



RF TEST REPORT

Applicant Quectel Wireless Solutions Co., Ltd
FCC ID XMR201909EC21AUX
Product LTE Module
Brand Quectel
Model EC21-AUX, EC21-AUX MINIPCIE
Report No. R2108A0686-R2V1
Issue Date December 8, 2021

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2020)/ FCC CFR 47 Part 24E (2020)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Performed by: Peng Tao

Approved by: Kai Xu

TA Technology (Shanghai) Co., Ltd.

No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China

TEL: +86-021-50791141/2/3

FAX: +86-021-50791141/2/3-8000



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Summary of measurement results

| No. | Test Case | Clause in FCC rules | Verdict |
|---|---|----------------------------|---------|
| 1 | RF power output | 2.1046 | PASS |
| 2 | Effective Isotropic Radiated power | 24.232(c) | PASS |
| 3 | Occupied Bandwidth | 2.1049 | PASS |
| 4 | Band Edge Compliance | 2.1051 /24.238(a) | PASS |
| 5 | Peak-to-Average Power Ratio | 24.232/KDB 971168 D01(5.7) | PASS |
| 6 | Frequency Stability | 2.1055 / 24.235 | PASS |
| 7 | Spurious Emissions at Antenna Terminals | 2.1051 / 24.238(a) | PASS |
| 8 | Radiates Spurious Emission | 2.1053 / 24.238(a) | PASS |
| Date of Testing: (Original) August 19, 2019 ~October 10, 2019 (Variant) September 28, 2021~ December 1, 2021 | | | |
| Note: PASS: The EUT complies with the essential requirements in the standard. | | | |

EC21-AUX, EC21-AUX MINIPCIE (Report No.: R2108A0686-R2V1) is a variant model of EC21-AUX MINIPCIE (Report No.: R1908A0502-R2). There is only changed the Power Amplifier and Software Version of product.

Tested cases refer to the following table. Please refer to Appendix C for Verify data

| Test Case | Original | Variant |
|--|----------|---|
| RF Power Output and Effective Radiated Power | PASS | Retest(GSM1900/WCDMA Band II/LTE Band 2) |
| Occupied Bandwidth | PASS | Verify the worst combination of each frequency band(GSM1900/WCDMA Band II/LTE Band 2) |
| Band Edge Compliance | PASS | Verify the worst combination of each frequency band(GSM1900/WCDMA Band II/LTE Band 2) |
| Peak-to-Average Power Ratio | PASS | Retest(GSM1900/WCDMA Band II/LTE Band 2) |
| Frequency Stability | PASS | Refer to the Original |
| Spurious Emissions at Antenna Terminals | PASS | Verify the worst combination of each frequency band(GSM1900/WCDMA Band II/LTE Band 2) |
| Radiates Spurious Emission | PASS | Retest(GSM1900/WCDMA Band II/LTE Band 2) |

The detailed product change description please refers to the Difference Declaration Letter.



1. Test Laboratory

1.1. Notes of the test report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein .Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2. Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong
City: Shanghai
Post code: 201201
Country: P. R. China
Contact: Xu Kai
Telephone: +86-021-50791141/2/3
Fax: +86-021-50791141/2/3-8000
Website: <http://www.ta-shanghai.com>
E-mail: xukai@ta-shanghai.com

2. General Description of Equipment under Test

2.1. Applicant and Manufacturer Information

| | |
|----------------------|---|
| Applicant | Quectel Wireless Solutions Co., Ltd |
| Applicant address | Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233 |
| Manufacturer | Quectel Wireless Solutions Co., Ltd |
| Manufacturer address | Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233 |

2.2. General information

| EUT Description | | | |
|------------------------------|---|-------------|-------------|
| Model | EC21-AUX, EC21-AUX MINIPCIE | | |
| IMEI | 868450040001099 | | |
| Hardware Version | R2.0 | | |
| Software Version | EC21AUXGAR08A03M1G | | |
| Power Supply | External power supply | | |
| Antenna Type | The EUT don't have standard Antenna, The Antenna used for testing in this report is the after-market accessory (Dipole Antenna) | | |
| Antenna Gain | 4dBi | | |
| Test Mode(s) | GSM1900; WCDMA Band II; LTE Band 2; | | |
| Test Modulation | (GSM)GMSK,8PSK; (WCDMA) BPSK, QPSK,16QAM; (LTE)QPSK,16QAM | | |
| GPRS Multislot Class | 33 | | |
| EGPRS Multislot Class | 33 | | |
| HSDPA UE Category | 24 | | |
| HSUPA UE Category | 6 | | |
| DC-HSDPA UE Category | 24 | | |
| HSPA+ UE Category | 6 | | |
| LTE Category | 1 | | |
| Maximum E.I.R.P | GSM 1900: | 31.49 | |
| | WCDMA Band II: | 25.35 | |
| | LTE Band 2: | 25.39 | |
| Rated Power Supply Voltage | 3.8V | | |
| Extreme Voltage | Minimum: 3.3V Maximum: 4.3V | | |
| Extreme Temperature | Lowest: -40°C Highest: +85°C | | |
| Operating Frequency Range(s) | Band | Tx (MHz) | Rx (MHz) |
| | GSM1900 | 1850 ~ 1910 | 1930 ~ 1990 |



| | | | |
|--|---------------|-------------|-------------|
| | WCDMA Band II | 1850 ~ 1910 | 1930 ~ 1990 |
| | LTE Band 2 | 1850 ~ 1910 | 1930 ~ 1990 |
| Note: 1. The information of the EUT is declared by the manufacturer. | | | |



3. Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC CFR47 Part 2 (2018)

FCC CFR 47 Part 24E (2018)

ANSI C63.26 (2015)

KDB 971168 D01 Power Meas License Digital Systems v03r01

4. Test Configuration

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes. EUT stand-up position (Z axis), lie-down position (X, Y axis). Receiver antenna polarization (horizontal and vertical), the worst emission was found in position (X axis, vertical polarization) and the worst case was recorded.

All mode and data rates and positions and RB size and modulations were investigated.

Subsequently, only the worst case emissions are reported.

The following testing in GSM/WCDMA/LTE is set based on the maximum RF Output Power.

Test modes are chosen to be reported as the worst case configuration below:

| Test items | Modes/Modulation | |
|---|-----------------------------------|--------------------------------|
| | GSM 1900 | WCDMA Band II |
| RF power output | GPRS EGPRS | RMC HSDPA/HSUPA DC-HSDPA |
| Effective Isotropic Radiated power | GPRS(1Tx slot) EGPRS(1Tx slot) | RMC |
| Occupied Bandwidth | GPRS(1Tx slot) EGPRS(1Tx slot) | RMC |
| Band Edge Compliance | GPRS(1Tx slot) EGPRS(1Tx slot) | RMC |
| Peak-to-Average Power Ratio | GPRS(1Tx slot) EGPRS(1Tx slot) | RMC |
| Frequency Stability | GPRS(1Tx slot) EGPRS(1Tx slot) | RMC |
| Spurious Emissions at Antenna Terminals | GPRS(1Tx slot) | RMC |
| Radiates Spurious Emission | GPRS(1Tx slot) | RMC |



Test modes are chosen to be reported as the worst case configuration below for LTE Band 2:

| Test items | Bandwidth (MHz) | | | | | | Modulation | | RB | | | Test Channel | | |
|------------------------------------|---|---|---|----|----|----|------------|-------|----|-----|------|--------------|---|---|
| | 1.4 | 3 | 5 | 10 | 15 | 20 | QPSK | 16QAM | 1 | 50% | 100% | L | M | H |
| RF power output | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Effective Isotropic Radiated power | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Occupied Bandwidth | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Band Edge Compliance | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | - | ○ |
| Peak-to-Average Power Ratio | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Frequency Stability | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Conducted Spurious Emissions | ○ | ○ | ○ | ○ | ○ | ○ | ○ | - | ○ | - | - | ○ | ○ | ○ |
| Radiates Spurious Emission | ○ | - | ○ | - | - | ○ | ○ | - | ○ | - | - | - | ○ | - |
| Note | 1. The mark "○" means that this configuration is chosen for testing. 2. The mark "-" means that this configuration is not testing. | | | | | | | | | | | | | |

5. Test Case Results

5.1.RF Power Output

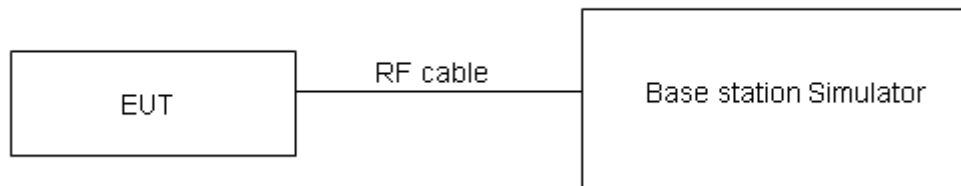
Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.5kPa |

Methods of Measurement

During the process of the testing, The EUT is controlled by the Base Station Simulator to ensure max power transmission and proper modulation.

Test Setup



The loss between RF output port of the EUT and the input port of the tester has been taken into consideration.

Limits

No specific RF power output requirements in part 2.1046.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.4$ dB.

**Test Results**

| Band | Channel | PCL | Slot | Power(dBm) | Limit(dBm) | Verdict |
|-----------|---------|-----|------|------------|------------|---------|
| GPRS1900 | 512 | 0 | 1 | 29.89 | 33 | PASS |
| GPRS1900 | 512 | 0 | 2 | 28.76 | 33 | PASS |
| GPRS1900 | 512 | 0 | 3 | 26.73 | 33 | PASS |
| GPRS1900 | 512 | 0 | 4 | 25.65 | 33 | PASS |
| GPRS1900 | 661 | 0 | 1 | 29.82 | 33 | PASS |
| GPRS1900 | 661 | 0 | 2 | 28.76 | 33 | PASS |
| GPRS1900 | 661 | 0 | 3 | 26.77 | 33 | PASS |
| GPRS1900 | 661 | 0 | 4 | 25.68 | 33 | PASS |
| GPRS1900 | 810 | 0 | 1 | 29.67 | 33 | PASS |
| GPRS1900 | 810 | 0 | 2 | 28.65 | 33 | PASS |
| GPRS1900 | 810 | 0 | 3 | 26.72 | 33 | PASS |
| GPRS1900 | 810 | 0 | 4 | 25.65 | 33 | PASS |
| EGPRS1900 | 512 | 2 | 1 | 25.86 | 33 | PASS |
| EGPRS1900 | 512 | 2 | 2 | 25.65 | 33 | PASS |
| EGPRS1900 | 512 | 2 | 3 | 23.51 | 33 | PASS |
| EGPRS1900 | 512 | 2 | 4 | 22.43 | 33 | PASS |
| EGPRS1900 | 661 | 2 | 1 | 25.96 | 33 | PASS |
| EGPRS1900 | 661 | 2 | 2 | 25.71 | 33 | PASS |
| EGPRS1900 | 661 | 2 | 3 | 23.58 | 33 | PASS |
| EGPRS1900 | 661 | 2 | 4 | 22.42 | 33 | PASS |
| EGPRS1900 | 810 | 2 | 1 | 26.05 | 33 | PASS |
| EGPRS1900 | 810 | 2 | 2 | 25.86 | 33 | PASS |
| EGPRS1900 | 810 | 2 | 3 | 23.56 | 33 | PASS |
| EGPRS1900 | 810 | 2 | 4 | 23.23 | 33 | PASS |

| Band | Channel | SubTest | Power(dBm) | Limit(dBm) | Verdict |
|---------------|---------|------------|------------|------------|---------|
| WCDMA Band II | 9262 | - | 23.57 | 33 | PASS |
| WCDMA Band II | 9400 | - | 23.75 | 33 | PASS |
| WCDMA Band II | 9538 | - | 23.57 | 33 | PASS |
| WCDMA Band II | 9262 | HSDPA_Sub0 | 22.57 | 33 | PASS |
| WCDMA Band II | 9262 | HSDPA_Sub1 | 22.17 | 33 | PASS |
| WCDMA Band II | 9262 | HSDPA_Sub2 | 22.13 | 33 | PASS |
| WCDMA Band II | 9262 | HSDPA_Sub3 | 22.09 | 33 | PASS |
| WCDMA Band II | 9400 | HSDPA_Sub0 | 22.80 | 33 | PASS |
| WCDMA Band II | 9400 | HSDPA_Sub1 | 22.43 | 33 | PASS |
| WCDMA Band II | 9400 | HSDPA_Sub2 | 22.42 | 33 | PASS |
| WCDMA Band II | 9400 | HSDPA_Sub3 | 22.41 | 33 | PASS |
| WCDMA Band II | 9538 | HSDPA_Sub0 | 22.39 | 33 | PASS |
| WCDMA Band II | 9538 | HSDPA_Sub1 | 21.91 | 33 | PASS |
| WCDMA Band II | 9538 | HSDPA_Sub2 | 22.00 | 33 | PASS |



| Band | Channel | SubTest | Power(dBm) | Limit(dBm) | Verdict |
|---------------|---------|------------|------------|------------|---------|
| WCDMA Band II | 9538 | HSDPA_Sub3 | 21.98 | 33 | PASS |
| WCDMA Band II | 9262 | HSUPA_Sub1 | 22.14 | 33 | PASS |
| WCDMA Band II | 9262 | HSUPA_Sub2 | 21.60 | 33 | PASS |
| WCDMA Band II | 9262 | HSUPA_Sub3 | 21.45 | 33 | PASS |
| WCDMA Band II | 9262 | HSUPA_Sub4 | 21.91 | 33 | PASS |
| WCDMA Band II | 9262 | HSUPA_Sub5 | 22.25 | 33 | PASS |
| WCDMA Band II | 9400 | HSUPA_Sub1 | 22.56 | 33 | PASS |
| WCDMA Band II | 9400 | HSUPA_Sub2 | 21.54 | 33 | PASS |
| WCDMA Band II | 9400 | HSUPA_Sub3 | 20.58 | 33 | PASS |
| WCDMA Band II | 9400 | HSUPA_Sub4 | 21.52 | 33 | PASS |
| WCDMA Band II | 9400 | HSUPA_Sub5 | 22.49 | 33 | PASS |
| WCDMA Band II | 9538 | HSUPA_Sub1 | 22.19 | 33 | PASS |
| WCDMA Band II | 9538 | HSUPA_Sub2 | 21.61 | 33 | PASS |
| WCDMA Band II | 9538 | HSUPA_Sub3 | 21.48 | 33 | PASS |
| WCDMA Band II | 9538 | HSUPA_Sub4 | 21.95 | 33 | PASS |
| WCDMA Band II | 9538 | HSUPA_Sub5 | 22.51 | 33 | PASS |

| Band | Bandwidth | Modulation | Channel | RB Configuration | Result(dBm) | Verdict |
|------------|-----------|------------|---------|------------------|-------------|---------|
| LTE Band 2 | 1.4MHz | QPSK | 18607 | 1RB#0 | 23.79 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 18607 | 1RB#0 | 23.00 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 18607 | 1RB#2 | 23.70 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 18607 | 1RB#2 | 22.67 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 18607 | 1RB#5 | 23.50 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 18607 | 1RB#5 | 22.52 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 18607 | 3RB#0 | 23.26 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 18607 | 3RB#0 | 21.93 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 18607 | 3RB#1 | 23.41 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 18607 | 3RB#1 | 22.10 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 18607 | 3RB#3 | 23.24 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 18607 | 3RB#3 | 22.13 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 18607 | 6RB#0 | 22.18 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 18607 | 6RB#0 | 21.43 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 18900 | 1RB#0 | 23.72 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 18900 | 1RB#0 | 22.38 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 18900 | 1RB#2 | 23.28 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 18900 | 1RB#2 | 22.36 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 18900 | 1RB#5 | 23.23 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 18900 | 1RB#5 | 22.59 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 18900 | 3RB#0 | 23.24 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 18900 | 3RB#0 | 22.18 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 18900 | 3RB#1 | 23.22 | PASS |



| | | | | | | |
|------------|--------|-------|-------|--------|-------|------|
| LTE Band 2 | 1.4MHz | 16QAM | 18900 | 3RB#1 | 22.28 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 18900 | 3RB#3 | 23.19 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 18900 | 3RB#3 | 22.20 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 18900 | 6RB#0 | 22.28 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 18900 | 6RB#0 | 21.29 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 19193 | 1RB#0 | 23.49 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 19193 | 1RB#0 | 22.43 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 19193 | 1RB#2 | 23.53 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 19193 | 1RB#2 | 22.72 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 19193 | 1RB#5 | 23.44 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 19193 | 1RB#5 | 22.45 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 19193 | 3RB#0 | 23.24 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 19193 | 3RB#0 | 22.14 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 19193 | 3RB#1 | 23.26 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 19193 | 3RB#1 | 22.23 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 19193 | 3RB#3 | 23.09 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 19193 | 3RB#3 | 22.08 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 19193 | 6RB#0 | 22.21 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 19193 | 6RB#0 | 21.23 | PASS |
| LTE Band 2 | 3MHz | QPSK | 18615 | 1RB#0 | 23.29 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 18615 | 1RB#0 | 22.21 | PASS |
| LTE Band 2 | 3MHz | QPSK | 18615 | 1RB#8 | 23.17 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 18615 | 1RB#8 | 22.16 | PASS |
| LTE Band 2 | 3MHz | QPSK | 18615 | 1RB#14 | 23.20 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 18615 | 1RB#14 | 22.04 | PASS |
| LTE Band 2 | 3MHz | QPSK | 18615 | 8RB#0 | 22.18 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 18615 | 8RB#0 | 21.31 | PASS |
| LTE Band 2 | 3MHz | QPSK | 18615 | 8RB#4 | 22.18 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 18615 | 8RB#4 | 21.29 | PASS |
| LTE Band 2 | 3MHz | QPSK | 18615 | 8RB#7 | 22.23 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 18615 | 8RB#7 | 21.35 | PASS |
| LTE Band 2 | 3MHz | QPSK | 18615 | 15RB#0 | 22.29 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 18615 | 15RB#0 | 21.39 | PASS |
| LTE Band 2 | 3MHz | QPSK | 18900 | 1RB#0 | 23.12 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 18900 | 1RB#0 | 22.20 | PASS |
| LTE Band 2 | 3MHz | QPSK | 18900 | 1RB#8 | 23.00 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 18900 | 1RB#8 | 22.19 | PASS |
| LTE Band 2 | 3MHz | QPSK | 18900 | 1RB#14 | 23.19 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 18900 | 1RB#14 | 22.12 | PASS |
| LTE Band 2 | 3MHz | QPSK | 18900 | 8RB#0 | 22.16 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 18900 | 8RB#0 | 21.12 | PASS |
| LTE Band 2 | 3MHz | QPSK | 18900 | 8RB#4 | 22.16 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 18900 | 8RB#4 | 21.17 | PASS |



| | | | | | | |
|------------|------|-------|-------|---------|-------|------|
| LTE Band 2 | 3MHz | QPSK | 18900 | 8RB#7 | 22.13 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 18900 | 8RB#7 | 21.35 | PASS |
| LTE Band 2 | 3MHz | QPSK | 18900 | 15RB#0 | 22.25 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 18900 | 15RB#0 | 21.24 | PASS |
| LTE Band 2 | 3MHz | QPSK | 19185 | 1RB#0 | 23.68 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 19185 | 1RB#0 | 22.32 | PASS |
| LTE Band 2 | 3MHz | QPSK | 19185 | 1RB#8 | 23.16 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 19185 | 1RB#8 | 22.24 | PASS |
| LTE Band 2 | 3MHz | QPSK | 19185 | 1RB#14 | 23.18 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 19185 | 1RB#14 | 22.26 | PASS |
| LTE Band 2 | 3MHz | QPSK | 19185 | 8RB#0 | 22.41 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 19185 | 8RB#0 | 21.28 | PASS |
| LTE Band 2 | 3MHz | QPSK | 19185 | 8RB#4 | 22.18 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 19185 | 8RB#4 | 21.29 | PASS |
| LTE Band 2 | 3MHz | QPSK | 19185 | 8RB#7 | 22.10 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 19185 | 8RB#7 | 21.18 | PASS |
| LTE Band 2 | 3MHz | QPSK | 19185 | 15RB#0 | 22.17 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 19185 | 15RB#0 | 21.15 | PASS |
| LTE Band 2 | 5MHz | QPSK | 18625 | 1RB#0 | 23.19 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 18625 | 1RB#0 | 22.35 | PASS |
| LTE Band 2 | 5MHz | QPSK | 18625 | 1RB#12 | 23.12 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 18625 | 1RB#12 | 21.97 | PASS |
| LTE Band 2 | 5MHz | QPSK | 18625 | 1RB#24 | 23.19 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 18625 | 1RB#24 | 21.93 | PASS |
| LTE Band 2 | 5MHz | QPSK | 18625 | 12RB#0 | 22.07 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 18625 | 12RB#0 | 21.17 | PASS |
| LTE Band 2 | 5MHz | QPSK | 18625 | 12RB#6 | 22.16 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 18625 | 12RB#6 | 21.14 | PASS |
| LTE Band 2 | 5MHz | QPSK | 18625 | 12RB#13 | 22.13 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 18625 | 12RB#13 | 21.11 | PASS |
| LTE Band 2 | 5MHz | QPSK | 18625 | 25RB#0 | 22.18 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 18625 | 25RB#0 | 21.37 | PASS |
| LTE Band 2 | 5MHz | QPSK | 18900 | 1RB#0 | 23.15 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 18900 | 1RB#0 | 22.27 | PASS |
| LTE Band 2 | 5MHz | QPSK | 18900 | 1RB#12 | 23.28 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 18900 | 1RB#12 | 22.45 | PASS |
| LTE Band 2 | 5MHz | QPSK | 18900 | 1RB#24 | 23.38 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 18900 | 1RB#24 | 22.14 | PASS |
| LTE Band 2 | 5MHz | QPSK | 18900 | 12RB#0 | 22.10 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 18900 | 12RB#0 | 21.17 | PASS |
| LTE Band 2 | 5MHz | QPSK | 18900 | 12RB#6 | 22.11 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 18900 | 12RB#6 | 21.28 | PASS |
| LTE Band 2 | 5MHz | QPSK | 18900 | 12RB#13 | 22.34 | PASS |



| | | | | | | |
|------------|-------|-------|-------|---------|-------|------|
| LTE Band 2 | 5MHz | 16QAM | 18900 | 12RB#13 | 21.28 | PASS |
| LTE Band 2 | 5MHz | QPSK | 18900 | 25RB#0 | 22.15 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 18900 | 25RB#0 | 21.12 | PASS |
| LTE Band 2 | 5MHz | QPSK | 19175 | 1RB#0 | 23.34 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 19175 | 1RB#0 | 22.11 | PASS |
| LTE Band 2 | 5MHz | QPSK | 19175 | 1RB#12 | 23.17 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 19175 | 1RB#12 | 22.32 | PASS |
| LTE Band 2 | 5MHz | QPSK | 19175 | 1RB#24 | 23.03 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 19175 | 1RB#24 | 22.43 | PASS |
| LTE Band 2 | 5MHz | QPSK | 19175 | 12RB#0 | 22.23 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 19175 | 12RB#0 | 21.23 | PASS |
| LTE Band 2 | 5MHz | QPSK | 19175 | 12RB#6 | 22.17 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 19175 | 12RB#6 | 21.22 | PASS |
| LTE Band 2 | 5MHz | QPSK | 19175 | 12RB#13 | 22.13 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 19175 | 12RB#13 | 21.30 | PASS |
| LTE Band 2 | 5MHz | QPSK | 19175 | 25RB#0 | 22.28 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 19175 | 25RB#0 | 21.35 | PASS |
| LTE Band 2 | 10MHz | QPSK | 18650 | 1RB#0 | 23.29 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 18650 | 1RB#0 | 22.71 | PASS |
| LTE Band 2 | 10MHz | QPSK | 18650 | 1RB#24 | 23.48 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 18650 | 1RB#24 | 22.71 | PASS |
| LTE Band 2 | 10MHz | QPSK | 18650 | 1RB#49 | 23.05 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 18650 | 1RB#49 | 22.04 | PASS |
| LTE Band 2 | 10MHz | QPSK | 18650 | 25RB#0 | 22.32 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 18650 | 25RB#0 | 21.26 | PASS |
| LTE Band 2 | 10MHz | QPSK | 18650 | 25RB#12 | 22.29 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 18650 | 25RB#12 | 21.23 | PASS |
| LTE Band 2 | 10MHz | QPSK | 18650 | 25RB#25 | 22.17 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 18650 | 25RB#25 | 21.22 | PASS |
| LTE Band 2 | 10MHz | QPSK | 18650 | 50RB#0 | 22.23 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 18650 | 50RB#0 | 22.25 | PASS |
| LTE Band 2 | 10MHz | QPSK | 18900 | 1RB#0 | 23.35 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 18900 | 1RB#0 | 22.38 | PASS |
| LTE Band 2 | 10MHz | QPSK | 18900 | 1RB#24 | 23.28 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 18900 | 1RB#24 | 22.15 | PASS |
| LTE Band 2 | 10MHz | QPSK | 18900 | 1RB#49 | 23.55 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 18900 | 1RB#49 | 22.29 | PASS |
| LTE Band 2 | 10MHz | QPSK | 18900 | 25RB#0 | 22.24 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 18900 | 25RB#0 | 21.33 | PASS |
| LTE Band 2 | 10MHz | QPSK | 18900 | 25RB#12 | 22.31 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 18900 | 25RB#12 | 21.62 | PASS |
| LTE Band 2 | 10MHz | QPSK | 18900 | 25RB#25 | 22.20 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 18900 | 25RB#25 | 21.20 | PASS |



| | | | | | | |
|------------|-------|-------|-------|---------|-------|------|
| LTE Band 2 | 10MHz | QPSK | 18900 | 50RB#0 | 22.12 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 18900 | 50RB#0 | 22.44 | PASS |
| LTE Band 2 | 10MHz | QPSK | 19150 | 1RB#0 | 23.51 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 19150 | 1RB#0 | 22.41 | PASS |
| LTE Band 2 | 10MHz | QPSK | 19150 | 1RB#24 | 23.57 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 19150 | 1RB#24 | 22.10 | PASS |
| LTE Band 2 | 10MHz | QPSK | 19150 | 1RB#49 | 23.00 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 19150 | 1RB#49 | 21.99 | PASS |
| LTE Band 2 | 10MHz | QPSK | 19150 | 25RB#0 | 22.33 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 19150 | 25RB#0 | 21.34 | PASS |
| LTE Band 2 | 10MHz | QPSK | 19150 | 25RB#12 | 22.32 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 19150 | 25RB#12 | 21.31 | PASS |
| LTE Band 2 | 10MHz | QPSK | 19150 | 25RB#25 | 22.33 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 19150 | 25RB#25 | 21.60 | PASS |
| LTE Band 2 | 10MHz | QPSK | 19150 | 50RB#0 | 22.18 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 19150 | 50RB#0 | 22.31 | PASS |
| LTE Band 2 | 15MHz | QPSK | 18675 | 1RB#0 | 23.45 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 18675 | 1RB#0 | 22.42 | PASS |
| LTE Band 2 | 15MHz | QPSK | 18675 | 1RB#38 | 23.40 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 18675 | 1RB#38 | 22.19 | PASS |
| LTE Band 2 | 15MHz | QPSK | 18675 | 1RB#74 | 23.12 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 18675 | 1RB#74 | 22.16 | PASS |
| LTE Band 2 | 15MHz | QPSK | 18675 | 38RB#0 | 22.29 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 18675 | 38RB#0 | 22.22 | PASS |
| LTE Band 2 | 15MHz | QPSK | 18675 | 38RB#18 | 22.20 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 18675 | 38RB#18 | 21.97 | PASS |
| LTE Band 2 | 15MHz | QPSK | 18675 | 38RB#37 | 22.06 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 18675 | 38RB#37 | 22.09 | PASS |
| LTE Band 2 | 15MHz | QPSK | 18675 | 75RB#0 | 22.10 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 18675 | 75RB#0 | 22.17 | PASS |
| LTE Band 2 | 15MHz | QPSK | 18900 | 1RB#0 | 23.32 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 18900 | 1RB#0 | 22.27 | PASS |
| LTE Band 2 | 15MHz | QPSK | 18900 | 1RB#38 | 23.23 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 18900 | 1RB#38 | 22.15 | PASS |
| LTE Band 2 | 15MHz | QPSK | 18900 | 1RB#74 | 23.04 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 18900 | 1RB#74 | 21.98 | PASS |
| LTE Band 2 | 15MHz | QPSK | 18900 | 38RB#0 | 21.82 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 18900 | 38RB#0 | 21.85 | PASS |
| LTE Band 2 | 15MHz | QPSK | 18900 | 38RB#18 | 22.06 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 18900 | 38RB#18 | 21.99 | PASS |
| LTE Band 2 | 15MHz | QPSK | 18900 | 38RB#37 | 21.82 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 18900 | 38RB#37 | 21.79 | PASS |
| LTE Band 2 | 15MHz | QPSK | 18900 | 75RB#0 | 22.11 | PASS |



| | | | | | | |
|------------|-------|-------|-------|---------|-------|------|
| LTE Band 2 | 15MHz | 16QAM | 18900 | 75RB#0 | 22.15 | PASS |
| LTE Band 2 | 15MHz | QPSK | 19125 | 1RB#0 | 23.11 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 19125 | 1RB#0 | 22.28 | PASS |
| LTE Band 2 | 15MHz | QPSK | 19125 | 1RB#38 | 23.17 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 19125 | 1RB#38 | 22.03 | PASS |
| LTE Band 2 | 15MHz | QPSK | 19125 | 1RB#74 | 22.93 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 19125 | 1RB#74 | 22.13 | PASS |
| LTE Band 2 | 15MHz | QPSK | 19125 | 38RB#0 | 21.99 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 19125 | 38RB#0 | 21.86 | PASS |
| LTE Band 2 | 15MHz | QPSK | 19125 | 38RB#18 | 21.96 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 19125 | 38RB#18 | 21.95 | PASS |
| LTE Band 2 | 15MHz | QPSK | 19125 | 38RB#37 | 21.43 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 19125 | 38RB#37 | 21.54 | PASS |
| LTE Band 2 | 15MHz | QPSK | 19125 | 75RB#0 | 22.08 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 19125 | 75RB#0 | 22.19 | PASS |
| LTE Band 2 | 20MHz | QPSK | 18700 | 1RB#0 | 23.07 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 18700 | 1RB#0 | 22.26 | PASS |
| LTE Band 2 | 20MHz | QPSK | 18700 | 1RB#49 | 23.53 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 18700 | 1RB#49 | 22.50 | PASS |
| LTE Band 2 | 20MHz | QPSK | 18700 | 1RB#99 | 23.14 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 18700 | 1RB#99 | 22.47 | PASS |
| LTE Band 2 | 20MHz | QPSK | 18700 | 50RB#0 | 22.15 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 18700 | 50RB#0 | 22.19 | PASS |
| LTE Band 2 | 20MHz | QPSK | 18700 | 50RB#25 | 22.14 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 18700 | 50RB#25 | 22.27 | PASS |
| LTE Band 2 | 20MHz | QPSK | 18700 | 50RB#50 | 22.08 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 18700 | 50RB#50 | 22.22 | PASS |
| LTE Band 2 | 20MHz | QPSK | 18700 | 100RB#0 | 22.33 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 18700 | 100RB#0 | 22.28 | PASS |
| LTE Band 2 | 20MHz | QPSK | 18900 | 1RB#0 | 23.22 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 18900 | 1RB#0 | 22.53 | PASS |
| LTE Band 2 | 20MHz | QPSK | 18900 | 1RB#49 | 23.55 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 18900 | 1RB#49 | 22.94 | PASS |
| LTE Band 2 | 20MHz | QPSK | 18900 | 1RB#99 | 23.48 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 18900 | 1RB#99 | 22.82 | PASS |
| LTE Band 2 | 20MHz | QPSK | 18900 | 50RB#0 | 22.23 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 18900 | 50RB#0 | 22.40 | PASS |
| LTE Band 2 | 20MHz | QPSK | 18900 | 50RB#25 | 22.35 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 18900 | 50RB#25 | 22.29 | PASS |
| LTE Band 2 | 20MHz | QPSK | 18900 | 50RB#50 | 22.37 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 18900 | 50RB#50 | 22.19 | PASS |
| LTE Band 2 | 20MHz | QPSK | 18900 | 100RB#0 | 22.21 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 18900 | 100RB#0 | 22.26 | PASS |



| | | | | | | |
|------------|-------|-------|-------|---------|-------|------|
| LTE Band 2 | 20MHz | QPSK | 19100 | 1RB#0 | 23.33 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 19100 | 1RB#0 | 22.70 | PASS |
| LTE Band 2 | 20MHz | QPSK | 19100 | 1RB#49 | 23.53 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 19100 | 1RB#49 | 22.94 | PASS |
| LTE Band 2 | 20MHz | QPSK | 19100 | 1RB#99 | 23.06 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 19100 | 1RB#99 | 22.45 | PASS |
| LTE Band 2 | 20MHz | QPSK | 19100 | 50RB#0 | 22.22 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 19100 | 50RB#0 | 22.24 | PASS |
| LTE Band 2 | 20MHz | QPSK | 19100 | 50RB#25 | 22.24 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 19100 | 50RB#25 | 22.23 | PASS |
| LTE Band 2 | 20MHz | QPSK | 19100 | 50RB#50 | 22.30 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 19100 | 50RB#50 | 22.22 | PASS |
| LTE Band 2 | 20MHz | QPSK | 19100 | 100RB#0 | 22.15 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 19100 | 100RB#0 | 22.26 | PASS |

5.2. Effective Isotropic Radiated Power

Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.5kPa |

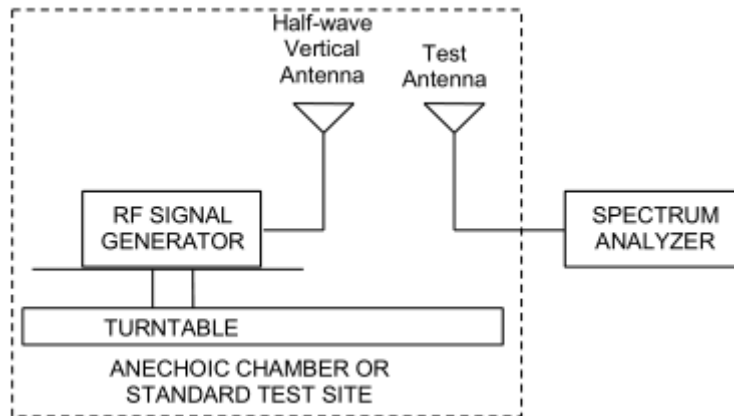
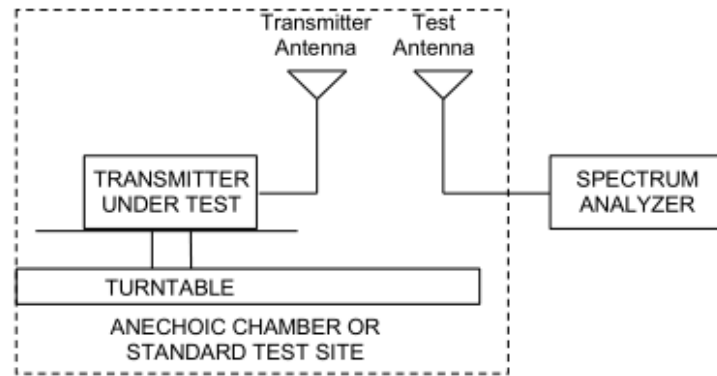
Methods of Measurement

The testing follows FCC KDB 971168 v03r01 Section 5.8 and ANSI C63.26 (2015).

- a) Connect the equipment as illustrated. Mount the equipment with the manufacturer specified antenna in a vertical orientation on a manufacturer specified mounting surface located on a non-conducting rotating platform of a RF anechoic chamber (preferred) or a standard radiation site.
- b) Key the transmitter, then rotate the EUT 360° azimuthally and record spectrum analyzer power level (LVL) measurements at angular increments that are sufficiently small to permit resolution of all peaks. If a standard radiation test site is used, raise and lower the test antenna to obtain a maximum reading at each angular increment. (Note: several batteries may be needed to offset the effect of battery voltage droop, which should not exceed 5% of the manufactured specified battery voltage during transmission).
- c) Replace the transmitter under test with a vertically polarized half-wave dipole (or an antenna whose gain is known relative to an ideal half-wave dipole). The center of the antenna should be at the same location as the center of the antenna under test.
- d) Connect the antenna to a signal generator with a known output power and record the path loss (in dB) as LOSS. If a standard radiation test site is used, raise and lower the test antenna to obtain a maximum reading. $LOSS = \text{Generator Output Power (dBm)} - \text{Analyzer reading (dBm)}$
- e) Determine the effective radiated output power at each angular position from the readings in steps b) and d) using the following equation: $ERP \text{ (dBm)} = \text{LVL (dBm)} + \text{LOSS (dB)}$
- f) The maximum ERP is the maximum value determined in the preceding step.
- g) When calculating ERP, in addition to knowing the antenna radiation and matching characteristics, it is necessary to know the loss values of all elements (e.g. transmission line attenuation, mismatches, filters, combiners) interposed between the point where transmitter output power is measured, and the point where power is applied to the antenna. ERP can then be calculated as follows:
 $EIRP \text{ (dBm)} = \text{Output Power (dBm)} - \text{Losses (dB)} + \text{Antenna Gain (dBi)}$
where: dBd refers to gain relative to an ideal dipole.
 $EIRP \text{ (dBm)} = ERP \text{ (dBm)} + 2.15 \text{ (dB.)}$

The RB allocation refers to section 5.1, using the maximum output power configuration.

Test setup



Limits

Rule Part 24.232(c) Mobile and portable stations are limited to 2 watts EIRP.

Rule Part 24.232(e) Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

| | |
|-------|----------------------------|
| Limit | $\leq 2\text{ W}$ (33 dBm) |
|-------|----------------------------|

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 1.19\text{ dB}$

Test Results:

The measurement is performed for both of horizontal and vertical antenna Polarization, and only the data of worst mode is recorded in this report.

| Band | Channel | PCL | Slot | EIRP | Limit (dBm) |
|-----------|---------|-----|------|-------|-------------|
| GPRS1900 | 512 | 0 | 1 | 31.49 | 33 |
| GPRS1900 | 512 | 0 | 2 | 30.36 | 33 |
| GPRS1900 | 512 | 0 | 3 | 28.33 | 33 |
| GPRS1900 | 512 | 0 | 4 | 27.25 | 33 |
| GPRS1900 | 661 | 0 | 1 | 31.42 | 33 |
| GPRS1900 | 661 | 0 | 2 | 30.36 | 33 |
| GPRS1900 | 661 | 0 | 3 | 28.37 | 33 |
| GPRS1900 | 661 | 0 | 4 | 27.28 | 33 |
| GPRS1900 | 810 | 0 | 1 | 31.27 | 33 |
| GPRS1900 | 810 | 0 | 2 | 30.25 | 33 |
| GPRS1900 | 810 | 0 | 3 | 28.32 | 33 |
| GPRS1900 | 810 | 0 | 4 | 27.25 | 33 |
| EGPRS1900 | 512 | 2 | 1 | 27.46 | 33 |
| EGPRS1900 | 512 | 2 | 2 | 27.25 | 33 |
| EGPRS1900 | 512 | 2 | 3 | 25.11 | 33 |
| EGPRS1900 | 512 | 2 | 4 | 24.03 | 33 |
| EGPRS1900 | 661 | 2 | 1 | 27.56 | 33 |
| EGPRS1900 | 661 | 2 | 2 | 27.31 | 33 |
| EGPRS1900 | 661 | 2 | 3 | 25.18 | 33 |
| EGPRS1900 | 661 | 2 | 4 | 24.02 | 33 |
| EGPRS1900 | 810 | 2 | 1 | 27.65 | 33 |
| EGPRS1900 | 810 | 2 | 2 | 27.46 | 33 |
| EGPRS1900 | 810 | 2 | 3 | 25.16 | 33 |
| EGPRS1900 | 810 | 2 | 4 | 24.83 | 33 |



| Band | Channel | SubTest | EIRP | Limit(dBm) |
|---------------|---------|------------|-------|------------|
| WCDMA Band II | 9262 | - | 25.17 | 33 |
| WCDMA Band II | 9400 | - | 25.35 | 33 |
| WCDMA Band II | 9538 | - | 25.17 | 33 |
| WCDMA Band II | 9262 | HSDPA_Sub0 | 24.17 | 33 |
| WCDMA Band II | 9262 | HSDPA_Sub1 | 23.77 | 33 |
| WCDMA Band II | 9262 | HSDPA_Sub2 | 23.73 | 33 |
| WCDMA Band II | 9262 | HSDPA_Sub3 | 23.69 | 33 |
| WCDMA Band II | 9400 | HSDPA_Sub0 | 24.40 | 33 |
| WCDMA Band II | 9400 | HSDPA_Sub1 | 24.03 | 33 |
| WCDMA Band II | 9400 | HSDPA_Sub2 | 24.02 | 33 |
| WCDMA Band II | 9400 | HSDPA_Sub3 | 24.01 | 33 |
| WCDMA Band II | 9538 | HSDPA_Sub0 | 23.99 | 33 |
| WCDMA Band II | 9538 | HSDPA_Sub1 | 23.51 | 33 |
| WCDMA Band II | 9538 | HSDPA_Sub2 | 23.60 | 33 |
| WCDMA Band II | 9538 | HSDPA_Sub3 | 23.58 | 33 |
| WCDMA Band II | 9262 | HSUPA_Sub1 | 23.74 | 33 |
| WCDMA Band II | 9262 | HSUPA_Sub2 | 23.20 | 33 |
| WCDMA Band II | 9262 | HSUPA_Sub3 | 23.05 | 33 |
| WCDMA Band II | 9262 | HSUPA_Sub4 | 23.51 | 33 |
| WCDMA Band II | 9262 | HSUPA_Sub5 | 23.85 | 33 |
| WCDMA Band II | 9400 | HSUPA_Sub1 | 24.16 | 33 |
| WCDMA Band II | 9400 | HSUPA_Sub2 | 23.14 | 33 |
| WCDMA Band II | 9400 | HSUPA_Sub3 | 22.18 | 33 |
| WCDMA Band II | 9400 | HSUPA_Sub4 | 23.12 | 33 |
| WCDMA Band II | 9400 | HSUPA_Sub5 | 24.09 | 33 |
| WCDMA Band II | 9538 | HSUPA_Sub1 | 23.79 | 33 |
| WCDMA Band II | 9538 | HSUPA_Sub2 | 23.21 | 33 |
| WCDMA Band II | 9538 | HSUPA_Sub3 | 23.08 | 33 |
| WCDMA Band II | 9538 | HSUPA_Sub4 | 23.55 | 33 |
| WCDMA Band II | 9538 | HSUPA_Sub5 | 24.11 | 33 |



| Band | Bandwidth | Modulation | Channel | RB Configuration | EIRP | Limit (dBm) |
|------------|-----------|------------|---------|------------------|-------|-------------|
| LTE Band 2 | 1.4MHz | QPSK | 18607 | 1RB#0 | 25.39 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 18607 | 1RB#0 | 24.60 | 33 |
| LTE Band 2 | 1.4MHz | QPSK | 18607 | 1RB#2 | 25.30 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 18607 | 1RB#2 | 24.27 | 33 |
| LTE Band 2 | 1.4MHz | QPSK | 18607 | 1RB#5 | 25.10 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 18607 | 1RB#5 | 24.12 | 33 |
| LTE Band 2 | 1.4MHz | QPSK | 18607 | 3RB#0 | 24.86 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 18607 | 3RB#0 | 23.53 | 33 |
| LTE Band 2 | 1.4MHz | QPSK | 18607 | 3RB#1 | 25.01 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 18607 | 3RB#1 | 23.70 | 33 |
| LTE Band 2 | 1.4MHz | QPSK | 18607 | 3RB#3 | 24.84 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 18607 | 3RB#3 | 23.73 | 33 |
| LTE Band 2 | 1.4MHz | QPSK | 18607 | 6RB#0 | 23.78 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 18607 | 6RB#0 | 23.03 | 33 |
| LTE Band 2 | 1.4MHz | QPSK | 18900 | 1RB#0 | 25.32 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 18900 | 1RB#0 | 23.98 | 33 |
| LTE Band 2 | 1.4MHz | QPSK | 18900 | 1RB#2 | 24.88 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 18900 | 1RB#2 | 23.96 | 33 |
| LTE Band 2 | 1.4MHz | QPSK | 18900 | 1RB#5 | 24.83 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 18900 | 1RB#5 | 24.19 | 33 |
| LTE Band 2 | 1.4MHz | QPSK | 18900 | 3RB#0 | 24.84 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 18900 | 3RB#0 | 23.78 | 33 |
| LTE Band 2 | 1.4MHz | QPSK | 18900 | 3RB#1 | 24.82 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 18900 | 3RB#1 | 23.88 | 33 |
| LTE Band 2 | 1.4MHz | QPSK | 18900 | 3RB#3 | 24.79 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 18900 | 3RB#3 | 23.80 | 33 |
| LTE Band 2 | 1.4MHz | QPSK | 18900 | 6RB#0 | 23.88 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 18900 | 6RB#0 | 22.89 | 33 |
| LTE Band 2 | 1.4MHz | QPSK | 19193 | 1RB#0 | 25.09 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 19193 | 1RB#0 | 24.03 | 33 |
| LTE Band 2 | 1.4MHz | QPSK | 19193 | 1RB#2 | 25.13 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 19193 | 1RB#2 | 24.32 | 33 |
| LTE Band 2 | 1.4MHz | QPSK | 19193 | 1RB#5 | 25.04 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 19193 | 1RB#5 | 24.05 | 33 |
| LTE Band 2 | 1.4MHz | QPSK | 19193 | 3RB#0 | 24.84 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 19193 | 3RB#0 | 23.74 | 33 |
| LTE Band 2 | 1.4MHz | QPSK | 19193 | 3RB#1 | 24.86 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 19193 | 3RB#1 | 23.83 | 33 |



| | | | | | | |
|------------|--------|-------|-------|--------|-------|----|
| LTE Band 2 | 1.4MHz | QPSK | 19193 | 3RB#3 | 24.69 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 19193 | 3RB#3 | 23.68 | 33 |
| LTE Band 2 | 1.4MHz | QPSK | 19193 | 6RB#0 | 23.81 | 33 |
| LTE Band 2 | 1.4MHz | 16QAM | 19193 | 6RB#0 | 22.83 | 33 |
| LTE Band 2 | 3MHz | QPSK | 18615 | 1RB#0 | 24.89 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 18615 | 1RB#0 | 23.81 | 33 |
| LTE Band 2 | 3MHz | QPSK | 18615 | 1RB#8 | 24.77 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 18615 | 1RB#8 | 23.76 | 33 |
| LTE Band 2 | 3MHz | QPSK | 18615 | 1RB#14 | 24.80 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 18615 | 1RB#14 | 23.64 | 33 |
| LTE Band 2 | 3MHz | QPSK | 18615 | 8RB#0 | 23.78 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 18615 | 8RB#0 | 22.91 | 33 |
| LTE Band 2 | 3MHz | QPSK | 18615 | 8RB#4 | 23.78 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 18615 | 8RB#4 | 22.89 | 33 |
| LTE Band 2 | 3MHz | QPSK | 18615 | 8RB#7 | 23.83 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 18615 | 8RB#7 | 22.95 | 33 |
| LTE Band 2 | 3MHz | QPSK | 18615 | 15RB#0 | 23.89 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 18615 | 15RB#0 | 22.99 | 33 |
| LTE Band 2 | 3MHz | QPSK | 18900 | 1RB#0 | 24.72 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 18900 | 1RB#0 | 23.80 | 33 |
| LTE Band 2 | 3MHz | QPSK | 18900 | 1RB#8 | 24.60 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 18900 | 1RB#8 | 23.79 | 33 |
| LTE Band 2 | 3MHz | QPSK | 18900 | 1RB#14 | 24.79 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 18900 | 1RB#14 | 23.72 | 33 |
| LTE Band 2 | 3MHz | QPSK | 18900 | 8RB#0 | 23.76 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 18900 | 8RB#0 | 22.72 | 33 |
| LTE Band 2 | 3MHz | QPSK | 18900 | 8RB#4 | 23.76 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 18900 | 8RB#4 | 22.77 | 33 |
| LTE Band 2 | 3MHz | QPSK | 18900 | 8RB#7 | 23.73 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 18900 | 8RB#7 | 22.95 | 33 |
| LTE Band 2 | 3MHz | QPSK | 18900 | 15RB#0 | 23.85 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 18900 | 15RB#0 | 22.84 | 33 |
| LTE Band 2 | 3MHz | QPSK | 19185 | 1RB#0 | 25.28 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 19185 | 1RB#0 | 23.92 | 33 |
| LTE Band 2 | 3MHz | QPSK | 19185 | 1RB#8 | 24.76 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 19185 | 1RB#8 | 23.84 | 33 |
| LTE Band 2 | 3MHz | QPSK | 19185 | 1RB#14 | 24.78 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 19185 | 1RB#14 | 23.86 | 33 |
| LTE Band 2 | 3MHz | QPSK | 19185 | 8RB#0 | 24.01 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 19185 | 8RB#0 | 22.88 | 33 |
| LTE Band 2 | 3MHz | QPSK | 19185 | 8RB#4 | 23.78 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 19185 | 8RB#4 | 22.89 | 33 |



| | | | | | | |
|------------|------|-------|-------|---------|-------|----|
| LTE Band 2 | 3MHz | QPSK | 19185 | 8RB#7 | 23.70 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 19185 | 8RB#7 | 22.78 | 33 |
| LTE Band 2 | 3MHz | QPSK | 19185 | 15RB#0 | 23.77 | 33 |
| LTE Band 2 | 3MHz | 16QAM | 19185 | 15RB#0 | 22.75 | 33 |
| LTE Band 2 | 5MHz | QPSK | 18625 | 1RB#0 | 24.79 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 18625 | 1RB#0 | 23.95 | 33 |
| LTE Band 2 | 5MHz | QPSK | 18625 | 1RB#12 | 24.72 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 18625 | 1RB#12 | 23.57 | 33 |
| LTE Band 2 | 5MHz | QPSK | 18625 | 1RB#24 | 24.79 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 18625 | 1RB#24 | 23.53 | 33 |
| LTE Band 2 | 5MHz | QPSK | 18625 | 12RB#0 | 23.67 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 18625 | 12RB#0 | 22.77 | 33 |
| LTE Band 2 | 5MHz | QPSK | 18625 | 12RB#6 | 23.76 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 18625 | 12RB#6 | 22.74 | 33 |
| LTE Band 2 | 5MHz | QPSK | 18625 | 12RB#13 | 23.73 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 18625 | 12RB#13 | 22.71 | 33 |
| LTE Band 2 | 5MHz | QPSK | 18625 | 25RB#0 | 23.78 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 18625 | 25RB#0 | 22.97 | 33 |
| LTE Band 2 | 5MHz | QPSK | 18900 | 1RB#0 | 24.75 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 18900 | 1RB#0 | 23.87 | 33 |
| LTE Band 2 | 5MHz | QPSK | 18900 | 1RB#12 | 24.88 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 18900 | 1RB#12 | 24.05 | 33 |
| LTE Band 2 | 5MHz | QPSK | 18900 | 1RB#24 | 24.98 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 18900 | 1RB#24 | 23.74 | 33 |
| LTE Band 2 | 5MHz | QPSK | 18900 | 12RB#0 | 23.70 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 18900 | 12RB#0 | 22.77 | 33 |
| LTE Band 2 | 5MHz | QPSK | 18900 | 12RB#6 | 23.71 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 18900 | 12RB#6 | 22.88 | 33 |
| LTE Band 2 | 5MHz | QPSK | 18900 | 12RB#13 | 23.94 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 18900 | 12RB#13 | 22.88 | 33 |
| LTE Band 2 | 5MHz | QPSK | 18900 | 25RB#0 | 23.75 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 18900 | 25RB#0 | 22.72 | 33 |
| LTE Band 2 | 5MHz | QPSK | 19175 | 1RB#0 | 24.94 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 19175 | 1RB#0 | 23.71 | 33 |
| LTE Band 2 | 5MHz | QPSK | 19175 | 1RB#12 | 24.77 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 19175 | 1RB#12 | 23.92 | 33 |
| LTE Band 2 | 5MHz | QPSK | 19175 | 1RB#24 | 24.63 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 19175 | 1RB#24 | 24.03 | 33 |
| LTE Band 2 | 5MHz | QPSK | 19175 | 12RB#0 | 23.83 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 19175 | 12RB#0 | 22.83 | 33 |
| LTE Band 2 | 5MHz | QPSK | 19175 | 12RB#6 | 23.77 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 19175 | 12RB#6 | 22.82 | 33 |



| | | | | | | |
|------------|-------|-------|-------|---------|-------|----|
| LTE Band 2 | 5MHz | QPSK | 19175 | 12RB#13 | 23.73 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 19175 | 12RB#13 | 22.90 | 33 |
| LTE Band 2 | 5MHz | QPSK | 19175 | 25RB#0 | 23.88 | 33 |
| LTE Band 2 | 5MHz | 16QAM | 19175 | 25RB#0 | 22.95 | 33 |
| LTE Band 2 | 10MHz | QPSK | 18650 | 1RB#0 | 24.89 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 18650 | 1RB#0 | 24.31 | 33 |
| LTE Band 2 | 10MHz | QPSK | 18650 | 1RB#24 | 25.08 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 18650 | 1RB#24 | 24.31 | 33 |
| LTE Band 2 | 10MHz | QPSK | 18650 | 1RB#49 | 24.65 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 18650 | 1RB#49 | 23.64 | 33 |
| LTE Band 2 | 10MHz | QPSK | 18650 | 25RB#0 | 23.92 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 18650 | 25RB#0 | 22.86 | 33 |
| LTE Band 2 | 10MHz | QPSK | 18650 | 25RB#12 | 23.89 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 18650 | 25RB#12 | 22.83 | 33 |
| LTE Band 2 | 10MHz | QPSK | 18650 | 25RB#25 | 23.77 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 18650 | 25RB#25 | 22.82 | 33 |
| LTE Band 2 | 10MHz | QPSK | 18650 | 50RB#0 | 23.83 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 18650 | 50RB#0 | 23.85 | 33 |
| LTE Band 2 | 10MHz | QPSK | 18900 | 1RB#0 | 24.95 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 18900 | 1RB#0 | 23.98 | 33 |
| LTE Band 2 | 10MHz | QPSK | 18900 | 1RB#24 | 24.88 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 18900 | 1RB#24 | 23.75 | 33 |
| LTE Band 2 | 10MHz | QPSK | 18900 | 1RB#49 | 25.15 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 18900 | 1RB#49 | 23.89 | 33 |
| LTE Band 2 | 10MHz | QPSK | 18900 | 25RB#0 | 23.84 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 18900 | 25RB#0 | 22.93 | 33 |
| LTE Band 2 | 10MHz | QPSK | 18900 | 25RB#12 | 23.91 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 18900 | 25RB#12 | 23.22 | 33 |
| LTE Band 2 | 10MHz | QPSK | 18900 | 25RB#25 | 23.80 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 18900 | 25RB#25 | 22.80 | 33 |
| LTE Band 2 | 10MHz | QPSK | 18900 | 50RB#0 | 23.72 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 18900 | 50RB#0 | 24.04 | 33 |
| LTE Band 2 | 10MHz | QPSK | 19150 | 1RB#0 | 25.11 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 19150 | 1RB#0 | 24.01 | 33 |
| LTE Band 2 | 10MHz | QPSK | 19150 | 1RB#24 | 25.17 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 19150 | 1RB#24 | 23.70 | 33 |
| LTE Band 2 | 10MHz | QPSK | 19150 | 1RB#49 | 24.60 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 19150 | 1RB#49 | 23.59 | 33 |
| LTE Band 2 | 10MHz | QPSK | 19150 | 25RB#0 | 23.93 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 19150 | 25RB#0 | 22.94 | 33 |
| LTE Band 2 | 10MHz | QPSK | 19150 | 25RB#12 | 23.92 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 19150 | 25RB#12 | 22.91 | 33 |



| | | | | | | |
|------------|-------|-------|-------|---------|-------|----|
| LTE Band 2 | 10MHz | QPSK | 19150 | 25RB#25 | 23.93 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 19150 | 25RB#25 | 23.20 | 33 |
| LTE Band 2 | 10MHz | QPSK | 19150 | 50RB#0 | 23.78 | 33 |
| LTE Band 2 | 10MHz | 16QAM | 19150 | 50RB#0 | 23.91 | 33 |
| LTE Band 2 | 15MHz | QPSK | 18675 | 1RB#0 | 25.05 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 18675 | 1RB#0 | 24.02 | 33 |
| LTE Band 2 | 15MHz | QPSK | 18675 | 1RB#38 | 25.00 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 18675 | 1RB#38 | 23.79 | 33 |
| LTE Band 2 | 15MHz | QPSK | 18675 | 1RB#74 | 24.72 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 18675 | 1RB#74 | 23.76 | 33 |
| LTE Band 2 | 15MHz | QPSK | 18675 | 38RB#0 | 23.89 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 18675 | 38RB#0 | 23.82 | 33 |
| LTE Band 2 | 15MHz | QPSK | 18675 | 38RB#18 | 23.80 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 18675 | 38RB#18 | 23.57 | 33 |
| LTE Band 2 | 15MHz | QPSK | 18675 | 38RB#37 | 23.66 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 18675 | 38RB#37 | 23.69 | 33 |
| LTE Band 2 | 15MHz | QPSK | 18675 | 75RB#0 | 23.70 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 18675 | 75RB#0 | 23.77 | 33 |
| LTE Band 2 | 15MHz | QPSK | 18900 | 1RB#0 | 24.92 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 18900 | 1RB#0 | 23.87 | 33 |
| LTE Band 2 | 15MHz | QPSK | 18900 | 1RB#38 | 24.83 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 18900 | 1RB#38 | 23.75 | 33 |
| LTE Band 2 | 15MHz | QPSK | 18900 | 1RB#74 | 24.64 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 18900 | 1RB#74 | 23.58 | 33 |
| LTE Band 2 | 15MHz | QPSK | 18900 | 38RB#0 | 23.42 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 18900 | 38RB#0 | 23.45 | 33 |
| LTE Band 2 | 15MHz | QPSK | 18900 | 38RB#18 | 23.66 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 18900 | 38RB#18 | 23.59 | 33 |
| LTE Band 2 | 15MHz | QPSK | 18900 | 38RB#37 | 23.42 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 18900 | 38RB#37 | 23.39 | 33 |
| LTE Band 2 | 15MHz | QPSK | 18900 | 75RB#0 | 23.71 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 18900 | 75RB#0 | 23.75 | 33 |
| LTE Band 2 | 15MHz | QPSK | 19125 | 1RB#0 | 24.71 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 19125 | 1RB#0 | 23.88 | 33 |
| LTE Band 2 | 15MHz | QPSK | 19125 | 1RB#38 | 24.77 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 19125 | 1RB#38 | 23.63 | 33 |
| LTE Band 2 | 15MHz | QPSK | 19125 | 1RB#74 | 24.53 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 19125 | 1RB#74 | 23.73 | 33 |
| LTE Band 2 | 15MHz | QPSK | 19125 | 38RB#0 | 23.59 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 19125 | 38RB#0 | 23.46 | 33 |
| LTE Band 2 | 15MHz | QPSK | 19125 | 38RB#18 | 23.56 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 19125 | 38RB#18 | 23.55 | 33 |



| | | | | | | |
|------------|-------|-------|-------|---------|-------|----|
| LTE Band 2 | 15MHz | QPSK | 19125 | 38RB#37 | 23.03 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 19125 | 38RB#37 | 23.14 | 33 |
| LTE Band 2 | 15MHz | QPSK | 19125 | 75RB#0 | 23.68 | 33 |
| LTE Band 2 | 15MHz | 16QAM | 19125 | 75RB#0 | 23.79 | 33 |
| LTE Band 2 | 20MHz | QPSK | 18700 | 1RB#0 | 24.67 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 18700 | 1RB#0 | 23.86 | 33 |
| LTE Band 2 | 20MHz | QPSK | 18700 | 1RB#49 | 25.13 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 18700 | 1RB#49 | 24.10 | 33 |
| LTE Band 2 | 20MHz | QPSK | 18700 | 1RB#99 | 24.74 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 18700 | 1RB#99 | 24.07 | 33 |
| LTE Band 2 | 20MHz | QPSK | 18700 | 50RB#0 | 23.75 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 18700 | 50RB#0 | 23.79 | 33 |
| LTE Band 2 | 20MHz | QPSK | 18700 | 50RB#25 | 23.74 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 18700 | 50RB#25 | 23.87 | 33 |
| LTE Band 2 | 20MHz | QPSK | 18700 | 50RB#50 | 23.68 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 18700 | 50RB#50 | 23.82 | 33 |
| LTE Band 2 | 20MHz | QPSK | 18700 | 100RB#0 | 23.93 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 18700 | 100RB#0 | 23.88 | 33 |
| LTE Band 2 | 20MHz | QPSK | 18900 | 1RB#0 | 24.82 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 18900 | 1RB#0 | 24.13 | 33 |
| LTE Band 2 | 20MHz | QPSK | 18900 | 1RB#49 | 25.15 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 18900 | 1RB#49 | 24.54 | 33 |
| LTE Band 2 | 20MHz | QPSK | 18900 | 1RB#99 | 25.08 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 18900 | 1RB#99 | 24.42 | 33 |
| LTE Band 2 | 20MHz | QPSK | 18900 | 50RB#0 | 23.83 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 18900 | 50RB#0 | 24.00 | 33 |
| LTE Band 2 | 20MHz | QPSK | 18900 | 50RB#25 | 23.95 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 18900 | 50RB#25 | 23.89 | 33 |
| LTE Band 2 | 20MHz | QPSK | 18900 | 50RB#50 | 23.97 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 18900 | 50RB#50 | 23.79 | 33 |
| LTE Band 2 | 20MHz | QPSK | 18900 | 100RB#0 | 23.81 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 18900 | 100RB#0 | 23.86 | 33 |
| LTE Band 2 | 20MHz | QPSK | 19100 | 1RB#0 | 24.93 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 19100 | 1RB#0 | 24.30 | 33 |
| LTE Band 2 | 20MHz | QPSK | 19100 | 1RB#49 | 25.13 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 19100 | 1RB#49 | 24.54 | 33 |
| LTE Band 2 | 20MHz | QPSK | 19100 | 1RB#99 | 24.66 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 19100 | 1RB#99 | 24.05 | 33 |
| LTE Band 2 | 20MHz | QPSK | 19100 | 50RB#0 | 23.82 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 19100 | 50RB#0 | 23.84 | 33 |
| LTE Band 2 | 20MHz | QPSK | 19100 | 50RB#25 | 23.84 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 19100 | 50RB#25 | 23.83 | 33 |



| | | | | | | |
|------------|-------|-------|-------|---------|-------|----|
| LTE Band 2 | 20MHz | QPSK | 19100 | 50RB#50 | 23.90 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 19100 | 50RB#50 | 23.82 | 33 |
| LTE Band 2 | 20MHz | QPSK | 19100 | 100RB#0 | 23.75 | 33 |
| LTE Band 2 | 20MHz | 16QAM | 19100 | 100RB#0 | 23.86 | 33 |

5.3.Occupied Bandwidth

Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.5kPa |

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The occupied bandwidth is measured using spectrum analyzer.

RBW is set to 5.1kHz, VBW is set to 51kHz for GSM 1900,

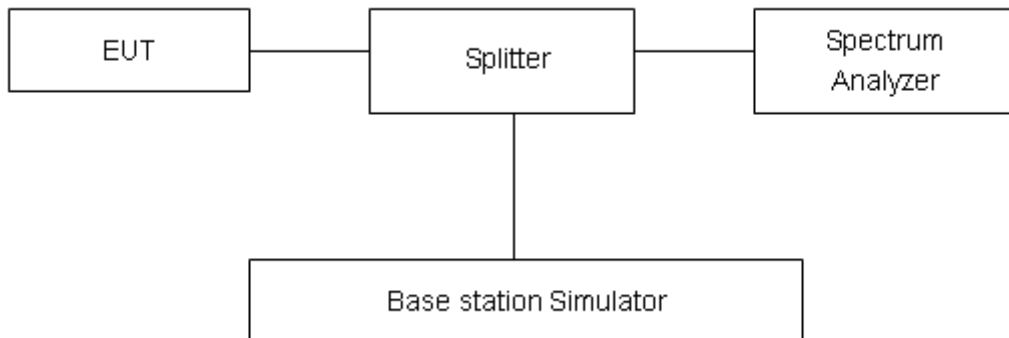
RBW is set to 100kHz, VBW is set to 300kHz for WCDMA Band II,

RBW is set to 51kHz, VBW is set to 51kHz for LTE Band 2(1.4MHz/3MHz/5MHz),

RBW is set to 51kHz,VBW is set to 51KHz for LTE Band 2(10MHz/15MHz/20MHz).

99% power and -26dBc occupied bandwidths are recorded. Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

No specific occupied bandwidth requirements in part 2.1049.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 624\text{Hz}$.

**Test Result**

| Band | Channel | Occupied Bandwidth (kHz) | 26dB Bandwidth (kHz) | Limit(kHz) | Verdict |
|---------------|---------|--------------------------|----------------------|------------|---------|
| GPRS1900 | 512 | 242.09 | 318.0 | --- | PASS |
| GPRS1900 | 661 | 242.23 | 315.3 | --- | PASS |
| GPRS1900 | 810 | 246.64 | 314.6 | --- | PASS |
| EGPRS1900 | 512 | 248.27 | 307.3 | --- | PASS |
| EGPRS1900 | 661 | 248.42 | 305.1 | --- | PASS |
| EGPRS1900 | 810 | 243.28 | 309.2 | --- | PASS |
| Band | Channel | Occupied Bandwidth (kHz) | 26dB Bandwidth (kHz) | Limit(kHz) | Verdict |
| WCDMA Band II | 9262 | 4123.8 | 4712 | --- | PASS |
| WCDMA Band II | 9400 | 4134.7 | 4701 | --- | PASS |
| WCDMA Band II | 9538 | 4127.8 | 4698 | --- | PASS |

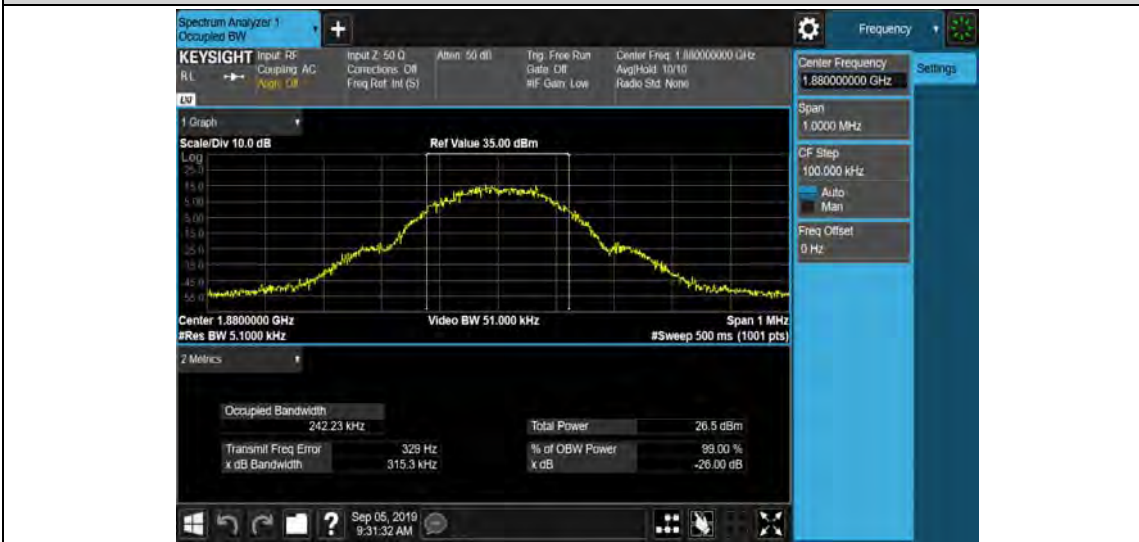
| Band | Bandwidth | Modulation | Channel | RB Configuration | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|------------|-----------|------------|---------|------------------|--------------------------|----------------------|---------|
| LTE Band 2 | 1.4MHz | QPSK | 18607 | 6RB#0 | 1.1108 | 1.279 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 18607 | 6RB#0 | 1.1104 | 1.305 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 18900 | 6RB#0 | 1.1093 | 1.273 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 18900 | 6RB#0 | 1.1119 | 1.296 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 19193 | 6RB#0 | 1.1175 | 1.285 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 19193 | 6RB#0 | 1.1101 | 1.295 | PASS |
| LTE Band 2 | 3MHz | QPSK | 18615 | 15RB#0 | 2.6964 | 2.912 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 18615 | 15RB#0 | 2.6971 | 2.914 | PASS |
| LTE Band 2 | 3MHz | QPSK | 18900 | 15RB#0 | 2.6998 | 2.927 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 18900 | 15RB#0 | 2.6918 | 2.921 | PASS |
| LTE Band 2 | 3MHz | QPSK | 19185 | 15RB#0 | 2.6948 | 2.932 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 19185 | 15RB#0 | 2.6920 | 2.926 | PASS |
| LTE Band 2 | 5MHz | QPSK | 18625 | 25RB#0 | 4.4718 | 4.823 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 18625 | 25RB#0 | 4.4726 | 4.868 | PASS |
| LTE Band 2 | 5MHz | QPSK | 18900 | 25RB#0 | 4.4828 | 4.813 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 18900 | 25RB#0 | 4.4802 | 4.858 | PASS |
| LTE Band 2 | 5MHz | QPSK | 19175 | 25RB#0 | 4.4746 | 4.831 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 19175 | 25RB#0 | 4.4745 | 4.834 | PASS |
| LTE Band 2 | 10MHz | QPSK | 18650 | 50RB#0 | 8.9140 | 9.366 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 18650 | 50RB#0 | 8.9256 | 9.351 | PASS |
| LTE Band 2 | 10MHz | QPSK | 18900 | 50RB#0 | 8.8862 | 9.279 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 18900 | 50RB#0 | 8.9078 | 9.316 | PASS |



| | | | | | | | |
|------------|-------|-------|-------|---------|--------|--------|------|
| LTE Band 2 | 10MHz | QPSK | 19150 | 50RB#0 | 8.9056 | 9.315 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 19150 | 50RB#0 | 8.9026 | 9.290 | PASS |
| LTE Band 2 | 15MHz | QPSK | 18675 | 75RB#0 | 13.354 | 13.880 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 18675 | 75RB#0 | 13.340 | 13.890 | PASS |
| LTE Band 2 | 15MHz | QPSK | 18900 | 75RB#0 | 13.346 | 13.880 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 18900 | 75RB#0 | 13.354 | 13.860 | PASS |
| LTE Band 2 | 15MHz | QPSK | 19125 | 75RB#0 | 13.330 | 13.880 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 19125 | 75RB#0 | 13.355 | 13.940 | PASS |
| LTE Band 2 | 20MHz | QPSK | 18700 | 100RB#0 | 17.814 | 18.350 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 18700 | 100RB#0 | 17.809 | 18.360 | PASS |
| LTE Band 2 | 20MHz | QPSK | 18900 | 100RB#0 | 17.780 | 18.370 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 18900 | 100RB#0 | 17.806 | 18.320 | PASS |
| LTE Band 2 | 20MHz | QPSK | 19100 | 100RB#0 | 17.771 | 18.480 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 19100 | 100RB#0 | 17.782 | 18.360 | PASS |



GPRS1900-512



GPRS1900-661



GPRS1900-810



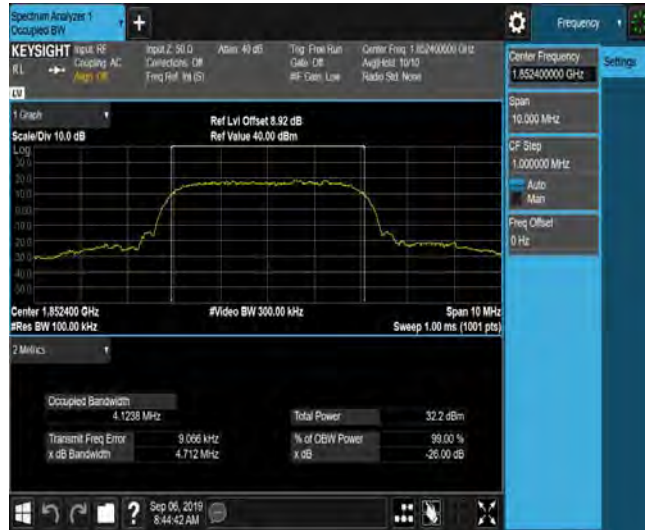
EGPRS1900-512



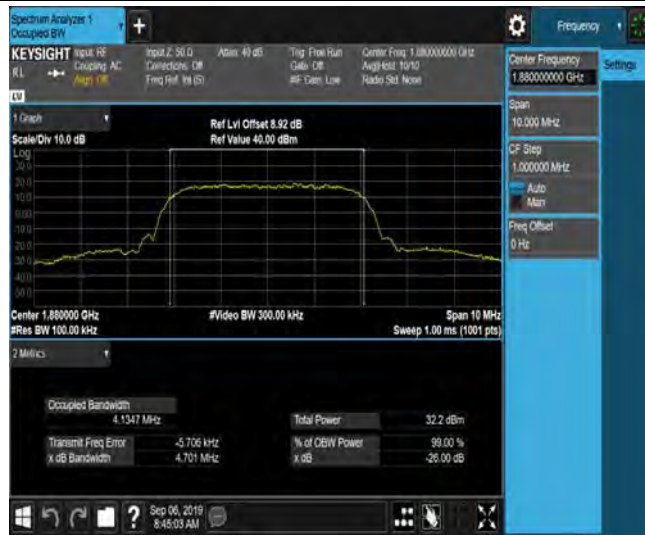
EGPRS1900-661



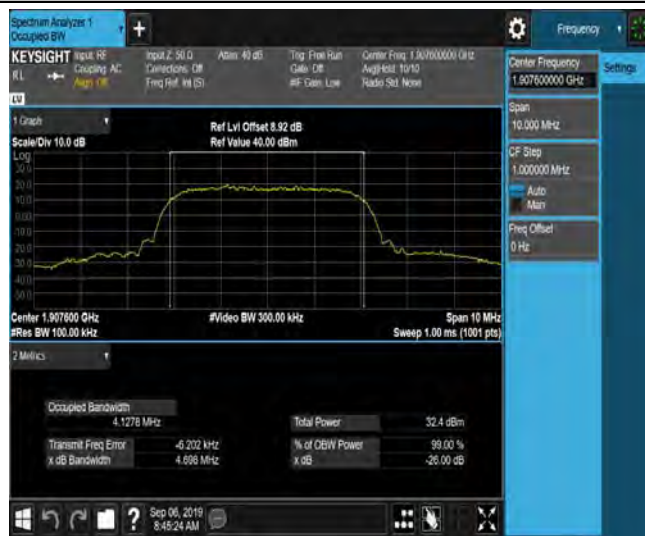
EGPRS1900-810



WCDMA Band II_9262

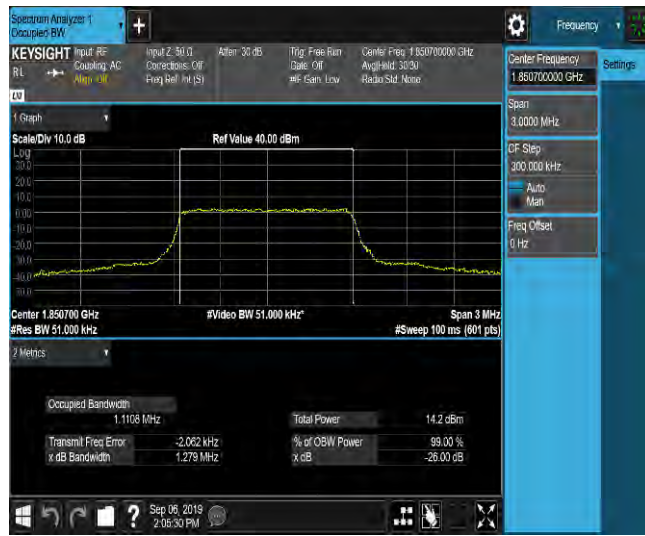


WCDMA Band II_9400

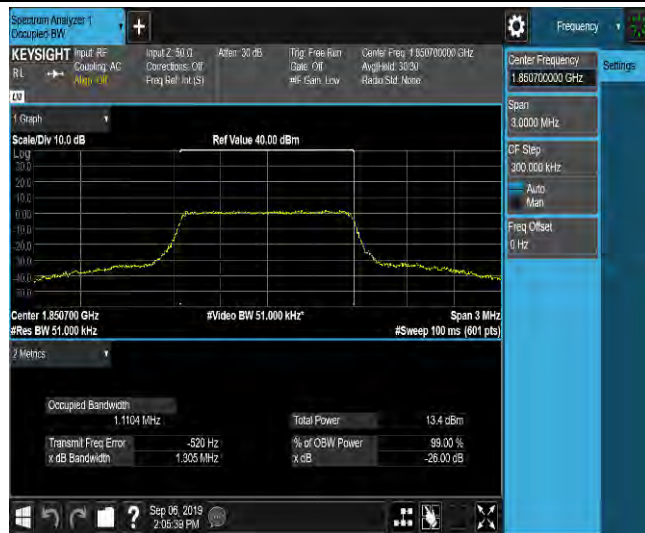


WCDMA Band II_9538

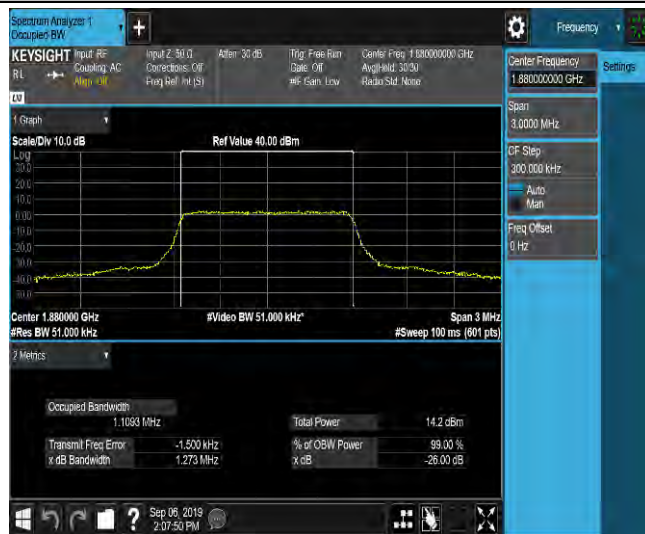
LTE Band 2_1.4MHz_QPSK_18607_6RB#0_1.1108_1.279_PASS



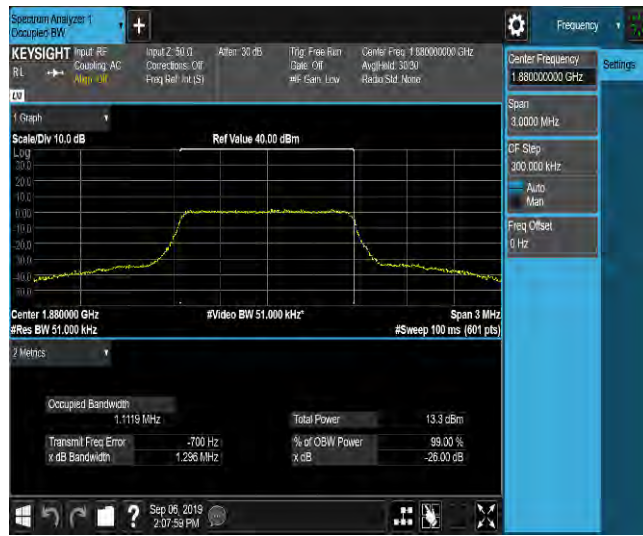
LTE Band 2_1.4MHz_16QAM_18607_6RB#0_1.1104_1.305_PASS



LTE Band 2_1.4MHz_QPSK_18900_6RB#0_1.1093_1.273_PASS



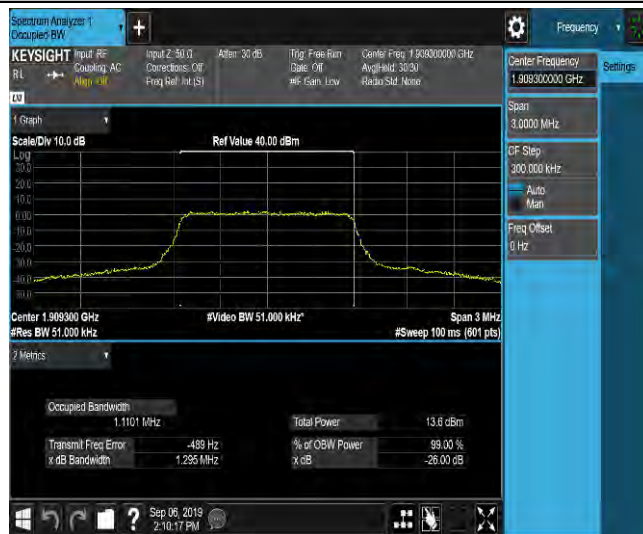
LTE Band 2_1.4MHz_16QAM_18900_6RB#0_1.1119_1.296_PASS



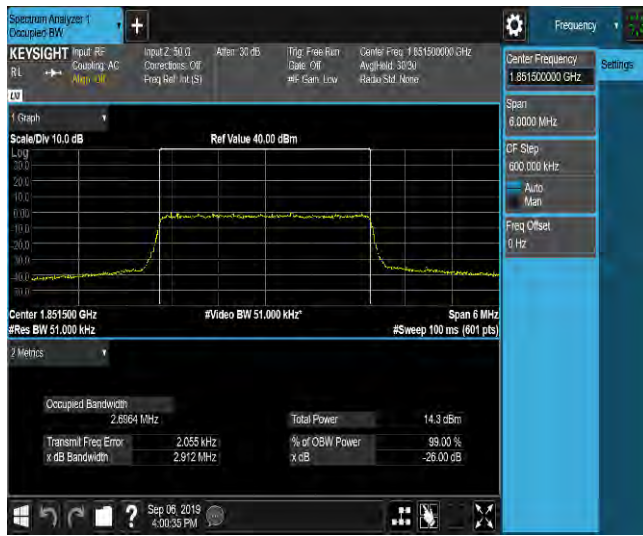
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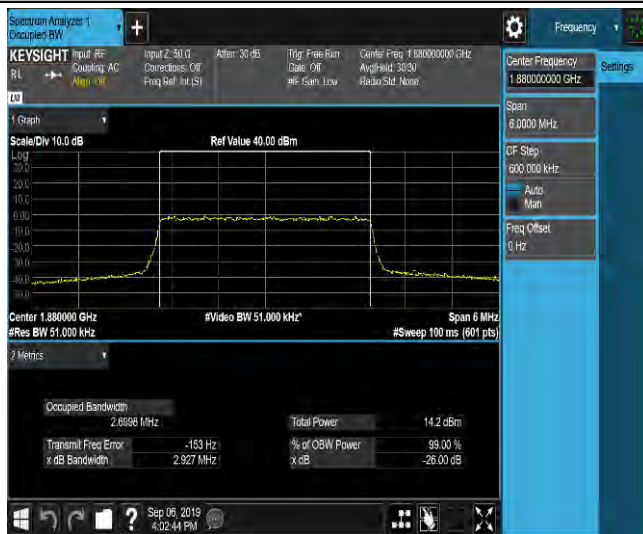
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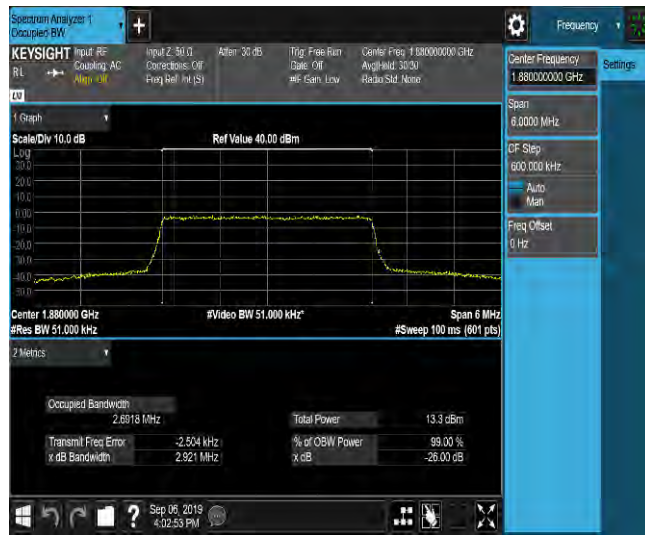
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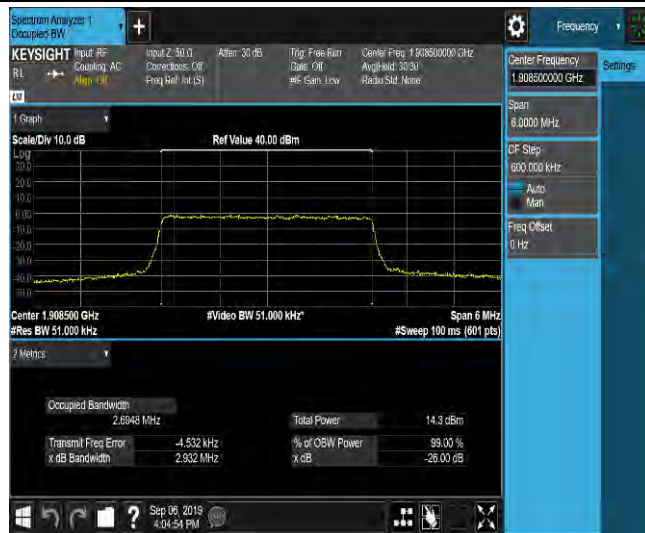
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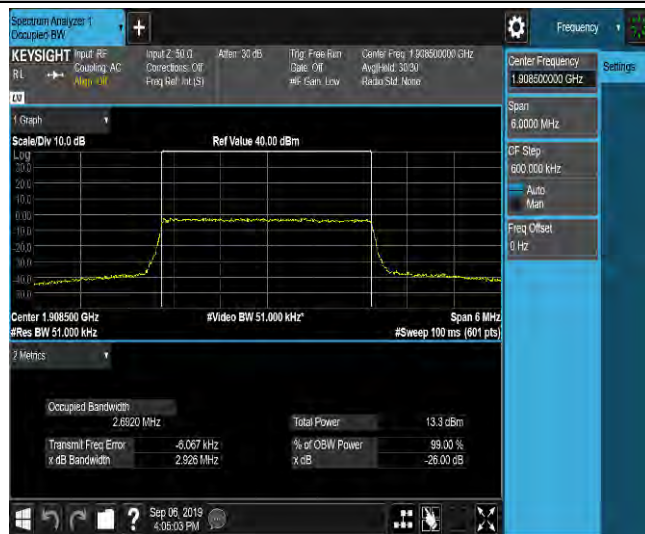
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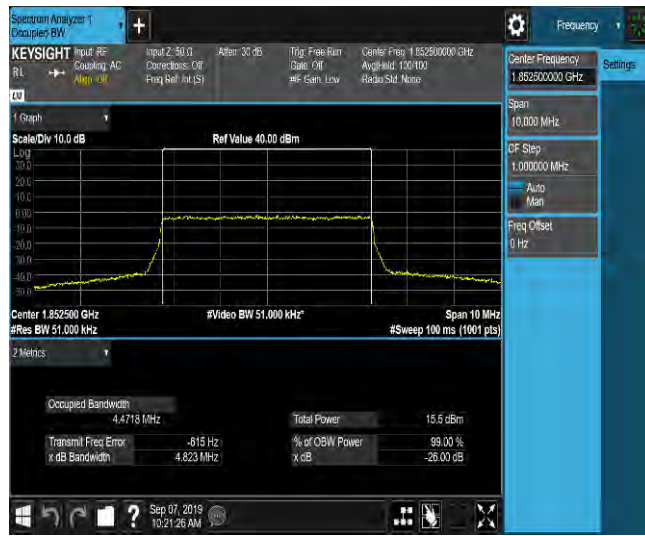
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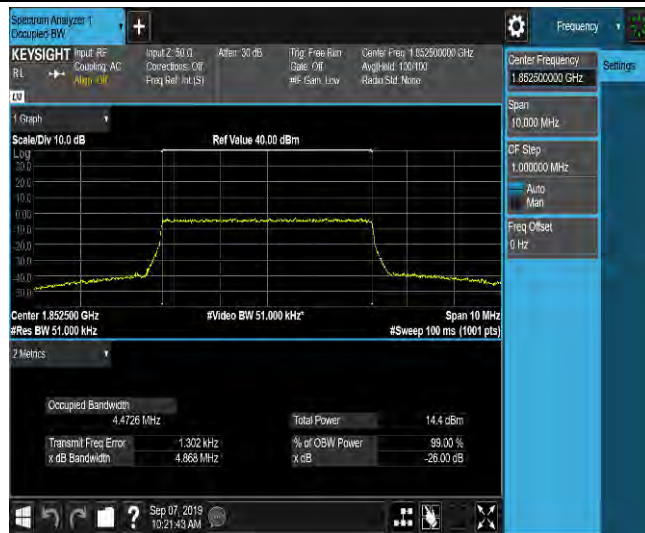
LTE Band 2_3MHz_16QAM_19185_15RB#0_2.6920_2.926_PASS



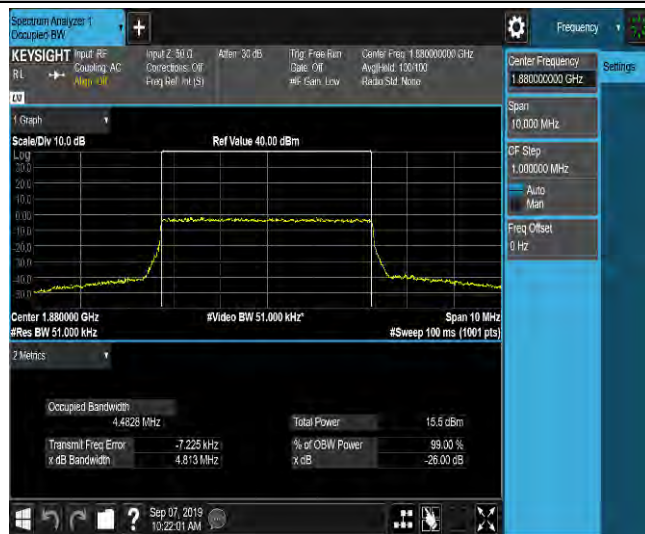
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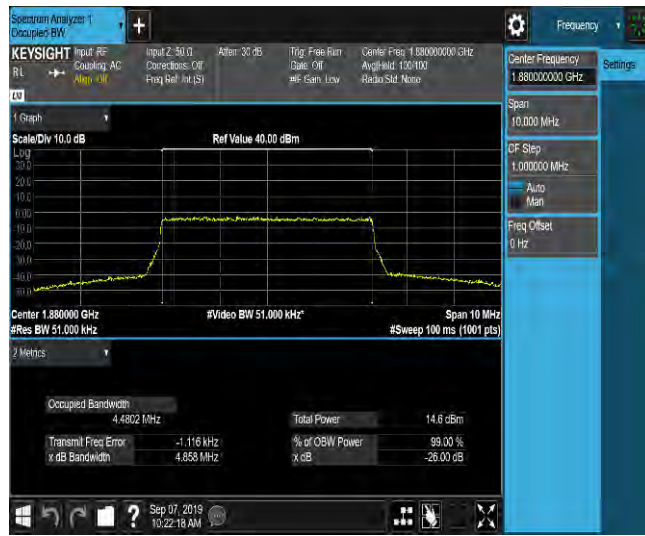
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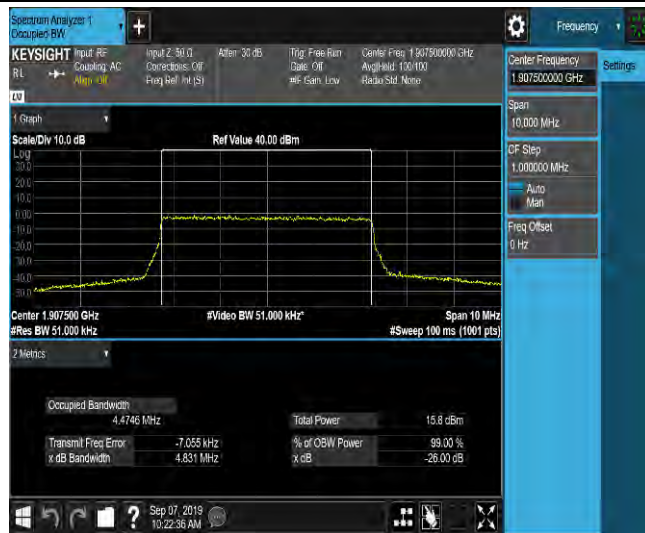
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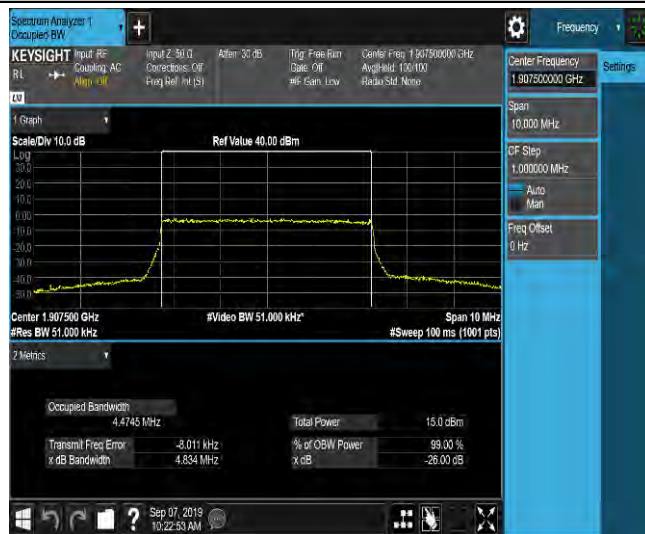
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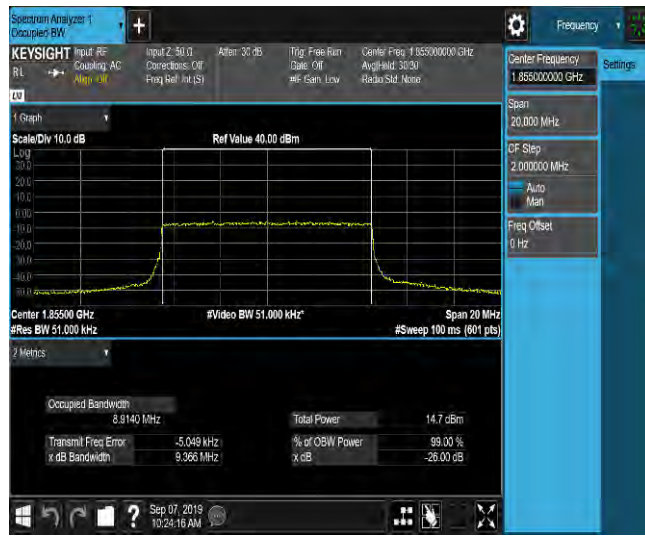
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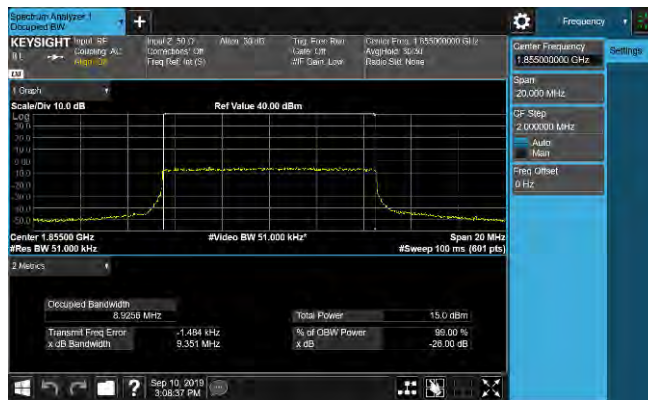
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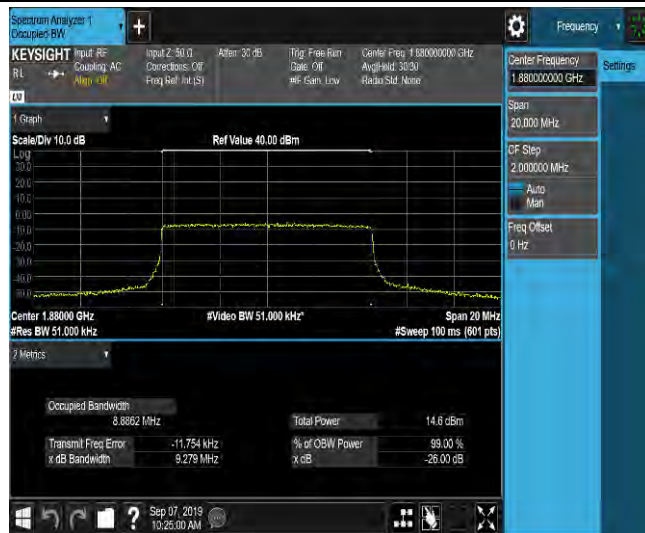
LTE Band 2_10MHz_QPSK_18650_50RB#0_8.9140_9.366_PASS



LTE Band 2_10MHz_16QAM_18650_50RB#0_8.9256_9.351_PASS



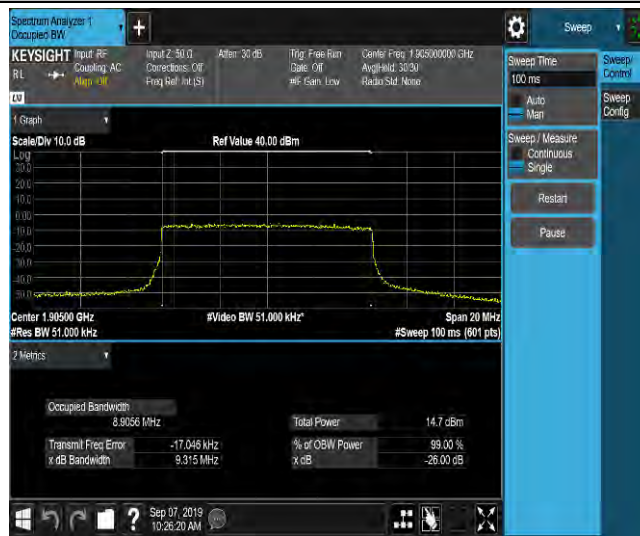
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LTE Band 2_10MHz_16QAM_18900_50RB#0_8.9078_9.316_PASS



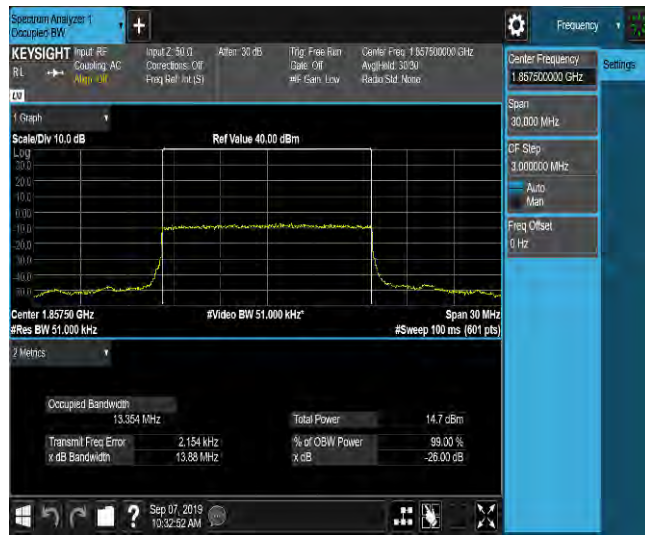
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LTE Band 2_10MHz_16QAM_19150_50RB#0_8.9026_9.290_PASS



LTE Band 2_15MHz_QPSK_18675_75RB#0_13.354_13.88_PASS



LTE Band 2_15MHz_16QAM_18675_75RB#0_13.340_13.89_PASS



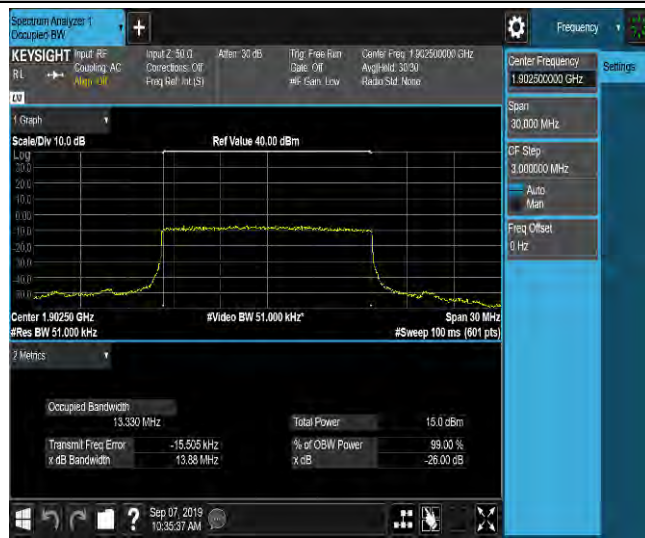
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LTE Band 2_15MHz_16QAM_18900_75RB#0_13.354_13.85_PASS



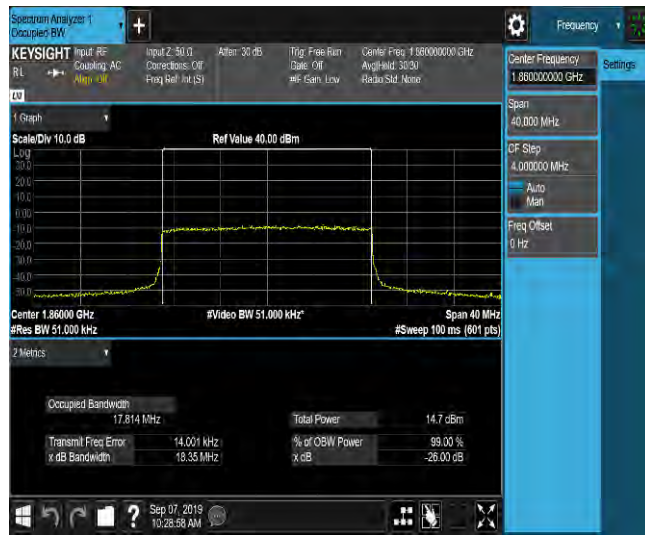
LTE Band 2_15MHz_QPSK_19125_75RB#0_13.330_13.88_PASS



LTE Band 2_15MHz_16QAM_19125_75RB#0_13.355_13.94_PASS



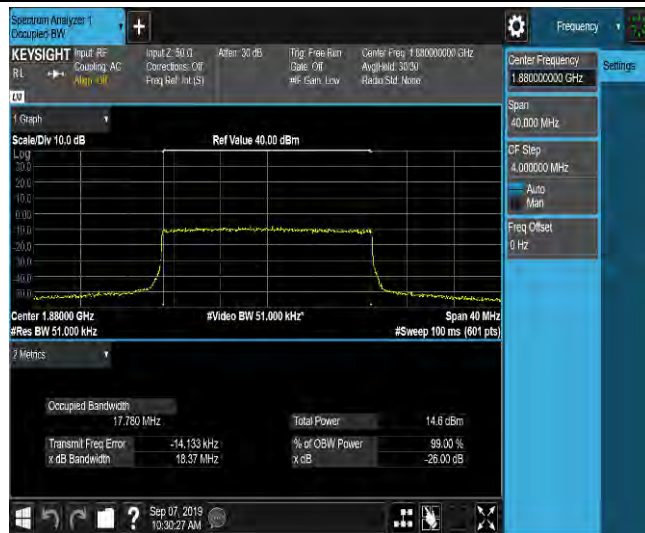
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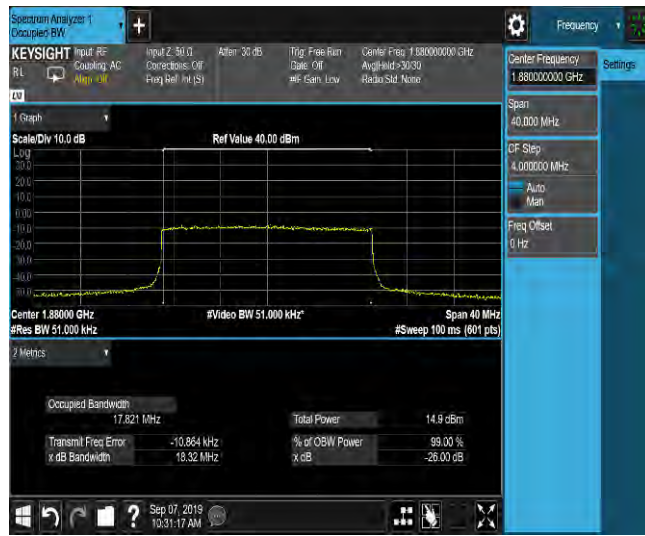
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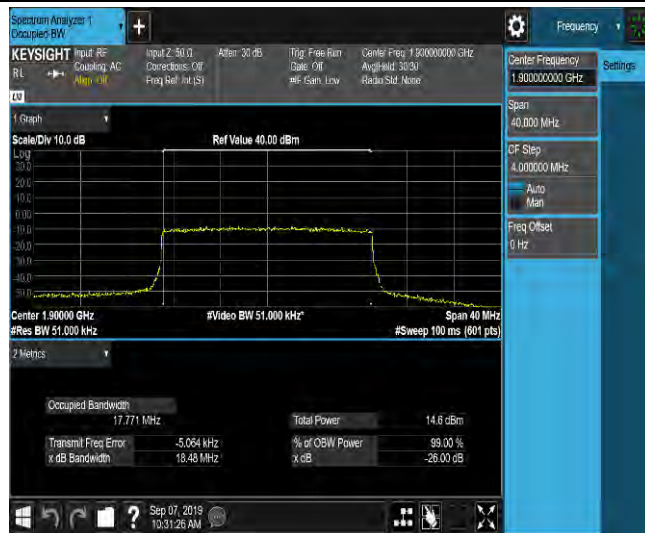
LTE Band 2_20MHz_QPSK_18900_100RB#0_17.780_18.37_PASS



LTE Band 2_20MHz_16QAM_18900_100RB#0_17.806_18.32_PASS



LTE Band 2_20MHz_QPSK_19100_100RB#0_17.771_18.48_PASS



LTE Band 2_20MHz_16QAM_19100_100RB#0_17.782_18.3.6_PASS



5.4. Band Edge Compliance

Ambient condition

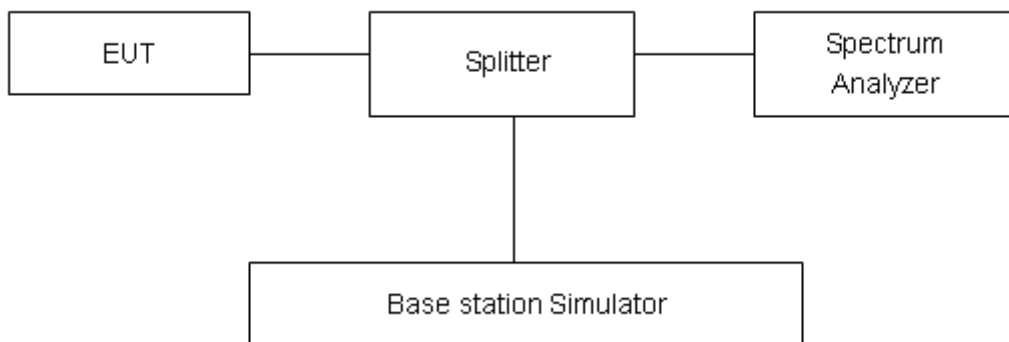
| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.5kPa |

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured. The Average detector is used and RBW is set to 5.1kHz, VBW is set to 51kHz for GSM 1900, RBW is set to 51kHz, VBW is set to 200kHz for WCDMA Band II, RBW is set to 51kHz, VBW is set to 51kHz for LTE Band 2(1.4MHz/3MHz/5MHz), RBW is set to 51kHz, VBW is set to 51kHz for LTE Band 2(10MHz/15MHz/20MHz),

Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

Rule Part 24.238(a) specifies that “on any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log10 (P) dB.”

| | |
|-------|---------|
| Limit | -13 dBm |
|-------|---------|

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U=0.684$ dB.

Test Result:



GPRS1900-512



GPRS1900-810



EGPRS1900-512



EGPRS1900-810



WCDMA Band II_9262



WCDMA Band II_9538

LTE Band 2_1.4MHz_QPSK_18607_1RB#0_-24.99_PASS



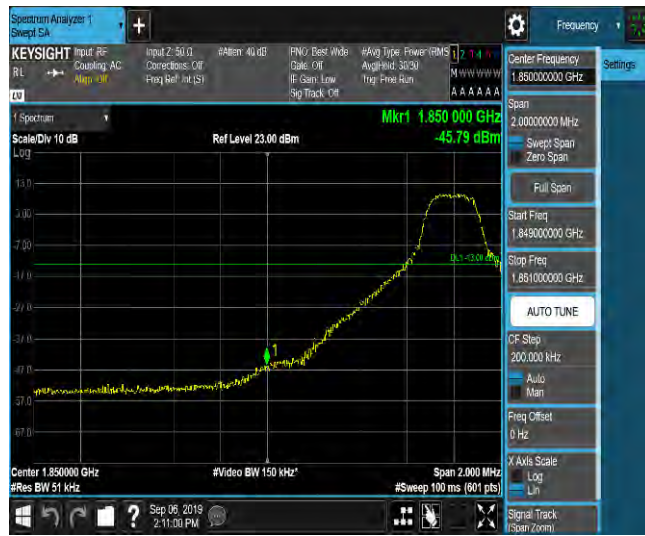
LTE Band 2_1.4MHz_16QAM_18607_1RB#0_-25.53_PASS



LTE Band 2_1.4MHz_QPSK_18607_1RB#2_-44.12_PASS



LTE Band 2_1.4MHz_16QAM_18607_1RB#2_-45.79_PASS



LTE Band 2_1.4MHz_QPSK_18607_1RB#5_-38.46_PASS



LTE Band 2_1.4MHz_16QAM_18607_1RB#5_-38.45_PASS





LTE Band 2_1.4MHz_QPSK_18607_3RB#0_-25.82_PASS



LTE Band 2_1.4MHz_16QAM_18607_3RB#0_-27.09_PASS



LTE Band 2_1.4MHz_QPSK_18607_3RB#1_-26.66_PASS



LTE Band 2_1.4MHz_16QAM_18607_3RB#1_-26.54_PASS



LTE Band 2_1.4MHz_QPSK_18607_3RB#3_-37.32_PASS



LTE Band 2_1.4MHz_16QAM_18607_3RB#3_-39.11_PASS



LTE Band 2_1.4MHz_QPSK_18607_6RB#0_-28.88_PASS



LTE Band 2_1.4MHz_16QAM_18607_6RB#0_-31.17_PASS



LTE Band 2_1.4MHz_QPSK_19193_1RB#0_-36.39_PASS

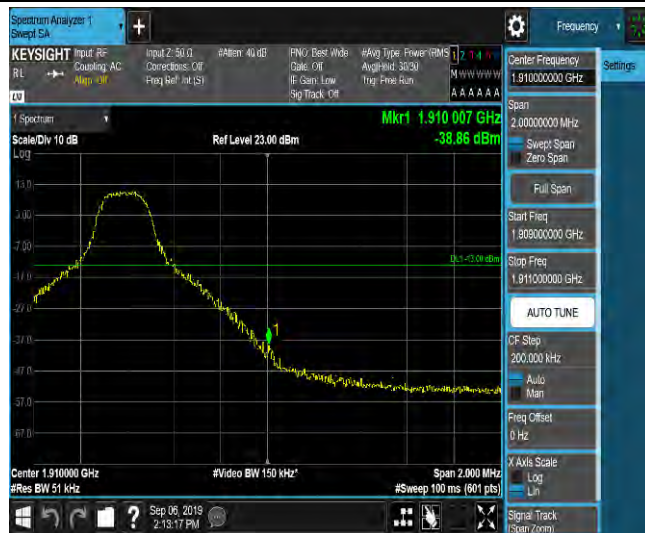




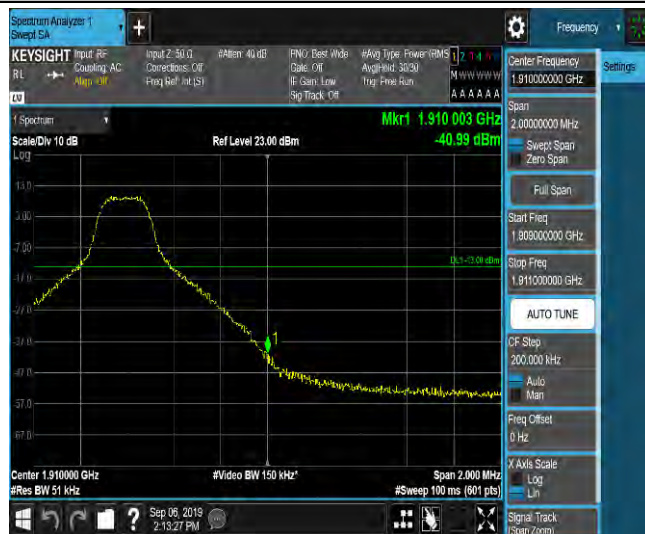
LTE Band 2_1.4MHz_16QAM_19193_1RB#0_-37.01_PASS



LTE Band 2_1.4MHz_QPSK_19193_1RB#2_-38.86_PASS



LTE Band 2_1.4MHz_16QAM_19193_1RB#2_-40.99_PASS



LTE Band 2_1.4MHz_QPSK_19193_1RB#5_-25.41_PASS



LTE Band 2_1.4MHz_16QAM_19193_1RB#5_-24.95_PASS



LTE Band 2_1.4MHz_QPSK_19193_3RB#0_-37.05_PASS



LTE Band 2_1.4MHz_16QAM_19193_3RB#0_-37.91_PASS



LTE Band 2_1.4MHz_QPSK_19193_3RB#1_-37.13_PASS



LTE Band 2_1.4MHz_16QAM_19193_3RB#1_-37.75_PASS



LTE Band 2_1.4MHz_QPSK_19193_3RB#3_-25.51_PASS



LTE Band 2_1.4MHz_16QAM_19193_3RB#3_-27.12_PASS



LTE Band 2_1.4MHz_QPSK_19193_6RB#0_-29.79_PASS





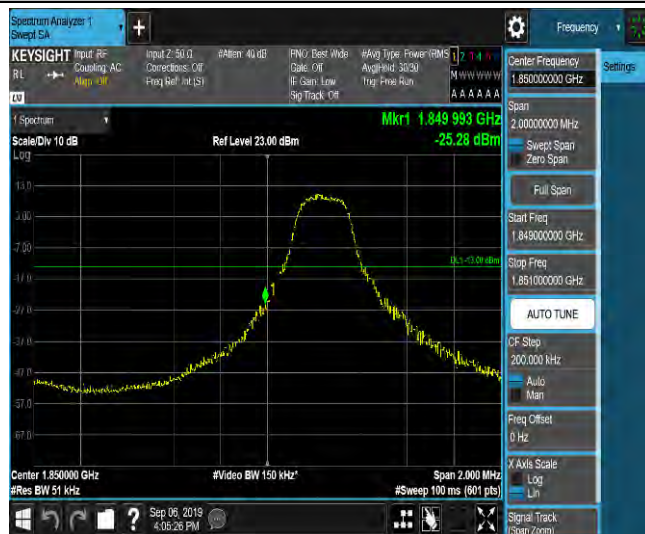
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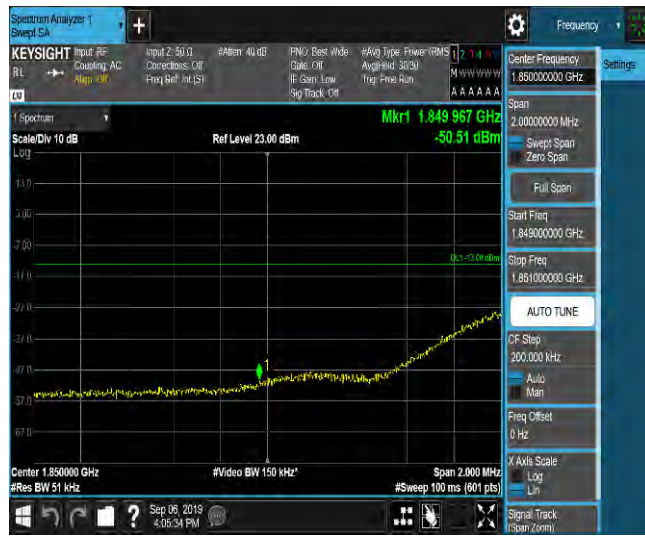
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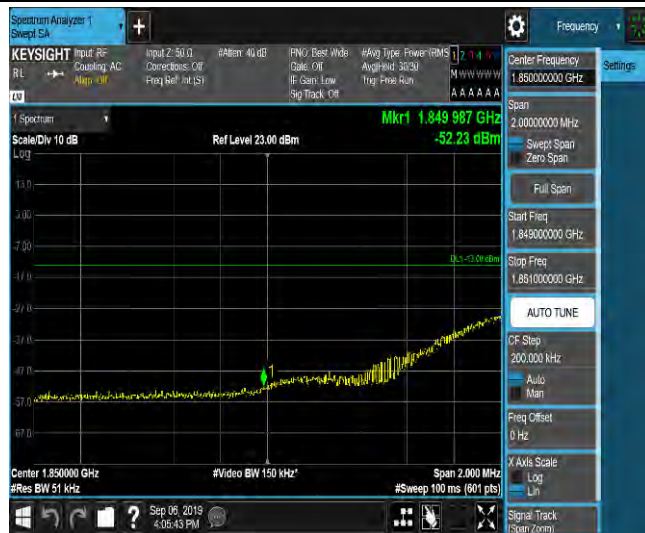
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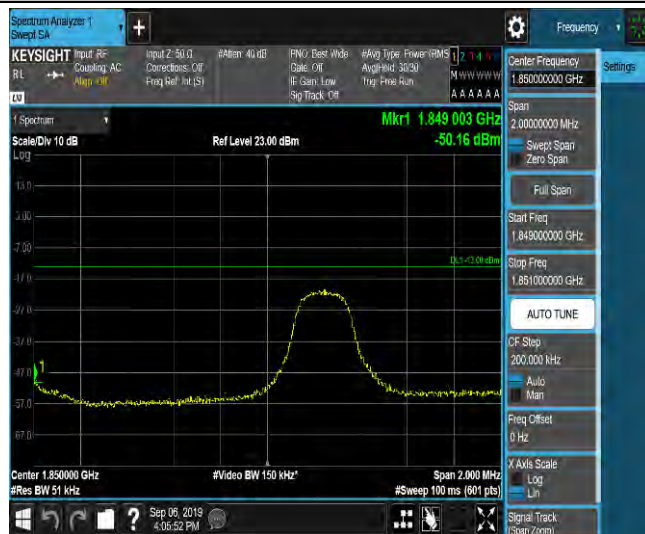
LTE Band 2_3MHz_QPSK_18615_1RB#8_-50.51_PASS



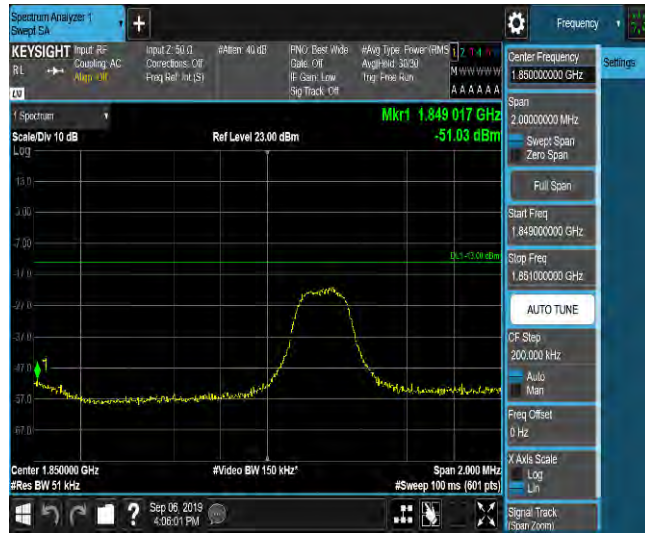
LTE Band 2_3MHz_16QAM_18615_1RB#8_-52.23_PASS



LTE Band 2_3MHz_QPSK_18615_1RB#14_-50.16_PASS



LTE Band 2_3MHz_16QAM_18615_1RB#14_-51.03_PASS



LTE Band 2_3MHz_QPSK_18615_8RB#0_-28.74_PASS



LTE Band 2_3MHz_16QAM_18615_8RB#0_-29.95_PASS



LTE Band 2_3MHz_QPSK_18615_8RB#4_-28.38_PASS



LTE Band 2_3MHz_16QAM_18615_8RB#4_-29.21_PASS



LTE Band 2_3MHz_QPSK_18615_8RB#7_-37.11_PASS



LTE Band 2_3MHz_16QAM_18615_8RB#7_-38.21_PASS



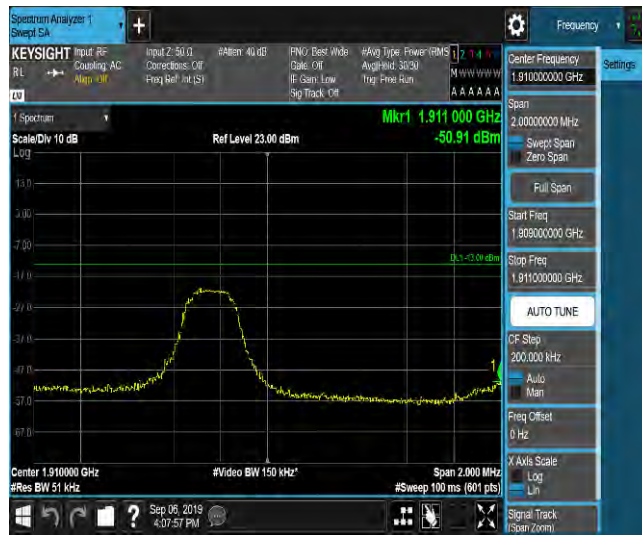
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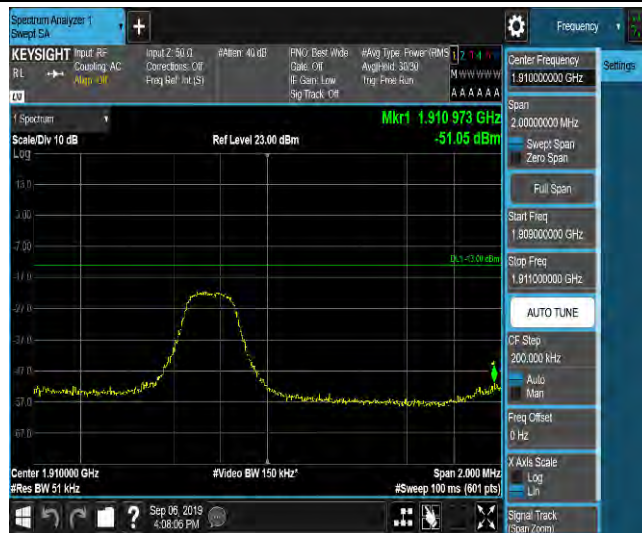
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LTE Band 2_3MHz_QPSK_19185_1RB#0_-50.91_PASS



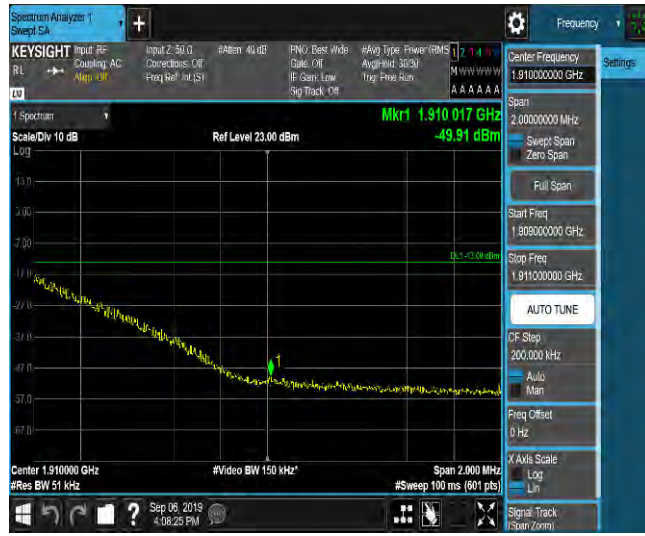
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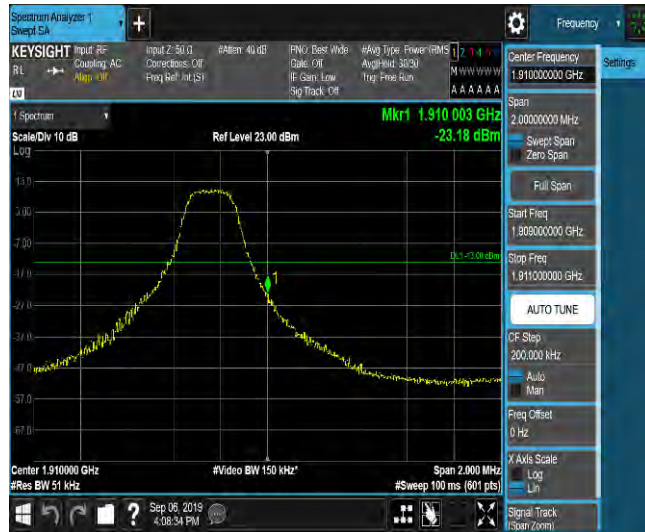
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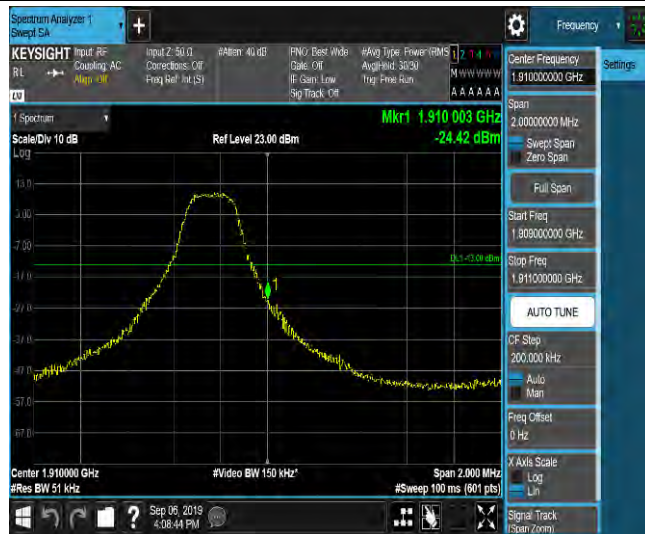
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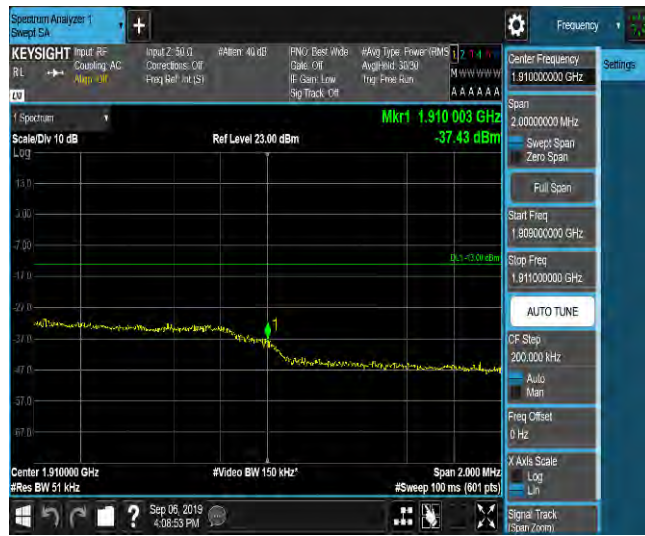
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LTE Band 2_3MHz_16QAM_19185_1RB#14_-24.42_PASS



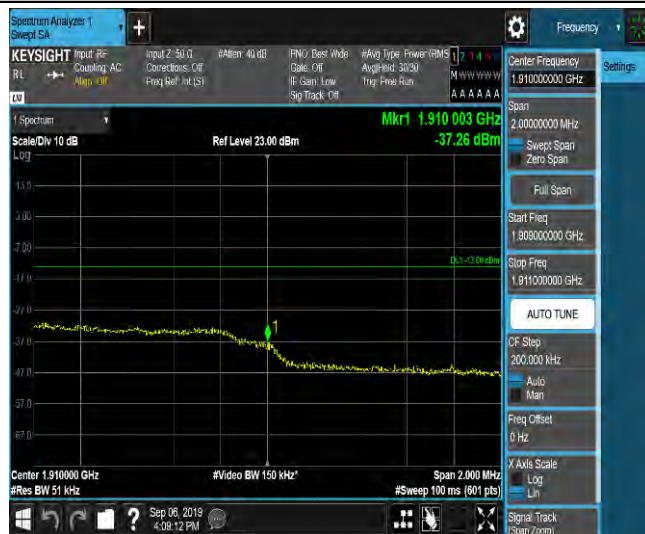
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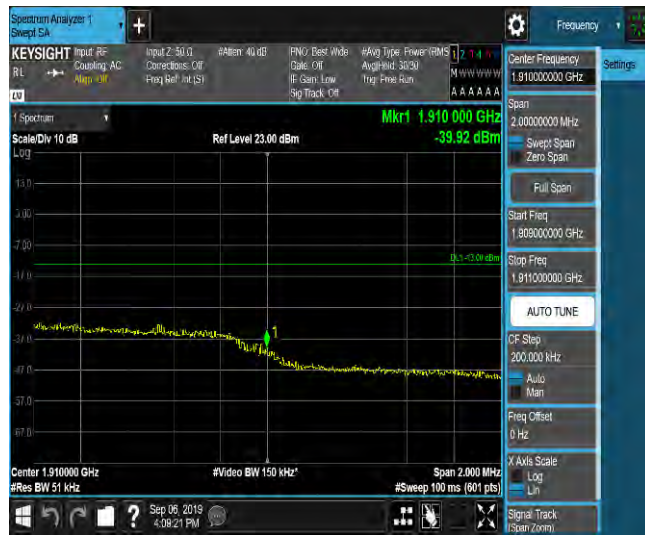
LTE Band 2_3MHz_16QAM_19185_8RB#0_-39.46_PASS



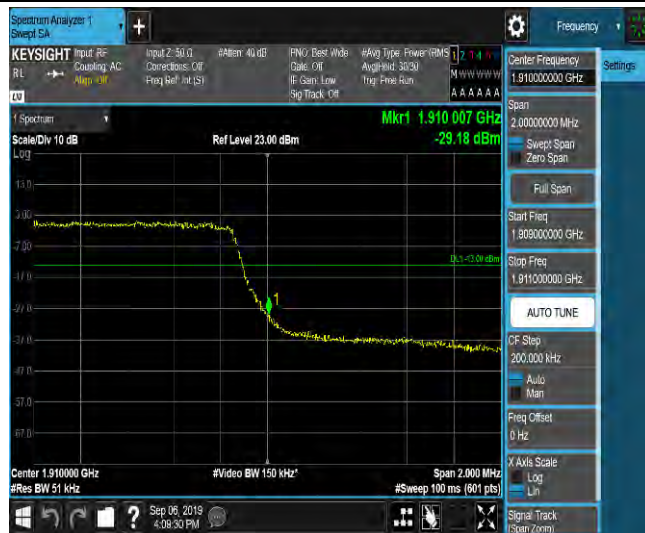
LTE Band 2_3MHz_QPSK_19185_8RB#4_-37.26_PASS



LTE Band 2_3MHz_16QAM_19185_8RB#4_-39.92_PASS



LTE Band 2_3MHz_QPSK_19185_8RB#7_-29.18_PASS



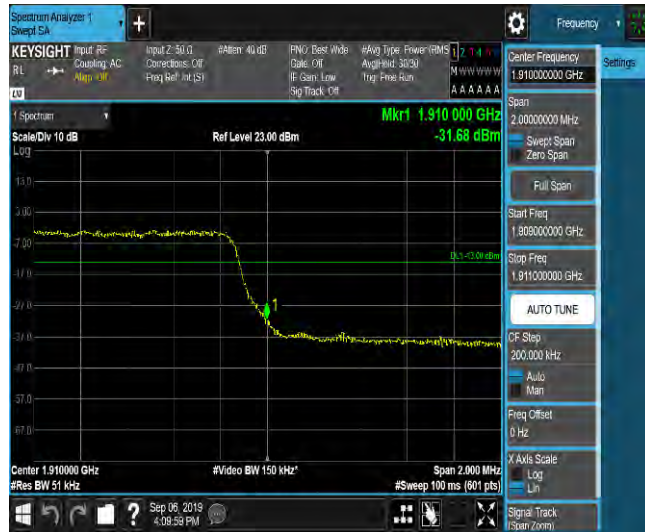
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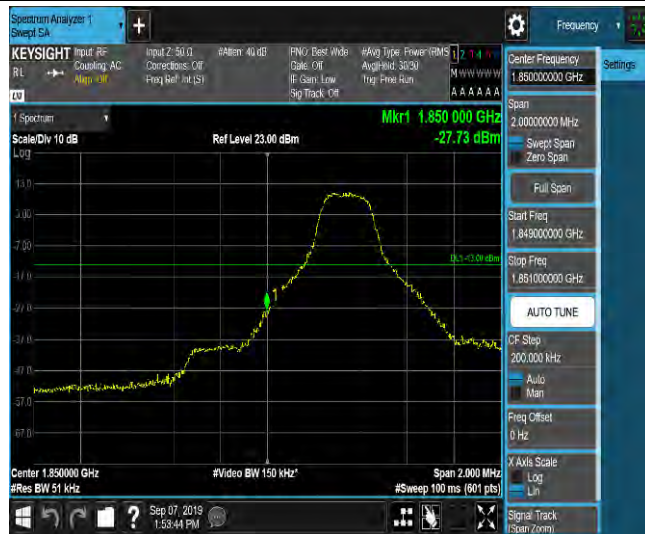
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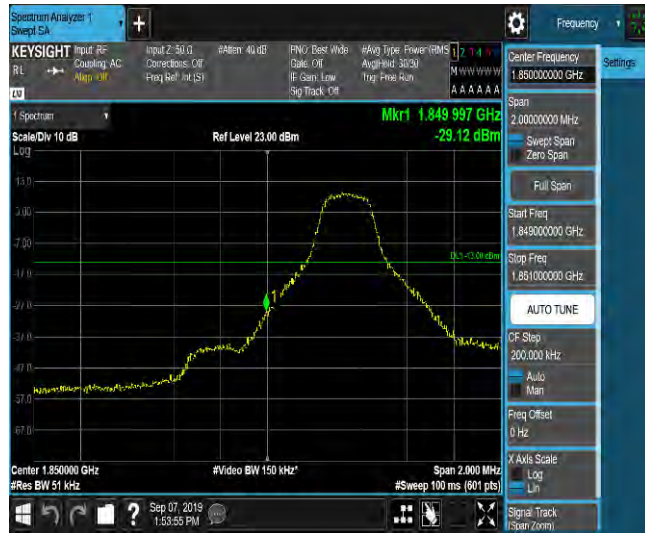
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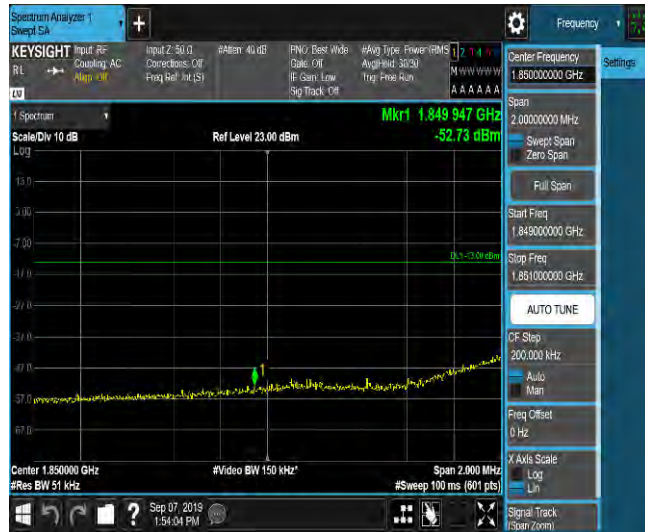
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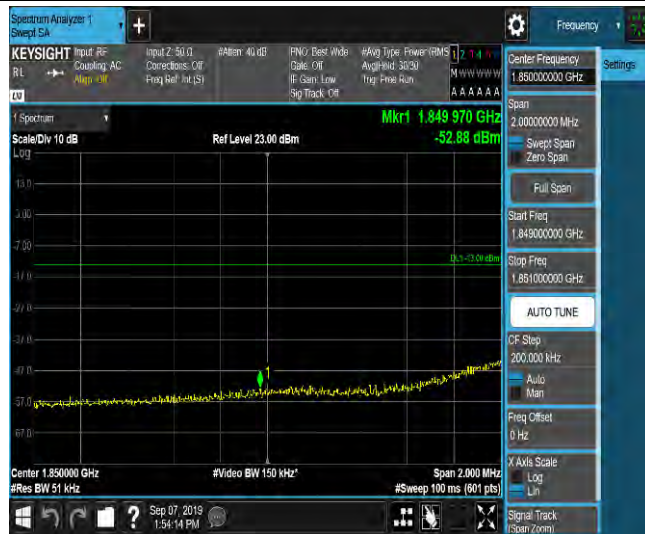
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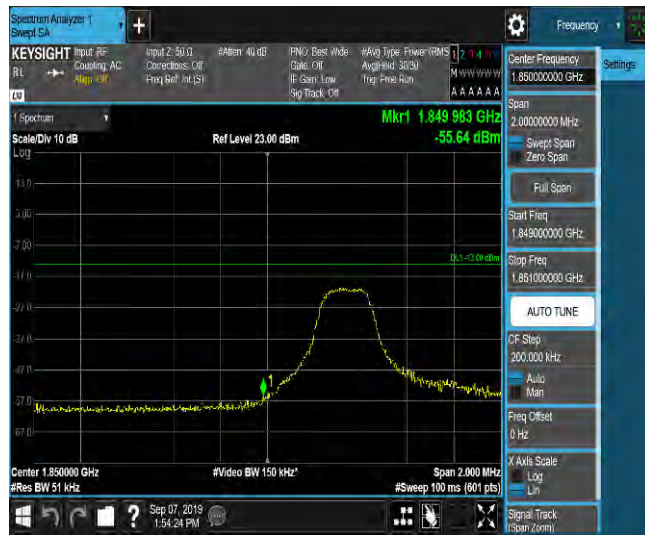
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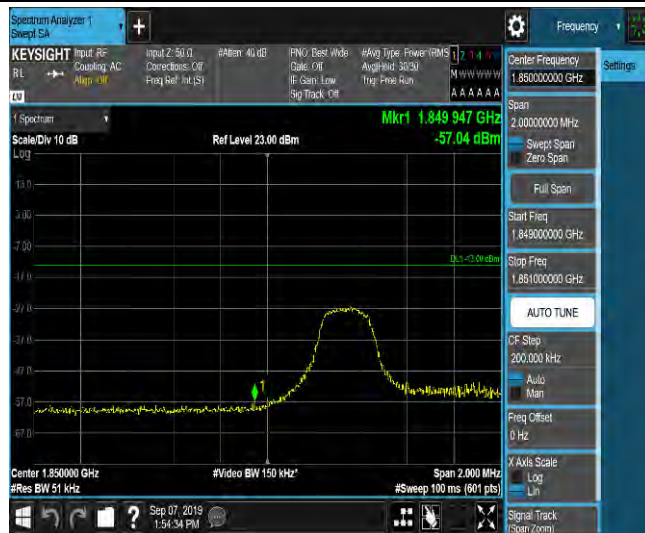
LTE Band 2_5MHz_16QAM_18625_1RB#12_-52.88_PASS



LTE Band 2_5MHz_QPSK_18625_1RB#24_-55.64_PASS



LTE Band 2_5MHz_16QAM_18625_1RB#24_-57.04_PASS



LTE Band 2_5MHz_QPSK_18625_12RB#0_-30.65_PASS



LTE Band 2_5MHz_16QAM_18625_12RB#0_-32.31_PASS



LTE Band 2_5MHz_QPSK_18625_12RB#6_-31.26_PASS



LTE Band 2_5MHz_16QAM_18625_12RB#6_-32.54_PASS



LTE Band 2_5MHz_QPSK_18625_12RB#13_-46.79_PASS



LTE Band 2_5MHz_16QAM_18625_12RB#13_-47.66_PASS



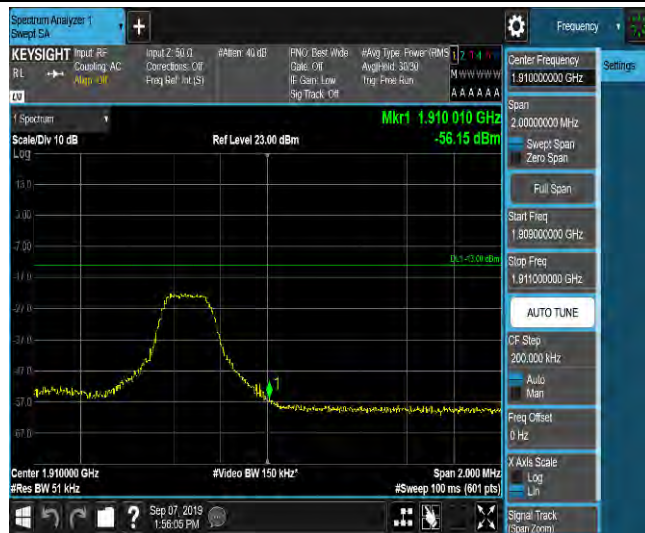
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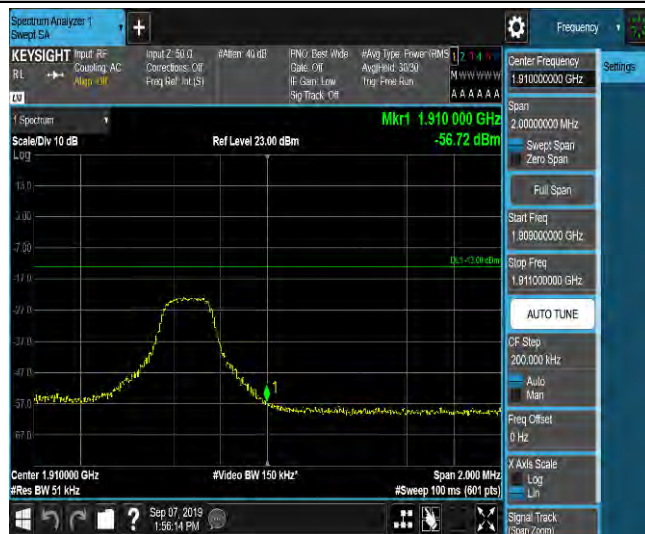
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LTE Band 2_5MHz_QPSK_19175_1RB#0_-56.15_PASS



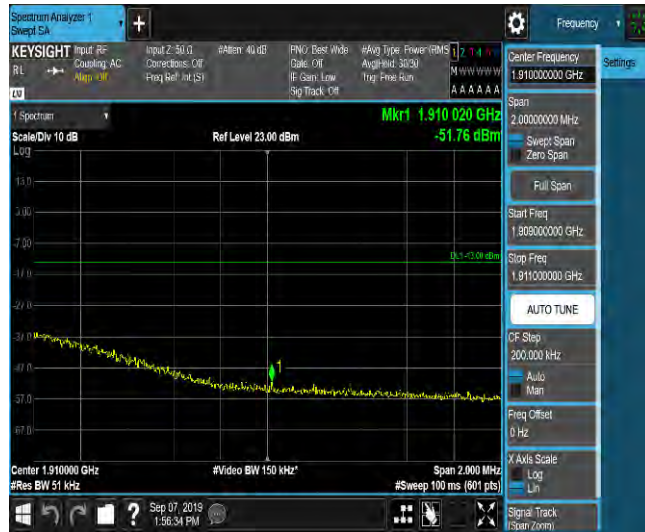
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LTE Band 2_5MHz_QPSK_19175_1RB#12_-51.96_PASS



LTE Band 2_5MHz_16QAM_19175_1RB#12_-51.76_PASS



LTE Band 2_5MHz_QPSK_19175_1RB#24_-24.98_PASS



LTE Band 2_5MHz_16QAM_19175_1RB#24_-28.32_PASS



LTE Band 2_5MHz_QPSK_19175_12RB#0_-46.08_PASS



LTE Band 2_5MHz_16QAM_19175_12RB#0_-46.90_PASS





LTE Band 2_5MHz_QPSK_19175_12RB#6_-46.31_PASS



LTE Band 2_5MHz_16QAM_19175_12RB#6_-47.60_PASS



LTE Band 2_5MHz_QPSK_19175_12RB#13_-31.99_PASS





LTE Band 2_5MHz_16QAM_19175_12RB#13_-32.32_PASS



LTE Band 2_5MHz_QPSK_19175_25RB#0_-34.93_PASS



LTE Band 2_5MHz_16QAM_19175_25RB#0_-36.26_PASS





LTE Band 2_10MHz_QPSK_18650_1RB#0_-36.61_PASS



LTE Band 2_10MHz_16QAM_18650_1RB#0_-34.00_PASS



LTE Band 2_10MHz_QPSK_18650_1RB#24_-55.33_PASS

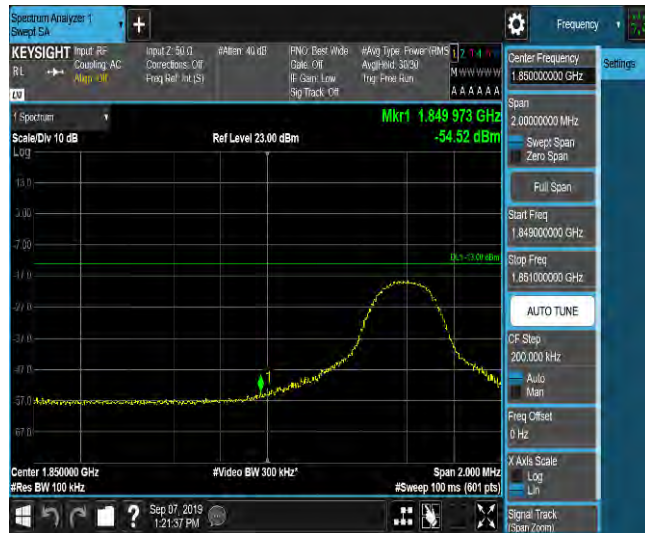




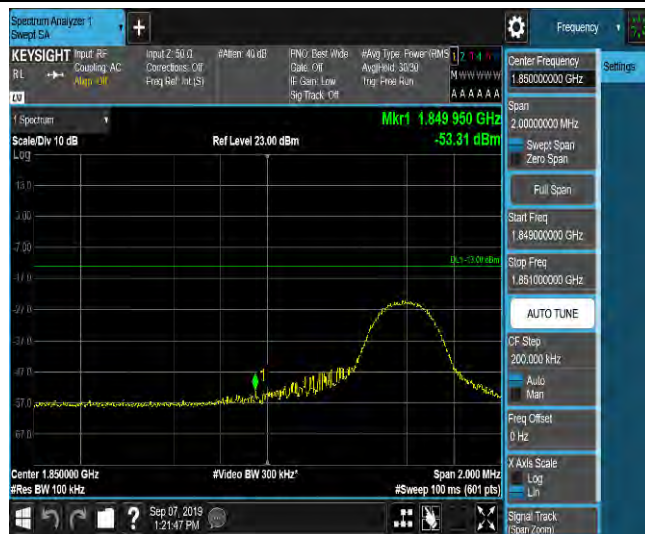
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LTE Band 2_10MHz_QPSK_18650_1RB#49_-54.52_PASS



LTE Band 2_10MHz_16QAM_18650_1RB#49_-53.31_PASS





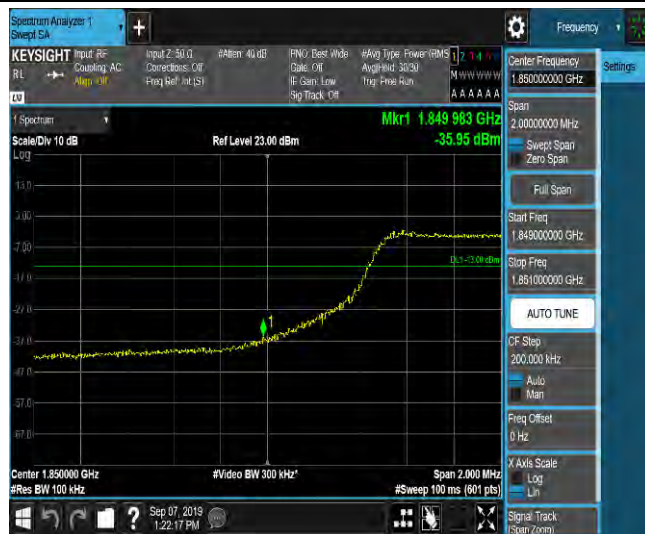
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LTE Band 2_10MHz_16QAM_18650_25RB#0_-36.43_PASS



LTE Band 2_10MHz_QPSK_18650_25RB#12_-35.95_PASS



LTE Band 2_10MHz_16QAM_18650_25RB#12_-37.25_PASS



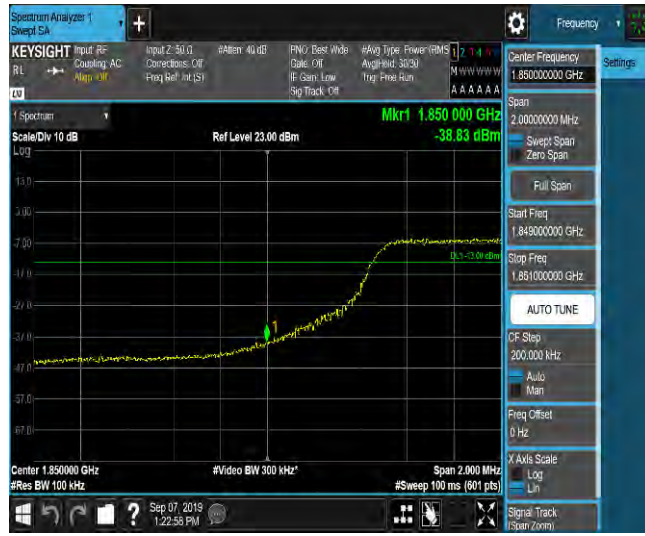
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LTE Band 2_10MHz_16QAM_18650_25RB#25_-47.12_PASS



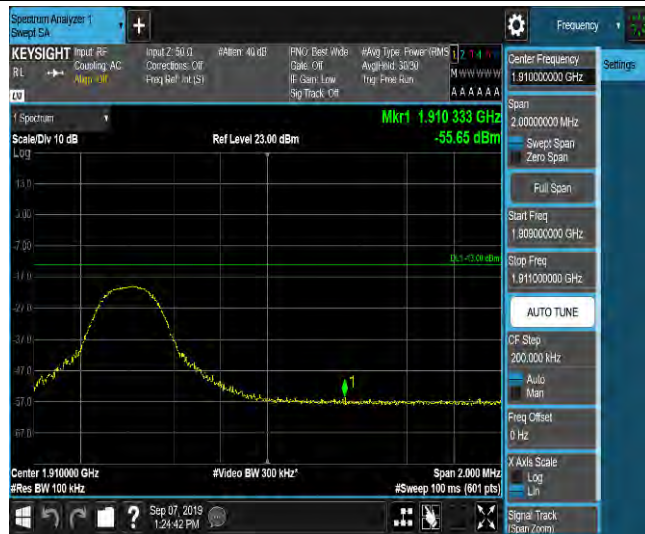
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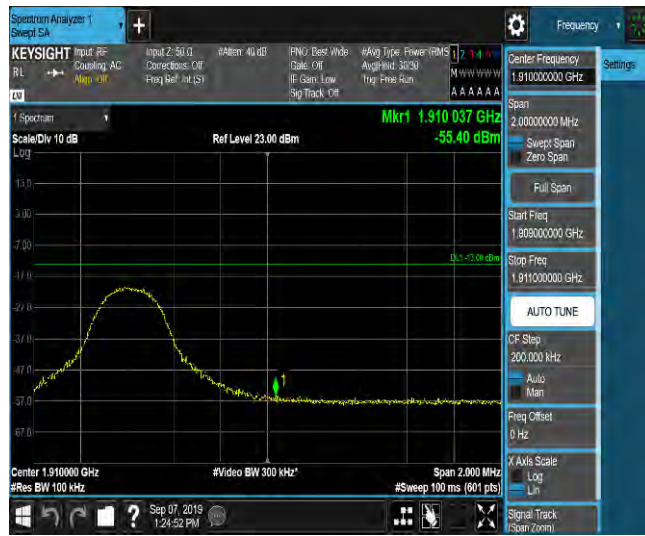
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LTE Band 2_10MHz_QPSK_19150_1RB#0_-55.65_PASS



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LTE Band 2_10MHz_QPSK_19150_1RB#24_-55.32_PASS



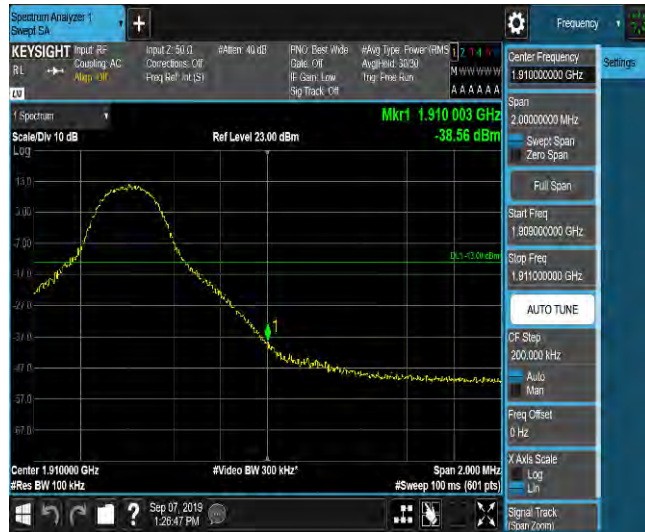
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LTE Band 2_10MHz_16QAM_19150_1RB#49_-38.56_PASS



LTE Band 2_10MHz_QPSK_19150_25RB#0_-45.95_PASS



LTE Band 2_10MHz_16QAM_19150_25RB#0_-47.50_PASS



LTE Band 2_10MHz_QPSK_19150_25RB#12_-46.08_PASS



LTE Band 2_10MHz_16QAM_19150_25RB#12_-47.47_PASS



LTE Band 2_10MHz_QPSK_19150_25RB#25_-36.56_PASS



LTE Band 2_10MHz_16QAM_19150_25RB#25_-36.86_PASS



LTE Band 2_10MHz_QPSK_19150_50RB#0_-39.01_PASS



LTE Band 2_10MHz_16QAM_19150_50RB#0_-39.16_PASS



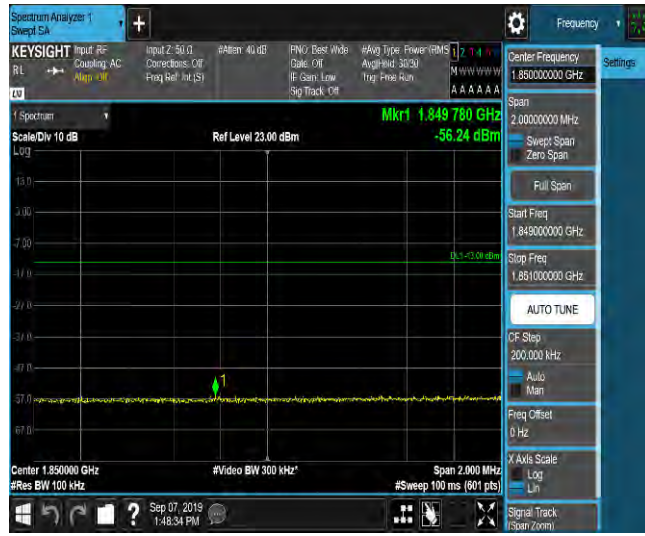
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LTE Band 2_15MHz_16QAM_18675_1RB#0_-38.28_PASS



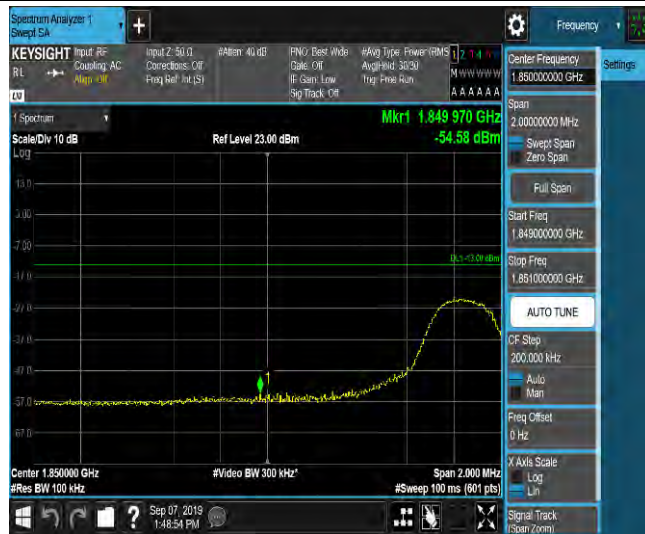
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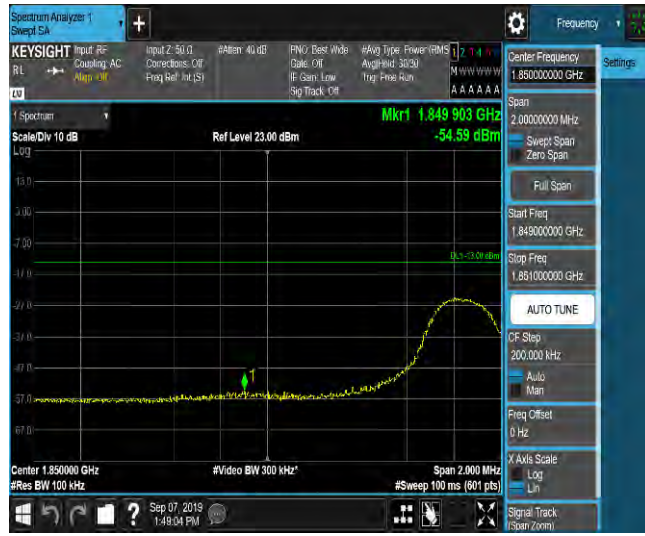
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LTE Band 2_15MHz_QPSK_18675_1RB#74_-54.58_PASS



LTE Band 2_15MHz_16QAM_18675_1RB#74_-54.59_PASS



LTE Band 2_15MHz_QPSK_18675_38RB#0_-38.19_PASS



LTE Band 2_15MHz_16QAM_18675_38RB#0_-38.30_PASS



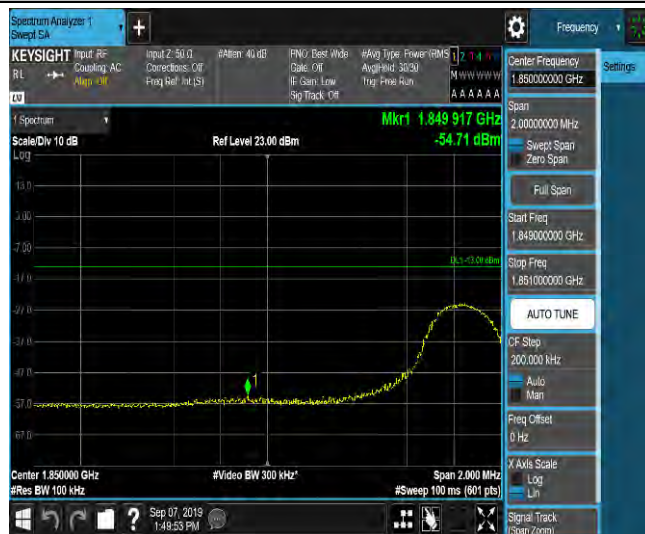
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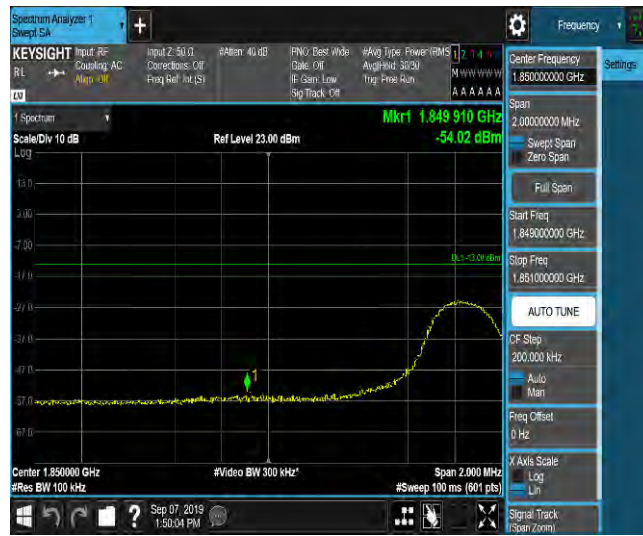
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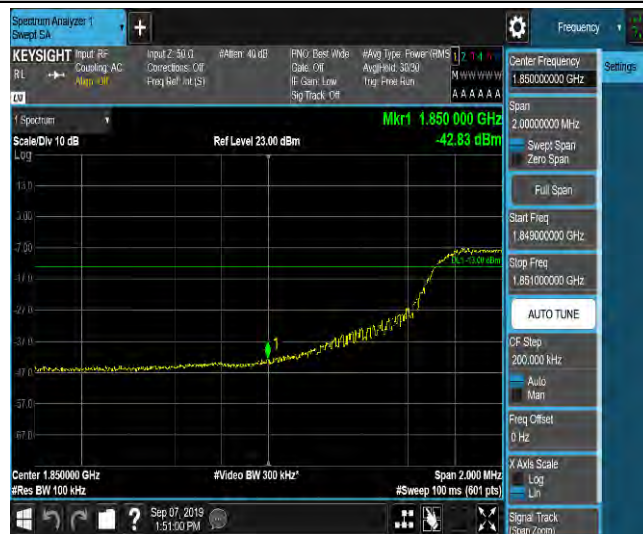
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LTE Band 2_15MHz_QPSK_18675_75RB#0_-42.65_PASS



LTE Band 2_15MHz_16QAM_18675_75RB#0_-42.83_PASS





LTE Band 2_15MHz_QPSK_19125_1RB#0_-53.61_PASS



LTE Band 2_15MHz_16QAM_19125_1RB#0_-54.12_PASS



LTE Band 2_15MHz_QPSK_19125_1RB#38_-56.13_PASS



LTE Band 2_15MHz_16QAM_19125_1RB#38_-55.91_PASS



LTE Band 2_15MHz_QPSK_19125_1RB#74_-38.15_PASS



LTE Band 2_15MHz_16QAM_19125_1RB#74_-38.46_PASS



LTE Band 2_15MHz_QPSK_19125_38RB#0_-38.71_PASS



LTE Band 2_15MHz_16QAM_19125_38RB#0_-38.42_PASS



LTE Band 2_15MHz_QPSK_19125_38RB#18_-38.56_PASS



LTE Band 2_15MHz_16QAM_19125_38RB#18_-39.22_PASS



LTE Band 2_15MHz_QPSK_19125_38RB#37_-39.45_PASS



LTE Band 2_15MHz_16QAM_19125_38RB#37_-39.34_PASS





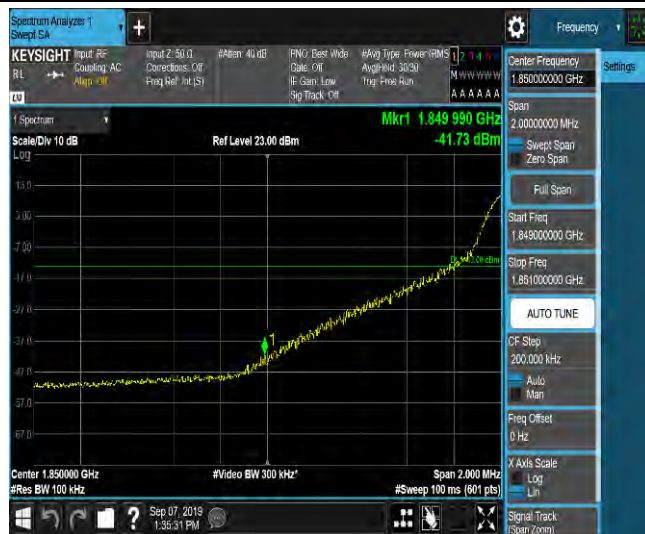
LTE Band 2_15MHz_QPSK_19125_75RB#0_-39.31_PASS



LTE Band 2_15MHz_16QAM_19125_75RB#0_-38.96_PASS



LTE Band 2_20MHz_QPSK_18700_1RB#0_-41.73_PASS



LTE Band 2_20MHz_16QAM_18700_1RB#0_-42.57_PASS



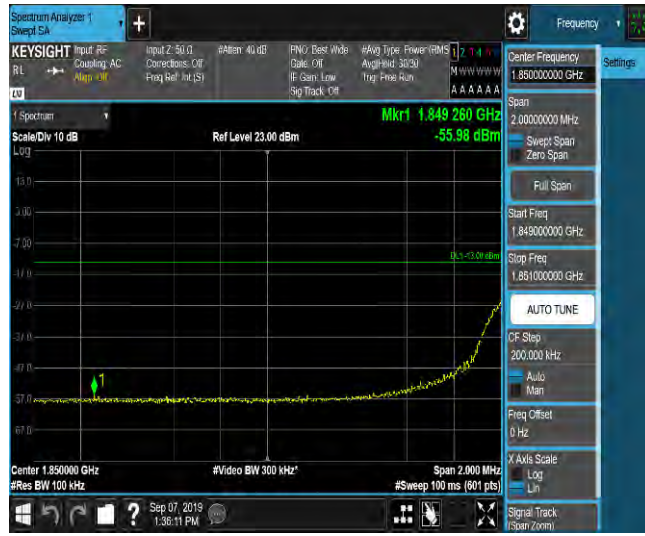
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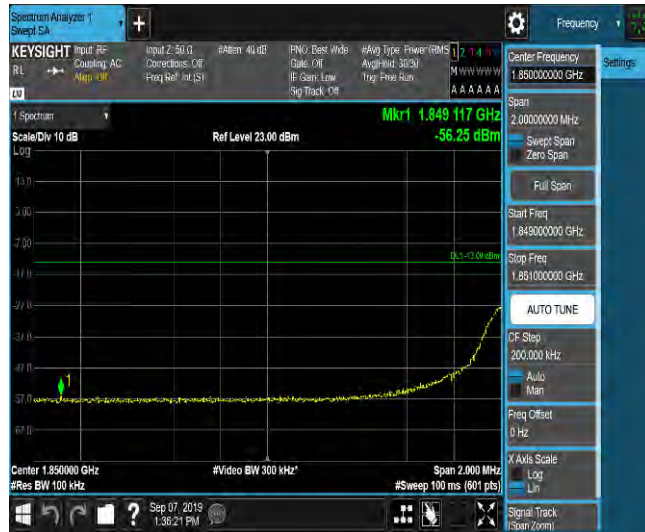
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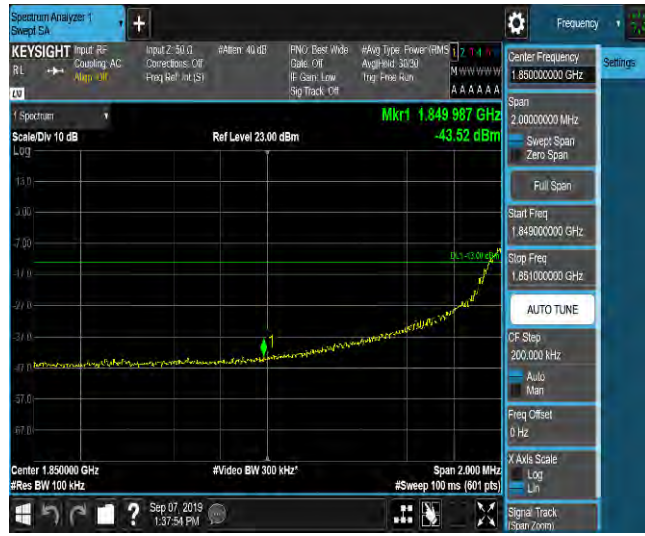
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LTE Band 2_20MHz_QPSK_18700_50RB#0_-43.46_PASS



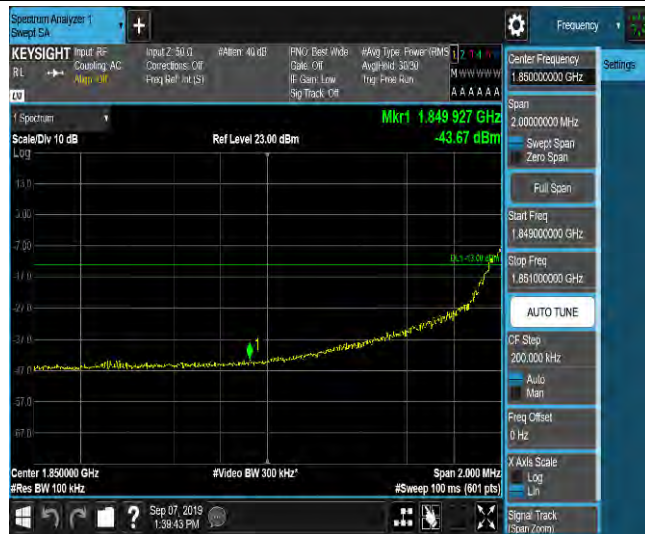
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LTE Band 2_20MHz_QPSK_18700_50RB#25_-43.06_PASS

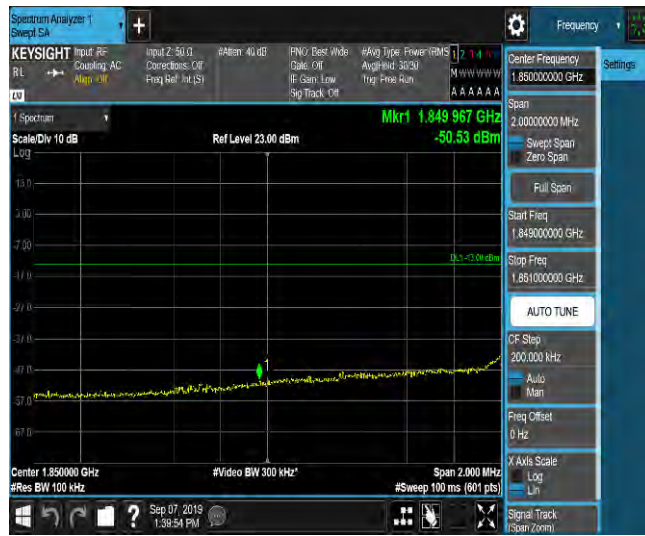


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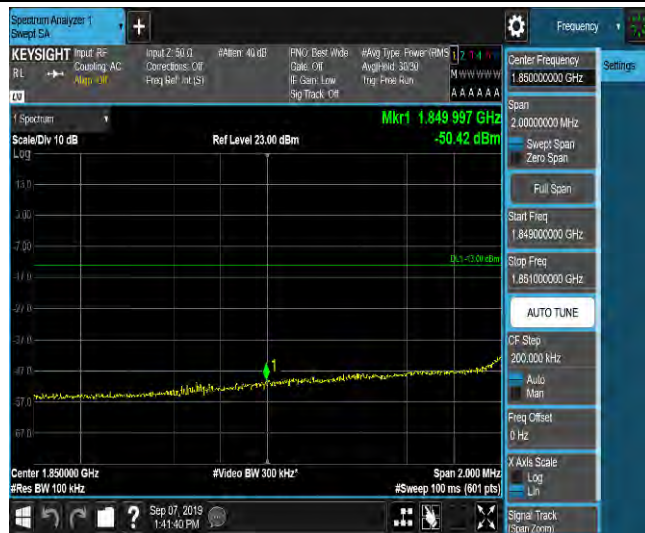




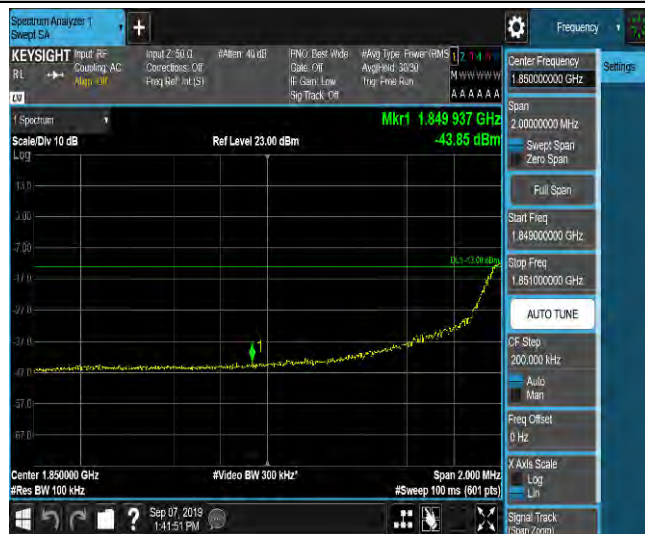
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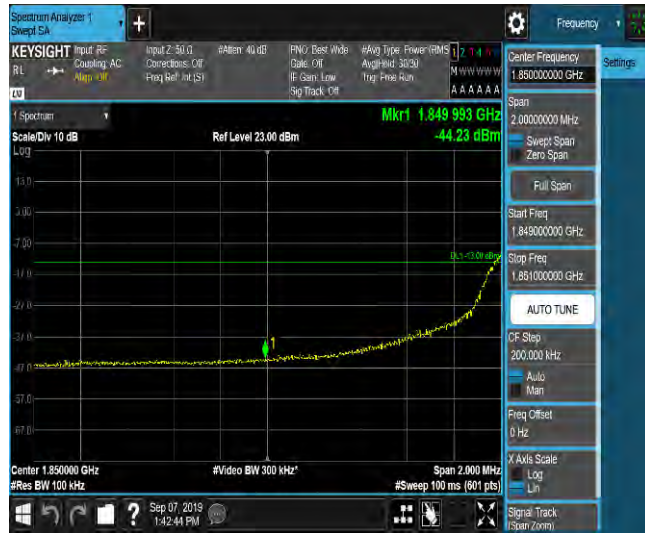
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LTE Band 2_20MHz_16QAM_18700_100RB#0_-44.23_PASS



LTE Band 2_20MHz_QPSK_19100_1RB#0_-55.99_PASS



LTE Band 2_20MHz_16QAM_19100_1RB#0_-55.88_PASS



LTE Band 2_20MHz_QPSK_19100_1RB#49_-56.18_PASS



LTE Band 2_20MHz_16QAM_19100_1RB#49_-56.06_PASS



LTE Band 2_20MHz_QPSK_19100_1RB#99_-42.62_PASS



LTE Band 2_20MHz_16QAM_19100_1RB#99_-43.29_PASS



LTE Band 2_20MHz_QPSK_19100_50RB#0_-49.15_PASS



LTE Band 2_20MHz_16QAM_19100_50RB#0_-49.42_PASS



LTE Band 2_20MHz_QPSK_19100_50RB#25_-49.06_PASS



LTE Band 2_20MHz_16QAM_19100_50RB#25_-49.62_PASS



LTE Band 2_20MHz_QPSK_19100_50RB#50_-42.25_PASS





LTE Band 2_20MHz_16QAM_19100_50RB#50_-42.27_PASS



LTE Band 2_20MHz_QPSK_19100_100RB#0_-45.20_PASS



LTE Band 2_20MHz_16QAM_19100_100RB#0_-44.83_PASS



5.5. Peak-to-Average Power Ratio (PAPR)

Ambient condition

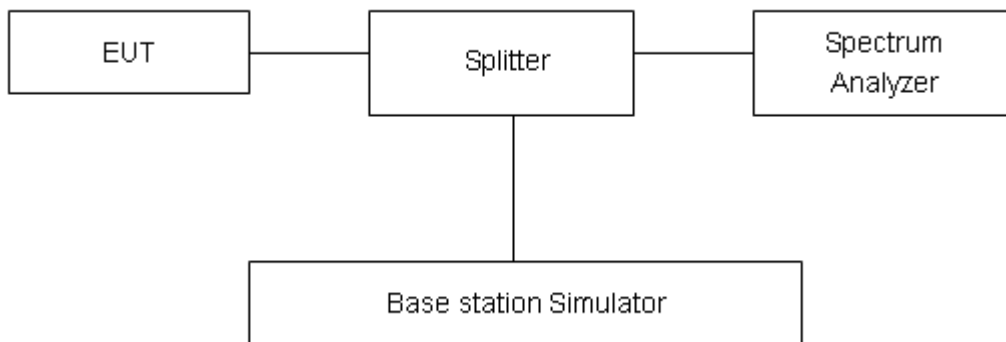
| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.5kPa |

Methods of Measurement

Measure the total peak power and record as PPK. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:

$$PAPR (dB) = PPK (dBm) - PAvg (dBm).$$

Test Setup



Limits

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 in 24.232(d).

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.4$ dB.

**Test Results**

| Band | Channel | Peak-to-Average Ratio(dB) | Limit(dBm) | Verdict |
|---------------|---------|---------------------------|------------|---------|
| GPRS1900 | 512 | 2.70 | 13 | PASS |
| GPRS1900 | 661 | 2.63 | 13 | PASS |
| GPRS1900 | 810 | 2.63 | 13 | PASS |
| EGPRS1900 | 512 | 5.88 | 13 | PASS |
| EGPRS1900 | 661 | 5.76 | 13 | PASS |
| EGPRS1900 | 810 | 5.68 | 13 | PASS |
| Band | Channel | Peak-to-Average Ratio(dB) | Limit(dBm) | Verdict |
| WCDMA Band II | 9262 | 3.20 | 13 | PASS |
| WCDMA Band II | 9400 | 3.17 | 13 | PASS |
| WCDMA Band II | 9538 | 3.11 | 13 | PASS |

| Band | Bandwidth | Modulation | Channel | RB Configuration | Result(dB) | Limit(dB) | Verdict |
|------------|-----------|------------|---------|------------------|------------|-----------|---------|
| LTE Band 2 | 1.4MHz | QPSK | 18607 | 6RB#0 | 5.36 | 13 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 18607 | 6RB#0 | 5.37 | 13 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 18900 | 6RB#0 | 5.29 | 13 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 18900 | 6RB#0 | 5.32 | 13 | PASS |
| LTE Band 2 | 1.4MHz | QPSK | 19193 | 6RB#0 | 5.12 | 13 | PASS |
| LTE Band 2 | 1.4MHz | 16QAM | 19193 | 6RB#0 | 5.13 | 13 | PASS |
| LTE Band 2 | 3MHz | QPSK | 18615 | 15RB#0 | 5.41 | 13 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 18615 | 15RB#0 | 5.43 | 13 | PASS |
| LTE Band 2 | 3MHz | QPSK | 18900 | 15RB#0 | 5.39 | 13 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 18900 | 15RB#0 | 5.39 | 13 | PASS |
| LTE Band 2 | 3MHz | QPSK | 19185 | 15RB#0 | 5.15 | 13 | PASS |
| LTE Band 2 | 3MHz | 16QAM | 19185 | 15RB#0 | 5.13 | 13 | PASS |
| LTE Band 2 | 5MHz | QPSK | 18625 | 25RB#0 | 5.41 | 13 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 18625 | 25RB#0 | 5.40 | 13 | PASS |
| LTE Band 2 | 5MHz | QPSK | 18900 | 25RB#0 | 5.38 | 13 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 18900 | 25RB#0 | 5.40 | 13 | PASS |
| LTE Band 2 | 5MHz | QPSK | 19175 | 25RB#0 | 5.16 | 13 | PASS |
| LTE Band 2 | 5MHz | 16QAM | 19175 | 25RB#0 | 5.17 | 13 | PASS |
| LTE Band 2 | 10MHz | QPSK | 18650 | 50RB#0 | 5.27 | 13 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 18650 | 50RB#0 | 5.26 | 13 | PASS |
| LTE Band 2 | 10MHz | QPSK | 18900 | 50RB#0 | 5.20 | 13 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 18900 | 50RB#0 | 5.20 | 13 | PASS |
| LTE Band 2 | 10MHz | QPSK | 19150 | 50RB#0 | 5.08 | 13 | PASS |
| LTE Band 2 | 10MHz | 16QAM | 19150 | 50RB#0 | 5.10 | 13 | PASS |
| LTE Band 2 | 15MHz | QPSK | 18675 | 75RB#0 | 5.03 | 13 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 18675 | 75RB#0 | 5.02 | 13 | PASS |
| LTE Band 2 | 15MHz | QPSK | 18900 | 75RB#0 | 4.98 | 13 | PASS |



| | | | | | | | |
|------------|-------|-------|-------|---------|------|----|------|
| LTE Band 2 | 15MHz | 16QAM | 18900 | 75RB#0 | 4.98 | 13 | PASS |
| LTE Band 2 | 15MHz | QPSK | 19125 | 75RB#0 | 4.89 | 13 | PASS |
| LTE Band 2 | 15MHz | 16QAM | 19125 | 75RB#0 | 4.90 | 13 | PASS |
| LTE Band 2 | 20MHz | QPSK | 18700 | 100RB#0 | 5.25 | 13 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 18700 | 100RB#0 | 5.25 | 13 | PASS |
| LTE Band 2 | 20MHz | QPSK | 18900 | 100RB#0 | 5.27 | 13 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 18900 | 100RB#0 | 5.28 | 13 | PASS |
| LTE Band 2 | 20MHz | QPSK | 19100 | 100RB#0 | 5.31 | 13 | PASS |
| LTE Band 2 | 20MHz | 16QAM | 19100 | 100RB#0 | 5.27 | 13 | PASS |