



# RF TEST REPORT

**Applicant** ZTE Corporation  
**FCC ID** SRQ-WF820E  
**Product** LTE CPE  
**Model** WF820+  
**Report No.** RXA1707-0212RF02R1  
**Issue Date** August 25, 2017

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2017)/ FCC CFR47 Part 27C (2017)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

*Jiang peng Lan*

*Performed by: Jiangpeng Lan*

*Kai Xu*

*Approved by: Kai Xu*

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**TA Technology (Shanghai) Co., Ltd.**

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

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

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

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## Summary of Measurement Results

Number	Test Case	Clause in FCC rules	Verdict
1	RF power output	2.1046	PASS
2	Effective Isotropic Radiated power	27.50(h)(2)	PASS
3	Occupied Bandwidth	2.1049	PASS
4	Band Edge Compliance	27.53(m)	PASS
5	Peak-to-Average Power Ratio	27.50(d)/KDB971168 D01(5.7)	PASS
6	Frequency Stability	2.1055 / 27.54	PASS
7	Spurious Emissions at Antenna Terminals	2.1051 /27.53(m)	PASS
8	Radiates Spurious Emission	2.1053 /27.53(m)	PASS
Date of Testing: July 8, 2017~ July 13, 2017			
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.			

# 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. This report must not be used by the client to claim product certification, approval, or endorsement by any government agencies.

## 1.2 Test facility

### **CNAS (accreditation number: L2264)**

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS).

### **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 electromagnetic emissions measurements.

### **IC (recognition number is 8510A)**

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement.

### **VCCI (recognition number is C-4595, T-2154, R-4113, G-10766)**

TA Technology (Shanghai) Co., Ltd. has been listed by industry Japan to perform electromagnetic emission measurement.

### **A2LA (Certificate Number: 3857.01)**

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

### 1.3 Testing Location

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

## 2 General Description of Equipment under Test

### Client Information

<b>Applicant</b>	ZTE Corporation
<b>Applicant address</b>	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, P.R.China
<b>Manufacturer</b>	ZTE Corporation
<b>Manufacturer address</b>	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, P.R.China

### General information

EUT Description			
Model:	WF820+		
HW Version:	V2.0		
SW Version:	4.2.2.0-30436-BYPASS-1.1.1		
Power Supply:	AC adapter		
Antenna Type:	Internal Antenna		
Test Mode(s):	LTE Band 7; LTE Band 41;		
LTE Category	4		
Maximum E.I.R.P.	LTE Band 7:	28.83dBm	
	LTE Band 41:	32.33dBm	
Rated Power Supply Voltage:	12V		
Extreme Voltage:	Minimum:9V Maximum: 15V		
Extreme Temperature:	Lowest: -10°C Highest: +45°C		
Operating Frequency Range(s)	Mode	Tx (MHz)	Rx (MHz)
	LTE Band 7	2500 ~ 2570	2620 ~ 2690
	LTE Band 41	2496 ~ 2690	2496 ~ 2690
Note: 1. The information of the EUT is declared by the manufacturer.			

Accessory equipment	
Adapter	Manufacturer: RUIDE Model: RD1201500-C55-1MG
POE Passive Injector	Model: GRT-HCQ (Not sold with EUT)

## **2.1 Applied Standards**

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

### **Test standards**

**FCC CFR47 Part 2 (2017)**

**FCC CFR47 Part 27C (2017)**

**ANSI C63.26 (2015)**

**KDB 971168 D01 Power Meas License Digital Systems v02r02**

### 3 Test Configuration

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

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

Subsequently, only the worst case emissions are reported.

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

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

Test modes are chosen to be reported as the worst case configuration below for LTE Band 7/41:

Test items	Modes	Bandwidth (MHz)				Modulation		RB			Test Channel		
		5	10	15	20	QPSK	16QAM	1	50%	100%	L	M	H
RF power output	LTE 7	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 41	O	O	O	O	O	O	O	O	O	O	O	O
Effective Isotropic Radiated power	LTE 7	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 41	O	O	O	O	O	O	-	-	O	O	O	O
Occupied Bandwidth	LTE 7	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 41	O	O	O	O	O	O	-	-	O	O	O	O
Band Edge Compliance	LTE 7	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 41	O	O	O	O	O	O	O	-	O	O	-	O
Peak-to-Average Power Ratio	LTE 7	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 41	O	O	O	O	O	O	-	-	O	O	O	O
Frequency Stability	LTE 7	O	O	O	O	O	O	-	-	O	-	O	-
	LTE 41	O	O	O	O	O	O	-	-	O	-	O	-
Spurious Emissions at Antenna Terminals	LTE 7	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 41	O	O	O	O	O	-	O	-	-	O	O	O
Radiates Spurious Emission	LTE 7	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 41	O	O	O	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.												



## 4 Test Information

### 4.1 RF Power Output

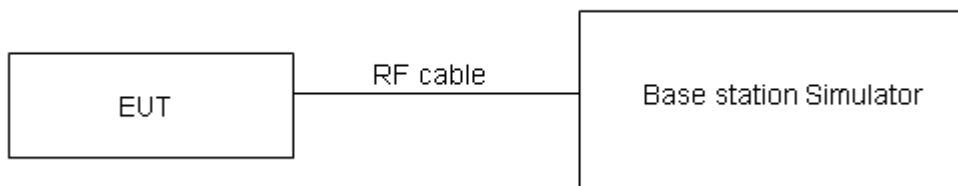
#### Ambient condition

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

#### Methods of Measurement

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

#### Test Setup



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

#### Limits

No specific RF power output requirements in part 2.1046.

#### Measurement Uncertainty

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

**Test Results**

LTE FDD Band 7				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20775/2502.5	21100/2535	21425/2567.5
5MHz	QPSK	1	0	21.70	21.80	22.57
		1	13	22.57	21.07	21.62
		1	24	22.54	22.29	21.80
		12	0	22.16	21.12	22.04
		12	6	22.29	21.06	21.67
		12	13	22.55	21.56	21.52
		25	0	22.31	21.24	21.82
	16QAM	1	0	21.76	22.14	22.84
		1	13	22.42	21.44	22.05
		1	24	22.60	22.82	22.16
		12	0	22.09	21.20	22.05
		12	6	22.23	21.09	21.63
		12	13	22.34	21.59	21.50
		25	0	22.16	21.23	21.87
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20800/2505	21100/2535	21400/2565
10MHz	QPSK	1	0	21.72	21.81	22.60
		1	25	22.60	21.12	21.66
		1	49	22.56	22.33	21.83
		25	0	22.19	21.17	22.08
		25	13	22.32	21.11	21.71
		25	25	22.57	21.60	21.57
		50	0	22.39	21.26	21.86
	16QAM	1	0	21.78	22.17	22.86
		1	25	22.45	21.48	22.08
		1	49	22.63	22.84	22.19
		25	0	22.12	21.25	22.09
		25	13	22.25	21.13	21.66
		25	25	22.37	21.64	21.54
		50	0	22.19	21.28	21.91
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20825/2507.5	21100/2535	21375/2562.5
15MHz	QPSK	1	0	21.71	21.77	22.58
		1	38	22.58	21.11	21.63
		1	74	22.53	22.28	21.79
		36	0	22.17	21.13	22.05
		36	18	22.29	21.06	21.67
		36	39	22.54	21.57	21.53
		75	0	22.37	21.22	21.81



Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20850/2510	21100/2535	21350/2560
20MHz	16QAM	1	0	21.73	22.15	22.84
		1	38	22.43	21.45	22.06
		1	74	22.60	22.80	22.16
		36	0	22.09	21.23	22.06
		36	18	22.22	21.08	21.62
		36	39	22.35	21.60	21.51
		75	0	22.16	21.23	21.87
	QPSK	1	0	21.68	21.73	22.55
		1	50	22.57	21.07	21.61
		1	99	22.51	22.27	21.76
		50	0	22.14	21.08	22.01
		50	25	22.27	21.02	21.64
		50	50	22.51	21.52	21.49
		100	0	22.34	21.17	21.77
16QAM	1	0	21.71	22.11	22.79	
	1	50	22.39	21.43	22.02	
	1	99	22.58	22.77	22.14	
	50	0	22.06	21.19	22.03	
	50	25	22.19	21.06	21.59	
	50	50	22.32	21.55	21.47	
	100	0	22.14	21.19	21.84	

LTE TDD Band 41				AV Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				39675/2498.5	40620/2593	41565/2687.5
5MHz	QPSK	1	0	21.48	22.76	22.95
		1	13	21.03	22.55	22.47
		1	24	21.51	22.96	22.85
		12	0	21.18	22.44	22.63
		12	6	21.11	22.49	22.39
		12	13	21.30	22.67	22.38
		25	0	21.16	22.55	22.44
	16QAM	1	0	21.46	22.59	23.07
		1	13	21.04	22.37	22.78
		1	24	21.49	22.93	23.15
		12	0	21.19	22.39	22.56
		12	6	21.16	22.54	22.49
		12	13	21.14	22.63	22.49
		25	0	21.13	22.56	22.59

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				39700/2501	40620/2593	41540/2685
10MHz	QPSK	1	0	21.50	22.77	22.98
		1	25	21.06	22.60	22.51
		1	49	21.53	23.00	22.88
		25	0	21.21	22.49	22.67
		25	13	21.14	22.54	22.43
		25	25	21.32	22.71	22.43
		50	0	21.24	22.57	22.48
	16QAM	1	0	21.48	22.62	23.09
		1	25	21.07	22.41	22.81
		1	49	21.52	22.95	23.18
		25	0	21.22	22.44	22.60
		25	13	21.18	22.58	22.52
		25	25	21.17	22.68	22.53
		50	0	21.16	22.61	22.63
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				39725/2503.5	40620/2593	41515/2682.5
15MHz	QPSK	1	0	21.49	22.73	22.96
		1	38	21.04	22.59	22.48
		1	74	21.50	22.95	22.84
		36	0	21.19	22.45	22.64
		36	18	21.11	22.49	22.39
		36	39	21.29	22.68	22.39
		75	0	21.22	22.53	22.43
	16QAM	1	0	21.43	22.60	23.07
		1	38	21.05	22.38	22.79
		1	74	21.49	22.91	23.15
		36	0	21.19	22.42	22.57
		36	18	21.15	22.53	22.48
		36	39	21.15	22.64	22.50
		75	0	21.13	22.56	22.59
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				39750/2506	40620/2593	41490/2680
20MHz	QPSK	1	0	21.46	22.69	22.93
		1	50	21.03	22.55	22.46
		1	99	21.48	22.94	22.81
		50	0	21.16	22.40	22.60
		50	25	21.09	22.45	22.36



		50	50	21.26	22.63	22.35
		100	0	21.19	22.48	22.39
	16QAM	1	0	21.41	22.56	23.02
		1	50	21.01	22.36	22.75
		1	99	21.47	22.88	23.13
		50	0	21.16	22.38	22.54
		50	25	21.12	22.51	22.45
		50	50	21.12	22.59	22.46
		100	0	21.11	22.52	22.56

## 4.2 Effective Isotropic Radiated Power

### Ambient condition

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

### Methods of Measurement

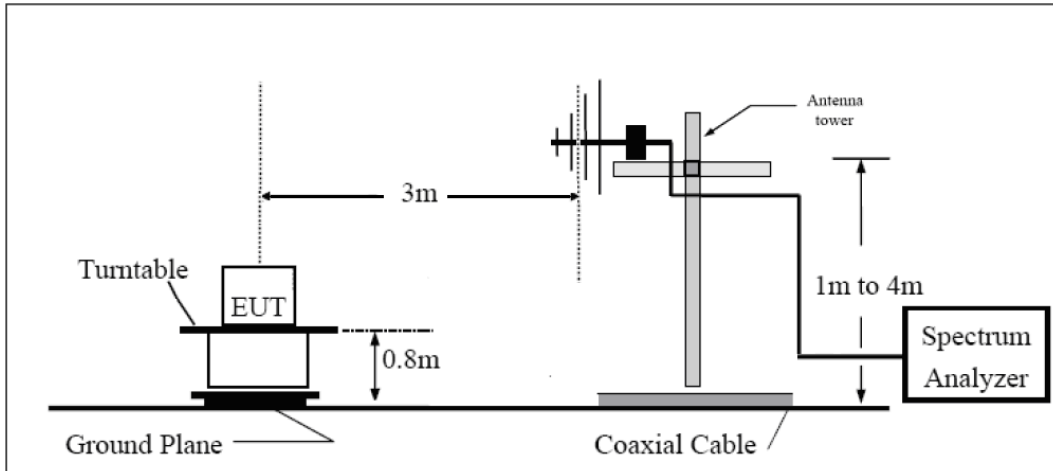
- The testing follows ANSI C63.26 (2015) Section 5.5.2.3.
- Above 30MHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the 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 log-periodic antenna or double-ridged waveguide 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=1MHz, VBW=3MHz, 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:  

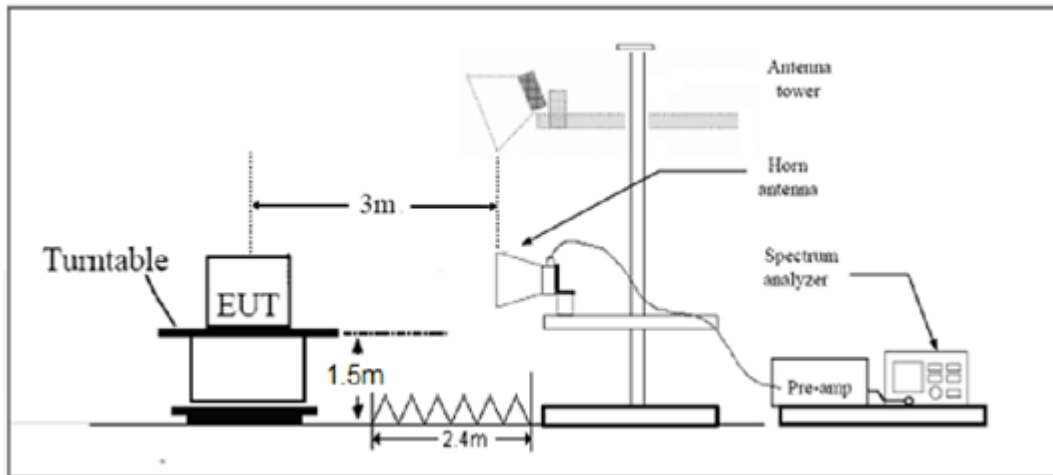
$$\text{Power(EIRP)} = \text{PMea} - \text{Pcl} + \text{Ga}$$
- This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole,  $\text{ERP} = \text{EIRP} - 2.15\text{dBi}$ .

**Test setup**

**30MHz~~~ 1GHz**



**Above 1GHz**



Note: Area side:2.4mX3.6m

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.

**Limits**

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(h)(2) Limit (EIRP)	$\leq 2 \text{ W}$ (33 dBm)
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**Measurement Uncertainty**

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



**Test Results**

LTE Band 7								
Band width	Ant Pot (H/V)	Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	Conclusion
5 MHz (QPSK)	H	2502.5	-35.45	-59.64	0.00	1.81	26.00	Pass
	H	2535	-35.86	-59.72	0.00	1.81	25.67	Pass
	H	2567.5	-37.02	-59.98	0.00	1.83	24.79	Pass
	V	2502.5	-33.95	-59.31	0.00	1.81	27.17	Pass
	V	2535	-34.66	-59.11	0.00	1.81	26.26	Pass
	V	2567.5	-36.11	-59.59	0.00	1.83	25.31	Pass
10 MHz (QPSK)	H	2505	-35.75	-59.64	0.00	1.81	25.70	Pass
	H	2535	-36.18	-59.72	0.00	1.81	25.35	Pass
	H	2565	-37.36	-59.98	0.00	1.83	24.45	Pass
	V	2505	-34.26	-59.31	0.00	1.81	26.86	Pass
	V	2535	-34.97	-59.11	0.00	1.81	25.95	Pass
	V	2565	-36.42	-59.59	0.00	1.83	25.00	Pass
15 MHz (QPSK)	H	2507.5	-36.60	-59.61	0.00	1.82	24.83	Pass
	H	2535	-35.58	-59.72	0.00	1.81	25.95	Pass
	H	2562.5	-37.22	-60.02	0.00	1.81	24.61	Pass
	V	2507.5	-37.06	-59.33	0.00	1.82	24.09	Pass
	V	2535	-34.52	-59.11	0.00	1.81	26.40	Pass
	V	2562.5	-36.37	-59.59	0.00	1.81	25.03	Pass
20 MHz (QPSK)	H	2510	-36.91	-59.61	0.00	1.82	24.52	Pass
	H	2535	-35.91	-59.72	0.00	1.81	25.62	Pass
	H	2560	-37.52	-60.02	0.00	1.81	24.31	Pass
	V	2510	-37.40	-59.33	0.00	1.82	23.75	Pass
	V	2535	-34.82	-59.11	0.00	1.81	26.10	Pass
	V	2560	-36.68	-59.59	0.00	1.81	24.72	Pass
5 MHz (16QAM)	H	2502.5	-34.48	-59.71	0.00	1.80	27.03	Pass
	H	2535	-36.23	-59.72	0.00	1.81	25.30	Pass
	H	2567.5	-37.41	-60.08	0.00	1.82	24.49	Pass
	V	2502.5	-34.84	-59.29	0.00	1.80	26.25	Pass
	V	2535	-35.77	-59.72	0.00	1.81	25.76	Pass
	V	2567.5	-36.22	-59.46	0.00	1.82	25.06	Pass
10 MHz (16QAM)	H	2505	-34.81	-59.71	0.00	1.80	26.70	Pass
	H	2535	-36.53	-59.72	0.00	1.81	25.00	Pass
	H	2565	-37.72	-60.08	0.00	1.82	24.18	Pass
	V	2505	-35.14	-59.29	0.00	1.80	25.95	Pass
	V	2535	-36.08	-59.72	0.00	1.81	25.45	Pass
	V	2565	-36.53	-59.46	0.00	1.82	24.75	Pass
15 MHz (16QAM)	H	2507.5	-32.46	-59.52	0.00	1.77	28.83	Pass
	H	2535	-34.28	-59.72	0.00	1.81	27.25	Pass
	H	2562.5	-34.86	-60.01	0.00	1.82	26.97	Pass



	V	2507.5	-32.85	-59.09	0.00	1.77	28.01	Pass
	V	2535	-34.01	-59.72	0.00	1.81	27.52	Pass
	V	2562.5	-33.78	-59.52	0.00	1.82	27.56	Pass
<b>20 MHz (16QAM)</b>	H	2510	-32.77	-59.52	0.00	1.77	28.52	Pass
	H	2535	-34.58	-59.72	0.00	1.81	26.95	Pass
	H	2560	-35.18	-60.01	0.00	1.82	26.65	Pass
	V	2510	-33.16	-59.09	0.00	1.77	27.70	Pass
	V	2535	-34.31	-59.72	0.00	1.81	27.22	Pass
	V	2560	-34.13	-59.52	0.00	1.82	27.21	Pass

LTE Band 41								
Band width	Ant Pot (H/V)	Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	Conclusion
<b>5 MHz (QPSK)</b>	H	2498.5	-38.91	-61.07	0.00	1.80	31.89	Pass
	H	2593	-40.05	-62.08	0.00	1.85	30.12	Pass
	H	2687.5	-44.07	-63.61	0.00	2.00	30.01	Pass
	V	2498.5	-39.25	-60.85	0.00	1.80	30.12	Pass
	V	2593	-42.67	-62.08	0.00	1.85	30.44	Pass
	V	2687.5	-48.98	-64.28	0.00	2.00	28.97	Pass
<b>10 MHz (QPSK)</b>	H	2501	-62.87	-61.07	0.00	1.80	31.55	Pass
	H	2593	-63.93	-62.08	0.00	1.85	29.80	Pass
	H	2685	-65.61	-63.61	0.00	2.00	29.70	Pass
	V	2501	-62.65	-60.85	0.00	1.80	29.81	Pass
	V	2593	-63.93	-62.08	0.00	1.85	30.12	Pass
	V	2685	-66.28	-64.28	0.00	2.00	28.66	Pass
<b>15 MHz (QPSK)</b>	H	2503.5	-38.40	-61.08	0.00	1.81	30.73	Pass
	H	2593	-40.05	-62.08	0.00	1.85	24.80	Pass
	H	2682.5	-43.40	-63.56	0.00	1.99	30.27	Pass
	V	2503.5	-38.85	-60.90	0.00	1.81	21.61	Pass
	V	2593	-42.94	-62.08	0.00	1.85	26.57	Pass
	V	2682.5	-48.51	-64.37	0.00	1.99	21.58	Pass
<b>20 MHz (QPSK)</b>	H	2506	-62.89	-61.08	0.00	1.81	30.42	Pass
	H	2593	-63.93	-62.08	0.00	1.85	24.50	Pass
	H	2680	-65.55	-63.56	0.00	1.99	29.95	Pass
	V	2506	-62.71	-60.90	0.00	1.81	21.30	Pass
	V	2593	-63.93	-62.08	0.00	1.85	26.25	Pass
	V	2680	-66.36	-64.37	0.00	1.99	21.27	Pass
<b>5 MHz (16QAM)</b>	H	2498.5	-38.46	-61.13	0.00	1.82	30.70	Pass
	H	2593	-39.51	-62.08	0.00	1.85	28.67	Pass
	H	2687.5	-43.80	-63.50	0.00	2.00	24.32	Pass
	V	2498.5	-39.13	-60.93	0.00	1.82	18.06	Pass

	V	2593	-42.08	-62.08	0.00	1.85	29.45	Pass
	V	2687.5	-48.81	-64.41	0.00	2.00	21.18	Pass
<b>10 MHz (16QAM)</b>	H	2501	-62.95	-61.13	0.00	1.82	30.40	Pass
	H	2593	-63.93	-62.08	0.00	1.85	28.35	Pass
	H	2685	-65.50	-63.50	0.00	2.00	24.00	Pass
	V	2501	-62.75	-60.93	0.00	1.82	17.75	Pass
	V	2593	-63.93	-62.08	0.00	1.85	29.15	Pass
	V	2685	-66.41	-64.41	0.00	2.00	20.88	Pass
<b>15 MHz (16QAM)</b>	H	2503.5	-38.40	-61.14	0.00	1.81	32.33	Pass
	H	2593	-39.71	-62.08	0.00	1.85	32.09	Pass
	H	2682.5	-43.52	-63.56	0.00	1.80	26.60	Pass
	V	2503.5	-39.13	-60.93	0.00	1.81	19.74	Pass
	V	2593	-42.44	-62.08	0.00	1.85	19.31	Pass
	V	2682.5	-48.58	-64.34	0.00	1.80	20.88	Pass
<b>20 MHz (16QAM)</b>	H	2506	-62.95	-61.14	0.00	1.81	32.01	Pass
	H	2593	-63.93	-62.08	0.00	1.85	31.78	Pass
	H	2680	-65.36	-63.56	0.00	1.80	26.30	Pass
	V	2506	-62.74	-60.93	0.00	1.81	19.41	Pass
	V	2593	-63.93	-62.08	0.00	1.85	19.00	Pass
	V	2680	-66.14	-64.34	0.00	1.80	20.55	Pass

### 4.3 Occupied Bandwidth

#### Ambient condition

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

#### Method of Measurement

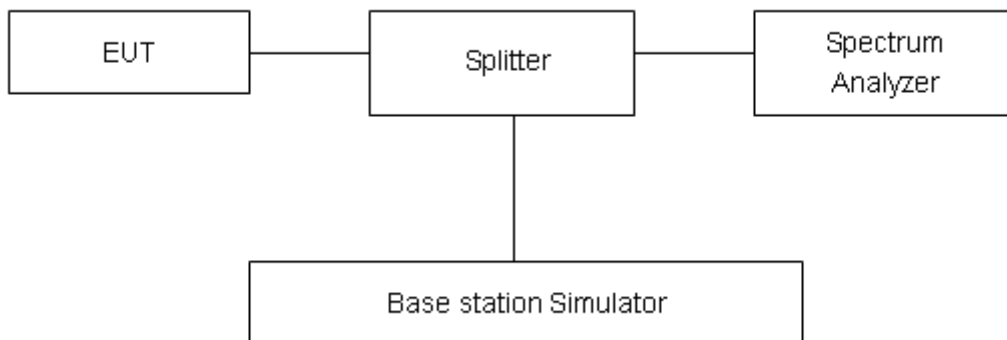
The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The occupied bandwidth is measured using spectrum analyzer.

RBW is set to 100 kHz, VBW is set to 300 kHz for LTE Band 7/41 (5MHz).

RBW is set to 300 kHz, VBW is set to 1MHz for LTE Band 7/41 (10MHz/15MHz/20MHz).

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

#### Test Setup



#### Limits

No specific occupied bandwidth requirements in part 2.1049.

#### Measurement Uncertainty

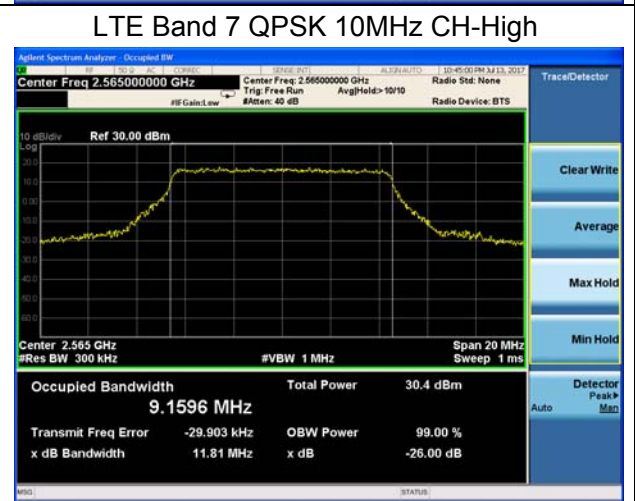
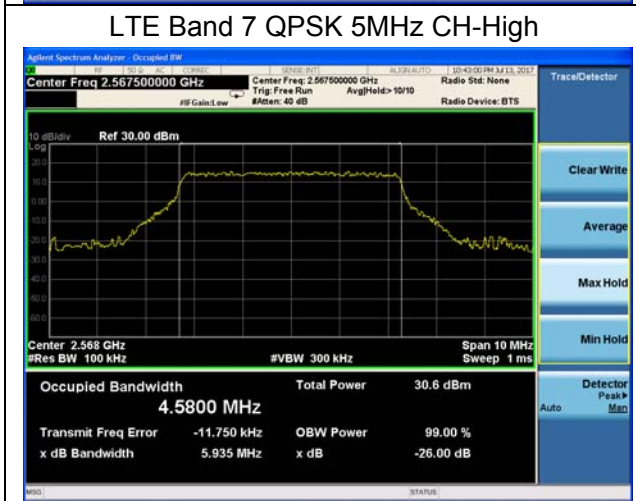
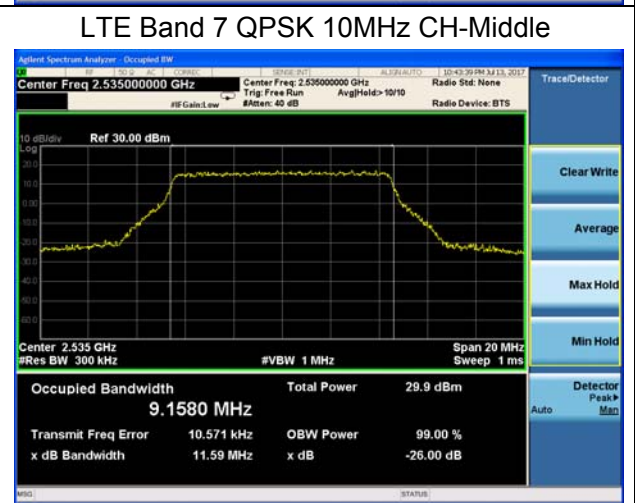
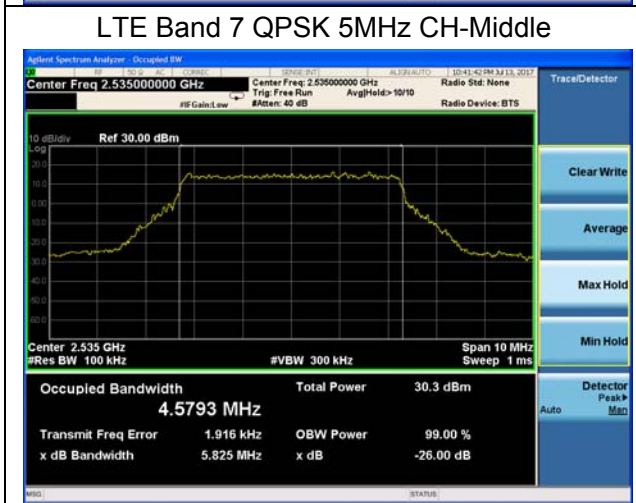
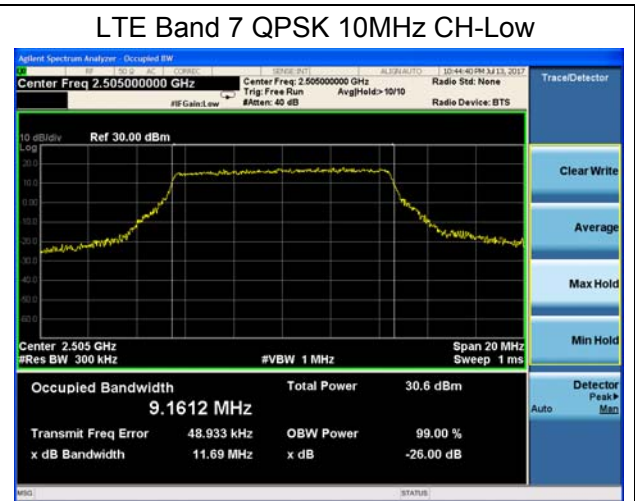
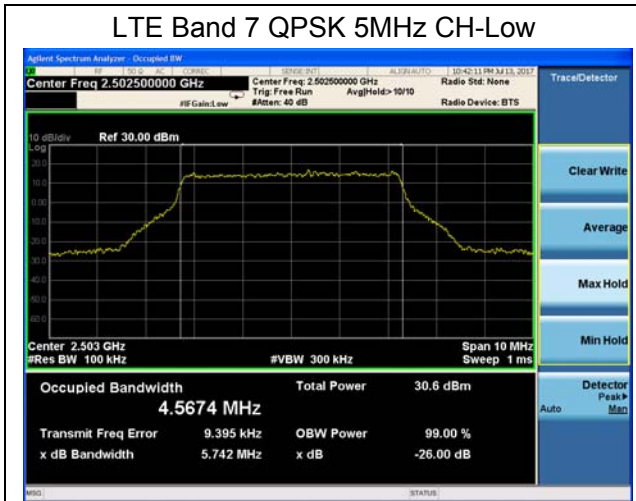
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 2$ ,  $U=624\text{Hz}$ .

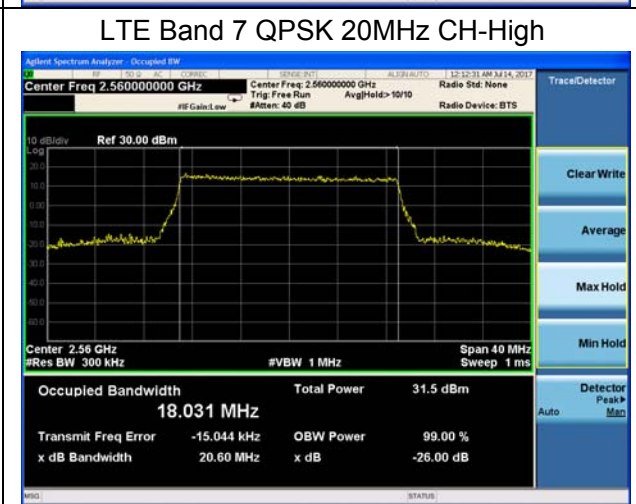
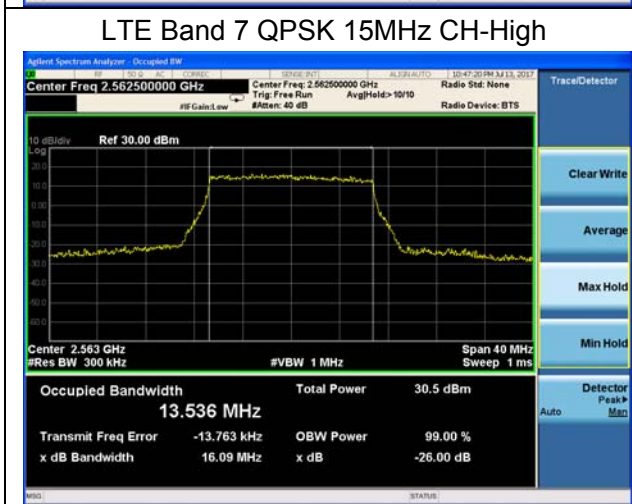
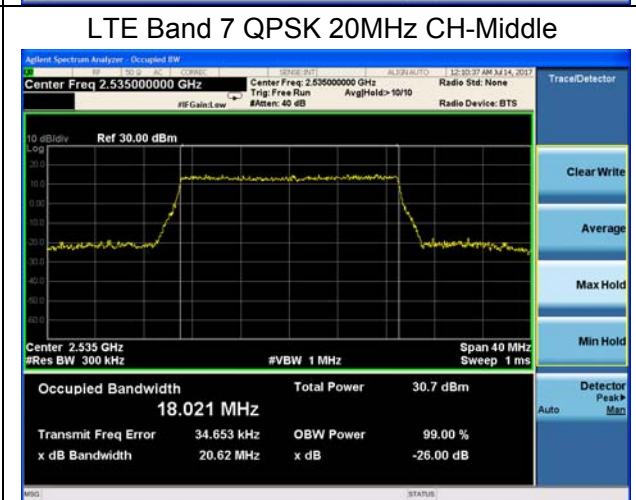
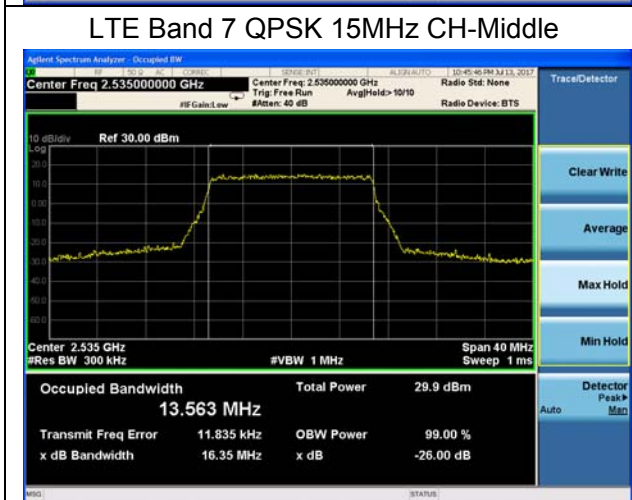
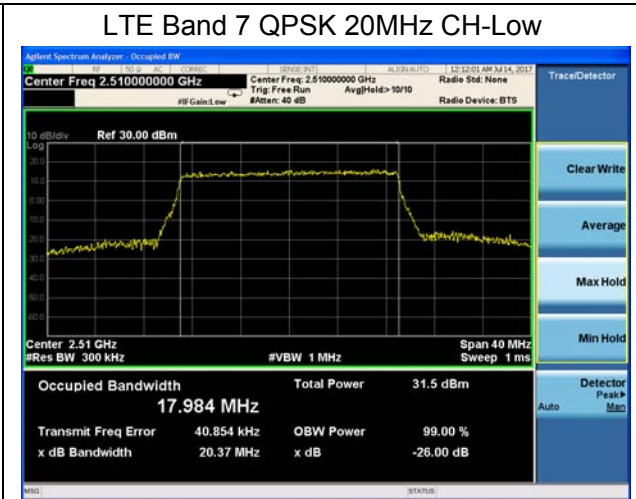
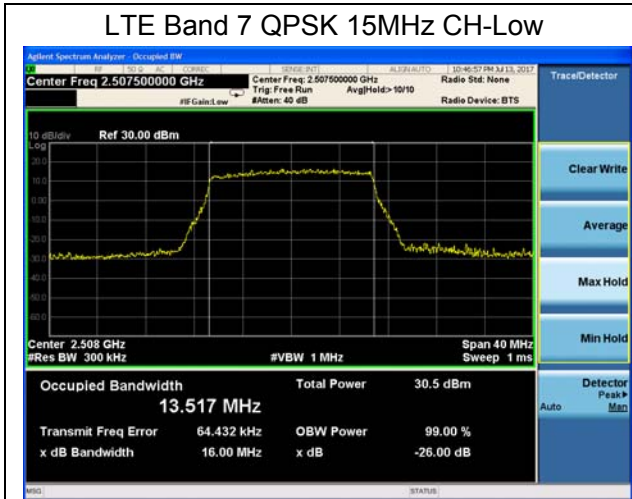


## Test Result

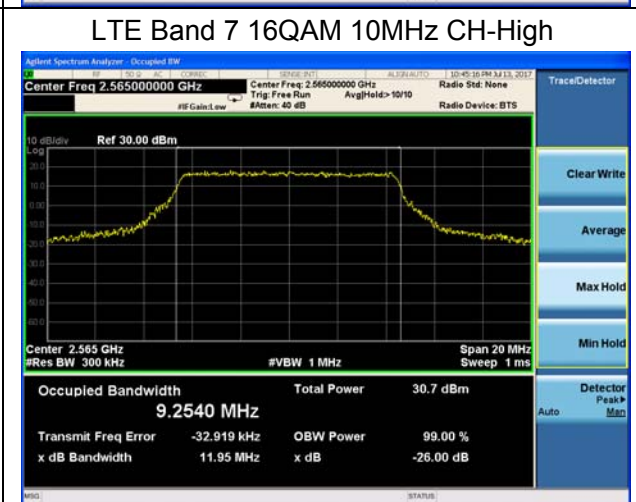
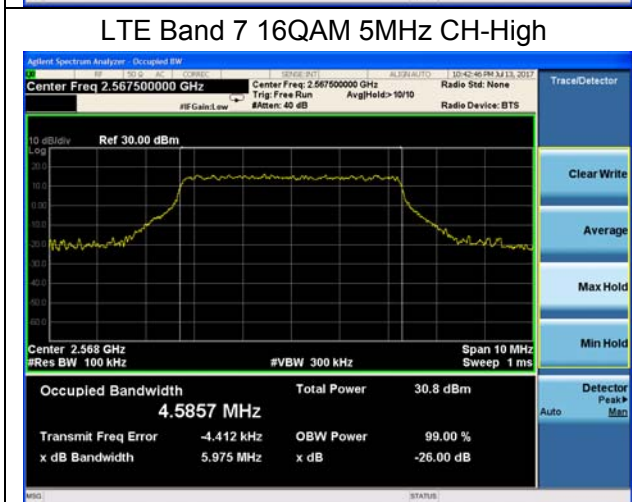
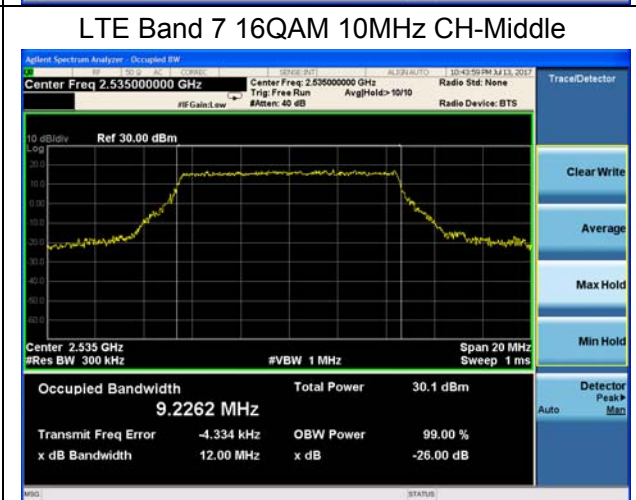
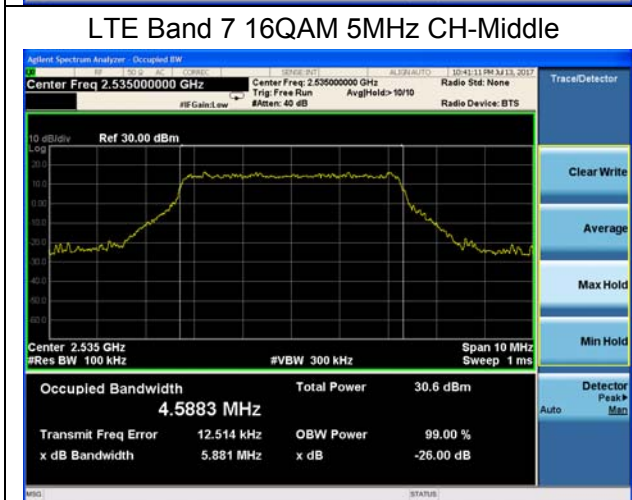
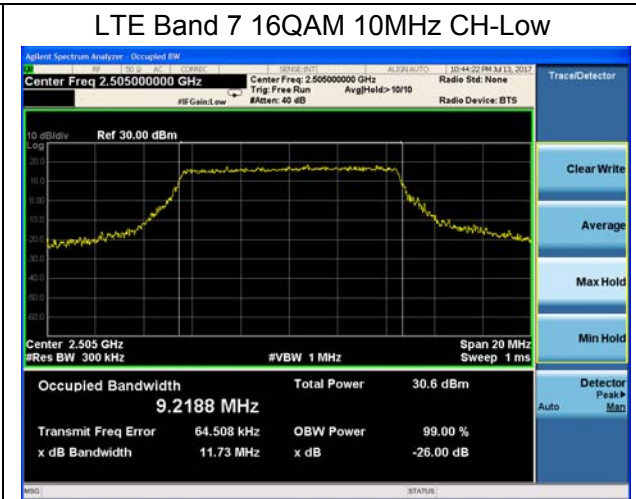
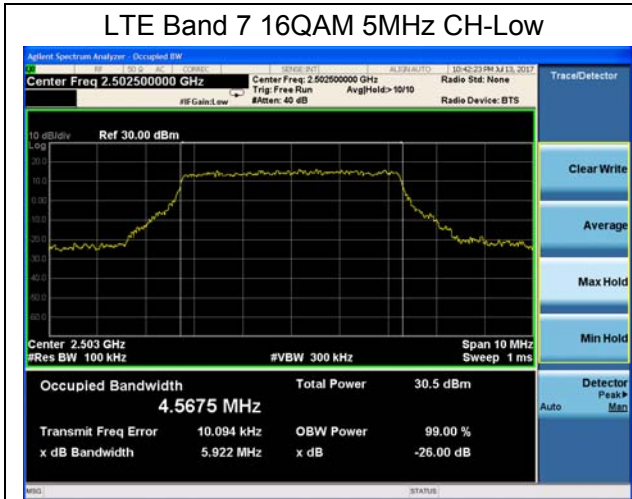
LTE Band 7						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	5	20775	2502.5	4.5674	5.742
			21100	2535	4.5793	5.825
			21425	2567.5	4.5800	5.935
		10	20800	2505	9.1612	11.69
			21100	2535	9.1580	11.59
			21400	2565	9.1596	11.81
		15	20825	2507.5	13.517	16.00
			21100	2535	13.563	16.35
			21375	2562.5	13.536	16.09
		20	20850	2510	17.984	20.37
			21100	2535	18.021	20.62
			21350	2560	18.031	20.60
	16QAM	5	20775	2502.5	4.5675	5.922
			21100	2535	4.5883	5.881
			21425	2567.5	4.5857	5.975
		10	20800	2505	9.2188	11.73
			21100	2535	9.2262	12.00
			21400	2565	9.2540	11.95
		15	20825	2507.5	13.525	16.00
			21100	2535	13.545	16.09
			21375	2562.5	13.585	16.27
		20	20850	2510	18.005	20.47
			21100	2535	18.056	20.89
			21350	2560	18.074	20.61

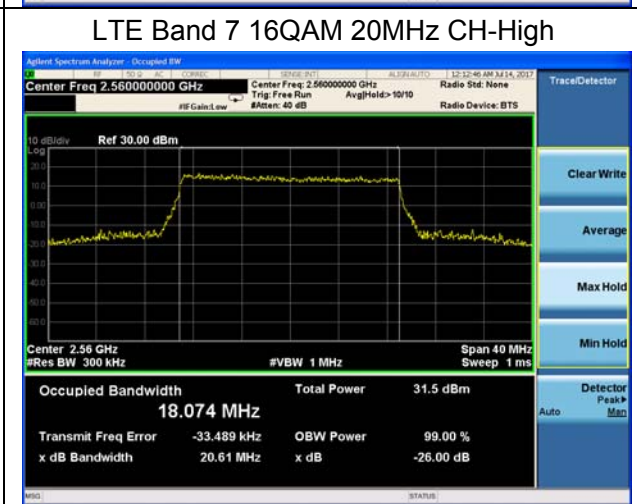
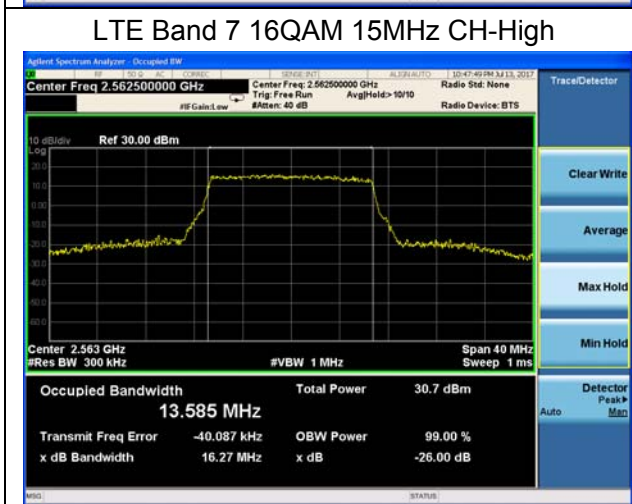
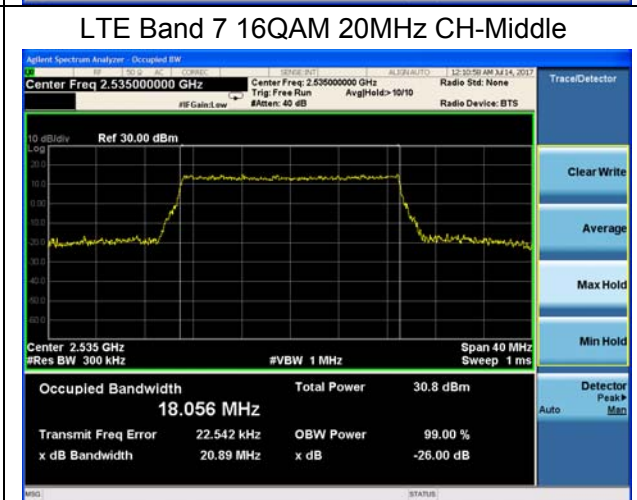
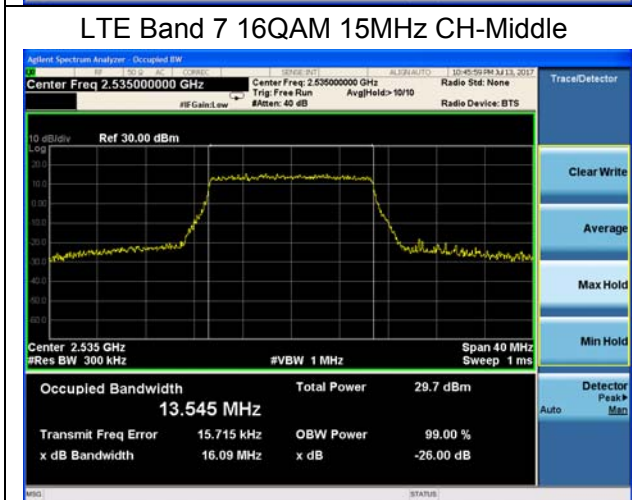
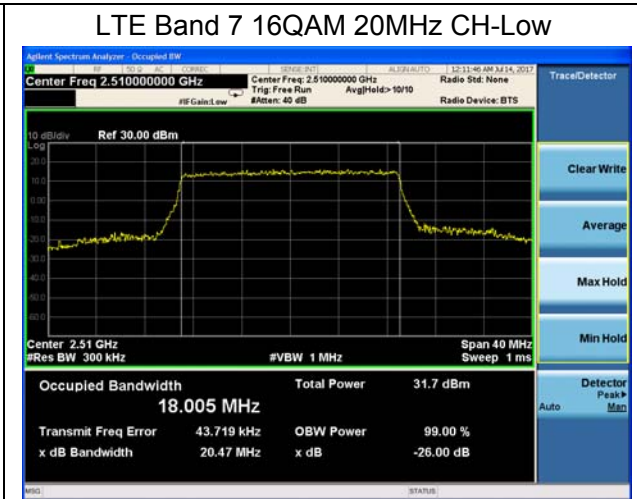
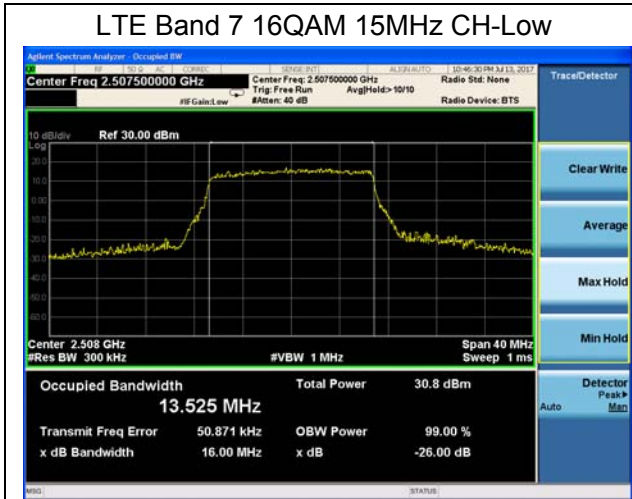
LTE Band 41						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	5	39675	2498.5	4.5588	5.979
			40620	2593	4.5768	5.830
			41565	2687.5	4.5716	5.874
		10	39700	2501	9.1244	11.46
			40620	2593	9.1700	11.54
			41540	2685	9.1703	11.70
		15	39725	2503.5	13.498	16.06
			40620	2593	13.498	16.13
			41515	2682.5	13.541	16.01
		20	39750	2506	18.027	20.63
			40620	2593	17.966	20.17
			41490	2680	17.988	20.42
	16QAM	5	39675	2498.5	4.5418	5.772
			40620	2593	4.5479	5.780
			41565	2687.5	4.5416	5.850
		10	39700	2501	9.1963	11.53
			40620	2593	9.1049	11.45
			41540	2685	9.1434	11.61
		15	39725	2503.5	13.538	16.10
			40620	2593	13.537	16.00
			41515	2682.5	13.480	15.91
		20	39750	2506	17.993	20.54
			40620	2593	17.989	20.65
			41490	2680	17.992	20.44

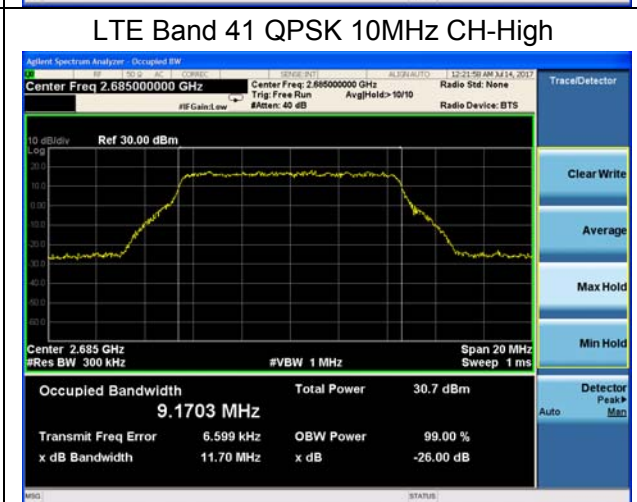
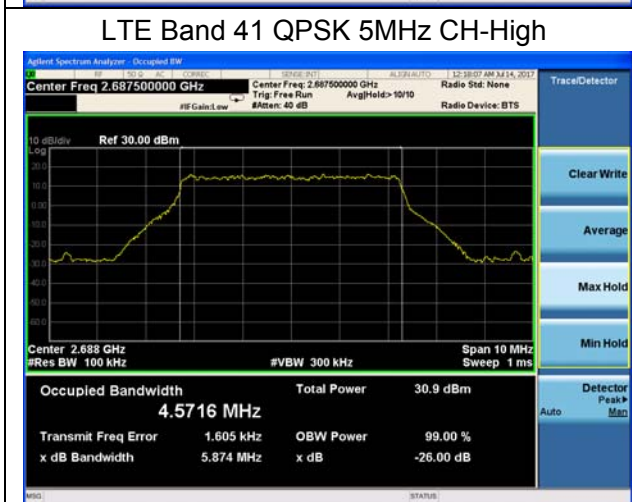
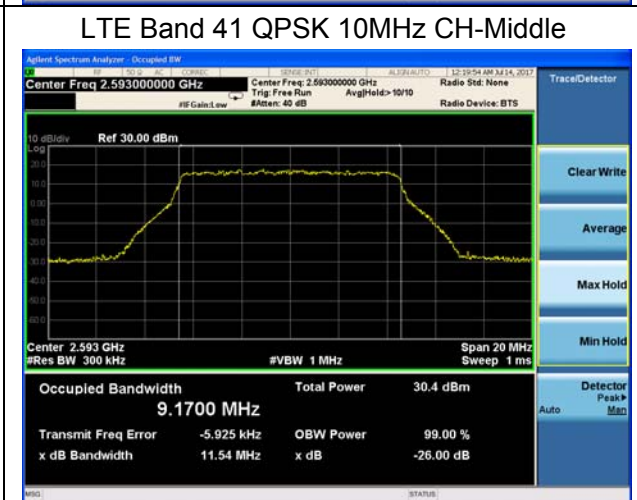
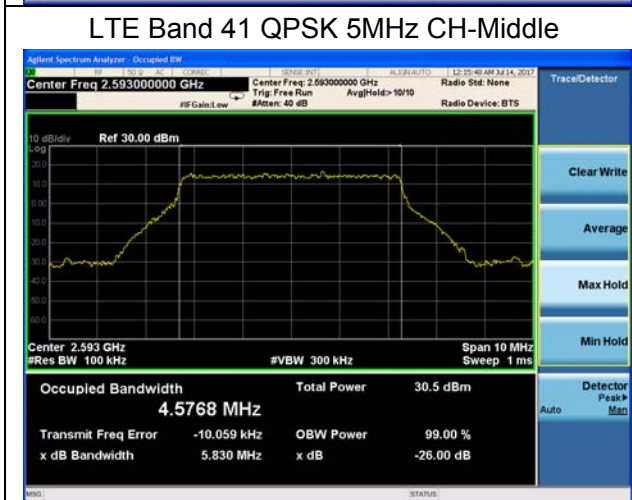
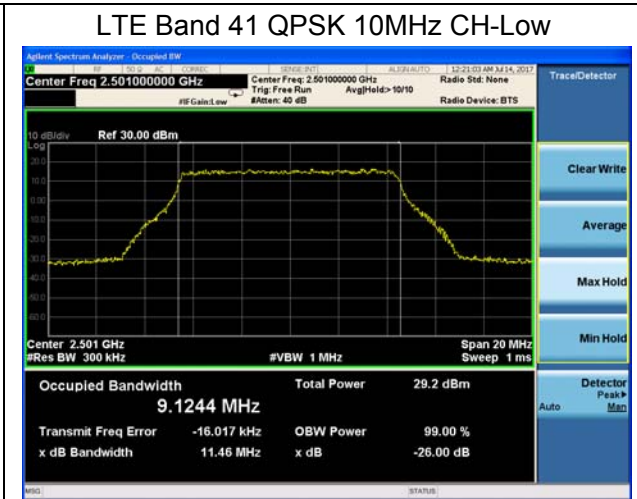
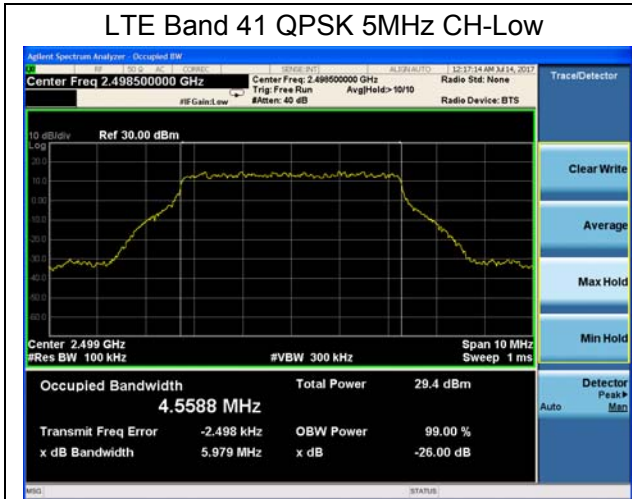






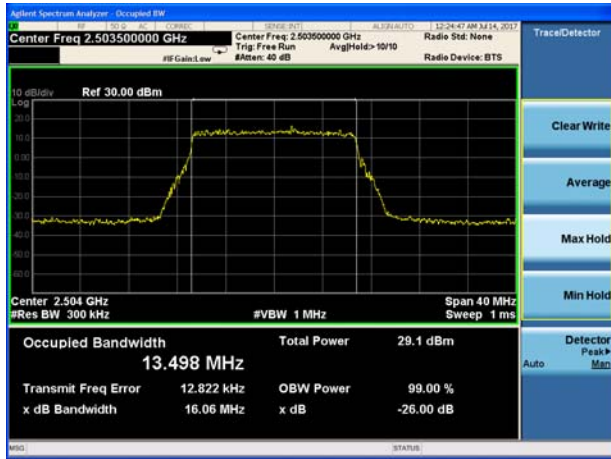




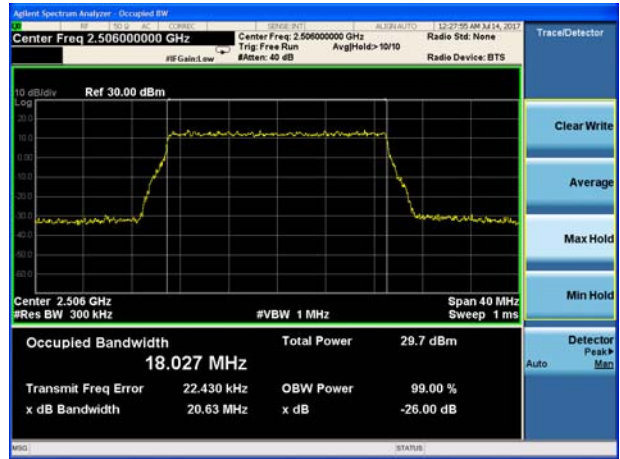




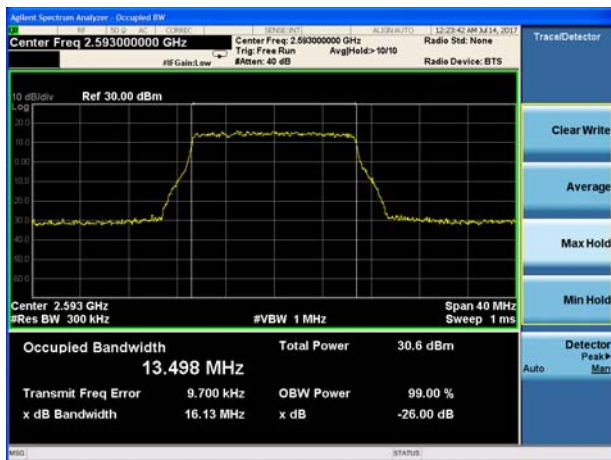
### LTE Band 41 QPSK 15MHz CH-Low



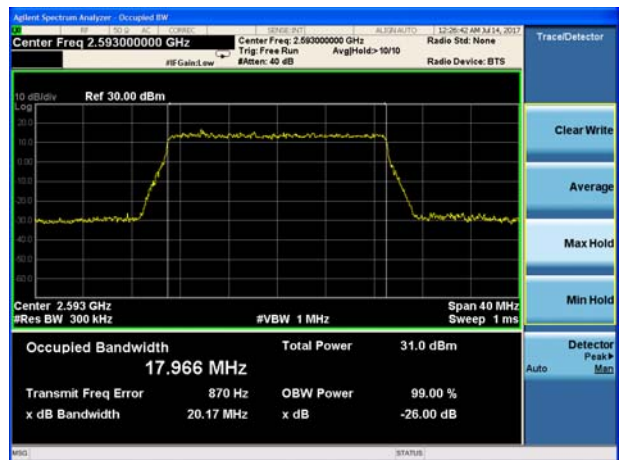
### LTE Band 41 QPSK 20MHz CH-Low



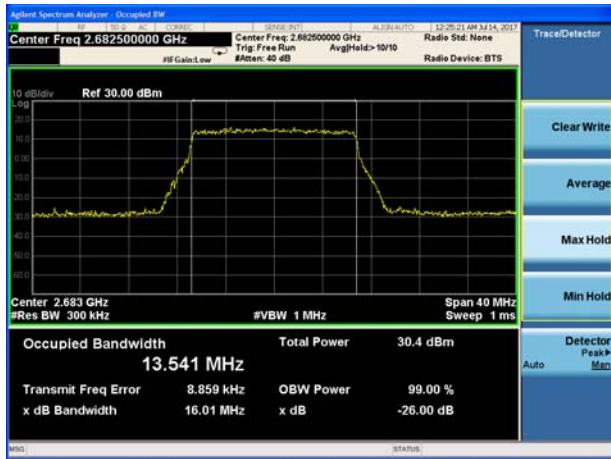
### LTE Band 41 QPSK 15MHz CH-Middle



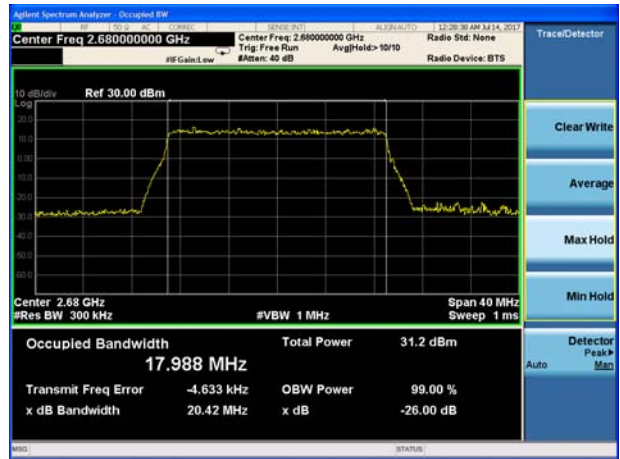
### LTE Band 41 QPSK 20MHz CH-Middle

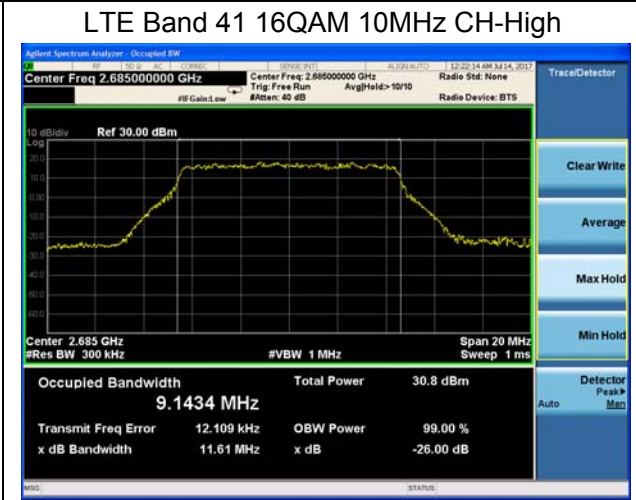
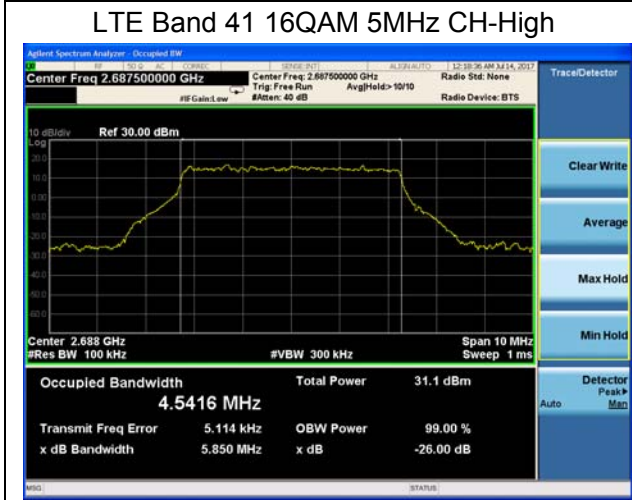
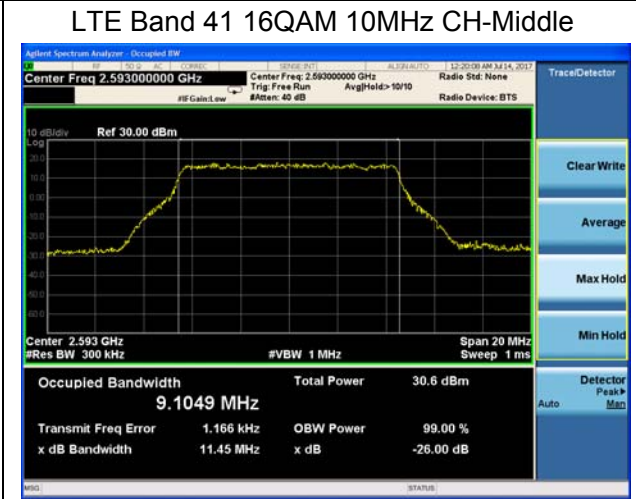
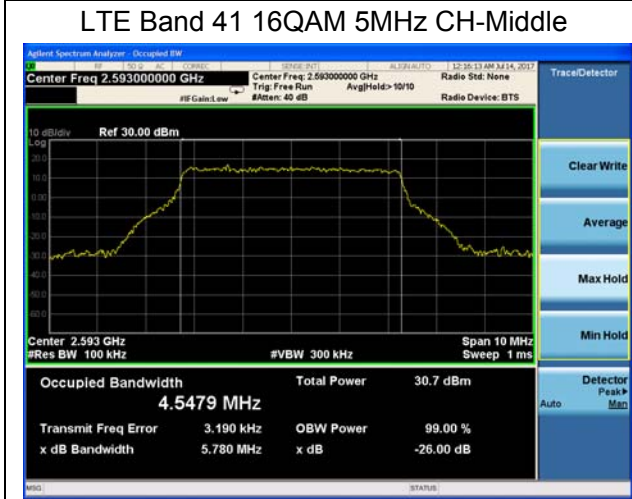
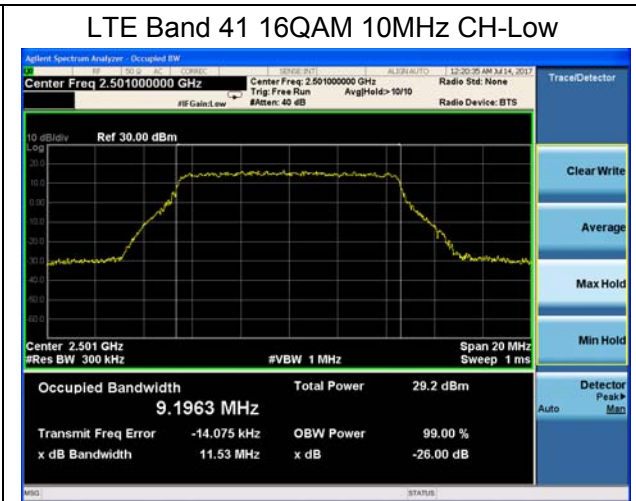
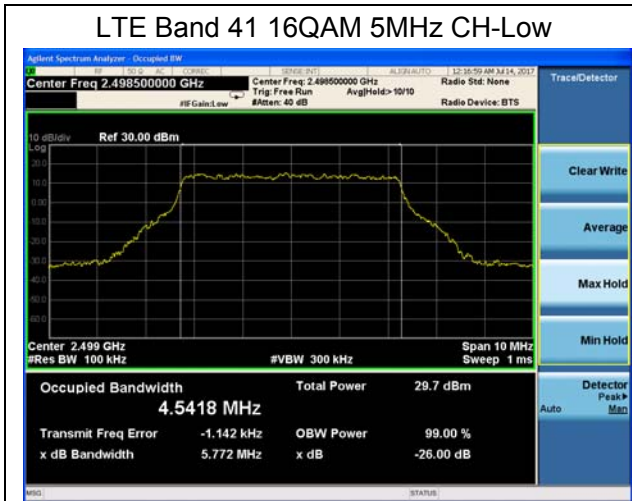


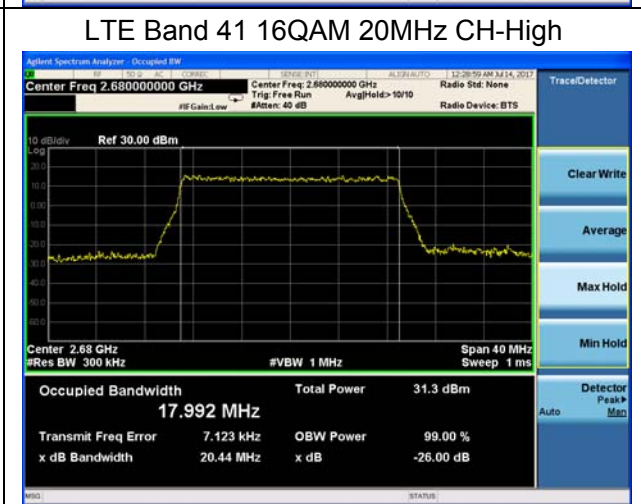
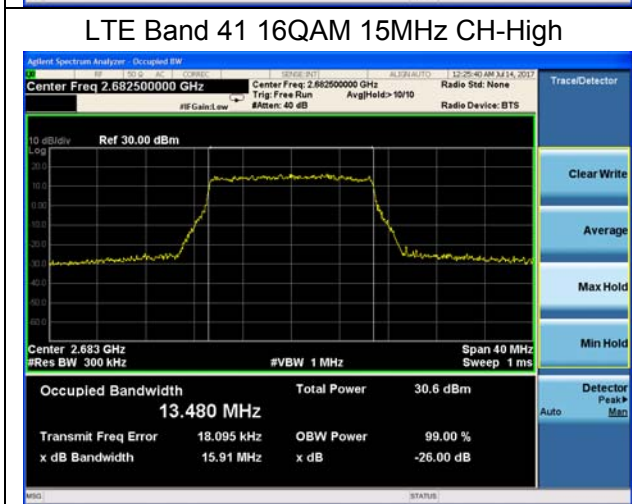
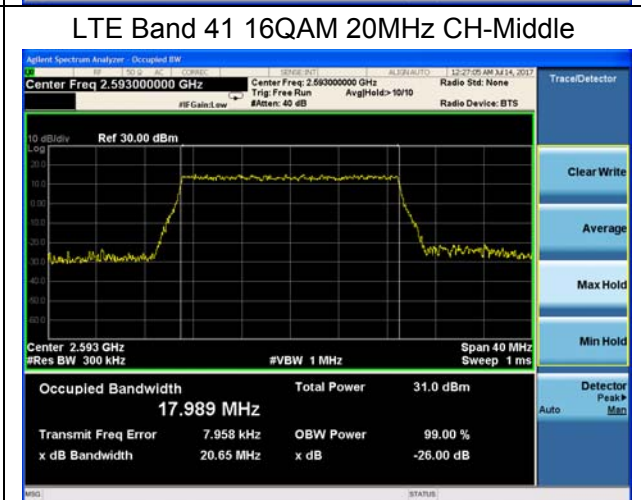
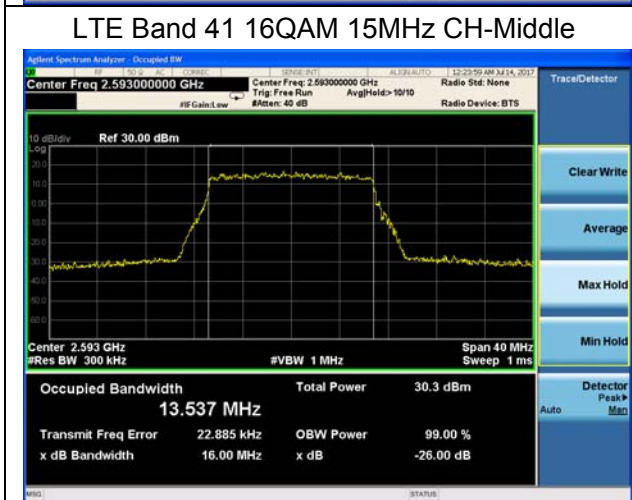
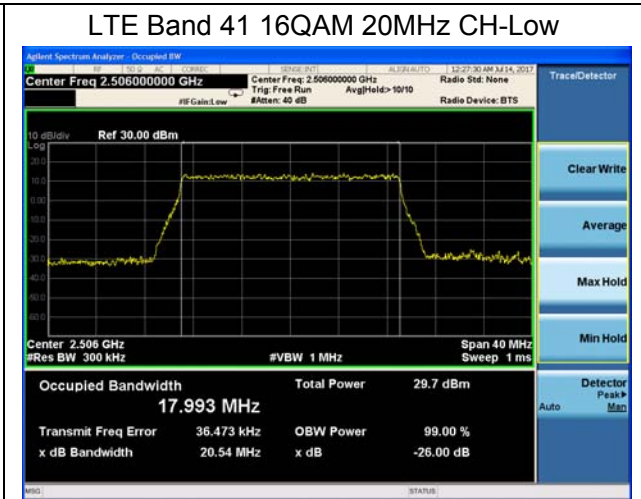
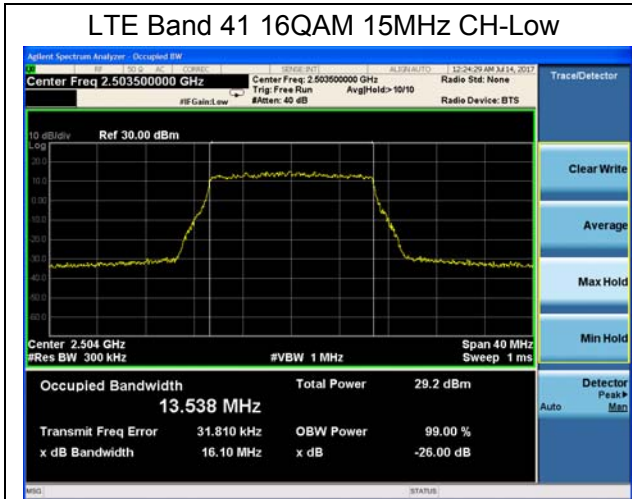
### LTE Band 41 QPSK 15MHz CH-High



### LTE Band 41 QPSK 20MHz CH-High







### 4.4 Band Edge Compliance

#### Ambient condition

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

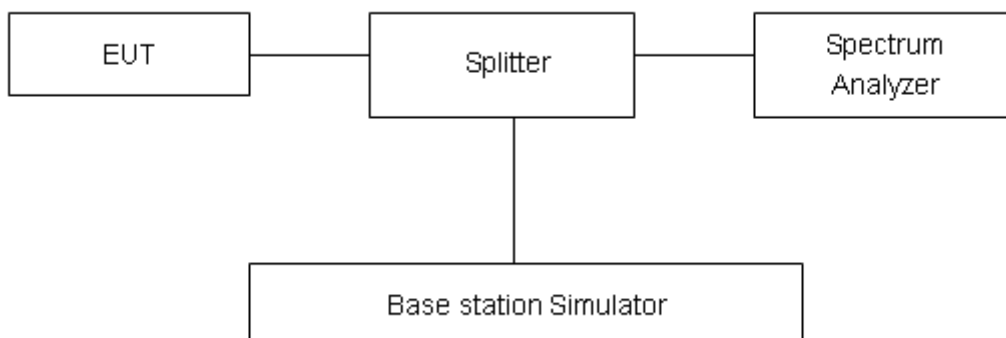
#### Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured.

The testing follows KDB 971168 v02r02 Section 6.0

- 1.The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The band edges of low and high channels for the highest RF powers were measured.
3. For LTE Band 41 Set RBW >= 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 51 kHz, VBW is set to 160 kHz for LTE Band 7 (5MHz).  
 RBW is set to 100 kHz, VBW is set to 300kHz for LTE Band 7 (10MHz).  
 RBW is set to 150 kHz, VBW is set to 510 kHz for LTE Band 7 (15MHz).  
 RBW is set to 200 kHz, VBW is set to 620 kHz for LTE Band 7 (20MHz) on spectrum analyzer.
4. Set spectrum analyzer with RMS detector.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. Checked that all the results comply with the emission limit line.

#### Test Setup



## Limits

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  $43 + 10 \log (P)$  dB below the transmitter power P(Watts)  
=  $P(W) - [43 + 10 \log (P)]$  (dB)  
=  $[30 + 10 \log (P)]$  (dBm) -  $[43 + 10 \log (P)]$  (dB) = -13dBm.

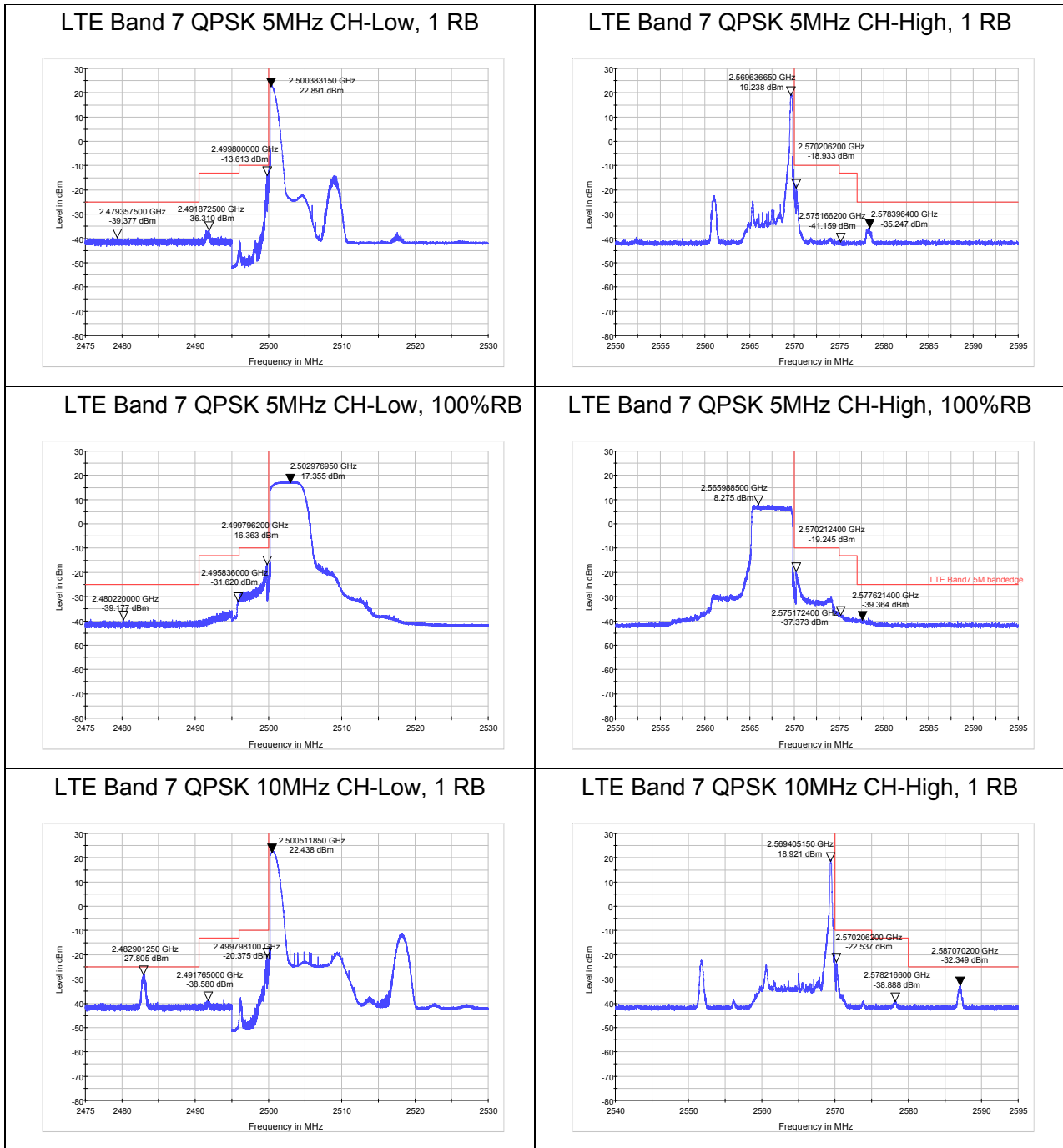
## Measurement Uncertainty

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.



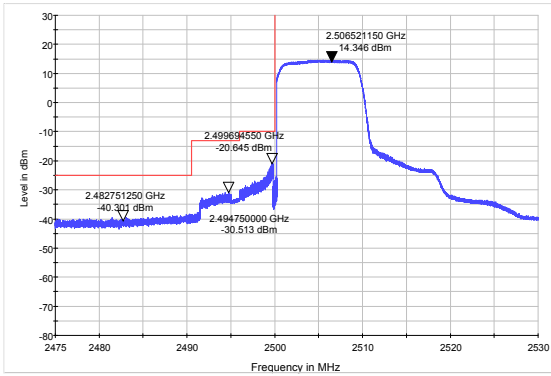
**Test Result**

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

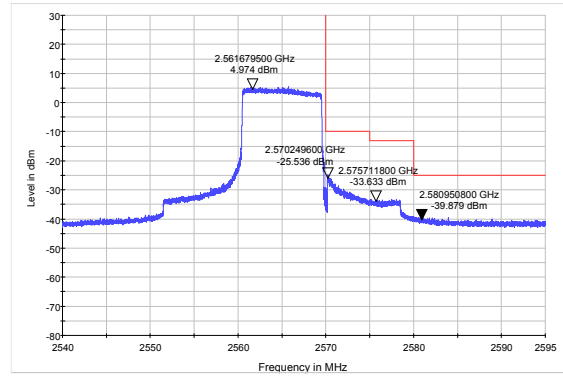




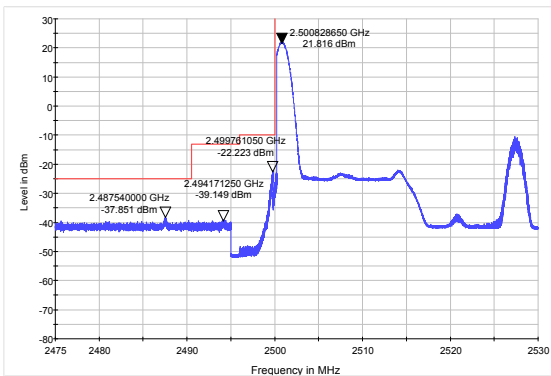
LTE Band 7 QPSK 10MHz CH-Low, 100%RB



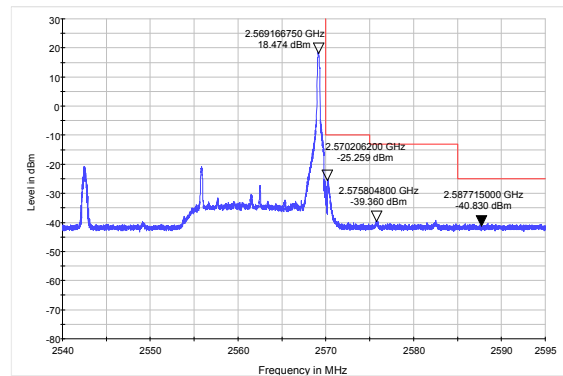
LTE Band 7 QPSK 10MHz CH-High, 100%RB



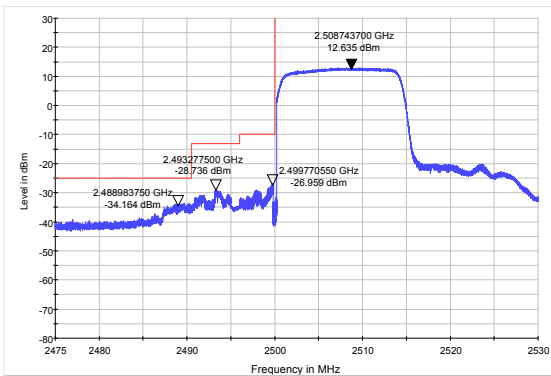
LTE Band 7 QPSK 15MHz CH-Low, 1 RB



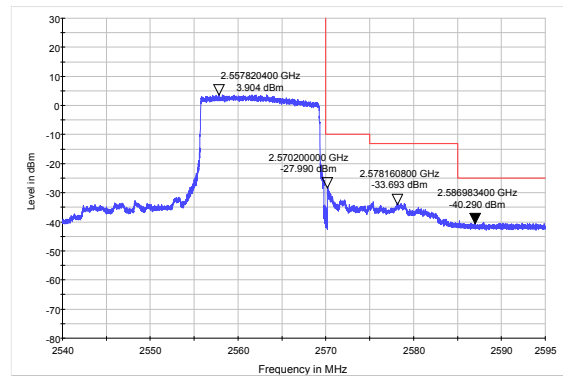
LTE Band 7 QPSK 15MHz CH-High, 1 RB



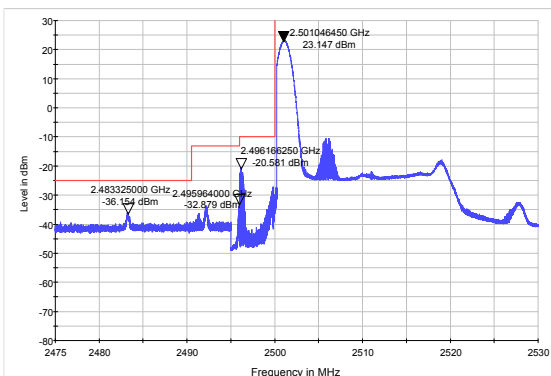
LTE Band 7 QPSK 15MHz CH-Low, 100%RB



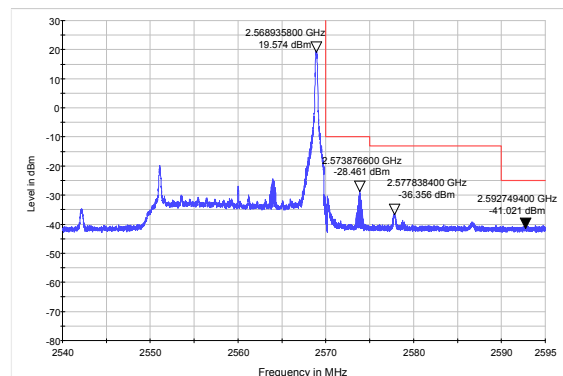
LTE Band 7 QPSK 15MHz CH-High, 100%RB



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

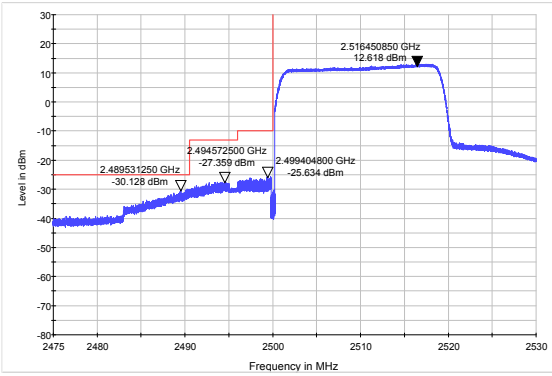


LTE Band 7 QPSK 20MHz CH-High, 1 RB

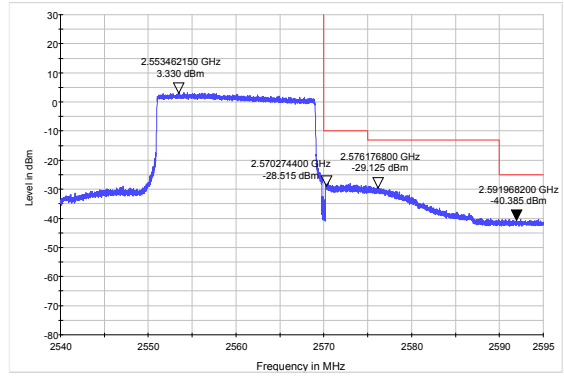




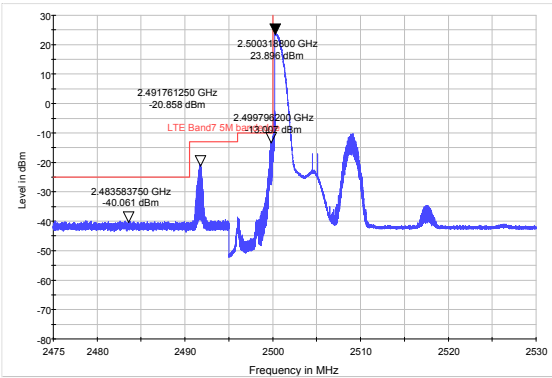
LTE Band 7 QPSK 20MHz CH-Low, 100%RB



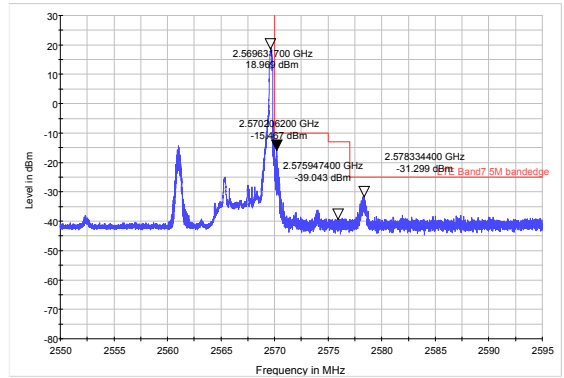
LTE Band 7 QPSK 20MHz CH-High, 100%RB



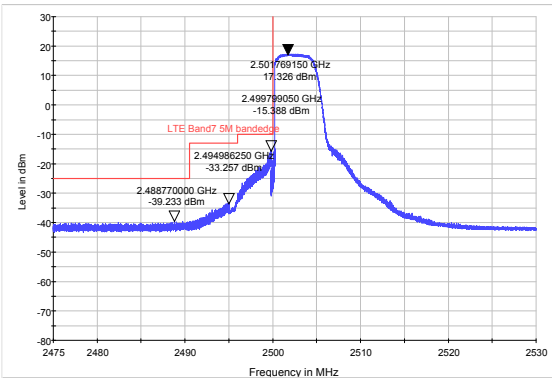
LTE Band 7 16QAM 5MHz CH-Low, 1 RB



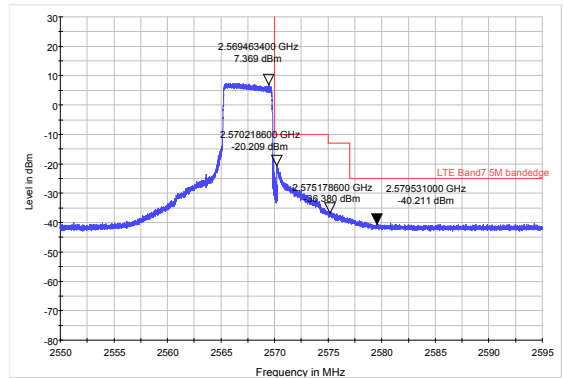
LTE Band 7 16QAM 5MHz CH-High, 1 RB



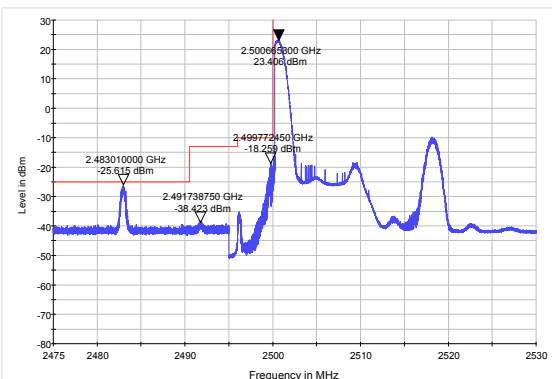
LTE Band 7 16QAM 5MHz CH-Low, 100%RB



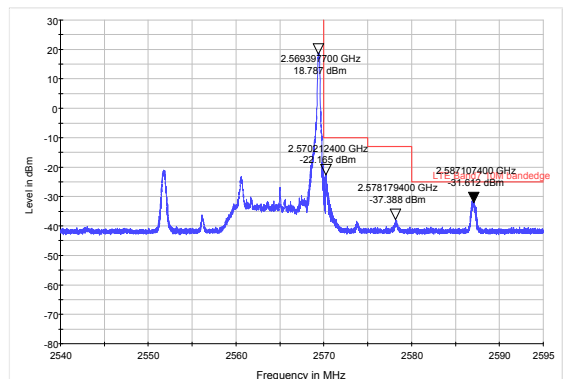
LTE Band 7 16QAM 5MHz CH-High, 100%RB



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

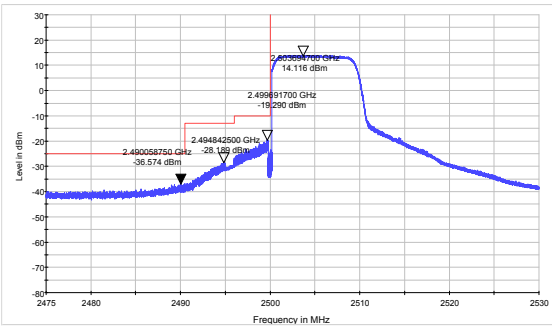


LTE Band 7 16QAM 10MHz CH-High, 1 RB

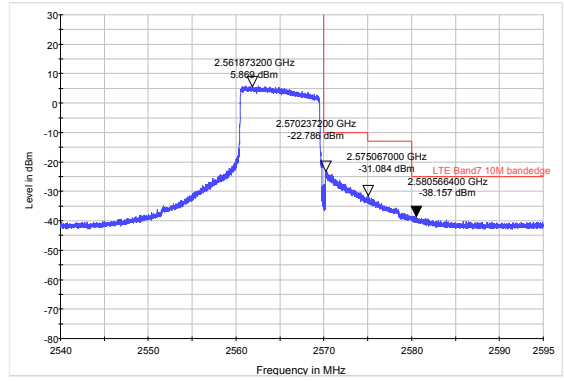




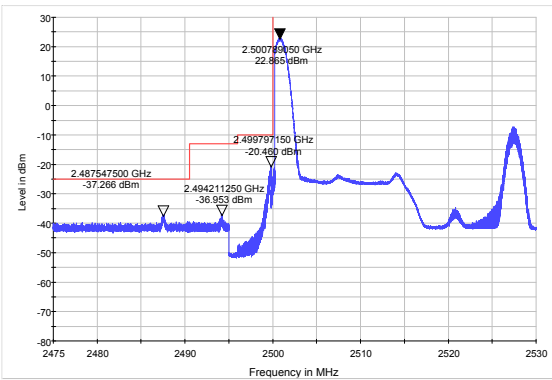
LTE Band 7 16QAM 10MHz CH-Low, 100%RB



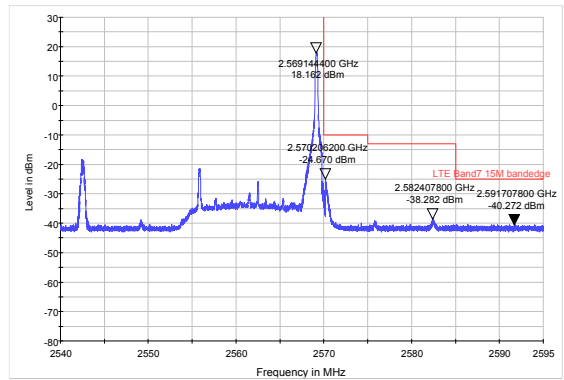
LTE Band 7 16QAM 10MHz CH-High, 100%RB



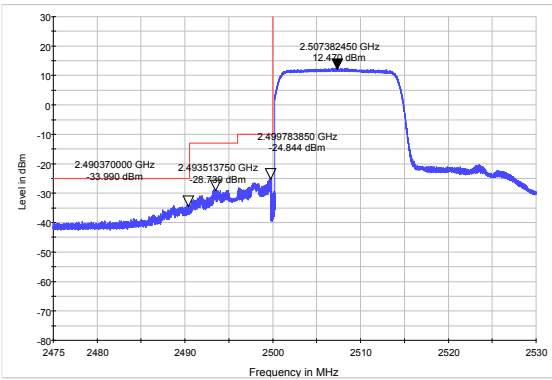
LTE Band 7 16QAM 15MHz CH-Low, 1 RB



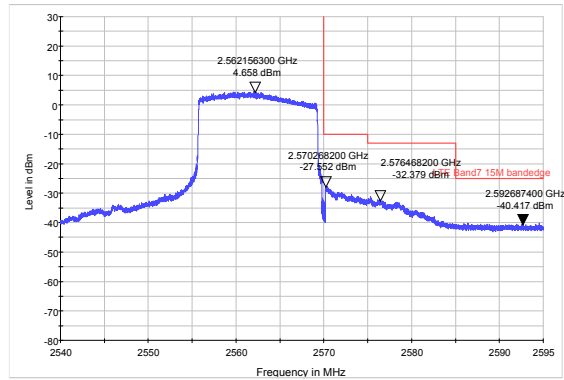
LTE Band 7 16QAM 15MHz CH-High, 1 RB



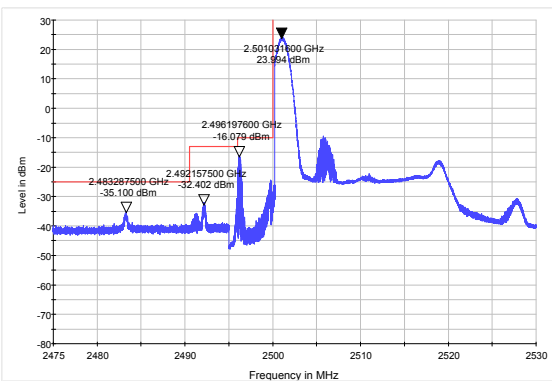
LTE Band 7 16QAM 15MHz CH-Low, 100%RB



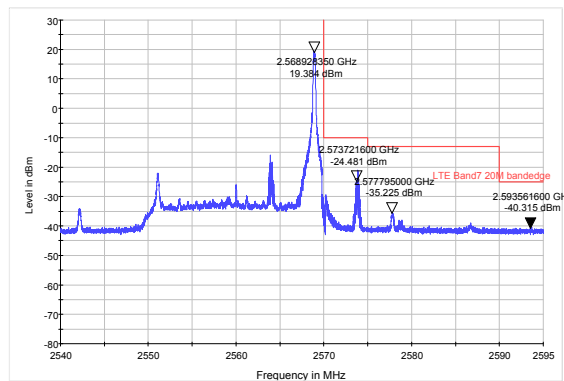
LTE Band 7 16QAM 15MHz CH-High, 100%RB



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

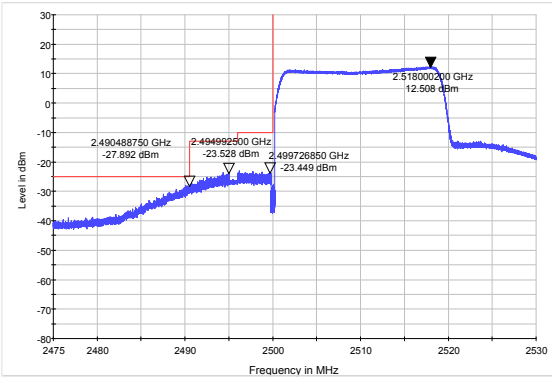


LTE Band 7 16QAM 20MHz CH-High, 1 RB

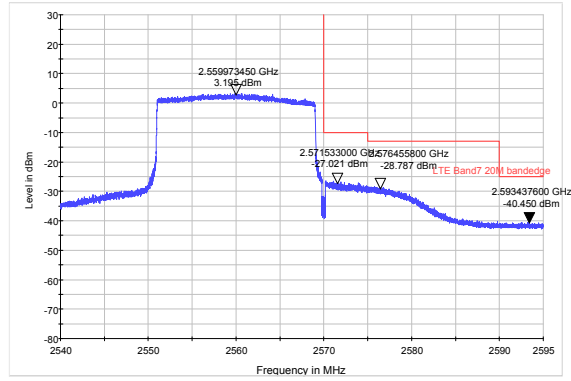




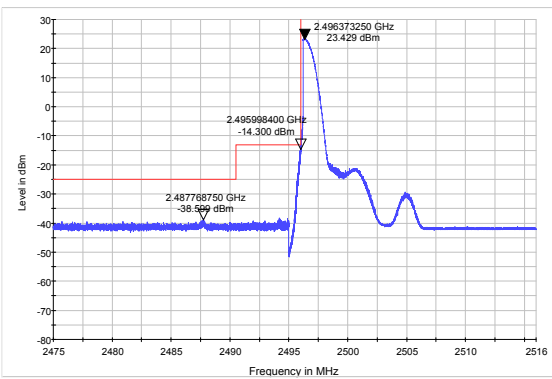
LTE Band 7 16QAM 20MHz CH-Low, 100%RB



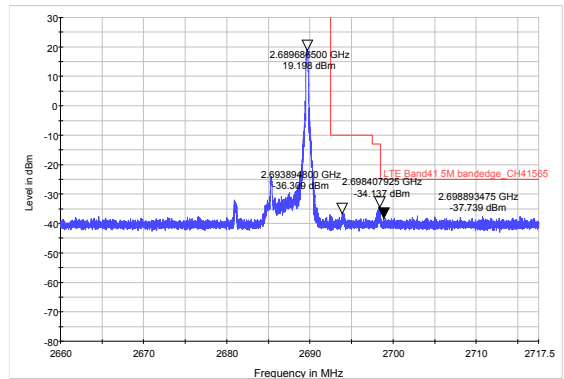
LTE Band 7 16QAM 20MHz CH-High, 100%RB



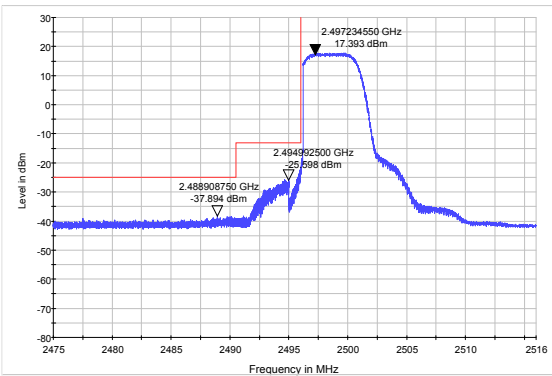
LTE Band 41 QPSK 5MHz CH-Low, 1 RB



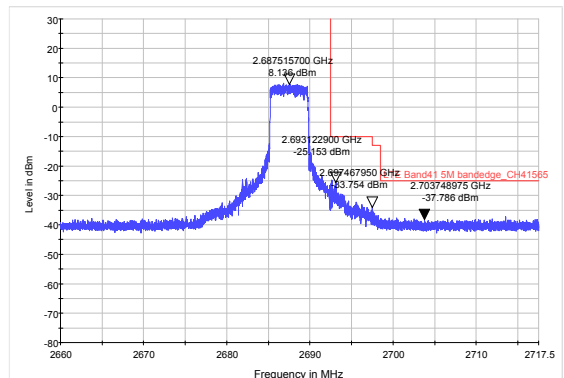
LTE Band 41 QPSK 5MHz CH-High, 1 RB



LTE Band 41 QPSK 5MHz CH-Low, 100%RB

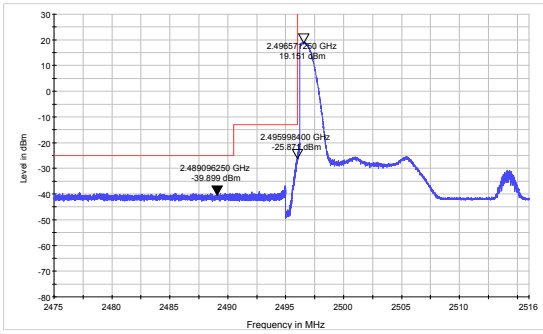


LTE Band 41 QPSK 5MHz CH-High, 100%RB

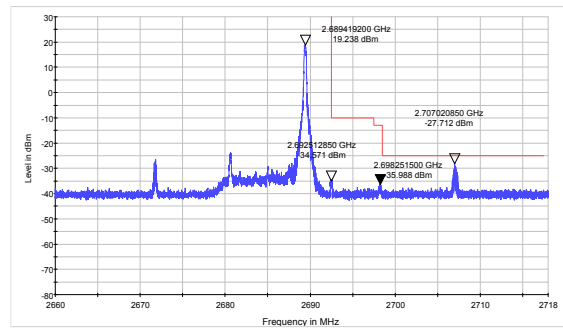




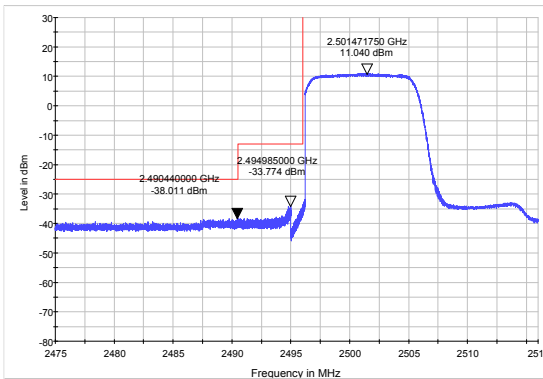
LTE Band 41 QPSK 10MHz CH-Low, 1 RB



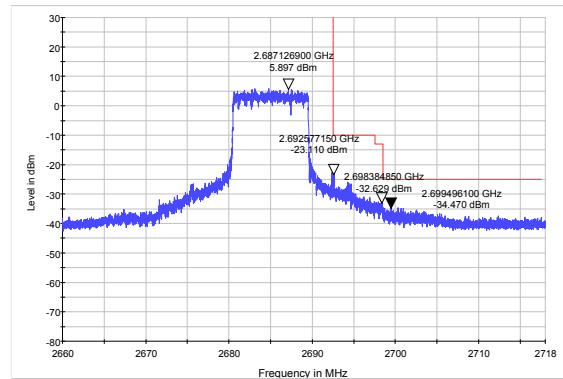
LTE Band 41 QPSK 10MHz CH-High, 1 RB



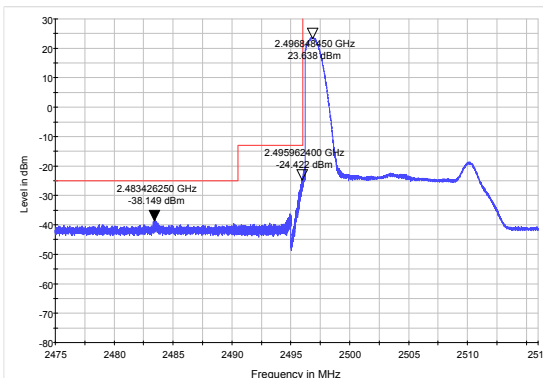
LTE Band 41 QPSK 10MHz CH-Low, 100%RB



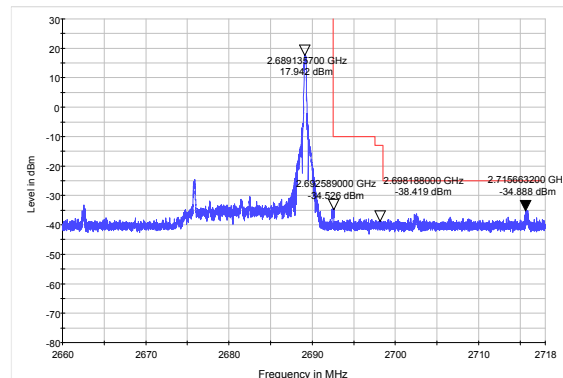
LTE Band 41 QPSK 10MHz CH-High, 100%RB



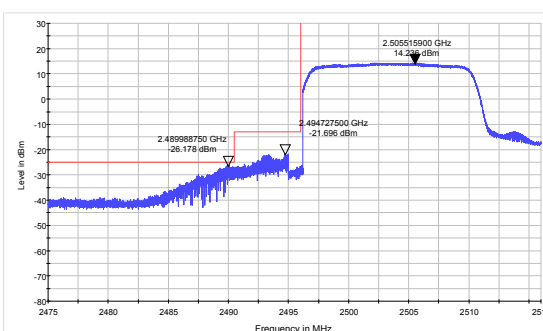
LTE Band 41 QPSK 15MHz CH-Low, 1 RB



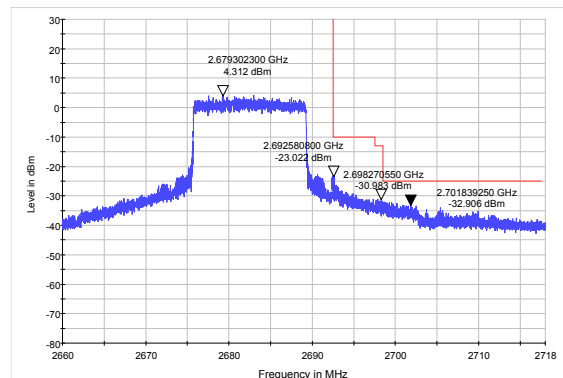
LTE Band 41 QPSK 15MHz CH-High, 1 RB



LTE Band 41 QPSK 15MHz CH-Low, 100%RB

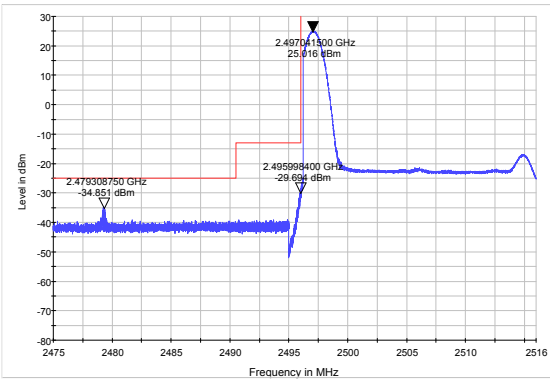


LTE Band 41 QPSK 15MHz CH-High, 100%RB

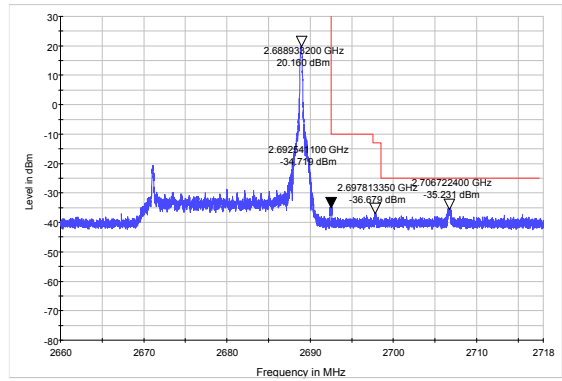




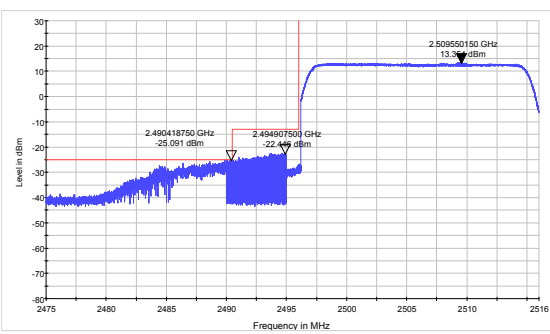
LTE Band 41 QPSK 20MHz CH-Low, 1 RB



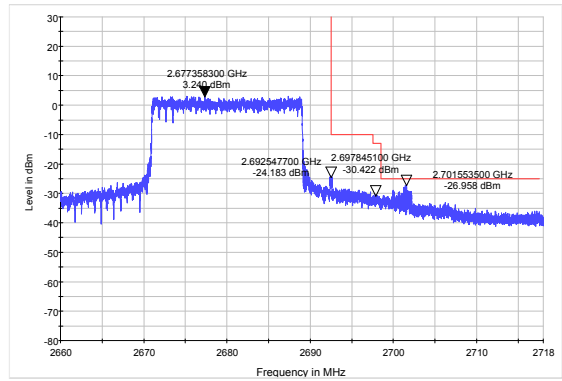
LTE Band 41 QPSK 20MHz CH-High, 1 RB



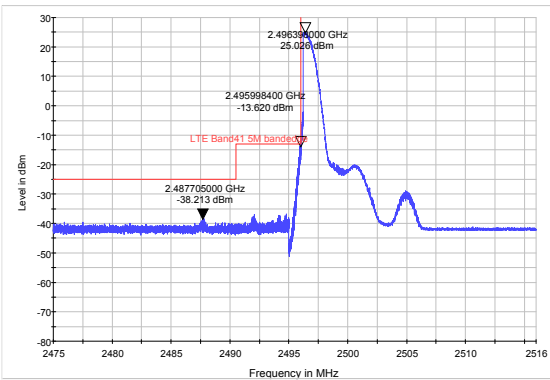
LTE Band 41 QPSK 20MHz CH-Low, 100%RB



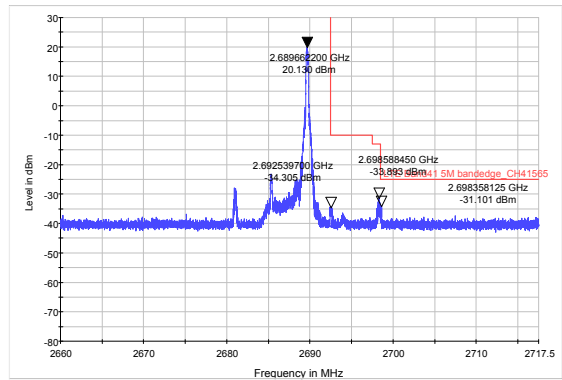
LTE Band 41 QPSK 20MHz CH-High, 100%RB



LTE Band 41 16QAM 5MHz CH-Low, 1 RB

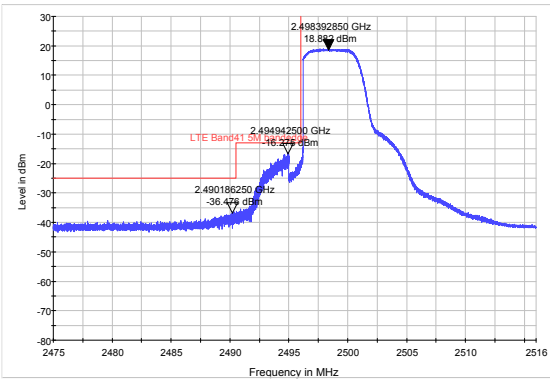


LTE Band 41 16QAM 5MHz CH-High, 1 RB

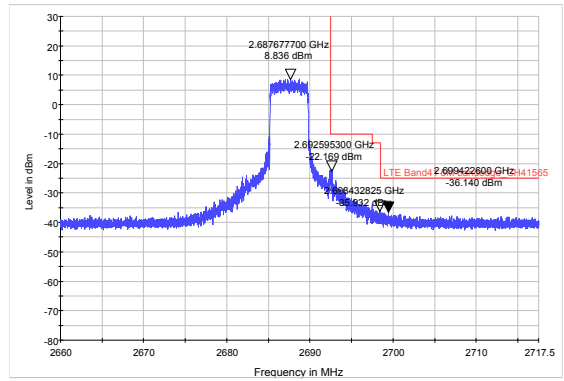




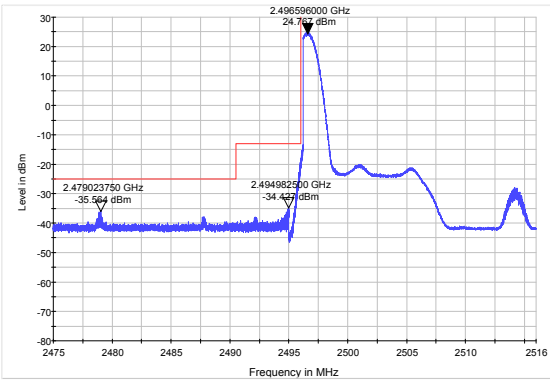
LTE Band 41 16QAM 5MHz CH-Low, 100%RB



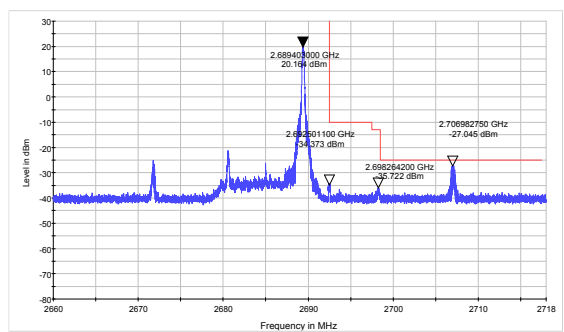
LTE Band 41 16QAM 5MHz CH-High, 100%RB



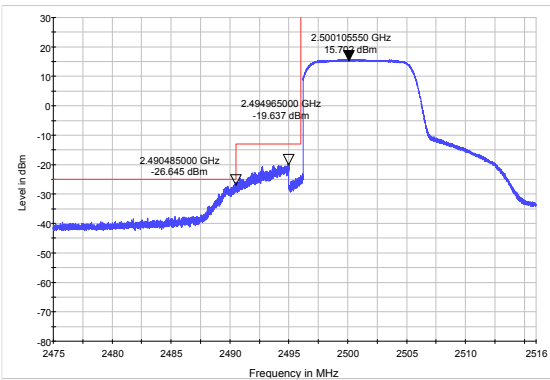
LTE Band 41 16QAM 10MHz CH-Low, 1 RB



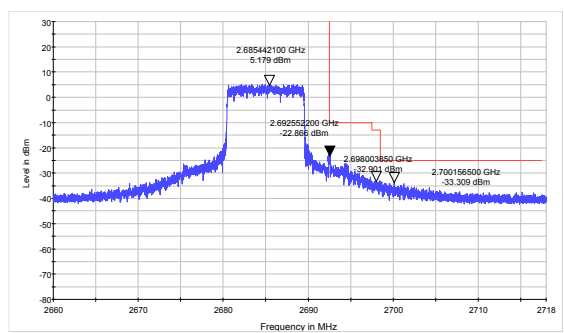
LTE Band 41 16QAM 10MHz CH-High, 1 RB



LTE Band 41 16QAM 10MHz CH-Low, 100%RB



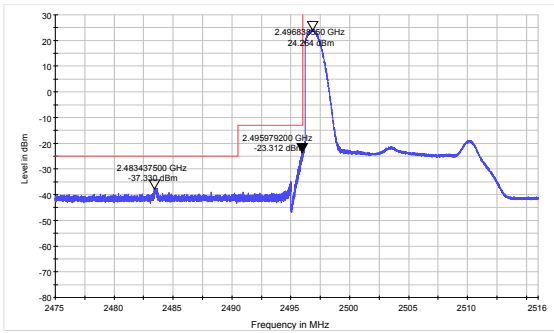
LTE Band 41 16QAM 10MHz CH-High, 100%RB



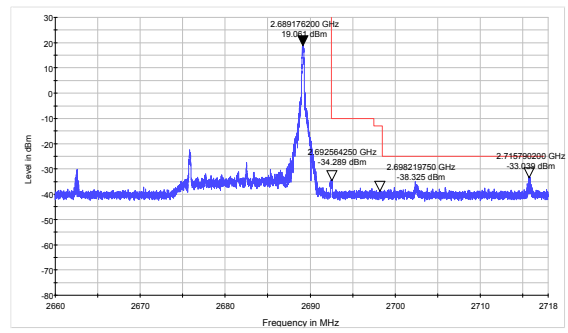




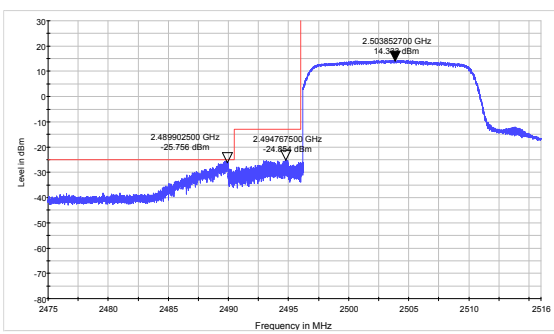
LTE Band 41 16QAM 15MHz CH-Low, 1 RB



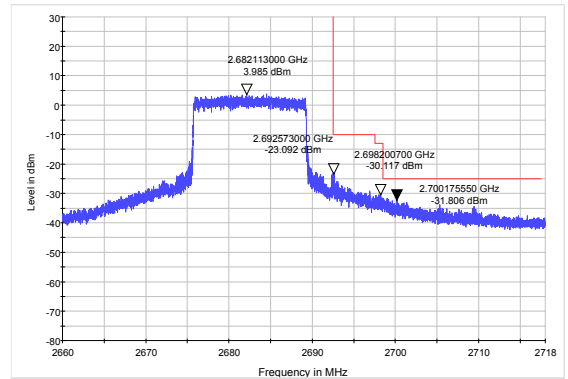
LTE Band 41 16QAM 15MHz CH-High, 1 RB



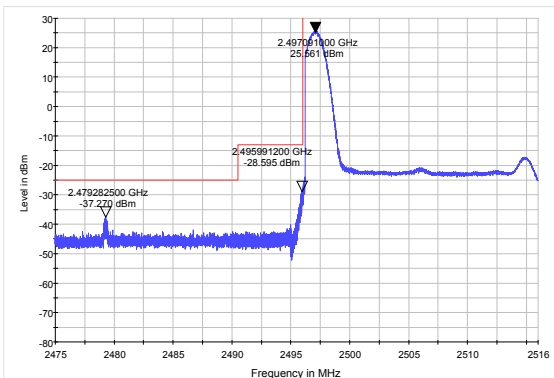
LTE Band 41 16QAM 15MHz CH-Low, 100%RB



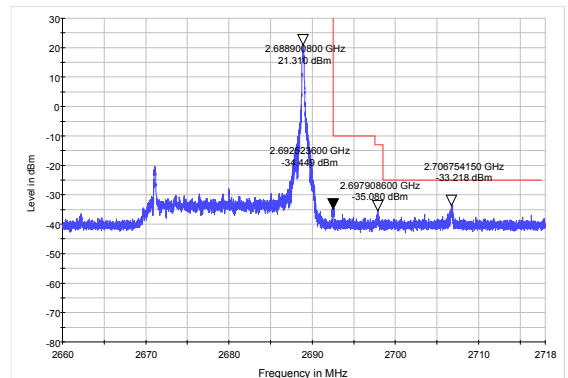
LTE Band 41 16QAM 15MHz CH-High, 100%RB



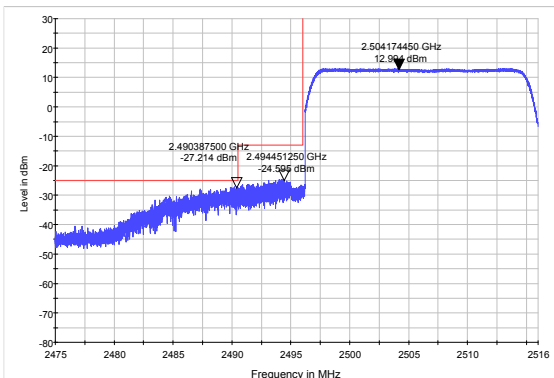
LTE Band 41 16QAM 20MHz CH-Low, RB 1



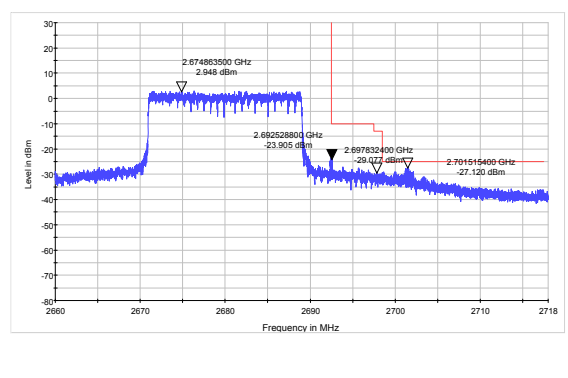
LTE Band 41 16QAM 20MHz CH-High, RB 1



LTE Band 41 16QAM 20MHz CH-Low, 100%RB



LTE Band 41 16QAM 20MHz CH-High, 100%RB



### 4.5 Peak-to-Average Power Ratio (PAPR)

#### Ambient condition

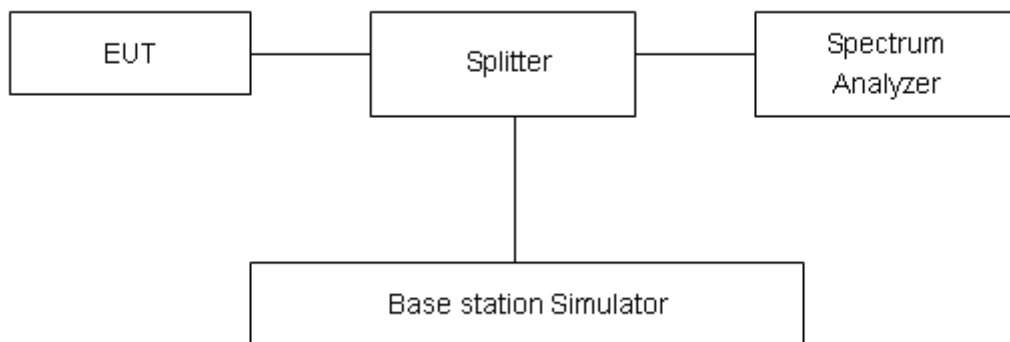
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

#### Methods of Measurement

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

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

#### Test Setup



#### Limits

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**

LTE Band 7								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	20775	2502.5	27.92	22.31	5.61	≤13	PASS
		21100	2535	27.57	21.24	6.33	≤13	PASS
		21425	2567.5	27.32	21.82	5.50	≤13	PASS
	10	20800	2505	27.88	22.39	5.49	≤13	PASS
		21100	2535	26.97	21.26	5.71	≤13	PASS
		21400	2565	27.30	21.86	5.44	≤13	PASS
	15	20825	2507.5	27.96	22.37	5.59	≤13	PASS
		21100	2535	27.20	21.22	5.98	≤13	PASS
		21375	2562.5	27.50	21.81	5.69	≤13	PASS
	20	20850	2510	27.63	22.34	5.29	≤13	PASS
		21100	2535	26.90	21.17	5.73	≤13	PASS
		21350	2560	27.12	21.77	5.35	≤13	PASS
16QAM	5	20775	2502.5	28.28	22.16	6.12	≤13	PASS
		21100	2535	26.97	21.23	5.74	≤13	PASS
		21425	2567.5	27.84	21.87	5.97	≤13	PASS
	10	20800	2505	28.18	22.19	5.99	≤13	PASS
		21100	2535	27.56	21.28	6.28	≤13	PASS
		21400	2565	27.80	21.91	5.89	≤13	PASS
	15	20825	2507.5	28.08	22.16	5.92	≤13	PASS
		21100	2535	27.55	21.23	6.32	≤13	PASS
		21375	2562.5	27.82	21.87	5.95	≤13	PASS
	20	20850	2510	27.84	22.14	5.70	≤13	PASS
		21100	2535	27.40	21.19	6.21	≤13	PASS
		21350	2560	27.53	21.84	5.69	≤13	PASS

LTE Band 41								
Modulation	Bandwidth ((MHz))	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	39675	2498.5	30.24	21.16	9.08	≤13	PASS
		40620	2593	31.49	22.55	8.94	≤13	PASS
		41565	2687.5	31.72	22.44	9.28	≤13	PASS
	10	39700	2501	30.44	21.24	9.20	≤13	PASS
		40620	2593	31.77	22.57	9.20	≤13	PASS
		41540	2685	31.81	22.48	9.33	≤13	PASS
	15	39725	2503.5	30.71	21.22	9.49	≤13	PASS
		40620	2593	32.11	22.53	9.58	≤13	PASS
		41515	2682.5	32.25	22.43	9.82	≤13	PASS
	20	39750	2506	30.66	21.19	9.47	≤13	PASS
		40620	2593	32.08	22.48	9.60	≤13	PASS
		41490	2680	32.24	22.39	9.85	≤13	PASS
16QAM	5	39675	2498.5	30.82	21.13	9.69	≤13	PASS
		40620	2593	32.29	22.56	9.73	≤13	PASS
		41565	2687.5	32.50	22.59	9.91	≤13	PASS
	10	39700	2501	30.42	21.16	9.26	≤13	PASS
		40620	2593	32.46	22.61	9.85	≤13	PASS
		41540	2685	32.52	22.63	9.89	≤13	PASS
	15	39725	2503.5	30.99	21.13	9.86	≤13	PASS
		40620	2593	32.36	22.56	9.80	≤13	PASS
		41515	2682.5	32.60	22.59	10.01	≤13	PASS
	20	39750	2506	31.06	21.11	9.95	≤13	PASS
		40620	2593	32.68	22.52	10.16	≤13	PASS
		41490	2680	32.20	22.56	9.64	≤13	PASS

## 4.6 Frequency Stability

### Ambient condition

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

### Method of Measurement

#### 1. Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -40°C to +55°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 -40°C to +55°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

#### 2. Frequency Stability (Voltage Variation)

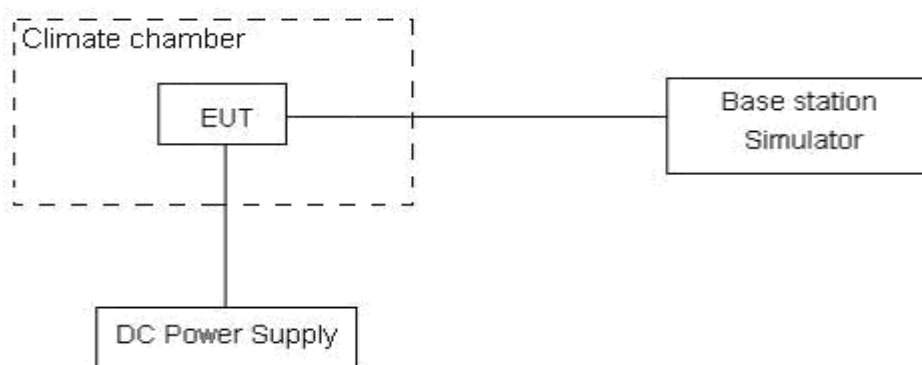
The frequency stability shall be measured with variation of primary supply voltage as follows:

(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

(2) For hand carried, battery powered equipment, reduce primary supply voltage 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 9 V and 18 V, with a nominal voltage of 12V.

### Test setup



### Limits

No specific frequency stability requirements in part 27.54

### 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 Result**

Bandwidth	Test status	LTE Band 7 Channel 21100 Test Results (ppm)	
		QPSK	16QAM
5MHz	-40°C/Normal Voltage	-0.00090	-0.00129
	-30°C/Normal Voltage	-0.00070	-0.00096
	-20°C/Normal Voltage	0.00073	-0.00355
	-10°C/Normal Voltage	-0.00065	-0.00014
	0°C/Normal Voltage	-0.00332	-0.00058
	10°C/Normal Voltage	-0.00282	0.00153
	20°C/Normal Voltage	-0.00091	-0.00047
	30°C/Normal Voltage	0.00139	-0.00243
	40°C/Normal Voltage	-0.00177	-0.00345
	50°C/Normal Voltage	0.00000	-0.00357
	55°C/Normal Voltage	0.00017	0.00179
	20°C/Min Voltage	-0.00038	0.00183
	20°C/Max Voltage	-0.00054	0.00784
10MHz	-40°C/Normal Voltage	-0.00044	-0.00377
	-30°C/Normal Voltage	-0.00086	-0.00303
	-20°C/Normal Voltage	0.00035	0.00057
	-10°C/Normal Voltage	-0.00005	0.00316
	0°C/Normal Voltage	0.00105	0.00305
	10°C/Normal Voltage	-0.00036	0.00197
	20°C/Normal Voltage	0.00136	0.00041
	30°C/Normal Voltage	0.00243	-0.00209
	40°C/Normal Voltage	0.00358	-0.00246
	50°C/Normal Voltage	-0.00069	0.00075
	55°C/Normal Voltage	-0.00152	0.00131
	20°C/Min Voltage	-0.00124	-0.00067
	20°C/Max Voltage	-0.00118	-0.00150
15MHz	-40°C/Normal Voltage	0.00017	0.00088
	-30°C/Normal Voltage	0.00069	0.00113
	-20°C/Normal Voltage	0.00137	0.00165
	-10°C/Normal Voltage	0.00047	-0.00182
	0°C/Normal Voltage	-0.00060	-0.00088
	10°C/Normal Voltage	0.00056	-0.00357
	20°C/Normal Voltage	-0.00017	-0.00096
	30°C/Normal Voltage	0.00123	-0.00381
	40°C/Normal Voltage	0.00156	-0.00553
	50°C/Normal Voltage	0.00037	-0.00135



	55°C/Normal Voltage	0.00156	-0.00105
	20°C/Min Voltage	0.00089	-0.00072
	20°C/Max Voltage	-0.00057	-0.00492
20MHz	-40°C/Normal Voltage	-0.00075	-0.00191
	-30°C/Normal Voltage	-0.00091	-0.00135
	-20°C/Normal Voltage	0.00180	0.00163
	-10°C/Normal Voltage	-0.00062	-0.00093
	0°C/Normal Voltage	-0.00057	-0.00374
	10°C/Normal Voltage	-0.00285	-0.00335
	20°C/Normal Voltage	-0.00070	-0.00405
	30°C/Normal Voltage	-0.00056	-0.00119
	40°C/Normal Voltage	0.00019	-0.00046
	50°C/Normal Voltage	0.00059	-0.00387
	55°C/Normal Voltage	0.00103	-0.00056
	20°C/Min Voltage	-0.00159	0.00110
	20°C/Max Voltage	0.00151	0.00142

Bandwidth	Test status	LTE Band 41 Channel 40620 Test Results (ppm)	
		QPSK	16QAM
5MHz	-40°C/Normal Voltage	0.00815	0.00760
	-30°C/Normal Voltage	0.00608	0.00553
	-20°C/Normal Voltage	-0.00087	0.00256
	-10°C/Normal Voltage	-0.00089	0.00010
	0°C/Normal Voltage	0.00025	0.00059
	10°C/Normal Voltage	0.00151	-0.00270
	20°C/Normal Voltage	-0.00018	-0.00147
	30°C/Normal Voltage	0.01115	0.00303
	40°C/Normal Voltage	-0.00002	0.00810
	50°C/Normal Voltage	0.01058	0.00883
	55°C/Normal Voltage	0.00771	0.00895
	20°C/Min Voltage	-0.00049	0.00870
	20°C/Max Voltage	-0.00132	0.00028
10MHz	-40°C/Normal Voltage	-0.00133	-0.00103
	-30°C/Normal Voltage	0.00219	0.00240
	-20°C/Normal Voltage	0.00099	0.00242
	-10°C/Normal Voltage	0.00159	-0.00014
	0°C/Normal Voltage	-0.00031	-0.00004
	10°C/Normal Voltage	-0.00110	0.00282
	20°C/Normal Voltage	0.00214	-0.00179
30°C/Normal Voltage	-0.00334	-0.00277	



	40°C/Normal Voltage	-0.00019	-0.00078
	50°C/Normal Voltage	-0.00035	-0.00059
	55°C/Normal Voltage	-0.00052	-0.00068
	20°C/Min Voltage	-0.00030	0.00179
	20°C/Max Voltage	0.00054	0.00035
15MHz	-40°C/Normal Voltage	0.00073	-0.00078
	-30°C/Normal Voltage	0.00094	0.00070
	-20°C/Normal Voltage	-0.00138	-0.00123
	-10°C/Normal Voltage	-0.00068	-0.00155
	0°C/Normal Voltage	0.00013	0.00041
	10°C/Normal Voltage	-0.00301	-0.00113
	20°C/Normal Voltage	-0.00045	0.00186
	30°C/Normal Voltage	0.00010	-0.00235
	40°C/Normal Voltage	-0.00077	0.00003
	50°C/Normal Voltage	-0.00062	-0.00123
	55°C/Normal Voltage	0.00124	-0.00295
	20°C/Min Voltage	0.00012	-0.00074
	20°C/Max Voltage	0.00209	0.00160
20MHz	-40°C/Normal Voltage	0.00827	0.00465
	-30°C/Normal Voltage	0.00176	0.00115
	-20°C/Normal Voltage	0.00997	0.00535
	-10°C/Normal Voltage	0.00654	0.00434
	0°C/Normal Voltage	0.01006	0.00620
	10°C/Normal Voltage	0.00921	0.00506
	20°C/Normal Voltage	0.00866	0.00514
	30°C/Normal Voltage	0.00903	0.00663
	40°C/Normal Voltage	0.00898	0.00646
	50°C/Normal Voltage	0.00921	0.00683
	55°C/Normal Voltage	0.00990	0.00655
	20°C/Min Voltage	0.00774	0.00607
	20°C/Max Voltage	0.00992	0.00771



### 4.7 Spurious Emissions at Antenna Terminals

#### Ambient condition

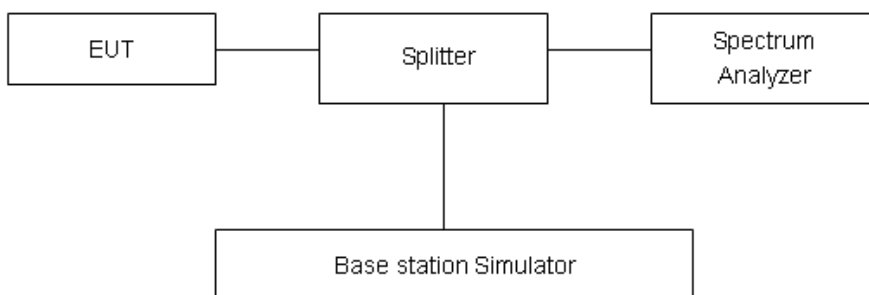
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

#### Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used. Set RBW 1MHz and VBW3MHz, Sweep is set to ATUO.

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

#### Test setup



#### Limits

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.

Limit	-25 dBm
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#### Measurement Uncertainty

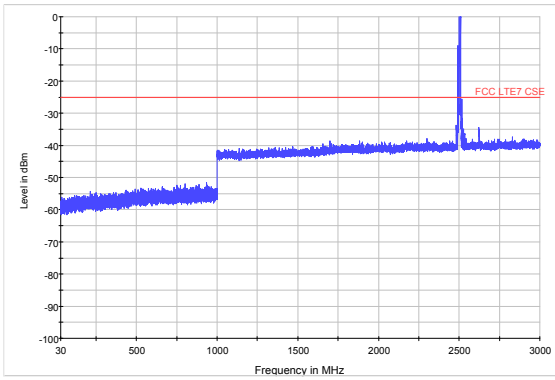
The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ .

Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-12.75GHz	1.407 dB

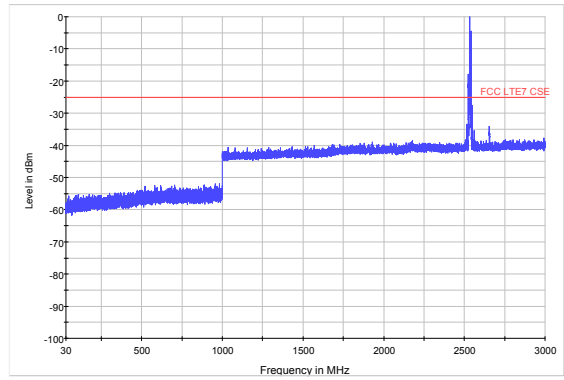


Test Result:

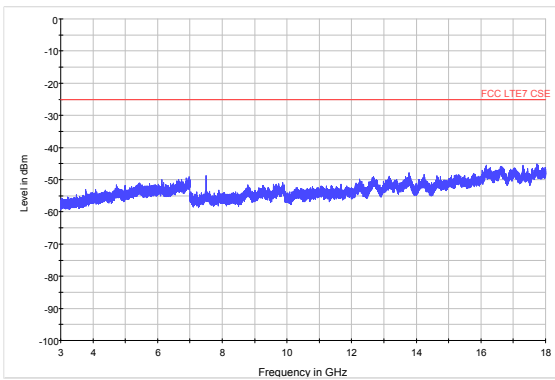
LTE Band 7 5MHz CH-Low 30MHz~3GHz



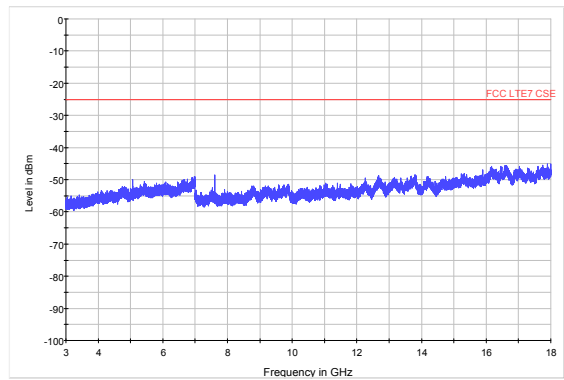
LTE Band 7 5MHz CH-Middle 30MHz~3GHz



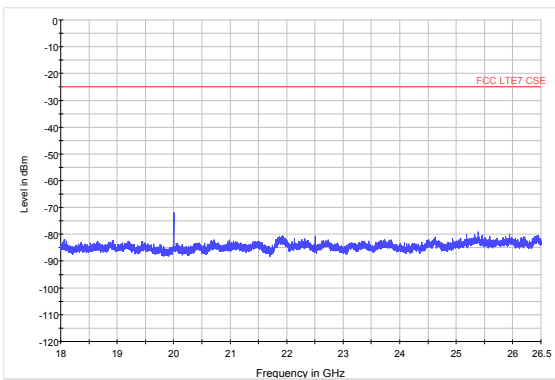
LTE Band 7 5MHz CH-Low 3GHz~18GHz



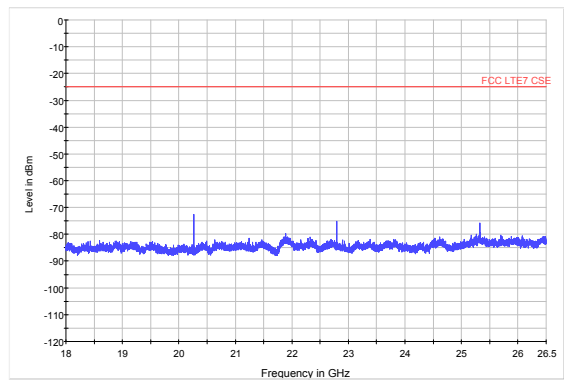
LTE Band 7 5MHz CH-Middle 3GHz~18GHz



LTE Band 7 5MHz CH-Low 18GHz~26.5GHz

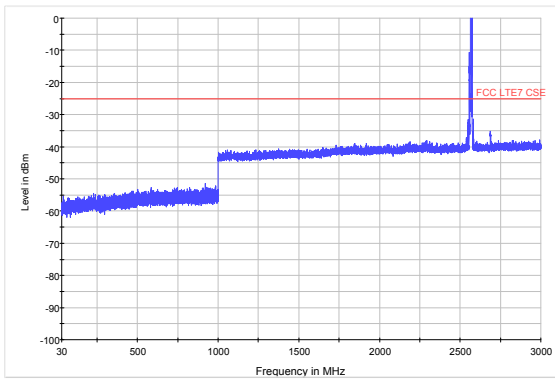


LTE Band 7 5MHz CH-Middle 18GHz~26.5GHz

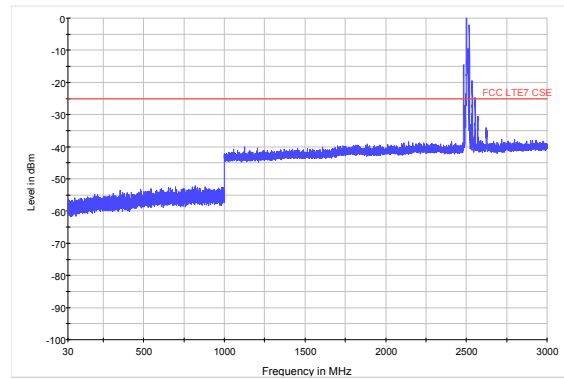




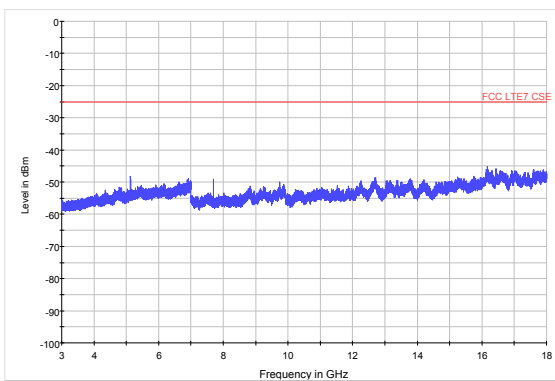
LTE Band 7 5MHz CH-High 30MHz~3GHz



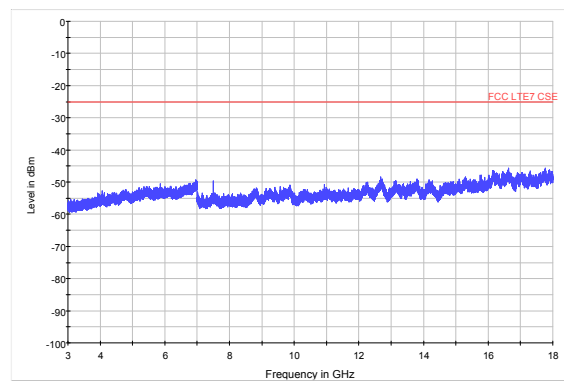
LTE Band 7 10MHz CH-Low 30MHz~3GHz



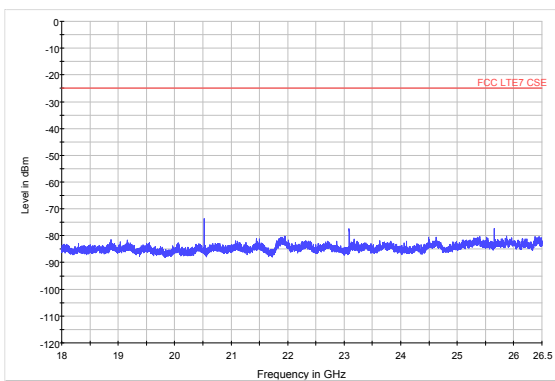
LTE Band 7 5MHz CH-High 3GHz~18GHz



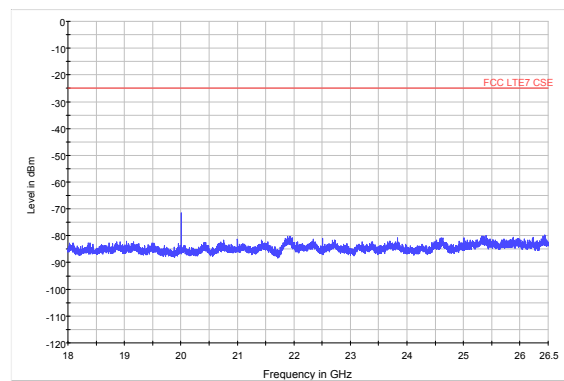
LTE Band 7 10MHz CH-Low 3GHz~18GHz



LTE Band 7 5MHz CH-High 18GHz~26.5GHz

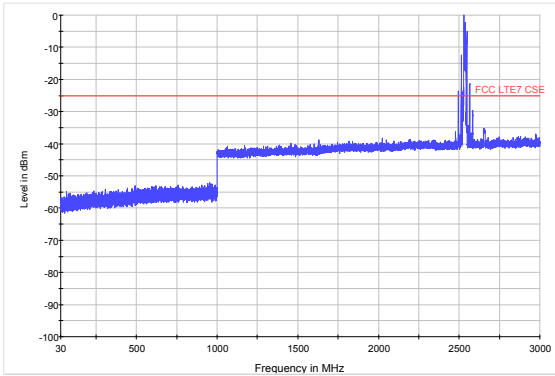


LTE Band 7 10MHz C CH-Low 18GHz~26.5GHz

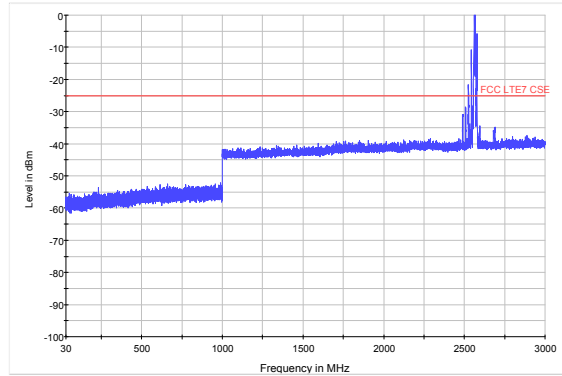




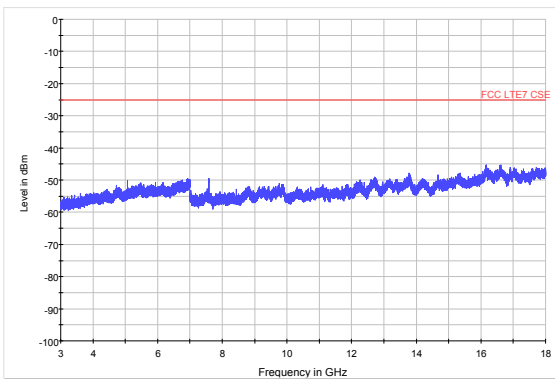
LTE Band 7 10MHz CH-Middle 30MHz~3GHz



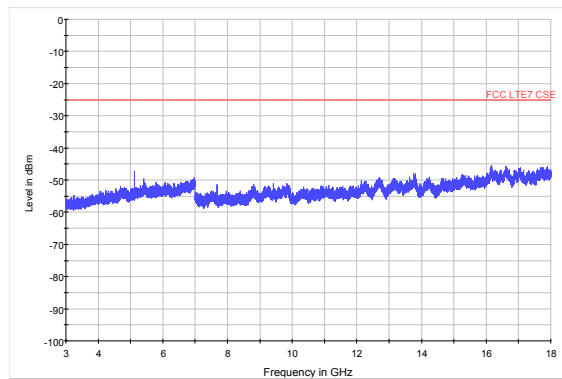
LTE Band 7 10MHz CH-High 30MHz~3GHz



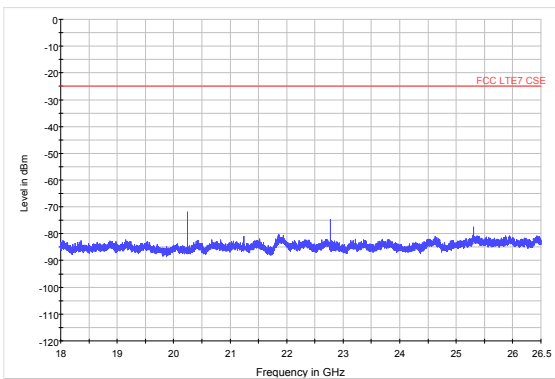
LTE Band 7 10MHz CH-Middle 3GHz~18GHz



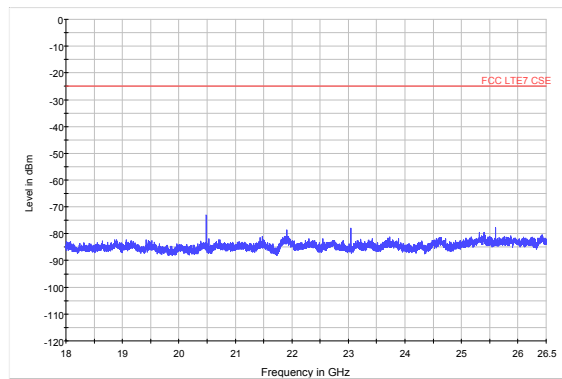
LTE Band 7 10MHz CH-High 3GHz~18GHz



LTE Band 7 10MHz CH-Middle 18GHz~26.5GHz

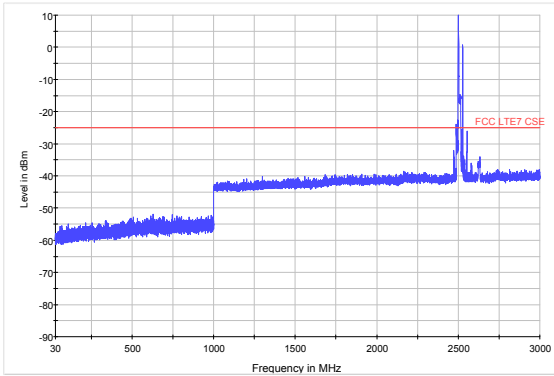


LTE Band 7 10MHz CH-High 18GHz~26.5GHz

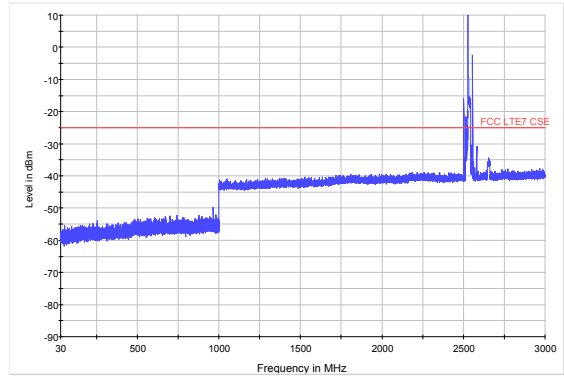




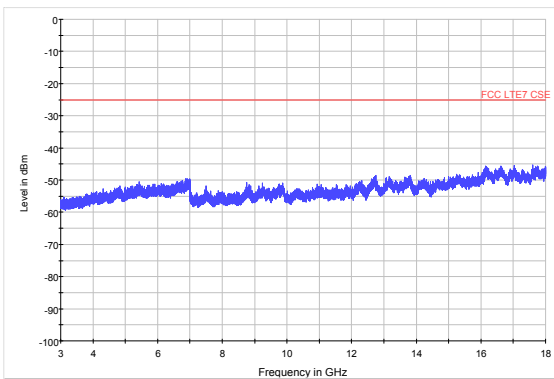
LTE Band 7 15MHz CH-Low 30MHz~3GHz



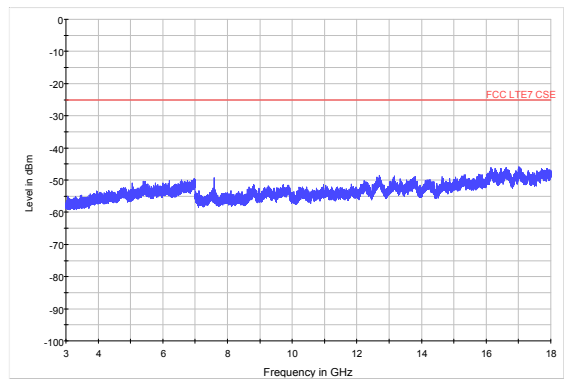
LTE Band 7 15MHz CH-Middle 30MHz~3GHz



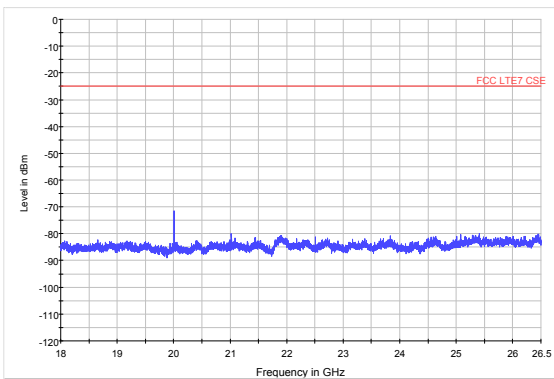
LTE Band 7 15MHz CH-Low 3GHz~18GHz



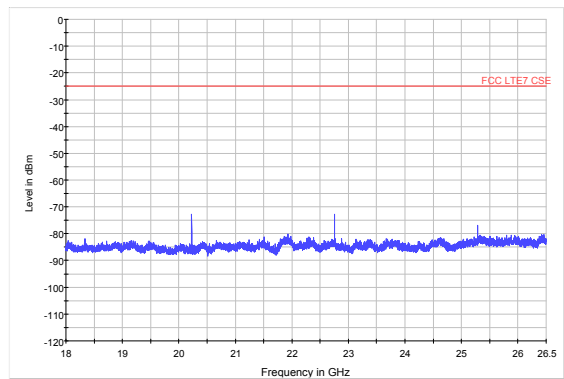
LTE Band 7 15MHz CH-Middle 3GHz~18GHz



LTE Band 7 15MHz CH-Low 18GHz~26.5GHz

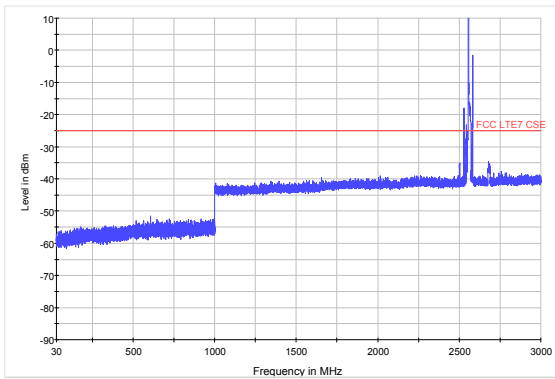


LTE Band 7 15MHz CH-Middle 18GHz~26.5GHz

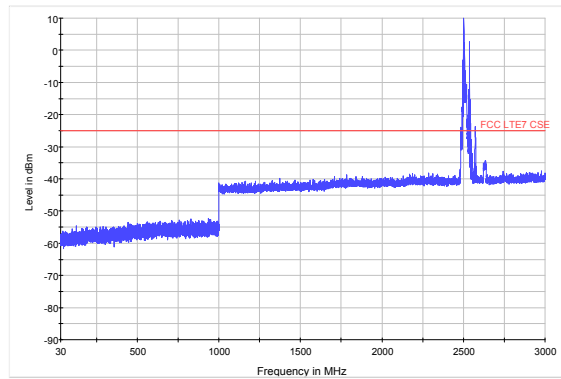




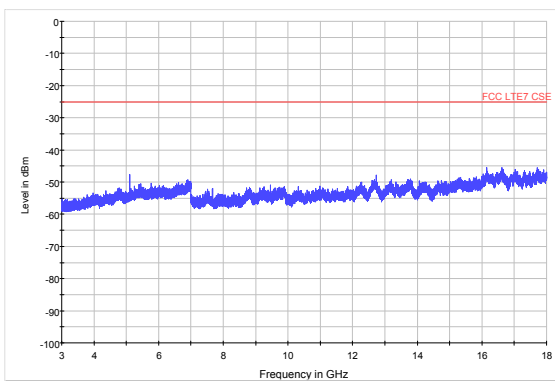
LTE Band 7 15MHz CH-High 30MHz~3GHz



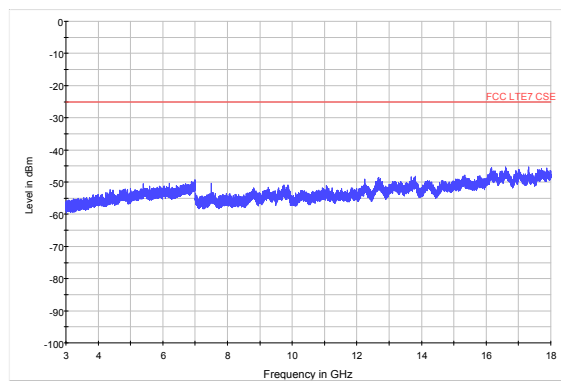
LTE Band 7 20MHz CH-Low 30MHz~3GHz



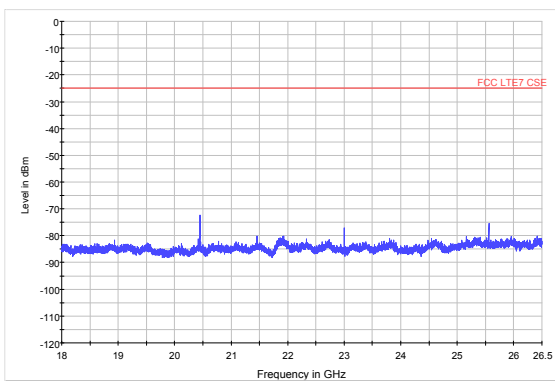
LTE Band 7 15MHz CH-High 3GHz~18GHz



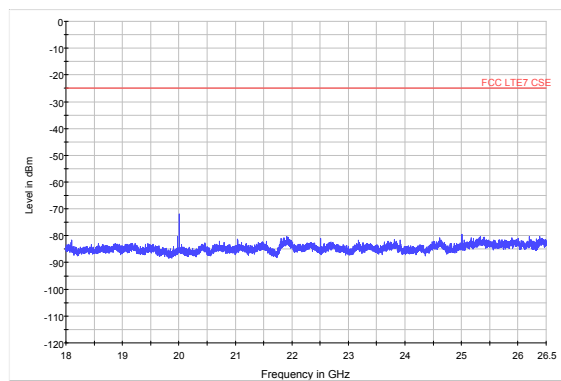
LTE Band 7 20MHz CH-Low 3GHz~18GHz



LTE Band 7 15MHz CH-High 18GHz~26.5GHz

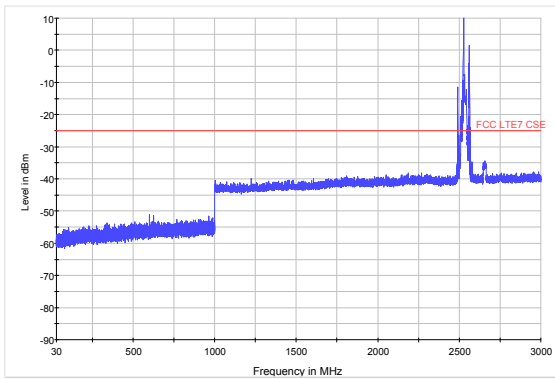


LTE Band 7 20MHz CH-Low 18GHz~26.5GHz

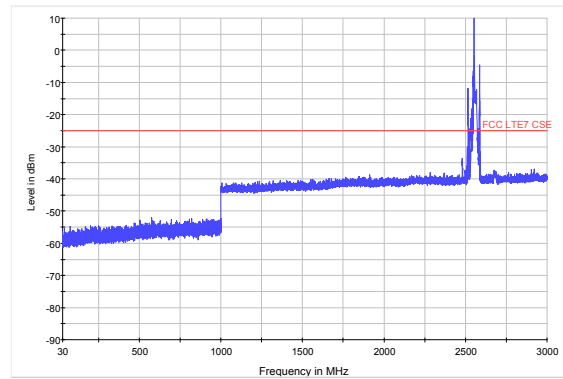




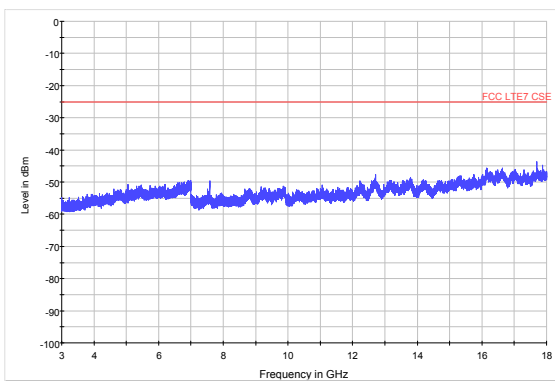
LTE Band 7 20MHz CH-Middle 30MHz~3GHz



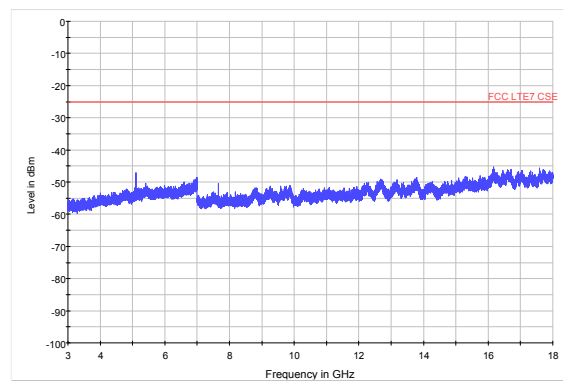
LTE Band 7 20MHz CH-High 30MHz~3GHz



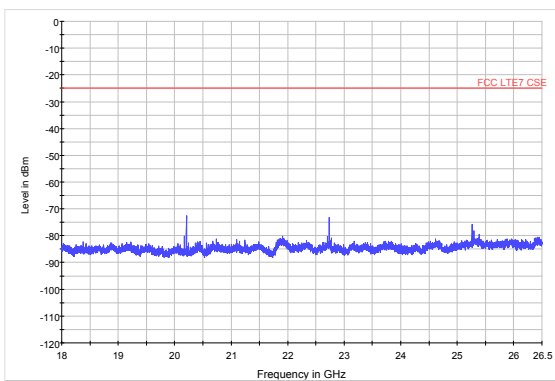
LTE Band 7 20MHz CH-Middle 3GHz~18GHz



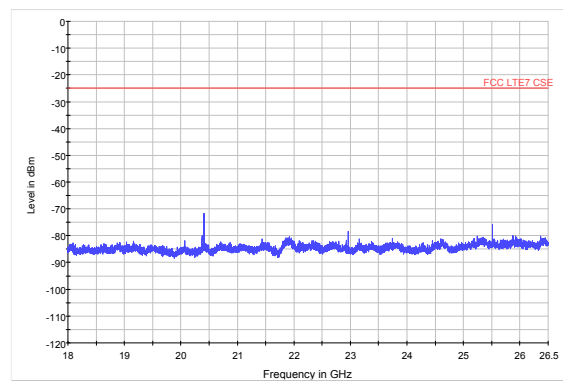
LTE Band 7 20MHz CH-High 3GHz~18GHz



LTE Band 7 20MHz CH-Middle 18GHz~26.5GHz

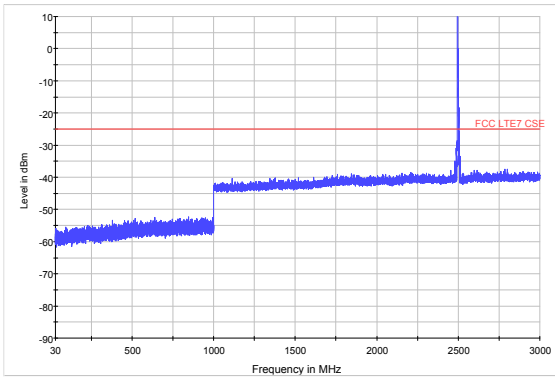


LTE Band 7 20MHz CH-High 18GHz~26.5GHz

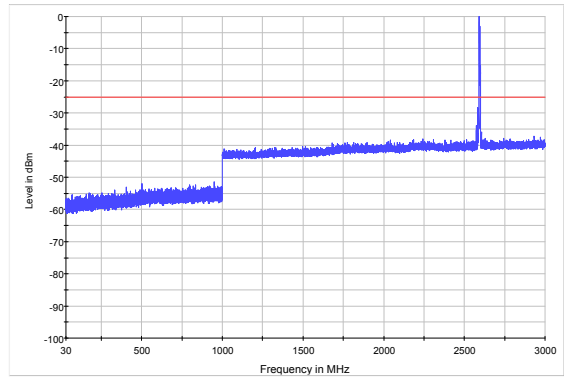




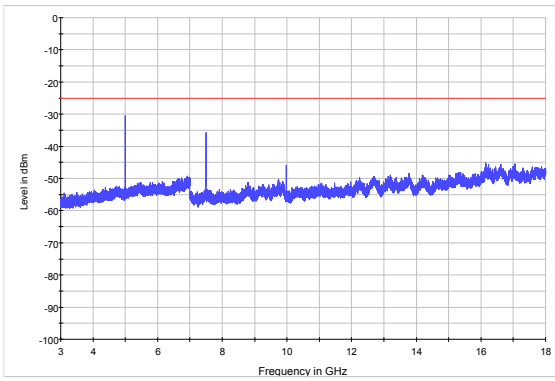
LTE Band 41 5MHz CH-Low 30MHz~3GHz



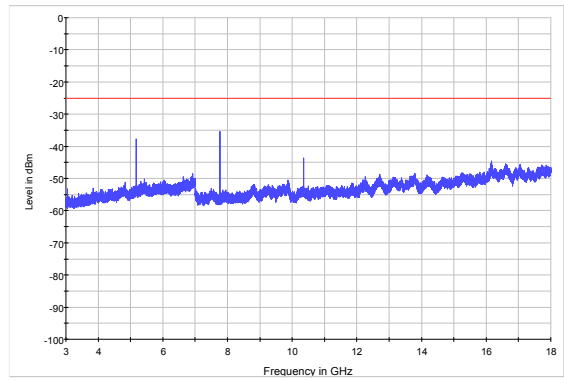
LTE Band 41 5MHz CH-Middle 30MHz~3GHz



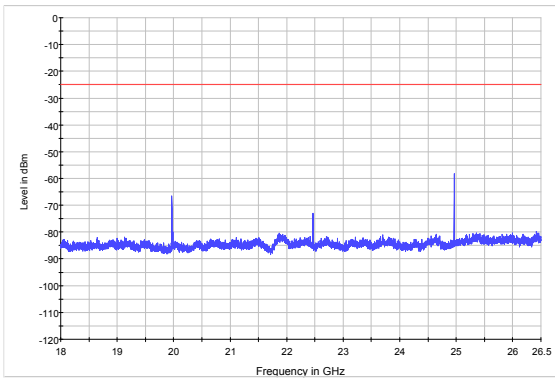
LTE Band 41 5MHz CH427235 3GHz~18GHz



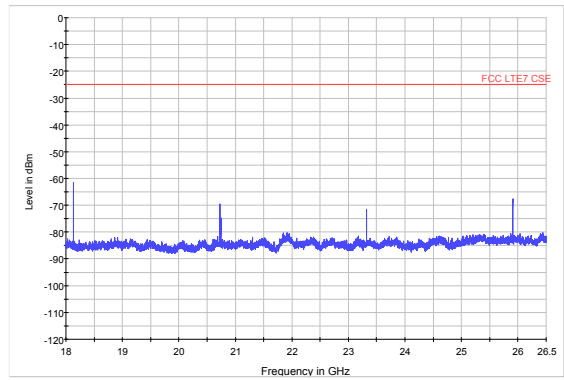
LTE Band 41 5MHz CH-Middle 3GHz~18GHz



LTE Band 41 5MHz CH-Low 18GHz~26.5GHz



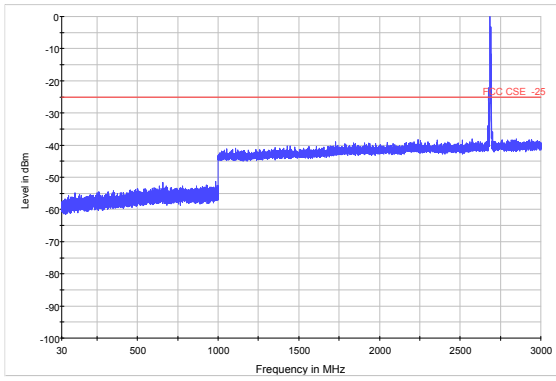
LTE Band 41 5MHz CH-Middle 18GHz~26.5GHz



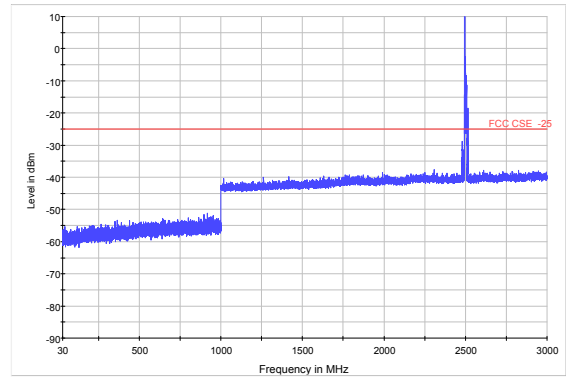




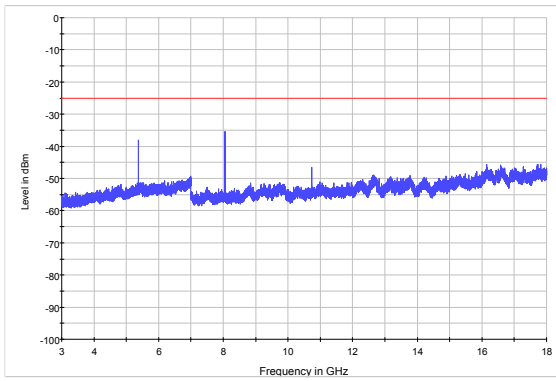
LTE Band 41 5MHz CH-High 30MHz~3GHz



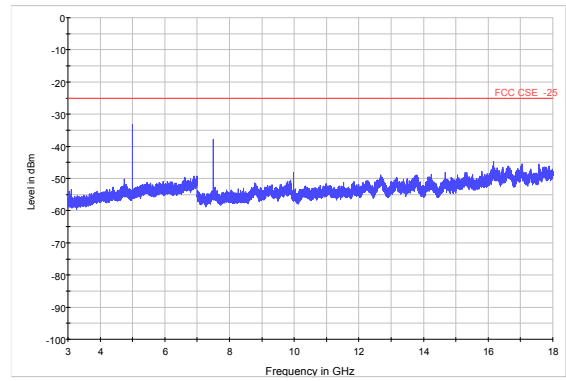
LTE Band 41 10MHz CH-Low 30MHz~3GHz



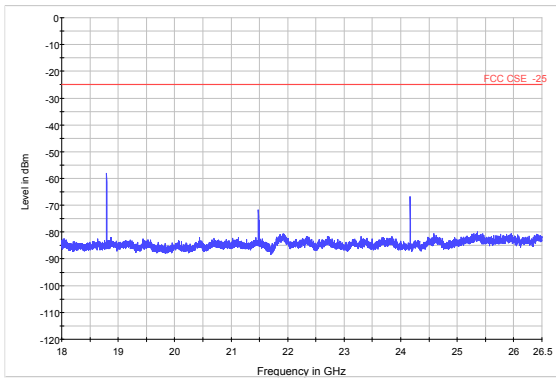
LTE Band 41 5MHz CH-High 3GHz~18GHz



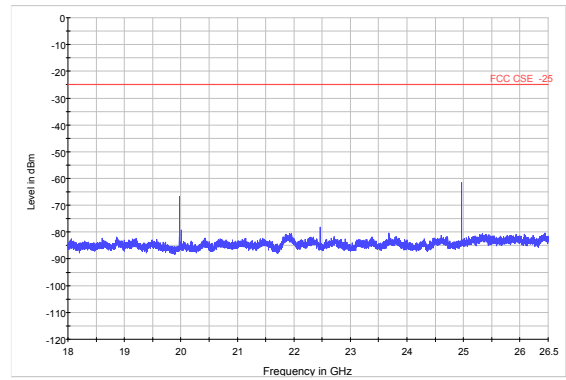
LTE Band 41 10MHz CH-Low 3GHz~18GHz



LTE Band 41 5MHz CH-High 18GHz~26.5GHz

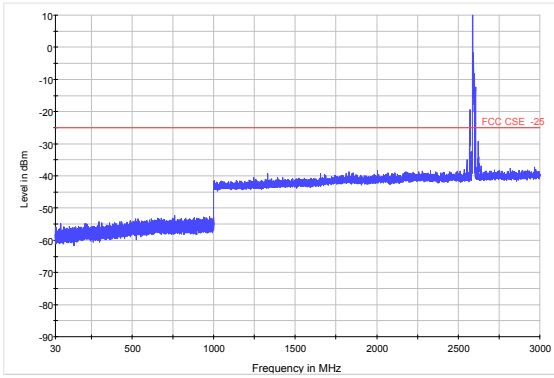


LTE Band 41 10MHz CH-Low 18GHz~26.5GHz

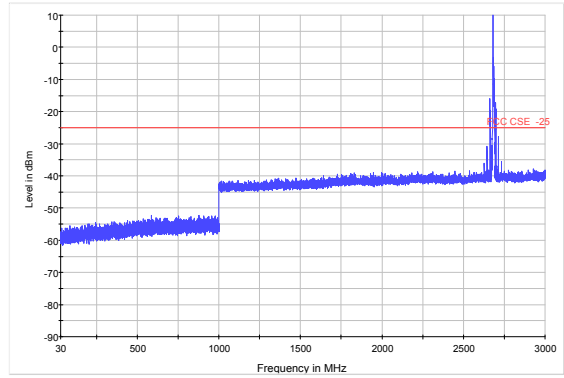




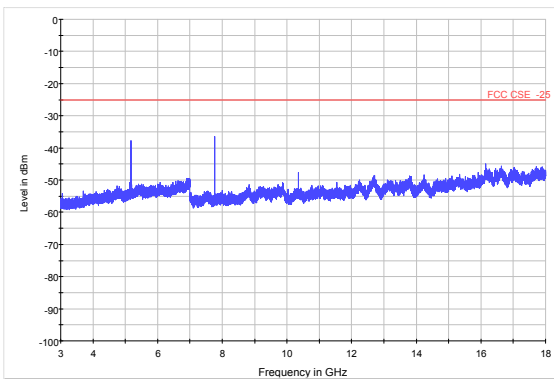
LTE Band 41 10MHz CH-Middle 30MHz~3GHz



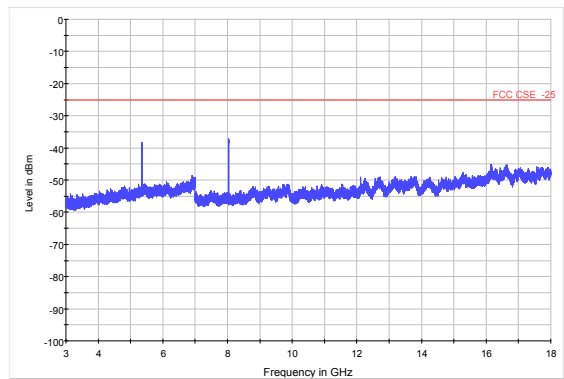
LTE Band 41 10MHz CH-High 30MHz~3GHz



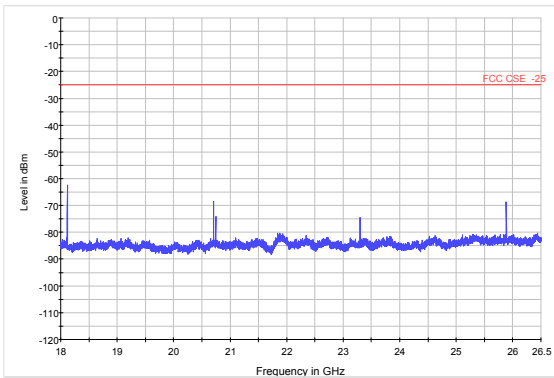
LTE Band 41 10MHz CH-Middle 3GHz~18GHz



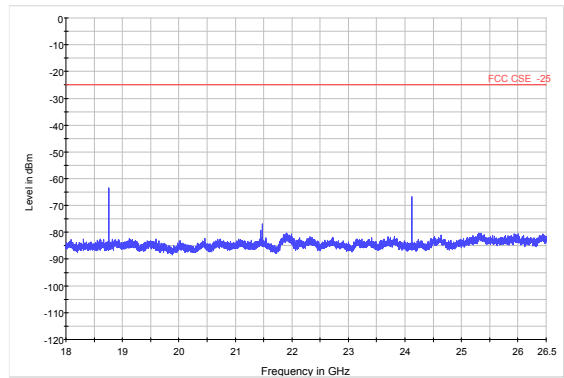
LTE Band 41 10MHz CH-High 3GHz~18GHz



LTE Band 41 10MHz CH-Middle  
18GHz~26.5GHz

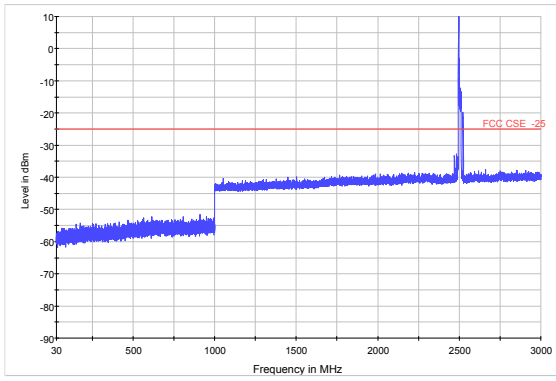


LTE Band 41 10MHz CH-High  
18GHz~26.5GHz

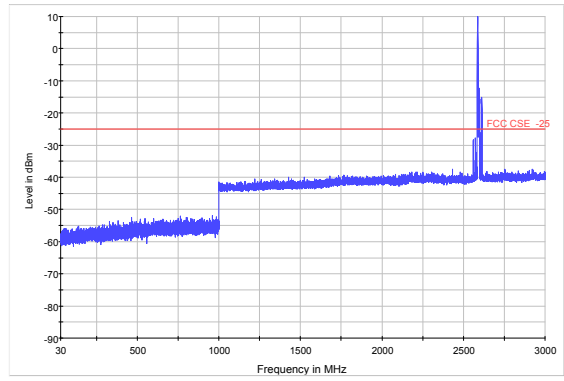




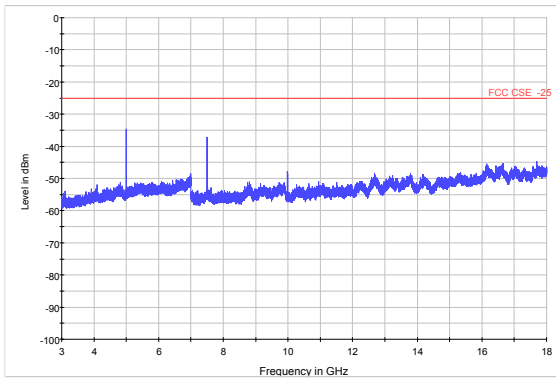
LTE Band 41 15MHz CH-Low 30MHz~3GHz



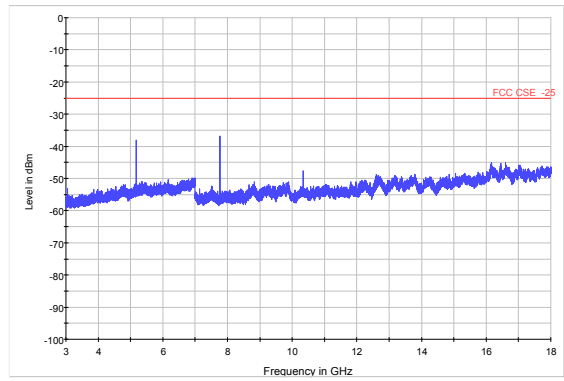
LTE Band 41 15MHz CH-Middle 30MHz~3GHz



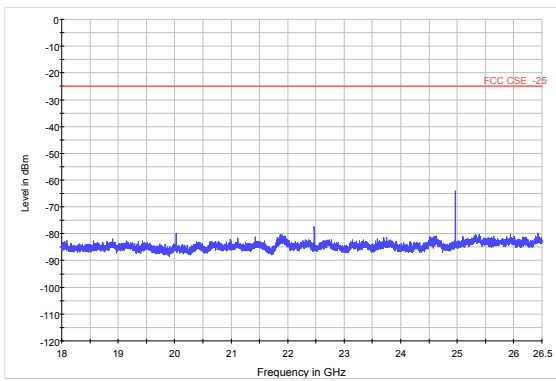
LTE Band 41 15MHz CH-Low 3GHz~18GHz



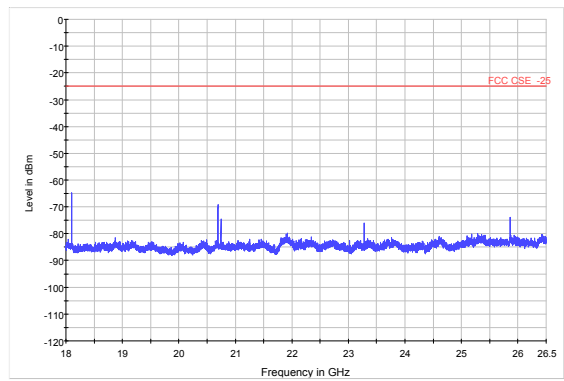
LTE Band 41 15MHz CH-Middle 3GHz~18GHz



LTE Band 41 15MHz CH-Low  
18GHz~26.5GHz

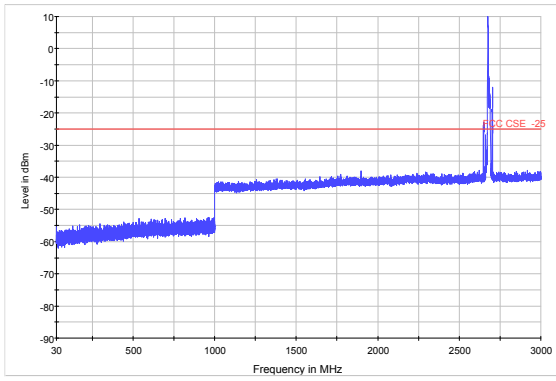


LTE Band 41 15MHz CH-Middle  
18GHz~26.5GHz

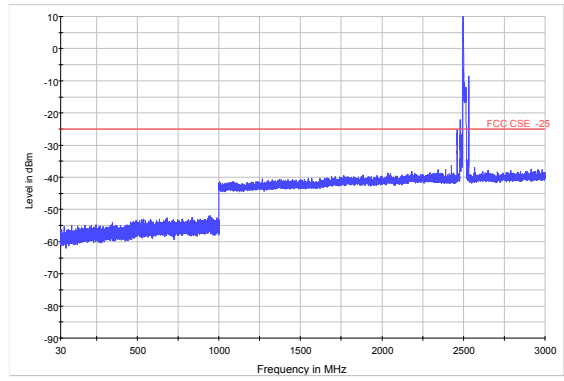




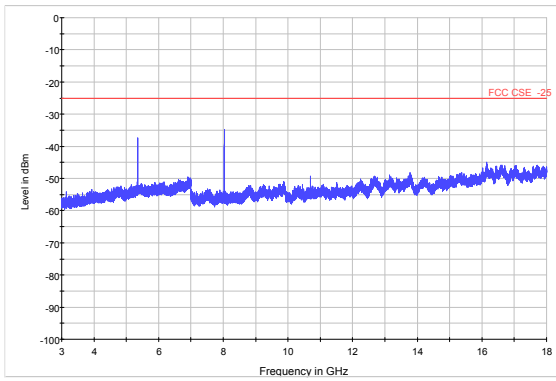
LTE Band 41 15MHz CH-High 30MHz~3GHz



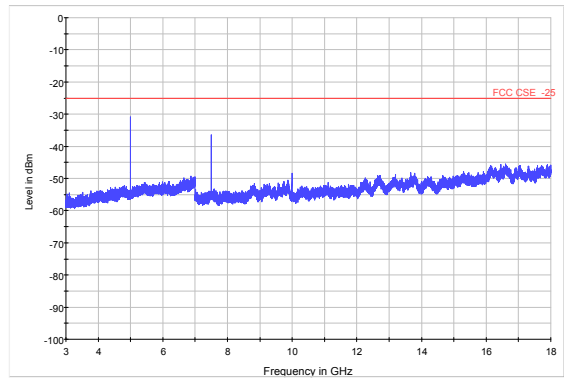
LTE Band 41 20MHz CH-Low 30MHz~3GHz



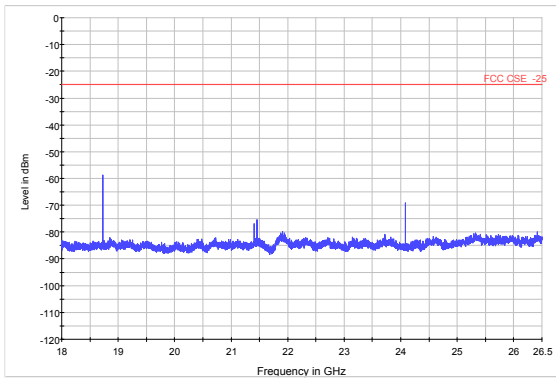
LTE Band 41 15MHz CH-High 3GHz~18GHz



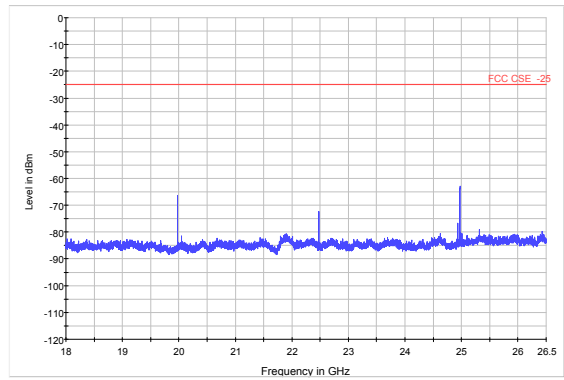
LTE Band 41 20MHz CH-Low 3GHz~18GHz



LTE Band 41 15MHz CH-High 18GHz~26.5GHz

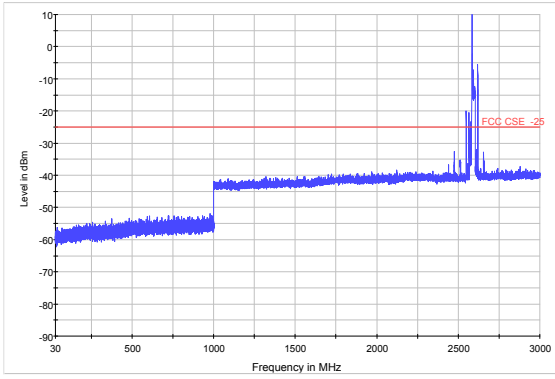


LTE Band 41 20MHz CH-Low 18GHz~26.5GHz

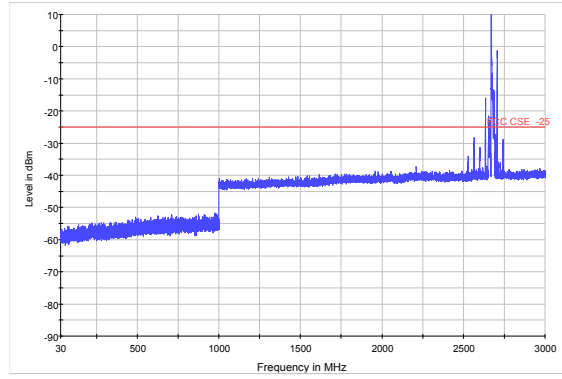




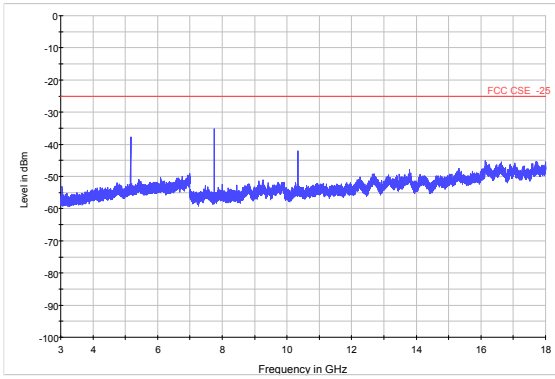
LTE Band 41 20MHz CH-Middle 30MHz~3GHz



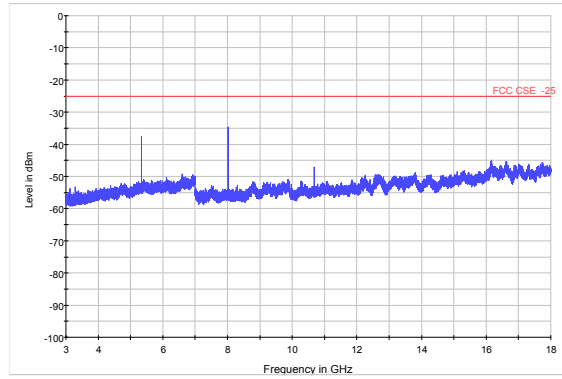
LTE Band 41 20MHz CH-High 30MHz~3GHz



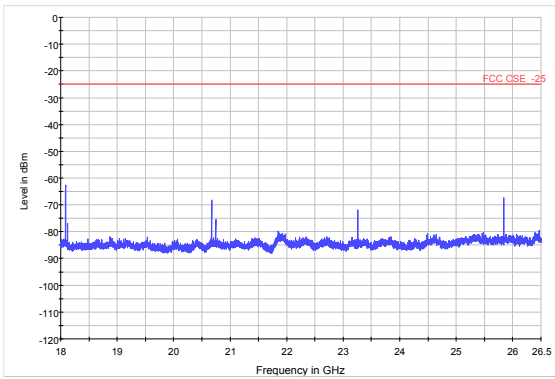
LTE Band 41 20MHz CH-Middle 3GHz~18GHz



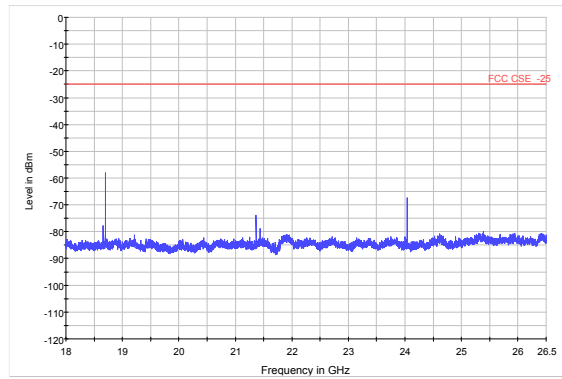
LTE Band 41 20MHz CH-High 3GHz~18GHz



LTE Band 41 20MHz CH-Middle  
18GHz~26.5GHz



LTE Band 41 20MHz CH-High  
18GHz~26.5GHz





If disturbances were found more than 20dB below limit line, the mark is not required for the EUT.

The signal beyond the limit is carrier in the following plots.

Test Data File Name	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
LTE B41_5M_CHLOW_RB1_3-18GHz	4992.8	-30.46	-25	5.46
LTE B41_5M_CHMID_RB1_3-18GHz	7772.6	-35.46	-25	10.46
LTE B41_5M_CHHIGH_RB1_3-18GHz	8055.8	-35.41	-25	10.41
LTE B41_10M_CHLOW_RB1_3-18GHz	4993.1	-33.17	-25	8.17
LTE B41_10M_CHMID_RB1_3-18GHz	7765.5	-37.50	-25	12.50
LTE B41_10M_CHHIGH_RB1_3-18GHz	8042.3	-37.13	-25	12.13
LTE B41_15M_CHLOW_RB1_3-18GHz	4994.3	-35.53	-25	10.53
LTE B41_15M_CHMID_RB1_3-18GHz	7759.1	-36.82	-25	11.82
LTE B41_15M_CHHIGH_RB1_3-18GHz	8027.6	-34.82	-25	9.82
LTE B41_20M_CHLOW_RB1_3-18GHz	4994.3	-31.71	-25	6.71
LTE B41_20M_CHMID_RB1_3-18GHz	7752.4	-35.21	-25	10.21
LTE B41_20M_CHHIGH_RB1_3-18GHz	80133.4	-34.69	-25	9.69

## 4.8 Radiates Spurious Emission

### Ambient condition

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

### Method of Measurement

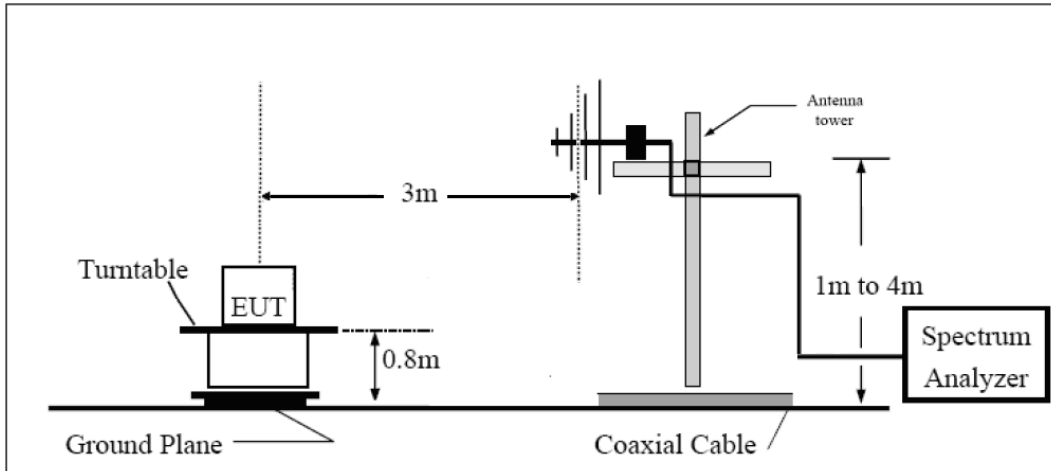
- The testing follows ANSI C63.26 (2015) Section 5.5.2.3.
- Above 30MHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the 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 log-periodic antenna or double-ridged waveguide 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=1MHz, VBW=3MHz, 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:  

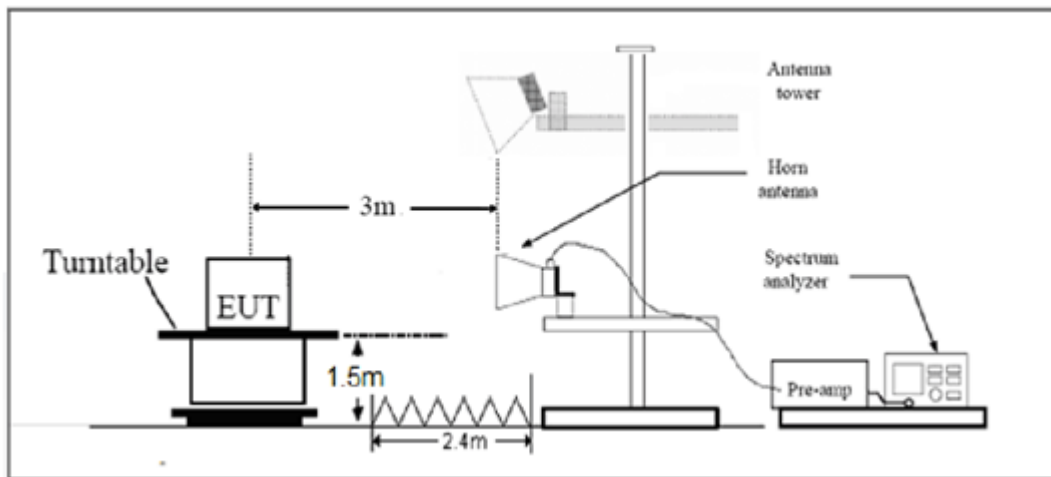
$$\text{Power(EIRP)} = \text{PMea} - \text{Pcl} + \text{Ga}$$
- This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole,  $\text{ERP} = \text{EIRP} - 2.15\text{dBi}$ .

**Test setup**

**30MHz~~~ 1GHz**



**Above 1GHz**



Note: Area side:2.4mX3.6m

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.

**Limits**

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.

Limit	-25 dBm
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## 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 Result**

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5006.6	-35.25	2.00	9.15	Vertical	-28.1	-25.0	3.1	135
3	7507.5	-39.45	2.50	11.35	Vertical	-30.6	-25.0	5.6	270
4	10010.0	-36.95	4.20	12.05	Vertical	-29.1	-25.0	4.1	45
5	12512.5	-46.05	5.20	12.85	Vertical	-38.4	-25.0	13.4	225
6	15015.0	-43.03	5.50	14.23	Vertical	-34.3	-25.0	9.3	270
7	17517.5	-42.15	5.70	14.15	Vertical	-33.7	-25.0	8.7	90
8	20020.0	-40.56	6.30	13.76	Vertical	-33.1	-25.0	8.1	45
9	22522.5	-39.95	6.80	14.05	Vertical	-32.7	-25.0	7.7	90
10	25025.0	-40.04	6.90	14.84	Vertical	-32.1	-25.0	7.1	270

- 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 vertical 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	5065.9	-33.65	2.00	9.15	Vertical	-26.5	-25.0	1.5	45
3	7598.6	-42.85	2.50	11.35	Vertical	-34.0	-25.0	9.0	225
4	10130.6	-35.35	4.20	12.05	Vertical	-27.5	-25.0	2.5	270
5	12675.0	-45.75	5.20	12.85	Vertical	-38.1	-25.0	13.1	90
6	15210.0	-45.03	5.50	14.23	Vertical	-36.3	-25.0	11.3	45
7	17745.0	-42.95	5.70	14.15	Vertical	-34.5	-25.0	9.5	90
8	20280.0	-41.06	6.30	13.76	Vertical	-33.6	-25.0	8.6	270
9	22815.0	-40.35	6.80	14.05	Vertical	-33.1	-25.0	8.1	45
10	25350.0	-40.84	6.90	14.84	Vertical	-32.9	-25.0	7.9	225

- 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 vertical position.

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5130.8	-36.25	2.00	9.15	Vertical	-29.1	-25.0	4.1	270
3	7695.8	-43.55	2.50	11.35	Vertical	-34.7	-25.0	9.7	90
4	10261.1	-33.45	4.20	12.05	Vertical	-25.6	-25.0	0.6	135
5	12837.5	-45.05	5.20	12.85	Vertical	-37.4	-25.0	12.4	270
6	15405.0	-45.73	5.50	14.23	Vertical	-37.0	-25.0	12.0	45
7	17972.5	-43.35	5.70	14.15	Vertical	-34.9	-25.0	9.9	135
8	20540.0	-41.36	6.30	13.76	Vertical	-33.9	-25.0	8.9	0
9	23107.5	-40.05	6.80	14.05	Vertical	-32.8	-25.0	7.8	90
10	25675.0	-40.04	6.90	14.84	Vertical	-32.1	-25.0	7.1	135

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 vertical position.

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5010.0	-34.85	2.00	9.15	Vertical	-27.7	-25.0	2.7	270
3	7515.0	-40.75	2.50	11.35	Vertical	-31.9	-25.0	6.9	225
4	10020.0	-35.85	4.20	12.05	Vertical	-28.0	-25.0	3.0	135
5	12525.0	-43.25	5.20	12.85	Vertical	-35.6	-25.0	10.6	225
6	15030.0	-46.43	5.50	14.23	Vertical	-37.7	-25.0	12.7	135
7	17535.0	-43.65	5.70	14.15	Vertical	-35.2	-25.0	10.2	0
8	20040.0	-40.96	6.30	13.76	Vertical	-33.5	-25.0	8.5	45
9	22545.0	-39.35	6.80	14.05	Vertical	-32.1	-25.0	7.1	90
10	25050.0	-39.84	6.90	14.84	Vertical	-31.9	-25.0	6.9	225

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 vertical position.

**LTE Band 7 QPSK 10MHz 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	5070.0	-36.25	2.00	9.15	Vertical	-29.1	-25.0	4.1	90
3	7605.0	-43.25	2.50	11.35	Vertical	-34.4	-25.0	9.4	135
4	10140.0	-46.05	4.20	12.05	Vertical	-38.2	-25.0	13.2	225
5	12675.0	-42.55	5.20	12.85	Vertical	-34.9	-25.0	9.9	225
6	15210.0	-43.03	5.50	14.23	Vertical	-34.3	-25.0	9.3	90
7	17745.0	-41.65	5.70	14.15	Vertical	-33.2	-25.0	8.2	45
8	20280.0	-40.56	6.30	13.76	Vertical	-33.1	-25.0	8.1	225
9	22815.0	-39.85	6.80	14.05	Vertical	-32.6	-25.0	7.6	90
10	25350.0	-40.04	6.90	14.84	Vertical	-32.1	-25.0	7.1	45

- 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 vertical position.

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5130.0	-37.25	2.00	10.15	Vertical	-29.1	-25.0	4.1	135
3	7695.0	-44.25	2.50	11.35	Vertical	-35.4	-25.0	10.4	0
4	10260.0	-46.05	4.20	12.05	Vertical	-38.2	-25.0	13.2	90
5	12825.0	-43.95	5.20	14.85	Vertical	-34.3	-25.0	9.3	135
6	15390.0	-41.83	5.50	13.23	Vertical	-34.1	-25.0	9.1	270
7	17955.0	-39.65	5.70	12.15	Vertical	-33.2	-25.0	8.2	225
8	20520.0	-39.96	6.30	13.76	Vertical	-32.5	-25.0	7.5	45
9	23085.0	-39.35	6.80	14.05	Vertical	-32.1	-25.0	7.1	135
10	25650.0	-39.54	6.90	14.84	Vertical	-31.6	-25.0	6.6	0

- 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 vertical position.

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5015.0	-35.35	2.00	10.15	Vertical	-27.2	-25.0	2.2	90
3	7522.5	-40.85	2.50	11.35	Vertical	-32.0	-25.0	7.0	135
4	10030.0	-45.05	4.20	12.05	Vertical	-37.2	-25.0	12.2	270
5	12537.5	-45.55	5.20	14.85	Vertical	-35.9	-25.0	10.9	225
6	15045.0	-42.23	5.50	13.23	Vertical	-34.5	-25.0	9.5	135
7	17552.5	-40.65	5.70	12.15	Vertical	-34.2	-25.0	9.2	225
8	20060.0	-41.06	6.30	13.76	Vertical	-33.6	-25.0	8.6	135
9	22567.5	-40.35	6.80	14.05	Vertical	-33.1	-25.0	8.1	0
10	25075.0	-40.44	6.90	14.84	Vertical	-32.5	-25.0	7.5	45

- 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 vertical position.

**LTE Band 7 QPSK 15MHz 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	5070.0	-37.25	2.00	10.15	Vertical	-29.1	-25.0	4.1	90
3	7605.0	-39.95	2.50	11.35	Vertical	-31.1	-25.0	6.1	225
4	10140.0	-38.95	4.20	12.05	Vertical	-31.1	-25.0	6.1	90
5	12675.0	-47.05	5.20	14.85	Vertical	-37.4	-25.0	12.4	135
6	15210.0	-41.23	5.50	13.23	Vertical	-33.5	-25.0	8.5	225
7	17745.0	-40.75	5.70	12.15	Vertical	-34.3	-25.0	9.3	225
8	20280.0	-40.96	6.30	13.76	Vertical	-33.5	-25.0	8.5	90
9	22815.0	-39.85	6.80	14.05	Vertical	-32.6	-25.0	7.6	45
10	25350.0	-39.44	6.90	14.84	Vertical	-31.5	-25.0	6.5	225

- 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 vertical position.

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5125.0	-38.65	2.00	10.15	Vertical	-30.5	-25.0	5.5	90
3	7687.5	-46.05	2.50	11.35	Vertical	-37.2	-25.0	12.2	45
4	10250.0	-36.45	4.20	12.05	Vertical	-28.6	-25.0	3.6	135
5	12812.5	-44.85	5.20	14.85	Vertical	-35.2	-25.0	10.2	0
6	15375.0	-43.33	5.50	13.23	Vertical	-35.6	-25.0	10.6	90
7	17937.5	-40.95	5.70	12.15	Vertical	-34.5	-25.0	9.5	135
8	20500.0	-41.06	6.30	13.76	Vertical	-33.6	-25.0	8.6	270
9	23062.5	-40.35	6.80	14.05	Vertical	-33.1	-25.0	8.1	225
10	25625.0	-40.44	6.90	14.84	Vertical	-32.5	-25.0	7.5	135

- 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 vertical position.

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5020.0	-35.75	2.00	10.15	Vertical	-27.6	-25.0	2.6	225
3	7530.0	-39.75	2.50	11.35	Vertical	-30.9	-25.0	5.9	135
4	10040.0	-45.55	4.20	12.05	Vertical	-37.7	-25.0	12.7	0
5	12550.0	-45.95	5.20	14.85	Vertical	-36.3	-25.0	11.3	45
6	15060.0	-44.13	5.50	13.23	Vertical	-36.4	-25.0	11.4	45
7	17570.0	-41.05	5.70	12.15	Vertical	-34.6	-25.0	9.6	135
8	20080.0	-41.56	6.30	13.76	Vertical	-34.1	-25.0	9.1	0
9	22590.0	-40.85	6.80	14.05	Vertical	-33.6	-25.0	8.6	90
10	25100.0	-40.74	6.90	14.84	Vertical	-32.8	-25.0	7.8	135

- 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 vertical 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	5070.0	-37.55	2.00	10.15	Vertical	-29.4	-25.0	4.4	270
3	7605.0	-42.15	2.50	11.35	Vertical	-33.3	-25.0	8.3	225
4	10140.0	-35.95	4.20	12.05	Vertical	-28.1	-25.0	3.1	135
5	12675.0	-46.95	5.20	14.85	Vertical	-37.3	-25.0	12.3	225
6	15210.0	-43.43	5.50	13.23	Vertical	-35.7	-25.0	10.7	135
7	17745.0	-40.85	5.70	12.15	Vertical	-34.4	-25.0	9.4	0
8	20280.0	-41.06	6.30	13.76	Vertical	-33.6	-25.0	8.6	45
9	22815.0	-39.75	6.80	14.05	Vertical	-32.5	-25.0	7.5	90
10	25350.0	-40.04	6.90	14.84	Vertical	-32.1	-25.0	7.1	225

- 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 vertical position.

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5120.0	-39.95	2.00	10.15	Vertical	-31.8	-25.0	6.8	90
3	7680.0	-42.65	2.50	11.35	Vertical	-33.8	-25.0	8.8	135
4	10240.0	-34.65	4.20	12.05	Vertical	-26.8	-25.0	1.8	225
5	12800.0	-46.85	5.20	14.85	Vertical	-37.2	-25.0	12.2	225
6	15360.0	-43.43	5.50	13.23	Vertical	-35.7	-25.0	10.7	45
7	17920.0	-40.95	5.70	12.15	Vertical	-34.5	-25.0	9.5	135
8	20480.0	-41.76	6.30	13.76	Vertical	-34.3	-25.0	9.3	0
9	23040.0	-40.75	6.80	14.05	Vertical	-33.5	-25.0	8.5	90
10	25600.0	-40.54	6.90	14.84	Vertical	-32.6	-25.0	7.6	135

- 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 vertical position.

**LTE Band 41 QPSK 5MHz CH-Low, RB 1**

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5005.0	-34.55	2.00	9.15	Vertical	-27.4	-25.0	2.4	270
3	7507.5	-38.65	2.50	11.35	Vertical	-29.8	-25.0	4.8	225
4	10010.0	-35.05	4.20	12.05	Vertical	-27.2	-25.0	2.2	135
5	12512.5	-43.25	5.20	12.85	Vertical	-35.6	-25.0	10.6	225
6	15015.0	-44.93	5.50	14.23	Vertical	-36.2	-25.0	11.2	135
7	17517.5	-44.65	5.70	14.15	Vertical	-36.2	-25.0	11.2	0
8	20020.0	-42.86	6.30	13.76	Vertical	-35.4	-25.0	10.4	45
9	22522.5	-41.45	6.80	14.05	Vertical	-34.2	-25.0	9.2	90
10	25025.0	-41.14	6.90	14.84	Vertical	-33.2	-25.0	8.2	225

- 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 vertical position.

**LTE Band 41 QPSK 5MHz CH-Middle, RB 1**

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	4997.0	-38.05	2.00	9.15	Vertical	-30.9	-25.0	5.9	90
3	7495.5	-41.95	2.50	11.35	Vertical	-33.1	-25.0	8.1	135
4	9994.0	-36.75	4.20	12.05	Vertical	-28.9	-25.0	3.9	45
5	12492.5	-42.95	5.20	12.85	Vertical	-35.3	-25.0	10.3	135
6	14991.0	-46.03	5.50	14.23	Vertical	-37.3	-25.0	12.3	0
7	17489.5	-43.55	5.70	14.15	Vertical	-35.1	-25.0	10.1	90
8	19988.0	-42.16	6.30	13.76	Vertical	-34.7	-25.0	9.7	135
9	22486.5	-41.45	6.80	14.05	Vertical	-34.2	-25.0	9.2	270
10	24985.0	-41.44	6.90	14.84	Vertical	-33.5	-25.0	8.5	225

- 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 vertical position.



**LTE Band 41 QPSK 5MHz CH-High, RB 1**

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5186.0	-40.05	2.00	9.15	Vertical	-32.9	-25.0	7.9	135
3	7779.0	-43.95	2.50	11.35	Vertical	-35.1	-25.0	10.1	225
4	10372.0	-43.35	4.20	12.05	Vertical	-35.5	-25.0	10.5	135
5	12965.0	-42.95	5.20	12.85	Vertical	-35.3	-25.0	10.3	0
6	15558.0	-45.63	5.50	14.23	Vertical	-36.9	-25.0	11.9	45
7	18151.0	-43.95	5.70	14.15	Vertical	-35.5	-25.0	10.5	90
8	20744.0	-42.06	6.30	13.76	Vertical	-34.6	-25.0	9.6	225
9	23337.0	-40.75	6.80	14.05	Vertical	-33.5	-25.0	8.5	90
10	25930.0	-40.04	6.90	14.84	Vertical	-32.1	-25.0	7.1	135

- 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 vertical position.

**LTE Band 41 QPSK 10MHz CH-Low, RB 1**

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	4993.1	-35.45	2.00	9.15	Vertical	-28.3	-25.0	3.3	225
3	7489.5	-39.75	2.50	11.35	Vertical	-30.9	-25.0	5.9	225
4	9986.6	-37.05	4.20	12.05	Vertical	-29.2	-25.0	4.2	90
5	12505.0	-43.25	5.20	12.85	Vertical	-35.6	-25.0	10.6	45
6	15006.0	-45.63	5.50	14.23	Vertical	-36.9	-25.0	11.9	225
7	17507.0	-44.55	5.70	14.15	Vertical	-36.1	-25.0	11.1	90
8	20008.0	-43.06	6.30	13.76	Vertical	-35.6	-25.0	10.6	45
9	22509.0	-42.45	6.80	14.05	Vertical	-35.2	-25.0	10.2	135
10	25010.0	-41.04	6.90	14.84	Vertical	-33.1	-25.0	8.1	0

- 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 vertical position.

**LTE Band 41 QPSK 10MHz CH-Middle, RB 1**

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5177.3	-37.55	2.00	9.15	Vertical	-30.4	-25.0	5.4	90
3	7765.5	-40.55	2.50	11.35	Vertical	-31.7	-25.0	6.7	135
4	10353.4	-33.35	4.20	12.05	Vertical	-25.5	-25.0	0.5	270
5	12965.0	-43.15	5.20	12.85	Vertical	-35.5	-25.0	10.5	225
6	15558.0	-45.23	5.50	14.23	Vertical	-36.5	-25.0	11.5	135
7	18151.0	-44.65	5.70	14.15	Vertical	-36.2	-25.0	11.2	225
8	20744.0	-43.36	6.30	13.76	Vertical	-35.9	-25.0	10.9	135
9	23337.0	-42.65	6.80	14.05	Vertical	-35.4	-25.0	10.4	0
10	25930.0	-43.14	6.90	14.84	Vertical	-35.2	-25.0	10.2	45

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 vertical position.

**LTE Band 41 QPSK 10MHz CH-High, RB 1**

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5361.4	-44.85	2.00	10.15	Vertical	-36.7	-25.0	11.7	135
3	8042.3	-43.85	2.50	11.35	Vertical	-35.0	-25.0	10.0	0
4	10722.4	-38.75	4.20	12.05	Vertical	-30.9	-25.0	5.9	90
5	13425.0	-46.15	5.20	14.85	Vertical	-36.5	-25.0	11.5	135
6	16110.0	-45.13	5.50	13.23	Vertical	-37.4	-25.0	12.4	270
7	18795.0	-42.55	5.70	12.15	Vertical	-36.1	-25.0	11.1	225
8	21480.0	-43.06	6.30	13.76	Vertical	-35.6	-25.0	10.6	135
9	24165.0	-42.65	6.80	14.05	Vertical	-35.4	-25.0	10.4	225
10	26850.0	-42.14	6.90	14.84	Vertical	-34.2	-25.0	9.2	135

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 vertical position.

**LTE Band 41 QPSK 15MHz CH-Low, RB 1**

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	4993.5	-45.45	2.00	10.15	Vertical	-37.3	-25.0	12.3	0
3	7491.0	-42.35	2.50	11.35	Vertical	-33.5	-25.0	8.5	45
4	9986.7	-41.55	4.20	12.05	Vertical	-33.7	-25.0	8.7	90
5	12517.5	-46.35	5.20	14.85	Vertical	-36.7	-25.0	11.7	225
6	15021.0	-43.63	5.50	13.23	Vertical	-35.9	-25.0	10.9	90
7	17524.5	-42.45	5.70	12.15	Vertical	-36.0	-25.0	11.0	135
8	20028.0	-41.76	6.30	13.76	Vertical	-34.3	-25.0	9.3	225
9	22531.5	-40.55	6.80	14.05	Vertical	-33.3	-25.0	8.3	225
10	25035.0	-41.54	6.90	14.84	Vertical	-33.6	-25.0	8.6	90

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 vertical position.

**LTE Band 41 QPSK 15MHz CH-Middle, RB 1**

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5172.8	-38.55	2.00	10.15	Vertical	-30.4	-25.0	5.4	45
3	7759.1	-45.75	2.50	11.35	Vertical	-36.9	-25.0	11.9	225
4	10344.4	-33.45	4.20	12.05	Vertical	-25.6	-25.0	0.6	90
5	12965.0	-46.65	5.20	14.85	Vertical	-37.0	-25.0	12.0	45
6	15558.0	-45.33	5.50	13.23	Vertical	-37.6	-25.0	12.6	135
7	18151.0	-42.05	5.70	12.15	Vertical	-35.6	-25.0	10.6	0
8	20744.0	-42.66	6.30	13.76	Vertical	-35.2	-25.0	10.2	90
9	23337.0	-42.35	6.80	14.05	Vertical	-35.1	-25.0	10.1	135
10	25930.0	-42.44	6.90	14.84	Vertical	-34.5	-25.0	9.5	270

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 vertical position.

**LTE Band 41 QPSK 15MHz CH-High, RB 1**

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5351.3	-45.65	2.00	10.15	Vertical	-37.5	-25.0	12.5	225
3	8027.6	-46.85	2.50	11.35	Vertical	-38.0	-25.0	13.0	135
4	10703.3	-36.95	4.20	12.05	Vertical	-29.1	-25.0	4.1	225
5	13412.5	-45.35	5.20	14.85	Vertical	-35.7	-25.0	10.7	135
6	16095.0	-43.63	5.50	13.23	Vertical	-35.9	-25.0	10.9	0
7	18777.5	-40.95	5.70	12.15	Vertical	-34.5	-25.0	9.5	45
8	21460.0	-40.96	6.30	13.76	Vertical	-33.5	-25.0	8.5	90
9	24142.5	-40.45	6.80	14.05	Vertical	-33.2	-25.0	8.2	225
10	26825.0	-40.94	6.90	14.84	Vertical	-33.0	-25.0	8.0	90

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 vertical position.

**LTE Band 41 QPSK 20MHz CH-Low, RB 1**

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5012.0	-34.05	2.00	10.15	Vertical	-25.9	-25.0	0.9	135
3	7518.0	-42.45	2.50	11.35	Vertical	-33.6	-25.0	8.6	225
4	10024.0	-39.75	4.20	12.05	Vertical	-31.9	-25.0	6.9	225
5	12530.0	-47.05	5.20	14.85	Vertical	-37.4	-25.0	12.4	90
6	15036.0	-44.13	5.50	13.23	Vertical	-36.4	-25.0	11.4	45
7	17542.0	-41.45	5.70	12.15	Vertical	-35.0	-25.0	10.0	90
8	20048.0	-41.96	6.30	13.76	Vertical	-34.5	-25.0	9.5	225
9	22554.0	-41.35	6.80	14.05	Vertical	-34.1	-25.0	9.1	135
10	25060.0	-41.44	6.90	14.84	Vertical	-33.5	-25.0	8.5	0

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 vertical position.

**LTE Band 41 QPSK 20MHz CH-Middle, RB 1**

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5186.0	-38.65	2.00	10.15	Vertical	-30.5	-25.0	5.5	45
3	7779.0	-40.65	2.50	11.35	Vertical	-31.8	-25.0	6.8	225
4	10372.0	-34.85	4.20	12.05	Vertical	-27.0	-25.0	2.0	135
5	12965.0	-44.55	5.20	14.85	Vertical	-34.9	-25.0	9.9	0
6	15558.0	-45.63	5.50	13.23	Vertical	-37.9	-25.0	12.9	45
7	18151.0	-40.55	5.70	12.15	Vertical	-34.1	-25.0	9.1	90
8	20744.0	-41.06	6.30	13.76	Vertical	-33.6	-25.0	8.6	225
9	23337.0	-39.75	6.80	14.05	Vertical	-32.5	-25.0	7.5	90
10	25930.0	-40.04	6.90	14.84	Vertical	-32.1	-25.0	7.1	135

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 vertical position.

**LTE Band 41 QPSK 20MHz CH-High, RB 1**

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5341.9	-39.65	2.00	10.15	Vertical	-31.5	-25.0	6.5	225
3	8013.4	-44.75	2.50	11.35	Vertical	-35.9	-25.0	10.9	0
4	10684.5	-35.25	4.20	12.05	Vertical	-27.4	-25.0	2.4	90
5	13400.0	-45.15	5.20	14.85	Vertical	-35.5	-25.0	10.5	0
6	16080.0	-43.53	5.50	13.23	Vertical	-35.8	-25.0	10.8	90
7	18760.0	-41.55	5.70	12.15	Vertical	-35.1	-25.0	10.1	135
8	21440.0	-42.06	6.30	13.76	Vertical	-34.6	-25.0	9.6	270
9	24120.0	-40.45	6.80	14.05	Vertical	-33.2	-25.0	8.2	225
10	26800.0	-40.94	6.90	14.84	Vertical	-33.0	-25.0	8.0	135

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 vertical position.

## 5 Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Time
Base Station Simulator	R&S	CMW500	113645	2017-05-14	2018-05-13
Power Splitter	Hua Xiang	SHX-GF2-2-13	10120101	2017-05-14	2018-05-13
Universal Radio Communication Tester	Agilent	E5515C	MY48367192	2017-05-14	2018-05-13
Spectrum Analyzer	Agilent	N9010A	MY47191109	2017-05-14	2018-05-13
Signal Analyzer	R&S	FSV30	100815	2016-12-16	2017-12-15
Signal generator	R&S	SMB 100A	102594	2017-05-14	2018-05-13
EMI Test Receiver	R&S	ESCI	100948	2017-05-20	2018-05-19
Trilog Antenna	SCHWARZBECK	VUBL 9163	9163-201	2014-12-06	2017-12-05
Horn Antenna	R&S	HF907	100126	2014-12-06	2017-12-05
Horn Antenna	ETS-Lindgren	3160-09	00102643	2015-01-30	2018-01-29
Climatic Chamber	Re Ce	PT-30B	20101891	2015-07-18	2018-07-17
RF Cable	Agilent	SMA 15cm	0001	2017-08-04	2018-02-03
Preamplifier	R&S	SCU18	102327	2017-06-18	2018-06-17

## ANNEX A: EUT Appearance and Test Setup

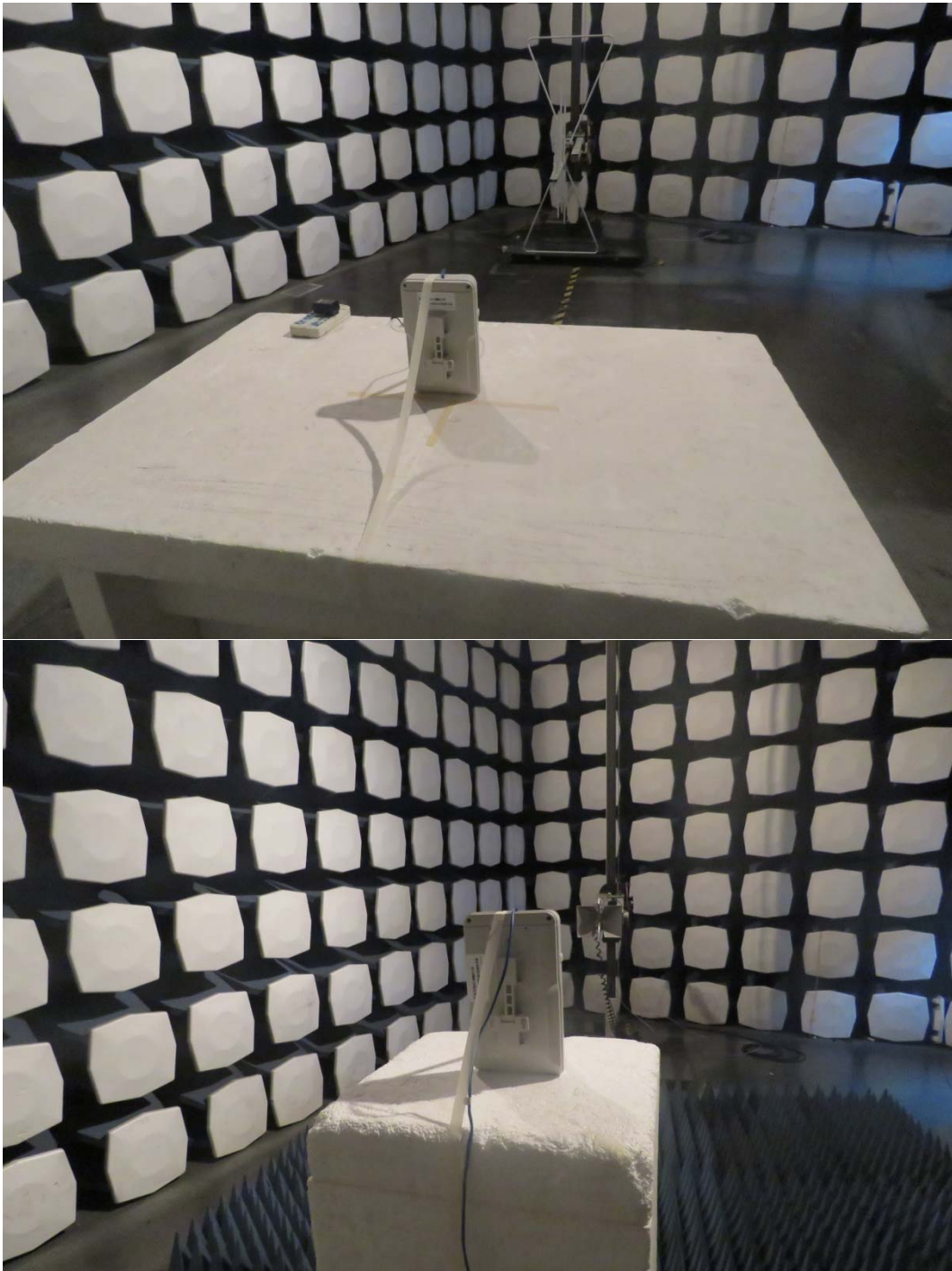
### A.1 EUT Appearance



a: EUT

Picture 1 EUT and Accessory

## A.2 Test Setup



Picture 2: Radiated Spurious Emissions Test setup