33 | 23.0 | 0.200 |
| | | | | | 8 | 0 | 1 | 21.57 | 22.3 | 0.168 |
| | | | | | 8 | 4 | 1 | 21.69 | 22.4 | 0.173 |
| | | | | | 8 | 7 | 1 | 21.55 | 22.2 | 0.167 |
| | | | | | 15 | 0 | 1 | 21.43 | 22.1 | 0.163 |
| | | | | 16QAM | 1 | 0 | 1 | 21.64 | 22.3 | 0.171 |
| | | | | | 1 | 7 | 1 | 21.79 | 22.5 | 0.177 |
| | | | | | 1 | 14 | 1 | 21.44 | 22.1 | 0.163 |
| | | | | | 8 | 0 | 2 | 20.47 | 21.2 | 0.131 |
| | | | | | 8 | 4 | 2 | 20.79 | 21.5 | 0.141 |
| | | | | | 8 | 7 | 2 | 20.40 | 21.1 | 0.129 |
| | | | | | 15 | 0 | 2 | 20.52 | 21.2 | 0.132 |
| | | 18900 | 1880.0 | QPSK | 1 | 0 | 0 | 22.46 | 23.2 | 0.207 |
| | | | | | 1 | 7 | 0 | 22.63 | 23.3 | 0.215 |
| | | | | | 1 | 14 | 0 | 22.10 | 22.8 | 0.190 |
| | | | | | 8 | 0 | 1 | 21.57 | 22.3 | 0.168 |
| | | | | | 8 | 4 | 1 | 21.67 | 22.4 | 0.172 |
| | | | | | 8 | 7 | 1 | 21.28 | 22.0 | 0.157 |
| | | | | | 15 | 0 | 1 | 21.52 | 22.2 | 0.166 |
| | | | | 16QAM | 1 | 0 | 1 | 21.64 | 22.3 | 0.171 |
| | | | | | 1 | 7 | 1 | 21.70 | 22.4 | 0.173 |
| | | | | | 1 | 14 | 1 | 21.17 | 21.9 | 0.153 |
| | | | | | 8 | 0 | 2 | 20.47 | 21.2 | 0.131 |
| | | | | | 8 | 4 | 2 | 20.77 | 21.5 | 0.140 |
| | | | | | 8 | 7 | 2 | 20.13 | 20.8 | 0.121 |
| | | | | | 15 | 0 | 2 | 21.30 | 22.0 | 0.158 |
| | | 19185 | 1908.5 | QPSK | 1 | 0 | 0 | 22.36 | 23.1 | 0.202 |
| | | | | | 1 | 7 | 0 | 22.38 | 23.1 | 0.203 |
| | | | | | 1 | 14 | 0 | 22.16 | 22.9 | 0.193 |
| | | | | | 8 | 0 | 1 | 21.47 | 22.2 | 0.164 |
| | | | | | 8 | 4 | 1 | 21.42 | 22.1 | 0.163 |
| | | | | | 8 | 7 | 1 | 21.34 | 22.0 | 0.160 |
| | | | | | 15 | 0 | 1 | 21.42 | 22.1 | 0.163 |
| | | | | 16QAM | 1 | 0 | 1 | 21.54 | 22.2 | 0.167 |
| | | | | | 1 | 7 | 1 | 21.50 | 22.2 | 0.166 |
| | | | | | 1 | 14 | 1 | 21.23 | 21.9 | 0.156 |
| | | | | | 8 | 0 | 2 | 20.37 | 21.1 | 0.128 |
| | | | | | 8 | 4 | 2 | 20.52 | 21.2 | 0.132 |
| | | | | | 8 | 7 | 2 | 20.19 | 20.9 | 0.122 |
| | | | | | 15 | 0 | 2 | 21.10 | 21.8 | 0.151 |

NOTE:
(1) EIRP = Average power + Antenna gain.
(2) ERP = EIRP - 2.15.
(3) $P(W) = 1\ W \cdot 10^{(P(dBm)\ /\ 10)} / 1000$
(4) The maximum antenna gain is applied.

| Band | BW (MHz) | Channel | Frequency (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | EIRP power (dBm) | EIRP power (W) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 5 | 18625 | 1852.5 | QPSK | 1 | 0 | 0 | 22.47 | 23.2 | 0.207 |
| | | | | | 1 | 12 | 0 | 22.66 | 23.4 | 0.216 |
| | | | | | 1 | 24 | 0 | 22.38 | 23.1 | 0.203 |
| | | | | | 12 | 0 | 1 | 21.62 | 22.3 | 0.170 |
| | | | | | 12 | 6 | 1 | 21.74 | 22.4 | 0.175 |
| | | | | | 12 | 11 | 1 | 21.60 | 22.3 | 0.169 |
| | | | | | 25 | 0 | 1 | 21.48 | 22.2 | 0.165 |
| | | | | 16QAM | 1 | 0 | 1 | 21.69 | 22.4 | 0.173 |
| | | | | | 1 | 12 | 1 | 21.84 | 22.5 | 0.179 |
| | | | | | 1 | 24 | 1 | 21.49 | 22.2 | 0.165 |
| | | | | | 12 | 0 | 2 | 20.52 | 21.2 | 0.132 |
| | | | | | 12 | 6 | 2 | 20.84 | 21.5 | 0.142 |
| | | | | | 12 | 11 | 2 | 20.45 | 21.1 | 0.130 |
| | | | | | 25 | 0 | 2 | 20.57 | 21.3 | 0.134 |
| | | 18900 | 1880.0 | QPSK | 1 | 0 | 0 | 22.51 | 23.2 | 0.209 |
| | | | | | 1 | 12 | 0 | 22.68 | 23.4 | 0.217 |
| | | | | | 1 | 24 | 0 | 22.15 | 22.8 | 0.192 |
| | | | | | 12 | 0 | 1 | 21.62 | 22.3 | 0.170 |
| | | | | | 12 | 6 | 1 | 21.72 | 22.4 | 0.174 |
| | | | | | 12 | 11 | 1 | 21.33 | 22.0 | 0.159 |
| | | | | | 25 | 0 | 1 | 21.57 | 22.3 | 0.168 |
| | | | | 16QAM | 1 | 0 | 1 | 21.69 | 22.4 | 0.173 |
| | | | | | 1 | 12 | 1 | 21.75 | 22.4 | 0.175 |
| | | | | | 1 | 24 | 1 | 21.22 | 21.9 | 0.155 |
| | | | | | 12 | 0 | 2 | 20.52 | 21.2 | 0.132 |
| | | | | | 12 | 6 | 2 | 20.82 | 21.5 | 0.142 |
| | | | | | 12 | 11 | 2 | 20.18 | 20.9 | 0.122 |
| | | | | | 25 | 0 | 2 | 20.66 | 21.4 | 0.136 |
| | | 19175 | 1907.5 | QPSK | 1 | 0 | 0 | 22.41 | 23.1 | 0.204 |
| | | | | | 1 | 12 | 0 | 22.43 | 23.1 | 0.205 |
| | | | | | 1 | 24 | 0 | 22.21 | 22.9 | 0.195 |
| | | | | | 12 | 0 | 1 | 21.52 | 22.2 | 0.166 |
| | | | | | 12 | 6 | 1 | 21.47 | 22.2 | 0.164 |
| | | | | | 12 | 11 | 1 | 21.39 | 22.1 | 0.161 |
| | | | | | 25 | 0 | 1 | 21.47 | 22.2 | 0.164 |
| | | | | 16QAM | 1 | 0 | 1 | 21.59 | 22.3 | 0.169 |
| | | | | | 1 | 12 | 1 | 21.55 | 22.2 | 0.167 |
| | | | | | 1 | 24 | 1 | 21.28 | 22.0 | 0.157 |
| | | | | | 12 | 0 | 2 | 20.42 | 21.1 | 0.129 |
| | | | | | 12 | 6 | 2 | 20.57 | 21.3 | 0.134 |
| | | | | | 12 | 11 | 2 | 20.24 | 20.9 | 0.124 |
| | | | | | 25 | 0 | 2 | 20.56 | 21.3 | 0.133 |

NOTE:
(1) EIRP = Average power + Antenna gain.
(2) ERP = EIRP - 2.15.
(3) $P(W) = 1\ W \cdot 10^{(P(dBm)\ /\ 10)} / 1000$
(4) The maximum antenna gain is applied.

| Band | BW (MHz) | Channel | Frequency (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | EIRP power (dBm) | EIRP power (W) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 10 | 18650 | 1855.0 | QPSK | 1 | 0 | 0 | 22.52 | 23.2 | 0.209 |
| | | | | | 1 | 24 | 0 | 22.71 | 23.4 | 0.219 |
| | | | | | 1 | 49 | 0 | 22.43 | 23.1 | 0.205 |
| | | | | | 25 | 0 | 1 | 21.67 | 22.4 | 0.172 |
| | | | | | 25 | 12 | 1 | 21.79 | 22.5 | 0.177 |
| | | | | | 25 | 24 | 1 | 21.65 | 22.3 | 0.171 |
| | | | | | 50 | 0 | 1 | 21.53 | 22.2 | 0.167 |
| | | | | 16QAM | 1 | 0 | 1 | 21.74 | 22.4 | 0.175 |
| | | | | | 1 | 24 | 1 | 21.89 | 22.6 | 0.181 |
| | | | | | 1 | 49 | 1 | 21.54 | 22.2 | 0.167 |
| | | | | | 25 | 0 | 2 | 20.57 | 21.3 | 0.134 |
| | | | | | 25 | 12 | 2 | 20.89 | 21.6 | 0.144 |
| | | | | | 25 | 24 | 2 | 20.50 | 21.2 | 0.132 |
| | | | | | 50 | 0 | 2 | 20.62 | 21.3 | 0.135 |
| | | 18900 | 1880.0 | QPSK | 1 | 0 | 0 | 22.56 | 23.3 | 0.211 |
| | | | | | 1 | 24 | 0 | 22.73 | 23.4 | 0.220 |
| | | | | | 1 | 49 | 0 | 22.20 | 22.9 | 0.195 |
| | | | | | 25 | 0 | 1 | 21.67 | 22.4 | 0.172 |
| | | | | | 25 | 12 | 1 | 21.77 | 22.5 | 0.176 |
| | | | | | 25 | 24 | 1 | 21.38 | 22.1 | 0.161 |
| | | | | | 50 | 0 | 1 | 21.62 | 22.3 | 0.170 |
| | | | | 16QAM | 1 | 0 | 1 | 21.74 | 22.4 | 0.175 |
| | | | | | 1 | 24 | 1 | 21.80 | 22.5 | 0.177 |
| | | | | | 1 | 49 | 1 | 21.27 | 22.0 | 0.157 |
| | | | | | 25 | 0 | 2 | 20.57 | 21.3 | 0.134 |
| | | | | | 25 | 12 | 2 | 20.87 | 21.6 | 0.143 |
| | | | | | 25 | 24 | 2 | 20.23 | 20.9 | 0.124 |
| | | | | | 50 | 0 | 2 | 20.71 | 21.4 | 0.138 |
| | | 19150 | 1905.0 | QPSK | 1 | 0 | 0 | 22.46 | 23.2 | 0.207 |
| | | | | | 1 | 24 | 0 | 22.48 | 23.2 | 0.207 |
| | | | | | 1 | 49 | 0 | 22.26 | 23.0 | 0.197 |
| | | | | | 25 | 0 | 1 | 21.57 | 22.3 | 0.168 |
| | | | | | 25 | 12 | 1 | 21.52 | 22.2 | 0.166 |
| | | | | | 25 | 24 | 1 | 21.44 | 22.1 | 0.163 |
| | | | | | 50 | 0 | 1 | 21.52 | 22.2 | 0.166 |
| | | | | 16QAM | 1 | 0 | 1 | 21.64 | 22.3 | 0.171 |
| | | | | | 1 | 24 | 1 | 21.60 | 22.3 | 0.169 |
| | | | | | 1 | 49 | 1 | 21.33 | 22.0 | 0.159 |
| | | | | | 25 | 0 | 2 | 20.47 | 21.2 | 0.131 |
| | | | | | 25 | 12 | 2 | 20.62 | 21.3 | 0.135 |
| | | | | | 25 | 24 | 2 | 20.29 | 21.0 | 0.125 |
| | | | | | 50 | 0 | 2 | 20.61 | 21.3 | 0.135 |

NOTE:
(1) EIRP = Average power + Antenna gain.
(2) ERP = EIRP - 2.15.
(3) $P(W) = 1\ W \cdot 10^{(P(dBm)\ /\ 10)} / 1000$
(4) The maximum antenna gain is applied.

| Band | BW (MHz) | Channel | Frequency (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | EIRP power (dBm) | EIRP power (W) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 15 | 18675 | 1857.5 | QPSK | 1 | 0 | 0 | 22.57 | 23.3 | 0.212 |
| | | | | | 1 | 37 | 0 | 22.76 | 23.5 | 0.221 |
| | | | | | 1 | 74 | 0 | 22.48 | 23.2 | 0.207 |
| | | | | | 36 | 0 | 1 | 21.72 | 22.4 | 0.174 |
| | | | | | 36 | 18 | 1 | 21.84 | 22.5 | 0.179 |
| | | | | | 36 | 35 | 1 | 21.70 | 22.4 | 0.173 |
| | | | | | 75 | 0 | 1 | 21.58 | 22.3 | 0.169 |
| | | | | 16QAM | 1 | 0 | 1 | 21.79 | 22.5 | 0.177 |
| | | | | | 1 | 37 | 1 | 21.94 | 22.6 | 0.183 |
| | | | | | 1 | 74 | 1 | 21.59 | 22.3 | 0.169 |
| | | | | | 36 | 0 | 2 | 20.62 | 21.3 | 0.135 |
| | | | | | 36 | 18 | 2 | 20.94 | 21.6 | 0.146 |
| | | | | | 36 | 35 | 2 | 20.55 | 21.2 | 0.133 |
| | | | | | 75 | 0 | 2 | 20.67 | 21.4 | 0.137 |
| | | 18900 | 1880.0 | QPSK | 1 | 0 | 0 | 22.61 | 23.3 | 0.214 |
| | | | | | 1 | 37 | 0 | 22.78 | 23.5 | 0.222 |
| | | | | | 1 | 74 | 0 | 22.25 | 22.9 | 0.197 |
| | | | | | 36 | 0 | 1 | 21.72 | 22.4 | 0.174 |
| | | | | | 36 | 18 | 1 | 21.82 | 22.5 | 0.178 |
| | | | | | 36 | 35 | 1 | 21.43 | 22.1 | 0.163 |
| | | | | | 75 | 0 | 1 | 21.67 | 22.4 | 0.172 |
| | | | | 16QAM | 1 | 0 | 1 | 21.79 | 22.5 | 0.177 |
| | | | | | 1 | 37 | 1 | 21.85 | 22.5 | 0.179 |
| | | | | | 1 | 74 | 1 | 21.32 | 22.0 | 0.159 |
| | | | | | 36 | 0 | 2 | 20.62 | 21.3 | 0.135 |
| | | | | | 36 | 18 | 2 | 20.92 | 21.6 | 0.145 |
| | | | | | 36 | 35 | 2 | 20.28 | 21.0 | 0.125 |
| | | | | | 75 | 0 | 2 | 20.76 | 21.5 | 0.140 |
| | | 19125 | 1902.5 | QPSK | 1 | 0 | 0 | 22.51 | 23.2 | 0.209 |
| | | | | | 1 | 37 | 0 | 22.53 | 23.2 | 0.210 |
| | | | | | 1 | 74 | 0 | 22.31 | 23.0 | 0.200 |
| | | | | | 36 | 0 | 1 | 21.62 | 22.3 | 0.170 |
| | | | | | 36 | 18 | 1 | 21.57 | 22.3 | 0.168 |
| | | | | | 36 | 35 | 1 | 21.49 | 22.2 | 0.165 |
| | | | | | 75 | 0 | 1 | 21.57 | 22.3 | 0.168 |
| | | | | 16QAM | 1 | 0 | 1 | 21.69 | 22.4 | 0.173 |
| | | | | | 1 | 37 | 1 | 21.65 | 22.3 | 0.171 |
| | | | | | 1 | 74 | 1 | 21.38 | 22.1 | 0.161 |
| | | | | | 36 | 0 | 2 | 20.52 | 21.2 | 0.132 |
| | | | | | 36 | 18 | 2 | 20.67 | 21.4 | 0.137 |
| | | | | | 36 | 35 | 2 | 20.34 | 21.0 | 0.127 |
| | | | | | 75 | 0 | 2 | 20.66 | 21.4 | 0.136 |

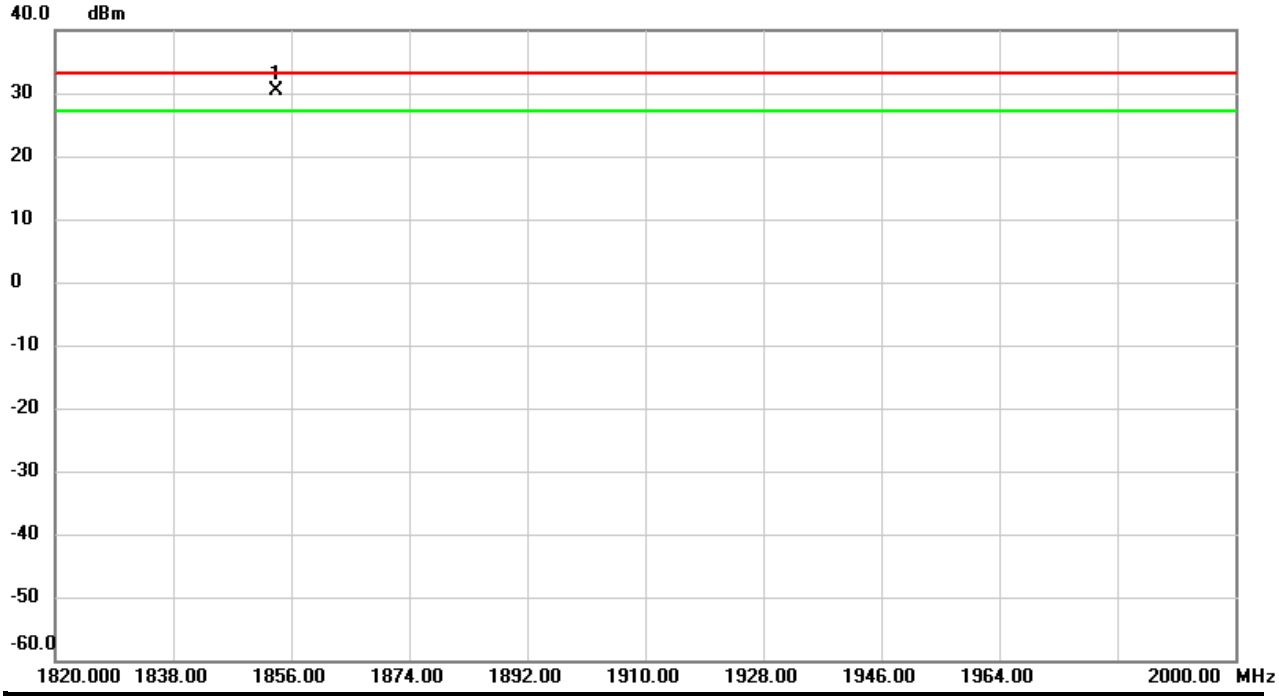
NOTE:
(1) EIRP = Average power + Antenna gain.
(2) ERP = EIRP - 2.15.
(3) $P(W) = 1\ W \cdot 10^{(P(dBm)\ /\ 10)} / 1000$
(4) The maximum antenna gain is applied.

| Band | BW (MHz) | Channel | Frequency (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | EIRP power (dBm) | EIRP power (W) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 20 | 18700 | 1860.0 | QPSK | 1 | 0 | 0 | 22.62 | 23.3 | 0.214 |
| | | | | | 1 | 49 | 0 | 22.81 | 23.5 | 0.224 |
| | | | | | 1 | 99 | 0 | 22.53 | 23.2 | 0.210 |
| | | | | | 50 | 0 | 1 | 21.73 | 22.4 | 0.175 |
| | | | | | 50 | 24 | 1 | 21.85 | 22.5 | 0.179 |
| | | | | | 50 | 49 | 1 | 21.71 | 22.4 | 0.174 |
| | | | | | 100 | 0 | 1 | 21.59 | 22.3 | 0.169 |
| | | | | 16QAM | 1 | 0 | 1 | 21.80 | 22.5 | 0.177 |
| | | | | | 1 | 49 | 1 | 21.95 | 22.6 | 0.184 |
| | | | | | 1 | 99 | 1 | 21.60 | 22.3 | 0.169 |
| | | | | | 50 | 0 | 2 | 20.63 | 21.3 | 0.136 |
| | | | | | 50 | 24 | 2 | 20.95 | 21.6 | 0.146 |
| | | | | | 50 | 49 | 2 | 20.56 | 21.3 | 0.133 |
| | | | | | 100 | 0 | 2 | 20.68 | 21.4 | 0.137 |
| | | 18900 | 1880.0 | QPSK | 1 | 0 | 0 | 22.62 | 23.3 | 0.214 |
| | | | | | 1 | 49 | 0 | 22.79 | 23.5 | 0.223 |
| | | | | | 1 | 99 | 0 | 22.26 | 23.0 | 0.197 |
| | | | | | 50 | 0 | 1 | 21.73 | 22.4 | 0.175 |
| | | | | | 50 | 24 | 1 | 21.83 | 22.5 | 0.179 |
| | | | | | 50 | 49 | 1 | 21.44 | 22.1 | 0.163 |
| | | | | | 100 | 0 | 1 | 21.68 | 22.4 | 0.173 |
| | | | | 16QAM | 1 | 0 | 1 | 21.80 | 22.5 | 0.177 |
| | | | | | 1 | 49 | 1 | 21.86 | 22.6 | 0.180 |
| | | | | | 1 | 99 | 1 | 21.33 | 22.0 | 0.159 |
| | | | | | 50 | 0 | 2 | 20.63 | 21.3 | 0.136 |
| | | | | | 50 | 24 | 2 | 20.93 | 21.6 | 0.145 |
| | | | | | 50 | 49 | 2 | 20.29 | 21.0 | 0.125 |
| | | | | | 100 | 0 | 2 | 20.77 | 21.5 | 0.140 |
| | | 19100 | 1900.0 | QPSK | 1 | 0 | 0 | 22.52 | 23.2 | 0.209 |
| | | | | | 1 | 49 | 0 | 22.54 | 23.2 | 0.210 |
| | | | | | 1 | 99 | 0 | 22.32 | 23.0 | 0.200 |
| | | | | | 50 | 0 | 1 | 21.63 | 22.3 | 0.171 |
| | | | | | 50 | 24 | 1 | 21.58 | 22.3 | 0.169 |
| | | | | | 50 | 49 | 1 | 21.50 | 22.2 | 0.166 |
| | | | | | 100 | 0 | 1 | 21.58 | 22.3 | 0.169 |
| | | | | 16QAM | 1 | 0 | 1 | 21.70 | 22.4 | 0.173 |
| | | | | | 1 | 49 | 1 | 21.66 | 22.4 | 0.172 |
| | | | | | 1 | 99 | 1 | 21.39 | 22.1 | 0.161 |
| | | | | | 50 | 0 | 2 | 20.53 | 21.2 | 0.132 |
| | | | | | 50 | 24 | 2 | 20.68 | 21.4 | 0.137 |
| | | | | | 50 | 49 | 2 | 20.35 | 21.0 | 0.127 |
| | | | | | 100 | 0 | 2 | 20.67 | 21.4 | 0.137 |

NOTE:
(1) EIRP = Average power + Antenna gain.
(2) ERP = EIRP - 2.15.
(3) $P(W) = 1\ W \cdot 10^{(P(dBm)\ /\ 10)} / 1000$
(4) The maximum antenna gain is applied.

**Effective Isotropic Radiated Power:**

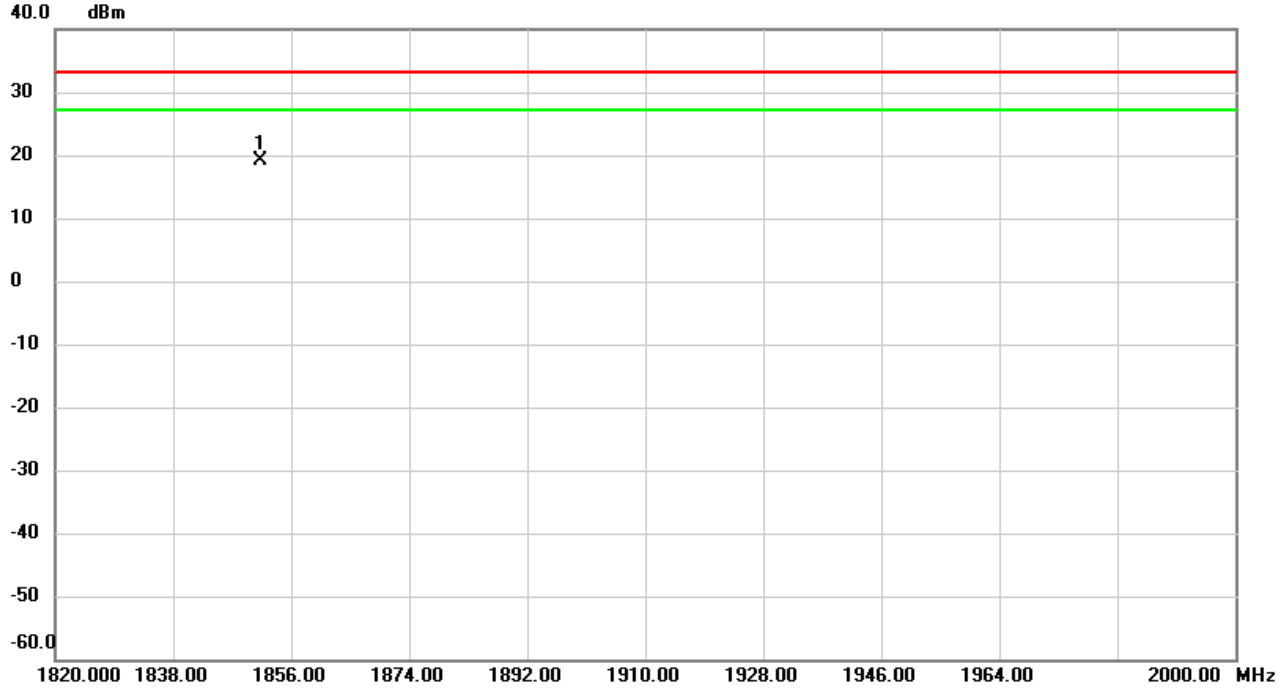
| Test Mode | WCDMA Band II | Test Date | 2022/3/10 |
|---|---|---|---|
| Test Channel | CH9262 | Polarization | Vertical |
| Temp | 21°C | Hum. | 64% |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm | dB | dBm | dBm | dB | Detector | Comment |
| 1 | * | 1853.636 | -9.24 | 39.68 | 30.44 | 33.01 | -2.57 | peak | |

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

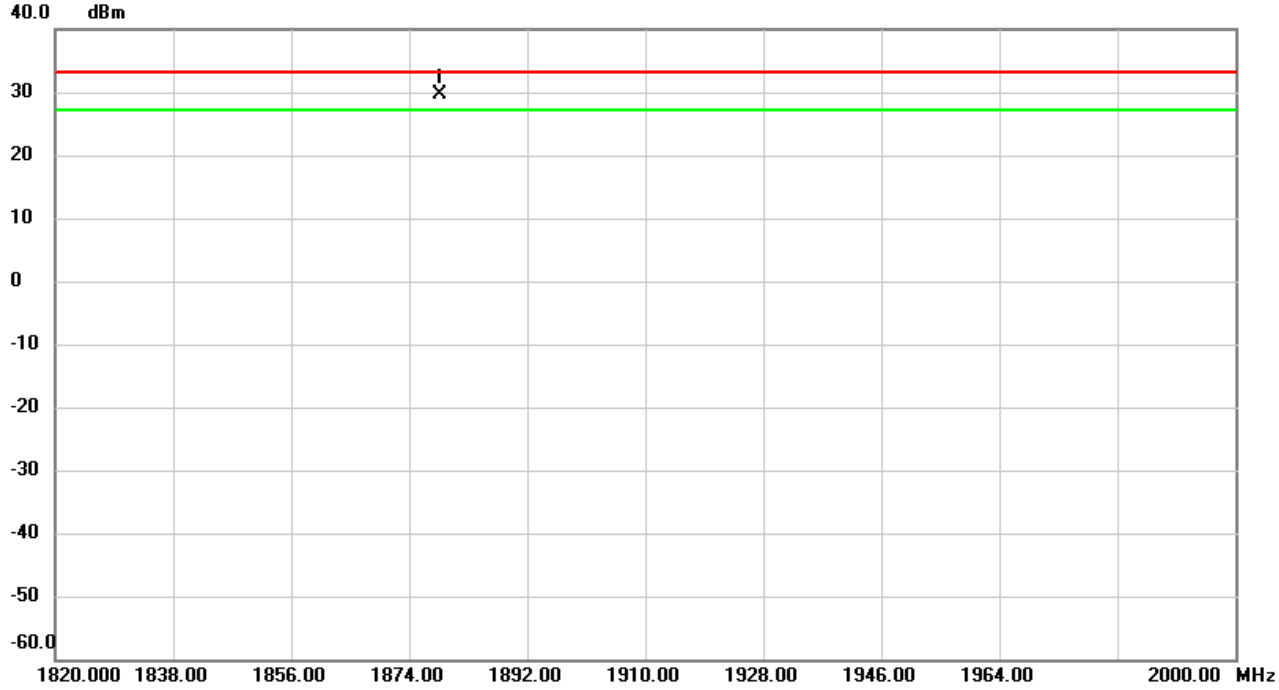
| Test Mode | WCDMA Band II | Test Date | 2022/3/10 |
|---|---|---|---|
| Test Channel | CH9262 | Polarization | Horizontal |
| Temp | 21°C | Hum. | 64% |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm | dB | dBm | dBm | dB | Detector | Comment |
| 1 | * | 1851.314 | -21.56 | 40.59 | 19.03 | 33.01 | -13.98 | peak | |

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

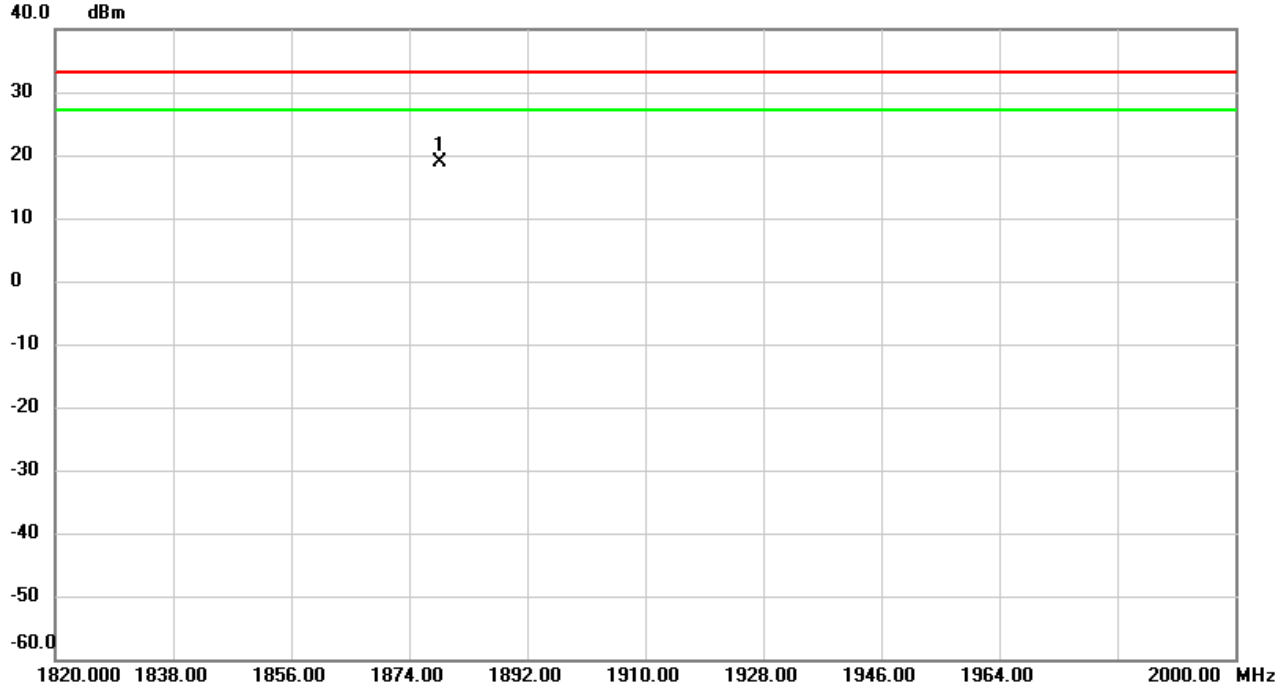
| Test Mode | WCDMA Band II | Test Date | 2022/3/10 |
|---|---|---|---|
| Test Channel | CH9400 | Polarization | Vertical |
| Temp | 21°C | Hum. | 64% |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm | dB | dBm | dBm | dB | Detector | Comment |
| 1 | * | 1878.776 | -10.21 | 39.78 | 29.57 | 33.01 | -3.44 | peak | |

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

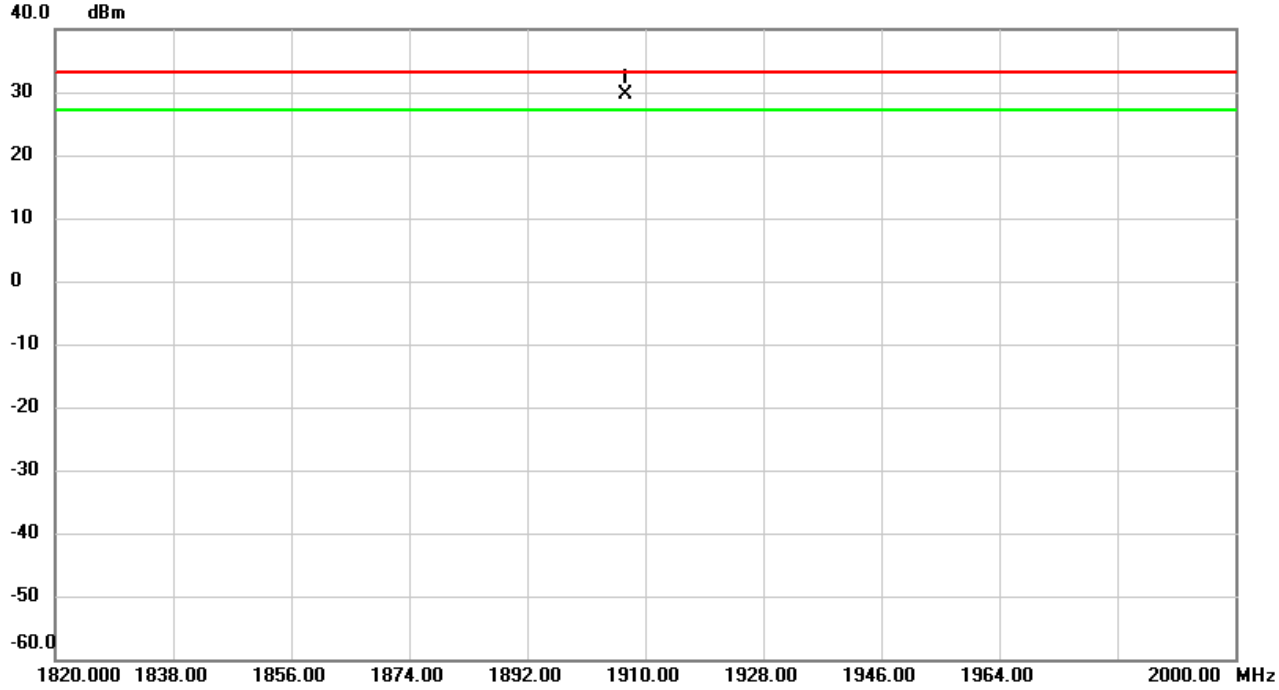
| Test Mode | WCDMA Band II | Test Date | 2022/3/10 |
|---|---|---|---|
| Test Channel | CH9400 | Polarization | Horizontal |
| Temp | 21°C | Hum. | 64% |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm | dB | dBm | dBm | dB | Detector | Comment |
| 1 | * | 1878.776 | -21.92 | 40.73 | 18.81 | 33.01 | -14.20 | peak | |

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

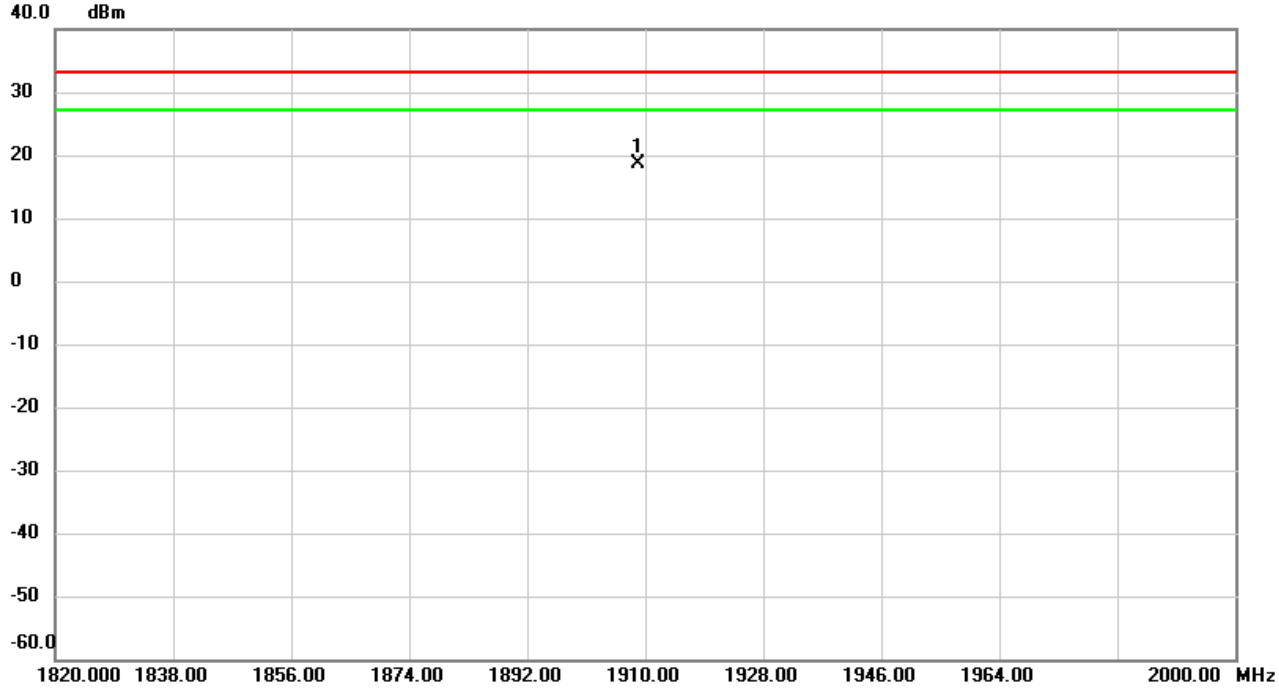
| Test Mode | WCDMA Band II | Test Date | 2022/3/10 |
|---|---|---|---|
| Test Channel | CH9538 | Polarization | Vertical |
| Temp | 21°C | Hum. | 64% |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm | dB | dBm | dBm | dB | Detector | Comment |
| 1 | * | 1906.940 | -10.17 | 39.89 | 29.72 | 33.01 | -3.29 | peak | |

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

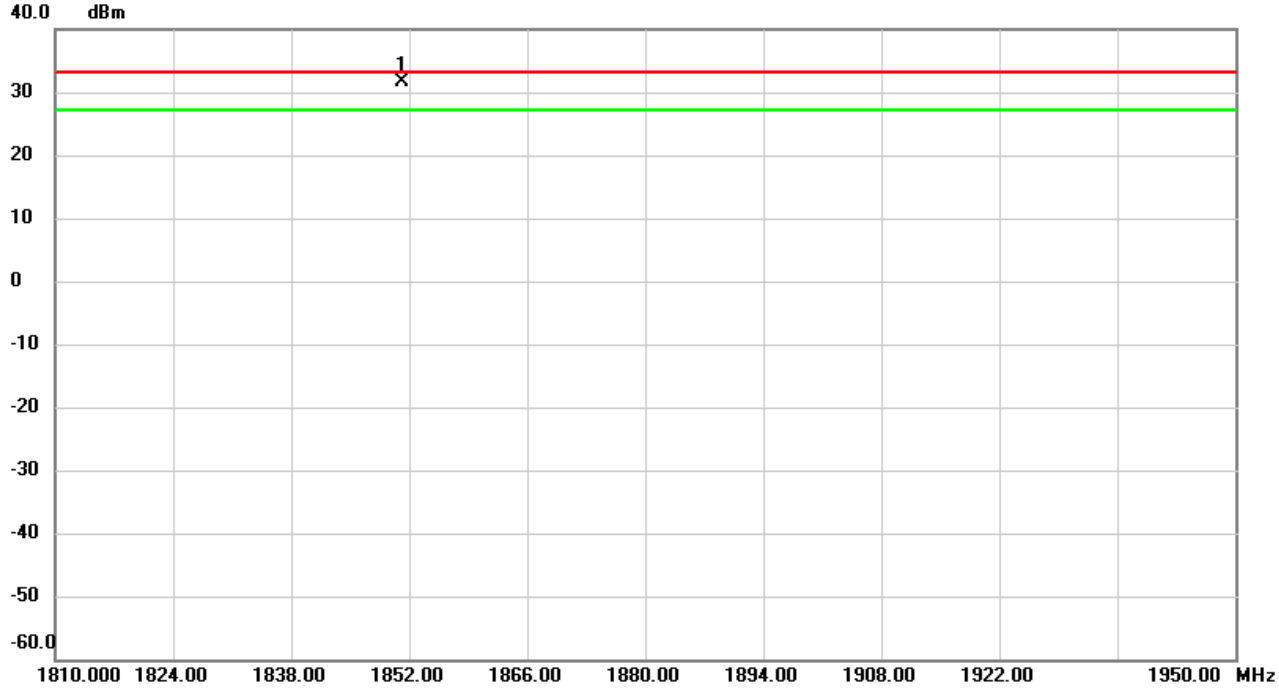
| Test Mode | WCDMA Band II | Test Date | 2022/3/10 |
|---|---|---|---|
| Test Channel | CH9538 | Polarization | Horizontal |
| Temp | 21°C | Hum. | 64% |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm | dB | dBm | dBm | dB | Detector | Comment |
| 1 | * | 1908.920 | -22.20 | 40.89 | 18.69 | 33.01 | -14.32 | peak | |

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

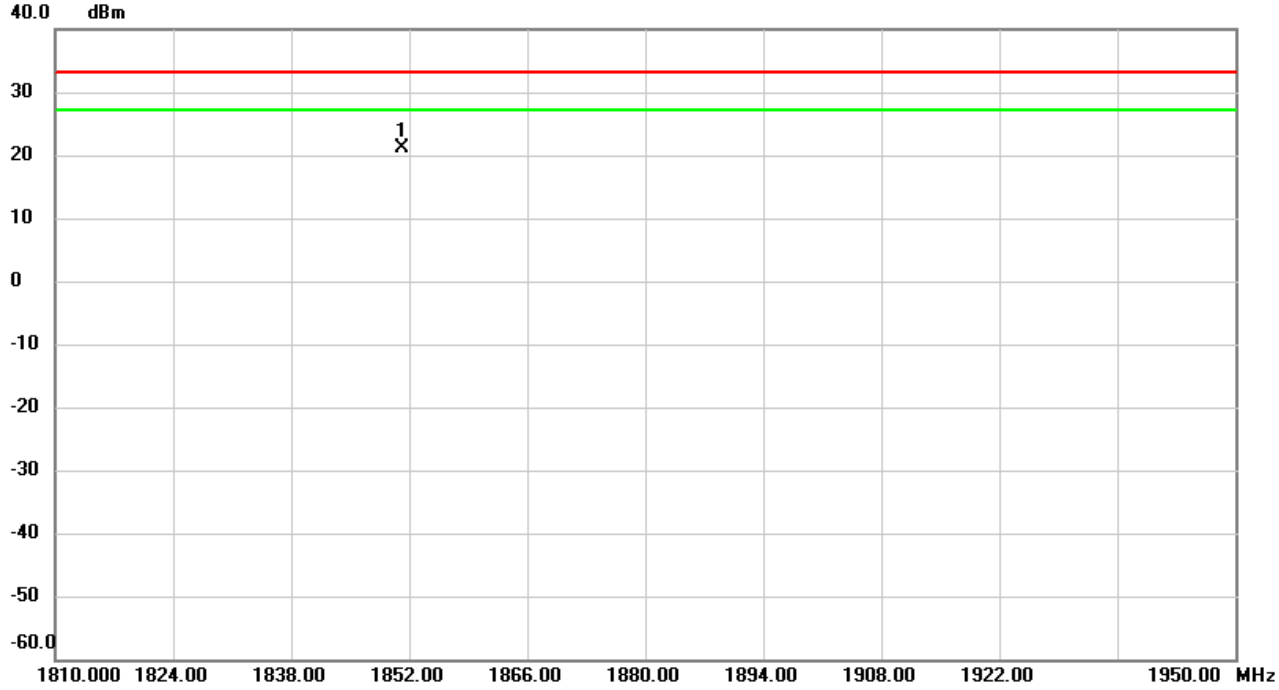
| Test Mode | LTE Band 2 | Test Date | 2022/3/10 |
|---|---|---|---|
| Test Channel | CH18700 | Polarization | Vertical |
| Temp | 21°C | Hum. | 64% |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm | dB | dBm | dBm | dB | Detector | Comment |
| 1 | * | 1851.076 | -7.99 | 39.67 | 31.68 | 33.01 | -1.33 | peak | |

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

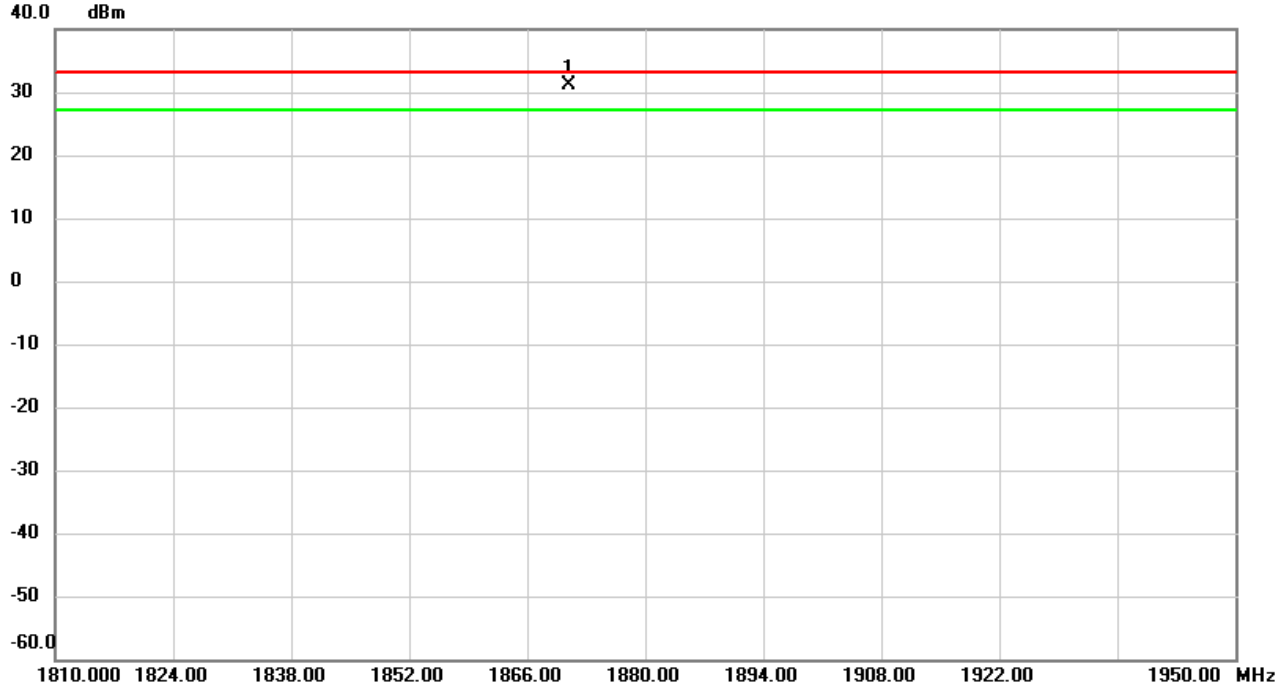
| Test Mode | LTE Band 2 | Test Date | 2022/3/10 |
|---|---|---|---|
| Test Channel | CH18700 | Polarization | Horizontal |
| Temp | 21°C | Hum. | 64% |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm | dB | dBm | dBm | dB | Detector | Comment |
| 1 | * | 1851.090 | -19.38 | 40.59 | 21.21 | 33.01 | -11.80 | peak | |

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

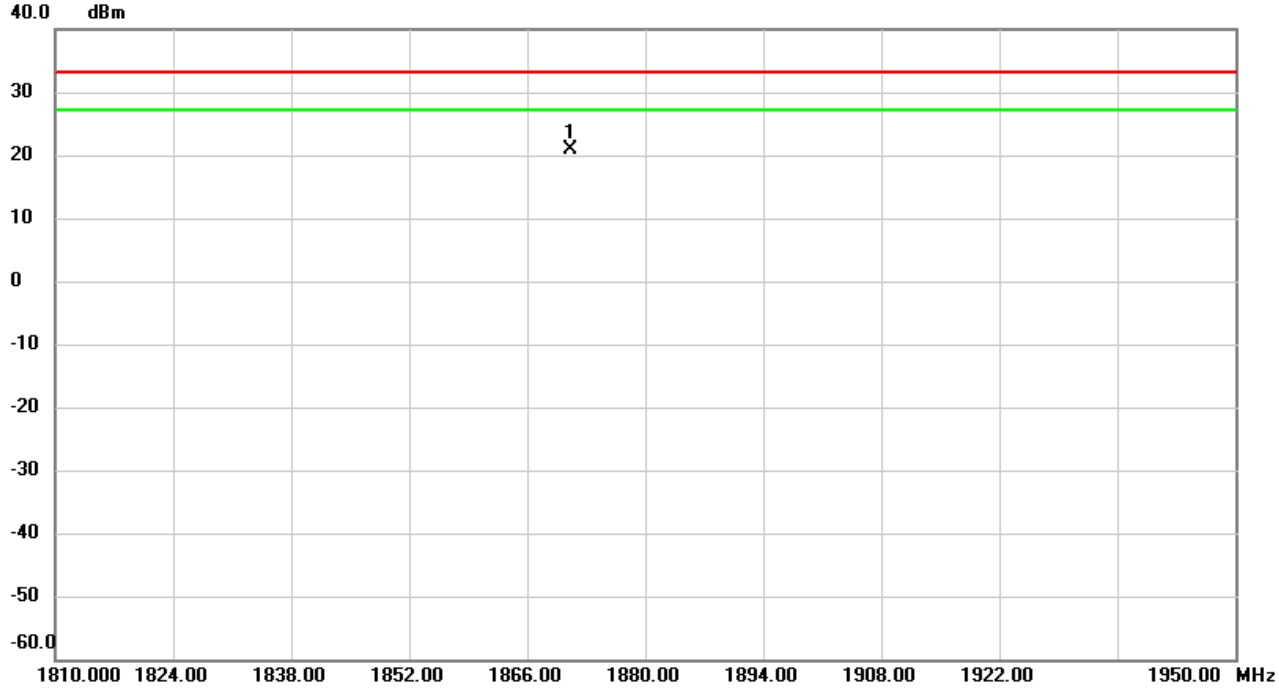
| Test Mode | LTE Band 2 | Test Date | 2022/3/10 |
|---|---|---|---|
| Test Channel | CH18900 | Polarization | Vertical |
| Temp | 21°C | Hum. | 64% |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm | dB | dBm | dBm | dB | Detector | Comment |
| 1 | * | 1870.895 | -8.60 | 39.75 | 31.15 | 33.01 | -1.86 | peak | |

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

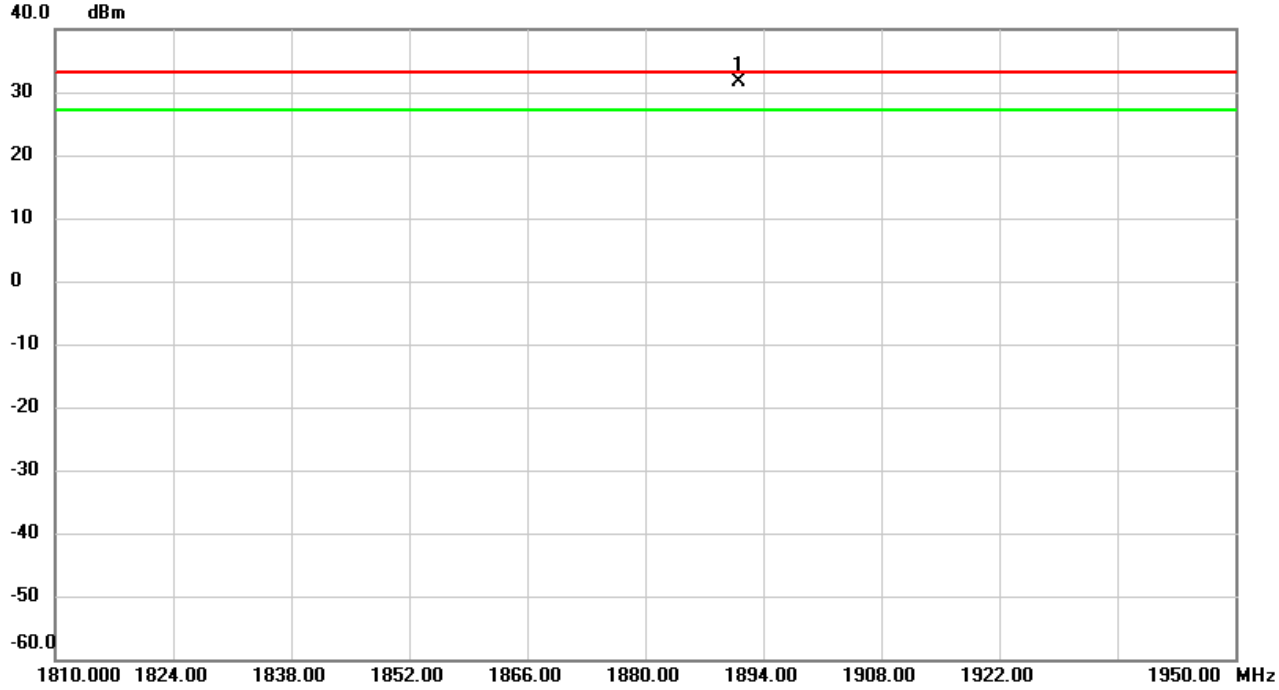
| Test Mode | LTE Band 2 | Test Date | 2022/3/10 |
|---|---|---|---|
| Test Channel | CH18900 | Polarization | Horizontal |
| Temp | 21°C | Hum. | 64% |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm | dB | dBm | dBm | dB | Detector | Comment |
| 1 | * | 1871.059 | -19.83 | 40.69 | 20.86 | 33.01 | -12.15 | peak | |

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

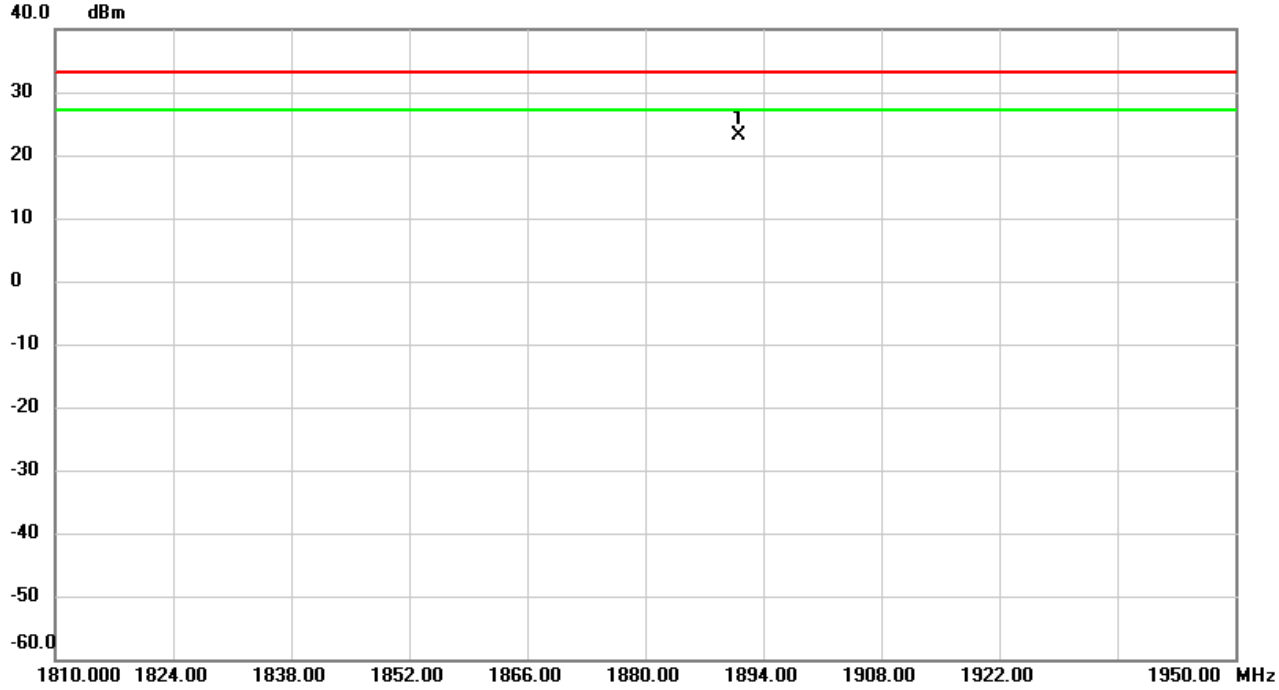
| Test Mode | LTE Band 2 | Test Date | 2022/3/10 |
|---|---|---|---|
| Test Channel | CH19100 | Polarization | Vertical |
| Temp | 21°C | Hum. | 64% |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm | dB | dBm | dBm | dB | Detector | Comment |
| 1 | * | 1891.037 | -8.26 | 39.83 | 31.57 | 33.01 | -1.44 | peak | |

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

| Test Mode | LTE Band 2 | Test Date | 2022/3/10 |
|---|---|---|---|
| Test Channel | CH19100 | Polarization | Horizontal |
| Temp | 21°C | Hum. | 64% |

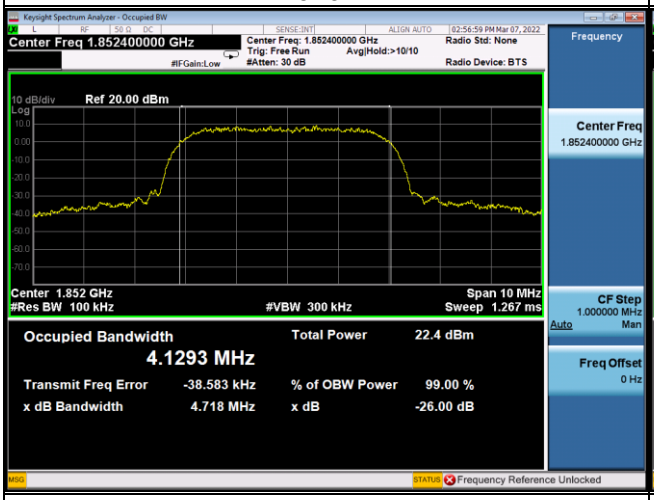
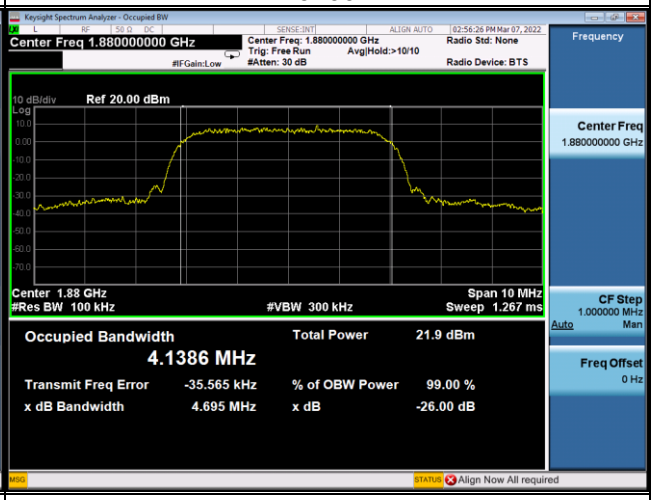
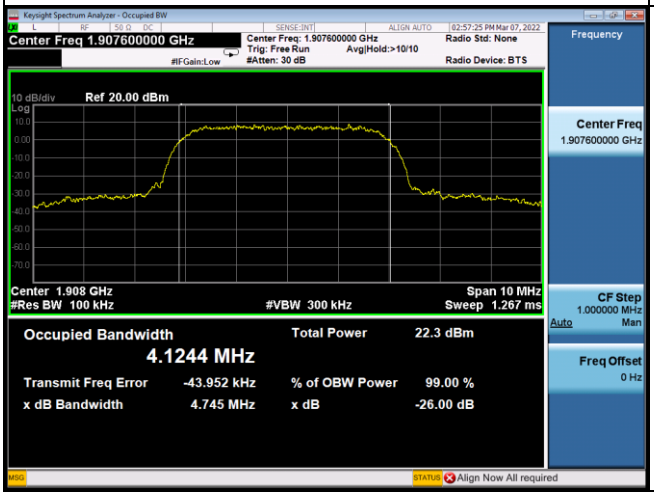



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm | dB | dBm | dBm | dB | Detector | Comment |
| 1 | * | 1891.083 | -17.58 | 40.79 | 23.21 | 33.01 | -9.80 | peak | |

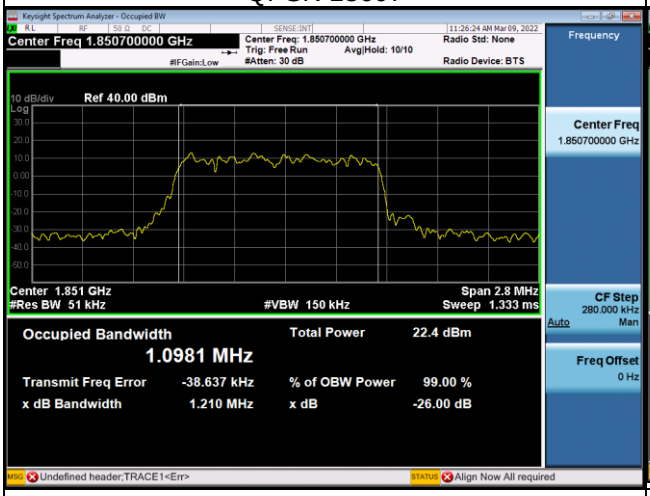
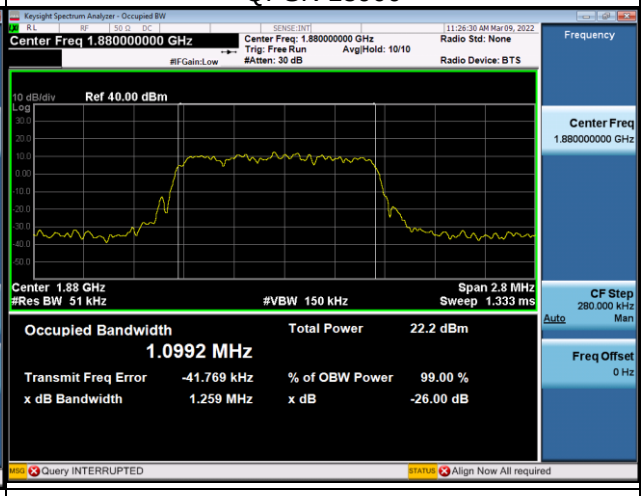
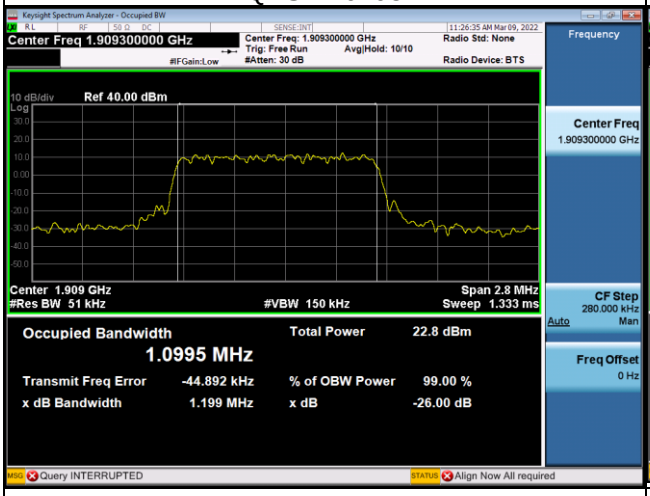
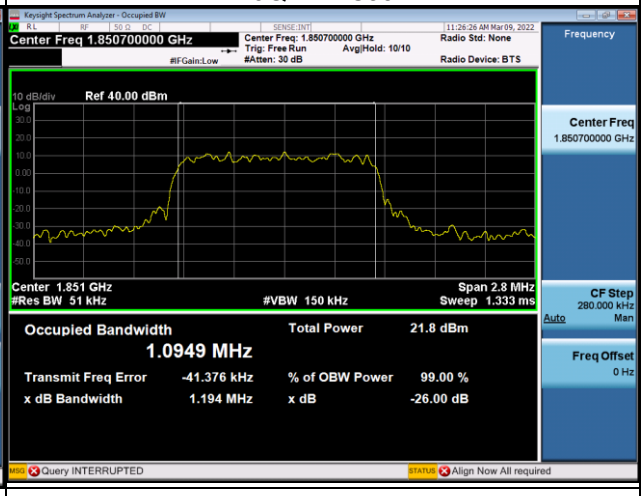
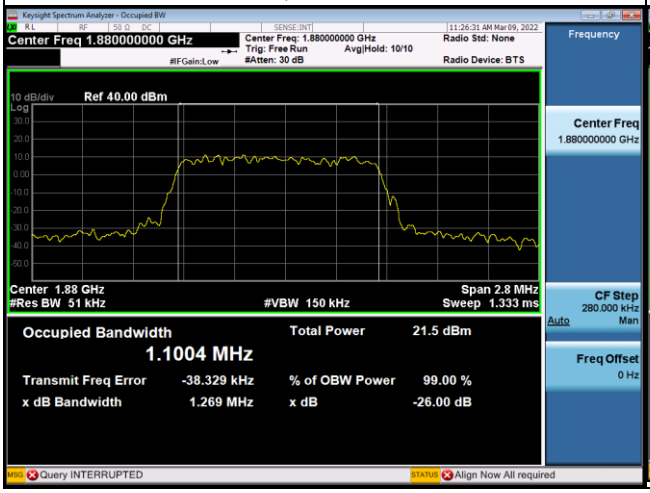
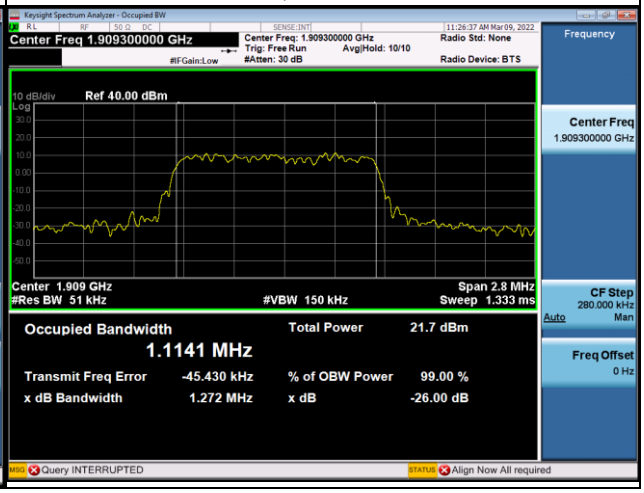
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

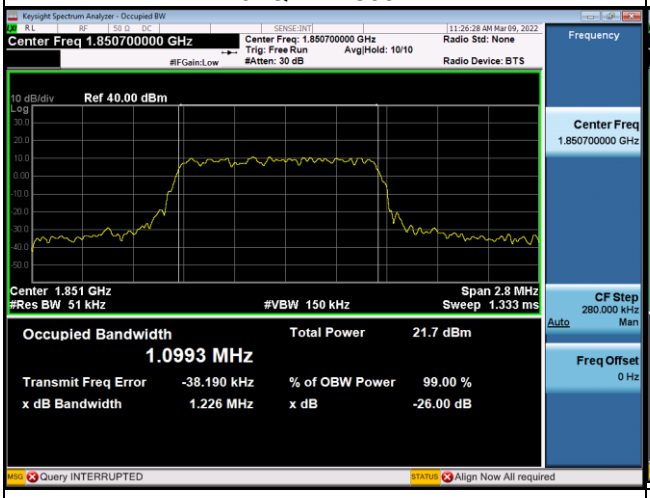
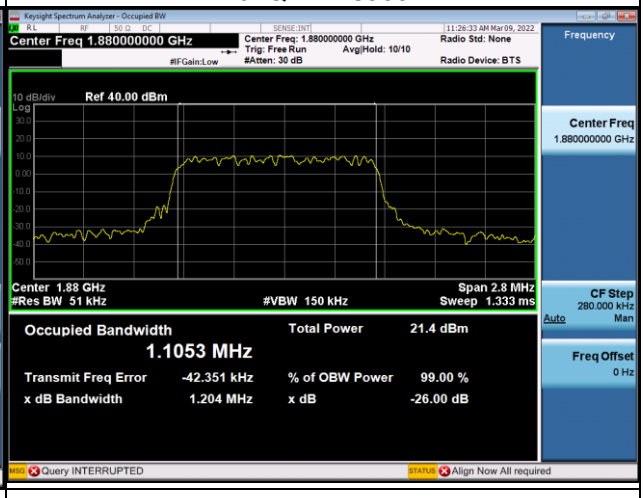
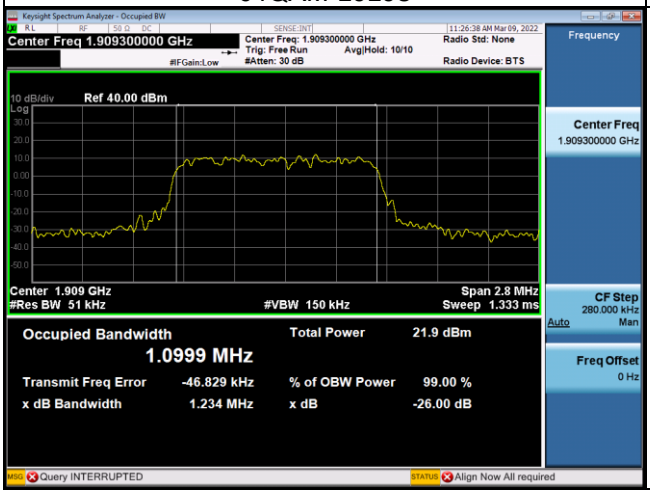
# APPENDIX B OCCUPIED BANDWIDTH

| WCDMA Band II_WCDMA | | | | | |
|---|---|---|---|---|---|
| QPSK | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 9262 | 1852.4 | 4.1293 | 9262 | 1852.4 | 4.718 |
| 9400 | 1880 | 4.1386 | 9400 | 1880 | 4.695 |
| 9538 | 1907.6 | 4.1244 | 9538 | 1907.6 | 4.745 |

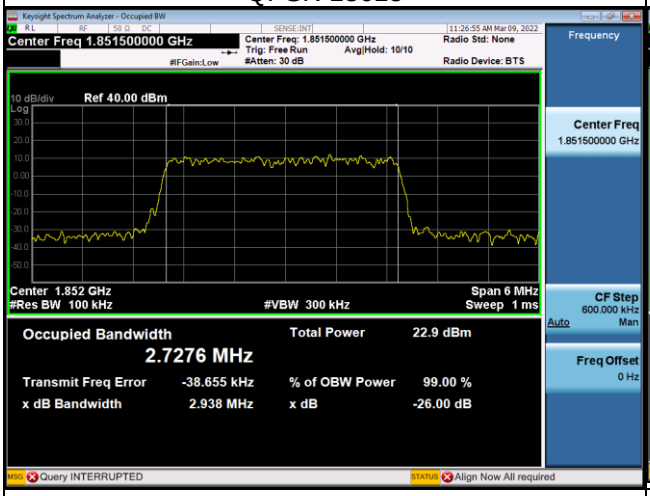
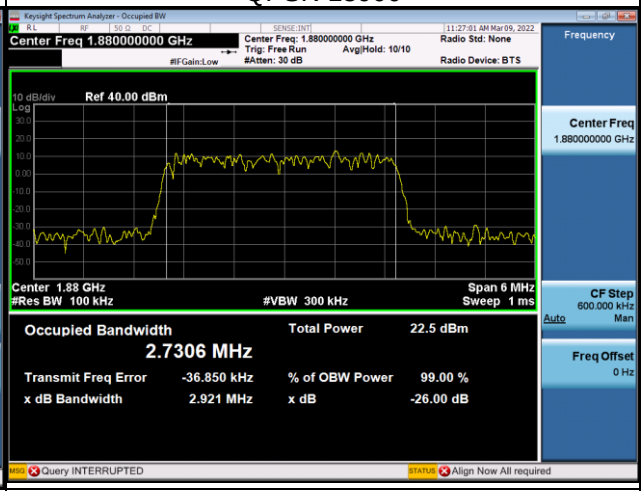
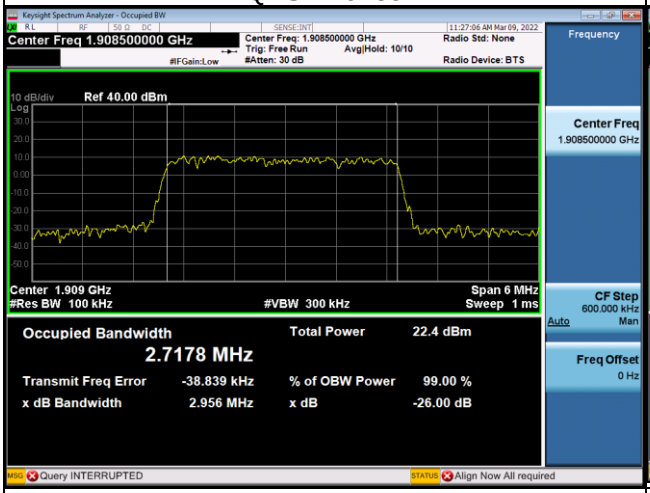
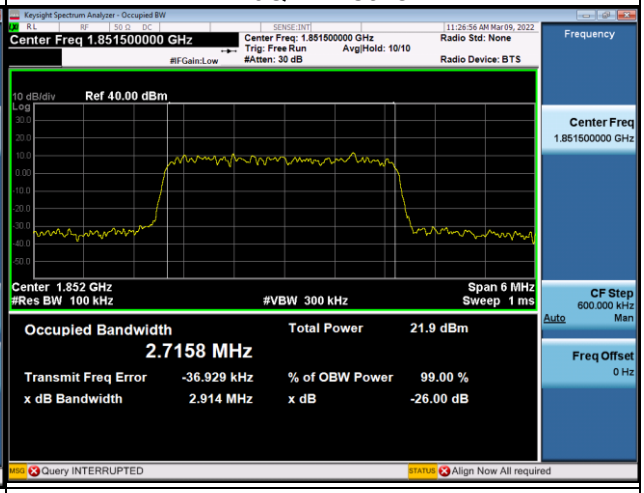
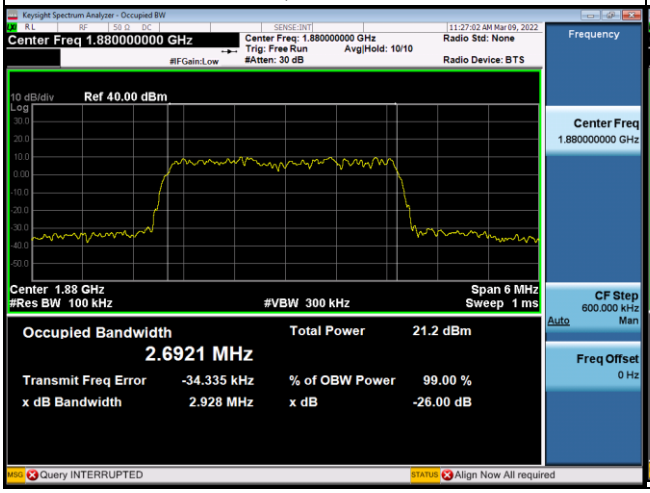
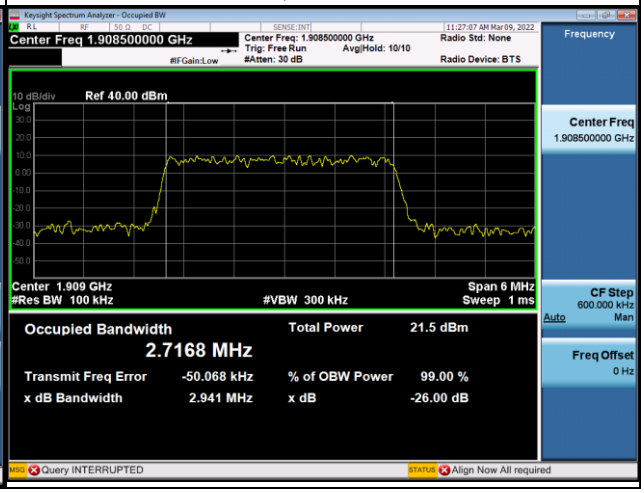
| Spectrum Plot | |
|---|---|
| 9262 | 9400 |
|  |  |
| 9538 | - |
|  | - |

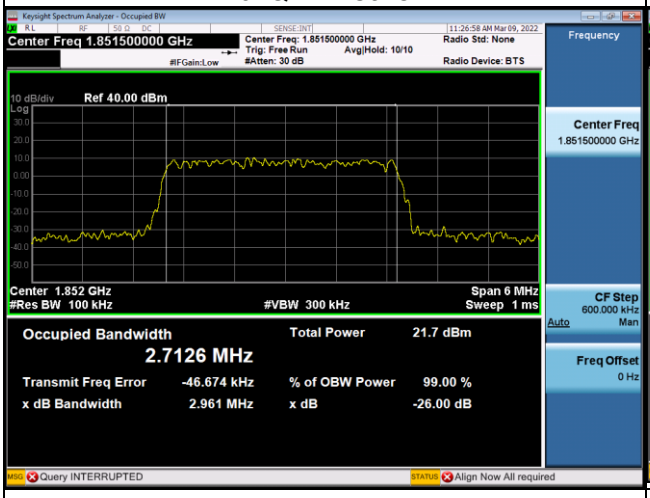
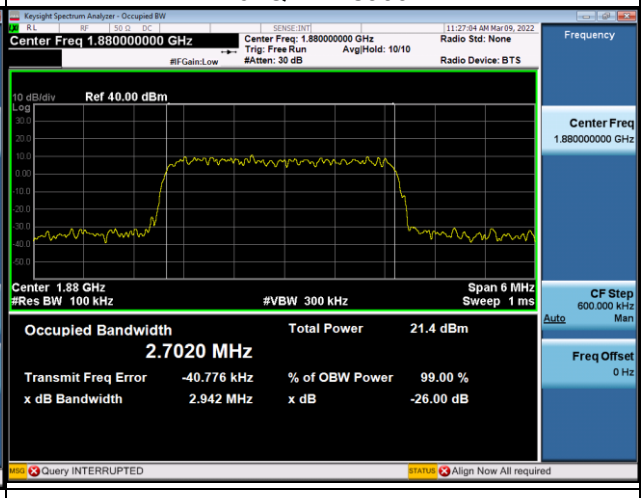
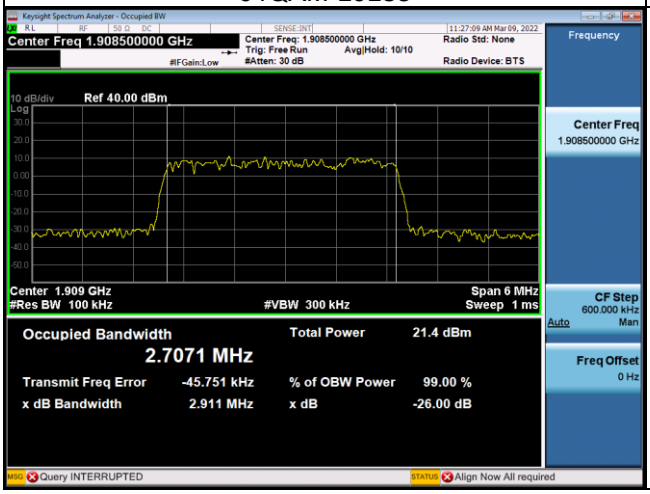
| LTE Band 2_1.4M | | | | | |
|---|---|---|---|---|---|
| QPSK | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 18607 | 1850.7 | 1.0981 | 18607 | 1850.7 | 1.210 |
| 18900 | 1880 | 1.0992 | 18900 | 1880 | 1.259 |
| 19193 | 1909.3 | 1.0995 | 19193 | 1909.3 | 1.199 |
| 16QAM | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 18607 | 1850.7 | 1.0949 | 18607 | 1850.7 | 1.194 |
| 18900 | 1880 | 1.1004 | 18900 | 1880 | 1.269 |
| 19193 | 1909.3 | 1.1141 | 19193 | 1909.3 | 1.272 |
| 64QAM | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 18607 | 1850.7 | 1.0993 | 18607 | 1850.7 | 1.226 |
| 18900 | 1880 | 1.1053 | 18900 | 1880 | 1.204 |
| 19193 | 1909.3 | 1.0999 | 19193 | 1909.3 | 1.234 |

| Spectrum Plot | |
|---|---|
| QPSK-18607 | QPSK-18900 |
|  |  |
| QPSK-19193 | 16QAM-18607 |
|  |  |
| 16QAM-18900 | 16QAM-19193 |
|  |  |

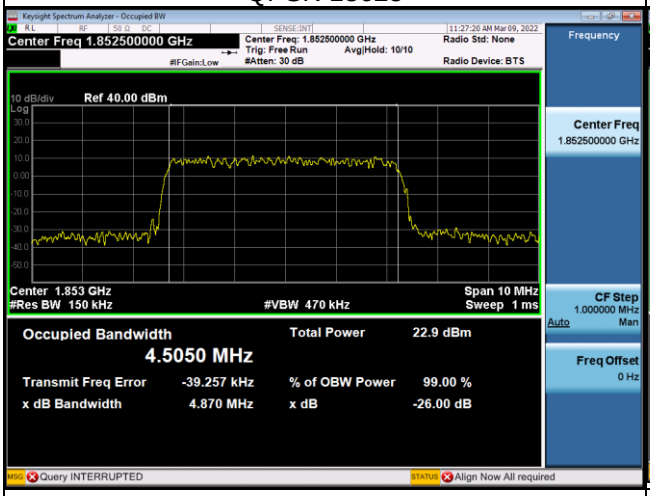
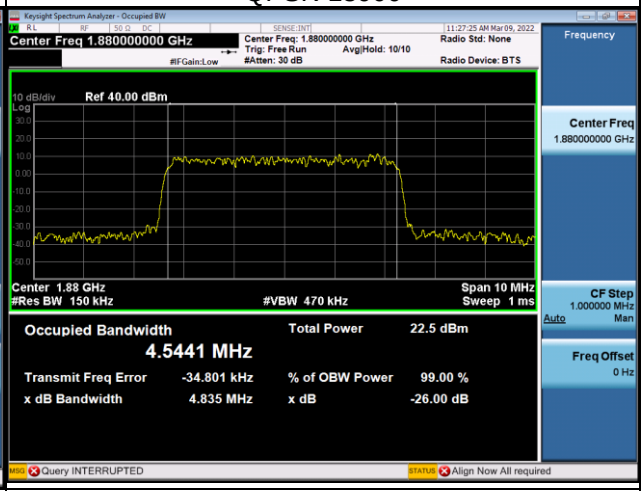
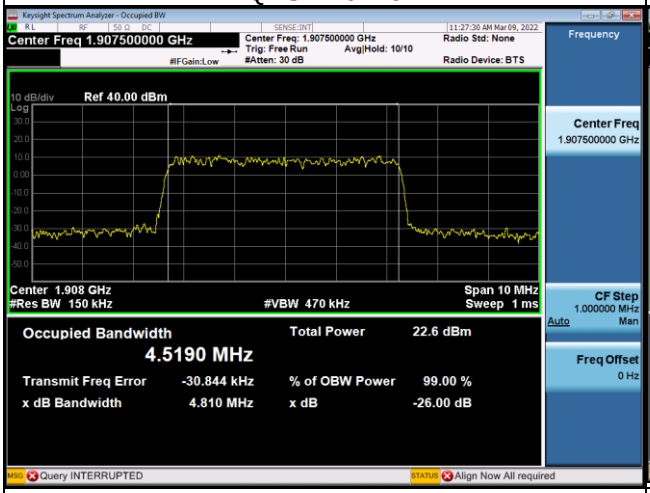
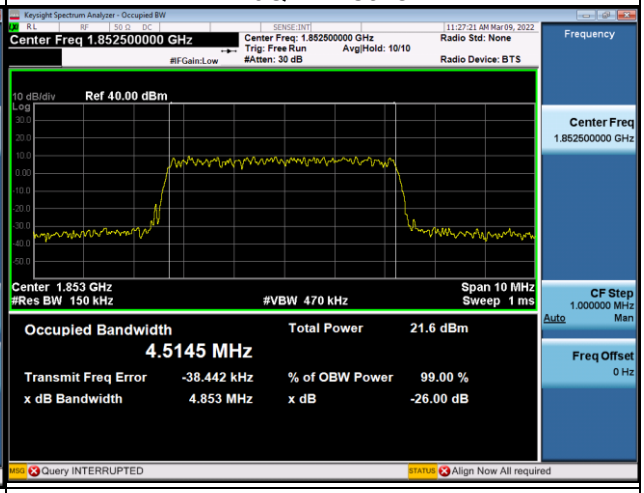
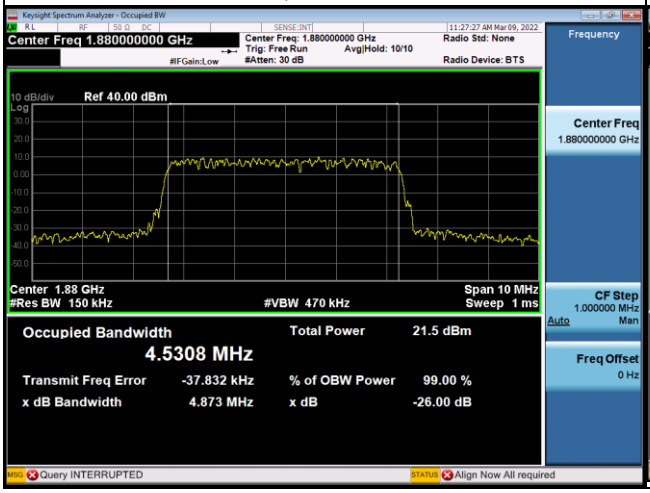
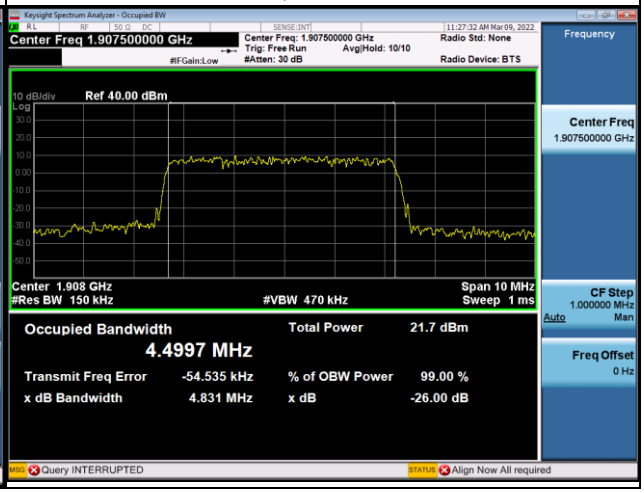
| 64QAM-18607 | 64QAM-18900 |
|---|---|
|  |  |
| 64QAM-19193 | - |
|  | - |

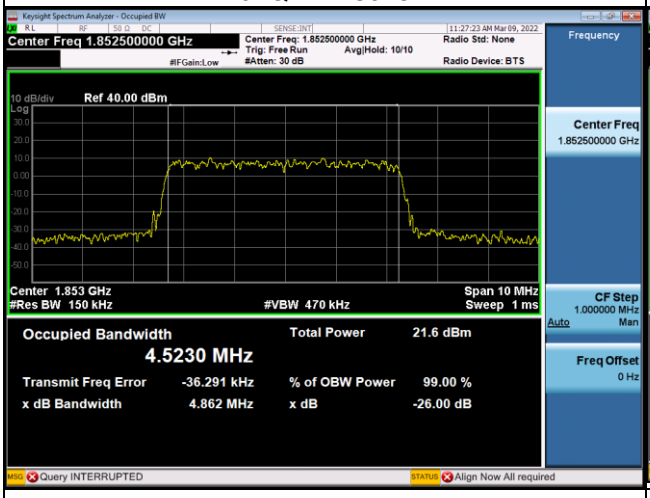
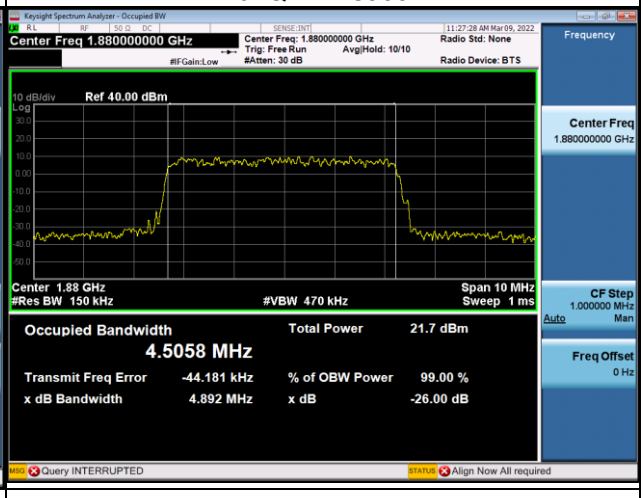
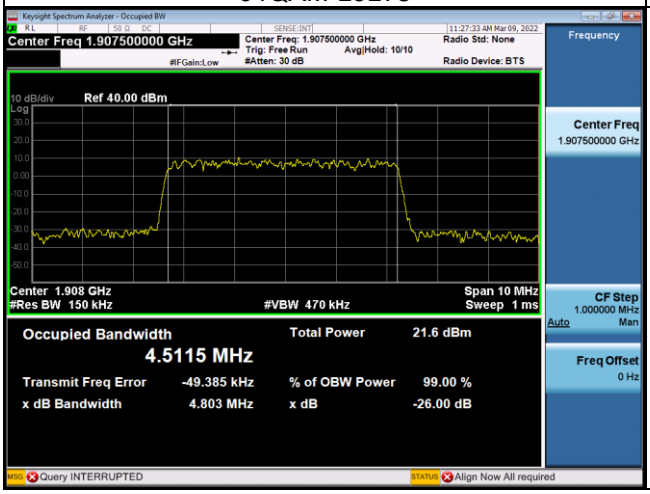
| LTE Band 2_3M | | | | | |
|---|---|---|---|---|---|
| QPSK | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 18615 | 1851.5 | 2.7276 | 18615 | 1851.5 | 2.938 |
| 18900 | 1880 | 2.7306 | 18900 | 1880 | 2.921 |
| 19185 | 1908.5 | 2.7178 | 19185 | 1908.5 | 2.956 |
| 16QAM | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 18615 | 1851.5 | 2.7158 | 18615 | 1851.5 | 2.914 |
| 18900 | 1880 | 2.6921 | 18900 | 1880 | 2.928 |
| 19185 | 1908.5 | 2.7168 | 19185 | 1908.5 | 2.941 |
| 64QAM | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 18615 | 1851.5 | 2.7216 | 18615 | 1851.5 | 2.961 |
| 18900 | 1880 | 2.7020 | 18900 | 1880 | 2.942 |
| 19185 | 1908.5 | 2.7071 | 19185 | 1908.5 | 2.911 |

| Spectrum Plot | |
|---|---|
| QPSK-18615 | QPSK-18900 |
|  |  |
| QPSK-19185 | 16QAM-18615 |
|  |  |
| 16QAM-18900 | 16QAM-19185 |
|  |  |

| 64QAM-18615 | 64QAM-18900 |
|---|---|
|  |  |
| 64QAM-19185 | - |
|  | - |

| LTE Band 2_5M | | | | | |
|---|---|---|---|---|---|
| QPSK | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 18625 | 1852.5 | 4.5050 | 18625 | 1852.5 | 4.870 |
| 18900 | 1880 | 4.5441 | 18900 | 1880 | 4.835 |
| 19175 | 1907.5 | 4.5190 | 19175 | 1907.5 | 4.810 |
| 16QAM | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 18625 | 1852.5 | 4.5145 | 18625 | 1852.5 | 4.853 |
| 18900 | 1880 | 4.5308 | 18900 | 1880 | 4.873 |
| 19175 | 1907.5 | 4.4997 | 19175 | 1907.5 | 4.831 |
| 64QAM | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 18625 | 1852.5 | 4.5230 | 18625 | 1852.5 | 4.862 |
| 18900 | 1880 | 4.5058 | 18900 | 1880 | 4.892 |
| 19175 | 1907.5 | 4.5115 | 19175 | 1907.5 | 4.803 |

| Spectrum Plot | |
|---|---|
| QPSK-18625 | QPSK-18900 |
|  |  |
| QPSK-19175 | 16QAM-18625 |
|  |  |
| 16QAM-18900 | 16QAM-19175 |
|  |  |

| 64QAM-18625 | 64QAM-18900 |
|---|---|
|  |  |
| 64QAM-19175 | - |
|  | - |

| LTE Band 2_10M | | | | | |
|---|---|---|---|---|---|
| QPSK | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 18650 | 1855 | 8.9538 | 18650 | 1855 | 9.464 |
| 18900 | 1880 | 8.9449 | 18900 | 1880 | 9.448 |
| 19150 | 1905 | 8.9350 | 19150 | 1905 | 9.579 |
| 16QAM | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 18650 | 1855 | 8.9294 | 18650 | 1855 | 9.523 |
| 18900 | 1880 | 8.9007 | 18900 | 1880 | 9.572 |
| 19150 | 1905 | 8.9777 | 19150 | 1905 | 9.502 |
| 64QAM | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 18650 | 1855 | 8.9271 | 18650 | 1855 | 9.499 |
| 18900 | 1880 | 8.9235 | 18900 | 1880 | 9.472 |
| 19150 | 1905 | 8.9315 | 19150 | 1905 | 9.417 |