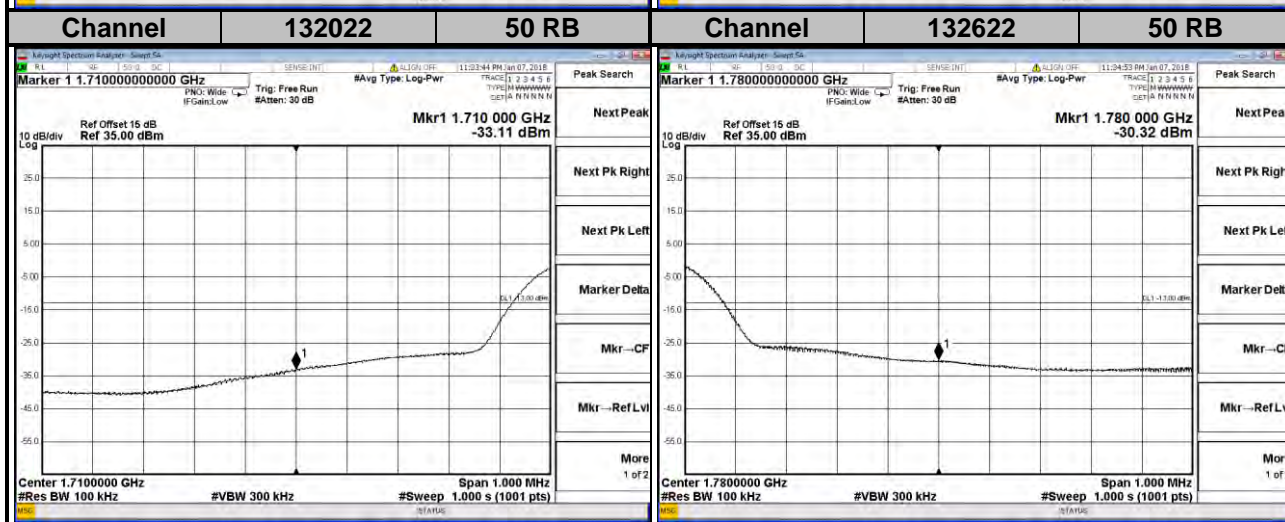
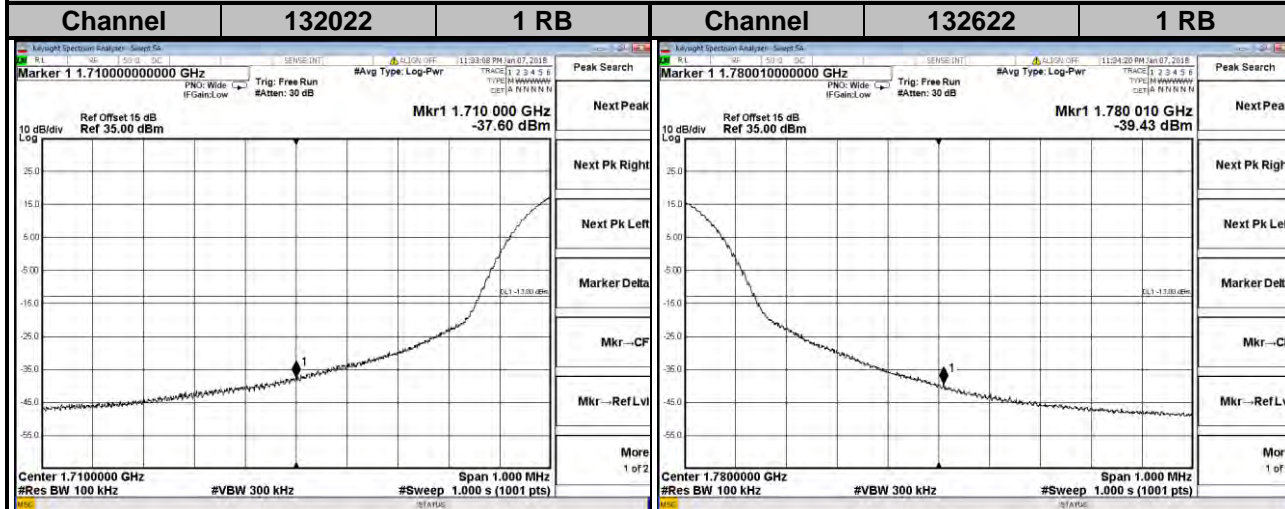
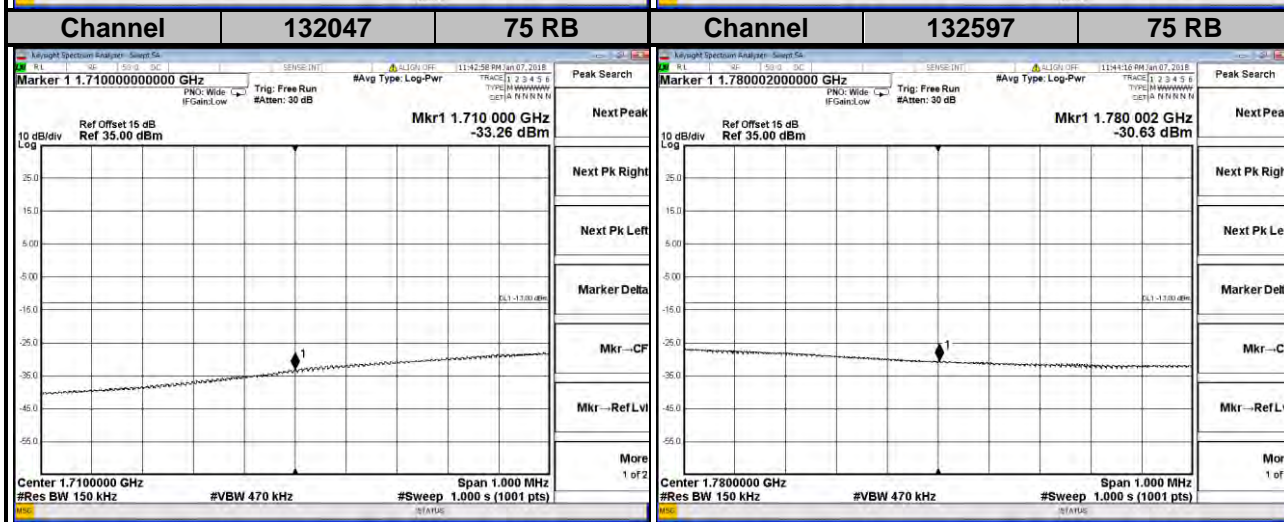
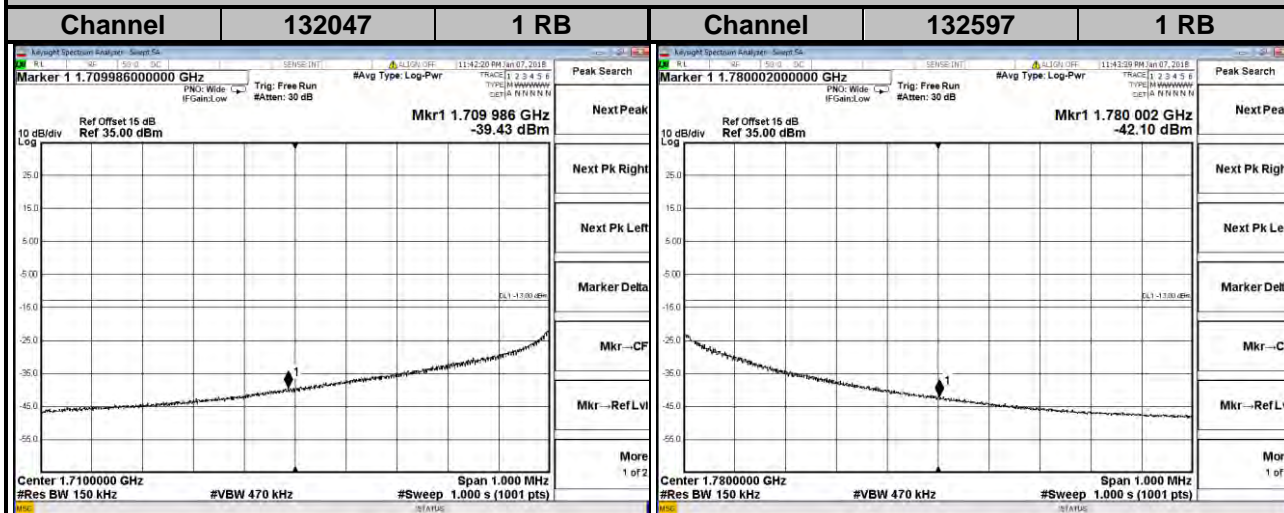


**LTE Band 66**  
**Channel Bandwidth: 10 MHz**

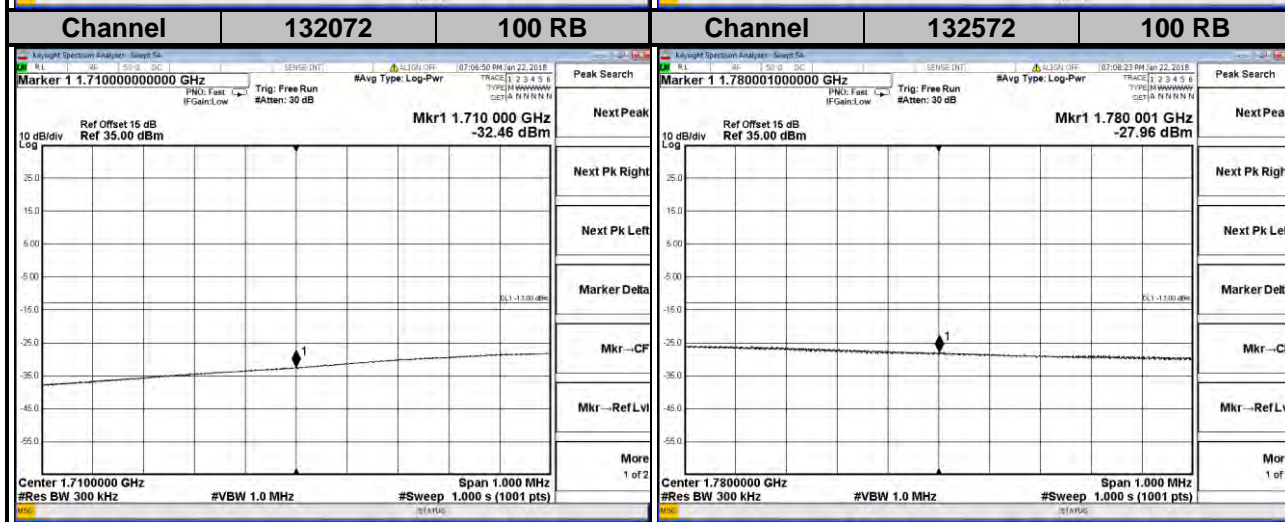
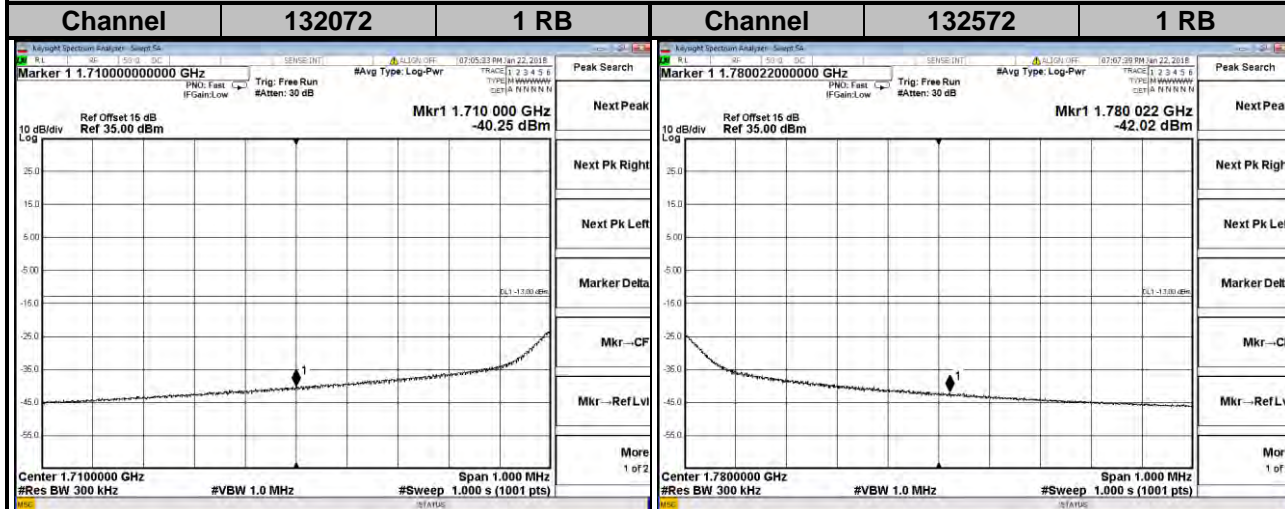


### LTE Band 66

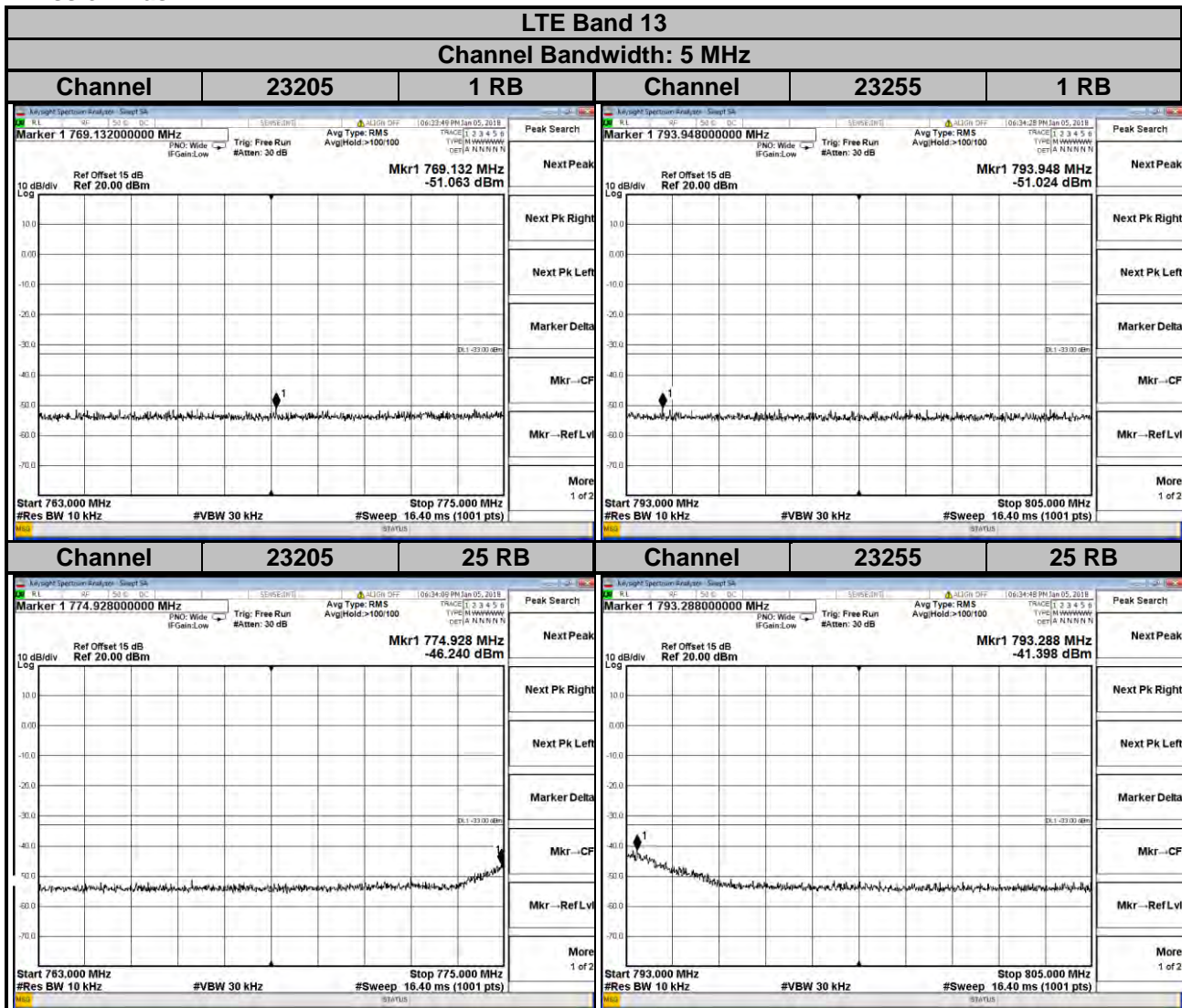
Channel Bandwidth: 15 MHz



**LTE Band 66**  
**Channel Bandwidth: 20 MHz**



### Emission Mask

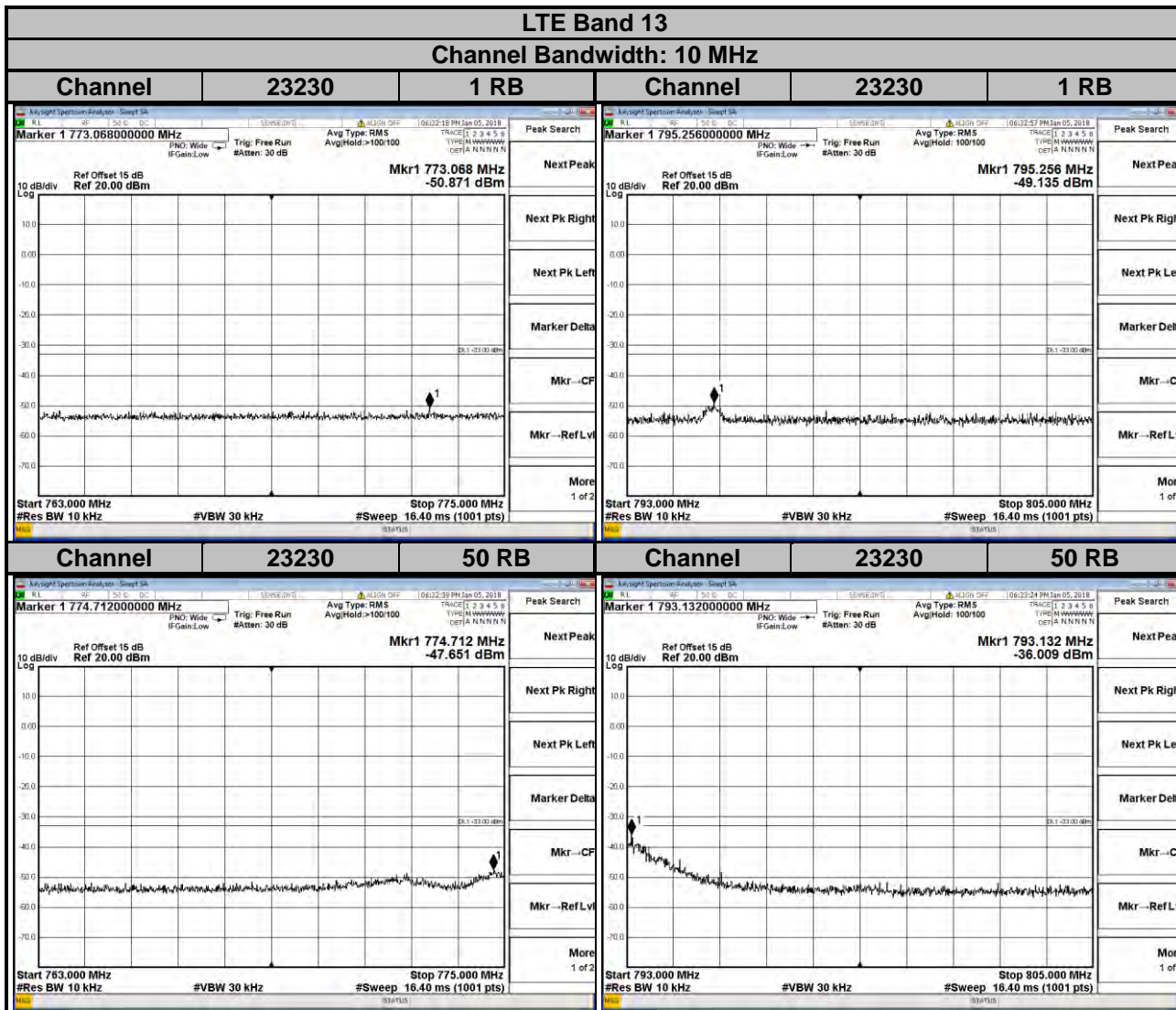


For the 763 - 775 MHz and 793 - 805 MHz band, the FCC limit is  $65 + 10\log(P[\text{watt}])$  in a 6.25 kHz bandwidth. Since it was not possible to set the resolution bandwidth to 6.25 kHz with the available equipment, a bandwidth of 10 kHz was used instead to show compliance. By using a 10 kHz bandwidth on the spectrum analyzer.

$$10\log(10\text{kHz}/6.25\text{kHz}) = 2.04 \text{ dB}$$

$$\text{Limit line} = -35 \text{ dBm} + 2.04 \text{ dB} = -32.96 \text{ dBm}$$





For the 763 - 775 MHz and 793 - 805 MHz band, the FCC limit is  $65 + 10\log(P[\text{watt}])$  in a 6.25 kHz bandwidth. Since it was not possible to set the resolution bandwidth to 6.25 kHz with the available equipment, a bandwidth of 10 kHz was used instead to show compliance. By using a 10 kHz bandwidth on the spectrum analyzer.

$$10\log(10\text{kHz}/6.25\text{kHz}) = 2.04 \text{ dB}$$

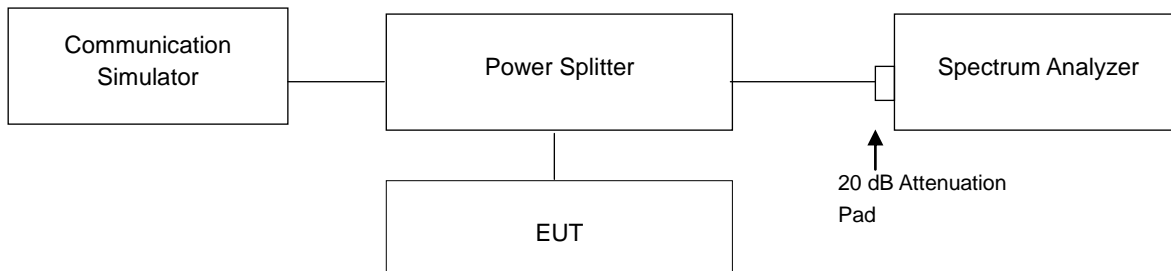
$$\text{Limit line} = -35 \text{ dBm} + 2.04 \text{ dB} = -32.96 \text{ dBm}$$

## 4.5 Peak to Average Ratio

### 4.5.1 Limits of Peak to Average Ratio Measurement

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.

### 4.5.2 Test Setup

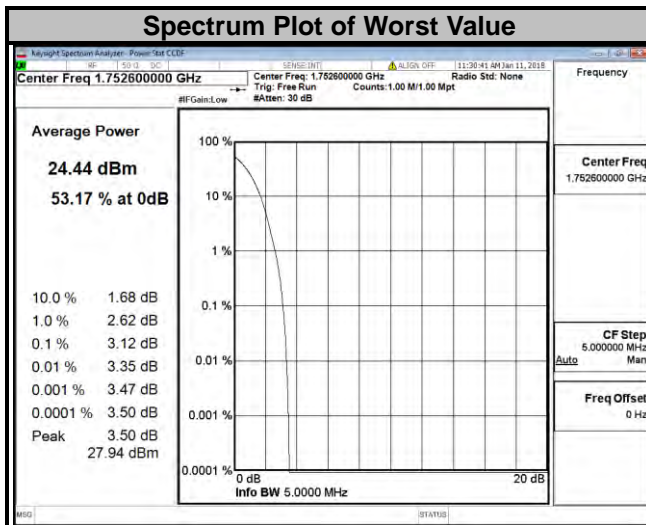


### 4.5.3 Test Procedures

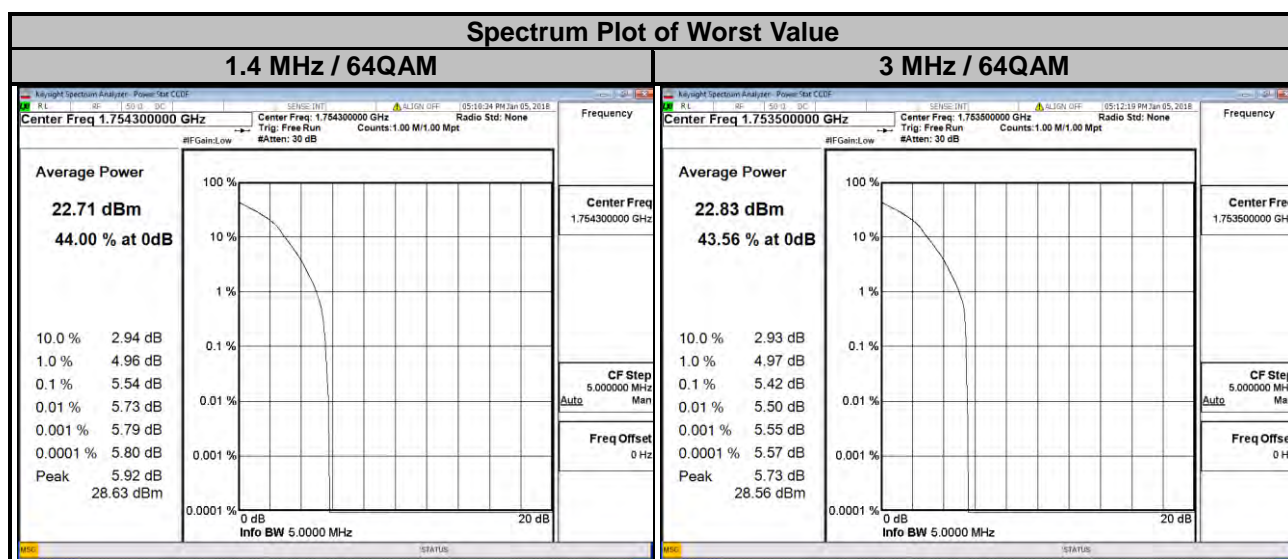
1. Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1 %.

#### 4.5.4 Test Results

WCDMA		
Channel	Frequency (MHz)	Peak to Average Ratio (dB)
1312	1712.4	3.07
1413	1732.6	3.10
1513	1752.6	3.12



LTE Band 4									
Channel Bandwidth: 1.4 MHz					Channel Bandwidth: 3 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
19957	1710.7	3.80	5.47	4.88	19965	1711.5	3.58	5.34	4.81
20175	1732.5	3.79	5.52	5.51	20175	1732.5	3.60	5.28	5.39
20393	1754.3	3.79	5.45	5.54	20385	1753.5	3.58	5.33	5.42

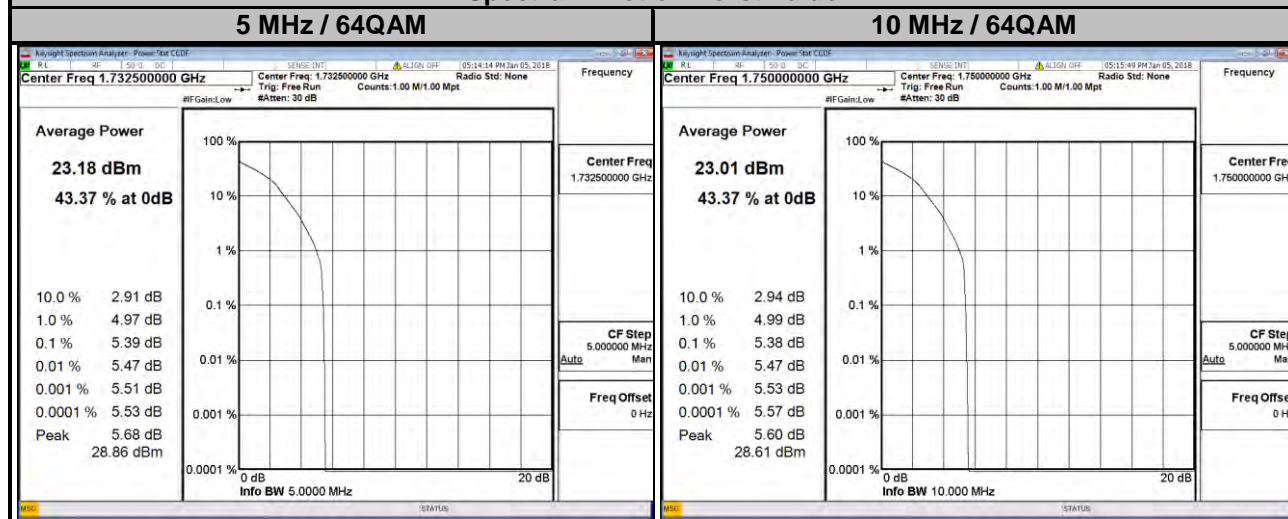




### LTE Band 4

Channel Bandwidth: 5 MHz					Channel Bandwidth: 10 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
19975	1712.5	3.59	5.35	4.77	20000	1715.0	3.51	5.23	4.77
20175	1732.5	3.59	5.32	5.39	20175	1732.5	3.54	5.24	5.35
20375	1752.5	3.59	5.28	5.40	20350	1750.0	3.53	5.20	5.38

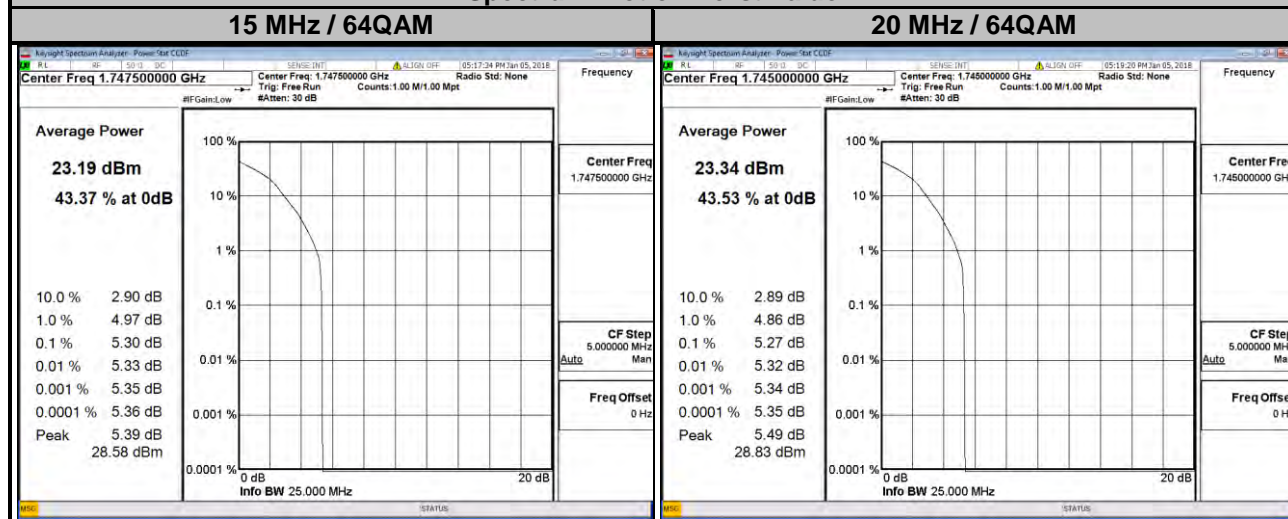
### Spectrum Plot of Worst Value



### LTE Band 4

Channel Bandwidth: 15 MHz					Channel Bandwidth: 20 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
20025	1717.5	3.46	5.16	4.68	20050	1720.0	3.43	5.16	4.61
20175	1732.5	3.43	5.20	5.12	20175	1732.5	3.41	5.24	5.01
20325	1747.5	3.44	5.12	5.30	20300	1745.0	3.45	5.20	5.27

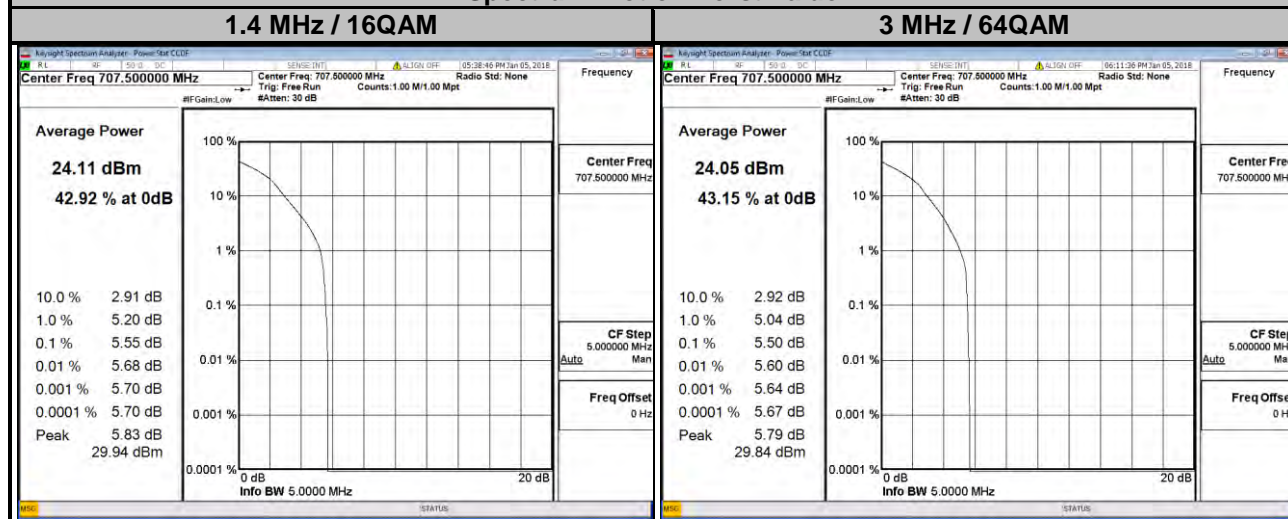
### Spectrum Plot of Worst Value



### LTE Band 12

Channel Bandwidth: 1.4 MHz					Channel Bandwidth: 3 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
23017	699.7	3.72	4.47	4.63	23025	700.5	3.61	4.47	4.56
23095	707.5	3.86	5.55	5.54	23095	707.5	3.63	5.48	5.50
23173	715.3	3.85	5.29	5.36	23165	714.5	3.64	4.92	5.06

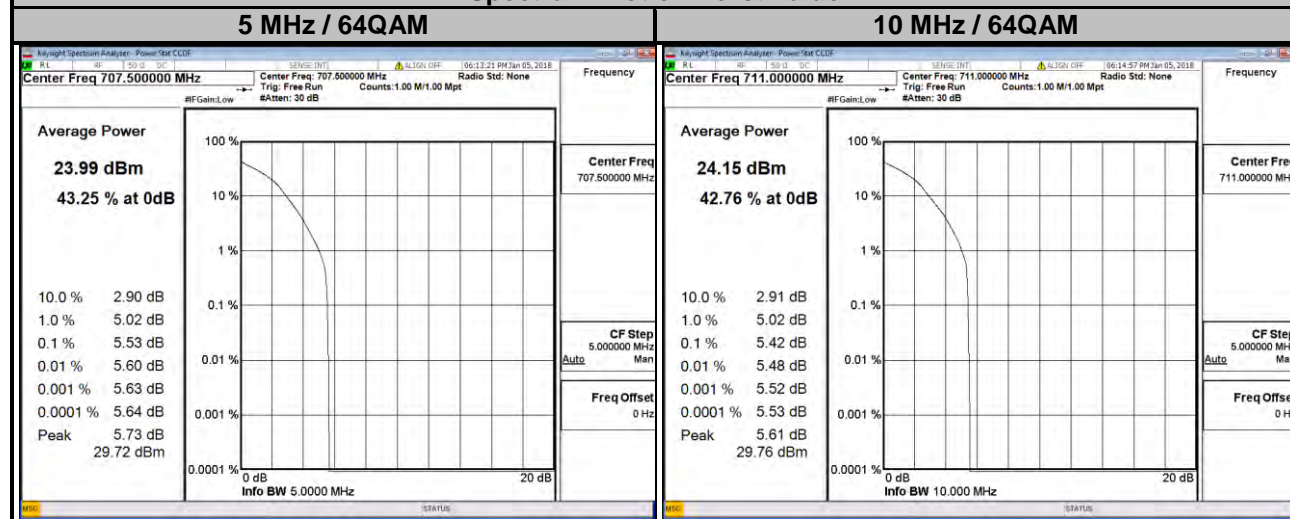
### Spectrum Plot of Worst Value



### LTE Band 12

Channel Bandwidth: 5 MHz					Channel Bandwidth: 10 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
23035	701.5	3.60	4.43	4.49	23060	704.0	3.51	4.12	4.39
23095	707.5	3.63	5.46	5.53	23095	707.5	3.55	5.05	5.01
23155	713.5	3.62	5.16	5.22	23130	711.0	3.55	5.34	5.42

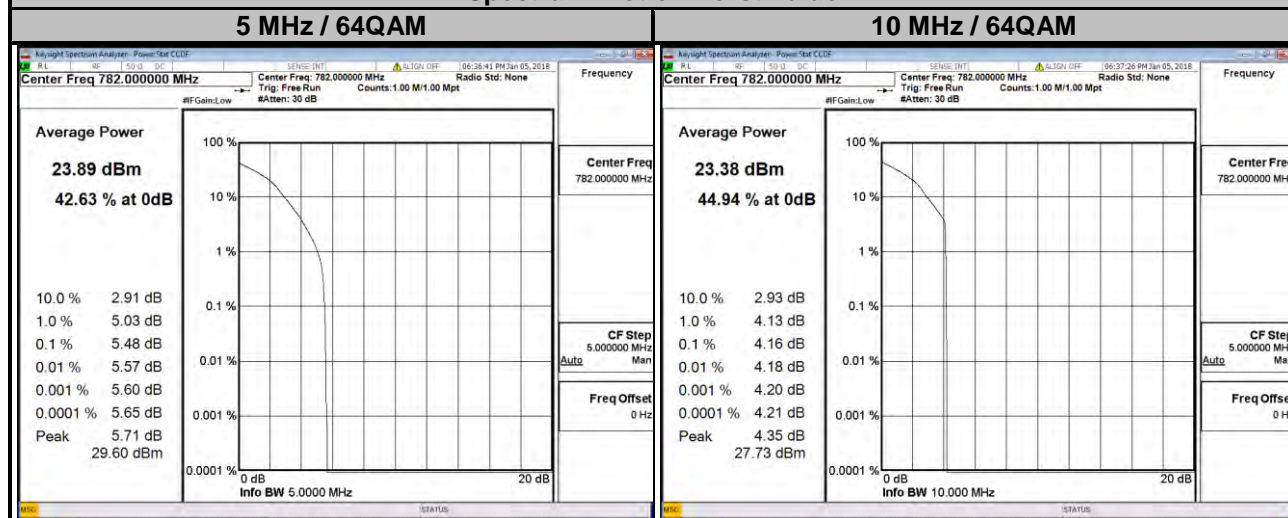
### Spectrum Plot of Worst Value



### LTE Band 13

Channel Bandwidth: 5 MHz					Channel Bandwidth: 10 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
23205	779.5	3.38	4.08	4.21	23230	782.0	3.32	4.12	4.16
23230	782.0	3.62	5.37	5.48					
23255	784.5	3.60	5.38	5.42					

### Spectrum Plot of Worst Value

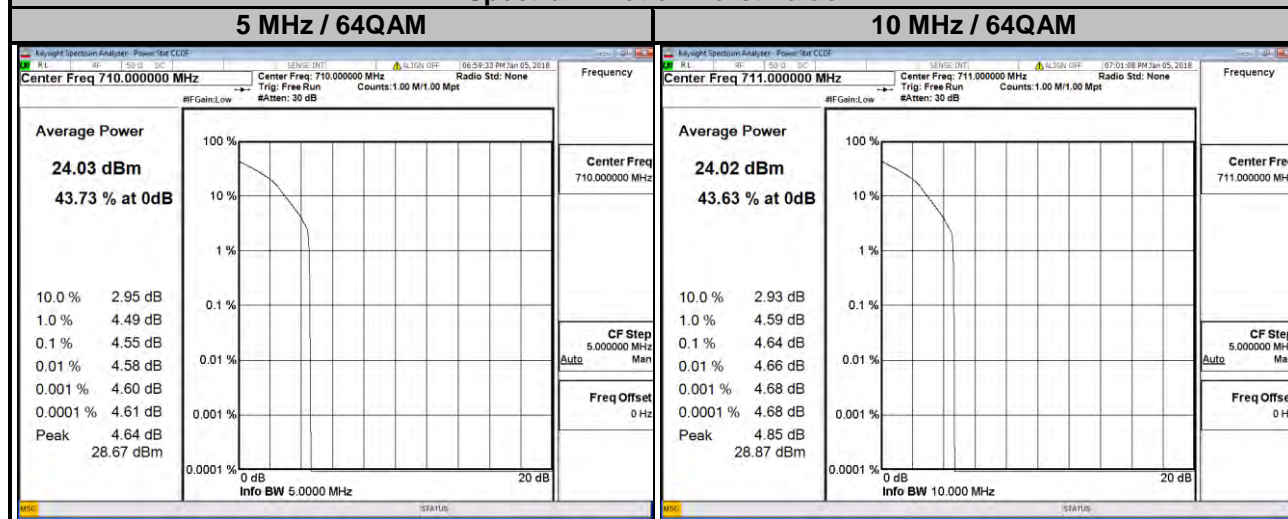




### LTE Band 17

Channel Bandwidth: 5 MHz					Channel Bandwidth: 10 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
23755	706.5	3.44	4.20	4.28	23780	709.0	3.39	4.16	4.27
23790	710.0	3.62	4.45	4.55	23790	710.0	3.59	4.35	4.44
23825	713.5	3.51	4.27	4.34	23800	711.0	3.57	4.42	4.64

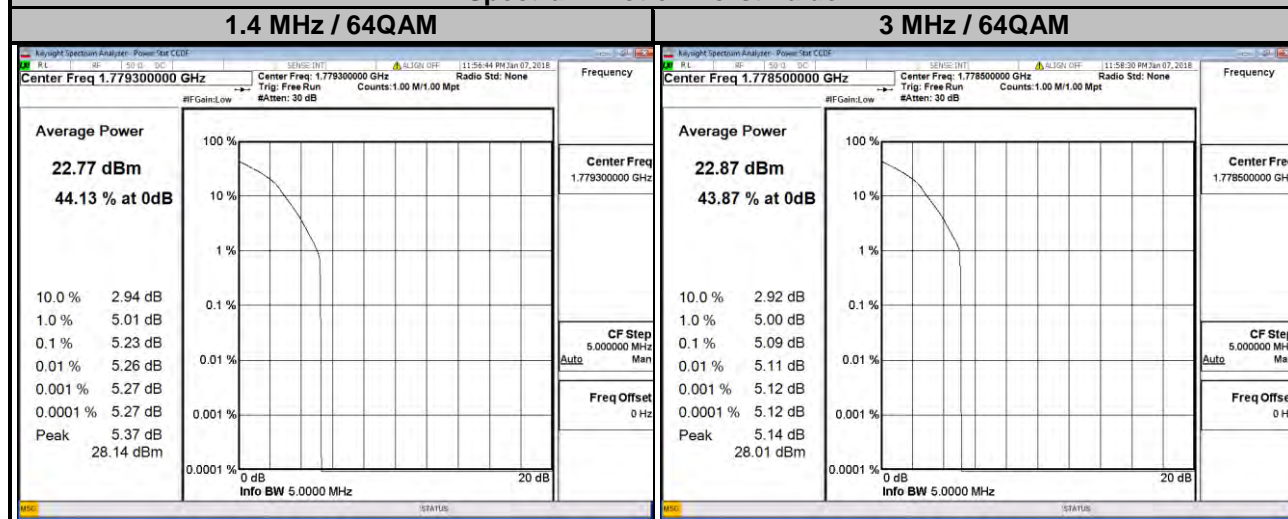
### Spectrum Plot of Worst Value



### LTE Band 66

Channel Bandwidth: 1.4 MHz					Channel Bandwidth: 3 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
131979	1710.7	3.43	4.23	4.26	131987	1711.5	3.36	4.12	4.22
132322	1745	3.83	4.91	5.04	132322	1745	3.63	4.67	4.87
132665	1779.3	3.81	5.01	5.23	132657	1778.5	3.56	4.90	5.09

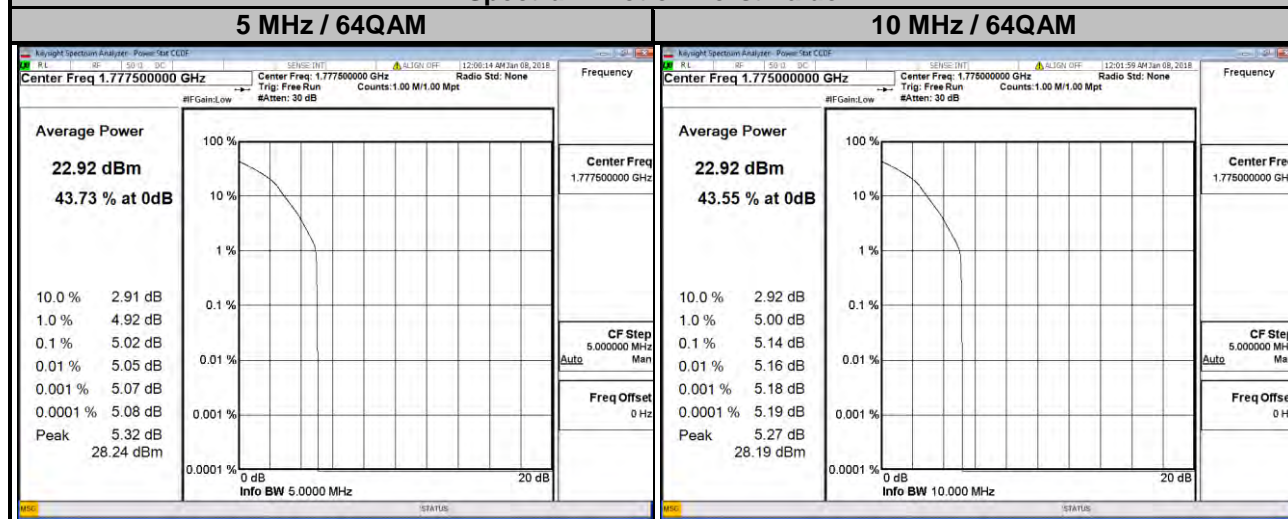
### Spectrum Plot of Worst Value



### LTE Band 66

Channel Bandwidth: 5 MHz					Channel Bandwidth: 10 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
131997	1712.5	3.42	4.18	4.28	132022	1715	3.38	4.15	4.21
132322	1745	3.60	4.72	4.73	132322	1745	3.52	4.56	4.62
132647	1777.5	3.58	4.96	5.02	132622	1775	3.52	5.00	5.14

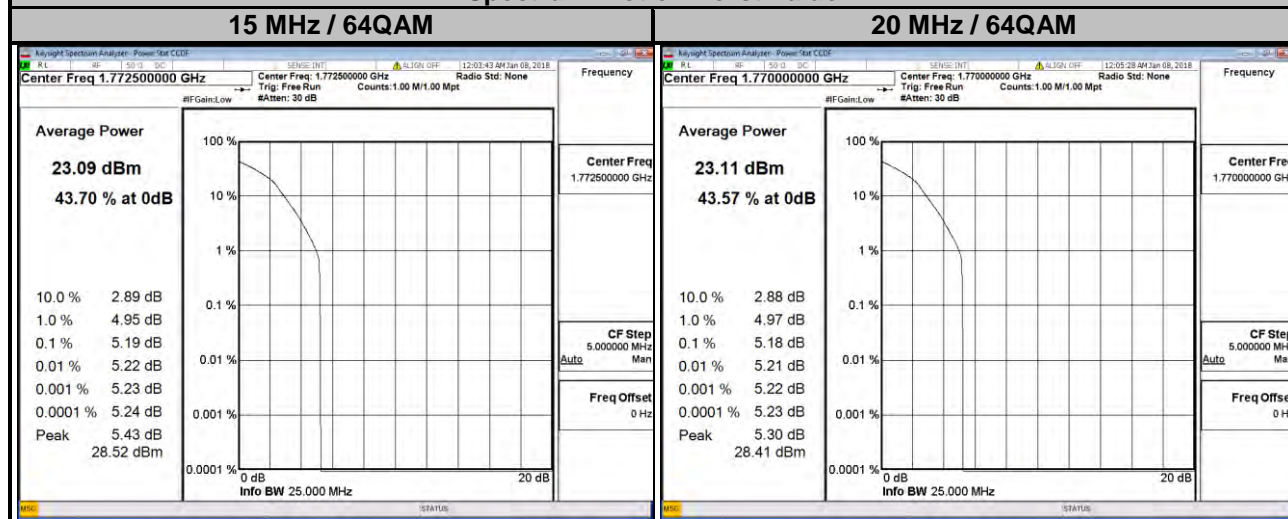
### Spectrum Plot of Worst Value



### LTE Band 66

Channel Bandwidth: 15 MHz					Channel Bandwidth: 20 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
132047	1717.5	3.30	4.08	4.22	132072	1720	3.34	4.11	4.27
132322	1745	3.47	4.48	4.61	132322	1745	3.48	4.56	4.62
132597	1772.5	3.43	5.01	5.19	132572	1770	3.40	5.12	5.18

### Spectrum Plot of Worst Value

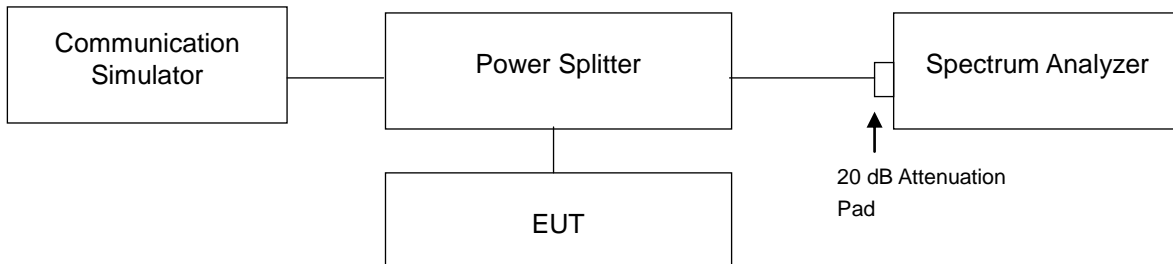


## 4.6 Conducted Spurious Emissions

### 4.6.1 Limits of Conducted Spurious Emissions Measurement

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB. The limit of emission is equal to -13 dBm.

### 4.6.2 Test Setup

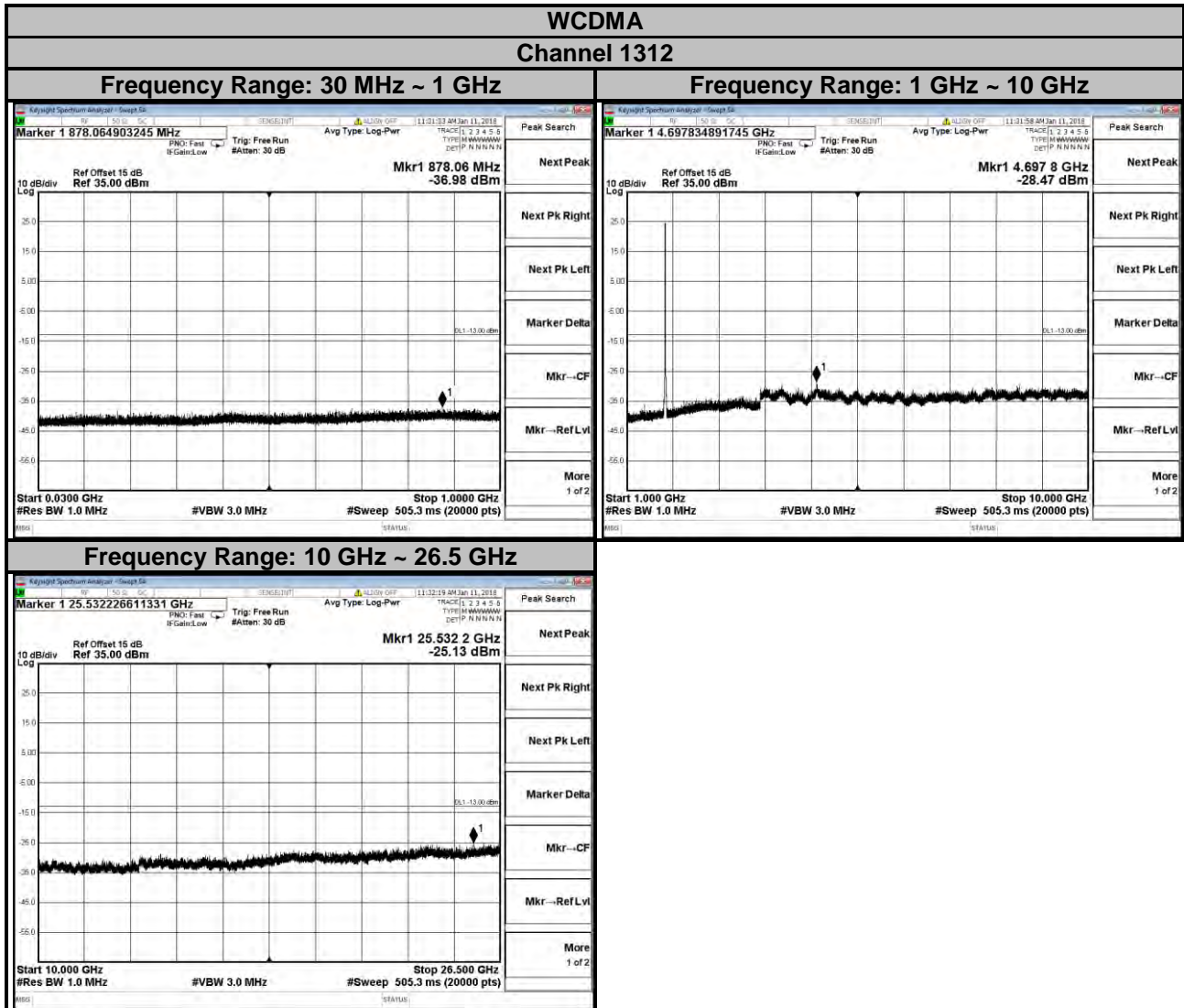


### 4.6.3 Test Procedure

- The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- Measuring frequency range is from 30 MHz to 10 GHz for LTE Band 12/13/17 and from 30 MHz to 26.5 GHz for WCDMA/LTE Band 4/66. 10 dB attenuation pad is connected with spectrum. RBW = 1 MHz and VBW = 3 MHz are used for conducted spurious emission measurement.



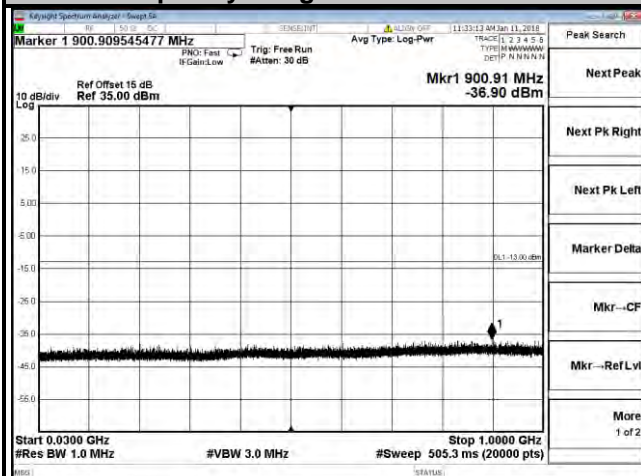
4.6.4 Test Results



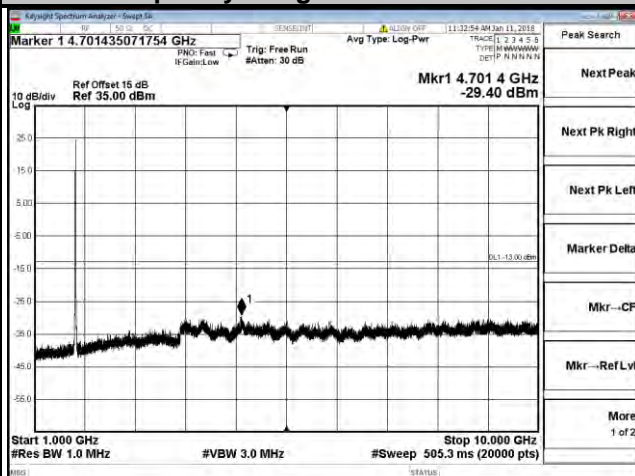
### WCDMA

### Channel 1413

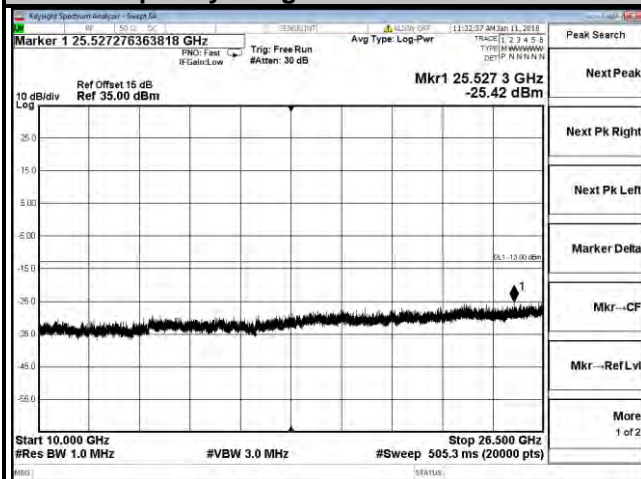
#### Frequency Range: 30 MHz ~ 1 GHz



#### Frequency Range: 1 GHz ~ 10 GHz



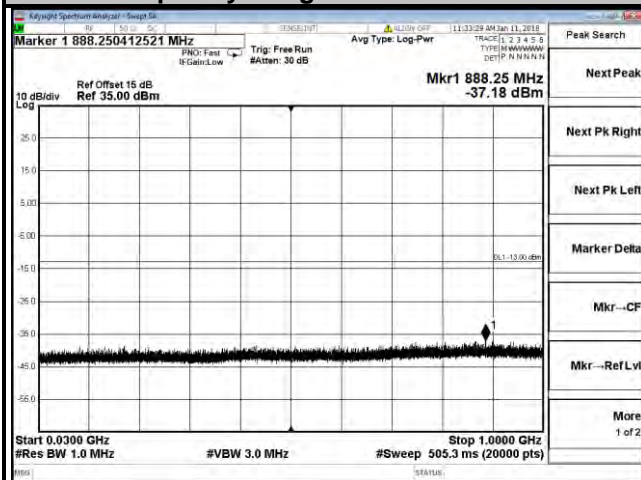
#### Frequency Range: 10 GHz ~ 26.5 GHz



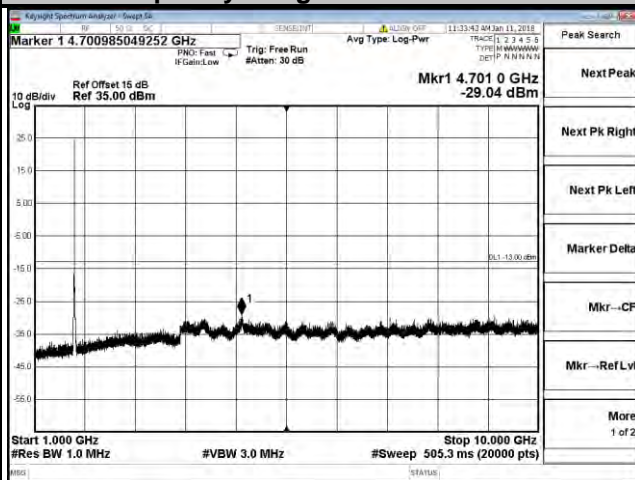
### WCDMA

### Channel 1513

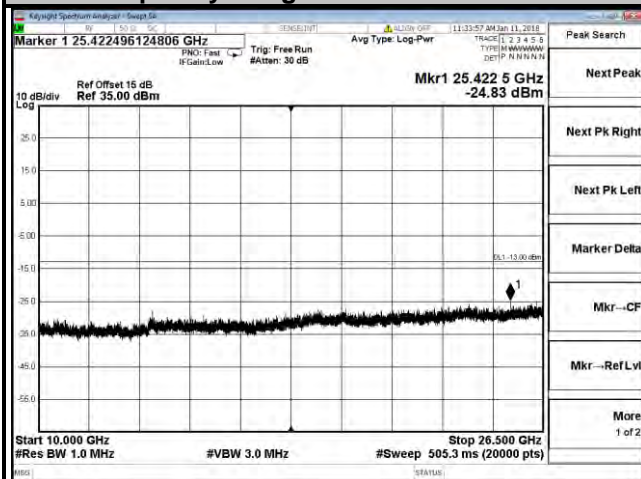
#### Frequency Range: 30 MHz ~ 1 GHz



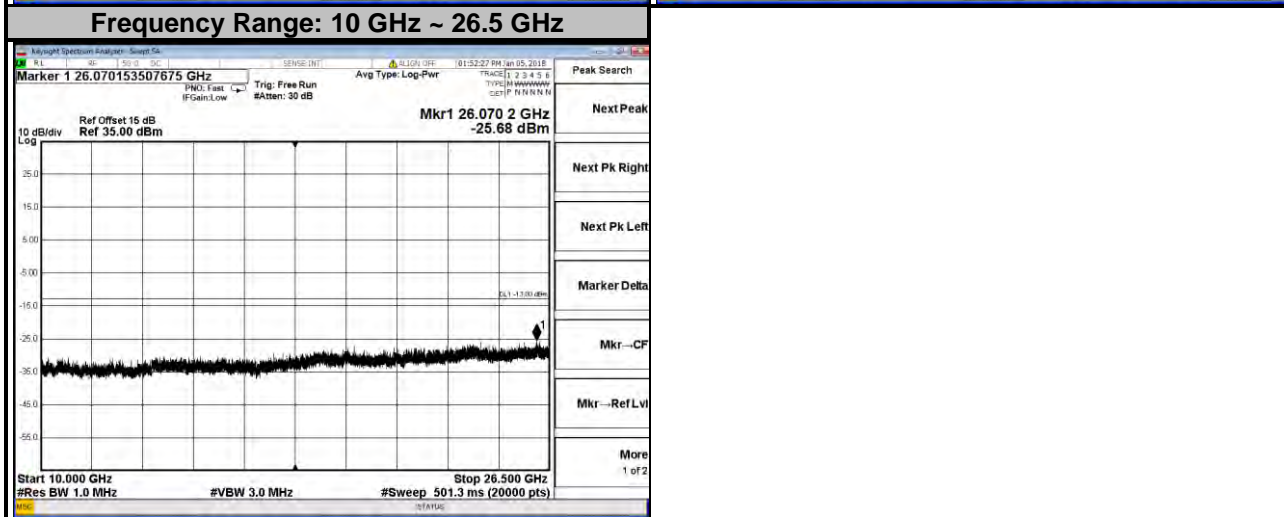
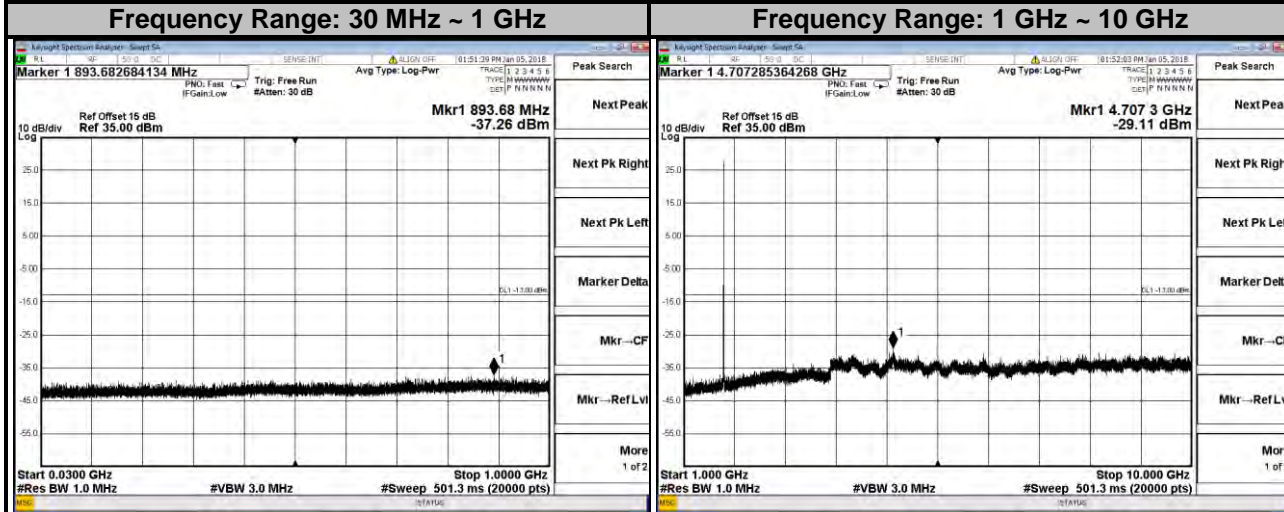
#### Frequency Range: 1 GHz ~ 10 GHz



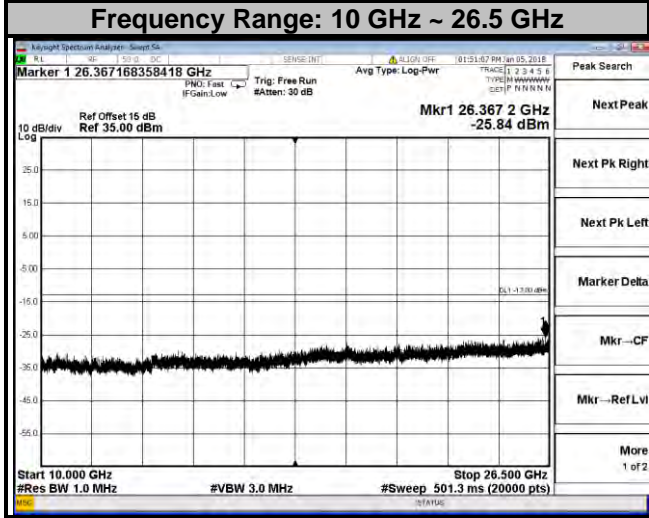
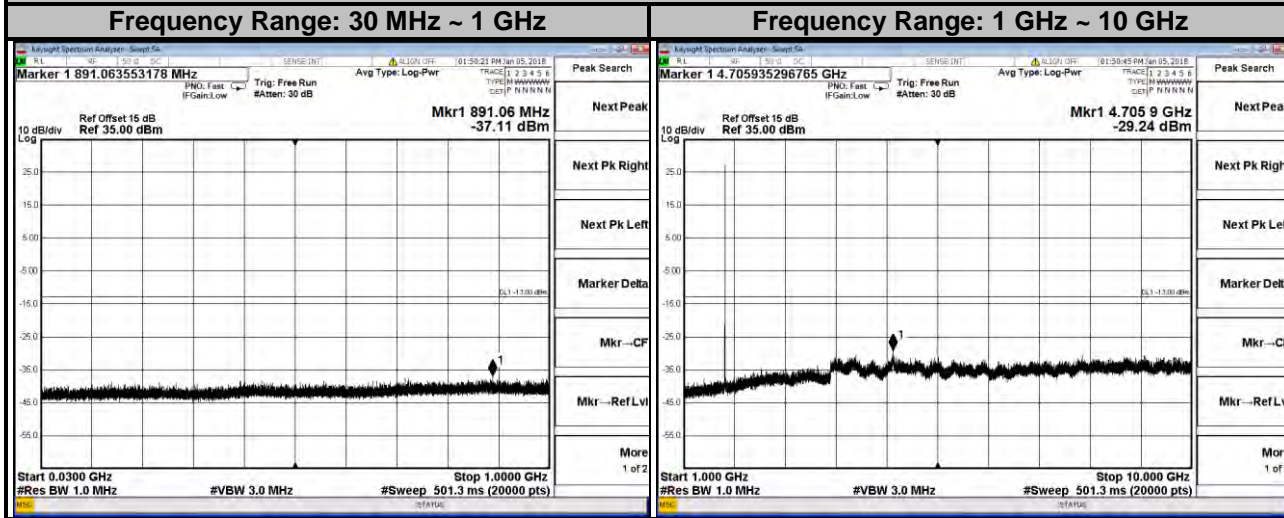
#### Frequency Range: 10 GHz ~ 26.5 GHz



**LTE Band 4**  
**Channel Bandwidth: 1.4 MHz**  
**Channel 19957**

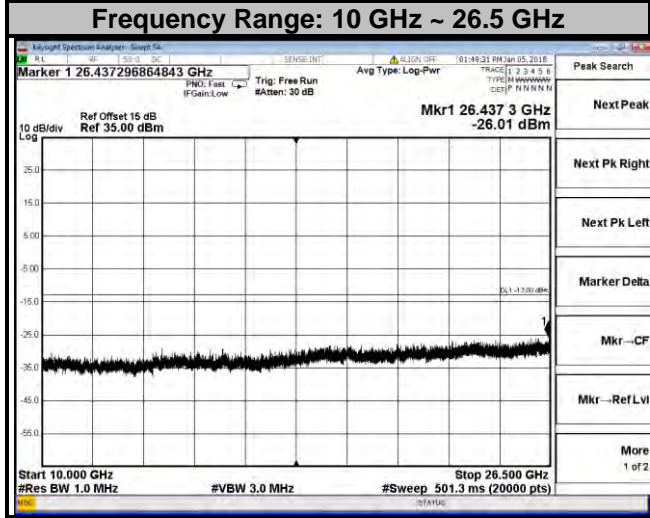
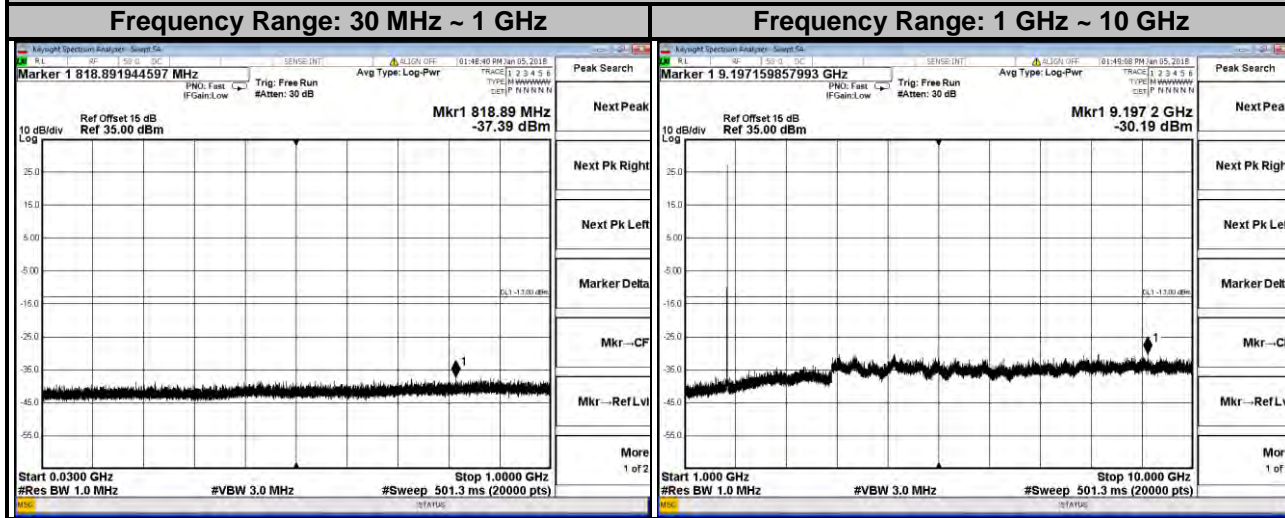


**LTE Band 4**  
**Channel Bandwidth: 1.4 MHz**  
**Channel 20175**

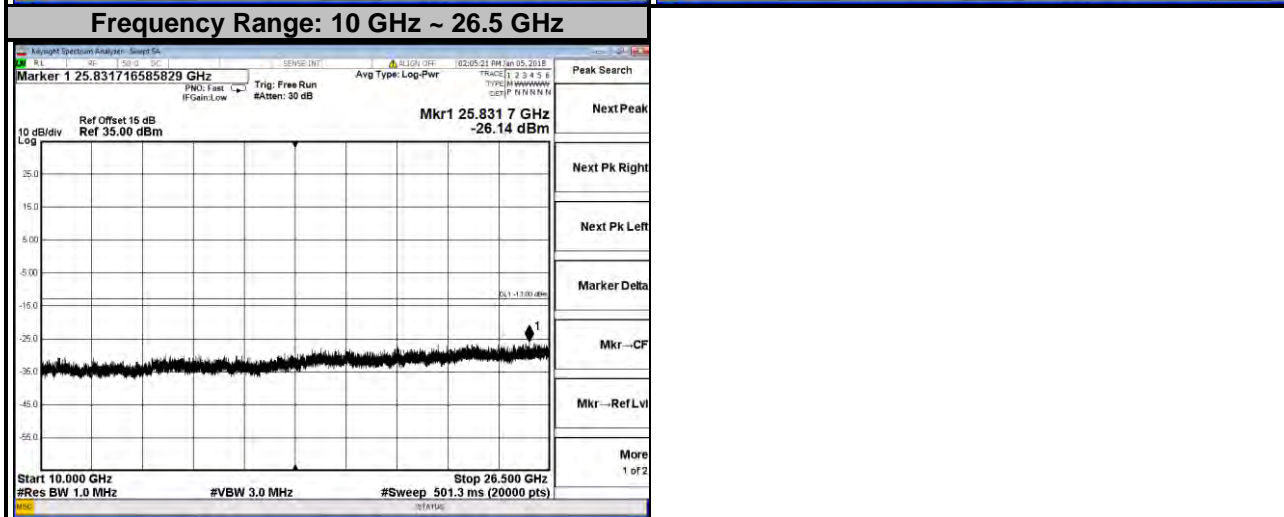
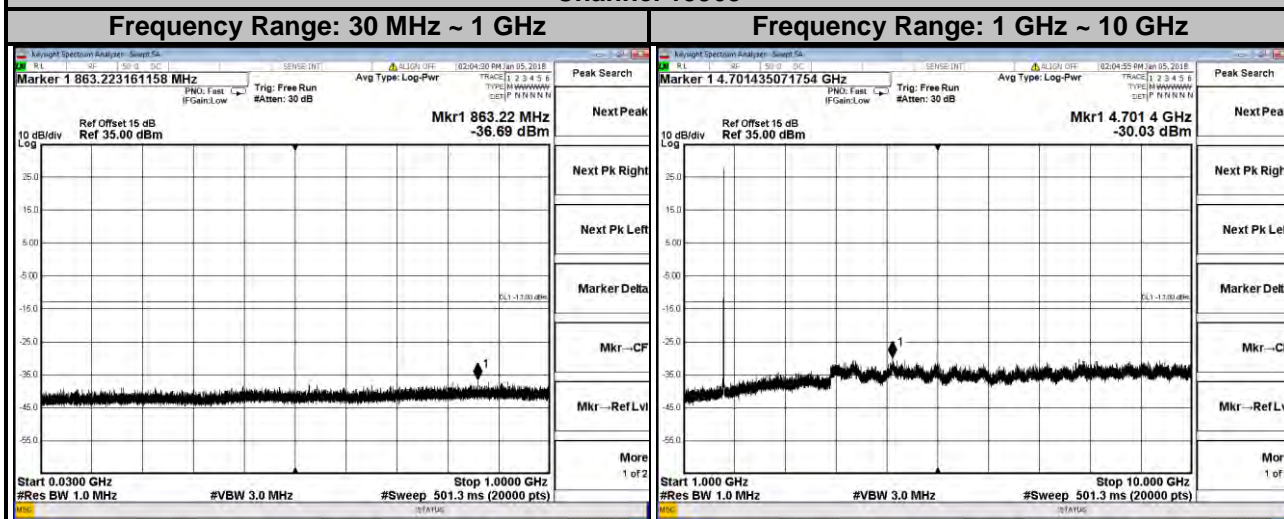




**LTE Band 4**  
**Channel Bandwidth: 1.4 MHz**  
**Channel 20393**

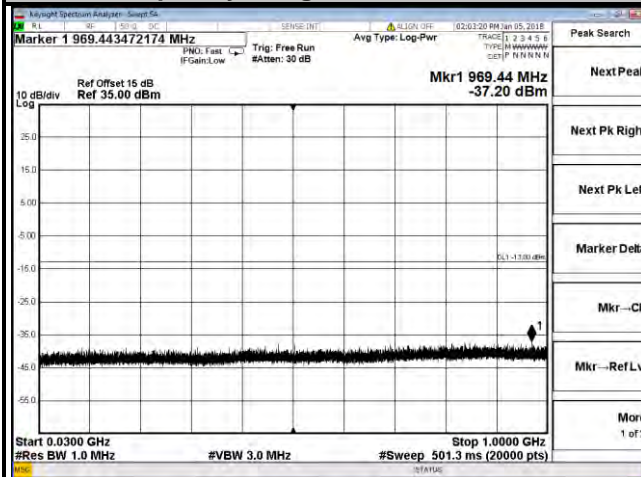


**LTE Band 4**  
**Channel Bandwidth: 3 MHz**  
**Channel 19965**

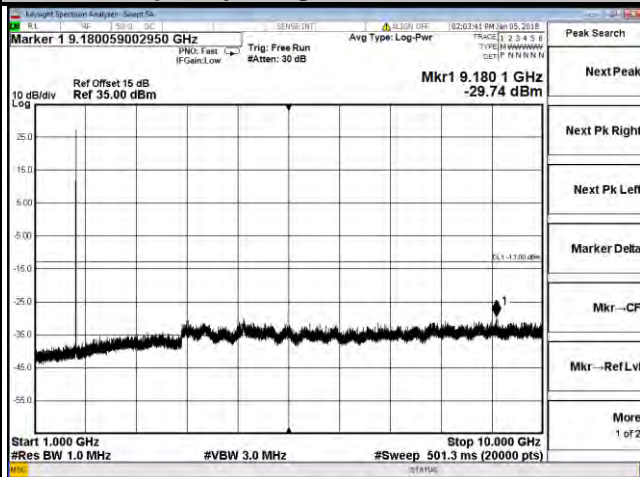


**LTE Band 4**  
**Channel Bandwidth: 3 MHz**  
**Channel 20175**

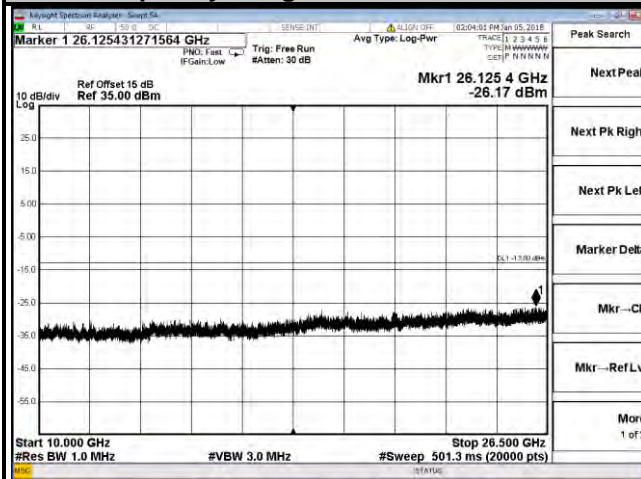
**Frequency Range: 30 MHz ~ 1 GHz**



**Frequency Range: 1 GHz ~ 10 GHz**

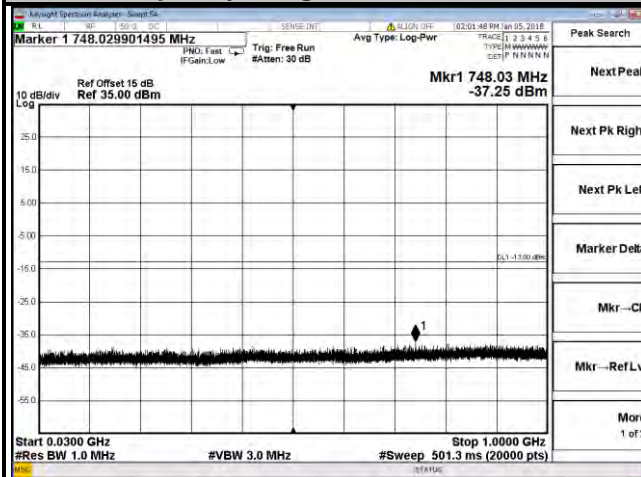


**Frequency Range: 10 GHz ~ 26.5 GHz**

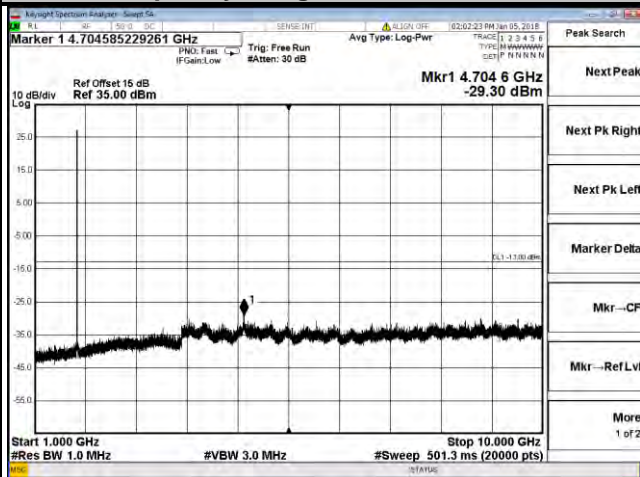


**LTE Band 4**  
**Channel Bandwidth: 3 MHz**  
**Channel 20385**

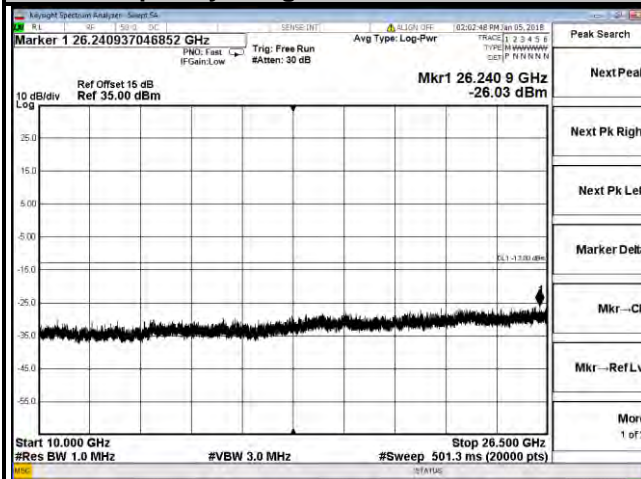
**Frequency Range: 30 MHz ~ 1 GHz**



**Frequency Range: 1 GHz ~ 10 GHz**

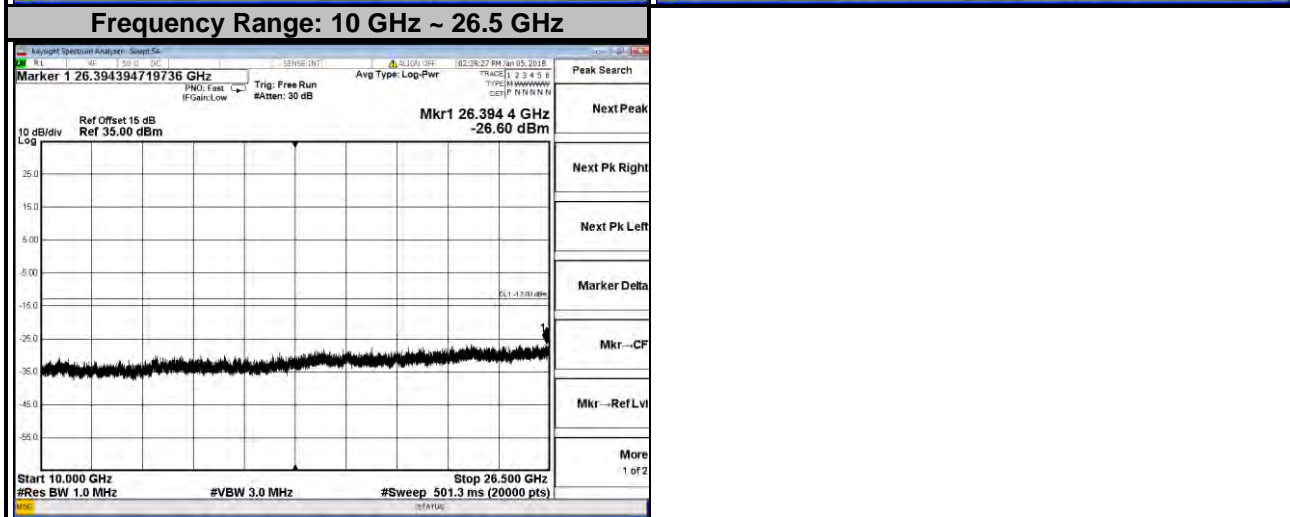
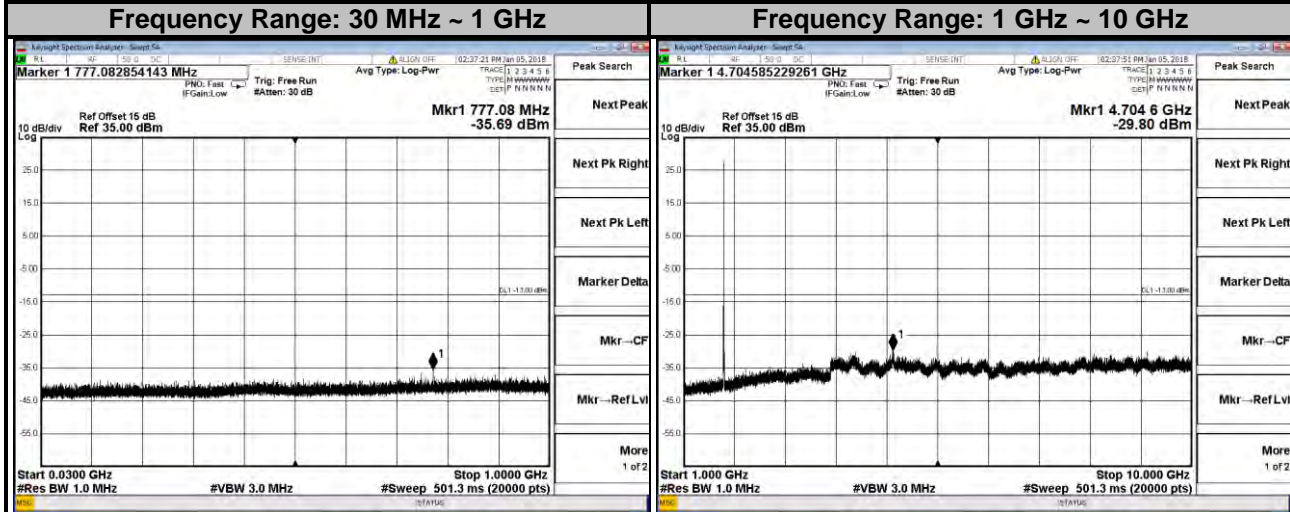


**Frequency Range: 10 GHz ~ 26.5 GHz**



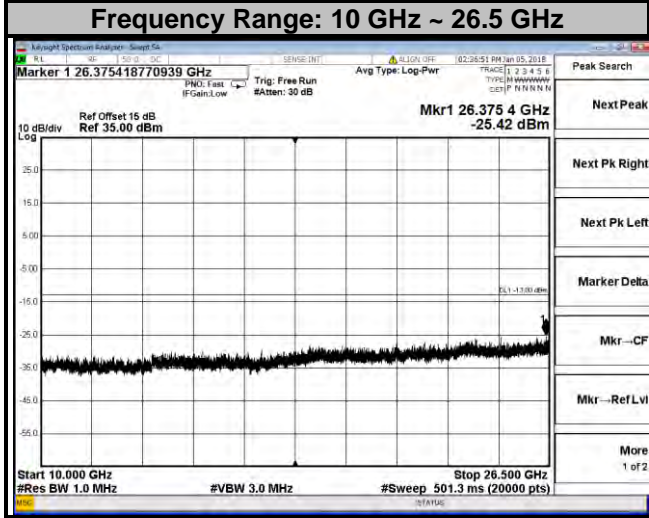
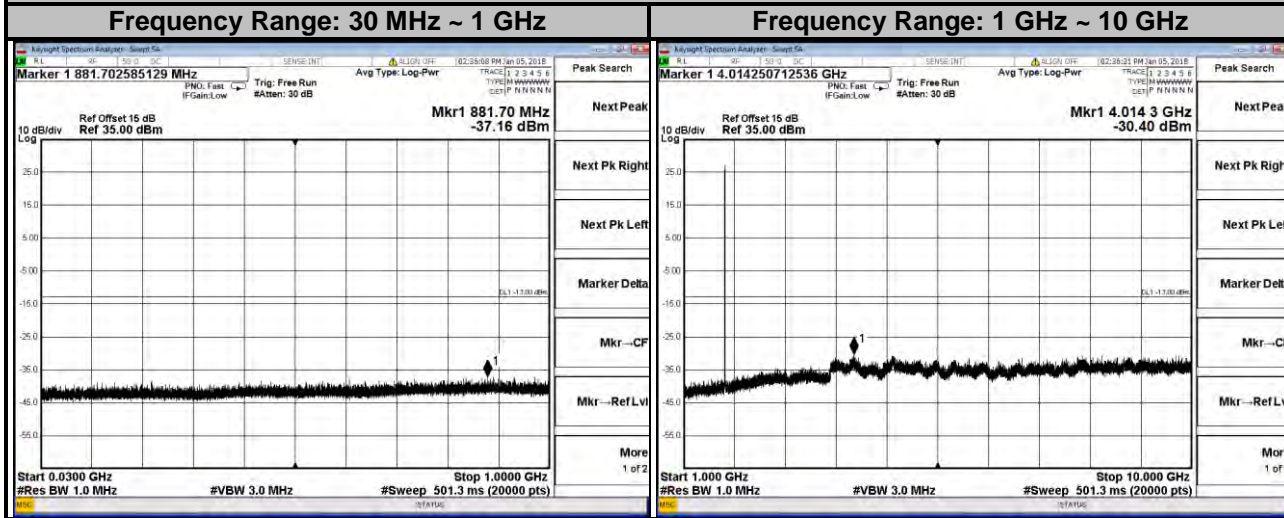


**LTE Band 4**  
**Channel Bandwidth: 5 MHz**  
**Channel 19975**



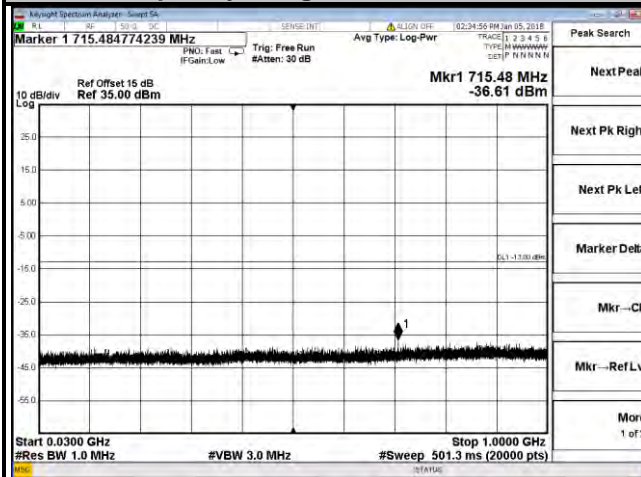


**LTE Band 4**  
**Channel Bandwidth: 5 MHz**  
**Channel 20175**

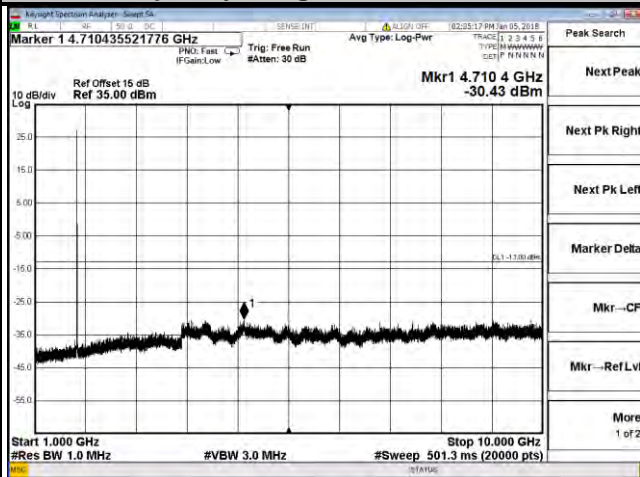


**LTE Band 4**  
**Channel Bandwidth: 5 MHz**  
**Channel 20375**

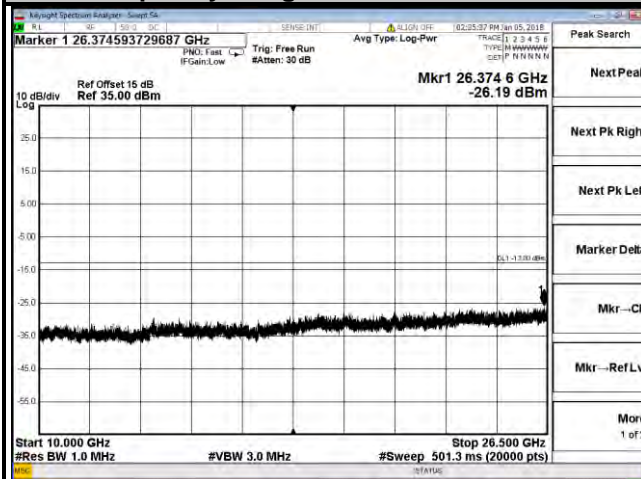
**Frequency Range: 30 MHz ~ 1 GHz**



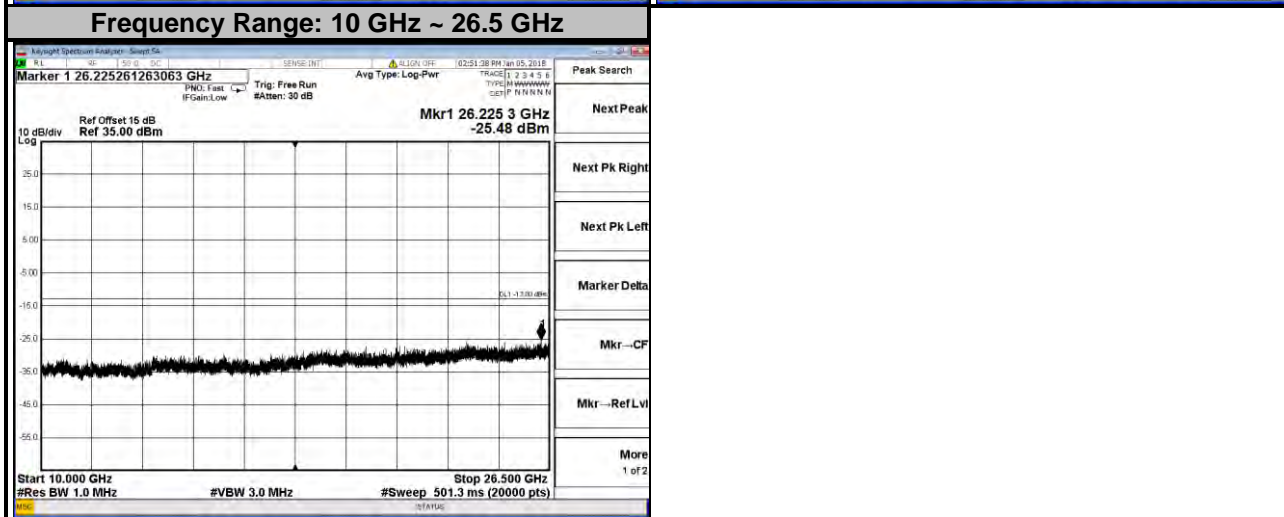
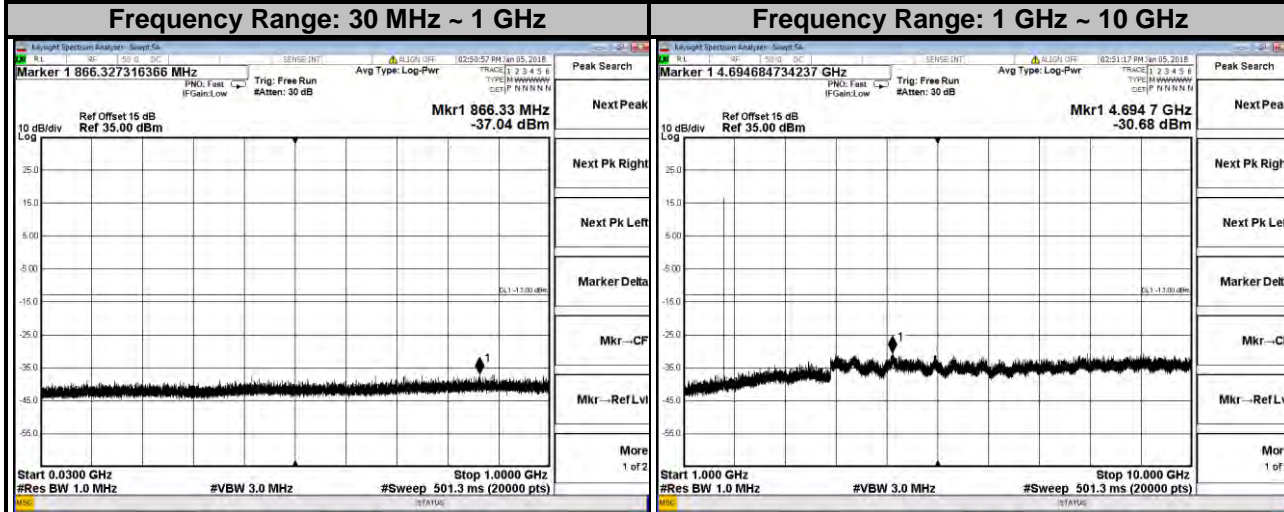
**Frequency Range: 1 GHz ~ 10 GHz**



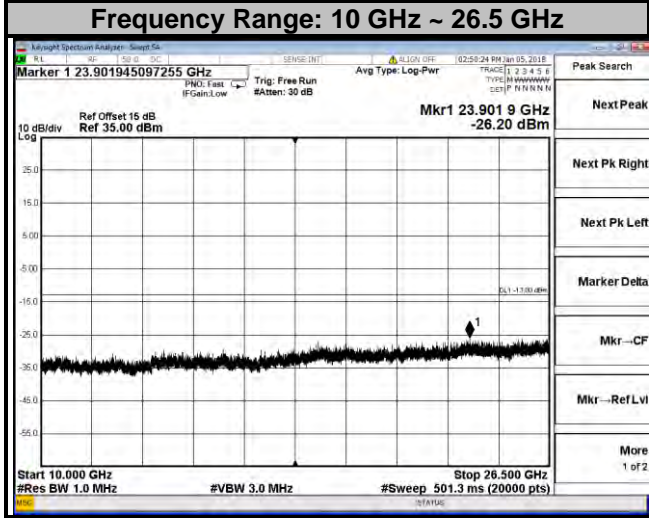
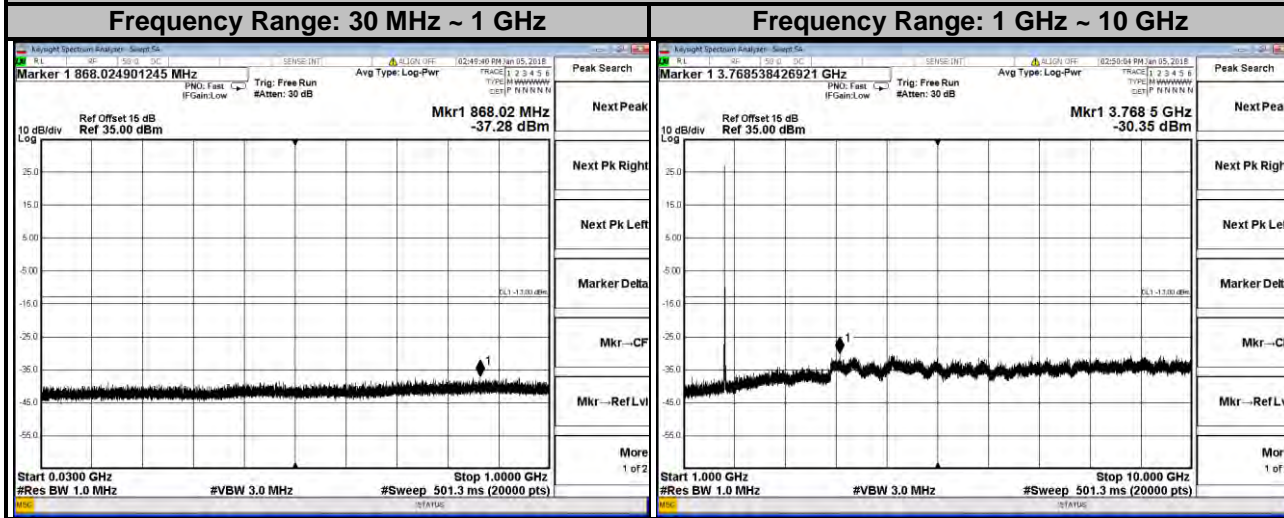
**Frequency Range: 10 GHz ~ 26.5 GHz**



**LTE Band 4**  
**Channel Bandwidth: 10 MHz**  
**Channel 20000**

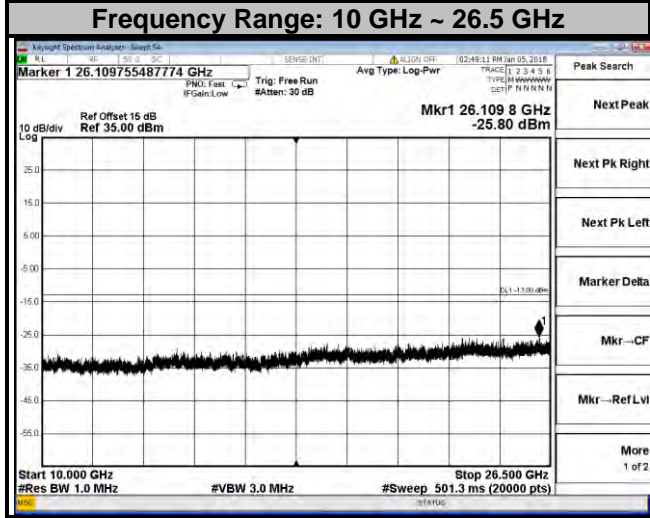
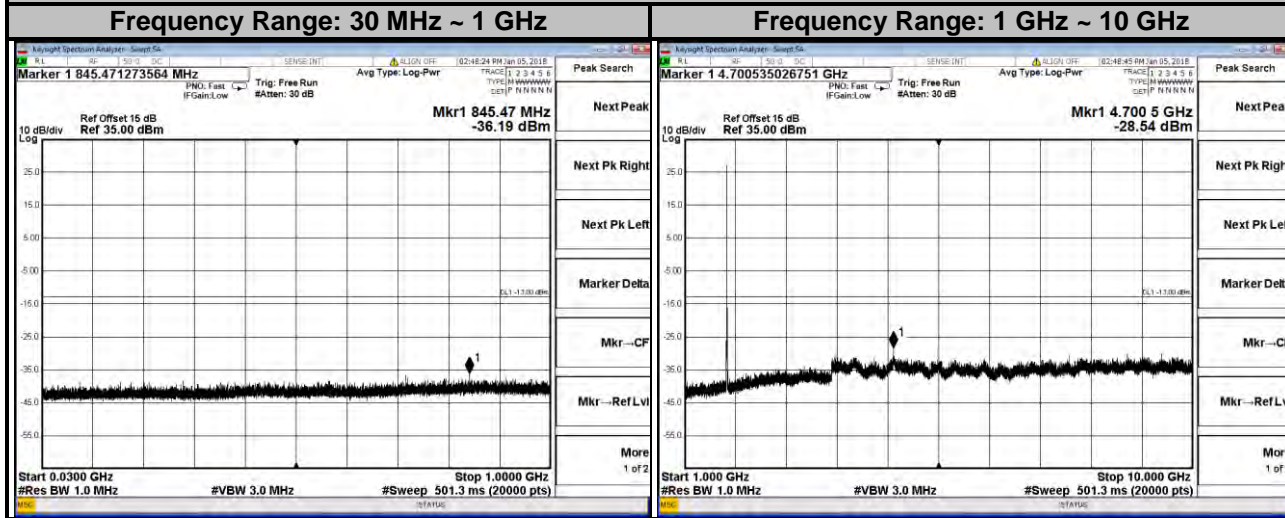


**LTE Band 4**  
**Channel Bandwidth: 10 MHz**  
**Channel 20175**



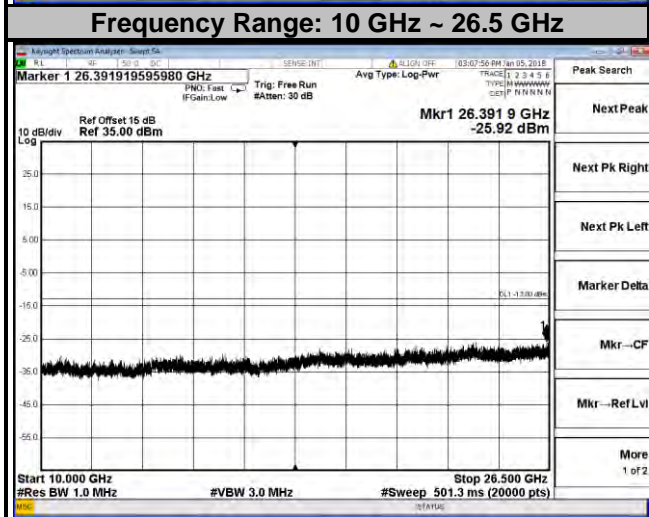
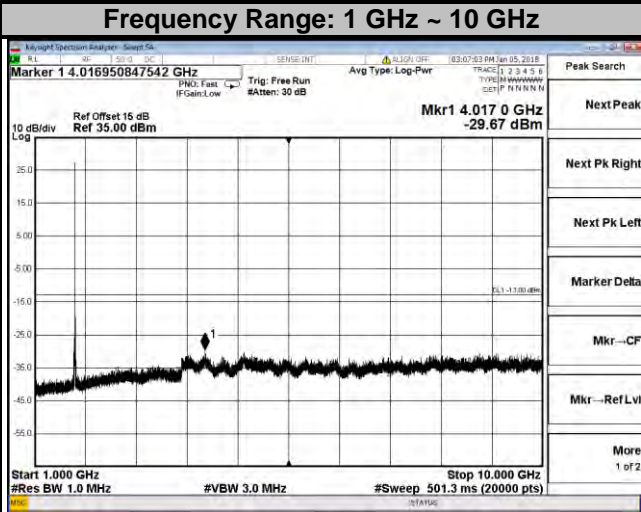
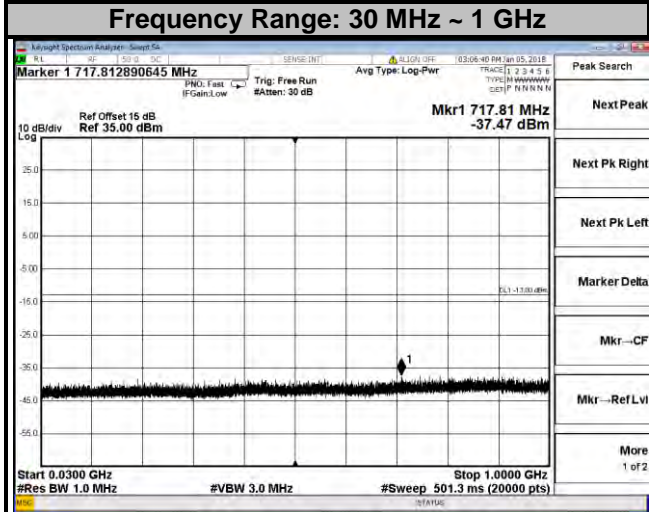


**LTE Band 4**  
**Channel Bandwidth: 10 MHz**  
**Channel 20350**

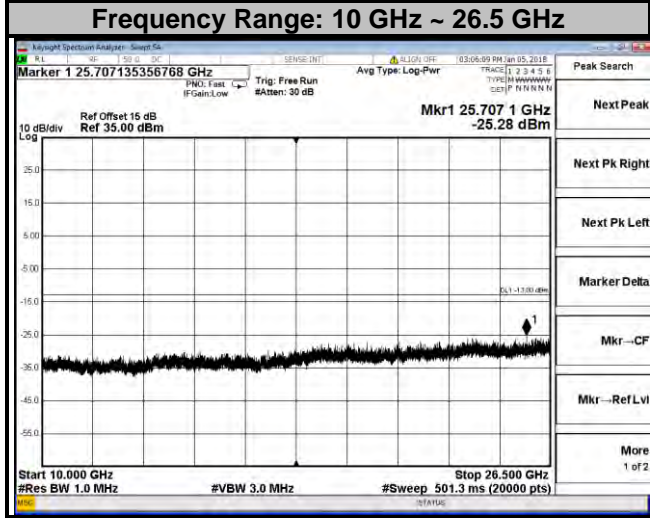
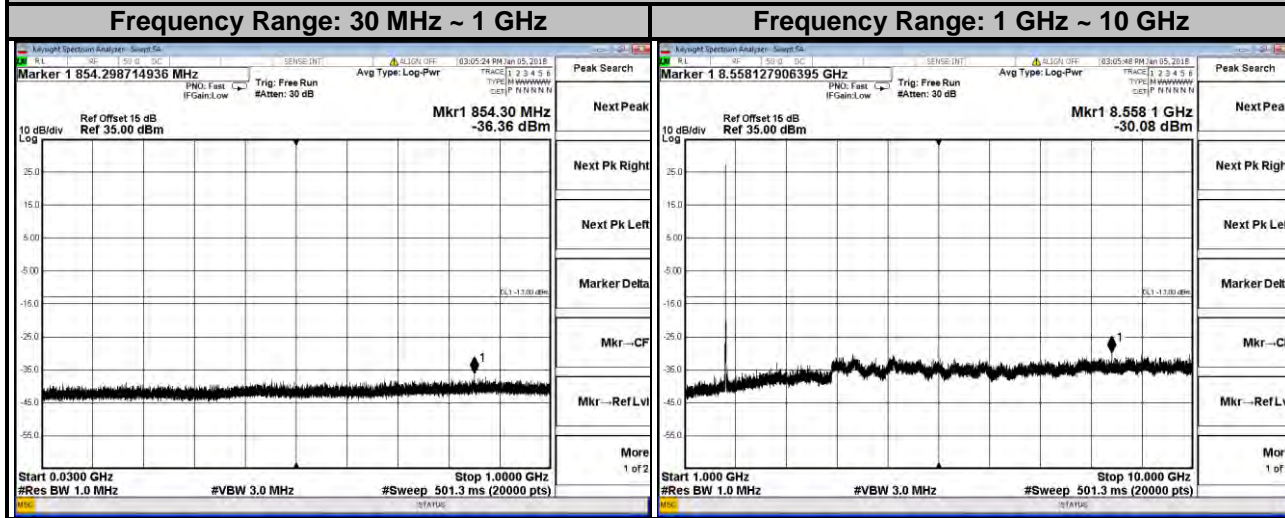




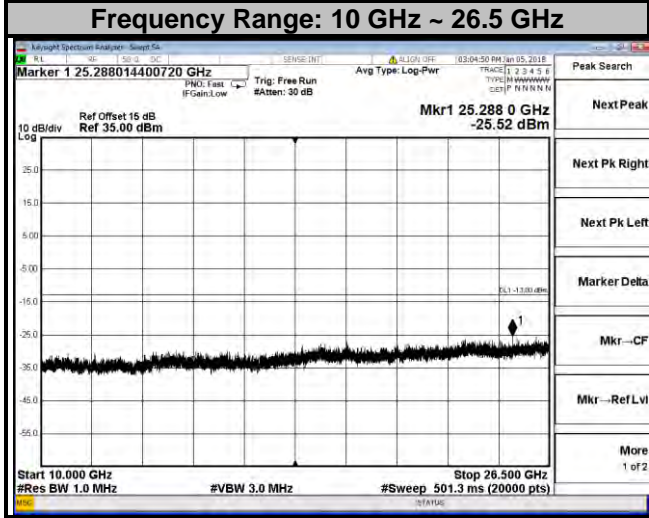
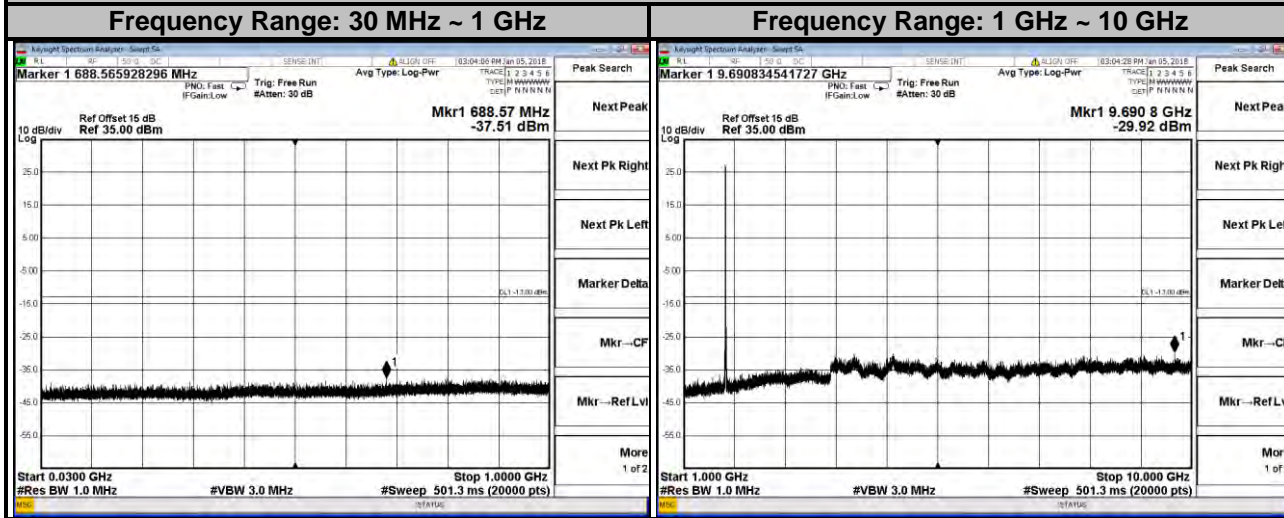
**LTE Band 4**  
**Channel Bandwidth: 15 MHz**  
**Channel 20025**



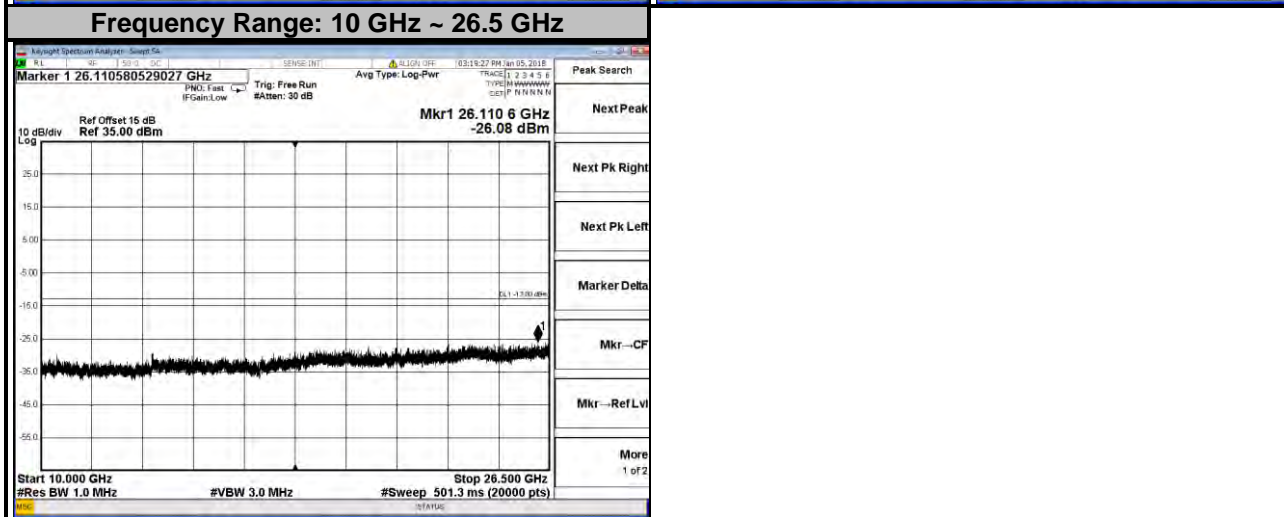
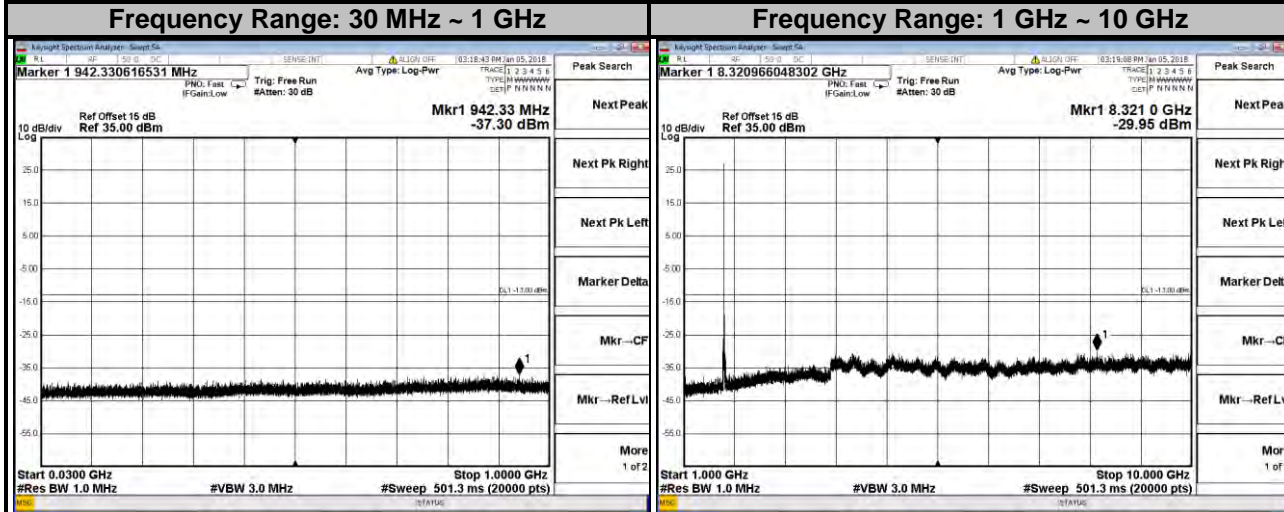
**LTE Band 4**  
**Channel Bandwidth: 15 MHz**  
**Channel 20175**



**LTE Band 4**  
**Channel Bandwidth: 15 MHz**  
**Channel 20325**

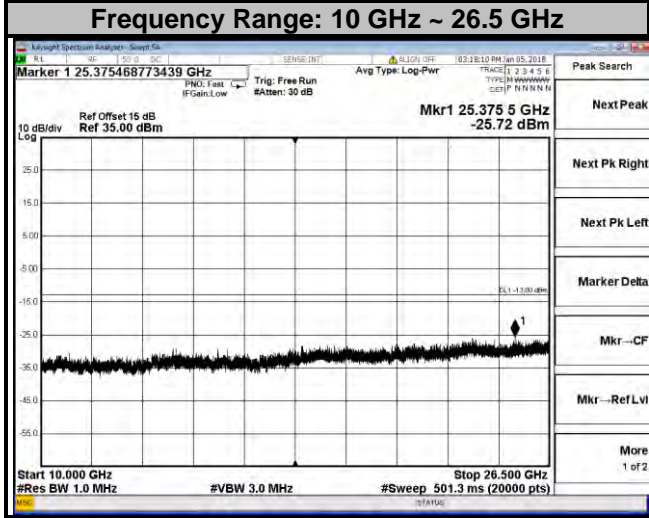
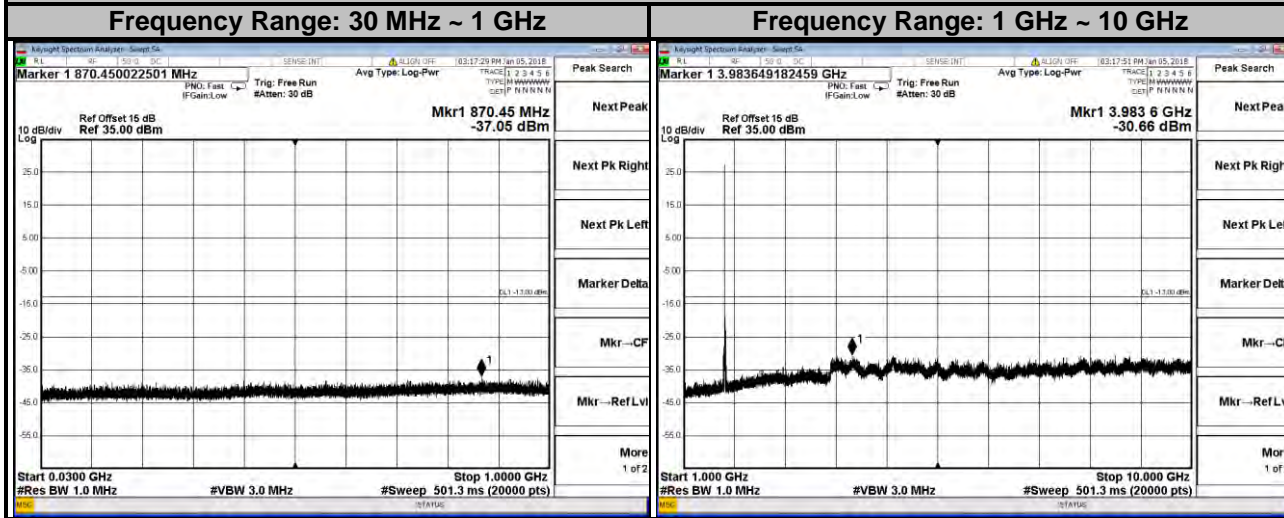


**LTE Band 4**  
**Channel Bandwidth: 20 MHz**  
**Channel 20050**



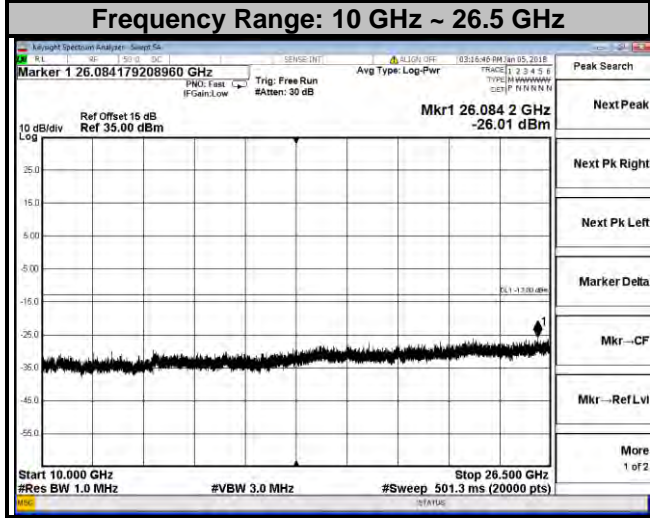
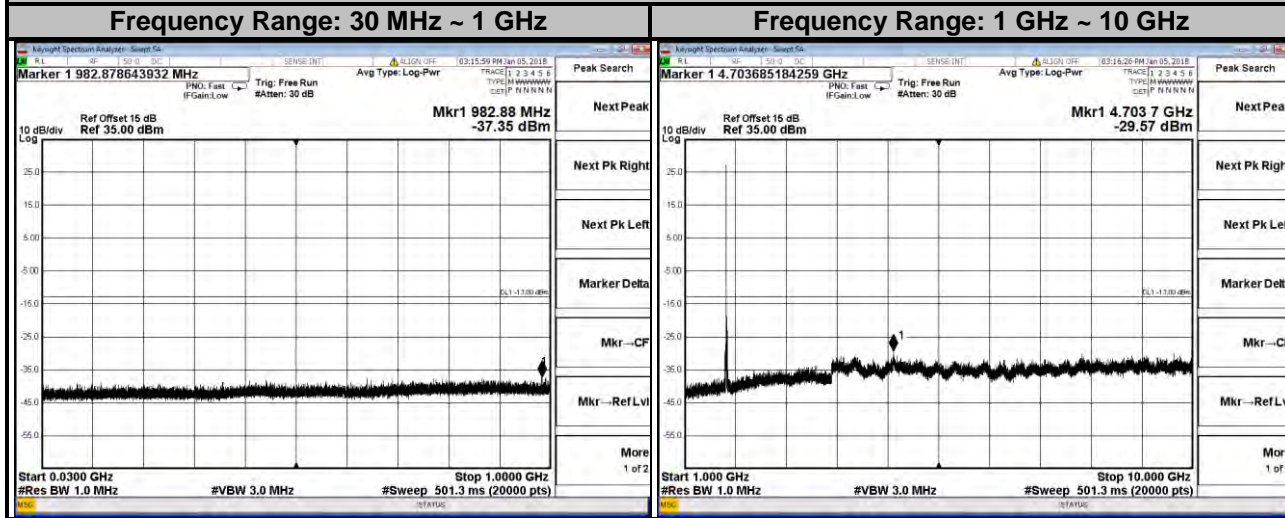


**LTE Band 4**  
**Channel Bandwidth: 20 MHz**  
**Channel 20175**

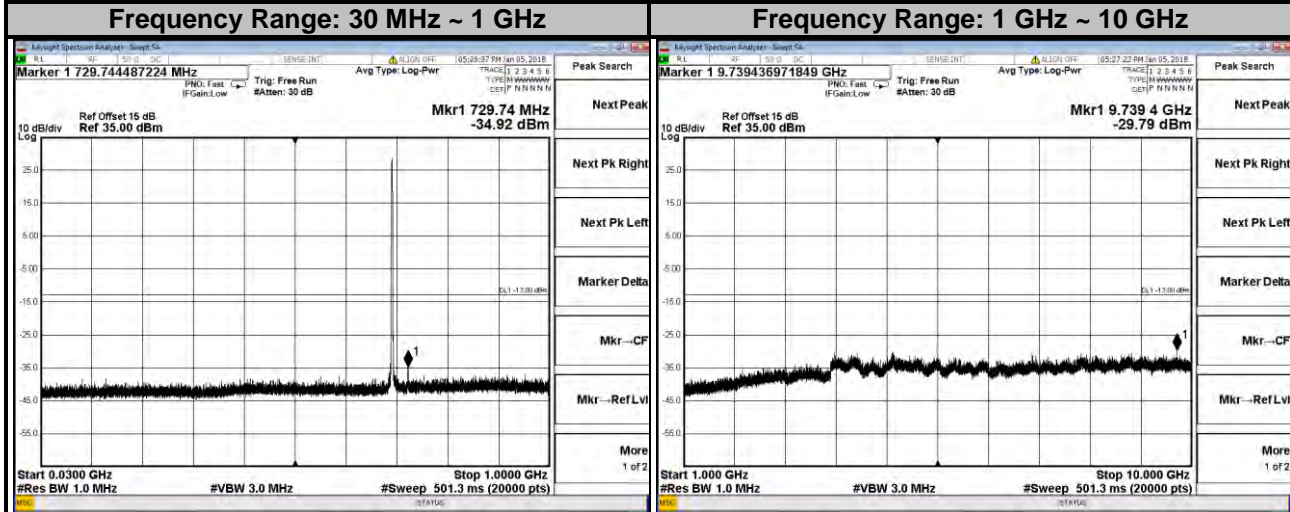




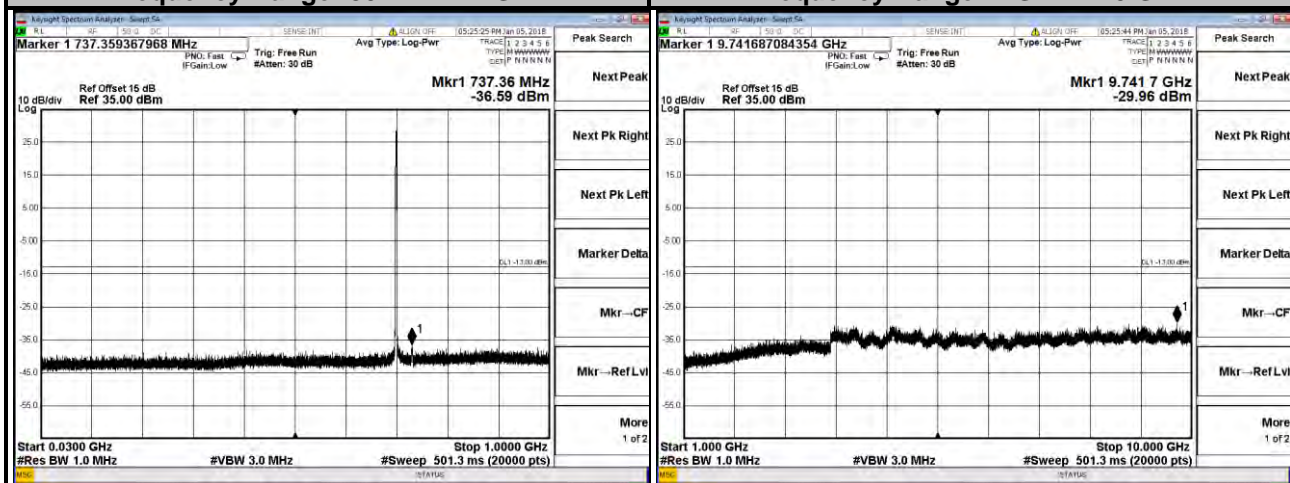
**LTE Band 4**  
**Channel Bandwidth: 20 MHz**  
**Channel 20300**



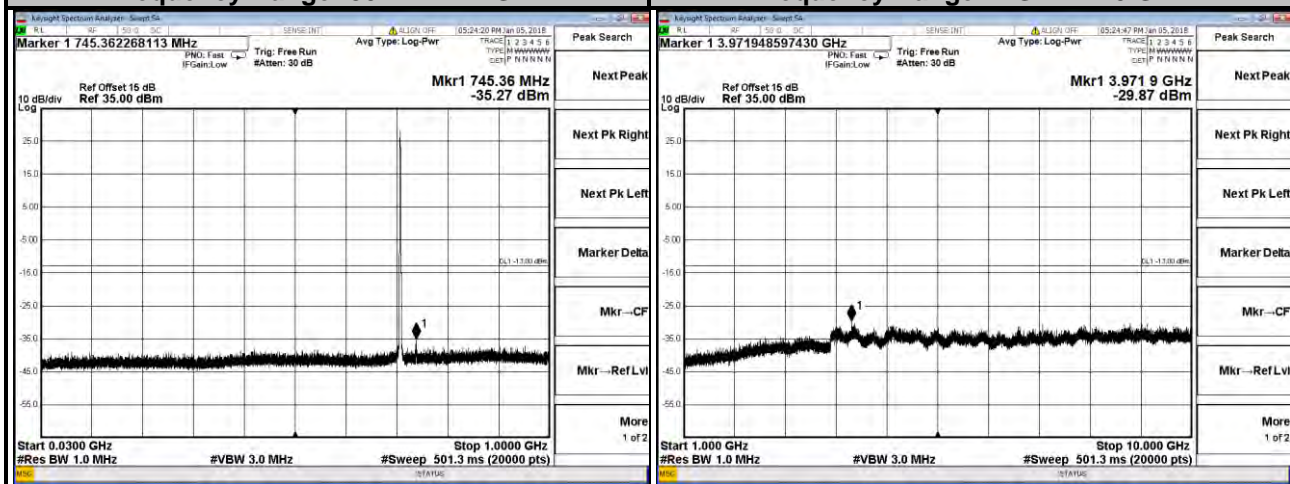
**LTE Band 12**  
**Channel Bandwidth: 1.4 MHz**  
**Channel 23017**



**Channel 23095**



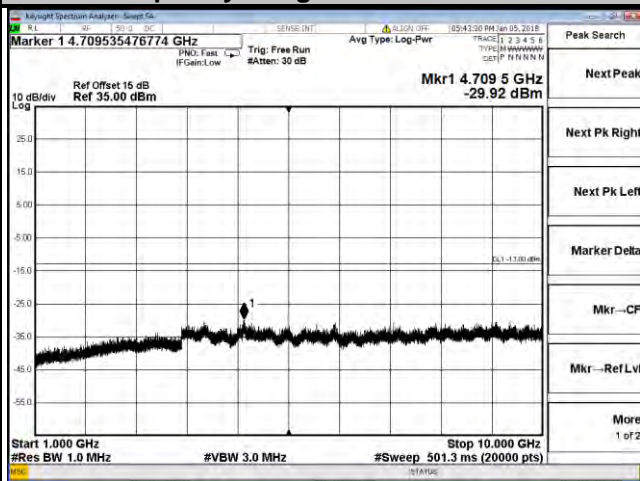
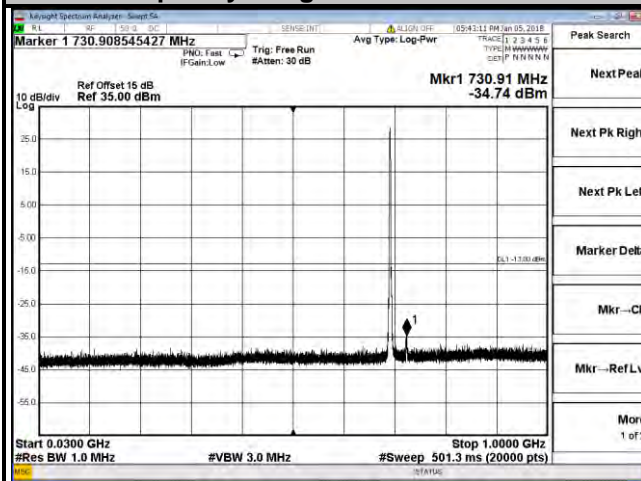
**Channel 23173**



**LTE Band 12**  
**Channel Bandwidth: 3 MHz**  
**Channel 23025**

**Frequency Range: 30 MHz ~ 1 GHz**

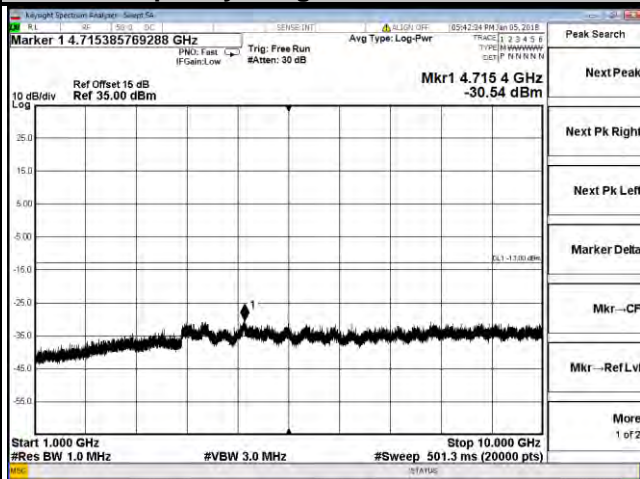
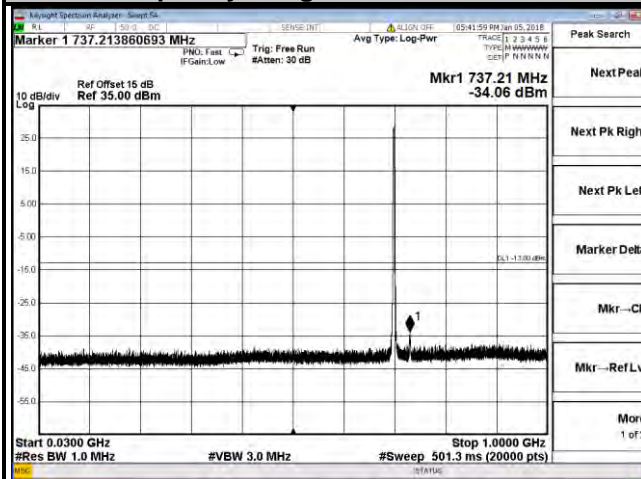
**Frequency Range: 1 GHz ~ 10 GHz**



**Channel 23095**

**Frequency Range: 30 MHz ~ 1 GHz**

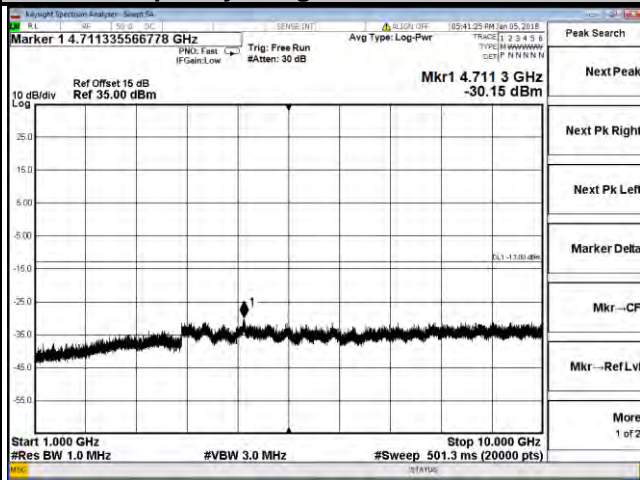
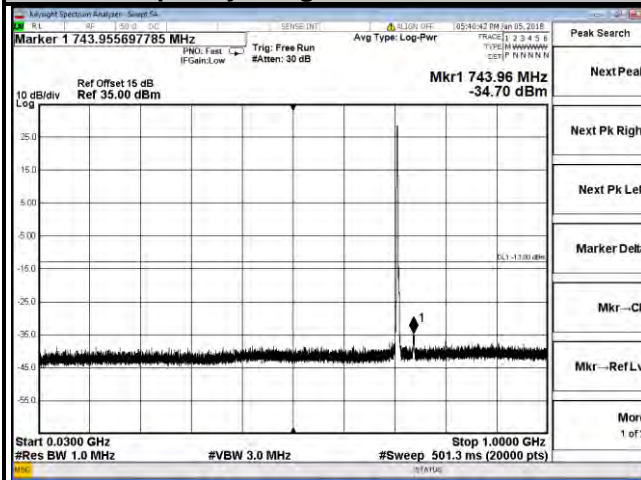
**Frequency Range: 1 GHz ~ 10 GHz**



**Channel 23165**

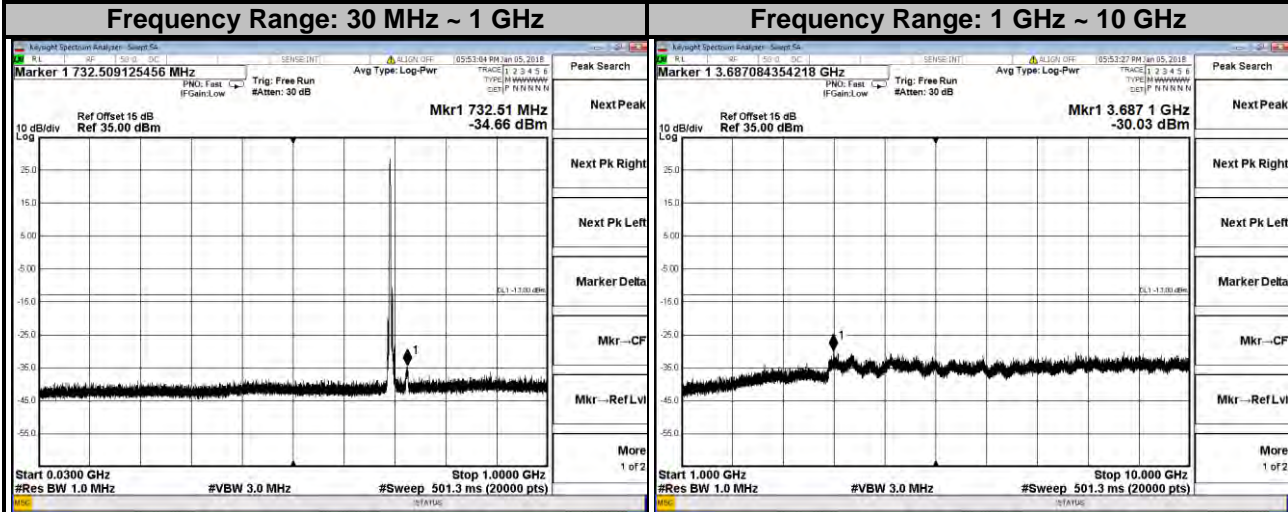
**Frequency Range: 30 MHz ~ 1 GHz**

**Frequency Range: 1 GHz ~ 10 GHz**

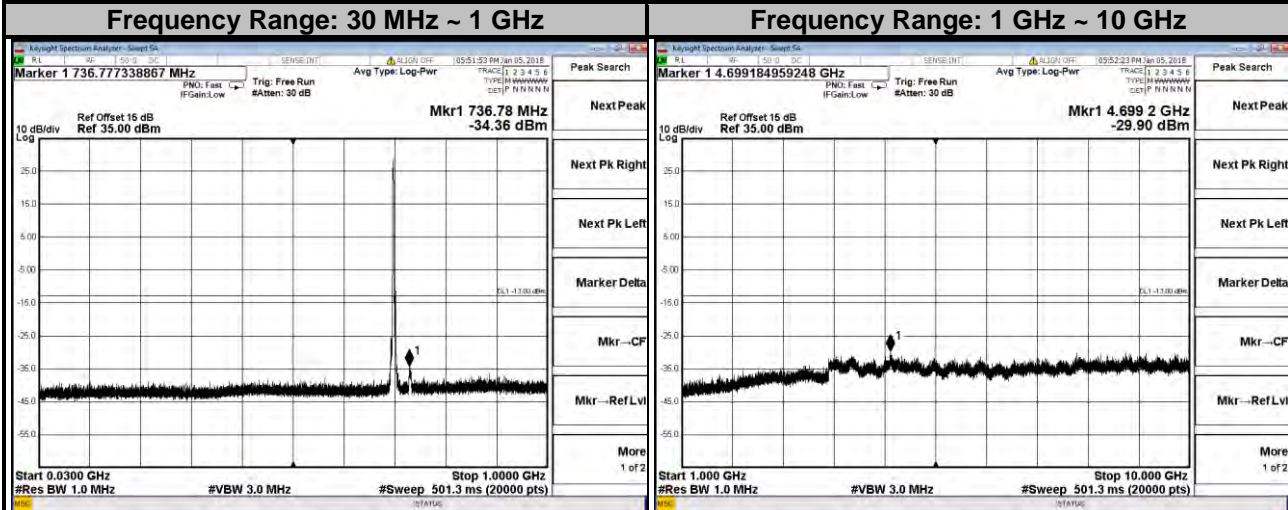




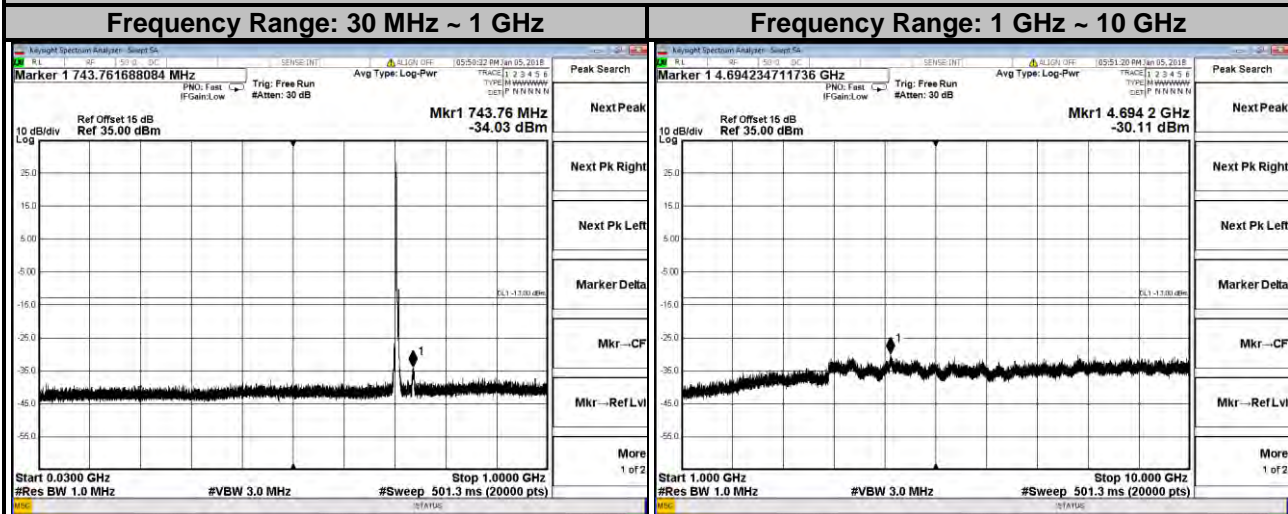
**LTE Band 12**  
**Channel Bandwidth: 5 MHz**  
**Channel 23035**



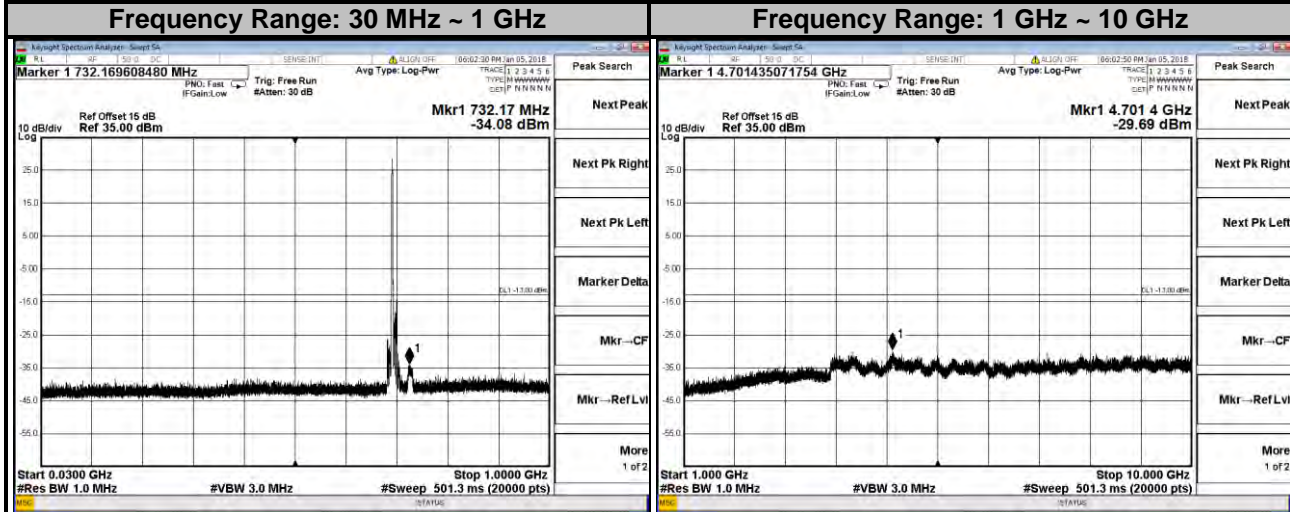
**Channel 23095**



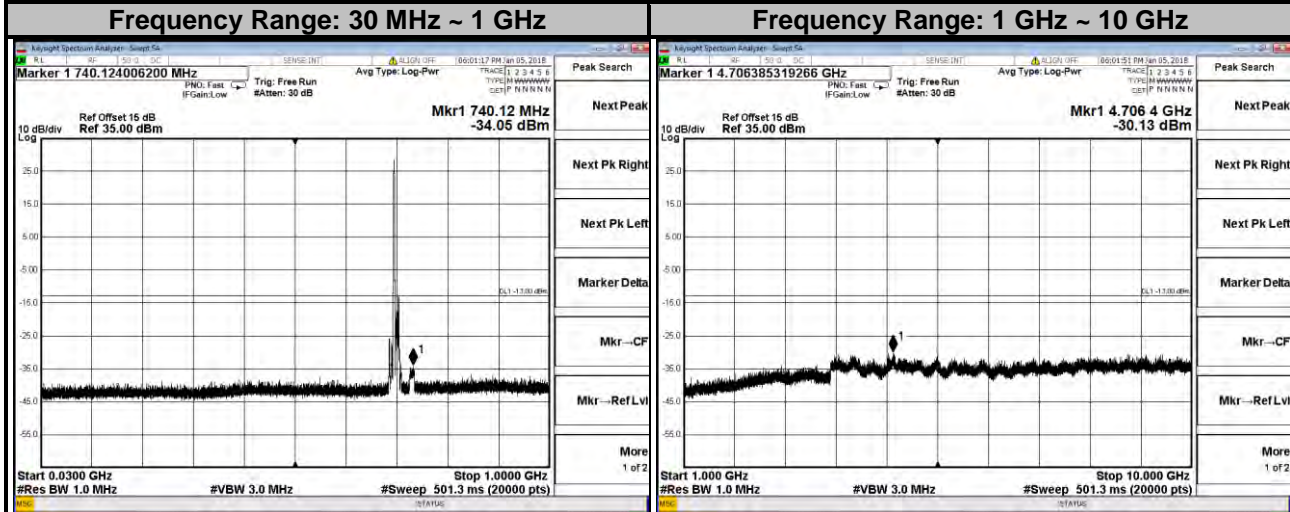
**Channel 23155**



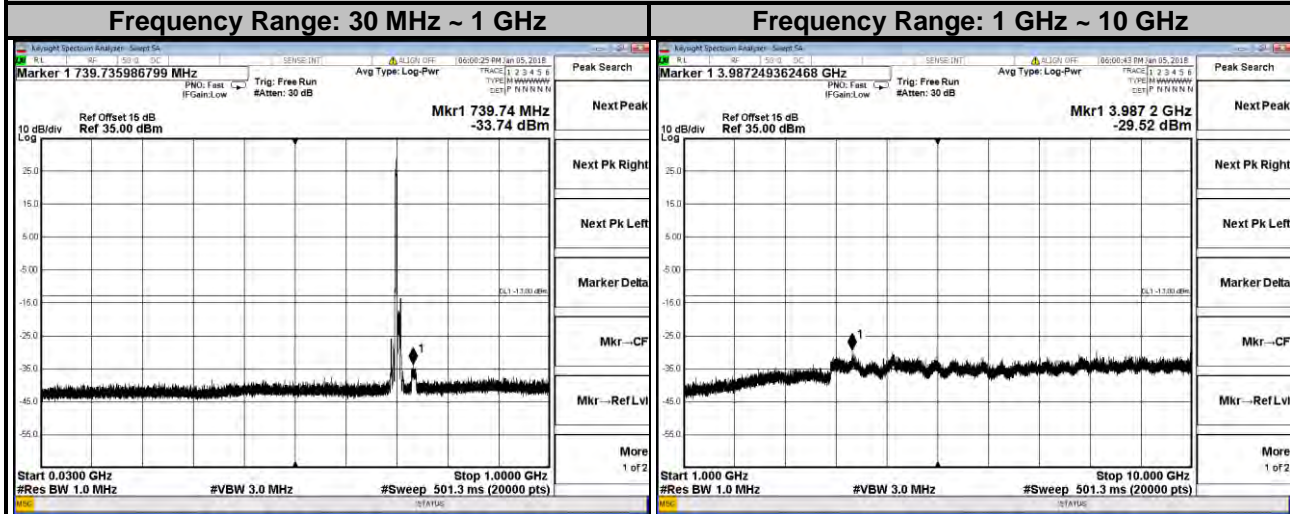
**LTE Band 12**  
**Channel Bandwidth: 10 MHz**  
**Channel 23060**



**Channel 23095**



**Channel 23130**

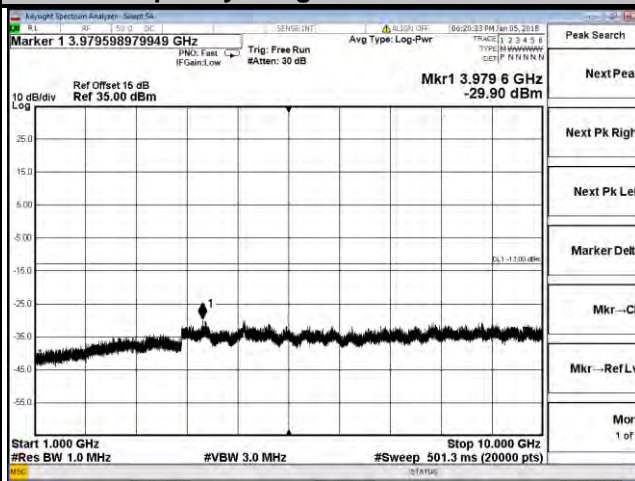
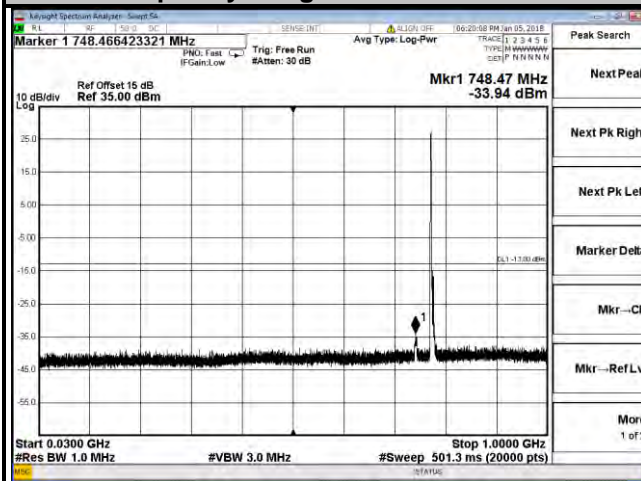




**LTE Band 13**  
**Channel Bandwidth: 5 MHz**  
**Channel 23205**

**Frequency Range: 30 MHz ~ 1 GHz**

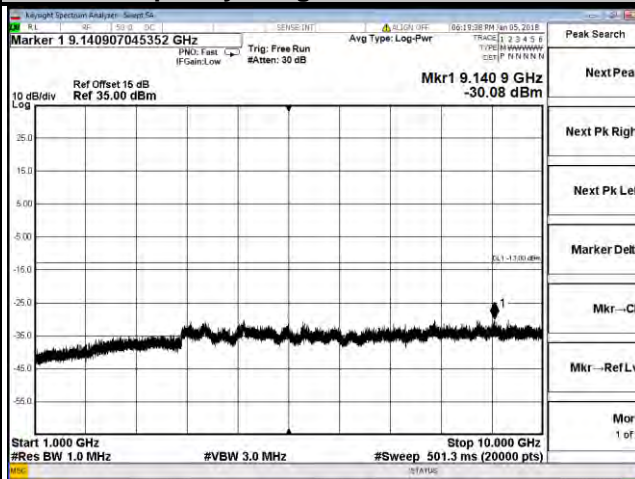
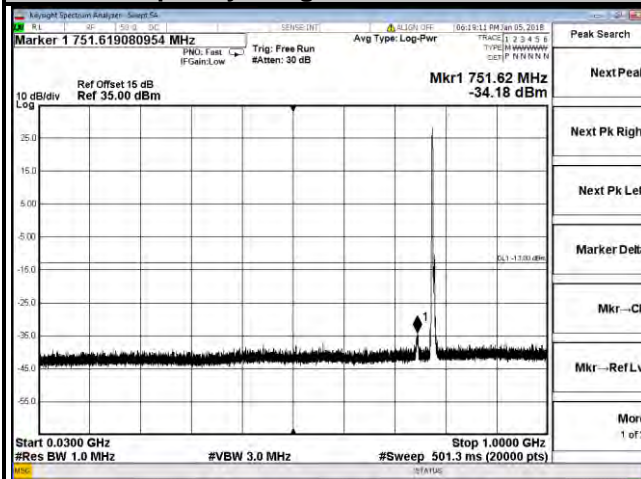
**Frequency Range: 1 GHz ~ 10 GHz**



**Channel 23230**

**Frequency Range: 30 MHz ~ 1 GHz**

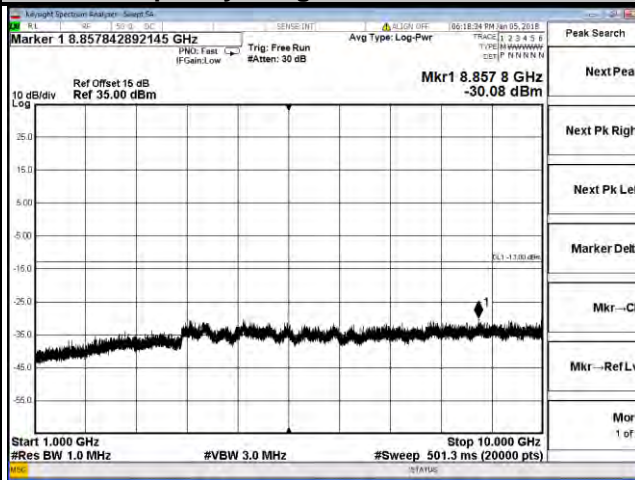
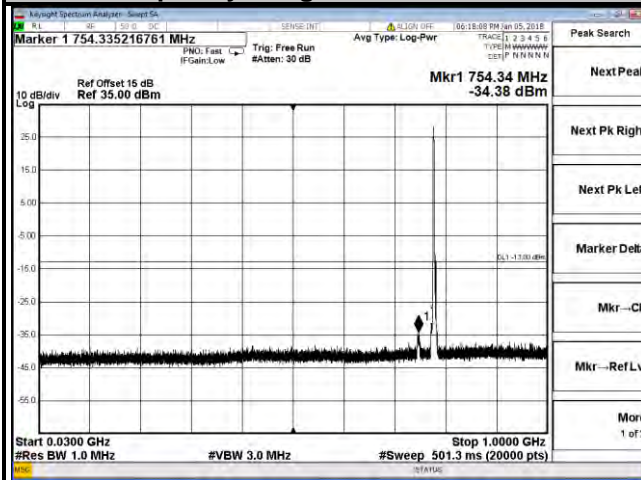
**Frequency Range: 1 GHz ~ 10 GHz**

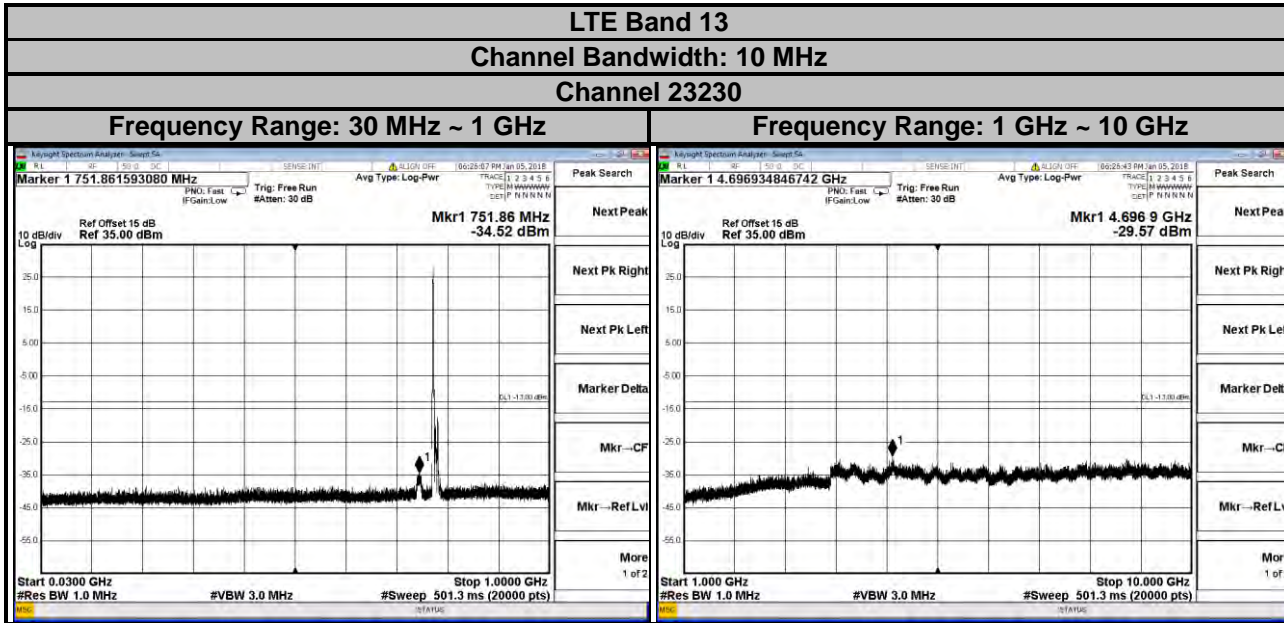


**Channel 23255**

**Frequency Range: 30 MHz ~ 1 GHz**

**Frequency Range: 1 GHz ~ 10 GHz**

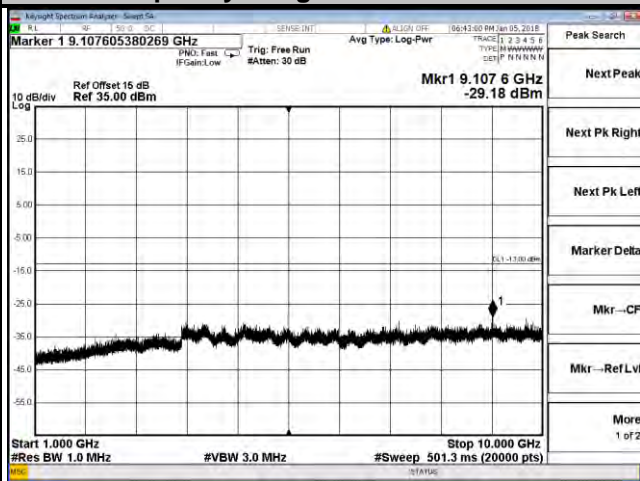
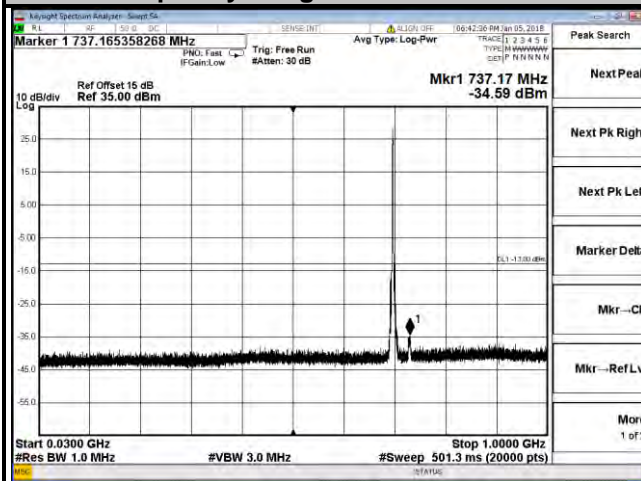




**LTE Band 17**  
**Channel Bandwidth: 5 MHz**  
**Channel 23755**

**Frequency Range: 30 MHz ~ 1 GHz**

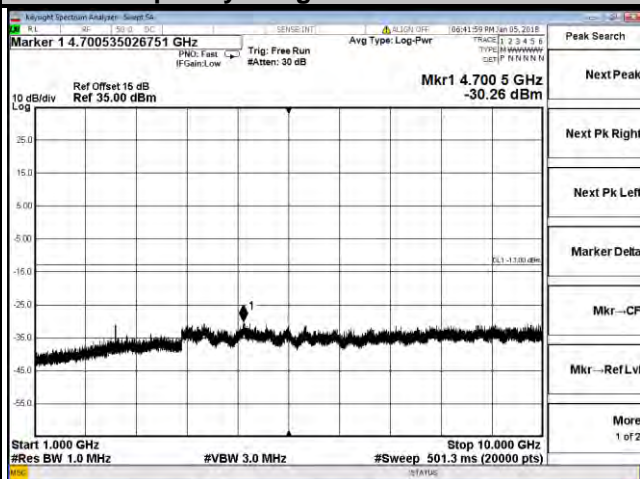
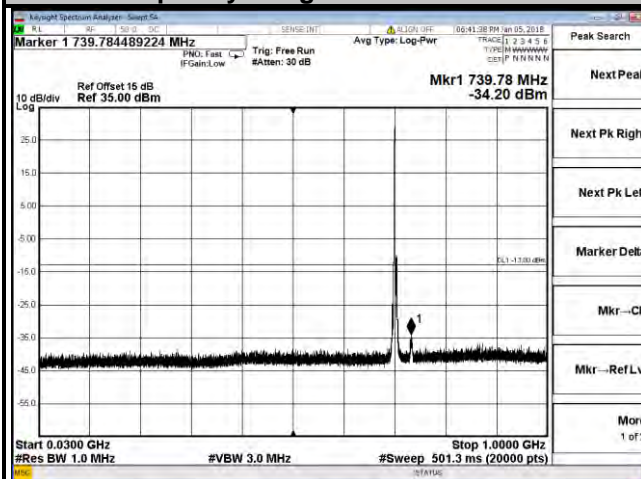
**Frequency Range: 1 GHz ~ 10 GHz**



**Channel 23790**

**Frequency Range: 30 MHz ~ 1 GHz**

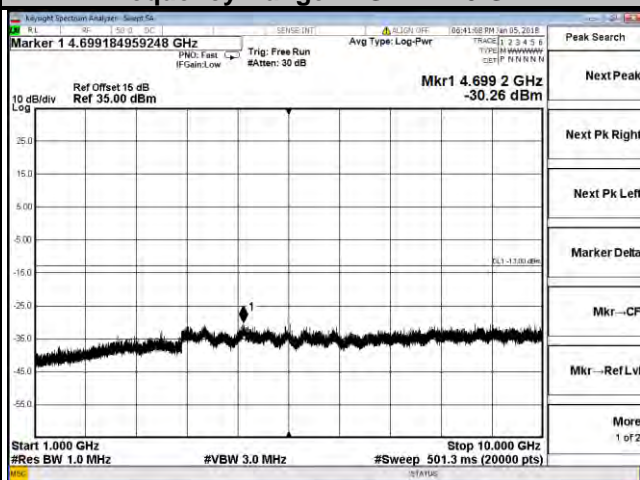
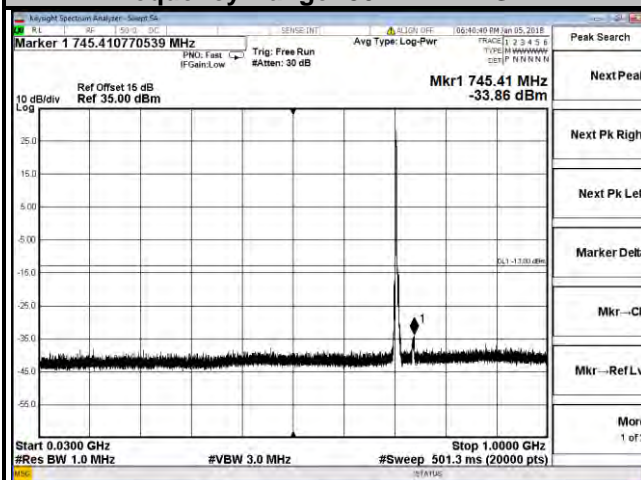
**Frequency Range: 1 GHz ~ 10 GHz**



**Channel 23825**

**Frequency Range: 30 MHz ~ 1 GHz**

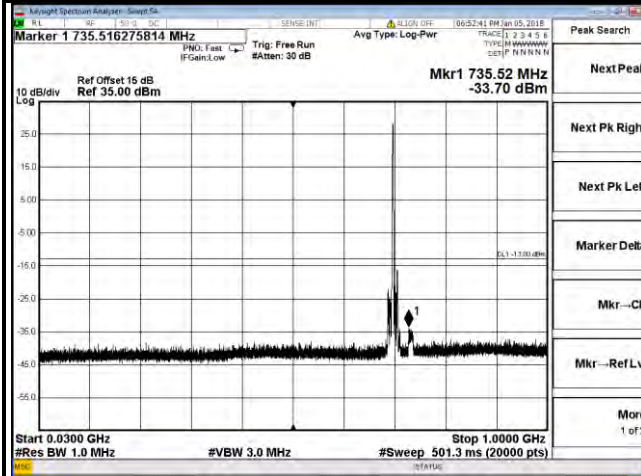
**Frequency Range: 1 GHz ~ 10 GHz**



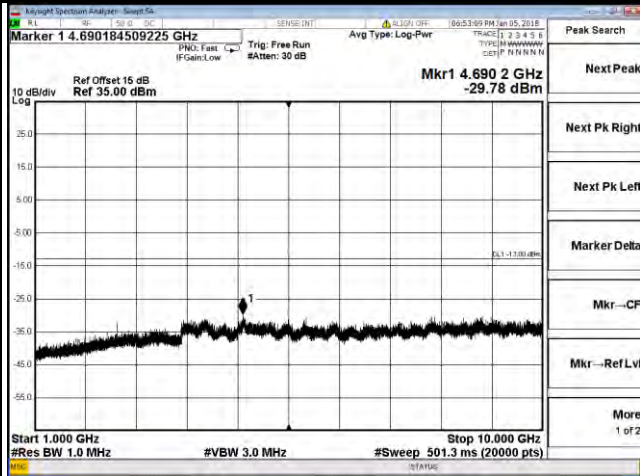


**LTE Band 17**  
**Channel Bandwidth: 10 MHz**  
**Channel 23780**

**Frequency Range: 30 MHz ~ 1 GHz**

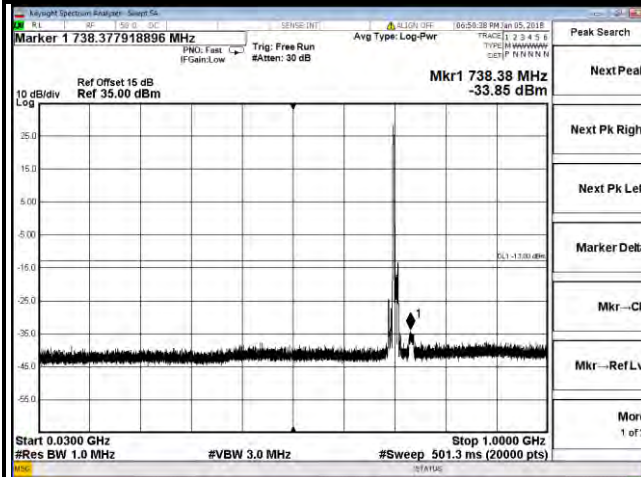


**Frequency Range: 1 GHz ~ 10 GHz**

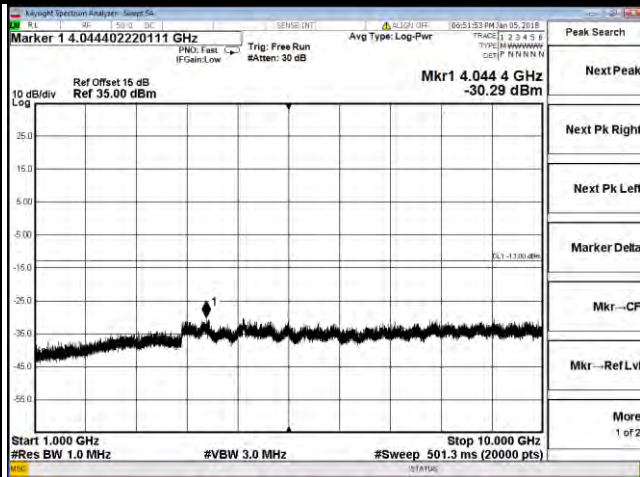


**Channel 23790**

**Frequency Range: 30 MHz ~ 1 GHz**

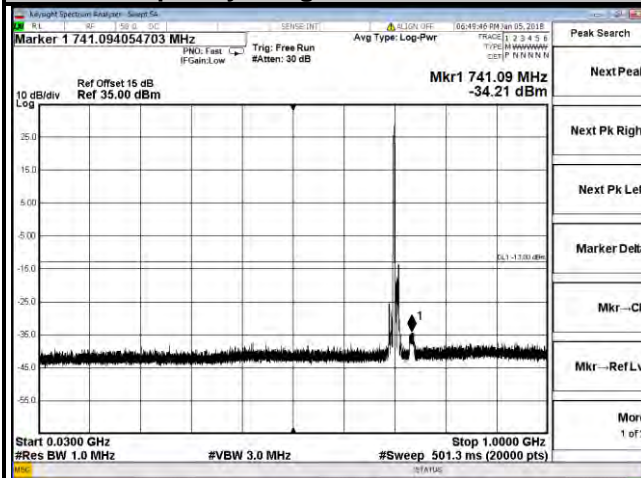


**Frequency Range: 1 GHz ~ 10 GHz**

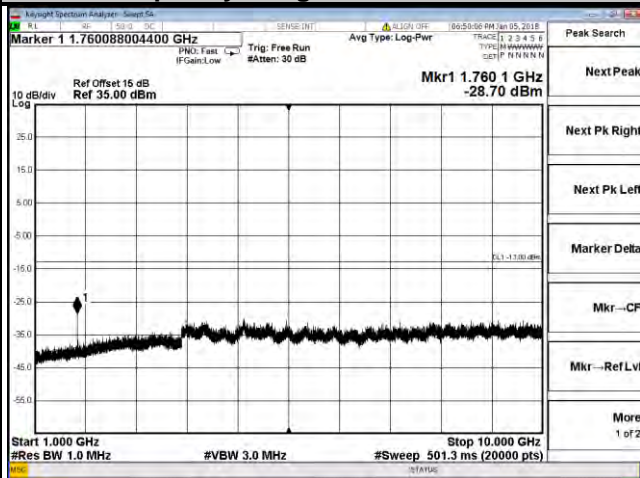


**Channel 23800**

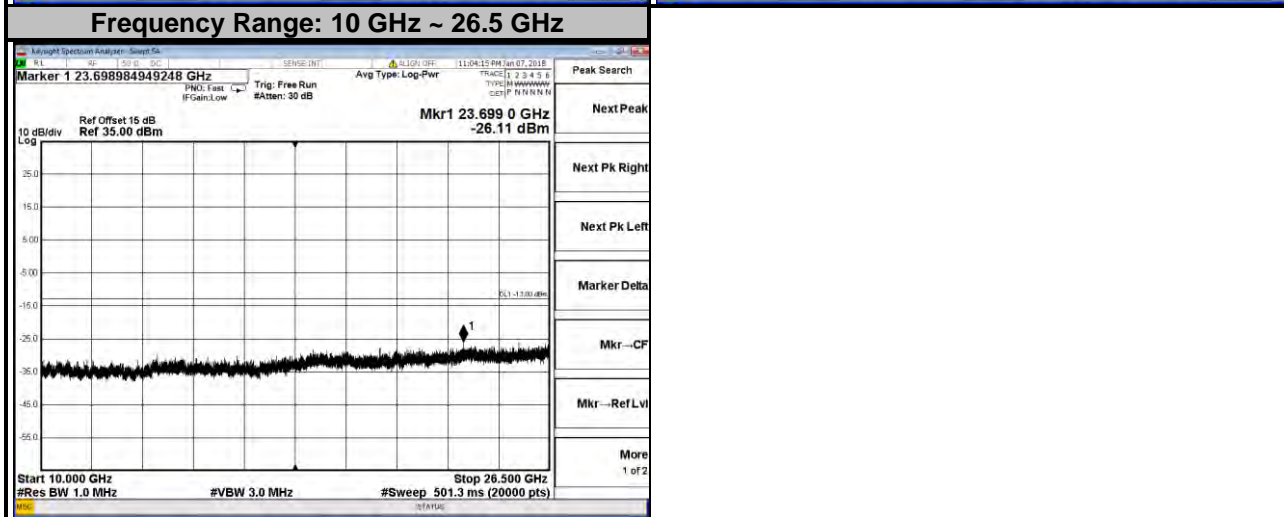
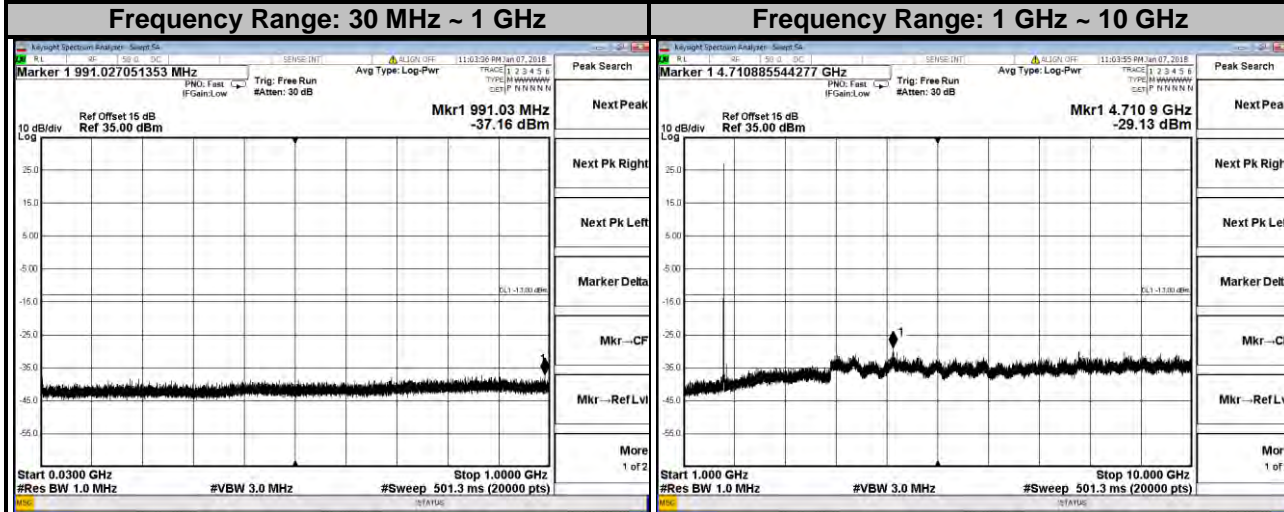
**Frequency Range: 30 MHz ~ 1 GHz**



**Frequency Range: 1 GHz ~ 10 GHz**

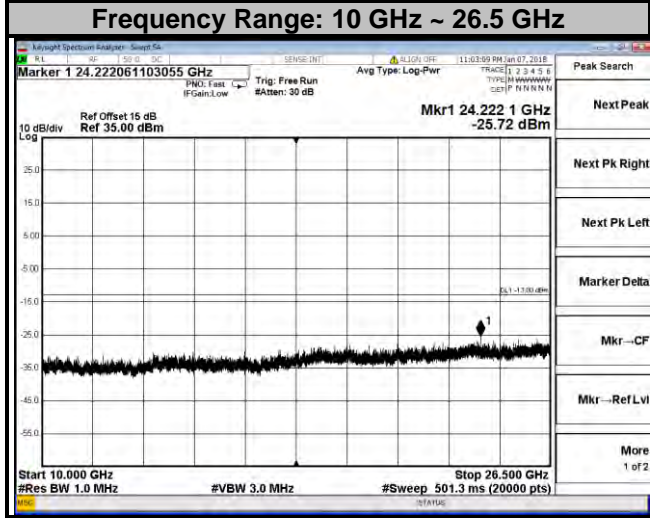
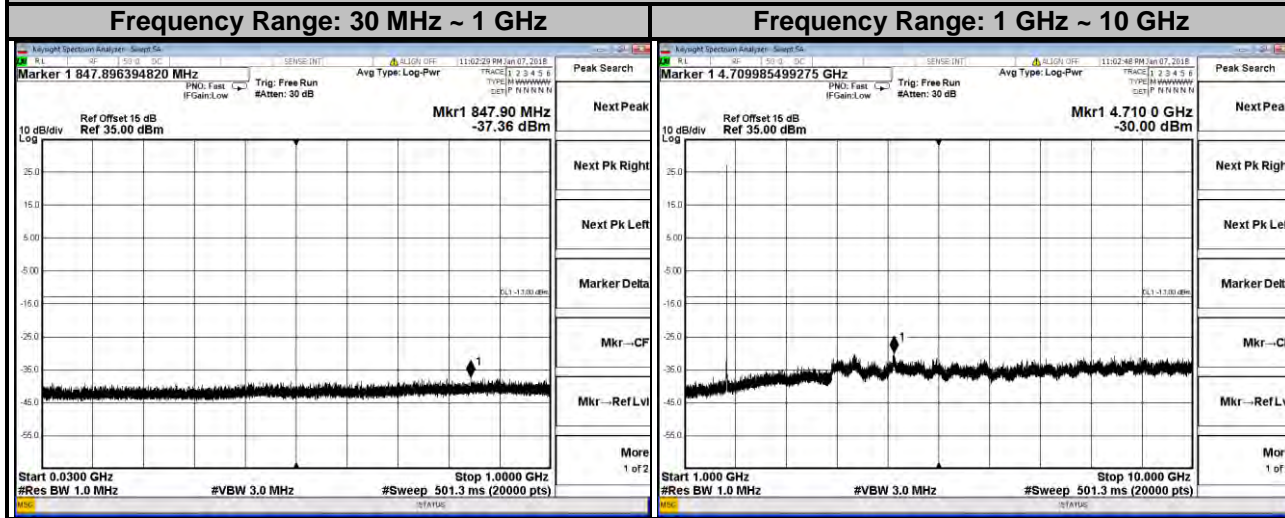


**LTE Band 66**  
**Channel Bandwidth: 1.4 MHz**  
**Channel 131979**

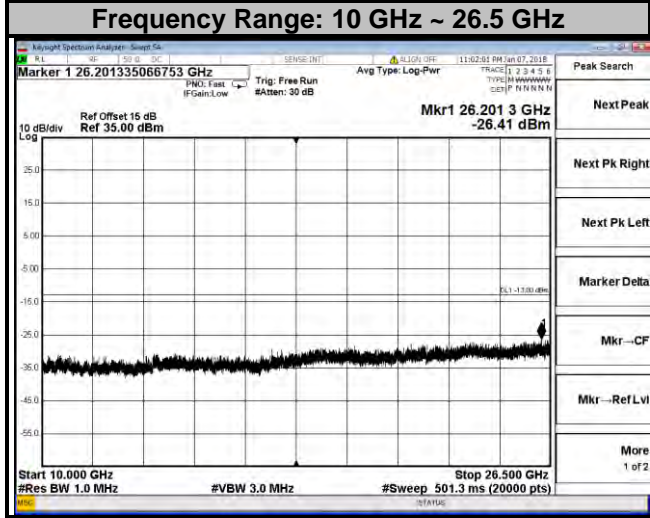
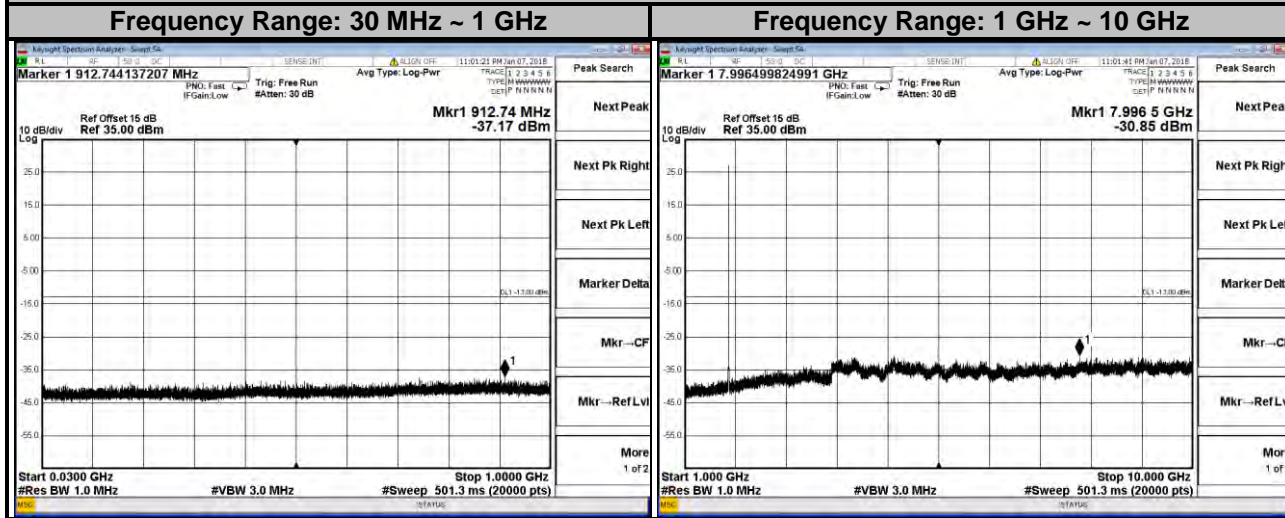




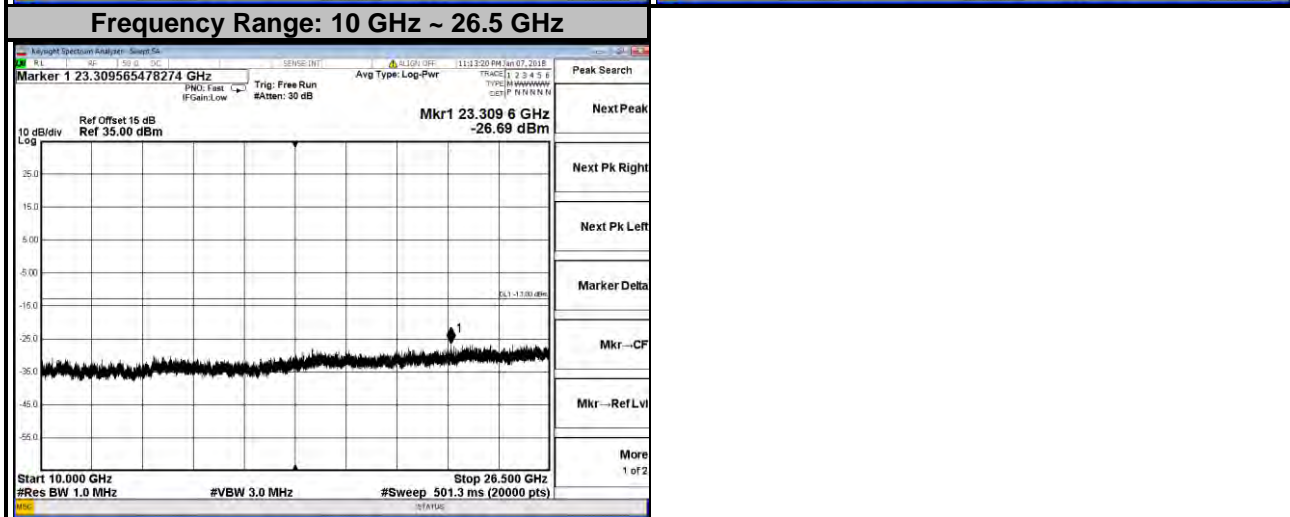
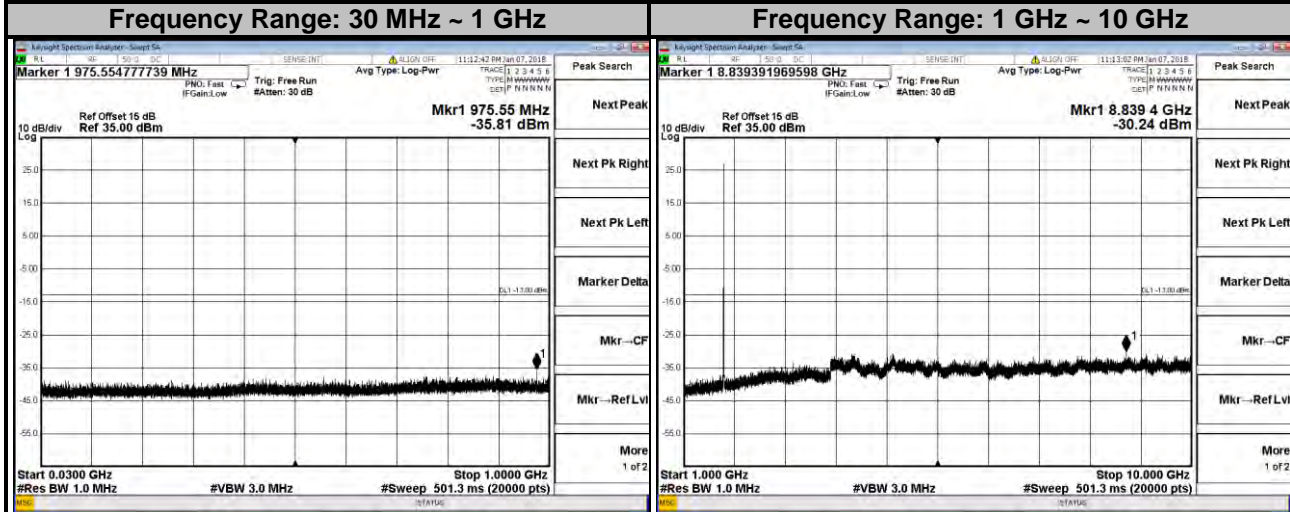
**LTE Band 66**  
**Channel Bandwidth: 1.4 MHz**  
**Channel 132322**



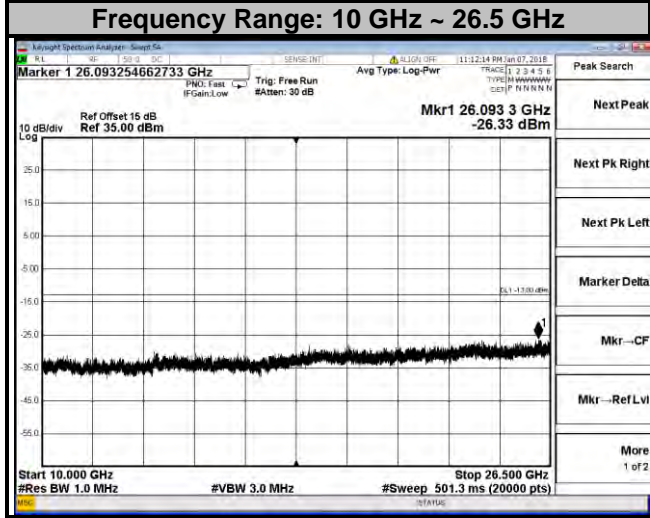
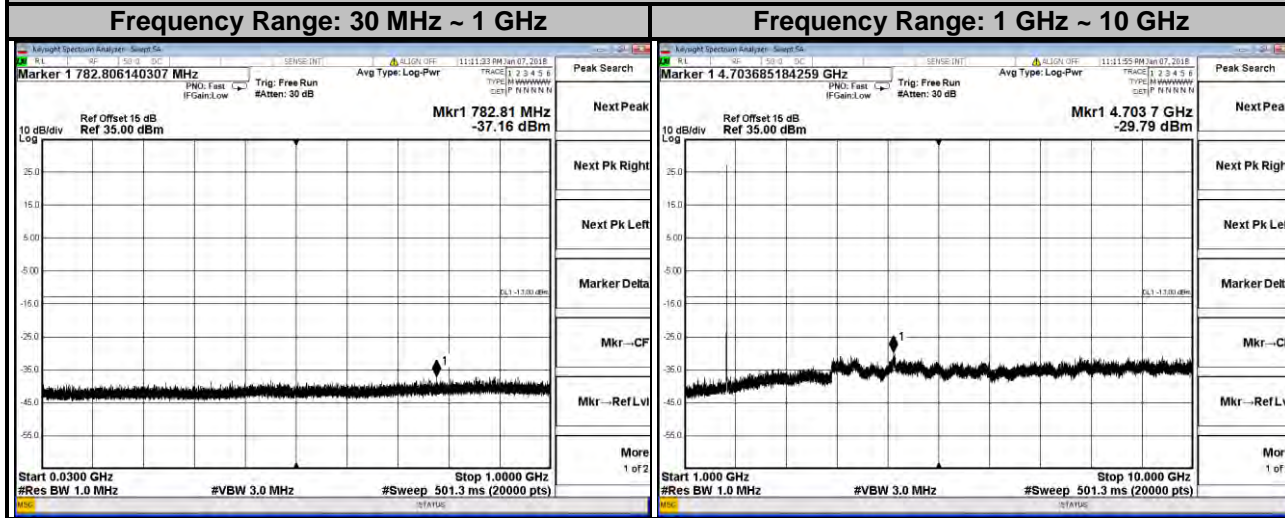
**LTE Band 66**  
**Channel Bandwidth: 1.4 MHz**  
**Channel 132655**



**LTE Band 66**  
**Channel Bandwidth: 3 MHz**  
**Channel 131987**

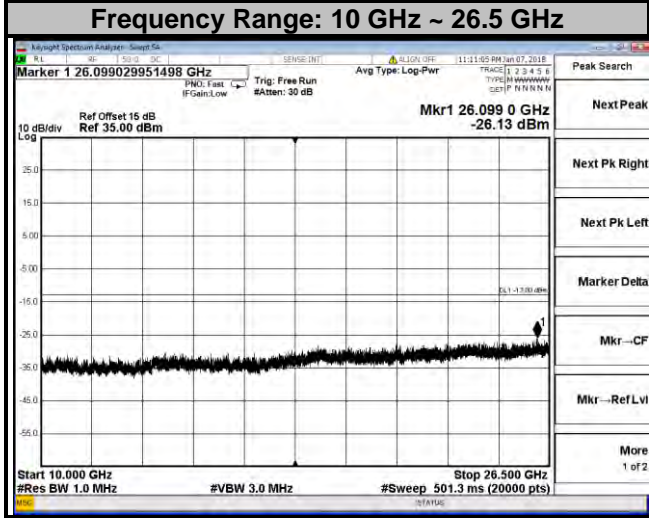
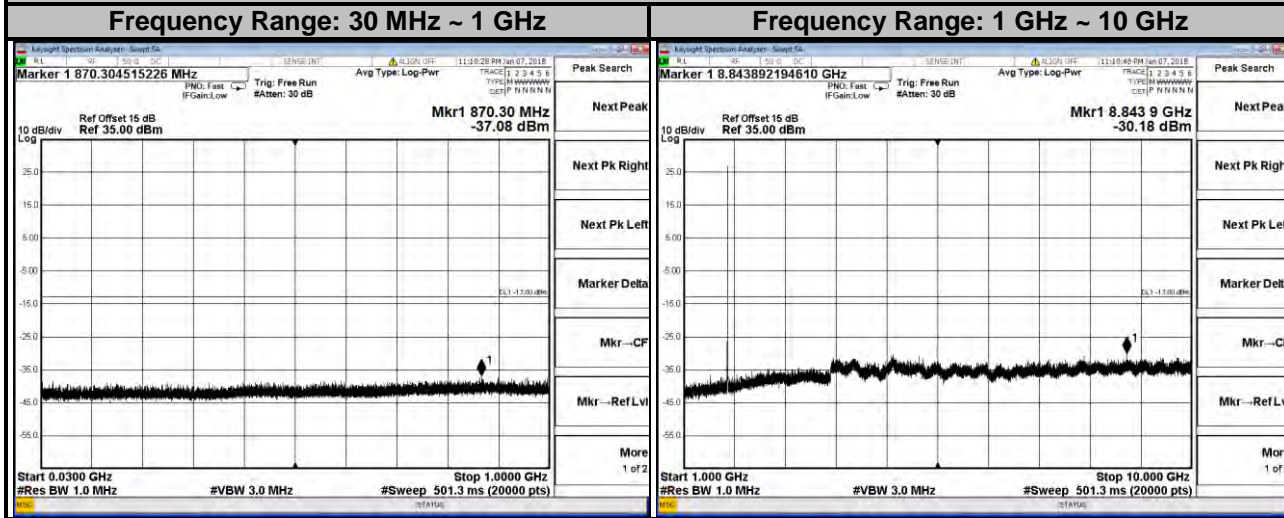


**LTE Band 66**  
**Channel Bandwidth: 3 MHz**  
**Channel 132322**

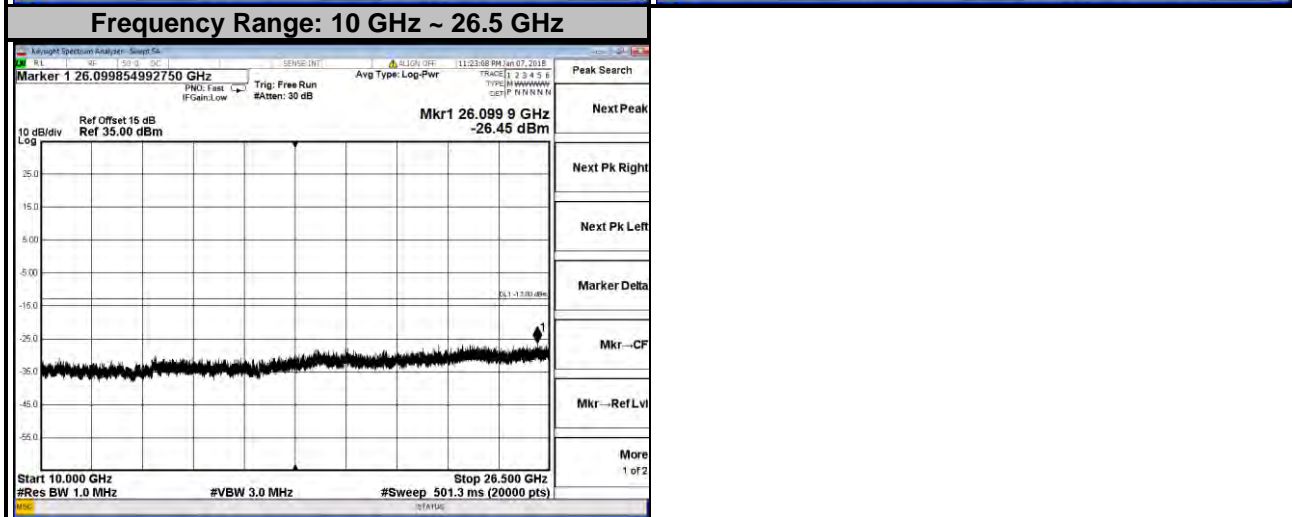
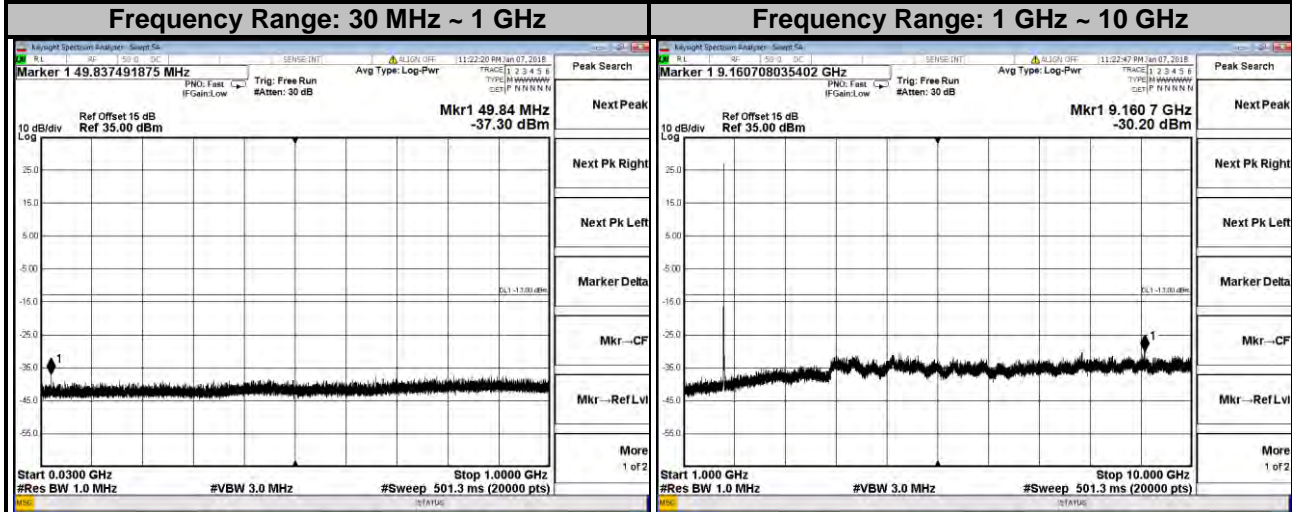




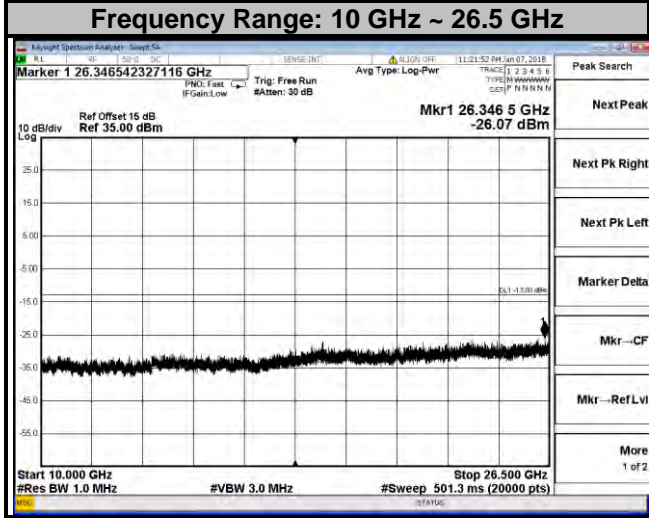
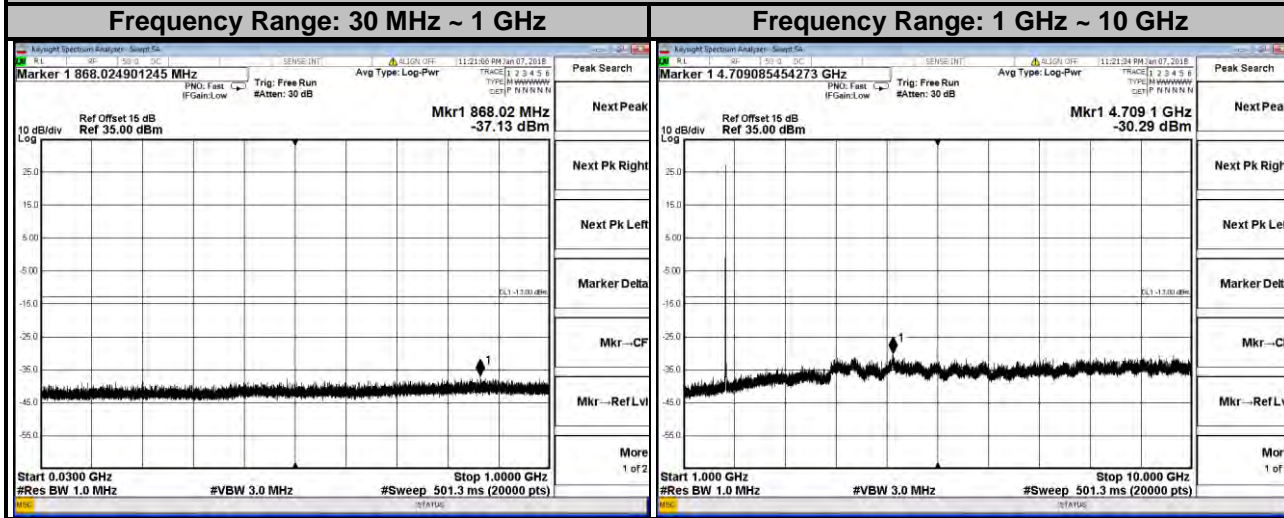
**LTE Band 66**  
**Channel Bandwidth: 3 MHz**  
**Channel 132657**



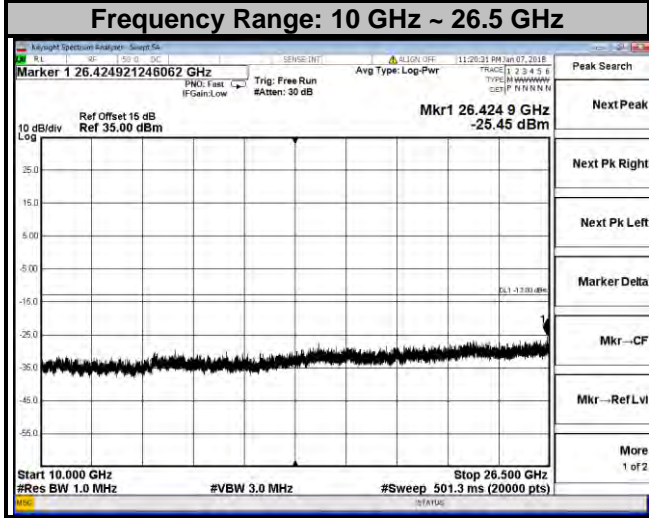
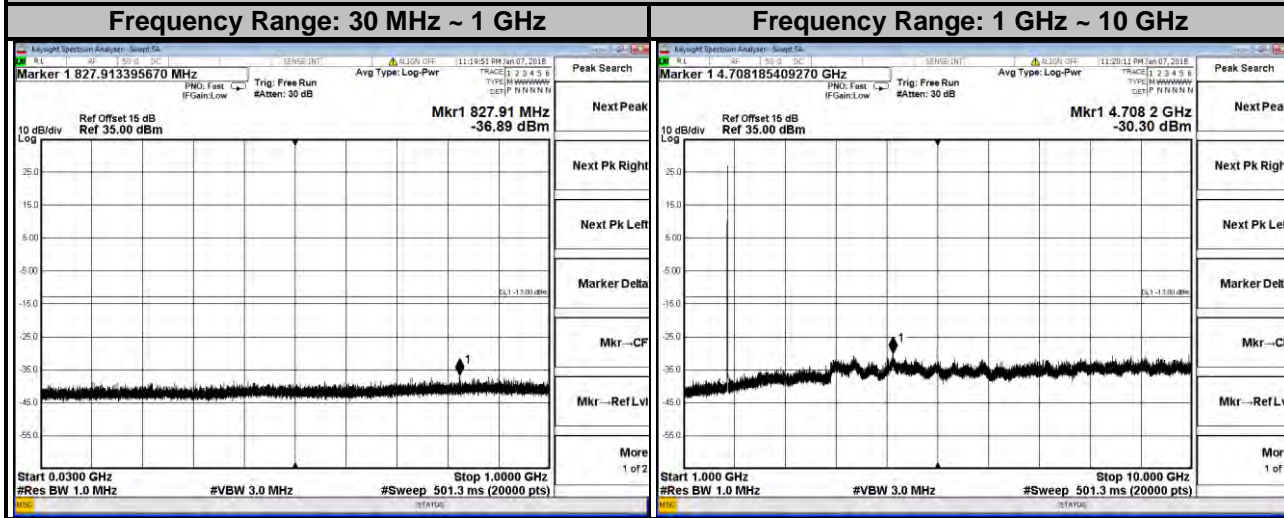
**LTE Band 66**  
**Channel Bandwidth: 5 MHz**  
**Channel 131997**



**LTE Band 66**  
**Channel Bandwidth: 5 MHz**  
**Channel 132322**

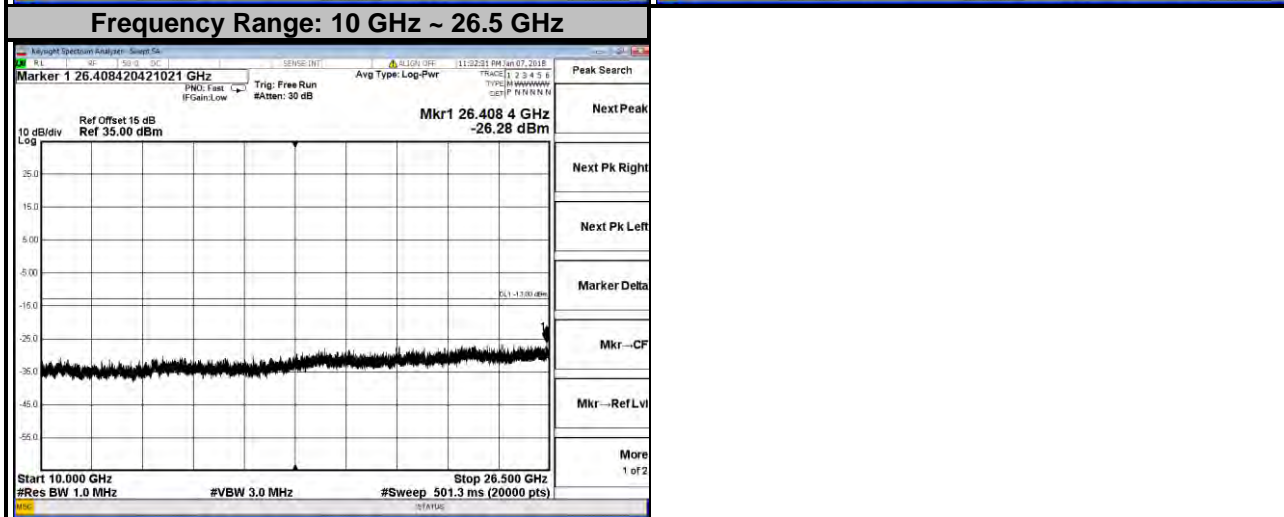
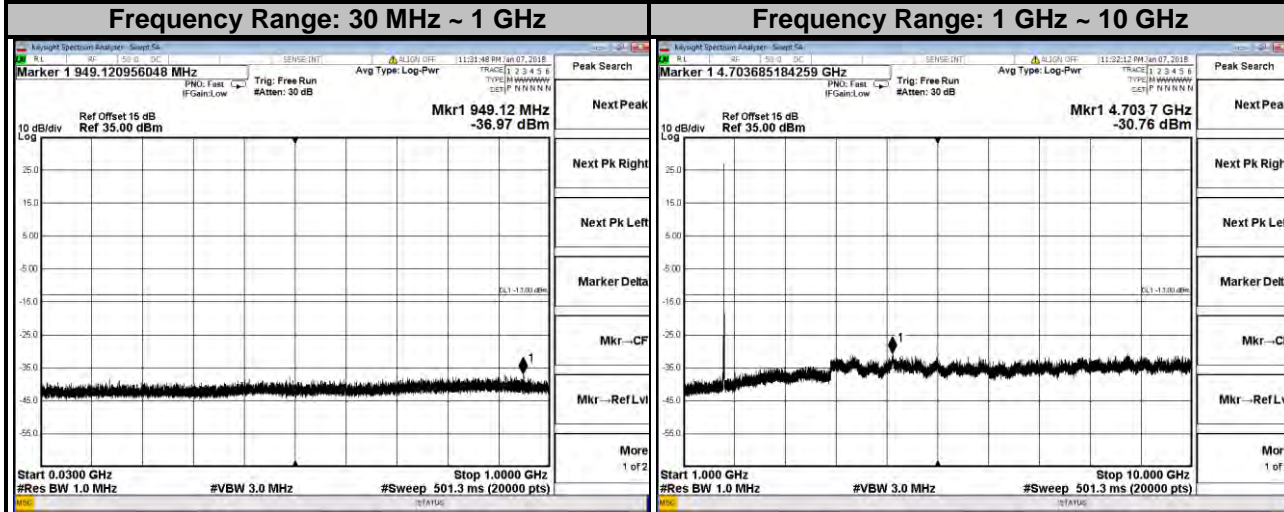


**LTE Band 66**  
**Channel Bandwidth: 5 MHz**  
**Channel 132647**

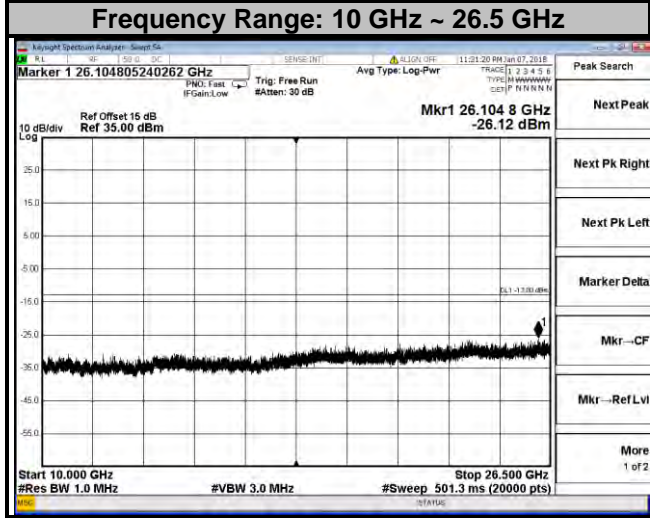
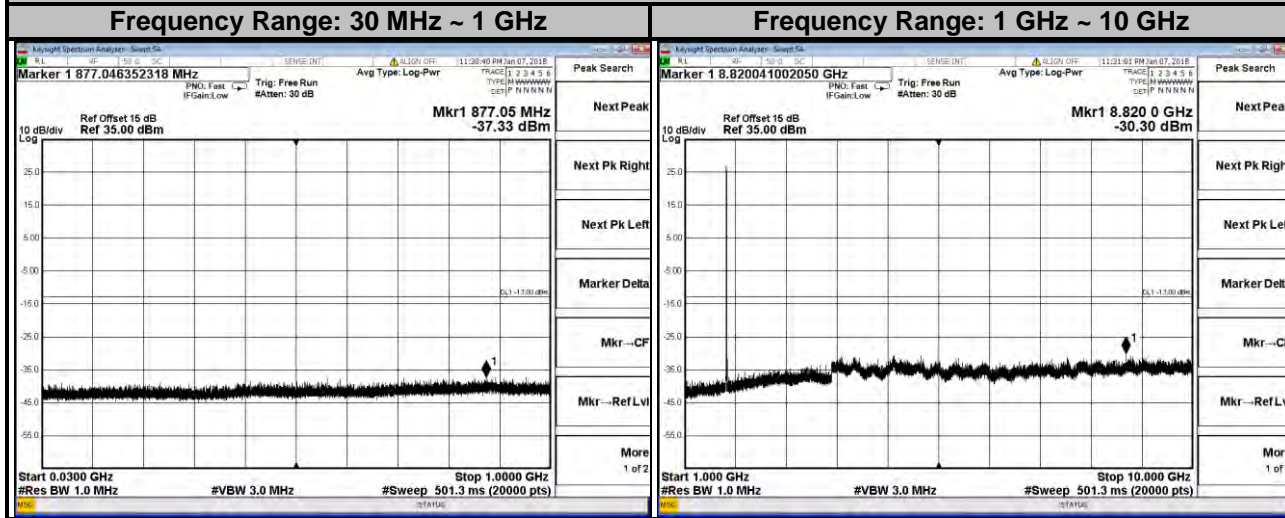




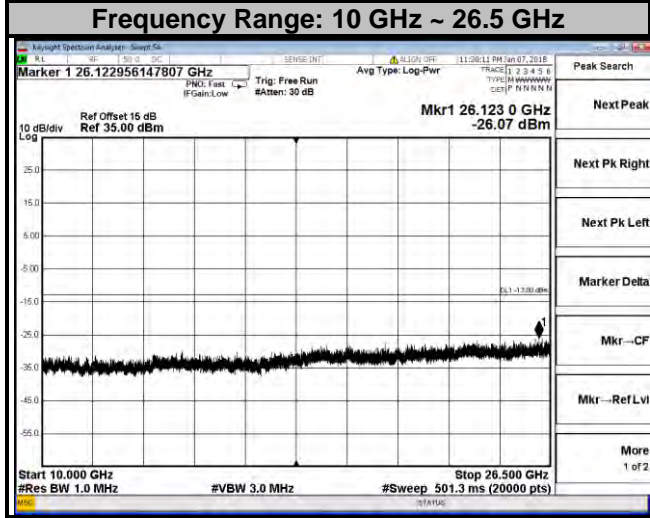
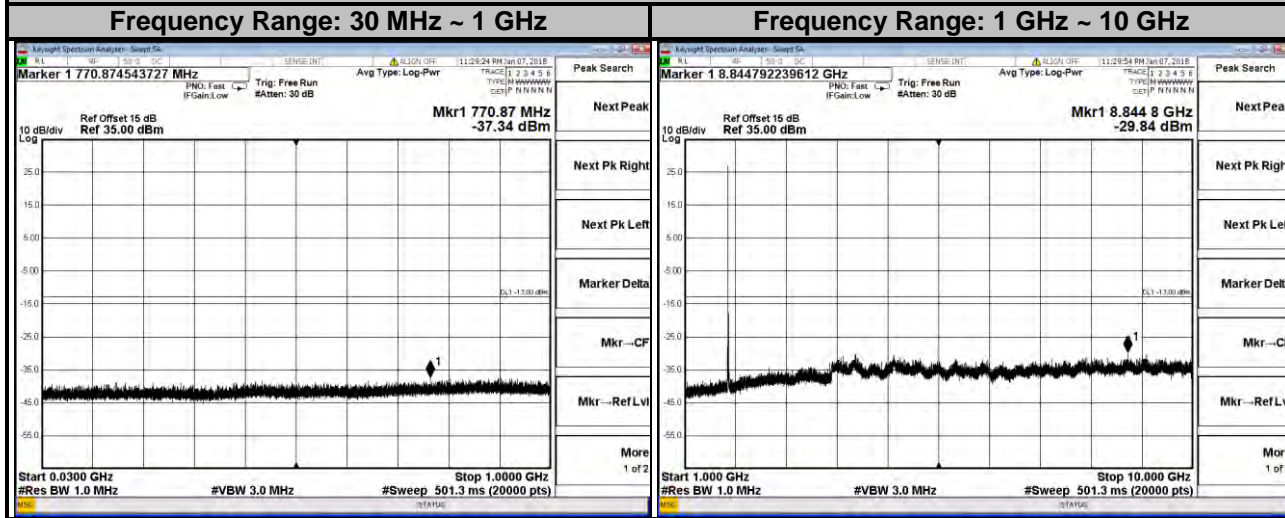
**LTE Band 66**  
**Channel Bandwidth: 10 MHz**  
**Channel 132022**



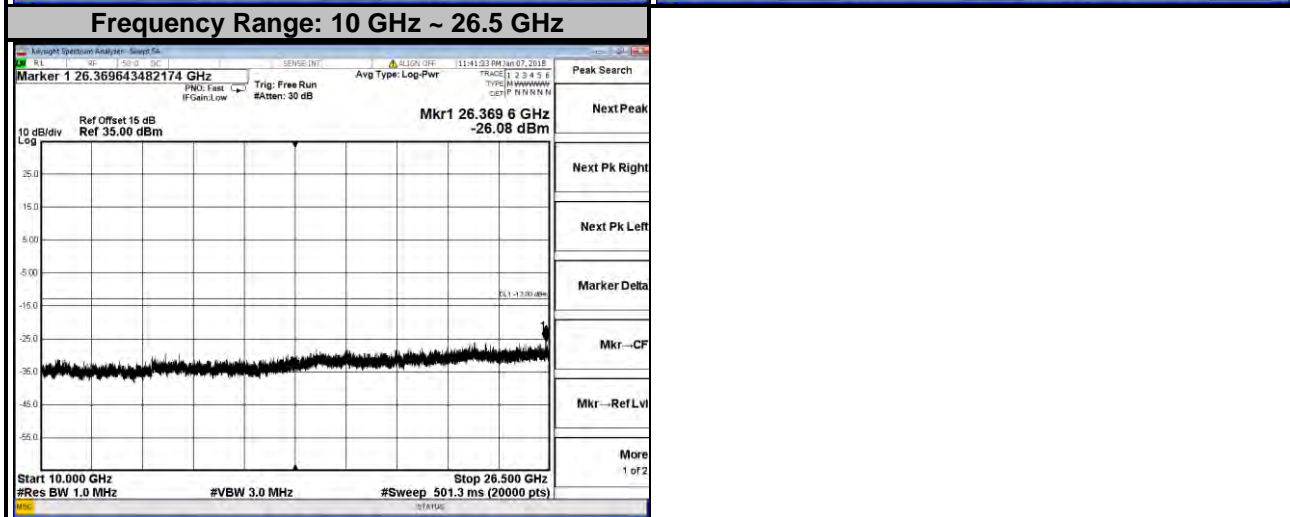
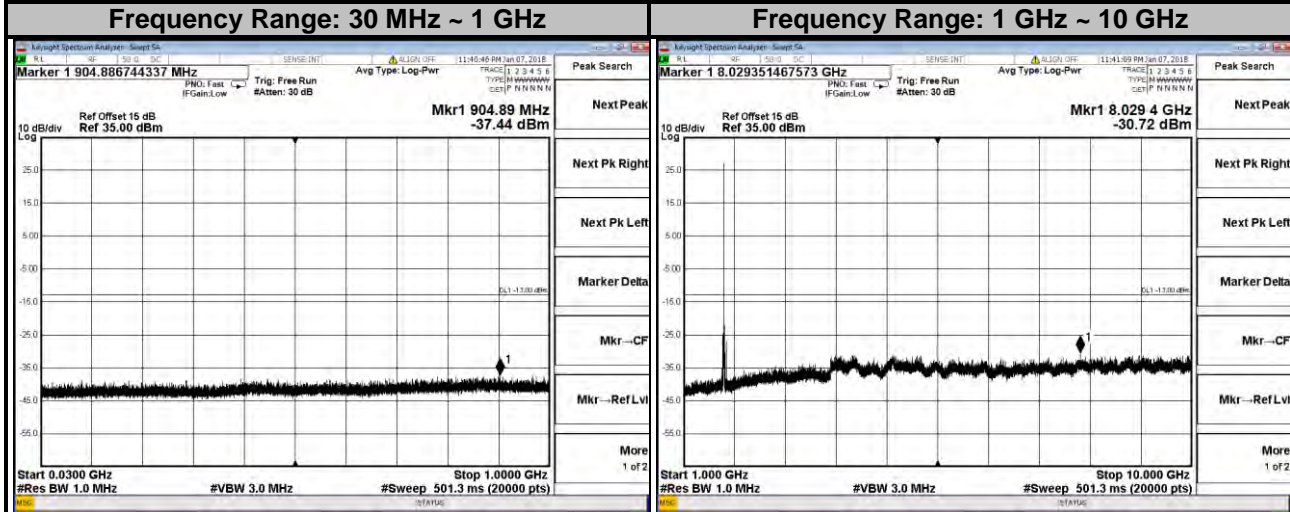
**LTE Band 66**  
**Channel Bandwidth: 10 MHz**  
**Channel 132322**



**LTE Band 66**  
**Channel Bandwidth: 10 MHz**  
**Channel 132622**

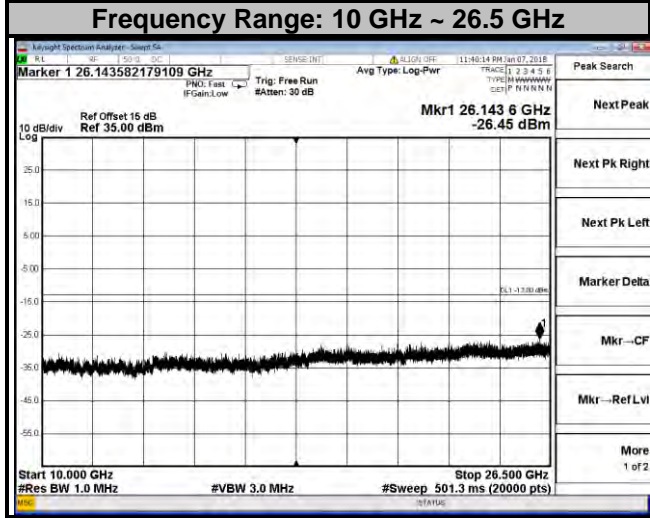
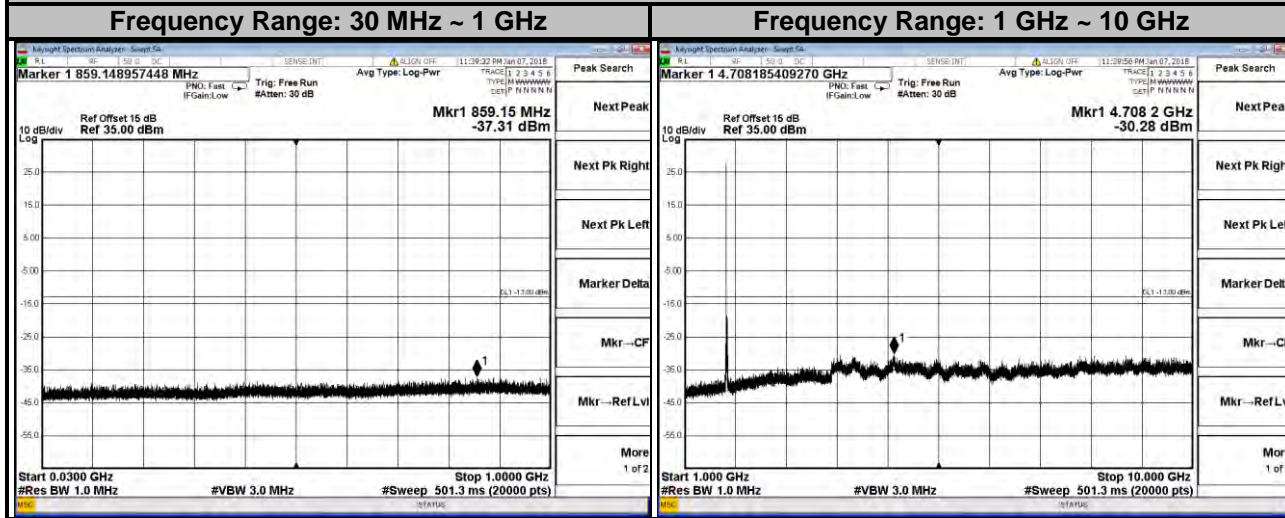


**LTE Band 66**  
**Channel Bandwidth: 15 MHz**  
**Channel 132047**

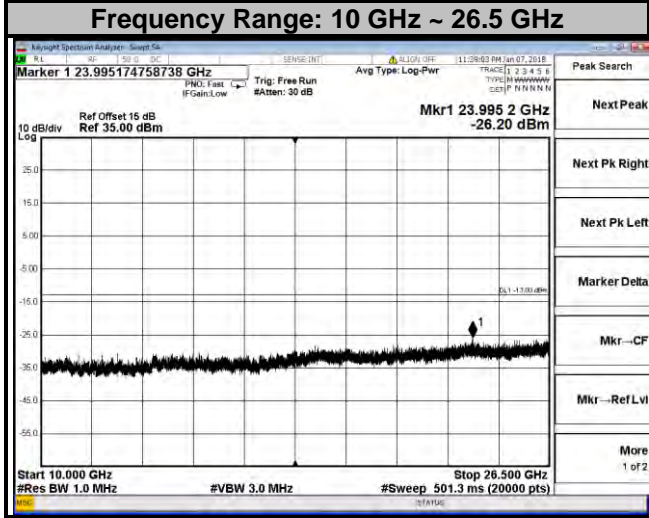
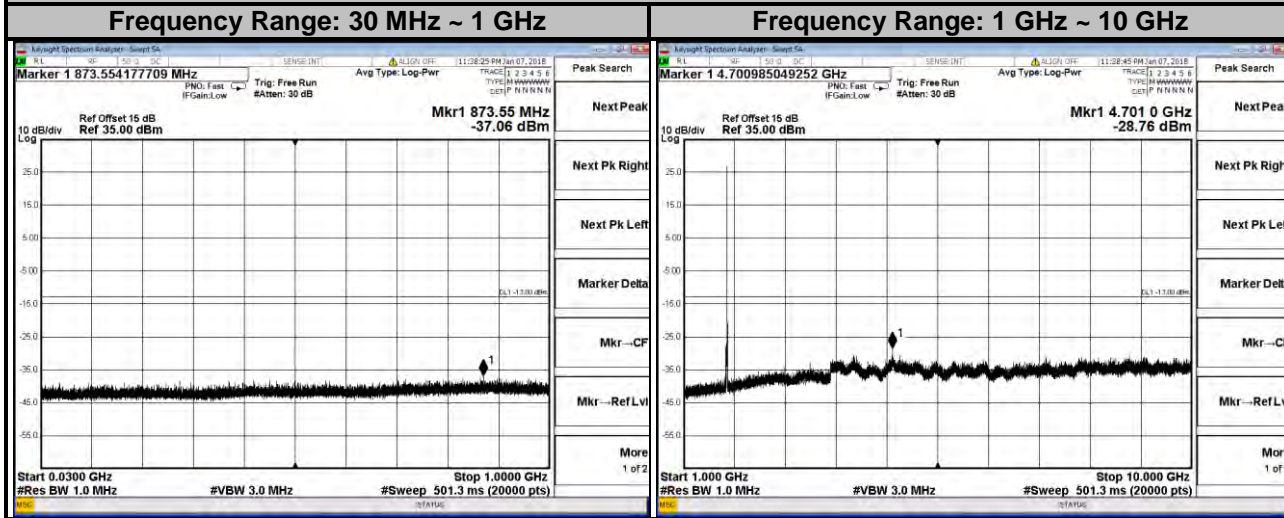




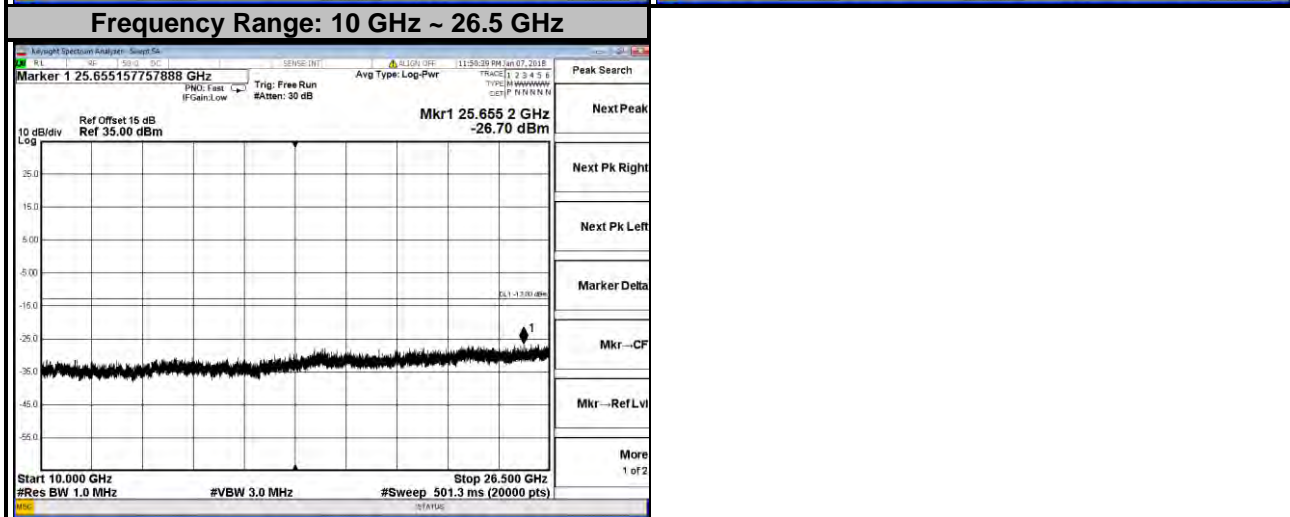
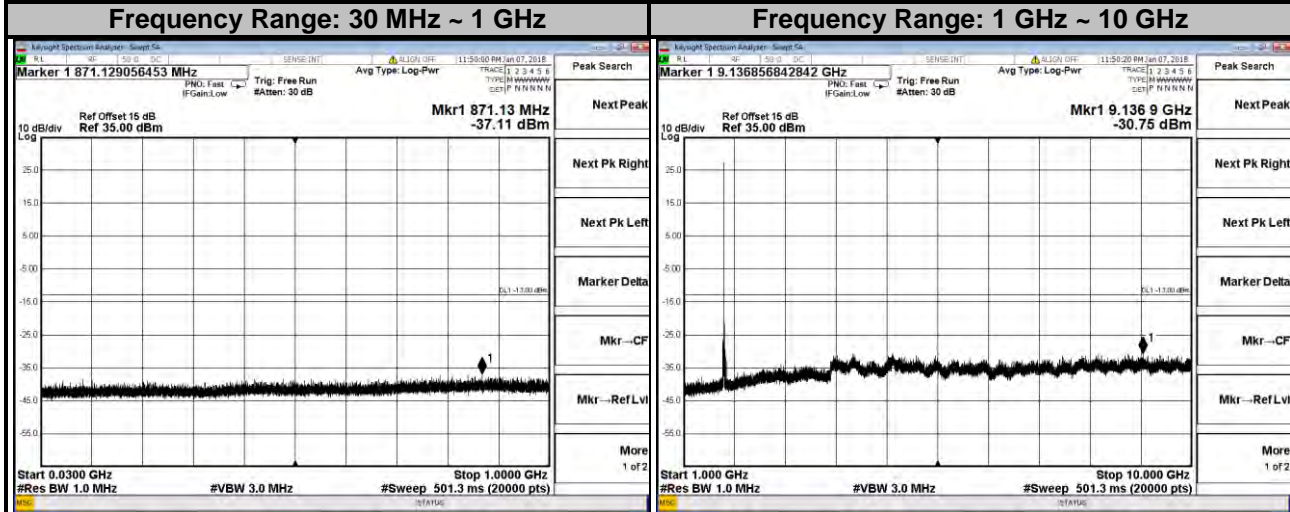
**LTE Band 66**  
**Channel Bandwidth: 15 MHz**  
**Channel 132322**



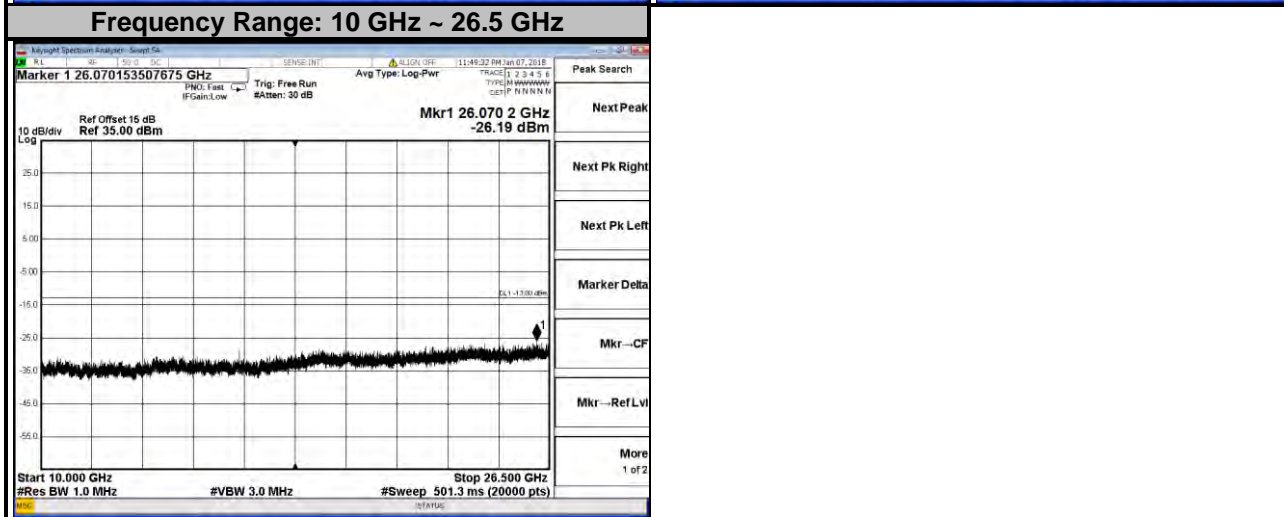
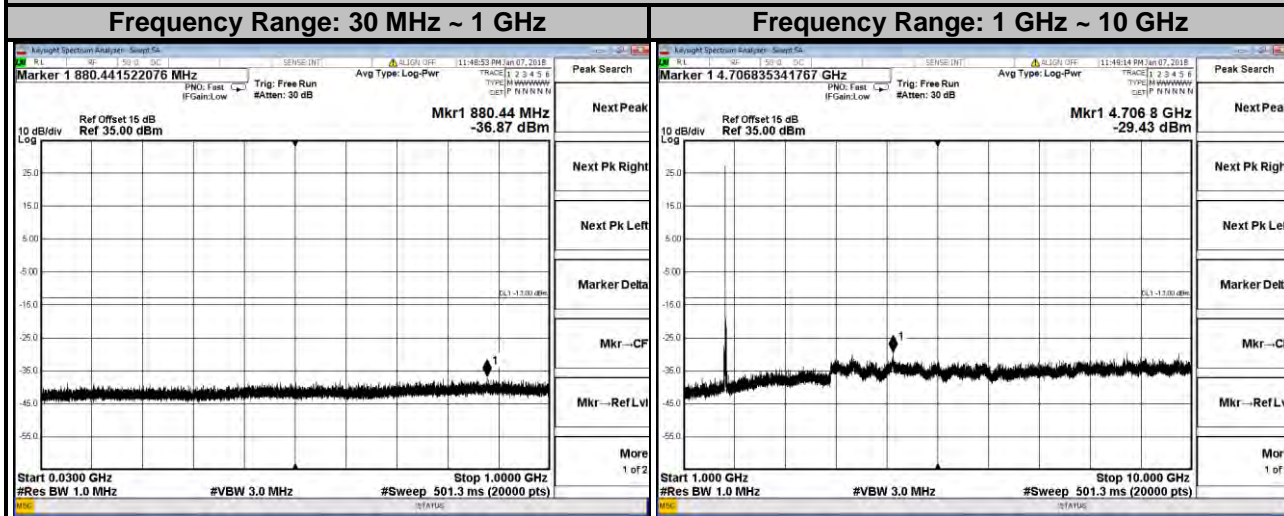
**LTE Band 66**  
**Channel Bandwidth: 15 MHz**  
**Channel 132597**



**LTE Band 66**  
**Channel Bandwidth: 20 MHz**  
**Channel 132072**

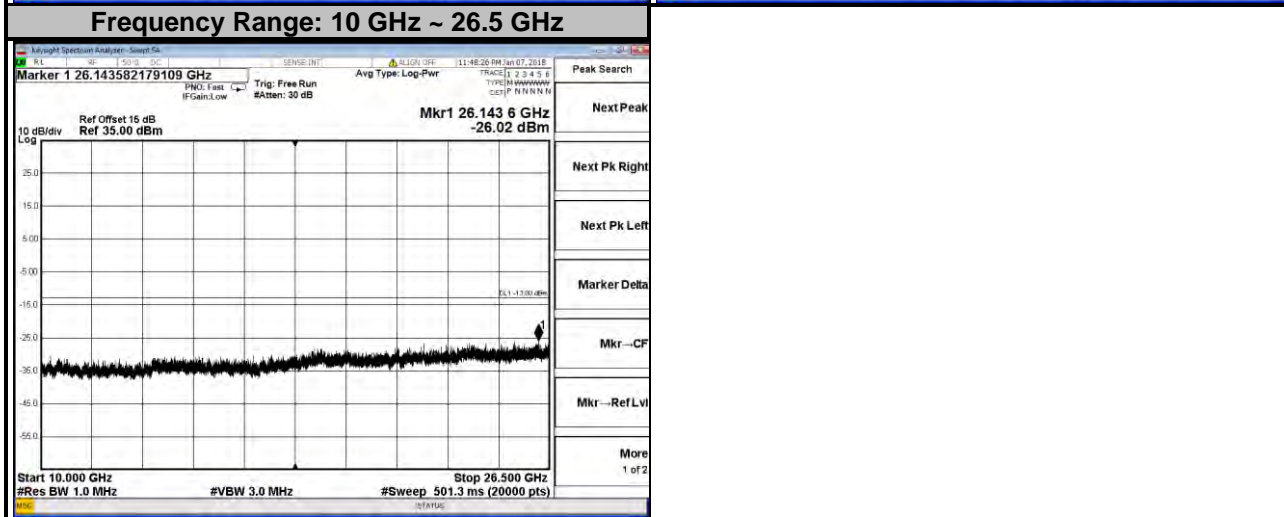
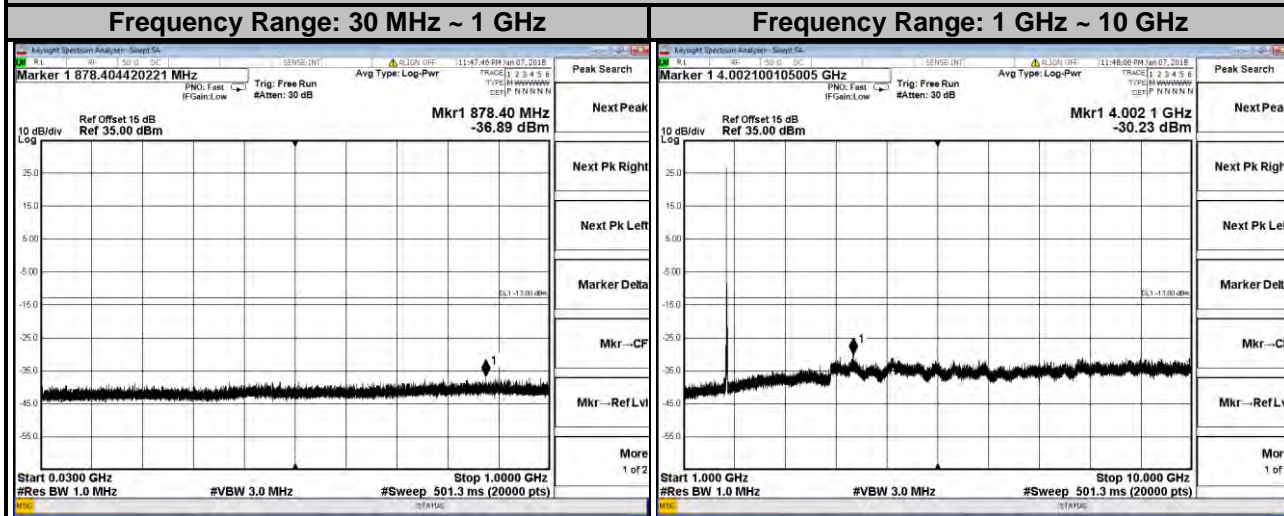


**LTE Band 66**  
**Channel Bandwidth: 20 MHz**  
**Channel 132322**





**LTE Band 66**  
**Channel Bandwidth: 20 MHz**  
**Channel 132572**



## 4.7 Radiated Emission Measurement

### 4.7.1 Limits of Radiated Emission Measurement

- a. The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB. The limit of emission is equal to -13 dBm.
- b. For operations in the 775-788 MHz, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz. The limit of emissions is equal to -40 dBm.

### 4.7.2 Test Procedure

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G.
- c.  $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$ .
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole,  $E.R.P \text{ power} = E.I.P.R \text{ power} - 2.15 \text{ dBi}$ .

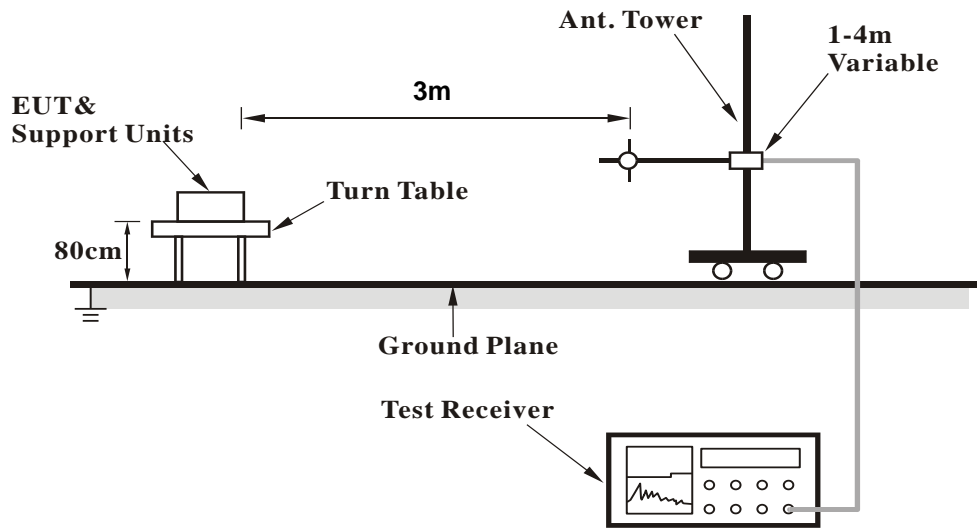
**Note:** The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

### 4.7.3 Deviation from Test Standard

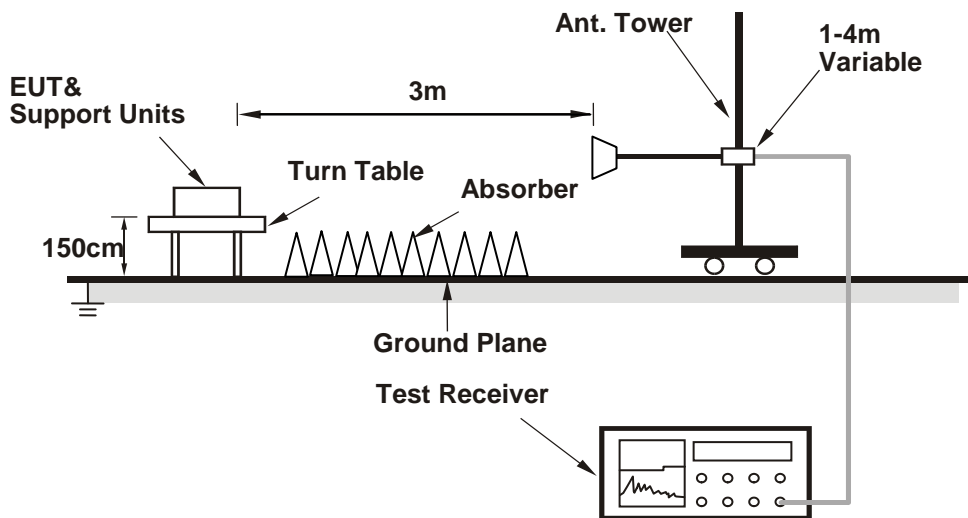
No deviation.

#### 4.7.4 Test Setup

##### <Radiated Emission below or equal 1 GHz>



##### <Radiated Emission above 1 GHz>



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.7.5 Test Results

WCDMA:  
Low Channel

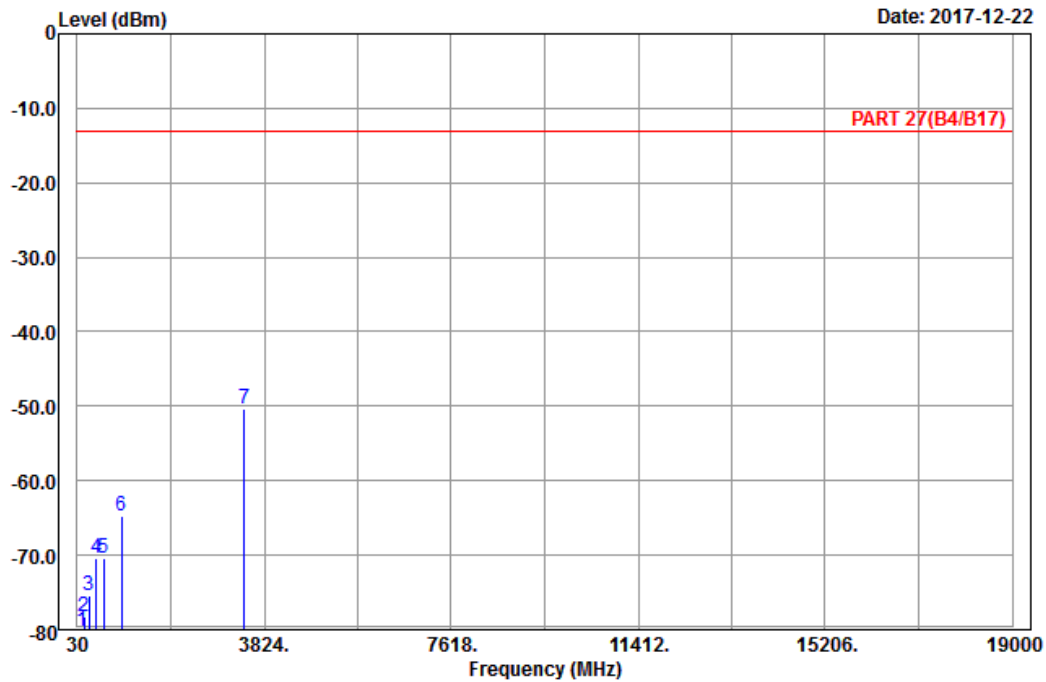


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 13

Date: 2017-12-22



Site : 966 chamber 1  
Condition: PART 27(B4/B17) Horizontal  
Remark : Band IV\_Link\_CH1312  
Tested by: Charles Hsiao

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	128.55	-80.21	-72.50	-13.00	-67.21	-7.71	Peak
2	168.78	-78.25	-71.45	-13.00	-65.25	-6.80	Peak
3	268.14	-75.34	-69.66	-13.00	-62.34	-5.68	Peak
4	422.50	-70.32	-67.07	-13.00	-57.32	-3.25	Peak
5	562.50	-70.32	-69.18	-13.00	-57.32	-1.14	Peak
6	928.60	-64.70	-68.85	-13.00	-51.70	4.15	Peak
7 pp	3424.80	-50.27	-64.64	-13.00	-37.27	14.37	Peak



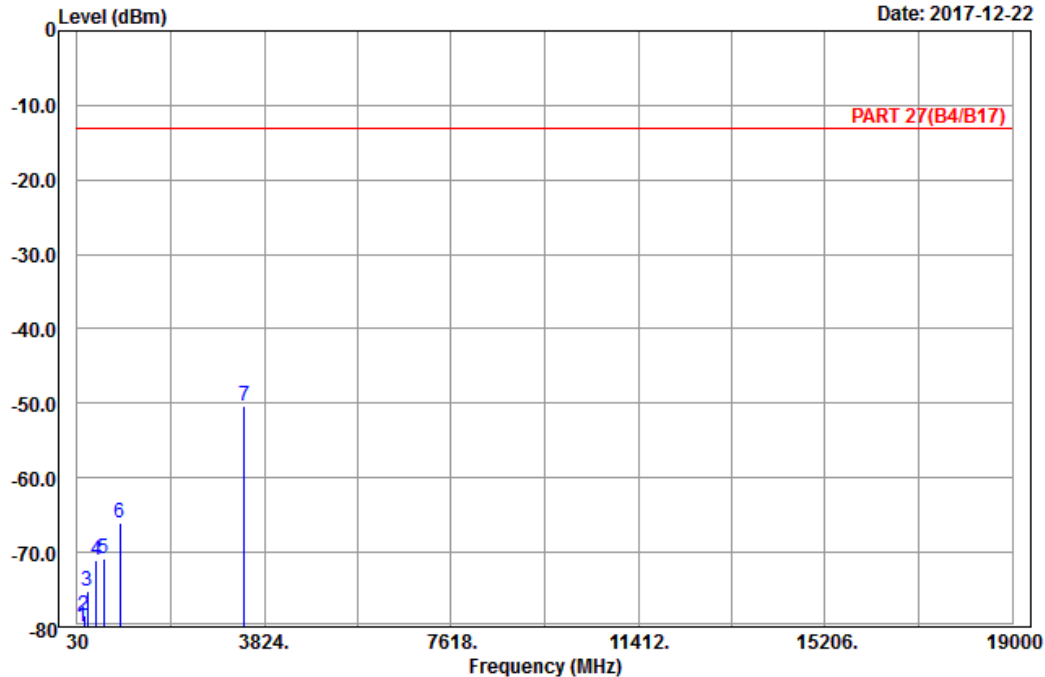


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A D T

Data: 14

Date: 2017-12-22



Site : 966 chamber 1  
 Condition: PART 27(B4/B17) Vertical  
 Remark : Band IV\_Link\_CH1312  
 Tested by: Charles Hsiao

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	128.55	-79.96	-72.25	-13.00	-66.96	-7.71	Peak
2	168.51	-78.43	-71.63	-13.00	-65.43	-6.80	Peak
3	236.82	-75.30	-69.61	-13.00	-62.30	-5.69	Peak
4	422.50	-71.00	-67.75	-13.00	-58.00	-3.25	Peak
5	563.90	-70.91	-69.81	-13.00	-57.91	-1.10	Peak
6	892.90	-66.02	-68.71	-13.00	-53.02	2.69	Peak
7 pp	3424.80	-50.26	-64.63	-13.00	-37.26	14.37	Peak

Middle Channel

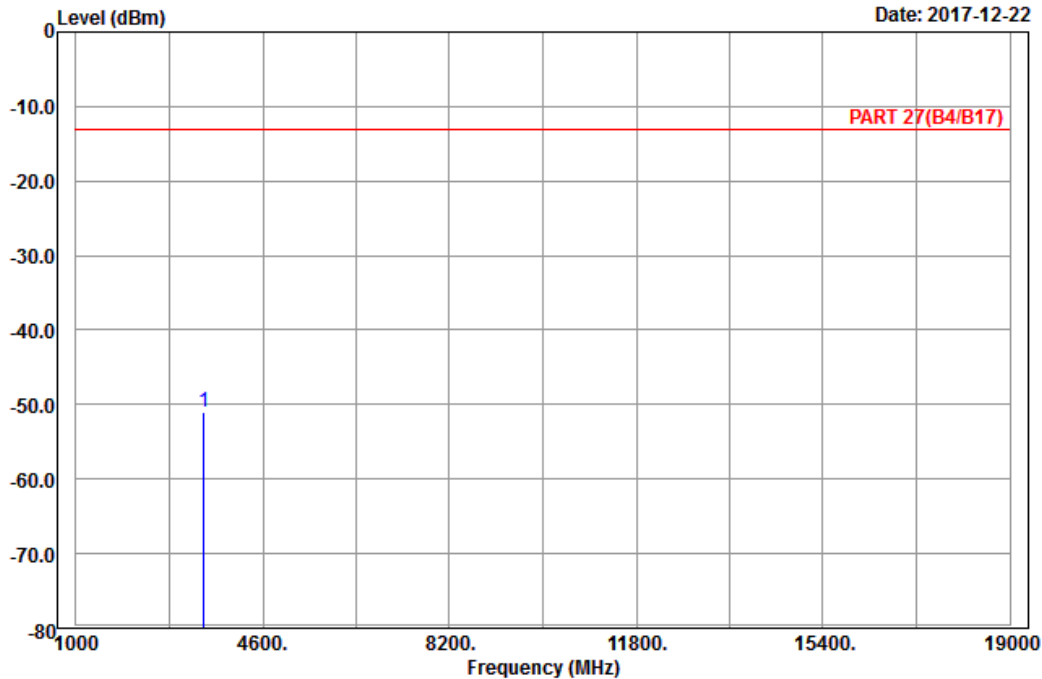


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 9

Date: 2017-12-22



Site : 966 chamber 1  
 Condition: PART 27(B4/B17) Horizontal  
 Remark : Band IV\_Link\_CH1413  
 Tested by: Charles Hsiao

Freq	Level	Read Level	Limit	Over	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 3465.20	-51.10	-65.44	-13.00	-38.10	14.34	Peak

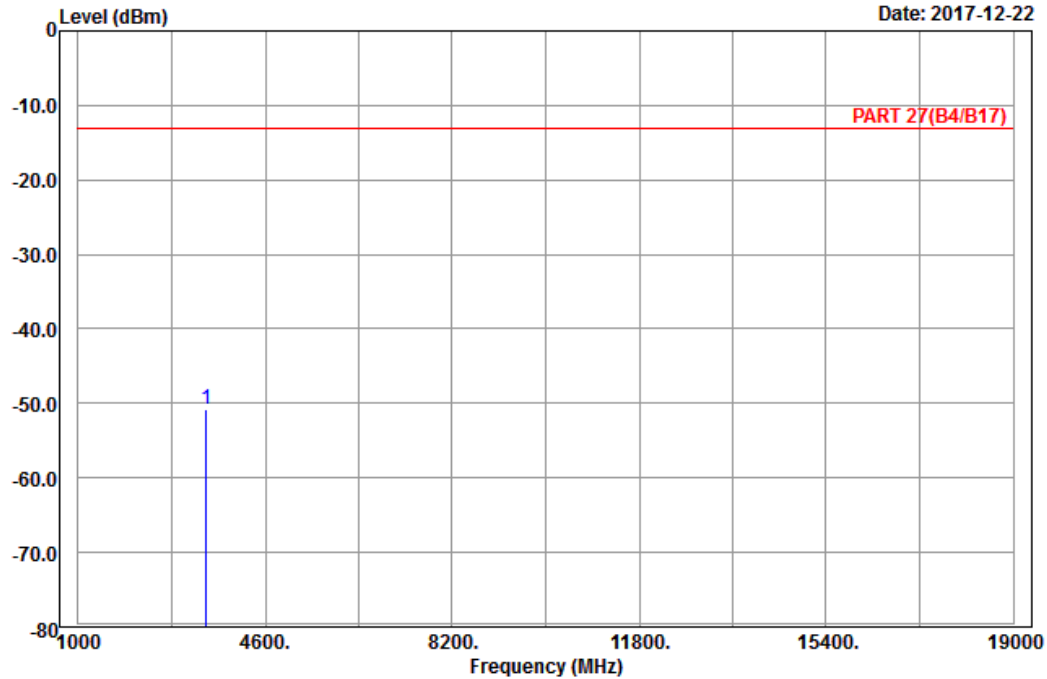


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 10

Date: 2017-12-22



Site : 966 chamber 1  
 Condition: PART 27(B4/B17) Vertical  
 Remark : Band IV\_Link\_CH1413  
 Tested by: Charles Hsiao

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	pp 3465.20	-50.88	-65.22	-13.00	-37.88	14.34	Peak

High Channel

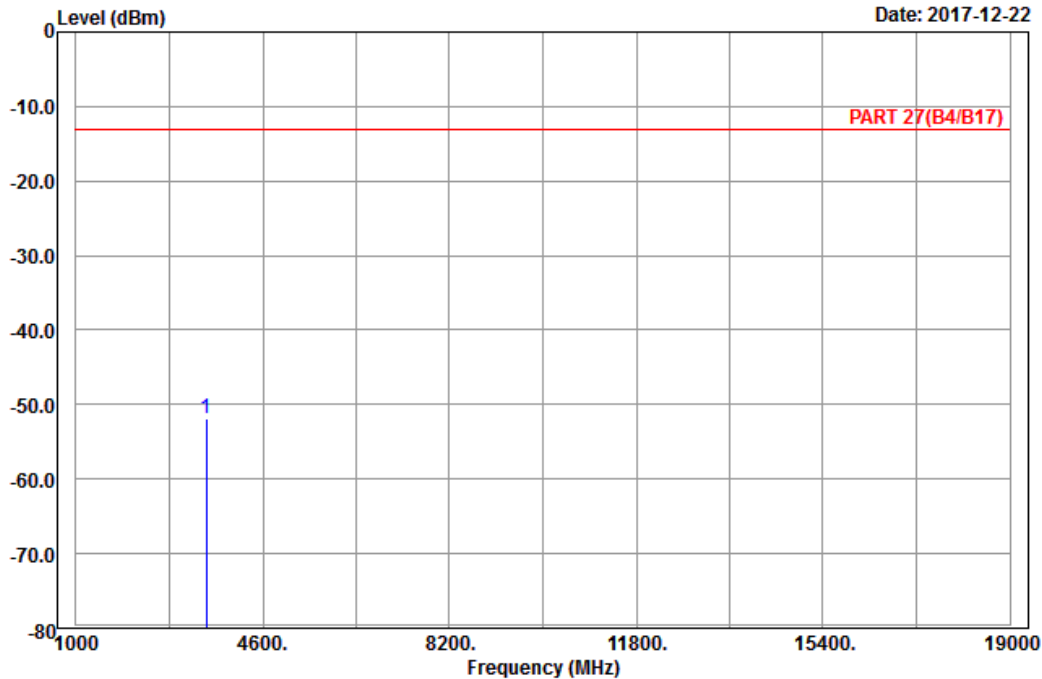


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 9

Date: 2017-12-22



Site : 966 chamber 1  
 Condition: PART 27(B4/B17) Horizontal  
 Remark : Band IV\_Link\_CH1513  
 Tested by: Charles Hsiao

Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 3505.20	-51.96	-66.24	-13.00	-38.96	14.28	Peak



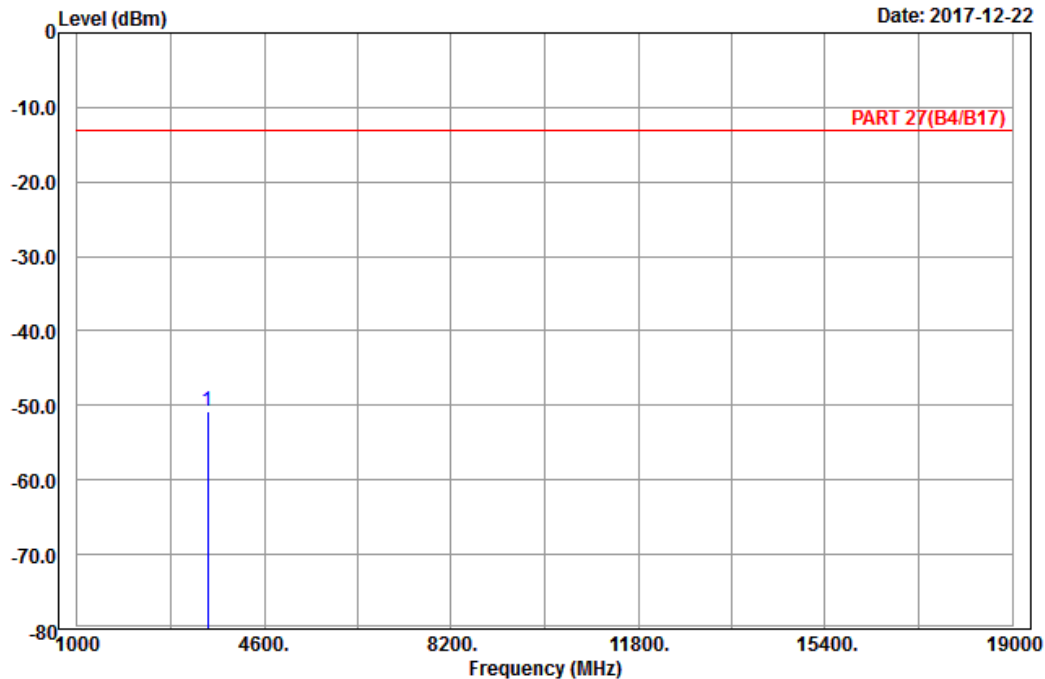


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 10

Date: 2017-12-22



Site : 966 chamber 1  
 Condition: PART 27(B4/B17) Vertical  
 Remark : Band IV\_Link\_CH1513  
 Tested by: Charles Hsiao

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	pp 3505.20	-50.81	-65.09	-13.00	-37.81	14.28	Peak

LTE Band 4  
 Channel Bandwidth: 20 MHz / QPSK  
 Low Channel

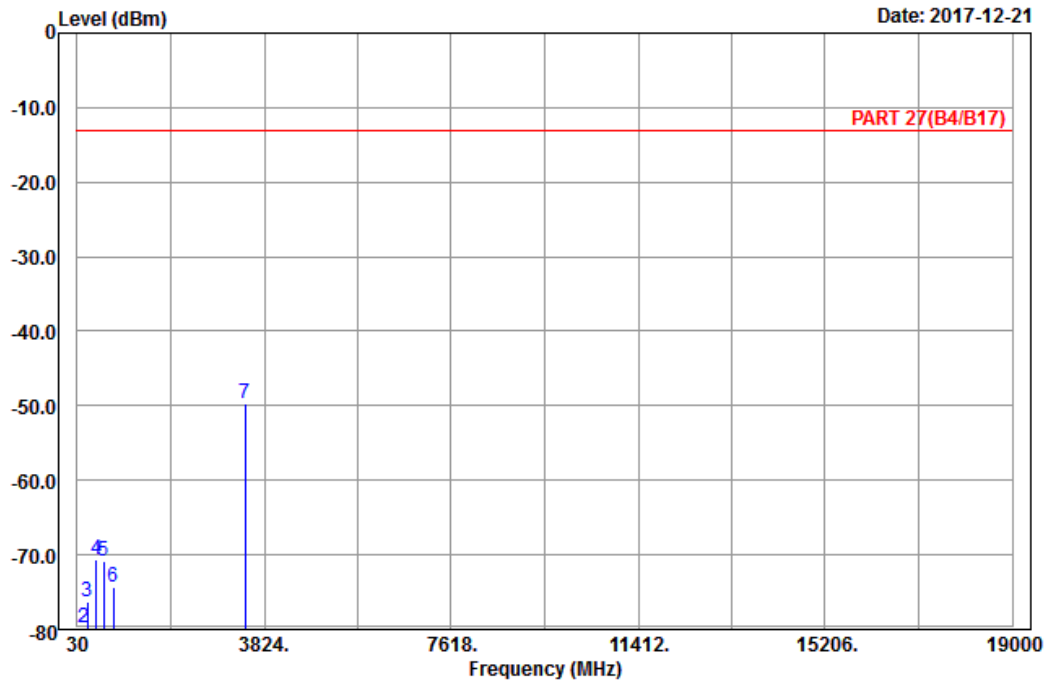


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 13

Date: 2017-12-21



Site : 966 chamber 1  
 Condition: PART 27(B4/B17) Horizontal  
 Remark : LTE\_Band 4\_Link\_CH20050  
 Tested by: Charles Hsiao

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	87.51	-83.57	-72.57	-13.00	-70.57	-11.00	Peak
2	160.14	-79.68	-72.01	-13.00	-66.68	-7.67	Peak
3	236.01	-76.23	-70.53	-13.00	-63.23	-5.70	Peak
4	416.20	-70.67	-67.57	-13.00	-57.67	-3.10	Peak
5	563.20	-70.76	-69.66	-13.00	-57.76	-1.10	Peak
6	760.60	-74.41	-73.80	-13.00	-61.41	-0.61	Peak
7 pp	3440.00	-49.73	-64.08	-13.00	-36.73	14.35	Peak

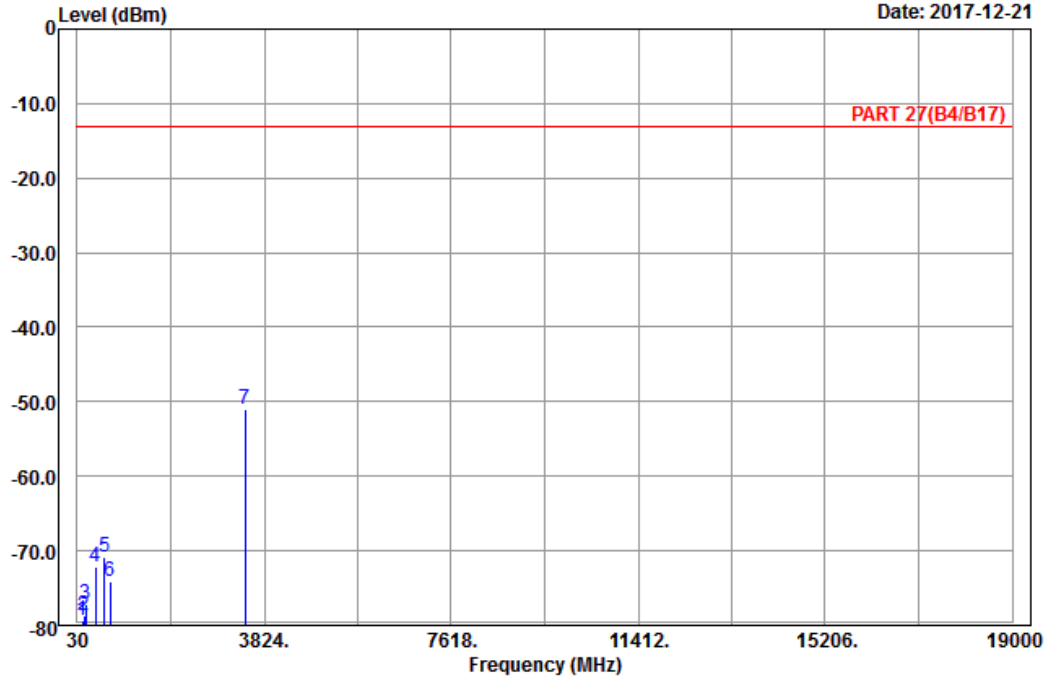


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 14

Date: 2017-12-21



Site : 966 chamber 1  
 Condition: PART 27(B4/B17) Vertical  
 Remark : LTE\_Band 4\_Link\_CH20050  
 Tested by: Charles Hsiao

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	131.25	-79.37	-71.72	-13.00	-66.37	-7.65	Peak
2	168.78	-78.70	-71.90	-13.00	-65.70	-6.80	Peak
3	201.99	-77.24	-71.08	-13.00	-64.24	-6.16	Peak
4	402.90	-72.18	-69.38	-13.00	-59.18	-2.80	Peak
5	576.50	-70.90	-70.32	-13.00	-57.90	-0.58	Peak
6	705.30	-74.22	-73.75	-13.00	-61.22	-0.47	Peak
7 pp	3440.00	-51.11	-65.46	-13.00	-38.11	14.35	Peak

Middle Channel

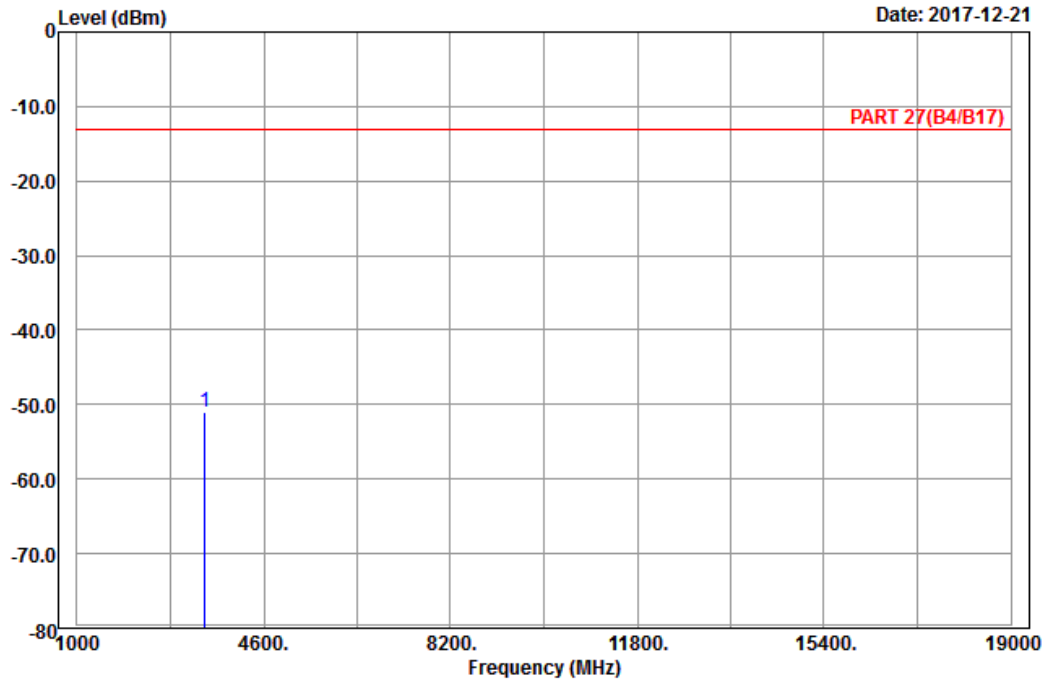


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 9

Date: 2017-12-21



Site : 966 chamber 1  
 Condition: PART 27(B4/B17) Horizontal  
 Remark : LTE\_Band 4\_Link\_CH20175  
 Tested by: Charles Hsiao

Freq	Level	Read Level	Limit	Over	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 3465.00	-51.00	-65.34	-13.00	-38.00	14.34	Peak

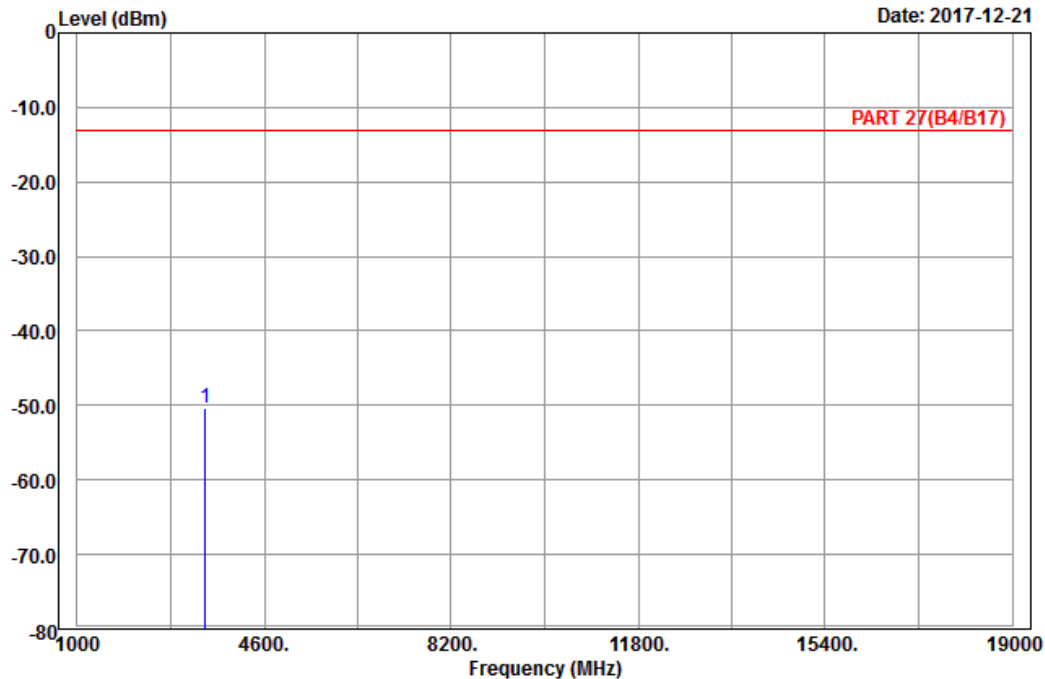




A D T

Data: 10

Date: 2017-12-21



Site : 966 chamber 1  
 Condition: PART 27(B4/B17) Vertical  
 Remark : LTE\_Band 4\_Link\_CH20175  
 Tested by: Charles Hsiao

	Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 3465.00	-50.32	-64.66	-13.00	-37.32	14.34	Peak

# High Channel

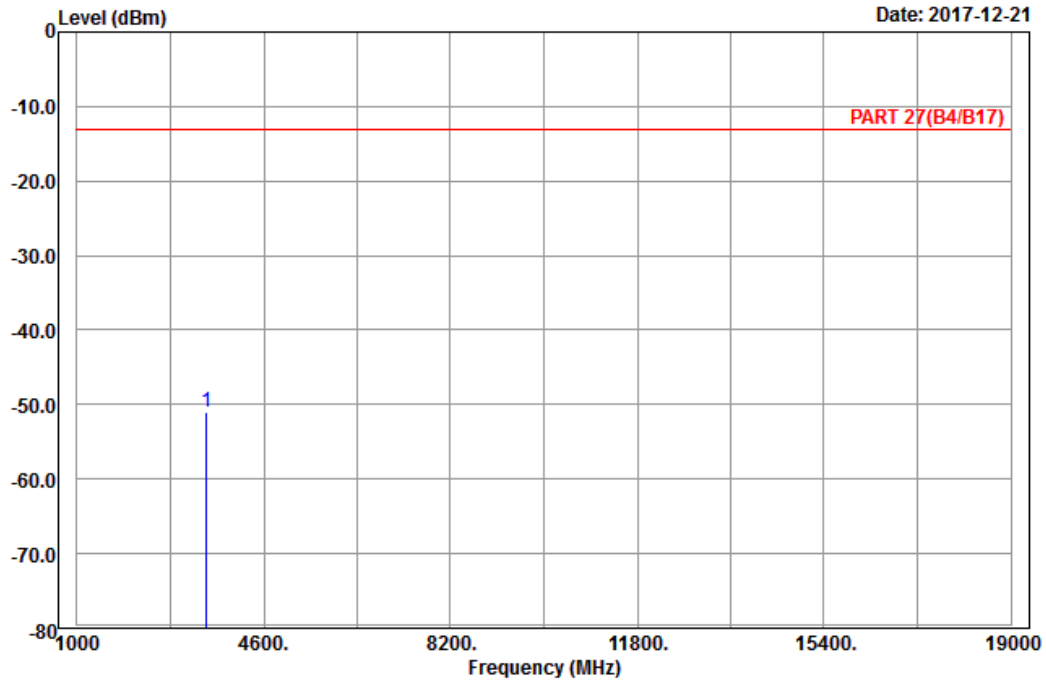


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 9

Date: 2017-12-21



Site : 966 chamber 1  
 Condition: PART 27(B4/B17) Horizontal  
 Remark : LTE\_Band 4\_Link\_CH20300  
 Tested by: Charles Hsiao

Freq	Level	Read Level	Limit	Over	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 3490.00	-51.07	-65.38	-13.00	-38.07	14.31	Peak

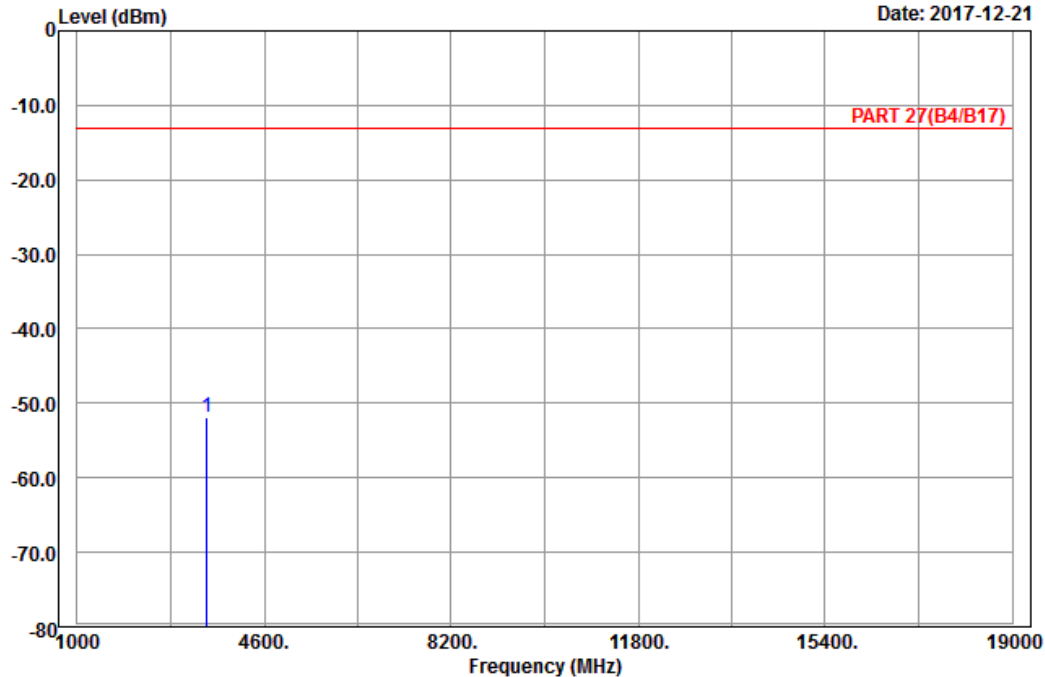


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 10

Date: 2017-12-21



Site : 966 chamber 1  
 Condition: PART 27(B4/B17) Vertical  
 Remark : LTE\_Band 4\_Link\_CH20300  
 Tested by: Charles Hsiao

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	pp 3490.00	-51.79	-66.10	-13.00	-38.79	14.31	Peak

LTE Band 12  
 Channel Bandwidth: 10 MHz / QPSK  
 Low Channel

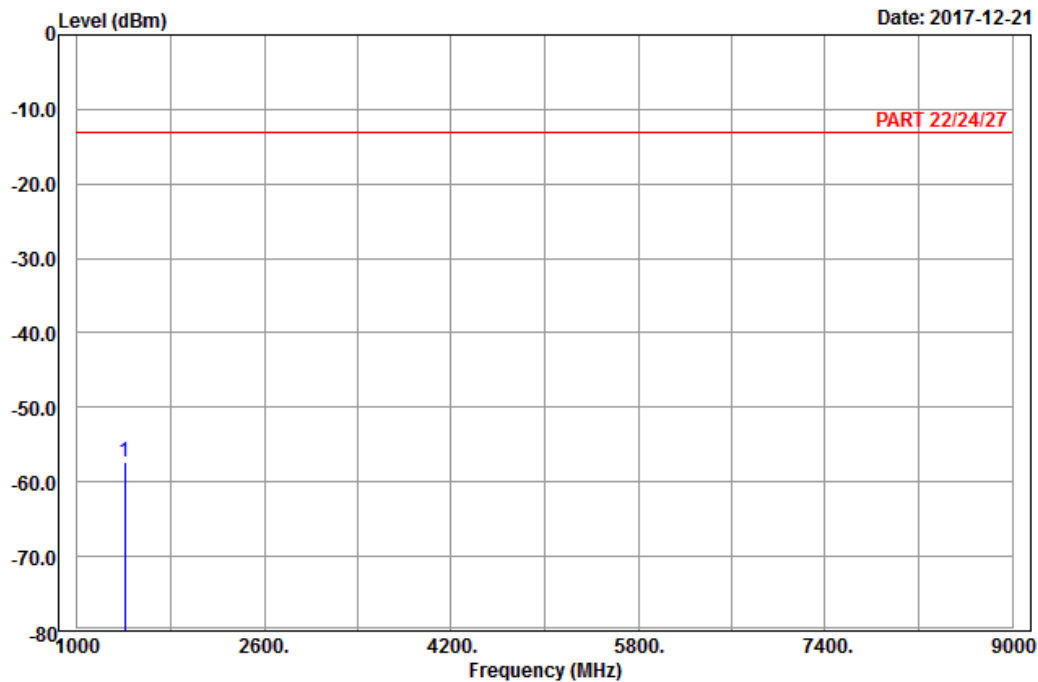


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5

Date: 2017-12-21



Site : 966 chamber 1  
 Condition: PART 22/24/27 Horizontal  
 Remark : LTE\_Band 12\_Link\_CH23060  
 Tested by: Charles Hsiao

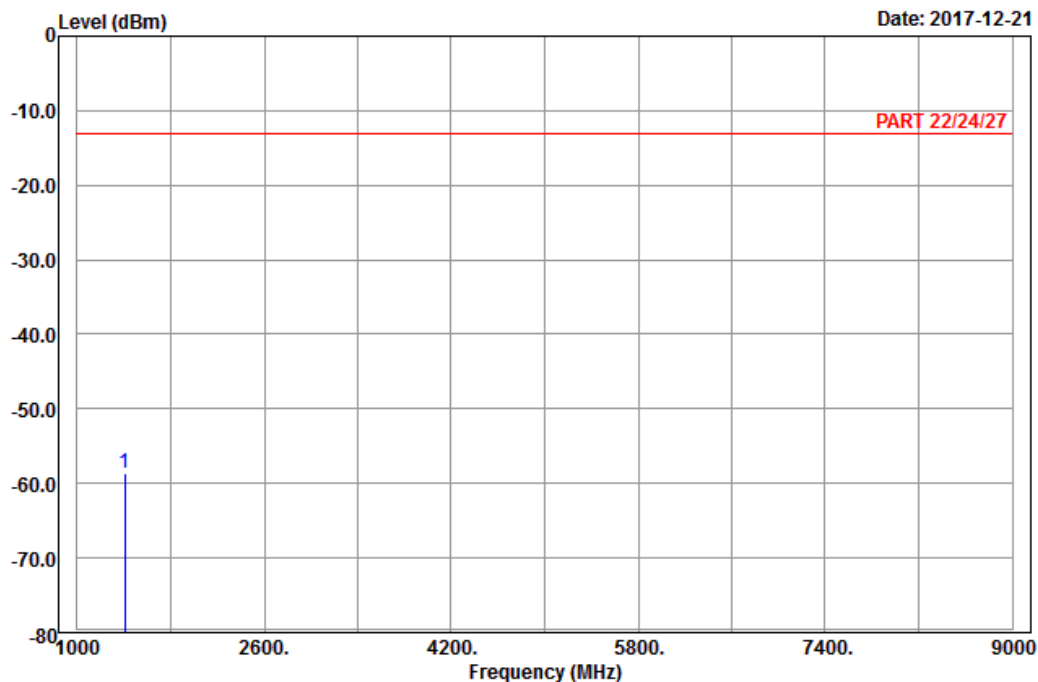
	Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1408.00	-57.36	-63.72	-13.00	-44.36	6.36	Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6



Site : 966 chamber 1  
 Condition: PART 22/24/27 Vertical  
 Remark : LTE\_Band 12\_Link\_CH23060  
 Tested by: Charles Hsiao

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	pp 1408.00	-58.61	-64.97	-13.00	-45.61	6.36	Peak



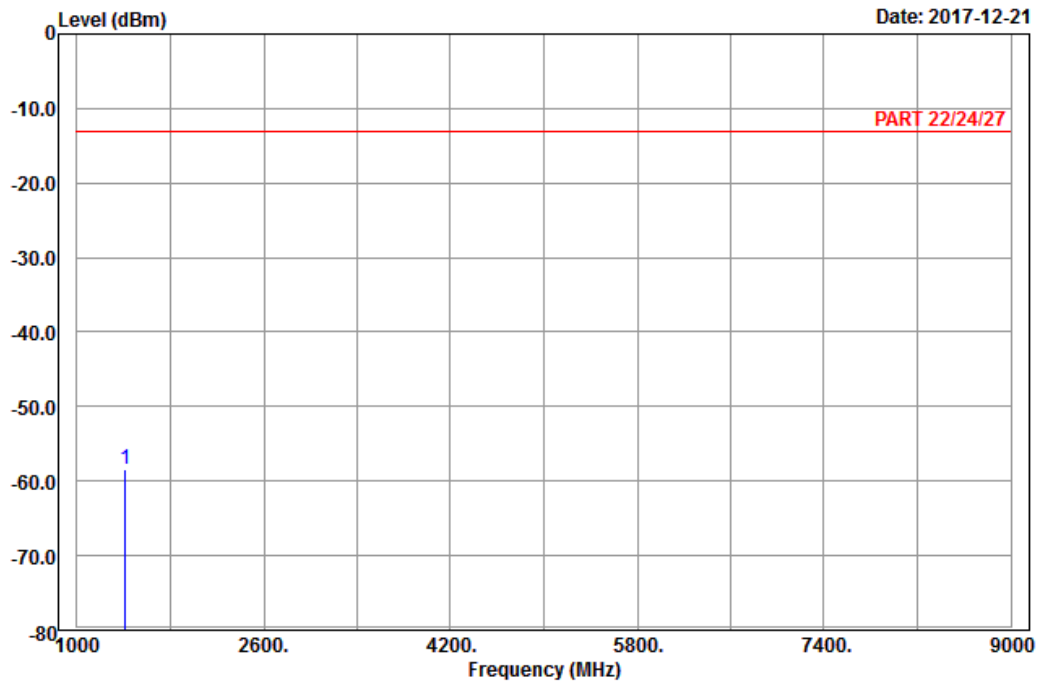
Middle Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5



Site : 966 chamber 1  
 Condition: PART 22/24/27 Horizontal  
 Remark : LTE\_Band 12\_Link\_CH23095  
 Tested by: Charles Hsiao

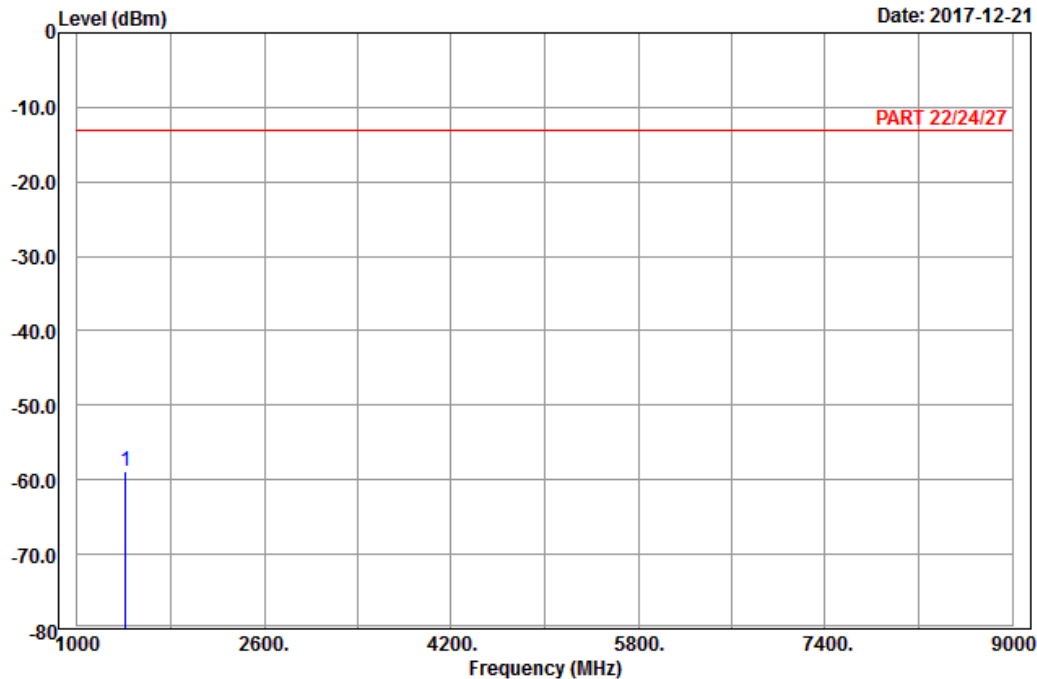
	Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1415.00	-58.46	-64.82	-13.00	-45.46	6.36	Peak



A D T

Data: 6

Date: 2017-12-21



Site : 966 chamber 1  
 Condition: PART 22/24/27 Vertical  
 Remark : LTE\_Band 12\_Link\_CH23095  
 Tested by: Charles Hsiao

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	pp 1415.00	-58.86	-65.22	-13.00	-45.86	6.36	Peak

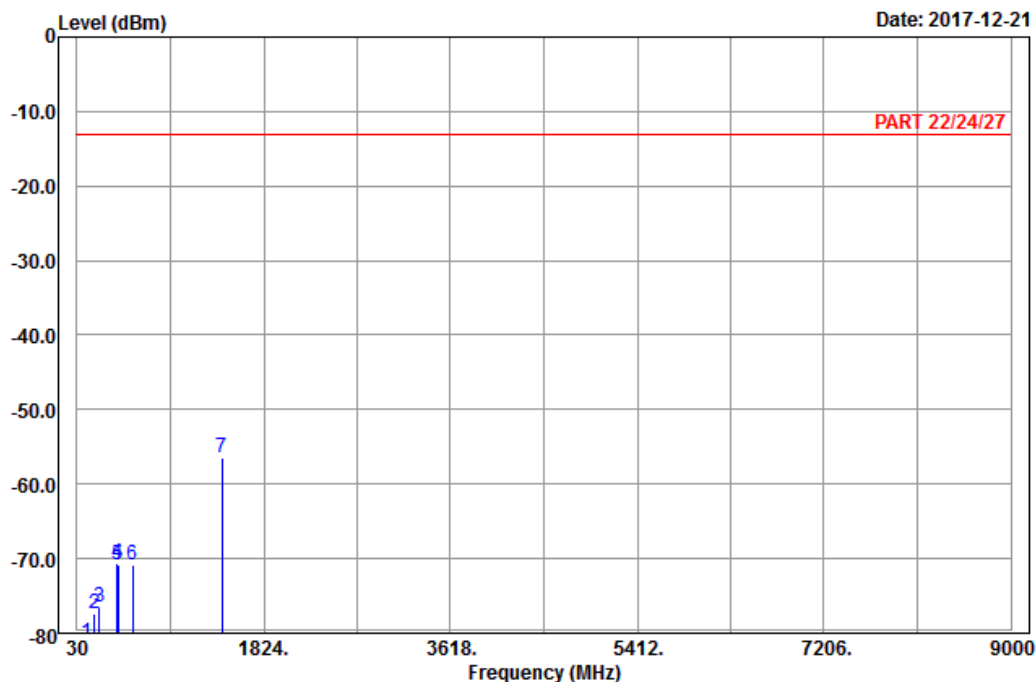
## High Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 9



Site : 966 chamber 1  
 Condition: PART 22/24/27 Horizontal  
 Remark : LTE\_Band 12\_Link\_CH23130  
 Tested by: Charles Hsiao

	Read	Limit	Over				
Freq	Level	Level	Line	Limit	Factor	Remark	
MHz	dBm	dBm	dBm	dB	dB		
1	120.99	-81.30	-73.11	-13.00	-68.30	-8.19	Peak
2	196.59	-77.31	-71.26	-13.00	-64.31	-6.05	Peak
3	241.41	-76.42	-70.80	-13.00	-63.42	-5.62	Peak
4	413.40	-70.74	-67.70	-13.00	-57.74	-3.04	Peak
5	426.00	-70.77	-67.46	-13.00	-57.77	-3.31	Peak
6	565.30	-70.83	-69.81	-13.00	-57.83	-1.02	Peak
7 pp	1422.00	-56.56	-62.92	-13.00	-43.56	6.36	Peak

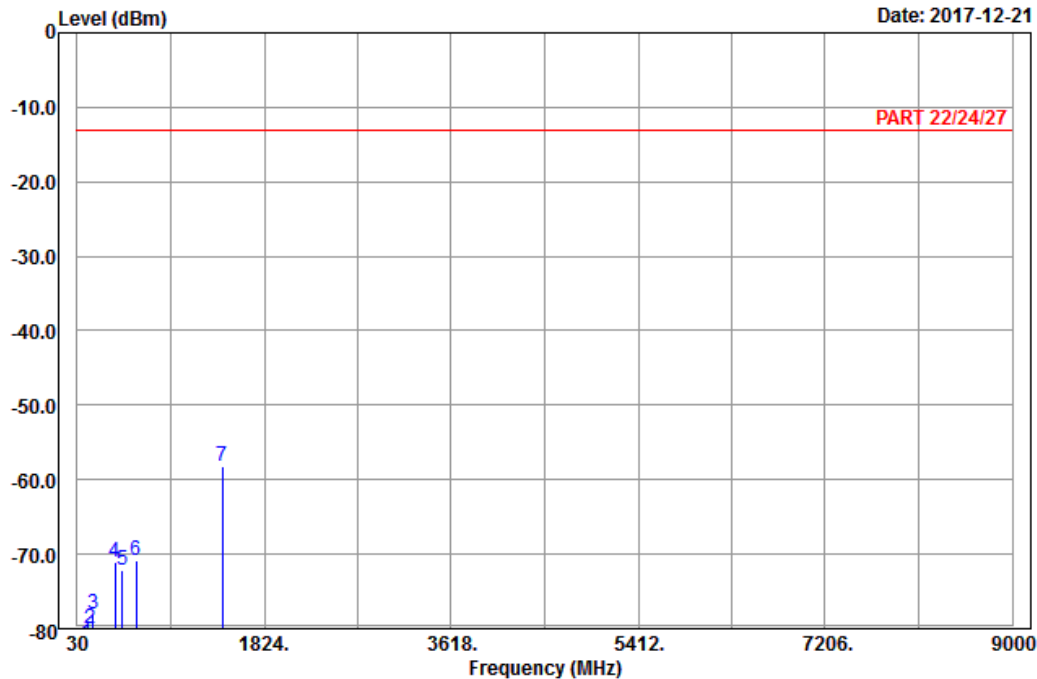


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 10

Date: 2017-12-21



Site : 966 chamber 1  
 Condition: PART 22/24/27 Vertical  
 Remark : LTE\_Band 12\_Link\_CH23130  
 Tested by: Charles Hsiao

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	116.67	-81.98	-73.47	-13.00	-68.98	-8.51	Peak
2	154.74	-80.04	-72.23	-13.00	-67.04	-7.81	Peak
3	185.25	-77.99	-72.34	-13.00	-64.99	-5.65	Peak
4	393.80	-71.01	-67.96	-13.00	-58.01	-3.05	Peak
5	459.60	-72.25	-68.13	-13.00	-59.25	-4.12	Peak
6	598.90	-70.83	-71.18	-13.00	-57.83	0.35	Peak
7 pp	1422.00	-58.28	-64.64	-13.00	-45.28	6.36	Peak

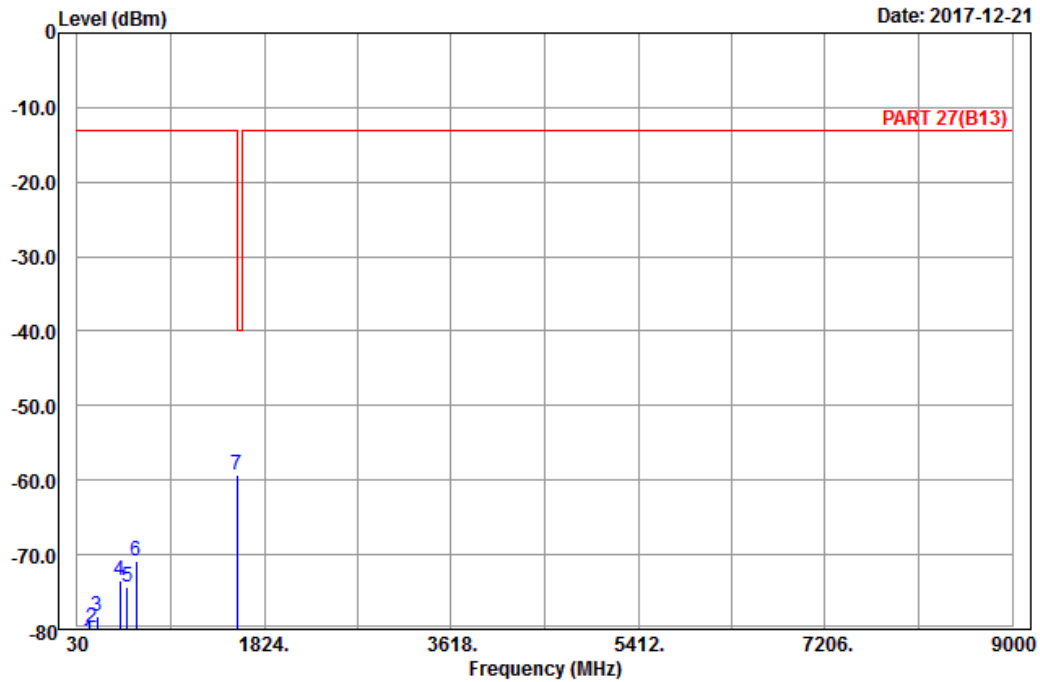
LTE Band 13  
Channel Bandwidth: 10 MHz / QPSK



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 9



Site : 966 chamber 1  
Condition: PART 27(B13) Horizontal  
Remark : LTE\_Band 13\_Link\_CH23230  
Tested by: Charles Hsiao

	Read	Limit	Over				
Freq	Level	Level	Line	Limit	Factor	Remark	
MHz	dBm	dBm	dBm	dB	dB		
1	132.87	-81.47	-73.81	-13.00	-68.47	-7.66	Peak
2	177.15	-79.84	-73.96	-13.00	-66.84	-5.88	Peak
3	224.13	-78.25	-72.39	-13.00	-65.25	-5.86	Peak
4	439.30	-73.46	-69.85	-13.00	-60.46	-3.61	Peak
5	505.80	-74.30	-69.44	-13.00	-61.30	-4.86	Peak
6	598.20	-70.88	-71.23	-13.00	-57.88	0.35	Peak
7 pp	1564.00	-59.24	-66.10	-40.00	-19.24	6.86	Peak



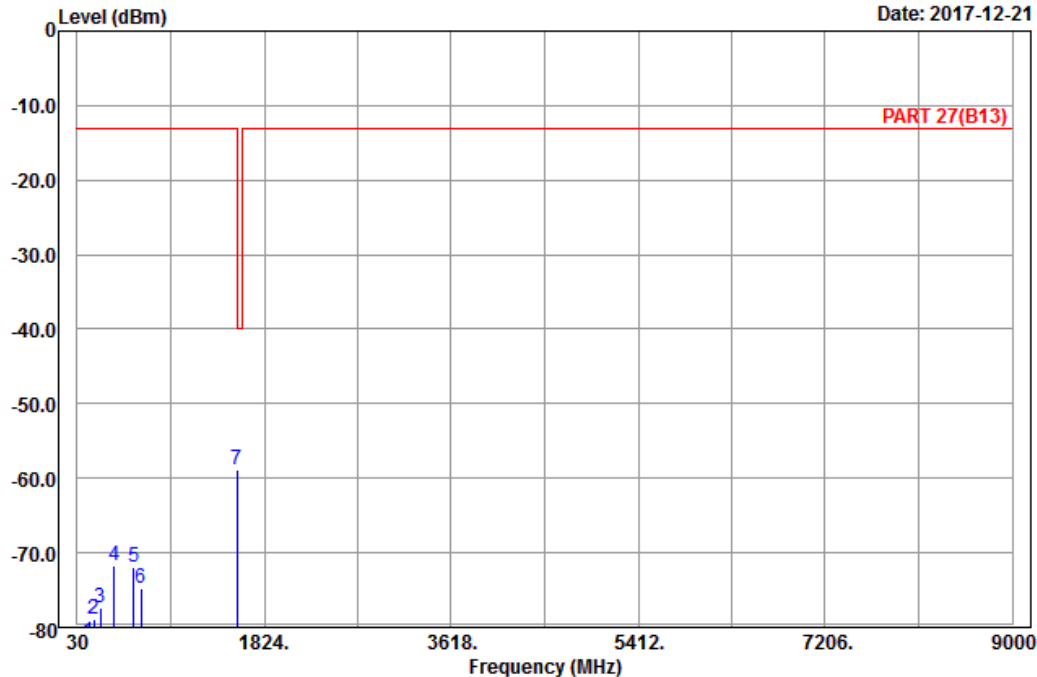


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 10

Date: 2017-12-21



Site : 966 chamber 1  
 Condition: PART 27(B13) Vertical  
 Remark : LTE\_Band 13\_Link\_CH23230  
 Tested by: Charles Hsiao

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	141.78	-81.95	-74.21	-13.00	-68.95	-7.74	Peak
2	186.06	-78.98	-73.31	-13.00	-65.98	-5.67	Peak
3	255.18	-77.45	-71.90	-13.00	-64.45	-5.55	Peak
4	381.20	-71.80	-68.08	-13.00	-58.80	-3.72	Peak
5	570.20	-71.83	-71.01	-13.00	-58.83	-0.82	Peak
6	640.20	-74.75	-74.73	-13.00	-61.75	-0.02	Peak
7 pp	1564.00	-58.83	-65.69	-40.00	-18.83	6.86	Peak

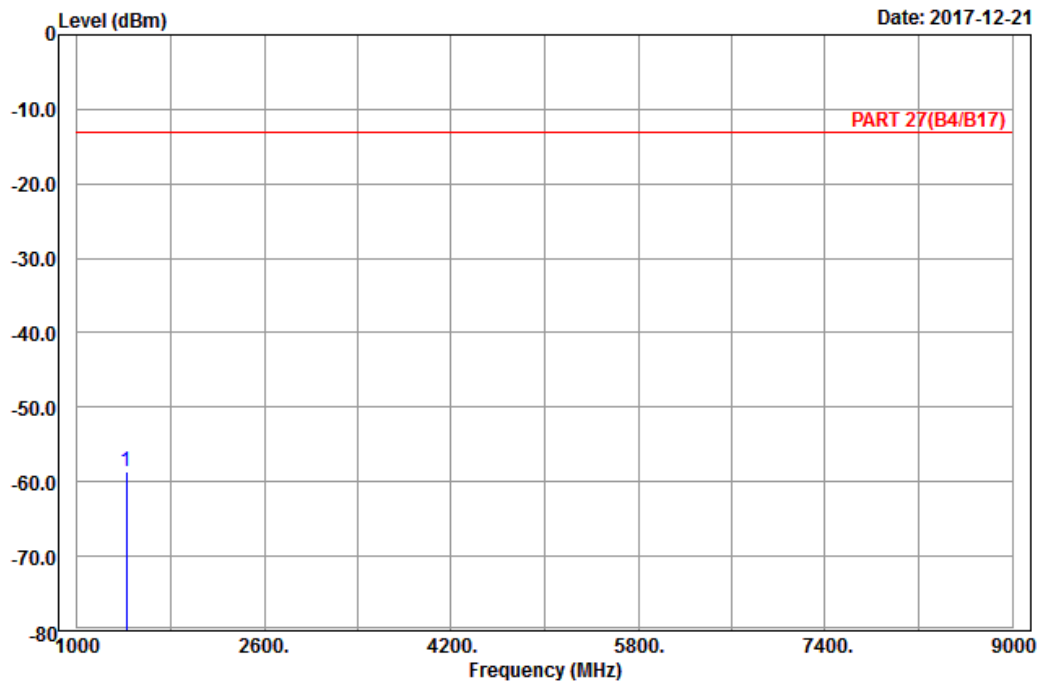
LTE Band 17  
Channel Bandwidth: 10 MHz / QPSK  
Low Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5



Site : 966 chamber 1  
Condition: PART 27(B4/B17) Horizontal  
Remark : LTE\_Band 17\_Link\_CH23780  
Tested by: Karl Lee

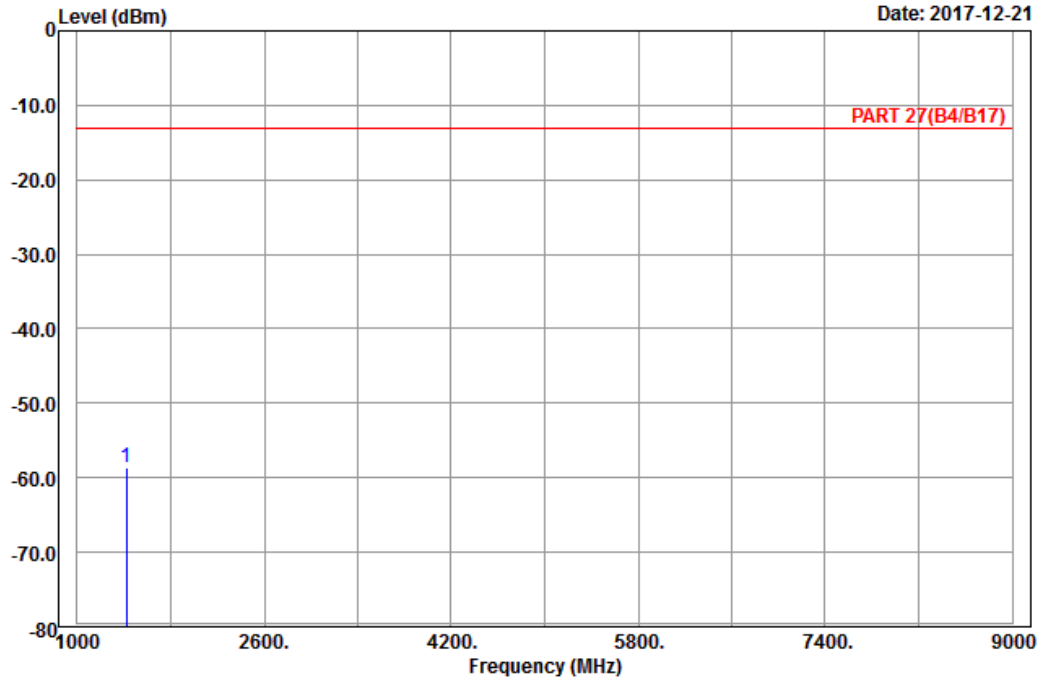
	Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1418.00	-58.61	-64.97	-13.00	-45.61	6.36	Peak



A D T

Data: 6

Date: 2017-12-21



Site : 966 chamber 1  
 Condition: PART 27(B4/B17) Vertical  
 Remark : LTE\_Band 17\_Link\_CH23780  
 Tested by: Karl Lee

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	pp 1418.00	-58.57	-64.93	-13.00	-45.57	6.36	Peak

Middle Channel

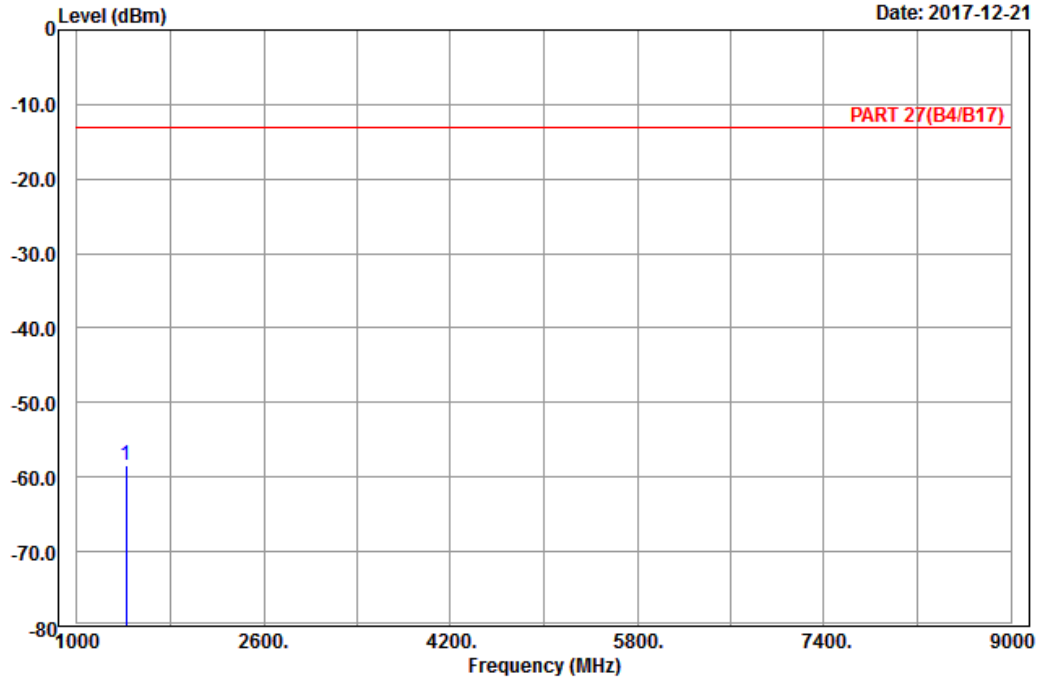


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5

Date: 2017-12-21



Site : 966 chamber 1  
 Condition: PART 27(B4/B17) Horizontal  
 Remark : LTE\_Band 17\_Link\_CH23790  
 Tested by: Harry Hsueh

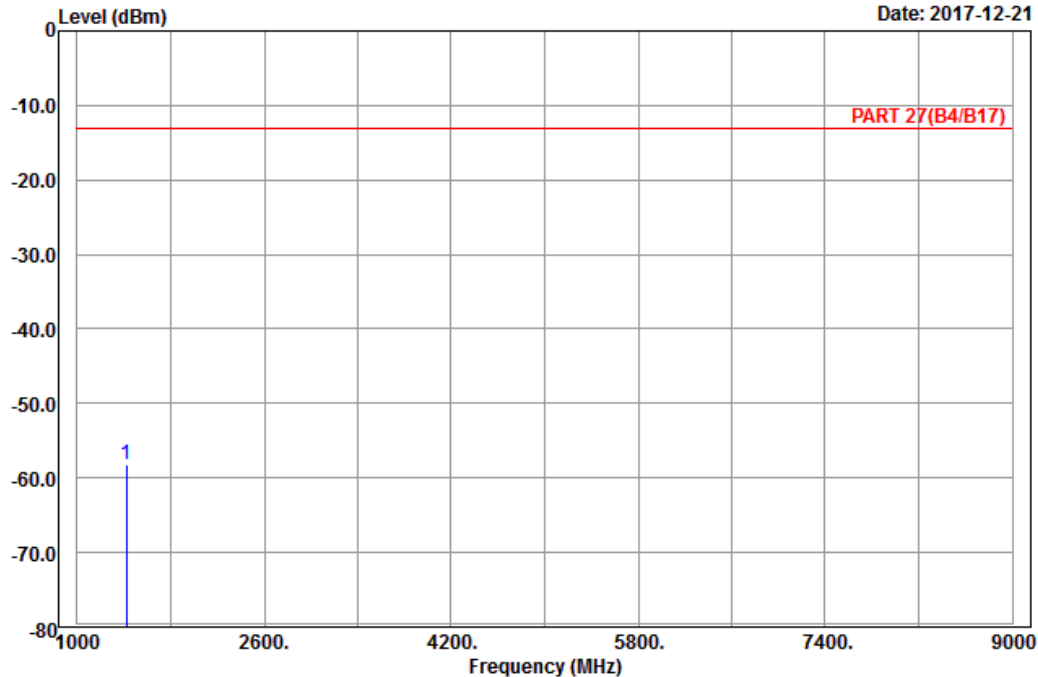
	Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1420.00	-58.46	-64.82	-13.00	-45.46	6.36	Peak



A D T

Data: 6

Date: 2017-12-21



Site : 966 chamber 1  
 Condition: PART 27(B4/B17) Vertical  
 Remark : LTE\_Band 17\_Link\_CH23790  
 Tested by: Harry Hsueh

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	pp 1420.00	-58.20	-64.56	-13.00	-45.20	6.36	Peak



High Channel

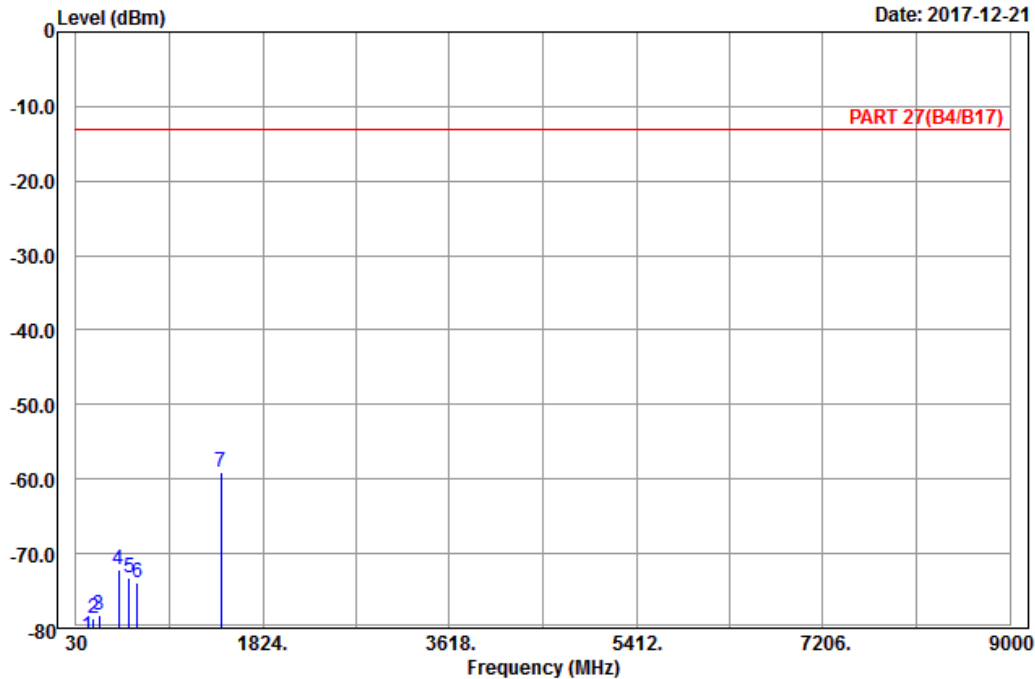


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 9

Date: 2017-12-21



Site : 966 chamber 1  
 Condition: PART 27(B4/B17) Horizontal  
 Remark : LTE\_Band 17\_Link\_CH23800  
 Tested by: Karl Lee

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	131.52	-81.16	-73.50	-13.00	-68.16	-7.66	Peak
2	196.86	-78.58	-72.53	-13.00	-65.58	-6.05	Peak
3	250.32	-78.27	-72.76	-13.00	-65.27	-5.51	Peak
4	442.80	-72.25	-68.55	-13.00	-59.25	-3.70	Peak
5	538.00	-73.16	-70.65	-13.00	-60.16	-2.51	Peak
6	622.70	-73.94	-74.11	-13.00	-60.94	0.17	Peak
7 pp	1422.00	-59.07	-65.43	-13.00	-46.07	6.36	Peak

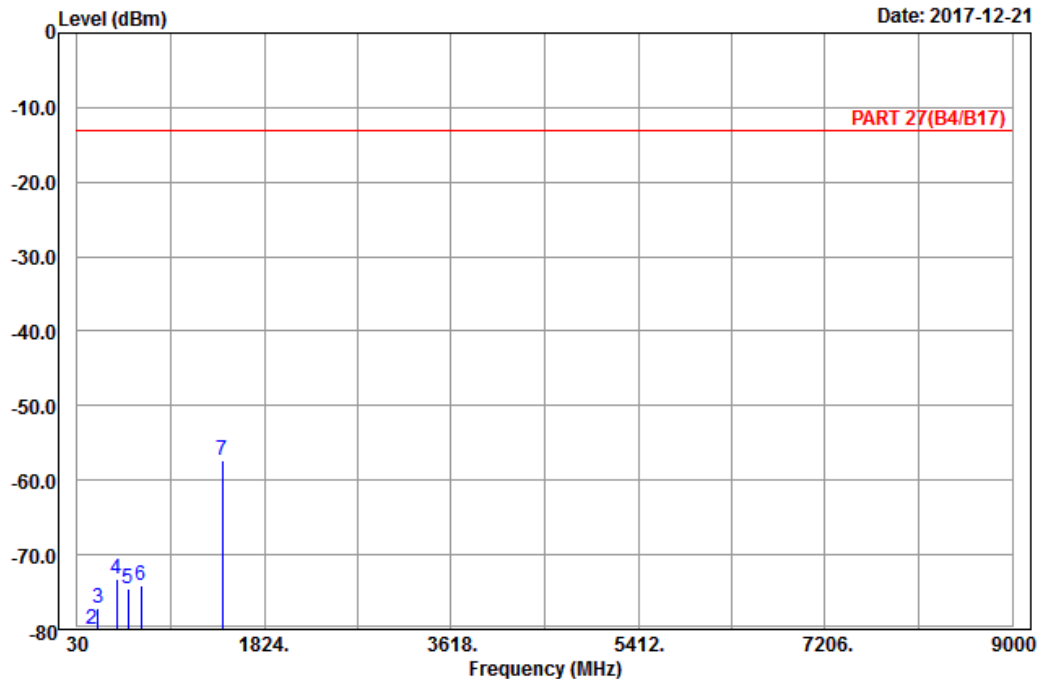


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 10

Date: 2017-12-21



Site : 966 chamber 1  
 Condition: PART 27(B4/B17) Vertical  
 Remark : LTE\_Band 17\_Link\_CH23800  
 Tested by: Karl Lee

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	96.15	-84.38	-74.04	-13.00	-71.38	-10.34	Peak
2	169.86	-79.91	-73.20	-13.00	-66.91	-6.71	Peak
3	230.61	-77.23	-71.46	-13.00	-64.23	-5.77	Peak
4	405.00	-73.15	-70.28	-13.00	-60.15	-2.87	Peak
5	514.20	-74.64	-70.35	-13.00	-61.64	-4.29	Peak
6	640.20	-74.22	-74.20	-13.00	-61.22	-0.02	Peak
7 pp	1422.00	-57.38	-63.74	-13.00	-44.38	6.36	Peak

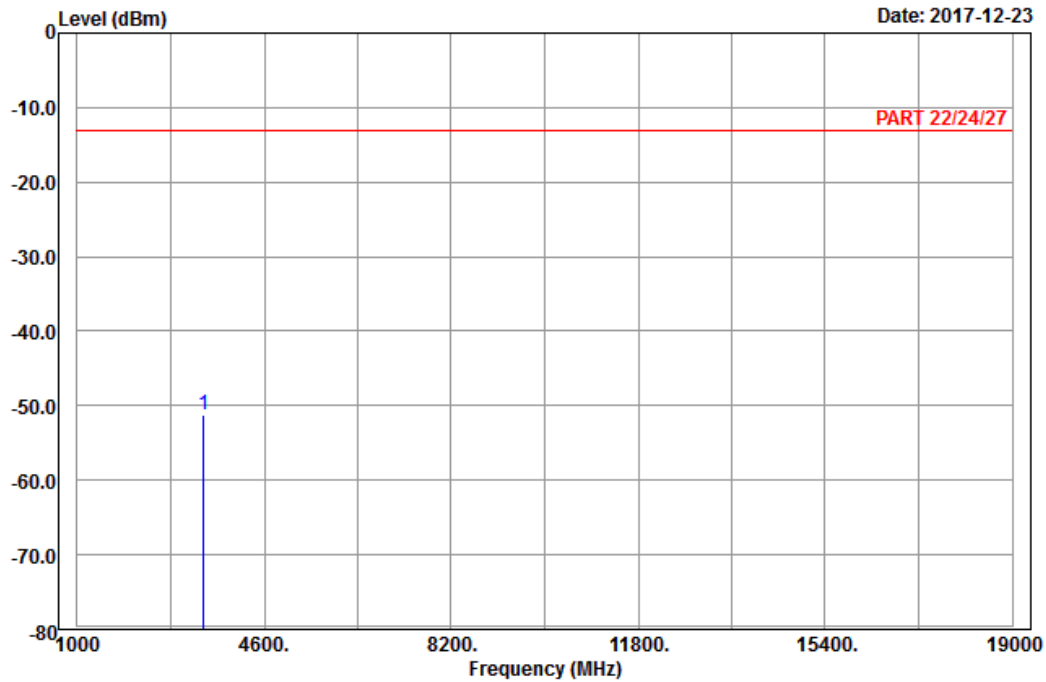
LTE Band 66:  
Low Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 9



Site : 966 chamber 1  
Condition: PART 22/24/27 Horizontal  
Remark : LTE\_Band 66\_Link\_CH132072  
Tested by: Charles Hsiao

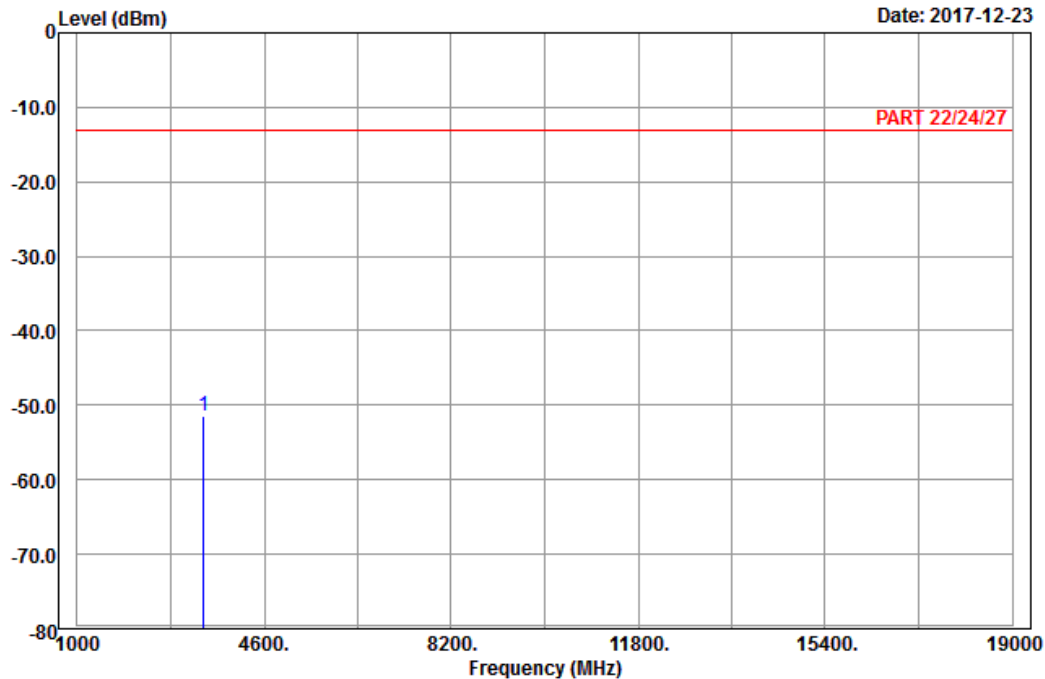
	Read	Limit	Over				
Freq	Level	Level	Line	Limit	Factor	Remark	
MHz	dBm	dBm	dBm	dB	dB		
1 pp 3440.00	-51.21	-65.56	-13.00	-38.21	14.35	Peak	



A D T

Data: 10

Date: 2017-12-23



Site : 966 chamber 1  
 Condition: PART 22/24/27 Vertical  
 Remark : LTE\_Band 66\_Link\_CH132072  
 Tested by: Charles Hsiao

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	pp 3440.00	-51.46	-65.81	-13.00	-38.46	14.35	Peak

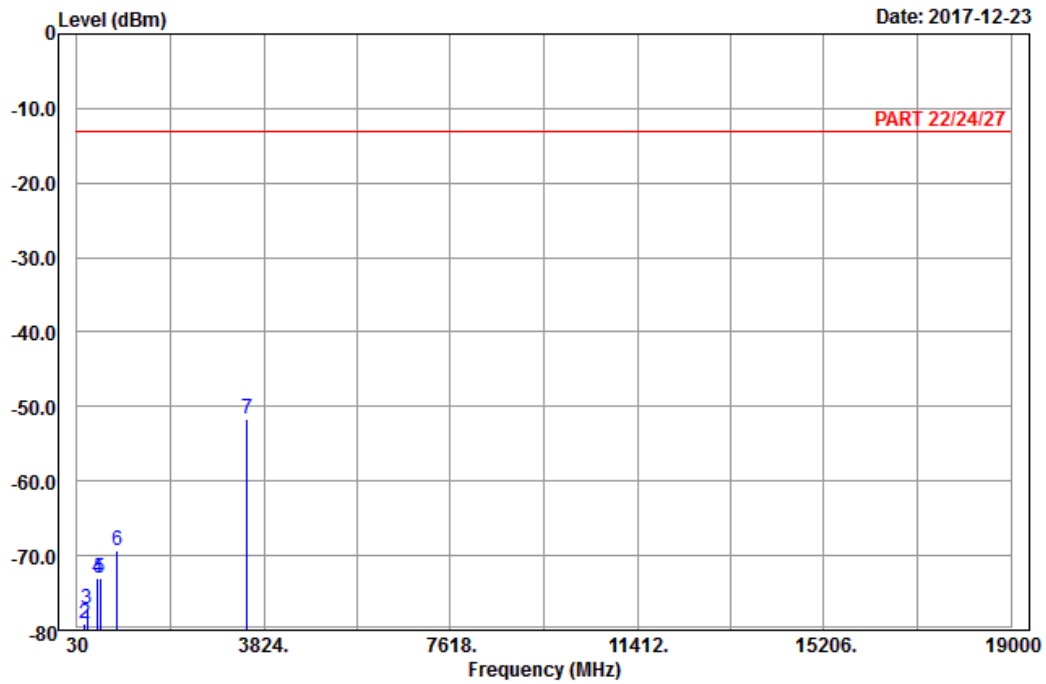
Middle Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 13



Site : 966 chamber 1  
 Condition: PART 22/24/27 Horizontal  
 Remark : LTE\_Band 66\_Link\_CH132322  
 Tested by: Charles Hsiao

	Read	Limit	Over				
Freq	Level	Level	Line	Limit	Factor	Remark	
MHz	dBm	dBm	dBm	dB	dB		
1	106.95	-83.94	-74.64	-13.00	-70.94	-9.30	Peak
2	184.98	-79.16	-73.51	-13.00	-66.16	-5.65	Peak
3	243.03	-77.20	-71.60	-13.00	-64.20	-5.60	Peak
4	454.00	-72.97	-69.01	-13.00	-59.97	-3.96	Peak
5	504.40	-72.93	-67.93	-13.00	-59.93	-5.00	Peak
6	853.70	-69.40	-70.96	-13.00	-56.40	1.56	Peak
7 pp	3490.00	-51.75	-66.06	-13.00	-38.75	14.31	Peak

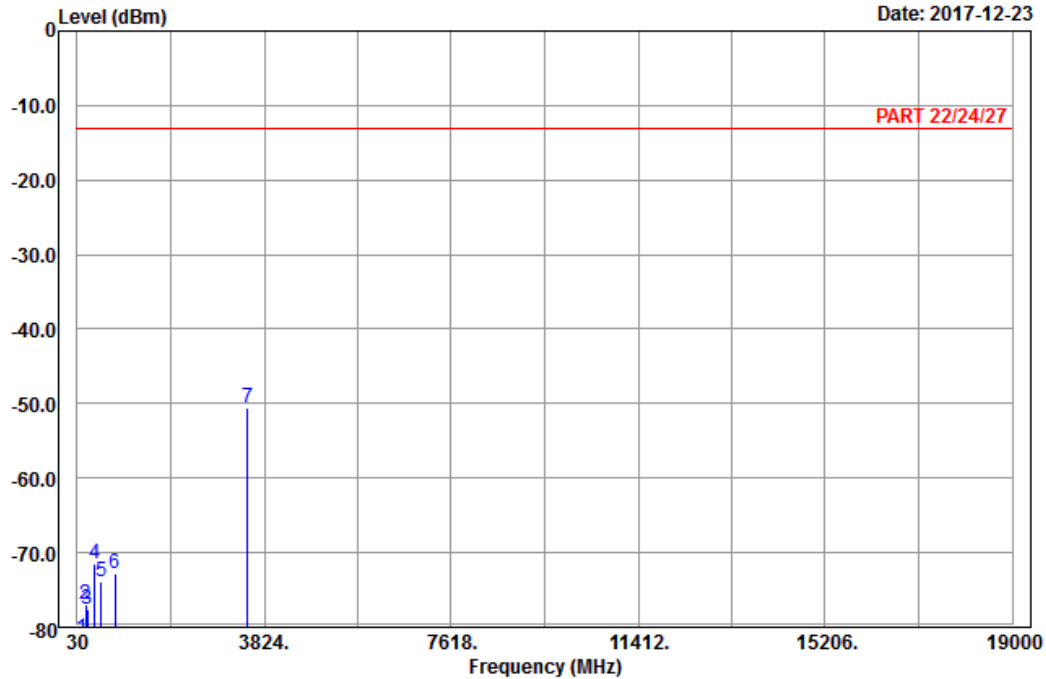




Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 14



Site : 966 chamber 1  
 Condition: PART 22/24/27 Vertical  
 Remark : LTE\_Band 66\_Link\_CH132322  
 Tested by: Charles Hsiao

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	116.67	-81.50	-72.99	-13.00	-68.50	-8.51	Peak
2	196.32	-77.03	-71.03	-13.00	-64.03	-6.00	Peak
3	242.76	-77.50	-71.89	-13.00	-64.50	-5.61	Peak
4	387.50	-71.54	-68.18	-13.00	-58.54	-3.36	Peak
5	508.60	-73.91	-69.20	-13.00	-60.91	-4.71	Peak
6	795.60	-72.78	-74.47	-13.00	-59.78	1.69	Peak
7 pp	3490.00	-50.57	-64.88	-13.00	-37.57	14.31	Peak

# High Channel

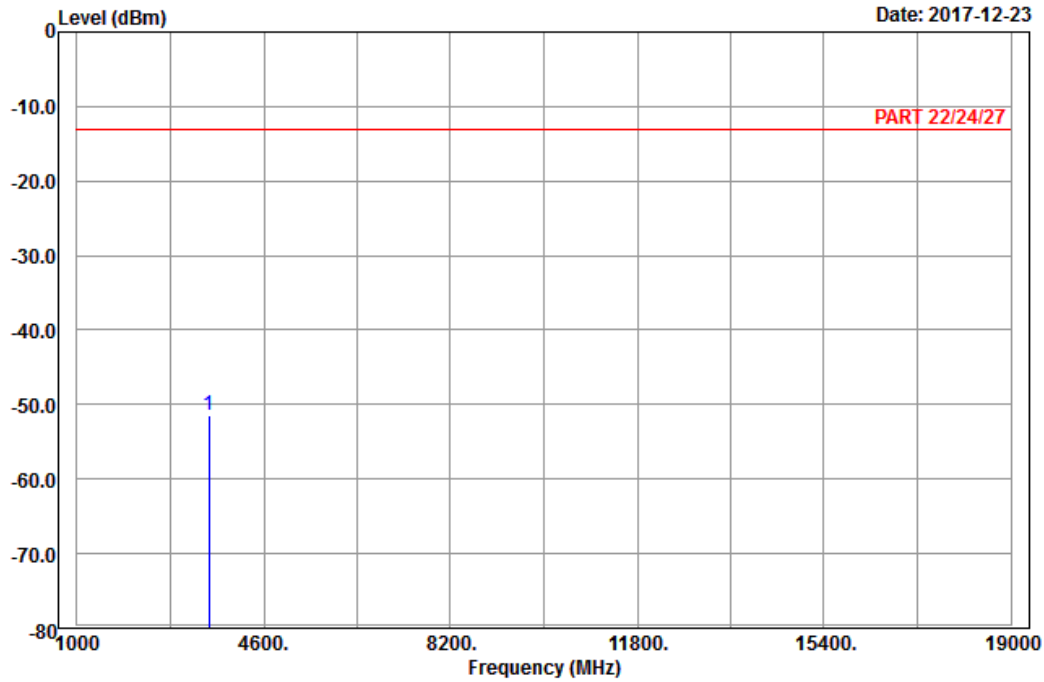


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 9

Date: 2017-12-23



Site : 966 chamber 1  
 Condition: PART 22/24/27 Horizontal  
 Remark : LTE\_Band 66\_Link\_CH132572  
 Tested by: Charles Hsiao

	Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 3540.00	-51.39	-66.28	-13.00	-38.39	14.89	Peak

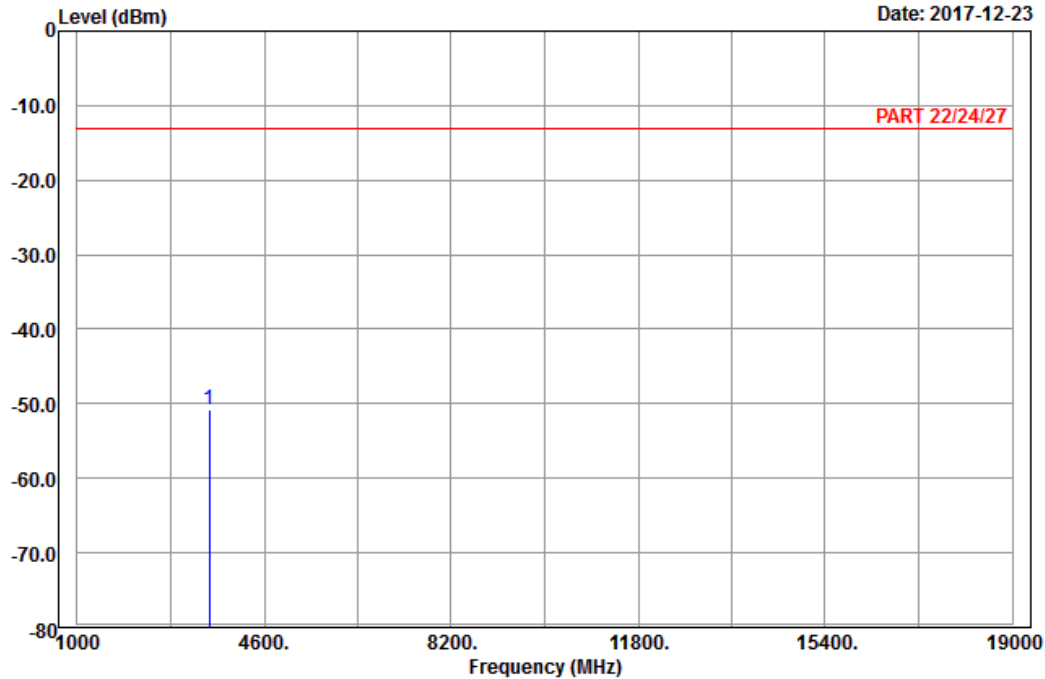


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 10

Date: 2017-12-23



Site : 966 chamber 1  
 Condition: PART 22/24/27 Vertical  
 Remark : LTE\_Band 66\_Link\_CH132572  
 Tested by: Charles Hsiao

	Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 3540.00	-50.77	-65.66	-13.00	-37.77	14.89	Peak

## 5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

## Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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Fax: 886-2-26051924

**Hsin Chu EMC/RF/Telecom Lab**

Tel: 886-3-6668565

Fax: 886-3-6668323

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**Email:** [service.adt@tw.bureauveritas.com](mailto:service.adt@tw.bureauveritas.com)

**Web Site:** [www.bureauveritas-adt.com](http://www.bureauveritas-adt.com)

The address and road map of all our labs can be found in our web site also.

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