

# RF TEST REPORT

<b>Applicant</b>	Quectel Wireless Solutions Co., Ltd.
<b>FCC ID</b>	XMR2023EG950ALA
<b>Product</b>	LTE Cat4 Module
<b>Brand</b>	Quectel
<b>Model</b>	EG950A-LA
<b>Report No.</b>	R2308A0904-R3
<b>Issue Date</b>	September 22, 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.

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## 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(h)(2)	PASS
2	Occupied Bandwidth	2.1049	PASS
3	Band Edge Compliance	27.53(h) /27.53(m)	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(m)	PASS
7	Radiated Spurious Emission	2.1053 /27.53(h) /27.53(m)	PASS

Date of Testing: August 29, 2023 ~ September 6, 2023

Date of Sample Received: August 29, 2023

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.

# 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  
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## 2 General Description of Equipment under Test

### 2.1 Applicant and Manufacturer Information

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

### 2.2 General information

EUT Description			
Model	EG950A-LA		
SN	Radiated	D1A23GT0C000195	
	Conducted	D1A23GS0N000120	
Hardware Version	R1.0		
Software Version	EG950ALALARO1A02M16		
Power Supply	External power supply		
Antenna Type	External Antenna		
Test Mode(s)	WCDMA Band IV; LTE Band 4/7/66		
Test Modulation	(WCDMA) BPSK, QPSK, 16QAM; (LTE) QPSK, 16QAM;		
HSDPA UE Category	14		
HSUPA UE Category	6		
HSPA+ UE Category	14		
LTE Category	4		
Maximum E.I.R.P./ E.R.P.	WCDMA Band IV	25.87 dBm	
	LTE Band 4	26.32 dBm	
	LTE Band 7	26.23 dBm	
	LTE Band 66	26.69 dBm	
Rated Power Supply Voltage	3.8V		
Operating Voltage	Minimum: 3.4V    Maximum: 4.5V		
Operating Temperature	Lowest: -35°C    Highest: +75°C		
Testing Temperature	Lowest: -30°C    Highest: +50°C		
Operating Frequency Range(s)	Mode	Tx (MHz)	Rx (MHz)
	WCDMA Band IV	1710 ~ 1755	2110 ~ 2155
	LTE Band 4	1710 ~ 1755	2110 ~ 2155
	LTE Band 7	2500 ~ 2570	2620 ~ 2690

	LTE Band 66	1710 ~ 1780	2110 ~ 2180
<b>Auxiliary Test Equipment</b>			
External Antenna	Manufacturer: Shanghai Saintenna Electronic Technology Co., Ltd. Model: /		
	Antenna Gain	WCDMA Band IV	2 dBi
		LTE Band 4	2 dBi
		LTE Band 7	3 dBi
		LTE Band 66	2 dBi
<b>Note:</b> 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.			

### 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

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes. EUT polarization (horizontal and vertical). Receiver antenna polarization (horizontal and vertical), the worst emission was found in position (horizontal polarization, horizontal polarization) and the worst case was recorded.

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

Subsequently, only the worst case emissions are reported.

The following testing in WCDMA/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:

Test items	Modes/Modulation
	WCDMA Band IV
RF Power Output and Effective Isotropic Radiated Power	RMC HSDPA/HSUPA/HSPA+
Occupied Bandwidth	RMC
Band Edge Compliance	RMC
Peak-to-Average Power Ratio	RMC
Frequency Stability	RMC
Spurious Emissions at Antenna Terminals	RMC
Radiated Spurious Emission	RMC



Test modes are chosen to be reported as the worst case configuration below for LTE Band 4/7/66:

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 4	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 7	-	-	O	O	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 4	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 7	-	-	O	O	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 4	O	O	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 7	-	-	O	O	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 4	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 7	-	-	O	O	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 4	O	O	O	O	O	O	O	O	O	-	-	-	O	-
	LTE 7	-	-	O	O	O	O	O	O	O	-	-	-	O	-
	LTE 66	O	O	O	O	O	O	O	O	O	-	-	-	O	-
Spurious Emissions at Antenna Terminals	LTE 4	O	O	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 7	-	-	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 66	O	O	O	O	O	O	O	-	O	-	-	O	O	O
Radiated Spurious Emission	LTE 4	O	-	O	-	-	O	O	-	O	-	-	-	O	-
	LTE 7	-	-	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
20°C ~25°C	45%~50%

#### Methods of Measurement

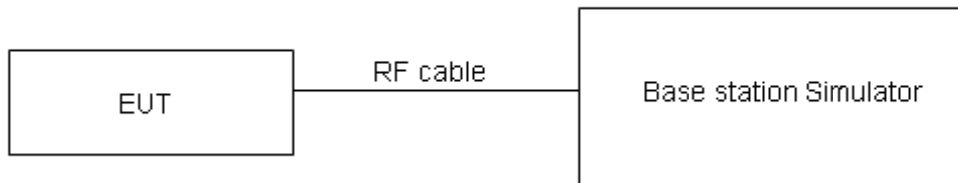
During the process of the testing, The EUT was connected to the Base Station Simulator with a known loss. The EUT is controlled by the Base Station Simulator test set to ensure max power transmission with proper modulation.

ERP can then be calculated as follows:

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

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

#### Test Setup



#### Limits

No specific RF power output requirements in part 2.1046.

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”

Rule Part 27.50(h) (2) specifies that “Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.”

Part 27.50(d)(4)Limit	≤ 1 W (30 dBm)
Part 27.50(h)(2) Limit	≤ 2 W (33 dBm)

## Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 2$ ,  $U=0.4$  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
20°C ~25°C	45%~50%

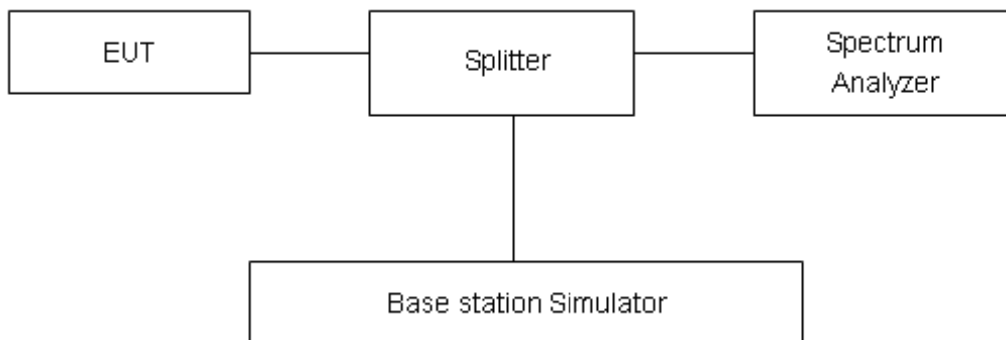
### Method of Measurement

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
20°C ~25°C	45%~50%

#### 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.

For LTE Band 7 set RBW  $\geq$  1% EBW in the 1MHz band immediately outside and adjacent to the band edge. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.

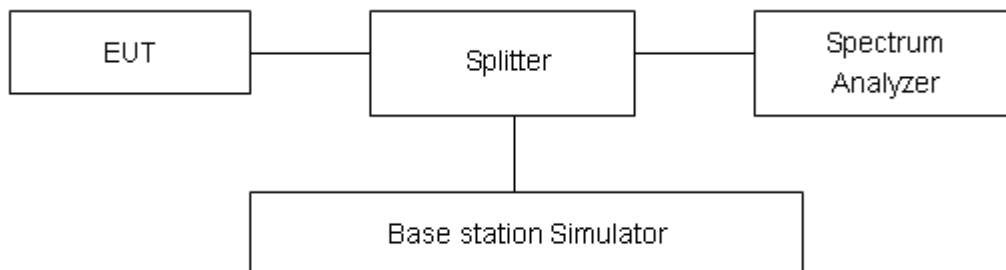
RBW is set to  $\geq$ 1%EBW, VBW is set to 3x RBW on spectrum analyzer.

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(m) (4) specifies that “for BRS and EBS stations. For mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log (P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log (P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log (P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section. In addition, the attenuation factor shall not be less that  $43 + 10 \log (P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and

55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Example:

The limit line is derived from 43 + 10log (P) dB below the transmitter power P(Watts)  
 = P(W)- [43 + 10log(P)] (dB)  
 = [30 + 10log (P)] (dBm) - [43 + 10log(P)] (dB) = -13dBm.

### 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

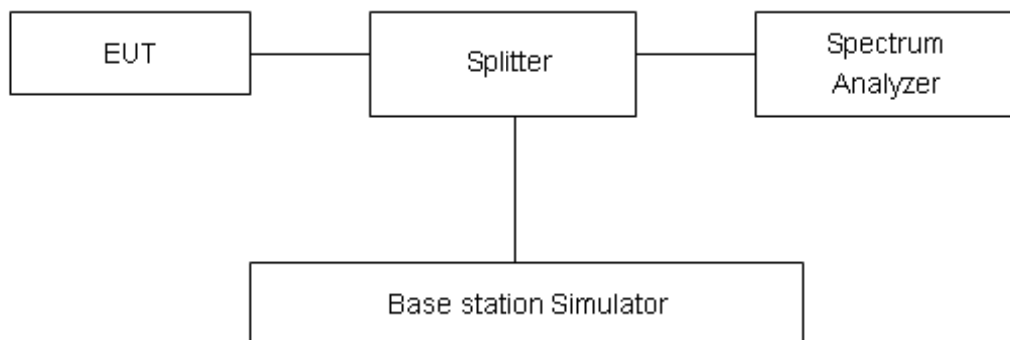
Temperature	Relative humidity
20°C ~25°C	45%~50%

### 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
20°C ~25°C	45%~50%

### 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.

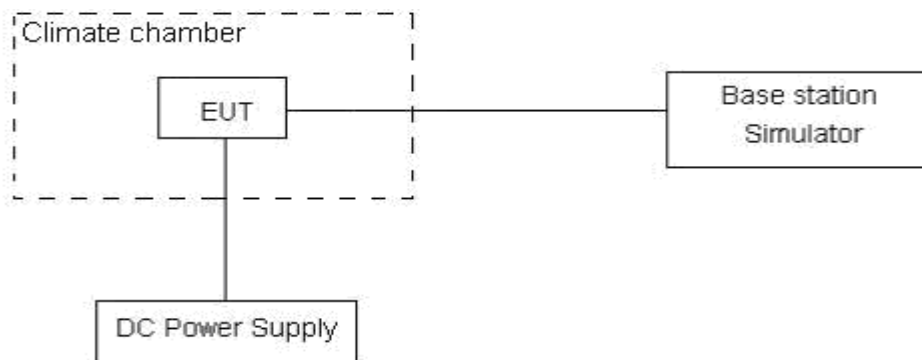
#### Frequency Stability (Voltage Variation)

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 3.4 V and 4.5 V, with a nominal voltage of 3.8V.

### 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
20°C ~25°C	45%~50%

### 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)

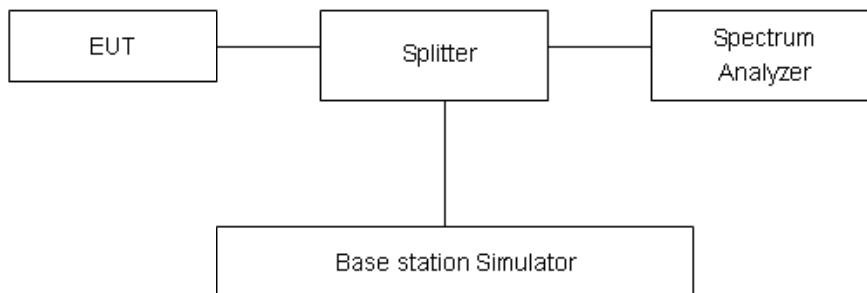
RBW is set to 1000 kHz (above 1000MHz)

Sweep is set to AUTO.

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(m)  $55 + 10 \log(P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section.

Part 27.53(h)/(g) Limit	-13 dBm
Part 27.53(m) Limit	-25 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-26.5GHz	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
20°C ~25°C	45%~50%

### Method of Measurement

- The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI C63.26-2015.
- 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).
- 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.
- 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).
- 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.
- 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.
- The measurement results are obtained as described below:  

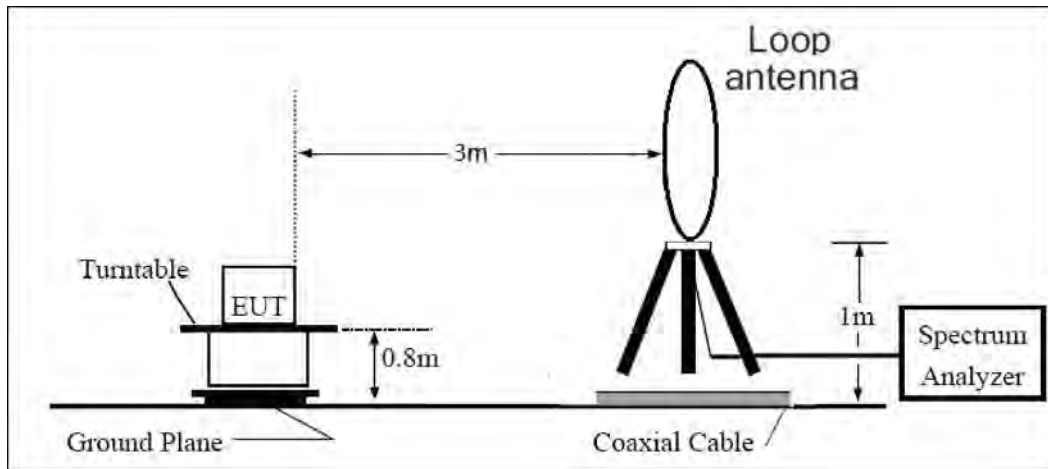
$$\text{Power(EIRP)} = \text{PMea} - \text{PAg} - \text{Pcl} + \text{Ga}$$
 The measurement results are amend as described below:  

$$\text{Power(EIRP)} = \text{PMea} - \text{Pcl} + \text{Ga}$$
- 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,  $\text{ERP} = \text{EIRP} - 2.15\text{dB}$ .

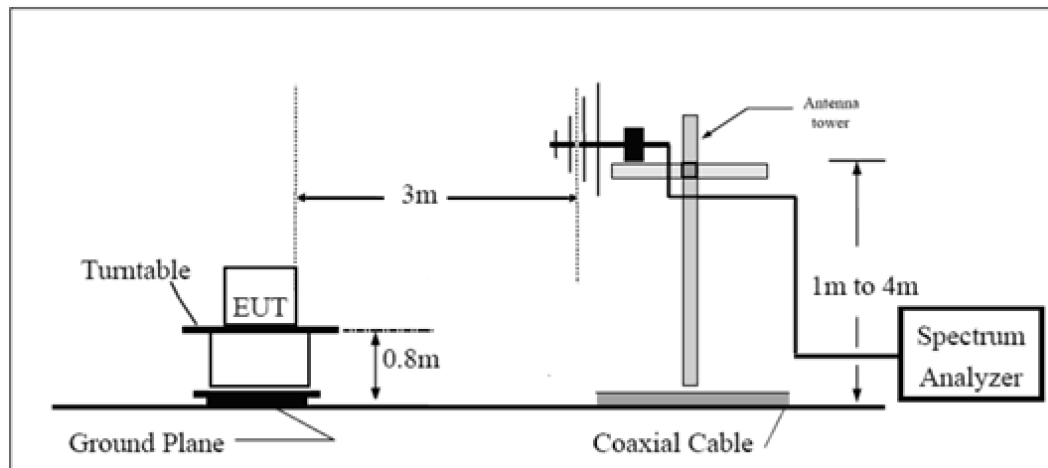
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

**Test setup**

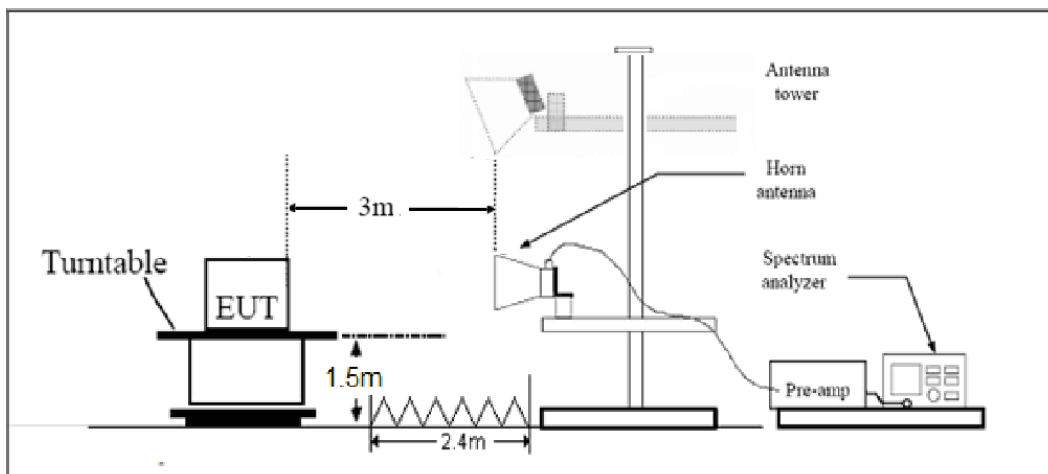
**9KHz~ 30MHz**



**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(m)  $55 + 10 \log(P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section.

Part 27.53 (h)/(g) Limit	-13 dBm
Part 27.53(m) Limit	-25 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

WCDMA Band IV		Maximum Output Power (dBm)			EIRP (dBm)		
		Channel 1312	Channel 1413	Channel 1513	Channel 1312	Channel 1413	Channel 1513
		1712.4 (MHz)	1732.6 (MHz)	1752.6 (MHz)	1712.4 (MHz)	1732.6 (MHz)	1752.6 (MHz)
<b>RMC</b>		23.57	23.87	23.49	25.57	25.87	25.49
<b>HSDPA</b>	Sub - Test 1	23.03	23.29	22.93	25.03	25.29	24.93
	Sub - Test 2	23.02	23.31	22.90	25.02	25.31	24.9
	Sub - Test 3	22.49	22.81	22.42	24.49	24.81	24.42
	Sub - Test 4	22.50	22.82	22.40	24.50	24.82	24.40
<b>HSUPA</b>	Sub - Test 1	22.99	23.28	22.88	24.99	25.28	24.88
	Sub - Test 2	21.98	22.26	21.87	23.98	24.26	23.87
	Sub - Test 3	22.45	22.74	22.36	24.45	24.74	24.36
	Sub - Test 4	21.91	22.23	21.84	23.91	24.23	23.84
	Sub - Test 5	22.92	23.21	22.82	24.92	25.21	24.82
<b>HSPA+</b>	16QAM	22.46	22.78	22.39	24.46	24.78	24.39

LTE Band 4						
Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	EIRP (dBm)
1.4	19957	1	#0	QPSK	24.22	26.22
1.4	19957	1	#Mid	QPSK	24.14	26.14
1.4	19957	1	#Max	QPSK	24.32	26.32
1.4	19957	3	#0	QPSK	24.05	26.05
1.4	19957	3	#Mid	QPSK	24.05	26.05
1.4	19957	3	#Max	QPSK	24.08	26.08
1.4	19957	6	#0	QPSK	23.09	25.09
1.4	19957	1	#0	16QAM	23.12	25.12
1.4	19957	1	#Mid	16QAM	23.10	25.10
1.4	19957	1	#Max	16QAM	23.25	25.25
1.4	19957	3	#0	16QAM	23.17	25.17
1.4	19957	3	#Mid	16QAM	23.17	25.17
1.4	19957	3	#Max	16QAM	23.25	25.25
1.4	19957	6	#0	16QAM	22.09	24.09
1.4	20175	1	#0	QPSK	23.91	25.91

1.4	20175	1	#Mid	QPSK	23.89	25.89
1.4	20175	1	#Max	QPSK	23.90	25.90
1.4	20175	3	#0	QPSK	23.89	25.89
1.4	20175	3	#Mid	QPSK	23.88	25.88
1.4	20175	3	#Max	QPSK	23.88	25.88
1.4	20175	6	#0	QPSK	22.99	24.99
1.4	20175	1	#0	16QAM	23.17	25.17
1.4	20175	1	#Mid	16QAM	23.17	25.17
1.4	20175	1	#Max	16QAM	23.19	25.19
1.4	20175	3	#0	16QAM	23.01	25.01
1.4	20175	3	#Mid	16QAM	23.02	25.02
1.4	20175	3	#Max	16QAM	23.01	25.01
1.4	20175	6	#0	16QAM	21.91	23.91
1.4	20393	1	#0	QPSK	23.86	25.86
1.4	20393	1	#Mid	QPSK	23.72	25.72
1.4	20393	1	#Max	QPSK	23.86	25.86
1.4	20393	3	#0	QPSK	23.68	25.68
1.4	20393	3	#Mid	QPSK	23.68	25.68
1.4	20393	3	#Max	QPSK	23.68	25.68
1.4	20393	6	#0	QPSK	22.82	24.82
1.4	20393	1	#0	16QAM	22.80	24.80
1.4	20393	1	#Mid	16QAM	22.70	24.70
1.4	20393	1	#Max	16QAM	22.81	24.81
1.4	20393	3	#0	16QAM	22.77	24.77
1.4	20393	3	#Mid	16QAM	22.78	24.78
1.4	20393	3	#Max	16QAM	22.78	24.78
1.4	20393	6	#0	16QAM	21.72	23.72
3	19965	1	#0	QPSK	23.87	25.87
3	19965	1	#Mid	QPSK	24.10	26.10
3	19965	1	#Max	QPSK	24.08	26.08
3	19965	8	#0	QPSK	23.10	25.10
3	19965	8	#Mid	QPSK	23.10	25.10
3	19965	8	#Max	QPSK	23.23	25.23
3	19965	15	#0	QPSK	23.15	25.15
3	19965	1	#0	16QAM	23.15	25.15
3	19965	1	#Mid	16QAM	23.37	25.37
3	19965	1	#Max	16QAM	23.37	25.37
3	19965	8	#0	16QAM	22.12	24.12
3	19965	8	#Mid	16QAM	22.12	24.12
3	19965	8	#Max	16QAM	22.21	24.21
3	19965	15	#0	16QAM	22.15	24.15
3	20175	1	#0	QPSK	23.77	25.77
3	20175	1	#Mid	QPSK	23.88	25.88

3	20175	1	#Max	QPSK	23.77	25.77
3	20175	8	#0	QPSK	22.99	24.99
3	20175	8	#Mid	QPSK	23.00	25.00
3	20175	8	#Max	QPSK	23.00	25.00
3	20175	15	#0	QPSK	22.99	24.99
3	20175	1	#0	16QAM	23.03	25.03
3	20175	1	#Mid	16QAM	23.16	25.16
3	20175	1	#Max	16QAM	23.05	25.05
3	20175	8	#0	16QAM	21.94	23.94
3	20175	8	#Mid	16QAM	21.95	23.95
3	20175	8	#Max	16QAM	21.96	23.96
3	20175	15	#0	16QAM	21.85	23.85
3	20385	1	#0	QPSK	23.67	25.67
3	20385	1	#Mid	QPSK	23.72	25.72
3	20385	1	#Max	QPSK	23.67	25.67
3	20385	8	#0	QPSK	22.83	24.83
3	20385	8	#Mid	QPSK	22.83	24.83
3	20385	8	#Max	QPSK	22.83	24.83
3	20385	15	#0	QPSK	22.81	24.81
3	20385	1	#0	16QAM	22.70	24.70
3	20385	1	#Mid	16QAM	22.70	24.70
3	20385	1	#Max	16QAM	22.61	24.61
3	20385	8	#0	16QAM	21.75	23.75
3	20385	8	#Mid	16QAM	21.75	23.75
3	20385	8	#Max	16QAM	21.75	23.75
3	20385	15	#0	16QAM	21.73	23.73
5	19975	1	#0	QPSK	23.95	25.95
5	19975	1	#Mid	QPSK	24.16	26.16
5	19975	1	#Max	QPSK	24.01	26.01
5	19975	12	#0	QPSK	23.10	25.10
5	19975	12	#Mid	QPSK	23.10	25.10
5	19975	12	#Max	QPSK	23.26	25.26
5	19975	25	#0	QPSK	23.20	25.20
5	19975	1	#0	QAM16	23.16	25.16
5	19975	1	#Mid	QAM16	23.50	25.50
5	19975	1	#Max	QAM16	23.34	25.34
5	19975	12	#0	QAM16	22.11	24.11
5	19975	12	#Mid	QAM16	22.10	24.10
5	19975	12	#Max	QAM16	22.19	24.19
5	19975	25	#0	QAM16	22.16	24.16
5	20175	1	#0	QPSK	23.74	25.74
5	20175	1	#Mid	QPSK	23.92	25.92
5	20175	1	#Max	QPSK	23.73	25.73



5	20175	12	#0	QPSK	22.95	24.95
5	20175	12	#Mid	QPSK	22.96	24.96
5	20175	12	#Max	QPSK	22.97	24.97
5	20175	25	#0	QPSK	22.95	24.95
5	20175	1	#0	16QAM	22.99	24.99
5	20175	1	#Mid	16QAM	23.19	25.19
5	20175	1	#Max	16QAM	23.00	25.00
5	20175	12	#0	16QAM	21.86	23.86
5	20175	12	#Mid	16QAM	21.87	23.87
5	20175	12	#Max	16QAM	21.85	23.85
5	20175	25	#0	16QAM	21.88	23.88
5	20375	1	#0	QPSK	23.58	25.58
5	20375	1	#Mid	QPSK	23.65	25.65
5	20375	1	#Max	QPSK	23.57	25.57
5	20375	12	#0	QPSK	22.76	24.76
5	20375	12	#Mid	QPSK	22.76	24.76
5	20375	12	#Max	QPSK	22.77	24.77
5	20375	25	#0	QPSK	22.77	24.77
5	20375	1	#0	16QAM	22.95	24.95
5	20375	1	#Mid	16QAM	23.07	25.07
5	20375	1	#Max	16QAM	22.96	24.96
5	20375	12	#0	16QAM	21.78	23.78
5	20375	12	#Mid	16QAM	21.79	23.79
5	20375	12	#Max	16QAM	21.72	23.72
5	20375	25	#0	16QAM	21.67	23.67
10	20000	1	#0	QPSK	23.75	25.75
10	20000	1	#Mid	QPSK	23.86	25.86
10	20000	1	#Max	QPSK	23.77	25.77
10	20000	25	#0	QPSK	23.02	25.02
10	20000	25	#Mid	QPSK	23.02	25.02
10	20000	25	#Max	QPSK	22.83	24.83
10	20000	50	#0	QPSK	22.88	24.88
10	20000	1	#0	16QAM	22.98	24.98
10	20000	1	#Mid	16QAM	23.24	25.24
10	20000	1	#Max	16QAM	22.99	24.99
10	20000	25	#0	16QAM	22.03	24.03
10	20000	25	#Mid	16QAM	22.03	24.03
10	20000	25	#Max	16QAM	21.86	23.86
10	20000	50	#0	16QAM	21.88	23.88
10	20175	1	#0	QPSK	23.59	25.59
10	20175	1	#Mid	QPSK	23.82	25.82
10	20175	1	#Max	QPSK	23.52	25.52
10	20175	25	#0	QPSK	22.74	24.74

10	20175	25	#Mid	QPSK	22.74	24.74
10	20175	25	#Max	QPSK	22.69	24.69
10	20175	50	#0	QPSK	22.76	24.76
10	20175	1	#0	16QAM	22.80	24.80
10	20175	1	#Mid	16QAM	23.09	25.09
10	20175	1	#Max	16QAM	22.78	24.78
10	20175	25	#0	16QAM	21.72	23.72
10	20175	25	#Mid	16QAM	21.72	23.72
10	20175	25	#Max	16QAM	21.72	23.72
10	20175	50	#0	16QAM	21.70	23.70
10	20350	1	#0	QPSK	23.46	25.46
10	20350	1	#Mid	QPSK	23.67	25.67
10	20350	1	#Max	QPSK	23.44	25.44
10	20350	25	#0	QPSK	22.57	24.57
10	20350	25	#Mid	QPSK	22.57	24.57
10	20350	25	#Max	QPSK	22.57	24.57
10	20350	50	#0	QPSK	22.57	24.57
10	20350	1	#0	16QAM	22.39	24.39
10	20350	1	#Mid	16QAM	22.61	24.61
10	20350	1	#Max	16QAM	22.37	24.37
10	20350	25	#0	16QAM	21.55	23.55
10	20350	25	#Mid	16QAM	21.55	23.55
10	20350	25	#Max	16QAM	21.56	23.56
10	20350	50	#0	16QAM	21.56	23.56
15	20025	1	#0	QPSK	23.89	25.89
15	20025	1	#Mid	QPSK	23.84	25.84
15	20025	1	#Max	QPSK	23.71	25.71
15	20025	36	#0	QPSK	23.09	25.09
15	20025	36	#Mid	QPSK	23.09	25.09
15	20025	36	#Max	QPSK	22.95	24.95
15	20025	75	#0	QPSK	22.99	24.99
15	20025	1	#0	16QAM	23.13	25.13
15	20025	1	#Mid	16QAM	23.18	25.18
15	20025	1	#Max	16QAM	23.09	25.09
15	20025	36	#0	16QAM	22.06	24.06
15	20025	36	#Mid	16QAM	22.06	24.06
15	20025	36	#Max	16QAM	21.97	23.97
15	20025	75	#0	16QAM	21.97	23.97
15	20175	1	#0	QPSK	23.62	25.62
15	20175	1	#Mid	QPSK	23.86	25.86
15	20175	1	#Max	QPSK	23.70	25.70
15	20175	36	#0	QPSK	22.83	24.83
15	20175	36	#Mid	QPSK	22.83	24.83

15	20175	36	#Max	QPSK	22.83	24.83
15	20175	75	#0	QPSK	22.85	24.85
15	20175	1	#0	16QAM	22.86	24.86
15	20175	1	#Mid	16QAM	23.12	25.12
15	20175	1	#Max	16QAM	22.97	24.97
15	20175	36	#0	16QAM	21.77	23.77
15	20175	36	#Mid	16QAM	21.78	23.78
15	20175	36	#Max	16QAM	21.84	23.84
15	20175	75	#0	16QAM	21.80	23.80
15	20325	1	#0	QPSK	23.78	25.78
15	20325	1	#Mid	QPSK	23.73	25.73
15	20325	1	#Max	QPSK	23.62	25.62
15	20325	36	#0	QPSK	22.80	24.80
15	20325	36	#Mid	QPSK	22.80	24.80
15	20325	36	#Max	QPSK	22.71	24.71
15	20325	75	#0	QPSK	22.69	24.69
15	20325	1	#0	16QAM	22.84	24.84
15	20325	1	#Mid	16QAM	22.82	24.82
15	20325	1	#Max	16QAM	22.69	24.69
15	20325	36	#0	16QAM	21.73	23.73
15	20325	36	#Mid	16QAM	21.73	23.73
15	20325	36	#Max	16QAM	21.69	23.69
15	20325	75	#0	16QAM	21.69	23.69
20	20050	1	#0	QPSK	23.90	25.90
20	20050	1	#Mid	QPSK	23.91	25.91
20	20050	1	#Max	QPSK	23.72	25.72
20	20050	50	#0	QPSK	22.94	24.94
20	20050	50	#Mid	QPSK	22.94	24.94
20	20050	50	#Max	QPSK	22.84	24.84
20	20050	100	#0	QPSK	22.82	24.82
20	20050	1	#0	16QAM	23.04	25.04
20	20050	1	#Mid	16QAM	23.18	25.18
20	20050	1	#Max	16QAM	22.94	24.94
20	20050	50	#0	16QAM	21.95	23.95
20	20050	50	#Mid	16QAM	21.96	23.96
20	20050	50	#Max	16QAM	21.81	23.81
20	20050	100	#0	16QAM	21.82	23.82
20	20175	1	#0	QPSK	23.75	25.75
20	20175	1	#Mid	QPSK	23.94	25.94
20	20175	1	#Max	QPSK	23.69	25.69
20	20175	50	#0	QPSK	22.74	24.74
20	20175	50	#Mid	QPSK	22.74	24.74
20	20175	50	#Max	QPSK	22.79	24.79

20	20175	100	#0	QPSK	22.81	24.81
20	20175	1	#0	16QAM	22.64	24.64
20	20175	1	#Mid	16QAM	22.87	24.87
20	20175	1	#Max	16QAM	22.61	24.61
20	20175	50	#0	16QAM	21.67	23.67
20	20175	50	#Mid	16QAM	21.67	23.67
20	20175	50	#Max	16QAM	21.76	23.76
20	20175	100	#0	16QAM	21.78	23.78
20	20300	1	#0	QPSK	23.62	25.62
20	20300	1	#Mid	QPSK	23.77	25.77
20	20300	1	#Max	QPSK	23.46	25.46
20	20300	50	#0	QPSK	22.76	24.76
20	20300	50	#Mid	QPSK	22.76	24.76
20	20300	50	#Max	QPSK	22.65	24.65
20	20300	100	#0	QPSK	22.72	24.72
20	20300	1	#0	16QAM	22.42	24.42
20	20300	1	#Mid	16QAM	22.62	24.62
20	20300	1	#Max	16QAM	22.31	24.31
20	20300	50	#0	16QAM	21.75	23.75
20	20300	50	#Mid	16QAM	21.75	23.75
20	20300	50	#Max	16QAM	21.69	23.69
20	20300	100	#0	16QAM	21.69	23.69

LTE Band 7						
Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	EIRP (dBm)
5	20775	1	#0	QPSK	23.12	26.12
5	20775	1	#Mid	QPSK	23.23	26.23
5	20775	1	#Max	QPSK	23.20	26.20
5	20775	12	#0	QPSK	22.35	25.35
5	20775	12	#Mid	QPSK	22.35	25.35
5	20775	12	#Max	QPSK	22.44	25.44
5	20775	25	#0	QPSK	22.37	25.37
5	20775	1	#0	16QAM	22.45	25.45
5	20775	1	#Mid	16QAM	22.61	25.61
5	20775	1	#Max	16QAM	22.53	25.53
5	20775	12	#0	16QAM	21.49	24.49
5	20775	12	#Mid	16QAM	21.49	24.49
5	20775	12	#Max	16QAM	21.57	24.57
5	20775	25	#0	16QAM	21.47	24.47
5	21100	1	#0	QPSK	22.96	25.96
5	21100	1	#Mid	QPSK	23.07	26.07
5	21100	1	#Max	QPSK	22.87	25.87

5	21100	12	#0	QPSK	22.03	25.03
5	21100	12	#Mid	QPSK	22.03	25.03
5	21100	12	#Max	QPSK	22.10	25.10
5	21100	25	#0	QPSK	22.06	25.06
5	21100	1	#0	16QAM	22.30	25.30
5	21100	1	#Mid	16QAM	22.37	25.37
5	21100	1	#Max	16QAM	22.23	25.23
5	21100	12	#0	16QAM	21.12	24.12
5	21100	12	#Mid	16QAM	21.13	24.13
5	21100	12	#Max	16QAM	21.17	24.17
5	21100	25	#0	16QAM	21.20	24.20
5	21425	1	#0	QPSK	22.50	25.50
5	21425	1	#Mid	QPSK	22.59	25.59
5	21425	1	#Max	QPSK	22.51	25.51
5	21425	12	#0	QPSK	21.65	24.65
5	21425	12	#Mid	QPSK	21.69	24.69
5	21425	12	#Max	QPSK	21.69	24.69
5	21425	25	#0	QPSK	21.66	24.66
5	21425	1	#0	16QAM	21.71	24.71
5	21425	1	#Mid	16QAM	21.86	24.86
5	21425	1	#Max	16QAM	21.75	24.75
5	21425	12	#0	16QAM	20.68	23.68
5	21425	12	#Mid	16QAM	20.69	23.69
5	21425	12	#Max	16QAM	20.64	23.64
5	21425	25	#0	16QAM	20.67	23.67
10	20800	1	#0	QPSK	22.89	25.89
10	20800	1	#Mid	QPSK	23.09	26.09
10	20800	1	#Max	QPSK	22.86	25.86
10	20800	25	#0	QPSK	22.09	25.09
10	20800	25	#Mid	QPSK	22.09	25.09
10	20800	25	#Max	QPSK	22.20	25.20
10	20800	50	#0	QPSK	22.10	25.10
10	20800	1	#0	16QAM	22.16	25.16
10	20800	1	#Mid	16QAM	22.43	25.43
10	20800	1	#Max	16QAM	22.25	25.25
10	20800	25	#0	16QAM	21.27	24.27
10	20800	25	#Mid	16QAM	21.27	24.27
10	20800	25	#Max	16QAM	21.39	24.39
10	20800	50	#0	16QAM	21.21	24.21
10	21100	1	#0	QPSK	22.80	25.80
10	21100	1	#Mid	QPSK	22.90	25.90
10	21100	1	#Max	QPSK	22.63	25.63
10	21100	25	#0	QPSK	21.80	24.80

10	21100	25	#Mid	QPSK	21.81	24.81
10	21100	25	#Max	QPSK	21.84	24.84
10	21100	50	#0	QPSK	21.83	24.83
10	21100	1	#0	16QAM	22.02	25.02
10	21100	1	#Mid	16QAM	22.13	25.13
10	21100	1	#Max	16QAM	21.91	24.91
10	21100	25	#0	16QAM	20.95	23.95
10	21100	25	#Mid	16QAM	20.96	23.96
10	21100	25	#Max	16QAM	20.99	23.99
10	21100	50	#0	16QAM	20.93	23.93
10	21400	1	#0	QPSK	22.59	25.59
10	21400	1	#Mid	QPSK	22.52	25.52
10	21400	1	#Max	QPSK	22.33	25.33
10	21400	25	#0	QPSK	21.52	24.52
10	21400	25	#Mid	QPSK	21.53	24.53
10	21400	25	#Max	QPSK	21.39	24.39
10	21400	50	#0	QPSK	21.50	24.50
10	21400	1	#0	16QAM	21.48	24.48
10	21400	1	#Mid	16QAM	21.44	24.44
10	21400	1	#Max	16QAM	21.20	24.20
10	21400	25	#0	16QAM	20.60	23.60
10	21400	25	#Mid	16QAM	20.62	23.62
10	21400	25	#Max	16QAM	20.49	23.49
10	21400	50	#0	16QAM	20.55	23.55
15	20825	1	#0	QPSK	22.96	25.96
15	20825	1	#Mid	QPSK	23.20	26.20
15	20825	1	#Max	QPSK	23.04	26.04
15	20825	36	#0	QPSK	22.23	25.23
15	20825	36	#Mid	QPSK	22.23	25.23
15	20825	36	#Max	QPSK	22.27	25.27
15	20825	75	#0	QPSK	22.22	25.22
15	20825	1	#0	16QAM	22.24	25.24
15	20825	1	#Mid	16QAM	22.53	25.53
15	20825	1	#Max	16QAM	22.42	25.42
15	20825	36	#0	16QAM	21.27	24.27
15	20825	36	#Mid	16QAM	21.27	24.27
15	20825	36	#Max	16QAM	21.42	24.42
15	20825	75	#0	16QAM	21.35	24.35
15	21100	1	#0	QPSK	22.85	25.85
15	21100	1	#Mid	QPSK	22.89	25.89
15	21100	1	#Max	QPSK	22.73	25.73
15	21100	36	#0	QPSK	21.99	24.99
15	21100	36	#Mid	QPSK	22.00	25.00

15	21100	36	#Max	QPSK	21.95	24.95
15	21100	75	#0	QPSK	21.92	24.92
15	21100	1	#0	16QAM	22.10	25.10
15	21100	1	#Mid	16QAM	22.14	25.14
15	21100	1	#Max	16QAM	22.02	25.02
15	21100	36	#0	16QAM	21.13	24.13
15	21100	36	#Mid	16QAM	21.14	24.14
15	21100	36	#Max	16QAM	21.08	24.08
15	21100	75	#0	16QAM	21.02	24.02
15	21375	1	#0	QPSK	22.74	25.74
15	21375	1	#Mid	QPSK	22.63	25.63
15	21375	1	#Max	QPSK	22.40	25.40
15	21375	36	#0	QPSK	21.87	24.87
15	21375	36	#Mid	QPSK	21.89	24.89
15	21375	36	#Max	QPSK	21.52	24.52
15	21375	75	#0	QPSK	21.67	24.67
15	21375	1	#0	16QAM	21.83	24.83
15	21375	1	#Mid	16QAM	21.64	24.64
15	21375	1	#Max	16QAM	21.42	24.42
15	21375	36	#0	16QAM	20.93	23.93
15	21375	36	#Mid	16QAM	20.96	23.96
15	21375	36	#Max	16QAM	20.58	23.58
15	21375	75	#0	16QAM	20.78	23.78
20	20850	1	#0	QPSK	22.79	25.79
20	20850	1	#Mid	QPSK	23.05	26.05
20	20850	1	#Max	QPSK	22.90	25.90
20	20850	50	#0	QPSK	22.08	25.08
20	20850	50	#Mid	QPSK	22.08	25.08
20	20850	50	#Max	QPSK	22.15	25.15
20	20850	100	#0	QPSK	22.10	25.10
20	20850	1	#0	16QAM	22.11	25.11
20	20850	1	#Mid	16QAM	22.33	25.33
20	20850	1	#Max	16QAM	22.13	25.13
20	20850	50	#0	16QAM	21.22	24.22
20	20850	50	#Mid	16QAM	21.22	24.22
20	20850	50	#Max	16QAM	21.30	24.30
20	20850	100	#0	16QAM	21.23	24.23
20	21100	1	#0	QPSK	22.76	25.76
20	21100	1	#Mid	QPSK	22.95	25.95
20	21100	1	#Max	QPSK	22.80	25.80
20	21100	50	#0	QPSK	21.91	24.91
20	21100	50	#Mid	QPSK	21.92	24.92
20	21100	50	#Max	QPSK	21.88	24.88

20	21100	100	#0	QPSK	21.85	24.85
20	21100	1	#0	16QAM	21.71	24.71
20	21100	1	#Mid	16QAM	21.85	24.85
20	21100	1	#Max	16QAM	21.67	24.67
20	21100	50	#0	16QAM	21.02	24.02
20	21100	50	#Mid	16QAM	21.03	24.03
20	21100	50	#Max	16QAM	20.98	23.98
20	21100	100	#0	16QAM	20.98	23.98
20	21350	1	#0	QPSK	22.61	25.61
20	21350	1	#Mid	QPSK	22.70	25.70
20	21350	1	#Max	QPSK	22.29	25.29
20	21350	50	#0	QPSK	21.78	24.78
20	21350	50	#Mid	QPSK	21.80	24.80
20	21350	50	#Max	QPSK	21.52	24.52
20	21350	100	#0	QPSK	21.72	24.72
20	21350	1	#0	16QAM	21.46	24.46
20	21350	1	#Mid	16QAM	21.58	24.58
20	21350	1	#Max	16QAM	21.12	24.12
20	21350	50	#0	16QAM	20.97	23.97
20	21350	50	#Mid	16QAM	21.00	24.00
20	21350	50	#Max	16QAM	20.64	23.64
20	21350	100	#0	16QAM	20.83	23.83

LTE Band 66						
Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	EIRP (dBm)
1.4	131979	1	#0	QPSK	24.65	26.65
1.4	131979	1	#Mid	QPSK	24.62	26.62
1.4	131979	1	#Max	QPSK	24.69	26.69
1.4	131979	3	#0	QPSK	24.55	26.55
1.4	131979	3	#Mid	QPSK	24.56	26.56
1.4	131979	3	#Max	QPSK	24.46	26.46
1.4	131979	6	#0	QPSK	23.49	25.49
1.4	131979	1	#0	16QAM	23.56	25.56
1.4	131979	1	#Mid	16QAM	23.47	25.47
1.4	131979	1	#Max	16QAM	23.57	25.57
1.4	131979	3	#0	16QAM	23.59	25.59
1.4	131979	3	#Mid	16QAM	23.59	25.59
1.4	131979	3	#Max	16QAM	23.63	25.63
1.4	131979	6	#0	16QAM	22.49	24.49
1.4	132322	1	#0	QPSK	24.22	26.22
1.4	132322	1	#Mid	QPSK	24.16	26.16
1.4	132322	1	#Max	QPSK	24.22	26.22



1.4	132322	3	#0	QPSK	24.18	26.18
1.4	132322	3	#Mid	QPSK	24.18	26.18
1.4	132322	3	#Max	QPSK	24.18	26.18
1.4	132322	6	#0	QPSK	23.25	25.25
1.4	132322	1	#0	16QAM	23.36	25.36
1.4	132322	1	#Mid	16QAM	23.36	25.36
1.4	132322	1	#Max	16QAM	23.38	25.38
1.4	132322	3	#0	16QAM	23.22	25.22
1.4	132322	3	#Mid	16QAM	23.22	25.22
1.4	132322	3	#Max	16QAM	23.22	25.22
1.4	132322	6	#0	16QAM	22.15	24.15
1.4	132665	1	#0	QPSK	23.46	25.46
1.4	132665	1	#Mid	QPSK	23.34	25.34
1.4	132665	1	#Max	QPSK	23.48	25.48
1.4	132665	3	#0	QPSK	23.32	25.32
1.4	132665	3	#Mid	QPSK	23.32	25.32
1.4	132665	3	#Max	QPSK	23.32	25.32
1.4	132665	6	#0	QPSK	22.35	24.35
1.4	132665	1	#0	16QAM	22.35	24.35
1.4	132665	1	#Mid	16QAM	22.24	24.24
1.4	132665	1	#Max	16QAM	22.42	24.42
1.4	132665	3	#0	16QAM	22.34	24.34
1.4	132665	3	#Mid	16QAM	22.34	24.34
1.4	132665	3	#Max	16QAM	22.37	24.37
1.4	132665	6	#0	16QAM	21.46	23.46
3	131987	1	#0	QPSK	24.28	26.28
3	131987	1	#Mid	QPSK	24.37	26.37
3	131987	1	#Max	QPSK	24.31	26.31
3	131987	8	#0	QPSK	23.48	25.48
3	131987	8	#Mid	QPSK	23.48	25.48
3	131987	8	#Max	QPSK	23.55	25.55
3	131987	15	#0	QPSK	23.53	25.53
3	131987	1	#0	16QAM	23.57	25.57
3	131987	1	#Mid	16QAM	23.67	25.67
3	131987	1	#Max	16QAM	23.54	25.54
3	131987	8	#0	16QAM	22.50	24.50
3	131987	8	#Mid	16QAM	22.50	24.50
3	131987	8	#Max	16QAM	22.55	24.55
3	131987	15	#0	16QAM	22.44	24.44
3	132322	1	#0	QPSK	24.11	26.11
3	132322	1	#Mid	QPSK	24.13	26.13
3	132322	1	#Max	QPSK	24.07	26.07
3	132322	8	#0	QPSK	23.25	25.25

3	132322	8	#Mid	QPSK	23.25	25.25
3	132322	8	#Max	QPSK	23.26	25.26
3	132322	15	#0	QPSK	23.25	25.25
3	132322	1	#0	16QAM	23.34	25.34
3	132322	1	#Mid	16QAM	23.39	25.39
3	132322	1	#Max	16QAM	23.33	25.33
3	132322	8	#0	16QAM	22.22	24.22
3	132322	8	#Mid	16QAM	22.22	24.22
3	132322	8	#Max	16QAM	22.22	24.22
3	132322	15	#0	16QAM	22.12	24.12
3	132657	1	#0	QPSK	23.49	25.49
3	132657	1	#Mid	QPSK	23.40	25.40
3	132657	1	#Max	QPSK	23.36	25.36
3	132657	8	#0	QPSK	22.46	24.46
3	132657	8	#Mid	QPSK	22.48	24.48
3	132657	8	#Max	QPSK	22.46	24.46
3	132657	15	#0	QPSK	22.42	24.42
3	132657	1	#0	16QAM	22.32	24.32
3	132657	1	#Mid	16QAM	22.27	24.27
3	132657	1	#Max	16QAM	22.29	24.29
3	132657	8	#0	16QAM	21.58	23.58
3	132657	8	#Mid	16QAM	21.60	23.60
3	132657	8	#Max	16QAM	21.53	23.53
3	132657	15	#0	16QAM	21.54	23.54
5	131997	1	#0	QPSK	24.33	26.33
5	131997	1	#Mid	QPSK	24.43	26.43
5	131997	1	#Max	QPSK	24.14	26.14
5	131997	12	#0	QPSK	23.48	25.48
5	131997	12	#Mid	QPSK	23.48	25.48
5	131997	12	#Max	QPSK	23.39	25.39
5	131997	25	#0	QPSK	23.44	25.44
5	131997	1	#0	16QAM	23.56	25.56
5	131997	1	#Mid	16QAM	23.72	25.72
5	131997	1	#Max	16QAM	23.46	25.46
5	131997	12	#0	16QAM	22.44	24.44
5	131997	12	#Mid	16QAM	22.44	24.44
5	131997	12	#Max	16QAM	22.42	24.42
5	131997	25	#0	16QAM	22.41	24.41
5	132322	1	#0	QPSK	24.11	26.11
5	132322	1	#Mid	QPSK	24.20	26.20
5	132322	1	#Max	QPSK	24.04	26.04
5	132322	12	#0	QPSK	23.18	25.18
5	132322	12	#Mid	QPSK	23.19	25.19

5	132322	12	#Max	QPSK	23.20	25.20
5	132322	25	#0	QPSK	23.18	25.18
5	132322	1	#0	16QAM	23.29	25.29
5	132322	1	#Mid	16QAM	23.37	25.37
5	132322	1	#Max	16QAM	23.28	25.28
5	132322	12	#0	16QAM	22.15	24.15
5	132322	12	#Mid	16QAM	22.07	24.07
5	132322	12	#Max	16QAM	22.07	24.07
5	132322	25	#0	16QAM	22.07	24.07
5	132647	1	#0	QPSK	23.25	25.25
5	132647	1	#Mid	QPSK	23.32	25.32
5	132647	1	#Max	QPSK	23.18	25.18
5	132647	12	#0	QPSK	22.42	24.42
5	132647	12	#Mid	QPSK	22.43	24.43
5	132647	12	#Max	QPSK	22.34	24.34
5	132647	25	#0	QPSK	22.43	24.43
5	132647	1	#0	16QAM	22.60	24.60
5	132647	1	#Mid	16QAM	22.68	24.68
5	132647	1	#Max	16QAM	22.55	24.55
5	132647	12	#0	16QAM	21.56	23.56
5	132647	12	#Mid	16QAM	21.58	23.58
5	132647	12	#Max	16QAM	21.41	23.41
5	132647	25	#0	16QAM	21.45	23.45
10	132022	1	#0	QPSK	24.04	26.04
10	132022	1	#Mid	QPSK	23.92	25.92
10	132022	1	#Max	QPSK	24.08	26.08
10	132022	25	#0	QPSK	23.21	25.21
10	132022	25	#Mid	QPSK	23.22	25.22
10	132022	25	#Max	QPSK	22.94	24.94
10	132022	50	#0	QPSK	22.87	24.87
10	132022	1	#0	16QAM	23.29	25.29
10	132022	1	#Mid	16QAM	23.22	25.22
10	132022	1	#Max	16QAM	23.31	25.31
10	132022	25	#0	16QAM	22.23	24.23
10	132022	25	#Mid	16QAM	22.23	24.23
10	132022	25	#Max	16QAM	22.06	24.06
10	132022	50	#0	16QAM	21.84	23.84
10	132322	1	#0	QPSK	23.99	25.99
10	132322	1	#Mid	QPSK	23.97	25.97
10	132322	1	#Max	QPSK	23.82	25.82
10	132322	25	#0	QPSK	22.95	24.95
10	132322	25	#Mid	QPSK	22.95	24.95
10	132322	25	#Max	QPSK	22.95	24.95

10	132322	50	#0	QPSK	22.95	24.95
10	132322	1	#0	16QAM	23.10	25.10
10	132322	1	#Mid	16QAM	23.23	25.23
10	132322	1	#Max	16QAM	22.94	24.94
10	132322	25	#0	16QAM	21.94	23.94
10	132322	25	#Mid	16QAM	21.94	23.94
10	132322	25	#Max	16QAM	21.90	23.90
10	132322	50	#0	16QAM	21.86	23.86
10	132622	1	#0	QPSK	23.69	25.69
10	132622	1	#Mid	QPSK	23.37	25.37
10	132622	1	#Max	QPSK	23.16	25.16
10	132622	25	#0	QPSK	22.48	24.48
10	132622	25	#Mid	QPSK	22.50	24.50
10	132622	25	#Max	QPSK	22.21	24.21
10	132622	50	#0	QPSK	22.35	24.35
10	132622	1	#0	16QAM	22.51	24.51
10	132622	1	#Mid	16QAM	22.32	24.32
10	132622	1	#Max	16QAM	22.06	24.06
10	132622	25	#0	16QAM	21.56	23.56
10	132622	25	#Mid	16QAM	21.58	23.58
10	132622	25	#Max	16QAM	21.32	23.32
10	132622	50	#0	16QAM	21.45	23.45
15	132047	1	#0	QPSK	24.13	26.13
15	132047	1	#Mid	QPSK	24.06	26.06
15	132047	1	#Max	QPSK	24.01	26.01
15	132047	36	#0	QPSK	23.09	25.09
15	132047	36	#Mid	QPSK	23.09	25.09
15	132047	36	#Max	QPSK	23.31	25.31
15	132047	75	#0	QPSK	23.13	25.13
15	132047	1	#0	16QAM	23.38	25.38
15	132047	1	#Mid	16QAM	23.30	25.30
15	132047	1	#Max	16QAM	23.30	25.30
15	132047	36	#0	16QAM	22.15	24.15
15	132047	36	#Mid	16QAM	22.15	24.15
15	132047	36	#Max	16QAM	22.33	24.33
15	132047	75	#0	16QAM	22.19	24.19
15	132322	1	#0	QPSK	24.02	26.02
15	132322	1	#Mid	QPSK	24.04	26.04
15	132322	1	#Max	QPSK	23.92	25.92
15	132322	36	#0	QPSK	23.15	25.15
15	132322	36	#Mid	QPSK	23.15	25.15
15	132322	36	#Max	QPSK	23.10	25.10
15	132322	75	#0	QPSK	23.04	25.04

15	132322	1	#0	16QAM	23.21	25.21
15	132322	1	#Mid	16QAM	23.25	25.25
15	132322	1	#Max	16QAM	23.09	25.09
15	132322	36	#0	16QAM	22.07	24.07
15	132322	36	#Mid	16QAM	22.07	24.07
15	132322	36	#Max	16QAM	22.02	24.02
15	132322	75	#0	16QAM	22.00	24.00
15	132597	1	#0	QPSK	23.97	25.97
15	132597	1	#Mid	QPSK	23.72	25.72
15	132597	1	#Max	QPSK	23.26	25.26
15	132597	36	#0	QPSK	22.89	24.89
15	132597	36	#Mid	QPSK	22.91	24.91
15	132597	36	#Max	QPSK	22.38	24.38
15	132597	75	#0	QPSK	22.59	24.59
15	132597	1	#0	16QAM	22.98	24.98
15	132597	1	#Mid	16QAM	22.70	24.70
15	132597	1	#Max	16QAM	22.26	24.26
15	132597	36	#0	16QAM	21.95	23.95
15	132597	36	#Mid	16QAM	21.97	23.97
15	132597	36	#Max	16QAM	21.44	23.44
15	132597	75	#0	16QAM	21.64	23.64
20	132072	1	#0	QPSK	24.23	26.23
20	132072	1	#Mid	QPSK	24.30	26.30
20	132072	1	#Max	QPSK	24.08	26.08
20	132072	50	#0	QPSK	22.94	24.94
20	132072	50	#Mid	QPSK	22.94	24.94
20	132072	50	#Max	QPSK	23.10	25.10
20	132072	100	#0	QPSK	23.04	25.04
20	132072	1	#0	16QAM	23.32	25.32
20	132072	1	#Mid	16QAM	23.46	25.46
20	132072	1	#Max	16QAM	23.27	25.27
20	132072	50	#0	16QAM	21.91	23.91
20	132072	50	#Mid	16QAM	21.92	23.92
20	132072	50	#Max	16QAM	22.09	24.09
20	132072	100	#0	16QAM	22.16	24.16
20	132322	1	#0	QPSK	24.08	26.08
20	132322	1	#Mid	QPSK	24.12	26.12
20	132322	1	#Max	QPSK	23.95	25.95
20	132322	50	#0	QPSK	23.04	25.04
20	132322	50	#Mid	QPSK	23.04	25.04
20	132322	50	#Max	QPSK	23.01	25.01
20	132322	100	#0	QPSK	23.01	25.01
20	132322	1	#0	16QAM	22.88	24.88

20	132322	1	#Mid	16QAM	23.02	25.02
20	132322	1	#Max	16QAM	22.72	24.72
20	132322	50	#0	16QAM	21.98	23.98
20	132322	50	#Mid	16QAM	21.98	23.98
20	132322	50	#Max	16QAM	21.95	23.95
20	132322	100	#0	16QAM	21.98	23.98
20	132572	1	#0	QPSK	23.80	25.80
20	132572	1	#Mid	QPSK	23.78	25.78
20	132572	1	#Max	QPSK	23.11	25.11
20	132572	50	#0	QPSK	22.86	24.86
20	132572	50	#Mid	QPSK	22.87	24.87
20	132572	50	#Max	QPSK	22.37	24.37
20	132572	100	#0	QPSK	22.67	24.67
20	132572	1	#0	16QAM	22.56	24.56
20	132572	1	#Mid	16QAM	22.60	24.60
20	132572	1	#Max	16QAM	21.95	23.95
20	132572	50	#0	16QAM	21.88	23.88
20	132572	50	#Mid	16QAM	21.89	23.89
20	132572	50	#Max	16QAM	21.51	23.51
20	132572	100	#0	16QAM	21.72	23.72

## 6.2 Occupied Bandwidth

Mode	Channel	Frequency (MHz)	99% Power Bandwidth (MHz)	-26dBc Bandwidth(MHz)
WCDMA Band IV (RMC)	1312	1712.4	4.152	4.673
	1413	1732.6	4.160	4.690
	1513	1752.6	4.175	4.677

LTE Band 4							
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)	
100%	QPSK	1.4	19957	1710.7	1.105	1.277	
			20175	1732.5	1.103	1.270	
			20393	1754.3	1.104	1.256	
		3	19965	1711.5	2.708	2.923	
			20175	1732.5	2.701	2.928	
			20385	1753.5	2.703	2.928	
		5	19975	1712.5	4.502	4.868	
			20175	1732.5	4.500	4.870	
			20375	1752.5	4.520	4.877	
		10	20000	1715	8.971	9.620	
			20175	1732.5	8.956	9.557	
			20350	1750	8.955	9.606	
		15	20025	1717.5	13.474	14.386	
			20175	1732.5	13.425	14.487	
			20325	1747.5	13.478	14.473	
		20	20050	1720	17.956	19.499	
			20175	1732.5	17.937	19.539	
			20300	1745	17.957	19.448	
		16QAM	1.4	19957	1710.7	1.112	1.276
				20175	1732.5	1.090	1.256
				20393	1754.3	1.107	1.259
			3	19965	1711.5	2.699	2.945
				20175	1732.5	2.706	2.914
				20385	1753.5	2.702	2.921
5	19975		1712.5	4.507	4.867		
	20175		1732.5	4.508	4.876		
	20375		1752.5	4.500	4.855		
10	20000		1715	8.950	9.597		

		15	20175	1732.5	8.987	9.607		
			20350	1750	8.963	9.575		
			20025	1717.5	13.433	14.404		
		20	15	20175	1732.5	13.468	14.335	
				20325	1747.5	13.470	14.325	
			20	20050	1720	17.943	19.701	
				20175	1732.5	17.961	19.385	
				20	20300	1745	17.927	19.420

LTE Band 7						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	5	20775	2502.5	4.512	4.873
			21100	2535	4.509	4.839
			21425	2567.5	4.512	4.87
		10	20800	2505	8.994	9.648
			21100	2535	8.957	9.666
			21400	2565	8.954	9.604
		15	20825	2507.5	13.436	14.348
			21100	2535	13.446	14.379
			21375	2562.5	13.469	14.46
		20	20850	2510	17.904	19.331
			21100	2535	17.957	19.703
			21350	2560	17.987	19.516
	16QAM	5	20775	2502.5	4.521	4.853
			21100	2535	4.505	4.848
			21425	2567.5	4.501	4.866
		10	20800	2505	8.968	9.592
			21100	2535	8.951	9.579
			21400	2565	8.979	9.648
		15	20825	2507.5	13.441	14.443
			21100	2535	13.454	14.427
			21375	2562.5	13.466	14.407
		20	20850	2510	17.966	19.417
			21100	2535	17.936	19.407
			21350	2560	17.952	19.382

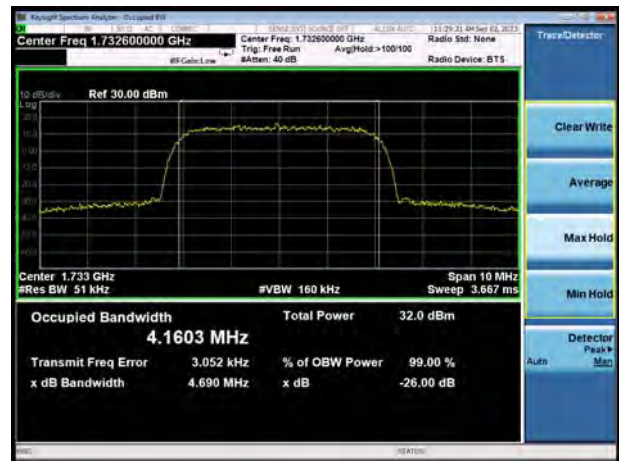


LTE Band 66						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	1.4	131979	1710.7	1.093	1.266
			132322	1745	1.102	1.262
			132665	1779.3	1.102	1.259
		3	131987	1711.5	2.690	2.933
			132322	1745	2.695	2.939
			132657	1778.5	2.708	2.940
		5	131997	1712.5	4.513	4.844
			132322	1745	4.515	4.882
			132647	1777.5	4.509	4.849
		10	132022	1715	8.952	9.687
			132322	1745	8.958	9.629
			132622	1775	8.955	9.653
		15	132047	1717.5	13.477	14.451
			132322	1745	13.447	14.321
			132597	1772.5	13.448	14.425
		20	132072	1720	17.978	19.500
			132322	1745	17.955	19.606
			132572	1770	17.952	19.342
	16QAM	1.4	131979	1710.7	1.111	1.271
			132322	1745	1.098	1.260
			132665	1779.3	1.101	1.262
		3	131987	1711.5	2.691	2.908
			132322	1745	2.696	2.926
			132657	1778.5	2.693	2.917
5		131997	1712.5	4.494	4.866	
		132322	1745	4.508	4.872	
		132647	1777.5	4.498	4.880	
10		132022	1715	8.949	9.587	
		132322	1745	8.989	9.614	
		132622	1775	8.959	9.575	
15		132047	1717.5	13.448	14.416	
		132322	1745	13.399	14.401	
		132597	1772.5	13.460	14.375	
20		132072	1720	17.923	19.365	
	132322	1745	17.924	19.267		
	132572	1770	17.927	19.361		

WCDMA Band IV CH-Low



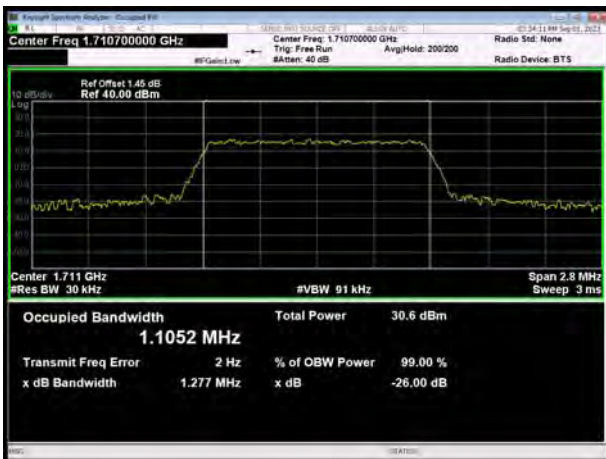
WCDMA Band IV CH Middle



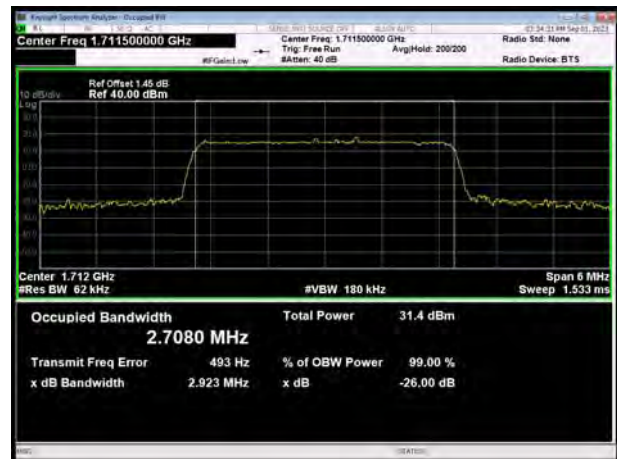
WCDMA Band IV CH High



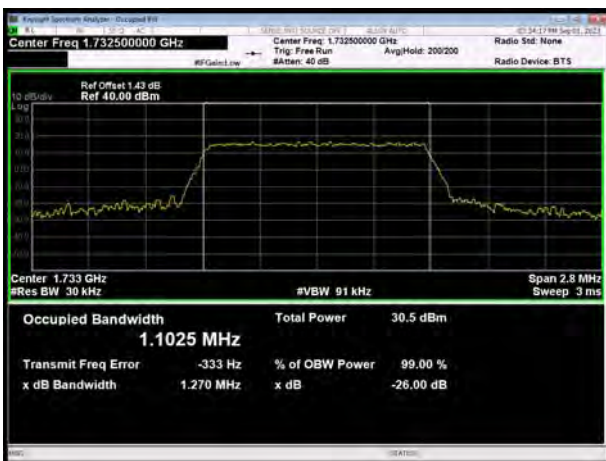
LTE Band 4 QPSK 1.4MHz CH-Low



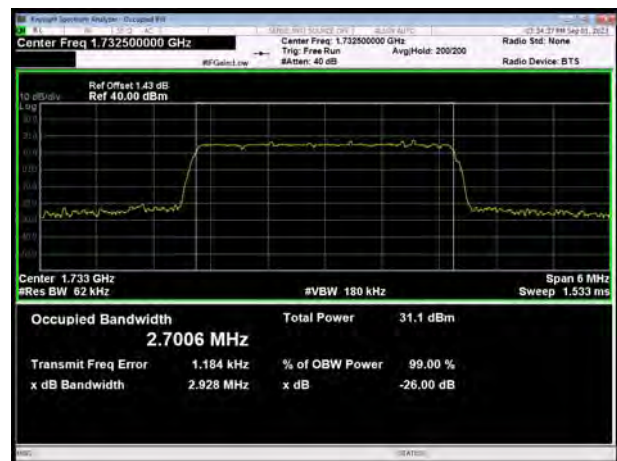
LTE Band 4 QPSK 3MHz CH-Low



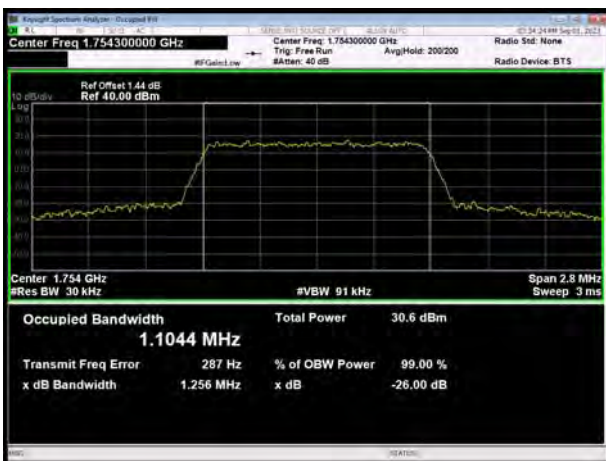
LTE Band 4 QPSK 1.4MHz CH-Middle



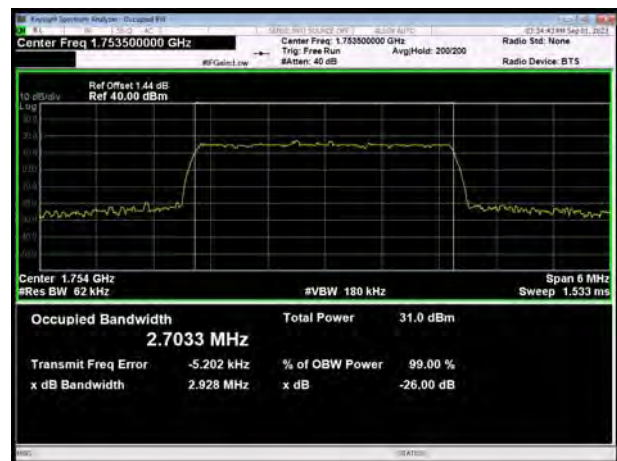
LTE Band 4 QPSK 3MHz CH-Middle



LTE Band 4 QPSK 1.4MHz CH-High



LTE Band 4 QPSK 3MHz CH-High



LTE Band 4 QPSK 5MHz CH-Low



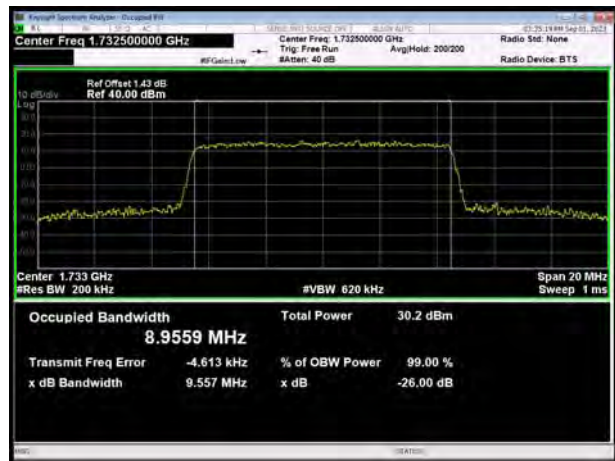
LTE Band 4 QPSK 10MHz CH-Low



LTE Band 4 QPSK 5MHz CH-Middle



LTE Band 4 QPSK 10MHz CH-Middle



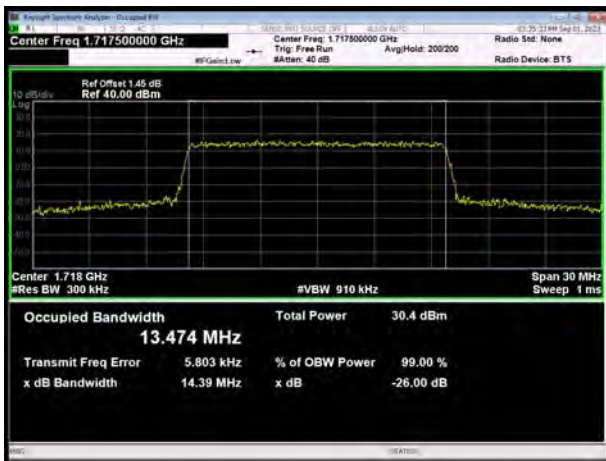
LTE Band 4 QPSK 5MHz CH-High



LTE Band 4 QPSK 10MHz CH-High



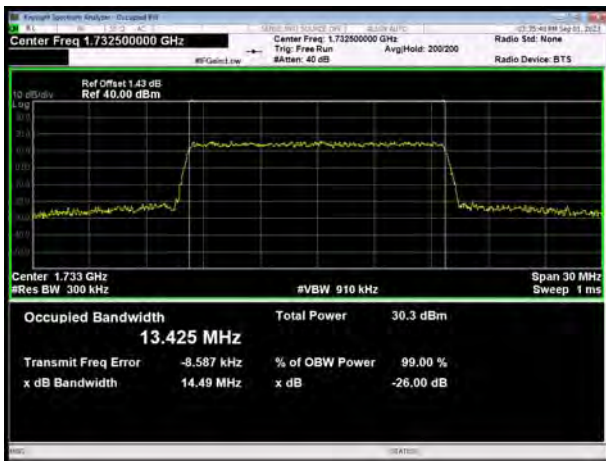
LTE Band 4 QPSK 15MHz CH-Low



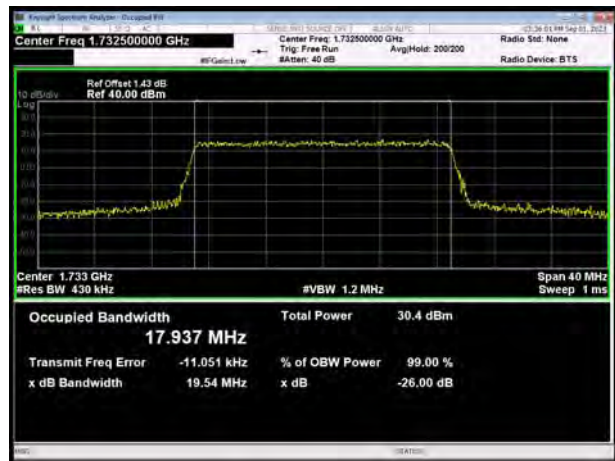
LTE Band 4 QPSK 20MHz CH-Low



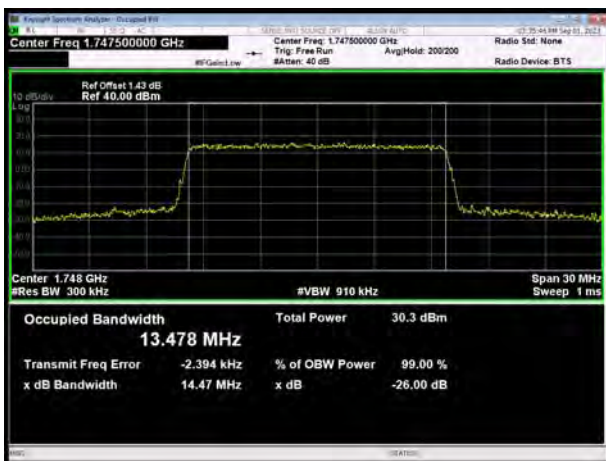
LTE Band 4 QPSK 15MHz CH-Middle



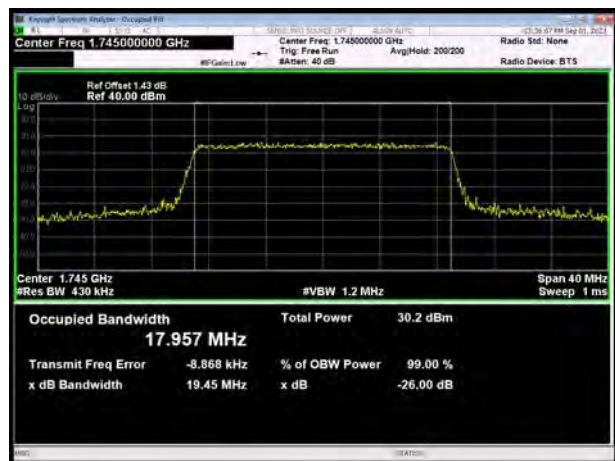
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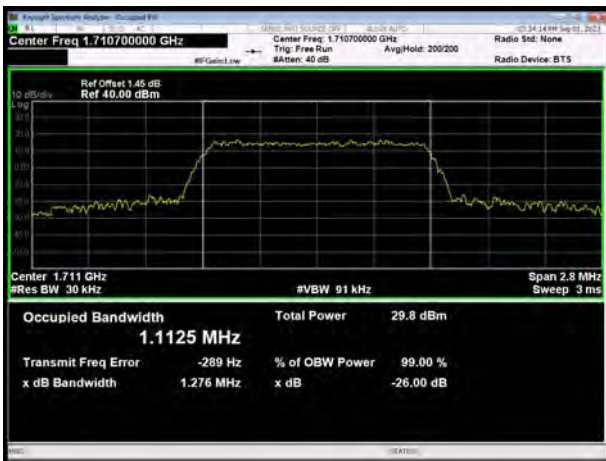
LTE Band 4 QPSK 15MHz CH-High



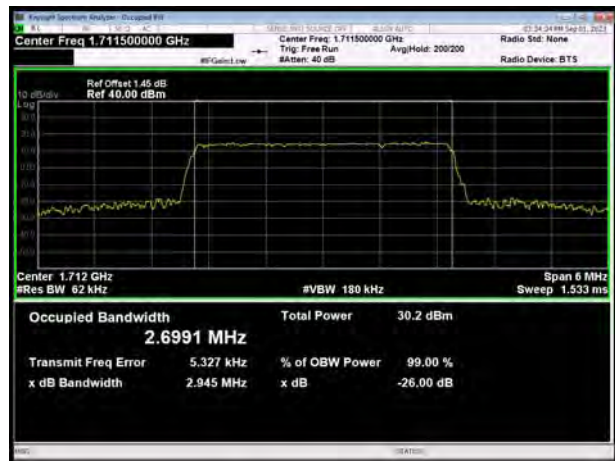
LTE Band 4 QPSK 20MHz CH-High



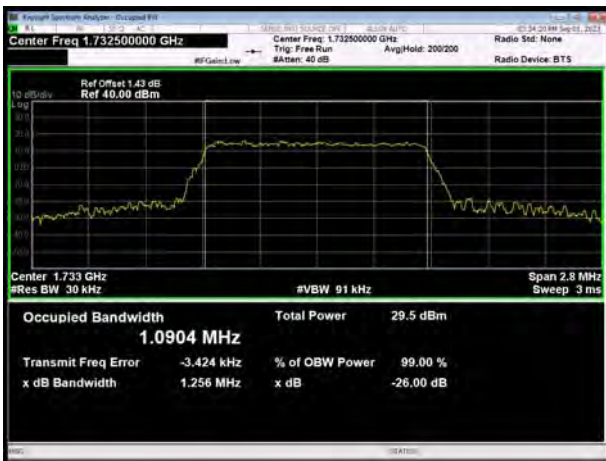
LTE Band 4 16QAM 1.4MHz CH-Low



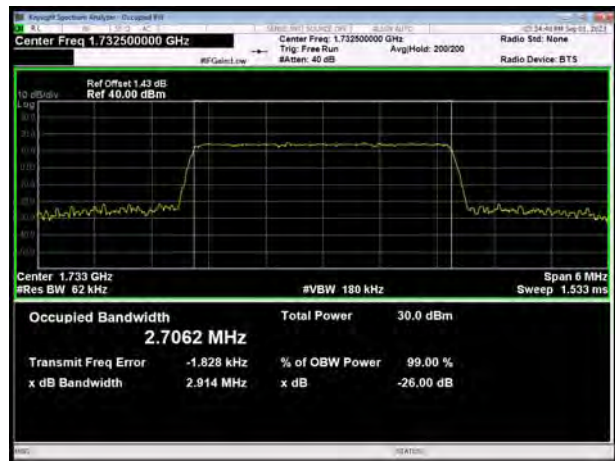
LTE Band 4 16QAM 3MHz CH-Low



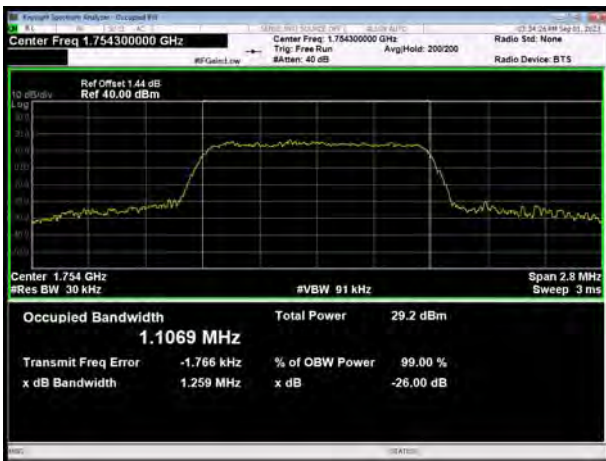
LTE Band 4 16QAM 1.4MHz CH-Middle



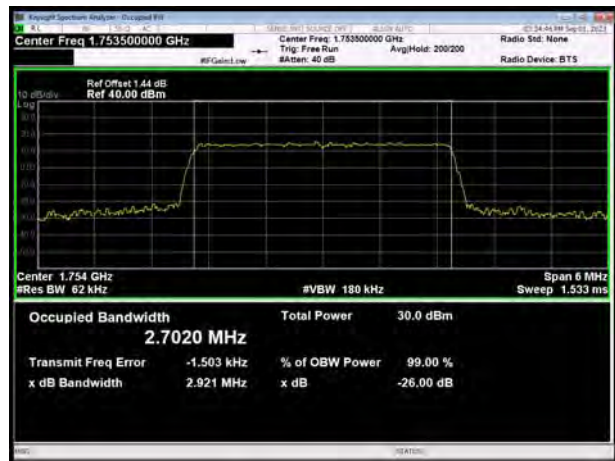
LTE Band 4 16QAM 3MHz CH-Middle



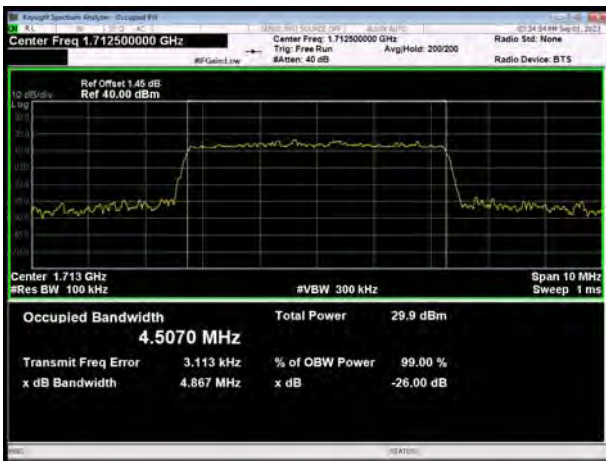
LTE Band 4 16QAM 1.4MHz CH-High



LTE Band 4 16QAM 3MHz CH-High



LTE Band 4 16QAM 5MHz CH-Low



LTE Band 4 16QAM 10MHz CH-Low



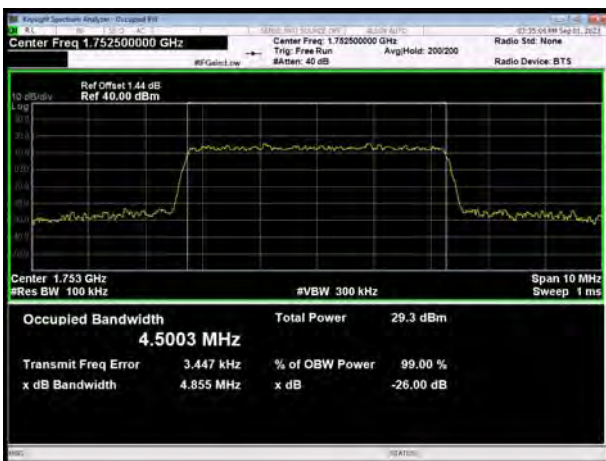
LTE Band 4 16QAM 5MHz CH-Middle



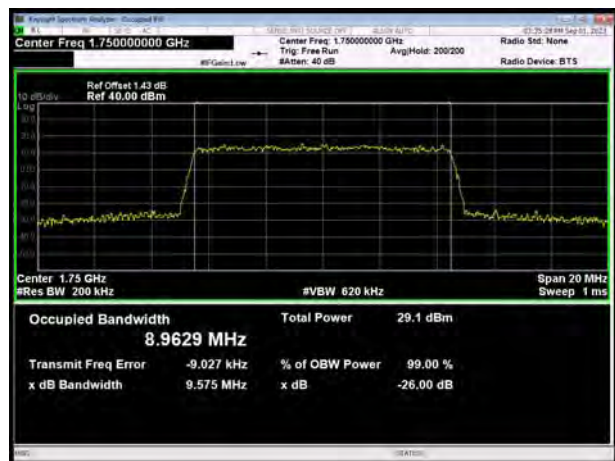
LTE Band 4 16QAM 10MHz CH-Middle



LTE Band 4 16QAM 5MHz CH-High



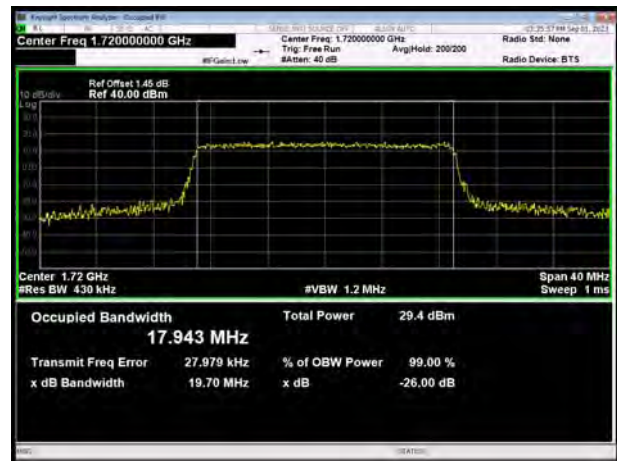
LTE Band 4 16QAM 10MHz CH-High



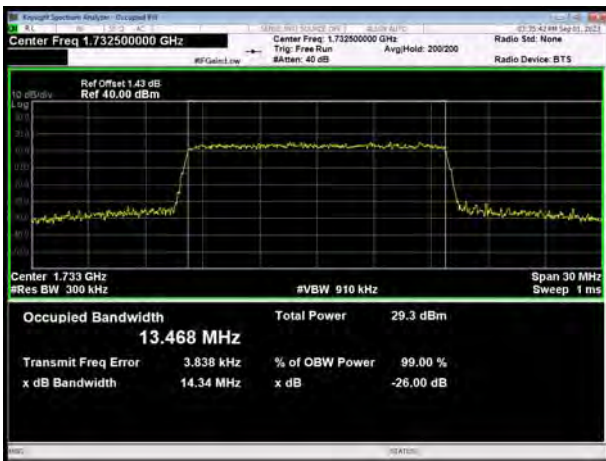
LTE Band 4 16QAM 15MHz CH-Low



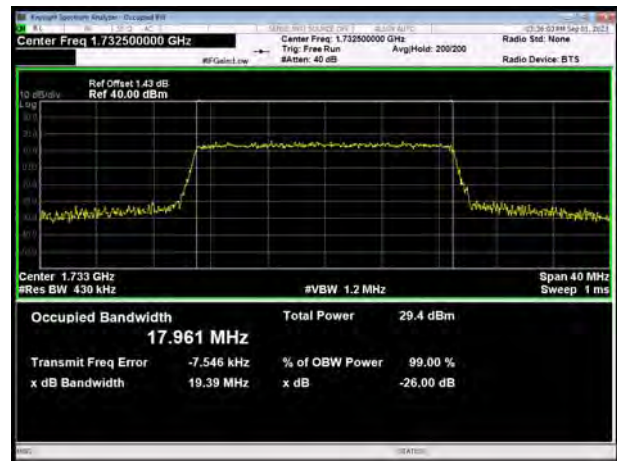
LTE Band 4 16QAM 20MHz CH-Low



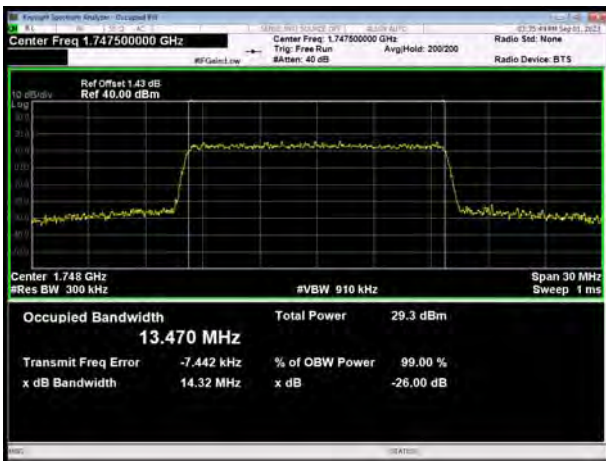
LTE Band 4 16QAM 15MHz CH-Middle



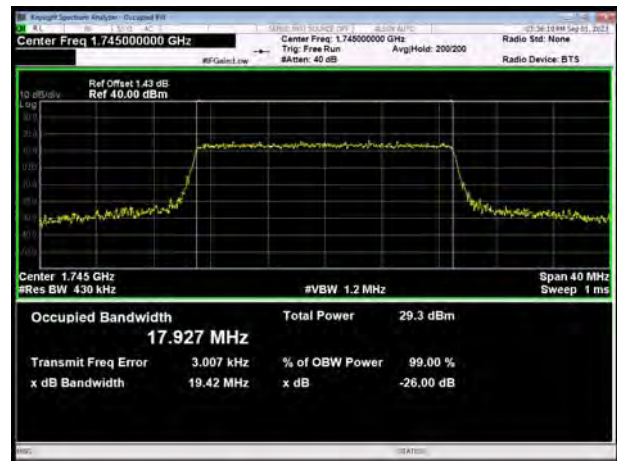
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LTE Band 4 16QAM 15MHz CH-High



LTE Band 4 16QAM 20MHz CH-High





LTE Band 7 QPSK 5MHz CH-Low



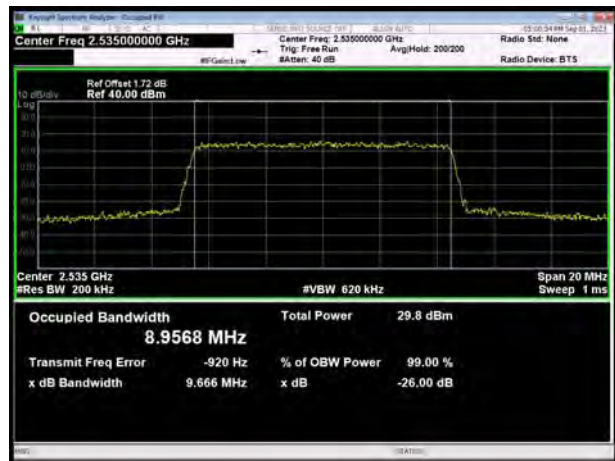
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LTE Band 7 QPSK 5MHz CH-Middle



LTE Band 7 QPSK 10MHz CH-Middle



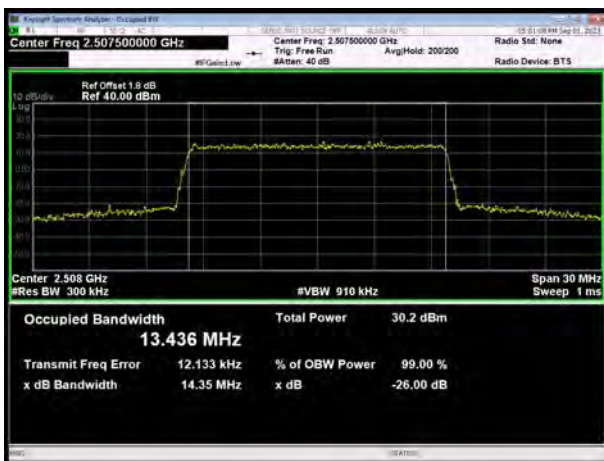
LTE Band 7 QPSK 5MHz CH-High



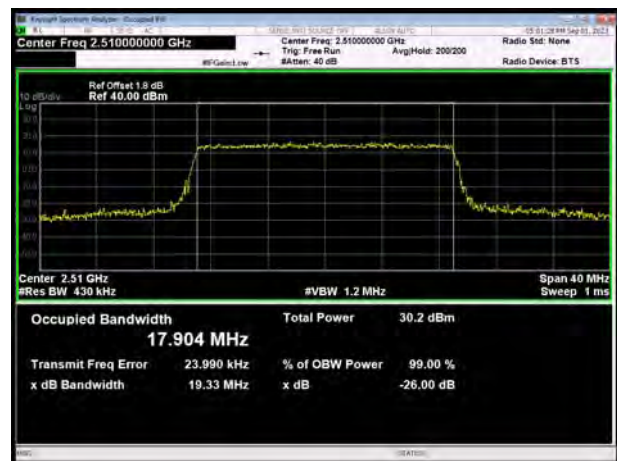
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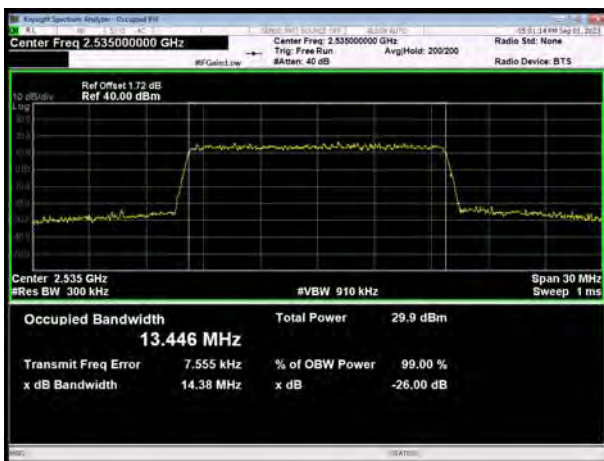
LTE Band 7 QPSK 15MHz CH-Low



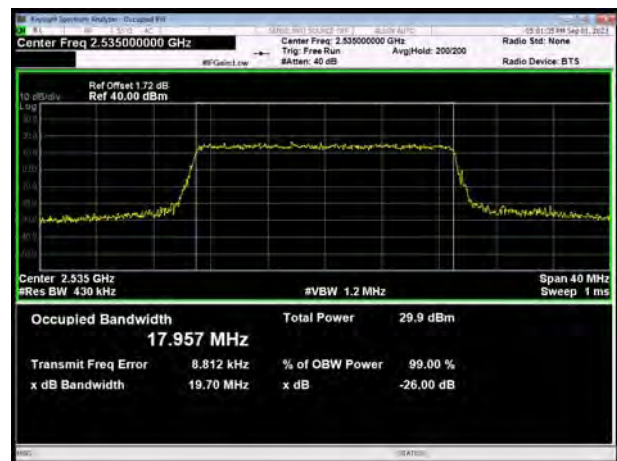
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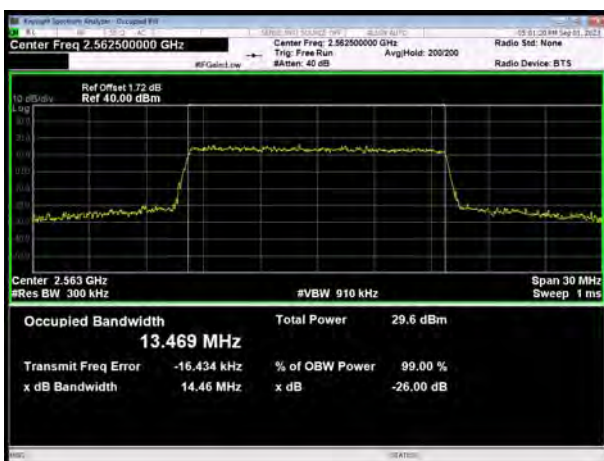
LTE Band 7 QPSK 15MHz CH-Middle



LTE Band 7 QPSK 20MHz CH-Middle



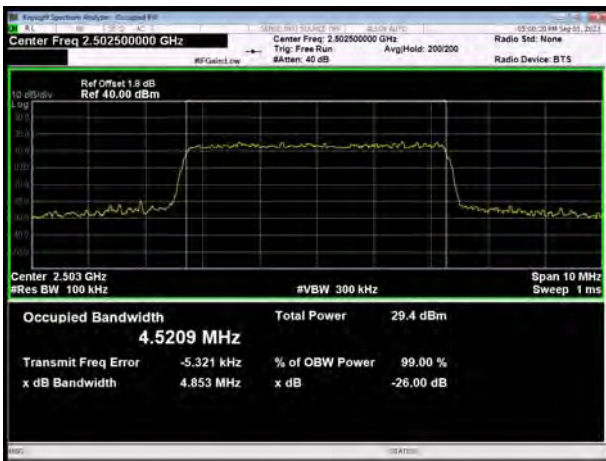
LTE Band 7 QPSK 15MHz CH-High



LTE Band 7 QPSK 20MHz CH-High



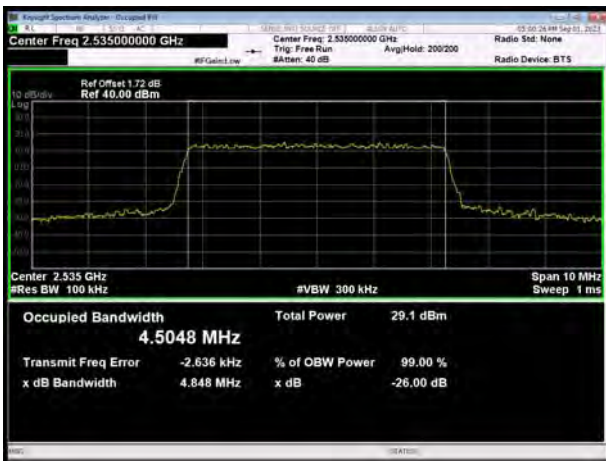
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LTE Band 7 16QAM 10MHz CH-Low



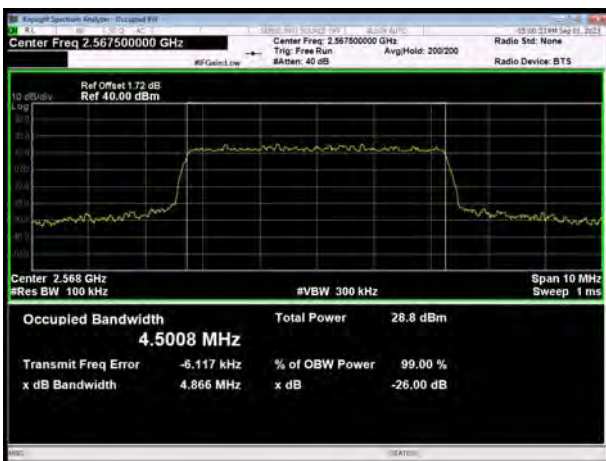
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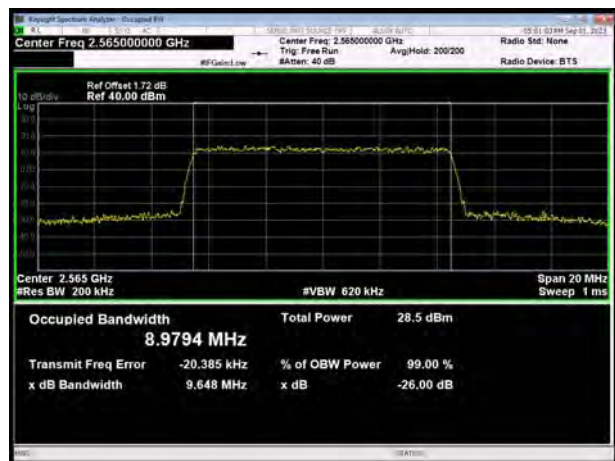
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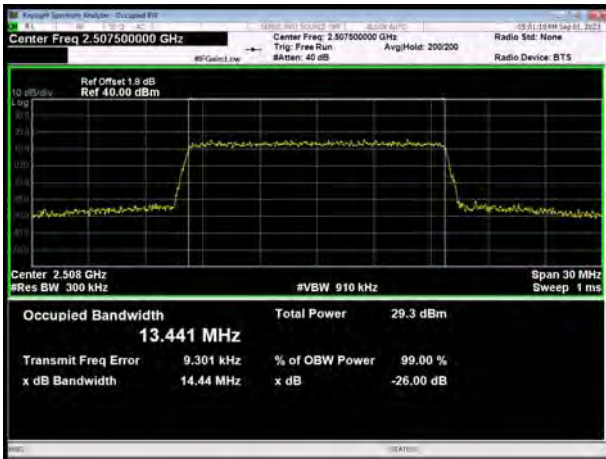
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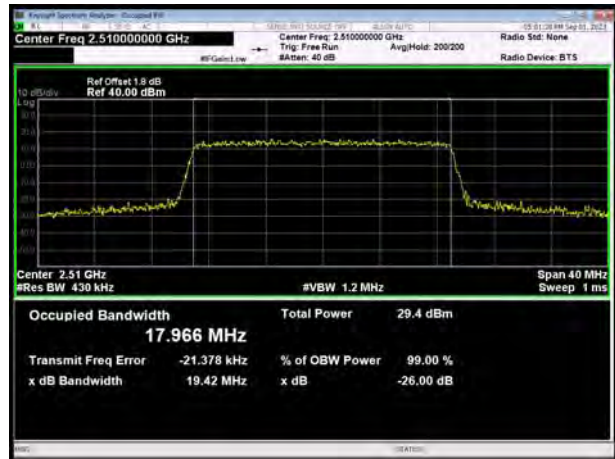
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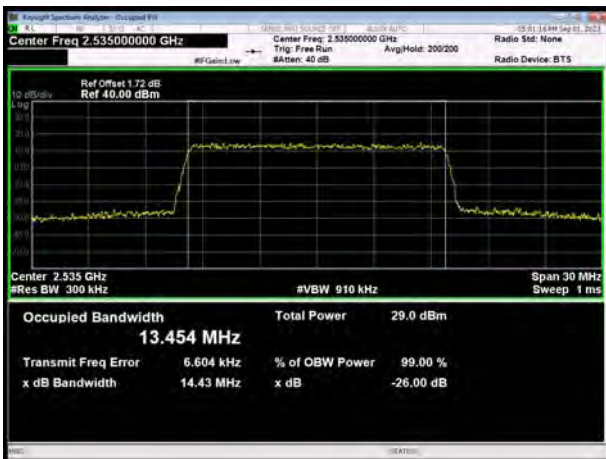
LTE Band 7 16QAM 15MHz CH-Low



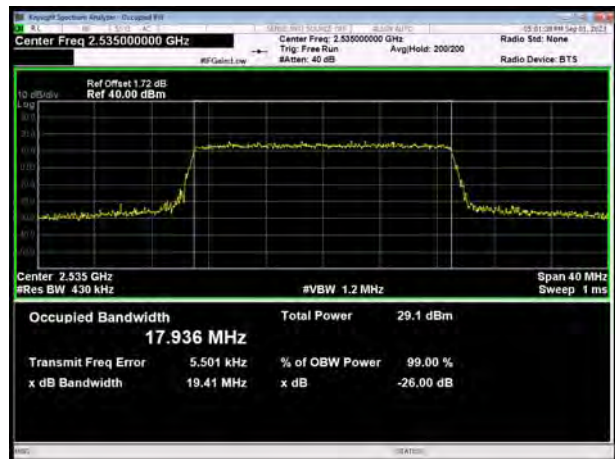
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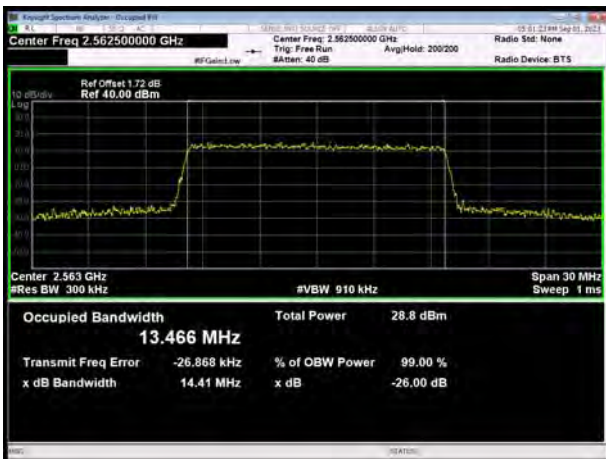
LTE Band 7 16QAM 15MHz CH-Middle



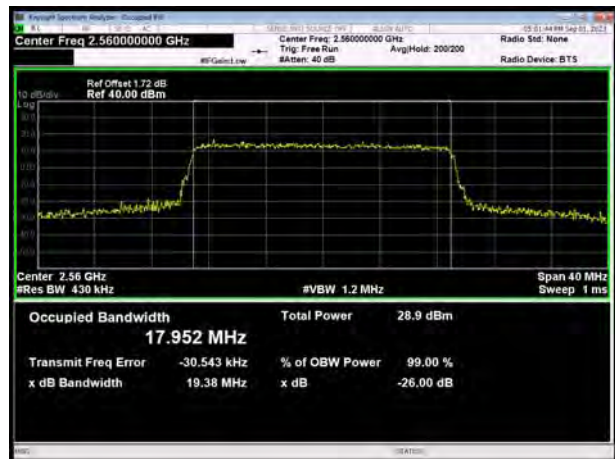
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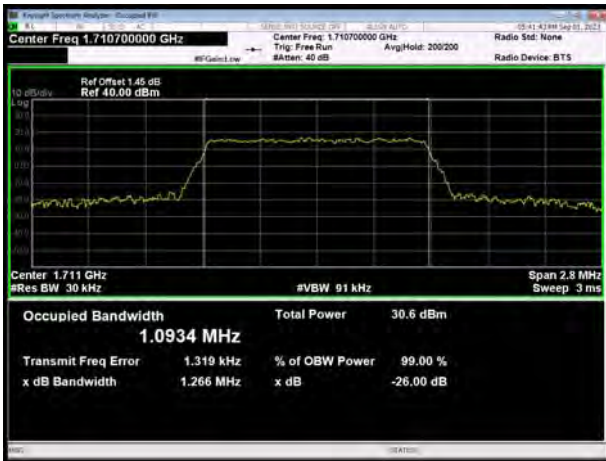
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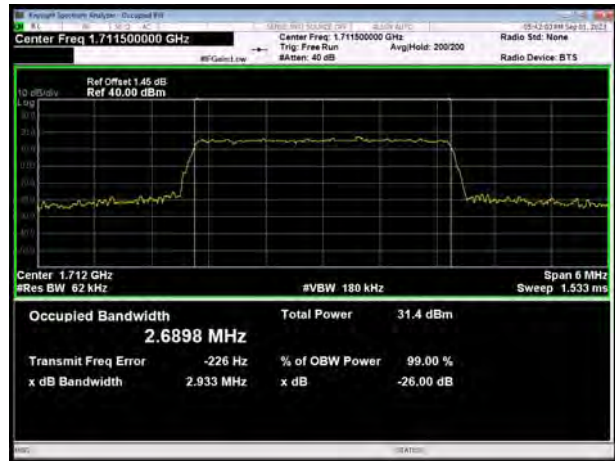
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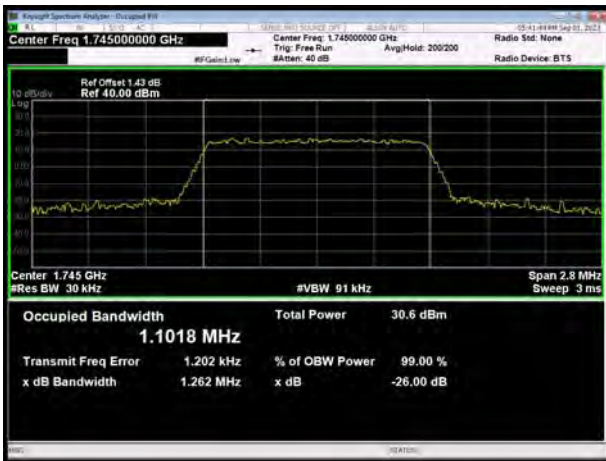
LTE Band 66 QPSK 1.4MHz CH-Low



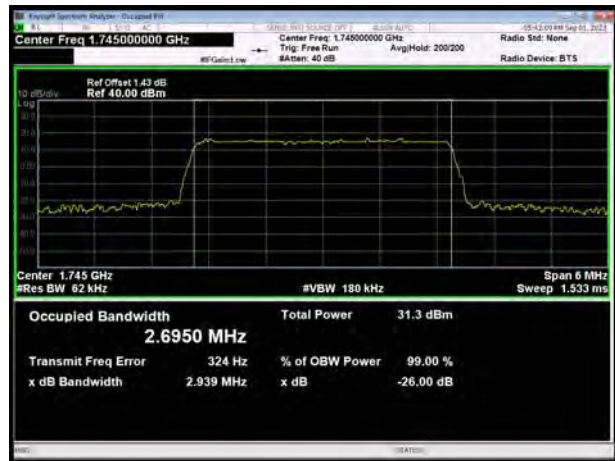
LTE Band 66 QPSK 3MHz CH-Low



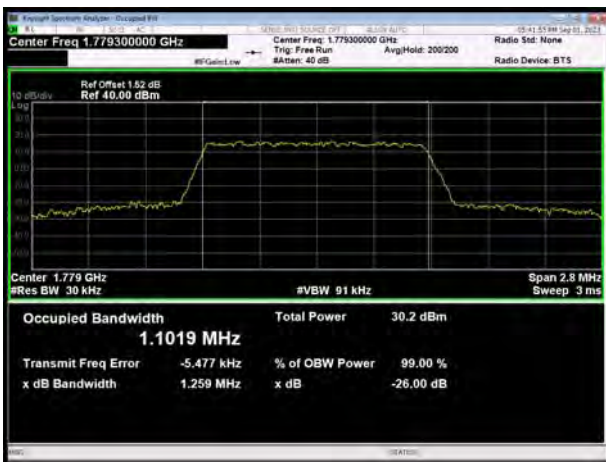
LTE Band 66 QPSK 1.4MHz CH-Middle



LTE Band 66 QPSK 3MHz CH-Middle



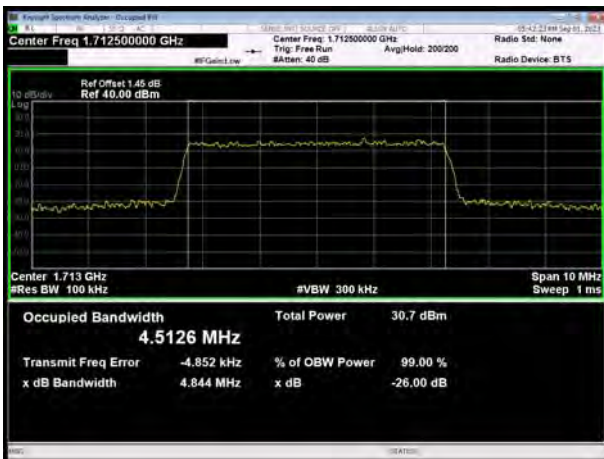
LTE Band 66 QPSK 1.4MHz CH-High



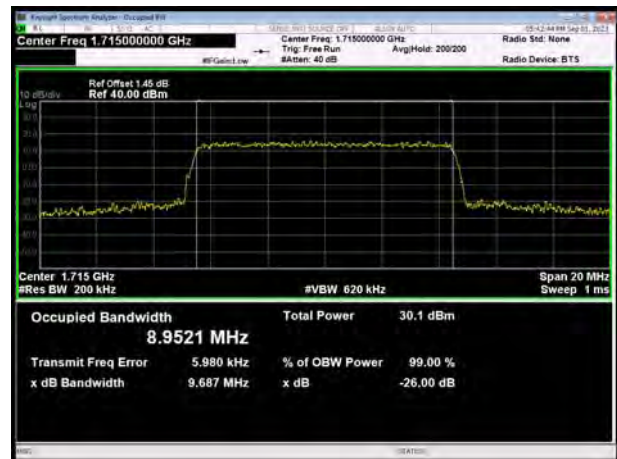
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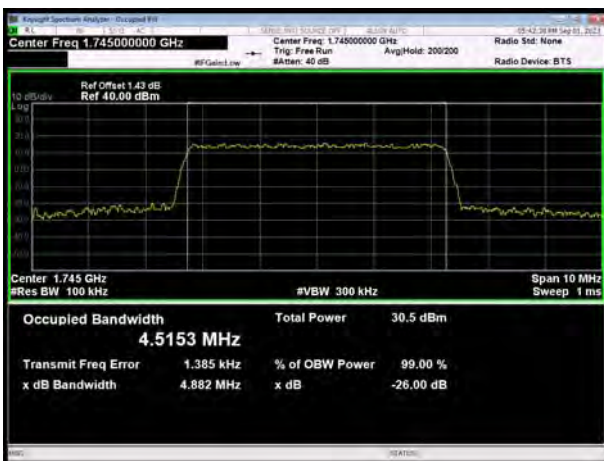
LTE Band 66 QPSK 5MHz CH-Low



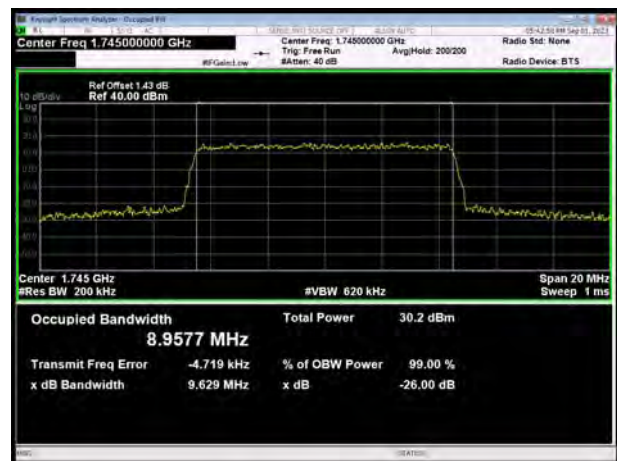
LTE Band 66 QPSK 10MHz CH-Low



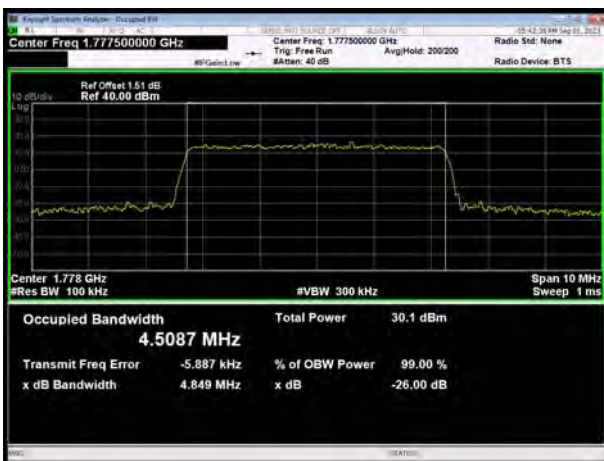
LTE Band 66 QPSK 5MHz CH-Middle



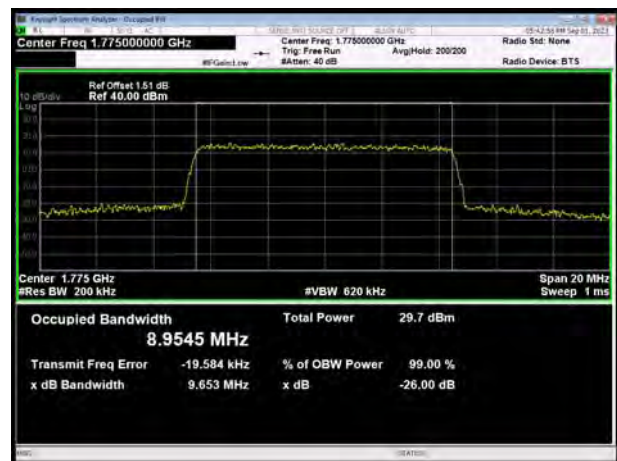
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LTE Band 66 QPSK 5MHz CH-High



LTE Band 66 QPSK 10MHz CH-High



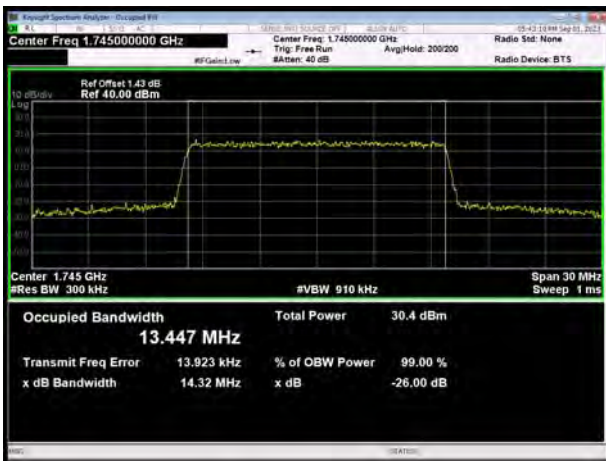
LTE Band 66 QPSK 15MHz CH-Low



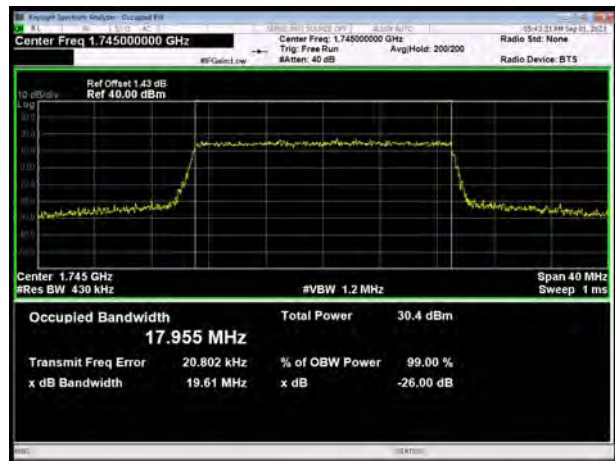
LTE Band 66 QPSK 20MHz CH-Low



LTE Band 66 QPSK 15MHz CH-Middle



LTE Band 66 QPSK 20MHz CH-Middle



LTE Band 66 QPSK 15MHz CH-High



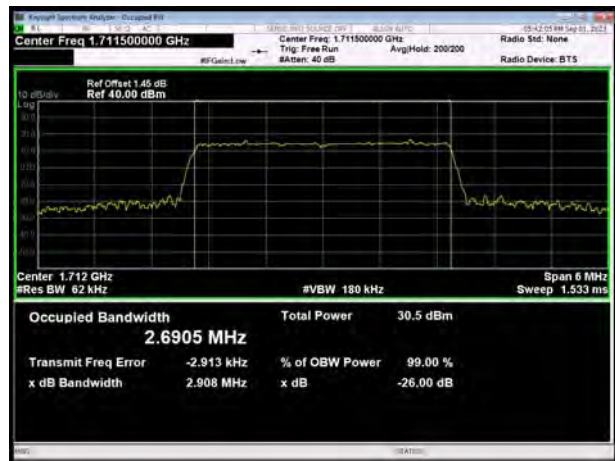
LTE Band 66 QPSK 20MHz CH-High



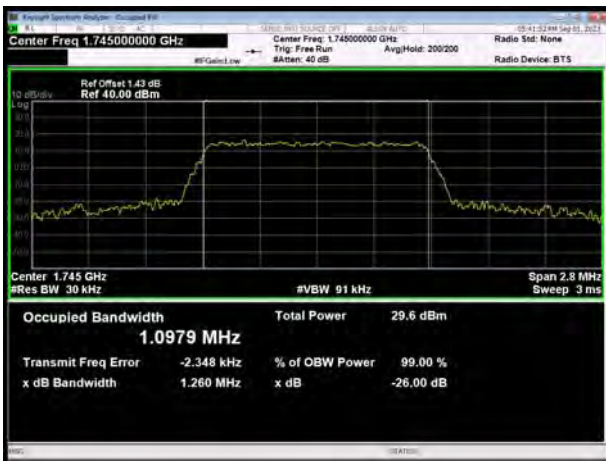
LTE Band 66 16QAM 1.4MHz CH-Low



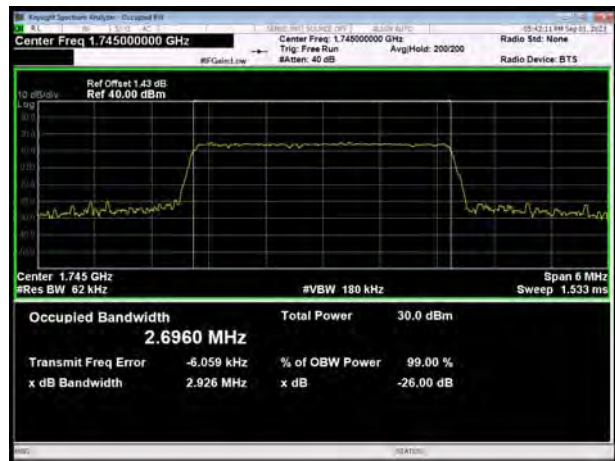
LTE Band 66 16QAM 3MHz CH-Low



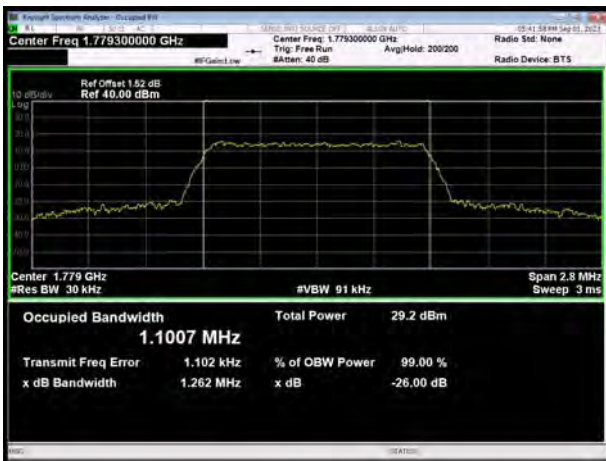
LTE Band 66 16QAM 1.4MHz CH-Middle



LTE Band 66 16QAM 3MHz CH-Middle



LTE Band 66 16QAM 1.4MHz CH-High

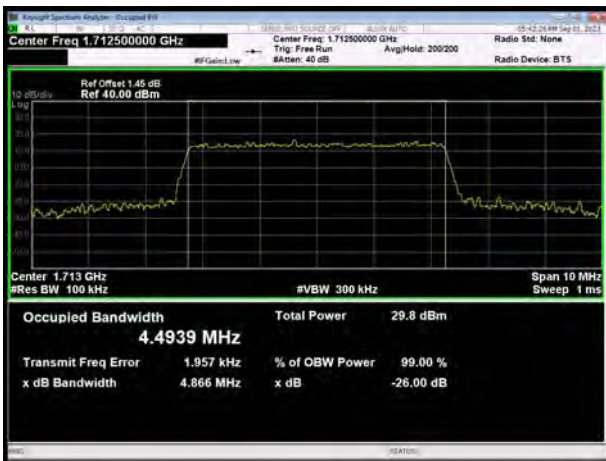


LTE Band 66 16QAM 3MHz CH-High

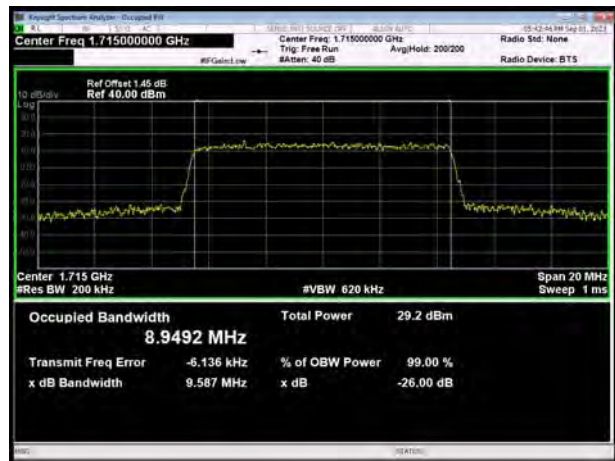




LTE Band 66 16QAM 5MHz CH-Low



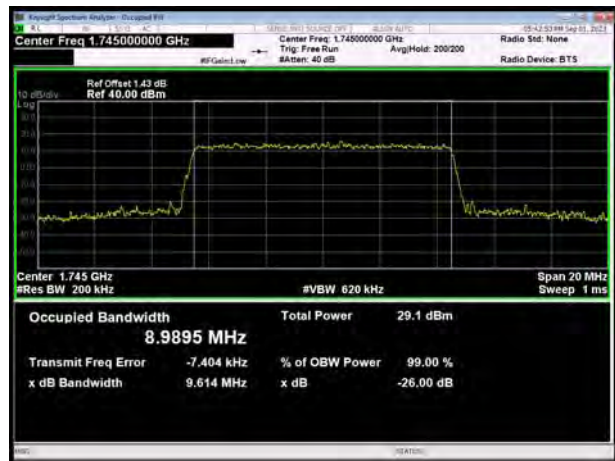
LTE Band 66 16QAM 10MHz CH-Low



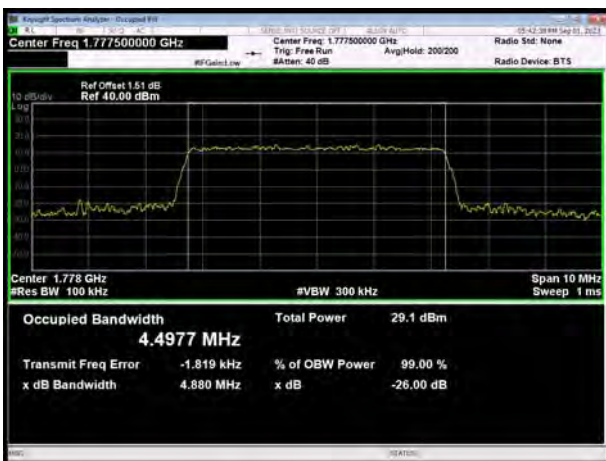
LTE Band 66 16QAM 5MHz CH-Middle



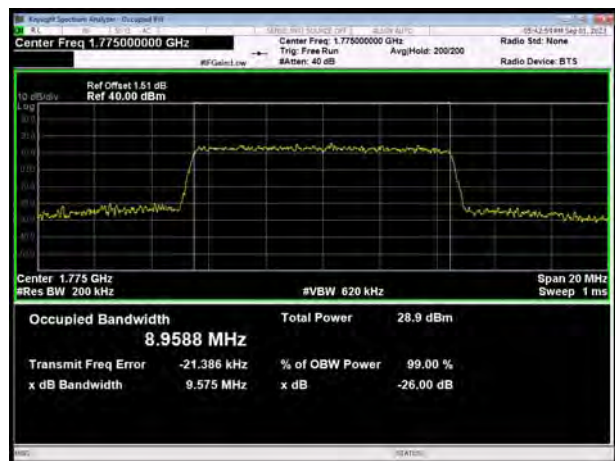
LTE Band 66 16QAM 10MHz CH-Middle



LTE Band 66 16QAM 5MHz CH-High



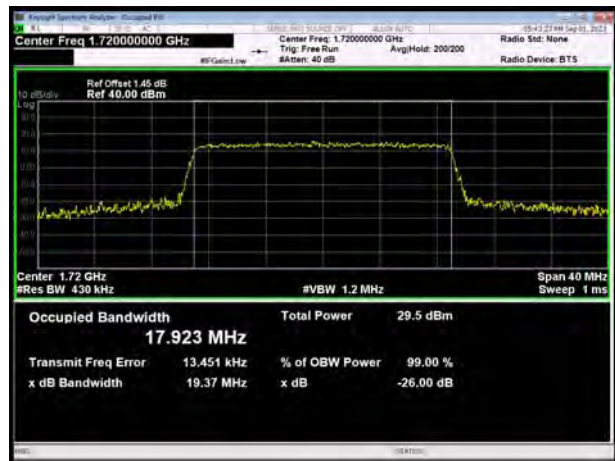
LTE Band 66 16QAM 10MHz CH-High



LTE Band 66 16QAM 15MHz CH-Low



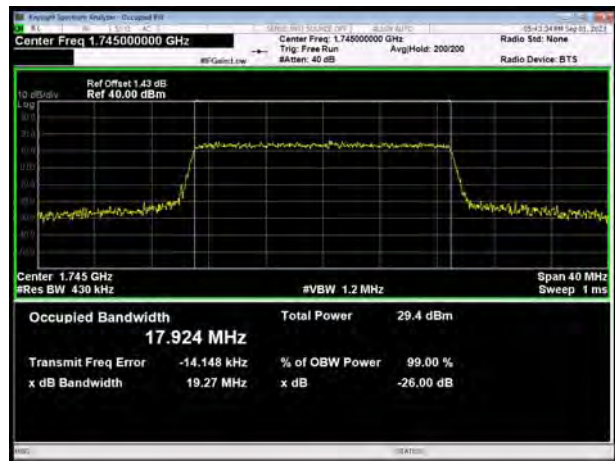
LTE Band 66 16QAM 20MHz CH-Low



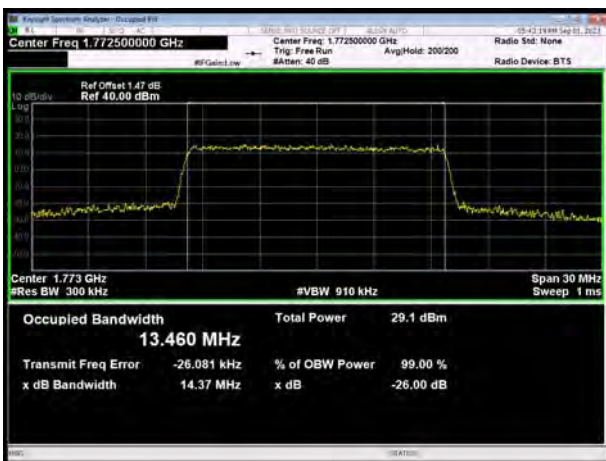
LTE Band 66 16QAM 15MHz CH-Middle



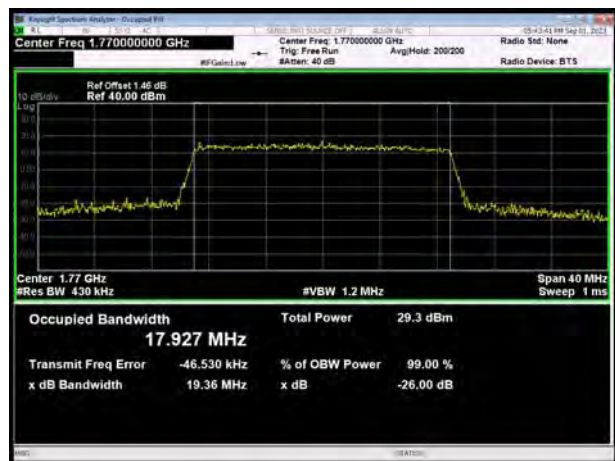
LTE Band 66 16QAM 20MHz CH-Middle



LTE Band 66 16QAM 15MHz CH-High

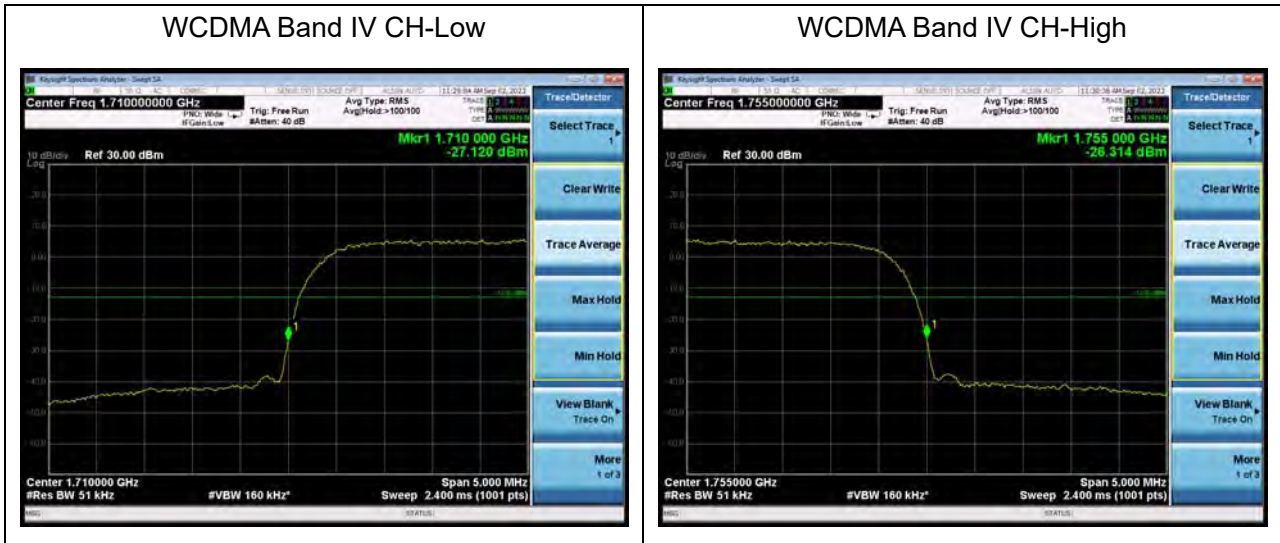


LTE Band 66 16QAM 20MHz CH-High



### 6.3 Band Edge Compliance

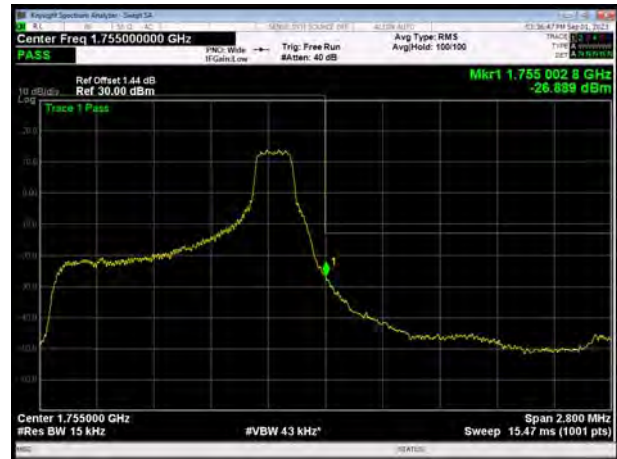
All the test traces in the plots shows the test results clearly.



LTE Band 4 QPSK 1.4MHz CH-Low, 1 RB



LTE Band 4 QPSK 1.4MHz CH-High, 1 RB



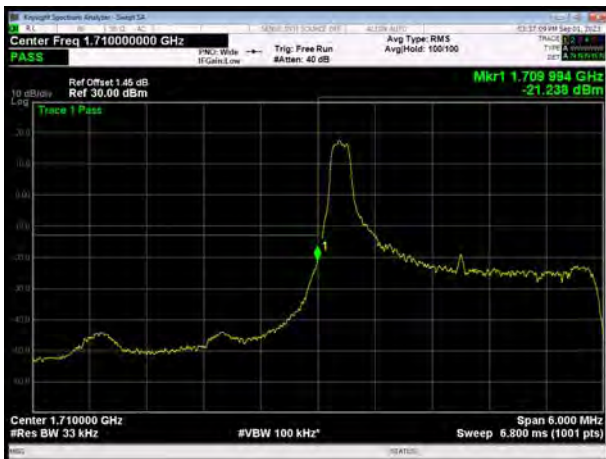
LTE Band 4 QPSK 1.4MHz CH-Low, 100%RB



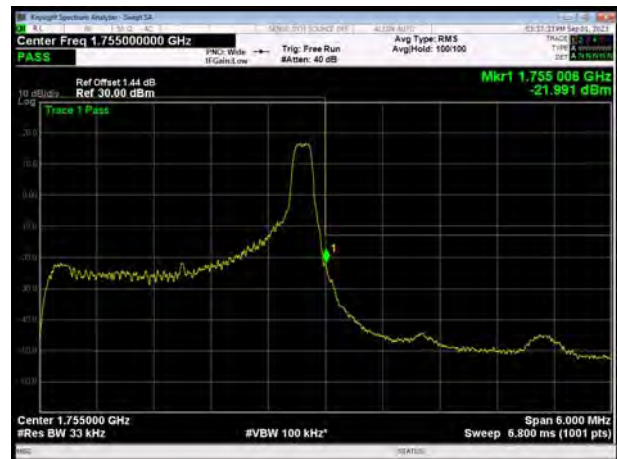
LTE Band 4 QPSK 1.4MHz CH-High, 100%RB



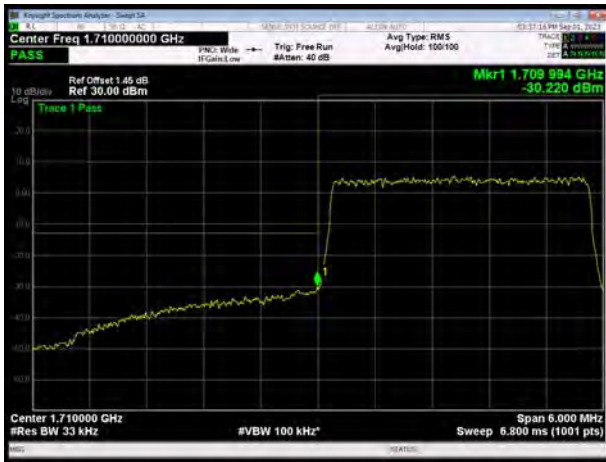
LTE Band 4 QPSK 3MHz CH-Low, 1 RB



LTE Band 4 QPSK 3MHz CH-High, 1 RB



LTE Band 4 QPSK 3MHz CH-Low, 100%RB



LTE Band 4 QPSK 3MHz CH-High, 100%RB



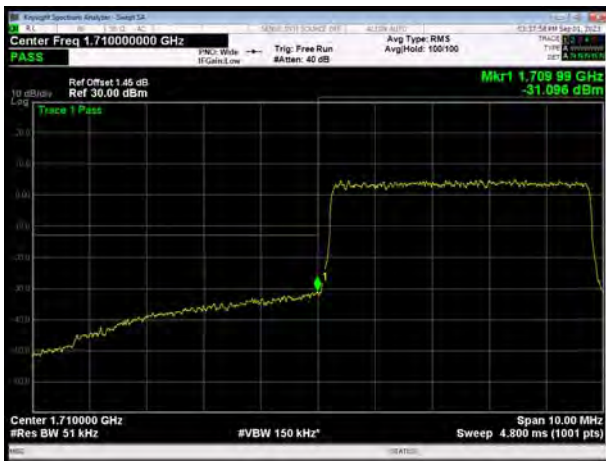
LTE Band 4 QPSK 5MHz CH-Low, 1 RB



LTE Band 4 QPSK 5MHz CH-High, 1 RB



LTE Band 4 QPSK 5MHz CH-Low, 100%RB



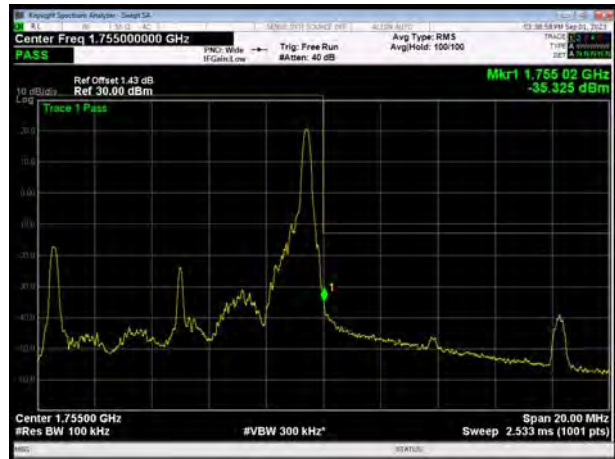
LTE Band 4 QPSK 5MHz CH-High, 100%RB



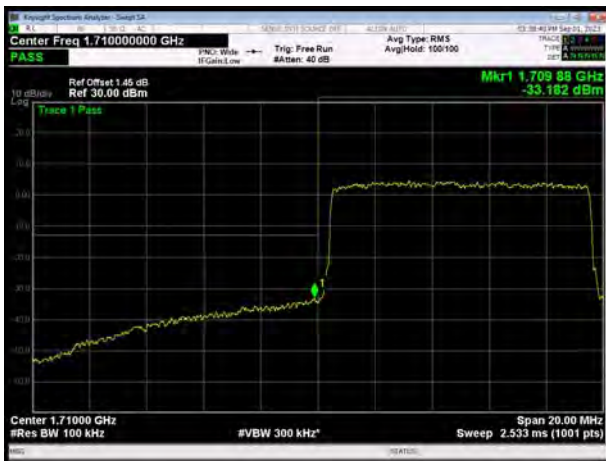
LTE Band 4 QPSK 10MHz CH-Low, 1 RB



LTE Band 4 QPSK 10MHz CH-High, 1 RB



LTE Band 4 QPSK 10MHz CH-Low, 100%RB



LTE Band 4 QPSK 10MHz CH-High, 100%RB



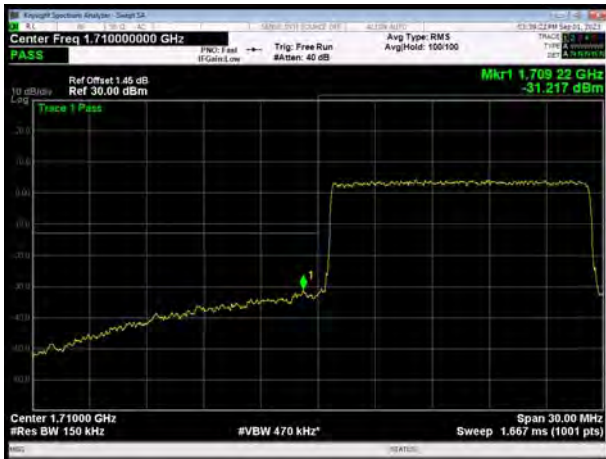
LTE Band 4 QPSK 15MHz CH-Low, 1 RB



LTE Band 4 QPSK 15MHz CH-High, 1 RB



LTE Band 4 QPSK 15MHz CH-Low, 100%RB



LTE Band 4 QPSK 15MHz CH-High, 100%RB



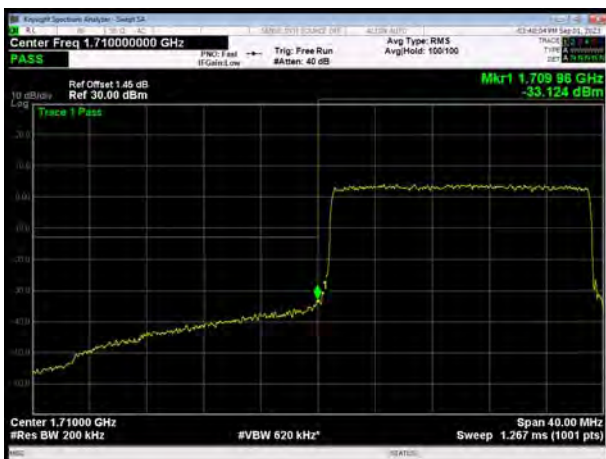
LTE Band 4 QPSK 20MHz CH-Low, 1 RB



LTE Band 4 QPSK 20MHz CH-High, 1 RB



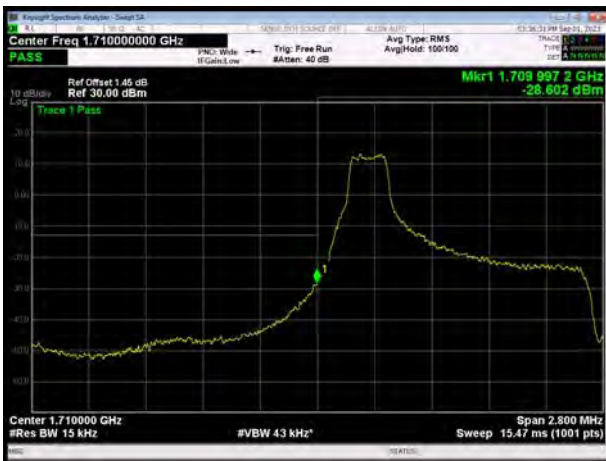
LTE Band 4 QPSK 20MHz CH-Low, 100%RB



LTE Band 4 QPSK 20MHz CH-High, 100%RB



LTE Band 4 16QAM 1.4MHz CH-Low, 1 RB



LTE Band 4 16QAM 1.4MHz CH-High, 1 RB



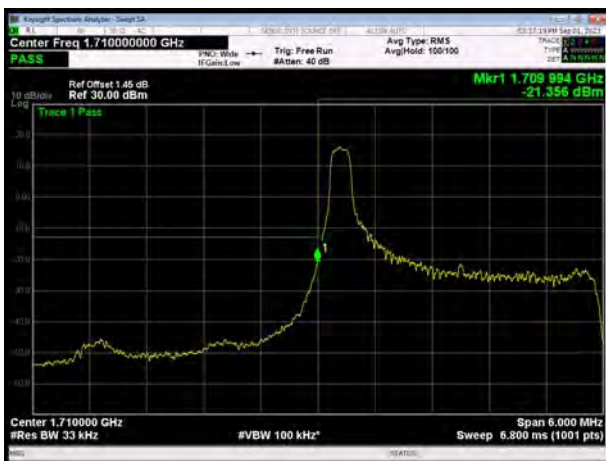
LTE Band 4 16QAM 1.4MHz CH-Low, 100%RB



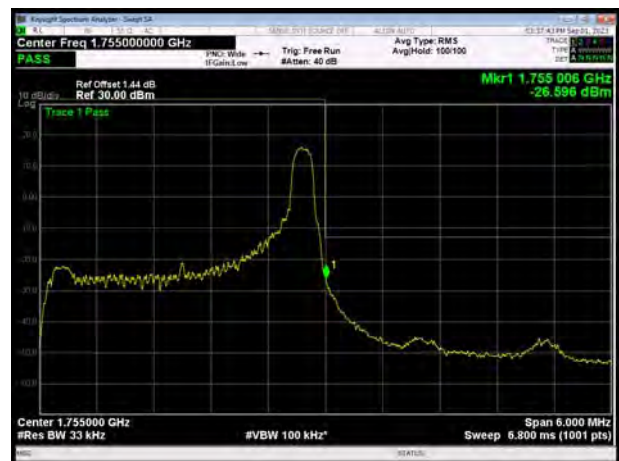
LTE Band 4 16QAM 1.4MHz CH-High, 100%RB



LTE Band 4 16QAM 3MHz CH-Low, 1 RB

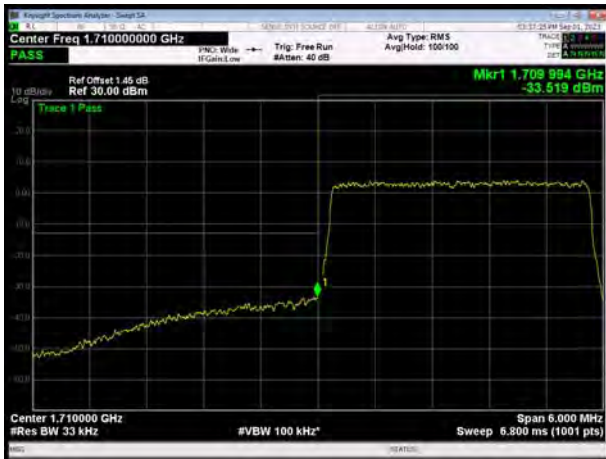


LTE Band 4 16QAM 3MHz CH-High, 1 RB





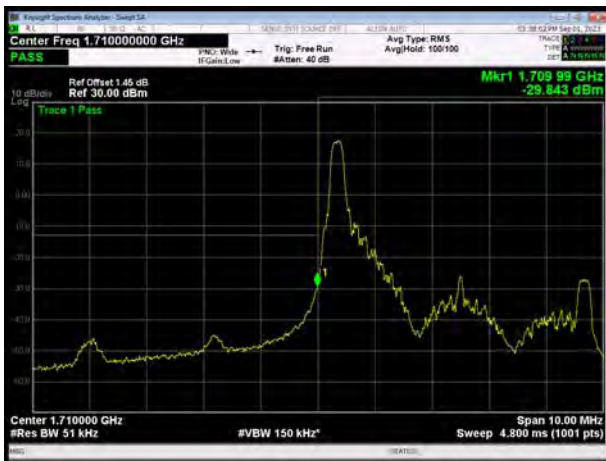
LTE Band 4 16QAM 3MHz CH-Low, 100%RB



LTE Band 4 16QAM 3MHz CH-High, 100%RB



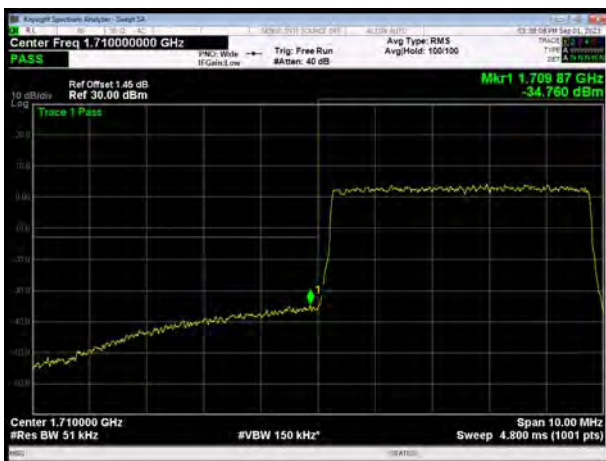
LTE Band 4 16QAM 5MHz CH-Low, 1 RB



LTE Band 4 16QAM 5MHz CH-High, 1 RB



LTE Band 4 16QAM 5MHz CH-Low, 100%RB



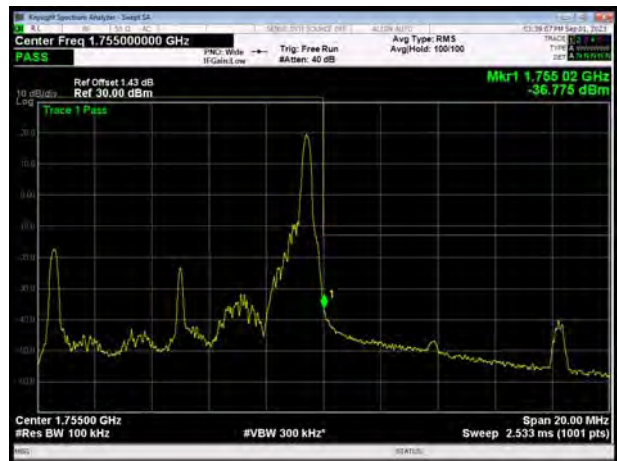
LTE Band 4 16QAM 5MHz CH-High, 100%RB



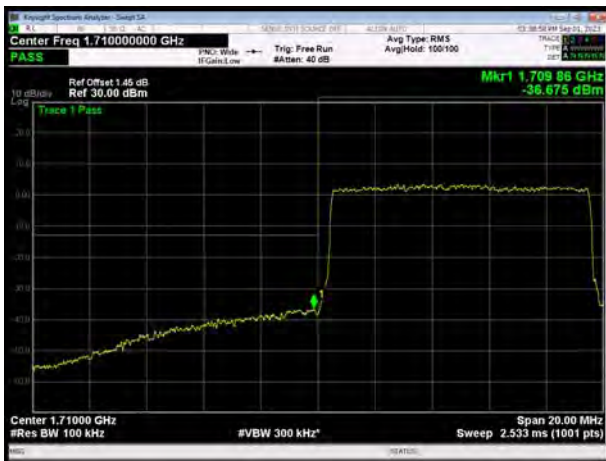
LTE Band 4 16QAM 10MHz CH-Low, 1 RB



LTE Band 4 16QAM 10MHz CH-High, 1 RB



LTE Band 4 16QAM 10MHz CH-Low, 100%RB



LTE Band 4 16QAM 10MHz CH-High, 100%RB



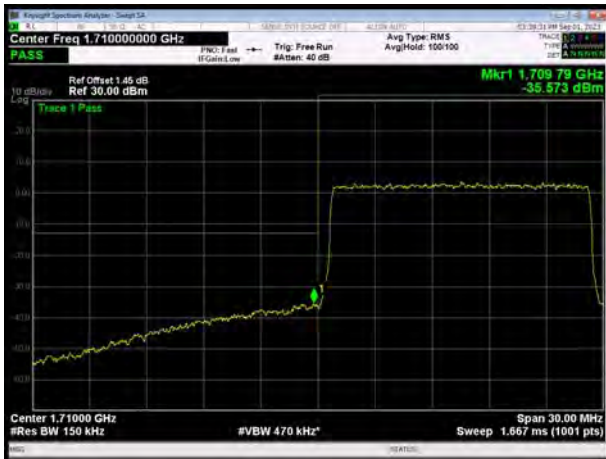
LTE Band 4 16QAM 15MHz CH-Low, 1 RB



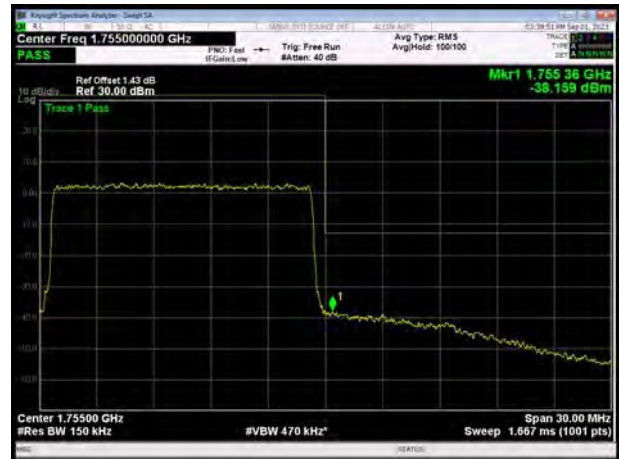
LTE Band 4 16QAM 15MHz CH-High, 1 RB



LTE Band 4 16QAM 15MHz CH-Low, 100%RB



LTE Band 4 16QAM 15MHz CH-High, 100%RB



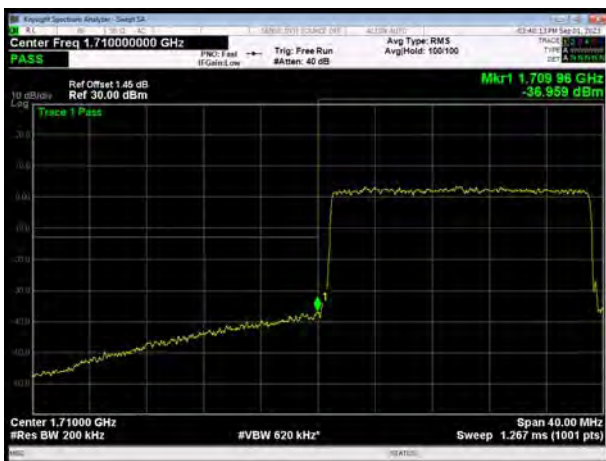
LTE Band 4 16QAM 20MHz CH-Low, 1 RB



LTE Band 4 16QAM 20MHz CH-High, 1 RB



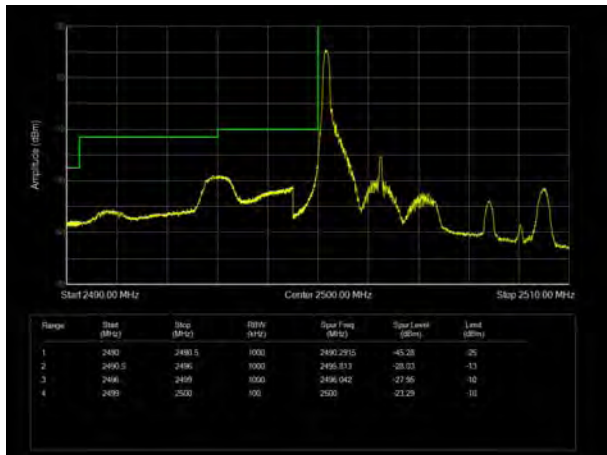
LTE Band 4 16QAM 20MHz CH-Low, 100%RB



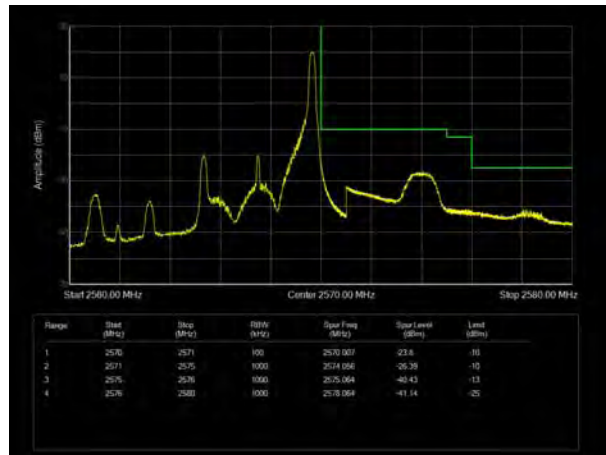
LTE Band 4 16QAM 20MHz CH-High, 100%RB



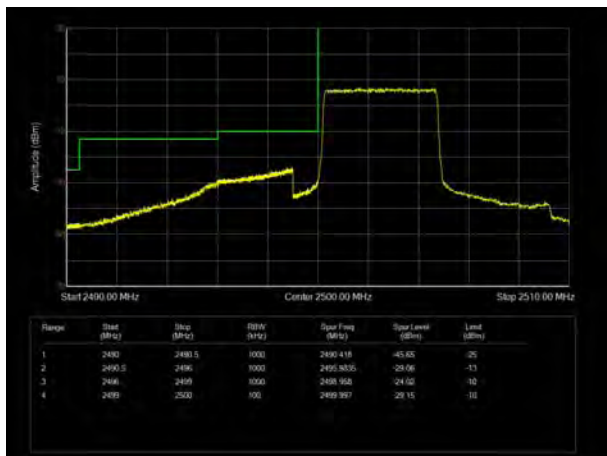
LTE Band 7 QPSK 5MHz CH-Low, 1 RB



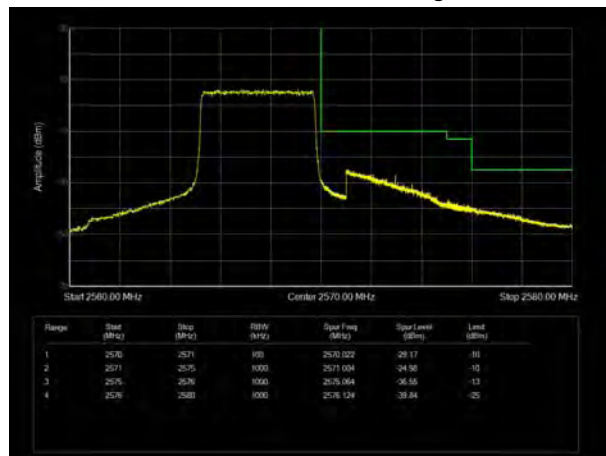
LTE Band 7 QPSK 5MHz CH-High, 1 RB



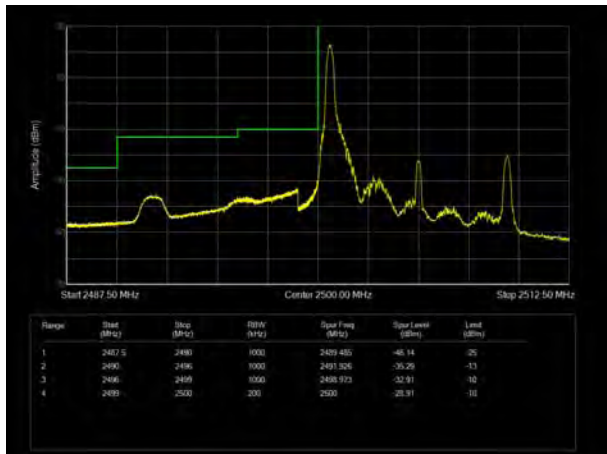
LTE Band 7 QPSK 5MHz CH-Low, 100%RB



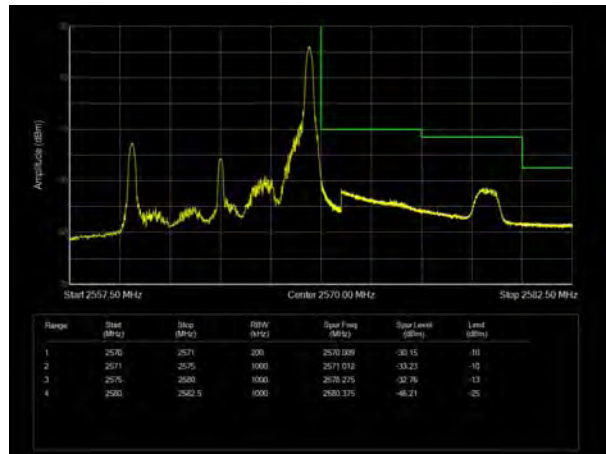
LTE Band 7 QPSK 5MHz CH-High, 100%RB



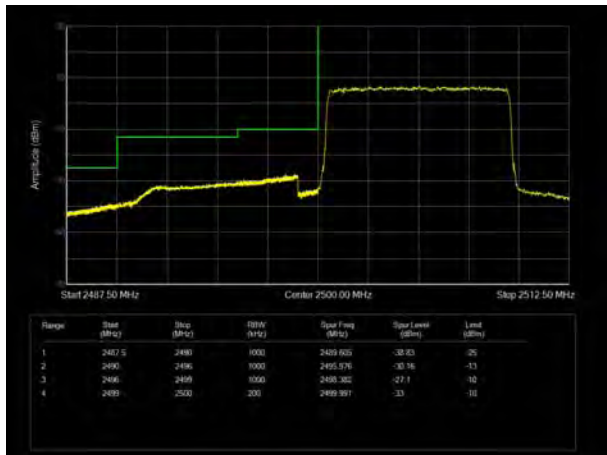
LTE Band 7 QPSK 10MHz CH-Low, 1 RB



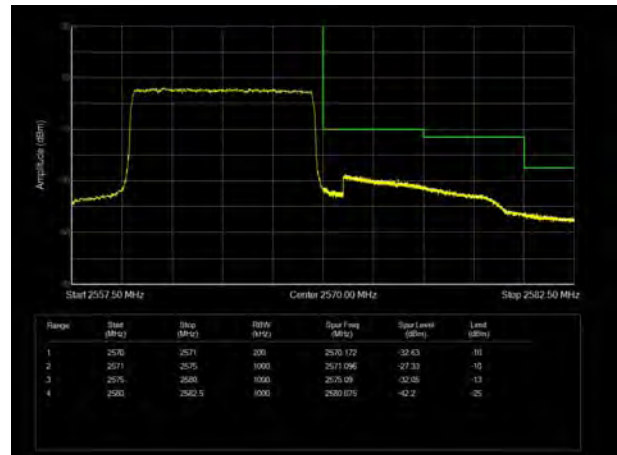
LTE Band 7 QPSK 10MHz CH-High, 1 RB



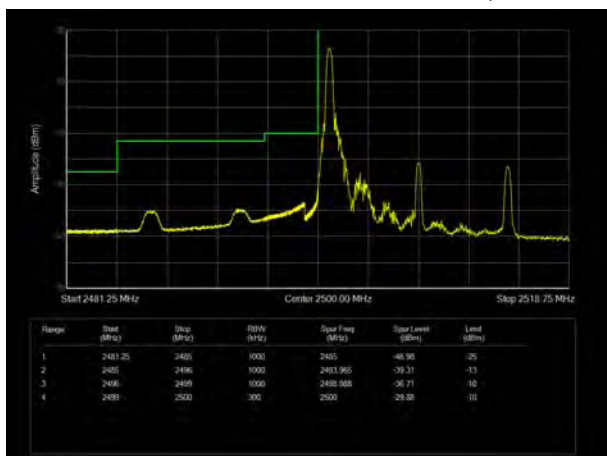
LTE Band 7 QPSK 10MHz CH-Low, 100%RB



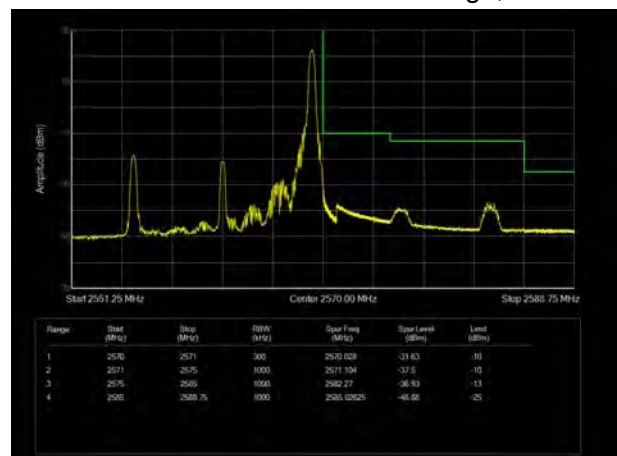
LTE Band 7 QPSK 10MHz CH-High, 100%RB



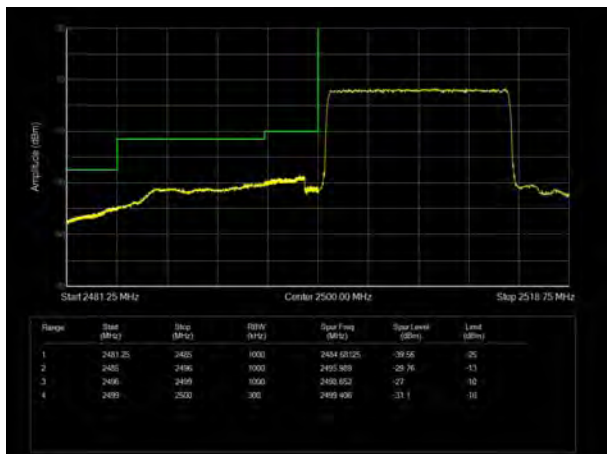
LTE Band 7 QPSK 15MHz CH-Low, 1 RB



LTE Band 7 QPSK 15MHz CH-High, 1 RB



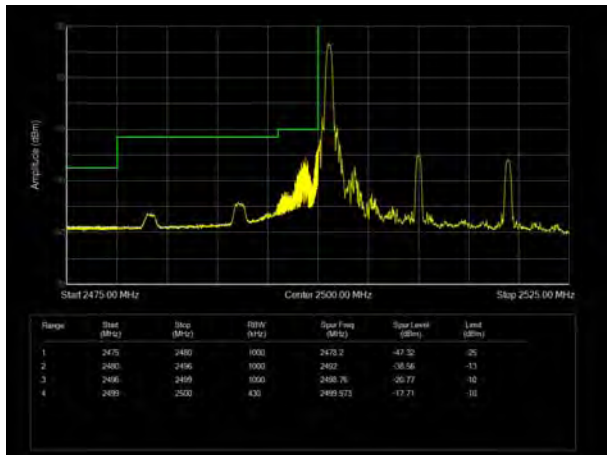
LTE Band 7 QPSK 15MHz CH-Low, 100%RB



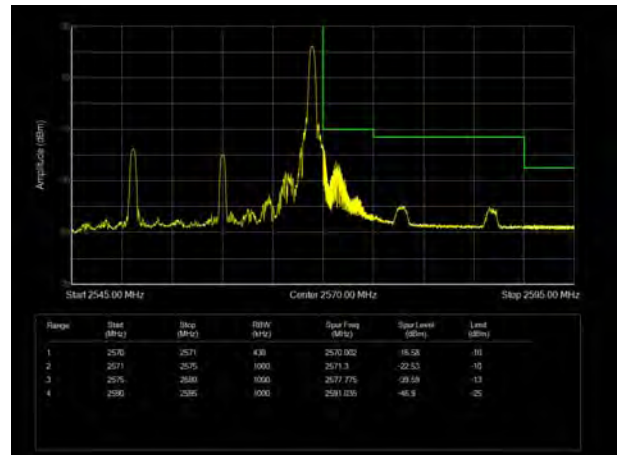
LTE Band 7 QPSK 15MHz CH-High, 100%RB



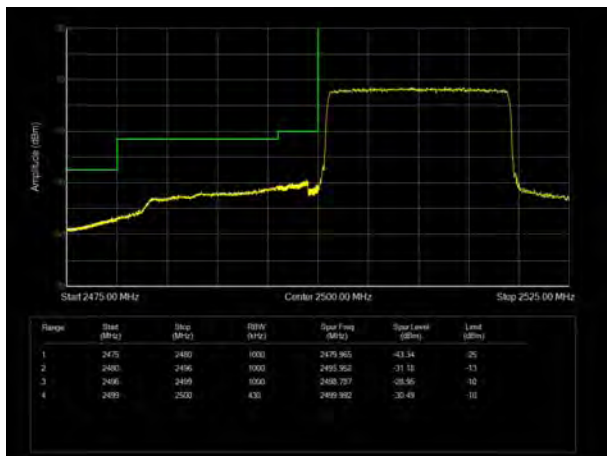
LTE Band 7 QPSK 20MHz CH-Low, 1 RB



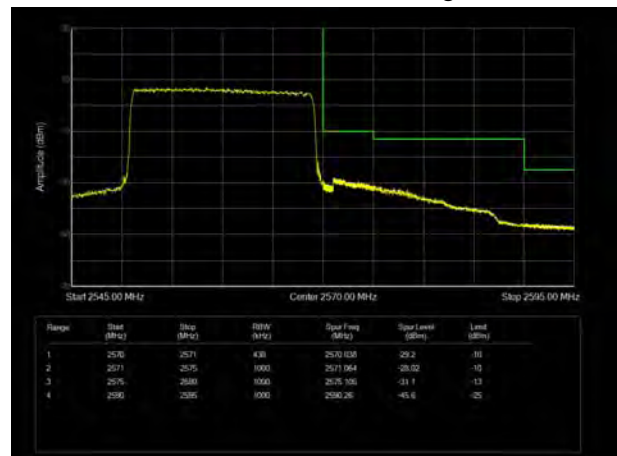
LTE Band 7 QPSK 20MHz CH-High, 1 RB



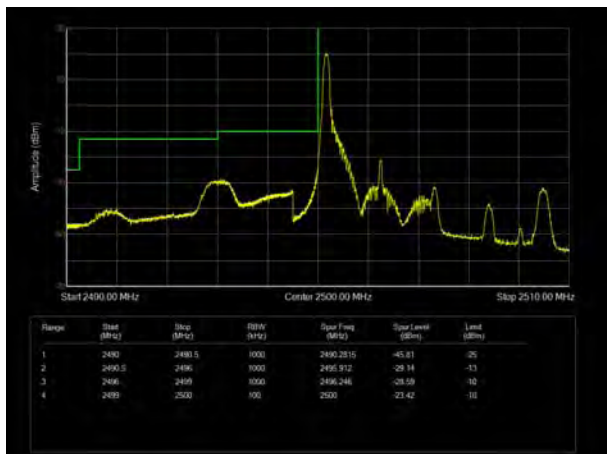
LTE Band 7 QPSK 20MHz CH-Low, 100%RB



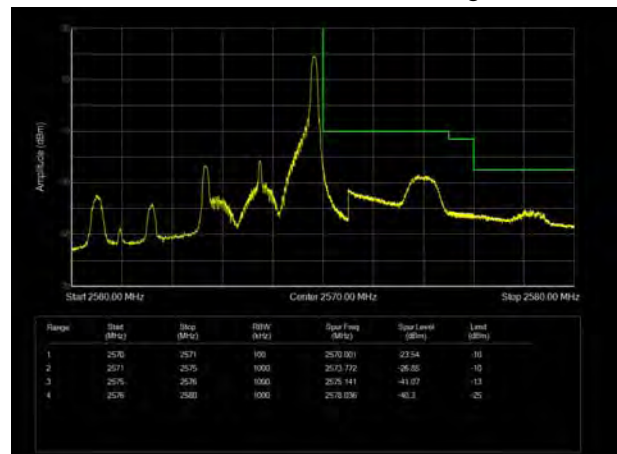
LTE Band 7 QPSK 20MHz CH-High, 100%RB



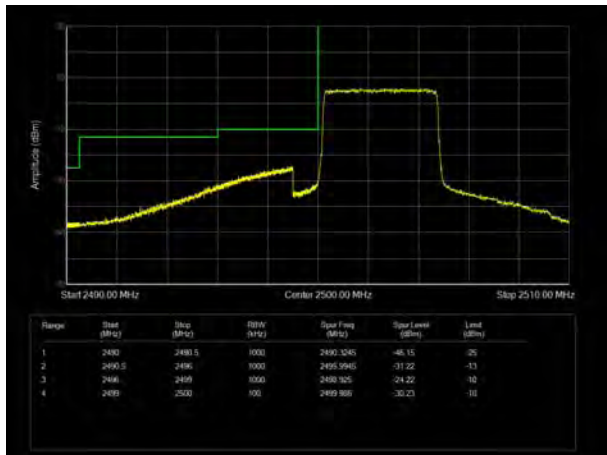
LTE Band 7 16QAM 5MHz CH-Low, 1 RB



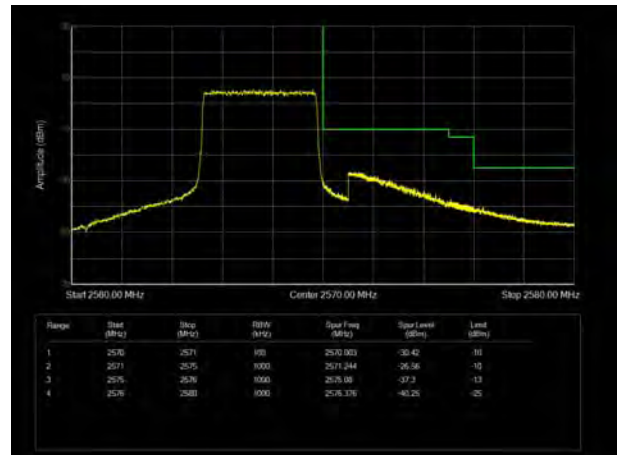
LTE Band 7 16QAM 5MHz CH-High, 1 RB



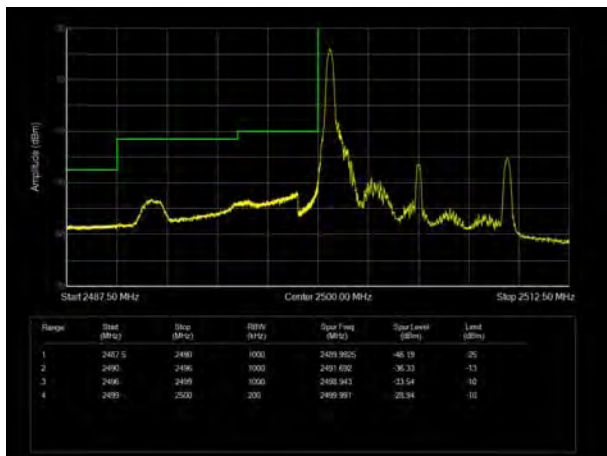
LTE Band 7 16QAM 5MHz CH-Low, 100%RB



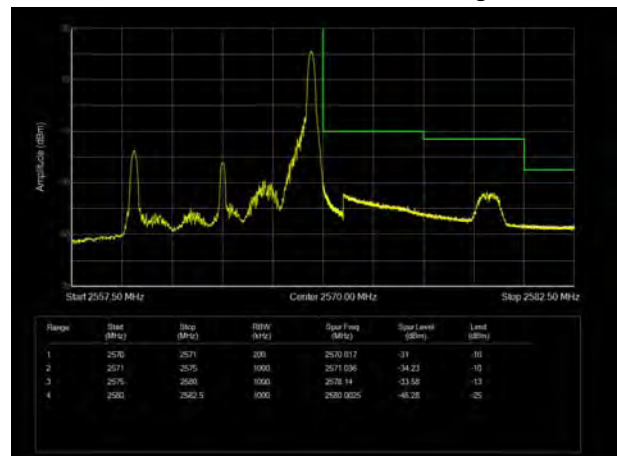
LTE Band 7 16QAM 5MHz CH-High, 100%RB



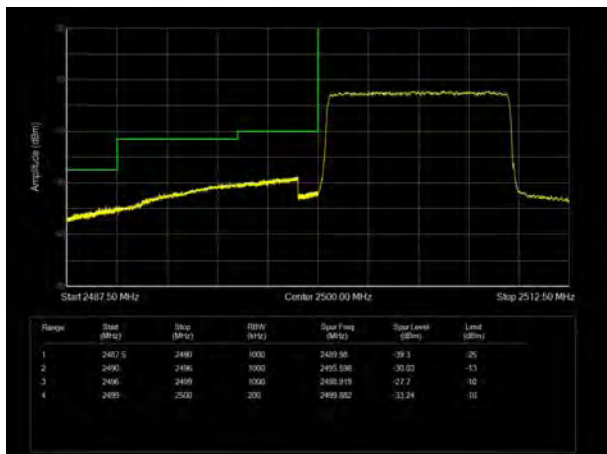
LTE Band 7 16QAM 10MHz CH-Low, 1 RB



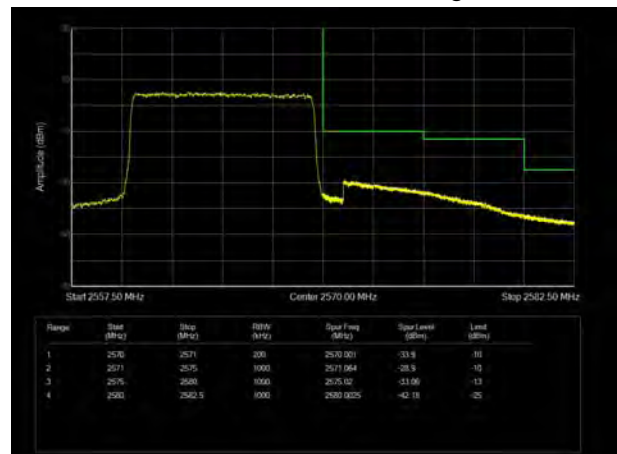
LTE Band 7 16QAM 10MHz CH-High, 1 RB



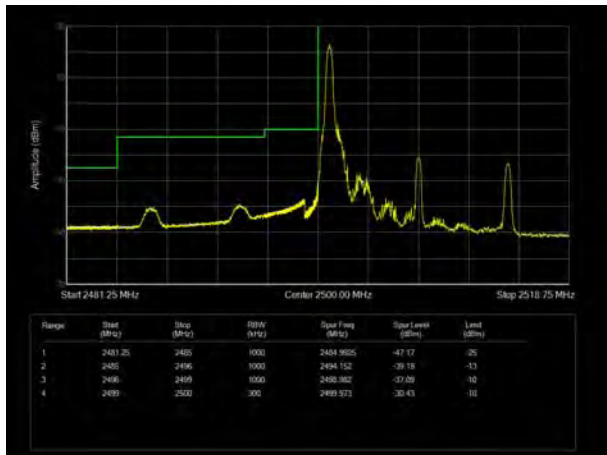
LTE Band 7 16QAM 10MHz CH-Low, 100%RB



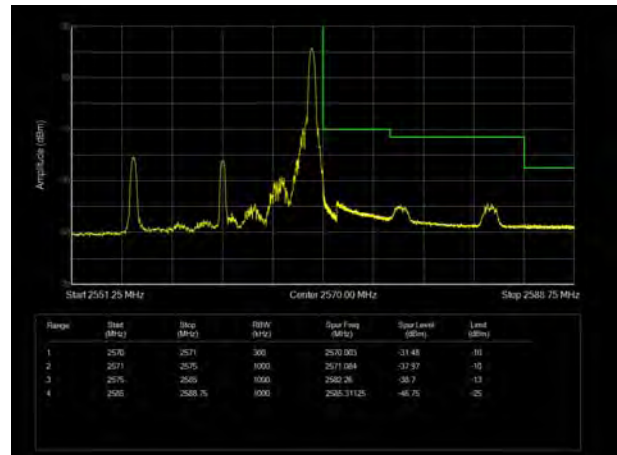
LTE Band 7 16QAM 10MHz CH-High, 100%RB



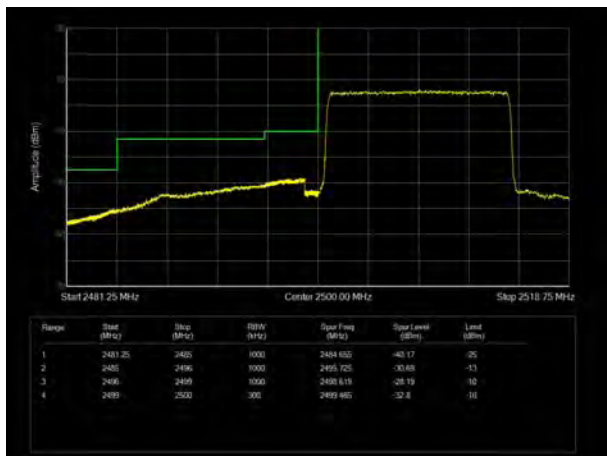
LTE Band 7 16QAM 15MHz CH-Low, 1 RB



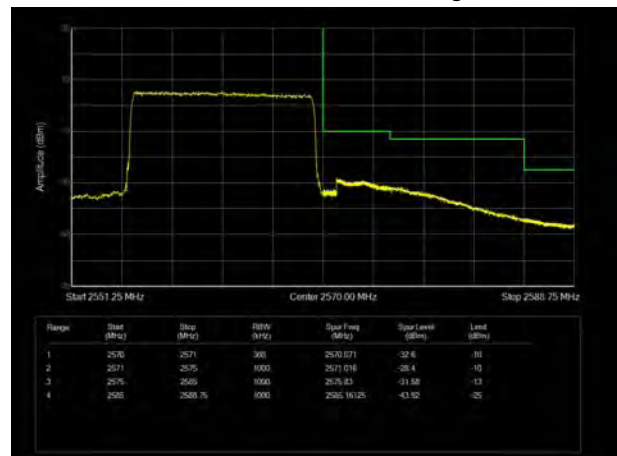
LTE Band 7 16QAM 15MHz CH-High, 1 RB



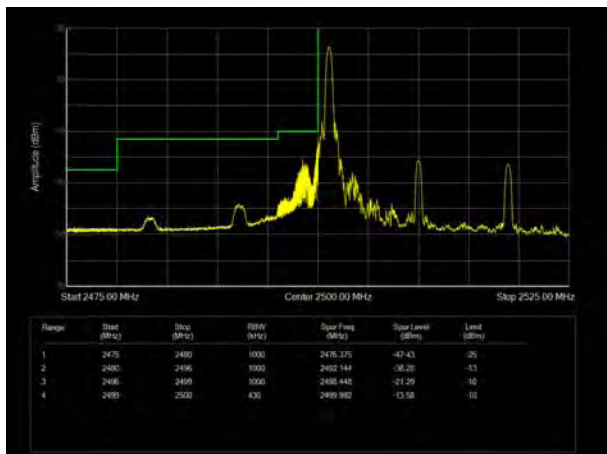
LTE Band 7 16QAM 15MHz CH-Low, 100%RB



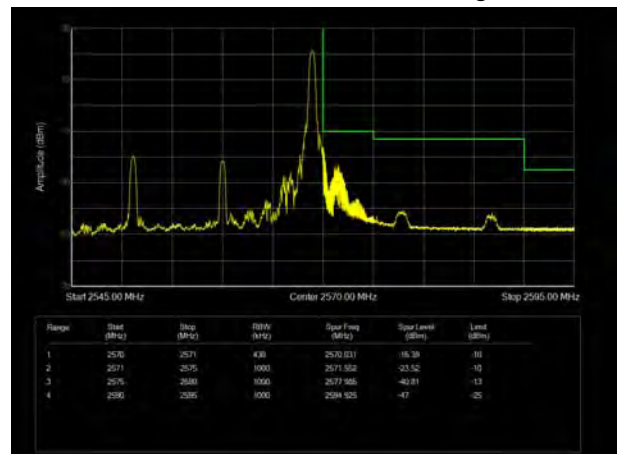
LTE Band 7 16QAM 15MHz CH-High, 100%RB



LTE Band 7 16QAM 20MHz CH-Low, 1 RB

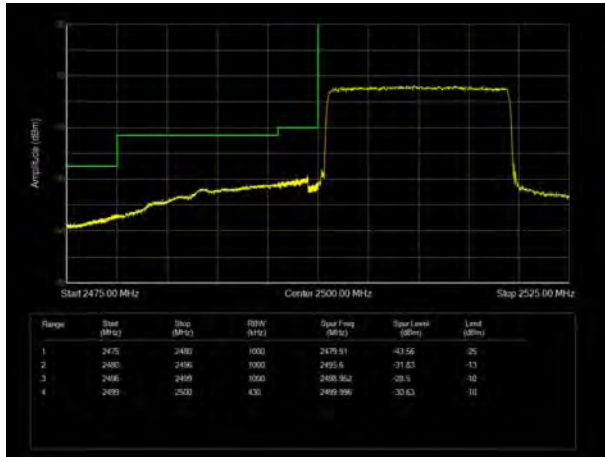


LTE Band 7 16QAM 20MHz CH-High, 1 RB

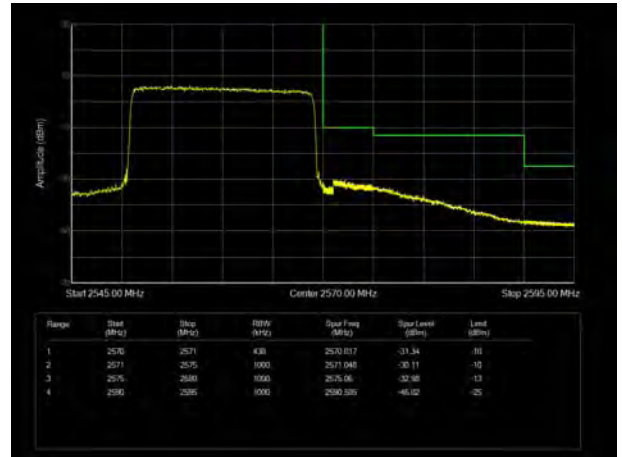




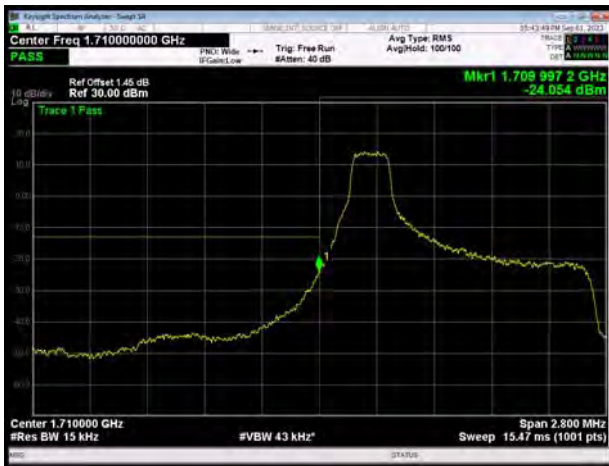
LTE Band 7 16QAM 20MHz CH-Low, 100% RB



LTE Band 7 16QAM 20MHz CH-High, 100% RB



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



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



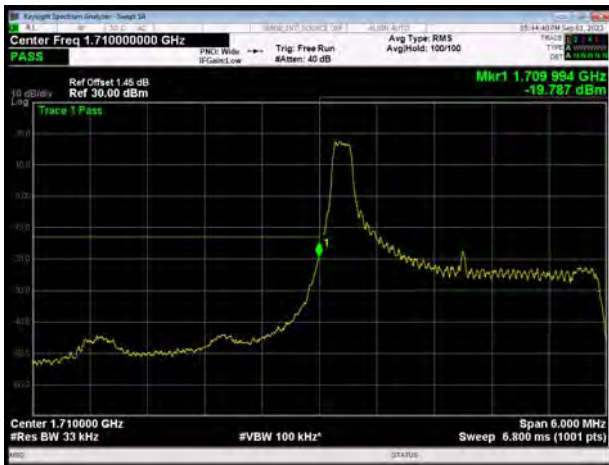
LTE Band 66 QPSK 1.4MHz CH-Low, 100%RB



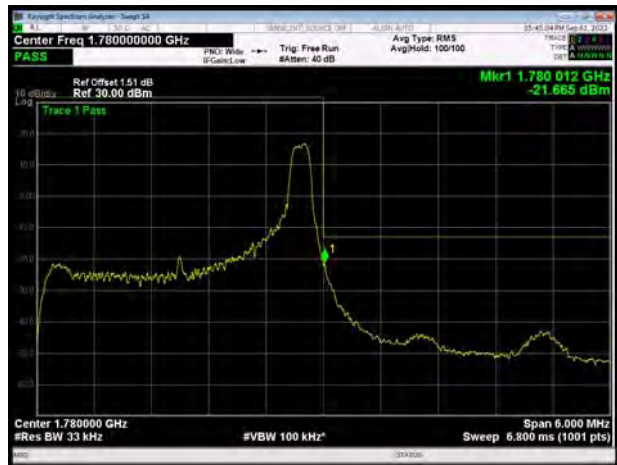
LTE Band 66 QPSK 1.4MHz CH-High, 100%RB



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



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



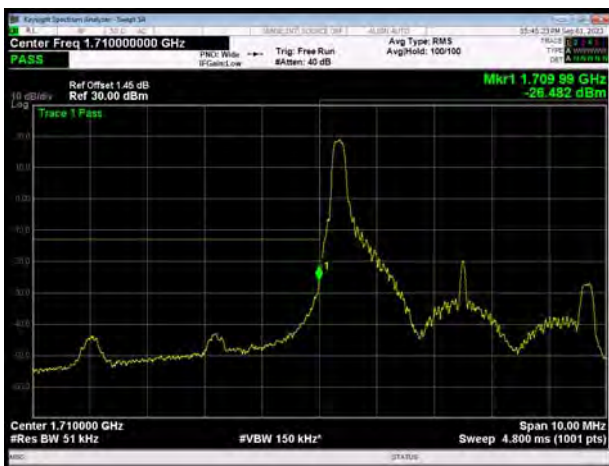
LTE Band 66 QPSK 3MHz CH-Low, 100%RB



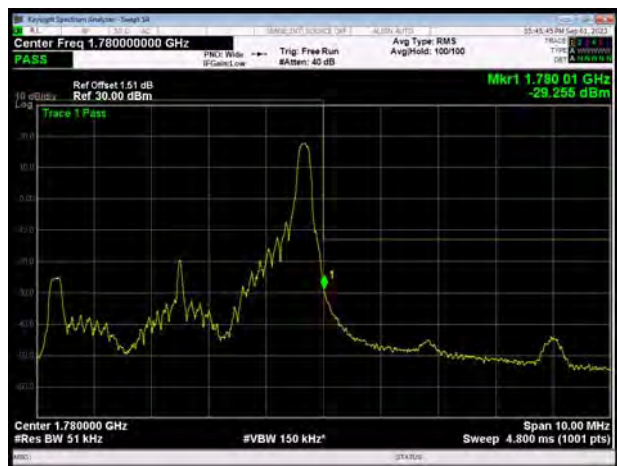
LTE Band 66 QPSK 3MHz CH-High, 100%RB



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



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



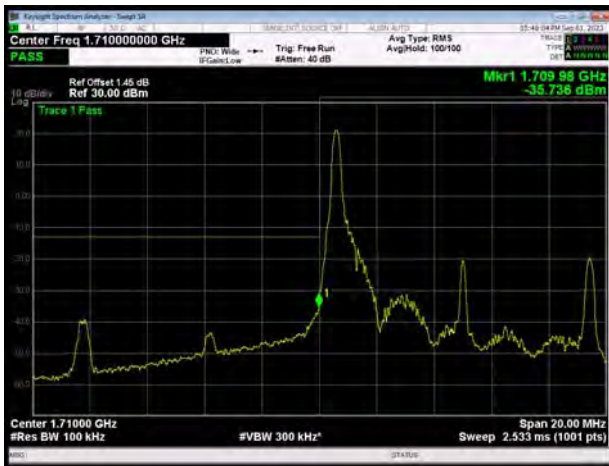
LTE Band 66 QPSK 5MHz CH-Low, 100%RB



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



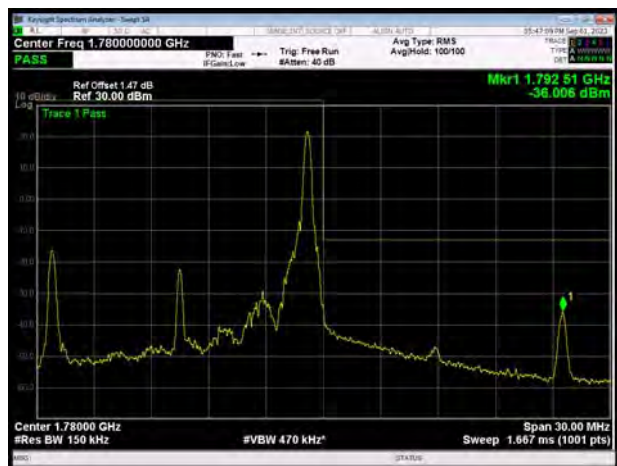
LTE Band 66 QPSK 10MHz CH-High, 100%RB



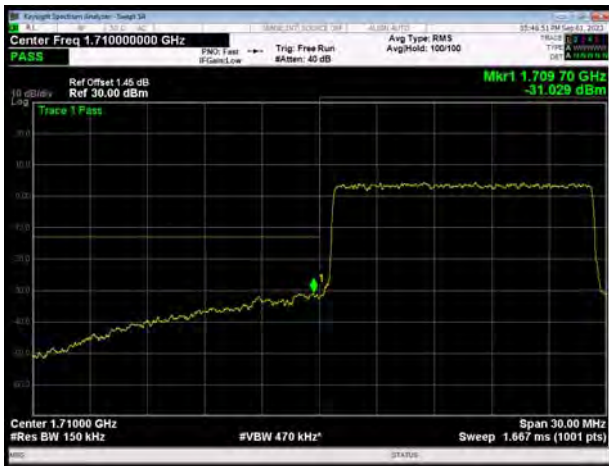
LTE Band 66 QPSK 15MHz CH-Low, 1 RB



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



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



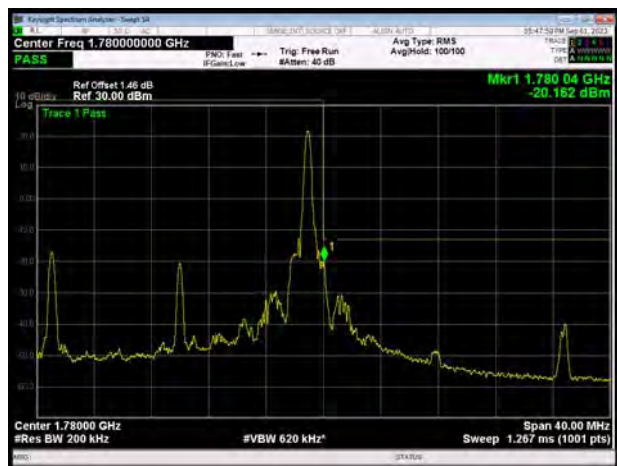
LTE Band 66 QPSK 15MHz CH-High, 100%RB



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



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



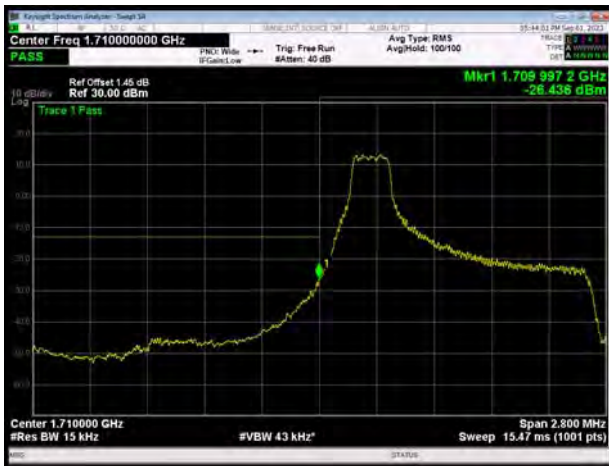
LTE Band 66 QPSK 20MHz CH-Low, 100%RB



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



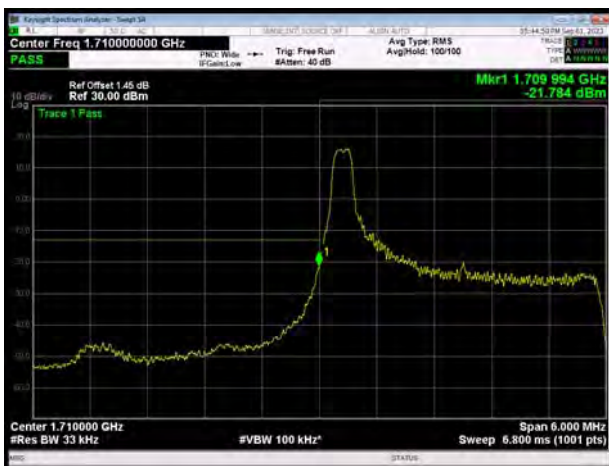
LTE Band 66 16QAM 1.4MHz CH-Low, 100%RB



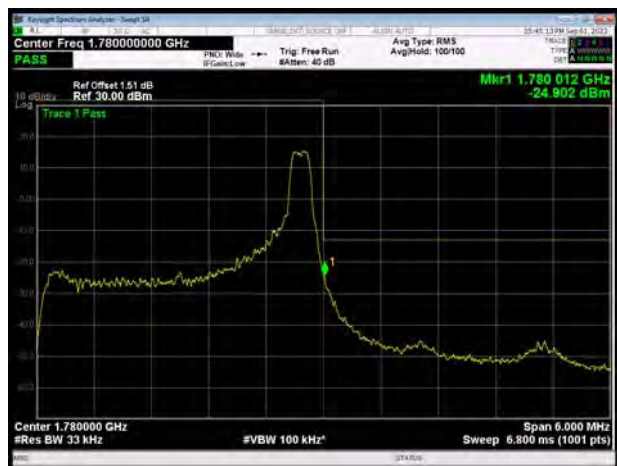
LTE Band 66 16QAM 1.4MHz CH-High, 100%RB



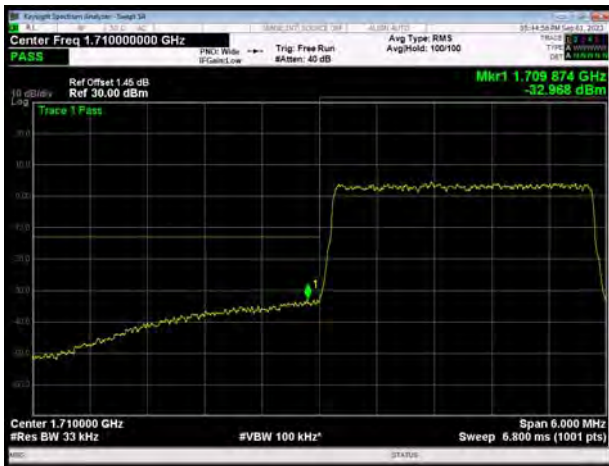
LTE Band 66 16QAM 3MHz CH-Low, 1 RB



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



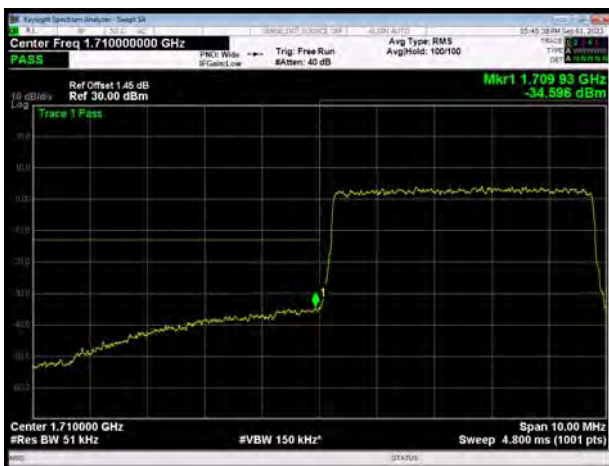
LTE Band 66 16QAM 5MHz CH-Low, 1 RB



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



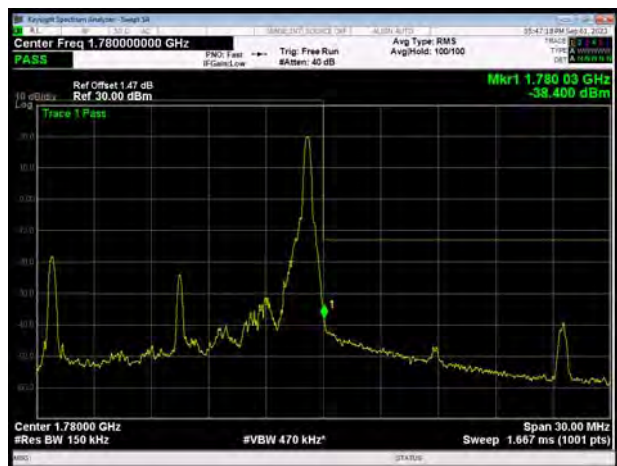
LTE Band 66 16QAM 10MHz CH-High, 100%RB



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

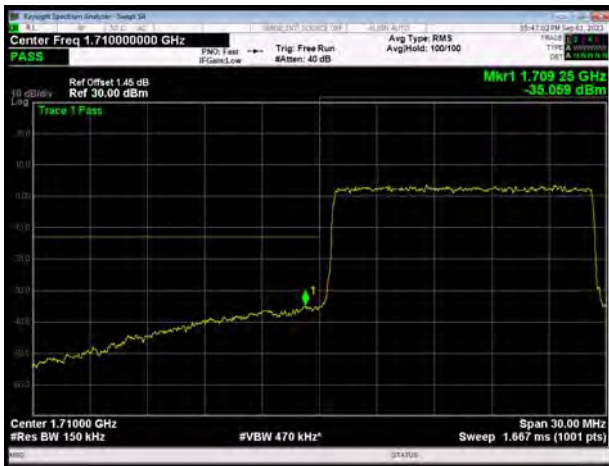


LTE Band 66 16QAM 15MHz CH-High, 1 RB





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



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



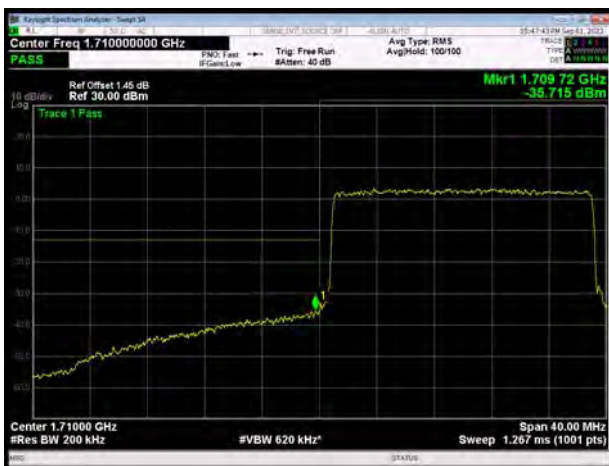
LTE Band 66 16QAM 20MHz CH-Low, 1 RB



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)

WCDMA Band IV	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
RMC	1312	1712.4	26.00	23.10	2.90	≤13	PASS
	1413	1732.6	26.24	23.37	2.87	≤13	PASS
	1513	1752.6	25.87	22.98	2.89	≤13	PASS

LTE Band 4								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	19957	1710.7	27.48	22.65	4.83	≤13	PASS
		20175	1732.5	27.67	22.56	5.11	≤13	PASS
		20393	1754.3	27.51	22.43	5.08	≤13	PASS
	3	19965	1711.5	27.58	22.71	4.87	≤13	PASS
		20175	1732.5	27.59	22.55	5.04	≤13	PASS
		20385	1753.5	27.46	22.42	5.04	≤13	PASS
	5	19975	1712.5	27.56	22.78	4.78	≤13	PASS
		20175	1732.5	27.66	22.53	5.13	≤13	PASS
		20375	1752.5	27.51	22.40	5.11	≤13	PASS
	10	20000	1715	27.36	22.46	4.90	≤13	PASS
		20175	1732.5	27.45	22.32	5.13	≤13	PASS
		20350	1750	27.32	22.17	5.15	≤13	PASS
	15	20025	1717.5	27.85	22.56	5.29	≤13	PASS
		20175	1732.5	27.89	22.43	5.46	≤13	PASS
		20325	1747.5	27.79	22.29	5.50	≤13	PASS
	20	20050	1720	27.60	22.40	5.20	≤13	PASS
		20175	1732.5	27.66	22.38	5.28	≤13	PASS
		20300	1745	27.65	22.31	5.34	≤13	PASS
16QAM	1.4	19957	1710.7	27.25	21.64	5.61	≤13	PASS
		20175	1732.5	27.44	21.52	5.92	≤13	PASS
		20393	1754.3	27.21	21.31	5.90	≤13	PASS
	3	19965	1711.5	27.39	21.73	5.66	≤13	PASS
		20175	1732.5	27.40	21.45	5.95	≤13	PASS
		20385	1753.5	27.26	21.34	5.92	≤13	PASS
	5	19975	1712.5	27.33	21.70	5.63	≤13	PASS
		20175	1732.5	27.40	21.50	5.90	≤13	PASS
		20375	1752.5	27.21	21.30	5.91	≤13	PASS
	10	20000	1715	27.14	21.42	5.72	≤13	PASS

		20175	1732.5	27.29	21.25	6.04	≤13	PASS
		20350	1750	27.10	21.13	5.97	≤13	PASS
		20025	1717.5	27.42	21.51	5.91	≤13	PASS
	15	20175	1732.5	27.42	21.37	6.05	≤13	PASS
		20325	1747.5	27.34	21.28	6.06	≤13	PASS
		20050	1720	27.36	21.37	5.99	≤13	PASS
	20	20175	1732.5	27.40	21.32	6.08	≤13	PASS
		20300	1745	27.32	21.26	6.06	≤13	PASS

LTE Band 7								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	20775	2502.5	27.77	22.30	5.47	≤13	PASS
		21100	2535	27.57	21.99	5.58	≤13	PASS
		21425	2567.5	27.17	21.63	5.54	≤13	PASS
	10	20800	2505	27.55	22.12	5.43	≤13	PASS
		21100	2535	27.39	21.81	5.58	≤13	PASS
		21400	2565	26.97	21.52	5.45	≤13	PASS
	15	20825	2507.5	27.96	22.27	5.69	≤13	PASS
		21100	2535	27.81	21.94	5.87	≤13	PASS
		21375	2562.5	27.38	21.73	5.65	≤13	PASS
	20	20850	2510	27.61	22.19	5.42	≤13	PASS
		21100	2535	27.48	21.90	5.58	≤13	PASS
		21350	2560	27.22	21.81	5.41	≤13	PASS
16QAM	5	20775	2502.5	27.60	21.40	6.20	≤13	PASS
		21100	2535	27.42	21.10	6.32	≤13	PASS
		21425	2567.5	26.88	20.68	6.20	≤13	PASS
	10	20800	2505	27.41	21.20	6.21	≤13	PASS
		21100	2535	27.28	20.92	6.36	≤13	PASS
		21400	2565	26.77	20.55	6.22	≤13	PASS
	15	20825	2507.5	27.62	21.37	6.25	≤13	PASS
		21100	2535	27.52	21.06	6.46	≤13	PASS
		21375	2562.5	27.04	20.82	6.22	≤13	PASS
	20	20850	2510	27.49	21.29	6.20	≤13	PASS
		21100	2535	27.37	21.00	6.37	≤13	PASS
		21350	2560	27.06	20.92	6.14	≤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	27.57	22.85	4.72	≤13	PASS
		132322	1745	27.67	22.64	5.03	≤13	PASS
		132665	1779.3	26.94	21.98	4.96	≤13	PASS
	3	131987	1711.5	27.63	22.82	4.81	≤13	PASS
		132322	1745	27.61	22.58	5.03	≤13	PASS
		132657	1778.5	26.97	22.02	4.95	≤13	PASS
	5	131997	1712.5	27.53	22.75	4.78	≤13	PASS
		132322	1745	27.64	22.57	5.07	≤13	PASS
		132647	1777.5	26.95	22.01	4.94	≤13	PASS
	10	132022	1715	27.26	22.31	4.95	≤13	PASS
		132322	1745	27.49	22.39	5.10	≤13	PASS
		132622	1775	26.90	21.98	4.92	≤13	PASS
	15	132047	1717.5	27.87	22.61	5.26	≤13	PASS
		132322	1745	27.96	22.52	5.44	≤13	PASS
		132597	1772.5	27.45	22.25	5.20	≤13	PASS
	20	132072	1720	27.77	22.62	5.15	≤13	PASS
		132322	1745	27.75	22.46	5.29	≤13	PASS
		132572	1770	27.39	22.26	5.13	≤13	PASS
16QAM	1.4	131979	1710.7	27.33	21.83	5.50	≤13	PASS
		132322	1745	27.37	21.64	5.73	≤13	PASS
		132665	1779.3	26.74	21.04	5.70	≤13	PASS
	3	131987	1711.5	27.40	21.87	5.53	≤13	PASS
		132322	1745	27.44	21.61	5.83	≤13	PASS
		132657	1778.5	26.85	21.10	5.75	≤13	PASS
	5	131997	1712.5	27.37	21.76	5.61	≤13	PASS
		132322	1745	27.39	21.53	5.86	≤13	PASS
		132647	1777.5	26.84	21.12	5.72	≤13	PASS
	10	132022	1715	27.03	21.24	5.79	≤13	PASS
		132322	1745	27.26	21.34	5.92	≤13	PASS
		132622	1775	26.79	21.06	5.73	≤13	PASS
	15	132047	1717.5	27.43	21.56	5.87	≤13	PASS
		132322	1745	27.56	21.54	6.02	≤13	PASS
		132597	1772.5	27.07	21.26	5.81	≤13	PASS
	20	132072	1720	27.51	21.57	5.94	≤13	PASS
		132322	1745	27.47	21.41	6.06	≤13	PASS
		132572	1770	27.20	21.35	5.85	≤13	PASS

## 6.5 Frequency Stability

WCDMA Band IV						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
Temperature	Voltage	BPSK	QPSK	BPSK	QPSK	
Normal (25°C)	Normal	4.85	7.12	0.00280	0.00411	PASS
Extreme (50°C)		2.30	8.46	0.00133	0.00488	PASS
Extreme (40°C)		4.53	11.07	0.00261	0.00639	PASS
Extreme (30°C)		17.30	14.73	0.00998	0.00850	PASS
Extreme (20°C)		15.82	5.80	0.00913	0.00335	PASS
Extreme (10°C)		8.36	11.51	0.00483	0.00664	PASS
Extreme (0°C)		1.26	15.46	0.00073	0.00892	PASS
Extreme (-10°C)		9.26	17.30	0.00534	0.00998	PASS
Extreme (-20°C)		11.86	12.90	0.00684	0.00745	PASS
Extreme (-30°C)		16.98	14.48	0.00980	0.00836	PASS
25°C	LV	5.14	13.18	0.00296	0.00761	PASS
	HV	2.21	17.82	0.00128	0.01029	PASS

LTE Band 4						
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°C)	Normal	4.15	8.70	0.00239	0.00502	PASS
Extreme (50°C)		16.74	4.41	0.00966	0.00254	PASS
Extreme (40°C)		10.58	9.88	0.00611	0.00570	PASS
Extreme (30°C)		10.29	15.72	0.00594	0.00907	PASS
Extreme (20°C)		6.83	10.23	0.00394	0.00590	PASS
Extreme (10°C)		17.77	4.41	0.01026	0.00255	PASS
Extreme (0°C)		2.98	8.30	0.00172	0.00479	PASS
Extreme (-10°C)		2.71	13.84	0.00157	0.00799	PASS
Extreme (-20°C)		6.75	15.85	0.00390	0.00915	PASS
Extreme (-30°C)		9.34	16.07	0.00539	0.00927	PASS
25°C	LV	6.92	1.91	0.00399	0.00110	PASS
	HV	5.76	10.78	0.00332	0.00622	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	3MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	

Normal (25°C)	Normal	8.68	11.34	0.00501	0.00655	PASS
Extreme (50°C)		4.88	15.32	0.00282	0.00884	PASS
Extreme (40°C)		14.24	11.05	0.00822	0.00638	PASS
Extreme (30°C)		15.23	17.93	0.00879	0.01035	PASS
Extreme (20°C)		15.80	3.79	0.00912	0.00218	PASS
Extreme (10°C)		3.68	1.19	0.00212	0.00069	PASS
Extreme (0°C)		5.36	2.71	0.00310	0.00157	PASS
Extreme (-10°C)		2.97	17.26	0.00171	0.00996	PASS
Extreme (-20°C)		7.95	2.02	0.00459	0.00117	PASS
Extreme (-30°C)		17.86	8.49	0.01031	0.00490	PASS
25°C	LV	6.76	11.79	0.00390	0.00680	PASS
	HV	14.12	6.18	0.00815	0.00357	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	11.62	5.91	0.00671	0.00341	PASS
Extreme (50°C)		14.77	7.26	0.00853	0.00419	PASS
Extreme (40°C)		2.13	9.50	0.00123	0.00548	PASS
Extreme (30°C)		6.47	7.98	0.00374	0.00460	PASS
Extreme (20°C)		16.84	17.49	0.00972	0.01009	PASS
Extreme (10°C)		3.42	10.27	0.00197	0.00593	PASS
Extreme (0°C)		14.39	1.31	0.00831	0.00076	PASS
Extreme (-10°C)		11.31	15.45	0.00653	0.00892	PASS
Extreme (-20°C)		12.55	10.03	0.00724	0.00579	PASS
Extreme (-30°C)		17.45	17.05	0.01007	0.00984	PASS
25°C	LV	10.24	13.97	0.00591	0.00807	PASS
	HV	13.43	11.77	0.00775	0.00680	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°C)	Normal	6.45	15.34	0.00372	0.00885	PASS
Extreme (50°C)		9.66	8.99	0.00558	0.00519	PASS
Extreme (40°C)		17.96	16.96	0.01037	0.00979	PASS
Extreme (30°C)		13.37	6.60	0.00772	0.00381	PASS
Extreme (20°C)		10.91	7.11	0.00630	0.00410	PASS
Extreme (10°C)		12.11	17.38	0.00699	0.01003	PASS
Extreme (0°C)		9.56	7.65	0.00552	0.00442	PASS
Extreme (-10°C)		2.97	5.32	0.00172	0.00307	PASS
Extreme (-20°C)		5.89	10.12	0.00340	0.00584	PASS

Extreme (-30℃)		5.59	8.43	0.00323	0.00487	PASS
25℃	LV	15.29	14.98	0.00883	0.00865	PASS
	HV	9.41	1.47	0.00543	0.00085	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	9.05	4.24	0.00522	0.00245	
Extreme (50℃)		9.04	16.24	0.00522	0.00937	PASS
Extreme (40℃)		2.35	16.63	0.00136	0.00960	PASS
Extreme (30℃)		3.70	7.13	0.00213	0.00411	PASS
Extreme (20℃)		5.08	15.43	0.00293	0.00891	PASS
Extreme (10℃)		15.62	4.73	0.00901	0.00273	PASS
Extreme (0℃)		16.10	2.40	0.00929	0.00139	PASS
Extreme (-10℃)		2.19	11.42	0.00126	0.00659	PASS
Extreme (-20℃)		13.22	6.96	0.00763	0.00402	PASS
Extreme (-30℃)		7.14	4.70	0.00412	0.00271	PASS
25℃		LV	10.92	13.00	0.00630	0.00750
	HV	7.23	15.32	0.00417	0.00885	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	1.01	9.63	0.00058	0.00556	
Extreme (50℃)		8.62	1.88	0.00497	0.00109	PASS
Extreme (40℃)		5.59	8.11	0.00323	0.00468	PASS
Extreme (30℃)		17.32	7.57	0.00999	0.00437	PASS
Extreme (20℃)		17.42	3.80	0.01005	0.00220	PASS
Extreme (10℃)		8.91	13.46	0.00514	0.00777	PASS
Extreme (0℃)		9.56	11.23	0.00552	0.00648	PASS
Extreme (-10℃)		10.89	14.70	0.00629	0.00849	PASS
Extreme (-20℃)		8.07	11.71	0.00466	0.00676	PASS
Extreme (-30℃)		11.49	15.20	0.00663	0.00877	PASS
25℃		LV	17.73	15.94	0.01024	0.00920
	HV	13.90	9.01	0.00802	0.00520	PASS

LTE Band 7						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	3.07	9.38	0.00121	0.00370	PASS
Extreme (50°C)		13.29	10.72	0.00524	0.00423	PASS
Extreme (40°C)		8.88	12.31	0.00350	0.00486	PASS
Extreme (30°C)		3.90	5.65	0.00154	0.00223	PASS
Extreme (20°C)		14.09	11.95	0.00556	0.00471	PASS
Extreme (10°C)		15.29	6.29	0.00603	0.00248	PASS
Extreme (0°C)		13.06	17.36	0.00515	0.00685	PASS
Extreme (-10°C)		2.57	11.09	0.00101	0.00438	PASS
Extreme (-20°C)		3.51	16.50	0.00138	0.00651	PASS
Extreme (-30°C)		12.57	6.02	0.00496	0.00237	PASS
25°C		LV	9.17	11.17	0.00362	0.00441
	HV	8.76	12.65	0.00346	0.00499	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°C)	Normal	10.13	14.17	0.00400	0.00559	PASS
Extreme (50°C)		2.30	1.39	0.00091	0.00055	PASS
Extreme (40°C)		16.57	7.76	0.00654	0.00306	PASS
Extreme (30°C)		7.55	6.22	0.00298	0.00246	PASS
Extreme (20°C)		14.59	16.92	0.00576	0.00667	PASS
Extreme (10°C)		1.64	12.56	0.00065	0.00496	PASS
Extreme (0°C)		6.95	12.94	0.00274	0.00510	PASS
Extreme (-10°C)		3.67	11.80	0.00145	0.00465	PASS
Extreme (-20°C)		11.62	15.43	0.00459	0.00609	PASS
Extreme (-30°C)		10.14	5.51	0.00400	0.00217	PASS
25°C		LV	9.50	6.95	0.00375	0.00274
	HV	7.64	12.70	0.00301	0.00501	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	15.17	1.15	0.00599	0.00045	PASS
Extreme (50°C)		9.05	10.44	0.00357	0.00412	PASS
Extreme (40°C)		8.70	1.40	0.00343	0.00055	PASS



Extreme (30°C)		6.22	4.96	0.00245	0.00196	PASS
Extreme (20°C)		14.86	1.61	0.00586	0.00063	PASS
Extreme (10°C)		17.00	5.40	0.00671	0.00213	PASS
Extreme (0°C)		5.01	14.46	0.00198	0.00570	PASS
Extreme (-10°C)		3.18	5.97	0.00126	0.00235	PASS
Extreme (-20°C)		5.67	4.76	0.00224	0.00188	PASS
Extreme (-30°C)		12.20	1.20	0.00481	0.00047	PASS
25°C	LV	3.07	12.47	0.00121	0.00492	PASS
	HV	16.99	7.54	0.00670	0.00297	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	7.55	6.86	0.00298	0.00271	
Extreme (50°C)		9.76	16.14	0.00385	0.00637	PASS
Extreme (40°C)		13.10	10.85	0.00517	0.00428	PASS
Extreme (30°C)		4.82	5.99	0.00190	0.00236	PASS
Extreme (20°C)		13.09	11.78	0.00516	0.00465	PASS
Extreme (10°C)		12.47	17.75	0.00492	0.00700	PASS
Extreme (0°C)		7.27	8.46	0.00287	0.00334	PASS
Extreme (-10°C)		9.58	14.30	0.00378	0.00564	PASS
Extreme (-20°C)		16.01	14.54	0.00631	0.00573	PASS
Extreme (-30°C)		14.72	14.52	0.00581	0.00573	PASS
25°C	LV	14.79	15.14	0.00584	0.00597	PASS
	HV	5.03	17.76	0.00198	0.00701	PASS

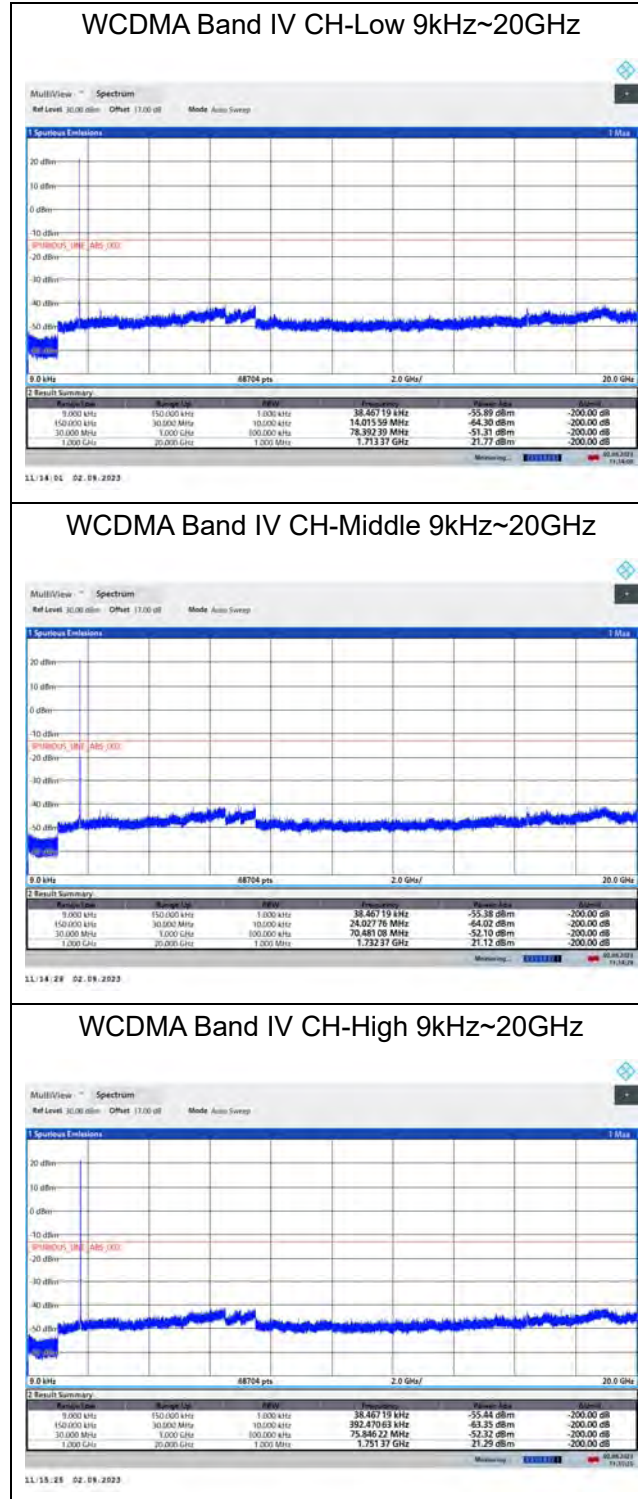
LTE Band 66						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	1.4MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	11.80	2.32	0.00676	0.00133	
Extreme (50°C)		14.17	11.62	0.00812	0.00666	PASS
Extreme (40°C)		16.11	5.87	0.00923	0.00337	PASS
Extreme (30°C)		2.89	17.31	0.00165	0.00992	PASS
Extreme (20°C)		11.92	4.25	0.00683	0.00243	PASS
Extreme (10°C)		10.22	11.28	0.00586	0.00647	PASS
Extreme (0°C)		12.26	12.31	0.00702	0.00706	PASS
Extreme (-10°C)		2.68	11.66	0.00154	0.00668	PASS
Extreme (-20°C)		1.07	7.11	0.00061	0.00407	PASS
Extreme (-30°C)		15.80	4.80	0.00906	0.00275	PASS
25°C	LV	7.69	4.27	0.00441	0.00245	PASS

	HV	8.04	3.09	0.00461	0.00177	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	3MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	16.19	14.67	0.00928	0.00841	PASS
Extreme (50°C)		12.07	5.51	0.00692	0.00316	PASS
Extreme (40°C)		11.07	10.63	0.00634	0.00609	PASS
Extreme (30°C)		17.89	15.07	0.01025	0.00864	PASS
Extreme (20°C)		5.24	2.31	0.00301	0.00132	PASS
Extreme (10°C)		14.92	9.12	0.00855	0.00523	PASS
Extreme (0°C)		9.07	7.11	0.00520	0.00408	PASS
Extreme (-10°C)		9.61	5.87	0.00551	0.00337	PASS
Extreme (-20°C)		7.30	2.19	0.00418	0.00126	PASS
Extreme (-30°C)		5.69	7.27	0.00326	0.00417	PASS
25°C		LV	3.15	9.34	0.00181	0.00535
	HV	7.78	13.26	0.00446	0.00760	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	7.74	13.15	0.00444	0.00754	PASS
Extreme (50°C)		4.21	11.87	0.00241	0.00681	PASS
Extreme (40°C)		3.41	5.56	0.00195	0.00319	PASS
Extreme (30°C)		9.30	16.46	0.00533	0.00943	PASS
Extreme (20°C)		14.66	5.39	0.00840	0.00309	PASS
Extreme (10°C)		12.71	8.95	0.00728	0.00513	PASS
Extreme (0°C)		9.25	3.49	0.00530	0.00200	PASS
Extreme (-10°C)		2.26	5.74	0.00130	0.00329	PASS
Extreme (-20°C)		16.81	16.79	0.00963	0.00962	PASS
Extreme (-30°C)		1.43	13.66	0.00082	0.00783	PASS
25°C		LV	13.38	2.82	0.00767	0.00162
	HV	2.12	14.90	0.00121	0.00854	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°C)	Normal	17.14	5.91	0.00982	0.00339	PASS
Extreme (50°C)		6.59	3.60	0.00377	0.00206	PASS
Extreme (40°C)		7.49	4.45	0.00429	0.00255	PASS
Extreme (30°C)		17.05	15.45	0.00977	0.00885	PASS

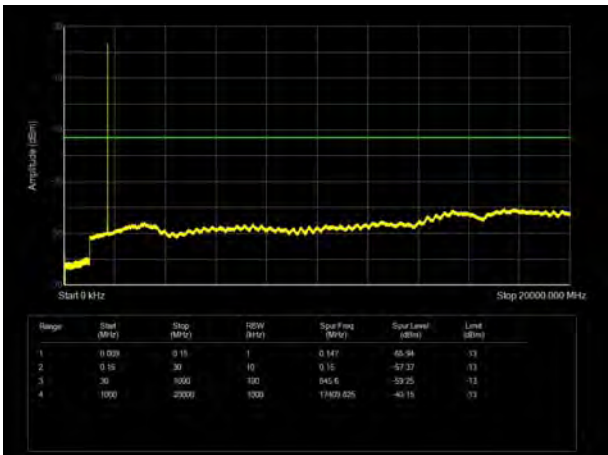
Extreme (20°C)		13.52	8.14	0.00775	0.00466	PASS
Extreme (10°C)		3.16	7.23	0.00181	0.00414	PASS
Extreme (0°C)		17.73	15.19	0.01016	0.00871	PASS
Extreme (-10°C)		17.54	10.15	0.01005	0.00582	PASS
Extreme (-20°C)		14.80	13.06	0.00848	0.00749	PASS
Extreme (-30°C)		13.67	5.57	0.00783	0.00319	PASS
25°C	LV	11.48	3.56	0.00658	0.00204	PASS
	HV	17.30	8.43	0.00991	0.00483	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	15.54	5.91	0.00891	0.00339	PASS
Extreme (50°C)		8.08	4.56	0.00463	0.00261	PASS
Extreme (40°C)		16.82	3.71	0.00964	0.00213	PASS
Extreme (30°C)		12.68	2.08	0.00727	0.00119	PASS
Extreme (20°C)		6.94	9.35	0.00397	0.00536	PASS
Extreme (10°C)		5.07	3.15	0.00291	0.00181	PASS
Extreme (0°C)		14.88	7.87	0.00853	0.00451	PASS
Extreme (-10°C)		5.04	2.60	0.00289	0.00149	PASS
Extreme (-20°C)		2.29	2.16	0.00131	0.00124	PASS
Extreme (-30°C)		2.88	10.87	0.00165	0.00623	PASS
25°C		LV	16.03	17.71	0.00918	0.01015
	HV	12.39	3.26	0.00710	0.00187	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	17.35	9.08	0.00994	0.00520	PASS
Extreme (50°C)		17.70	6.85	0.01014	0.00393	PASS
Extreme (40°C)		14.23	3.73	0.00815	0.00214	PASS
Extreme (30°C)		15.09	8.43	0.00865	0.00483	PASS
Extreme (20°C)		12.90	5.64	0.00739	0.00323	PASS
Extreme (10°C)		16.88	8.68	0.00967	0.00498	PASS
Extreme (0°C)		16.64	13.62	0.00953	0.00780	PASS
Extreme (-10°C)		4.56	3.03	0.00261	0.00173	PASS
Extreme (-20°C)		13.05	15.72	0.00748	0.00901	PASS
Extreme (-30°C)		15.00	9.15	0.00860	0.00524	PASS
25°C		LV	7.34	7.14	0.00420	0.00409
	HV	12.41	2.83	0.00711	0.00162	PASS

### 6.6 Spurious Emissions at Antenna Terminals

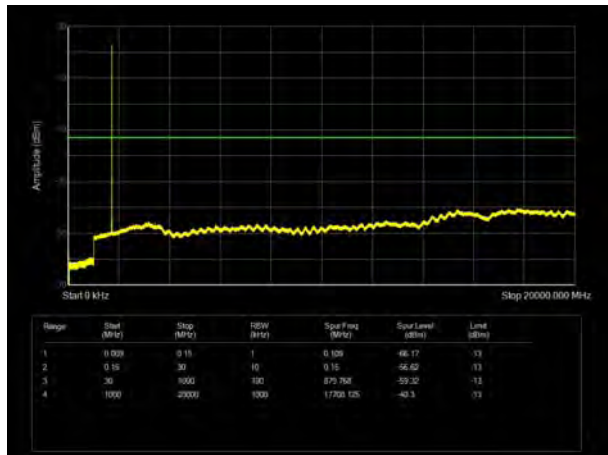
Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions more than 20 dB below the limit are not reported. The signal beyond the limit is carrier.



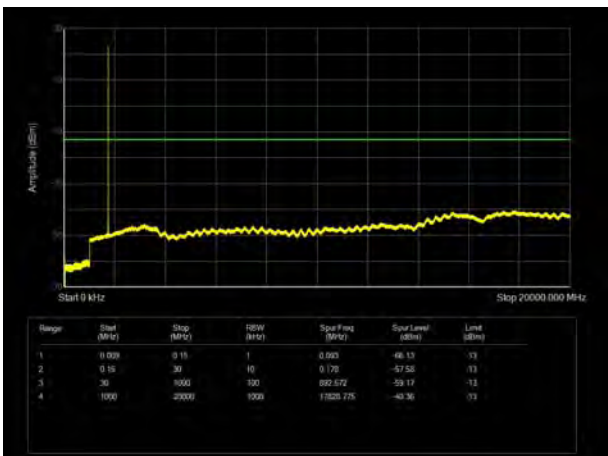
LTE Band 4 1.4MHz CH-Low 9kHz~20GHz



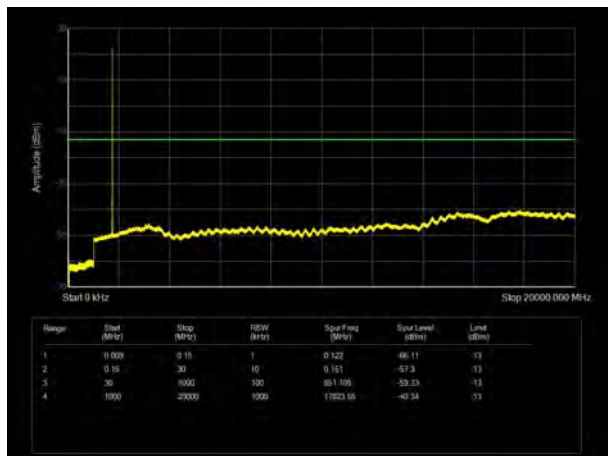
LTE Band 4 3MHz CH- Low 9kHz~20GHz



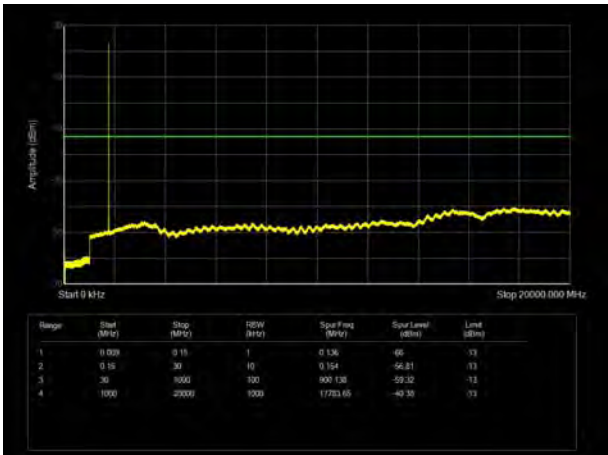
LTE Band 4 1.4MHz CH- Middle 9kHz~20GHz



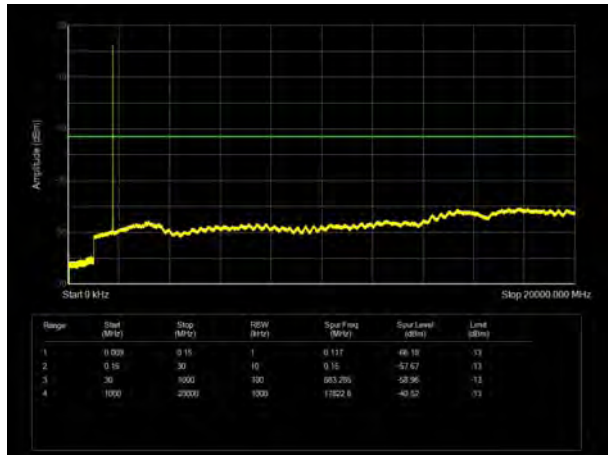
LTE Band 4 3MHz CH- Middle 9kHz~20GHz



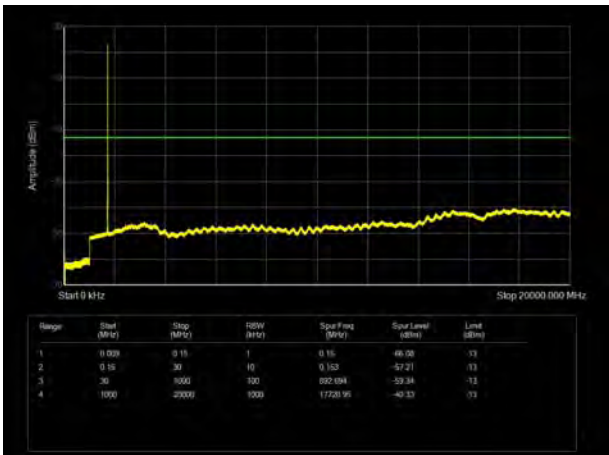
LTE Band 4 1.4MHz CH- High 9kHz~20GHz



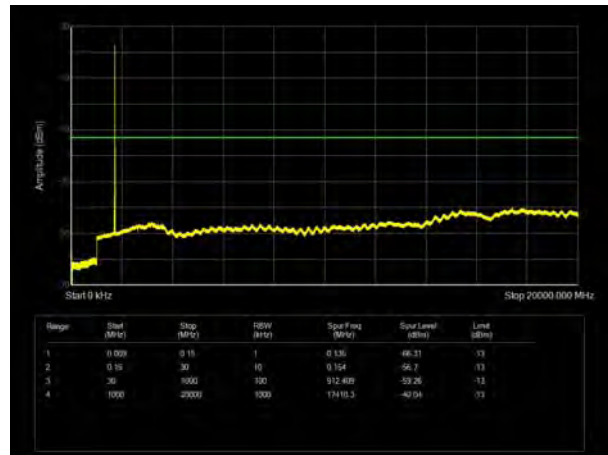
LTE Band 4 3MHz CH-High 9kHz~20GHz



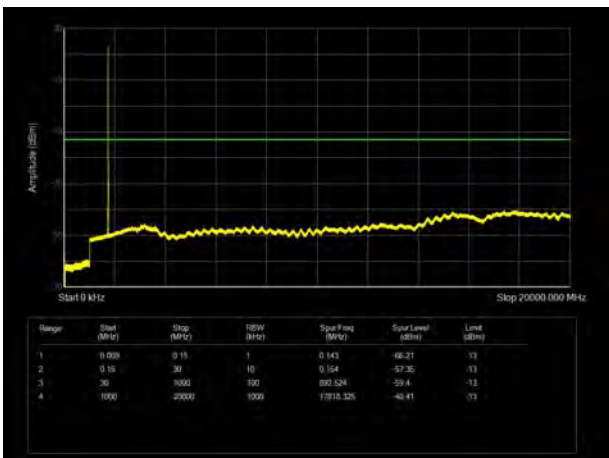
LTE Band 4 5MHz CH- Low 9kHz~20GHz



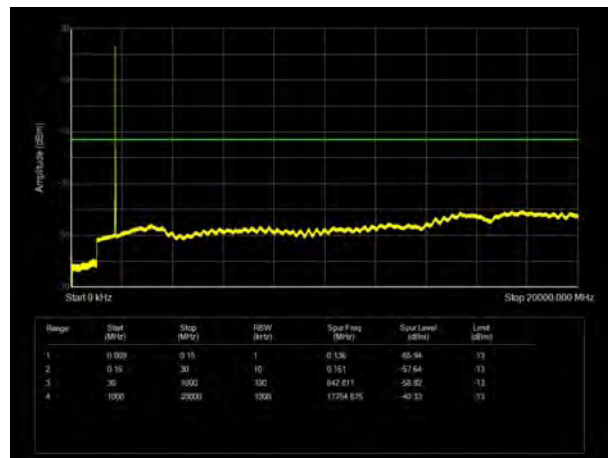
LTE Band 4 10MHz CH-Low 9kHz~20GHz



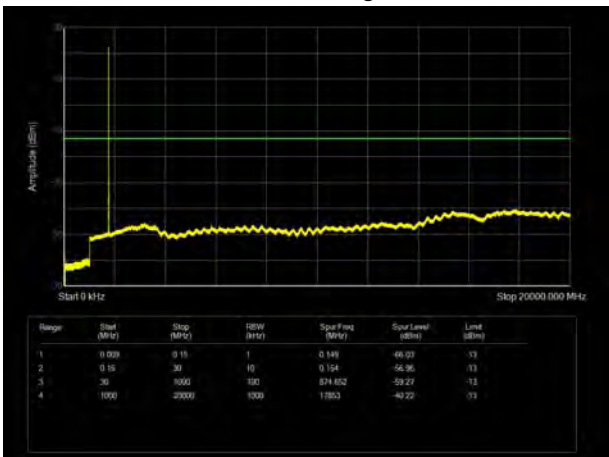
LTE Band 4 5MHz CH- Middle 9kHz~20GHz



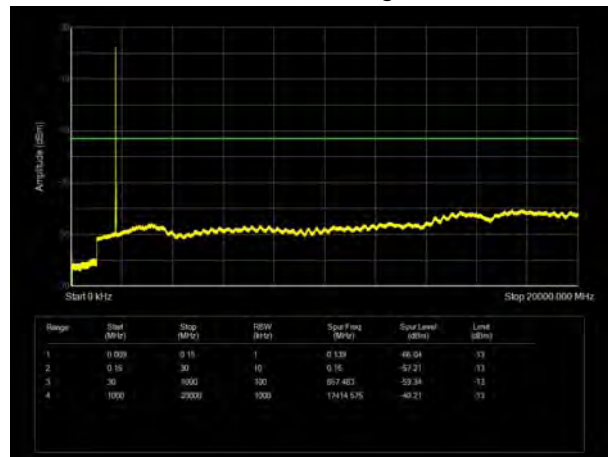
LTE Band 4 10MHz CH- Middle 9kHz~20GHz



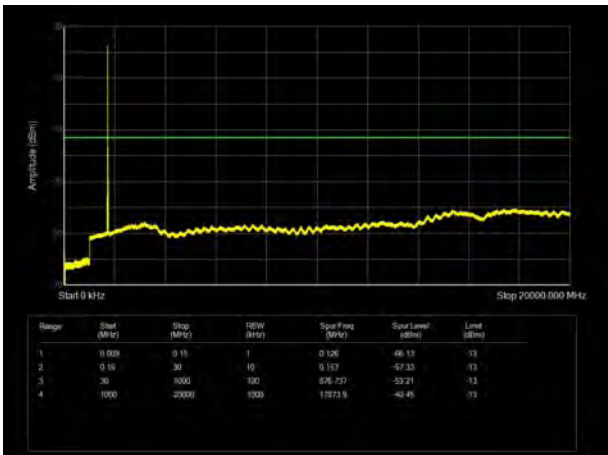
LTE Band 4 5MHz CH-High 9kHz~20GHz



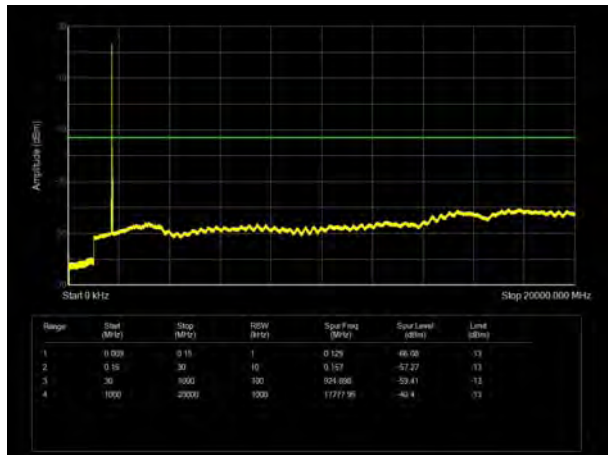
LTE Band 4 10MHz CH- High 9kHz~20GHz



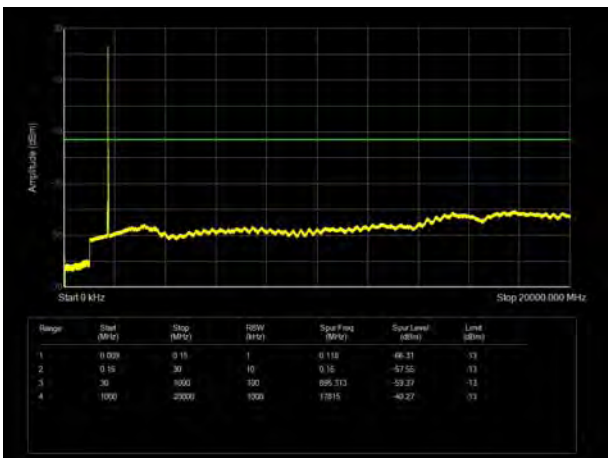
LTE Band 4 15MHz CH- Low 9kHz~20GHz



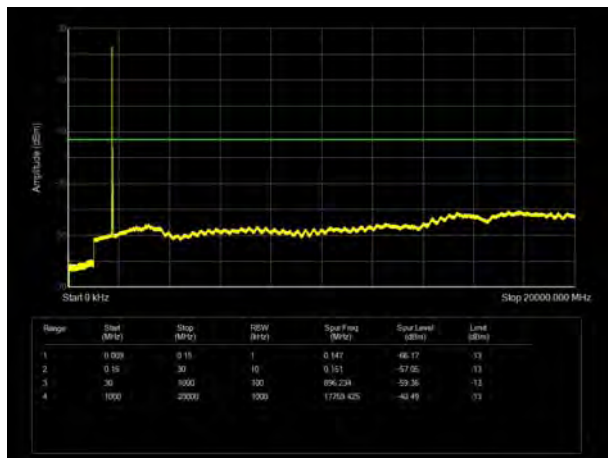
LTE Band 4 20MHz CH-Low 9kHz~20GHz



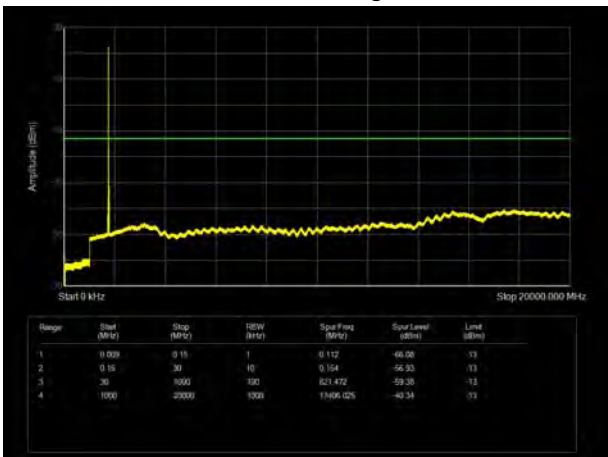
LTE Band 4 15MHz CH- Middle 9kHz~20GHz



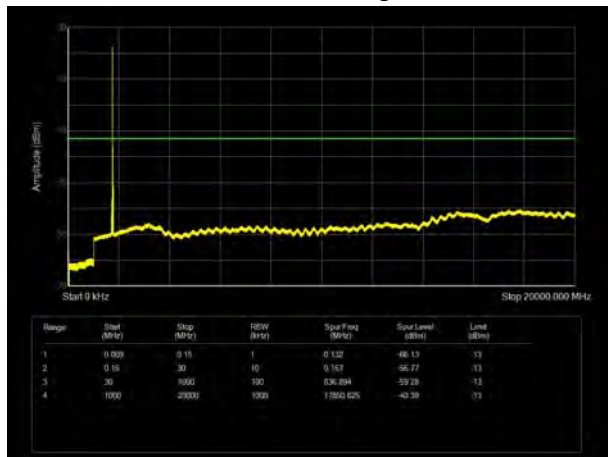
LTE Band 4 20MHz CH- Middle 9kHz~20GHz



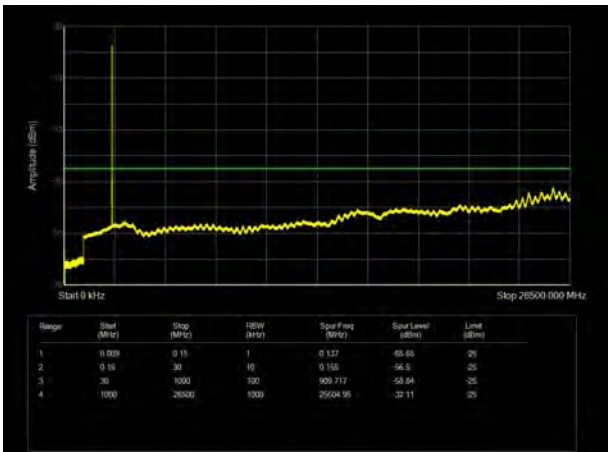
LTE Band 4 15MHz CH-High 9kHz~20GHz



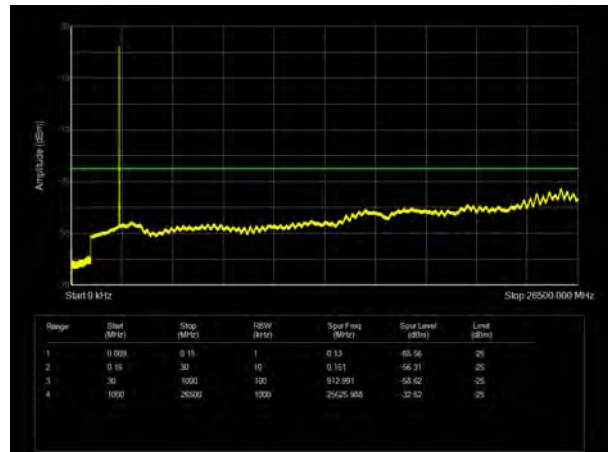
LTE Band 4 20MHz CH- High 9kHz~20GHz



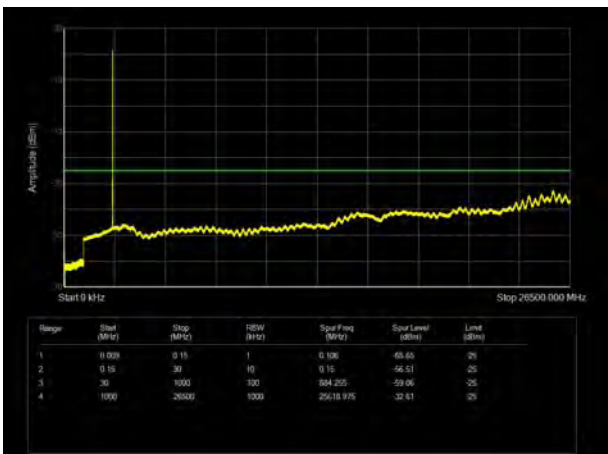
LTE Band 7 5MHz CH- Low 9kHz~26.5GHz



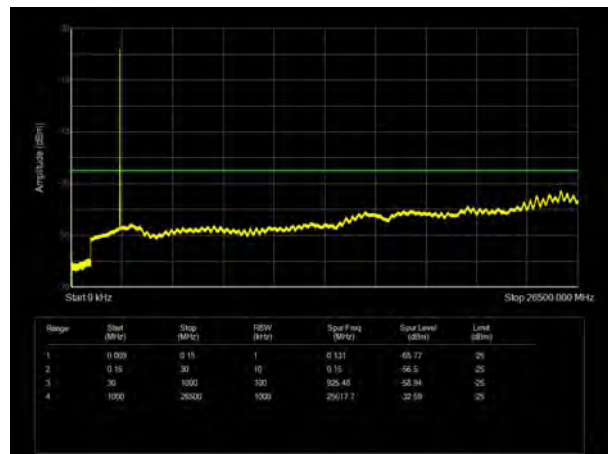
LTE Band 7 10MHz CH-Low 9kHz~26.5GHz



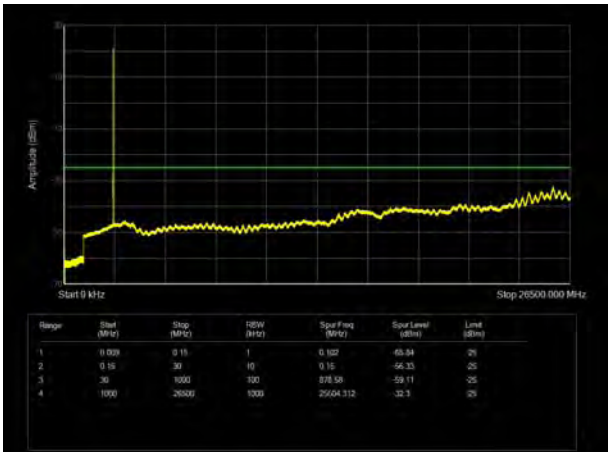
LTE Band 7 5MHz CH- Middle 9kHz~26.5GHz



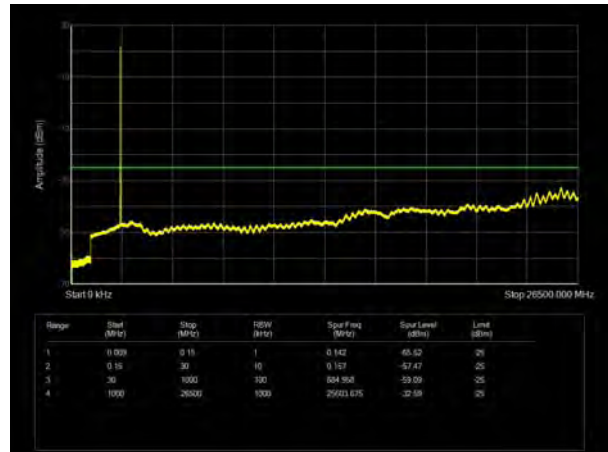
LTE Band 7 10MHz CH- Middle 9kHz~26.5GHz



LTE Band 7 5MHz CH-High 9kHz~26.5GHz

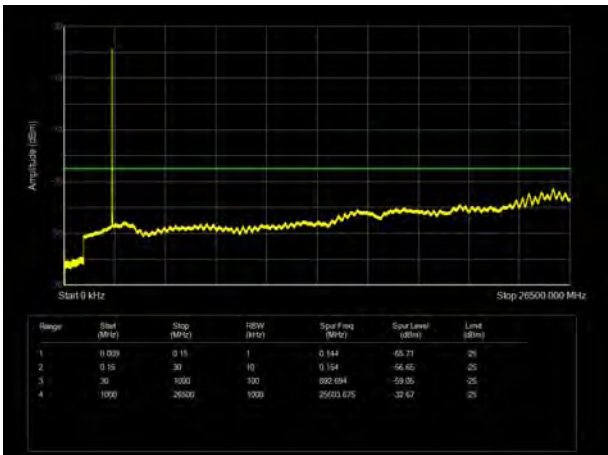


LTE Band 7 10MHz CH- High 9kHz~26.5GHz

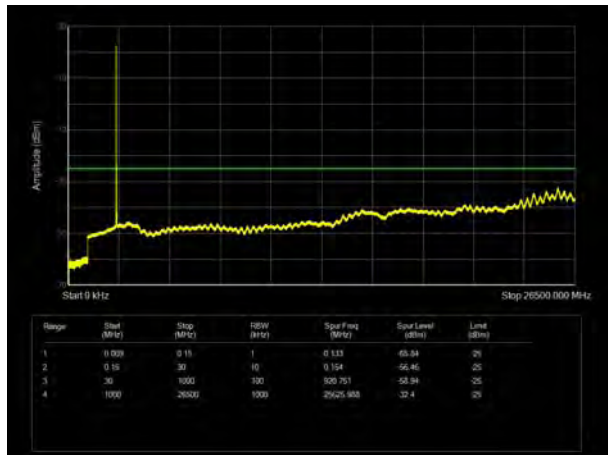




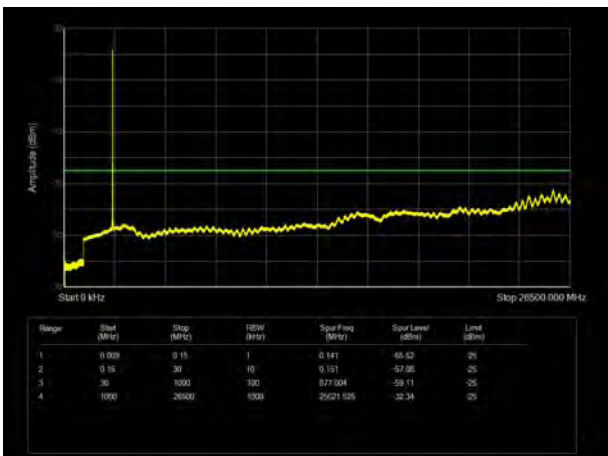
LTE Band 7 15MHz CH- Low 9kHz~26.5GHz



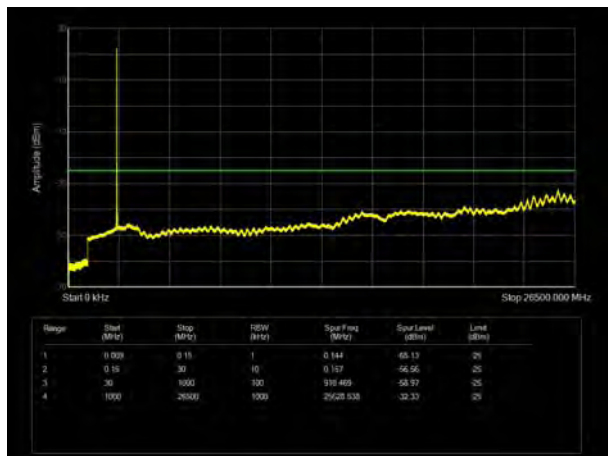
LTE Band 7 20MHz CH-Low 9kHz~26.5GHz



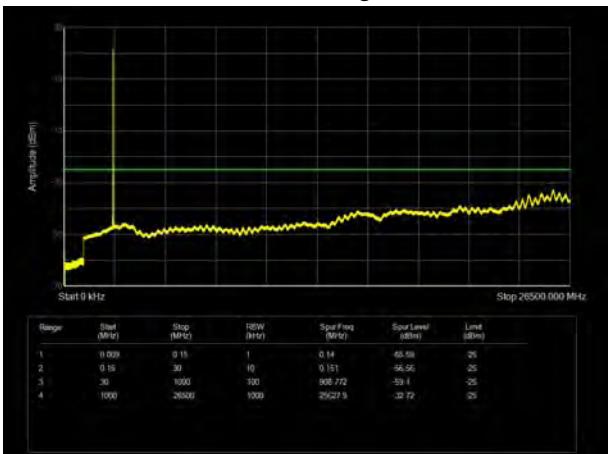
LTE Band 7 15MHz CH- Middle 9kHz~26.5GHz



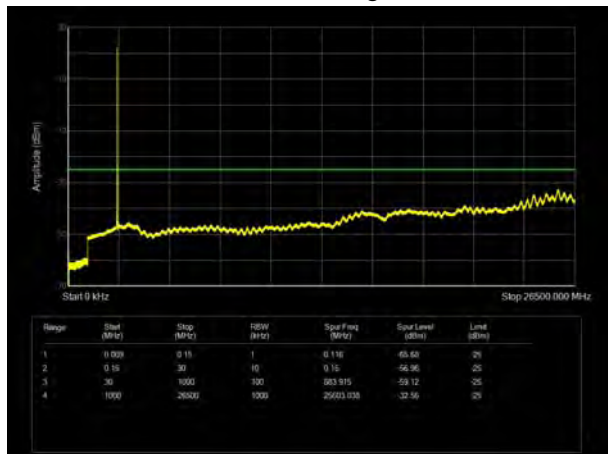
LTE Band 7 20MHz CH- Middle 9kHz~26.5GHz



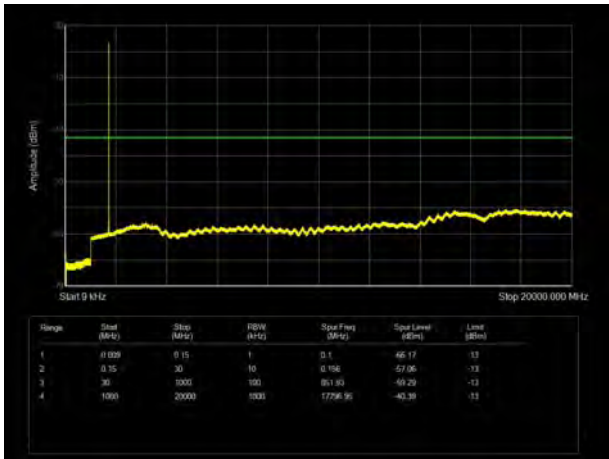
LTE Band 7 15MHz CH-High 9kHz~26.5GHz



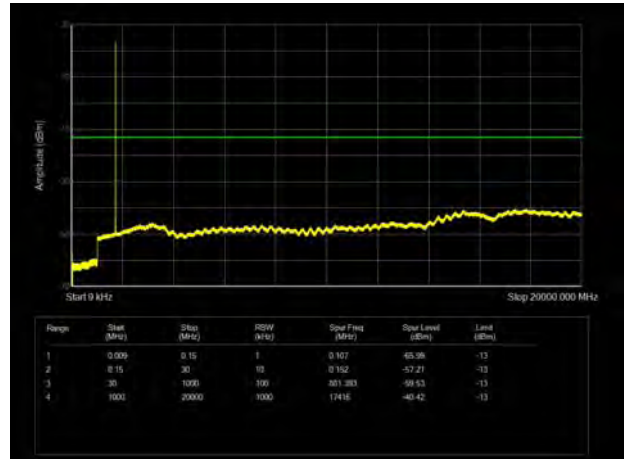
LTE Band 7 20MHz CH- High 9kHz~26.5GHz



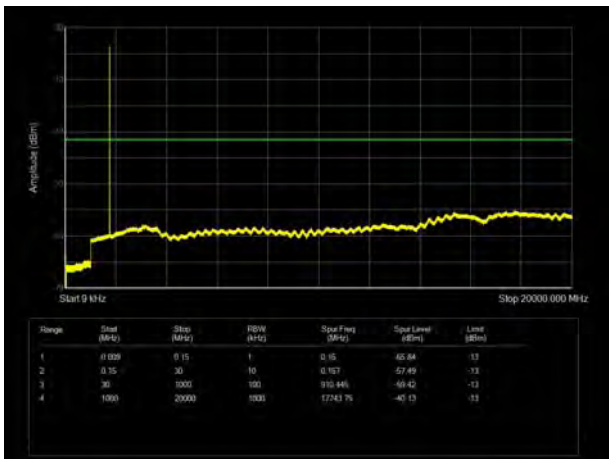
LTE Band 66 1.4MHz CH-Low 9kHz ~20GHz



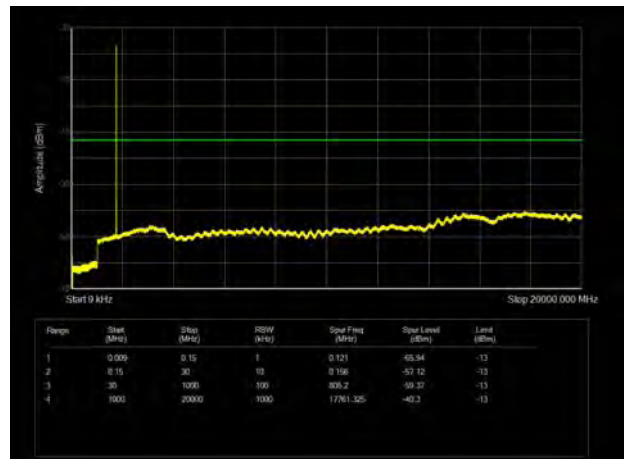
LTE Band 66 3MHz CH-Low 9kHz ~20GHz



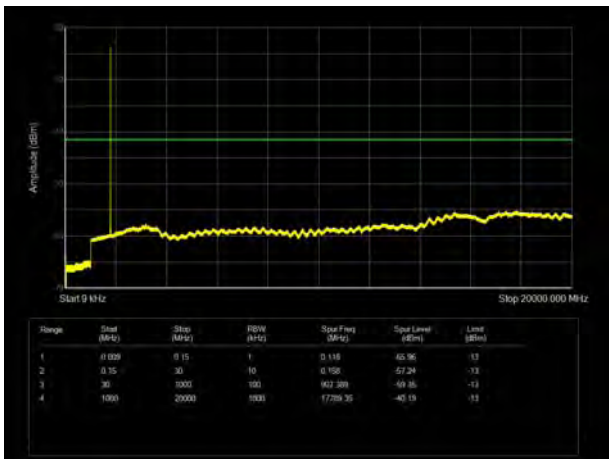
LTE Band 66 1.4MHz CH-Middle 9kHz ~20GHz



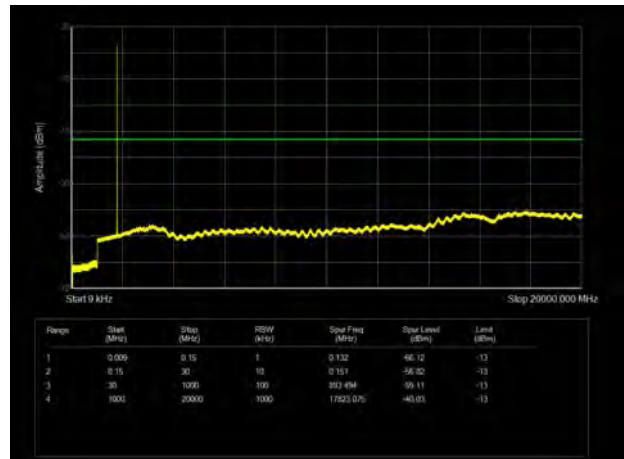
LTE Band 66 3MHz CH-Middle 9kHz ~20GHz



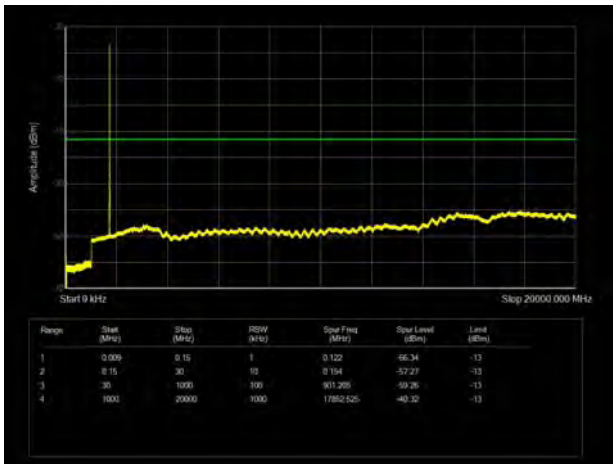
LTE Band 66 1.4MHz CH-High 9kHz ~20GHz



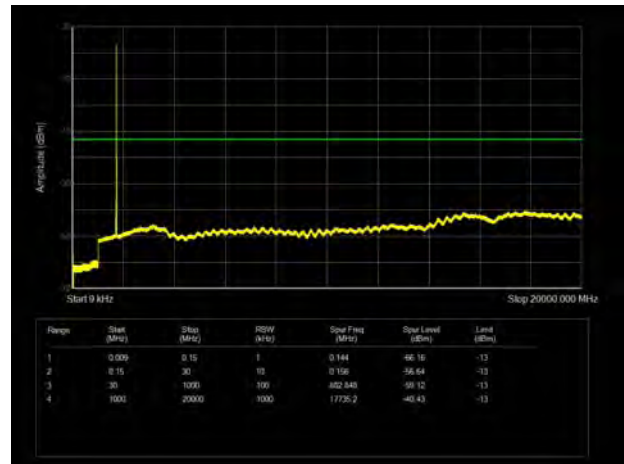
LTE Band 66 3MHz CH-High 9kHz ~20GHz



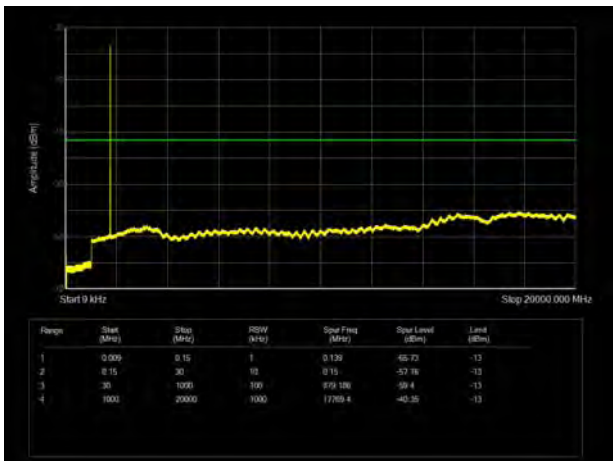
LTE Band 66 5MHz CH-Low 9kHz ~20GHz



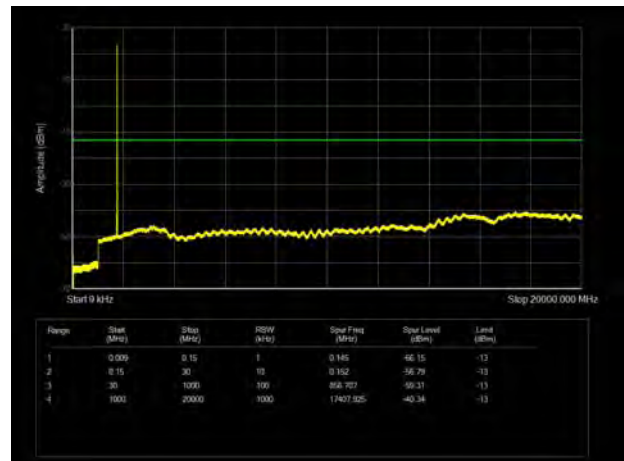
LTE Band 66 10MHz CH-Low 9kHz ~20GHz



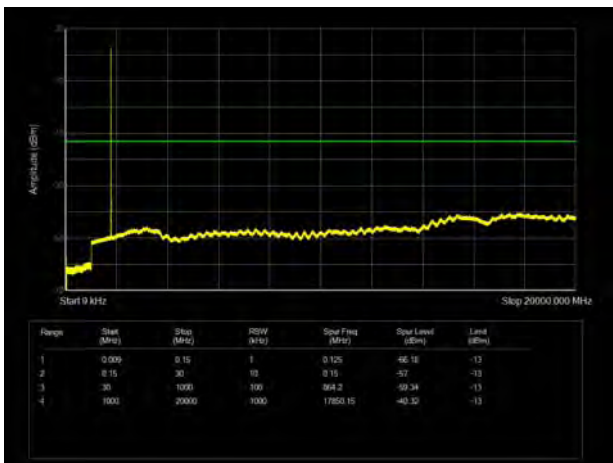
LTE Band 66 5MHz CH-Middle 9kHz ~20GHz



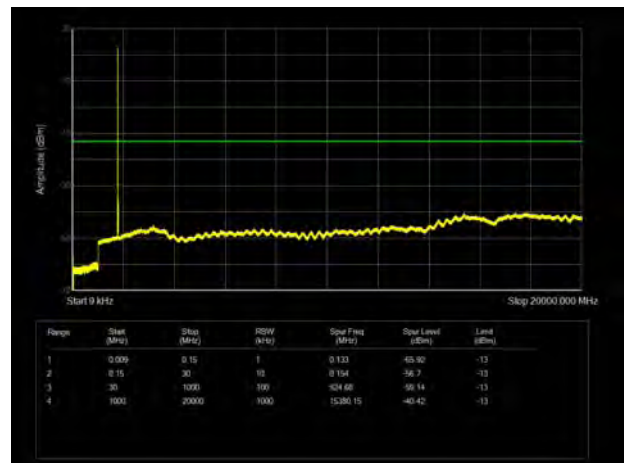
LTE Band 66 10MHz CH-Middle 9kHz ~20GHz



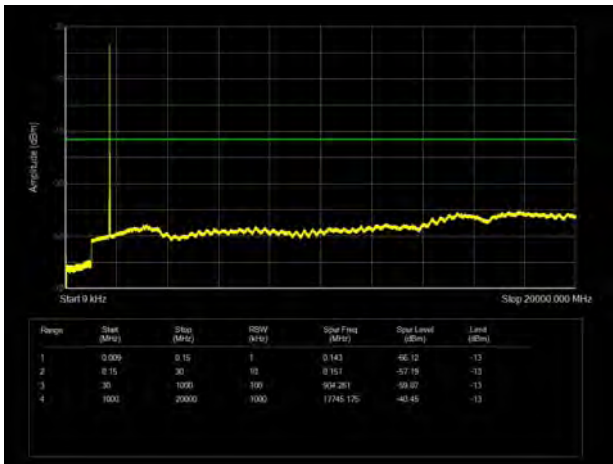
LTE Band 66 5MHz CH-High 9kHz ~20GHz



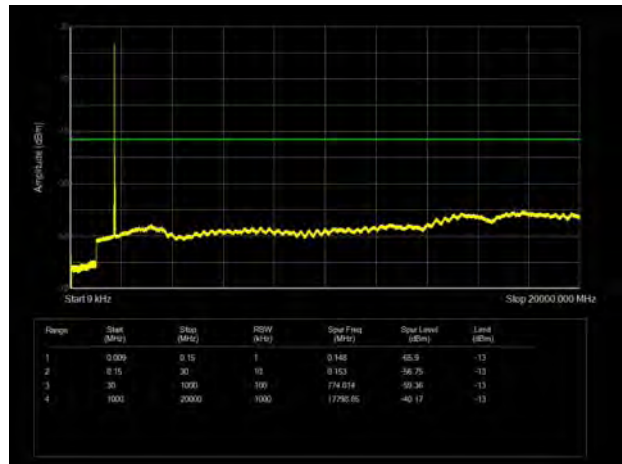
LTE Band 66 10MHz CH-High 9kHz ~20GHz



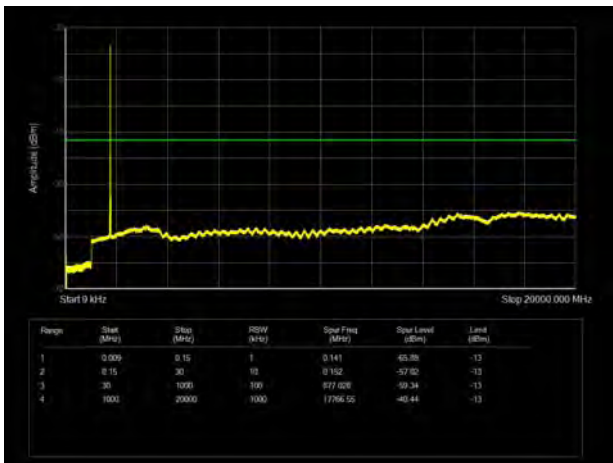
LTE Band 66 15MHz CH-Low 9kHz ~20GHz



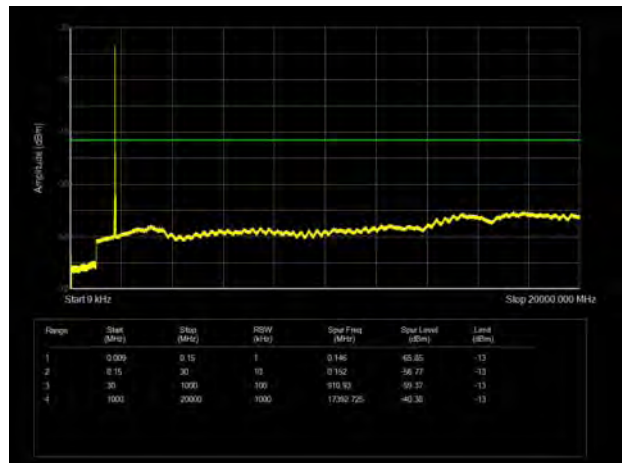
LTE Band 66 20MHz CH-Low 9kHz ~20GHz



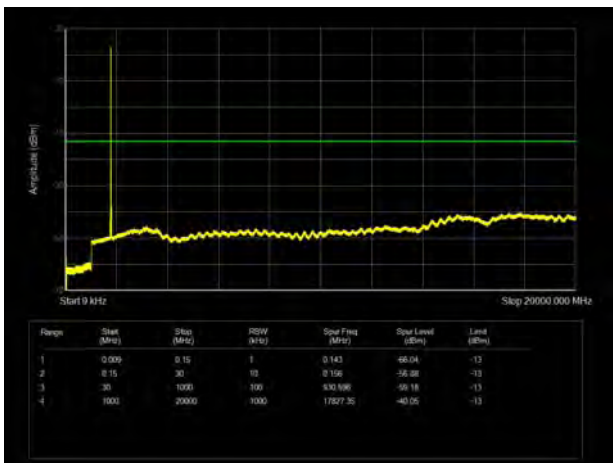
LTE Band 66 15MHz CH-Middle 9kHz ~20GHz



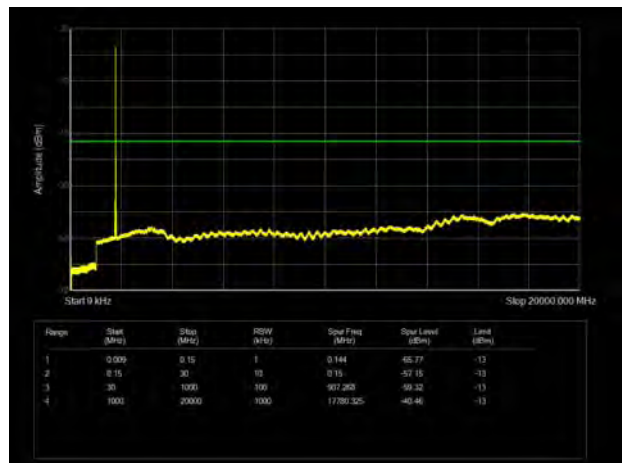
LTE Band 66 20MHz CH-Middle 9kHz ~20GHz



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.

WCDMA Band IV CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.20	-64.57	2.70	12.70	Horizontal	-54.57	-13.00	41.57	164
3	5197.80	-63.02	3.20	12.50	Horizontal	-53.72	-13.00	40.72	91
4	6930.40	-61.19	4.20	11.80	Horizontal	-53.59	-13.00	40.59	22
5	8663.00	-55.35	4.40	12.50	Horizontal	-47.25	-13.00	34.25	108
6	10395.60	-50.73	4.70	11.30	Horizontal	-44.13	-13.00	31.13	263
7	12128.20	-52.12	5.20	13.80	Horizontal	-43.52	-13.00	30.52	225
8	13860.80	-46.99	5.70	11.30	Horizontal	-41.39	-13.00	28.39	138
9	15593.40	-55.86	6.10	16.80	Horizontal	-45.16	-13.00	32.16	146
10	17326.00	-51.47	6.10	14.20	Horizontal	-43.37	-13.00	30.37	17

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 4 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	3463.60	-57.14	2.70	12.70	Horizontal	-47.14	-13.00	34.14	30
3	5195.40	-63.63	3.20	12.50	Horizontal	-54.33	-13.00	41.33	45
4	6927.20	-63.68	4.20	11.80	Horizontal	-56.08	-13.00	43.08	16
5	8659.00	-57.07	4.40	12.50	Horizontal	-48.97	-13.00	35.97	0
6	10390.80	-53.49	4.70	11.30	Horizontal	-46.89	-13.00	33.89	177
7	12122.60	-54.28	5.20	13.80	Horizontal	-45.68	-13.00	32.68	315
8	13854.40	-49.51	5.70	11.30	Horizontal	-43.91	-13.00	30.91	2
9	15586.20	-57.21	6.10	16.80	Horizontal	-46.51	-13.00	33.51	163
10	17318.00	-52.88	6.10	14.20	Horizontal	-44.78	-13.00	31.78	177

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 4 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	3460.00	-57.18	2.70	12.70	Horizontal	-47.18	-13.00	34.18	315
3	5190.00	-62.13	3.20	12.50	Horizontal	-52.83	-13.00	39.83	2
4	6920.00	-63.42	4.20	11.80	Horizontal	-55.82	-13.00	42.82	163
5	8650.00	-57.93	4.40	12.50	Horizontal	-49.83	-13.00	36.83	121
6	10380.00	-53.42	4.70	11.30	Horizontal	-46.82	-13.00	33.82	118
7	12110.00	-54.26	5.20	13.80	Horizontal	-45.66	-13.00	32.66	0
8	13840.00	-49.70	5.70	11.30	Horizontal	-44.10	-13.00	31.10	231
9	15570.00	-57.72	6.10	16.80	Horizontal	-47.02	-13.00	34.02	134
10	17300.00	-51.36	6.10	14.20	Horizontal	-43.26	-13.00	30.26	241

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 4 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	3445.00	-58.68	2.70	12.70	Horizontal	-48.68	-13.00	35.68	97
3	5167.50	-62.87	3.20	12.50	Horizontal	-53.57	-13.00	40.57	90
4	6890.00	-63.16	4.20	11.80	Horizontal	-55.56	-13.00	42.56	132
5	8612.50	-58.19	4.40	12.50	Horizontal	-50.09	-13.00	37.09	271
6	10335.00	-53.42	4.70	11.30	Horizontal	-46.82	-13.00	33.82	240
7	12057.50	-54.44	5.20	13.80	Horizontal	-45.84	-13.00	32.84	140
8	13780.00	-48.88	5.70	11.30	Horizontal	-43.28	-13.00	30.28	270
9	15502.50	-58.10	6.10	16.80	Horizontal	-47.40	-13.00	34.40	136
10	17225.00	-52.30	6.10	14.20	Horizontal	-44.20	-13.00	31.20	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 7 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	5065.80	-61.25	3.40	12.50	Horizontal	-52.15	-25.00	27.15	103
3	7598.60	-58.99	4.40	12.20	Horizontal	-51.19	-25.00	26.19	132
4	10130.63	-54.25	4.70	11.30	Horizontal	-47.65	-25.00	22.65	78
5	12675.00	-52.54	5.40	13.20	Horizontal	-44.74	-25.00	19.74	236
6	15210.00	-51.61	6.10	13.10	Horizontal	-44.61	-25.00	19.61	123
7	17745.00	-50.51	6.10	14.20	Horizontal	-42.41	-25.00	17.41	209
8	20280.00	--	--	--	--	--	--	--	--
9	22815.00	--	--	--	--	--	--	--	--
10	25350.00	--	--	--	--	--	--	--	--

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 7 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	5052.20	-61.22	3.40	12.50	Horizontal	-52.12	-25.00	27.12	315
3	7578.30	-59.01	4.40	12.20	Horizontal	-51.21	-25.00	26.21	124
4	10104.40	-55.44	4.70	11.30	Horizontal	-48.84	-25.00	23.84	180
5	12630.50	-52.19	5.40	13.20	Horizontal	-44.39	-25.00	19.39	58
6	15156.60	-53.84	6.10	13.10	Horizontal	-46.84	-25.00	21.84	96
7	17745.00	-50.90	6.10	14.20	Horizontal	-42.80	-25.00	17.80	114
8	20208.80	--	--	--	--	--	--	--	--
9	22734.90	--	--	--	--	--	--	--	--
10	25261.00	--	--	--	--	--	--	--	--

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	-54.25	2.70	12.70	Horizontal	-44.25	-13.00	31.25	262
3	5232.90	-65.23	3.20	12.50	Horizontal	-55.93	-13.00	42.93	279
4	6977.20	-63.94	4.20	11.80	Horizontal	-56.34	-13.00	43.34	208
5	8721.50	-57.57	4.40	12.50	Horizontal	-49.47	-13.00	36.47	124
6	10465.80	-54.09	4.70	11.80	Horizontal	-46.99	-13.00	33.99	0
7	12210.10	-53.25	5.20	13.80	Horizontal	-44.65	-13.00	31.65	135
8	13954.40	-52.40	5.70	13.20	Horizontal	-44.90	-13.00	31.90	161
9	15698.70	-57.98	6.10	16.80	Horizontal	-47.28	-13.00	34.28	144
10	17443.00	-53.59	6.10	14.20	Horizontal	-45.49	-13.00	32.49	119

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	-55.09	2.70	12.70	Horizontal	-45.09	-13.00	32.09	34
3	5229.00	-62.60	3.20	12.50	Horizontal	-53.30	-13.00	40.30	225
4	6972.00	-63.62	4.20	11.80	Horizontal	-56.02	-13.00	43.02	190
5	8715.00	-57.09	4.40	12.50	Horizontal	-48.99	-13.00	35.99	0
6	10458.00	-53.75	4.70	11.80	Horizontal	-46.65	-13.00	33.65	315
7	12201.00	-52.93	5.20	13.80	Horizontal	-44.33	-13.00	31.33	315
8	13944.00	-51.58	5.70	13.20	Horizontal	-44.08	-13.00	31.08	304
9	15687.00	-57.37	6.10	16.80	Horizontal	-46.67	-13.00	33.67	286
10	17430.00	-54.18	6.10	14.20	Horizontal	-46.08	-13.00	33.08	119

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	3472.88	-56.47	2.70	12.70	Horizontal	-46.47	-13.00	33.47	147
3	5209.00	-62.23	3.20	12.50	Horizontal	-52.93	-13.00	39.93	225
4	6945.75	-62.74	4.20	11.80	Horizontal	-55.14	-13.00	42.14	243
5	8682.00	-57.69	4.40	12.50	Horizontal	-49.59	-13.00	36.59	220
6	10418.63	-53.22	4.70	11.80	Horizontal	-46.12	-13.00	33.12	118
7	12455.00	-55.84	5.20	13.80	Horizontal	-47.24	-13.00	34.24	35
8	13891.50	-52.16	5.70	13.20	Horizontal	-44.66	-13.00	31.66	302
9	15627.00	-57.78	6.10	16.80	Horizontal	-47.08	-13.00	34.08	78
10	17364.38	-53.85	6.10	14.20	Horizontal	-45.75	-13.00	32.75	160

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
Climate Chamber	WEISS	VT 4002	58226119450010	2023-05-12	2024-05-11
Wireless Communication Tester	R&S	CMW500	150415	2023-05-12	2024-05-11
Spectrum Analyzer	Keysight	N9020A	MY50510203	2023-05-12	2024-05-11
DC Power Supply	UNI-T	UTP1310+	C220795889	2023-05-12	2024-05-11
Signal Analyzer	R&S	FSV30	100815	2022-12-10	2023-12-09
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2023-04-16	2026-04-15
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	01439	2021-06-30	2024-06-29
Horn Antenna	Schwarzbeck	BBHA 9120D	01799	2022-09-01	2025-08-31
Horn Antenna	ETS-Lindgren	3160-09	00102643	2021-10-10	2024-10-09
Software	R&S	EMC32	10.35.10	/	/

## ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.

## ANNEX B: Test Setup Photos

The Test Setup Photos are submitted separately.

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