



RF TEST REPORT

Applicant Xiaomi Communications Co., Ltd.

FCC ID 2AFZZRN54G

Product Mobile Phone

Brand Redmi

Model 23026RN54G

Report No. R2211A1048-R7

Issue Date January 6, 2023

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2022)/ FCC CFR47 Part 27C (2022)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Prepared by: Xu Ying

Approved by: Xu Kai

TA Technology (Shanghai) Co., Ltd.

Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China

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

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



TABLE OF CONTENT

1	Test Laboratory	4
1.1	Notes of the Test Report	4
1.2.	Test facility	4
1.3	Testing Location	4
2	General Description of Equipment under Test	5
2.1	Applicant and Manufacturer Information	5
2.2	General information	5
3	Applied Standards	7
4	Test Configuration	8
5	Test Case	9
5.1	RF Power Output and Effective Isotropic Radiated Power	9
5.2	Occupied Bandwidth	11
5.3	Band Edge Compliance	12
5.4	Peak-to-Average Power Ratio (PAPR)	14
5.5	Frequency Stability	15
5.6	Spurious Emissions at Antenna Terminals	16
5.7	Radiated Spurious Emission	18
6	Test Results	21
6.1	RF Power Output and Effective Isotropic Radiated Power	21
6.2	Occupied Bandwidth	36
6.3	Band Edge Compliance	46
6.4	Peak-to-Average Power Ratio (PAPR)	57
6.5	Frequency Stability	59
6.6	Spurious Emissions at Antenna Terminals	62
6.7	Radiated Spurious Emission	66
7	Main Test Instruments	72
	ANNEX A: The EUT Appearance	73
	ANNEX B: Test Setup Photos	74
	ANNEX C: Product Change Description (Variant 2)	75



Summary of Measurement Results

Number	Test Case	Clause in FCC rules	Verdict
1	RF Power Output and Effective Isotropic Radiated Power	2.1046 /27.50(d)(4) /27.50(b)(10)	PASS
2	Occupied Bandwidth	2.1049	PASS
3	Band Edge Compliance	27.53(h) /27.53(f) /27.53(c)	PASS
4	Peak-to-Average Power Ratio	27.50(d)/KDB971168 D01(5.7)	PASS
5	Frequency Stability	2.1055 / 27.54	PASS
6	Spurious Emissions at Antenna Terminals	2.1051 /27.53(h) /27.53(f) /27.53(c)	PASS
7	Radiated Spurious Emission	2.1053 /27.53(h) /27.53(f) /27.53(c)	PASS

Date of Testing: November 25, 2022 ~ December 4, 2022

Date of Sample Received: November 12, 2022

Note: PASS: The EUT complies with the essential requirements in the standard.

FAIL: The EUT does not comply with the essential requirements in the standard.

All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.

23026RN54G (Variant) is a variant model of 23026RN54G (Original).

Tested band refer to the following table.

Test Case	Original (R2211A1048-R7)	Variant (R2211A1048-R7)
RF Power Output	Pass	Tested RF Power Output, and did not worsen, so they were not recorded in the report.
Radiated Spurious Emission	Pass	Tested Radiates Spurious Emission (LTE Band 13 for Low Antenna), and did not worsen, so they were not recorded in the report.

The detailed product change description please refers to the *Difference Declaration Letter (Variant 2)*.



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. Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

1.3 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
Address: Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
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	Xiaomi Communications Co., Ltd.
Applicant address	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085
Manufacturer	Xiaomi Communications Co., Ltd.
Manufacturer address	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

2.2 General information

EUT Description			
Model	23026RN54G		
IMEI	IMEI1: 863698060058689 IMEI2: 863698060058697		
Hardware Version	P1.1		
Software Version	Android 13		
Antenna Type	PIFA Antenna		
Antenna Gain	Band	Low Antenna	Upper Antenna
	LTE Band 13	-3.7 dBi	-4.1 dBi
	LTE Band 66	-1.2 dBi	-0.2 dBi
Test Mode(s)	LTE Band 13/66		
Test Modulation	(LTE) QPSK, 16QAM		
LTE Category	4		
Maximum E.I.R.P./ E.R.P.	LTE Band 13:	18.16 dBm	
	LTE Band 66:	24.02 dBm	
Rated Power Supply Voltage	3.85 V		
Operating Voltage	Minimum: 3.6V Maximum: 4.4V		
Operating Temperature	Lowest: 0°C Highest: +40°C		
Testing Temperature	Lowest: -30°C Highest: +50°C		
Operating Frequency Range(s)	Mode	Tx (MHz)	Rx (MHz)
	LTE Band 13	777 ~ 787	746 ~ 756
	LTE Band 66	1710 ~ 1780	2110 ~ 2180
Note:			
1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.			



Item	Configure 1	Configure 2
WIFI test socket	support	remove
PL sensor	support	remove
Note: Configuration 2 only verifies Radiated Emission.		



3 Applied Standards

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

Test standards:

FCC CFR47 Part 27C (2022)

FCC CFR47 Part 2 (2022)

Reference standard:

ANSI C63.26-2015

KDB 971168 D01 Power Meas License Digital Systems v03r01

4 Test Configuration

There is more than one SIM card slot, each one should be applied throughout the compliance test respectively, and however, only the worst case (SIM 1) will be recorded in this report

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 (Y axis, horizontal polarization for Low Antenna; Z axis, horizontal polarization for Upper Antenna,) 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 LTE is set based on the maximum RF Output Power.

The following testing in different Bandwidth is set to detail in the following table:

Test modes are chosen to be reported as the worst case configuration below for LTE Band 13/66:

Test items	Modes	Bandwidth (MHz)						Modulation		RB			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	50%	100%	L	M	H
RF Power Output and Effective Isotropic Radiated Power	LTE 13	-	-	O	O	-	-	O	O	O	O	O	O	O	O
	LTE 66	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Occupied Bandwidth	LTE 13	-	-	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 66	O	O	O	O	O	O	O	O	-	-	O	O	O	O
Band Edge Compliance	LTE 13	-	-	O	O	-	-	O	O	O	-	O	O	-	O
	LTE 66	O	O	O	O	O	O	O	O	O	-	O	O	-	O
Peak-to-Average Power Ratio	LTE 13	-	-	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 66	O	O	O	O	O	O	O	O	-	-	O	O	O	O
Frequency Stability	LTE 13	-	-	O	O	-	-	O	O	O	-	-	-	O	-
	LTE 66	O	O	O	O	O	O	O	O	O	-	-	-	O	-
Spurious Emissions at Antenna Terminals	LTE 13	-	-	O	O	-	-	O	-	O	-	-	O	O	O
	LTE 66	O	O	O	O	O	O	O	-	O	-	-	O	O	O
Radiated Spurious Emission	LTE 13	-	-	O	O	-	-	O	-	O	-	-	-	O	-
	LTE 66	O	-	O	-	-	O	O	-	O	-	-	-	O	-
Note	1. The mark "O" means that this configuration is chosen for testing. 2. The mark "-" means that this configuration is not testing.														

5 Test Case

5.1 RF Power Output and Effective Isotropic Radiated Power

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 was connected to the Base Station Simulator with a known loss. The EUT is controlled by the Base Station Simulator test set to ensure max power transmission with proper modulation.

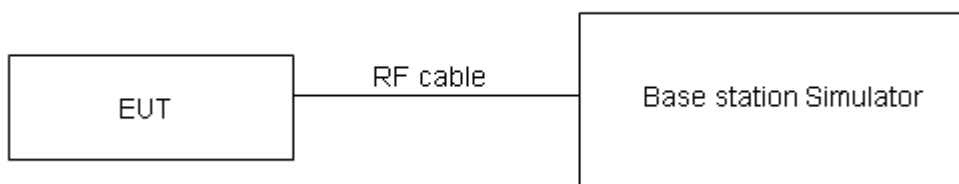
ERP can then be calculated as follows:

$EIRP \text{ (dBm)} = \text{Output Power (dBm)} + \text{Antenna Gain (dBi)}$

where: dBd refers to gain relative to an ideal dipole.

$EIRP \text{ (dBm)} = ERP \text{ (dBm)} + 2.15 \text{ (dB.)}$

Test Setup



Limits

No specific RF power output requirements in part 2.1046.

Rule Part 27.50(b) (10) specifies that “Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP”

Rule Part 27.50(d) (4) specifies that “Fixed, mobile and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP”

Part 27.50(b)(10)Limit	$\leq 3 \text{ W}$ (34.77 dBm)
Part 27.50(d)(4)Limit	$\leq 1 \text{ W}$ (30 dBm)



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 for RF power output, $k = 2$, $U= 1.19$ dB for ERP/EIRP.

Test Results

Refer to the section 6.1 of this report for test data.

5.2 Occupied Bandwidth

Ambient condition

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

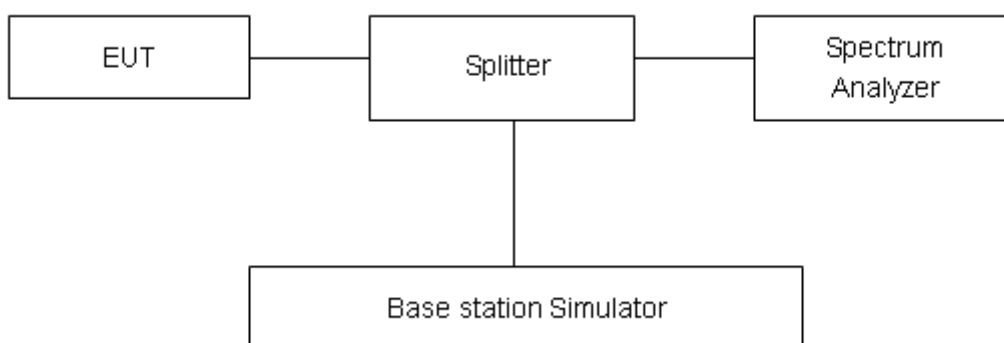
Method of Measurement

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 $\geq 1\%EBW$, VBW is set to 3x RBW.

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 Results

Refer to the section 6.2 of this report for test data.

5.3 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 testing follows KDB 971168 D01 v03r01 Section 6.0

The EUT was connected to spectrum analyzer and system simulator via a power divider.

The band edges of low and high channels for the highest RF powers were measured.

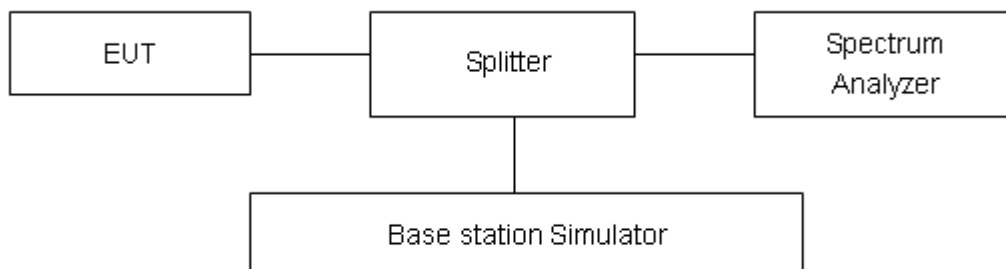
RBW is set to $\geq 1\%EBW$, VBW is set to 3x RBW on spectrum analyzer.

Set spectrum analyzer with RMS detector.

The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

Checked that all the results comply with the emission limit line.

Test Setup



Limits

Rule Part 27.53(h) specifies that “ for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee’s frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ dB”

Rule Part 27.53(f) For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

Rule Part 27.53 (c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee’s frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated



outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;

(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;

(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $76 + 10 \log (P)$ dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

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 Results

Refer to the section 6.3 of this report for test data.

5.4 Peak-to-Average Power Ratio (PAPR)

Ambient condition

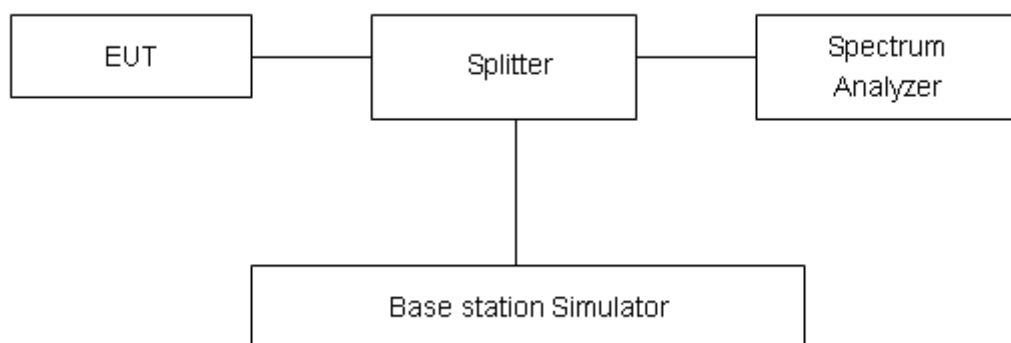
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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:

$$\text{PAPR (dB)} = \text{PPk (dBm)} - \text{PAvg (dBm)}.$$

Test Setup



Limits

Rule Part 27.50(d)(5) Equipment employed must be authorized in accordance with the provisions of 24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. 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.

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

Refer to the section 6.4 of this report for test data.

5.5 Frequency Stability

Ambient condition

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

Method of Measurement

Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -30°C to +50°C in 10°C step size.

(1) With all power removed, the temperature was decreased to -10°C and permitted to stabilize for three hours.

(2) Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.

(3) Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

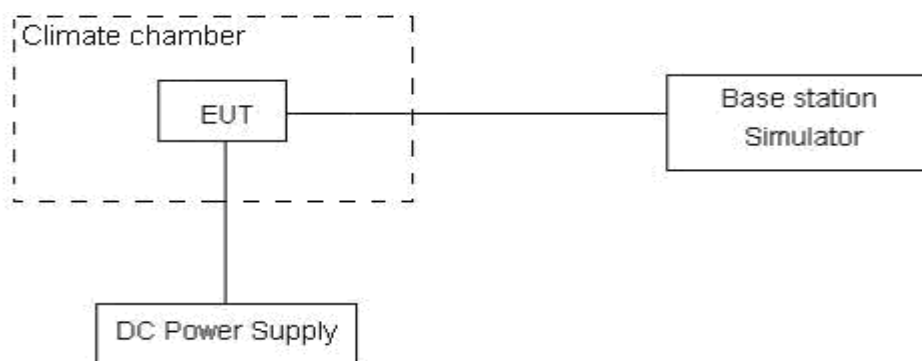
Frequency Stability (Voltage Variation)

The frequency stability shall be measured with variation of primary supply voltage as follows:

Primary Supply Voltage: The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

This transceiver is specified to operate with an input voltage of between 3.6 V and 4.4 V, with a nominal voltage of 3.85V.

Test setup



Limits

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 3$, $U=0.01\text{ppm}$.

Test Results

Refer to the section 6.5 of this report for test data.

5.6 Spurious Emissions at Antenna Terminals

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 measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 9kHz to the 10th harmonic of the carrier. The peak detector is used.

RBW is set to 1 kHz (0.009MHz~ 0.15 MHz),

RBW is set to 10 kHz (0.15 MHz~ 30 MHz)

RBW is set to 100 kHz (30MHz~1000 MHz)

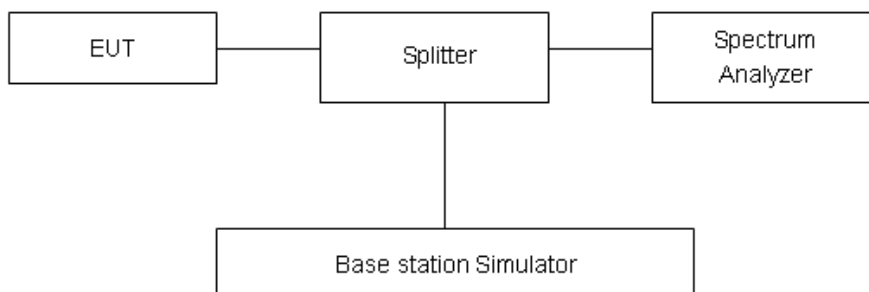
RBW is set to 1000 kHz (above 1000MHz)

Sweep is set to ATUO.

Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.

The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup



Limits

Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.”

Rule Part 27.53(f) For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to –70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and –80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

Part 27.53 (c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with

the following:

- (1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;
- (2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;
- (3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $76 + 10 \log (P)$ dB in a 6.25 kHz band segment, for base and fixed stations;
- (4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;
- (5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

Part 27.53(h) Limit		-13 dBm
Part 27.53(f) Limit	Limit out of the band 1559-1610 MHz	-13 dBm
	Limit in the band 1559-1610 MHz	-40 dBm

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
9kHz-1GHz	0.684 dB
1GHz-20GHz	1.407 dB

Test Results

Refer to the section 6.6 of this report for test data.

5.7 Radiated Spurious Emission

Ambient condition

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

Method of Measurement

1. The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI C63.26-2015.
2. Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H). Above 1GHz: (Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.) The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).
3. A loop antenna, A log-periodic antenna or horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
4. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=100kHz, VBW=300kHz for 30MHz to 1GHz and RBW=1MHz, VBW=3MHz for above 1GHz, and the maximum value of the receiver should be recorded as (Pr).
5. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
6. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAG) should be recorded after test.
7. The measurement results are obtained as described below:

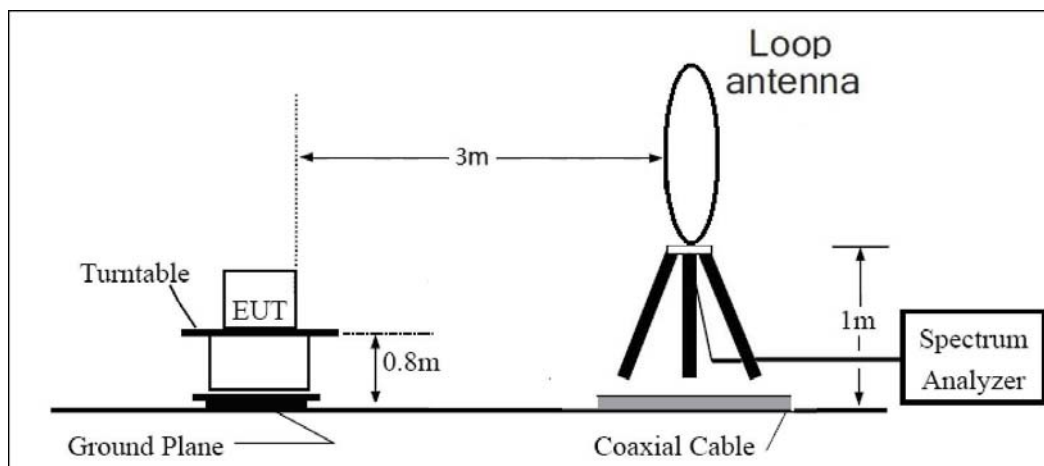
$$\text{Power(EIRP)} = \text{PMea} - \text{PAG} - \text{Pcl} + \text{Ga}$$
The measurement results are amend as described below:

$$\text{Power(EIRP)} = \text{PMea} - \text{Pcl} + \text{Ga}$$
8. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dB) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, $\text{ERP} = \text{EIRP} - 2.15\text{dB}$.

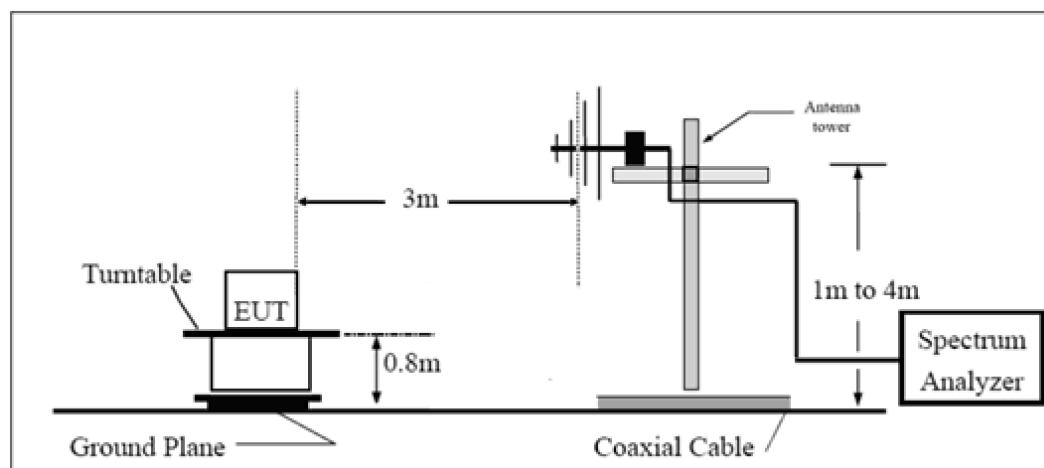
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

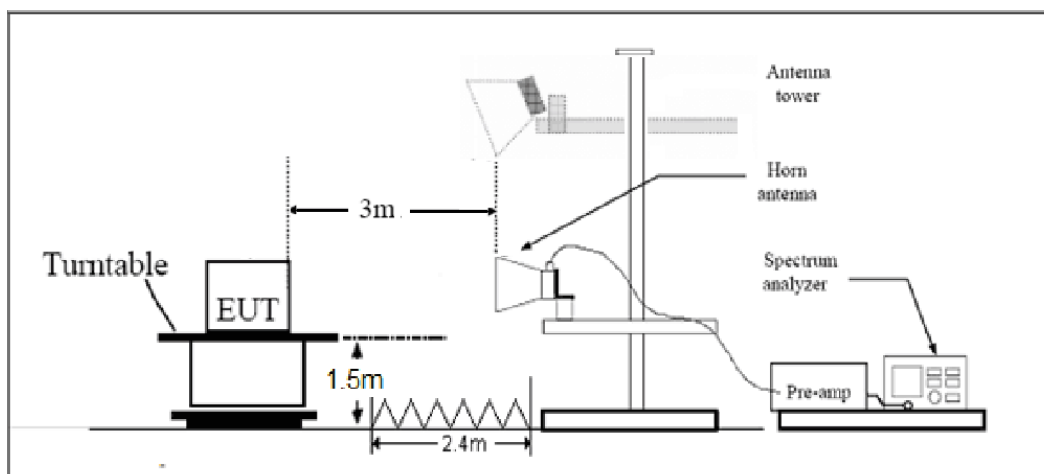
9KHz~ 30MHz



30MHz~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Limits

Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.”

Rule Part 27.53(f) For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation. Part 27.53 (c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

- (1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;
- (2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;
- (3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $76 + 10 \log(P)$ dB in a 6.25 kHz band segment, for base and fixed stations;
- (4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;
- (5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

Part 27.53 (h) Limit		-13 dBm
Part 27.53(f) Limit	Limit out of the band 1559-1610 MHz	-13 dBm
	Limit in the band 1559-1610 MHz	-40 dBm

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = \pm 1.96$, $U = \pm 3.55$ dB.

Test Results

Refer to the section 6.7 of this report for test data.

6 Test Results

6.1 RF Power Output and Effective Isotropic Radiated Power

LTE Band13 (Low Antenna)						
Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	ERP (dBm)
5	23205	1	#0	QPSK	23.71	17.86
5	23205	1	#Mid	QPSK	23.78	17.93
5	23205	1	#Max	QPSK	23.68	17.83
5	23205	12	#0	QPSK	22.86	17.01
5	23205	12	#Mid	QPSK	22.85	17.00
5	23205	12	#Max	QPSK	22.84	16.99
5	23205	25	#0	QPSK	22.87	17.02
5	23205	1	#0	16QAM	22.97	17.12
5	23205	1	#Mid	16QAM	23.06	17.21
5	23205	1	#Max	16QAM	22.95	17.10
5	23205	12	#0	16QAM	21.86	16.01
5	23205	12	#Mid	16QAM	21.89	16.04
5	23205	12	#Max	16QAM	21.93	16.08
5	23205	25	#0	16QAM	21.92	16.07
5	23230	1	#0	QPSK	23.75	17.90
5	23230	1	#Mid	QPSK	23.91	18.06
5	23230	1	#Max	QPSK	23.76	17.91
5	23230	12	#0	QPSK	22.83	16.98
5	23230	12	#Mid	QPSK	22.83	16.98
5	23230	12	#Max	QPSK	22.81	16.96
5	23230	25	#0	QPSK	22.84	16.99
5	23230	1	#0	16QAM	22.99	17.14
5	23230	1	#Mid	16QAM	23.13	17.28
5	23230	1	#Max	16QAM	22.95	17.10
5	23230	12	#0	16QAM	21.85	16.00
5	23230	12	#Mid	16QAM	21.85	16.00
5	23230	12	#Max	16QAM	21.71	15.86
5	23230	25	#0	16QAM	21.89	16.04
5	23255	1	#0	QPSK	23.81	17.96
5	23255	1	#Mid	QPSK	23.84	17.99
5	23255	1	#Max	QPSK	23.59	17.74
5	23255	12	#0	QPSK	22.56	16.71
5	23255	12	#Mid	QPSK	22.61	16.76
5	23255	12	#Max	QPSK	22.41	16.56



5	23255	25	#0	QPSK	22.59	16.74
5	23255	1	#0	16QAM	22.48	16.63
5	23255	1	#Mid	16QAM	22.52	16.67
5	23255	1	#Max	16QAM	22.47	16.62
5	23255	12	#0	16QAM	21.38	15.53
5	23255	12	#Mid	16QAM	21.41	15.56
5	23255	12	#Max	16QAM	21.34	15.49
5	23255	25	#0	16QAM	21.36	15.51
10	23230	1	#0	QPSK	23.86	18.01
10	23230	1	#Mid	QPSK	24.01	18.16
10	23230	1	#Max	QPSK	23.88	18.03
10	23230	25	#0	QPSK	22.90	17.05
10	23230	25	#Mid	QPSK	22.90	17.05
10	23230	25	#Max	QPSK	22.77	16.92
10	23230	50	#0	QPSK	22.84	16.99
10	23230	1	#0	16QAM	22.99	17.14
10	23230	1	#Mid	16QAM	23.17	17.32
10	23230	1	#Max	16QAM	22.78	16.93
10	23230	25	#0	16QAM	21.92	16.07
10	23230	25	#Mid	16QAM	21.83	15.98
10	23230	25	#Max	16QAM	21.62	15.77
10	23230	50	#0	16QAM	21.74	15.89

LTE Band13 (Upper Antenna)						
Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	ERP (dBm)
5	23205	1	#0	QPSK	23.75	17.50
5	23205	1	#Mid	QPSK	23.89	17.64
5	23205	1	#Max	QPSK	23.72	17.47
5	23205	12	#0	QPSK	22.82	16.57
5	23205	12	#Mid	QPSK	22.84	16.59
5	23205	12	#Max	QPSK	22.84	16.59
5	23205	25	#0	QPSK	22.84	16.59
5	23205	1	#0	16QAM	22.99	16.74
5	23205	1	#Mid	16QAM	23.12	16.87
5	23205	1	#Max	16QAM	22.98	16.73
5	23205	12	#0	16QAM	21.87	15.62
5	23205	12	#Mid	16QAM	21.83	15.58
5	23205	12	#Max	16QAM	21.86	15.61
5	23205	25	#0	16QAM	21.95	15.70
5	23230	1	#0	QPSK	23.74	17.49
5	23230	1	#Mid	QPSK	23.90	17.65
5	23230	1	#Max	QPSK	23.73	17.48



5	23230	12	#0	QPSK	22.81	16.56
5	23230	12	#Mid	QPSK	22.85	16.60
5	23230	12	#Max	QPSK	22.83	16.58
5	23230	25	#0	QPSK	22.83	16.58
5	23230	1	#0	16QAM	22.94	16.69
5	23230	1	#Mid	16QAM	23.01	16.76
5	23230	1	#Max	16QAM	22.88	16.63
5	23230	12	#0	16QAM	21.83	15.58
5	23230	12	#Mid	16QAM	21.83	15.58
5	23230	12	#Max	16QAM	21.81	15.56
5	23230	25	#0	16QAM	21.90	15.65
5	23255	1	#0	QPSK	23.71	17.46
5	23255	1	#Mid	QPSK	23.81	17.56
5	23255	1	#Max	QPSK	23.75	17.50
5	23255	12	#0	QPSK	22.85	16.60
5	23255	12	#Mid	QPSK	22.84	16.59
5	23255	12	#Max	QPSK	22.79	16.54
5	23255	25	#0	QPSK	22.84	16.59
5	23255	1	#0	16QAM	22.99	16.74
5	23255	1	#Mid	16QAM	23.07	16.82
5	23255	1	#Max	16QAM	22.95	16.70
5	23255	12	#0	16QAM	21.93	15.68
5	23255	12	#Mid	16QAM	21.98	15.73
5	23255	12	#Max	16QAM	21.78	15.53
5	23255	25	#0	16QAM	21.89	15.64
10	23230	1	#0	QPSK	23.80	17.55
10	23230	1	#Mid	QPSK	23.99	17.74
10	23230	1	#Max	QPSK	23.81	17.56
10	23230	25	#0	QPSK	22.89	16.64
10	23230	25	#Mid	QPSK	22.91	16.66
10	23230	25	#Max	QPSK	22.78	16.53
10	23230	50	#0	QPSK	22.85	16.60
10	23230	1	#0	16QAM	23.07	16.82
10	23230	1	#Mid	16QAM	23.20	16.95
10	23230	1	#Max	16QAM	22.97	16.72
10	23230	25	#0	16QAM	22.03	15.78
10	23230	25	#Mid	16QAM	22.01	15.76
10	23230	25	#Max	16QAM	21.90	15.65
10	23230	50	#0	16QAM	21.88	15.63



LTE Band66 (Low Antenna)						
Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	EIRP (dBm)
1.4	131979	1	#0	QPSK	23.81	22.61
1.4	131979	1	#Mid	QPSK	23.75	22.55
1.4	131979	1	#Max	QPSK	23.55	22.35
1.4	131979	3	#0	QPSK	23.69	22.49
1.4	131979	3	#Mid	QPSK	23.59	22.39
1.4	131979	3	#Max	QPSK	23.55	22.35
1.4	131979	6	#0	QPSK	22.77	21.57
1.4	131979	1	#0	16QAM	22.96	21.76
1.4	131979	1	#Mid	16QAM	22.84	21.64
1.4	131979	1	#Max	16QAM	22.54	21.34
1.4	131979	3	#0	16QAM	23.12	21.92
1.4	131979	3	#Mid	16QAM	22.80	21.60
1.4	131979	3	#Max	16QAM	22.74	21.54
1.4	131979	6	#0	16QAM	21.73	20.53
1.4	132322	1	#0	QPSK	23.75	22.55
1.4	132322	1	#Mid	QPSK	23.70	22.50
1.4	132322	1	#Max	QPSK	23.57	22.37
1.4	132322	3	#0	QPSK	23.67	22.47
1.4	132322	3	#Mid	QPSK	23.89	22.69
1.4	132322	3	#Max	QPSK	23.71	22.51
1.4	132322	6	#0	QPSK	22.89	21.69
1.4	132322	1	#0	16QAM	22.99	21.79
1.4	132322	1	#Mid	16QAM	23.16	21.96
1.4	132322	1	#Max	16QAM	23.00	21.80
1.4	132322	3	#0	16QAM	22.73	21.53
1.4	132322	3	#Mid	16QAM	22.77	21.57
1.4	132322	3	#Max	16QAM	22.63	21.43
1.4	132322	6	#0	16QAM	21.84	20.64
1.4	132665	1	#0	QPSK	23.70	22.50
1.4	132665	1	#Mid	QPSK	23.86	22.66
1.4	132665	1	#Max	QPSK	23.47	22.27
1.4	132665	3	#0	QPSK	23.51	22.31
1.4	132665	3	#Mid	QPSK	23.55	22.35
1.4	132665	3	#Max	QPSK	23.48	22.28
1.4	132665	6	#0	QPSK	22.54	21.34
1.4	132665	1	#0	16QAM	22.35	21.15
1.4	132665	1	#Mid	16QAM	22.46	21.26
1.4	132665	1	#Max	16QAM	22.28	21.08
1.4	132665	3	#0	16QAM	22.43	21.23



1.4	132665	3	#Mid	16QAM	22.39	21.19
1.4	132665	3	#Max	16QAM	22.41	21.21
1.4	132665	6	#0	16QAM	21.47	20.27
3	131987	1	#0	QPSK	23.98	22.78
3	131987	1	#Mid	QPSK	23.97	22.77
3	131987	1	#Max	QPSK	23.95	22.75
3	131987	8	#0	QPSK	23.00	21.80
3	131987	8	#Mid	QPSK	23.00	21.80
3	131987	8	#Max	QPSK	22.99	21.79
3	131987	15	#0	QPSK	22.95	21.75
3	131987	1	#0	16QAM	23.28	22.08
3	131987	1	#Mid	16QAM	23.26	22.06
3	131987	1	#Max	16QAM	23.22	22.02
3	131987	8	#0	16QAM	22.00	20.80
3	131987	8	#Mid	16QAM	22.02	20.82
3	131987	8	#Max	16QAM	21.94	20.74
3	131987	15	#0	16QAM	21.90	20.70
3	132322	1	#0	QPSK	23.91	22.71
3	132322	1	#Mid	QPSK	23.91	22.71
3	132322	1	#Max	QPSK	23.88	22.68
3	132322	8	#0	QPSK	22.90	21.70
3	132322	8	#Mid	QPSK	22.89	21.69
3	132322	8	#Max	QPSK	22.92	21.72
3	132322	15	#0	QPSK	22.87	21.67
3	132322	1	#0	16QAM	23.08	21.88
3	132322	1	#Mid	16QAM	23.04	21.84
3	132322	1	#Max	16QAM	23.07	21.87
3	132322	8	#0	16QAM	21.90	20.70
3	132322	8	#Mid	16QAM	21.90	20.70
3	132322	8	#Max	16QAM	21.90	20.70
3	132322	15	#0	16QAM	21.76	20.56
3	132657	1	#0	QPSK	23.97	22.77
3	132657	1	#Mid	QPSK	24.01	22.81
3	132657	1	#Max	QPSK	24.01	22.81
3	132657	8	#0	QPSK	22.89	21.69
3	132657	8	#Mid	QPSK	22.96	21.76
3	132657	8	#Max	QPSK	22.77	21.57
3	132657	15	#0	QPSK	22.72	21.52
3	132657	1	#0	16QAM	22.54	21.34
3	132657	1	#Mid	16QAM	22.34	21.14
3	132657	1	#Max	16QAM	22.31	21.11
3	132657	8	#0	16QAM	21.70	20.50
3	132657	8	#Mid	16QAM	21.91	20.71



3	132657	8	#Max	16QAM	21.71	20.51
3	132657	15	#0	16QAM	21.78	20.58
5	131997	1	#0	QPSK	23.88	22.68
5	131997	1	#Mid	QPSK	23.98	22.78
5	131997	1	#Max	QPSK	23.82	22.62
5	131997	12	#0	QPSK	22.97	21.77
5	131997	12	#Mid	QPSK	23.00	21.80
5	131997	12	#Max	QPSK	22.99	21.79
5	131997	25	#0	QPSK	23.00	21.80
5	131997	1	#0	16QAM	23.14	21.94
5	131997	1	#Mid	16QAM	23.23	22.03
5	131997	1	#Max	16QAM	23.14	21.94
5	131997	12	#0	16QAM	22.00	20.80
5	131997	12	#Mid	16QAM	22.02	20.82
5	131997	12	#Max	16QAM	22.00	20.80
5	131997	25	#0	16QAM	21.97	20.77
5	132322	1	#0	QPSK	23.81	22.61
5	132322	1	#Mid	QPSK	23.92	22.72
5	132322	1	#Max	QPSK	23.77	22.57
5	132322	12	#0	QPSK	22.88	21.68
5	132322	12	#Mid	QPSK	22.88	21.68
5	132322	12	#Max	QPSK	22.89	21.69
5	132322	25	#0	QPSK	22.89	21.69
5	132322	1	#0	16QAM	23.09	21.89
5	132322	1	#Mid	16QAM	23.16	21.96
5	132322	1	#Max	16QAM	23.05	21.85
5	132322	12	#0	16QAM	21.87	20.67
5	132322	12	#Mid	16QAM	21.84	20.64
5	132322	12	#Max	16QAM	21.84	20.64
5	132322	25	#0	16QAM	21.92	20.72
5	132647	1	#0	QPSK	23.85	22.65
5	132647	1	#Mid	QPSK	23.97	22.77
5	132647	1	#Max	QPSK	23.79	22.59
5	132647	12	#0	QPSK	22.71	21.51
5	132647	12	#Mid	QPSK	22.93	21.73
5	132647	12	#Max	QPSK	22.72	21.52
5	132647	25	#0	QPSK	22.58	21.38
5	132647	1	#0	16QAM	22.70	21.50
5	132647	1	#Mid	16QAM	22.67	21.47
5	132647	1	#Max	16QAM	22.99	21.79
5	132647	12	#0	16QAM	21.46	20.26
5	132647	12	#Mid	16QAM	21.42	20.22
5	132647	12	#Max	16QAM	21.59	20.39



5	132647	25	#0	16QAM	21.50	20.30
10	132022	1	#0	QPSK	23.96	22.76
10	132022	1	#Mid	QPSK	24.10	22.90
10	132022	1	#Max	QPSK	24.02	22.82
10	132022	25	#0	QPSK	22.99	21.79
10	132022	25	#Mid	QPSK	23.01	21.81
10	132022	25	#Max	QPSK	23.07	21.87
10	132022	50	#0	QPSK	23.03	21.83
10	132022	1	#0	16QAM	23.22	22.02
10	132022	1	#Mid	16QAM	23.37	22.17
10	132022	1	#Max	16QAM	23.30	22.10
10	132022	25	#0	16QAM	22.09	20.89
10	132022	25	#Mid	16QAM	22.11	20.91
10	132022	25	#Max	16QAM	22.14	20.94
10	132022	50	#0	16QAM	22.06	20.86
10	132322	1	#0	QPSK	23.94	22.74
10	132322	1	#Mid	QPSK	24.07	22.87
10	132322	1	#Max	QPSK	23.85	22.65
10	132322	25	#0	QPSK	22.95	21.75
10	132322	25	#Mid	QPSK	22.96	21.76
10	132322	25	#Max	QPSK	23.02	21.82
10	132322	50	#0	QPSK	22.98	21.78
10	132322	1	#0	16QAM	23.10	21.90
10	132322	1	#Mid	16QAM	23.19	21.99
10	132322	1	#Max	16QAM	22.96	21.76
10	132322	25	#0	16QAM	21.98	20.78
10	132322	25	#Mid	16QAM	21.98	20.78
10	132322	25	#Max	16QAM	22.04	20.84
10	132322	50	#0	16QAM	21.95	20.75
10	132622	1	#0	QPSK	23.99	22.79
10	132622	1	#Mid	QPSK	24.14	22.94
10	132622	1	#Max	QPSK	23.80	22.60
10	132622	25	#0	QPSK	22.62	21.42
10	132622	25	#Mid	QPSK	22.79	21.59
10	132622	25	#Max	QPSK	22.58	21.38
10	132622	50	#0	QPSK	22.57	21.37
10	132622	1	#0	16QAM	22.31	21.11
10	132622	1	#Mid	16QAM	22.45	21.25
10	132622	1	#Max	16QAM	22.33	21.13
10	132622	25	#0	16QAM	21.79	20.59
10	132622	25	#Mid	16QAM	21.59	20.39
10	132622	25	#Max	16QAM	21.73	20.53
10	132622	50	#0	16QAM	21.64	20.44



15	132047	1	#0	QPSK	23.85	22.65
15	132047	1	#Mid	QPSK	24.01	22.81
15	132047	1	#Max	QPSK	23.95	22.75
15	132047	36	#0	QPSK	23.02	21.82
15	132047	36	#Mid	QPSK	22.99	21.79
15	132047	36	#Max	QPSK	23.11	21.91
15	132047	75	#0	QPSK	23.05	21.85
15	132047	1	#0	16QAM	23.12	21.92
15	132047	1	#Mid	16QAM	23.29	22.09
15	132047	1	#Max	16QAM	23.21	22.01
15	132047	36	#0	16QAM	21.99	20.79
15	132047	36	#Mid	16QAM	22.01	20.81
15	132047	36	#Max	16QAM	22.10	20.90
15	132047	75	#0	16QAM	22.07	20.87
15	132322	1	#0	QPSK	23.85	22.65
15	132322	1	#Mid	QPSK	23.88	22.68
15	132322	1	#Max	QPSK	23.74	22.54
15	132322	36	#0	QPSK	22.95	21.75
15	132322	36	#Mid	QPSK	22.98	21.78
15	132322	36	#Max	QPSK	23.01	21.81
15	132322	75	#0	QPSK	23.02	21.82
15	132322	1	#0	16QAM	23.03	21.83
15	132322	1	#Mid	16QAM	22.95	21.75
15	132322	1	#Max	16QAM	22.81	21.61
15	132322	36	#0	16QAM	21.90	20.70
15	132322	36	#Mid	16QAM	21.94	20.74
15	132322	36	#Max	16QAM	21.95	20.75
15	132322	75	#0	16QAM	21.94	20.74
15	132597	1	#0	QPSK	23.82	22.62
15	132597	1	#Mid	QPSK	23.98	22.78
15	132597	1	#Max	QPSK	23.58	22.38
15	132597	36	#0	QPSK	22.92	21.72
15	132597	36	#Mid	QPSK	22.47	21.27
15	132597	36	#Max	QPSK	22.64	21.44
15	132597	75	#0	QPSK	22.63	21.43
15	132597	1	#0	16QAM	22.32	21.12
15	132597	1	#Mid	16QAM	22.57	21.37
15	132597	1	#Max	16QAM	22.31	21.11
15	132597	36	#0	16QAM	21.56	20.36
15	132597	36	#Mid	16QAM	21.49	20.29
15	132597	36	#Max	16QAM	21.63	20.43
15	132597	75	#0	16QAM	21.47	20.27
20	132072	1	#0	QPSK	23.73	22.53



20	132072	1	#Mid	QPSK	24.24	23.04
20	132072	1	#Max	QPSK	23.79	22.59
20	132072	50	#0	QPSK	22.96	21.76
20	132072	50	#Mid	QPSK	22.96	21.76
20	132072	50	#Max	QPSK	23.00	21.80
20	132072	100	#0	QPSK	23.01	21.81
20	132072	1	#0	16QAM	22.81	21.61
20	132072	1	#Mid	16QAM	23.43	22.23
20	132072	1	#Max	16QAM	22.87	21.67
20	132072	50	#0	16QAM	22.01	20.81
20	132072	50	#Mid	16QAM	21.92	20.72
20	132072	50	#Max	16QAM	21.98	20.78
20	132072	100	#0	16QAM	21.97	20.77
20	132322	1	#0	QPSK	23.64	22.44
20	132322	1	#Mid	QPSK	24.04	22.84
20	132322	1	#Max	QPSK	23.35	22.15
20	132322	50	#0	QPSK	22.81	21.61
20	132322	50	#Mid	QPSK	22.77	21.57
20	132322	50	#Max	QPSK	22.90	21.70
20	132322	100	#0	QPSK	22.89	21.69
20	132322	1	#0	16QAM	22.38	21.18
20	132322	1	#Mid	16QAM	22.86	21.66
20	132322	1	#Max	16QAM	21.98	20.78
20	132322	50	#0	16QAM	21.76	20.56
20	132322	50	#Mid	16QAM	21.73	20.53
20	132322	50	#Max	16QAM	21.91	20.71
20	132322	100	#0	16QAM	21.90	20.70
20	132572	1	#0	QPSK	23.52	22.32
20	132572	1	#Mid	QPSK	24.03	22.83
20	132572	1	#Max	QPSK	23.36	22.16
20	132572	50	#0	QPSK	22.69	21.49
20	132572	50	#Mid	QPSK	22.44	21.24
20	132572	50	#Max	QPSK	22.41	21.21
20	132572	100	#0	QPSK	22.70	21.50
20	132572	1	#0	16QAM	21.89	20.69
20	132572	1	#Mid	16QAM	22.45	21.25
20	132572	1	#Max	16QAM	21.89	20.69
20	132572	50	#0	16QAM	21.74	20.54
20	132572	50	#Mid	16QAM	21.51	20.31
20	132572	50	#Max	16QAM	21.47	20.27
20	132572	100	#0	16QAM	21.62	20.42



LTE Band66 (Upper Antenna)						
Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	EIRP (dBm)
1.4	131979	1	#0	QPSK	23.90	23.70
1.4	131979	1	#Mid	QPSK	24.20	24.00
1.4	131979	1	#Max	QPSK	23.96	23.76
1.4	131979	3	#0	QPSK	23.95	23.75
1.4	131979	3	#Mid	QPSK	23.96	23.76
1.4	131979	3	#Max	QPSK	23.94	23.74
1.4	131979	6	#0	QPSK	22.90	22.70
1.4	131979	1	#0	16QAM	22.90	22.70
1.4	131979	1	#Mid	16QAM	23.16	22.96
1.4	131979	1	#Max	16QAM	22.90	22.70
1.4	131979	3	#0	16QAM	23.06	22.86
1.4	131979	3	#Mid	16QAM	23.07	22.87
1.4	131979	3	#Max	16QAM	23.13	22.93
1.4	131979	6	#0	16QAM	21.92	21.72
1.4	132322	1	#0	QPSK	23.79	23.59
1.4	132322	1	#Mid	QPSK	23.98	23.78
1.4	132322	1	#Max	QPSK	23.74	23.54
1.4	132322	3	#0	QPSK	23.90	23.70
1.4	132322	3	#Mid	QPSK	23.88	23.68
1.4	132322	3	#Max	QPSK	23.85	23.65
1.4	132322	6	#0	QPSK	22.81	22.61
1.4	132322	1	#0	16QAM	22.94	22.74
1.4	132322	1	#Mid	16QAM	23.16	22.96
1.4	132322	1	#Max	16QAM	22.97	22.77
1.4	132322	3	#0	16QAM	22.90	22.70
1.4	132322	3	#Mid	16QAM	22.87	22.67
1.4	132322	3	#Max	16QAM	22.90	22.70
1.4	132322	6	#0	16QAM	21.77	21.57
1.4	132665	1	#0	QPSK	23.65	23.45
1.4	132665	1	#Mid	QPSK	23.88	23.68
1.4	132665	1	#Max	QPSK	23.67	23.47
1.4	132665	3	#0	QPSK	23.76	23.56
1.4	132665	3	#Mid	QPSK	23.78	23.58
1.4	132665	3	#Max	QPSK	23.72	23.52
1.4	132665	6	#0	QPSK	22.65	22.45
1.4	132665	1	#0	16QAM	22.53	22.33
1.4	132665	1	#Mid	16QAM	22.73	22.53
1.4	132665	1	#Max	16QAM	22.56	22.36
1.4	132665	3	#0	16QAM	22.67	22.47



1.4	132665	3	#Mid	16QAM	22.69	22.49
1.4	132665	3	#Max	16QAM	22.68	22.48
1.4	132665	6	#0	16QAM	21.65	21.45
3	131987	1	#0	QPSK	23.91	23.71
3	131987	1	#Mid	QPSK	23.86	23.66
3	131987	1	#Max	QPSK	23.85	23.65
3	131987	8	#0	QPSK	22.89	22.69
3	131987	8	#Mid	QPSK	22.91	22.71
3	131987	8	#Max	QPSK	22.88	22.68
3	131987	15	#0	QPSK	22.83	22.63
3	131987	1	#0	16QAM	23.17	22.97
3	131987	1	#Mid	16QAM	23.18	22.98
3	131987	1	#Max	16QAM	23.14	22.94
3	131987	8	#0	16QAM	21.90	21.70
3	131987	8	#Mid	16QAM	21.89	21.69
3	131987	8	#Max	16QAM	21.87	21.67
3	131987	15	#0	16QAM	21.81	21.61
3	132322	1	#0	QPSK	23.85	23.65
3	132322	1	#Mid	QPSK	23.87	23.67
3	132322	1	#Max	QPSK	23.83	23.63
3	132322	8	#0	QPSK	22.87	22.67
3	132322	8	#Mid	QPSK	22.89	22.69
3	132322	8	#Max	QPSK	22.88	22.68
3	132322	15	#0	QPSK	22.87	22.67
3	132322	1	#0	16QAM	23.06	22.86
3	132322	1	#Mid	16QAM	23.03	22.83
3	132322	1	#Max	16QAM	22.99	22.79
3	132322	8	#0	16QAM	21.88	21.68
3	132322	8	#Mid	16QAM	21.86	21.66
3	132322	8	#Max	16QAM	21.86	21.66
3	132322	15	#0	16QAM	21.74	21.54
3	132657	1	#0	QPSK	23.76	23.56
3	132657	1	#Mid	QPSK	23.78	23.58
3	132657	1	#Max	QPSK	23.81	23.61
3	132657	8	#0	QPSK	22.71	22.51
3	132657	8	#Mid	QPSK	22.74	22.54
3	132657	8	#Max	QPSK	22.75	22.55
3	132657	15	#0	QPSK	22.72	22.52
3	132657	1	#0	16QAM	22.60	22.40
3	132657	1	#Mid	16QAM	22.65	22.45
3	132657	1	#Max	16QAM	22.62	22.42
3	132657	8	#0	16QAM	21.73	21.53
3	132657	8	#Mid	16QAM	21.76	21.56



3	132657	8	#Max	16QAM	21.76	21.56
3	132657	15	#0	16QAM	21.73	21.53
5	131997	1	#0	QPSK	23.80	23.60
5	131997	1	#Mid	QPSK	23.97	23.77
5	131997	1	#Max	QPSK	23.83	23.63
5	131997	12	#0	QPSK	22.95	22.75
5	131997	12	#Mid	QPSK	22.91	22.71
5	131997	12	#Max	QPSK	22.95	22.75
5	131997	25	#0	QPSK	22.93	22.73
5	131997	1	#0	16QAM	23.02	22.82
5	131997	1	#Mid	16QAM	23.08	22.88
5	131997	1	#Max	16QAM	23.01	22.81
5	131997	12	#0	16QAM	21.86	21.66
5	131997	12	#Mid	16QAM	21.88	21.68
5	131997	12	#Max	16QAM	21.89	21.69
5	131997	25	#0	16QAM	21.89	21.69
5	132322	1	#0	QPSK	23.74	23.54
5	132322	1	#Mid	QPSK	23.80	23.60
5	132322	1	#Max	QPSK	23.68	23.48
5	132322	12	#0	QPSK	22.85	22.65
5	132322	12	#Mid	QPSK	22.86	22.66
5	132322	12	#Max	QPSK	22.86	22.66
5	132322	25	#0	QPSK	22.85	22.65
5	132322	1	#0	16QAM	23.05	22.85
5	132322	1	#Mid	16QAM	23.11	22.91
5	132322	1	#Max	16QAM	22.97	22.77
5	132322	12	#0	16QAM	21.87	21.67
5	132322	12	#Mid	16QAM	21.88	21.68
5	132322	12	#Max	16QAM	21.89	21.69
5	132322	25	#0	16QAM	21.90	21.70
5	132647	1	#0	QPSK	23.59	23.39
5	132647	1	#Mid	QPSK	23.71	23.51
5	132647	1	#Max	QPSK	23.58	23.38
5	132647	12	#0	QPSK	22.72	22.52
5	132647	12	#Mid	QPSK	22.73	22.53
5	132647	12	#Max	QPSK	22.69	22.49
5	132647	25	#0	QPSK	22.74	22.54
5	132647	1	#0	16QAM	22.91	22.71
5	132647	1	#Mid	16QAM	23.02	22.82
5	132647	1	#Max	16QAM	22.87	22.67
5	132647	12	#0	16QAM	21.71	21.51
5	132647	12	#Mid	16QAM	21.66	21.46
5	132647	12	#Max	16QAM	21.68	21.48



5	132647	25	#0	16QAM	21.77	21.57
10	132022	1	#0	QPSK	23.90	23.70
10	132022	1	#Mid	QPSK	23.98	23.78
10	132022	1	#Max	QPSK	23.95	23.75
10	132022	25	#0	QPSK	22.97	22.77
10	132022	25	#Mid	QPSK	22.94	22.74
10	132022	25	#Max	QPSK	23.02	22.82
10	132022	50	#0	QPSK	22.99	22.79
10	132022	1	#0	16QAM	23.17	22.97
10	132022	1	#Mid	16QAM	23.29	23.09
10	132022	1	#Max	16QAM	23.26	23.06
10	132022	25	#0	16QAM	22.04	21.84
10	132022	25	#Mid	16QAM	22.05	21.85
10	132022	25	#Max	16QAM	22.10	21.90
10	132022	50	#0	16QAM	22.02	21.82
10	132322	1	#0	QPSK	23.92	23.72
10	132322	1	#Mid	QPSK	24.01	23.81
10	132322	1	#Max	QPSK	23.82	23.62
10	132322	25	#0	QPSK	22.95	22.75
10	132322	25	#Mid	QPSK	22.94	22.74
10	132322	25	#Max	QPSK	22.97	22.77
10	132322	50	#0	QPSK	22.96	22.76
10	132322	1	#0	16QAM	23.08	22.88
10	132322	1	#Mid	16QAM	23.17	22.97
10	132322	1	#Max	16QAM	22.95	22.75
10	132322	25	#0	16QAM	21.97	21.77
10	132322	25	#Mid	16QAM	21.96	21.76
10	132322	25	#Max	16QAM	21.99	21.79
10	132322	50	#0	16QAM	21.92	21.72
10	132622	1	#0	QPSK	23.72	23.52
10	132622	1	#Mid	QPSK	23.93	23.73
10	132622	1	#Max	QPSK	23.72	23.52
10	132622	25	#0	QPSK	22.80	22.60
10	132622	25	#Mid	QPSK	22.78	22.58
10	132622	25	#Max	QPSK	22.72	22.52
10	132622	50	#0	QPSK	22.76	22.56
10	132622	1	#0	16QAM	22.56	22.36
10	132622	1	#Mid	16QAM	22.66	22.46
10	132622	1	#Max	16QAM	22.56	22.36
10	132622	25	#0	16QAM	21.80	21.60
10	132622	25	#Mid	16QAM	21.78	21.58
10	132622	25	#Max	16QAM	21.78	21.58
10	132622	50	#0	16QAM	21.78	21.58



15	132047	1	#0	QPSK	23.83	23.63
15	132047	1	#Mid	QPSK	24.02	23.82
15	132047	1	#Max	QPSK	23.97	23.77
15	132047	36	#0	QPSK	22.94	22.74
15	132047	36	#Mid	QPSK	22.93	22.73
15	132047	36	#Max	QPSK	23.08	22.88
15	132047	75	#0	QPSK	23.00	22.80
15	132047	1	#0	16QAM	22.83	22.63
15	132047	1	#Mid	16QAM	23.00	22.80
15	132047	1	#Max	16QAM	22.94	22.74
15	132047	36	#0	16QAM	21.89	21.69
15	132047	36	#Mid	16QAM	21.86	21.66
15	132047	36	#Max	16QAM	22.01	21.81
15	132047	75	#0	16QAM	21.99	21.79
15	132322	1	#0	QPSK	23.79	23.59
15	132322	1	#Mid	QPSK	23.81	23.61
15	132322	1	#Max	QPSK	23.68	23.48
15	132322	36	#0	QPSK	22.98	22.78
15	132322	36	#Mid	QPSK	22.94	22.74
15	132322	36	#Max	QPSK	22.94	22.74
15	132322	75	#0	QPSK	22.93	22.73
15	132322	1	#0	16QAM	23.09	22.89
15	132322	1	#Mid	16QAM	23.10	22.90
15	132322	1	#Max	16QAM	22.91	22.71
15	132322	36	#0	16QAM	21.93	21.73
15	132322	36	#Mid	16QAM	21.91	21.71
15	132322	36	#Max	16QAM	21.92	21.72
15	132322	75	#0	16QAM	21.92	21.72
15	132597	1	#0	QPSK	23.59	23.39
15	132597	1	#Mid	QPSK	23.75	23.55
15	132597	1	#Max	QPSK	23.62	23.42
15	132597	36	#0	QPSK	22.74	22.54
15	132597	36	#Mid	QPSK	22.74	22.54
15	132597	36	#Max	QPSK	22.71	22.51
15	132597	75	#0	QPSK	22.71	22.51
15	132597	1	#0	16QAM	22.59	22.39
15	132597	1	#Mid	16QAM	22.75	22.55
15	132597	1	#Max	16QAM	22.61	22.41
15	132597	36	#0	16QAM	21.70	21.50
15	132597	36	#Mid	16QAM	21.70	21.50
15	132597	36	#Max	16QAM	21.67	21.47
15	132597	75	#0	16QAM	21.70	21.50
20	132072	1	#0	QPSK	23.63	23.43



20	132072	1	#Mid	QPSK	24.22	24.02
20	132072	1	#Max	QPSK	23.76	23.56
20	132072	50	#0	QPSK	22.91	22.71
20	132072	50	#Mid	QPSK	22.87	22.67
20	132072	50	#Max	QPSK	22.94	22.74
20	132072	100	#0	QPSK	22.95	22.75
20	132072	1	#0	16QAM	22.82	22.62
20	132072	1	#Mid	16QAM	23.33	23.13
20	132072	1	#Max	16QAM	22.96	22.76
20	132072	50	#0	16QAM	21.91	21.71
20	132072	50	#Mid	16QAM	21.91	21.71
20	132072	50	#Max	16QAM	22.01	21.81
20	132072	100	#0	16QAM	21.94	21.74
20	132322	1	#0	QPSK	23.72	23.52
20	132322	1	#Mid	QPSK	24.05	23.85
20	132322	1	#Max	QPSK	23.54	23.34
20	132322	50	#0	QPSK	22.88	22.68
20	132322	50	#Mid	QPSK	22.85	22.65
20	132322	50	#Max	QPSK	22.89	22.69
20	132322	100	#0	QPSK	22.87	22.67
20	132322	1	#0	16QAM	22.56	22.36
20	132322	1	#Mid	16QAM	22.90	22.70
20	132322	1	#Max	16QAM	22.36	22.16
20	132322	50	#0	16QAM	21.86	21.66
20	132322	50	#Mid	16QAM	21.83	21.63
20	132322	50	#Max	16QAM	21.85	21.65
20	132322	100	#0	16QAM	21.89	21.69
20	132572	1	#0	QPSK	23.44	23.24
20	132572	1	#Mid	QPSK	23.80	23.60
20	132572	1	#Max	QPSK	23.38	23.18
20	132572	50	#0	QPSK	22.68	22.48
20	132572	50	#Mid	QPSK	22.70	22.50
20	132572	50	#Max	QPSK	22.65	22.45
20	132572	100	#0	QPSK	22.66	22.46
20	132572	1	#0	16QAM	22.23	22.03
20	132572	1	#Mid	16QAM	22.60	22.40
20	132572	1	#Max	16QAM	22.12	21.92
20	132572	50	#0	16QAM	21.76	21.56
20	132572	50	#Mid	16QAM	21.78	21.58
20	132572	50	#Max	16QAM	21.70	21.50
20	132572	100	#0	16QAM	21.68	21.48

6.2 Occupied Bandwidth

LTE Band 13						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	5	23205	779.5	4.524	5.134
			23230	782	4.524	5.181
			23255	784.5	4.519	5.154
		10	23230	782	8.992	10.130
	16QAM	5	23205	779.5	4.530	5.198
			23230	782	4.506	5.039
			23255	784.5	4.527	5.145
		10	23230	782	8.969	9.865

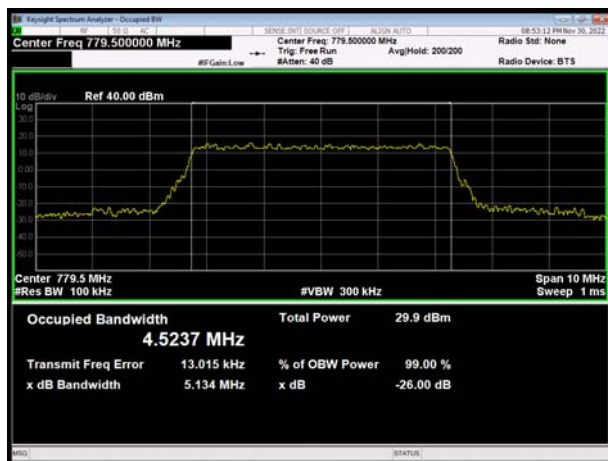
LTE Band 66						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	1.4	131979	1710.7	1.093	1.278
			132322	1745	1.092	1.292
			132665	1779.3	1.087	1.307
		3	131987	1711.5	2.696	2.922
			132322	1745	2.684	2.913
			132657	1778.5	2.699	2.926
		5	131997	1712.5	4.517	5.082
			132322	1745	4.519	5.018
			132647	1777.5	4.538	5.166
		10	132022	1715	8.978	9.917
			132322	1745	8.988	9.880
			132622	1775	9.015	9.940
		15	132047	1717.5	13.482	14.718
			132322	1745	13.500	14.692
			132597	1772.5	13.485	14.998
		20	132072	1720	17.978	19.799
			132322	1745	18.008	19.615
			132572	1770	17.919	19.437
	16QAM	1.4	131979	1710.7	1.091	1.284
			132322	1745	1.095	1.297
			132665	1779.3	1.098	1.277
		3	131987	1711.5	2.683	2.908



			132322	1745	2.684	2.936
			132657	1778.5	2.688	2.899
		5	131997	1712.5	4.521	5.149
			132322	1745	4.539	5.233
			132647	1777.5	4.520	5.138
		10	132022	1715	8.988	9.934
			132322	1745	8.996	10.042
			132622	1775	9.005	10.004
		15	132047	1717.5	13.494	15.030
			132322	1745	13.488	14.842
			132597	1772.5	13.495	14.974
		20	132072	1720	17.931	19.772
			132322	1745	17.938	19.642
			132572	1770	17.956	19.504



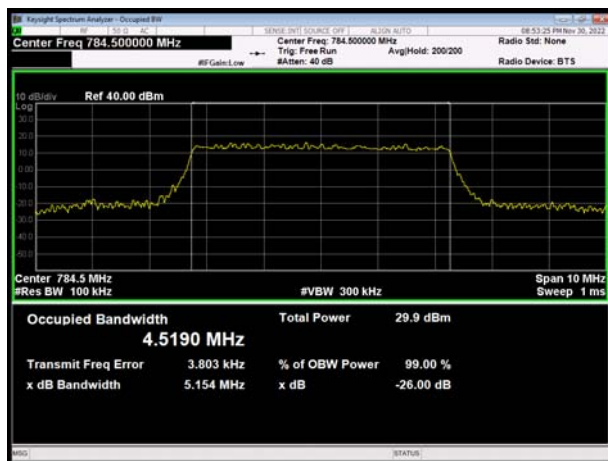
LTE Band 13 QPSK 5MHz CH-Low



LTE Band 13 QPSK 5MHz CH-Middle



LTE Band 13 QPSK 5MHz CH-High



LTE Band 13 QPSK 10MHz CH-Middle

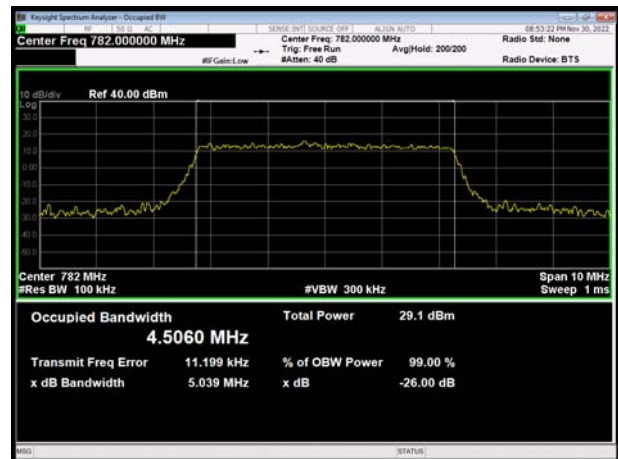




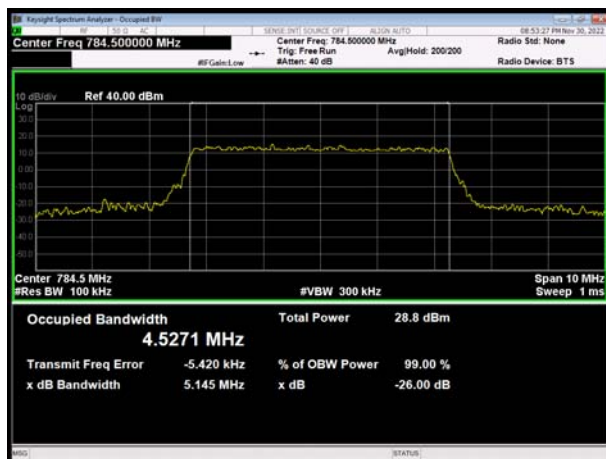
LTE Band 13 16QAM 5MHz CH-Low



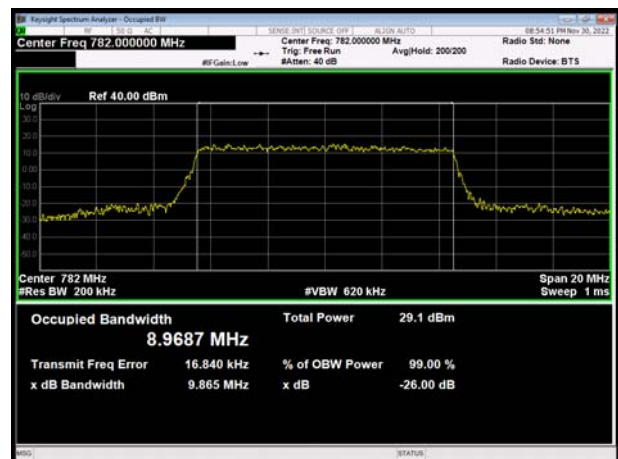
LTE Band 13 16QAM 5MHz CH-Middle



LTE Band 13 16QAM 5MHz CH-High

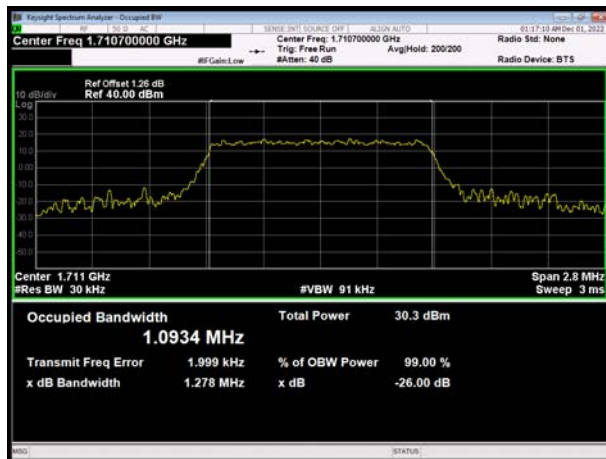


LTE Band 13 16QAM 10MHz CH-Middle

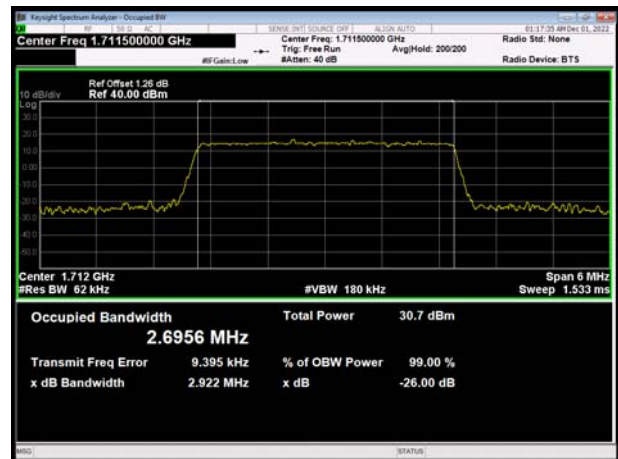




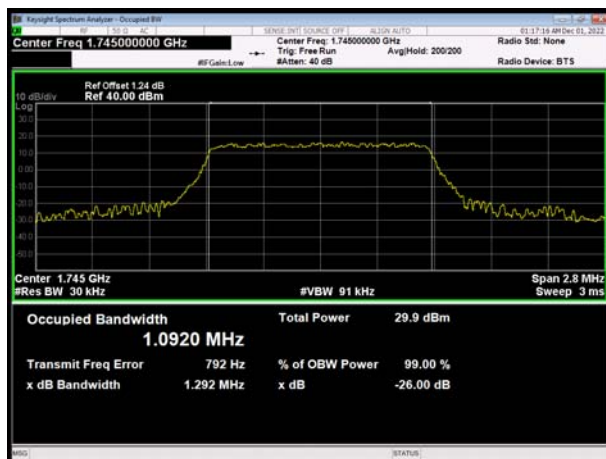
LTE Band 66 QPSK 1.4MHz CH-Low



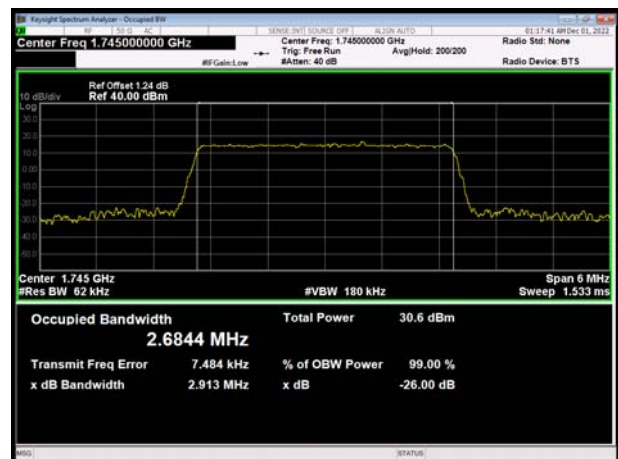
LTE Band 66 QPSK 3MHz CH-Low



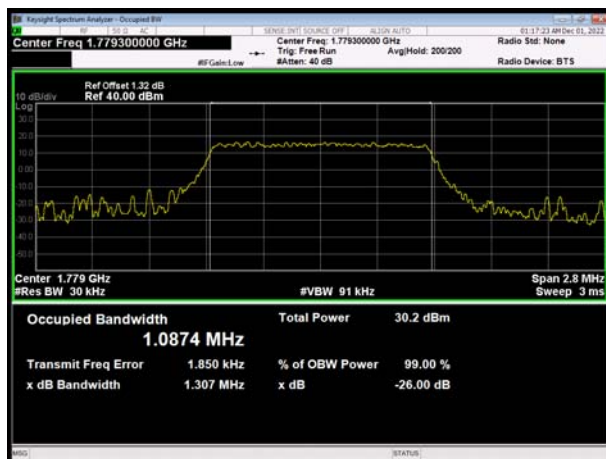
LTE Band 66 QPSK 1.4MHz CH-Middle



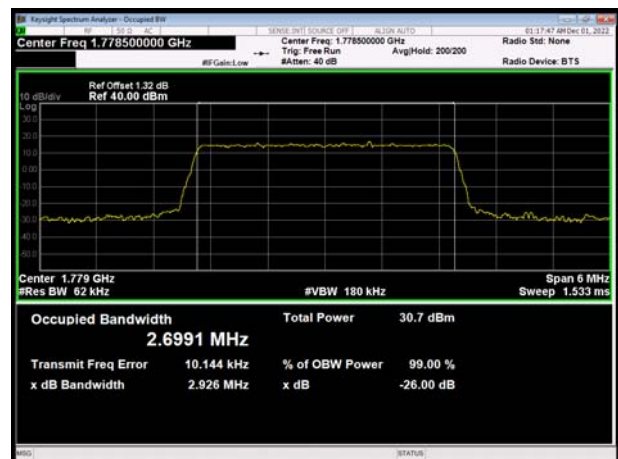
LTE Band 66 QPSK 3MHz CH-Middle



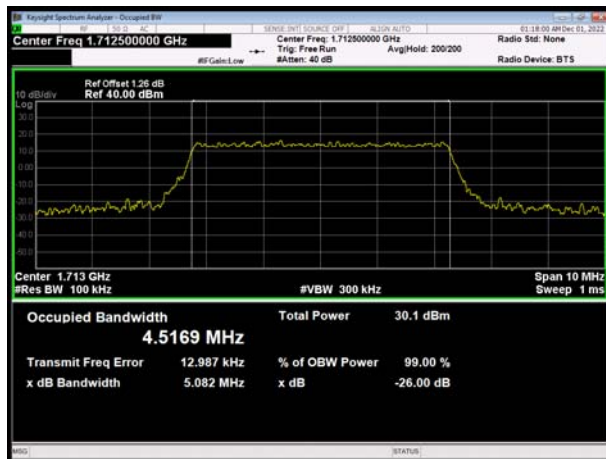
LTE Band 66 QPSK 1.4MHz CH-High



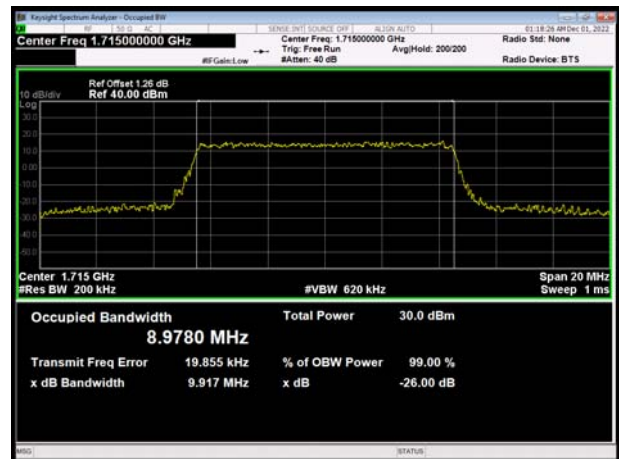
LTE Band 66 QPSK 3MHz CH-High



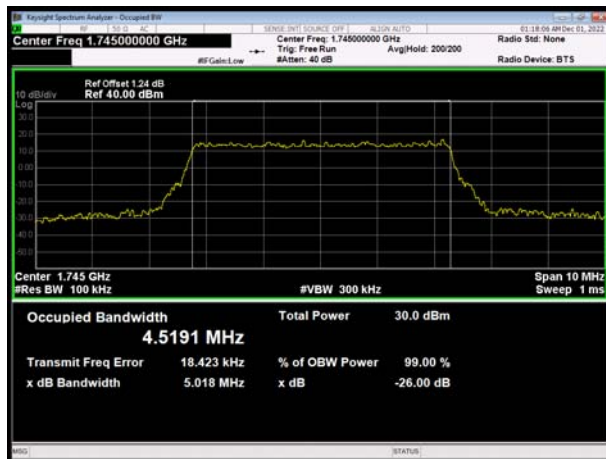
LTE Band 66 QPSK 5MHz CH-Low



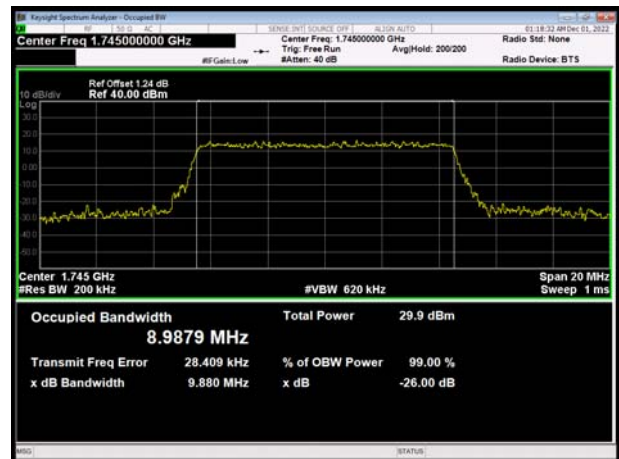
LTE Band 66 QPSK 10MHz CH-Low



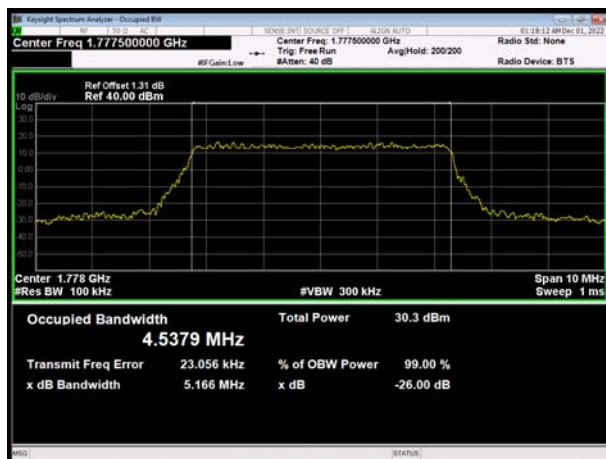
LTE Band 66 QPSK 5MHz CH-Middle



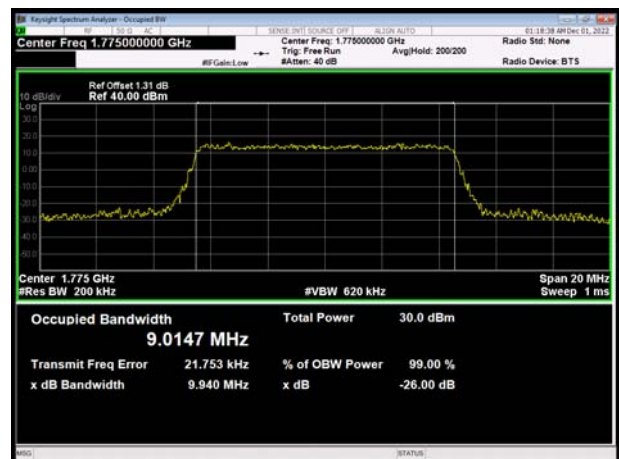
LTE Band 66 QPSK 10MHz CH-Middle



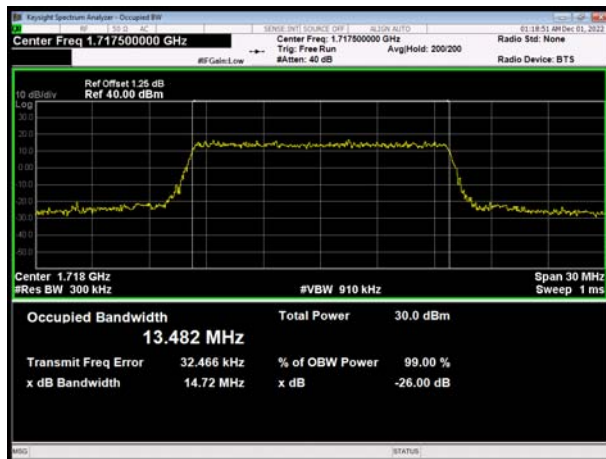
LTE Band 66 QPSK 5MHz CH-High



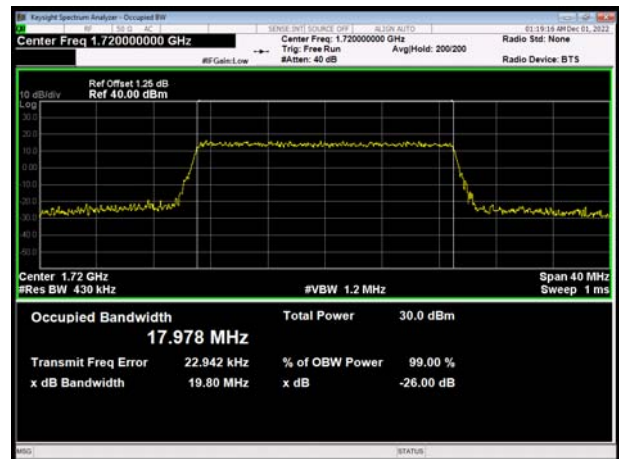
LTE Band 66 QPSK 10MHz CH-High



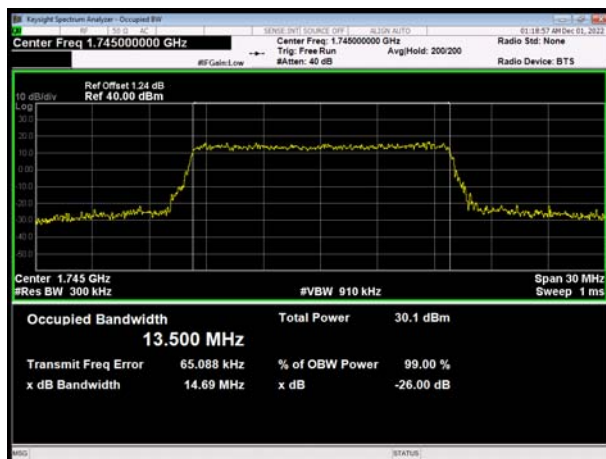
LTE Band 66 QPSK 15MHz CH-Low



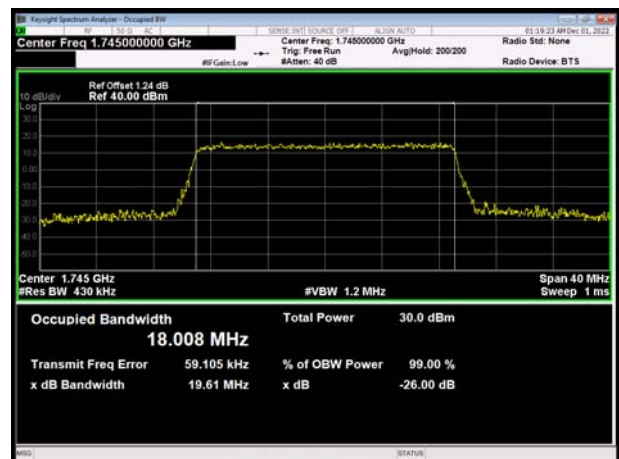
LTE Band 66 QPSK 20MHz CH-Low



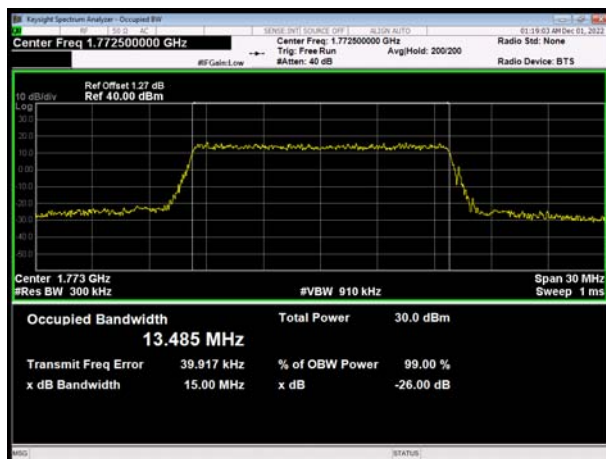
LTE Band 66 QPSK 15MHz CH-Middle



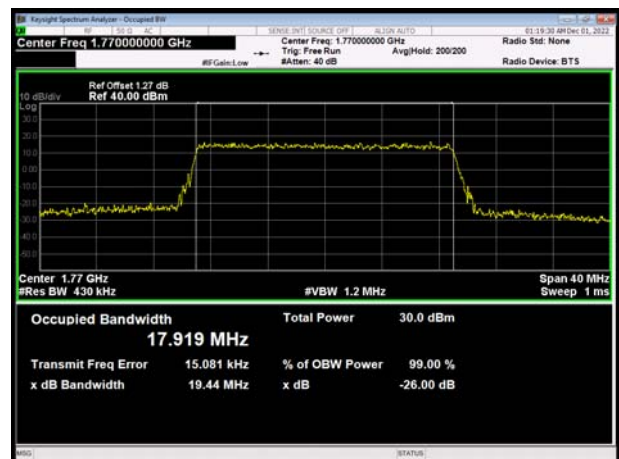
LTE Band 66 QPSK 20MHz CH-Middle



LTE Band 66 QPSK 15MHz CH-High

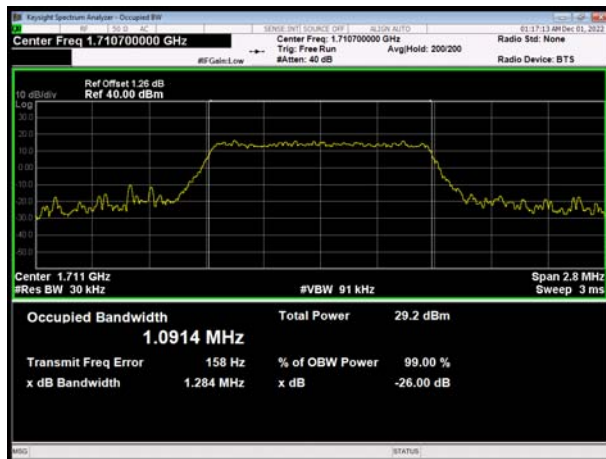


LTE Band 66 QPSK 20MHz CH-High

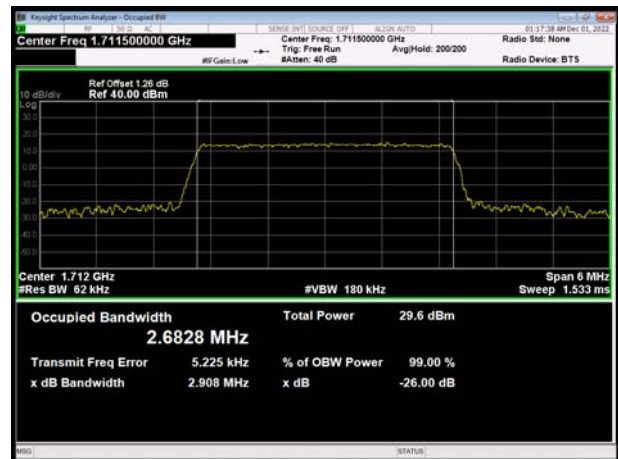




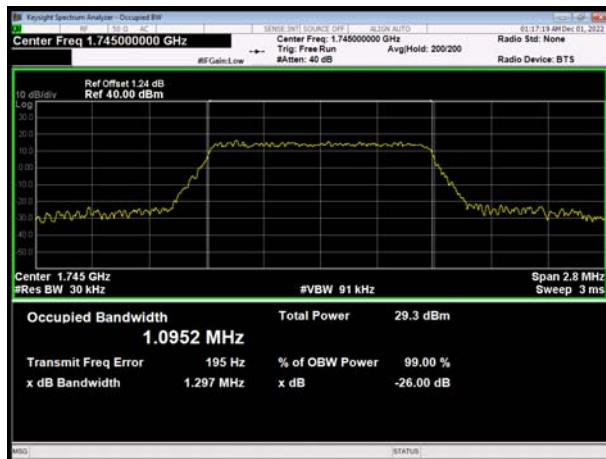
LTE Band 66 16QAM 1.4MHz CH-Low



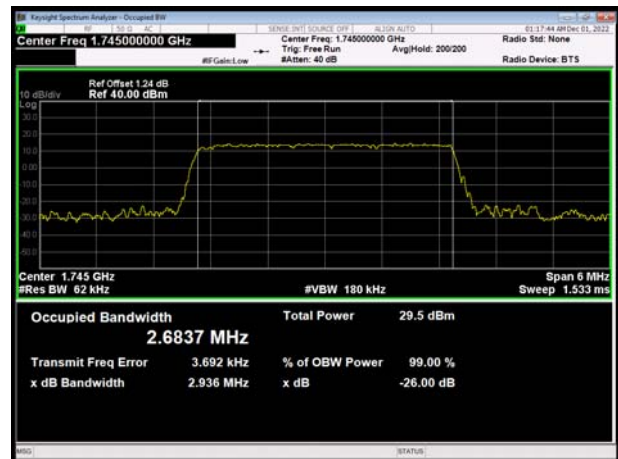
LTE Band 66 16QAM 3MHz CH-Low



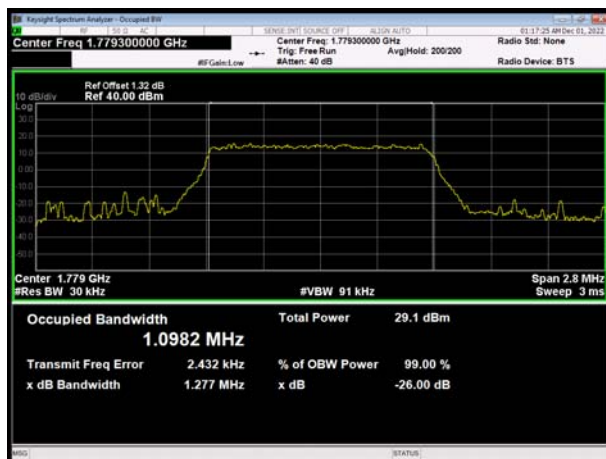
LTE Band 66 16QAM 1.4MHz CH-Middle



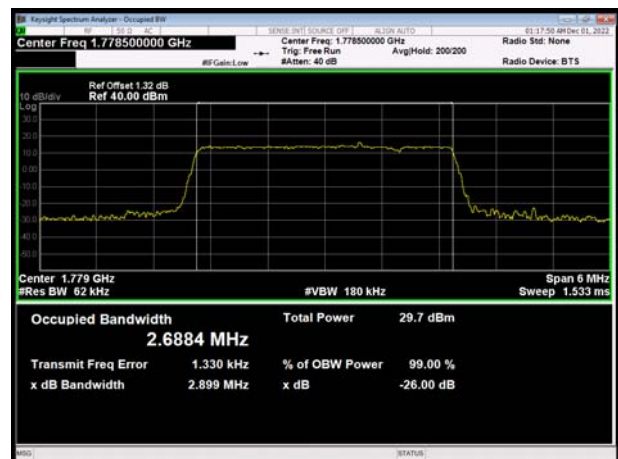
LTE Band 66 16QAM 3MHz CH-Middle



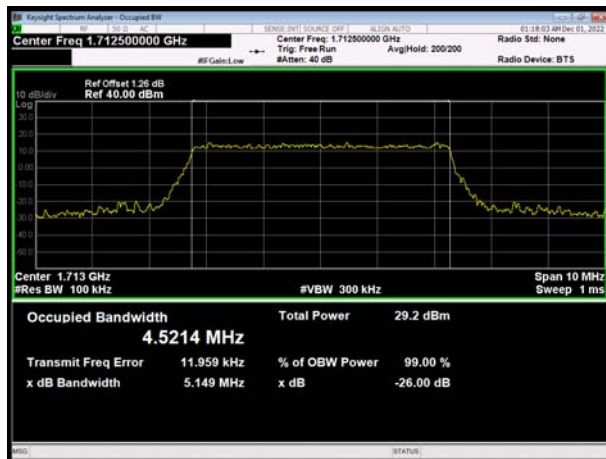
LTE Band 66 16QAM 1.4MHz CH-High



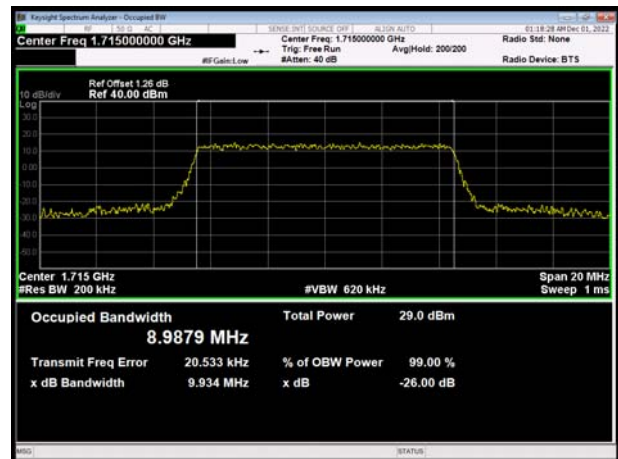
LTE Band 66 16QAM 3MHz CH-High



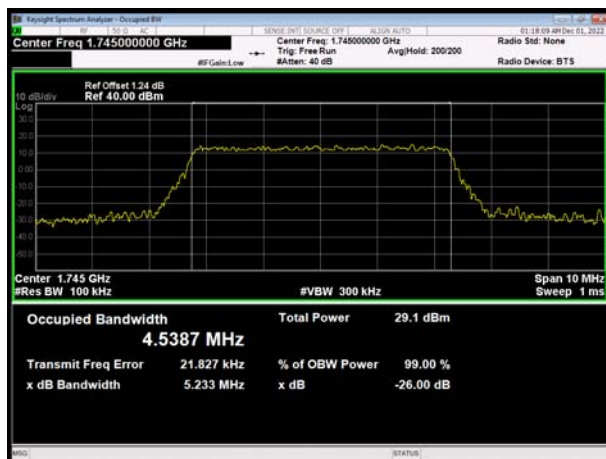
LTE Band 66 16QAM 5MHz CH-Low



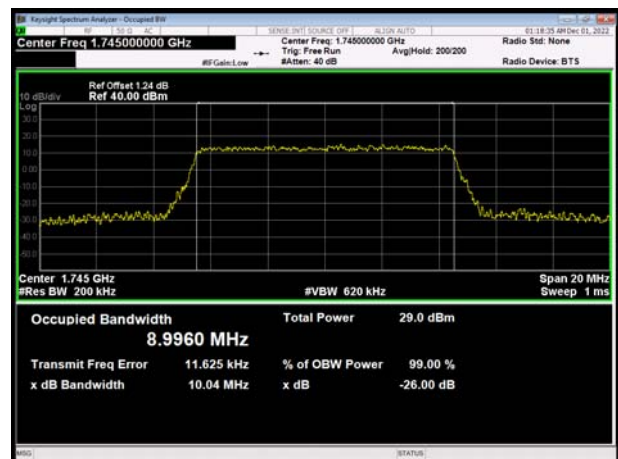
LTE Band 66 16QAM 10MHz CH-Low



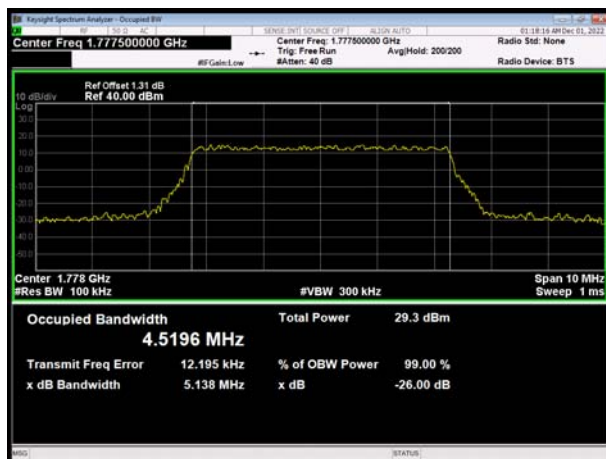
LTE Band 66 16QAM 5MHz CH-Middle



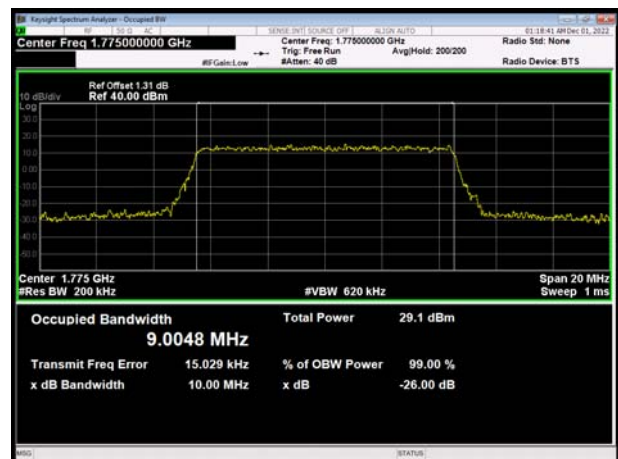
LTE Band 66 16QAM 10MHz CH-Middle



LTE Band 66 16QAM 5MHz CH-High

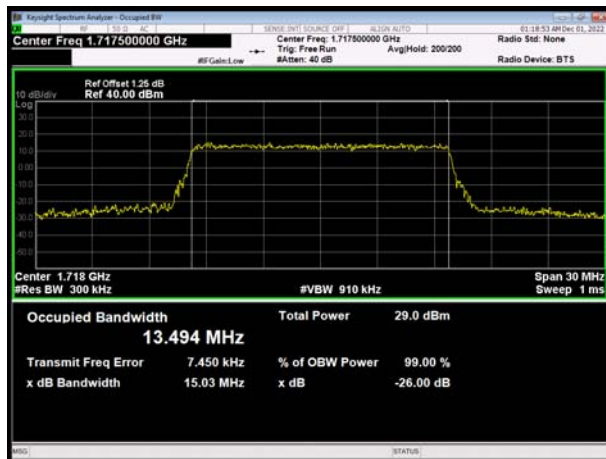


LTE Band 66 16QAM 10MHz CH-High

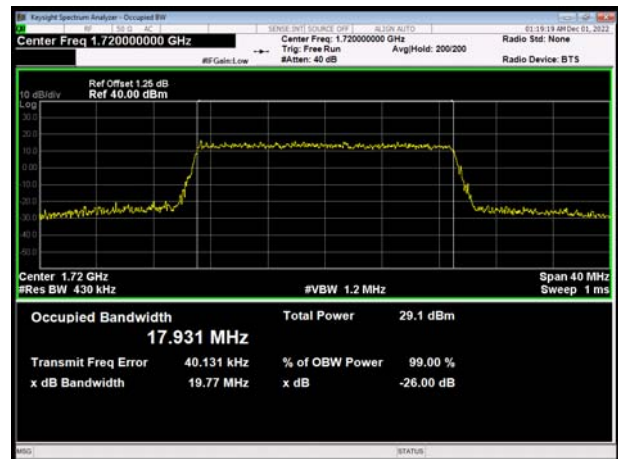




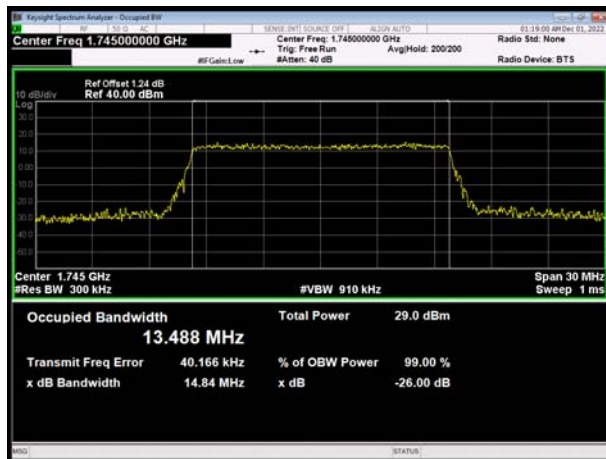
LTE Band 66 16QAM 15MHz CH-Low



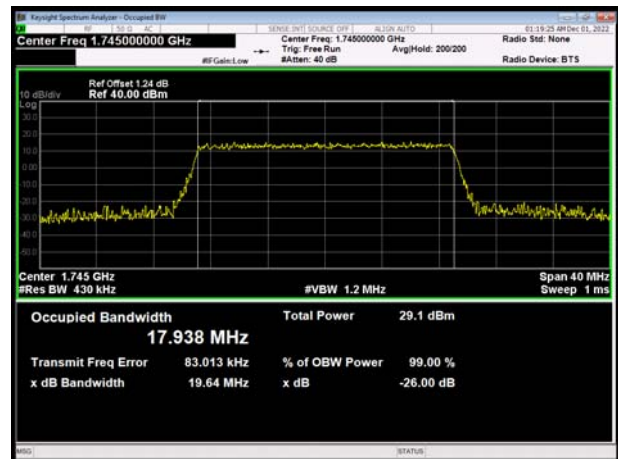
LTE Band 66 16QAM 20MHz CH-Low



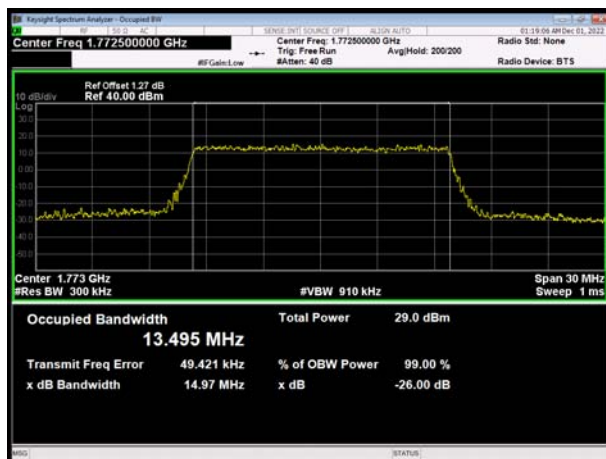
LTE Band 66 16QAM 15MHz CH-Middle



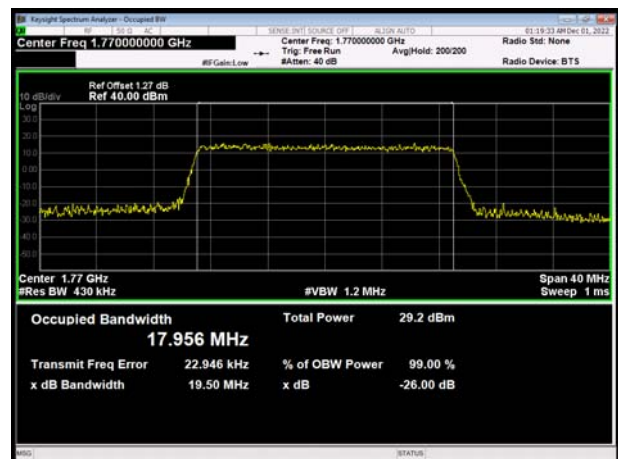
LTE Band 66 16QAM 20MHz CH-Middle



LTE Band 66 16QAM 15MHz CH-High



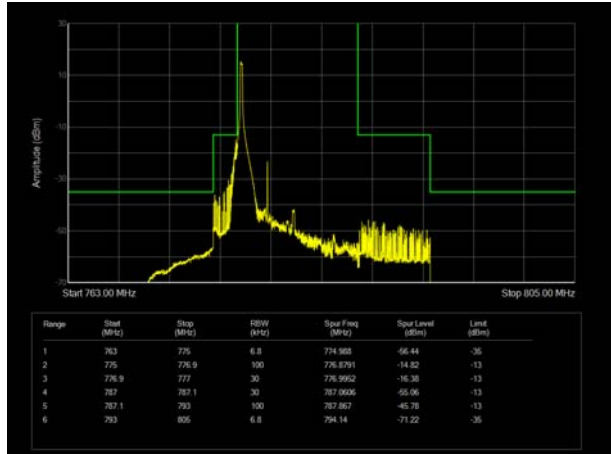
LTE Band 66 16QAM 20MHz CH-High



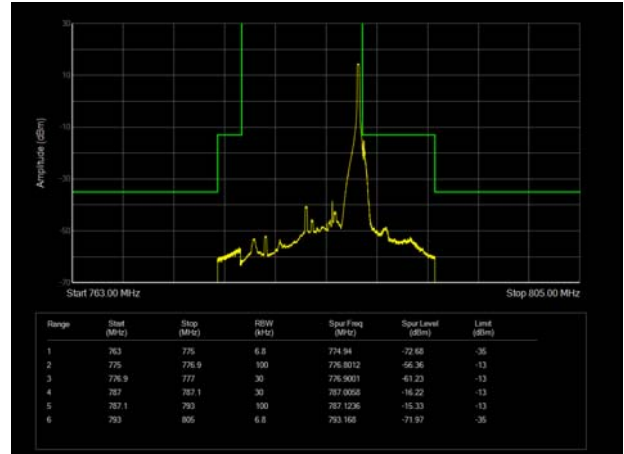
6.3 Band Edge Compliance

All the test traces in the plots shows the test results clearly.

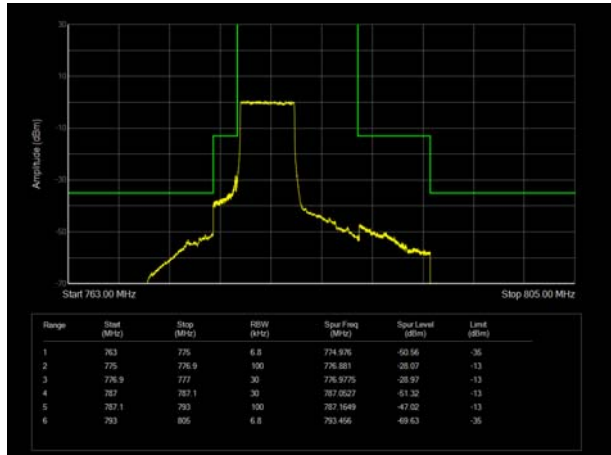
LTE Band 13 QPSK 5MHz CH-Low, 1 RB



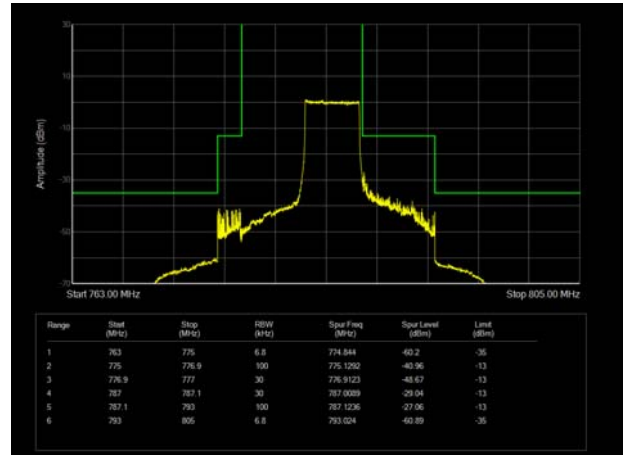
LTE Band 13 QPSK 5MHz CH-High, 1 RB



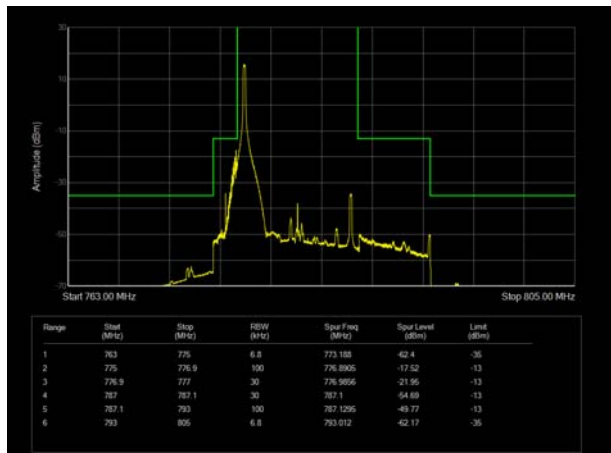
LTE Band 13 QPSK 5MHz CH-Low, 100%RB



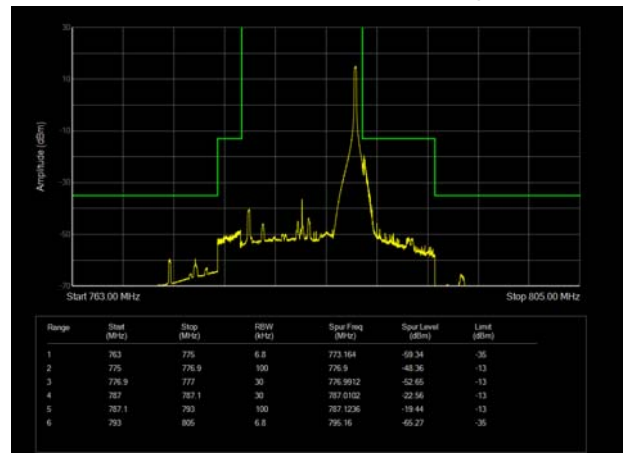
LTE Band 13 QPSK 5MHz CH-High, 100%RB



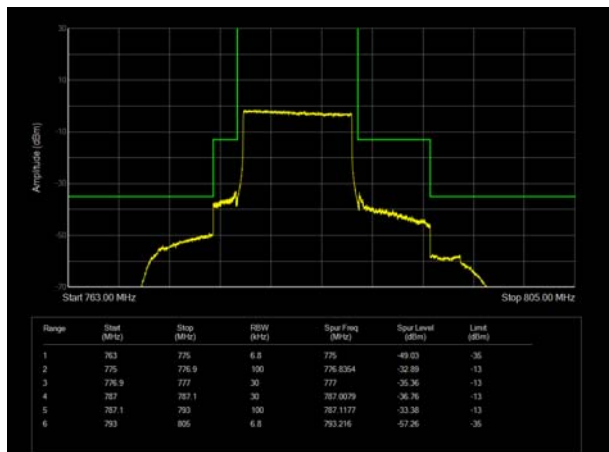
LTE Band 13 QPSK 10MHz CH-Low, 1 RB



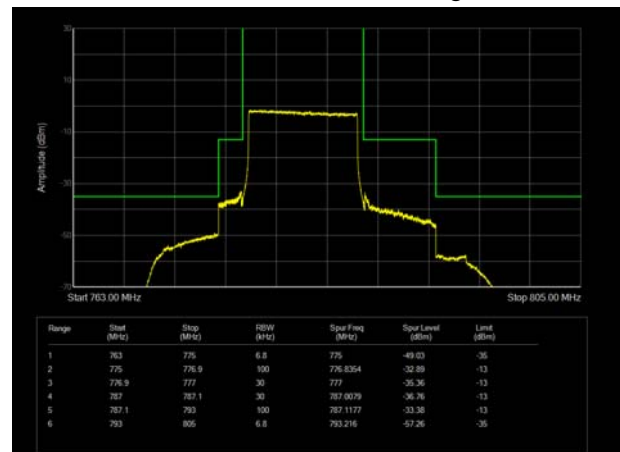
LTE Band 13 QPSK 10MHz CH-High, 1 RB



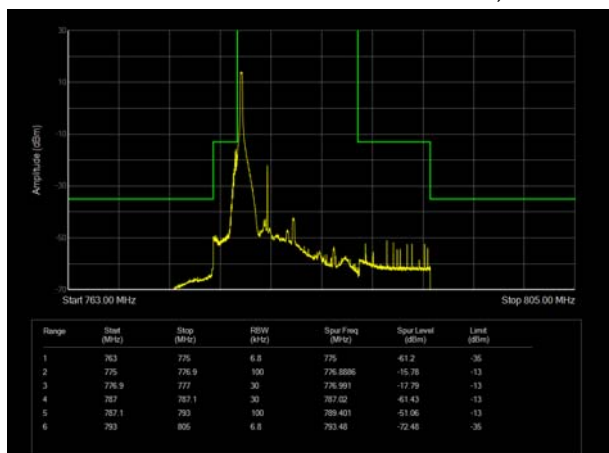
LTE Band 13 QPSK 10MHz CH-Low, 100%RB



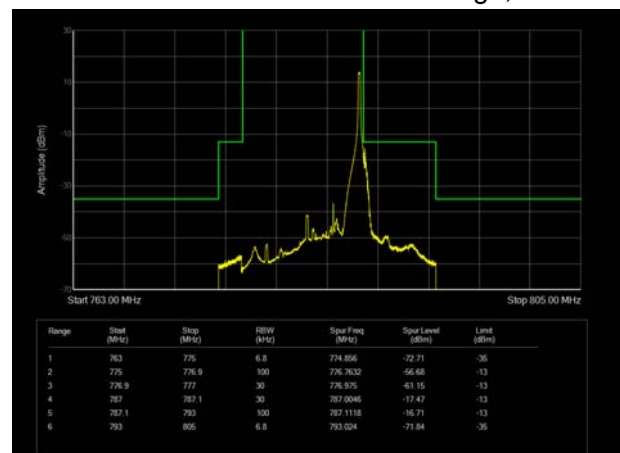
LTE Band 13 QPSK 10MHz CH-High, 100%RB



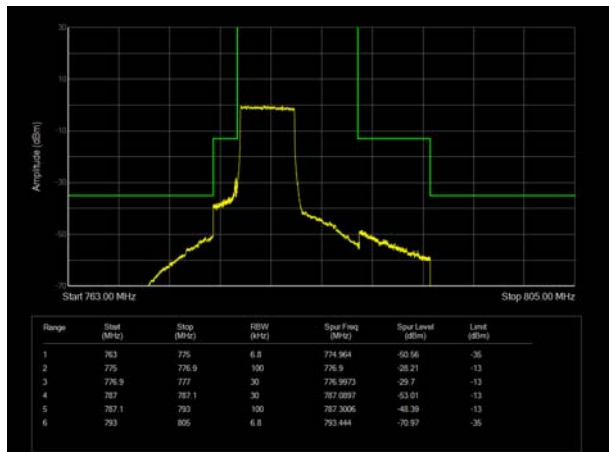
LTE Band 13 16QAM 5MHz CH-Low, 1 RB



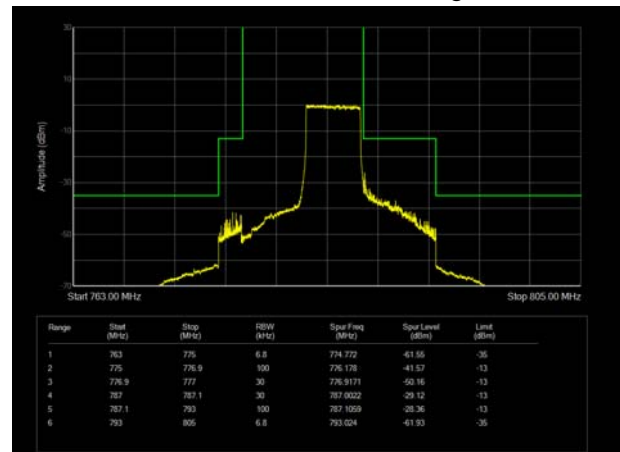
LTE Band 13 16QAM 5MHz CH-High, 1 RB



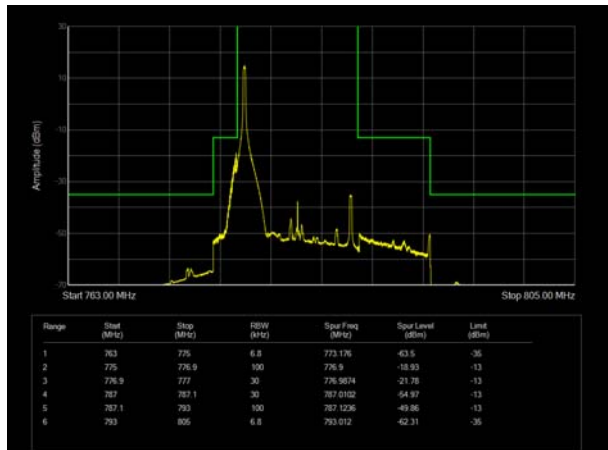
LTE Band 13 16QAM 5MHz CH-Low, 100%RB



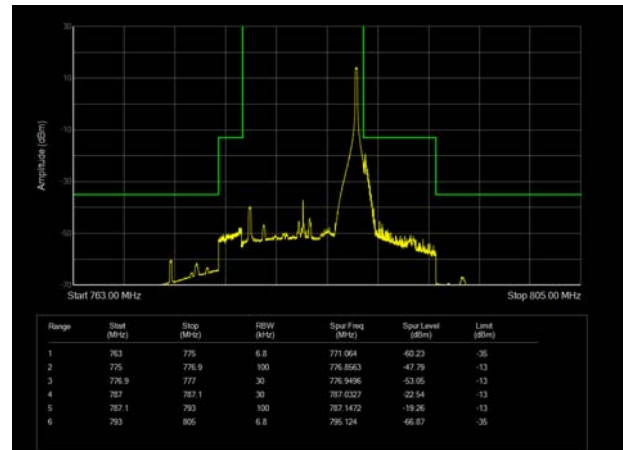
LTE Band 13 16QAM 5MHz CH-High, 100%RB



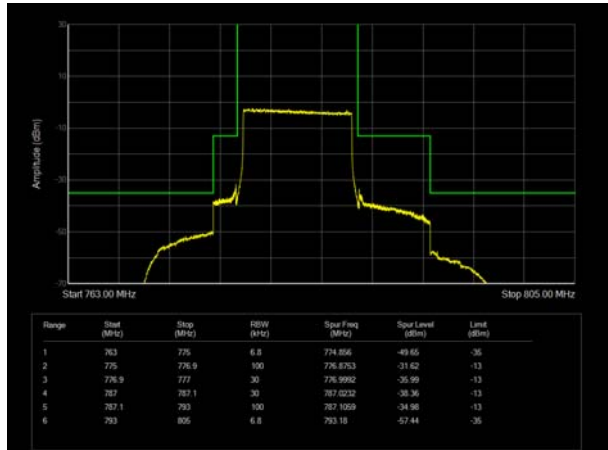
LTE Band 13 16QAM 10MHz CH-Low, 1 RB



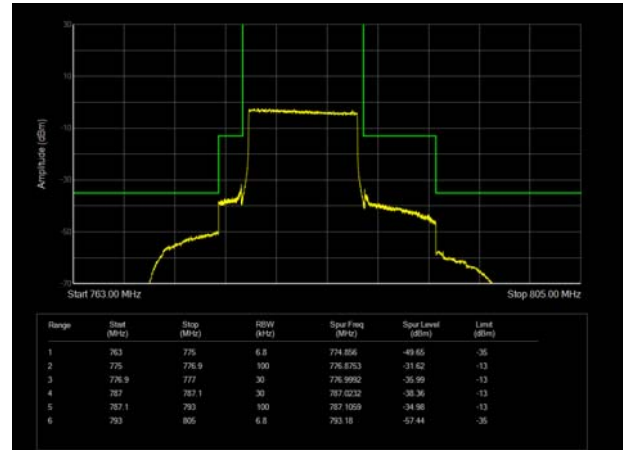
LTE Band 13 16QAM 10MHz CH-High, 1 RB



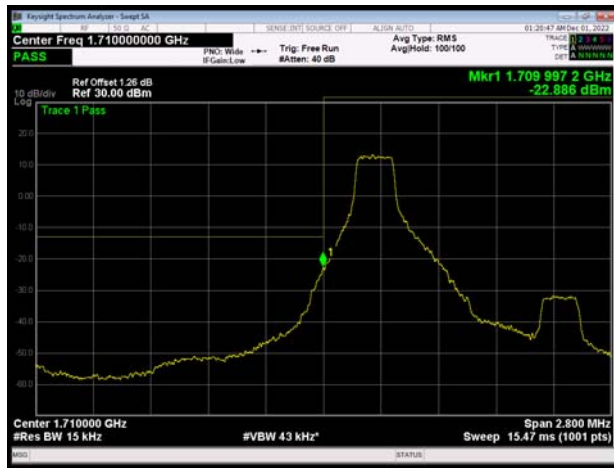
LTE Band 13 16QAM 10MHz CH-Low, 100%RB



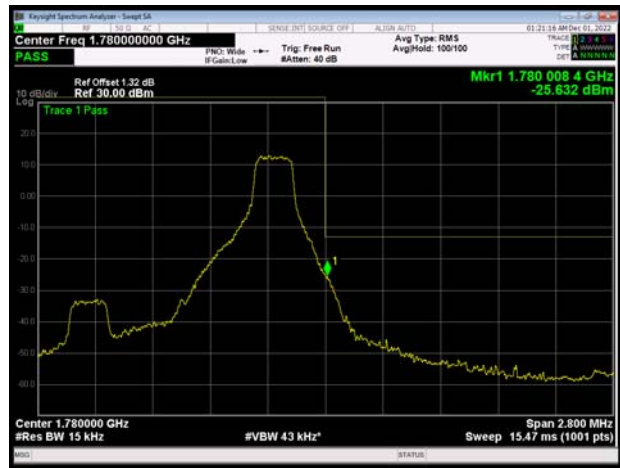
LTE Band 13 16QAM 10MHz CH-High, 100%RB



LTE Band 66 QPSK 1.4MHz CH-Low, 1 RB



LTE Band 66 QPSK 1.4MHz CH-High, 1 RB



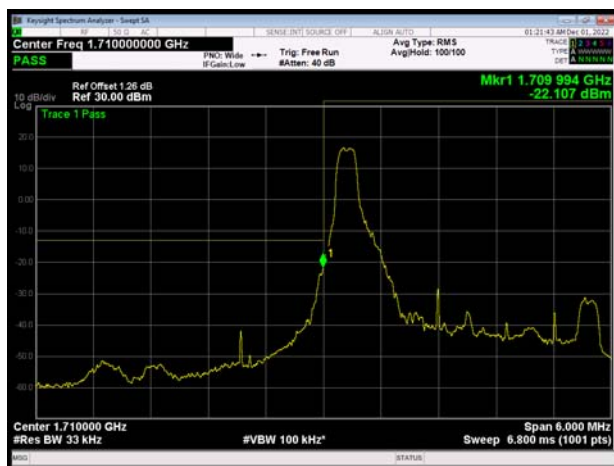
LTE Band 66 QPSK 1.4MHz CH-Low, 100%RB



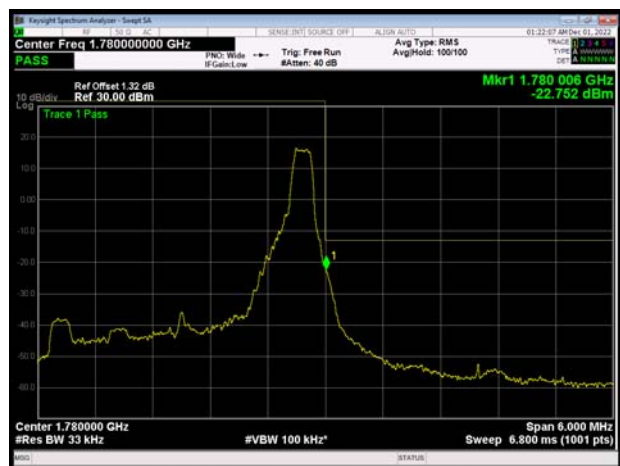
LTE Band 66 QPSK 1.4MHz CH-High, 100%RB



LTE Band 66 QPSK 3MHz CH-Low, 1 RB



LTE Band 66 QPSK 3MHz CH-High, 1 RB





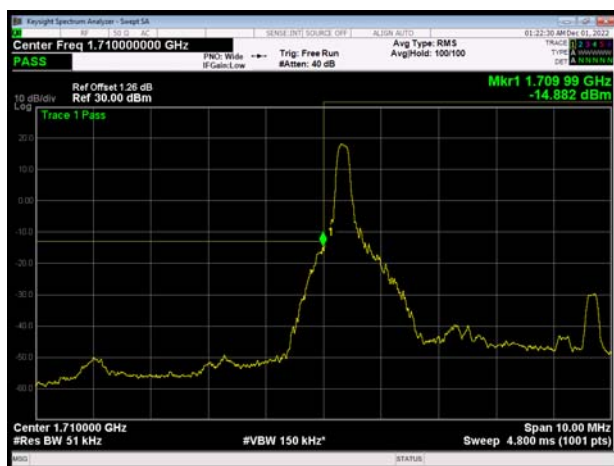
LTE Band 66 QPSK 3MHz CH-Low, 100%RB



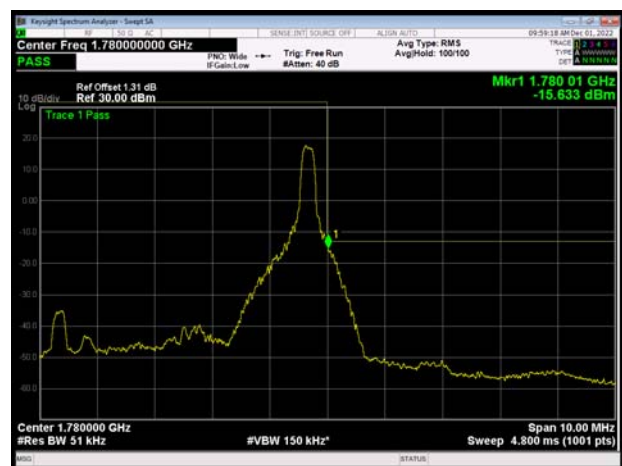
LTE Band 66 QPSK 3MHz CH-High, 100%RB



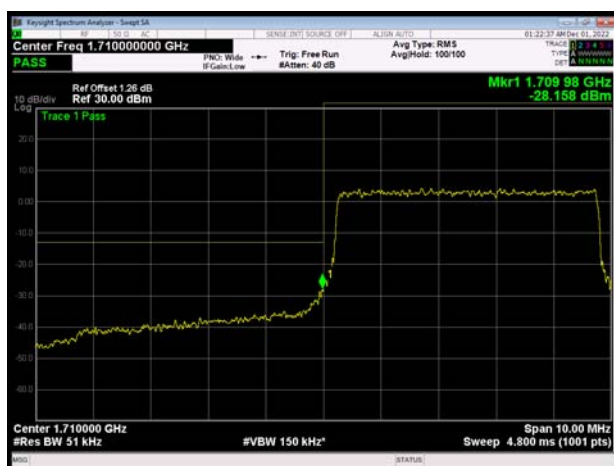
LTE Band 66 QPSK 5MHz CH-Low, 1 RB



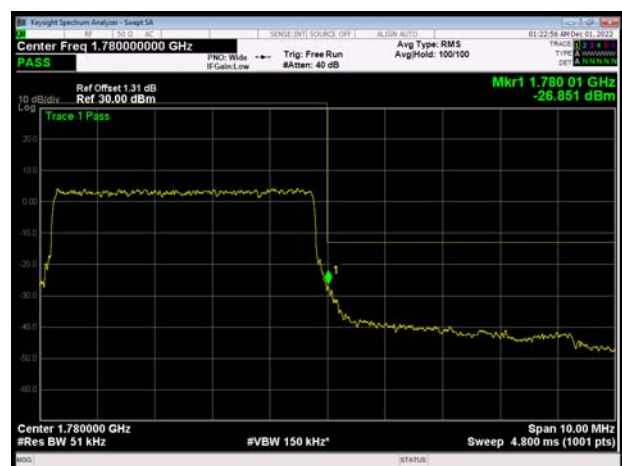
LTE Band 66 QPSK 5MHz CH-High, 1 RB



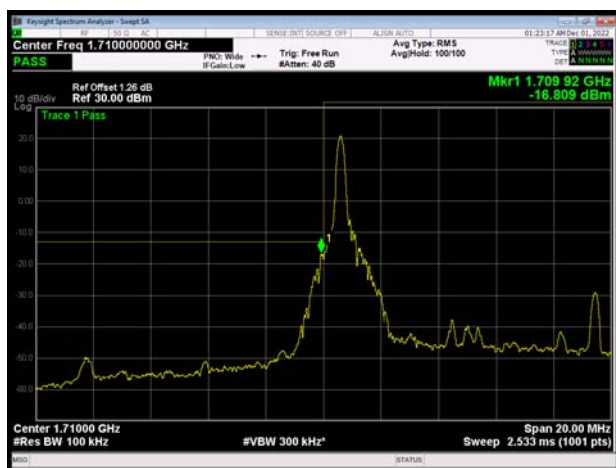
LTE Band 66 QPSK 5MHz CH-Low, 100%RB



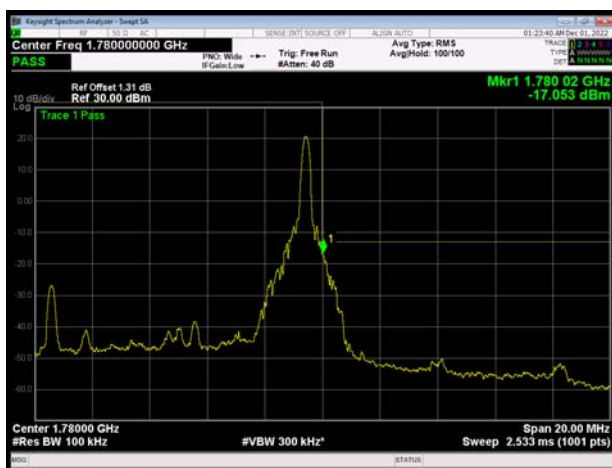
LTE Band 66 QPSK 5MHz CH-High, 100%RB



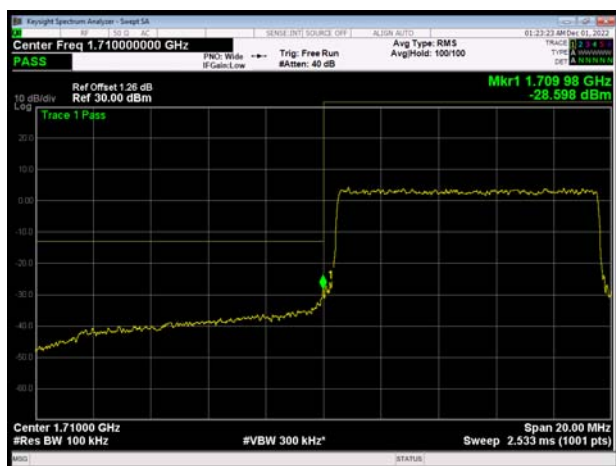
LTE Band 66 QPSK 10MHz CH-Low, 1 RB



LTE Band 66 QPSK 10MHz CH-High, 1 RB



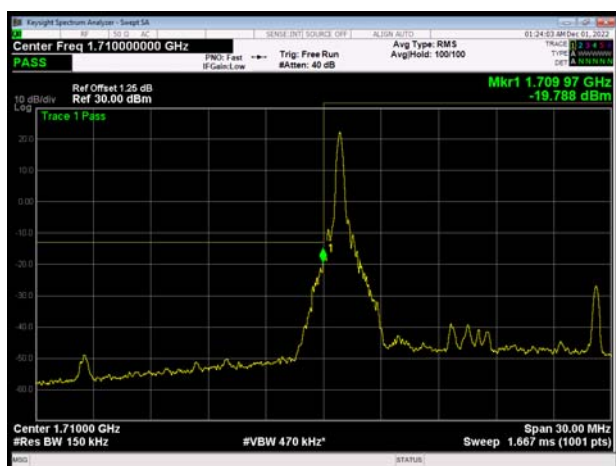
LTE Band 66 QPSK 10MHz CH-Low, 100%RB



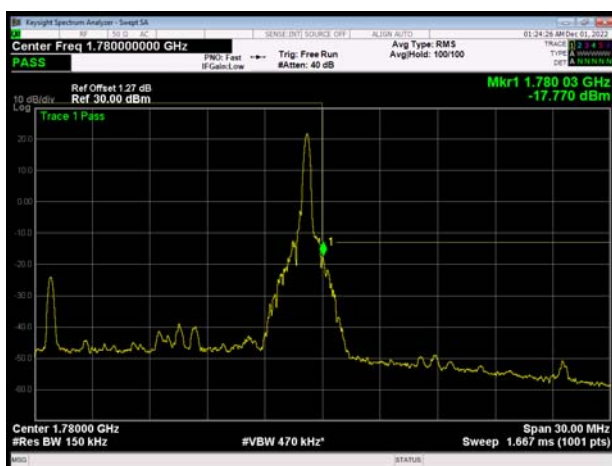
LTE Band 66 QPSK 10MHz CH-High, 100%RB



LTE Band 66 QPSK 15MHz CH-Low, 1 RB



LTE Band 66 QPSK 15MHz CH-High, 1 RB





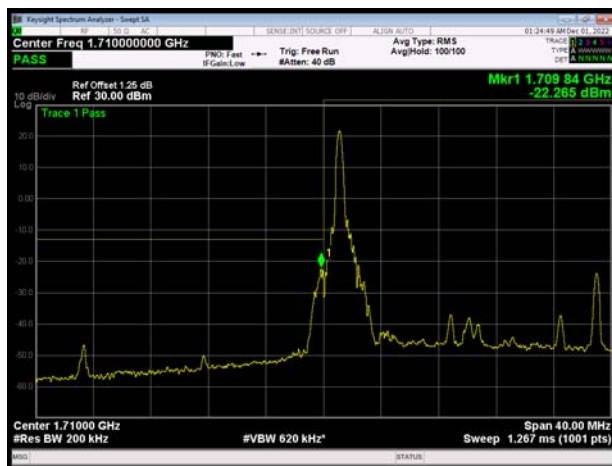
LTE Band 66 QPSK 15MHz CH-Low, 100%RB



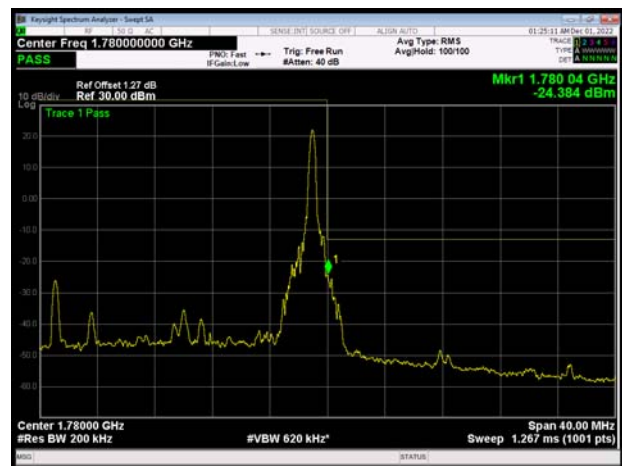
LTE Band 66 QPSK 15MHz CH-High, 100%RB



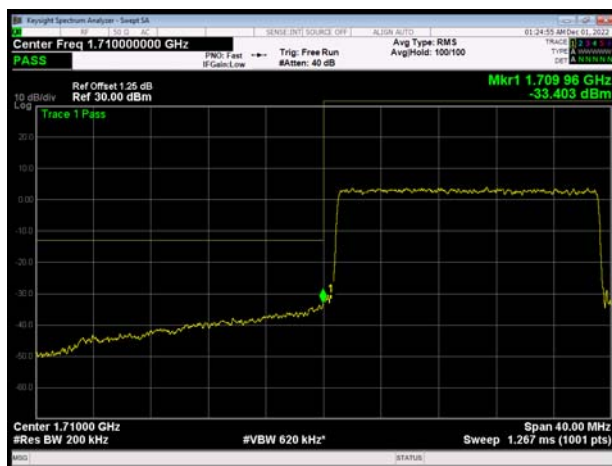
LTE Band 66 QPSK 20MHz CH-Low, 1 RB



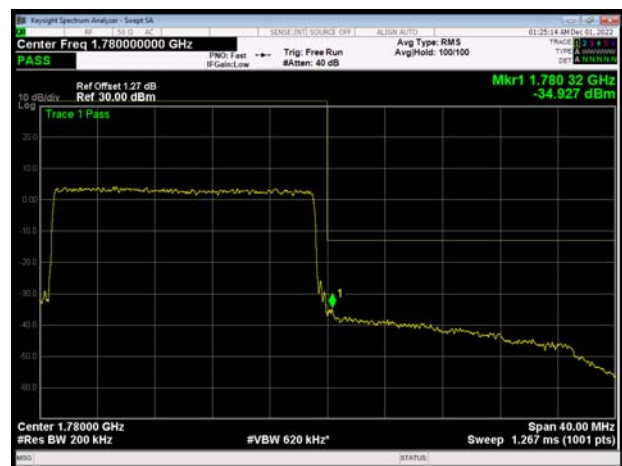
LTE Band 66 QPSK 20MHz CH-High, 1 RB



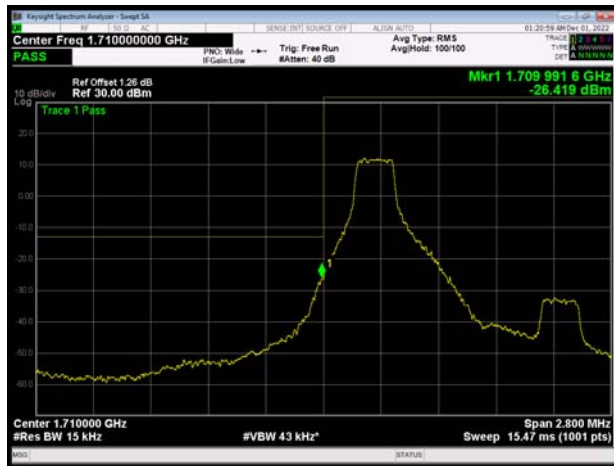
LTE Band 66 QPSK 20MHz CH-Low, 100%RB



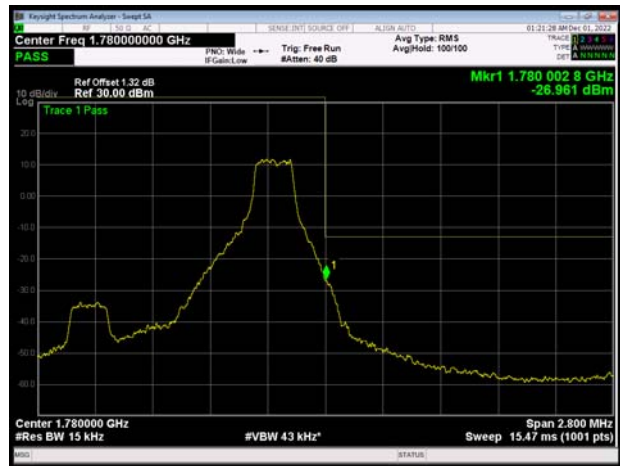
LTE Band 66 QPSK 20MHz CH-High, 100%RB



LTE Band 66 16QAM 1.4MHz CH-Low, 1 RB



LTE Band 66 16QAM 1.4MHz CH-High, 1 RB



LTE Band 66 16QAM 1.4MHz CH-Low, 100%RB



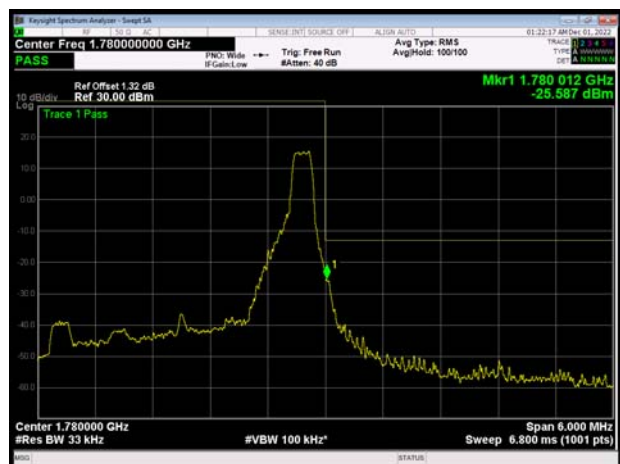
LTE Band 66 16QAM 1.4MHz CH-High, 100%RB



LTE Band 66 16QAM 3MHz CH-Low, 1 RB

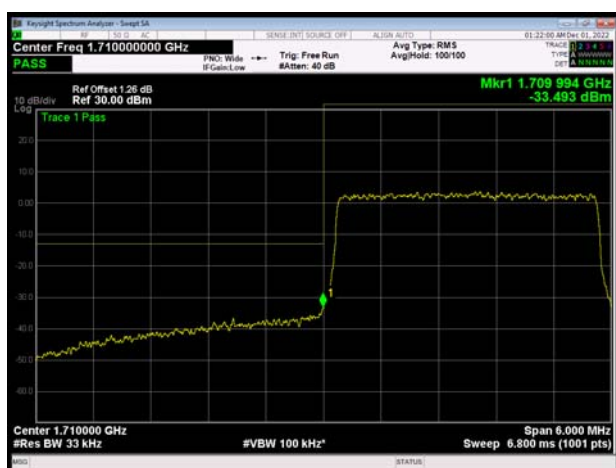


LTE Band 66 16QAM 3MHz CH-High, 1 RB

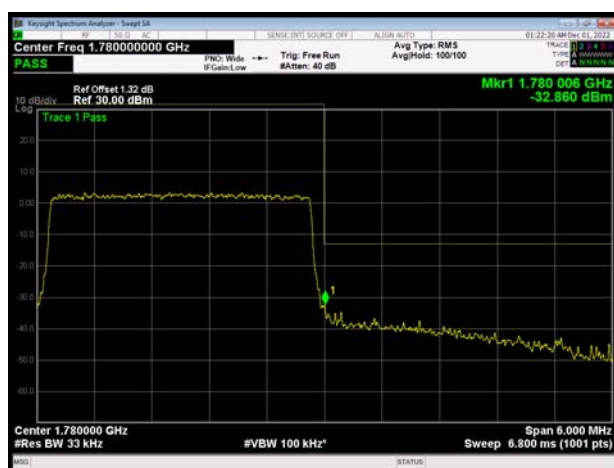




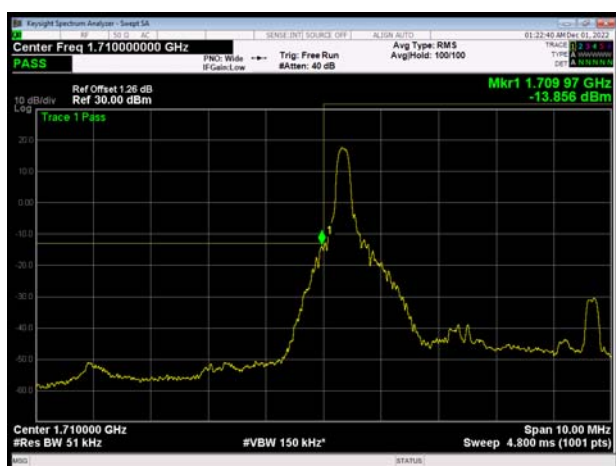
LTE Band 66 16QAM 3MHz CH-Low, 100%RB



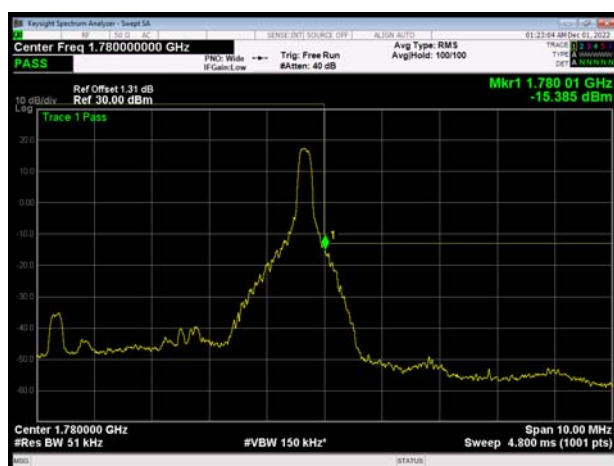
LTE Band 66 16QAM 3MHz CH-High, 100%RB



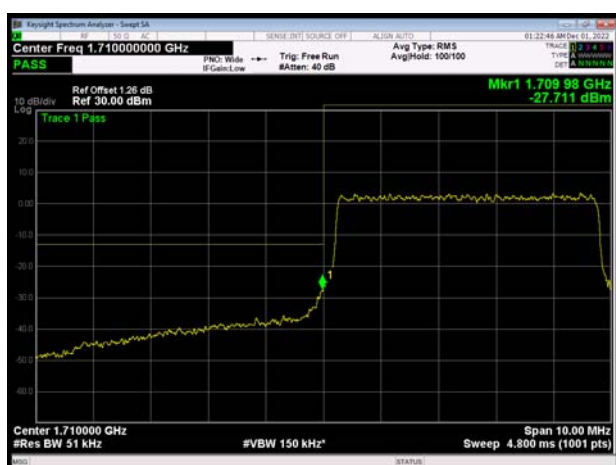
LTE Band 66 16QAM 5MHz CH-Low, 1 RB



LTE Band 66 16QAM 5MHz CH-High, 1 RB



LTE Band 66 16QAM 5MHz CH-Low, 100%RB

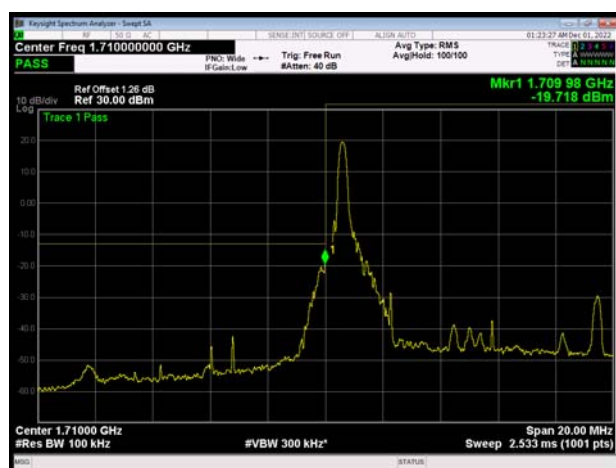


LTE Band 66 16QAM 5MHz CH-High, 100%RB

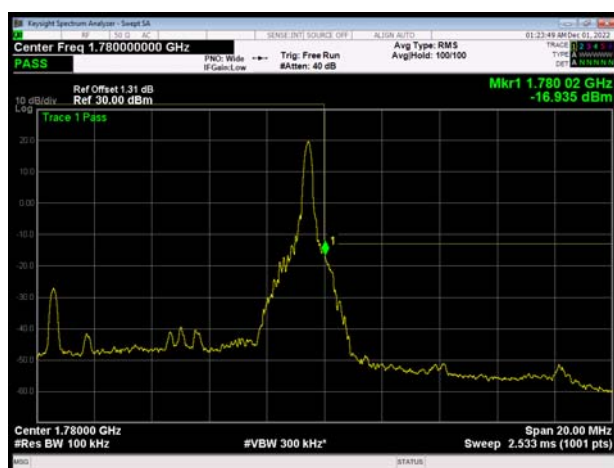




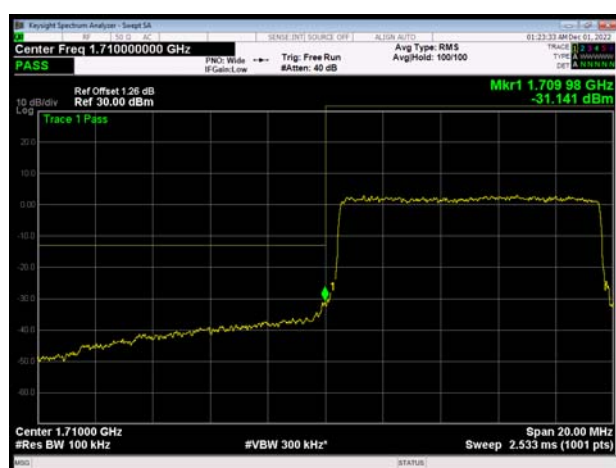
LTE Band 66 16QAM 10MHz CH-Low, 1 RB



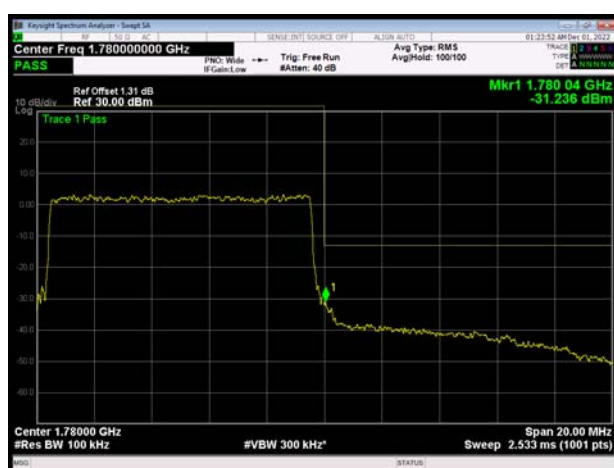
LTE Band 66 16QAM 10MHz CH-High, 1 RB



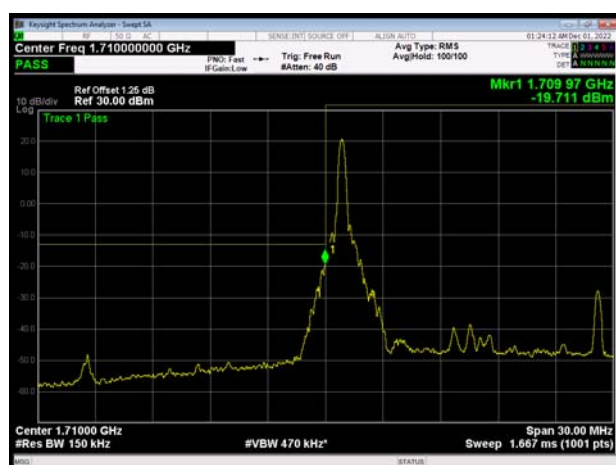
LTE Band 66 16QAM 10MHz CH-Low, 100%RB



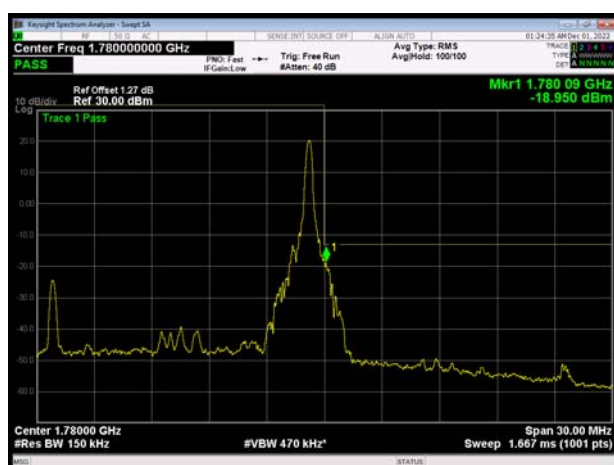
LTE Band 66 16QAM 10MHz CH-High, 100%RB



LTE Band 66 16QAM 15MHz CH-Low, 1 RB

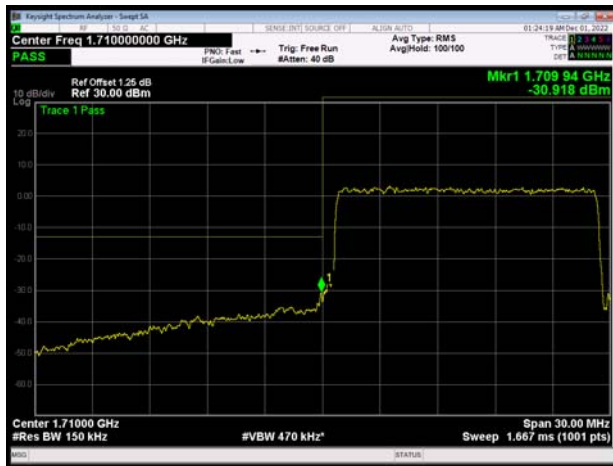


LTE Band 66 16QAM 15MHz CH-High, 1 RB

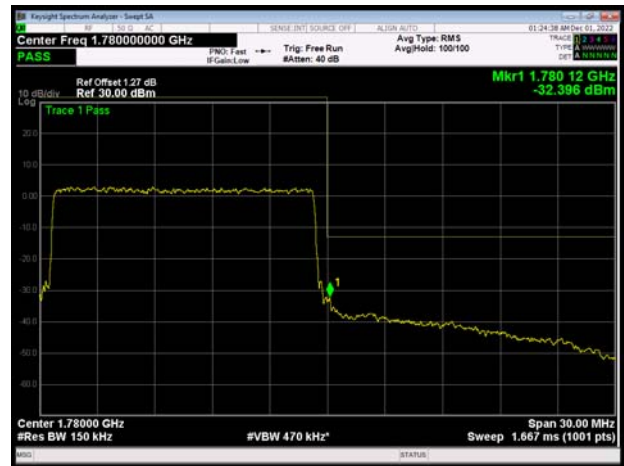




LTE Band 66 16QAM 15MHz CH-Low, 100%RB



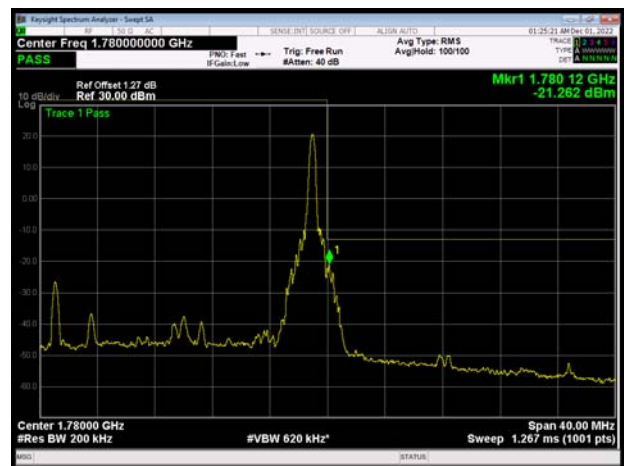
LTE Band 66 16QAM 15MHz CH-High, 100%RB



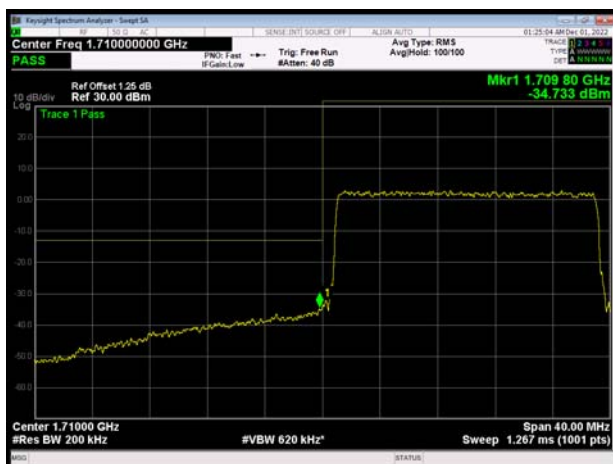
LTE Band 66 16QAM 20MHz CH-Low, 1 RB



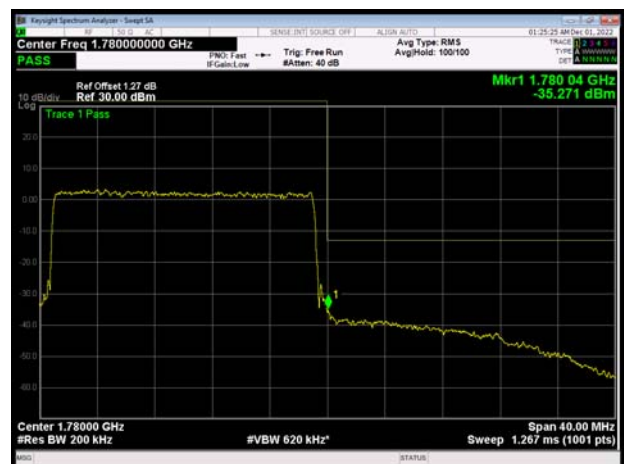
LTE Band 66 16QAM 20MHz CH-High, 1 RB



LTE Band 66 16QAM 20MHz CH-Low, 100%RB



LTE Band 66 16QAM 20MHz CH-High, 100%RB



6.4 Peak-to-Average Power Ratio (PAPR)

LTE Band 13								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	23205	779.5	26.83	21.69	5.14	≤13	PASS
		23230	782	26.68	21.67	5.01	≤13	PASS
		23255	784.5	26.38	21.68	4.70	≤13	PASS
	10	23230	782	26.97	22.17	4.80	≤13	PASS
16QAM	5	23205	779.5	26.73	20.77	5.96	≤13	PASS
		23230	782	26.55	20.75	5.80	≤13	PASS
		23255	784.5	26.27	20.75	5.52	≤13	PASS
	10	23230	782	26.77	21.12	5.65	≤13	PASS

LTE Band 66								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	131979	1710.7	27.11	22.15	4.96	≤13	PASS
		132322	1745	27.12	22.04	5.08	≤13	PASS
		132665	1779.3	27.43	22.14	5.29	≤13	PASS
	3	131987	1711.5	27.09	22.08	5.01	≤13	PASS
		132322	1745	27.17	22.01	5.16	≤13	PASS
		132657	1778.5	27.60	22.15	5.45	≤13	PASS
	5	131997	1712.5	27.30	22.11	5.19	≤13	PASS
		132322	1745	27.32	22.06	5.26	≤13	PASS
		132647	1777.5	27.70	22.16	5.54	≤13	PASS
	10	132022	1715	27.46	22.15	5.31	≤13	PASS
		132322	1745	27.41	22.13	5.28	≤13	PASS
		132622	1775	27.77	22.22	5.55	≤13	PASS
	15	132047	1717.5	27.92	22.16	5.76	≤13	PASS
		132322	1745	27.75	22.13	5.62	≤13	PASS
		132597	1772.5	28.03	22.16	5.87	≤13	PASS
	20	132072	1720	27.66	22.11	5.55	≤13	PASS
		132322	1745	27.52	22.03	5.49	≤13	PASS
		132572	1770	27.71	22.13	5.58	≤13	PASS
16QAM	1.4	131979	1710.7	26.83	21.08	5.75	≤13	PASS
		132322	1745	26.92	21.05	5.87	≤13	PASS
		132665	1779.3	27.35	21.10	6.25	≤13	PASS
	3	131987	1711.5	26.98	21.07	5.91	≤13	PASS



		132322	1745	27.09	21.05	6.04	≤13	PASS
		132657	1778.5	27.48	21.17	6.31	≤13	PASS
	5	131997	1712.5	27.14	21.14	6.00	≤13	PASS
		132322	1745	27.06	21.05	6.01	≤13	PASS
		132647	1777.5	27.47	21.20	6.27	≤13	PASS
	10	132022	1715	27.26	21.16	6.10	≤13	PASS
		132322	1745	27.18	21.12	6.06	≤13	PASS
		132622	1775	27.59	21.24	6.35	≤13	PASS
	15	132047	1717.5	27.47	21.15	6.32	≤13	PASS
		132322	1745	27.32	21.10	6.22	≤13	PASS
		132597	1772.5	27.56	21.14	6.42	≤13	PASS
	20	132072	1720	27.46	21.13	6.33	≤13	PASS
		132322	1745	27.27	21.05	6.22	≤13	PASS
		132572	1770	27.50	21.16	6.34	≤13	PASS



6.5 Frequency Stability

LTE Band 13						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability(ppm)	Frequency Stability(ppm)	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	17.80	10.03	0.02370	0.01335	PASS
Extreme (50℃)		11.43	3.00	0.01521	0.00399	PASS
Extreme (40℃)		12.36	5.38	0.01645	0.00716	PASS
Extreme (30℃)		3.54	12.84	0.00472	0.01709	PASS
Extreme (20℃)		16.50	6.02	0.02197	0.00801	PASS
Extreme (10℃)		5.45	2.52	0.00726	0.00335	PASS
Extreme (0℃)		16.21	16.60	0.02159	0.02211	PASS
Extreme (-10℃)		3.97	4.17	0.00529	0.00555	PASS
Extreme (-20℃)		8.20	10.88	0.01091	0.01449	PASS
Extreme (-30℃)		15.30	17.84	0.02037	0.02376	PASS
25℃	LV	5.98	12.89	0.00797	0.01716	PASS
	HV	17.56	5.94	0.02338	0.00791	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability(ppm)	Frequency Stability(ppm)	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	10.36	15.66	0.01379	0.02086	PASS
Extreme (50℃)		3.57	10.75	0.00475	0.01432	PASS
Extreme (40℃)		8.90	15.75	0.01185	0.02098	PASS
Extreme (30℃)		11.54	2.68	0.01537	0.00357	PASS
Extreme (20℃)		14.26	17.79	0.01899	0.02369	PASS
Extreme (10℃)		6.91	9.61	0.00921	0.01280	PASS
Extreme (0℃)		12.41	10.11	0.01653	0.01346	PASS
Extreme (-10℃)		4.58	7.68	0.00610	0.01023	PASS
Extreme (-20℃)		13.57	16.11	0.01807	0.02145	PASS
Extreme (-30℃)		6.61	13.16	0.00880	0.01752	PASS
25℃	LV	6.09	13.58	0.00811	0.01809	PASS
	HV	15.70	12.07	0.02090	0.01607	PASS

LTE Band 66						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability(ppm)	Frequency Stability(ppm)	Verdict
BANDWIDTH	1.4MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	14.25	3.10	0.00817	0.00177	PASS
Extreme (50℃)		5.53	2.39	0.00317	0.00137	PASS
Extreme (40℃)		7.59	3.00	0.00435	0.00172	PASS
Extreme (30℃)		4.50	6.82	0.00258	0.00391	PASS



Extreme (20℃)		17.84	3.58	0.01023	0.00205	PASS
Extreme (10℃)		6.81	8.14	0.00390	0.00467	PASS
Extreme (0℃)		9.92	13.13	0.00569	0.00752	PASS
Extreme (-10℃)		3.28	4.15	0.00188	0.00238	PASS
Extreme (-20℃)		16.29	4.00	0.00934	0.00229	PASS
Extreme (-30℃)		1.55	17.80	0.00089	0.01020	PASS
25℃	LV	11.58	1.50	0.00664	0.00086	PASS
	HV	8.83	2.80	0.00506	0.00160	PASS
Condition		Freq.Error	Freq.Error	Frequency	Frequency	Verdict
BANDWIDTH	3MHz	(Hz)	(Hz)	Stability(ppm)	Stability(ppm)	
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	17.98	8.69	0.01030	0.00498	PASS
Extreme (50℃)		14.78	15.94	0.00847	0.00913	PASS
Extreme (40℃)		3.08	16.94	0.00176	0.00971	PASS
Extreme (30℃)		6.23	14.30	0.00357	0.00819	PASS
Extreme (20℃)		17.55	10.69	0.01006	0.00613	PASS
Extreme (10℃)		8.90	13.10	0.00510	0.00751	PASS
Extreme (0℃)		13.38	11.08	0.00767	0.00635	PASS
Extreme (-10℃)		17.51	17.03	0.01003	0.00976	PASS
Extreme (-20℃)		16.10	9.85	0.00923	0.00565	PASS
Extreme (-30℃)		15.73	1.14	0.00901	0.00065	PASS
25℃	LV	16.12	7.97	0.00924	0.00457	PASS
	HV	13.52	9.06	0.00775	0.00519	PASS
Condition		Freq.Error	Freq.Error	Frequency	Frequency	Verdict
BANDWIDTH	5MHz	(Hz)	(Hz)	Stability(ppm)	Stability(ppm)	
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	7.62	8.82	0.00437	0.00505	PASS
Extreme (50℃)		15.10	15.05	0.00865	0.00863	PASS
Extreme (40℃)		4.95	2.36	0.00284	0.00135	PASS
Extreme (30℃)		14.03	17.52	0.00804	0.01004	PASS
Extreme (20℃)		6.14	4.51	0.00352	0.00258	PASS
Extreme (10℃)		15.80	12.86	0.00905	0.00737	PASS
Extreme (0℃)		11.05	15.36	0.00633	0.00880	PASS
Extreme (-10℃)		13.70	8.28	0.00785	0.00474	PASS
Extreme (-20℃)		16.98	17.21	0.00973	0.00986	PASS
Extreme (-30℃)		6.99	1.60	0.00401	0.00092	PASS
25℃	LV	7.89	3.86	0.00452	0.00221	PASS
	HV	2.58	14.77	0.00148	0.00846	PASS
Condition		Freq.Error	Freq.Error	Frequency	Frequency	Verdict
BANDWIDTH	10MHz	(Hz)	(Hz)	Stability(ppm)	Stability(ppm)	
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	8.95	9.84	0.00513	0.00564	PASS
Extreme (50℃)		9.63	10.20	0.00552	0.00584	PASS



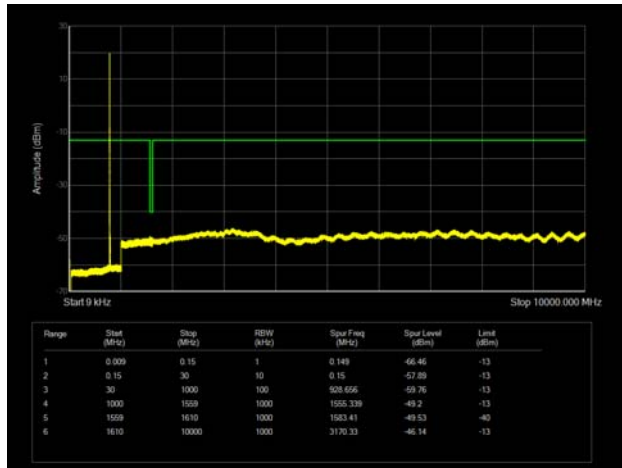
Extreme (40℃)		7.78	4.76	0.00446	0.00273	PASS
Extreme (30℃)		14.13	12.78	0.00810	0.00732	PASS
Extreme (20℃)		2.44	15.30	0.00140	0.00877	PASS
Extreme (10℃)		6.92	7.59	0.00396	0.00435	PASS
Extreme (0℃)		15.12	6.01	0.00867	0.00344	PASS
Extreme (-10℃)		1.20	3.30	0.00069	0.00189	PASS
Extreme (-20℃)		17.47	12.39	0.01001	0.00710	PASS
Extreme (-30℃)		11.12	10.28	0.00637	0.00589	PASS
25℃	LV	11.09	15.91	0.00636	0.00912	PASS
	HV	16.11	12.89	0.00923	0.00739	PASS
Condition		Freq.Error	Freq.Error	Frequency	Frequency	Verdict
BANDWIDTH	15MHz	(Hz)	(Hz)	Stability(ppm)	Stability(ppm)	
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	5.08	11.96	0.00291	0.00686	PASS
Extreme (50℃)		12.53	8.53	0.00718	0.00489	PASS
Extreme (40℃)		13.89	17.84	0.00796	0.01022	PASS
Extreme (30℃)		10.55	4.65	0.00604	0.00267	PASS
Extreme (20℃)		2.42	17.72	0.00139	0.01015	PASS
Extreme (10℃)		6.38	13.72	0.00366	0.00786	PASS
Extreme (0℃)		6.63	15.36	0.00380	0.00880	PASS
Extreme (-10℃)		5.70	3.49	0.00327	0.00200	PASS
Extreme (-20℃)		11.41	9.01	0.00654	0.00516	PASS
Extreme (-30℃)		3.07	17.42	0.00176	0.00998	PASS
25℃	LV	8.69	10.65	0.00498	0.00610	PASS
	HV	9.98	15.37	0.00572	0.00881	PASS
Condition		Freq.Error	Freq.Error	Frequency	Frequency	Verdict
BANDWIDTH	20MHz	(Hz)	(Hz)	Stability(ppm)	Stability(ppm)	
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	1.43	2.69	0.00082	0.00154	PASS
Extreme (50℃)		3.94	16.38	0.00226	0.00939	PASS
Extreme (40℃)		13.92	2.42	0.00798	0.00138	PASS
Extreme (30℃)		8.04	2.82	0.00461	0.00161	PASS
Extreme (20℃)		11.03	8.77	0.00632	0.00502	PASS
Extreme (10℃)		5.39	11.03	0.00309	0.00632	PASS
Extreme (0℃)		14.67	15.30	0.00841	0.00877	PASS
Extreme (-10℃)		3.99	7.27	0.00229	0.00417	PASS
Extreme (-20℃)		7.31	10.28	0.00419	0.00589	PASS
Extreme (-30℃)		14.16	10.59	0.00811	0.00607	PASS
25℃	LV	12.02	15.86	0.00689	0.00909	PASS
	HV	16.53	16.16	0.00947	0.00926	PASS

6.6 Spurious Emissions at Antenna Terminals

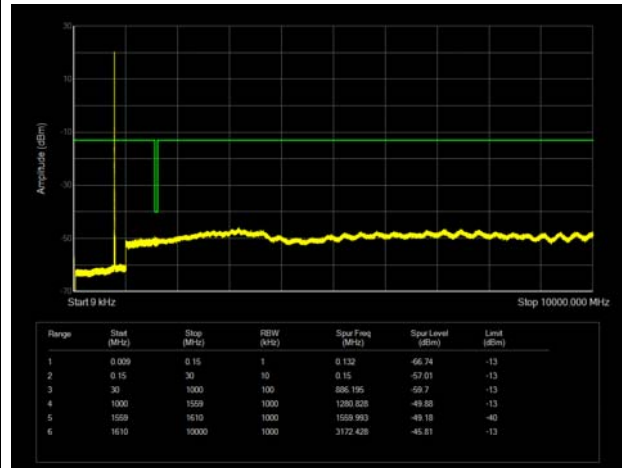
Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions more than 20 dB below the limit are not reported.

The signal beyond the limit is carrier.

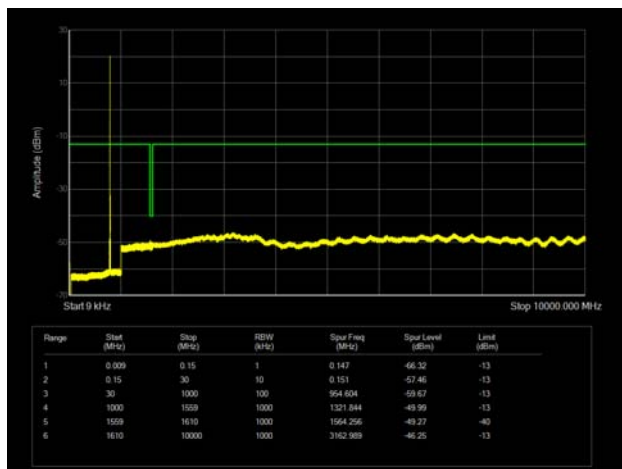
LTE Band 13 5MHz CH-Low 9kHz ~10GHz



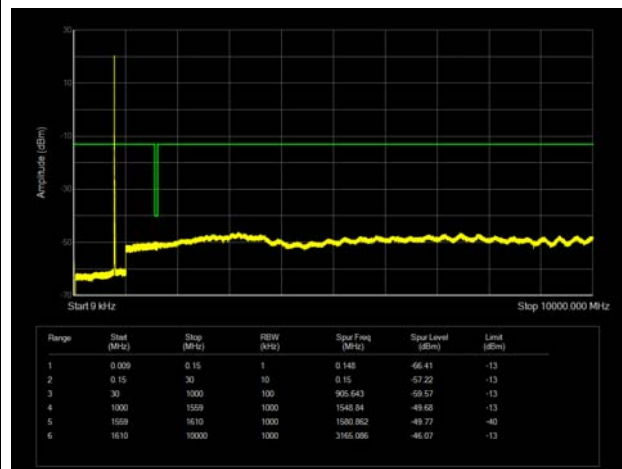
LTE Band 13 5MHz CH-Middle 9kHz ~10GHz



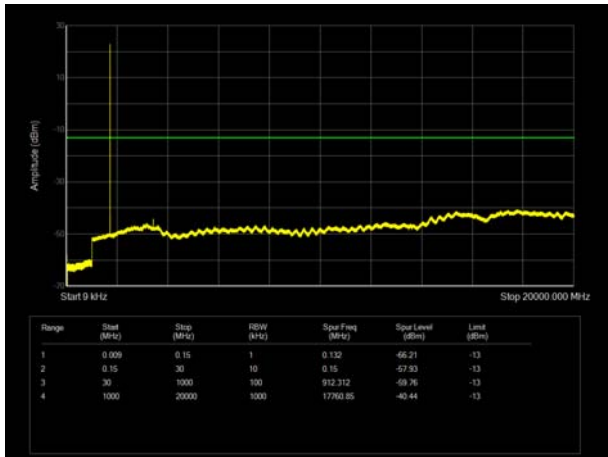
LTE Band 13 5MHz CH-High 9kHz ~10GHz



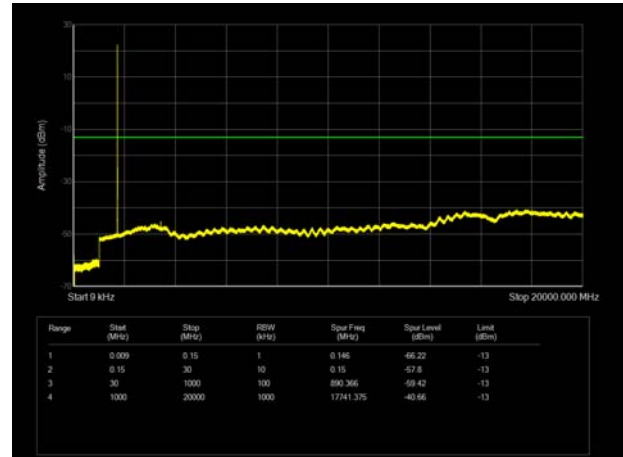
LTE Band 13 10MHz CH-Middle 9kHz ~10GHz



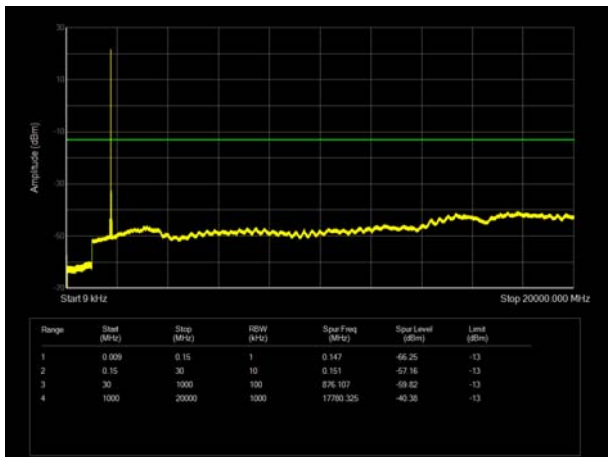
LTE Band 66 1.4MHz CH-Low 9kHz ~20GHz



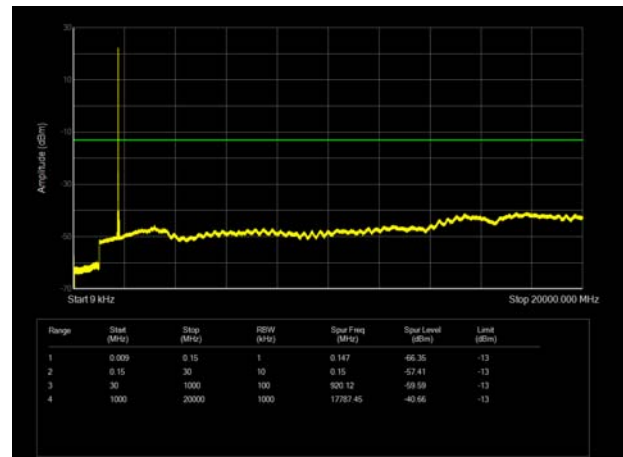
LTE Band 66 3MHz CH-Low 9kHz ~20GHz



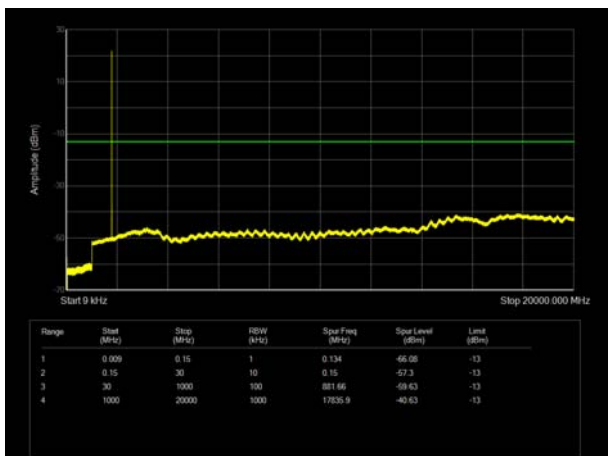
LTE Band 66 1.4MHz CH-Middle 9kHz ~20GHz



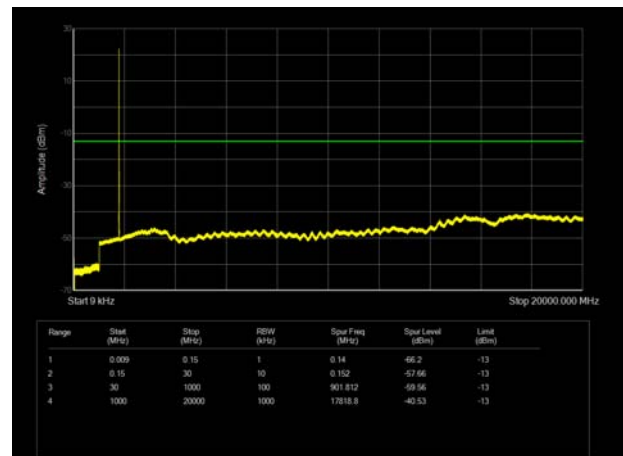
LTE Band 66 3MHz CH-Middle 9kHz ~20GHz



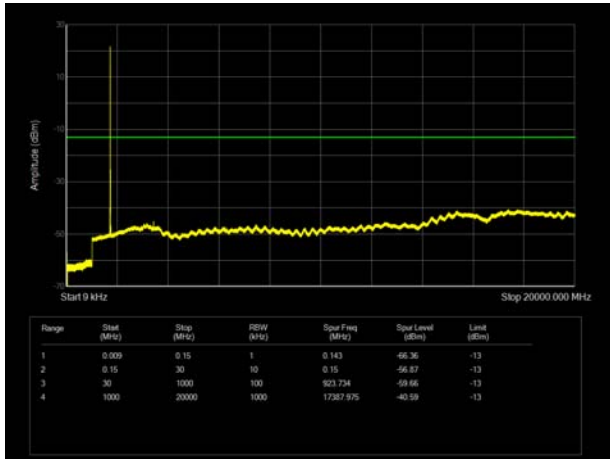
LTE Band 66 1.4MHz CH-High 9kHz ~20GHz



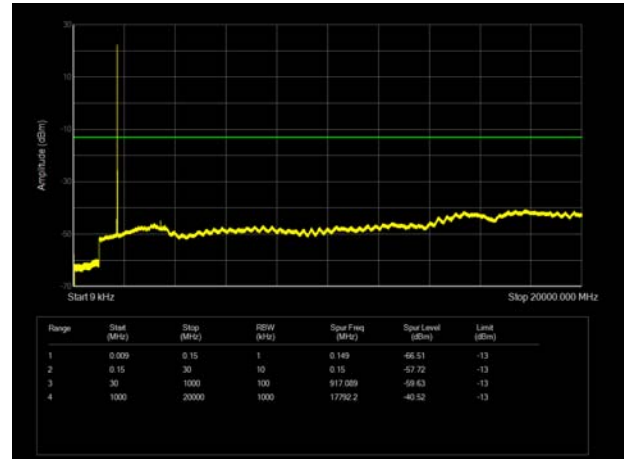
LTE Band 66 3MHz CH-High 9kHz ~20GHz



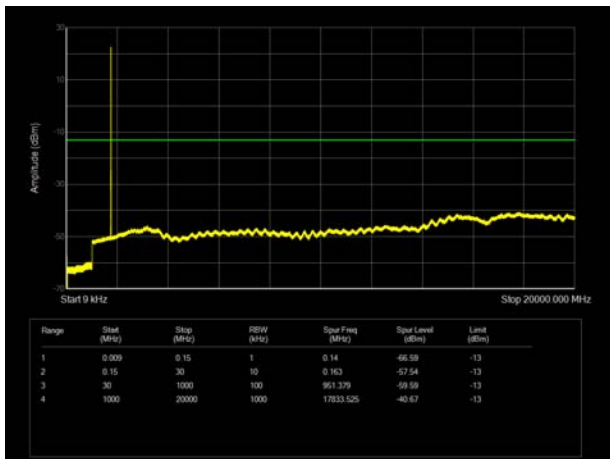
LTE Band 66 5MHz CH-Low 9kHz ~20GHz



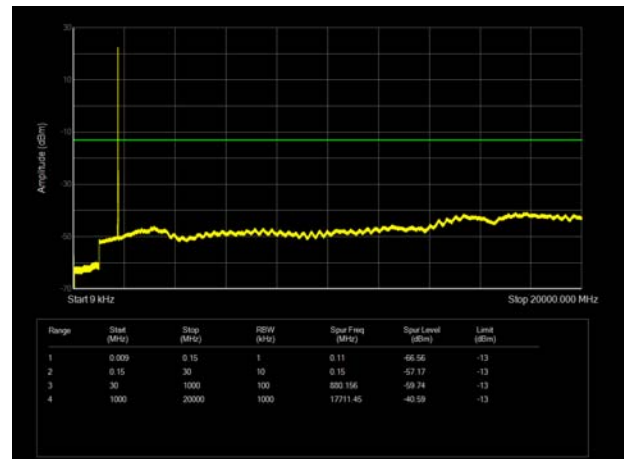
LTE Band 66 10MHz CH-Low 9kHz ~20GHz



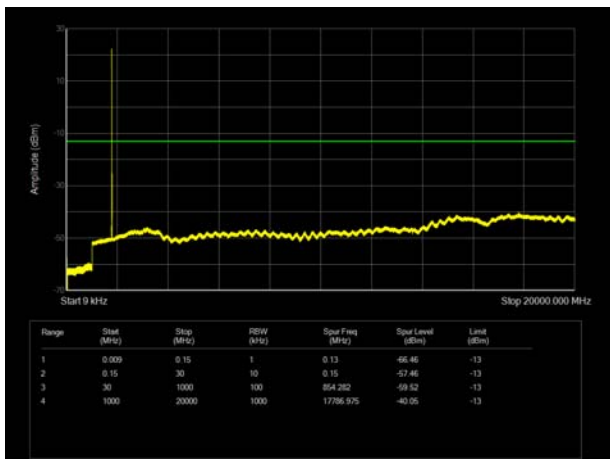
LTE Band 66 5MHz CH-Middle 9kHz ~20GHz



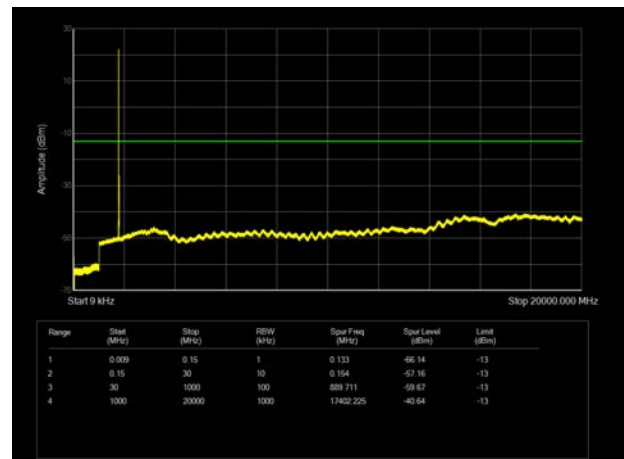
LTE Band 66 10MHz CH-Middle 9kHz ~20GHz



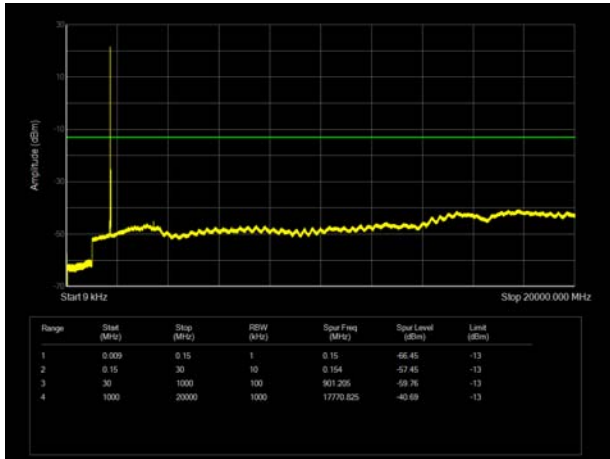
LTE Band 66 5MHz CH-High 9kHz ~20GHz



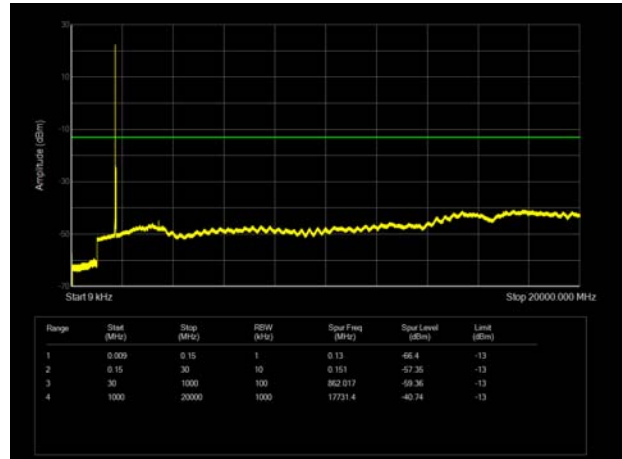
LTE Band 66 10MHz CH-High 9kHz ~20GHz



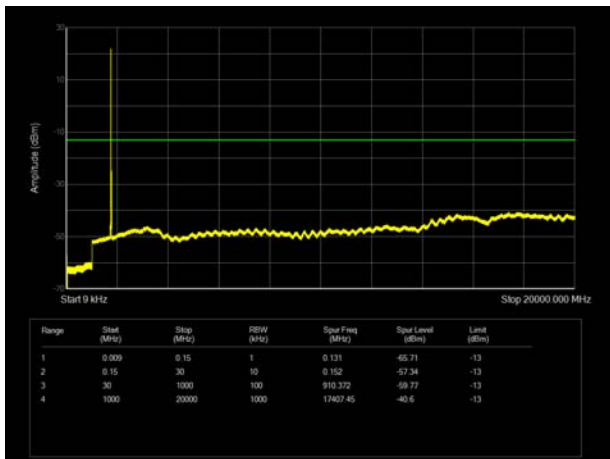
LTE Band 66 15MHz CH-Low 9kHz ~20GHz



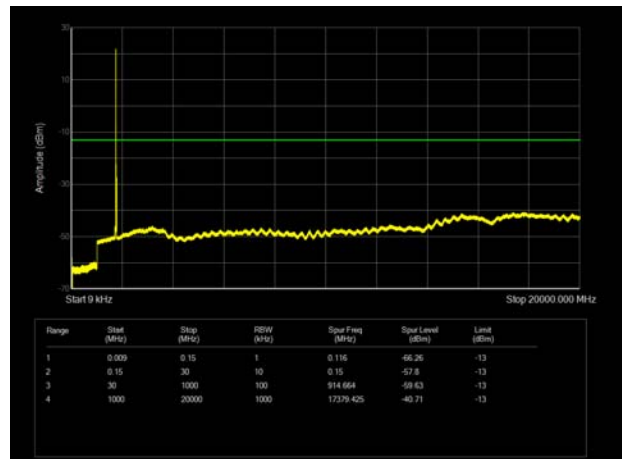
LTE Band 66 20MHz CH-Low 9kHz ~20GHz



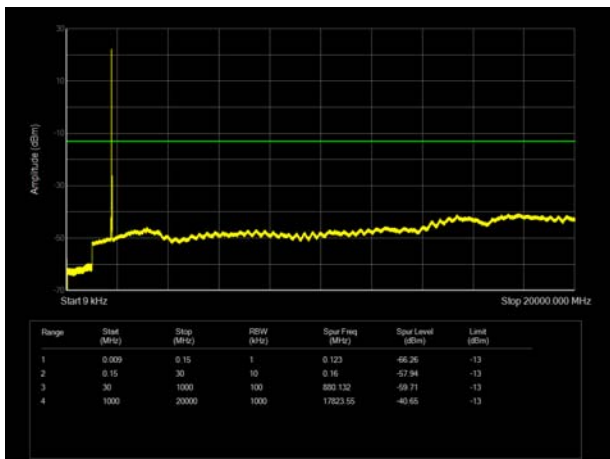
LTE Band 66 15MHz CH-Middle 9kHz ~20GHz



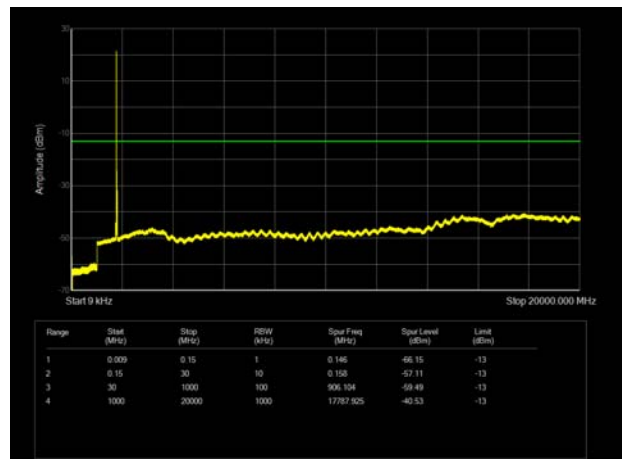
LTE Band 66 20MHz CH-Middle 9kHz ~20GHz



LTE Band 66 15MHz CH-High 9kHz ~20GHz



LTE Band 66 20MHz CH-High 9kHz ~20GHz





6.7 Radiated Spurious Emission

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions below the noise floor will not be recorded in the report.

Low Antenna

LTE Band 13 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1559.60	-62.16	1.70	8.70	Horizontal	-55.16	-40.00	15.16	307
Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
3	2604.75	-65.46	2.10	12.00	Horizontal	-57.71	-13.00	44.71	124
4	3118.00	-66.70	2.30	13.10	Horizontal	-58.05	-13.00	45.05	132
5	3897.50	-63.36	2.90	12.50	Horizontal	-55.91	-13.00	42.91	315
6	4677.00	-63.08	3.10	12.50	Horizontal	-55.83	-13.00	42.83	151
7	5456.50	-63.16	3.30	12.50	Horizontal	-56.11	-13.00	43.11	132
8	6236.00	-59.97	3.50	12.80	Horizontal	-52.82	-13.00	39.82	0
9	7015.50	-59.57	4.20	11.80	Horizontal	-54.12	-13.00	41.12	0
10	7795.00	-56.86	4.40	12.30	Horizontal	-51.11	-13.00	38.11	170

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 13 QPSK 10MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1554.00	-63.31	1.70	8.70	Horizontal	-58.46	-13.00	45.46	19
3	2331.00	-65.94	2.10	12.00	Horizontal	-58.19	-13.00	45.19	225
4	3108.00	-66.78	2.30	13.10	Horizontal	-58.13	-13.00	45.13	167
5	3885.00	-63.05	2.90	12.50	Horizontal	-55.60	-13.00	42.60	131
6	4662.00	-62.63	3.10	12.50	Horizontal	-55.38	-13.00	42.38	36
7	5439.00	-61.72	3.30	12.50	Horizontal	-54.67	-13.00	41.67	167
8	6216.00	-60.63	3.50	12.80	Horizontal	-53.48	-13.00	40.48	186
9	6993.00	-60.45	4.20	11.80	Horizontal	-55.00	-13.00	42.00	148
10	7770.00	-57.94	4.40	12.30	Horizontal	-52.19	-13.00	39.19	93

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



LTE Band 66 QPSK 1.4MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3488.60	-75.15	2.70	12.70	Horizontal	-65.15	-13.00	52.15	315
3	5232.90	-68.69	3.20	12.50	Horizontal	-59.39	-13.00	46.39	24
4	6977.20	-72.02	4.20	11.80	Horizontal	-64.42	-13.00	51.42	152
5	8721.50	-67.05	4.40	12.50	Horizontal	-58.95	-13.00	45.95	24
6	10465.80	-63.53	4.70	11.80	Horizontal	-56.43	-13.00	43.43	129
7	12210.10	-64.66	5.20	13.80	Horizontal	-56.06	-13.00	43.06	175
8	13954.40	-60.07	5.70	13.20	Horizontal	-52.57	-13.00	39.57	315
9	15698.70	-66.63	6.10	16.80	Horizontal	-55.93	-13.00	42.93	199
10	17443.00	-61.52	6.10	14.20	Horizontal	-53.42	-13.00	40.42	272
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 66 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3486.00	-75.37	2.70	12.70	Horizontal	-65.37	-13.00	52.37	145
3	5229.00	-68.96	3.20	12.50	Horizontal	-59.66	-13.00	46.66	313
4	6972.00	-71.85	4.20	11.80	Horizontal	-64.25	-13.00	51.25	203
5	8715.00	-66.67	4.40	12.50	Horizontal	-58.57	-13.00	45.57	313
6	10458.00	-62.98	4.70	11.80	Horizontal	-55.88	-13.00	42.88	315
7	12201.00	-64.48	5.20	13.80	Horizontal	-55.88	-13.00	42.88	222
8	13944.00	-61.88	5.70	13.20	Horizontal	-54.38	-13.00	41.38	204
9	15687.00	-66.22	6.10	16.80	Horizontal	-55.52	-13.00	42.52	184
10	17430.00	-61.50	6.10	14.20	Horizontal	-53.40	-13.00	40.40	97
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									



LTE Band 66 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	2677.40	-71.65	2.70	12.70	Horizontal	-61.65	-13.00	48.65	139
3	3472.88	-74.67	3.20	12.50	Horizontal	-65.37	-13.00	52.37	262
4	5209.00	-66.60	4.20	11.80	Horizontal	-59.00	-13.00	46.00	22
5	6945.75	-73.38	4.40	12.50	Horizontal	-65.28	-13.00	52.28	99
6	8682.00	-65.09	4.70	11.80	Horizontal	-57.99	-13.00	44.99	271
7	10418.63	-63.83	5.20	13.80	Horizontal	-55.23	-13.00	42.23	103
8	12455.00	-65.00	5.70	13.20	Horizontal	-57.50	-13.00	44.50	0
9	13891.50	-61.05	6.10	16.80	Horizontal	-50.35	-13.00	37.35	113
10	15627.00	-64.14	6.10	14.20	Horizontal	-56.04	-13.00	43.04	315
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

**Upper Antenna**

LTE Band 13 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1559.55	-61.96	1.70	8.70	Horizontal	-54.96	-40.00	14.96	314
Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
3	2338.50	-65.89	2.10	12.00	Horizontal	-58.14	-13.00	45.14	31
4	3118.00	-65.88	2.30	13.10	Horizontal	-57.23	-13.00	44.23	63
5	3897.50	-56.11	2.90	12.50	Horizontal	-48.66	-13.00	35.66	273
6	4677.00	-61.26	3.10	12.50	Horizontal	-54.01	-13.00	41.01	76
7	5456.50	-61.84	3.30	12.50	Horizontal	-54.79	-13.00	41.79	190
8	6236.00	-60.75	3.50	12.80	Horizontal	-53.60	-13.00	40.60	27
9	7015.50	-58.07	4.20	11.80	Horizontal	-52.62	-13.00	39.62	0
10	7795.00	-57.35	4.40	12.30	Horizontal	-51.60	-13.00	38.60	13
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 13 QPSK 10MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1554.00	-58.80	1.70	8.70	Horizontal	-53.95	-13.00	40.95	315
3	2331.00	-65.95	2.10	12.00	Horizontal	-58.20	-13.00	45.20	43
4	3108.00	-65.97	2.30	13.10	Horizontal	-57.32	-13.00	44.32	13
5	3885.00	-63.16	2.90	12.50	Horizontal	-55.71	-13.00	42.71	276
6	4662.00	-62.70	3.10	12.50	Horizontal	-55.45	-13.00	42.45	134
7	5439.00	-61.93	3.30	12.50	Horizontal	-54.88	-13.00	41.88	76
8	6216.00	-59.58	3.50	12.80	Horizontal	-52.43	-13.00	39.43	47
9	6993.00	-59.82	4.20	11.80	Horizontal	-54.37	-13.00	41.37	33
10	7770.00	-57.06	4.40	12.30	Horizontal	-51.31	-13.00	38.31	180
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 66 QPSK 1.4MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3490.00	-74.58	2.70	12.70	Horizontal	-64.58	-13.00	51.58	309
3	5235.00	-70.05	3.20	12.50	Horizontal	-60.75	-13.00	47.75	116
4	6980.00	-71.91	4.20	11.80	Horizontal	-64.31	-13.00	51.31	9
5	8725.00	-67.25	4.40	12.50	Horizontal	-59.15	-13.00	46.15	254
6	10470.00	-62.83	4.70	11.80	Horizontal	-55.73	-13.00	42.73	61
7	12215.00	-64.88	5.20	13.80	Horizontal	-56.28	-13.00	43.28	93
8	13960.00	-59.38	5.70	13.20	Horizontal	-51.88	-13.00	38.88	225
9	15705.00	-67.36	6.10	16.80	Horizontal	-56.66	-13.00	43.66	98
10	17450.00	-61.41	6.10	14.20	Horizontal	-53.31	-13.00	40.31	164

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 66 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3486.00	-74.87	2.70	12.70	Horizontal	-64.87	-13.00	51.87	80
3	5229.00	-67.24	3.20	12.50	Horizontal	-57.94	-13.00	44.94	228
4	6972.00	-71.73	4.20	11.80	Horizontal	-64.13	-13.00	51.13	14
5	8715.00	-66.67	4.40	12.50	Horizontal	-58.57	-13.00	45.57	61
6	10458.00	-63.27	4.70	11.80	Horizontal	-56.17	-13.00	43.17	183
7	12201.00	-64.41	5.20	13.80	Horizontal	-55.81	-13.00	42.81	237
8	13944.00	-59.17	5.70	13.20	Horizontal	-51.67	-13.00	38.67	301
9	15687.00	-66.20	6.10	16.80	Horizontal	-55.50	-13.00	42.50	186
10	17430.00	-61.66	6.10	14.20	Horizontal	-53.56	-13.00	40.56	315

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



LTE Band 66 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	2659.06	-72.24	2.70	12.70	Horizontal	-62.24	-13.00	49.24	32
3	3472.88	-73.45	3.20	12.50	Horizontal	-64.15	-13.00	51.15	3
4	5209.00	-63.70	4.20	11.80	Horizontal	-56.10	-13.00	43.10	48
5	6945.75	-72.97	4.40	12.50	Horizontal	-64.87	-13.00	51.87	135
6	8682.00	-65.69	4.70	11.80	Horizontal	-58.59	-13.00	45.59	69
7	10418.63	-64.62	5.20	13.80	Horizontal	-56.02	-13.00	43.02	274
8	12455.00	-65.12	5.70	13.20	Horizontal	-57.62	-13.00	44.62	201
9	13891.50	-60.03	6.10	16.80	Horizontal	-49.33	-13.00	36.33	50
10	15627.00	-64.24	6.10	14.20	Horizontal	-56.14	-13.00	43.14	91
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									



7 Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Climatic Chamber	ESPEC	SU-242	93000506	2021-12-12	2022-12-11
Wireless Communication Tester	R&S	CMW500	150415	2022-05-14	2023-05-13
Spectrum Analyzer	Keysight	N9020A	MY50510203	2021-12-12	2022-12-11
Wireless communication tester	Agilent	E5515C	GB44400275	2021-12-12	2022-12-11
Spectrum Analyzer	R&S	FSV30	104028	2021-12-12	2022-12-11
Loop antenna	SCHWARZBECK	FMZB1519	1519-047	2020-04-02	2023-04-01
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	1023	2020-05-05	2023-05-04
Horn Antenna	Schwarzbeck	BBHA 9120D	1594	2020-12-17	2023-12-16
Software	R&S	EMC32	10.35.10	/	/

*****END OF REPORT *****



ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.



ANNEX B: Test Setup Photos

The Test Setup Photos are submitted separately.



ANNEX C: Product Change Description (Variant 2)

The Product Change Description are submitted separately.