

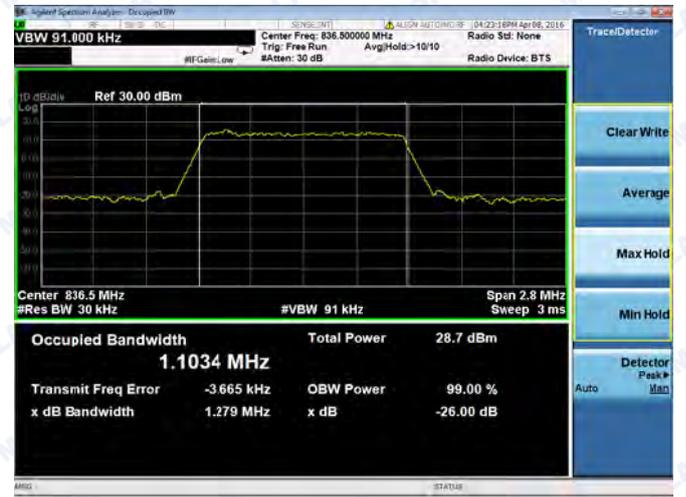
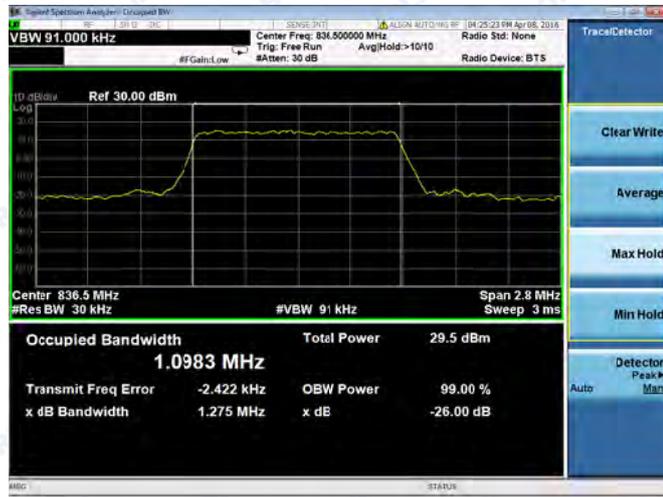


Middle channel:

Spectrum Plot of Worst Value

1.4MHz/QPSK

1.4MHz/16QAM



Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM





**Spectrum Plot of Worst Value**

**5MHz/QPSK**

**5MHz/16QAM**



**Spectrum Plot of Worst Value**

**10MHz/QPSK**

**10MHz/16QAM**



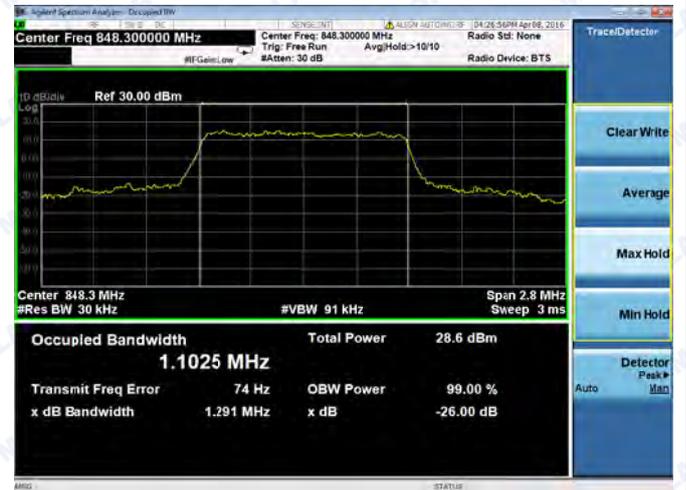
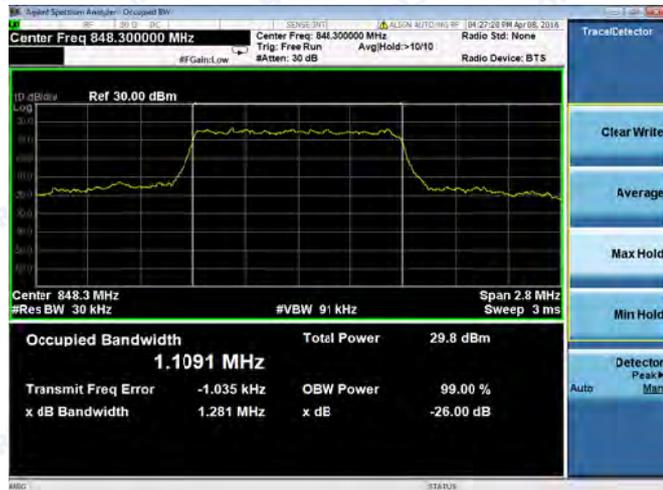


High channel:

Spectrum Plot of Worst Value

1.4MHz/QPSK

1.4MHz/16QAM



Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM

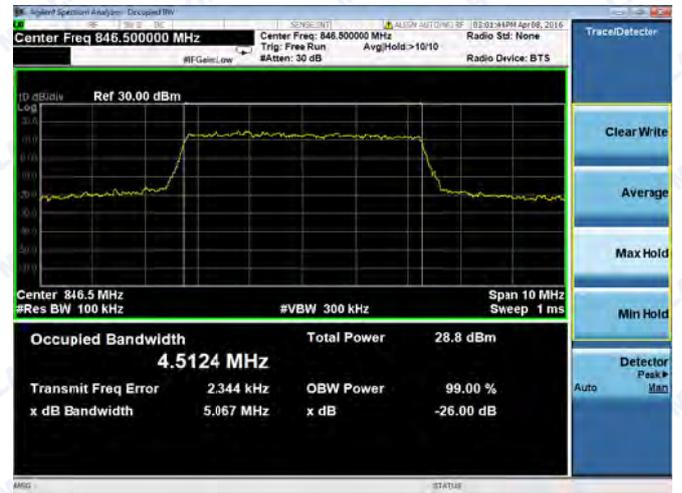




**Spectrum Plot of Worst Value**

**5MHz/QPSK**

**5MHz/16QAM**



**Spectrum Plot of Worst Value**

**10MHz/QPSK**

**10MHz/16QAM**





**LTE Band 7**

**Low channel:**

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20775	2502.5	4.5371	5.5324	20800	2505.0	8.9873	9.0048
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20775	2502.5	5.092	5.037	20800	2505.0	9.940	9.970

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20825	2507.5	13.455	13.515	20850	2510.0	17.975	18.017
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20825	2507.5	14.86	14.80	20850	2510.0	19.59	19.71

**Middle channel:**

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
21100	2535.0	4.5329	4.5258	21100	2535.0	9.0054	9.0046
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
21100	2535.0	5.065	5.088	21100	2535.0	10.07	9.897



Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
21100	2535.0	13.513	13.494	21100	2535.0	17.982	18.018
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
21100	2535.0	14.98	14.78	21100	2535.0	19.61	19.71

**High channel:**

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
21425	2567.5	4.5323	4.5405	21400	2565.0	8.9978	8.9902
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
21425	2567.5	5.033	5.067	21400	2565.0	9.974	9.992

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
21375	2562.5	13.477	13.481	21350	2560.0	17.985	17.981
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
21375	2562.5	14.90	14.82	21350	2560.0	19.67	19.59

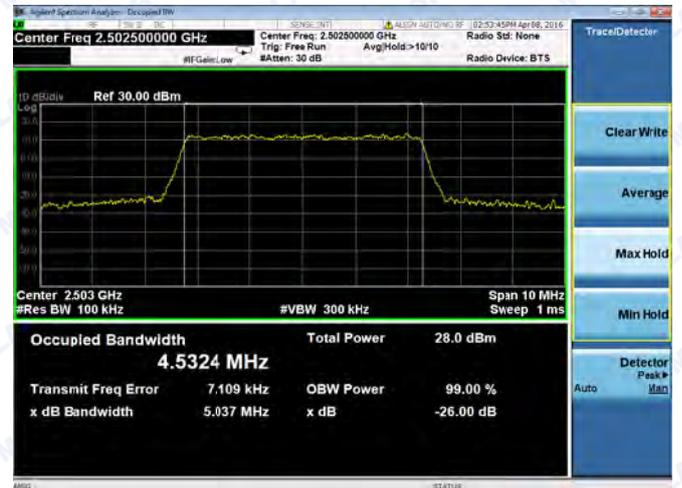
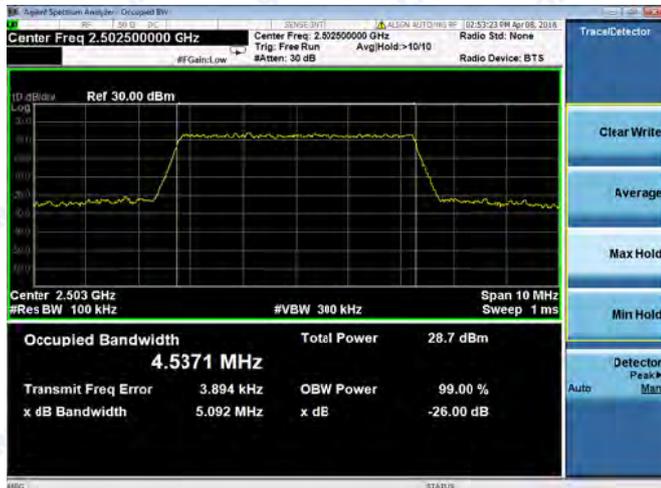


Low channel:

Spectrum Plot of Worst Value

5MHz/QPSK

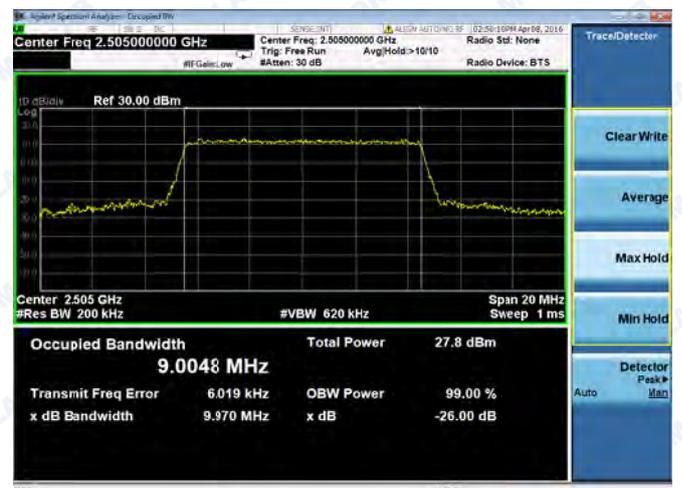
5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

10MHz/16QAM

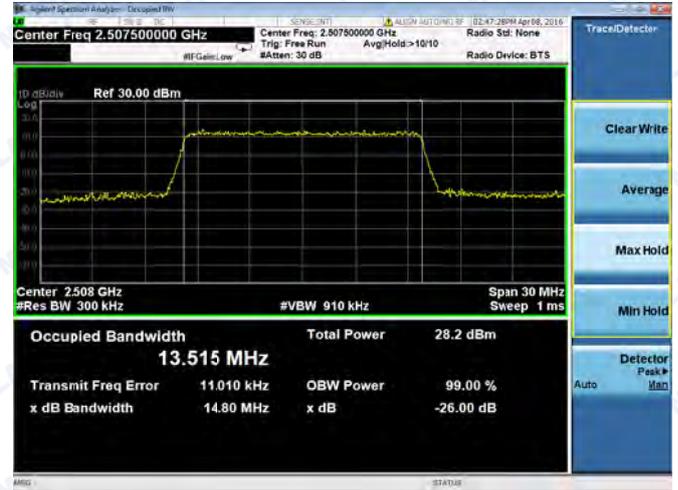
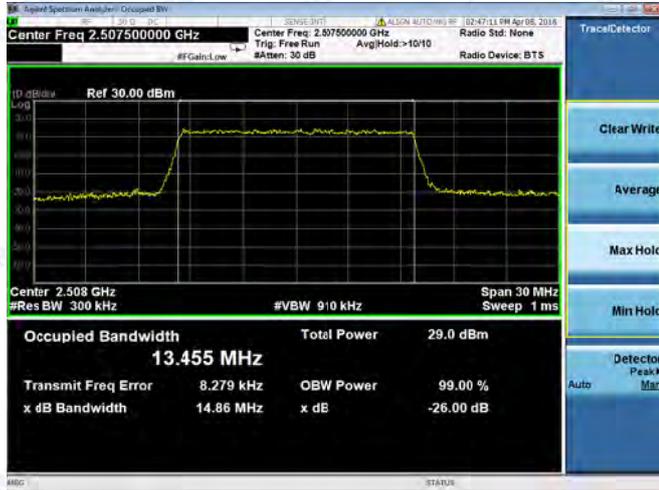




**Spectrum Plot of Worst Value**

**15MHz/QPSK**

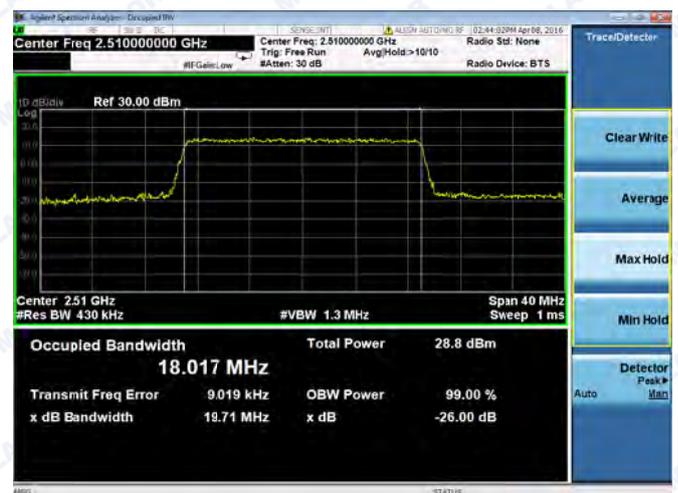
**15MHz/16QAM**



**Spectrum Plot of Worst Value**

**20MHz/QPSK**

**20MHz/16QAM**



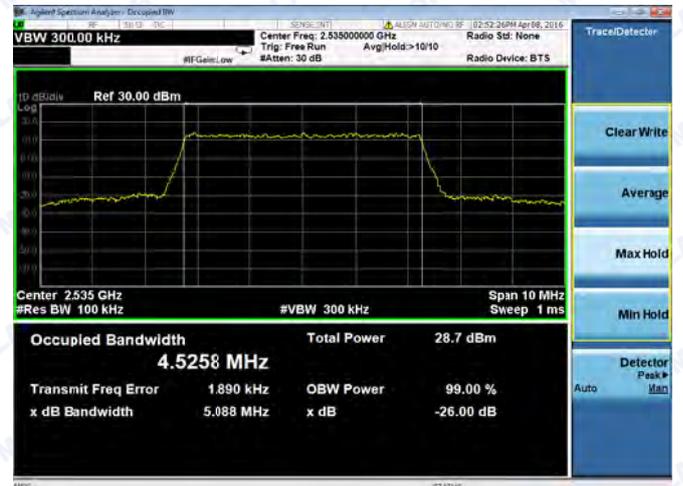
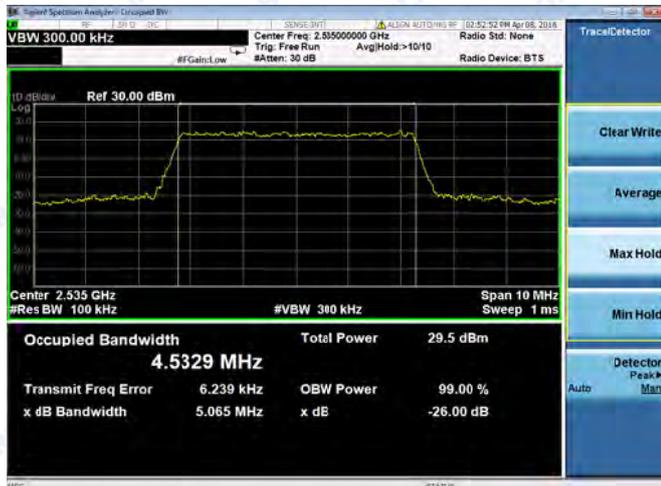


Middle channel:

Spectrum Plot of Worst Value

5MHz/QPSK

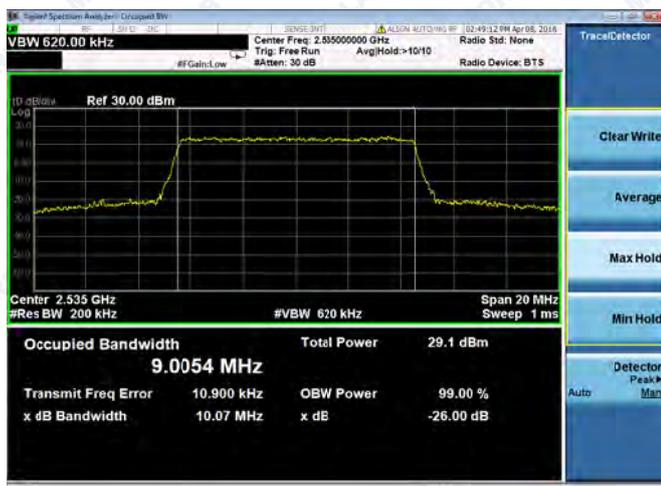
5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

10MHz/16QAM

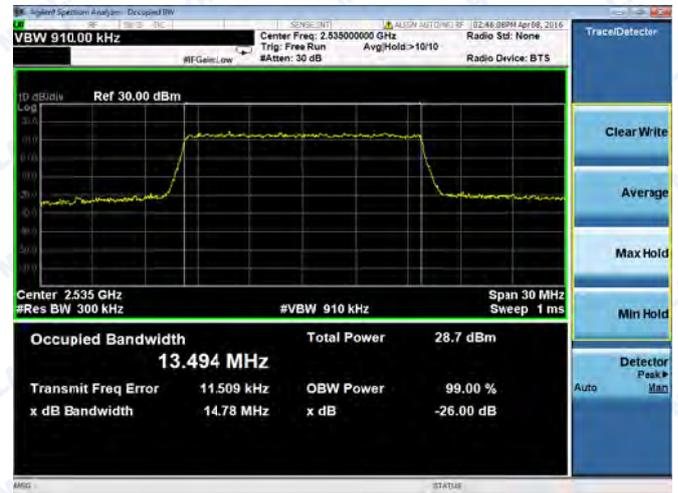
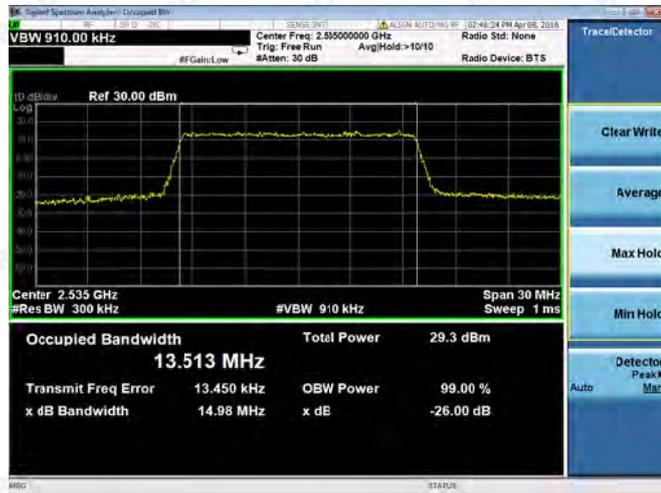




Spectrum Plot of Worst Value

15MHz/QPSK

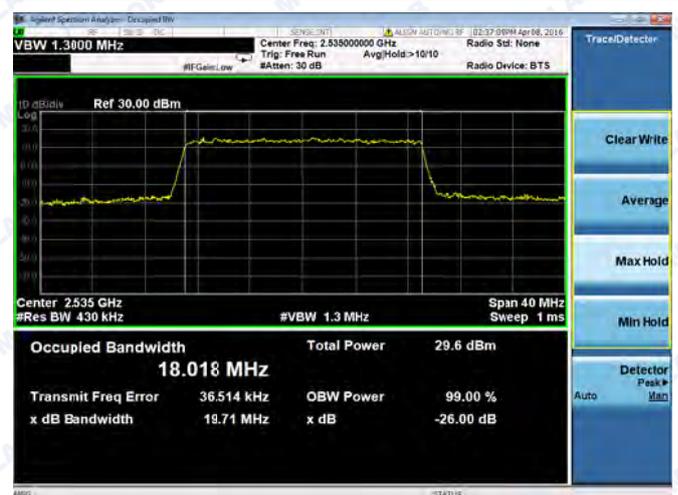
15MHz/16QAM



Spectrum Plot of Worst Value

20MHz/QPSK

20MHz/16QAM



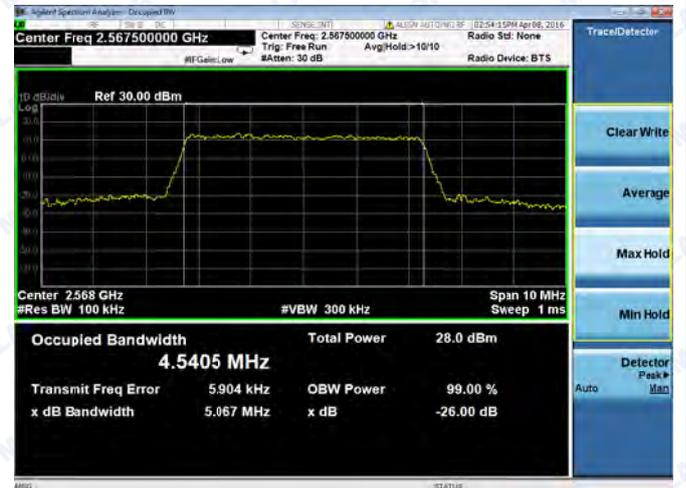


High channel:

Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

10MHz/16QAM

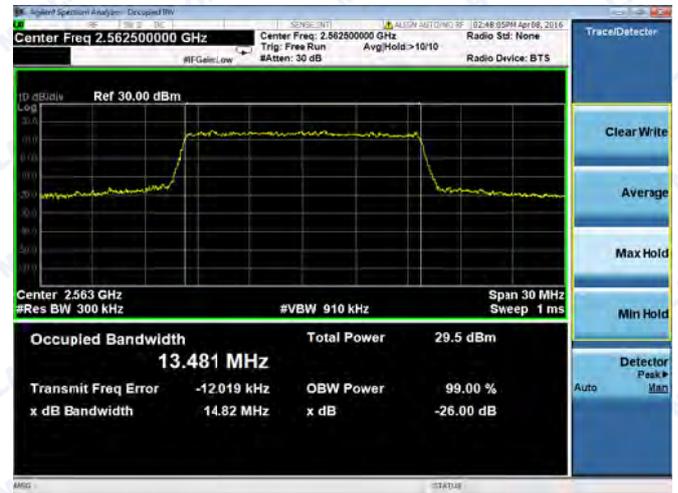
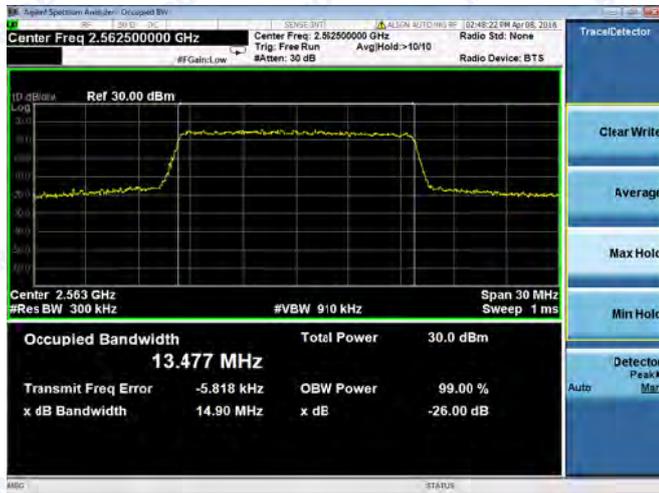




**Spectrum Plot of Worst Value**

**15MHz/QPSK**

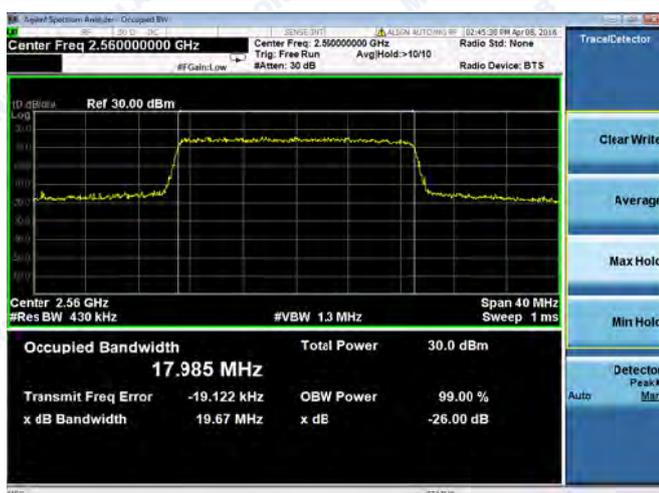
**15MHz/16QAM**



**Spectrum Plot of Worst Value**

**20MHz/QPSK**

**20MHz/16QAM**





**LTE Band 28 (704MHz-710MHz)**

**Low channel:**

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27225	704.5	2.7183	2.7086	27235	705.5	4.5425	4.5439

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27225	704.5	2.986	2.986	27235	705.5	5.108	5.075

**Middle channel:**

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27250	707	2.7096	2.7141	27250	707	4.5431	4.5327

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27250	707	2.969	2.966	27250	707	5.062	5.098

**High channel:**

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27275	709.5	2.7129	2.7066	27265	708.5	4.5305	4.5386

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27275	709.5	2.982	2.980	27265	708.5	5.054	5.096



**LTE Band 28 (710MHz-716MHz)**

**Low channel:**

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27285	710.5	2.7170	2.7062	27295	711.5	4.5321	4.5269
Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27285	710.5	2.981	2.982	27295	711.5	5.097	5.048

**Middle channel:**

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27310	713	2.7090	2.7110	27310	713	4.5264	5.5276
Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27310	713	2.986	2.987	27310	713	5.058	5.077

**High Channel:**

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27335	715.5	2.7129	2.7021	27325	714.5	4.5263	4.5376
Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27335	715.5	2.983	2.978	27325	714.5	5.060	5.061



**LTE Band 28 (734MHz-740MHz)**

**Low channel:**

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27525	734.5	2.7179	2.7074	27535	735.5	4.5341	4.5339
Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27525	734.5	2.991	2.989	27535	735.5	5.066	5.083

**Middle channel:**

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27550	737	2.7112	2.7187	27550	737	4.5298	4.5327
Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27550	737	2.972	2.991	27550	737	5.042	5.102

**High Channel:**

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27575	739.5	2.7153	2.7077	27565	738.5	4.5358	4.5454
Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27575	739.5	2.984	2.992	27565	738.5	5.035	5.071



**LTE Band 28 (740MHz-746MHz)**

**Low channel:**

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27585	740.5	2.7215	2.7067	27595	741.5	4.5388	4.5346
Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27585	740.5	2.971	2.996	27595	741.5	5.135	5.074

**Middle channel:**

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27610	743	2.7138	2.7087	27610	743	4.5415	4.5252
Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27610	743	2.974	2.989	27610	743	5.098	5.065

**High channel:**

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27635	745.5	2.7144	2.7025	27625	744.5	4.5345	4.5454
Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27635	745.5	2.997	2.983	27625	744.5	5.057	5.098



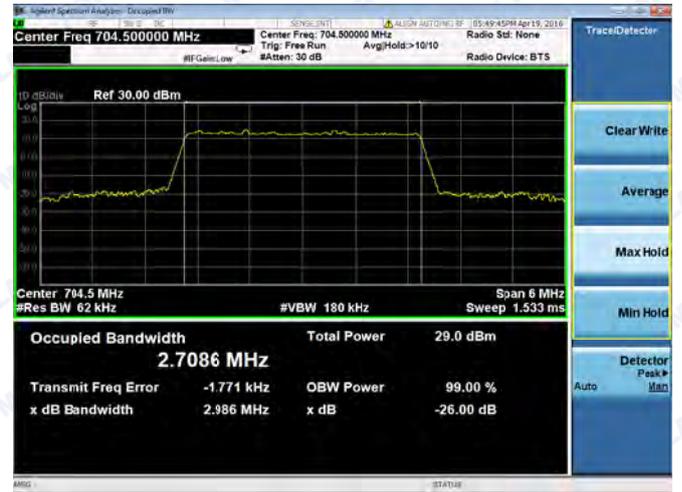
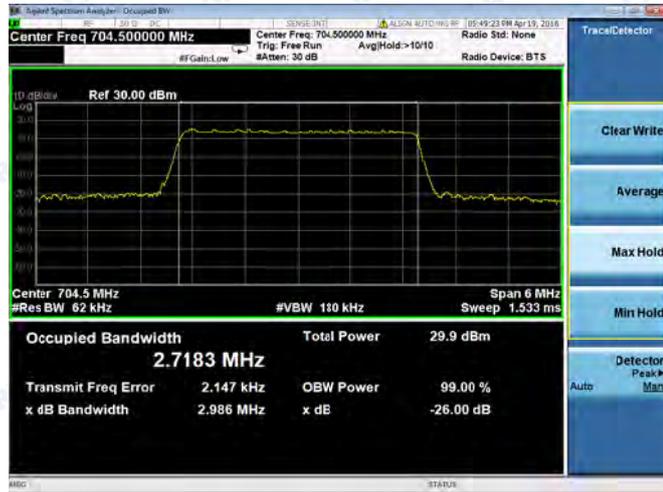
LTE Band 28 (704MHz-710MHz)

Low channel:

Spectrum Plot of Worst Value

3MHz/QPSK

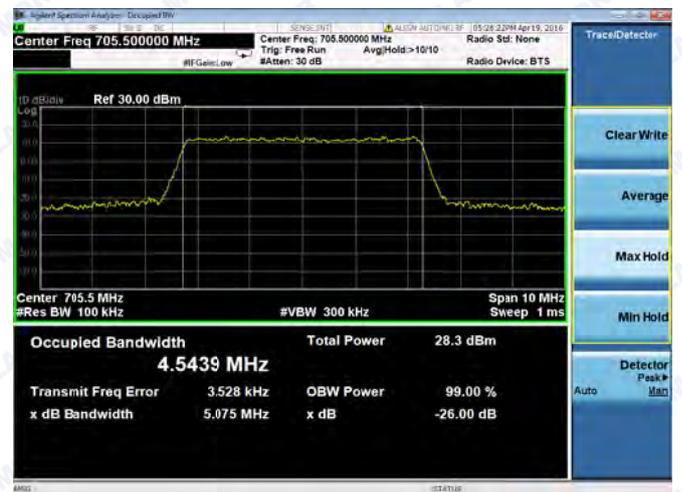
3MHz/16QAM



Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM



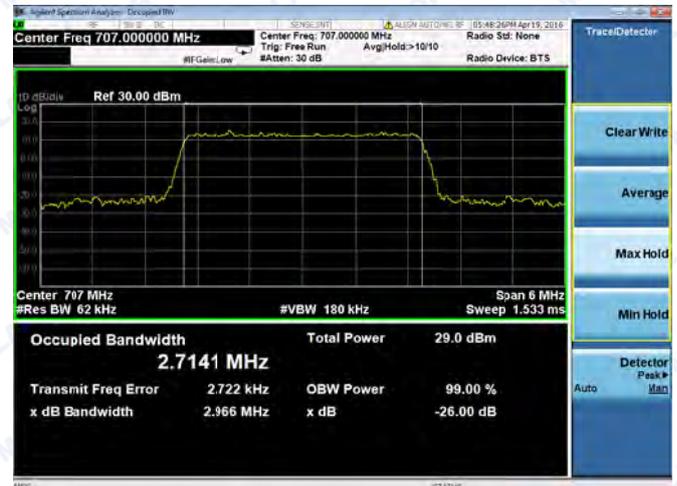
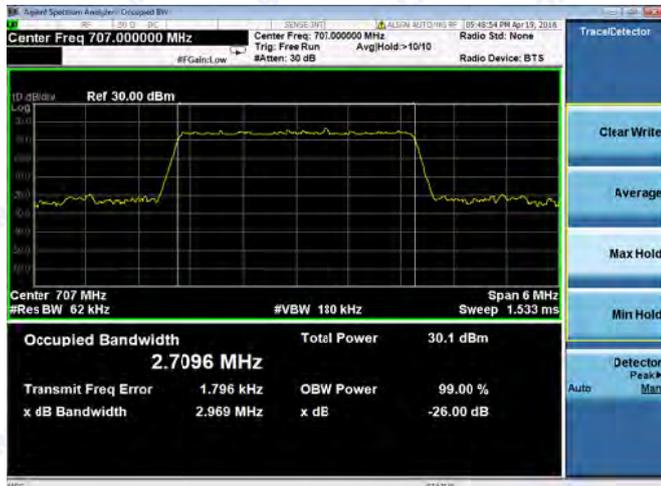


Middle channel:

Spectrum Plot of Worst Value

3MHz/QPSK

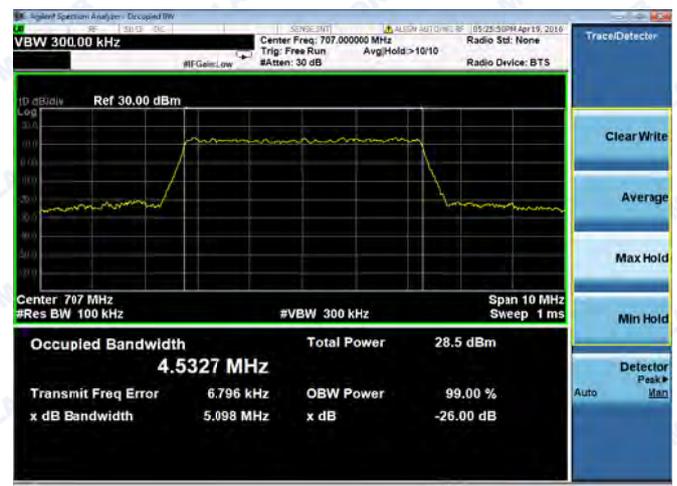
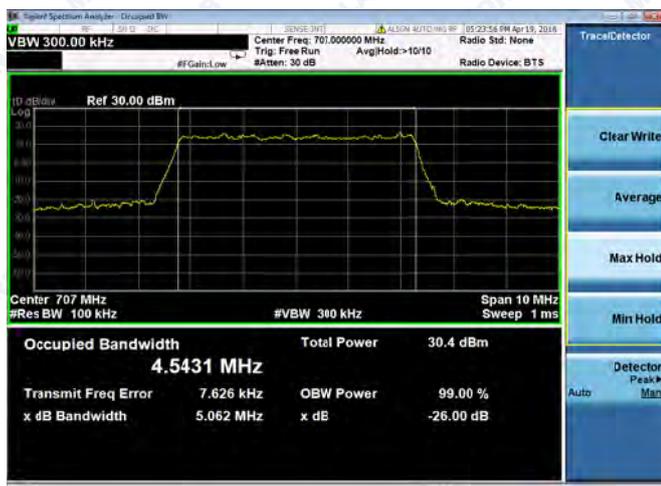
3MHz/16QAM



Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM





High channel:

Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM



Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM





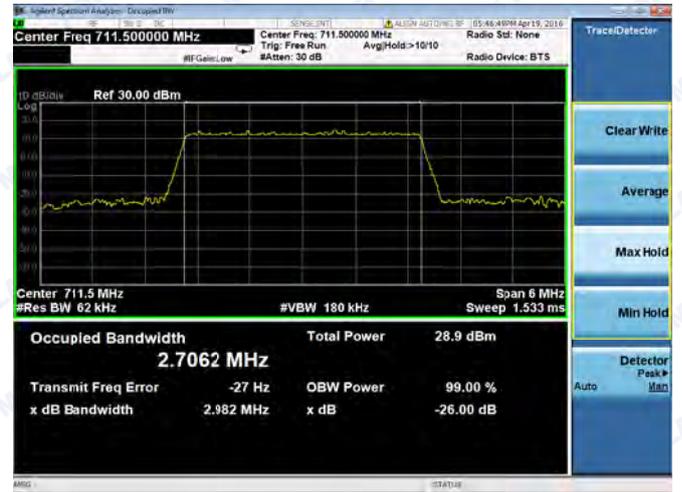
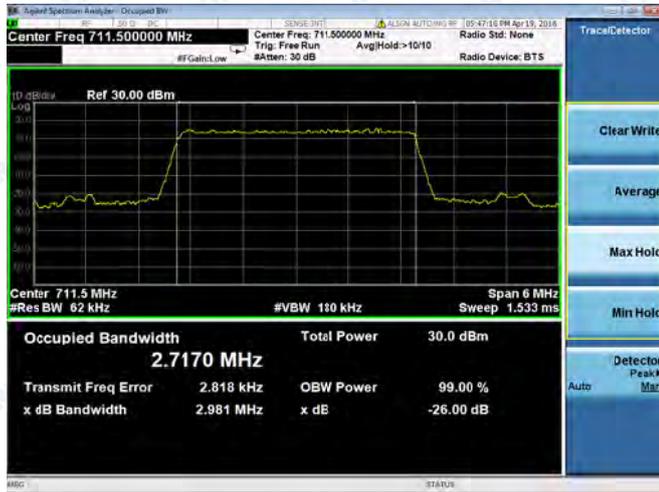
Band 28 (710MHz-716MHz)

Low channel:

Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM



Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM



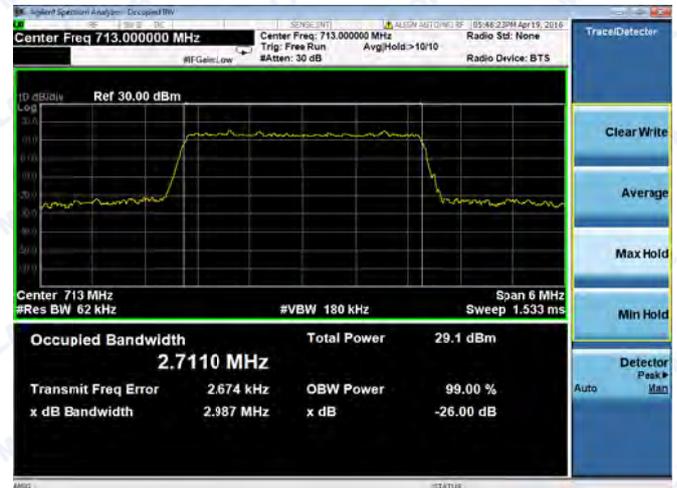
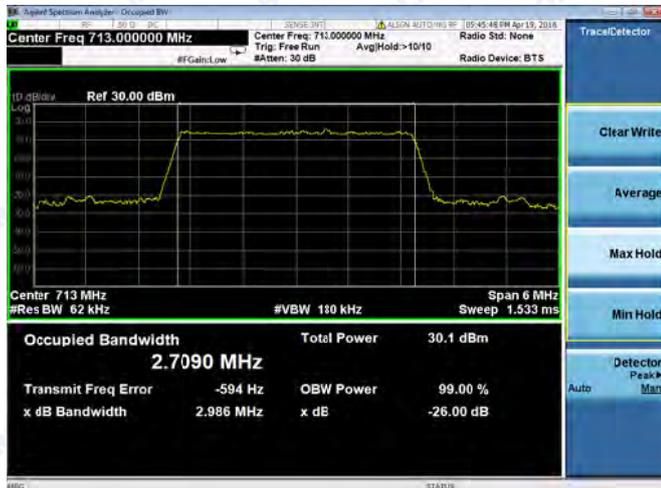


Middle channel:

Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM



Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM



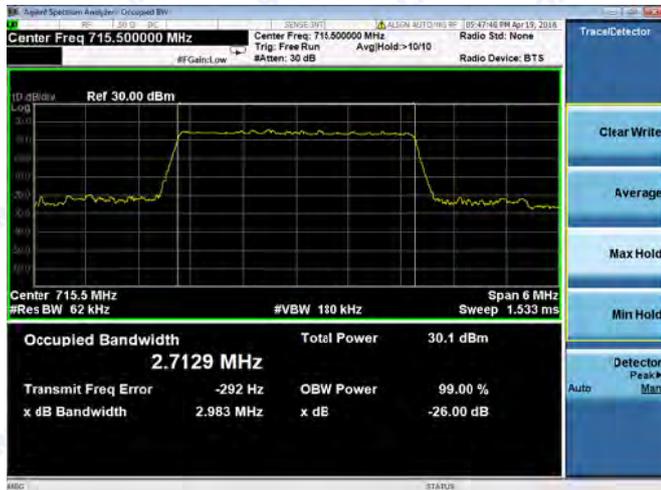


High channel:

Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM



Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM



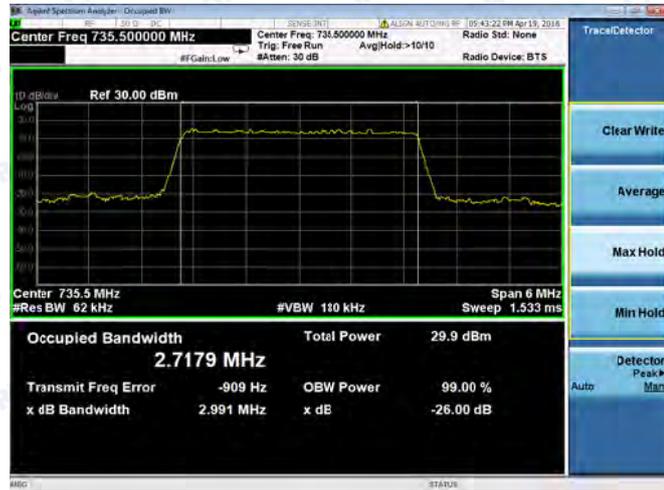


Band 28 (734MHz-740MHz)

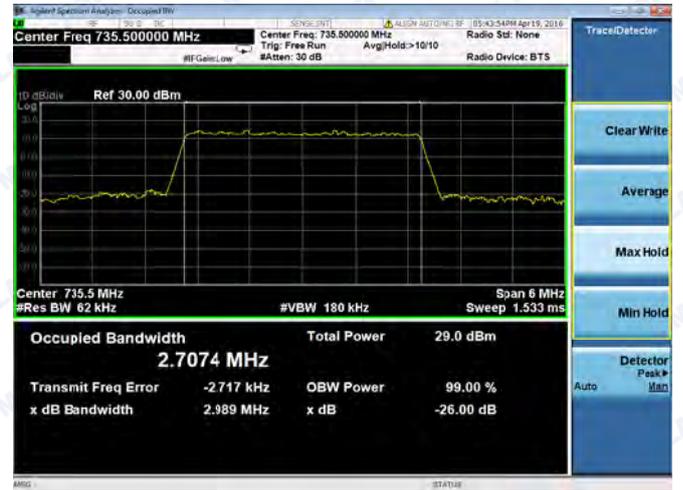
Low channel:

Spectrum Plot of Worst Value

3MHz/QPSK



3MHz/16QAM

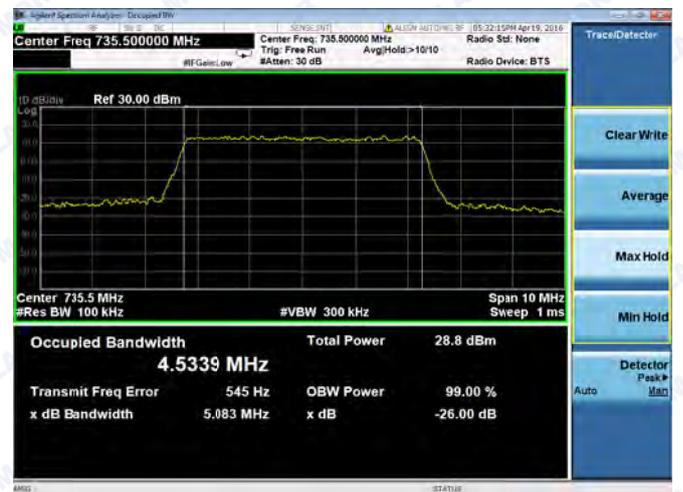


Spectrum Plot of Worst Value

5MHz/QPSK



5MHz/16QAM



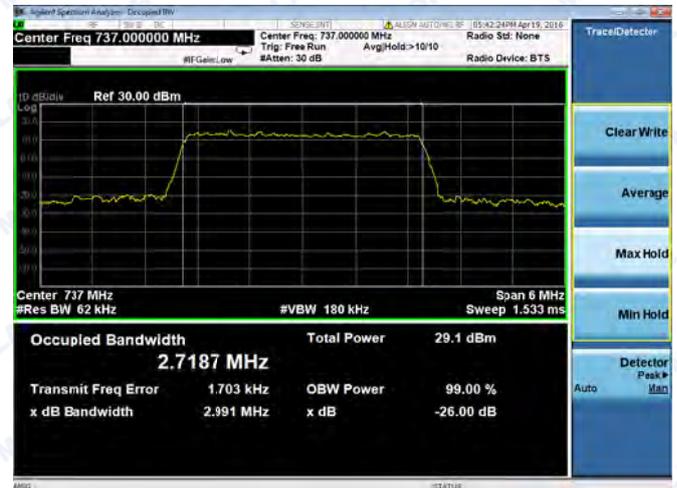
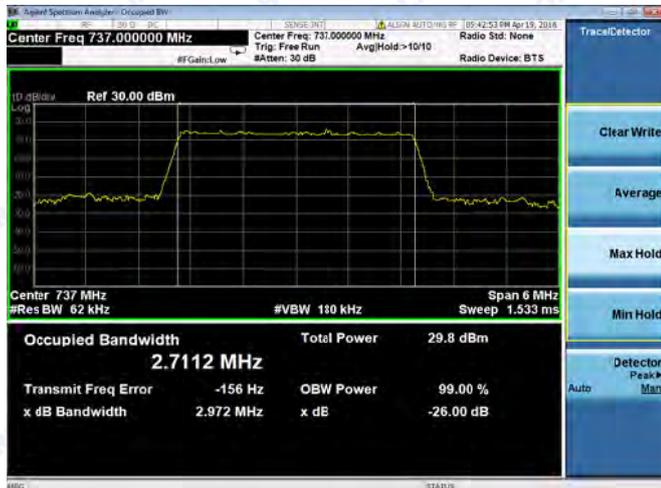


Middle channel:

Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM



Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM



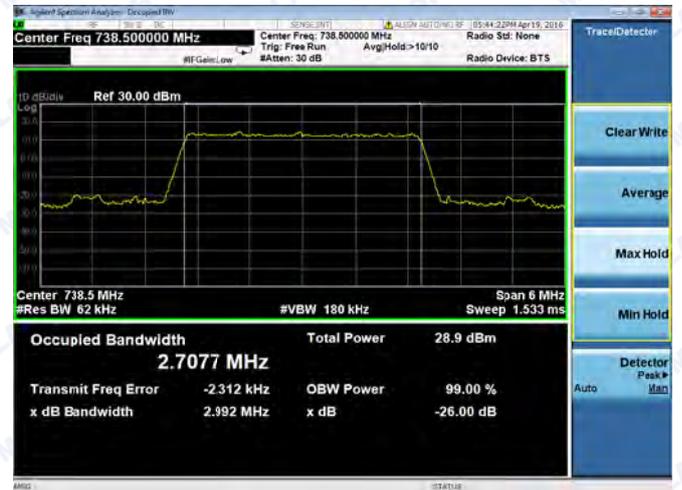
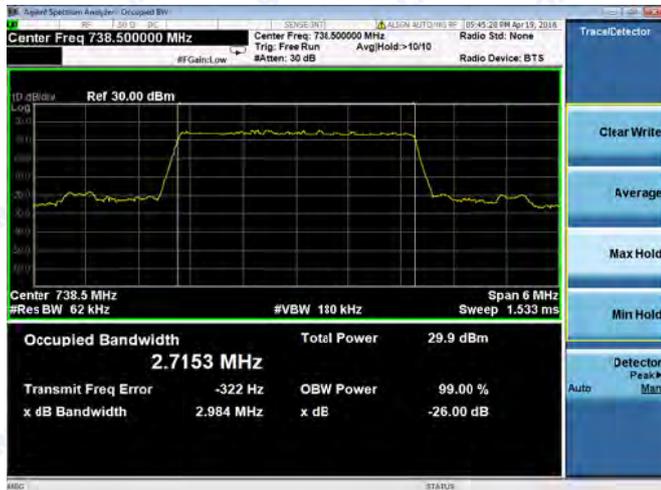


High channel:

Spectrum Plot of Worst Value

3MHz/QPSK

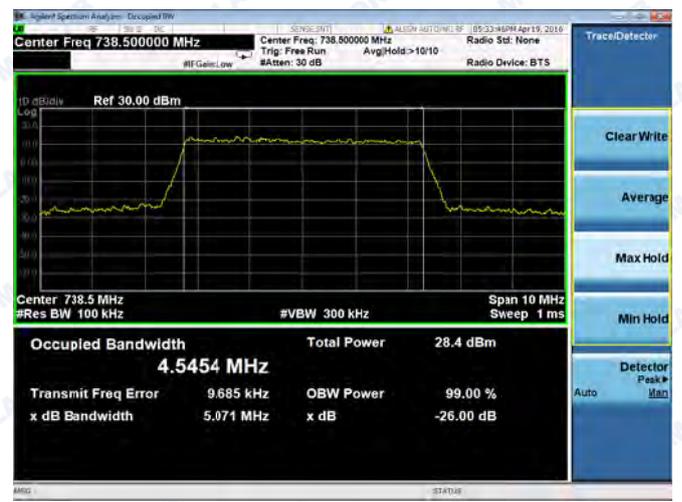
3MHz/16QAM



Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM





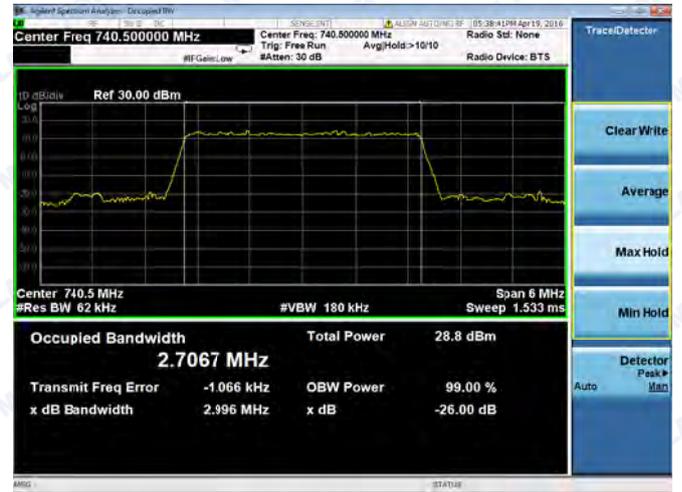
Band 28 (740MHz-746MHz)

Low channel:

Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM



Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM



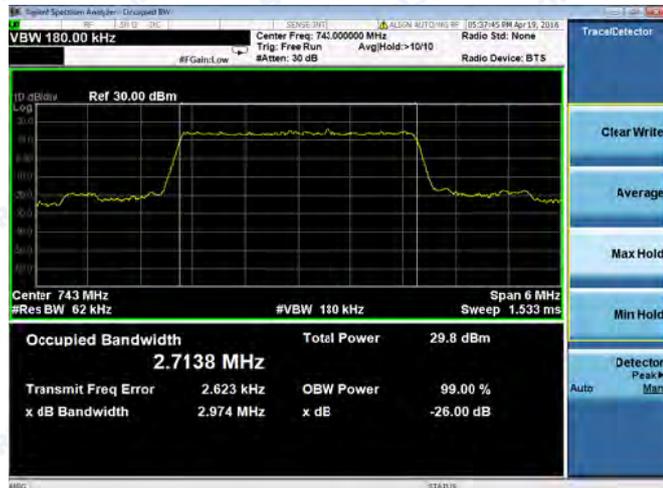


Middle channel:

Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM



Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM



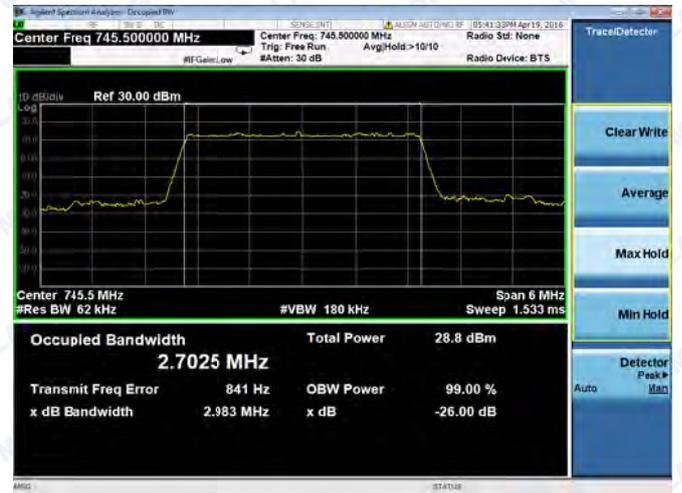
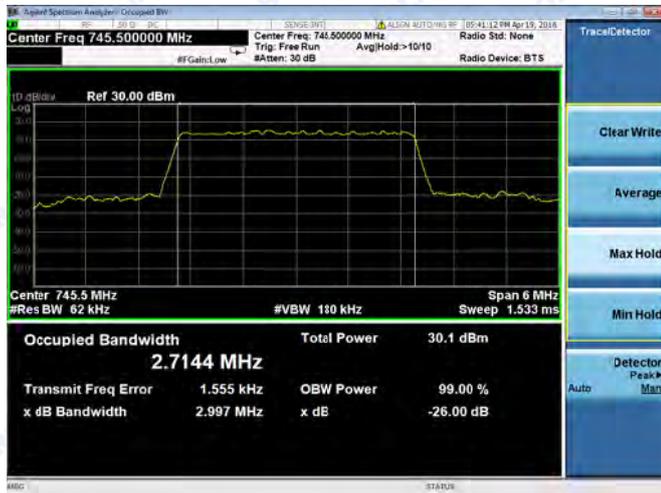


High channel:

Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM



Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM



## 2.3 Frequency Stability

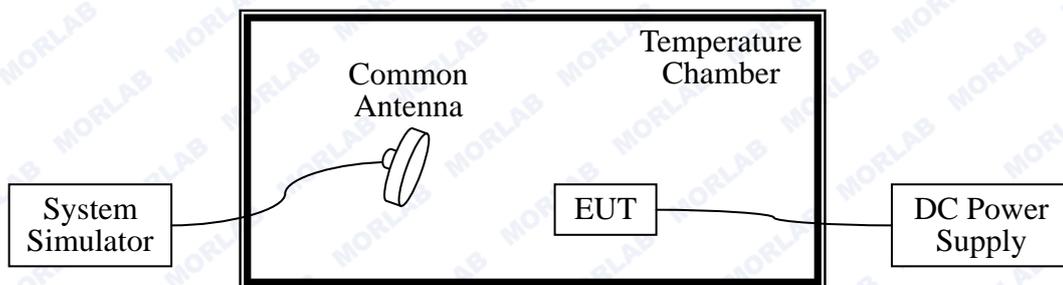
### 2.3.1 Requirement

According to FCC section 2.1055 and FCC section 27.54, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

- (a) The temperature is varied from -30°C to +50°C at intervals of not more than 10°C.
- (b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

### 2.3.2 Test Description

Test Setup:



The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power. A call is established between the EUT and the SS via a Common Antenna.

Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Rohde& Schwarz	CMW500	1201.0002k5 0/124534/wk	2016.03.02	2017.03.01
DC Power Supply	Good Will	GPS-3030DD	EF920938	2016.03.02	2017.03.01
Temperature Chamber	YinHe Experimental Equip.	HL4003T	(n.a.)	2016.03.02	2017.03.01



**2.3.3 Test Verdict**

The nominal, highest and lowest extreme voltages are separately 3.8VDC, 4.2VDC and 3.45VDC, which are specified by the applicant; the normal temperature here used is 20°C. The frequency deviation limit is ±2.5ppm.

The testing was performed using one RB and Bandwidth setting for each band.

<b>LTE Band 2 – QPSK - Channel 18900 – Frequency 1880.0MHz – RB 6/0</b>				
<b>Limit: 1880.0MHz*1ppm=1880.0Hz</b>				
<b>Voltage (%)</b>	<b>Power (VDC)</b>	<b>Temp (°C)</b>	<b>Fre. Dev. (Hz)</b>	<b>Result</b>
100	3.8	-30	6.26	PASS
100		-20	-4.79	
100		-10	-4.83	
100		0	4.63	
100		+10	-1.46	
100		+20	6.5	
100		+30	3.36	
100		+40	5.55	
100		+50	-5.23	
115		4.2	+20	
85	3.45	+20	-4.64	

<b>LTE Band 4 – QPSK - Channel 20175 – Frequency 1732.5MHz – RB 6/0</b>				
<b>Limit: 1732.5MHz*2.5ppm=4331.25Hz</b>				
<b>Voltage (%)</b>	<b>Power (VDC)</b>	<b>Temp (°C)</b>	<b>Fre. Dev. (Hz)</b>	<b>Result</b>
100	3.8	-30	13.42	PASS
100		-20	-8.8	
100		-10	10.69	
100		0	12.6	
100		+10	11.42	
100		+20	10.34	
100		+30	-10.03	
100		+40	-11.69	
100		+50	10.64	
115		4.2	+20	
85	3.45	+20	13.77	



LTE Band 5 – QPSK - Channel 20525 – Frequency 836.5MHz – RB 6/0				
Limit: 836.5 MHz*2.5ppm=2091.25Hz				
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Result
100	3.8	-30	12.94	PASS
100		-20	-9.28	
100		-10	10.21	
100		0	12.12	
100		+10	-10.94	
100		+20	9.86	
100		+30	-10.51	
100		+40	11.21	
100		+50	10.16	
115		4.2	+20	
85	3.45	+20	-13.29	

TE Band 7 – QPSK - Channel 21100 – Frequency 2535MHz – RB 25/0				
Limit: 2535MHz*2.5ppm=6337.5Hz				
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Result
100	3.8	-30	13.45	PASS
100		-20	-8.77	
100		-10	10.72	
100		0	12.63	
100		+10	-11.45	
100		+20	10.37	
100		+30	-10.0	
100		+40	-11.72	
100		+50	10.67	
115		4.2	+20	
85	3.45	+20	13.8	



TE Band 28– QPSK - Channel 27250 –Frequency 707MHz – RB 25/0				
Limit: 707MHz*2.5ppm=1767.5Hz				
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Result
100	3.8	-30	10.95	<u>PASS</u>
100		-20	18.19	
100		-10	-11.9	
100		0	10.85	
100		+10	11.59	
100		+20	7.56	
100		+30	-12.81	
100		+40	9.4	
100		+50	9.51	
115		4.2	+20	
85	3.45	+20	8.79	



## **2.4 Peak to Average Ratio**

### **2.4.1 Requirement**

According to FCC section 27.50(d) (5), the peak to average ratio (PAR) of the transmission may not exceed 13dB.

### **2.4.2 Test Description**

See section 2.1.2 of this report.

### **2.4.3 Test Result**

Record the maximum PAPR level associated with a probability of 0.1%.

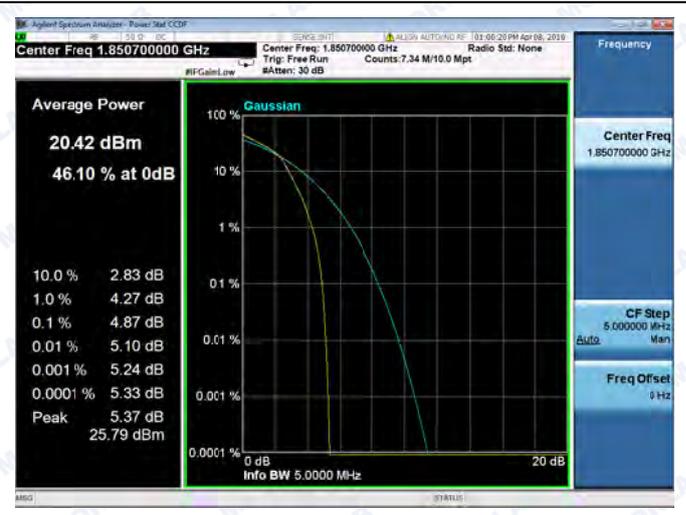


LTE Band 2 Low channel							
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
18607	1850.7	3.98	4.87	18615	1851.5	4.26	5.12

Spectrum Plot of Worst Value (Low channel)

1.4MHz/QPSK

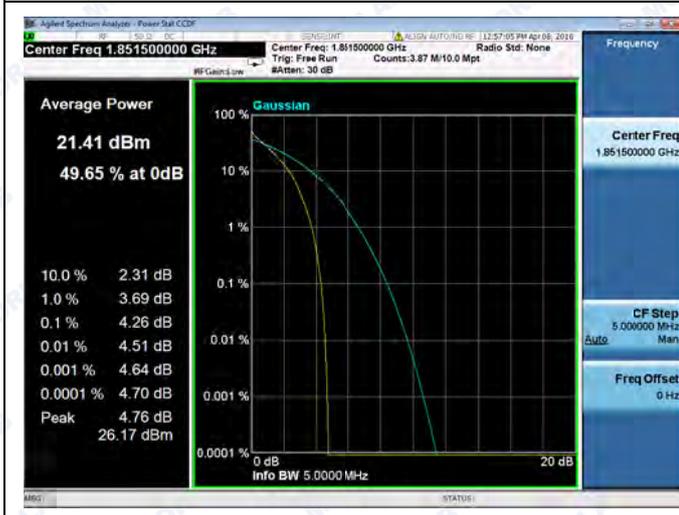
1.4MHz/16QAM



Spectrum Plot of Worst Value

3MHz/QPSK

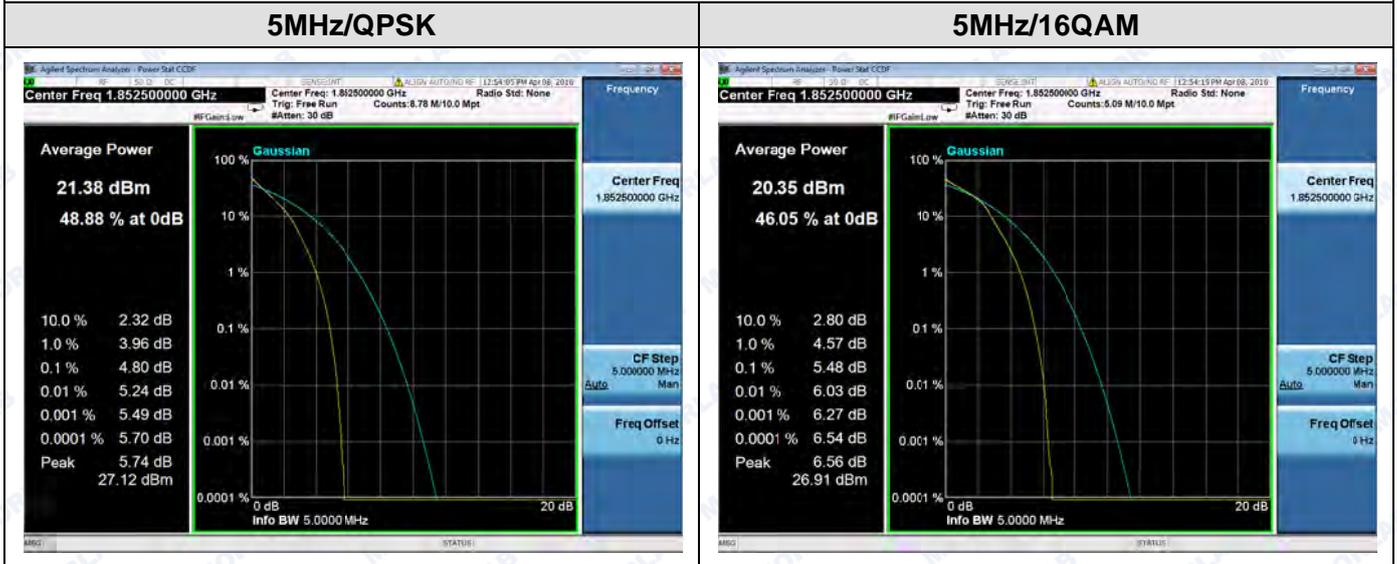
3MHz/16QAM



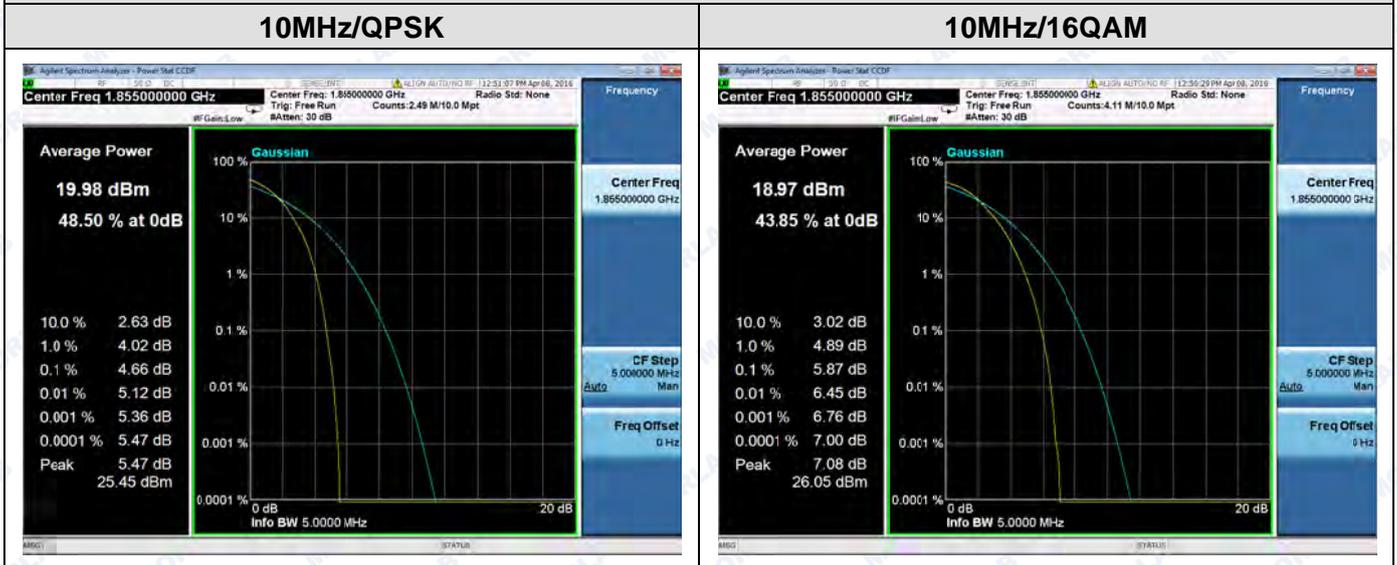


LTE Band 2 Low channel							
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
18625	1852.5	4.80	5.78	18650	1855.0	4.66	5.87

Spectrum Plot of Worst Value



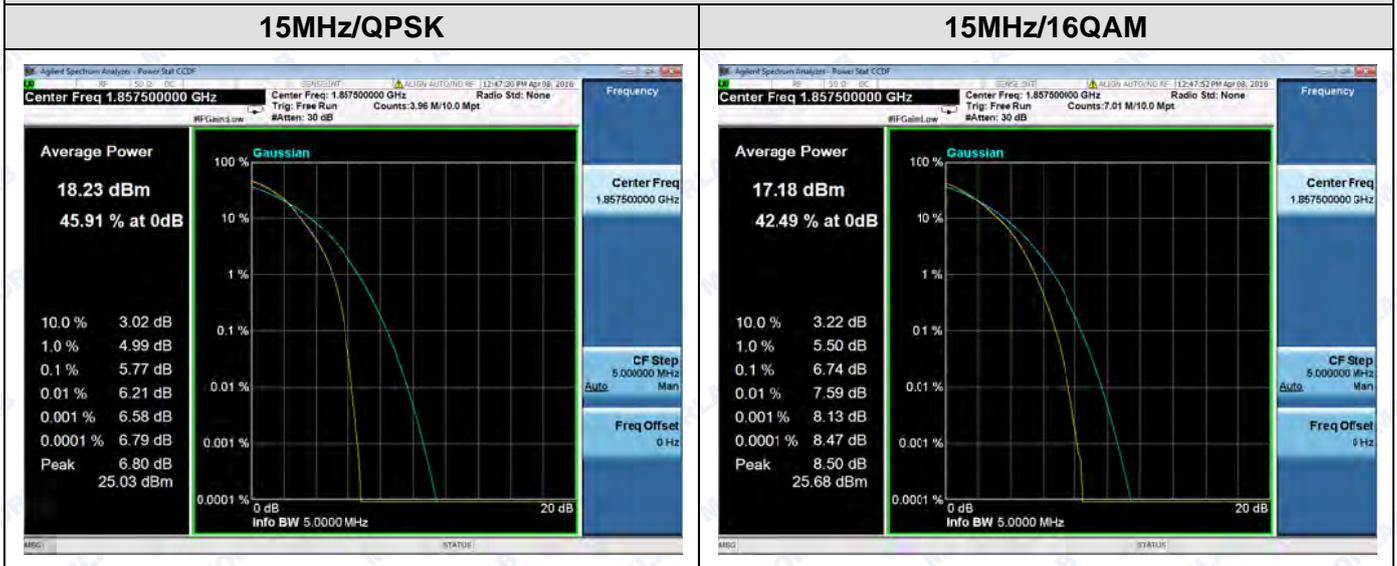
Spectrum Plot of Worst Value



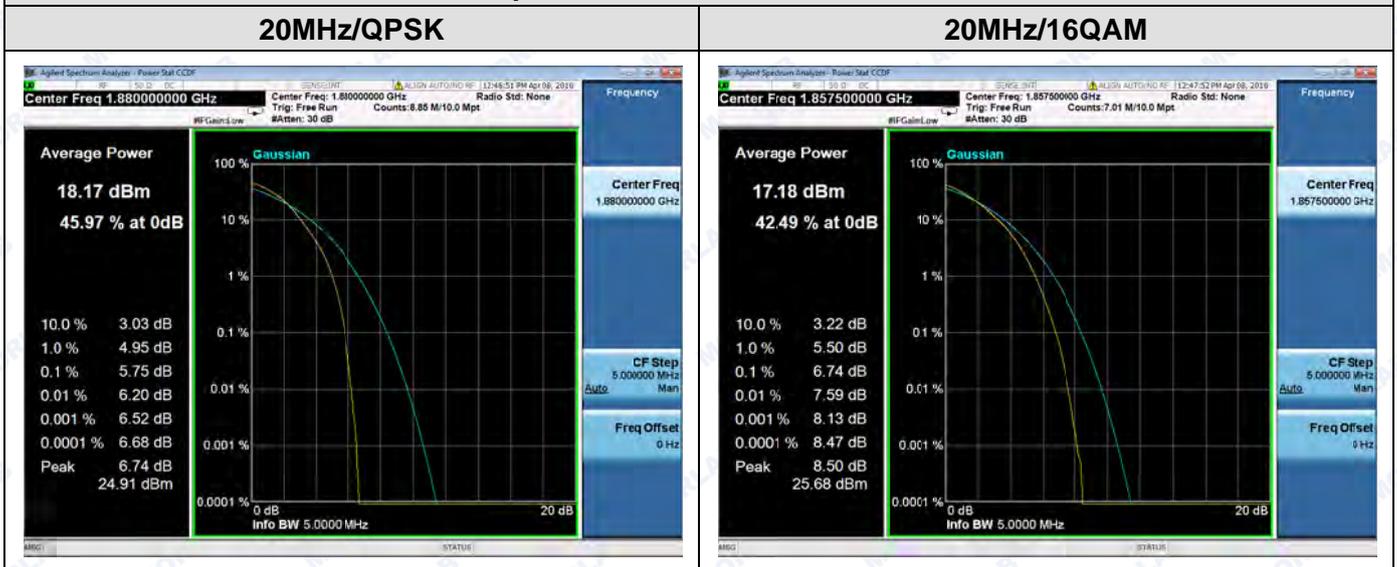


LTE Band 2 Low channel							
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
18675	1857.5	5.77	6.74	18700	1860.0	5.75	6.74

Spectrum Plot of Worst Value



Spectrum Plot of Worst Value

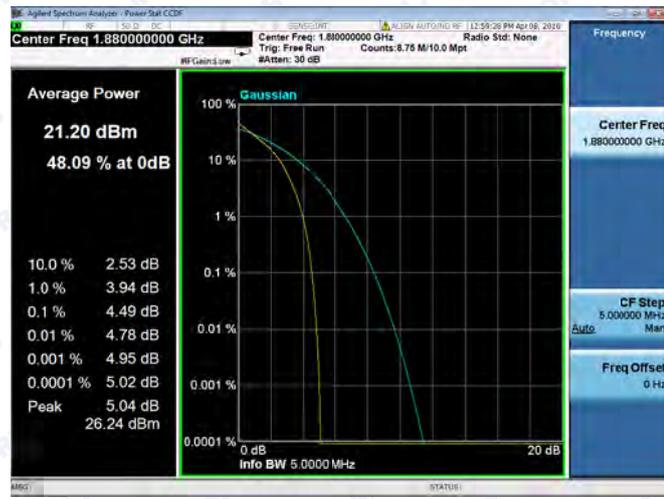




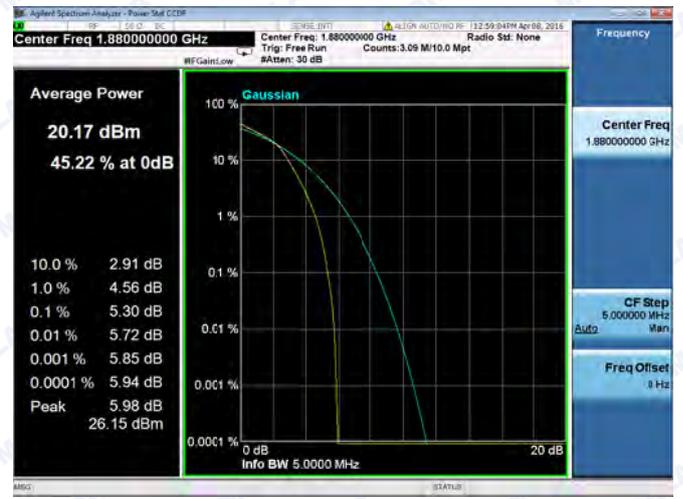
LTE Band 2 Middle channel							
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
18900	1880.0	4.49	5.30	18900	1880.0	4.72	5.50

Spectrum Plot of Worst Value

1.4MHz/QPSK

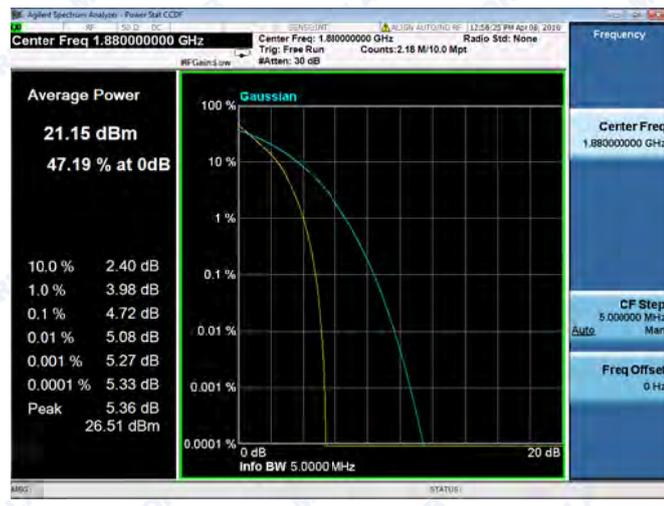


1.4MHz/16QAM

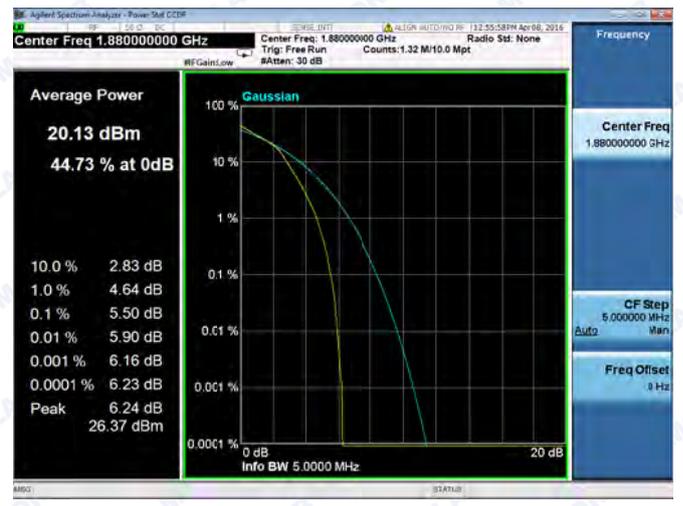


Spectrum Plot of Worst Value

3MHz/QPSK



3MHz/16QAM



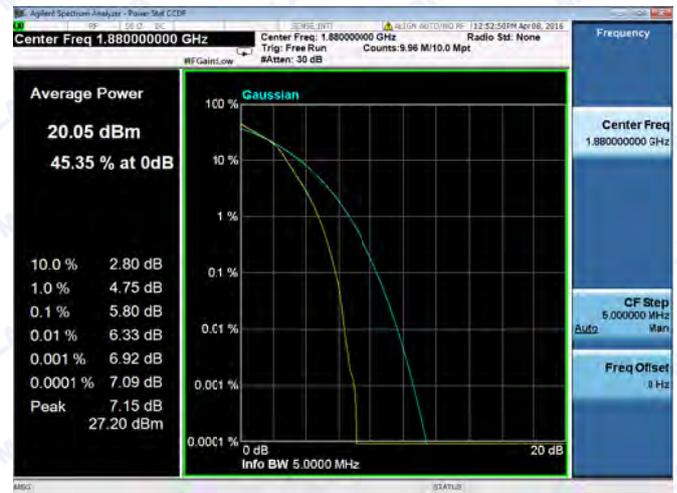
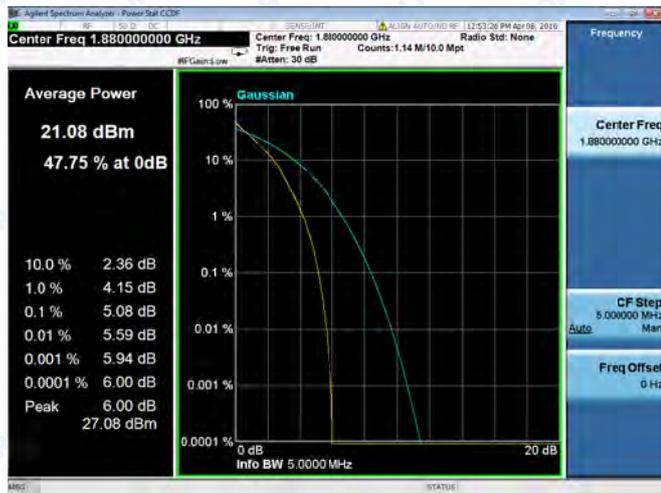


LTE Band 2 Middle channel							
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
18900	1880.0	5.08	5.80	18900	1880.0	4.65	5.95

Spectrum Plot of Worst Value

5MHz/QPSK

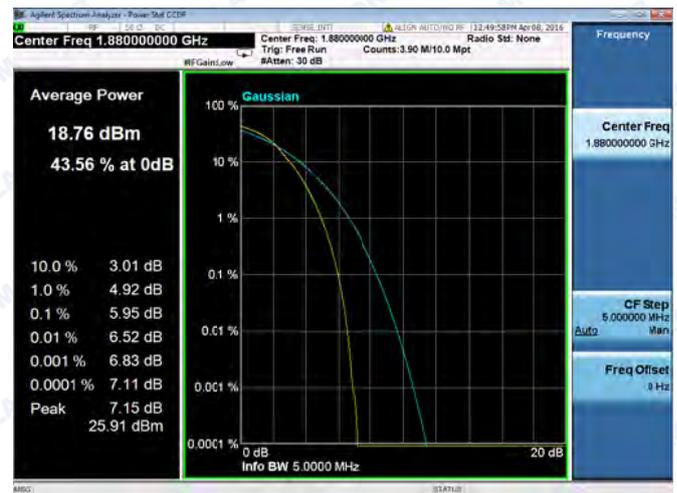
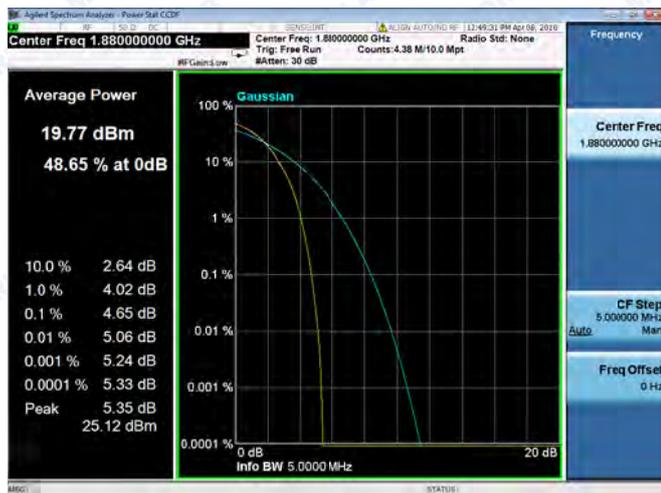
5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

10MHz/16QAM



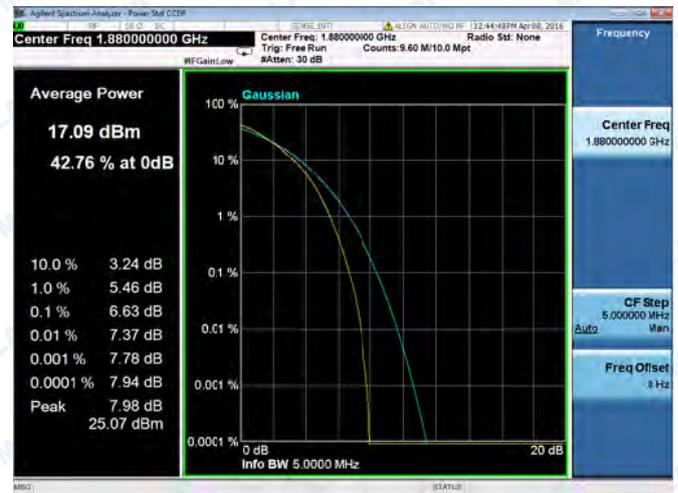
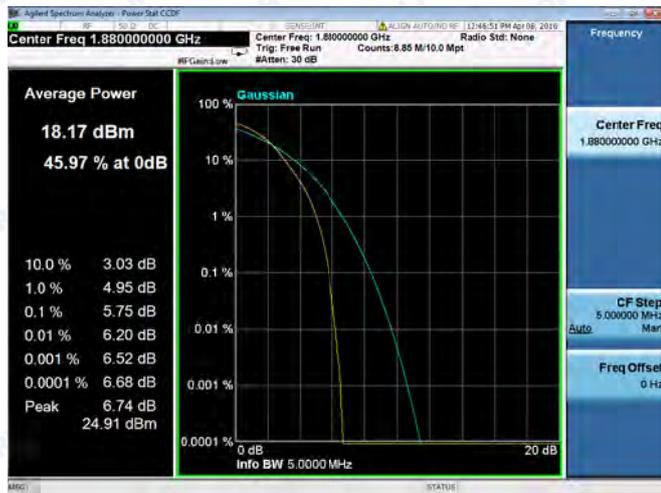


LTE Band 2 Middle channel							
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
18900	1880.0	5.75	6.63	18900	1880.0	6.44	7.10

Spectrum Plot of Worst Value

15MHz/QPSK

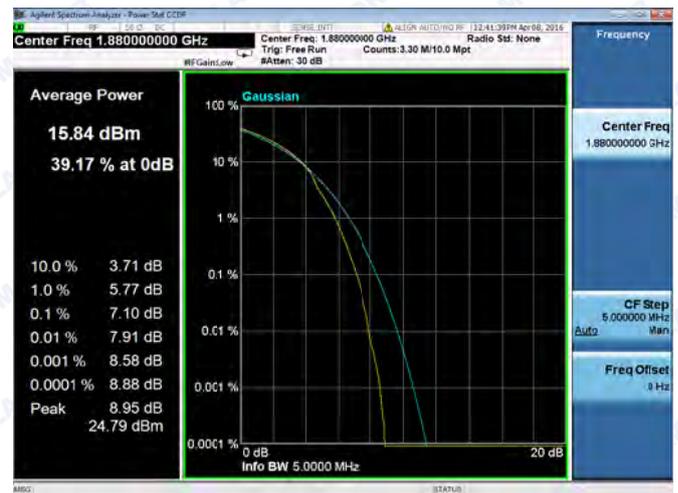
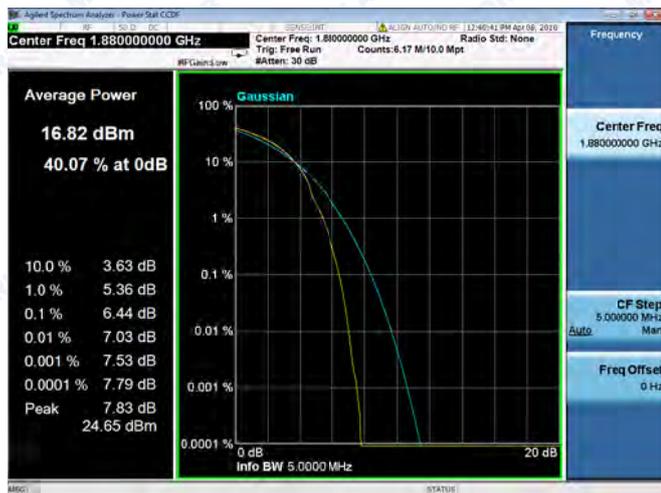
15MHz/16QAM



Spectrum Plot of Worst Value

20MHz/QPSK

20MHz/16QAM



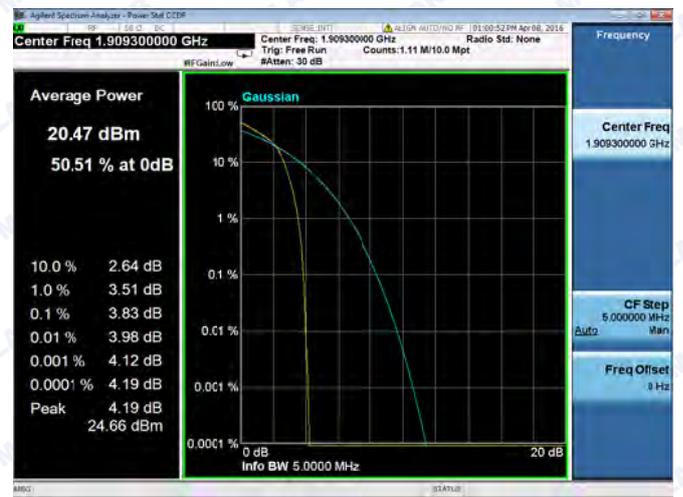
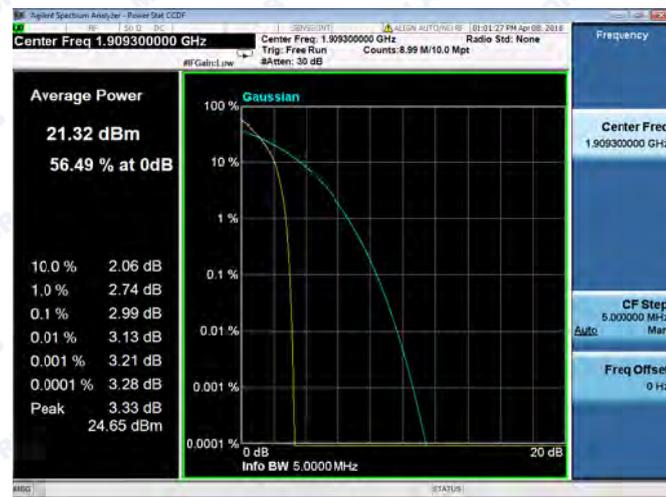


LTE Band 2 High channel							
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
19193	1909.3	2.99	3.83	19185	1908.5	3.24	4.34

Spectrum Plot of Worst Value

1.4MHz/QPSK

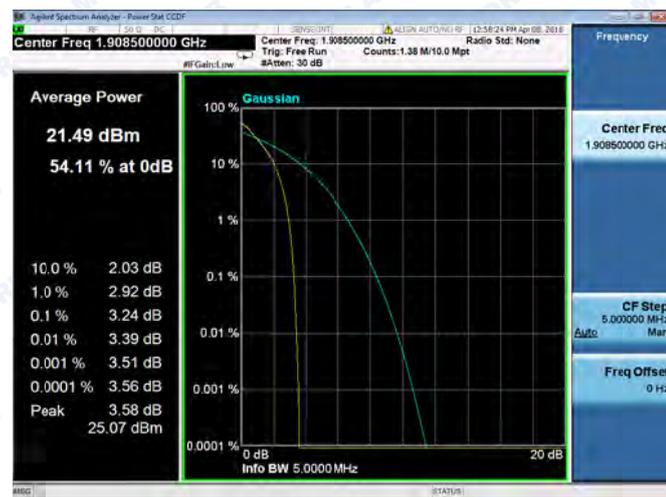
1.4MHz/16QAM



Spectrum Plot of Worst Value

3MHz/QPSK

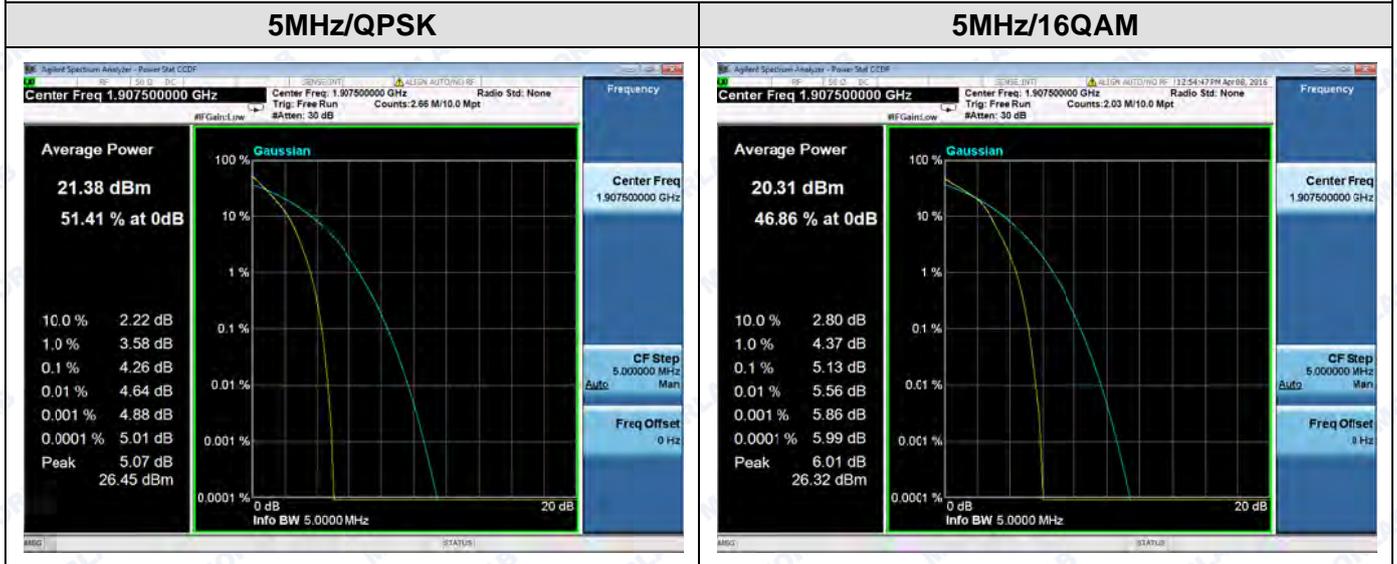
3MHz/16QAM



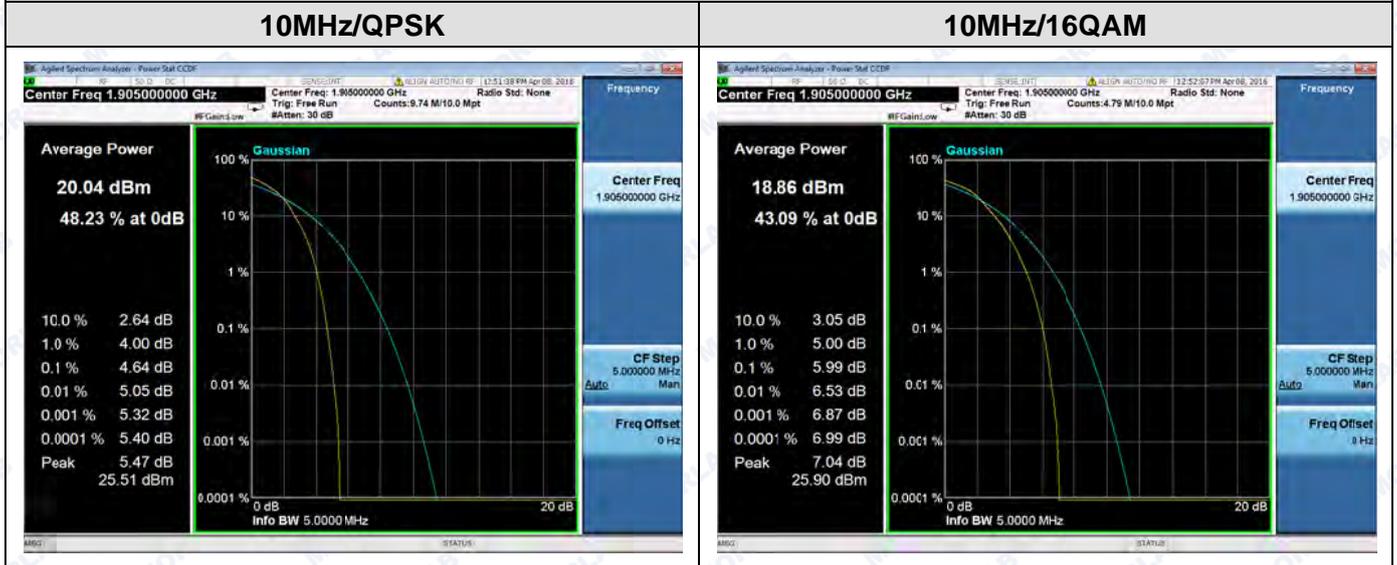


LTE Band 2 High channel							
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
19175	1907.5	4.26	5.13	19150	1905.0	4.64	5.99

**Spectrum Plot of Worst Value**



**Spectrum Plot of Worst Value**



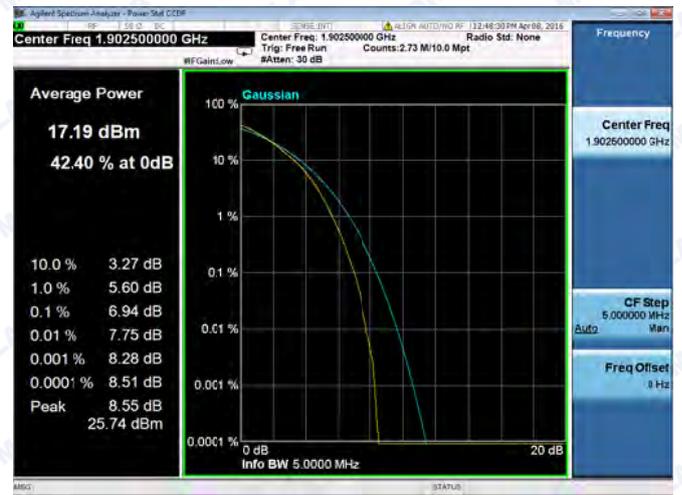
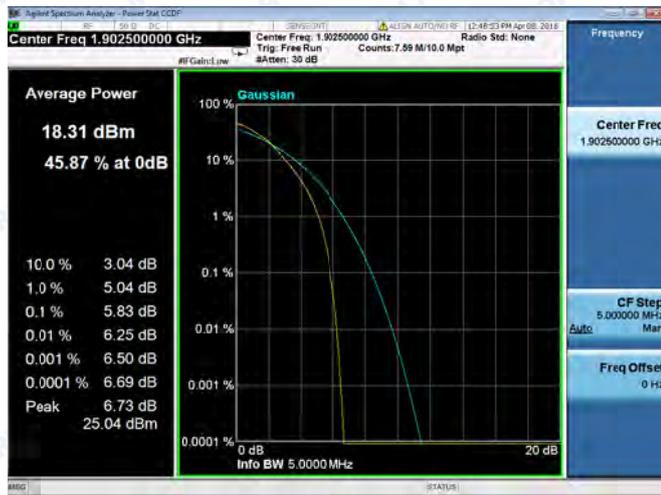


LTE Band 2 High channel							
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
19125	1902.5	5.83	6.94	19100	1900.0	6.50	7.21

Spectrum Plot of Worst Value

15MHz/QPSK

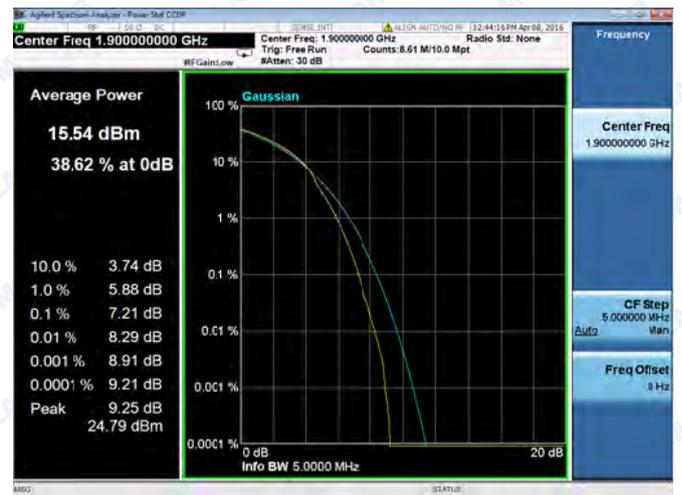
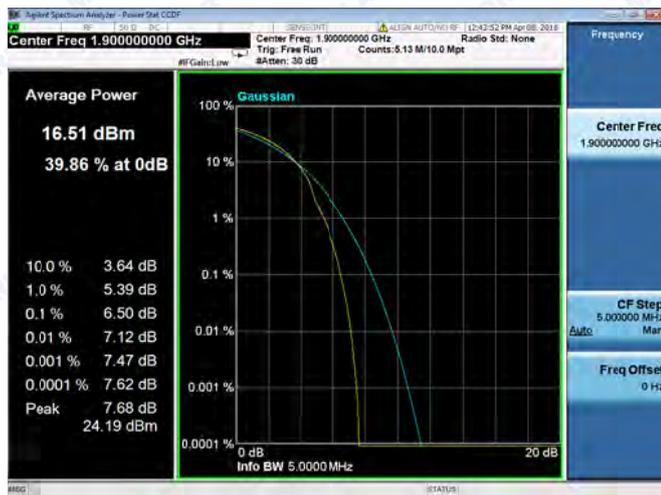
15MHz/16QAM



Spectrum Plot of Worst Value

20MHz/QPSK

20MHz/16QAM



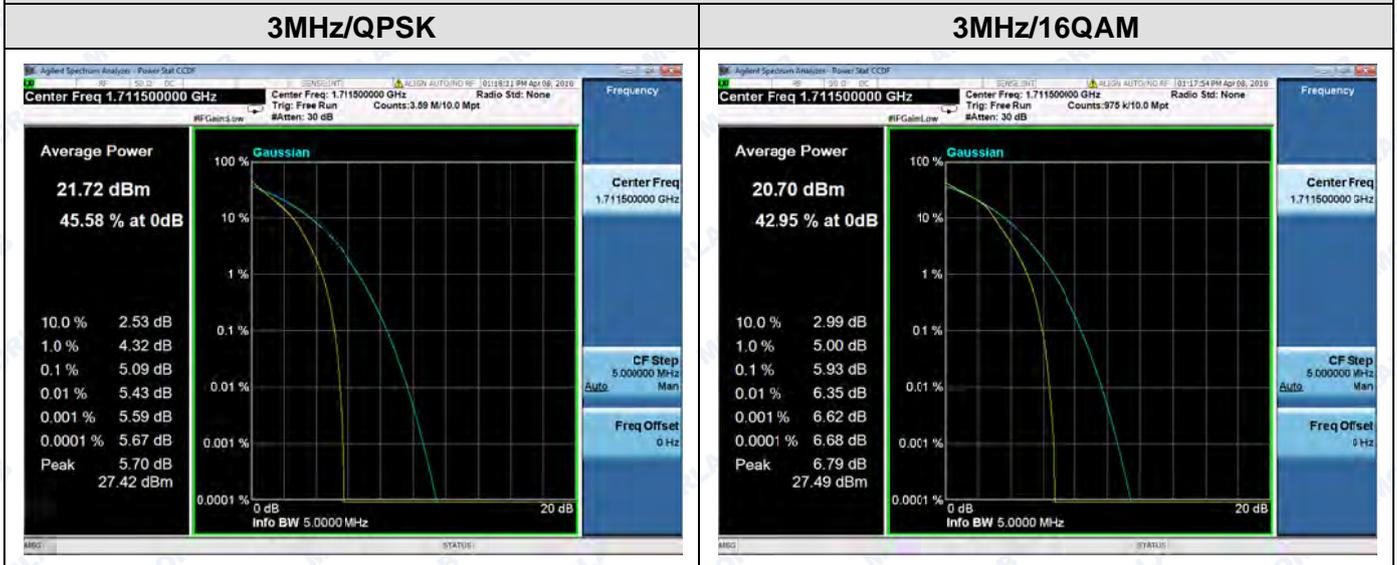


LTE Band 4 Low channel							
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
19957	1710.7	4.94	5.78	19965	1711.5	5.09	5.93

Spectrum Plot of Worst Value (Low channel)



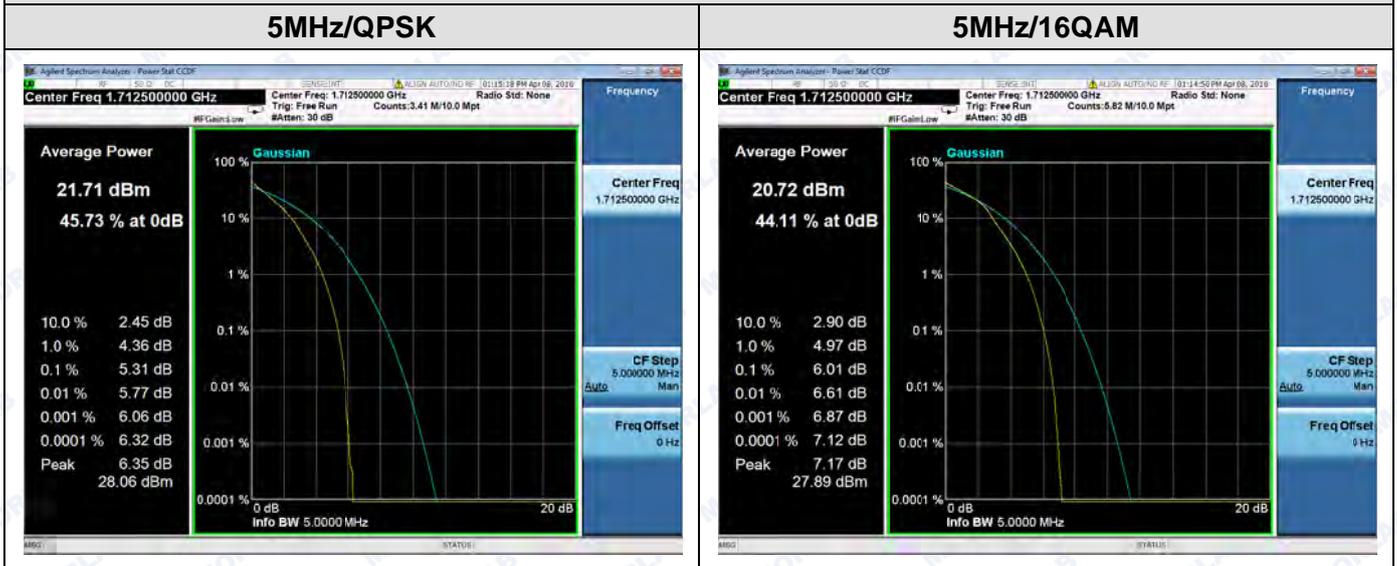
Spectrum Plot of Worst Value



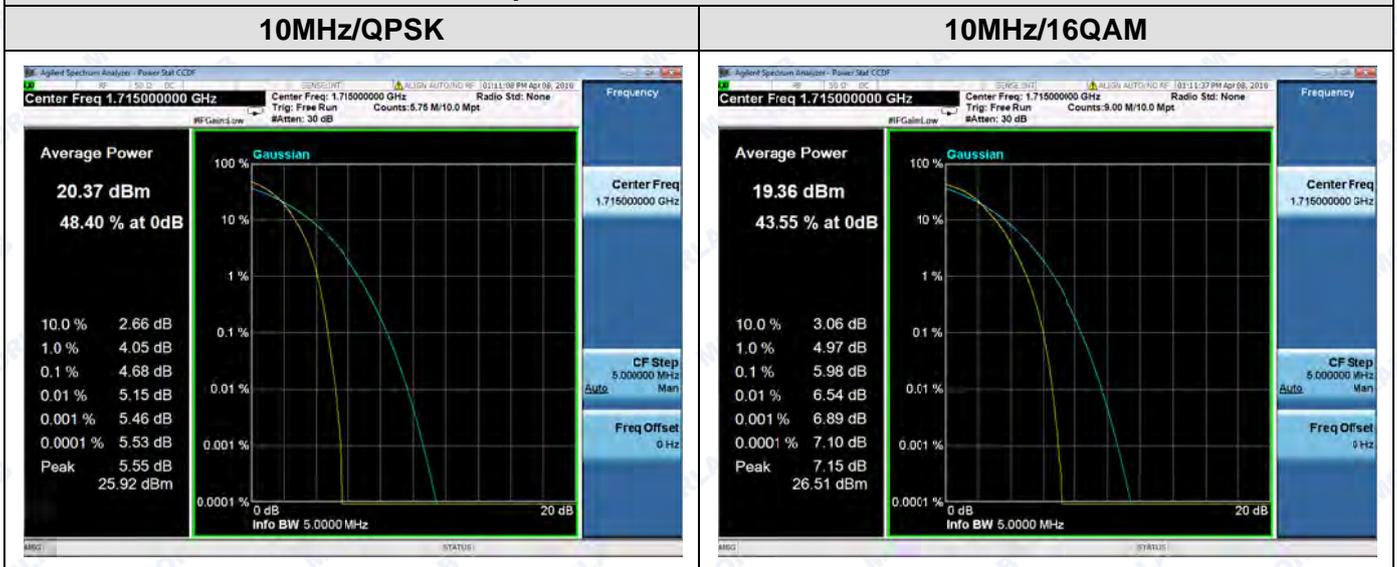


LTE Band 4 Low channel							
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
19975	1712.5	5.31	6.01	20000	1715.0	4.68	5.98

Spectrum Plot of Worst Value



Spectrum Plot of Worst Value



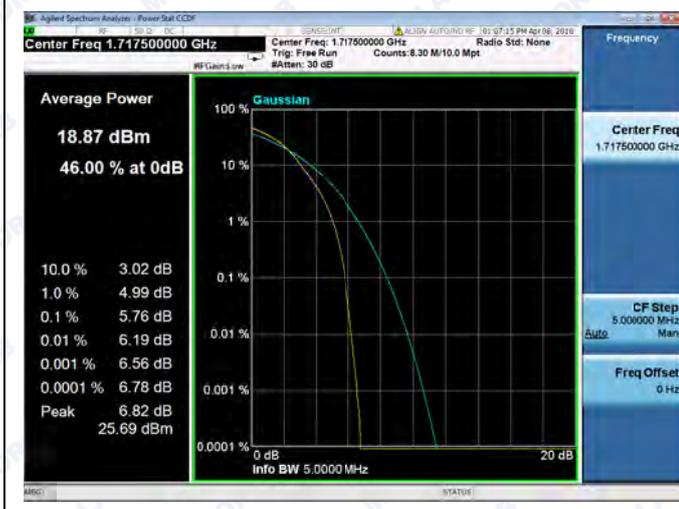


LTE Band 4 Low channel							
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
20025	1717.5	5.76	6.71	20050	1720.0	6.43	7.08

Spectrum Plot of Worst Value

15MHz/QPSK

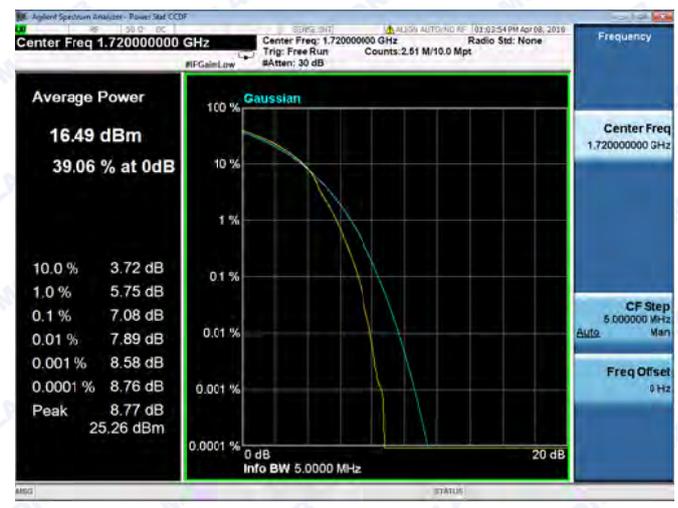
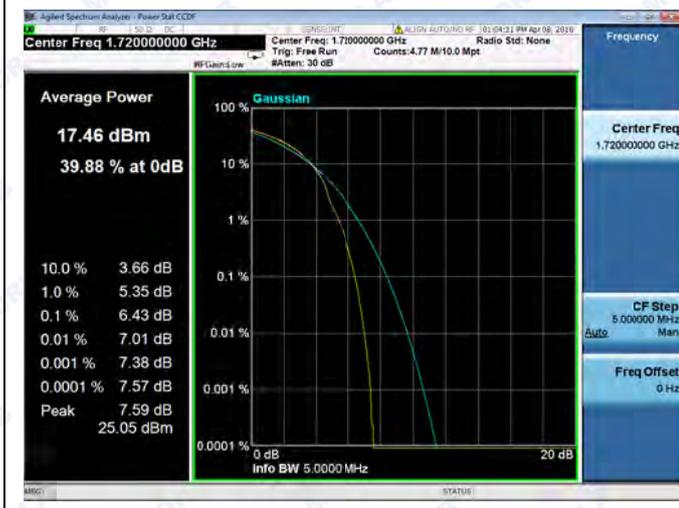
15MHz/16QAM



Spectrum Plot of Worst Value

20MHz/QPSK

20MHz/16QAM



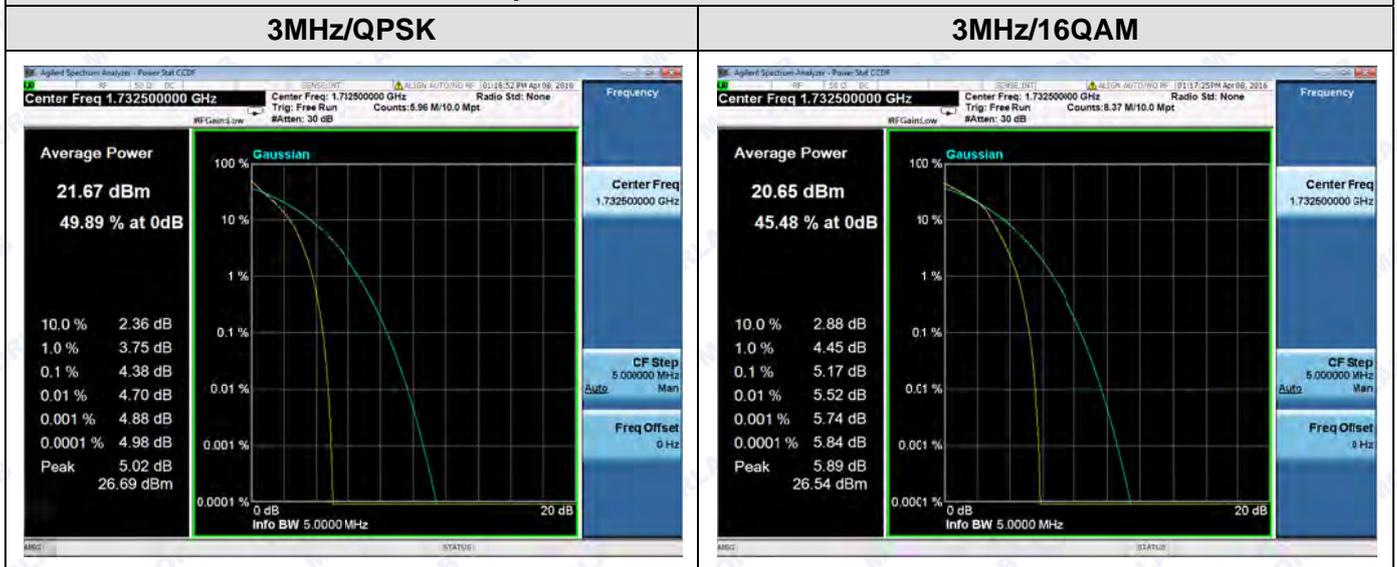


LTE Band 4 Middle channel							
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	4.14	4.90	20175	1732.5	4.38	5.17

Spectrum Plot of Worst Value



Spectrum Plot of Worst Value



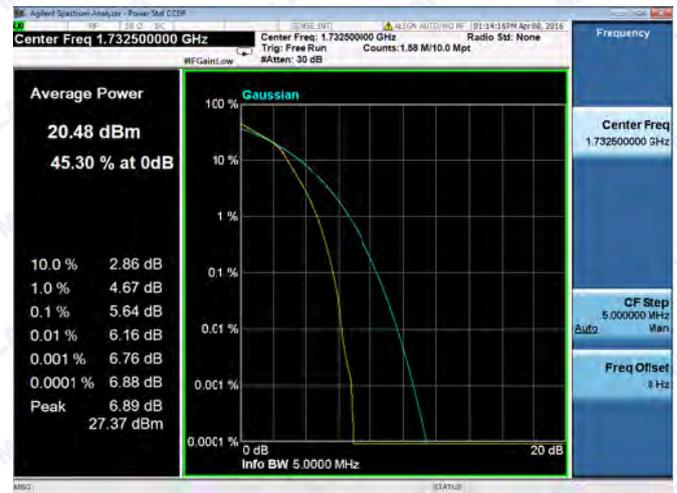
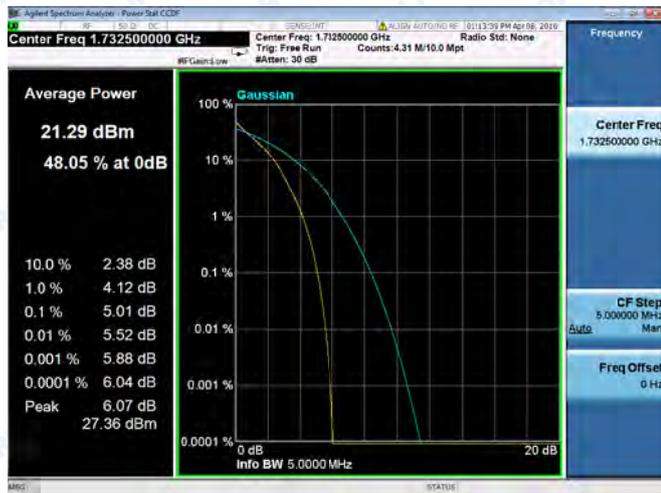


LTE Band 4 Middle channel							
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	5.01	5.64	20175	1732.5	4.70	5.96

Spectrum Plot of Worst Value

5MHz/QPSK

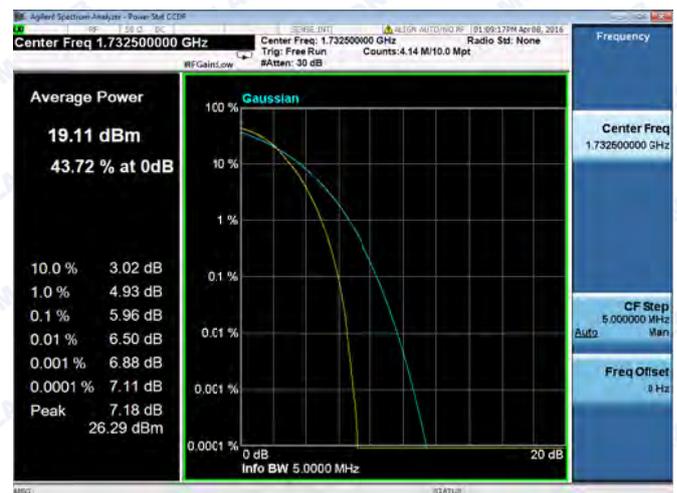
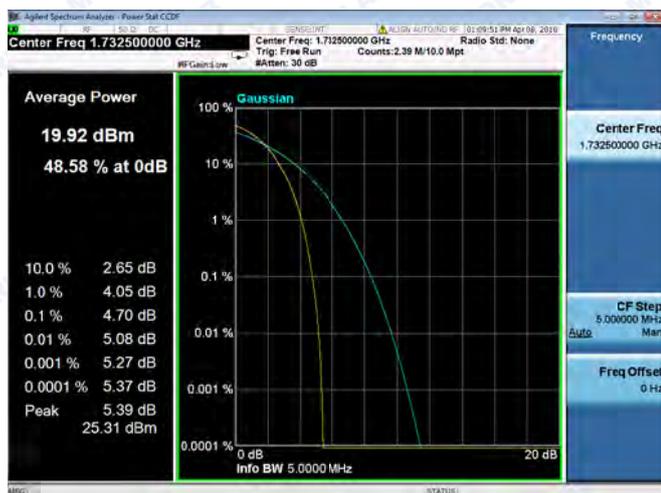
5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

10MHz/16QAM



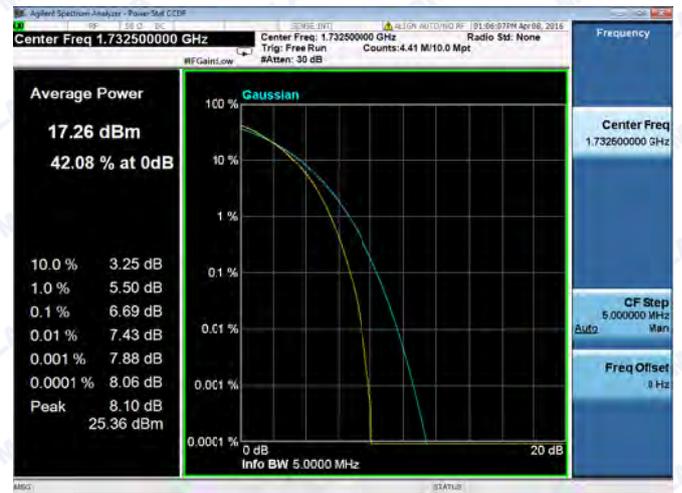
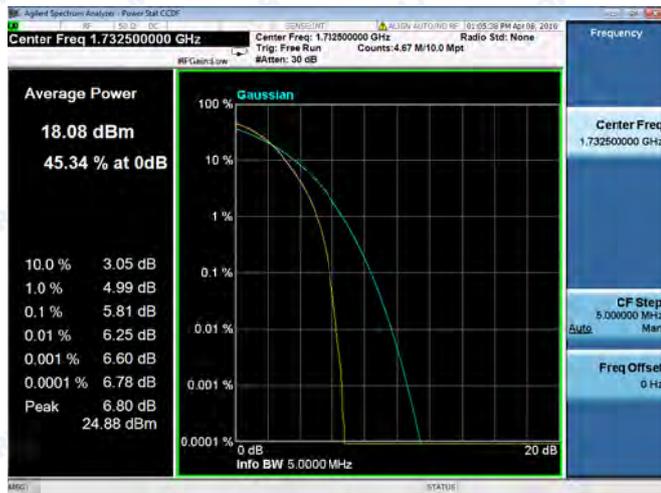


LTE Band 4 Middle channel							
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	5.81	6.69	20175	1732.5	6.46	7.16

Spectrum Plot of Worst Value

15MHz/QPSK

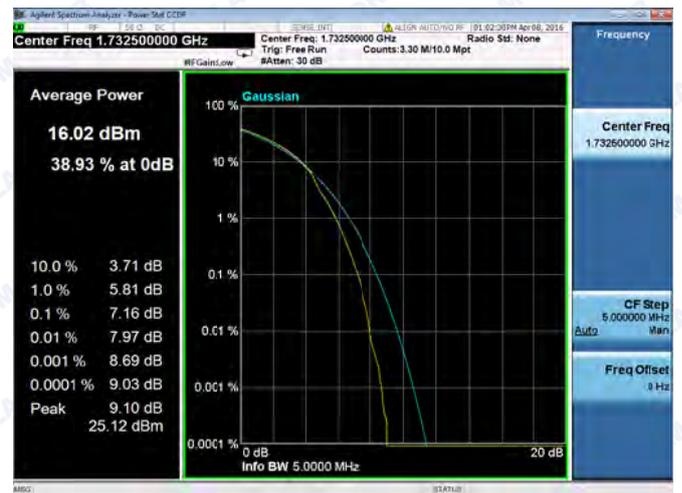
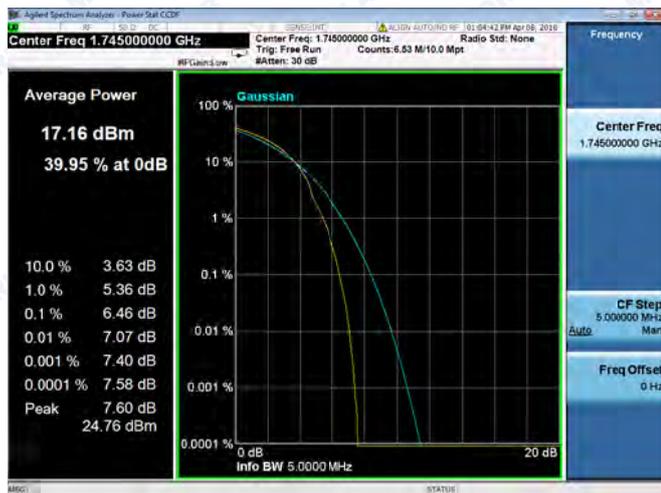
15MHz/16QAM



Spectrum Plot of Worst Value

20MHz/QPSK

20MHz/16QAM



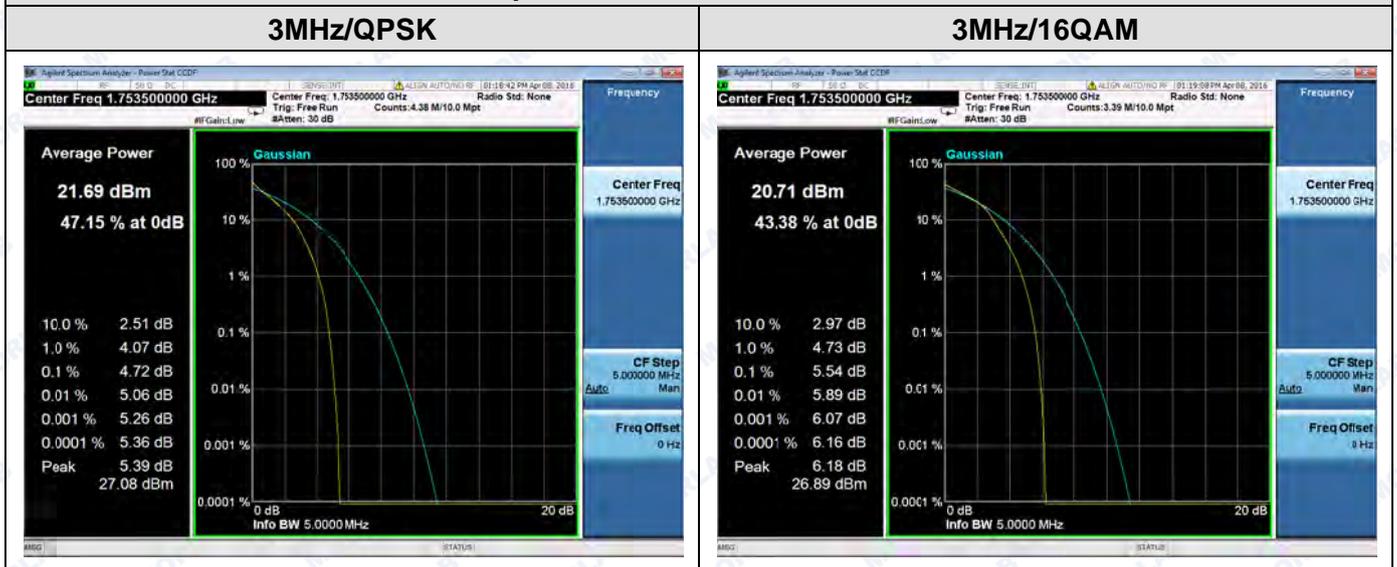


LTE Band 4 High channel							
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
20393	1754.3	4.41	5.26	20385	1753.5	4.72	5.54

Spectrum Plot of Worst Value



Spectrum Plot of Worst Value



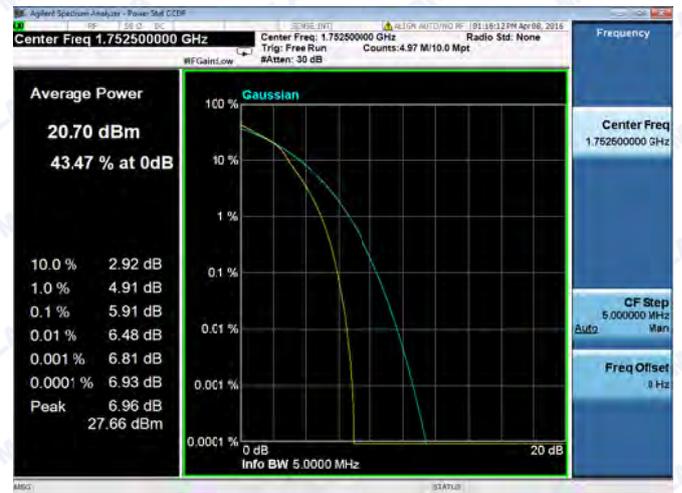
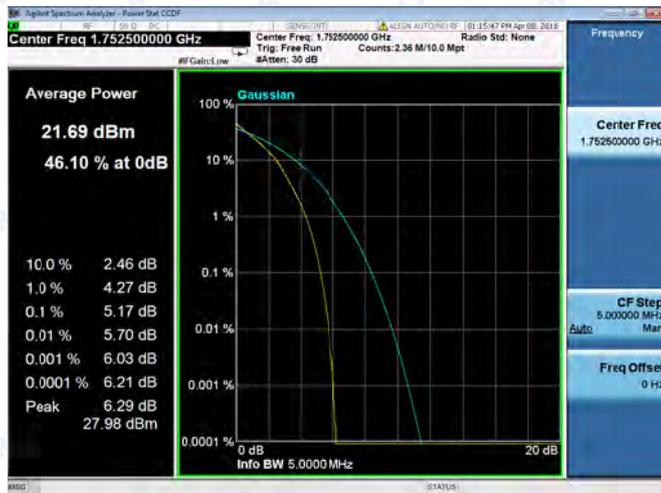


LTE Band 4 High channel							
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
20375	1752.5	5.17	5.91	20350	1750.0	4.69	6.16

Spectrum Plot of Worst Value

5MHz/QPSK

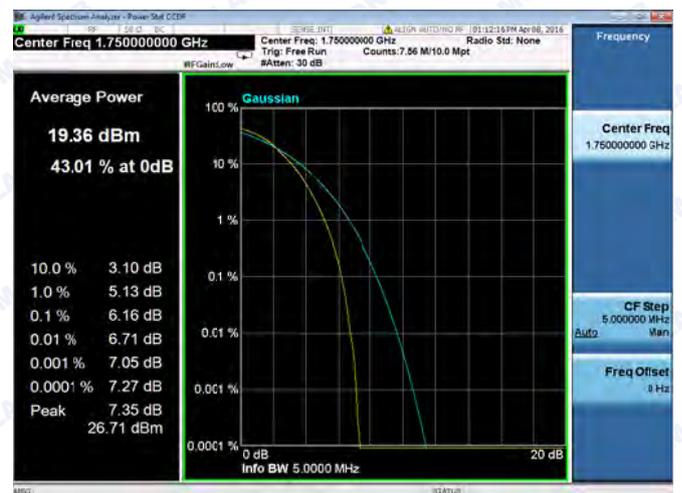
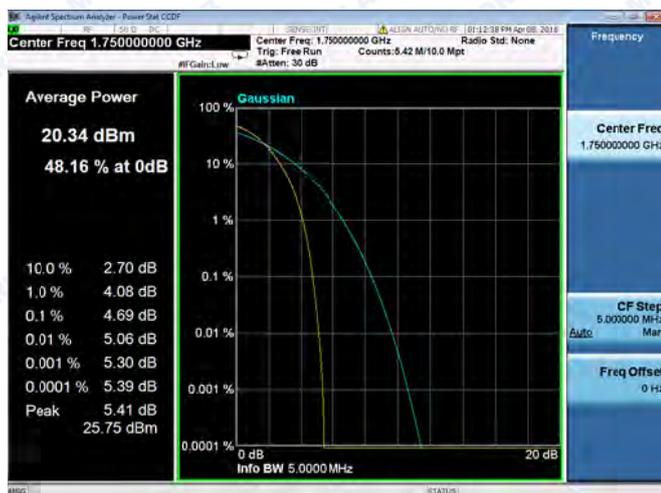
5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

10MHz/16QAM



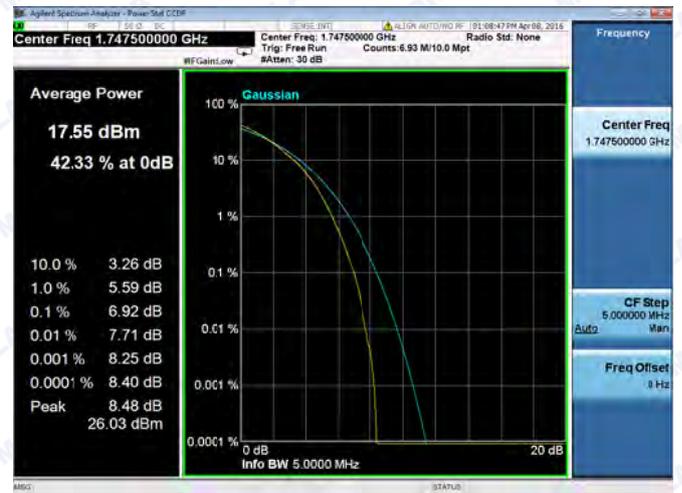
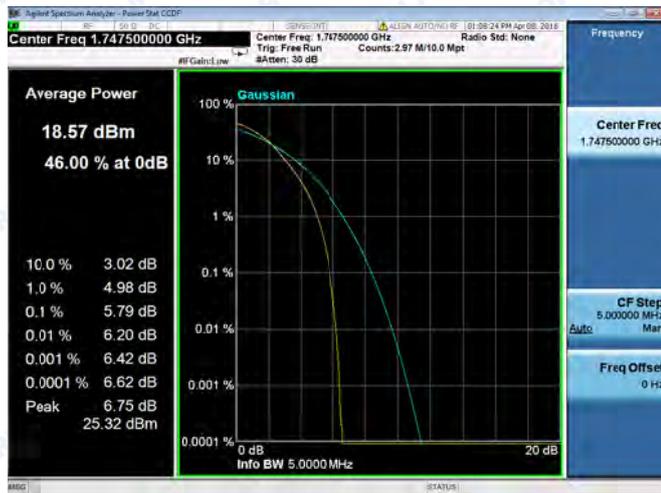


LTE Band 4 High channel							
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
20325	1747.5	5.79	6.92	20300	1745.0	6.46	7.17

Spectrum Plot of Worst Value

15MHz/QPSK

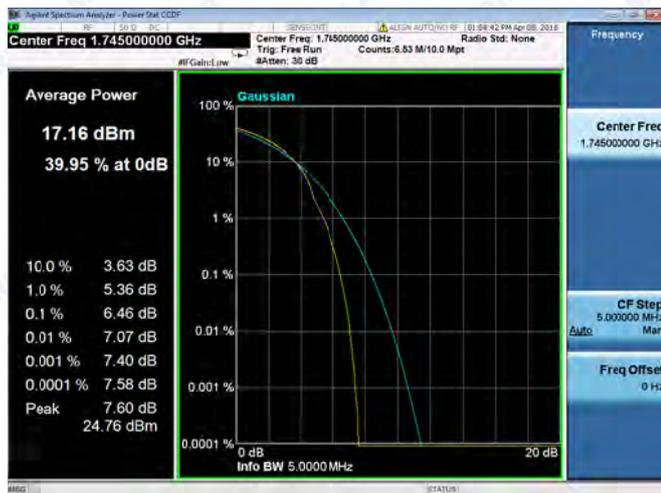
15MHz/16QAM



Spectrum Plot of Worst Value

20MHz/QPSK

20MHz/16QAM





## 2.5 Conducted Spurious Emissions

### 2.5.1 Test Requirement

According to FCC section 2.1051 and 27.53(g), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43+10*\log(P)$ dB. This calculated to be -13dBm.

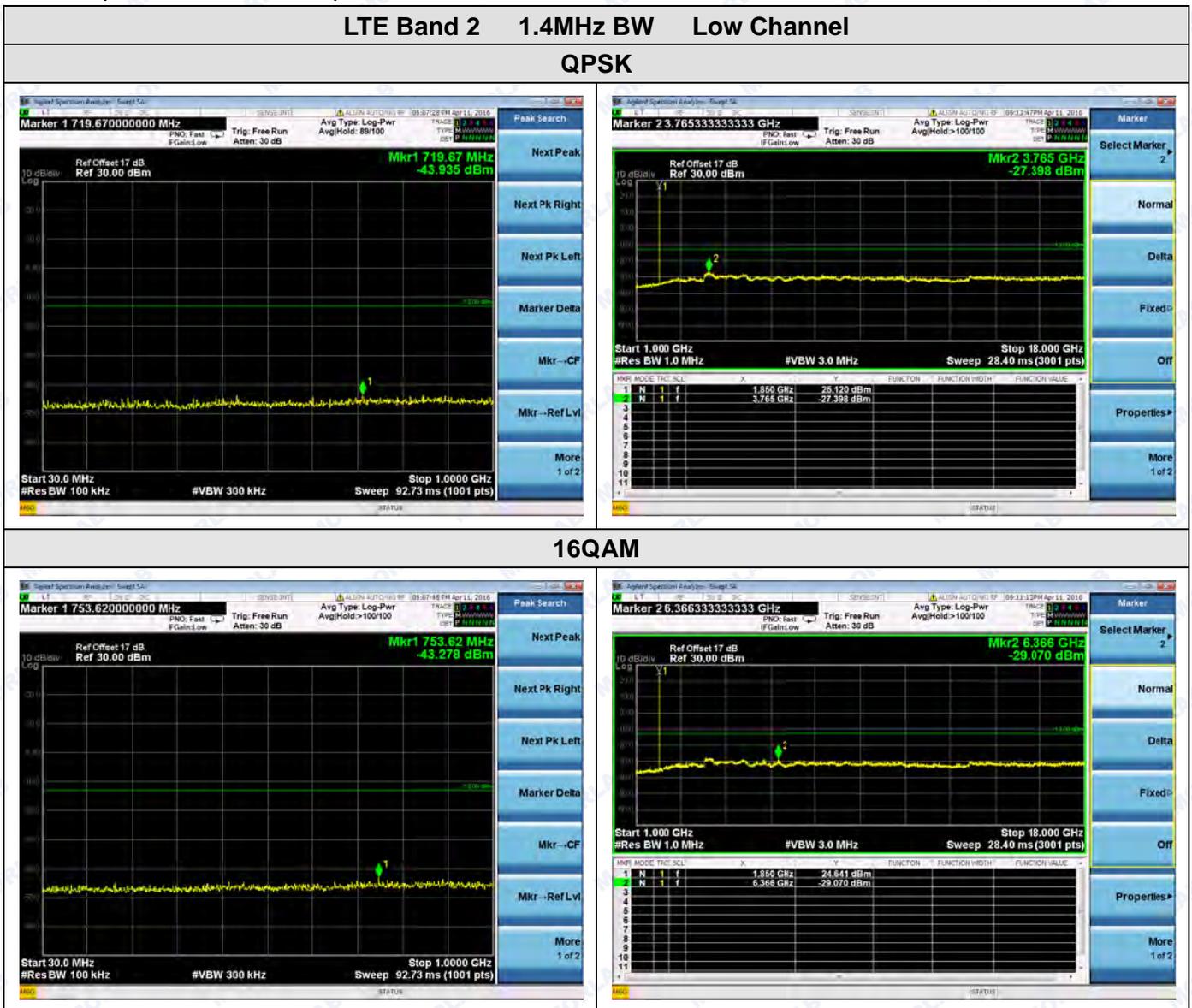
### 2.5.2 Test Procedure

See section 2.1.2 of this report.

Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

### 2.5.3 Test Result

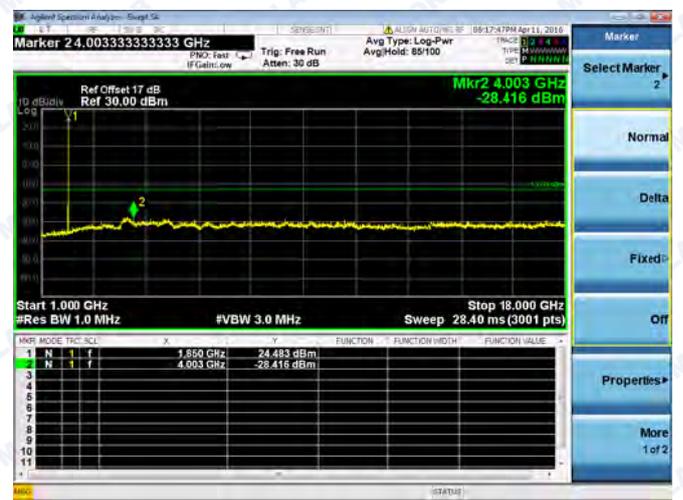
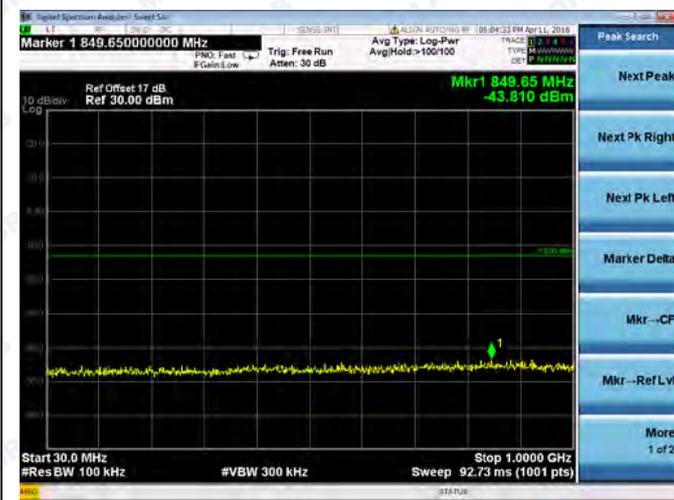
Compliant. See attached pots.



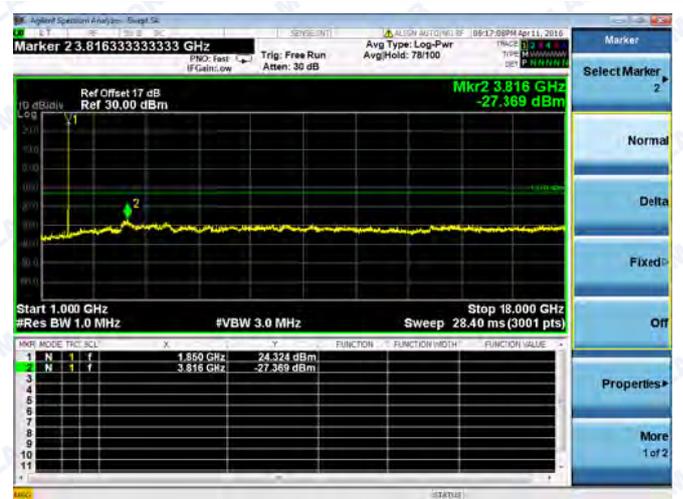
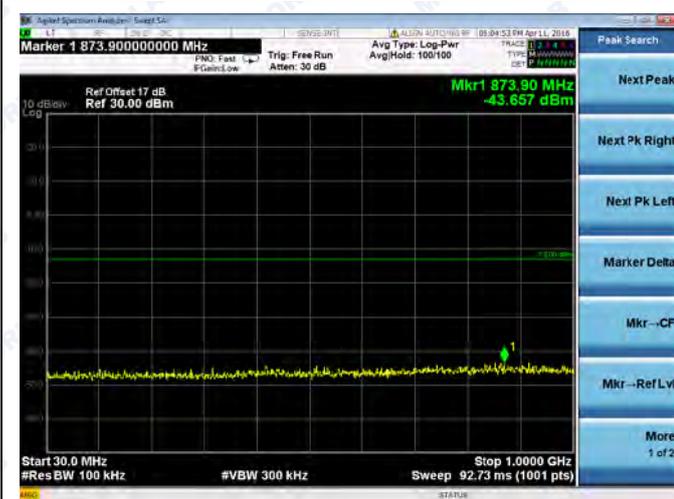


LTE Band 2 3MHz BW Low Channel

QPSK



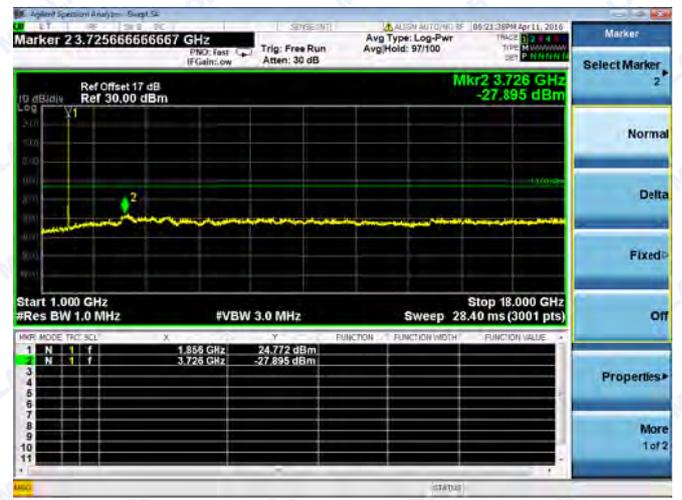
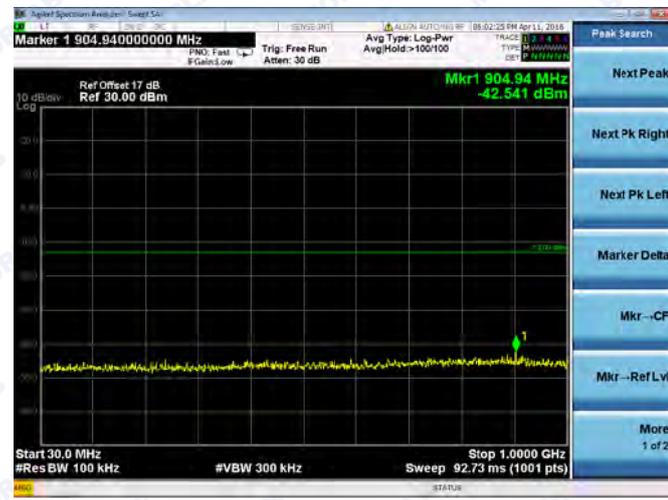
16QAM



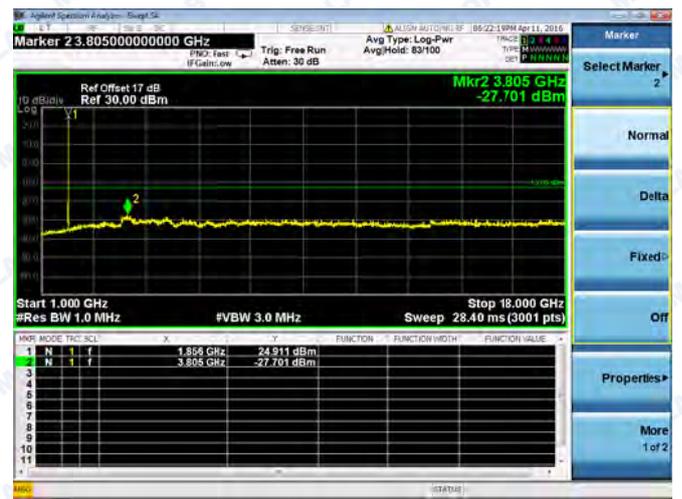
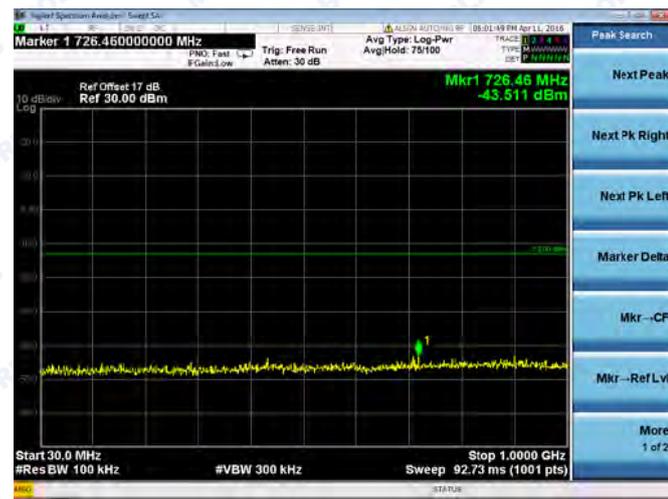


LTE Band 2 5MHz BW Low Channel

QPSK



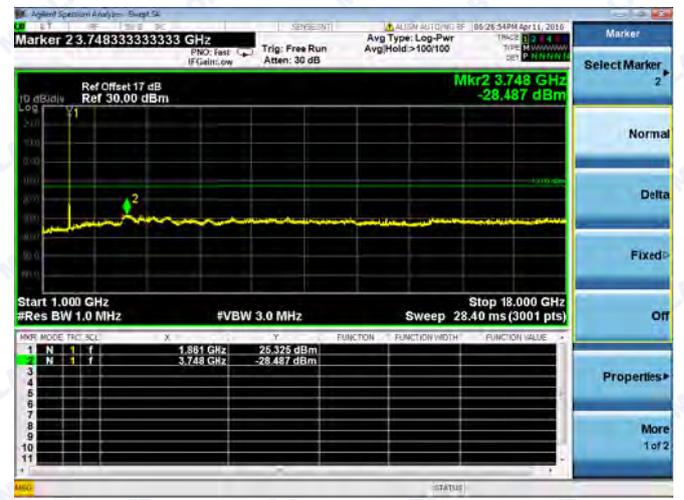
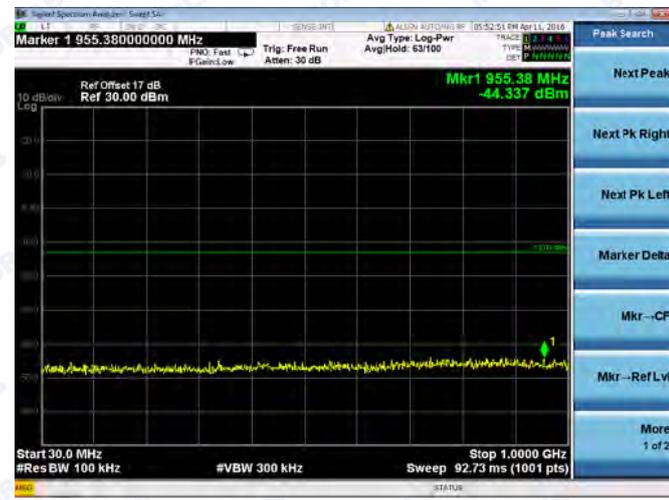
16QAM



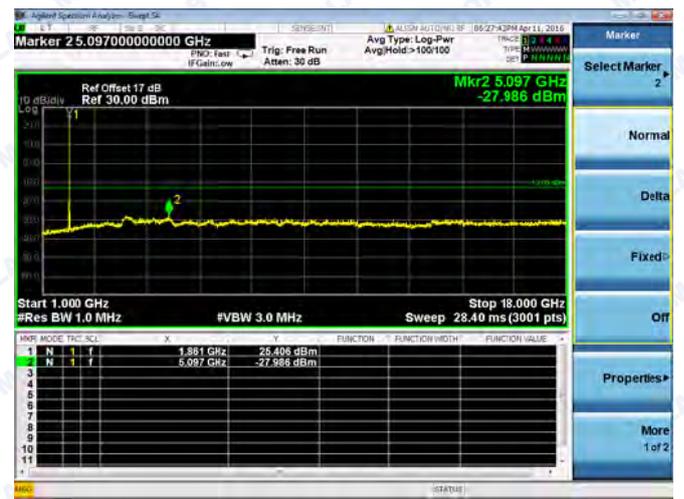
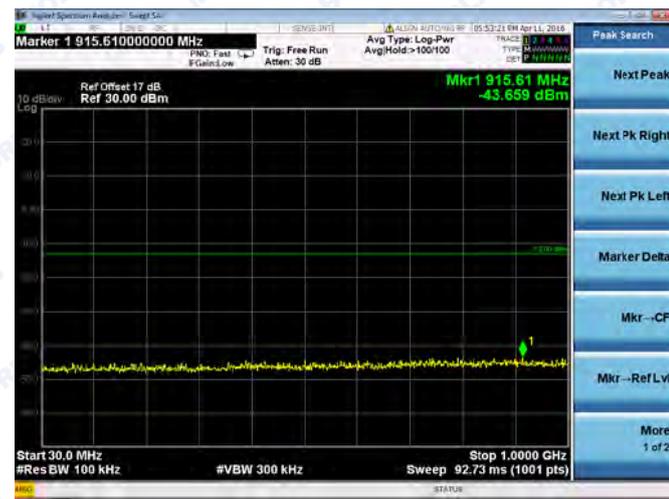


LTE Band 2 10MHz BW Low Channel

QPSK



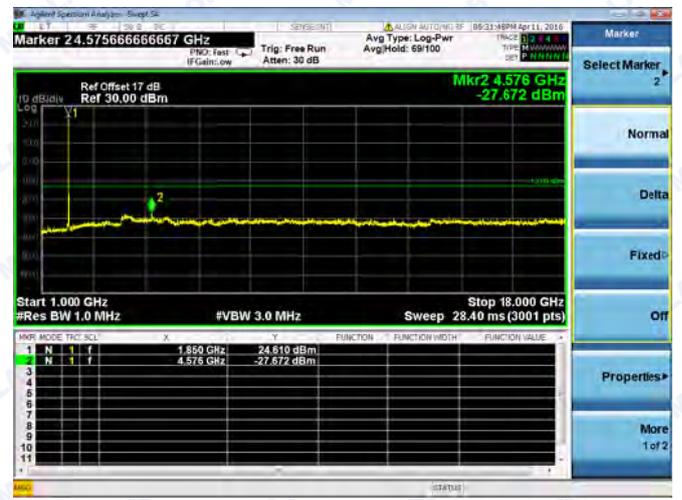
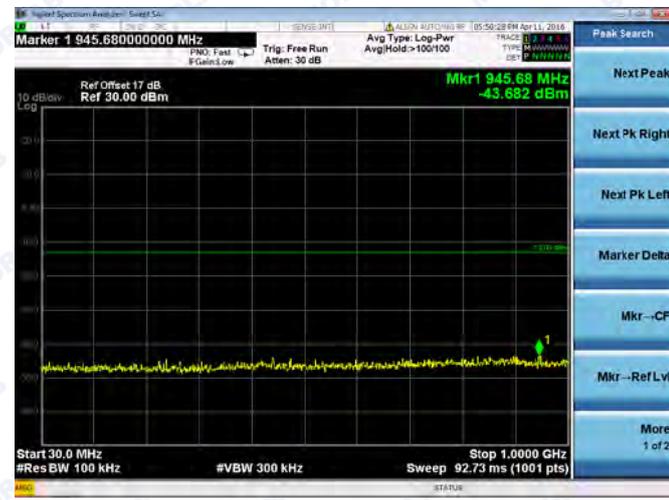
16QAM



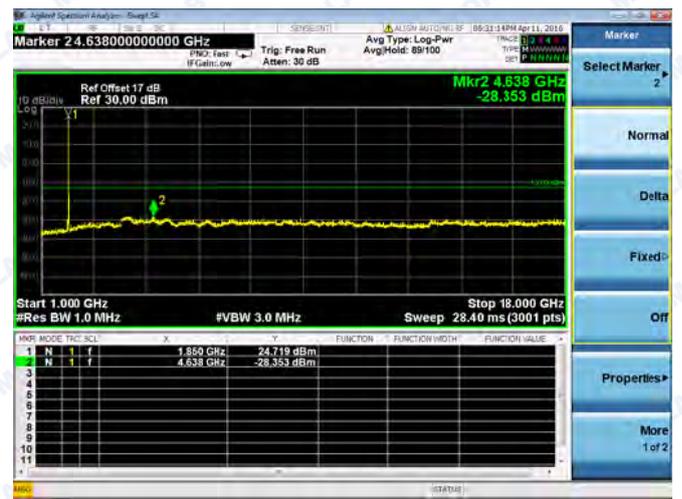
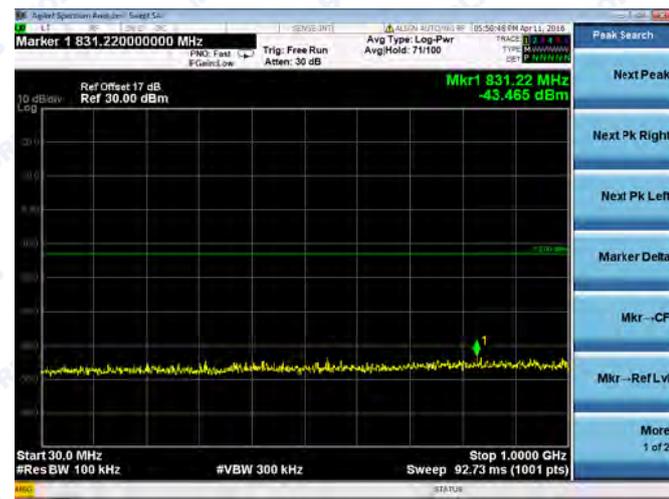


LTE Band 2 15MHz BW Low Channel

QPSK



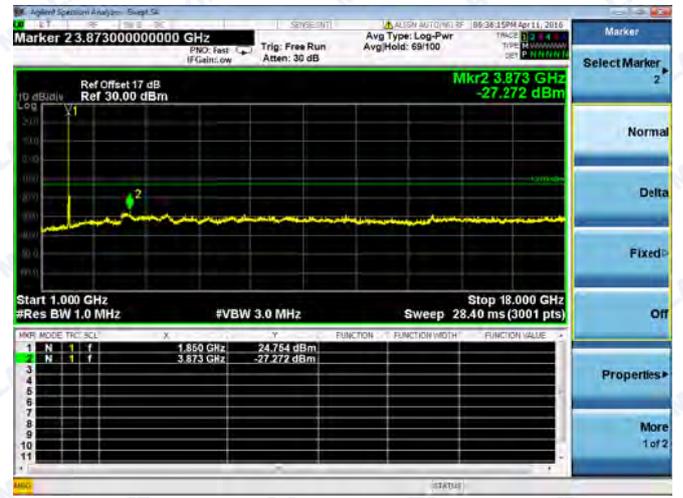
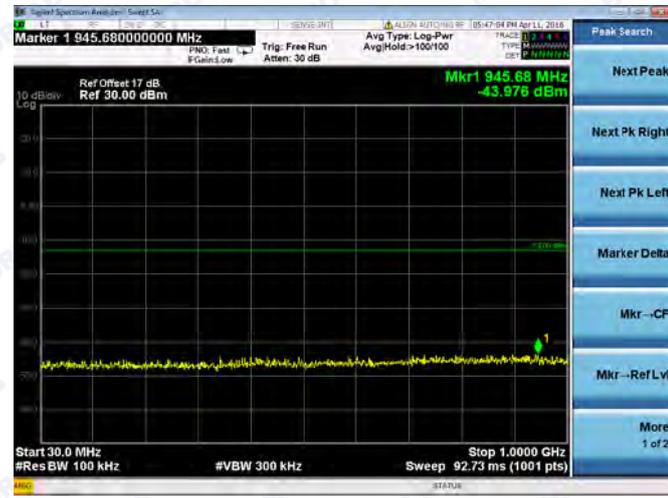
16QAM



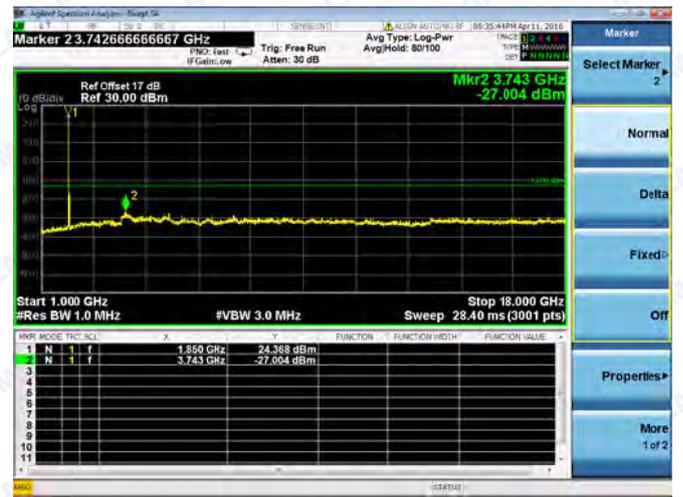
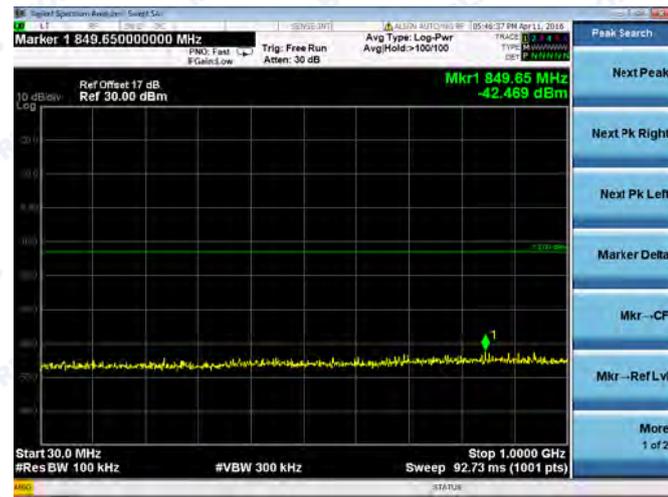


LTE Band 2 20MHz BW Low Channel

QPSK



16QAM

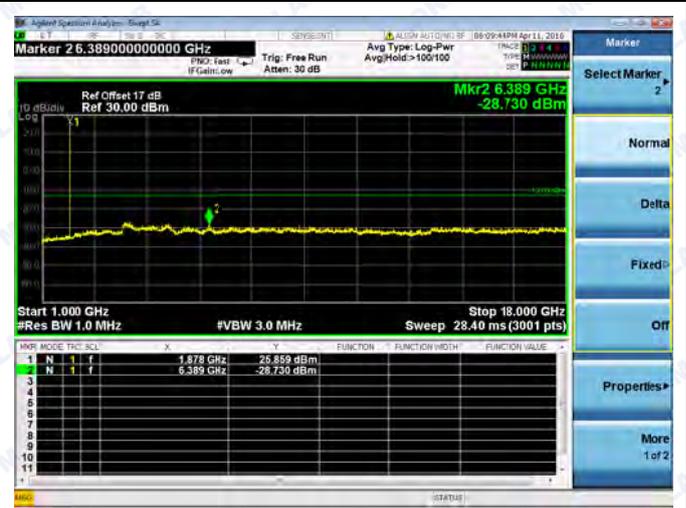
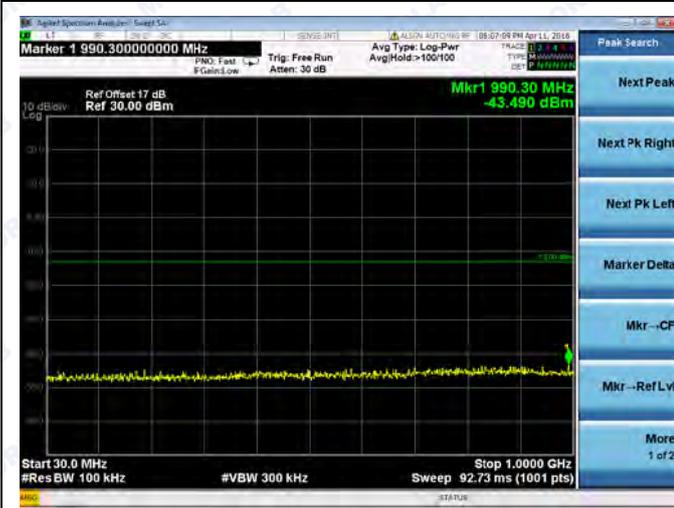




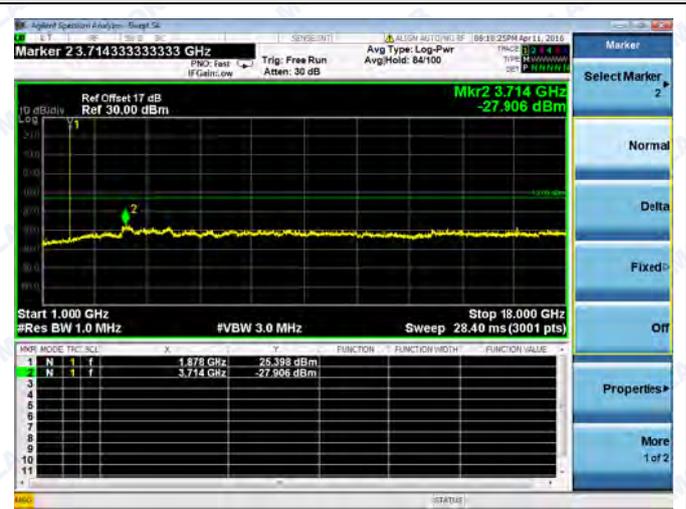
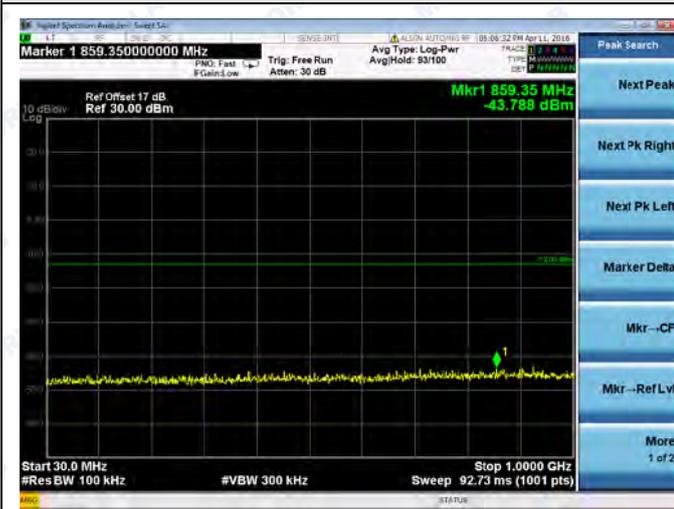
Middle channel:

LTE Band 2 1.4MHz BW Mid Channel

QPSK



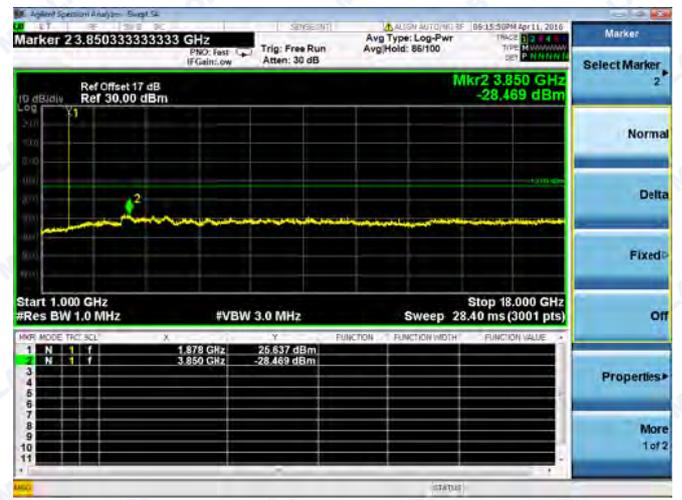
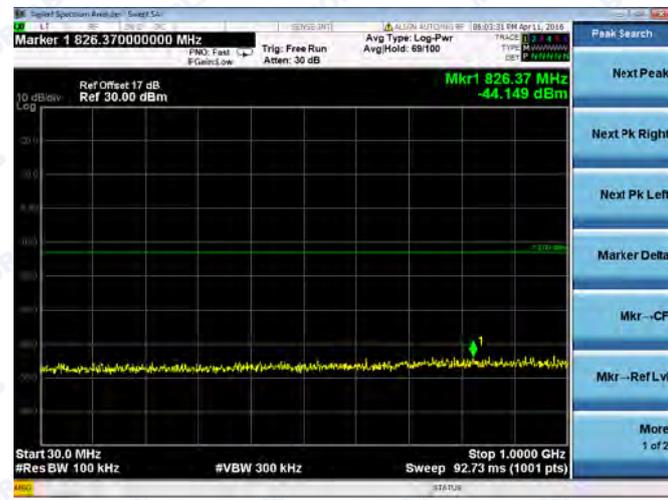
16QAM



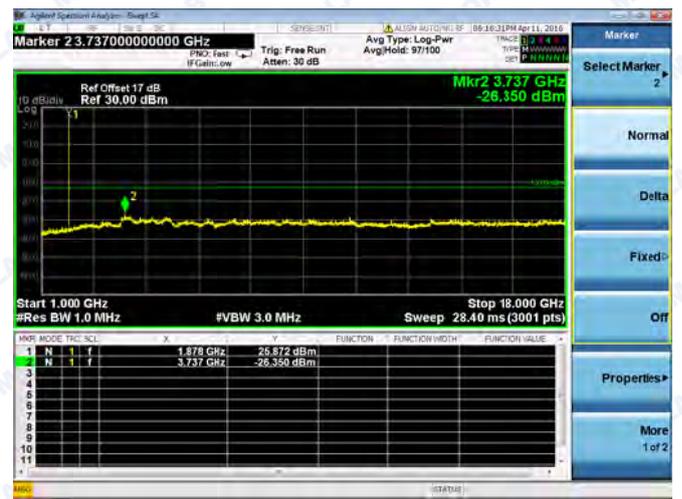
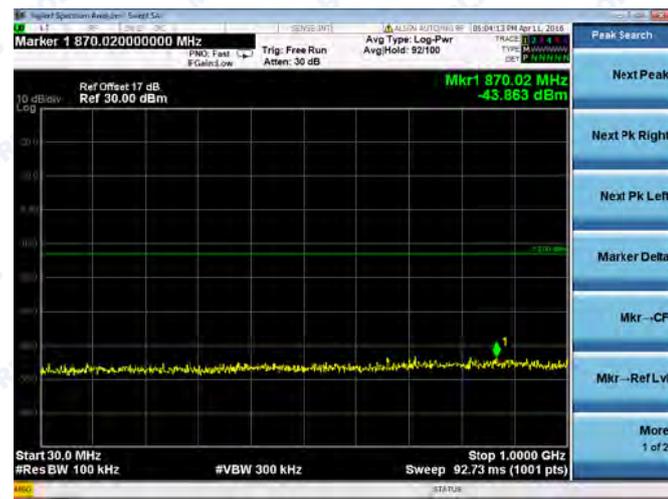


LTE Band 2 3MHz BW Mid Channel

QPSK



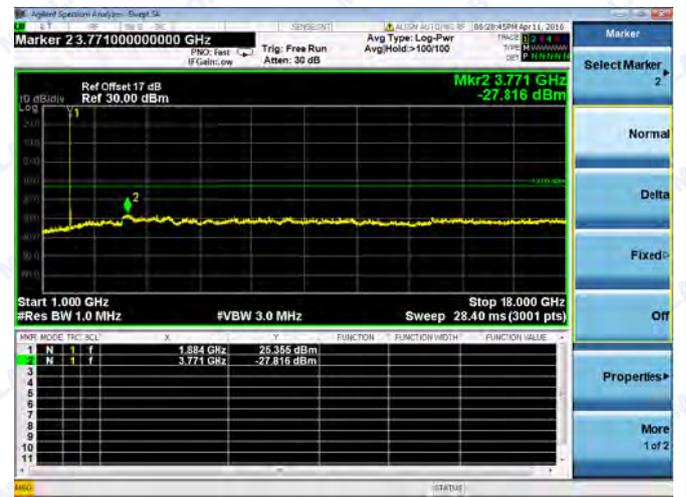
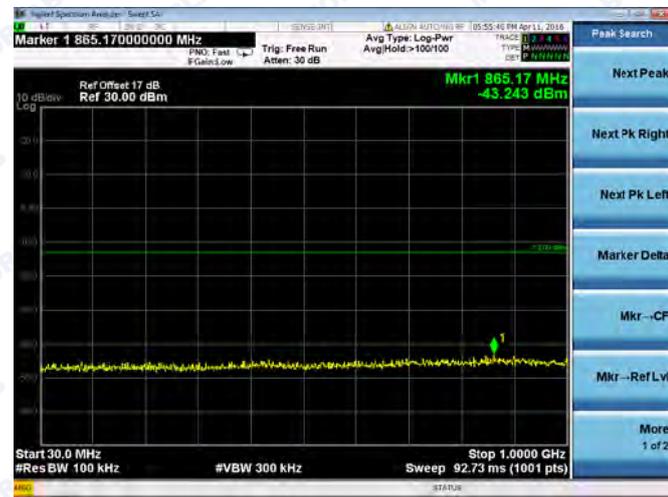
16QAM



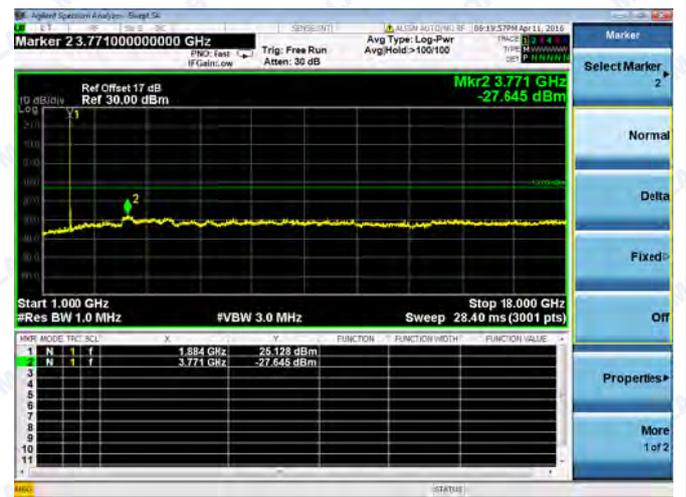
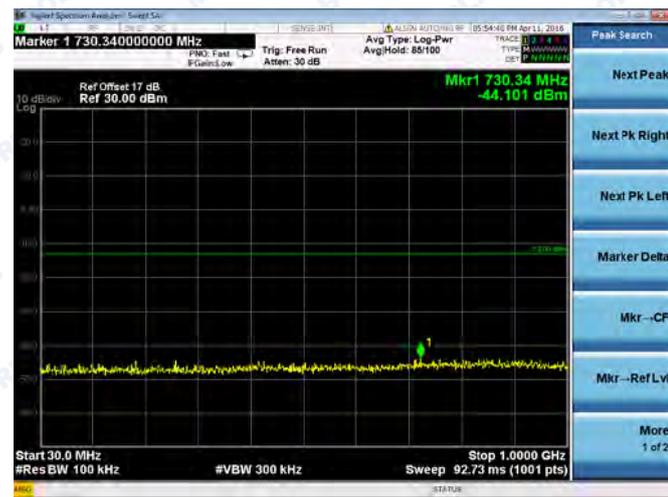


LTE Band 2 5MHz BW Mid Channel

QPSK



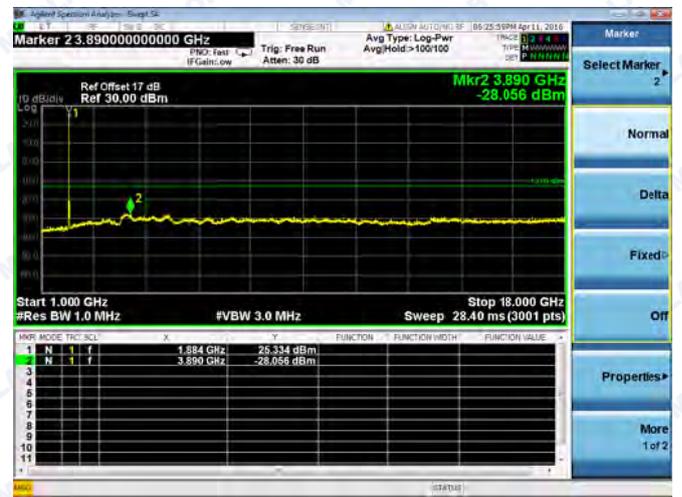
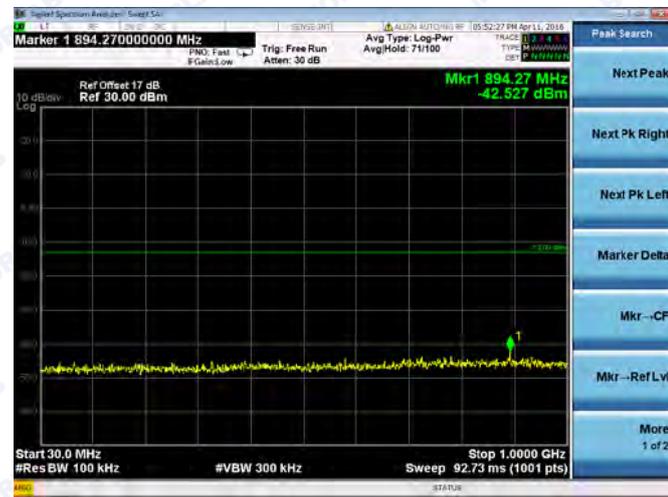
16QAM



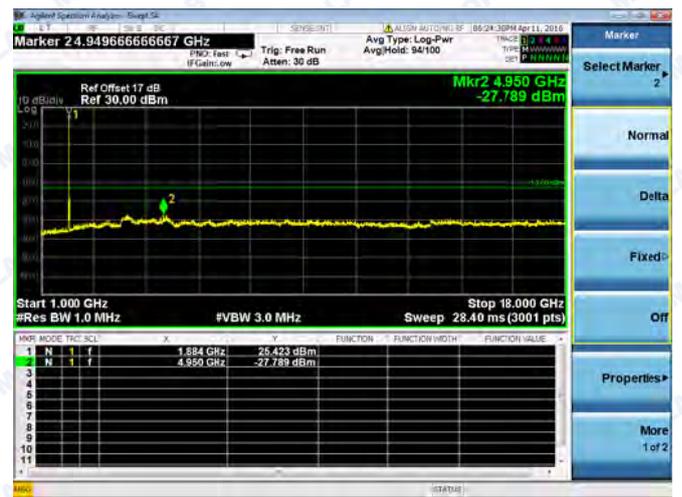
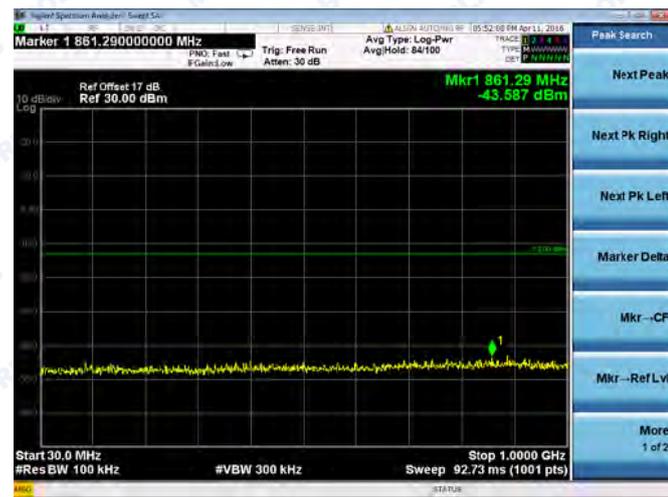


LTE Band 2 10MHz BW Mid Channel

QPSK



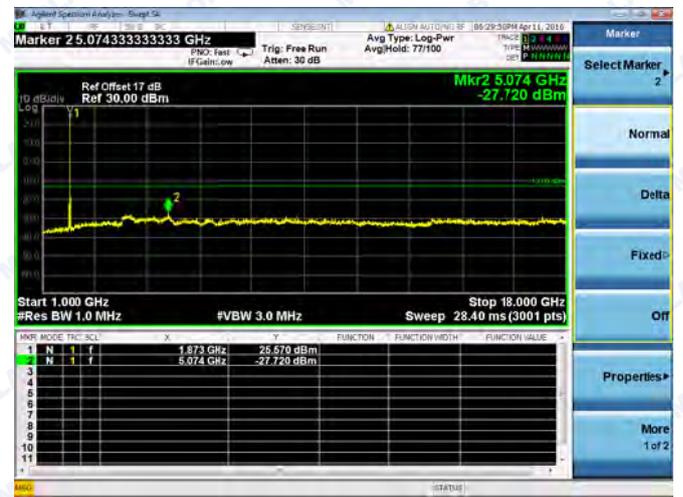
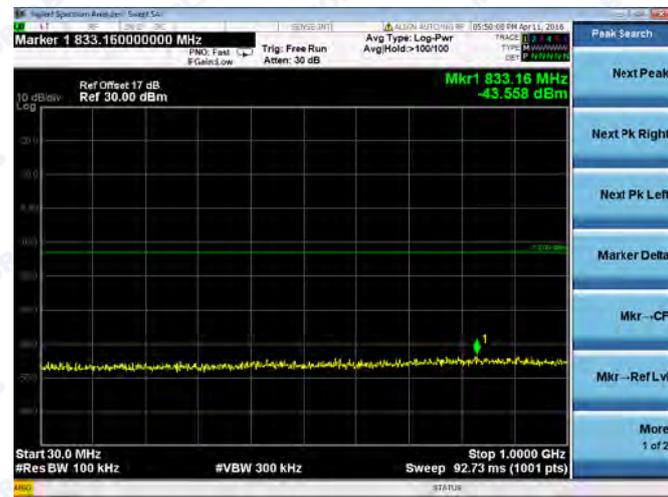
16QAM



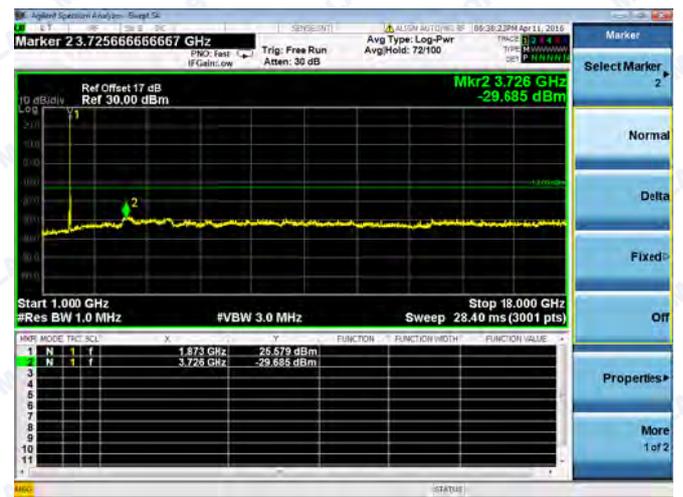
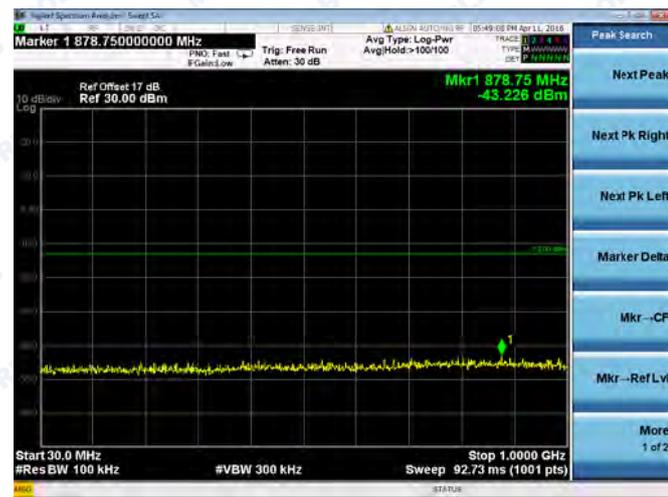


LTE Band 2 15MHz BW Mid Channel

QPSK



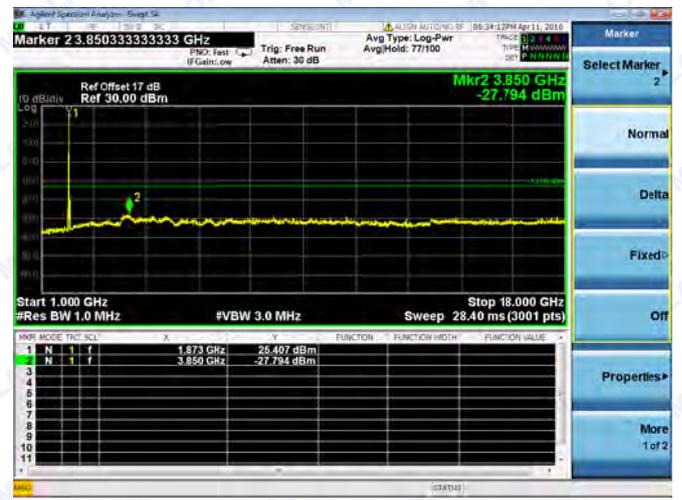
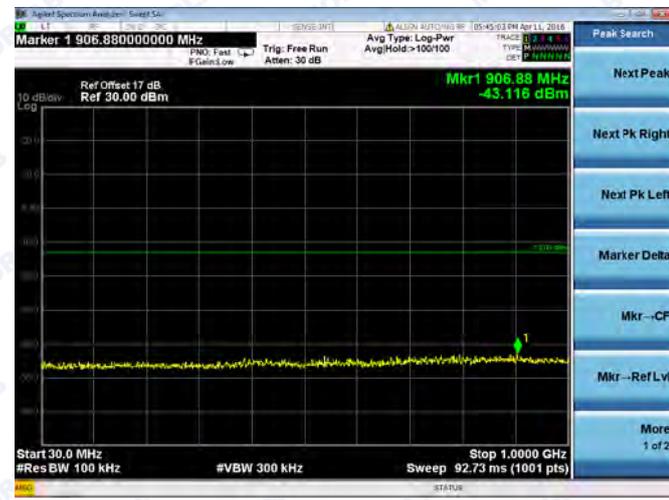
16QAM



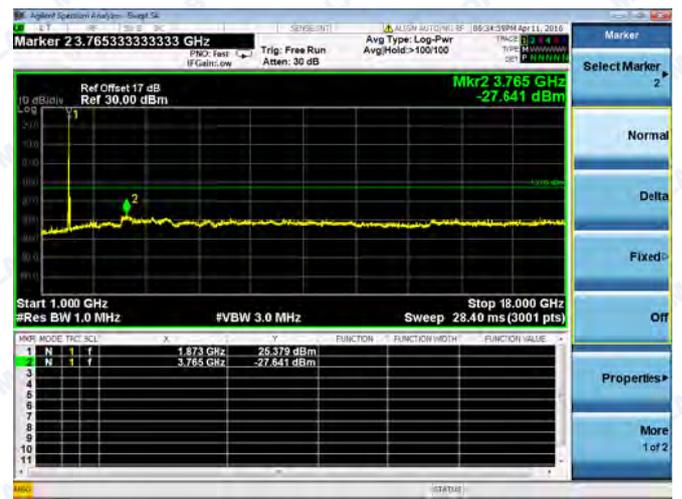
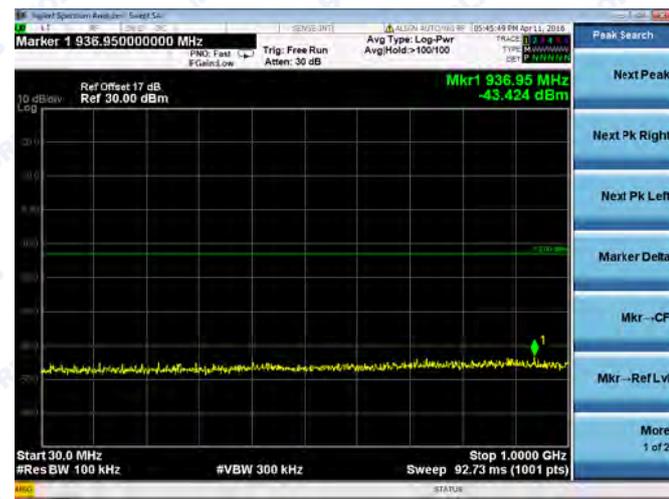


LTE Band 2 20MHz BW Mid Channel

QPSK



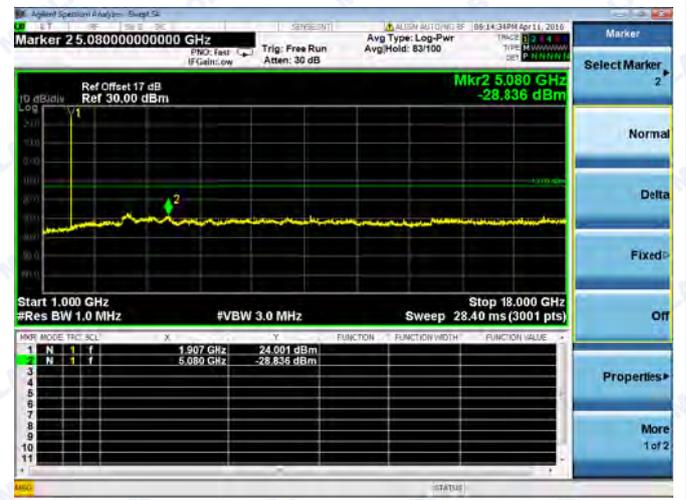
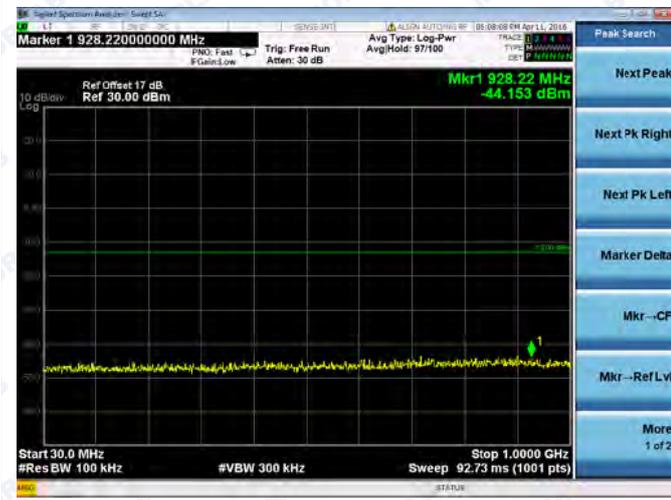
16QAM



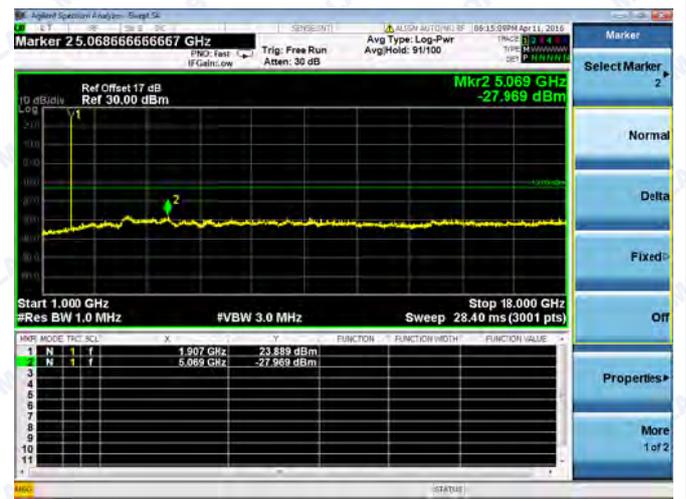
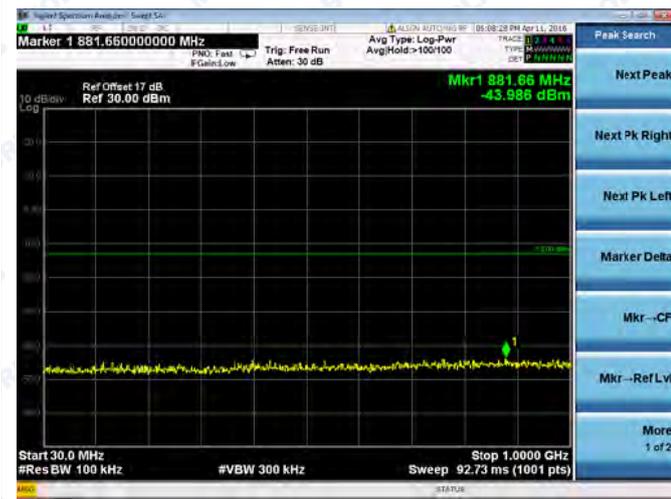


LTE Band 2 1.4MHz BW High Channel

QPSK



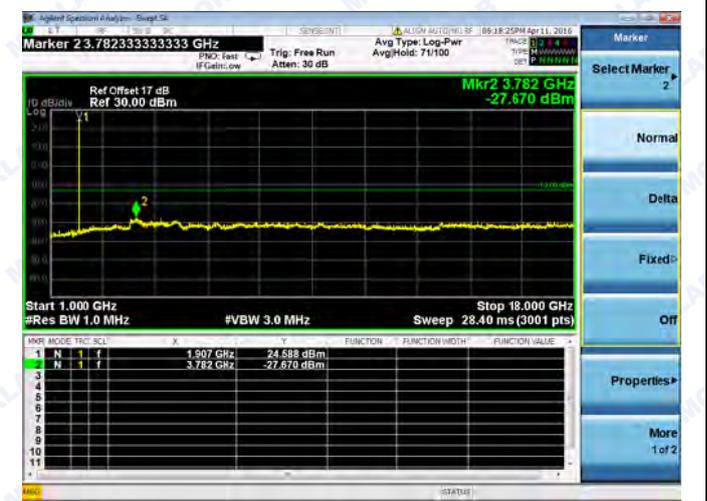
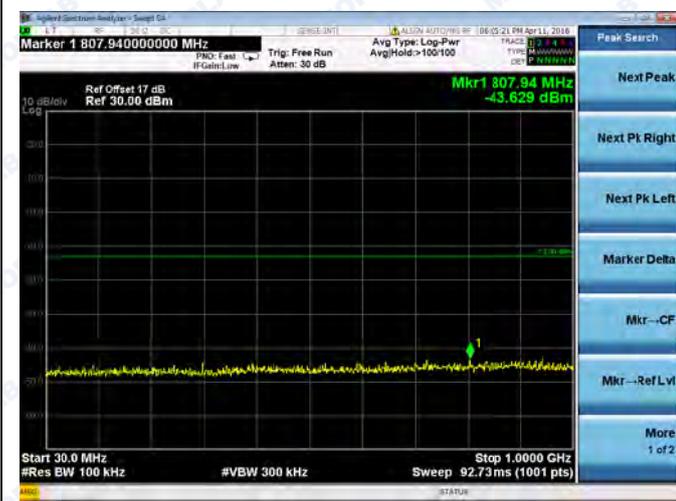
16QAM





LTE Band 2 3MHz BW High Channel

QPSK



16QAM

