

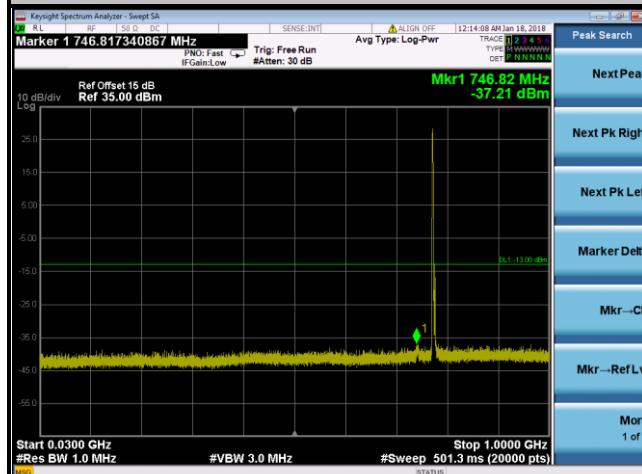
## LTE Band 13

### 30MHz ~ 1GHz

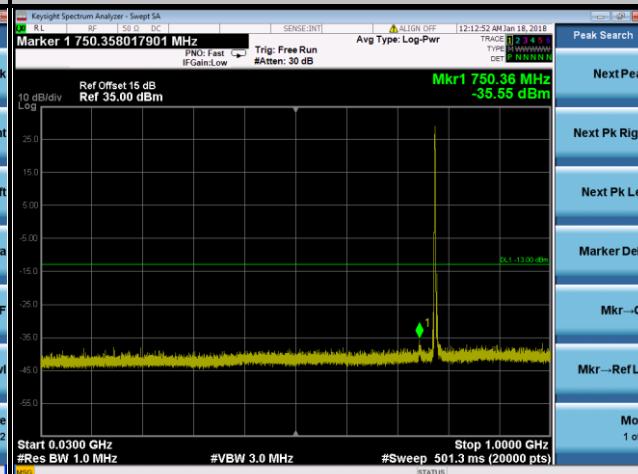
#### LTE Band 13

##### Channel Bandwidth: 5 MHz

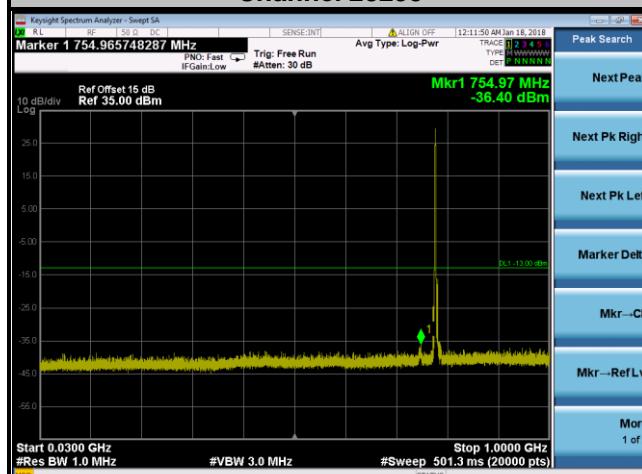
###### Channel 23205



###### Channel 23230



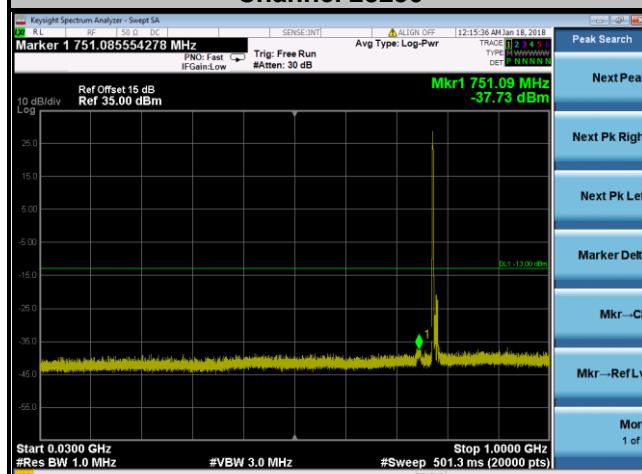
###### Channel 23255



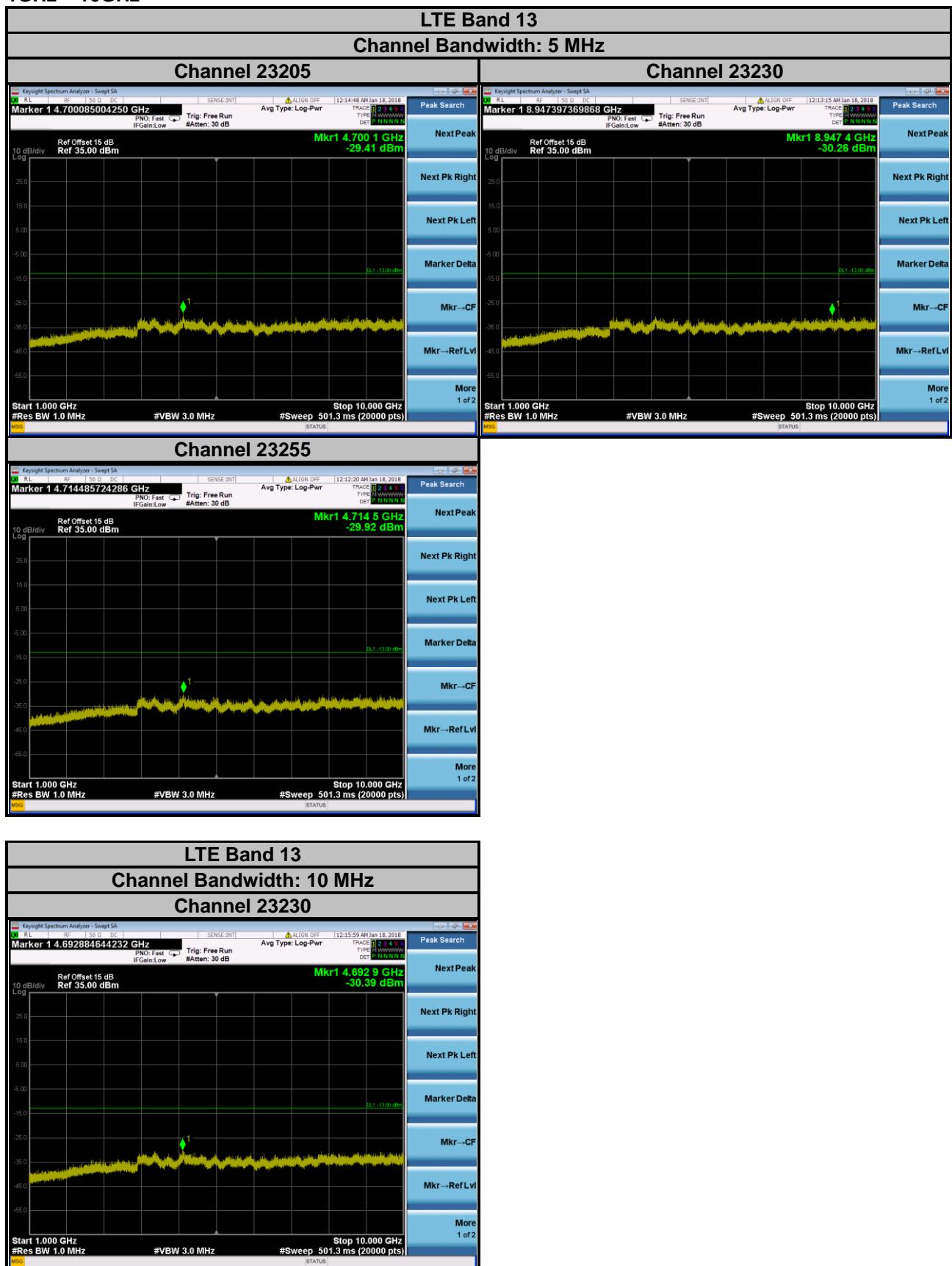
#### LTE Band 13

##### Channel Bandwidth: 10 MHz

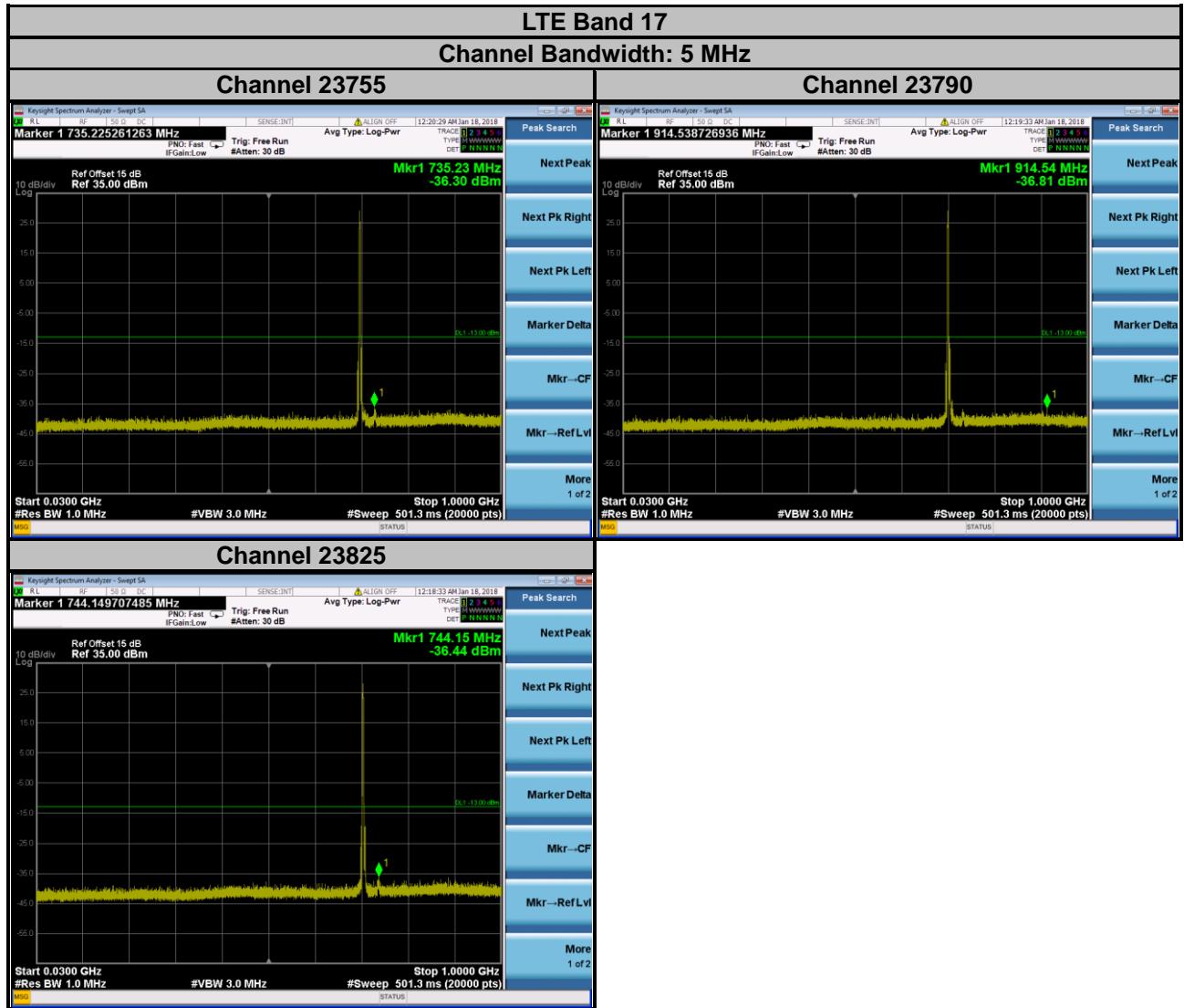
###### Channel 23230



1GHz ~ 10GHz



## LTE Band 17



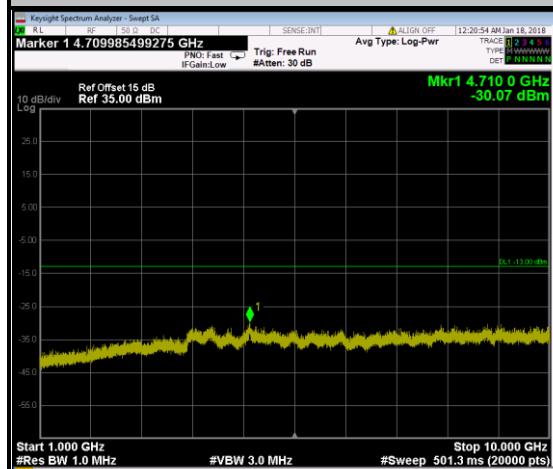


**1GHz ~ 10GHz**

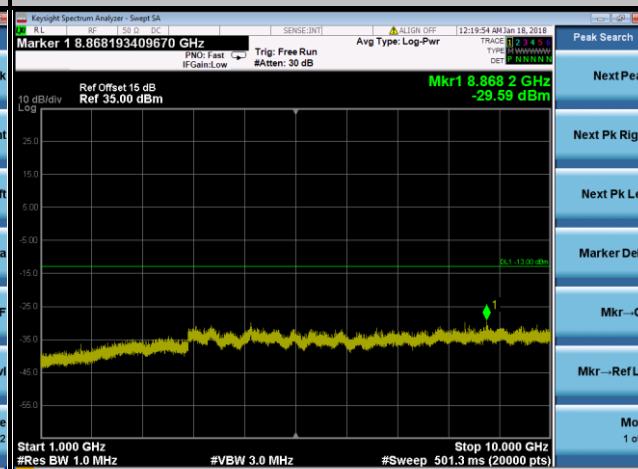
## LTE Band 17

### Channel Bandwidth: 5 MHz

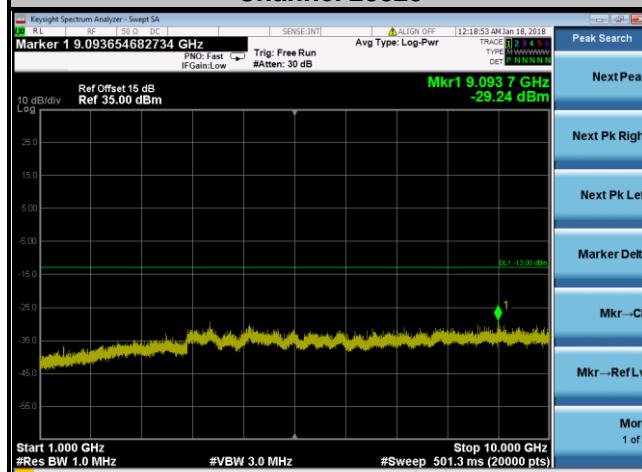
Channel 23755

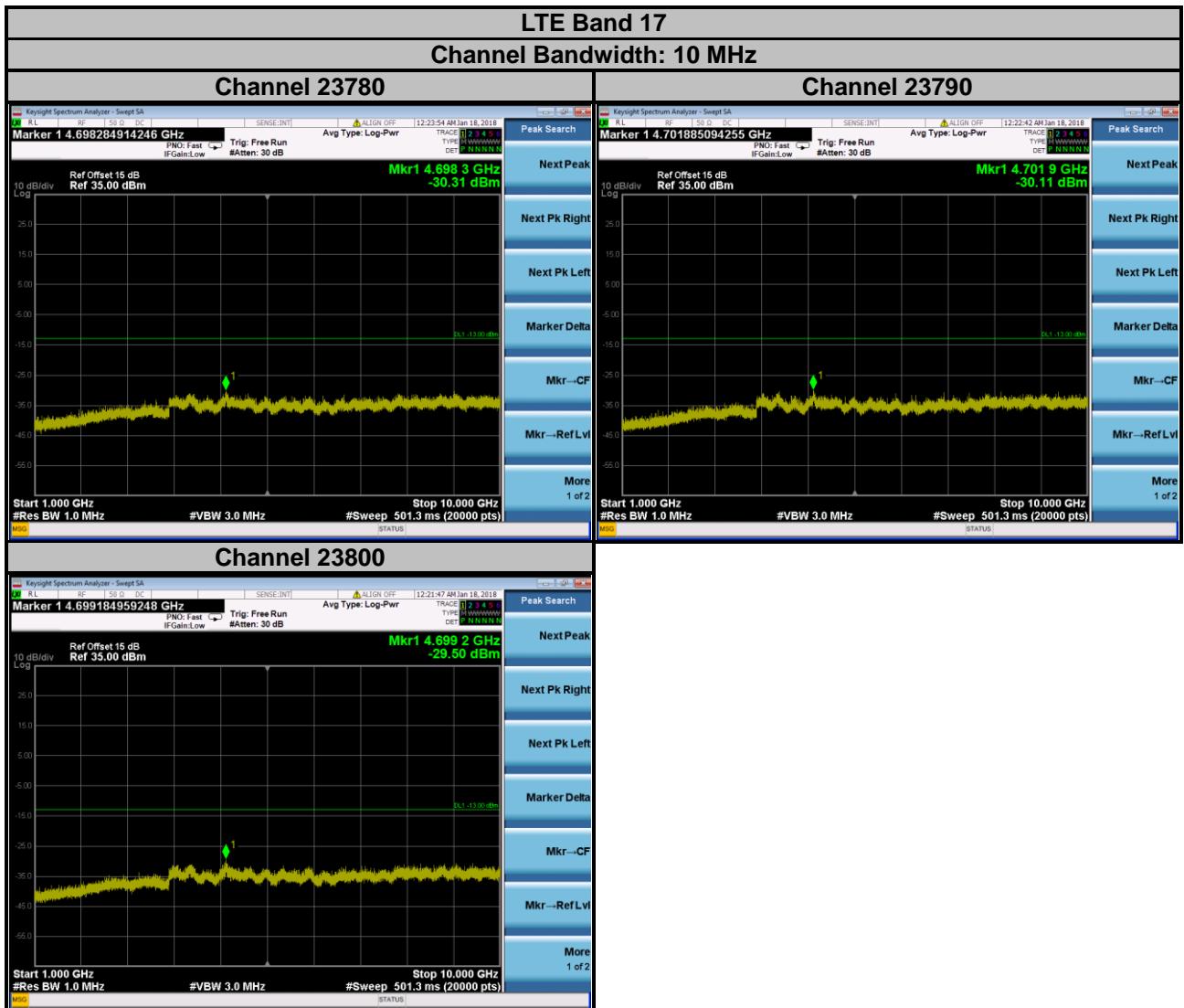


Channel 23790



Channel 23825





## 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 = Output power level of S.G – TX cable loss + 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 power = E.I.P.R power - 2.15 dBi.

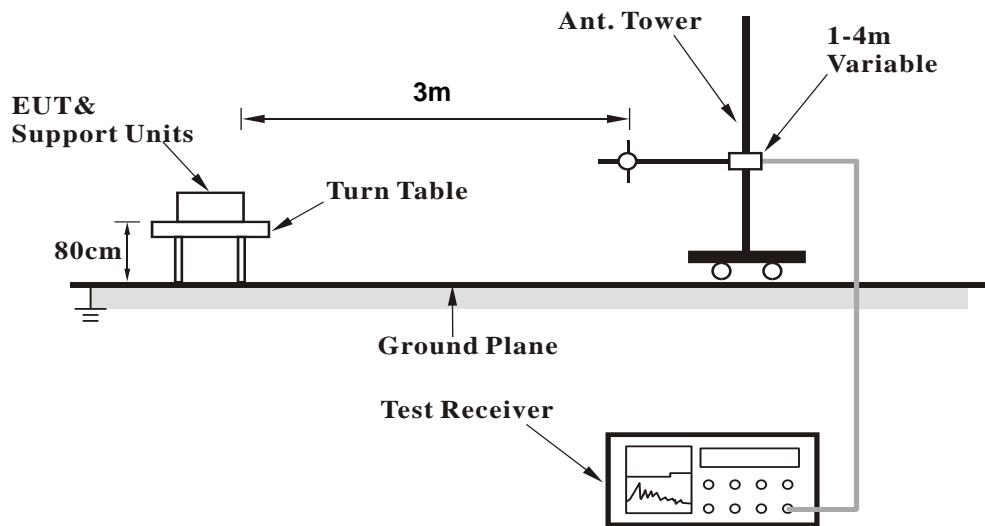
**Note:** The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

### 4.7.3 Deviation from Test Standard

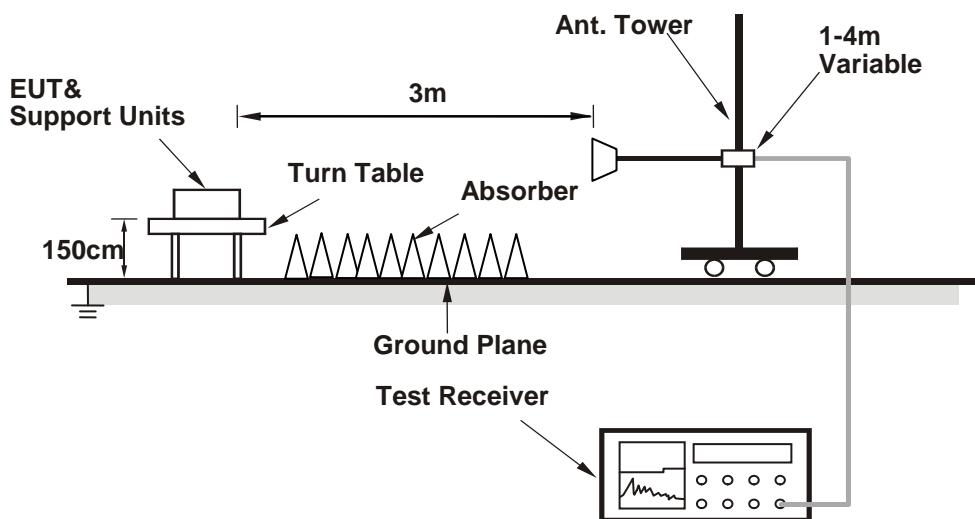
No deviation.

#### 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

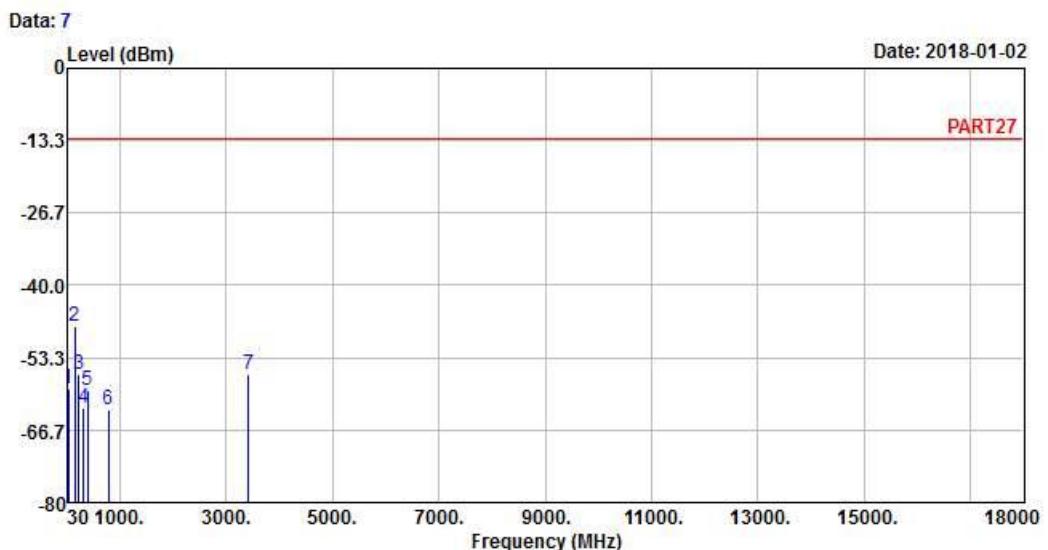
##### WCDMA:

##### Low Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remark : WCDMA Band 4 Link\_L-CH

Tested by: Jisyong Wang

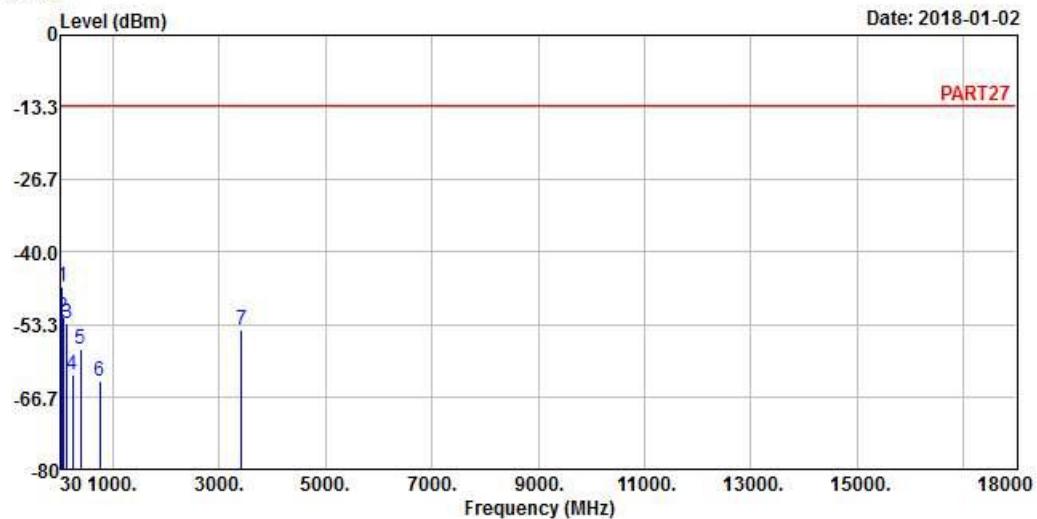
Freq	Level	Read		Limit	Over	Remark
		MHz	dBm	dBm	dBm	
1	39.45	-58.94	-59.58	-13.00	-45.94	0.64 Peak
2 pp	157.17	-47.51	-41.85	-13.00	-34.51	-5.66 Peak
3	236.55	-56.47	-49.93	-13.00	-43.47	-6.54 Peak
4	328.00	-62.58	-56.00	-13.00	-49.58	-6.58 Peak
5	400.10	-59.20	-53.26	-13.00	-46.20	-5.94 Peak
6	783.00	-62.85	-63.64	-13.00	-49.85	0.79 Peak
7	3424.80	-56.46	-47.37	-13.00	-43.46	-9.09 Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 8



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remark : WCDMA Band 4 Link\_L-CH

Tested by: Jisyong Wang

Freq	Read		Limit	Over	Factor	Remark
	MHz	dBm	dBm	dBm		
1 pp	42.42	-46.28	-45.34	-13.00	-33.28	-0.94 Peak
2	70.77	-51.98	-43.36	-13.00	-38.98	-8.62 Peak
3	142.86	-53.22	-44.86	-13.00	-40.22	-8.36 Peak
4	245.19	-62.61	-56.42	-13.00	-49.61	-6.19 Peak
5	400.10	-57.88	-51.94	-13.00	-44.88	-5.94 Peak
6	757.10	-63.88	-64.74	-13.00	-50.88	0.86 Peak
7	3424.80	-54.36	-45.27	-13.00	-41.36	-9.09 Peak

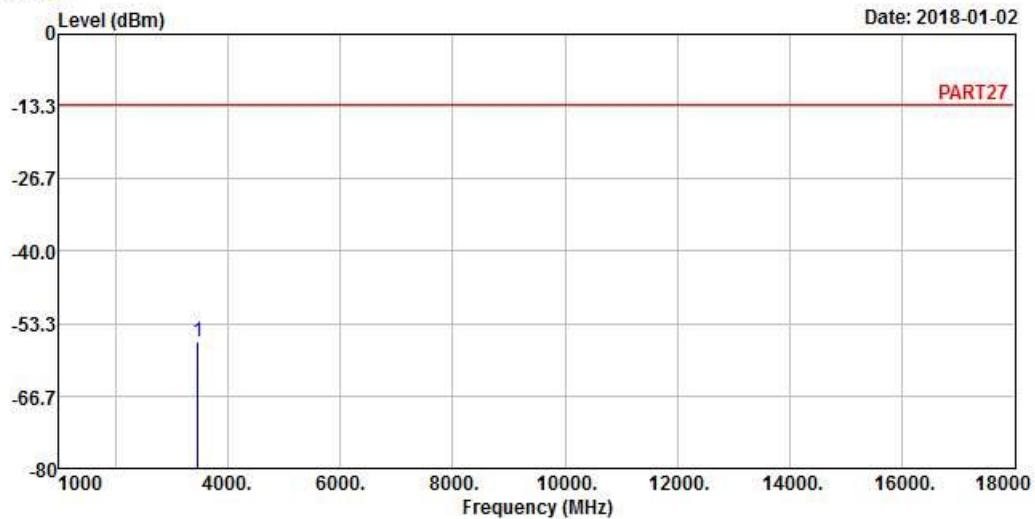
## Middle Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remark : WCDMA Band 4 Link\_M-CH

Tested by: Jisyong Wang

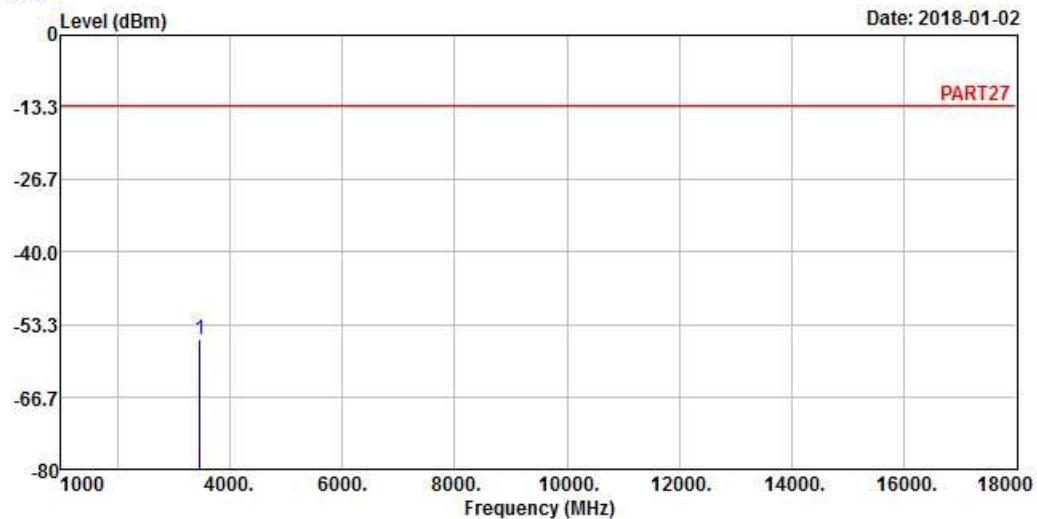
Freq	Level	Read	Limit	Over	Factor	Remark
		MHz	dBm	dBm		
1 pp	3465.20	-56.60	-47.69	-13.00	-43.60	-8.91 Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remark : WCDMA Band 4 Link\_M-CH

Tested by: Jisyong Wang

Freq	Read		Limit	Over	Line	Limit Factor	Remark
	Level	Level					
MHz	dBm	dBm	dBm	dB	dB		
1 pp	3465.20	-55.98	-47.07	-13.00	-42.98	-8.91	Peak

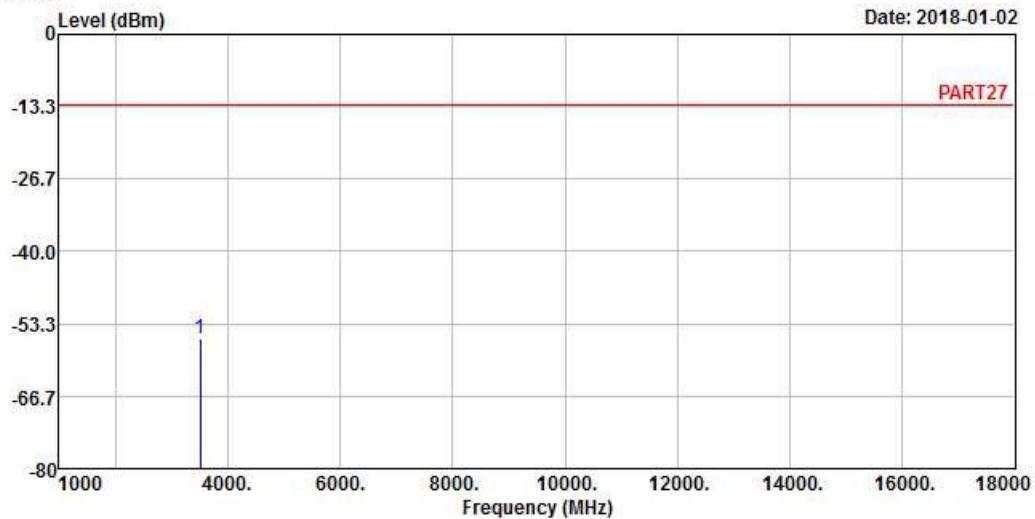
## High Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remark : WCDMA Band 4 Link\_H-CH

Tested by: Jisyong Wang

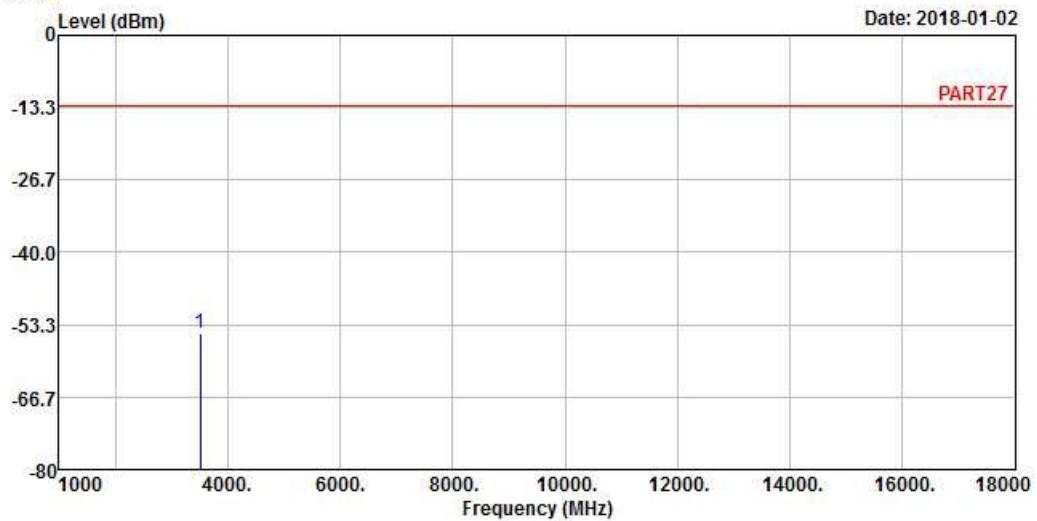
Freq	Level	Read	Limit	Over	Factor	Remark
		MHz	dBm	dBm		
1 pp	3505.20	-56.17	-48.06	-13.00	-43.17	-8.11 Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remark : WCDMA Band 4 Link\_H-CH

Tested by: Jisyong Wang

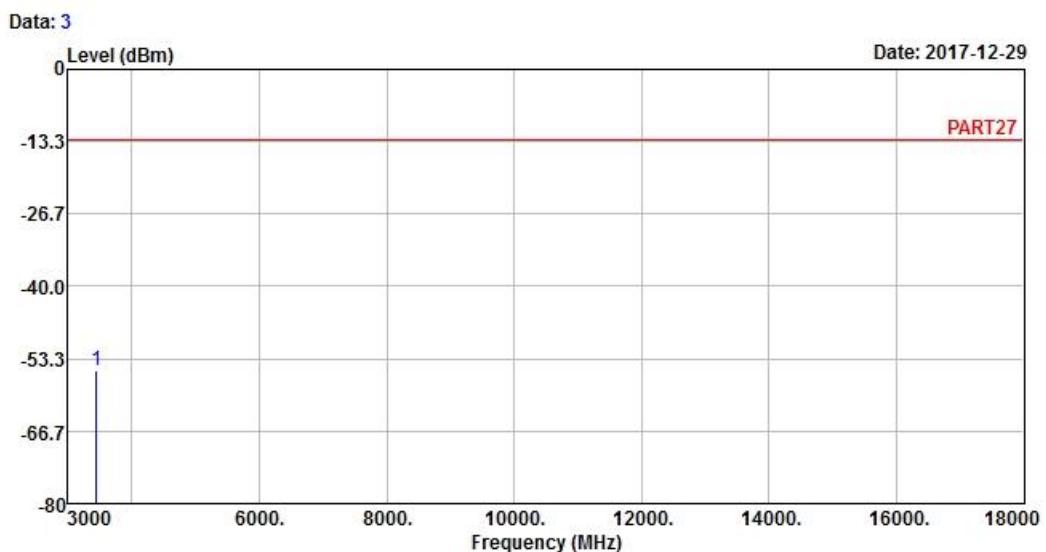
Freq	Read		Limit	Over	Line	Limit Factor	Remark
	Level	Level					
MHz	dBm	dBm	dBm	dBm	dB	dB	
1 pp	3505.20	-54.90	-46.79	-13.00	-41.90	-8.11	Peak

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



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T



Site : 966 Chamber 5  
 Condition: PART27 HORIZONTAL  
 Remak : LTE Band 4 QPSK\_20M Link\_L-CH.EM6  
 Tested by: Jisyong Wang

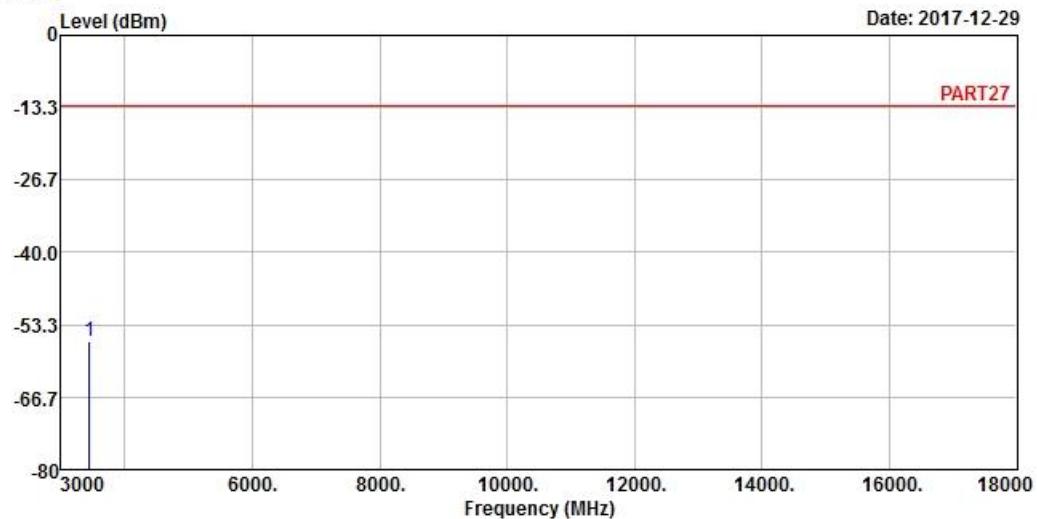
Freq	Level	Read	Limit	Over	Remark
		MHz	dBm	dBm	
1 pp	3440.00	-55.53	-46.53	-13.00	-42.53 -9.00 Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_20M Link\_L-CH.EM6

Tested by: Jisyong Wang

	Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp	3440.00	-56.25	-47.25	-13.00	-43.25	-9.00 Peak

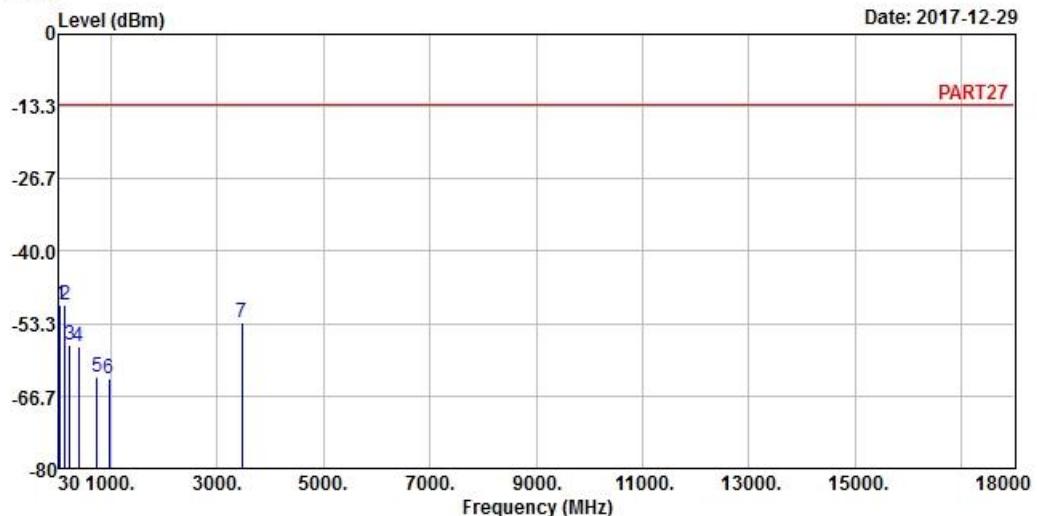
## Middle Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 4 QPSK\_20M Link\_M-CH

Tested by: Jisyong Wang

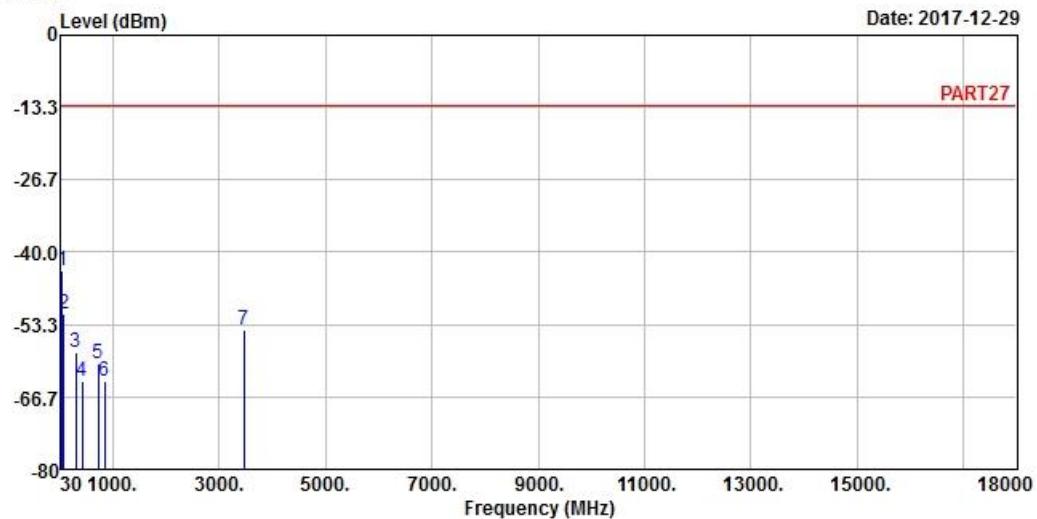
	Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1	42.61	-49.87	-48.93	-13.00	-36.87	-0.94 Peak
2 pp	138.64	-49.79	-41.13	-13.00	-36.79	-8.66 Peak
3	228.85	-57.20	-50.35	-13.00	-44.20	-6.85 Peak
4	400.54	-57.52	-51.58	-13.00	-44.52	-5.94 Peak
5	747.80	-63.12	-63.96	-13.00	-50.12	0.84 Peak
6	964.11	-63.43	-65.74	-13.00	-50.43	2.31 Peak
7	3465.00	-53.27	-44.36	-13.00	-40.27	-8.91 Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_20M Link\_M-CH

Tested by: Jisyong Wang

Freq	Read		Limit	Over	Factor	Remark
	MHz	dBm	dBm	dBm		
1 pp	42.61	-43.35	-42.41	-13.00	-30.35	-0.94 Peak
2	79.47	-51.38	-40.72	-13.00	-38.38	-10.66 Peak
3	300.63	-58.60	-51.60	-13.00	-45.60	-7.00 Peak
4	428.67	-63.86	-58.14	-13.00	-50.86	-5.72 Peak
5	729.37	-60.42	-60.90	-13.00	-47.42	0.48 Peak
6	850.62	-63.68	-63.98	-13.00	-50.68	0.30 Peak
7	3465.00	-54.42	-45.51	-13.00	-41.42	-8.91 Peak

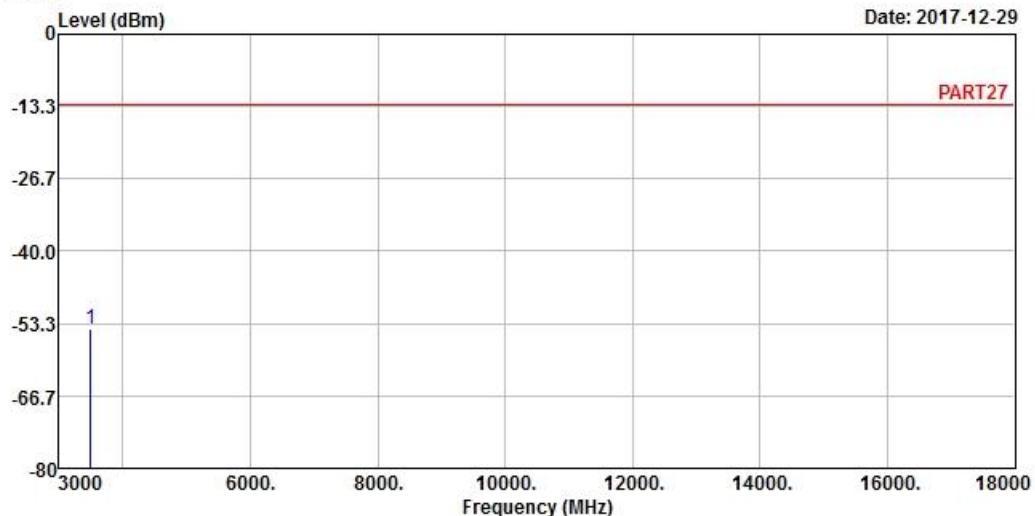
## High Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 4 QPSK\_20M Link\_H-CH

Tested by: Jisyong Wang

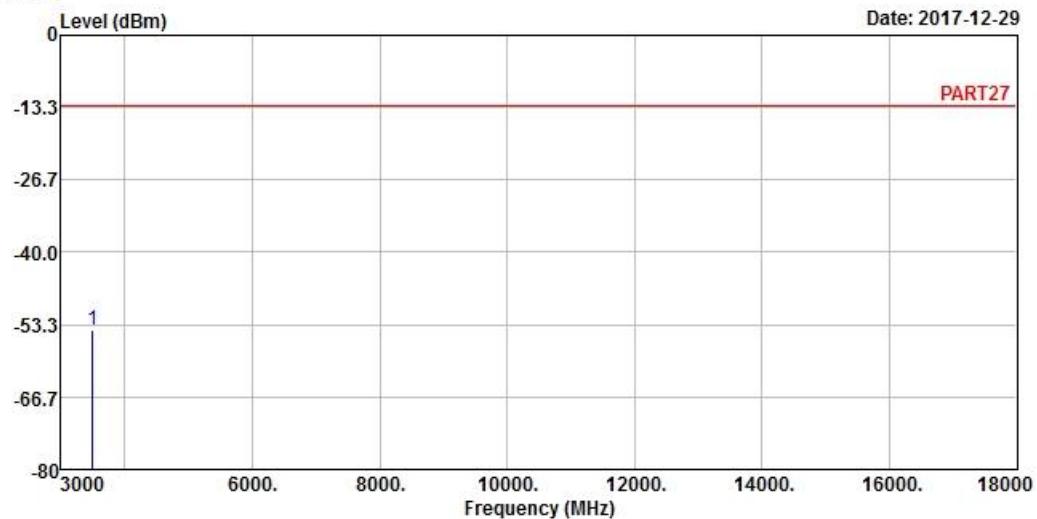
Freq	Read	Limit	Over	Factor	Remark
	Level	Level	Line		
MHz	dBm	dBm	dBm	dB	dB
1 pp	3490.00	-54.36	-45.85	-13.00	-41.36 -8.51 Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_20M Link\_H-CH

Tested by: Jisyong Wang

Freq	Read Level	Limit Level	Over Line	Limit	Over Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	

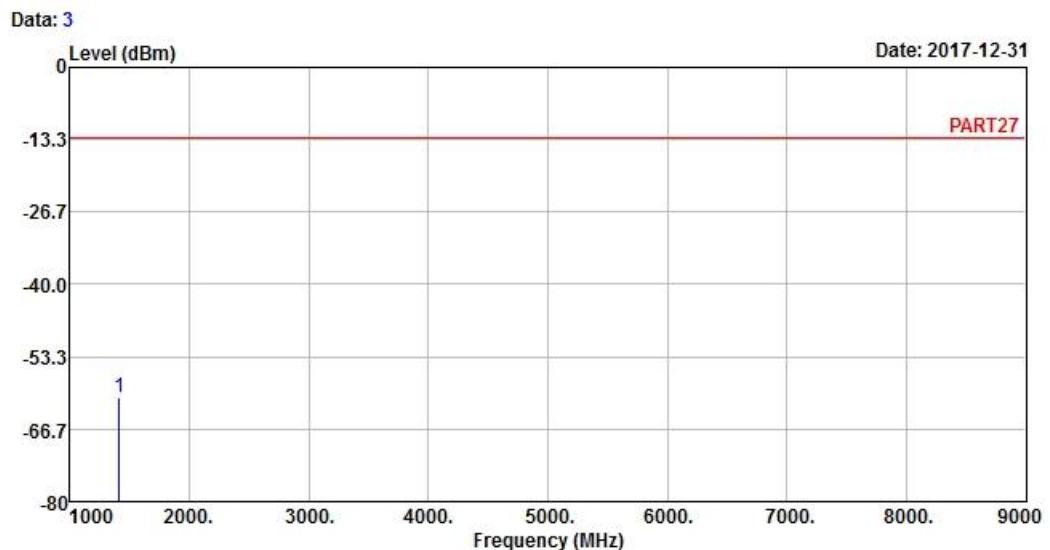
1 pp 3490.00 -54.40 -45.89 -13.00 -41.40 -8.51 Peak

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



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T



Site : 966 Chamber 5  
 Condition: PART27 HORIZONTAL  
 Remak : LTE Band 12 QPSK\_10M Link\_L-CH  
 Tested by: Jisyong Wang

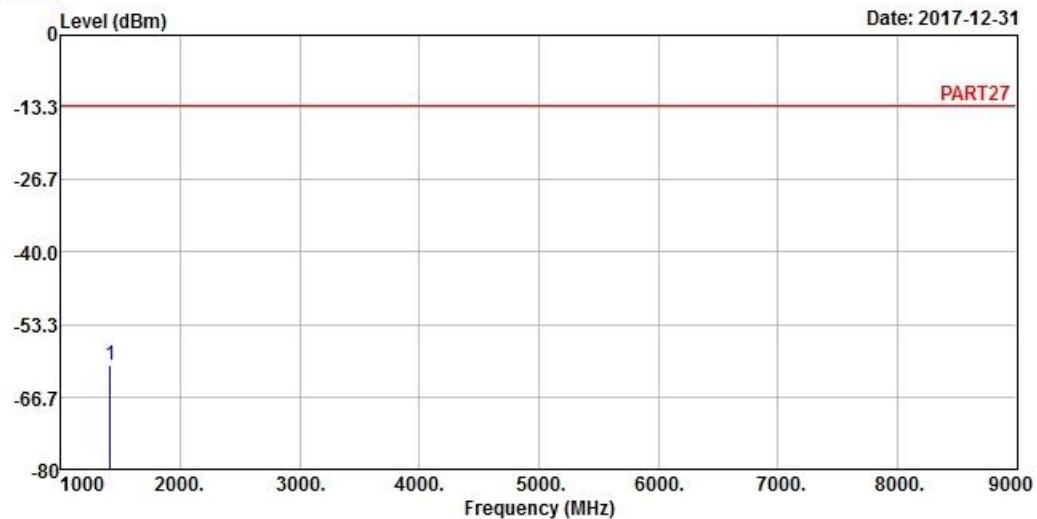
	Read	Limit	Over			
Freq	Level	Level	Line	Limit Factor	Remark	
MHz	dBm	dBm	dBm	dB	dB	
1 pp	1408.00	-60.67	-46.33	-13.00	-47.67	-14.34 Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_10M Link\_L-CH

Tested by: Jisyong Wang

Freq	Level	Read	Limit	Over	Factor	Remark
		MHz	dBm	dBm		
1 pp	1408.00	-60.90	-46.56	-13.00	-47.90	-14.34 Peak

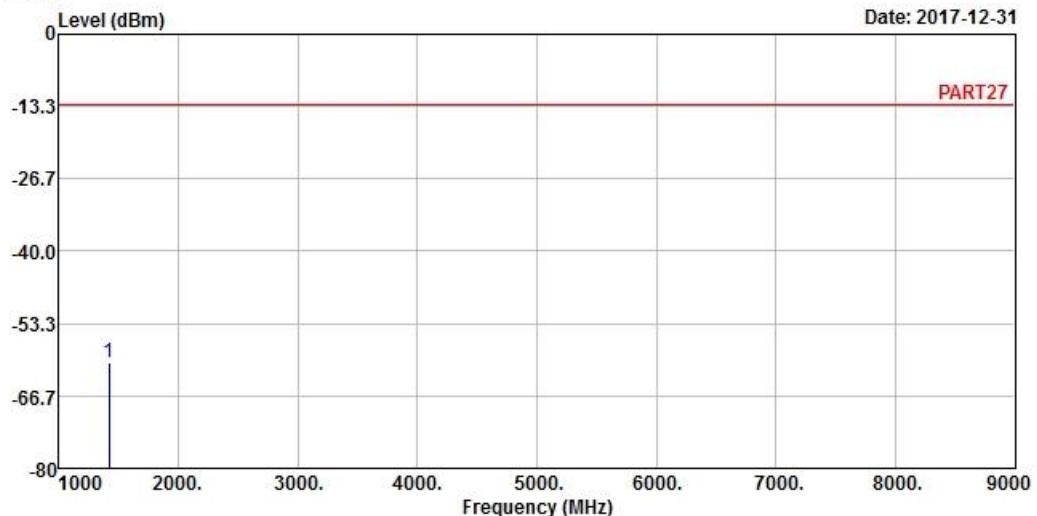
## Middle Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 12 QPSK\_10M Link\_M-CH

Tested by: Jisyong Wang

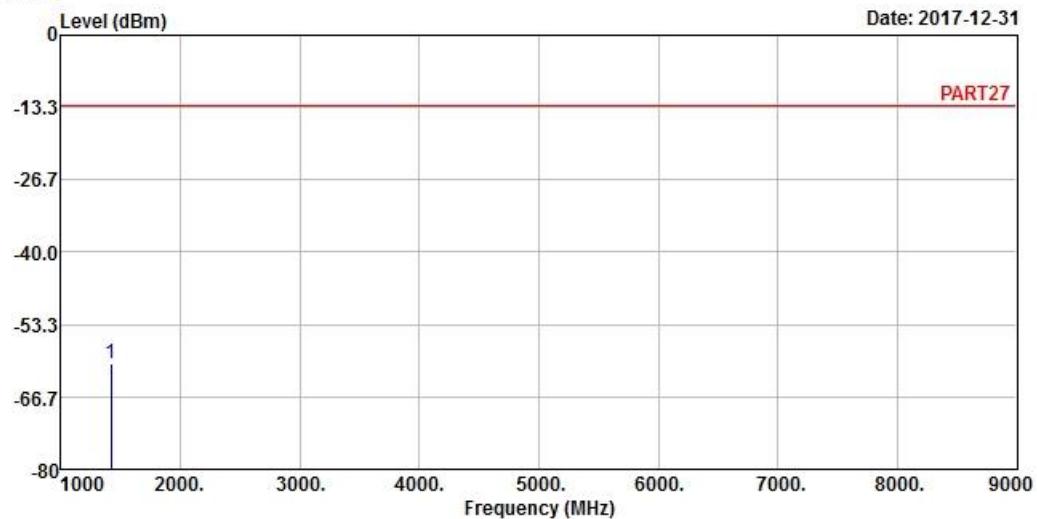
Freq	Read	Limit	Over	Remark			
	Level	Level	Line				
MHz	dBm	dBm	dBm	dB			
1 pp	1415.00	-60.61	-46.27	-13.00	-47.61	-14.34	Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_10M Link\_M-CH

Tested by: Jisyong Wang

	Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp	1415.00	-60.60	-46.26	-13.00	-47.60	-14.34 Peak

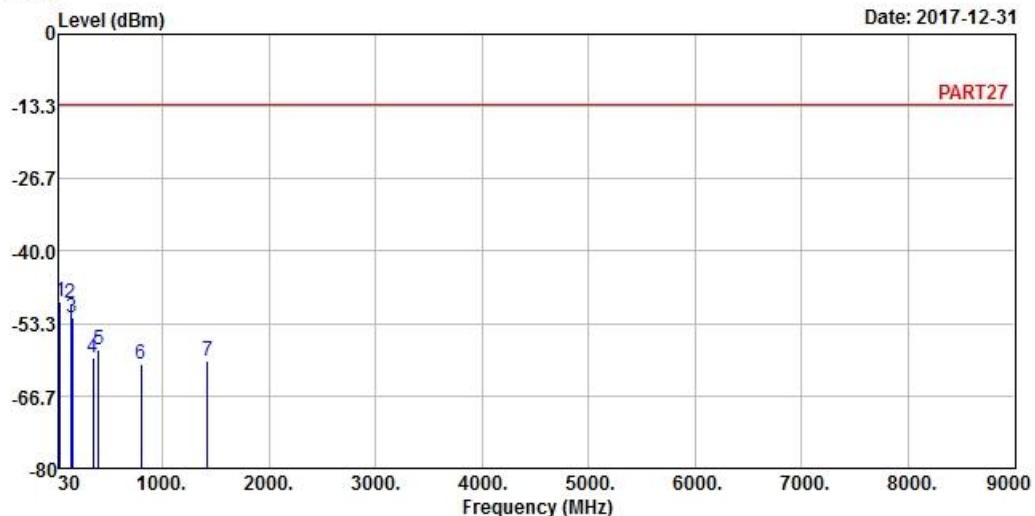
## High Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 12 QPSK\_10M Link\_H-CH

Tested by: Jisyong Wang

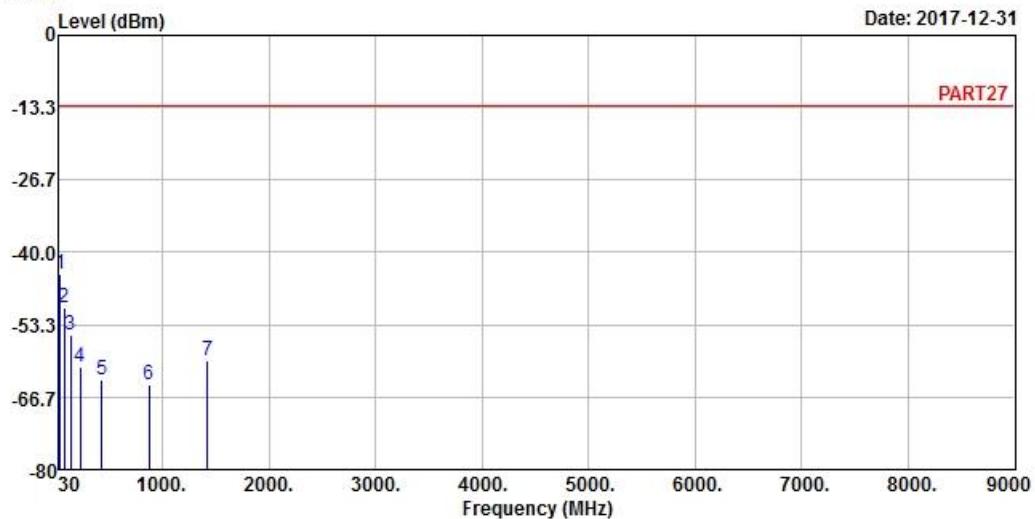
	Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	
1 pp	42.61	-49.24	-48.30	-13.00	-36.24	-0.94 Peak
2	137.67	-49.71	-41.05	-13.00	-36.71	-8.66 Peak
3	154.16	-52.37	-45.89	-13.00	-39.37	-6.48 Peak
4	350.10	-59.70	-53.46	-13.00	-46.70	-6.24 Peak
5	400.54	-58.24	-52.30	-13.00	-45.24	-5.94 Peak
6	800.18	-60.84	-61.58	-13.00	-47.84	0.74 Peak
7	1422.00	-60.17	-45.83	-13.00	-47.17	-14.34 Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_10M Link\_H-CH

Tested by: Jisyong Wang

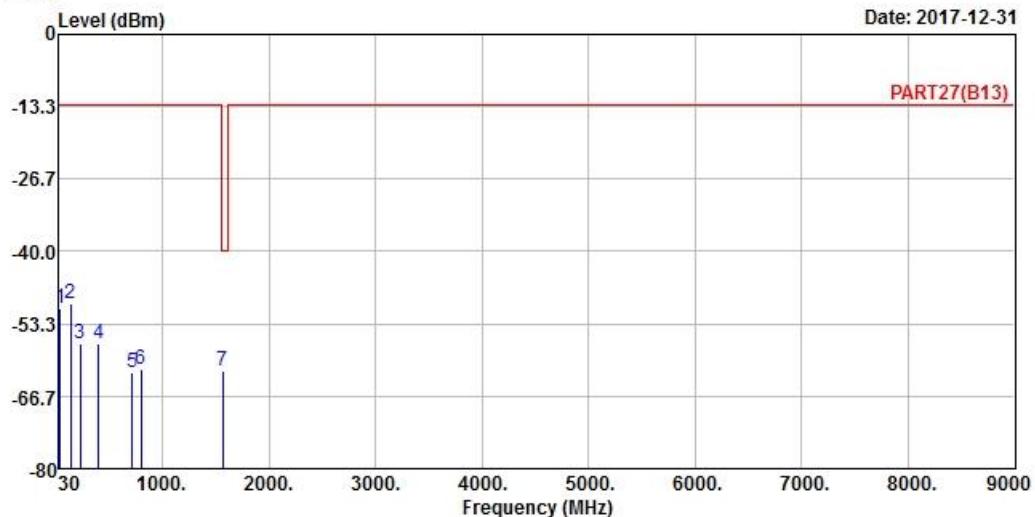
Freq	Read		Limit	Over	Line	Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB		
1 pp	42.61	-43.96	-43.02	-13.00	-30.96	-0.94	Peak	
2	79.47	-50.23	-39.57	-13.00	-37.23	-10.66	Peak	
3	137.67	-55.06	-46.40	-13.00	-42.06	-8.66	Peak	
4	230.79	-61.20	-54.43	-13.00	-48.20	-6.77	Peak	
5	430.61	-63.36	-57.66	-13.00	-50.36	-5.70	Peak	
6	870.99	-64.25	-64.66	-13.00	-51.25	0.41	Peak	
7	1422.00	-59.88	-45.54	-13.00	-46.88	-14.34	Peak	

**LTE Band 13**
**Channel Bandwidth: 10 MHz / QPSK**


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5



Site : 966 Chamber 5

Condition: PART27(B13) HORIZONTAL

Remak : LTE Band 13 QPSK\_10M \_M-CH

Tested by: Jisyong Wang

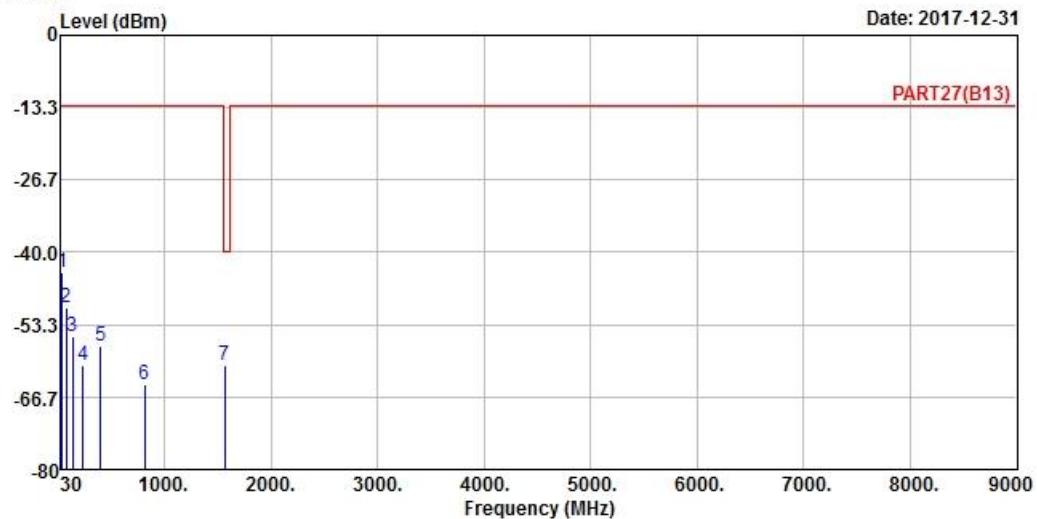
Freq	Level	Read		Limit	Over	Factor	Remark
		Line	dBm				
1	42.61	-50.57	-49.63	-13.00	-37.57	-0.94	Peak
2	137.67	-49.70	-41.04	-13.00	-36.70	-8.66	Peak
3	226.91	-57.10	-50.17	-13.00	-44.10	-6.93	Peak
4	400.54	-57.05	-51.11	-13.00	-44.05	-5.94	Peak
5	716.76	-62.31	-62.54	-13.00	-49.31	0.23	Peak
6	800.18	-61.63	-62.37	-13.00	-48.63	0.74	Peak
7 pp	1564.00	-61.99	-46.97	-40.00	-21.99	-15.02	Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6



Site : 966 Chamber 5

Condition: PART27(B13) VERTICAL

Remak : LTE Band 13 QPSK\_10M \_M-CH

Tested by: Jisyong Wang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	
1	41.64	-43.62	-43.21	-13.00	-30.62	-0.41 Peak
2	79.47	-50.31	-39.65	-13.00	-37.31	-10.66 Peak
3	137.67	-55.38	-46.72	-13.00	-42.38	-8.66 Peak
4	232.73	-60.74	-54.04	-13.00	-47.74	-6.70 Peak
5	400.54	-57.35	-51.41	-13.00	-44.35	-5.94 Peak
6	815.70	-64.47	-65.07	-13.00	-51.47	0.60 Peak
7 pp	1564.00	-60.75	-45.73	-40.00	-20.75	-15.02 Peak

LTE Band 17

Channel Bandwidth: 10 MHz / QPSK

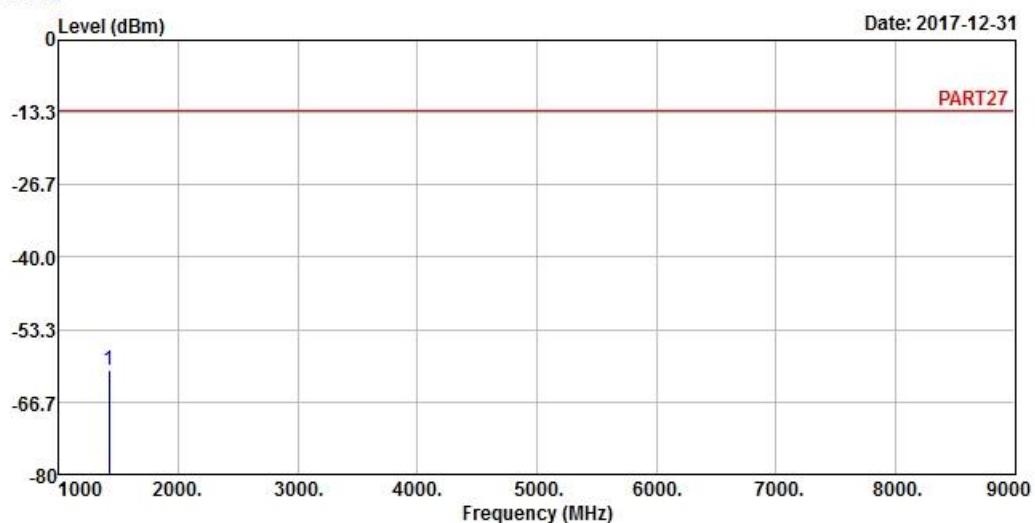
Low Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 17 QPSK\_10M \_L-CH

Tested by: Jisyong Wang

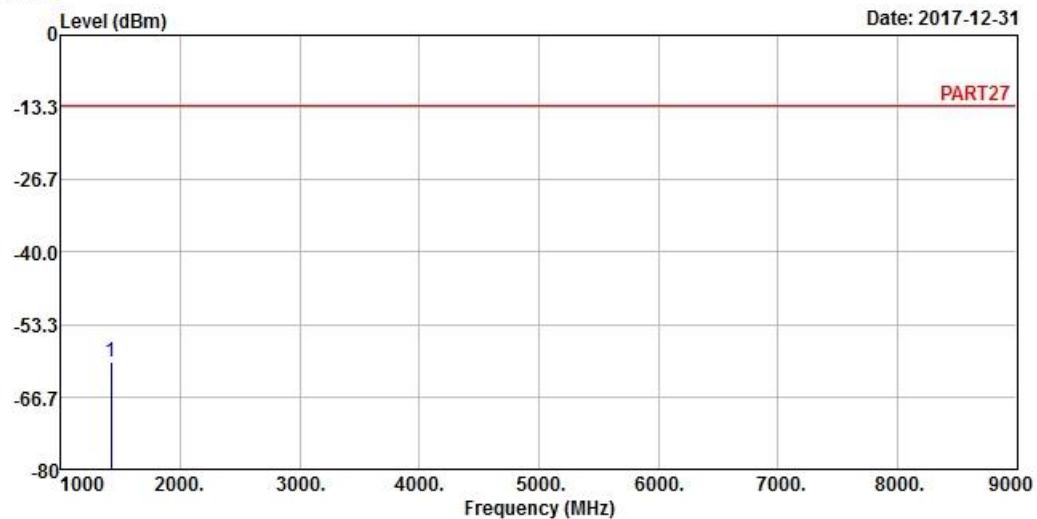
	Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp	1418.00	-60.84	-46.50	-13.00	-47.84	-14.34 Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 17 QPSK\_10M \_L-CH

Tested by: Jisyong Wang

Freq	Level	Read	Limit	Over	Factor	Remark
		MHz	dBm	dBm		
1 pp	1418.00	-60.21	-45.87	-13.00	-47.21	-14.34 Peak

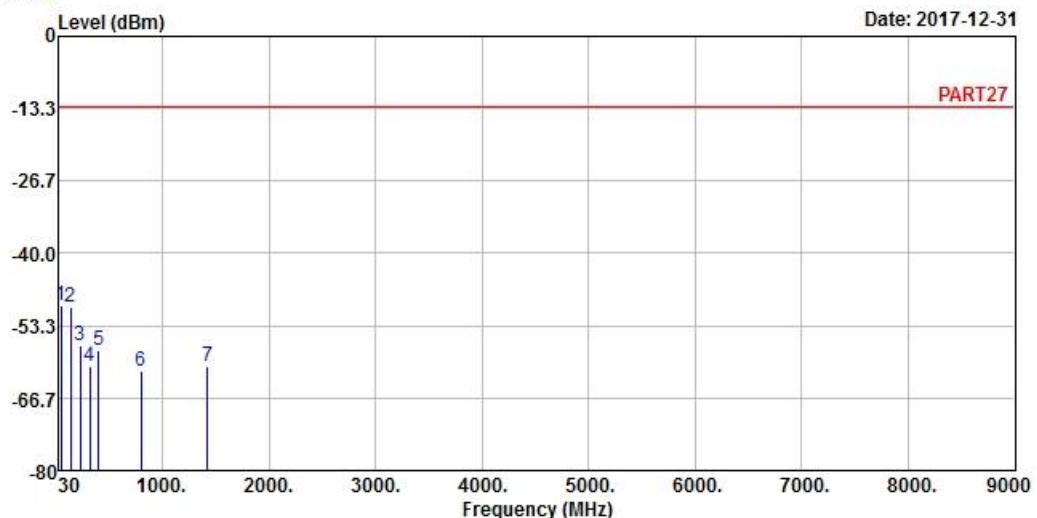
## Middle Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 17 QPSK\_10M \_M-CH

Tested by: Jisyong Wang

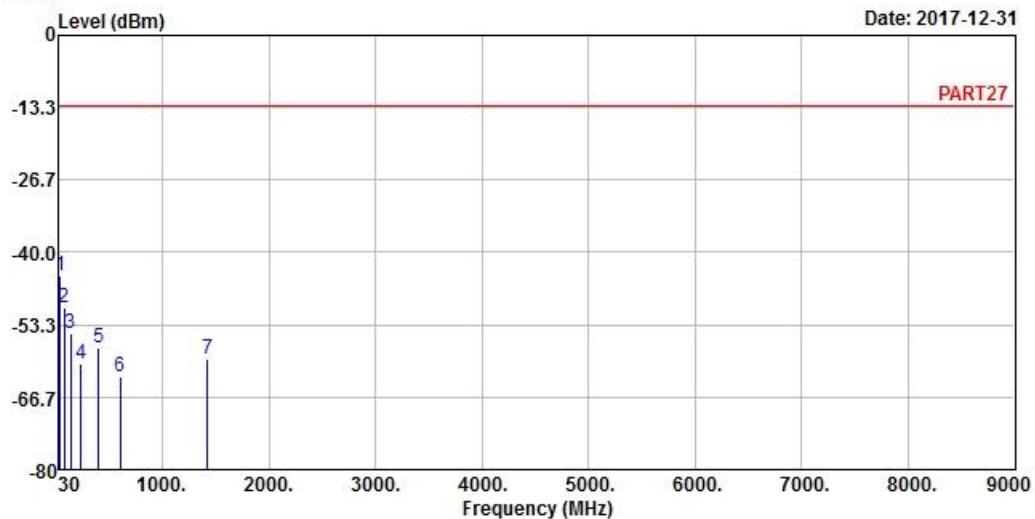
	Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp	43.58	-49.66	-48.19	-13.00	-36.66	-1.47 Peak
2	137.67	-49.97	-41.31	-13.00	-36.97	-8.66 Peak
3	225.94	-56.99	-50.02	-13.00	-43.99	-6.97 Peak
4	319.06	-60.85	-54.13	-13.00	-47.85	-6.72 Peak
5	400.54	-57.80	-51.86	-13.00	-44.80	-5.94 Peak
6	801.15	-61.83	-62.56	-13.00	-48.83	0.73 Peak
7	1420.00	-60.85	-46.51	-13.00	-47.85	-14.34 Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 17 QPSK\_10M \_M-CH

Tested by: Jisyong Wang

Freq	Read		Limit	Over	Factor	Remark
	MHz	dBm	dBm	dBm		
1 pp	41.64	-44.27	-43.86	-13.00	-31.27	-0.41 Peak
2	79.47	-50.22	-39.56	-13.00	-37.22	-10.66 Peak
3	137.67	-54.93	-46.27	-13.00	-41.93	-8.66 Peak
4	235.64	-60.60	-54.02	-13.00	-47.60	-6.58 Peak
5	400.54	-57.47	-51.53	-13.00	-44.47	-5.94 Peak
6	600.36	-63.02	-62.27	-13.00	-50.02	-0.75 Peak
7	1420.00	-59.64	-45.30	-13.00	-46.64	-14.34 Peak

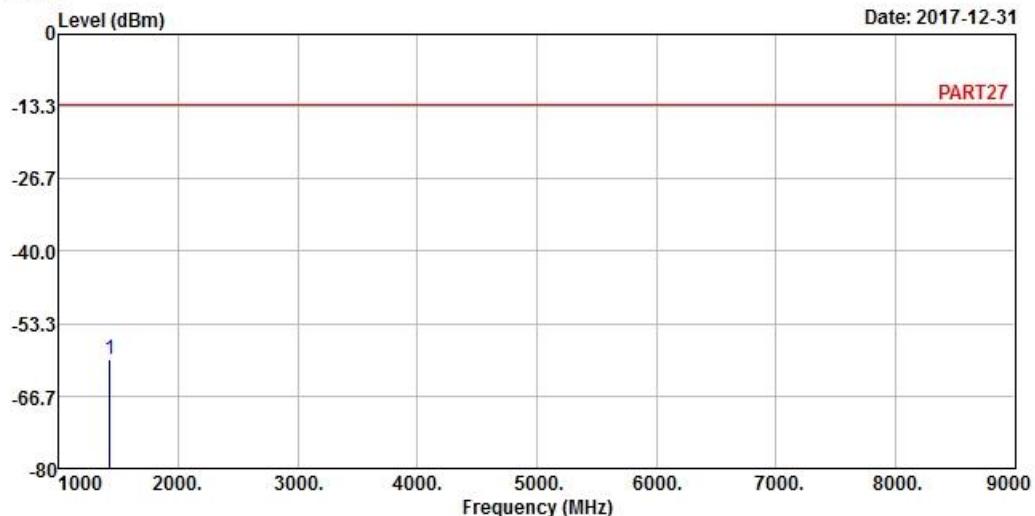
## High Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 17 QPSK\_10M \_H-CH

Tested by: Jisyong Wang

Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor
MHz	dBm	dBm	dBm	dB	dB
1 pp	1422.00	-59.84	-45.50	-13.00	-46.84

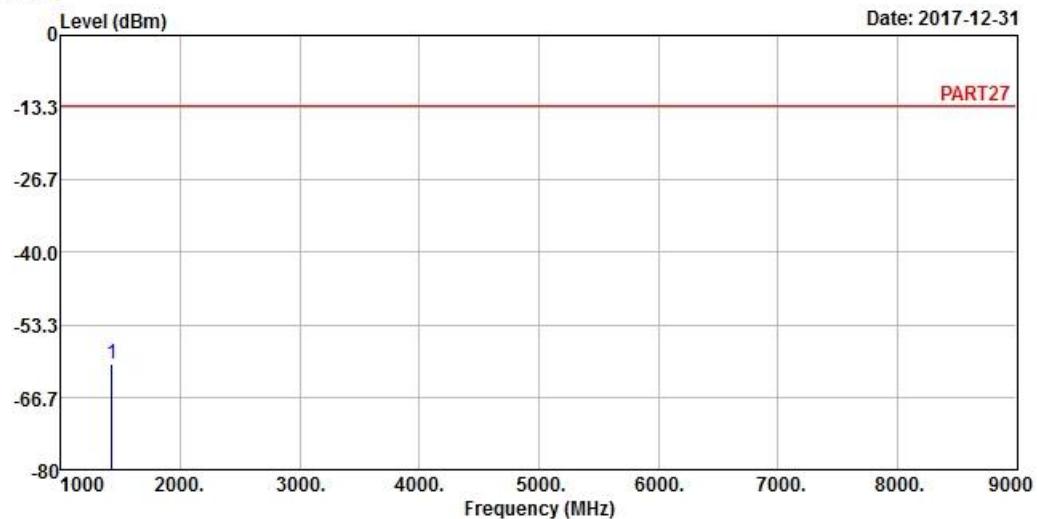
-14.34 Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 17 QPSK\_10M \_H-CH

Tested by: Jisyong Wang

Freq	Level	Read	Limit	Over	Factor	Remark
		MHz	dBm	dBm	dB	dB
1 pp	1422.00	-60.42	-46.08	-13.00	-47.42	-14.34 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:

**Linko EMC/RF Lab**

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**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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