

FCC Radio Test Report

FCC ID: 2AH4HMT4201

This report concerns: Original Grant

Project No. : 2104C020
Equipment : LTE Cat-M1 Tracker
Brand Name : Mobilogix
Test Model : MT4201E
Series Model : MT4201C
Applicant : Mobilogix, Inc.
Address : 5500 Trabuco Rd Suite 150 Irvine, CA, USA
Manufacturer : Mobilogix, Inc.
Address : 5500 Trabuco Rd Suite 150 Irvine, CA, USA
Factory : Suga Electronics (Dongguan) Co., Ltd.
Address : No.8 Fulong Road, Qingxi Town, Dongguan City
Date of Receipt : Apr. 28, 2021
Date of Test : Apr. 29, 2021 ~ May 18, 2021
Issued Date : Jun. 07, 2021
Report Version : R00
Test Sample : Engineering Sample No.: DG2021050858
Standard(s) : 47 CFR FCC Part 22 Subpart H
47 CFR FCC Part 2
ANSI/TIA/EIA-603-E-2016
FCC KDB 971168 D01 Power Meas License Digital Systems v03r01

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

Vegeta Li

Prepared by : Vegeta Li

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Declaration

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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 is not use in determining the Pass/Fail results.

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REPORT ISSUED HISTORY

| Report Version | Description | Issued Date |
|----------------|-----------------|---------------|
| R00 | Original Issue. | Jun. 07, 2021 |

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

| FCC Part 22 Subpart H & Part 2 | | | |
|--------------------------------|------------------------------|----------|-------------|
| Standard(s) Section | Test Item | Judgment | Remark |
| 2.1046 22.913(a)(5) | Effective Radiated Power | PASS | ----- |
| 2.1049 | Occupied Bandwidth | PASS | ----- |
| 2.1051 22.917(a) | Conducted Spurious Emissions | PASS | ----- |
| 2.1053 22.917(a) | Radiated Spurious Emissions | PASS | ----- |
| 22.917(a) | Band Edge Measurements | PASS | ----- |
| - | Peak To Average Ratio | PASS | Record Only |
| 2.1055 22.355 | Frequency Stability | PASS | ----- |

Note:

(1) "N/A" denotes test is not applicable in this test report.

1.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.
 BTL's Test Firm Registration Number for FCC: 357015
 BTL's Designation Number for FCC: CN1240

1.2 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor ($k=2$))
 The BTL measurement uncertainty as below table:

A. Radiated Measurement:

| Test Site | Method | Measurement Frequency Range | Ant. H / V | U,(dB) |
|-----------------|--------|-----------------------------|------------|--------|
| DG-CB03 (3m) | CISPR | 9KHz ~ 30MHz | V | 3.79 |
| | | 9KHz ~ 30MHz | H | 3.57 |
| | | 30MHz ~ 200MHz | V | 4.88 |
| | | 30MHz ~ 200MHz | H | 4.14 |
| | | 200MHz ~ 1,000MHz | V | 4.62 |
| | | 200MHz ~ 1,000MHz | H | 4.80 |

| Test Site | Method | Measurement Frequency Range | U,(dB) |
|-----------------|--------|-----------------------------|--------|
| DG-CB03 (3m) | CISPR | 1GHz ~ 6GHz | 4.58 |
| | | 6GHz ~ 18GHz | 5.18 |

B. Other Measurement:

| Parameter | Uncertainty |
|------------------------|-------------|
| Spectrum Bandwidth | ±3.8 % |
| Maximum Output Power | ±0.95 dB |
| Power Spectral Density | ±0.86 dB |
| Frequency Stability | ±0.16 dB |
| Temperature | ±0.08 °C |
| Time | ±0.58 % |
| Supply voltages | ±0.3 % |

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 | Temperature | Humidity | Test Voltage | Tested By |
|------------------------------|------------------|----------|------------------|------------|
| Output Power & ERP | 21.3°C | 46% | DC 3.7 | Tate Liu |
| Occupied Bandwidth | 21.3°C | 46% | DC 3.7 | Tate Liu |
| Conducted Spurious Emissions | 21.3°C | 46% | DC 3.7 | Tate Liu |
| Radiated Spurious Emissions | 26°C | 52% | DC 3.7 | Grani Zhou |
| Band Edge | 21.3°C | 46% | DC 3.7 | Tate Liu |
| Peak to Average Ratio | 21.3°C | 46% | DC 3.7 | Tate Liu |
| Frequency Stability | Normal & Extreme | 46% | Normal & Extreme | Tate Liu |

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

| | | | | | | |
|---------------------|---|-------------------------|----------------------------------|-------------|-------|--|
| Equipment | LTE Cat-M1 Tracker | | | | | |
| Brand Name | Mobilogix | | | | | |
| Test Model | MT4201E | | | | | |
| Series Model | MT4201C | | | | | |
| Model Difference(s) | Only differ in model name and Harness. | | | | | |
| Hardware Version | 1.2 | | | | | |
| Software Version | 1.5.0.1 | | | | | |
| Power Source | 1# DC voltage supplied from external power supply. 2# Supplied from battery. | | | | | |
| Power Rating | 1# DC 48V 2# DC 3.7V | | | | | |
| IEMI No. | 864475040048497 | | | | | |
| LTE Category | M1 | | | | | |
| Modulation Type | GSM | | GMSK | | | |
| | EDGE/GPRS | | GMSK, 8PSK | | | |
| | LTE | | UL: QPSK,16QAM DL: QPSK,16QAM | | | |
| Max. ERP | GSM 850 / GPRS 850 | | GMSK | 26.70 | dBm | |
| | EDGE 850 | | 8PSK | 20.12 | dBm | |
| | LTE | Channel Bandwidth (MHz) | QPSK (dBm) | 16QAM (dBm) | | |
| | Band 5 | 1.4 | | 15.99 | 15.38 | |
| | | 3 | | 16.19 | 15.15 | |
| | | 5 | | 16.01 | 16.00 | |
| | | 10 | | 16.01 | 15.99 | |
| | Band 26 | 1.4 | | 16.30 | 15.36 | |
| | | 3 | | 16.08 | 15.47 | |
| | | 5 | | 15.90 | 16.50 | |
| 10 | | | 15.85 | 16.26 | | |
| | | 15 | | 15.98 | 16.51 | |

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. Channel List:

| GSM 850 | | | | |
|-------------------|--------|---------------------------|--------|-----------------------------|
| Test Frequency ID | UARFCN | Frequency of Uplink (MHz) | UARFCN | Frequency of Downlink (MHz) |
| Low Range | 128 | 824.2 | 137 | 869.2 |
| Mid Range | 190 | 836.6 | 199 | 881.6 |
| High Range | 251 | 848.8 | 260 | 893.8 |

| LTE Band 5 | | | | | |
|-------------------|-----------------|-----------------|---------------------------|-----------------|-----------------------------|
| Test Frequency ID | Bandwidth (MHz) | N _{UL} | Frequency of Uplink (MHz) | N _{DL} | Frequency of Downlink (MHz) |
| Low Range | 1.4 | 20407 | 824.7 | 2407 | 869.7 |
| | 3 | 20415 | 825.5 | 2415 | 870.5 |
| | 5 | 20425 | 826.5 | 2425 | 871.5 |
| | 10 | 20450 | 829 | 2450 | 874 |
| Mid Range | 1.4/3/5/10 | 20525 | 836.5 | 2525 | 881.5 |
| High Range | 1.4 | 20643 | 848.3 | 2643 | 893.3 |
| | 3 | 20635 | 847.5 | 2635 | 892.5 |
| | 5 | 20625 | 846.5 | 2625 | 891.5 |
| | 10 | 20600 | 844 | 2600 | 889 |

| LTE Band 26 | | | | | |
|-------------------|-----------------|-----------------|---------------------------|-----------------|-----------------------------|
| Test Frequency ID | Bandwidth (MHz) | N _{UL} | Frequency of Uplink (MHz) | N _{DL} | Frequency of Downlink (MHz) |
| Low Range | 1.4 | 26797 | 824.7 | 8797 | 869.7 |
| | 3 | 26805 | 825.5 | 8805 | 870.5 |
| | 5 | 26815 | 826.5 | 8815 | 871.5 |
| | 10 | 26840 | 829 | 8840 | 874 |
| | 15 | 26865 | 831.5 | 8865 | 876.5 |
| Mid Range | 1.4/3/5/10/15 | 26915 | 836.5 | 8915 | 881.5 |
| High Range | 1.4 | 27033 | 848.3 | 9033 | 893.3 |
| | 3 | 27025 | 847.5 | 9025 | 892.5 |
| | 5 | 27015 | 846.5 | 9015 | 891.5 |
| | 10 | 26990 | 844 | 8990 | 889 |
| | 15 | 26965 | 841.5 | 8965 | 886.5 |

3. Table for Filed Antenna:

| Brand | Model Name | Antenna Type | Connector | Gain (dBi) | Note |
|-------|------------|--------------|-----------|------------|-------------|
| N/A | N/A | Internal | N/A | -3.62 | GSM 850 |
| N/A | N/A | Internal | N/A | -3.62 | LTE Band 5 |
| N/A | N/A | Internal | N/A | -3.62 | LTE Band 26 |

Note: The antenna gain is provided by the manufacturer.

2.2 DESCRIPTION OF TEST MODES

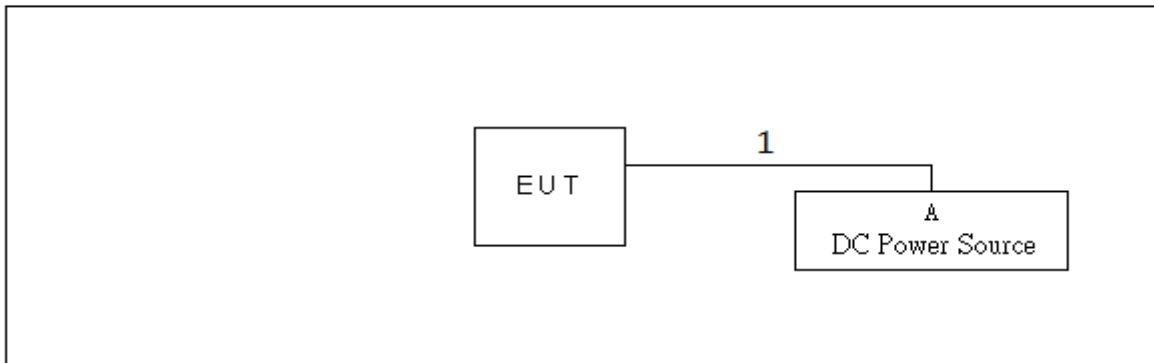
Following mode(s) is (were) found to be the worst case(s) and selected for the final test.

| GSM MODE | | | |
|------------------------------|-------------------|----------------|-----------------|
| Test Item | Available Channel | Tested Channel | Mode |
| Output Power & ERP | 128 to 251 | 128, 190, 251 | GSM, GPRS, EDGE |
| Occupied Bandwidth | 128 to 251 | 128, 190, 251 | GSM, EDGE |
| Conducted Spurious Emissions | 128 to 251 | 190 | GSM, EDGE |
| Radiated Spurious Emissions | 128 to 251 | 190 | GSM |
| Band Edge | 128 to 251 | 128, 251 | GSM, EDGE |
| Peak to Average Ratio | 128 to 251 | 128, 190, 251 | GSM, EDGE |
| Frequency Stability | 128 to 251 | 190 | GSM |

| LTE BAND 5 MODE | | | | | |
|------------------------------|-------------------|---------------------|-------------------|-------------|---------|
| Test Item | Available Channel | Tested Channel | Channel Bandwidth | Modulation | Mode |
| Output Power & ERP | 20407 to 20643 | 20407, 20525, 20643 | 1.4MHz | QPSK, 16QAM | 1RB/6RB |
| | 20415 to 20635 | 20415, 20525, 20635 | 3MHz | QPSK, 16QAM | 1RB/6RB |
| | 20425 to 20625 | 20425, 20525, 20625 | 5MHz | QPSK, 16QAM | 1RB/6RB |
| | 20450 to 20600 | 20450, 20525, 20600 | 10MHz | QPSK, 16QAM | 1RB/4RB |
| Occupied Bandwidth | 20407 to 20643 | 20525 | 1.4MHz | QPSK, 16QAM | 6RB |
| | 20415 to 20635 | 20525 | 3MHz | QPSK, 16QAM | 6RB |
| | 20425 to 20625 | 20525 | 5MHz | QPSK, 16QAM | 6RB |
| | 20450 to 20600 | 20525 | 10MHz | QPSK, 16QAM | 6RB |
| Conducted Spurious Emissions | 20407 to 20643 | 20525 | 1.4MHz | QPSK | 1RB |
| | 20425 to 20625 | 20525 | 5MHz | QPSK | 1RB |
| | 20450 to 20600 | 20525 | 10MHz | QPSK | 1RB |
| Radiated Spurious Emissions | 20407 to 20643 | 20525 | 1.4MHz | QPSK | 1RB |
| | 20425 to 20625 | 20525 | 5MHz | QPSK | 1RB |
| | 20450 to 20600 | 20525 | 10MHz | QPSK | 1RB |
| Band Edge | 20407 to 20643 | 20407, 20643 | 1.4MHz | QPSK | 1RB/6RB |
| | 20415 to 20635 | 20415, 20635 | 3MHz | QPSK | 1RB/6RB |
| | 20425 to 20625 | 20425, 20625 | 5MHz | QPSK | 1RB/6RB |
| | 20450 to 20600 | 20450, 20600 | 10MHz | QPSK | 1RB/6RB |
| Peak To Average Ratio | 20407 to 20643 | 20407, 20525, 20643 | 1.4MHz | QPSK, 16QAM | 1RB |
| | 20415 to 20635 | 20415, 20525, 20635 | 3MHz | QPSK, 16QAM | 1RB |
| | 20425 to 20625 | 20425, 20525, 20625 | 5MHz | QPSK, 16QAM | 1RB |
| | 20450 to 20600 | 20450, 20525, 20600 | 10MHz | QPSK, 16QAM | 1RB |
| Frequency Stability | 20407 to 20643 | 20525 | 1.4MHz | QPSK | 1RB |
| | 20415 to 20635 | 20525 | 3MHz | QPSK | 1RB |
| | 20425 to 20625 | 20525 | 5MHz | QPSK | 1RB |
| | 20450 to 20600 | 20525 | 10MHz | QPSK | 1RB |

| LTE BAND 26 MODE | | | | | |
|------------------------------|-------------------|---------------------|-------------------|-------------|---------|
| Test Item | Available Channel | Tested Channel | Channel Bandwidth | Modulation | Mode |
| Output Power & ERP | 26797 to 27033 | 26797, 26915, 27033 | 1.4MHz | QPSK, 16QAM | 1RB/6RB |
| | 26805 to 27025 | 26805, 26915, 27025 | 3MHz | QPSK, 16QAM | 1RB/6RB |
| | 26815 to 27015 | 26815, 26915, 27015 | 5MHz | QPSK, 16QAM | 1RB/6RB |
| | 26840 to 26990 | 26840, 26915, 26990 | 10MHz | QPSK, 16QAM | 1RB/4RB |
| | 26865 to 26965 | 26865, 26915, 26965 | 15MHz | QPSK, 16QAM | 1RB/6RB |
| Occupied Bandwidth | 26797 to 27033 | 26797, 26915, 27033 | 1.4MHz | QPSK, 16QAM | 6RB |
| | 26805 to 27025 | 26805, 26915, 27025 | 3MHz | QPSK, 16QAM | 6RB |
| | 26815 to 27015 | 26815, 26915, 27015 | 5MHz | QPSK, 16QAM | 6RB |
| | 26840 to 26990 | 26840, 26915, 26990 | 10MHz | QPSK, 16QAM | 6RB |
| | 26865 to 26965 | 26865, 26915, 26965 | 15MHz | QPSK, 16QAM | 6RB |
| Conducted Spurious Emissions | 26815 to 27015 | 26915 | 1.4MHz | QPSK | 1RB |
| | 26815 to 27015 | 26915 | 5MHz | QPSK | 1RB |
| | 26865 to 26965 | 26915 | 15MHz | QPSK | 1RB |
| Radiated Spurious Emissions | 26815 to 27015 | 26915 | 1.4MHz | QPSK | 1RB |
| | 26815 to 27015 | 26915 | 5MHz | QPSK | 1RB |
| | 26865 to 26965 | 26915 | 15MHz | QPSK | 1RB |
| Band Edge | 26797 to 27033 | 26797, 27033 | 1.4MHz | QPSK | 1RB/6RB |
| | 26805 to 27025 | 26805, 27025 | 3MHz | QPSK | 1RB/6RB |
| | 26815 to 27015 | 26815, 27015 | 5MHz | QPSK | 1RB/6RB |
| | 26840 to 26990 | 26840, 26990 | 10MHz | QPSK | 1RB/6RB |
| | 26865 to 26965 | 26865, 26965 | 15MHz | QPSK | 1RB/6RB |
| Peak To Average Ratio | 26797 to 27033 | 26797, 26915, 27033 | 1.4MHz | QPSK, 16QAM | 1RB |
| | 26805 to 27025 | 26805, 26915, 27025 | 3MHz | QPSK, 16QAM | 1RB |
| | 26815 to 27015 | 26815, 26915, 27015 | 5MHz | QPSK, 16QAM | 1RB |
| | 26840 to 26990 | 26840, 26915, 26990 | 10MHz | QPSK, 16QAM | 1RB |
| | 26865 to 26965 | 26865, 26915, 26965 | 15MHz | QPSK, 16QAM | 1RB |
| Frequency Stability | 26797 to 27033 | 26915 | 1.4MHz | QPSK | 1RB |
| | 26805 to 27025 | 26915 | 3MHz | QPSK | 1RB |
| | 26815 to 27015 | 26915 | 5MHz | QPSK | 1RB |
| | 26840 to 26990 | 26915 | 10MHz | QPSK | 1RB |
| | 26865 to 26965 | 26915 | 15MHz | QPSK | 1RB |

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Item | Equipment | Mfr/Brand | Model/Type No. | Series No. |
|------|-----------------|------------|----------------|------------|
| A | DC Power Source | TRUE-POWER | GPC30300N | N/A |

| Item | Cable Type | Shielded Type | Ferrite Core | Length |
|------|------------|---------------|--------------|--------|
| 1 | DC Cable | NO | NO | 1.5m |

3. TEST RESULT

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMIT

Mobile / Portable station are limited to 7 watts e.r.p.

3.1.2 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 5.

EIRP / ERP:

EIRP = Output Power + Antenan gain

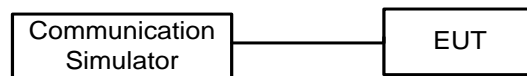
ERP = EIPR - 2.15dBi

Output Power:

The EUT was set up for the maximum power with GSM, GPRS, EDGE, 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.

3.1.3 TEST SETUP LAYOUT

Output Power Measurement



3.1.4 TEST DEVIATION

No deviation

3.1.5 TEST RESULTS

Please refer to the APPENDIX A.

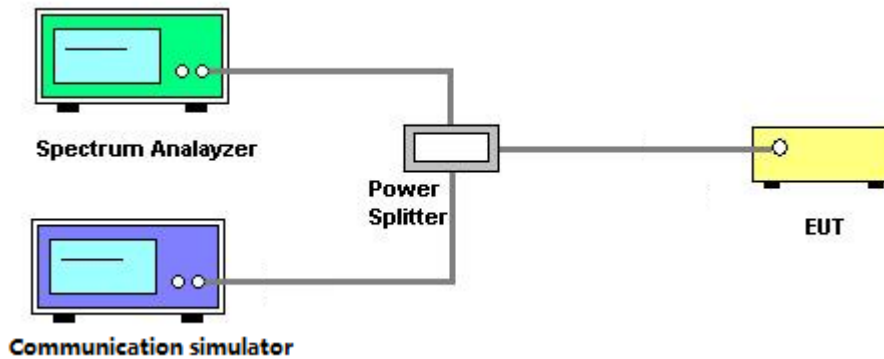
3.2 OCCUPIED BANDWIDTH MEASUREMENT

3.2.1 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 4.

1. 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.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. $RBW=(1\% \sim 5\%)*EBW$
 $VBW \geq 3* RBW$
4. Set spectrum analyzer with Peak detector.

3.2.2 TEST SETUP LAYOUT



3.2.3 TEST DEVIATION

No deviation

3.2.4 TEST RESULTS

Please refer to the APPENDIX B.

3.3 CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

3.3.1 LIMIT

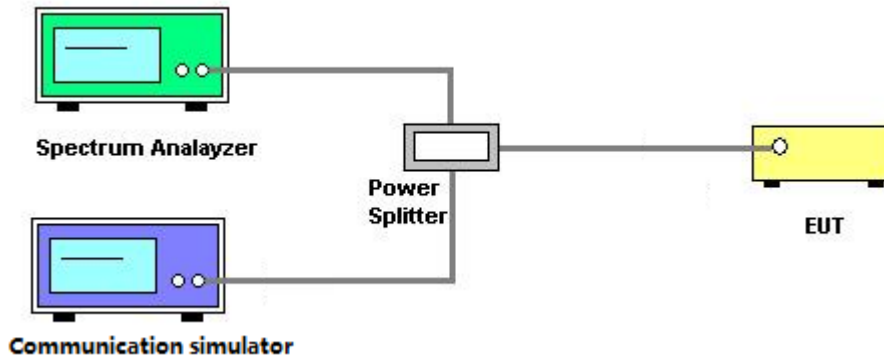
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm.

3.3.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 6.

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

3.3.3 TEST SETUP LAYOUT



3.3.4 TEST DEVIATION

No deviation

3.3.5 TEST RESULTS

Please refer to the APPENDIX C.

3.4 RADIATED SPURIOUS EMISSIONS MEASUREMENT

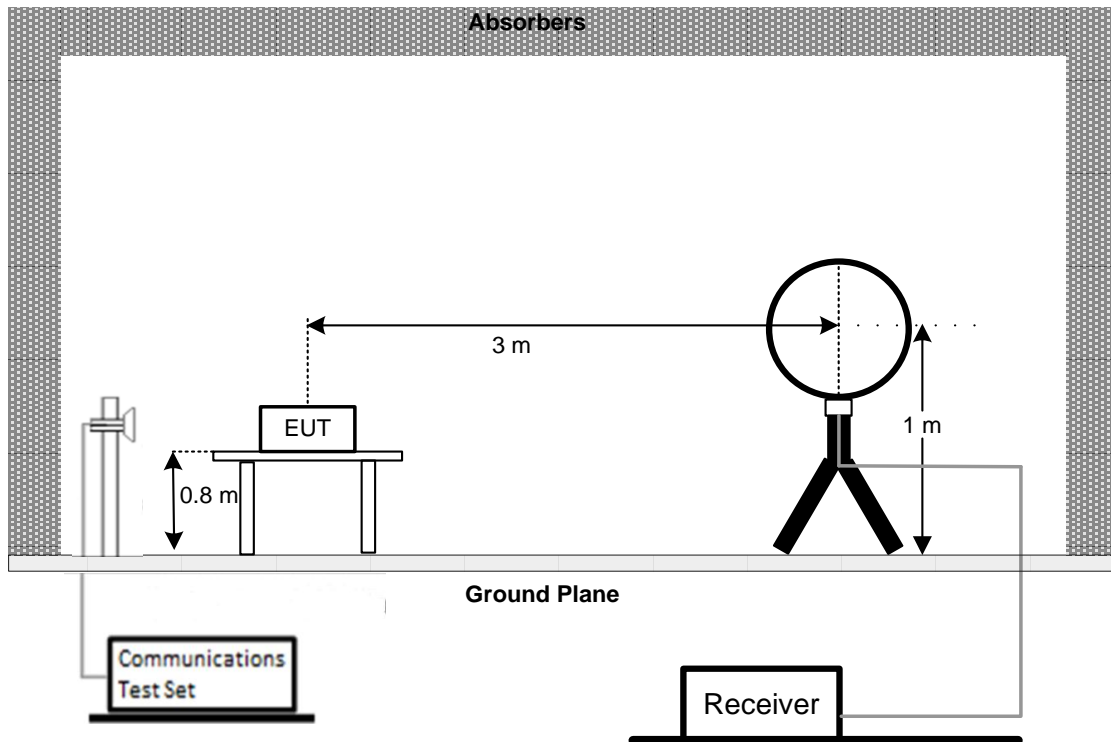
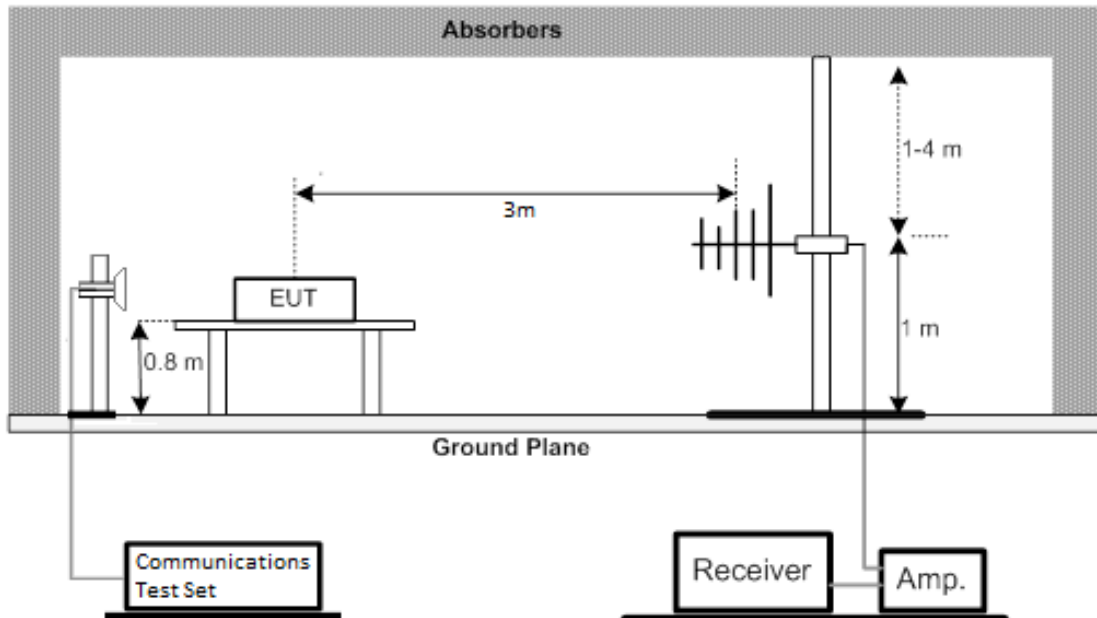
3.4.1 LIMIT

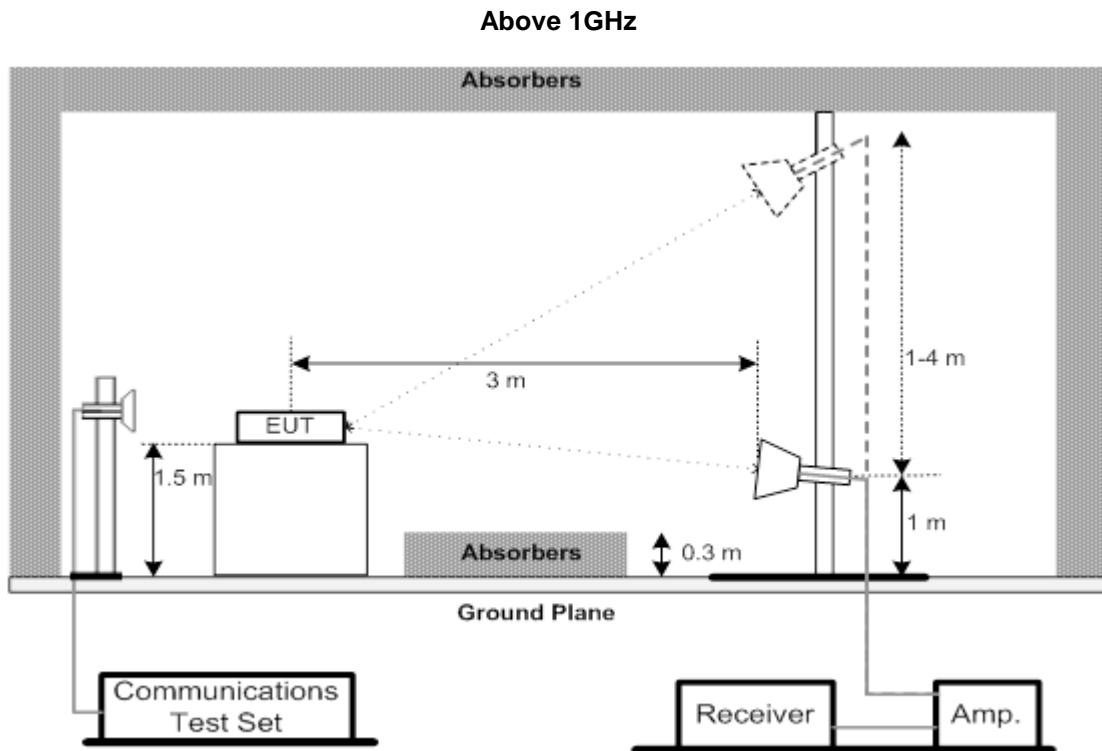
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm.

3.4.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 6.2.

1. 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.
2. 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
3. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn.}$
4. ERP can be calculated form EIRP by subtracting the gain of dipole, $ERP = EIPR - 2.15\text{dBi.}$
5. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

3.4.3 TEST SETUP LAYOUT**Below 30MHz****30MHz to 1000MHz**



3.4.4 TEST DEVIATION

No deviation

3.4.5 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the APPENDIX D.

3.4.6 TEST RESULTS (30MHZ TO 1000MHZ)

Please refer to the APPENDIX E.

3.4.7 TEST RESULTS (ABOVE 1000MHZ)

Please refer to the APPENDIX F.

3.5 BAND EDGE MEASUREMENT

3.5.1 LIMIT

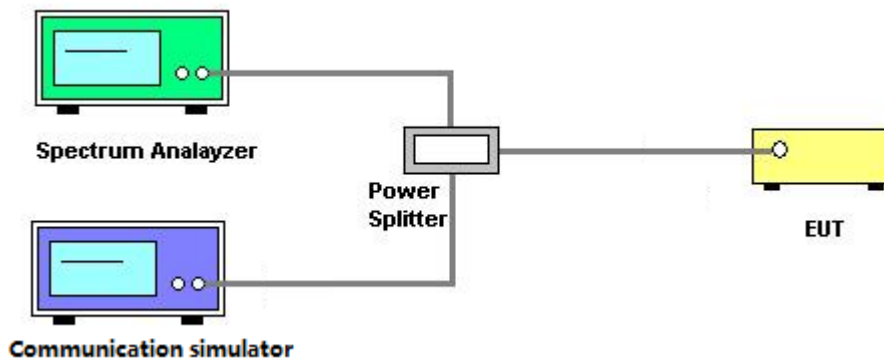
A Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the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

3.5.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 6.

1. All measurements were done at low and high operational frequency range.
2. Record the max trace plot into the test report.

3.5.3 TEST SETUP LAYOUT



3.5.4 TEST DEVIATION

No deviation

3.5.5 TEST RESULTS

Please refer to the APPENDIX G.

3.6 PEAK TO AVERAGE RATIO MEASUREMENT

3.6.1 LIMIT

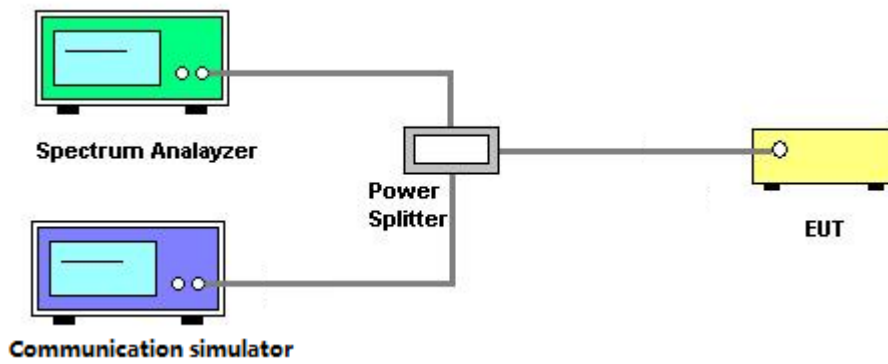
In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB.

3.6.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 5.7.

1. Set resolution/measurement bandwidth \geq signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

3.6.3 TEST SETUP LAYOUT



3.6.4 TEST DEVIATION

No deviation

3.6.5 TEST RESULTS

Please refer to the APPENDIX H.

3.7 FREQUENCY STABILITY MEASUREMENT

3.7.1 LIMIT

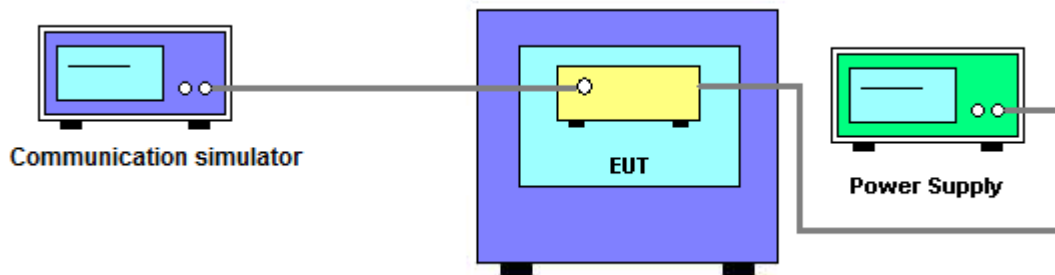
± 1.5 ppm is for base and fixed station. ± 2.5 ppm is for mobile station.

3.7.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 9.

1. 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.
2. 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.
3. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ 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.
4. The frequency error was recorded frequency error from the communication simulator.

3.7.3 TEST SETUP LAYOUT



3.7.4 TEST DEVIATION

No deviation

3.7.5 TEST RESULTS

Please refer to the APPENDIX I.

4. LIST OF MEASUREMENT EQUIPMENTS

| Radiated Spurious Emission Measurement | | | | | |
|--|-------------------------------------|-----------------------------|---|---------------|------------------|
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
| 1 | Antenna | Schwarzbeck | VULB9160 | 9160-3232 | Mar. 15, 2022 |
| 2 | Amplifier | Agilent | 8449B | 3008A02334 | Feb. 27, 2022 |
| 3 | High Pass Filter | Wairwright Instruments Gmbh | WHK 1.5/15G-10ST | 11 | Feb. 27, 2022 |
| 4 | Band Reject Filter | Wairwright Instruments Gmbh | WRCG 1710/1785-1690/1805-60/ 12SS | 38 | Feb. 27, 2022 |
| 5 | Band Reject Filter | Wairwright Instruments Gmbh | WRCG 824/849-810/863-60/9SS | 7 | Feb. 27, 2022 |
| 6 | Band Reject Filter | Wairwright Instruments Gmbh | WRCG 880/915-860/935-60/9SS | 14 | Feb. 27, 2022 |
| 7 | Band Reject Filter | Wairwright Instruments Gmbh | WRCG 1850/1910-1830/1930-60/ 10SS | 17 | Feb. 27, 2022 |
| 8 | High Pass Filter | Wairwright Instruments Gmbh | WHK3.1/18G-10SS | 24 | Feb. 27, 2022 |
| 9 | Wireless Communication Test SET | Agilent | E5515C | MY48364183 | Feb. 28, 2022 |
| 10 | Microwave Preamplifier With Adaptor | EMC INSTRUMENT | EMC2654045 | 980039 & HA01 | Feb. 28, 2022 |
| 11 | Receiver | Agilent | N9038A | MY52130039 | Jul. 25, 2021 |
| 12 | wideband radio communication tester | R&S | CMW500 | 152372 | Feb. 27, 2022 |
| 13 | High pass filter | KANGMAIWEI | ZHPF-M3-12.75G-3869 | B2015073763 | Feb. 07, 2022 |
| 14 | High pass filter | KANGMAIWEI | ZHPF-M1000-4000-1 | B2015073762 | Feb. 07, 2022 |
| 15 | High pass filter | KANGMAIWEI | ZHPF-M6-186-1727 | B2015073764 | Feb. 07, 2022 |
| 16 | Cable | emci | LMR-400(30MHz-1GHz) (8m+5m) | N/A | May 23, 2021 |
| 17 | Cable | mitron | B10-01-01-12M | 18072744 | Jun. 28, 2021 |
| 18 | Controller | ETS-Lindgren | 2090 | N/A | N/A |
| 19 | Measurement Software | Farad | EZ-EMC Ver.NB-03A1-01 | N/A | N/A |
| 20 | Loop Antenna | EM | EM-6876-1 | 230 | Apr. 28, 2022 |
| 21 | Double Ridged Guide Antenna | ETS | 3115 | 75846 | Mar. 17, 2022 |
| 22 | Broad-Band Horn Antenna | Schwarzbeck | BBHA 9170 | 9170319 | Jul. 07, 2021 |

| Conducted Measurement | | | | | |
|-----------------------|-------------------------------------|---------------|--------------|-------------|------------------|
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
| 1 | Wireless Communication Test SET | Agilent | E5515C | MY48364183 | Feb. 28, 2022 |
| 2 | EXA Spectrum Analyzer | Agilent | N9010A | MY50520044 | Feb. 28, 2022 |
| 3 | POWER SPLITTER | Mini-Circuits | ZFRSC-123-S+ | 331000910-1 | Feb. 27, 2022 |
| 4 | wideband radio communication tester | R&S | CMW500 | 152372 | Feb. 27, 2022 |

| Frequency Stability Measurement | | | | | |
|---------------------------------|-------------------------------------|---------------|--------------|-------------|------------------|
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
| 1 | Wireless Communication Test SET | Agilent | E5515C | MY48364183 | Feb. 28, 2022 |
| 2* | Multi-output DC Power Supply | GW Instek | GPC-3030DN | EK880675 | Jul. 25, 2023 |
| 3 | POWER SPLITTER | Mini-Circuits | ZFRSC-123-S+ | 331000910-1 | Feb. 27, 2022 |
| 4 | wideband radio communication tester | R&S | CMW500 | 152372 | Feb. 27, 2022 |
| 5 | Const Temp, & Humidity Chamber | Bell | BTH-50C | 20170306001 | Feb. 27, 2022 |

Remark: "N/A" denotes no model name, serial no. or calibration specified.

"**" calibration period of equipment list is three year.

Except * item, all calibration period of equipment list is one year.

APPENDIX A - OUTPUT POWER

Output Power (dBm):

| GSM850 | | 128CH | 190CH | 251CH |
|---------------------|-----------|----------|----------|----------|
| | | 824.2MHz | 836.6MHz | 848.8MHz |
| GSM (CS) | | 32.47 | 31.96 | 31.97 |
| GPRS/EDGE (GMSK) | 1 Tx Slot | 31.94 | 32.34 | 32.40 |
| | 2 Tx Slot | 31.72 | 32.07 | 31.59 |
| | 3 Tx Slot | 29.76 | 30.58 | 30.63 |
| | 4 Tx Slot | 29.3 | 29.21 | 29.14 |
| EDGE (8PSK) | 1 Tx Slot | 25.89 | 25.72 | 25.44 |
| | 2 Tx Slot | 25.49 | 25.47 | 25.31 |
| | 3 Tx Slot | 23.74 | 23.77 | 23.69 |
| | 4 Tx Slot | 22.7 | 22.29 | 21.95 |

| LTE Band / BW | Channel / Frequency (MHz) | RB Size | RB Offset | Index | Conducted Power (dBm) | |
|---------------|------------------------------|------------|--------------|-------|--------------------------|-------|
| | | | | | QPSK | 16QAM |
| 5 / 1.4M | 20407 / 824.7 | 1 | 0 | 0 | 21.76 | 21.15 |
| | | 6 | 0 | 0 | 20.79 | 19.95 |
| | 20525 / 836.5 | 1 | 0 | 0 | 20.48 | 20.59 |
| | | 6 | 0 | 0 | 20.30 | 19.40 |
| | 20643 / 848.3 | 1 | 5 | 0 | 20.97 | 20.14 |
| | | 6 | 0 | 0 | 20.15 | 19.26 |
| 5 / 3M | 20415 / 825.5 | 1 | 0 | 0 | 21.96 | 20.92 |
| | | 6 | 0 | 0 | 20.63 | 19.75 |
| | 20525 / 836.5 | 1 | 0 | 0 | 21.42 | 20.83 |
| | | 6 | 0 | 0 | 20.37 | 19.55 |
| | 20635 / 847.5 | 1 | 5 | 1 | 21.30 | 20.21 |
| | | 6 | 0 | 1 | 20.05 | 19.34 |
| 5 / 5M | 20425 / 826.5 | 1 | 0 | 0 | 21.78 | 21.77 |
| | | 6 | 0 | 0 | 20.64 | 20.86 |
| | 20525 / 836.5 | 1 | 0 | 0 | 21.47 | 21.66 |
| | | 6 | 0 | 0 | 20.38 | 20.56 |
| | 20625 / 846.5 | 1 | 5 | 3 | 20.80 | 21.17 |
| | | 6 | 0 | 3 | 20.01 | 20.34 |
| 5 / 10M | 20450 / 829 | 1 | 0 | 3 | 21.78 | 21.71 |
| | | 4 | 0 | 0 | 20.55 | 19.39 |
| | 20525 / 836.5 | 1 | 0 | 0 | 21.44 | 21.76 |
| | | 4 | 0 | 0 | 21.36 | 21.60 |
| | 20600 / 844 | 1 | 5 | 7 | 20.90 | 21.22 |
| | | 4 | 2 | 7 | 20.96 | 21.18 |

| LTE Band / BW | Channel / Frequency (MHz) | RB Size | RB Offset | Index | Conducted Power (dBm) | |
|---------------|---------------------------|---------|-----------|-------|-----------------------|-------|
| | | | | | QPSK | 16QAM |
| 26 / 1.4M | 26797 / 824.7 | 1 | 0 | 0 | 22.07 | 21.13 |
| | | 6 | 0 | 0 | 20.93 | 20.04 |
| | 26915 / 836.5 | 1 | 0 | 0 | 21.54 | 20.66 |
| | | 6 | 0 | 0 | 20.45 | 19.54 |
| | 27033 / 848.3 | 1 | 5 | 0 | 20.99 | 20.04 |
| | | 6 | 0 | 0 | 20.10 | 19.15 |
| 26 / 3M | 26805 / 825.5 | 1 | 0 | 0 | 21.85 | 21.24 |
| | | 6 | 0 | 0 | 20.86 | 20.08 |
| | 26915 / 836.5 | 1 | 0 | 0 | 21.39 | 20.81 |
| | | 6 | 0 | 0 | 20.41 | 19.60 |
| | 27025 / 847.5 | 1 | 5 | 1 | 20.83 | 20.19 |
| | | 6 | 0 | 1 | 20.02 | 19.24 |
| 26 / 5M | 26815 / 826.5 | 1 | 0 | 3 | 21.67 | 22.27 |
| | | 6 | 0 | 0 | 20.72 | 20.74 |
| | 26915 / 836.5 | 1 | 0 | 0 | 21.42 | 21.73 |
| | | 6 | 0 | 0 | 20.34 | 20.49 |
| | 27015 / 846.5 | 1 | 5 | 0 | 20.87 | 21.15 |
| | | 6 | 0 | 3 | 20.02 | 20.30 |
| 26 / 10M | 26840 / 829 | 1 | 0 | 3 | 21.62 | 22.03 |
| | | 4 | 0 | 0 | 21.57 | 21.79 |
| | 26915 / 836.5 | 1 | 0 | 0 | 21.32 | 21.71 |
| | | 4 | 0 | 0 | 21.33 | 21.55 |
| | 26990 / 844 | 1 | 5 | 4 | 20.83 | 21.25 |
| | | 4 | 2 | 7 | 20.94 | 21.22 |
| 26 / 15M | 26865 / 831.5 | 1 | 0 | 3 | 21.75 | 22.28 |
| | | 6 | 0 | 0 | 21.71 | 21.99 |
| | 26915 / 836.5 | 1 | 0 | 0 | 21.61 | 21.91 |
| | | 6 | 0 | 0 | 21.50 | 21.73 |
| | 26965 / 841.5 | 1 | 5 | 8 | 21.10 | 21.38 |
| | | 6 | 0 | 11 | 21.28 | 21.43 |

ERP (dBm):

| GSM850 | | 128CH | 190CH | 251CH |
|---------------------|-----------|----------|----------|----------|
| | | 824.2MHz | 836.6MHz | 848.8MHz |
| GSM (CS) | | 28.67 | 27.99 | 28.26 |
| GPRS/EDGE (GMSK) | 1 Tx Slot | 28.61 | 27.81 | 28.16 |
| | 2 Tx Slot | 27.54 | 27.12 | 26.94 |
| | 3 Tx Slot | 24.74 | 25.17 | 24.07 |
| | 4 Tx Slot | 23.95 | 23.15 | 23.22 |
| EDGE (8PSK) | 1 Tx Slot | 25.11 | 24.14 | 24.42 |
| | 2 Tx Slot | 24.24 | 23.44 | 23.17 |
| | 3 Tx Slot | 22.57 | 21.80 | 21.37 |
| | 4 Tx Slot | 20.57 | 20.84 | 20.55 |

| LTE Band / BW | Channel / Frequency (MHz) | RB Size | RB Offset | Index | Conducted Power (dBm) | |
|---------------|------------------------------|------------|--------------|-------|--------------------------|-------|
| | | | | | QPSK | 16QAM |
| 5 / 1.4M | 20407/824.7 | 1 | 0 | 0 | 15.99 | 15.38 |
| | | 6 | 0 | 0 | 15.02 | 14.18 |
| | 20525/836.5 | 1 | 0 | 0 | 14.71 | 14.82 |
| | | 6 | 0 | 0 | 14.53 | 13.63 |
| | 20643/848.3 | 1 | 5 | 0 | 15.20 | 14.37 |
| | | 6 | 0 | 0 | 14.38 | 13.49 |
| 5 / 3M | 20415/825.5 | 1 | 0 | 0 | 16.19 | 15.15 |
| | | 6 | 0 | 0 | 14.86 | 13.98 |
| | 20525/836.5 | 1 | 0 | 0 | 15.65 | 15.06 |
| | | 6 | 0 | 0 | 14.60 | 13.78 |
| | 20635/847.5 | 1 | 5 | 1 | 15.53 | 14.44 |
| | | 6 | 0 | 1 | 14.28 | 13.57 |
| 5 / 5M | 20425/826.5 | 1 | 0 | 0 | 16.01 | 16.00 |
| | | 6 | 0 | 0 | 14.87 | 15.09 |
| | 20525/836.5 | 1 | 0 | 0 | 15.70 | 15.89 |
| | | 6 | 0 | 0 | 14.61 | 14.79 |
| | 20625/846.5 | 1 | 5 | 3 | 15.03 | 15.40 |
| | | 6 | 0 | 3 | 14.24 | 14.57 |
| 5 / 10M | 20450/829 | 1 | 0 | 3 | 16.01 | 15.94 |
| | | 4 | 0 | 0 | 14.78 | 13.62 |
| | 20525/836.5 | 1 | 0 | 0 | 15.67 | 15.99 |
| | | 4 | 0 | 0 | 15.59 | 15.83 |
| | 20600/844 | 1 | 5 | 7 | 15.13 | 15.45 |
| | | 4 | 2 | 7 | 15.19 | 15.41 |

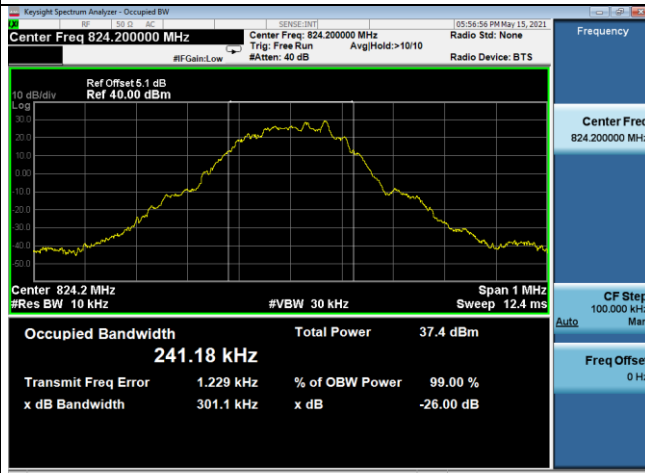
| LTE Band / BW | Channel / Frequency (MHz) | RB Size | RB Offset | Index | Conducted Power (dBm) | |
|---------------|---------------------------|---------|-----------|-------|-----------------------|-------|
| | | | | | QPSK | 16QAM |
| 26 / 1.4M | 26797/824.7 | 1 | 0 | 0 | 16.30 | 15.36 |
| | | 6 | 0 | 0 | 15.16 | 14.27 |
| | 26915/836.5 | 1 | 0 | 0 | 15.77 | 14.89 |
| | | 6 | 0 | 0 | 14.68 | 13.77 |
| | 27033/848.3 | 1 | 5 | 0 | 15.22 | 14.27 |
| | | 6 | 0 | 0 | 14.33 | 13.38 |
| 26 / 3M | 26805/825.5 | 1 | 0 | 0 | 16.08 | 15.47 |
| | | 6 | 0 | 0 | 15.09 | 14.31 |
| | 26915/836.5 | 1 | 0 | 0 | 15.62 | 15.04 |
| | | 6 | 0 | 0 | 14.64 | 13.83 |
| | 27025/847.5 | 1 | 5 | 1 | 15.06 | 14.42 |
| | | 6 | 0 | 1 | 14.25 | 13.47 |
| 26 / 5M | 26815/826.5 | 1 | 0 | 3 | 15.90 | 16.50 |
| | | 6 | 0 | 0 | 14.95 | 14.97 |
| | 26915/836.5 | 1 | 0 | 0 | 15.65 | 15.96 |
| | | 6 | 0 | 0 | 14.57 | 14.72 |
| | 27015/846.5 | 1 | 5 | 0 | 15.10 | 15.38 |
| | | 6 | 0 | 3 | 14.25 | 14.53 |
| 26 / 10M | 26840/829 | 1 | 0 | 3 | 15.85 | 16.26 |
| | | 4 | 0 | 0 | 15.80 | 16.02 |
| | 26915/836.5 | 1 | 0 | 0 | 15.55 | 15.94 |
| | | 4 | 0 | 0 | 15.56 | 15.78 |
| | 26990/844 | 1 | 5 | 4 | 15.06 | 15.48 |
| | | 4 | 2 | 7 | 15.17 | 15.45 |
| 26 / 15M | 26865/831.5 | 1 | 0 | 3 | 15.98 | 16.51 |
| | | 6 | 0 | 0 | 15.94 | 16.22 |
| | 26915/836.5 | 1 | 0 | 0 | 15.84 | 16.14 |
| | | 6 | 0 | 0 | 15.73 | 15.96 |
| | 26965/841.5 | 1 | 5 | 8 | 15.33 | 15.61 |
| | | 6 | 0 | 11 | 15.51 | 15.66 |

APPENDIX B - OCCUPIED BANDWIDTH

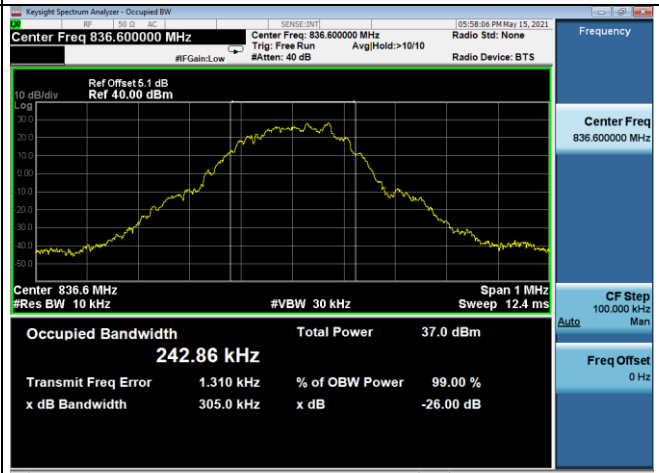
| GSM850 | | | | | |
|---------|-----------------|------------------------------|---------|-----------------|------------------------------|
| GSM | | | EDGE | | |
| CS | | | 8PSK | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) |
| 128 | 824.2 | 0.2412 | 128 | 824.2 | 0.2433 |
| 190 | 836.6 | 0.2429 | 190 | 836.6 | 0.2422 |
| 251 | 848.8 | 0.2389 | 251 | 848.8 | 0.2468 |
| Channel | Frequency (MHz) | 26dB Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 128 | 824.2 | 0.3011 | 128 | 824.2 | 0.3187 |
| 190 | 836.6 | 0.3050 | 190 | 836.6 | 0.3130 |
| 251 | 848.8 | 0.3010 | 251 | 848.8 | 0.2908 |

Spectrum Plot

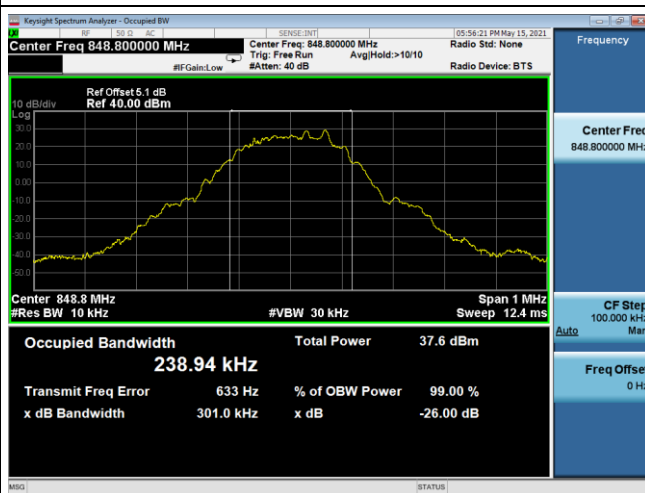
GSM-128



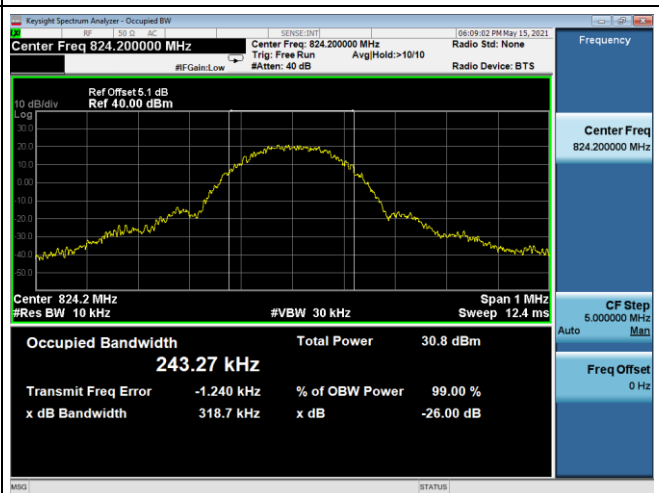
GSM-190



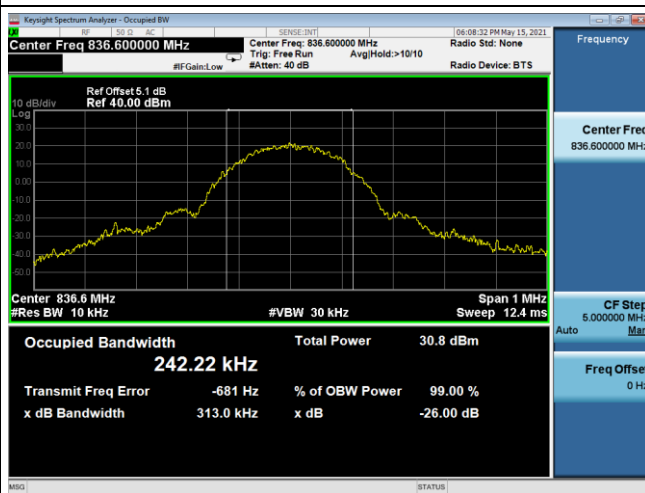
GSM-251



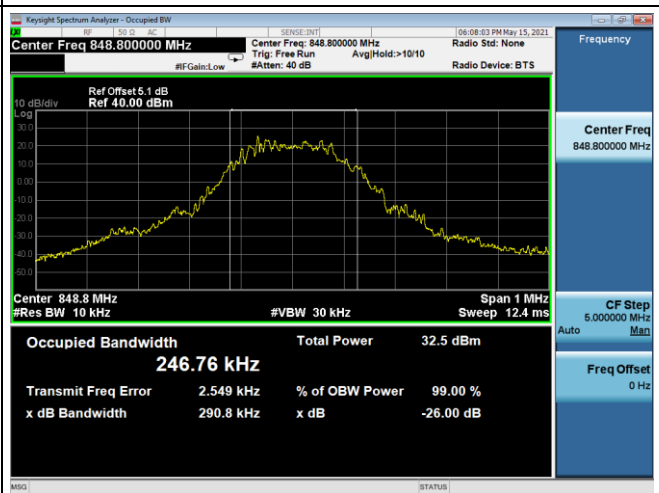
EDGE-128



EDGE-190



EDGE-251



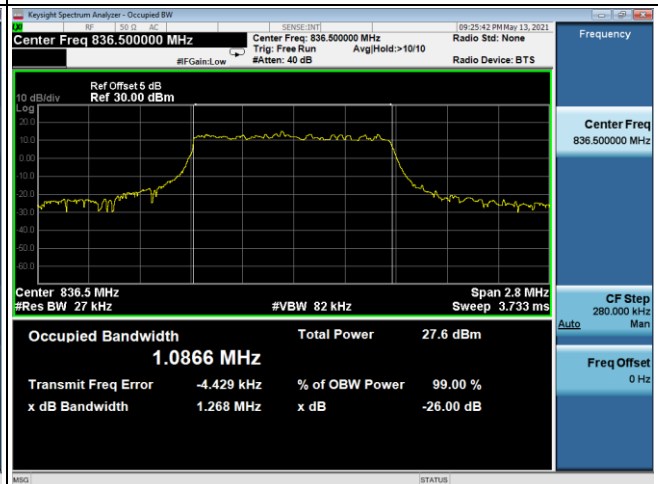
| LTE Band 5_1.4M | | | | | |
|-----------------|-----------------|------------------------------|---------|-----------------|----------------------|
| QPSK | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 20407 | 824.7 | 1.0915 | 20407 | 824.7 | 1.261 |
| 20525 | 836.5 | 1.0866 | 20525 | 836.5 | 1.268 |
| 20643 | 848.3 | 1.0887 | 20643 | 848.3 | 1.264 |
| 16QAM | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 20407 | 824.7 | 0.9284 | 20407 | 824.7 | 1.129 |
| 20525 | 836.5 | 0.9241 | 20525 | 836.5 | 1.250 |
| 20643 | 848.3 | 1.0931 | 20643 | 848.3 | 1.253 |

Spectrum Plot

QPSK-20407



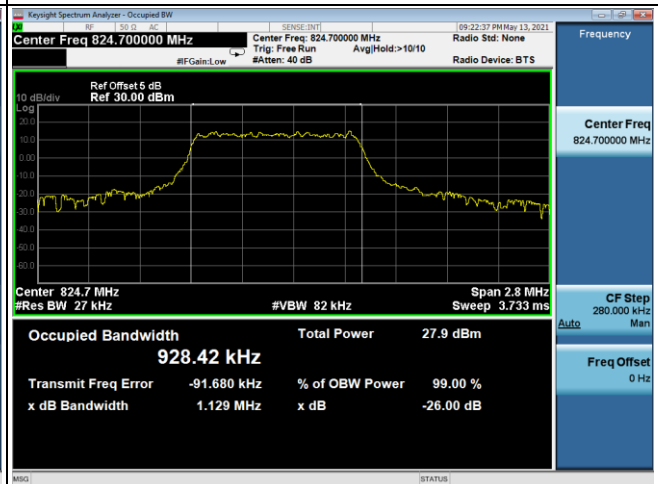
QPSK-20525



QPSK-20643



16QAM-20407



16QAM-20525



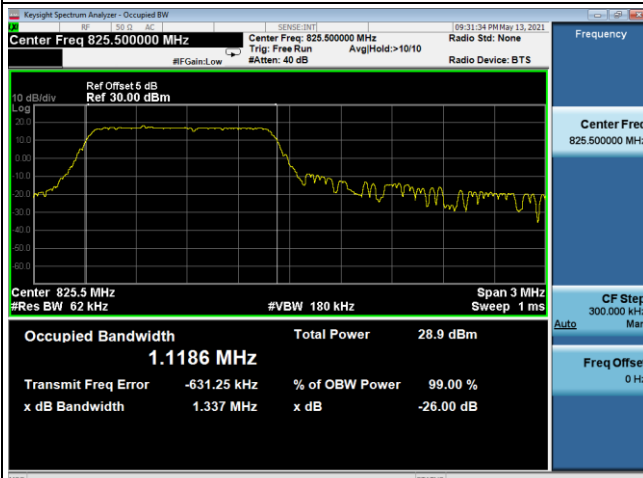
16QAM-20643



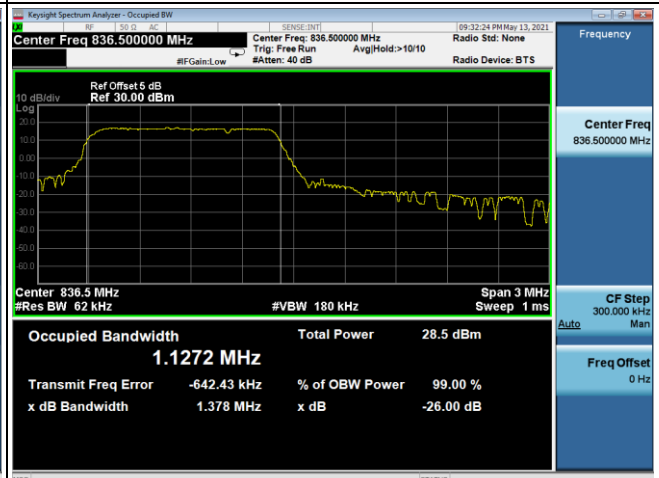
| LTE Band 5_3M | | | | | |
|---------------|-----------------|------------------------------|---------|-----------------|----------------------|
| QPSK | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 20415 | 825.5 | 1.1186 | 20415 | 825.5 | 1.337 |
| 20525 | 836.5 | 1.1272 | 20525 | 836.5 | 1.378 |
| 20635 | 847.5 | 1.1152 | 20635 | 847.5 | 1.340 |
| 16QAM | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 20415 | 825.5 | 0.9968 | 20415 | 825.5 | 1.199 |
| 20525 | 836.5 | 0.9728 | 20525 | 836.5 | 1.589 |
| 20635 | 847.5 | 0.9755 | 20635 | 847.5 | 1.386 |

Spectrum Plot

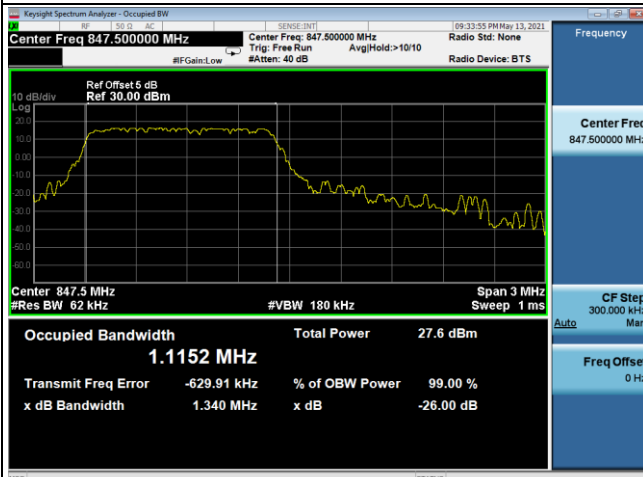
QPSK-20415



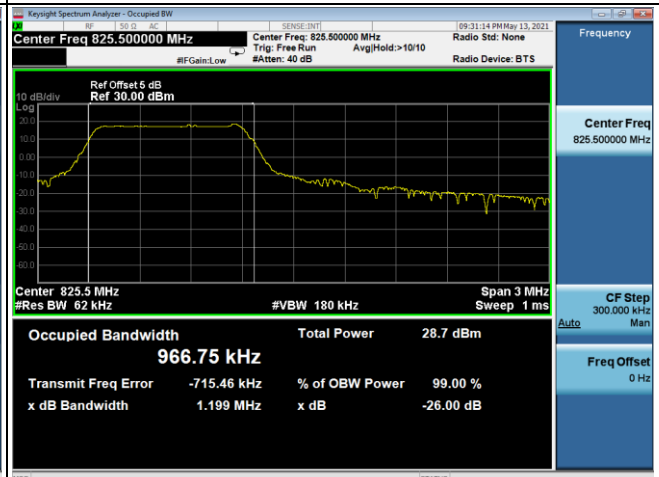
QPSK-20525



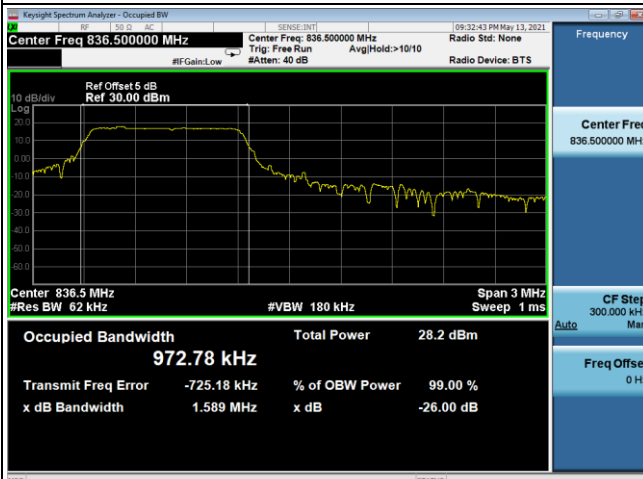
QPSK-20635



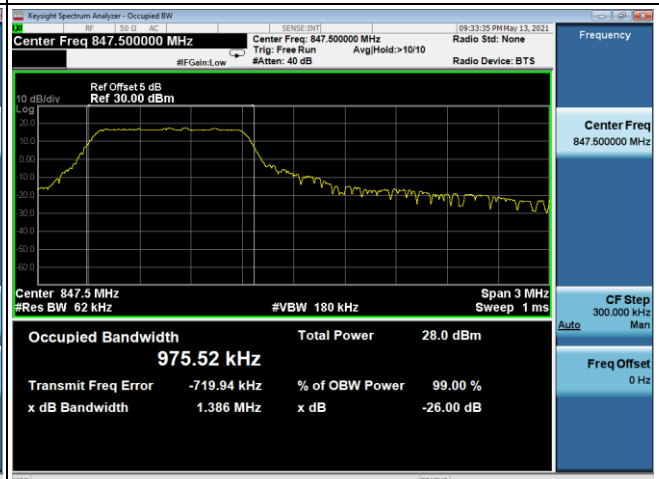
16QAM-20415



16QAM-20525



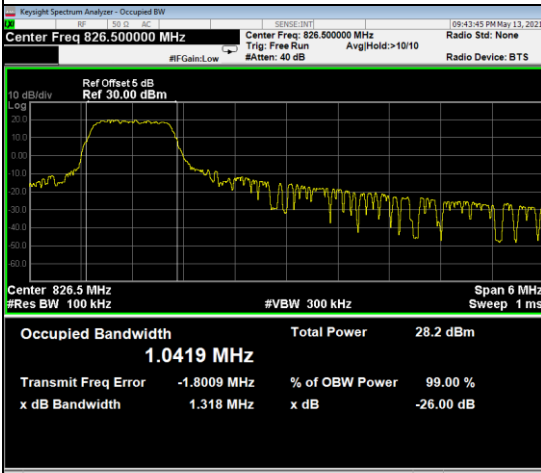
16QAM-20635



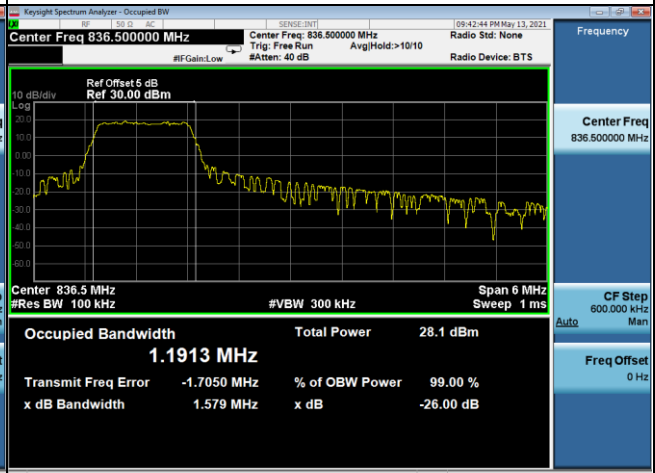
| LTE Band 5_5M | | | | | |
|---------------|-----------------|------------------------------|---------|-----------------|----------------------|
| QPSK | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 20425 | 826.5 | 1.0419 | 20425 | 826.5 | 1.318 |
| 20525 | 836.5 | 1.1913 | 20525 | 836.5 | 1.579 |
| 20625 | 846.5 | 1.1842 | 20625 | 846.5 | 1.477 |
| 16QAM | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 20425 | 826.5 | 1.0455 | 20425 | 826.5 | 1.527 |
| 20525 | 836.5 | 1.0697 | 20525 | 836.5 | 1.488 |
| 20625 | 846.5 | 1.0313 | 20625 | 846.5 | 1.516 |

Spectrum Plot

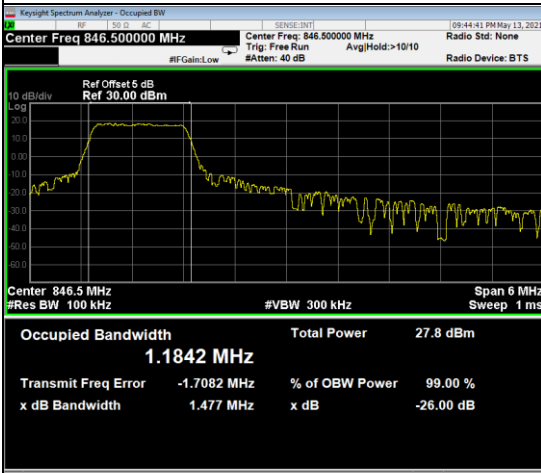
QPSK-20425



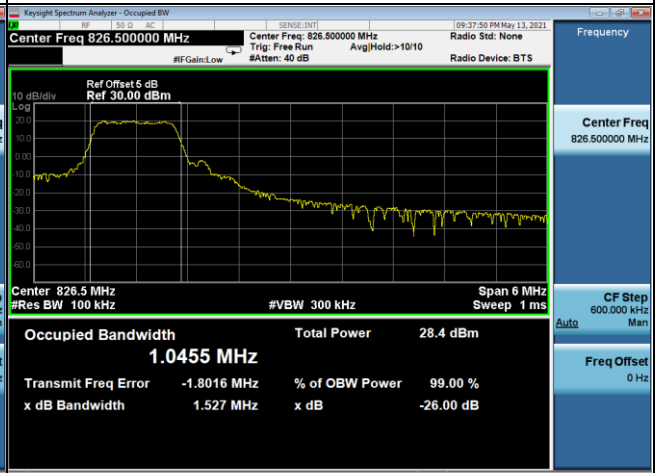
QPSK-20525



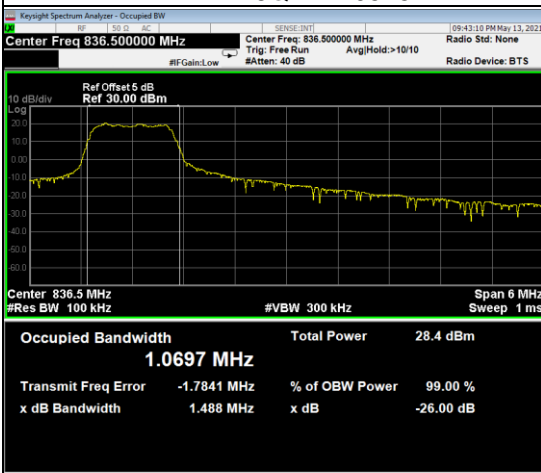
QPSK-20625



16QAM-20425



16QAM-20525



16QAM-20625



| LTE Band 5_10M | | | | | |
|----------------|-----------------|------------------------------|---------|-----------------|----------------------|
| QPSK | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 20450 | 829.0 | 1.3708 | 20450 | 829.0 | 2.052 |
| 20525 | 836.5 | 1.3549 | 20525 | 836.5 | 1.985 |
| 20600 | 844.0 | 1.3566 | 20600 | 844.0 | 1.972 |
| 16QAM | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 20450 | 829.0 | 1.2276 | 20450 | 829.0 | 2.211 |
| 20525 | 836.5 | 1.2305 | 20525 | 836.5 | 2.079 |
| 20600 | 844.0 | 1.3810 | 20600 | 844.0 | 2.070 |

Spectrum Plot

QPSK-20450



QPSK-20525



QPSK-20600



16QAM-20450



16QAM-20525



16QAM-20600



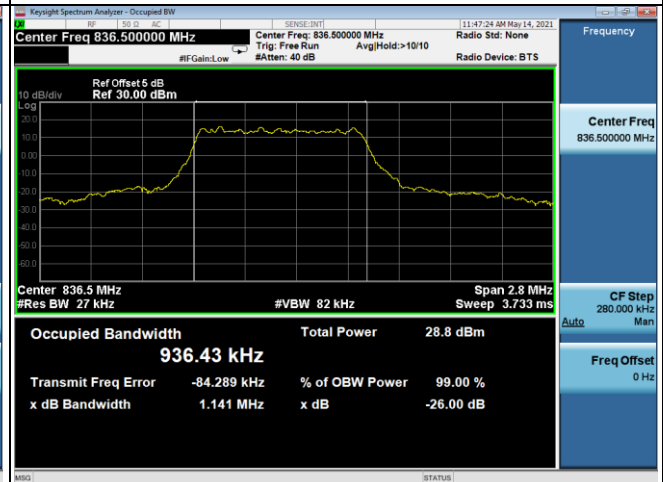
| LTE Band 26_1.4M | | | | | |
|------------------|-----------------|------------------------------|---------|-----------------|----------------------|
| QPSK | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 26797 | 824.7 | 0.9222 | 26797 | 824.7 | 1.107 |
| 26915 | 836.5 | 0.9364 | 26915 | 836.5 | 1.141 |
| 27033 | 848.3 | 0.9213 | 27033 | 848.3 | 1.089 |
| 16QAM | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 26797 | 824.7 | 0.9283 | 26797 | 824.7 | 1.168 |
| 26915 | 836.5 | 0.9254 | 26915 | 836.5 | 1.244 |
| 27033 | 848.3 | 0.9274 | 27033 | 848.3 | 1.132 |

Spectrum Plot

QPSK-26797



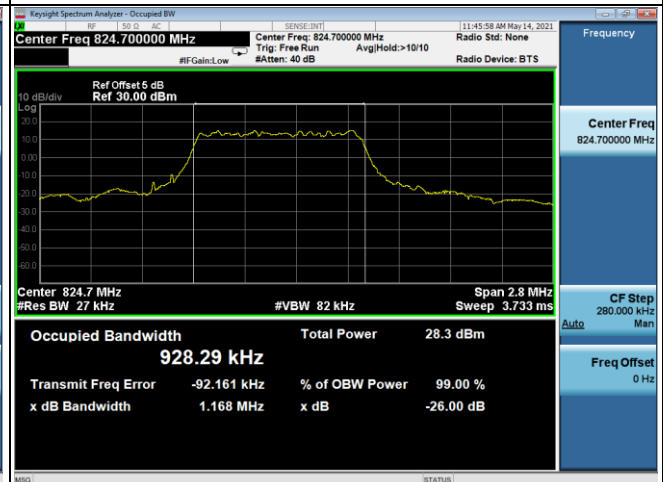
QPSK-26915



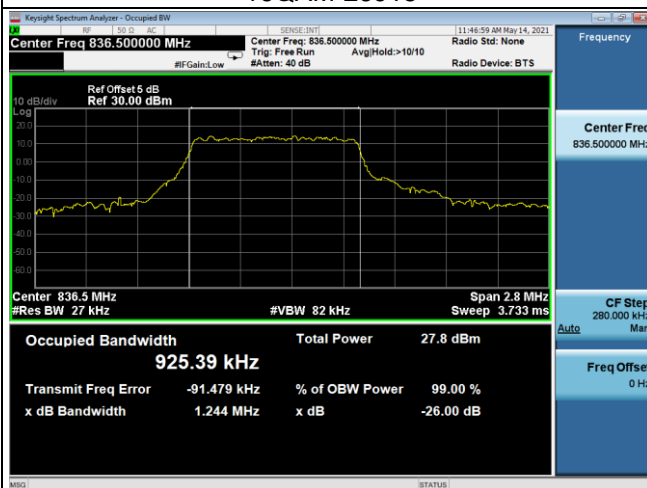
QPSK-27033



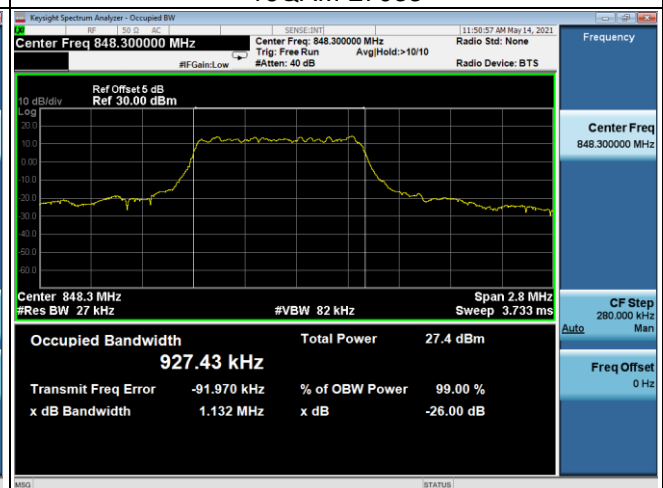
16QAM-26797



16QAM-26915



16QAM-27033



| LTE Band 26_3M | | | | | |
|----------------|-----------------|------------------------------|---------|-----------------|----------------------|
| QPSK | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 26805 | 825.5 | 0.9632 | 26805 | 825.5 | 1.175 |
| 26915 | 836.5 | 0.9870 | 26915 | 836.5 | 1.237 |
| 27025 | 847.5 | 0.9614 | 27025 | 847.5 | 1.169 |
| 16QAM | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 26805 | 825.5 | 0.9870 | 26805 | 825.5 | 1.448 |
| 26915 | 836.5 | 0.9806 | 26915 | 836.5 | 1.556 |
| 27025 | 847.5 | 0.9863 | 27025 | 847.5 | 1.426 |

Spectrum Plot

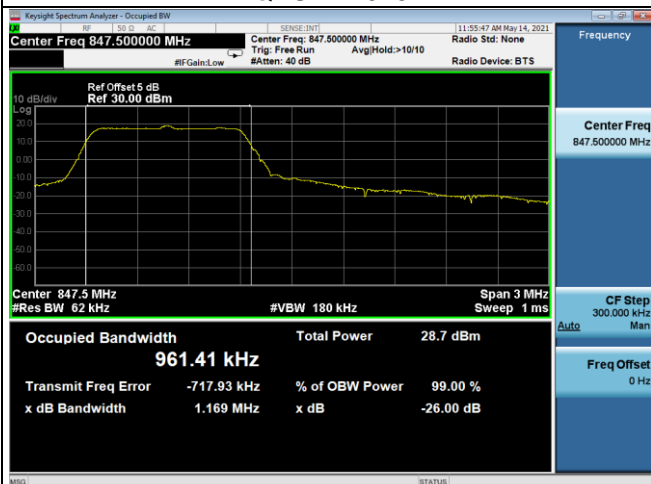
QPSK-26805



QPSK-26915



QPSK-27025



16QAM-26805



16QAM-26915



16QAM-27025



| LTE Band 26_5M | | | | | |
|----------------|-----------------|------------------------------|---------|-----------------|----------------------|
| QPSK | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 26815 | 826.5 | 1.0375 | 26815 | 826.5 | 1.562 |
| 26915 | 836.5 | 1.0346 | 26915 | 836.5 | 1.510 |
| 27015 | 846.5 | 1.0566 | 27015 | 846.5 | 1.444 |
| 16QAM | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 26815 | 826.5 | 1.0470 | 26815 | 826.5 | 1.546 |
| 26915 | 836.5 | 1.0707 | 26915 | 836.5 | 1.480 |
| 27015 | 846.5 | 1.0714 | 27015 | 846.5 | 1.453 |

Spectrum Plot

QPSK-26815



QPSK-26915



QPSK-27015



16QAM-26815



16QAM-26915



16QAM-27015



| LTE Band 26_10M | | | | | |
|-----------------|-----------------|------------------------------|---------|-----------------|----------------------|
| QPSK | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 26840 | 829 | 1.3140 | 26840 | 829 | 2.281 |
| 26915 | 836.5 | 1.3665 | 26915 | 836.5 | 1.982 |
| 26990 | 844 | 1.3483 | 26990 | 844 | 1.954 |
| 16QAM | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 26840 | 829 | 1.3702 | 26840 | 829 | 2.250 |
| 26915 | 836.5 | 1.2468 | 26915 | 836.5 | 2.224 |
| 26990 | 844 | 1.2252 | 26990 | 844 | 2.152 |