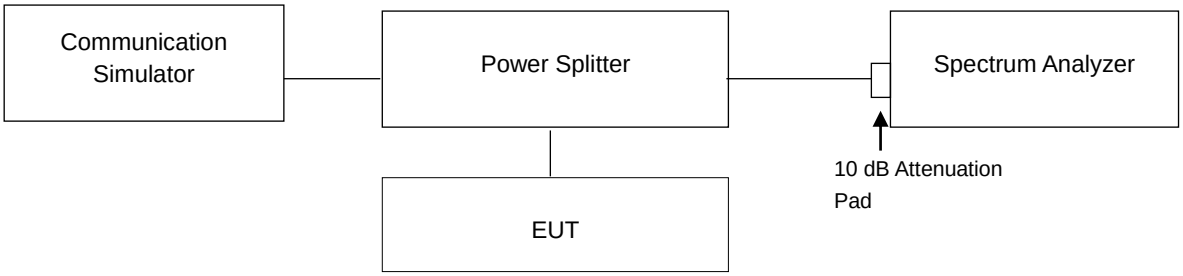
4.6 Peak to Average Ratio

4.6.1 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.

4.6.2 Test Setup



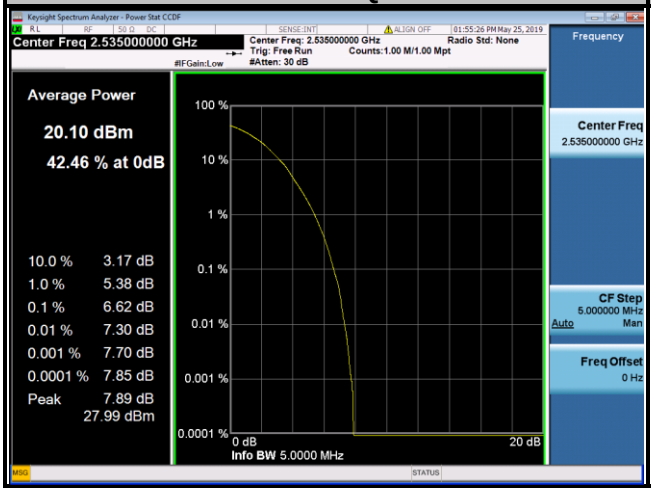
4.6.3 Test Procedures

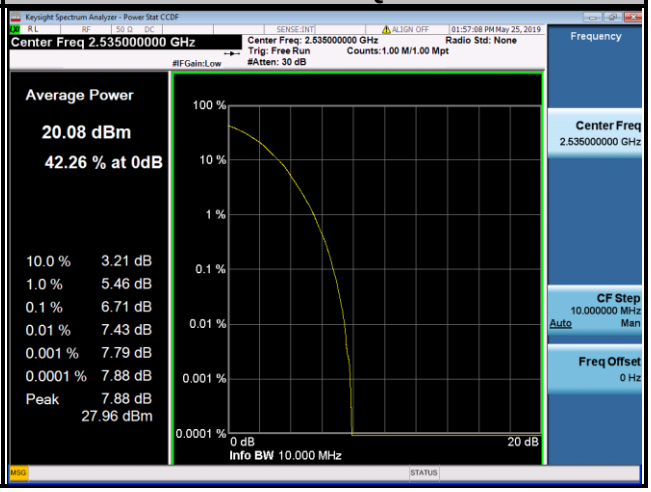
1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1 %.

4.6.4 Test Results

LTE Band 7									
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
20775	2502.5	5.07	6.10	6.48	20800	2505.0	5.04	6.04	6.41
21100	2535.0	5.20	6.16	6.62	21100	2535.0	5.27	6.28	6.71
21425	2567.5	4.92	5.93	6.45	21400	2565.0	5.02	5.95	6.58

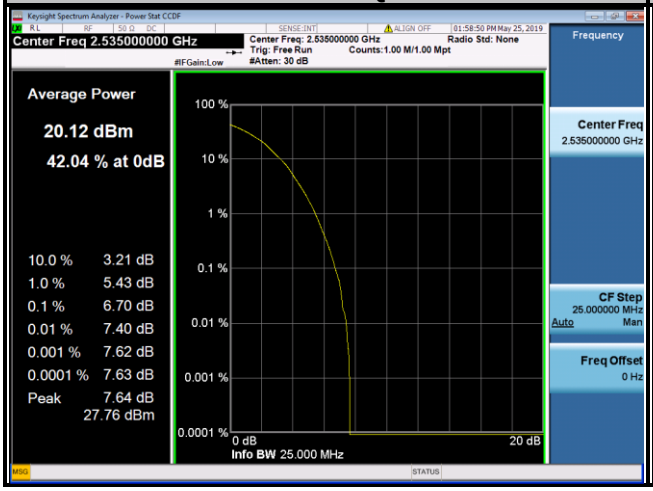
Spectrum Plot of Worst Value	
5 MHz / 64QAM	10 MHz / 64QAM

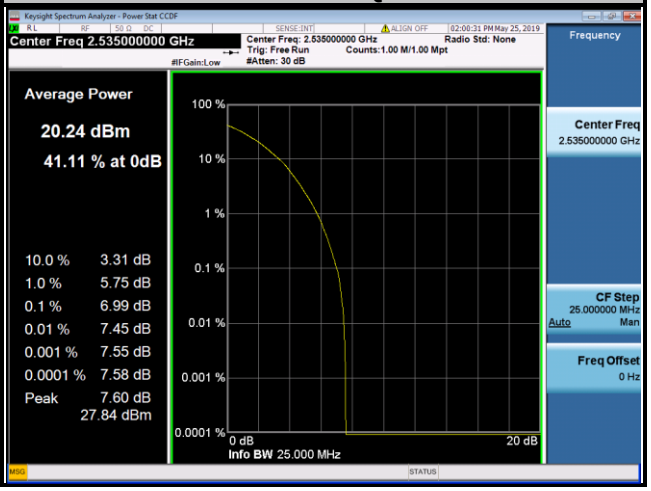




LTE Band 7									
Channel Bandwidth: 15 MHz					Channel Bandwidth: 20 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
20825	2507.5	4.99	5.91	6.39	20850	2510.0	4.93	5.99	6.51
21100	2535.0	5.20	6.18	6.70	21100	2535.0	5.37	6.29	6.99
21375	2562.5	5.17	5.92	6.55	21350	2560.0	4.87	5.86	6.46

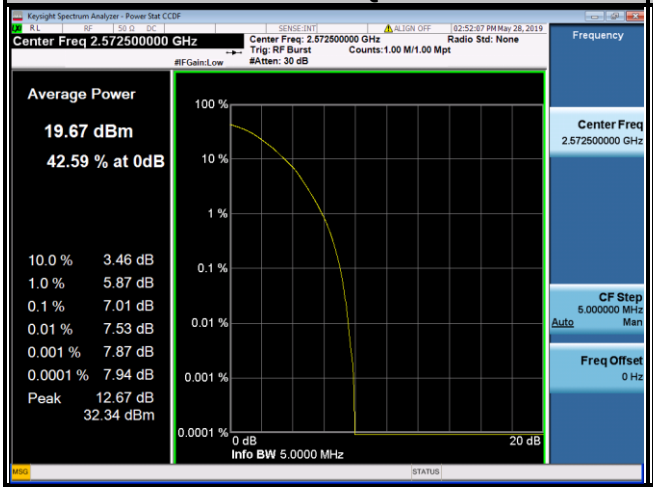
Spectrum Plot of Worst Value	
15 MHz / 64QAM	20 MHz / 64QAM

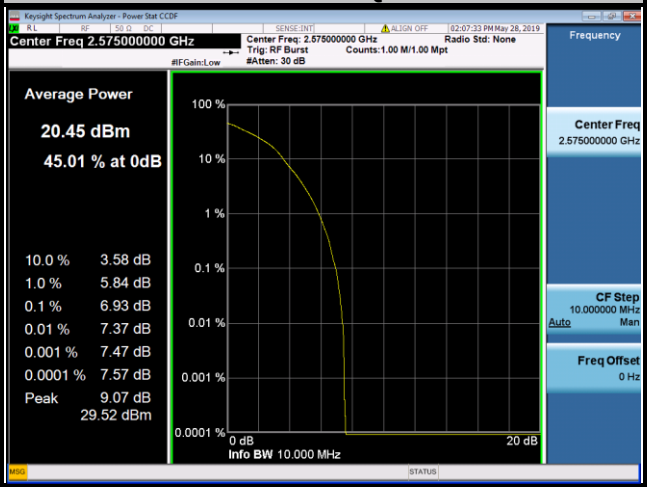




LTE Band 38									
Channel Bandwidth: 5 MHz					Channel Bandwidth: 10 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
37775	2572.5	5.28	6.79	7.01	37800	2575.0	5.38	6.93	6.81
38000	2595.0	5.26	6.78	6.79	38000	2595.0	5.38	6.70	6.52
38225	2617.5	5.08	6.45	6.58	38200	2615.0	5.38	6.22	6.48

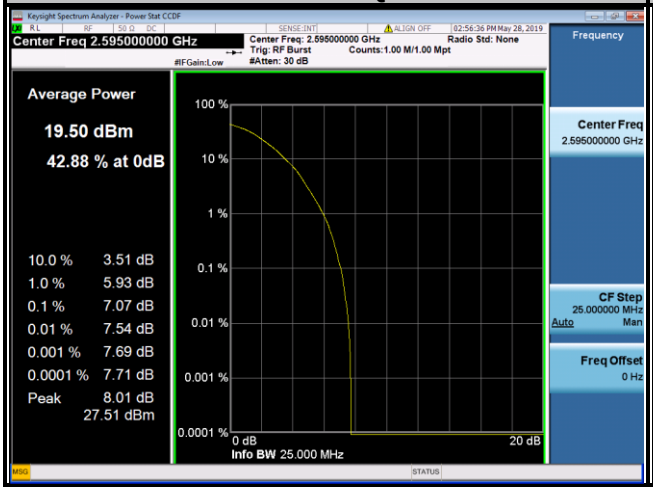
Spectrum Plot of Worst Value	
5 MHz / 64QAM	10 MHz / 16QAM

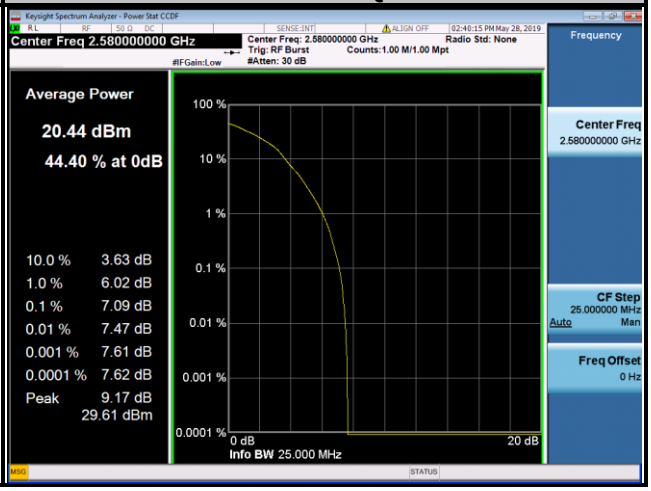




LTE Band 38									
Channel Bandwidth: 15 MHz					Channel Bandwidth: 20 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
37825	2577.5	5.11	6.86	6.67	37850	2580.0	5.41	7.09	6.77
38000	2595.0	6.28	6.86	7.07	38000	2595.0	6.28	6.51	6.85
38175	2612.5	5.74	6.39	6.68	38150	2610.0	5.85	6.59	6.57

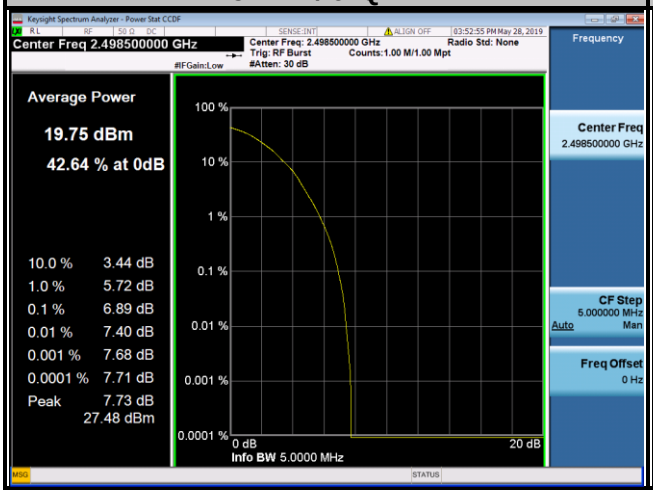
Spectrum Plot of Worst Value	
15 MHz / 64QAM	20 MHz / 16QAM





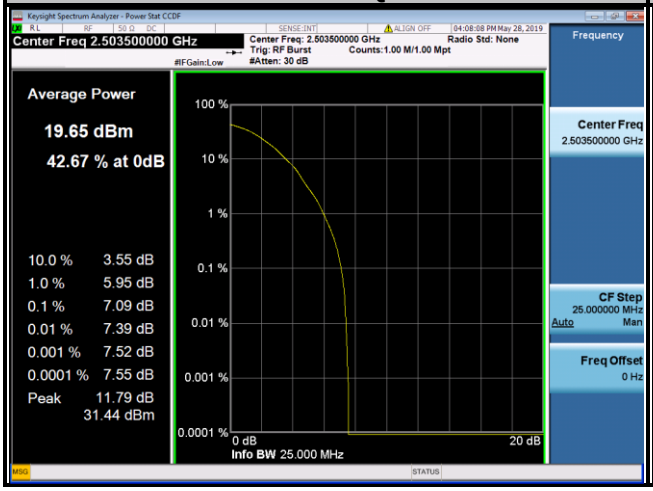
LTE Band 41									
Channel Bandwidth: 5 MHz					Channel Bandwidth: 10 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
39675	2498.5	5.97	6.83	6.89	39700	2501.0	5.91	6.68	6.46
40620	2593.0	5.35	6.52	6.87	40620	2593.0	5.58	6.57	6.86
41565	2687.5	5.24	6.43	6.67	41540	2685.0	5.41	6.50	6.54

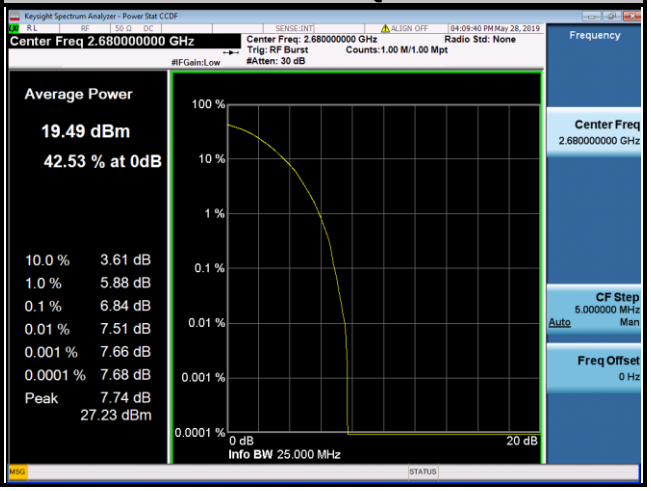
Spectrum Plot of Worst Value	
5 MHz / 64QAM	10 MHz / 64QAM



LTE Band 41									
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
39725	2503.5	5.96	6.62	7.09	39750	2506.0	5.84	6.58	6.71
40620	2593.0	5.46	7.01	6.83	40620	2593.0	5.71	6.81	6.68
41515	2682.5	5.48	6.46	6.86	41490	2680.0	5.66	6.69	6.84

Spectrum Plot of Worst Value	
15 MHz / 64QAM	20 MHz / 64QAM



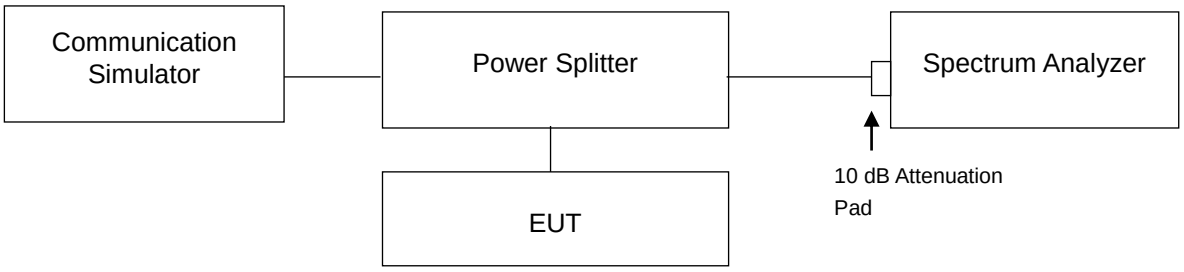


4.7 Conducted Spurious Emissions

4.7.1 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 55 + 10 log (P) dB. The limit of emission is equal to -25 dBm.

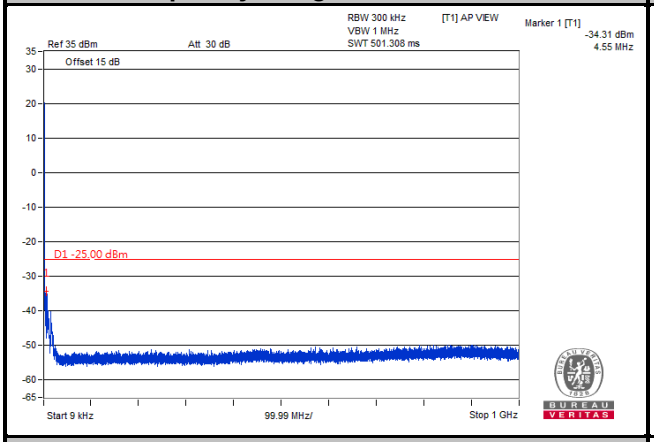
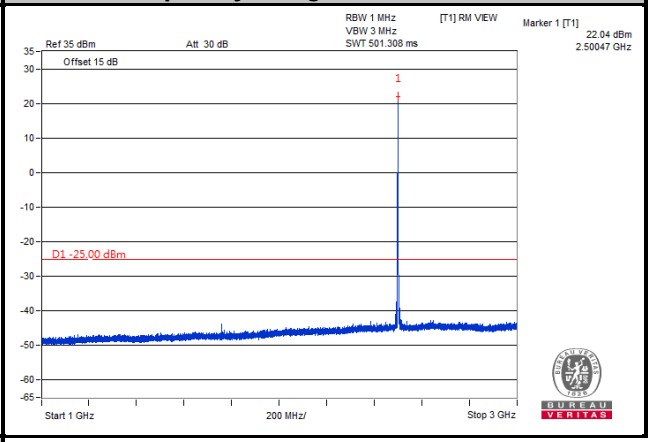
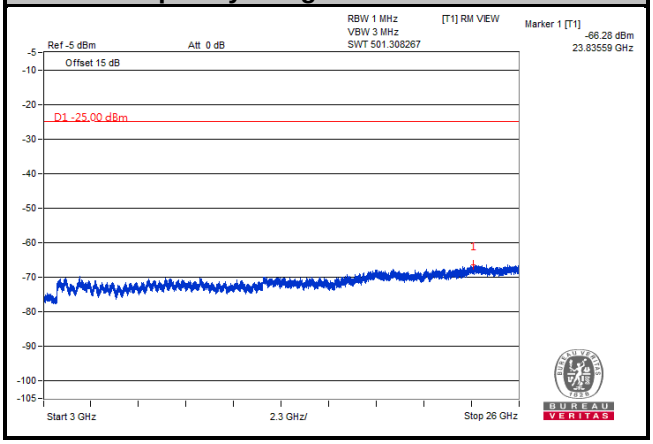
4.7.2 Test Setup



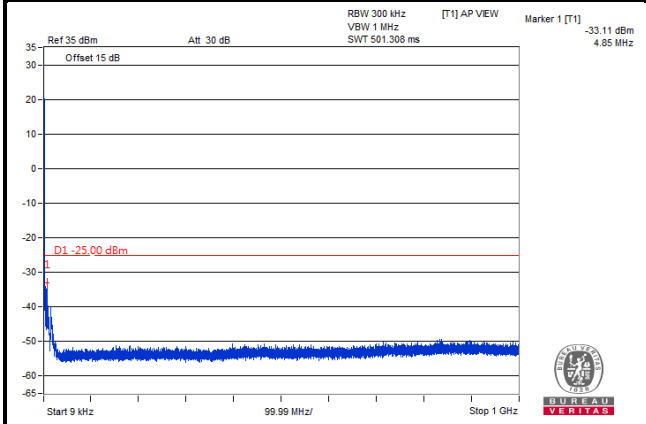
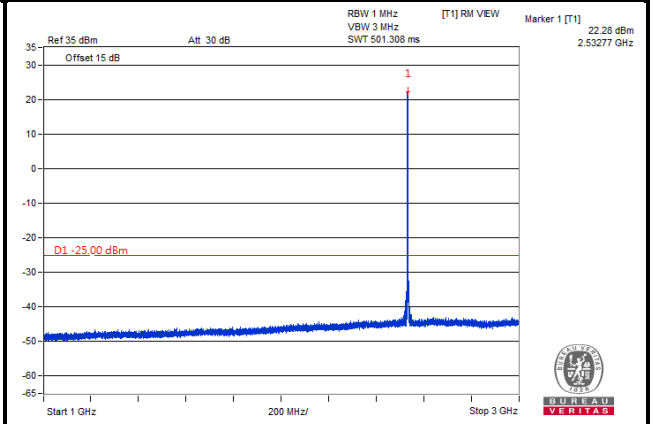
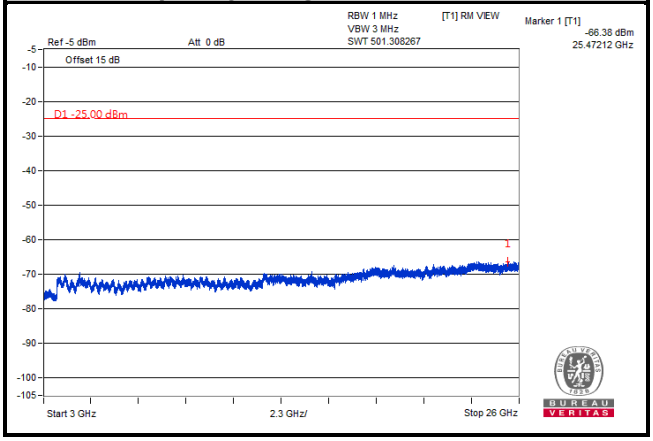
4.7.3 Test Procedure

a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
b. Measuring frequency range is from 9 kHz to 3 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 300 kHz and VBW = 1 MHz are used for conducted emission measurement.
c. Measuring frequency range is from 3 GHz to 26 or 27 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 1 MHz and VBW = 3 MHz are used for conducted emission measurement.
d. Spectrum RBW settings are referenced to ANSI 63.26 section 5.7.2.

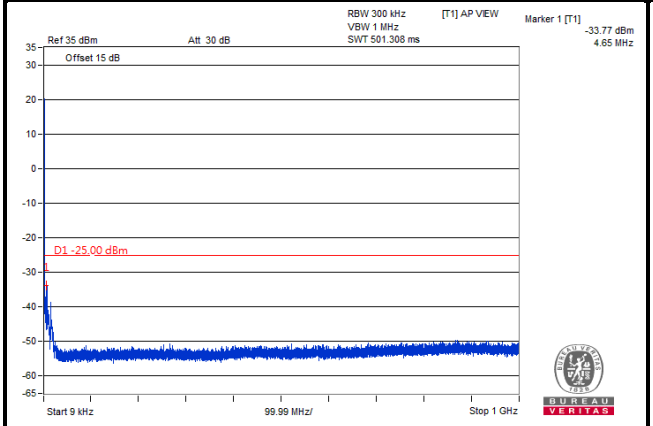
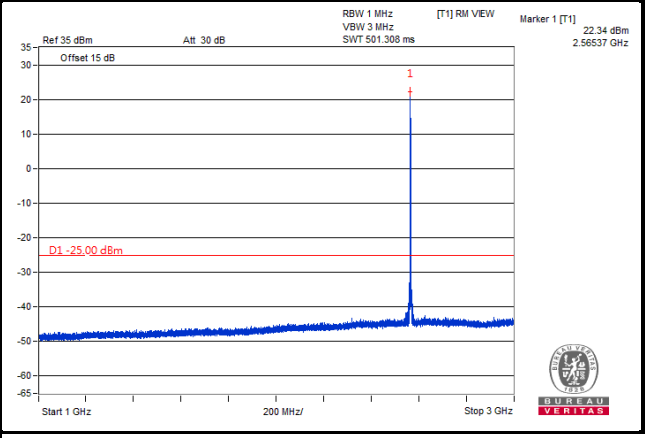
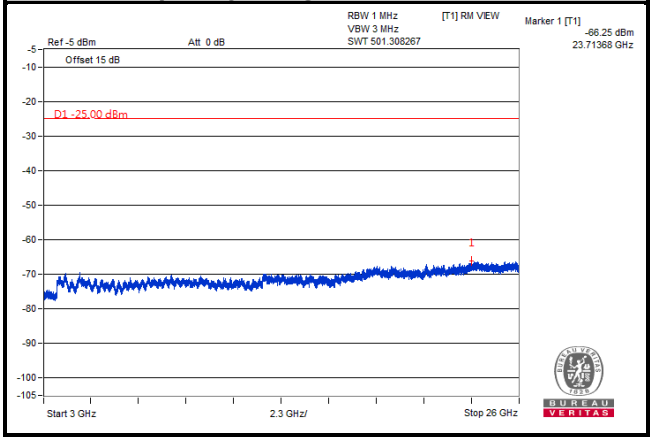
4.7.4 Test Results

LTE Band 7	
Channel Bandwidth: 5 MHz	
Channel 20775	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 26 GHz	
	

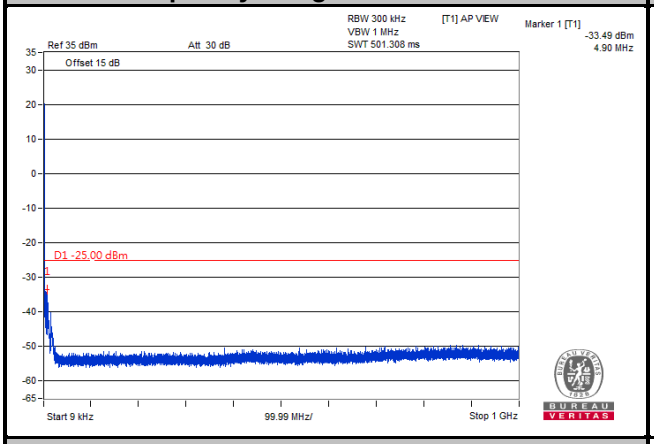
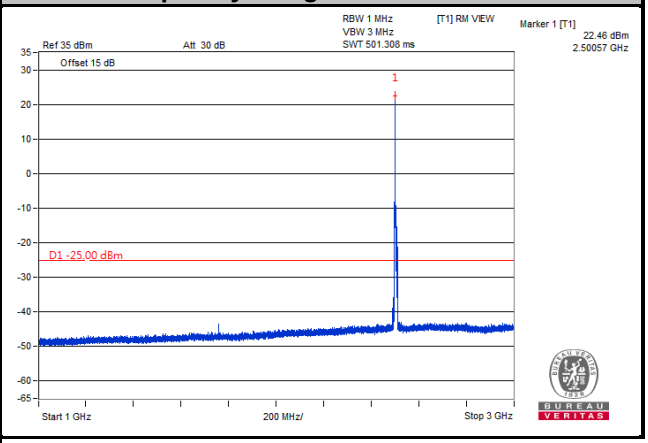
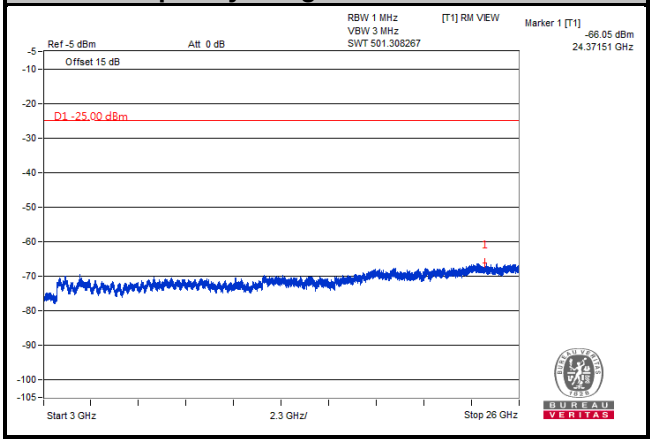
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 7	
Channel Bandwidth: 5 MHz	
Channel 21100	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 26 GHz	
	

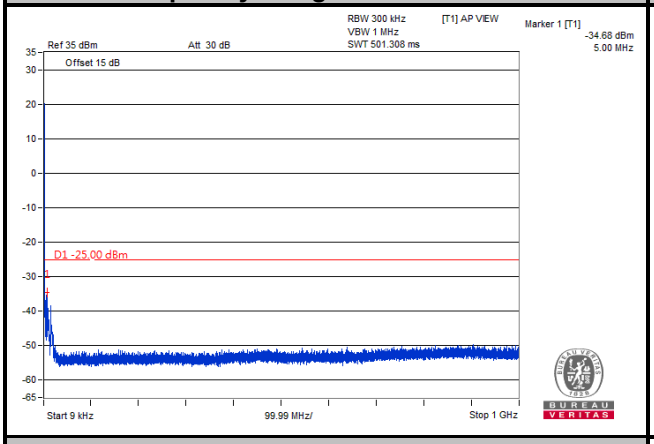
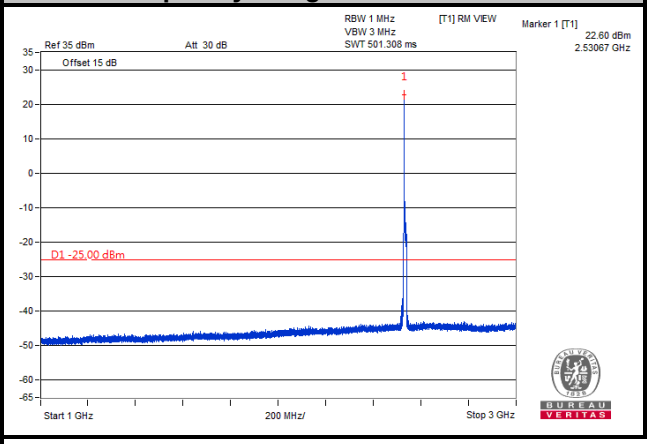
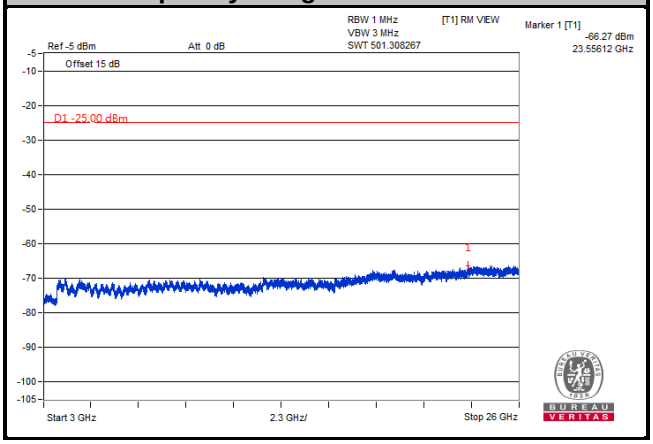
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 7	
Channel Bandwidth: 5 MHz	
Channel 21425	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 26 GHz	
	

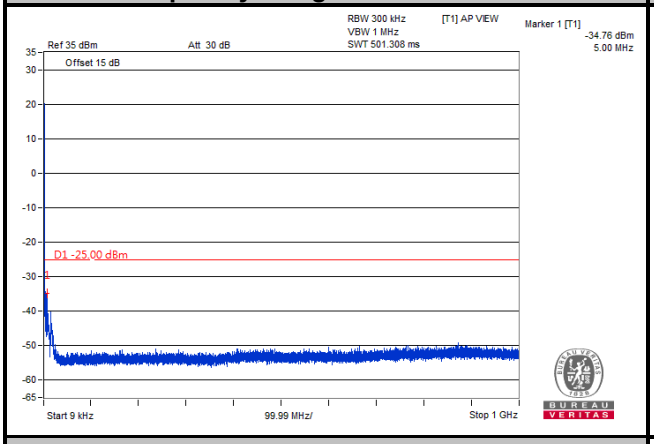
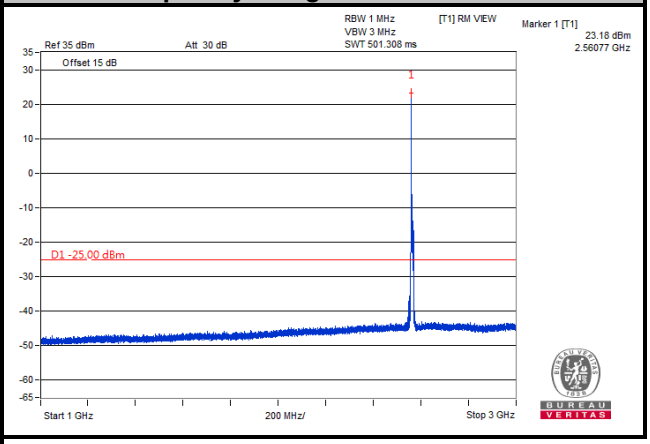
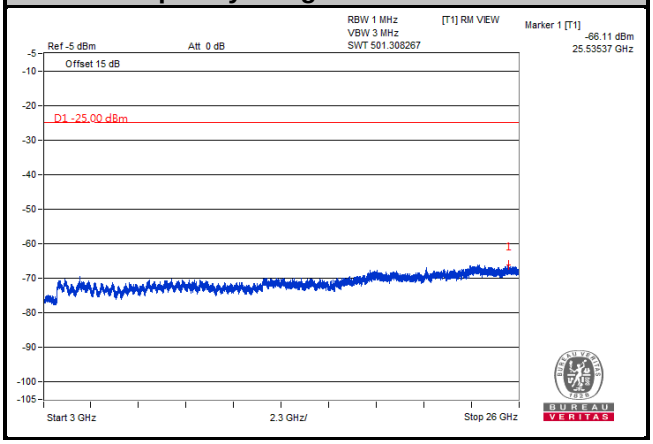
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 7	
Channel Bandwidth: 10 MHz	
Channel 20800	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 26 GHz	
	

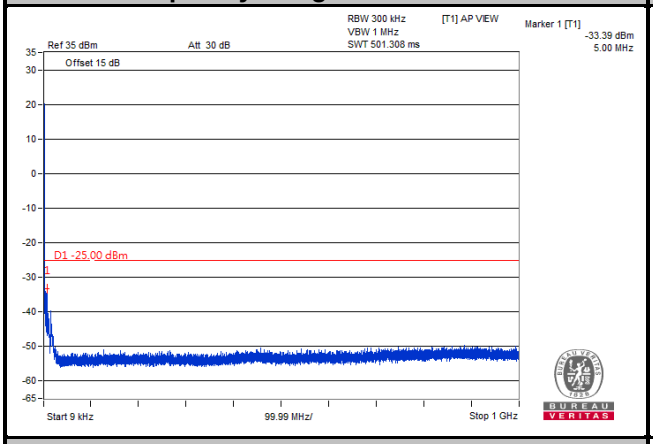
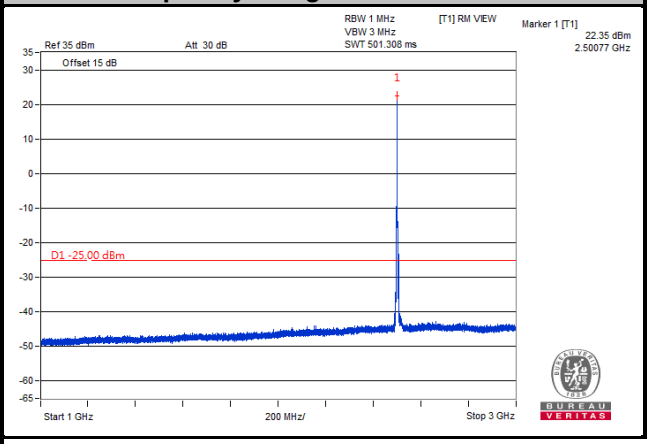
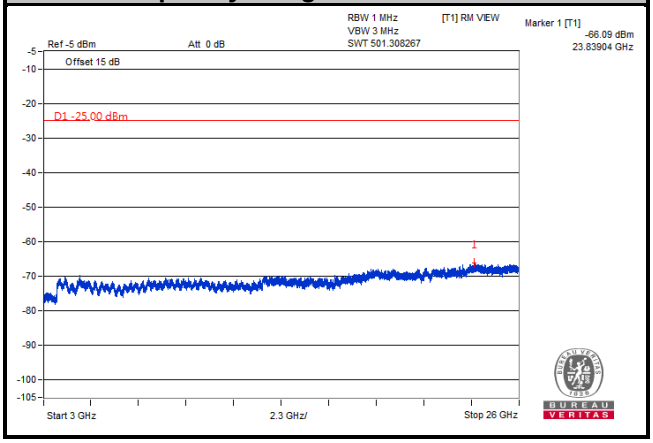
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 7	
Channel Bandwidth: 10 MHz	
Channel 21100	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 26 GHz	
	

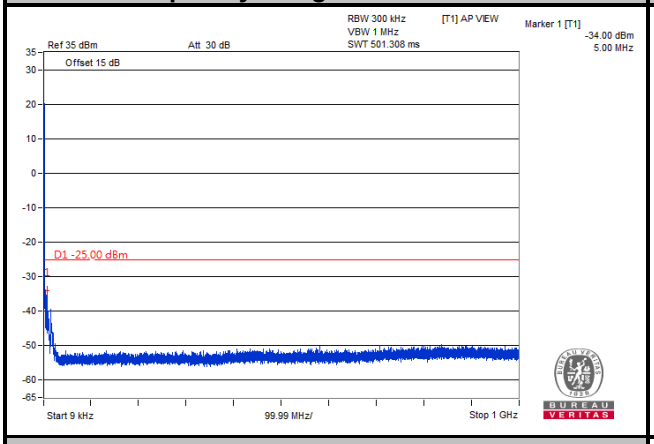
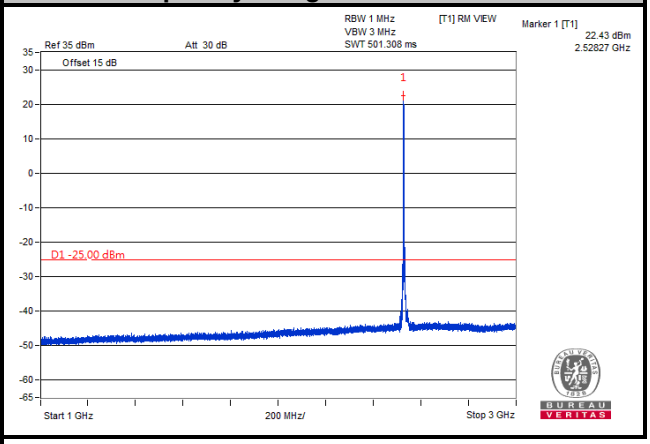
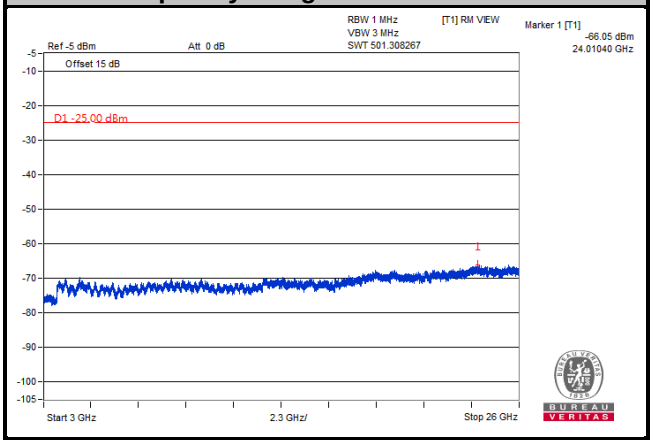
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 7	
Channel Bandwidth: 10 MHz	
Channel 21400	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 26 GHz	
	

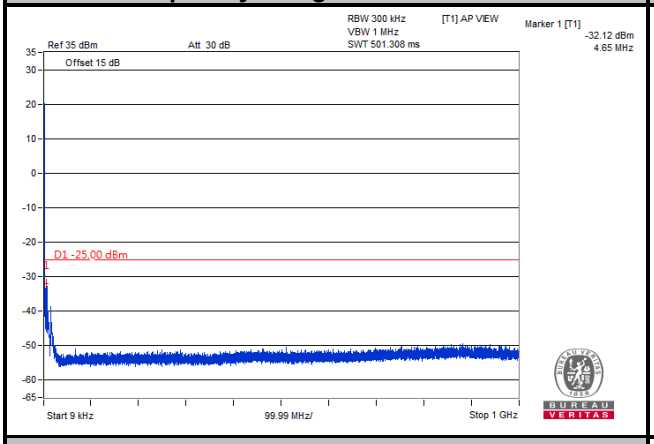
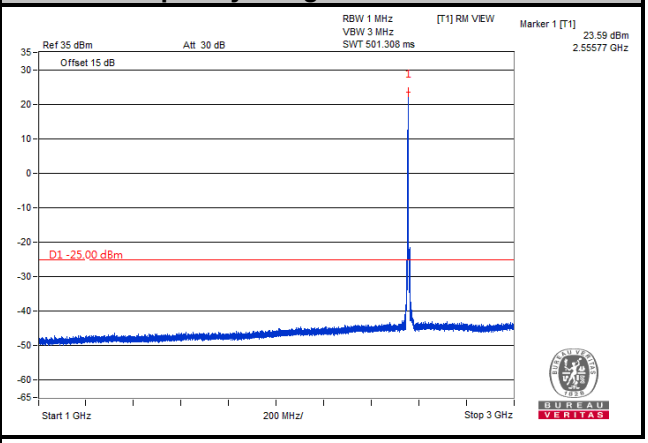
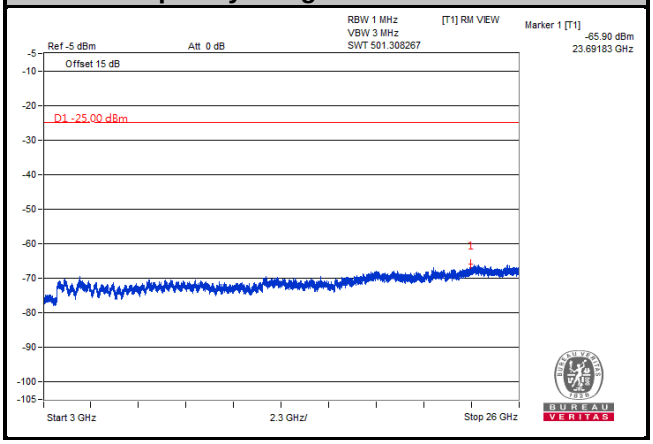
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 7	
Channel Bandwidth: 15 MHz	
Channel 20825	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 26 GHz	
	

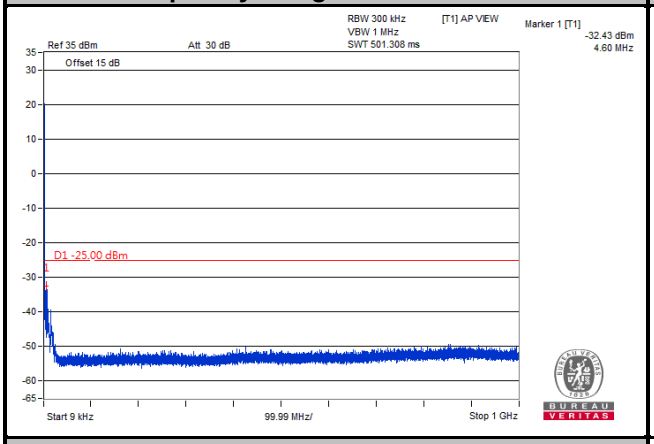
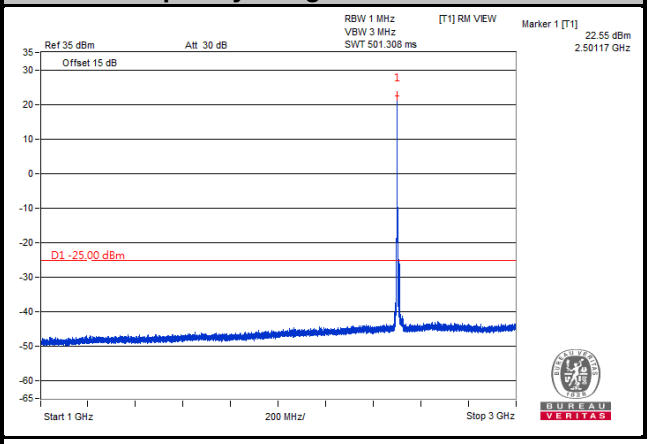
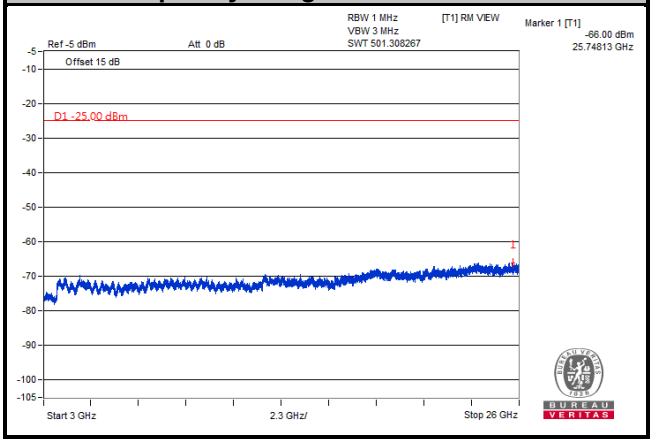
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 7	
Channel Bandwidth: 15 MHz	
Channel 21100	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 26 GHz	
	

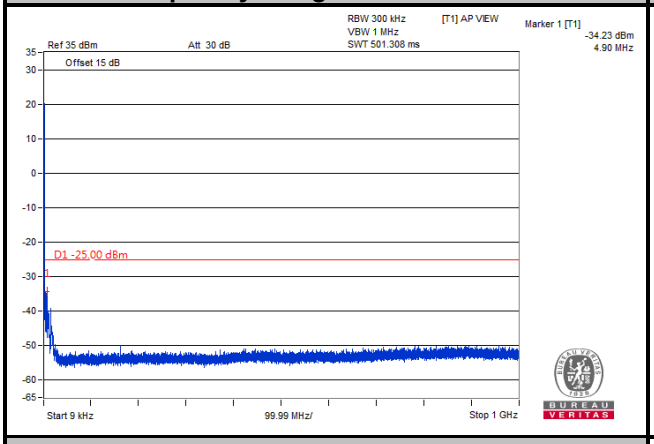
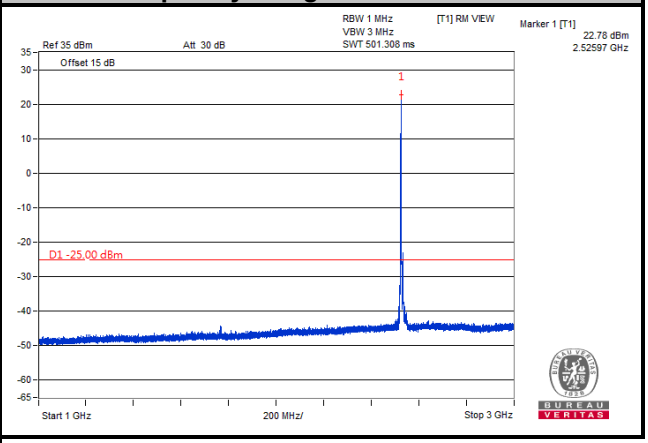
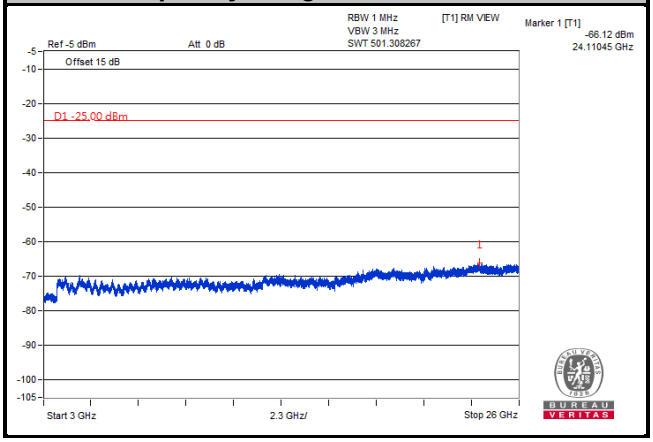
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 7	
Channel Bandwidth: 15 MHz	
Channel 21375	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 26 GHz	
	

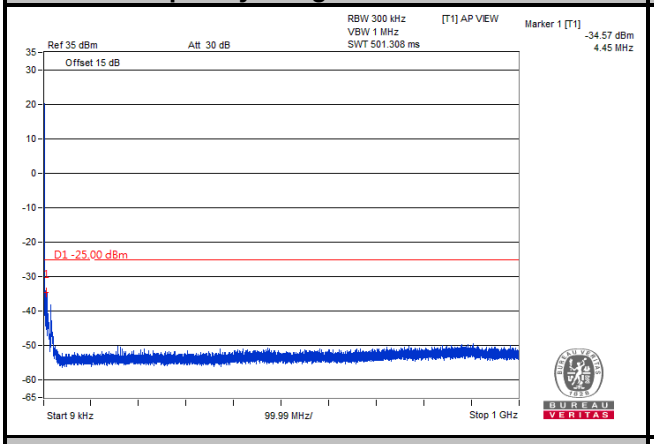
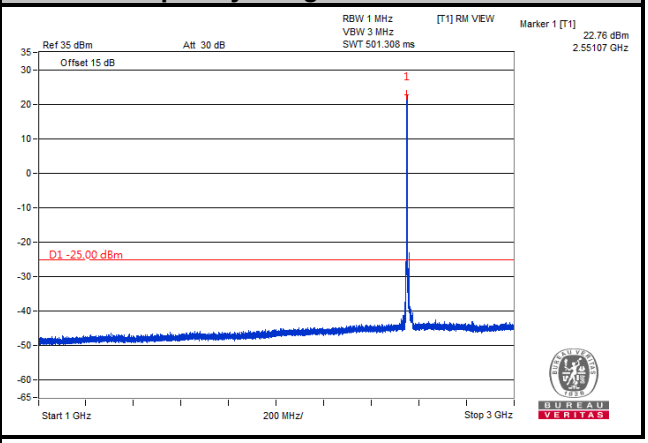
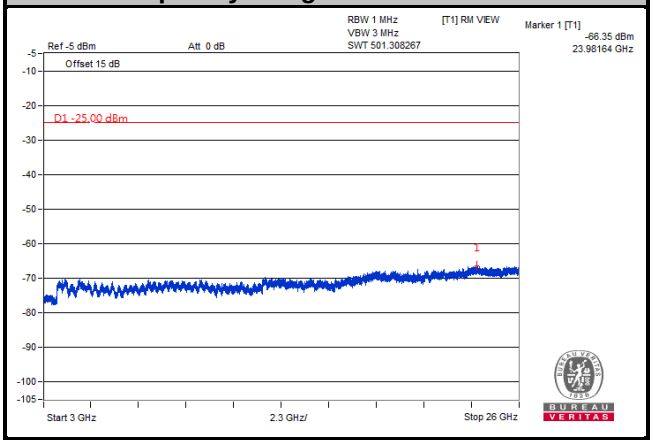
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 7	
Channel Bandwidth: 20 MHz	
Channel 20850	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 26 GHz	
	

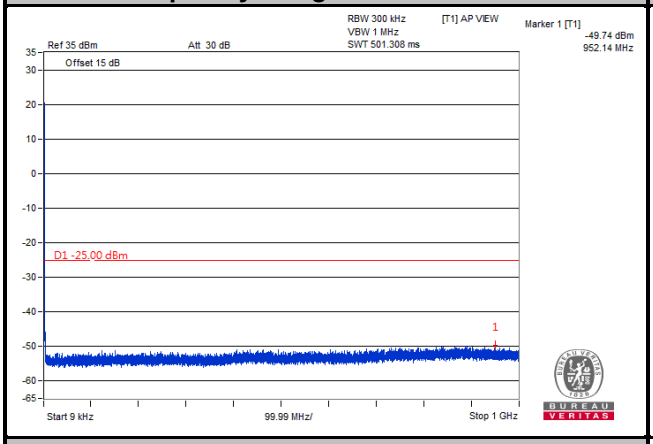
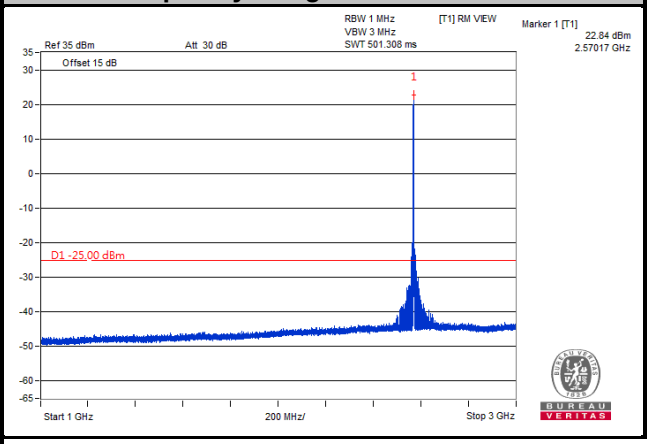
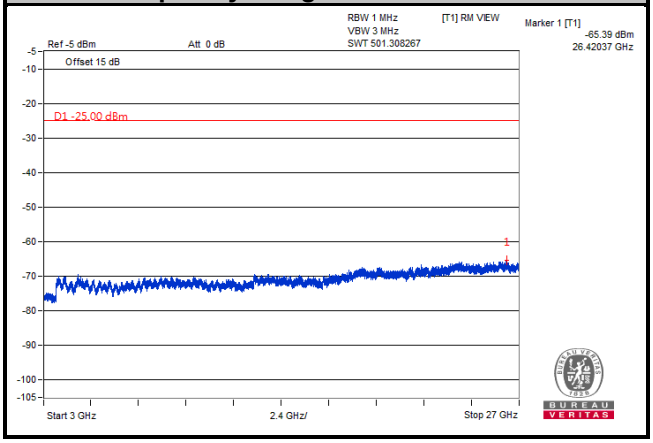
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 7	
Channel Bandwidth: 20 MHz	
Channel 21100	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 26 GHz	
	

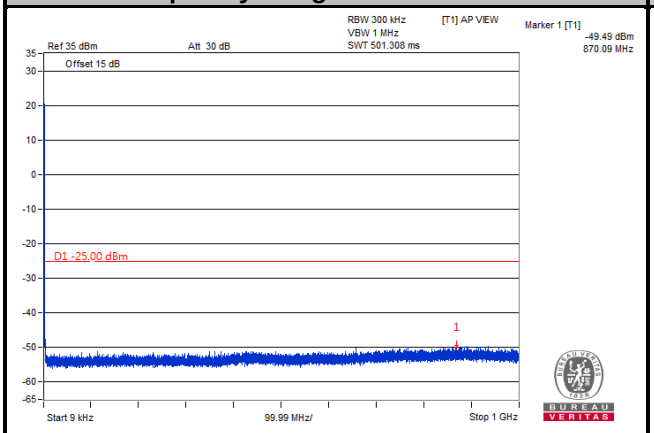
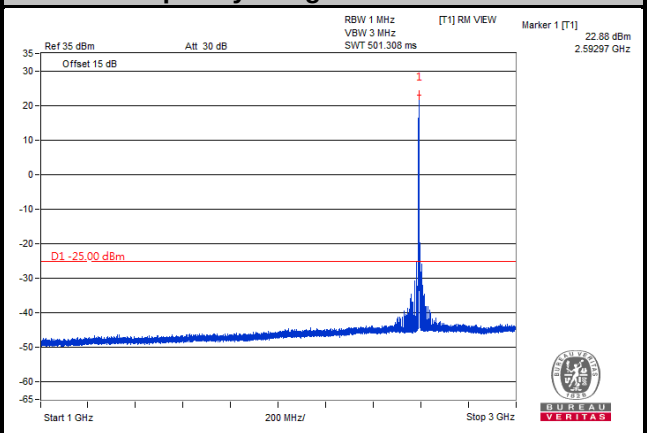
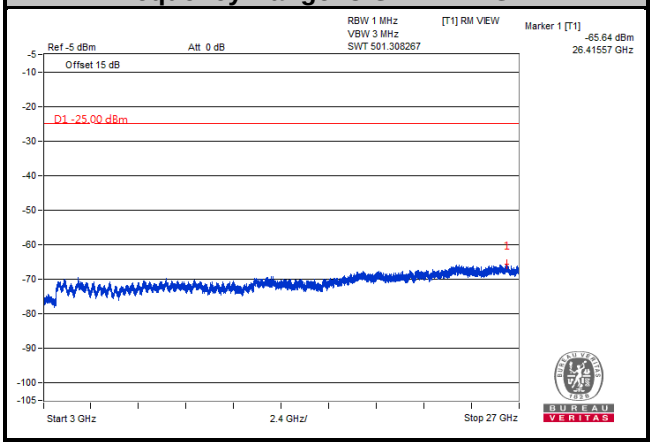
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 7	
Channel Bandwidth: 20 MHz	
Channel 21350	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 26 GHz	
	

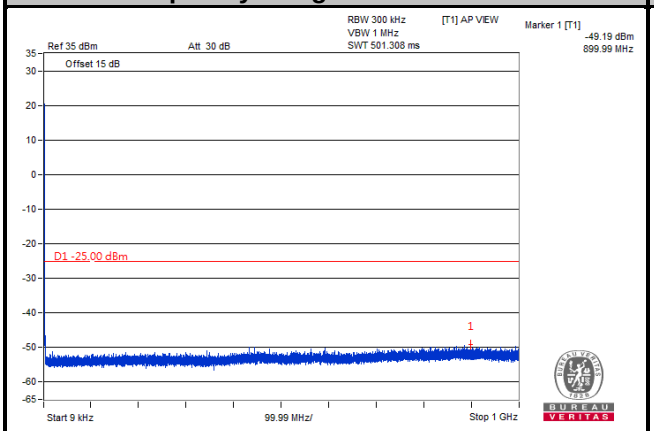
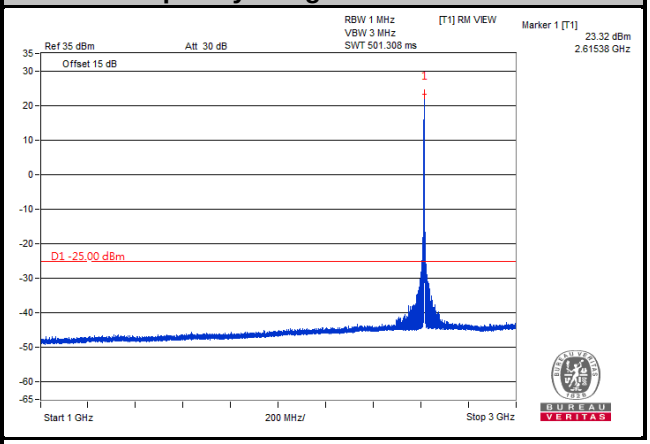
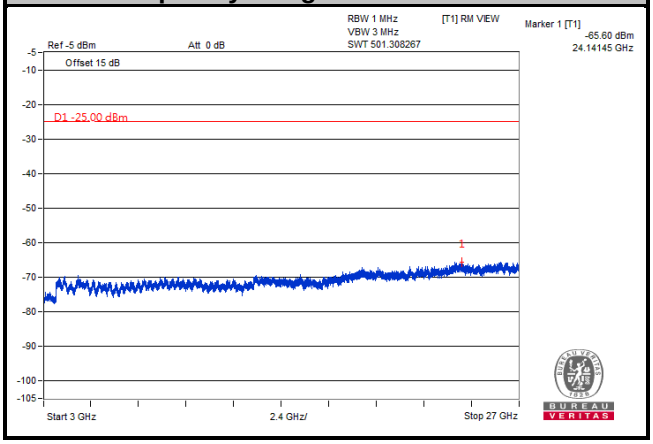
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 38	
Channel Bandwidth: 5 MHz	
Channel 37775	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

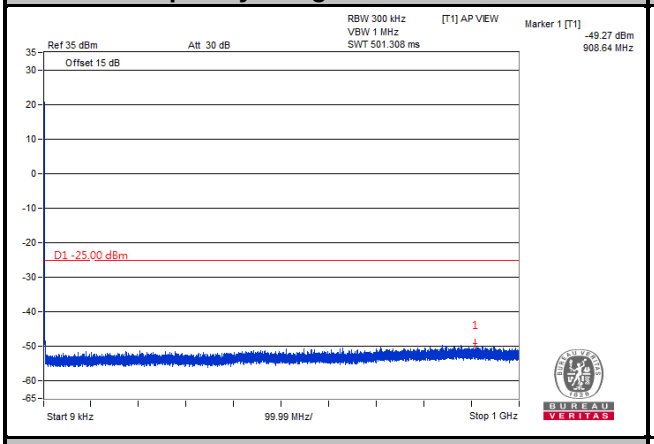
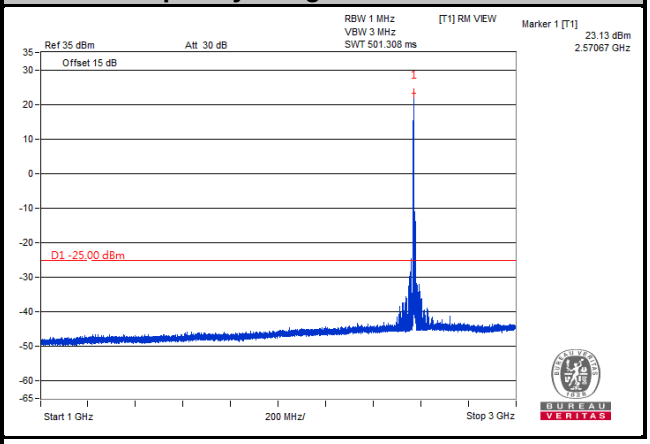
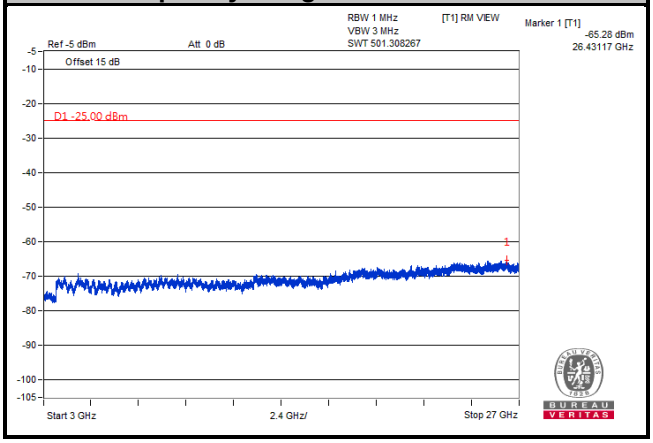
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 38	
Channel Bandwidth: 5 MHz	
Channel 38000	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

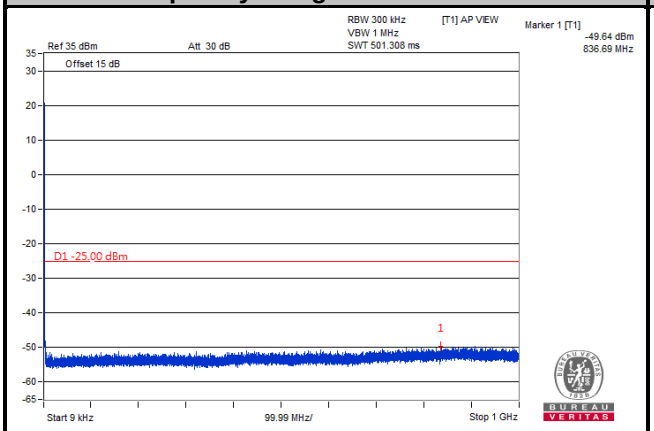
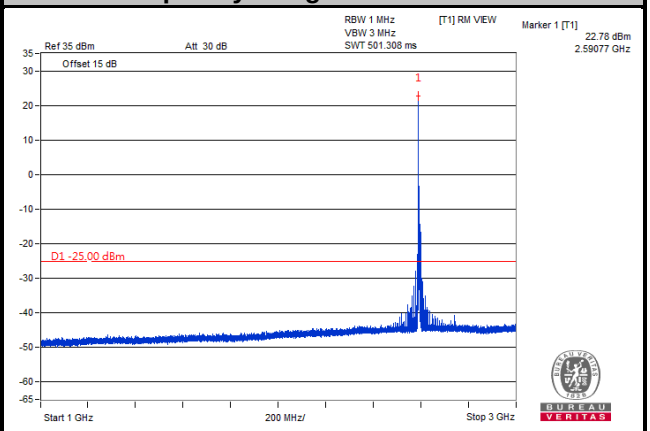
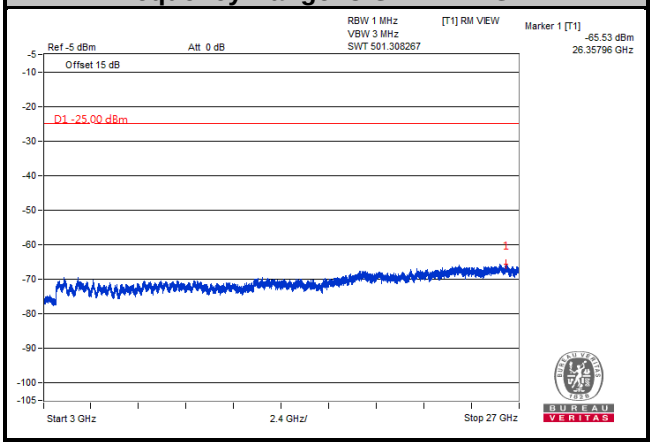
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 38	
Channel Bandwidth: 5 MHz	
Channel 38225	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

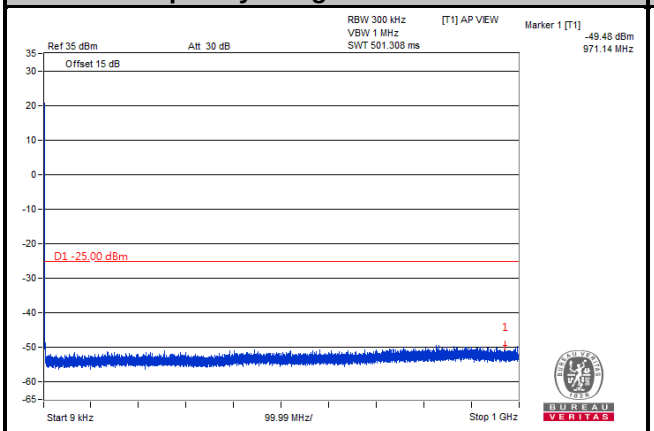
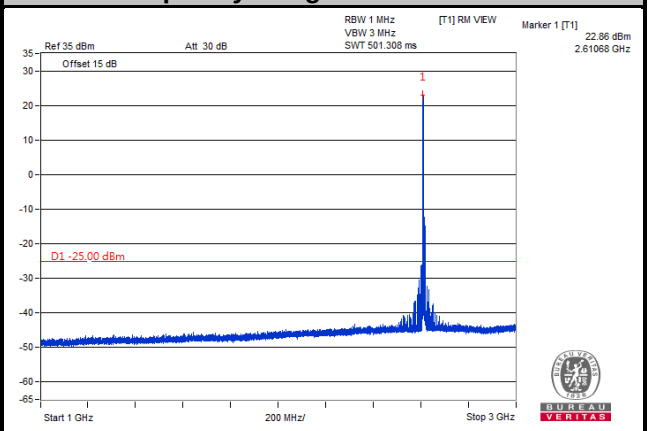
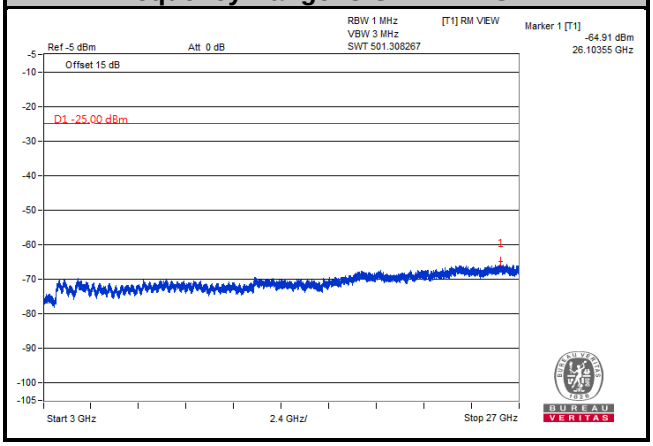
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 38	
Channel Bandwidth: 10 MHz	
Channel 37800	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

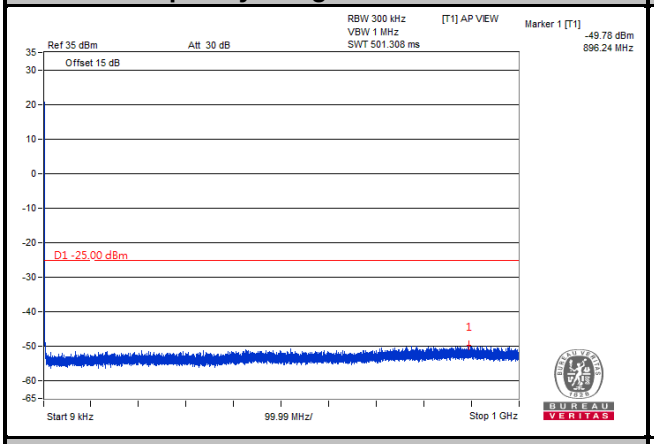
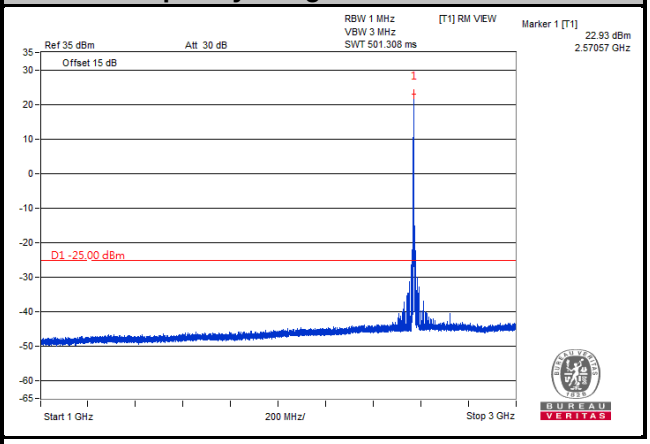
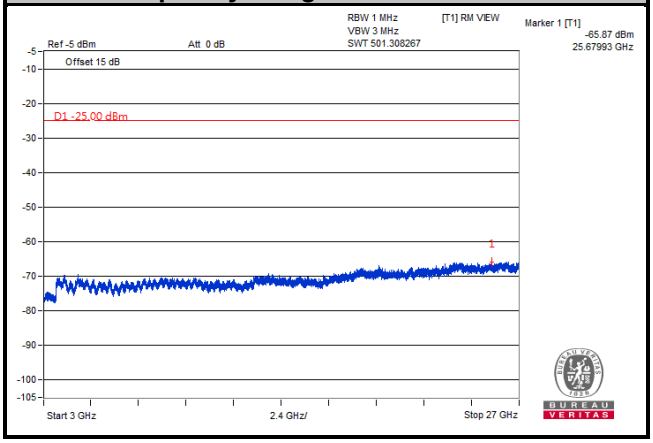
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 38	
Channel Bandwidth: 10 MHz	
Channel 38000	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

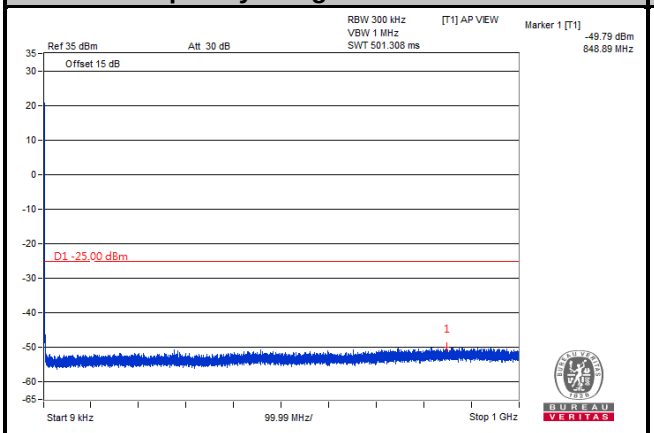
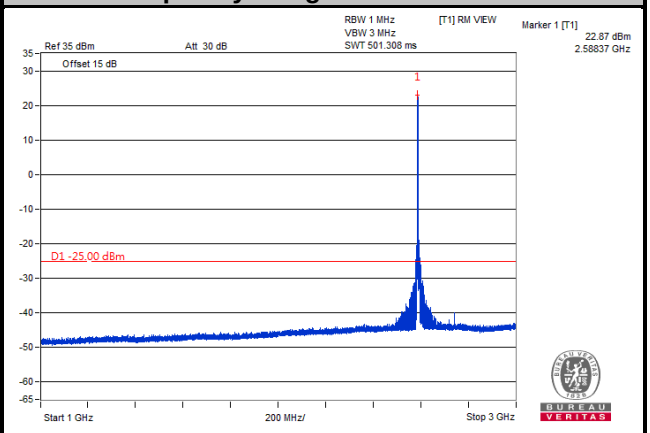
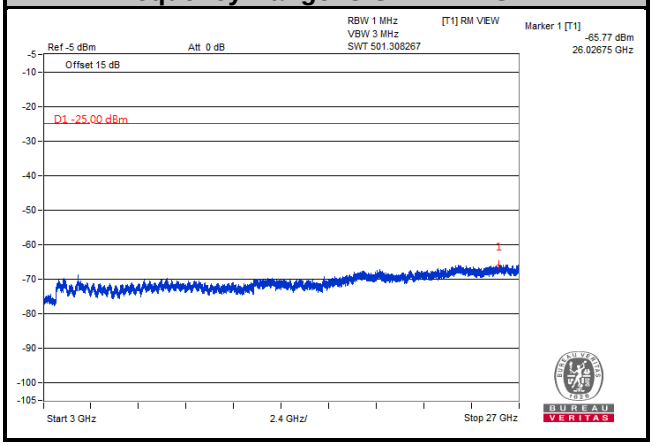
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 38	
Channel Bandwidth: 10 MHz	
Channel 38200	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

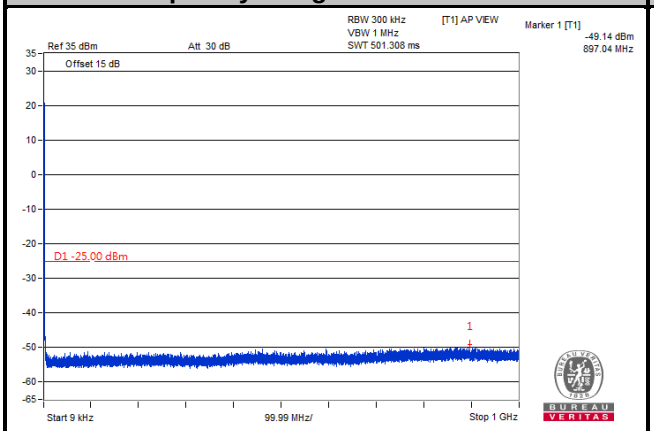
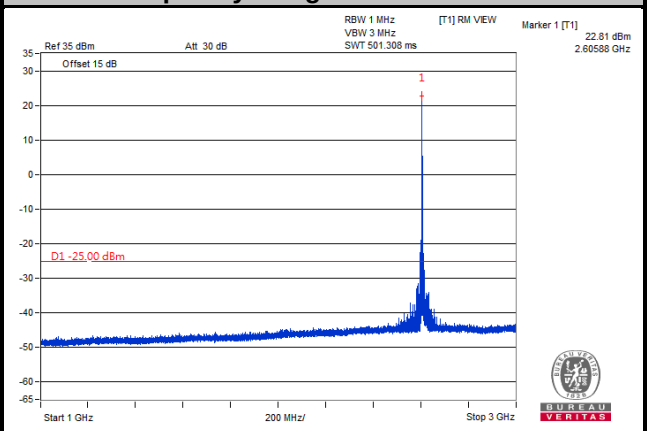
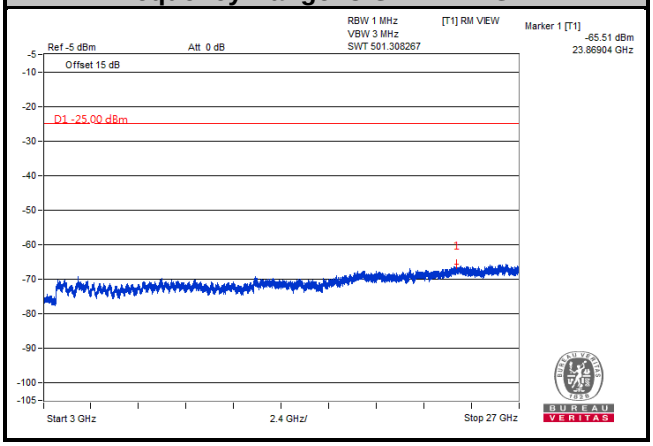
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 38	
Channel Bandwidth: 15 MHz	
Channel 37825	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

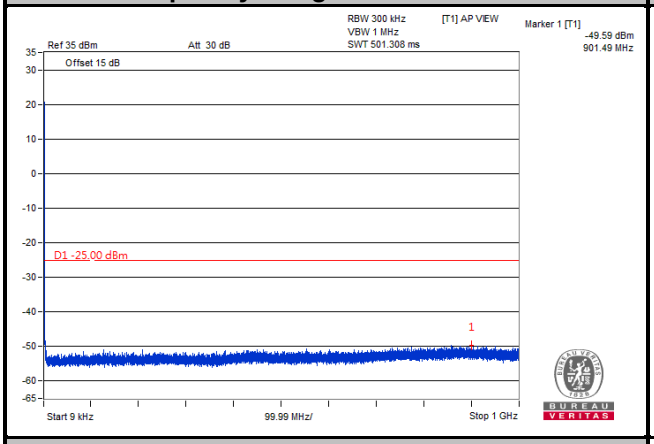
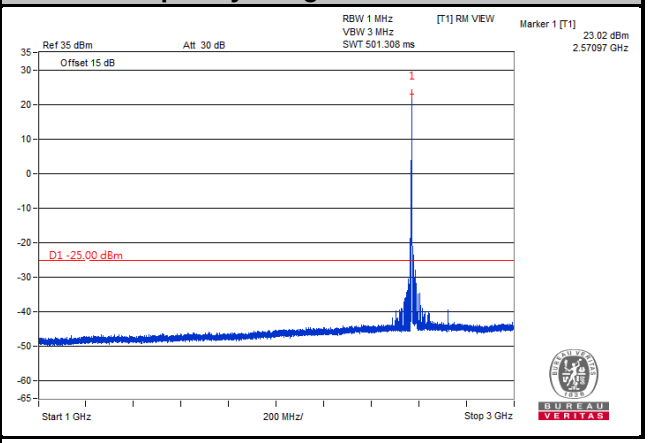
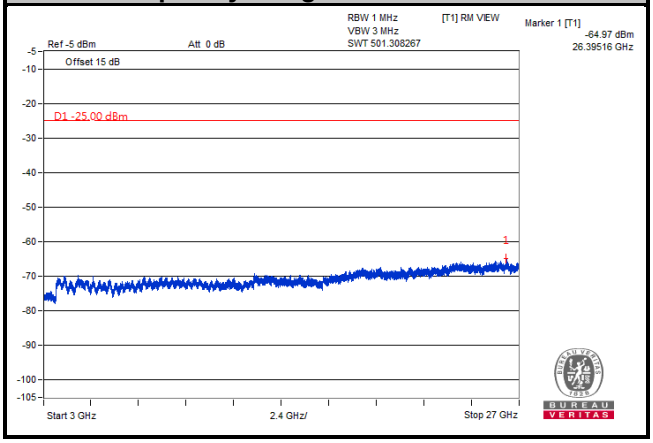
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 38	
Channel Bandwidth: 15 MHz	
Channel 38000	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

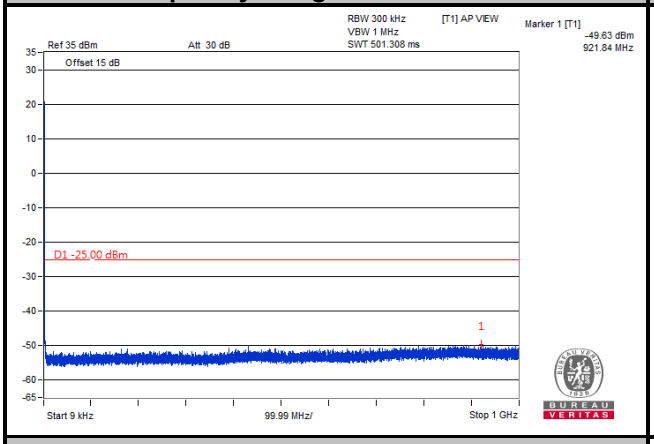
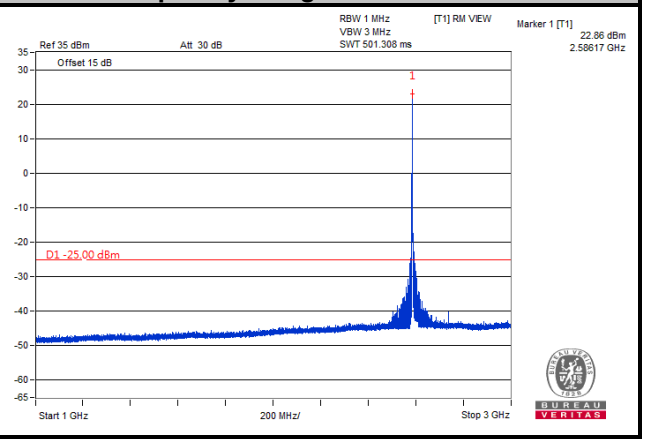
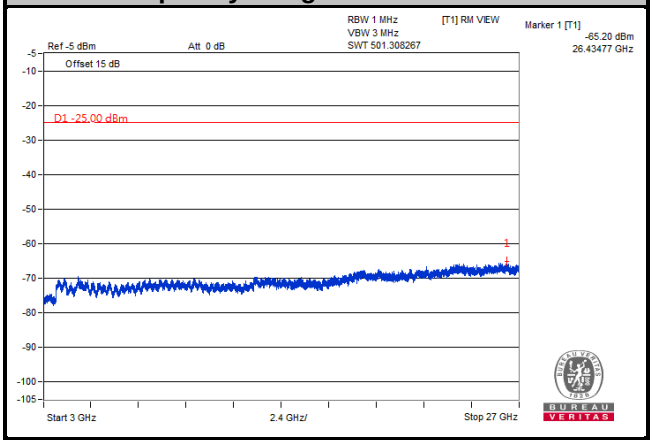
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 38	
Channel Bandwidth: 15 MHz	
Channel 38175	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

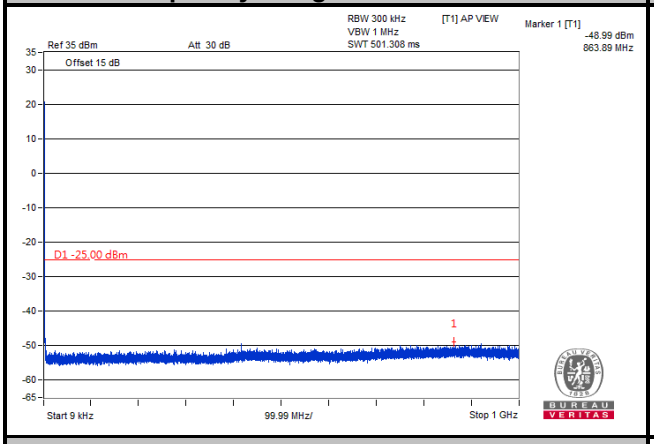
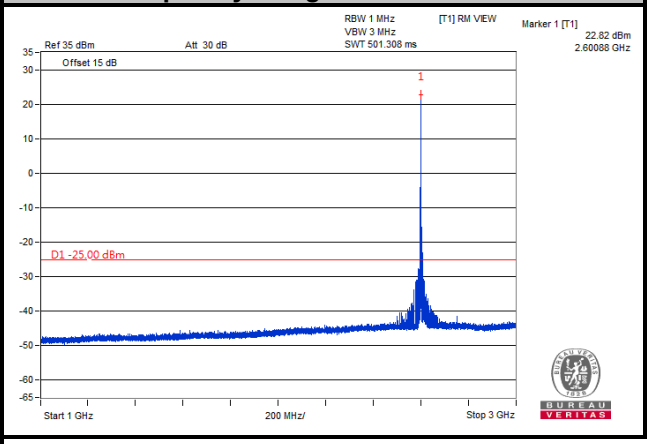
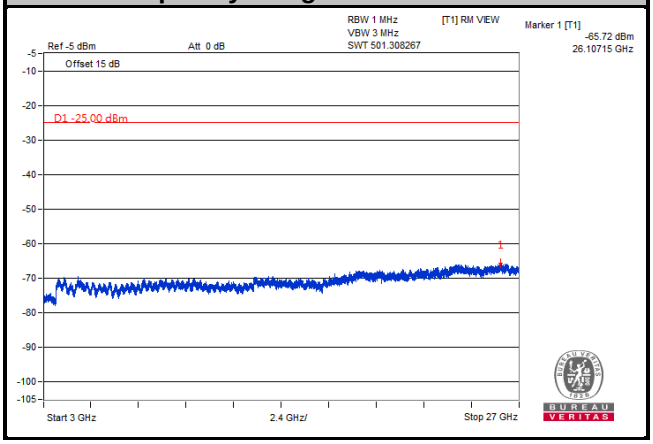
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 38	
Channel Bandwidth: 20 MHz	
Channel 37850	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

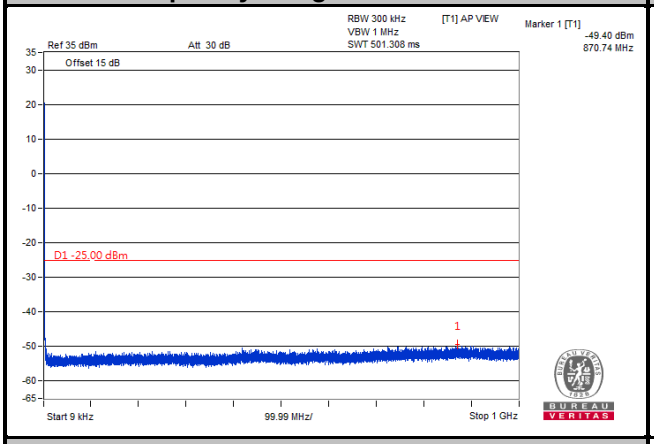
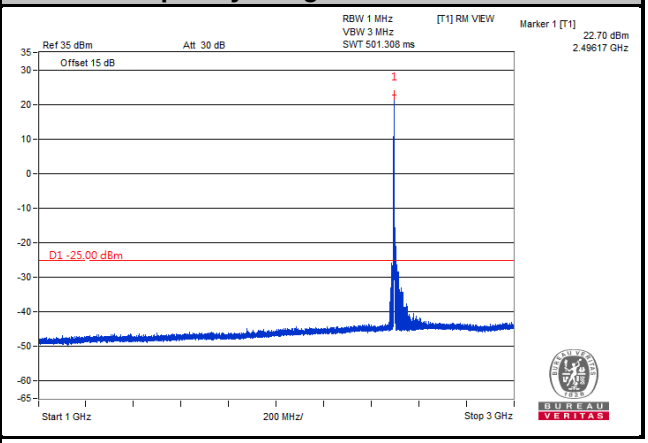
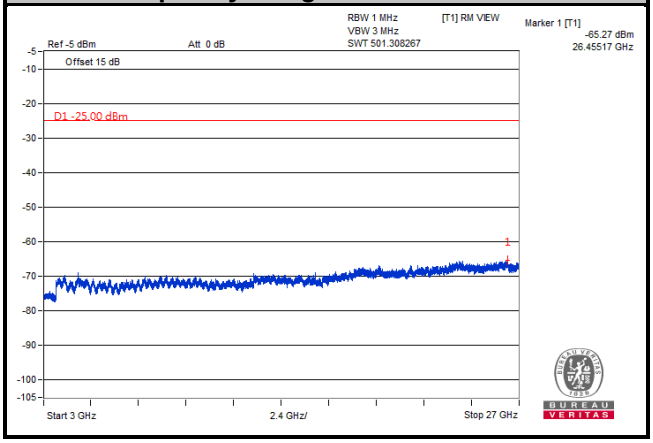
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 38	
Channel Bandwidth: 20 MHz	
Channel 38000	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

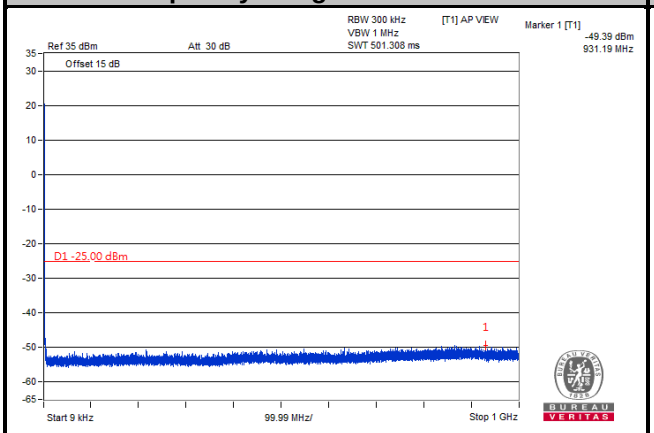
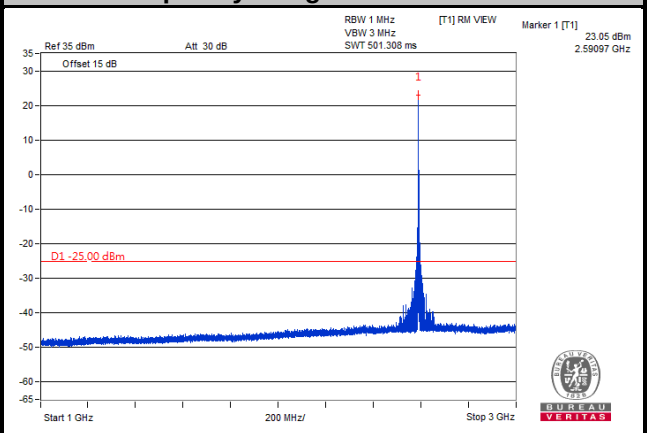
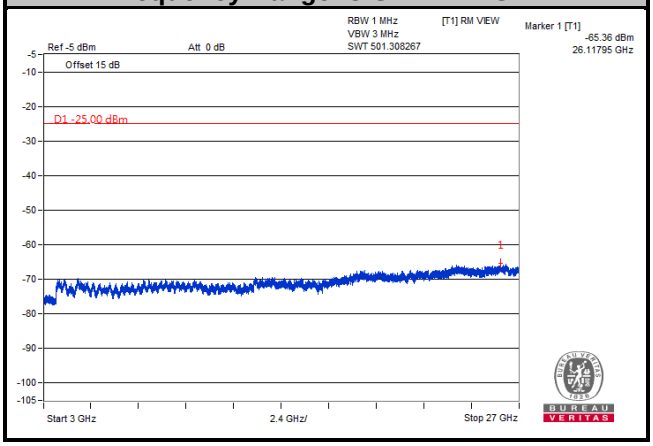
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 38	
Channel Bandwidth: 20 MHz	
Channel 38150	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

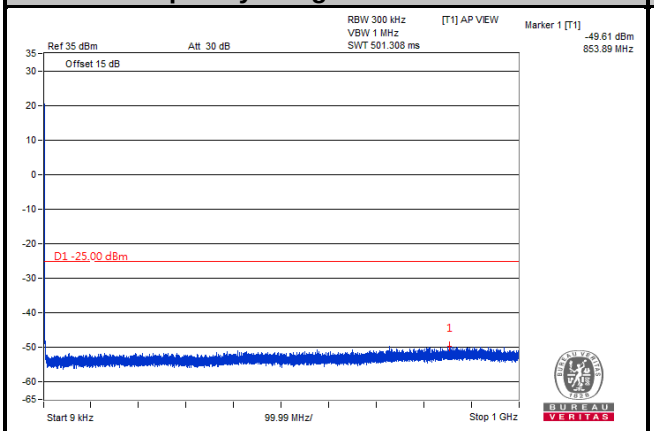
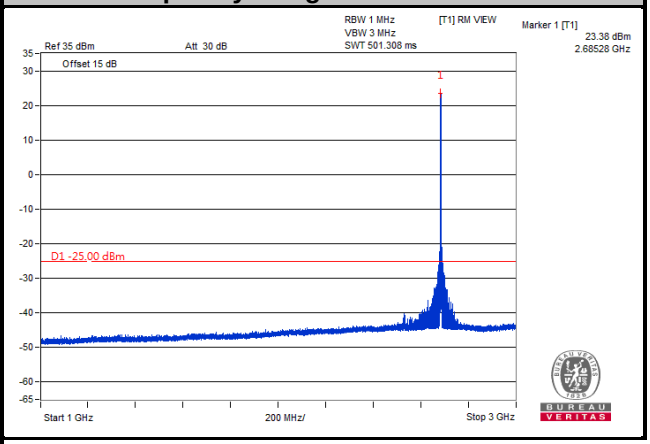
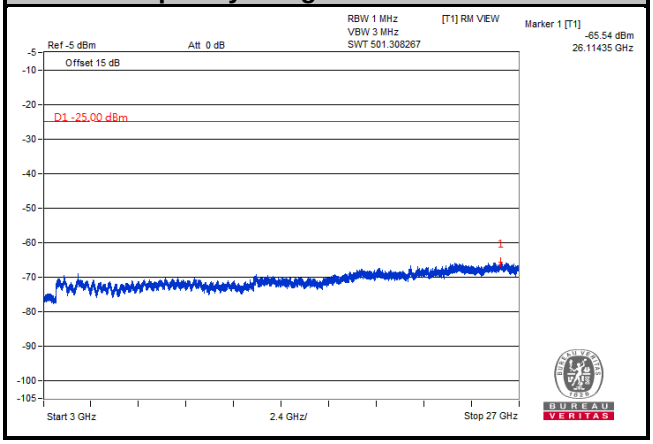
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 41	
Channel Bandwidth: 5 MHz	
Channel 39675	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

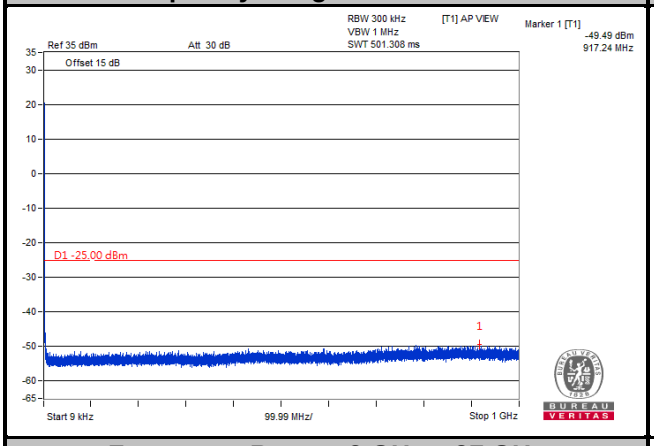
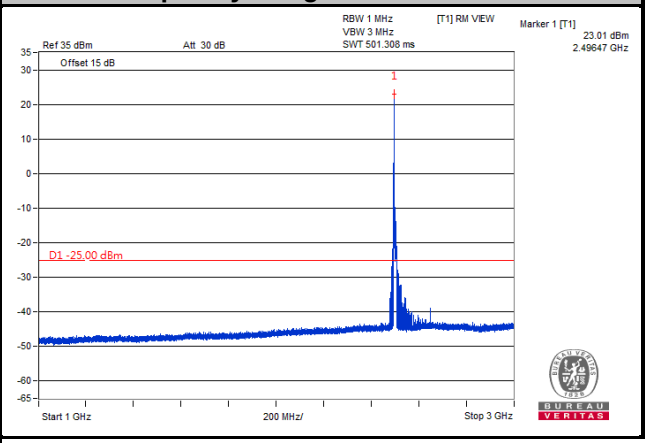
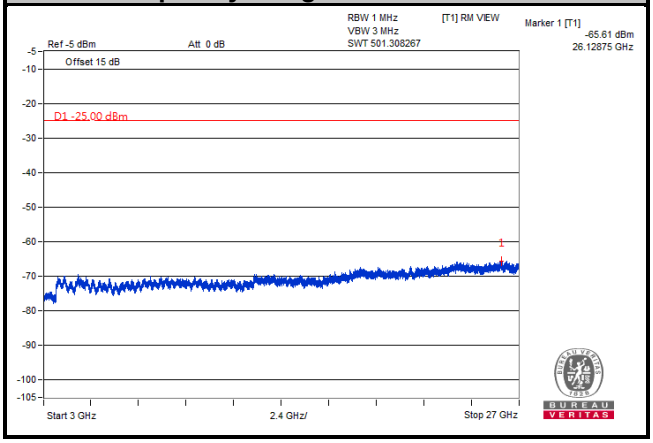
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 41	
Channel Bandwidth: 5 MHz	
Channel 40620	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

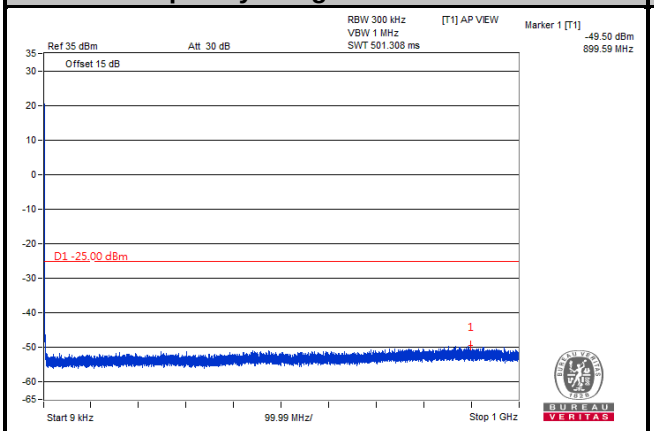
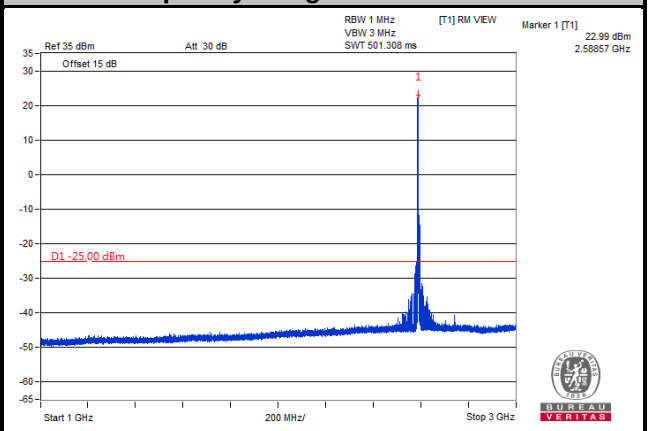
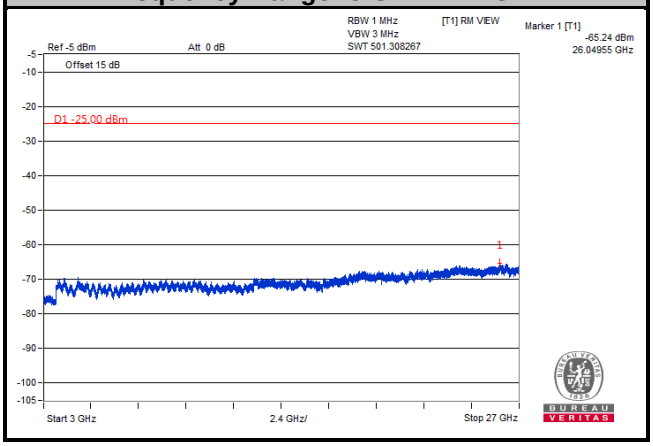
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 41	
Channel Bandwidth: 5 MHz	
Channel 41565	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

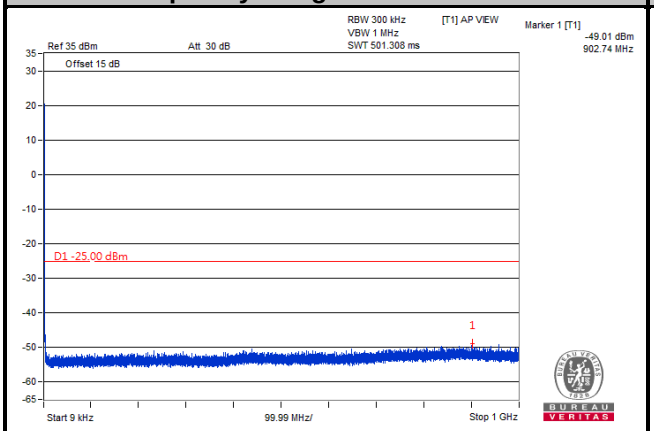
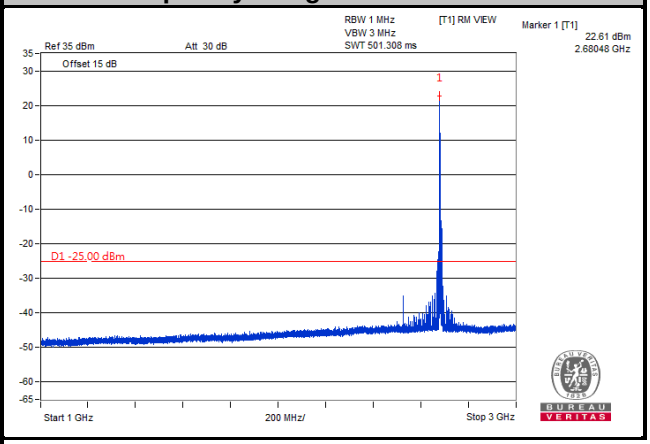
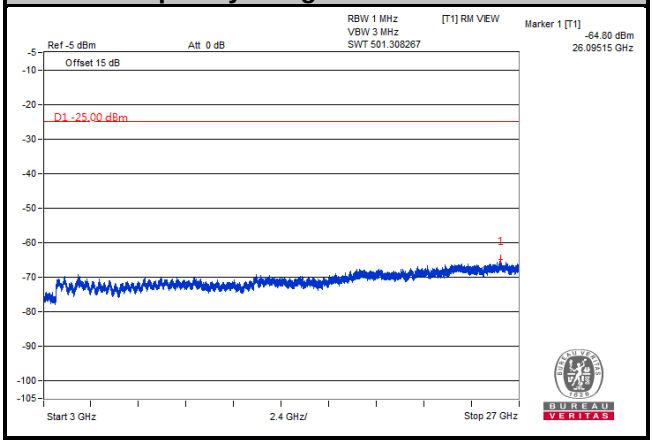
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 41	
Channel Bandwidth: 10 MHz	
Channel 39700	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

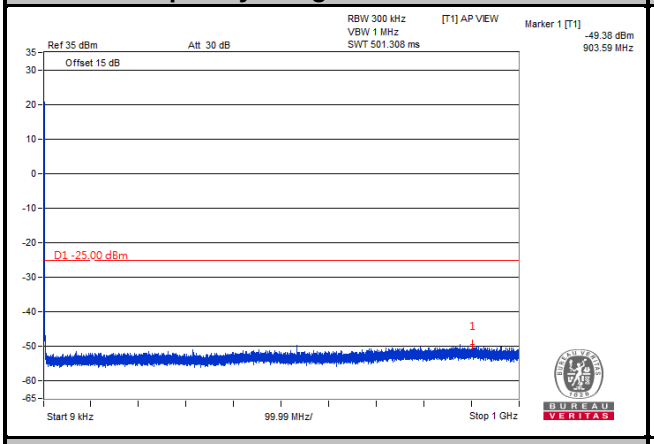
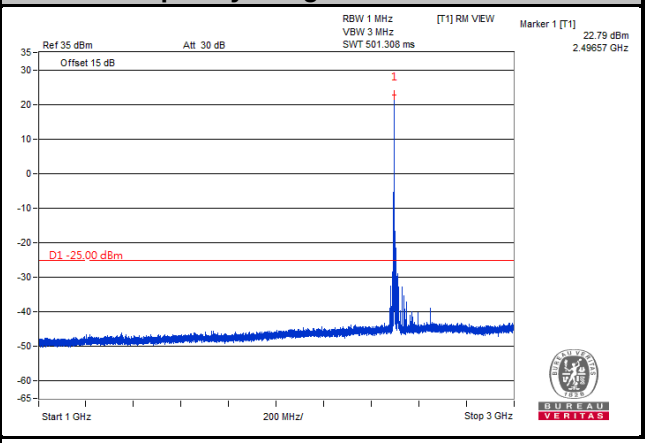
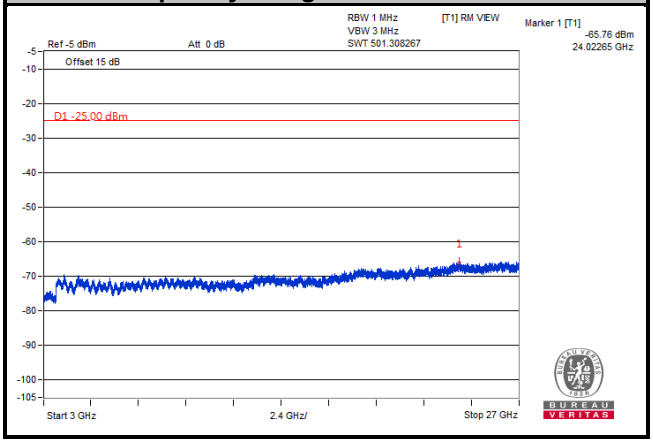
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 41	
Channel Bandwidth: 10 MHz	
Channel 40620	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

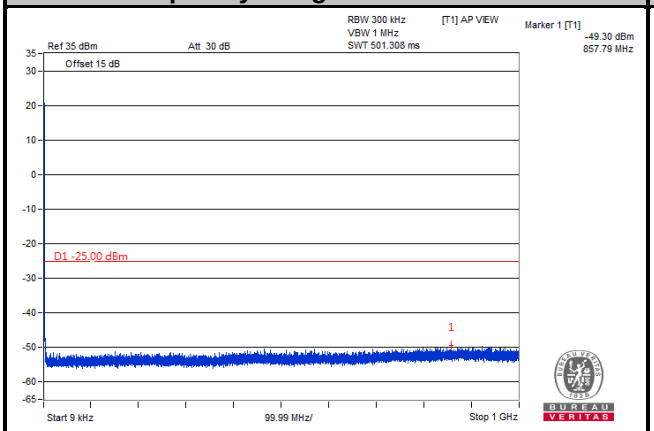
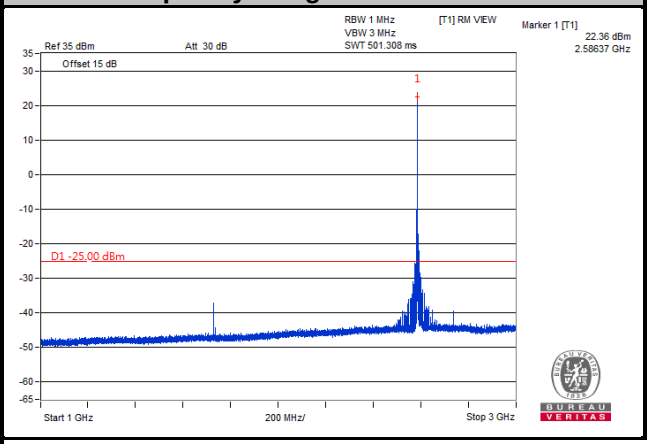
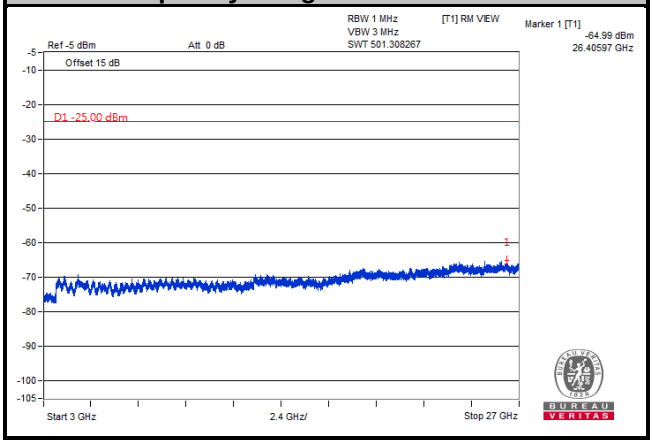
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 41	
Channel Bandwidth: 10 MHz	
Channel 41540	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

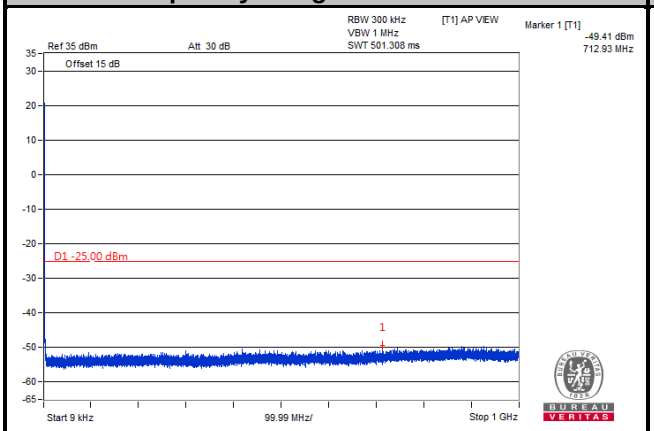
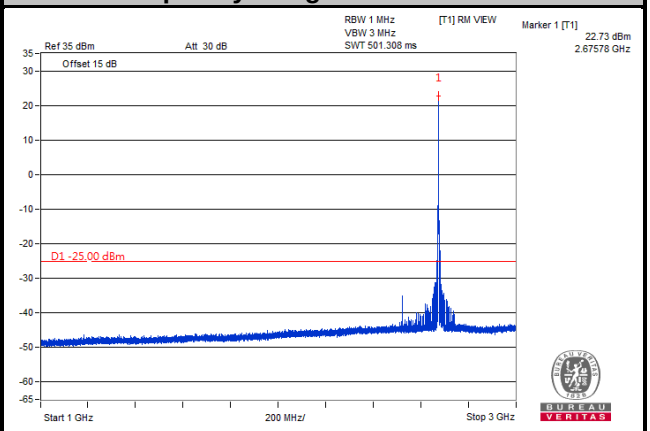
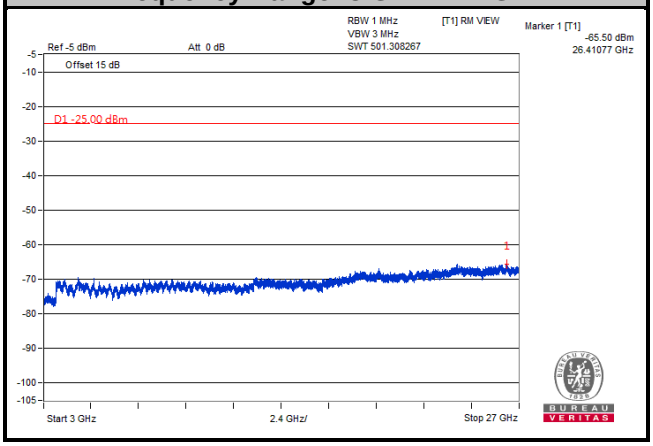
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 41	
Channel Bandwidth: 15 MHz	
Channel 39725	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

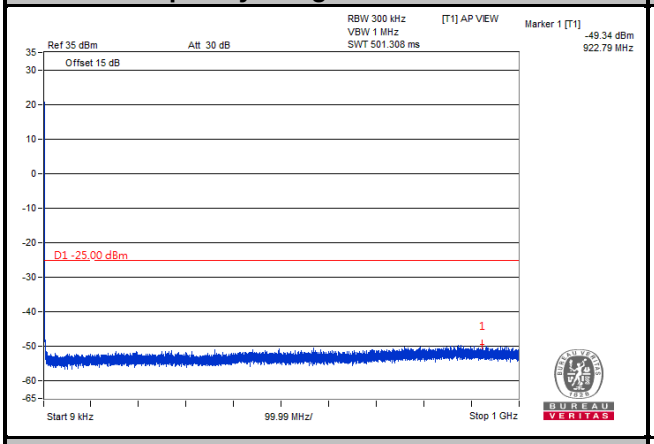
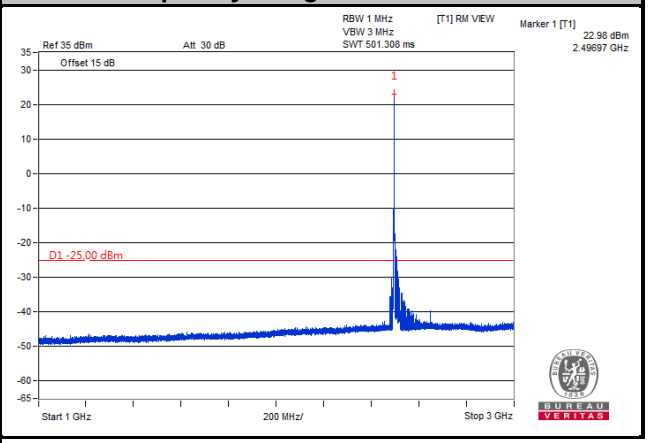
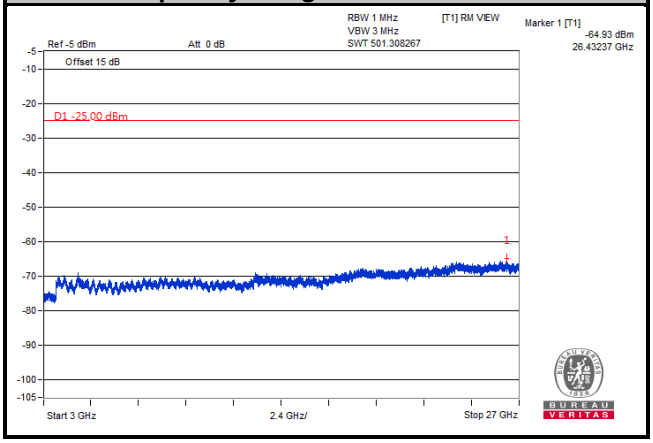
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 41	
Channel Bandwidth: 15 MHz	
Channel 40620	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

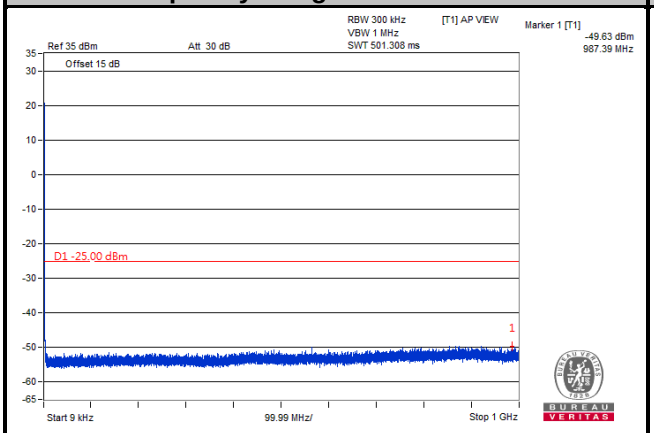
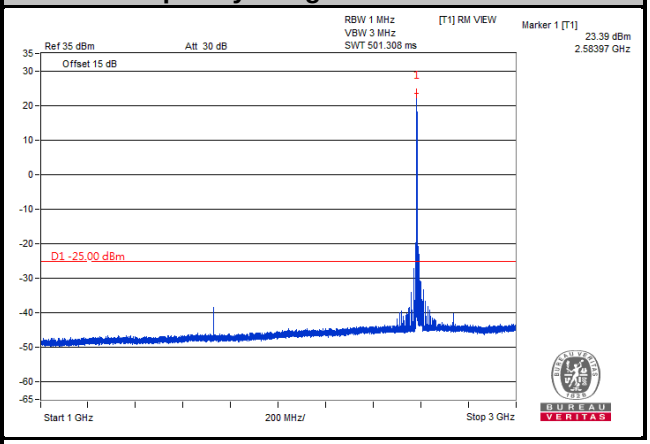
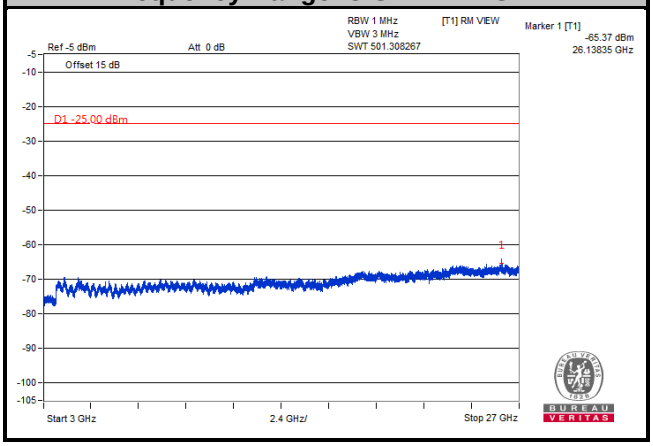
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 41	
Channel Bandwidth: 15 MHz	
Channel 41515	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

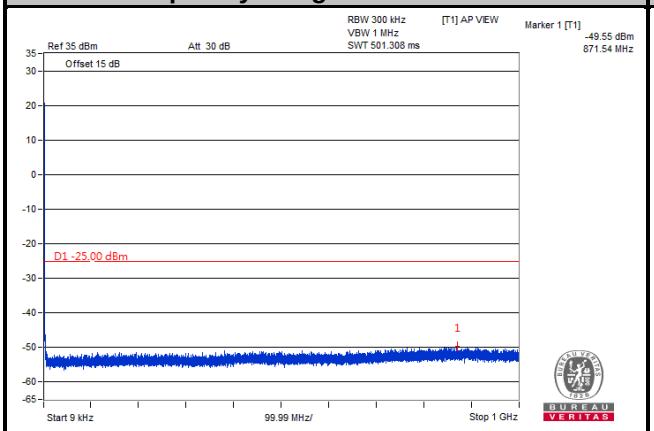
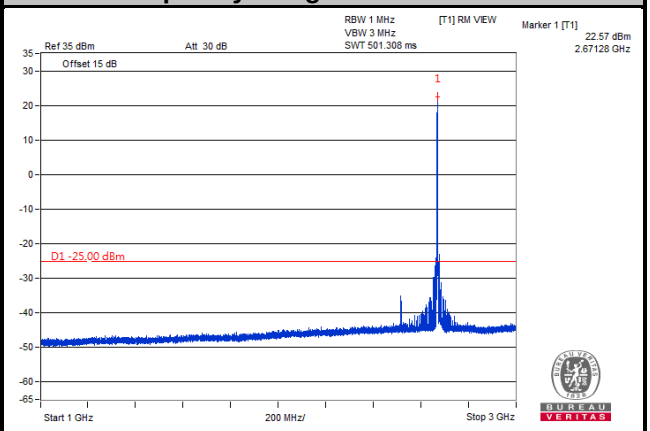
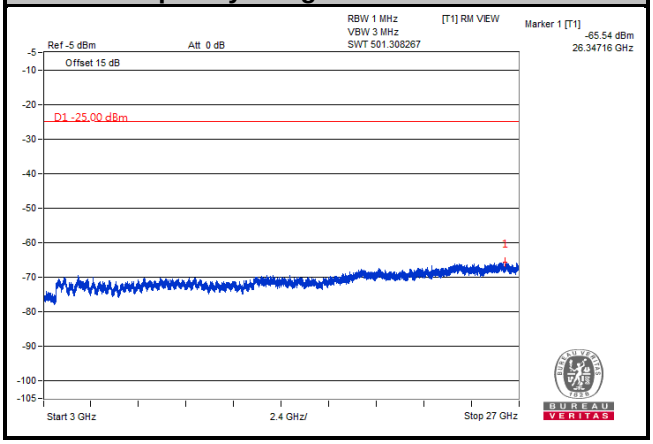
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 41	
Channel Bandwidth: 20 MHz	
Channel 39750	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 41	
Channel Bandwidth: 20 MHz	
Channel 40620	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 41	
Channel Bandwidth: 20 MHz	
Channel 41490	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 3 GHz
	
Frequency Range: 3 GHz ~ 27 GHz	
	

Note: The signal over the limit in 9 kHz is from spectrum analyzer.

4.8 Radiated Emission Measurement

4.8.1 Limits of Radiated Emission Measurement

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 55 + 10 log (P) dB. The limit of emission is equal to -25 dBm.

4.8.2 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.R.P power - 2.15 dB.

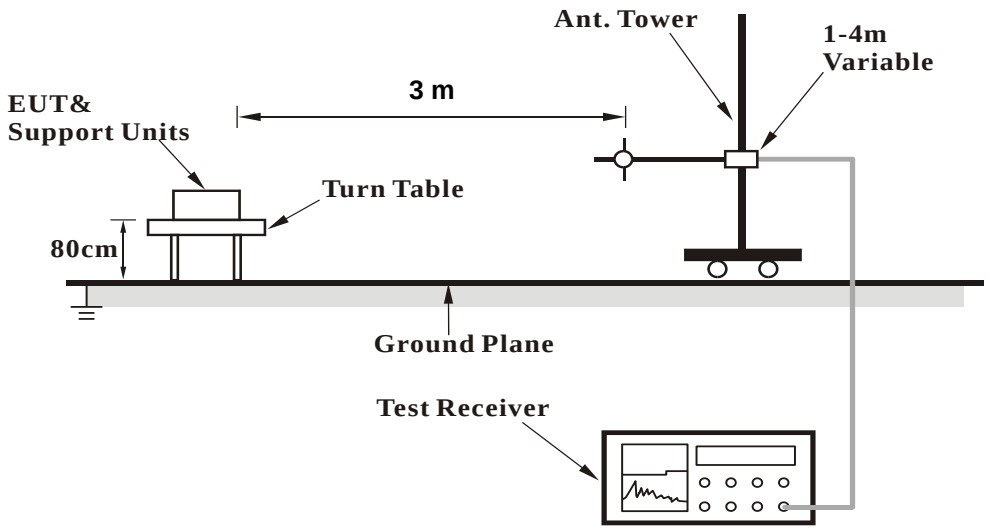
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

4.8.3 Deviation from Test Standard

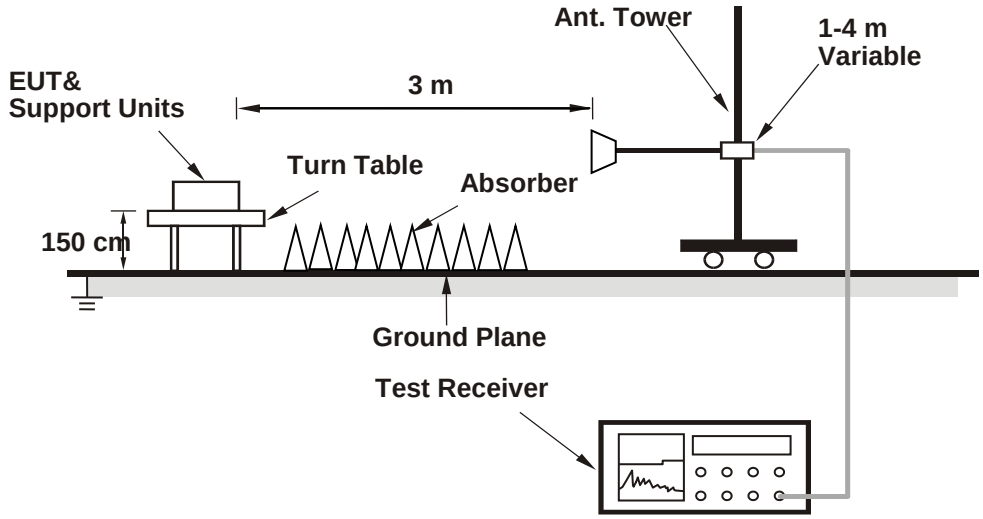
No deviation.

4.8.4 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).

4.8.5 Test Results

LTE Band 7

Channel Bandwidth: 5 MHz / QPSK

Low Channel

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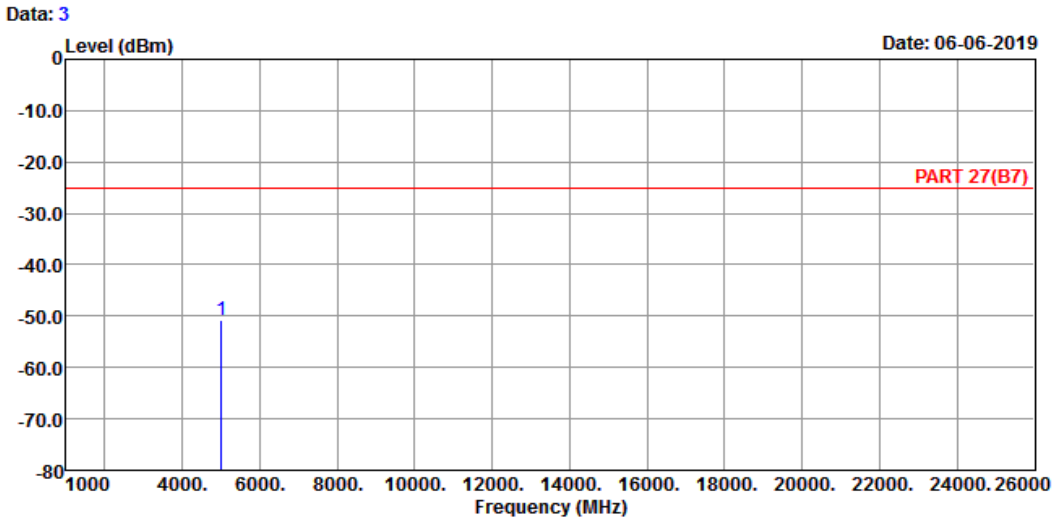
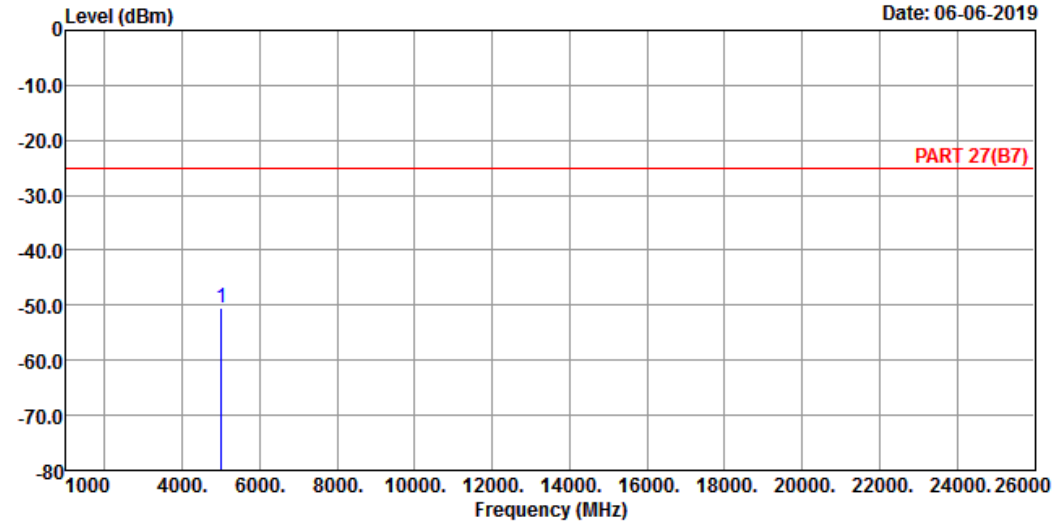


Site : 966 Chamber 5
Condition: PART 27(B7) HORIZONTAL
Remak : LTE Band 7 QPSK_5M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5005.00	-50.83	-48.37	-25.00	-2.46	-25.83	Peak

Data: 4



Site : 966 Chamber 5
Condition: PART 27(B7) VERTICAL
Remak : LTE Band 7 QPSK_5M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5005.00	-50.46	-48.00	-25.00	-2.46	-25.46	Peak

Middle Channel

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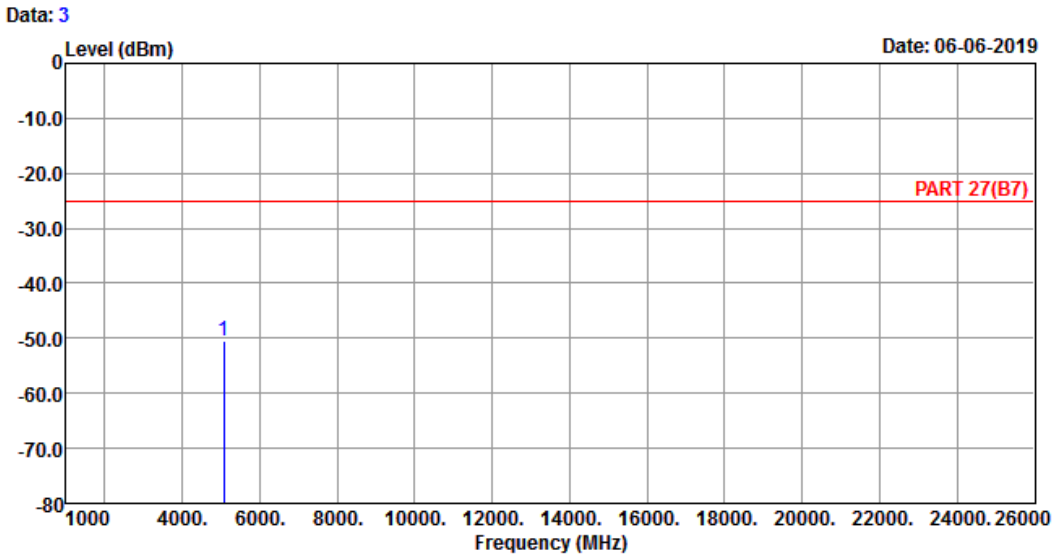
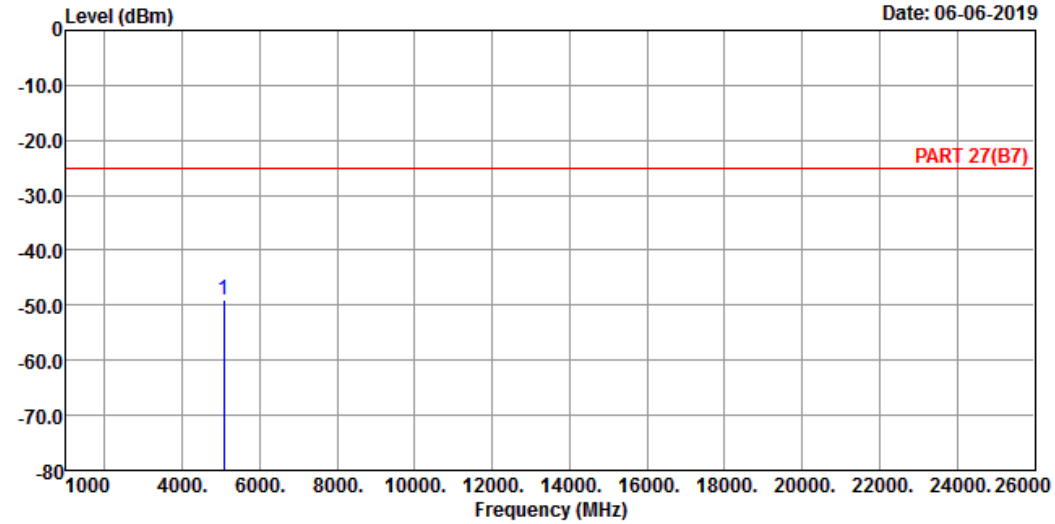


Site : 966 Chamber 5
Condition: PART 27(B7) HORIZONTAL
Remak : LTE Band 7 QPSK_5M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5070.00	-50.48	-48.61	-25.00	-1.87	-25.48	Peak

Data: 4

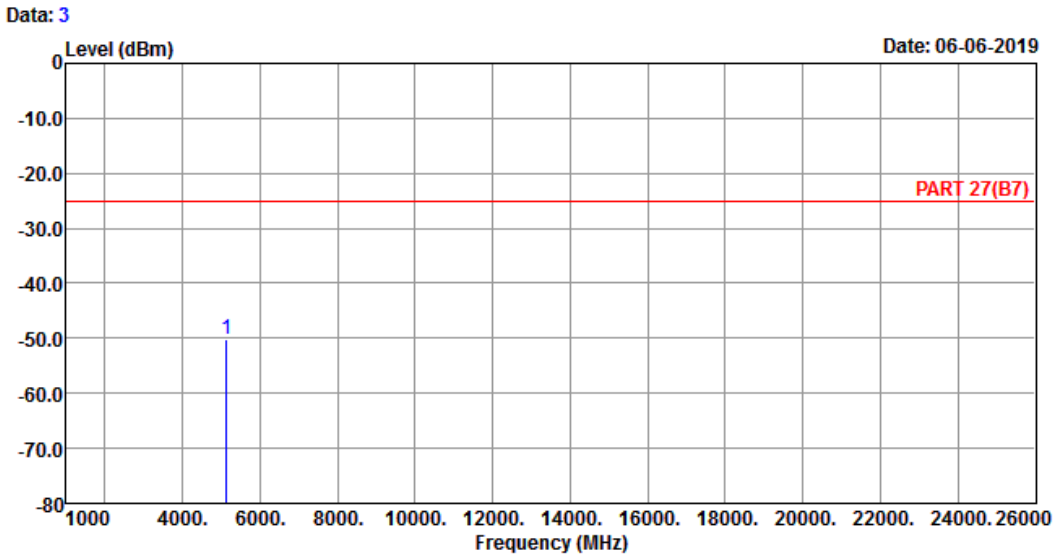


Site : 966 Chamber 5
Condition: PART 27(B7) VERTICAL
Remak : LTE Band 7 QPSK_5M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5070.00	-48.94	-47.07	-25.00	-1.87	-23.94	Peak

High Channel

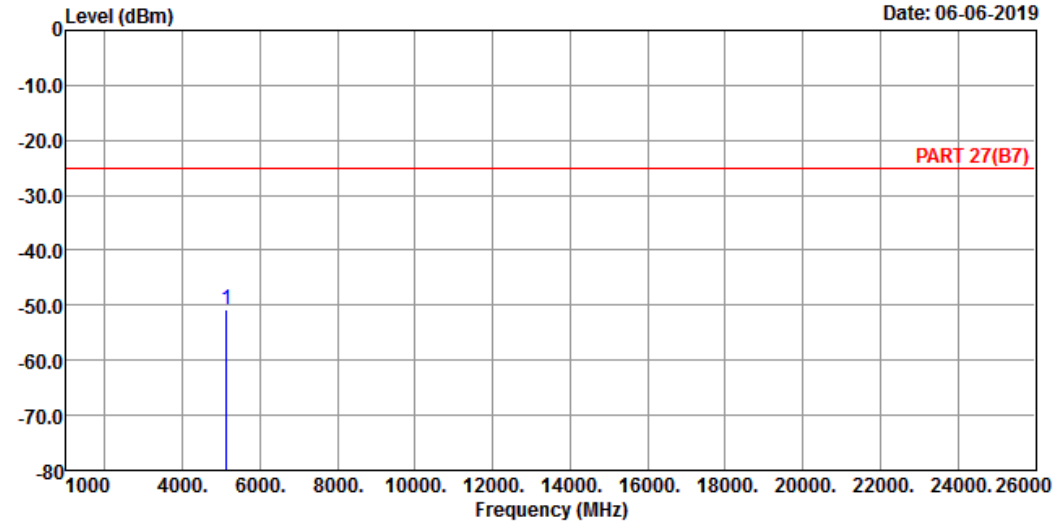
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART 27(B7) HORIZONTAL
Remak : LTE Band 7 QPSK_5M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5135.00	-50.33	-48.59	-25.00	-1.74	-25.33	Peak

Data: 4

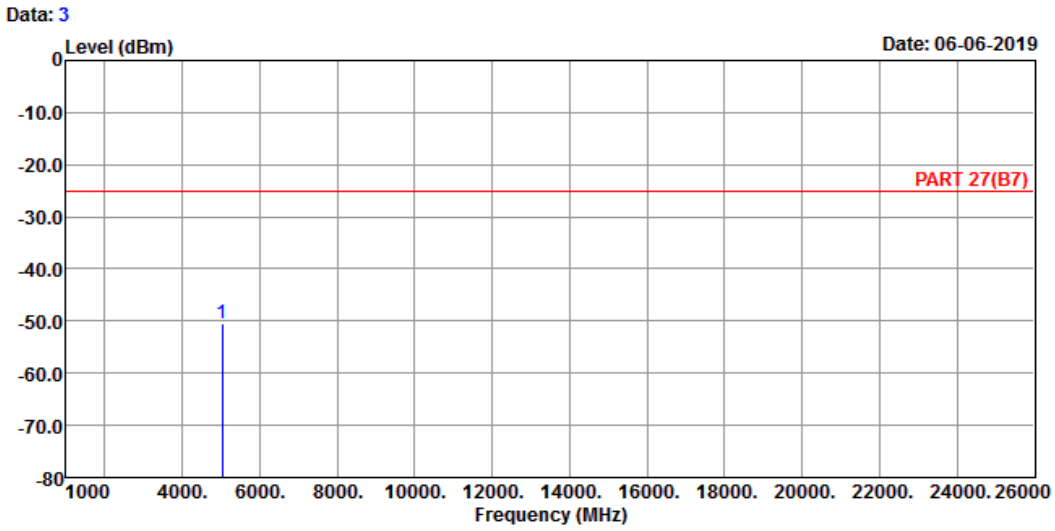


Site : 966 Chamber 5
Condition: PART 27(B7) VERTICAL
Remak : LTE Band 7 QPSK_5M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5135.00	-50.68	-48.94	-25.00	-1.74	-25.68	Peak

Channel Bandwidth: 20 MHz / QPSK
Low Channel

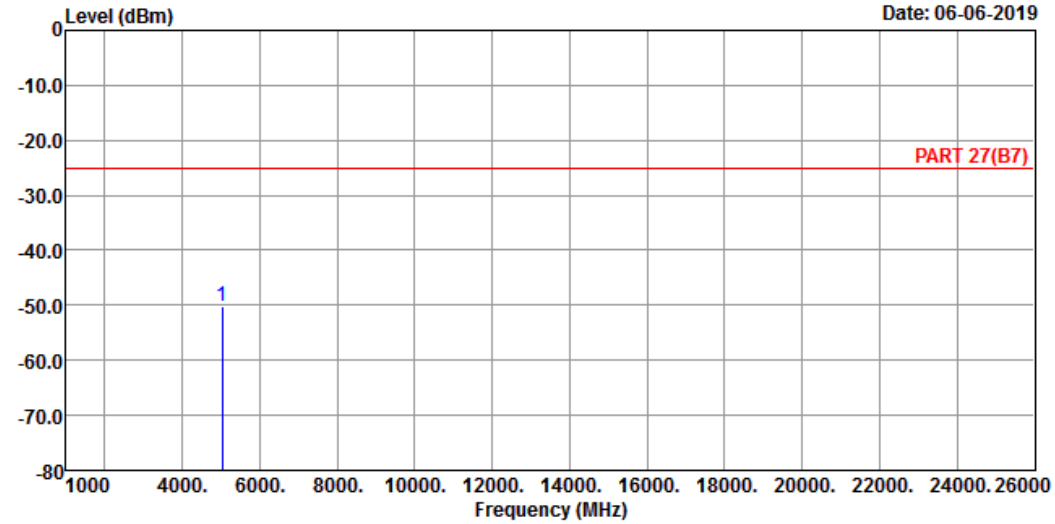
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART 27(B7) HORIZONTAL
Remak : LTE Band 7 QPSK_20M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5020.00	-50.62	-48.30	-25.00	-2.32	-25.62	Peak

Data: 4

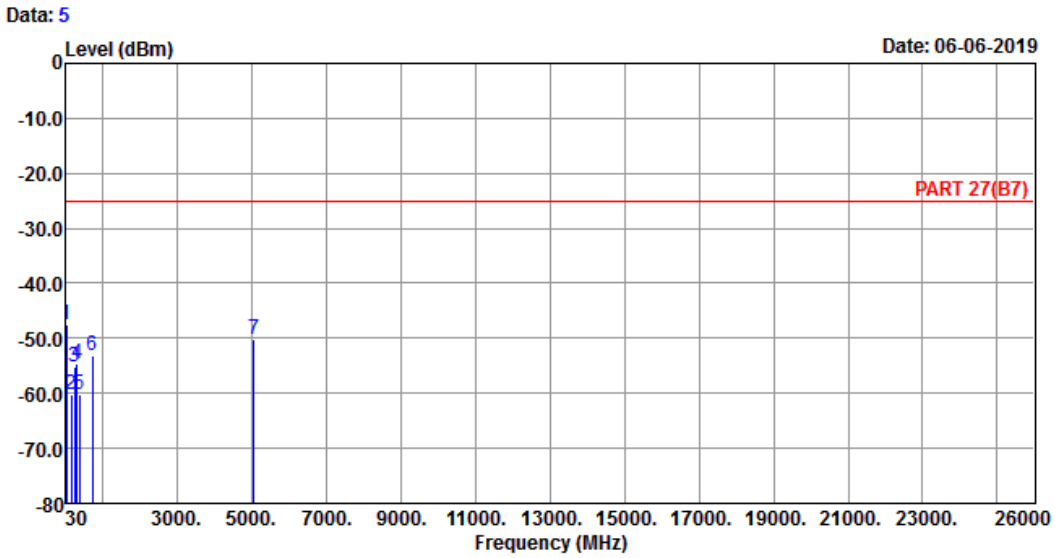


Site : 966 Chamber 5
Condition: PART 27(B7) VERTICAL
Remak : LTE Band 7 QPSK_20M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5020.00	-50.25	-47.93	-25.00	-2.32	-25.25	Peak

Middle Channel

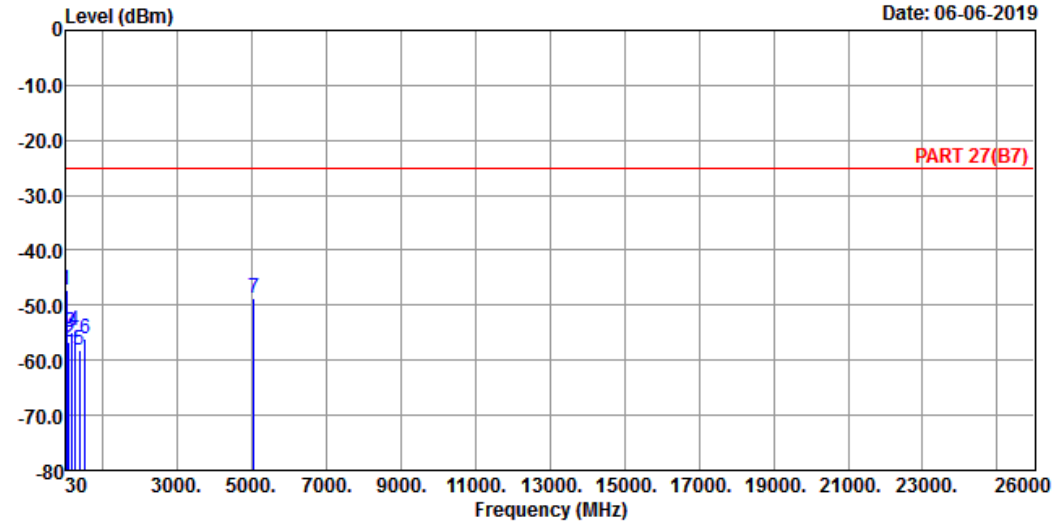
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART 27(B7) HORIZONTAL
Remak : LTE Band 7 QPSK_20M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	43.58	-47.55	-46.08	-25.00	-1.47	-22.55	Peak
2	170.65	-60.29	-54.59	-25.00	-5.70	-35.29	Peak
3	262.80	-55.14	-48.89	-25.00	-6.25	-30.14	Peak
4	310.33	-54.48	-47.63	-25.00	-6.85	-29.48	Peak
5	375.32	-60.28	-54.19	-25.00	-6.09	-35.28	Peak
6	730.34	-53.03	-53.53	-25.00	0.50	-28.03	Peak
7	5070.00	-50.21	-48.34	-25.00	-1.87	-25.21	Peak

Data: 6

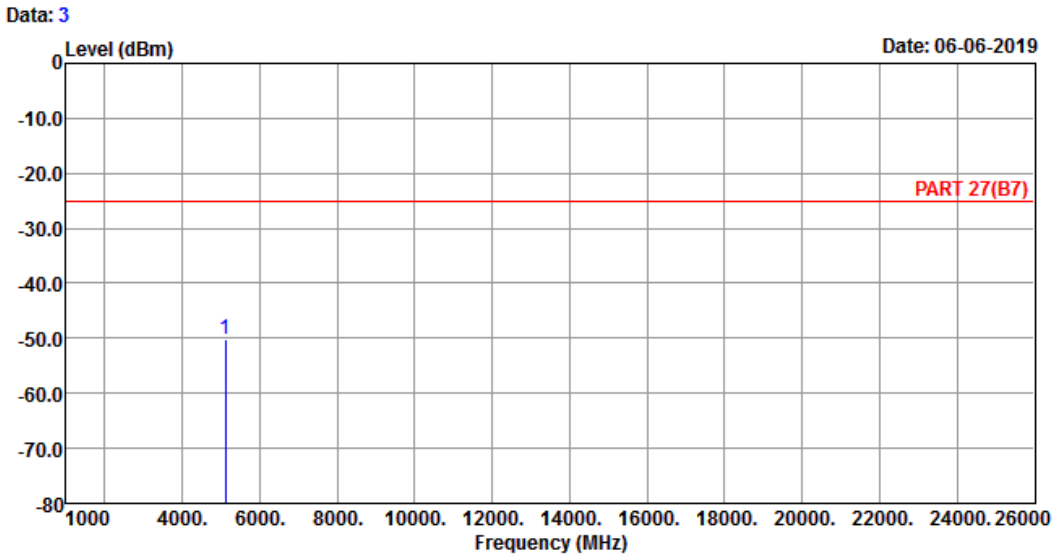


Site : 966 Chamber 5
Condition: PART 27(B7) VERTICAL
Remak : LTE Band 7 QPSK_20M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	43.58	-47.27	-45.80	-25.00	-1.47	-22.27	Peak
2	104.69	-56.81	-46.37	-25.00	-10.44	-31.81	Peak
3	169.68	-54.91	-49.38	-25.00	-5.53	-29.91	Peak
4	251.16	-54.64	-48.63	-25.00	-6.01	-29.64	Peak
5	391.81	-58.21	-52.22	-25.00	-5.99	-33.21	Peak
6	533.43	-56.03	-52.59	-25.00	-3.44	-31.03	Peak
7	5070.00	-48.64	-46.77	-25.00	-1.87	-23.64	Peak

High Channel

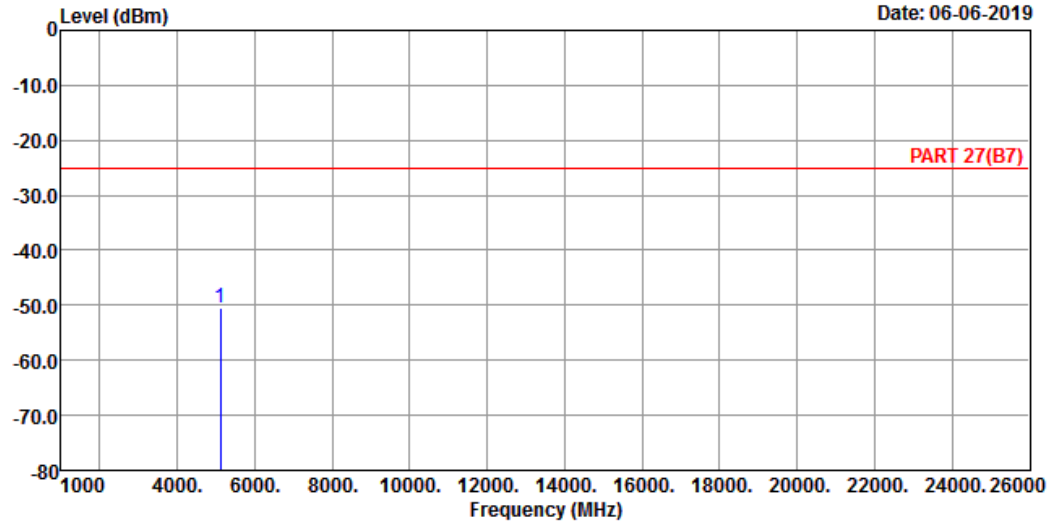
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART 27(B7) HORIZONTAL
Remak : LTE Band 7 QPSK_20M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5120.00	-50.06	-48.40	-25.00	-1.66	-25.06	Peak

Data: 4

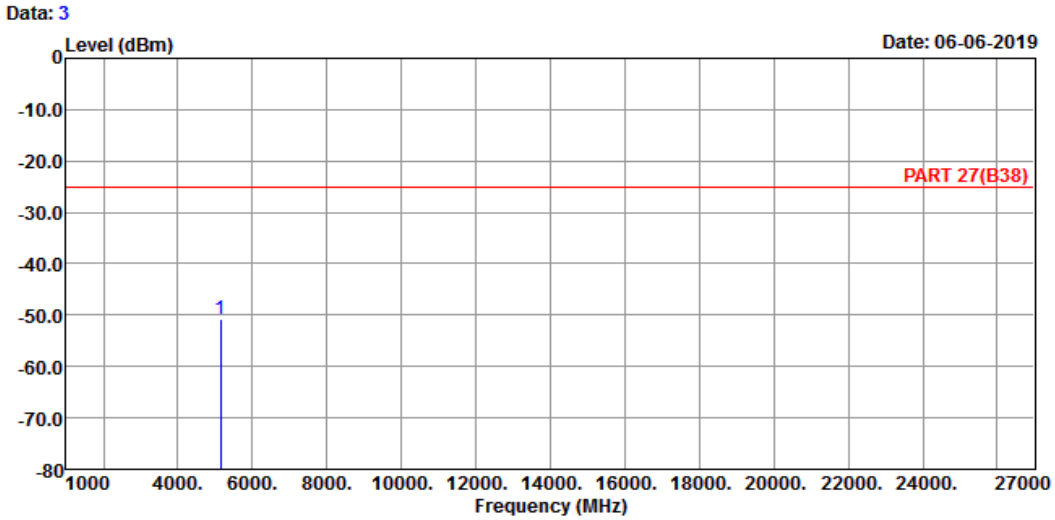


Site : 966 Chamber 5
Condition: PART 27(B7) VERTICAL
Remak : LTE Band 7 QPSK_20M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5120.00	-50.55	-48.89	-25.00	-1.66	-25.55	Peak

LTE Band 38
Channel Bandwidth: 5 MHz / QPSK
Low Channel

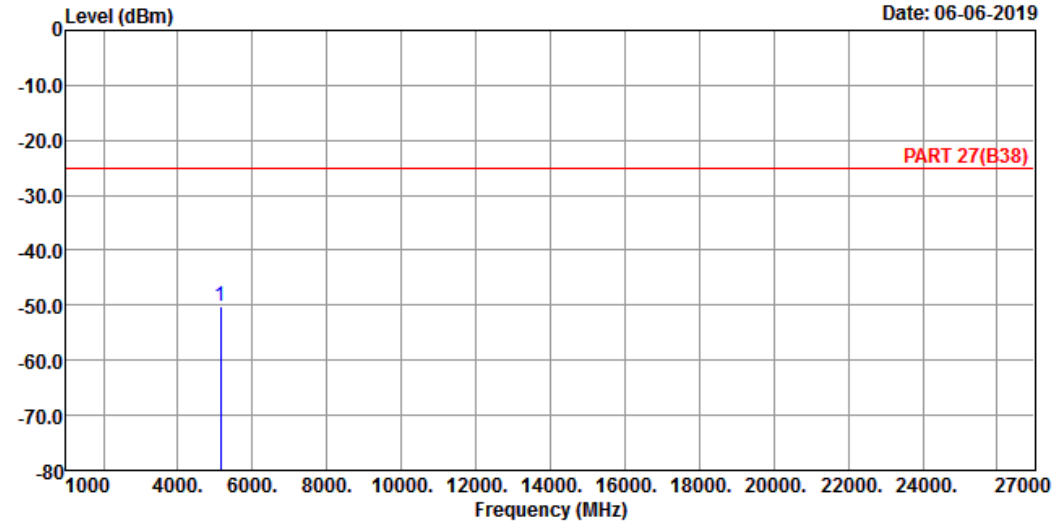
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART 27(B38) HORIZONTAL
Remak : LTE Band 38 QPSK_5M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5145.00	-50.77	-48.94	-25.00	-1.83	-25.77	Peak

Data: 4

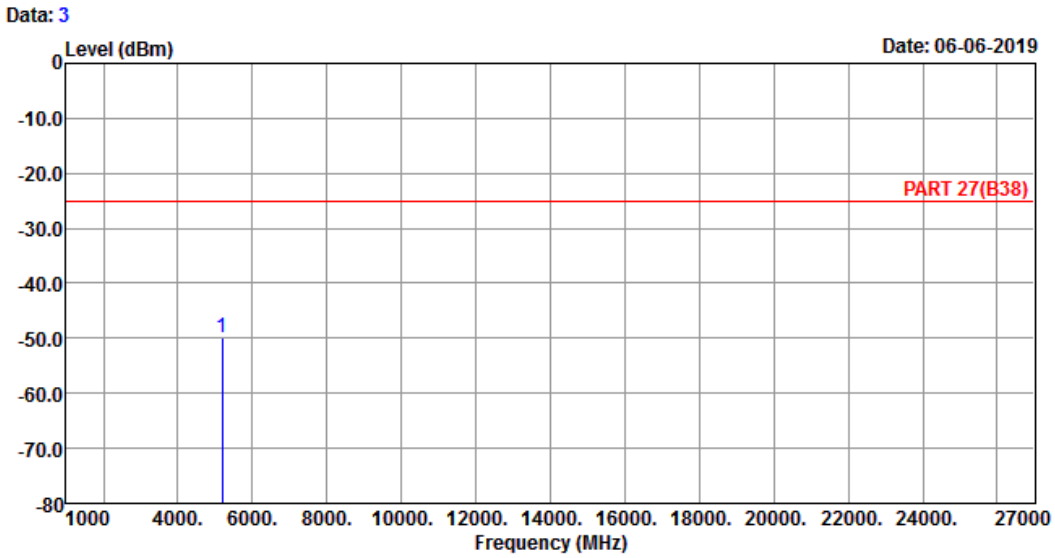


Site : 966 Chamber 5
Condition: PART 27(B38) VERTICAL
Remak : LTE Band 38 QPSK_5M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5145.00	-50.23	-48.40	-25.00	-1.83	-25.23	Peak

Middle Channel

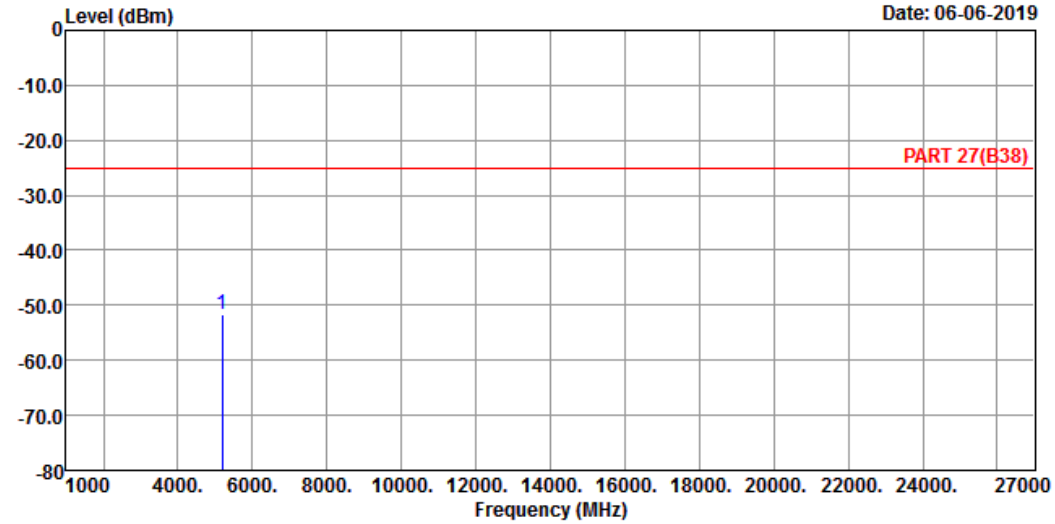
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART 27(B38) HORIZONTAL
Remak : LTE Band 38 QPSK_5M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5190.00	-49.88	-47.81	-25.00	-2.07	-24.88	Peak

Data: 4



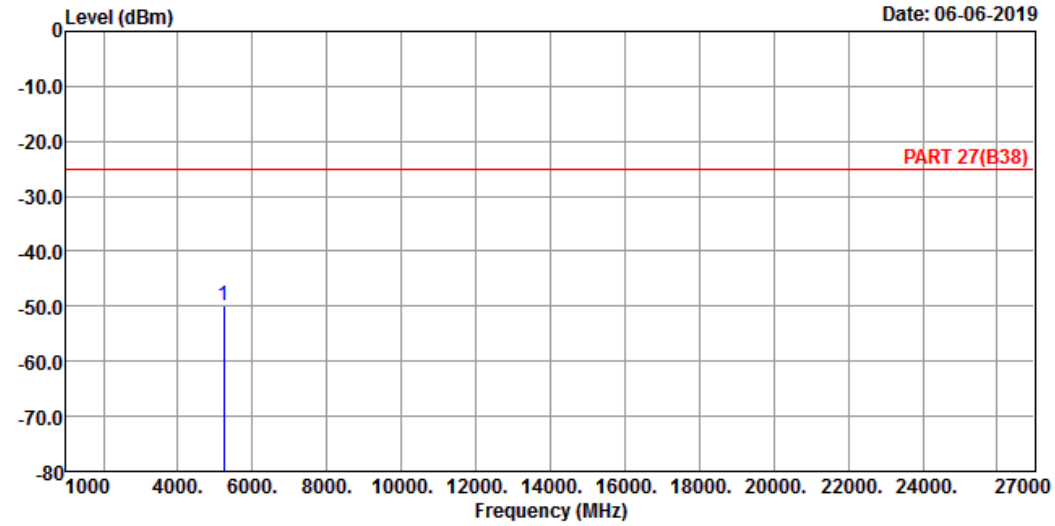
Site : 966 Chamber 5
Condition: PART 27(B38) VERTICAL
Remak : LTE Band 38 QPSK_5M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5190.00	-51.59	-49.52	-25.00	-2.07	-26.59	Peak

High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch

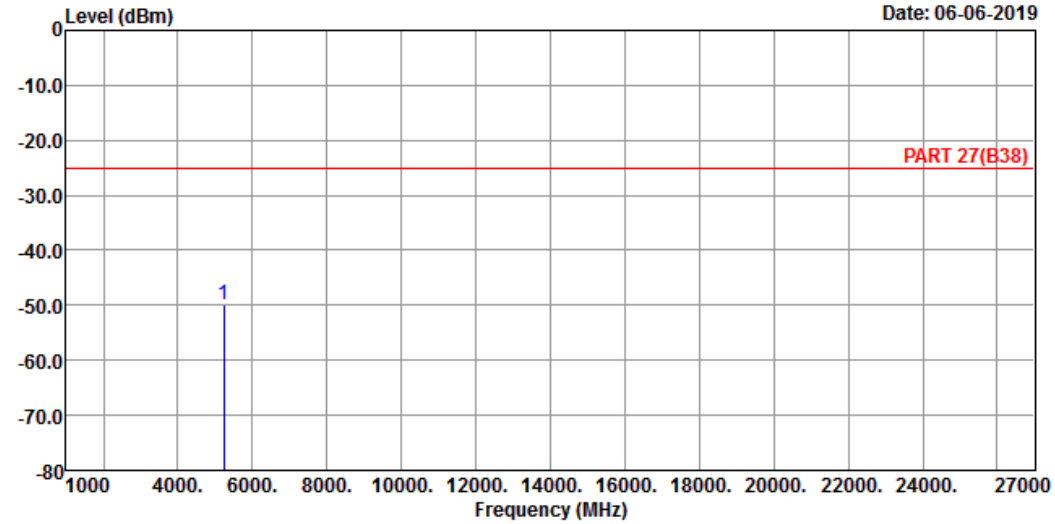
Data: 3



Site : 966 Chamber 5
Condition: PART 27(B38) HORIZONTAL
Remak : LTE Band 38 QPSK_5M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5235.00	-49.78	-47.37	-25.00	-2.41	-24.78	Peak

Data: 4

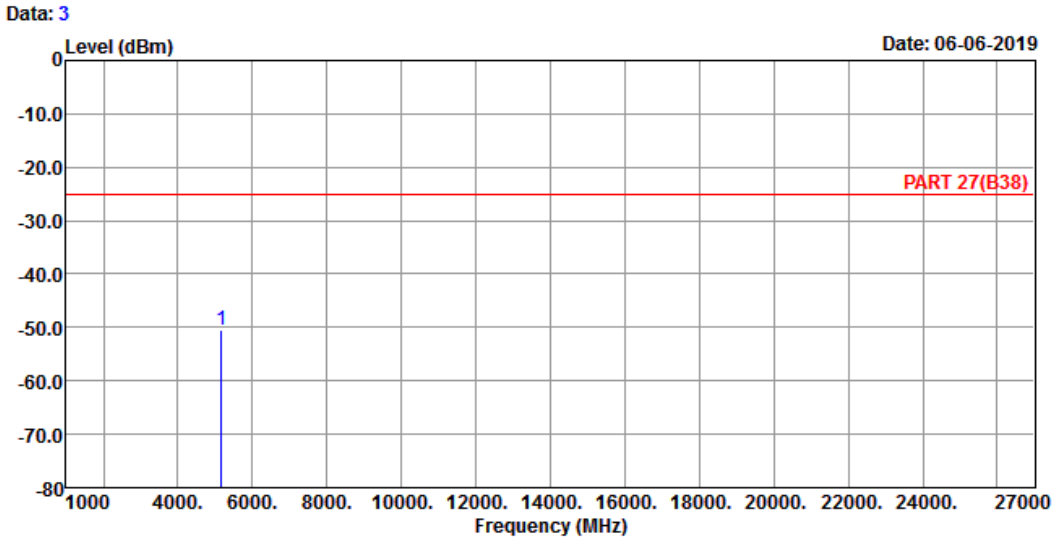


Site : 966 Chamber 5
Condition: PART 27(B38) VERTICAL
Remak : LTE Band 38 QPSK_5M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5235.00	-49.81	-47.40	-25.00	-2.41	-24.81	Peak

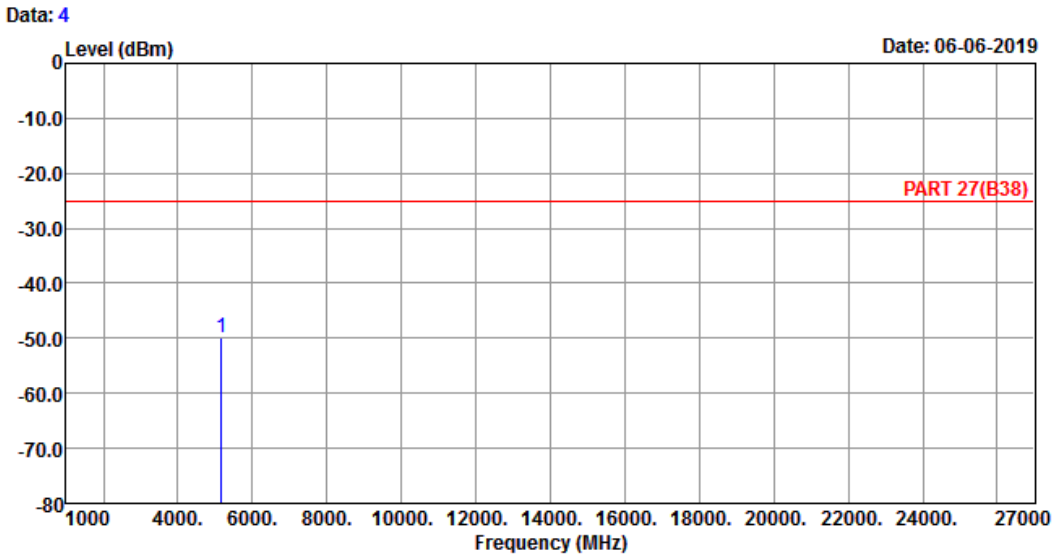
Channel Bandwidth: 20 MHz / QPSK
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART 27(B38) HORIZONTAL
Remak : LTE Band 38 QPSK_20M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5160.00	-50.37	-48.46	-25.00	-1.91	-25.37	Peak

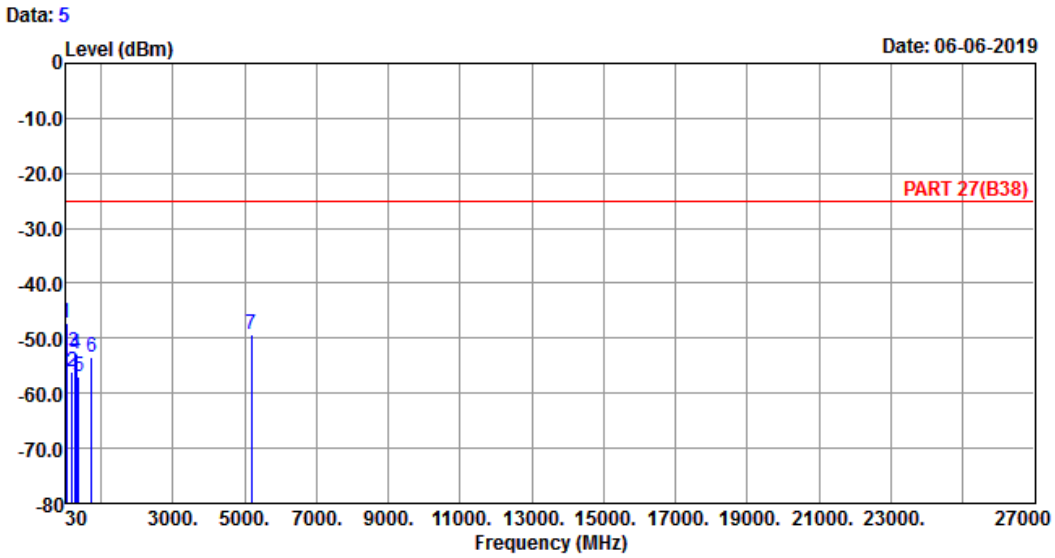


Site : 966 Chamber 5
Condition: PART 27(B38) VERTICAL
Remak : LTE Band 38 QPSK_20M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5160.00	-49.84	-47.93	-25.00	-1.91	-24.84	Peak

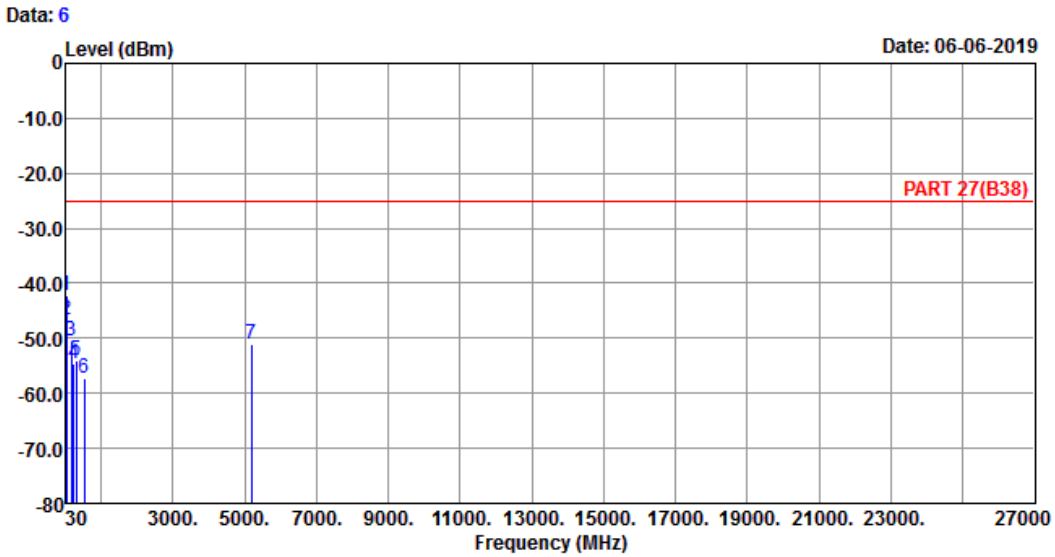
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART 27(B38) HORIZONTAL
Remak : LTE Band 38 QPSK_20M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	43.58	-47.22	-45.75	-25.00	-1.47	-22.22	Peak
2	203.63	-56.23	-48.37	-25.00	-7.86	-31.23	Peak
3	256.98	-52.68	-46.55	-25.00	-6.13	-27.68	Peak
4	312.27	-52.75	-45.93	-25.00	-6.82	-27.75	Peak
5	385.99	-57.08	-51.05	-25.00	-6.03	-32.08	Peak
6	733.25	-53.35	-53.90	-25.00	0.55	-28.35	Peak
7	5190.00	-49.26	-47.19	-25.00	-2.07	-24.26	Peak

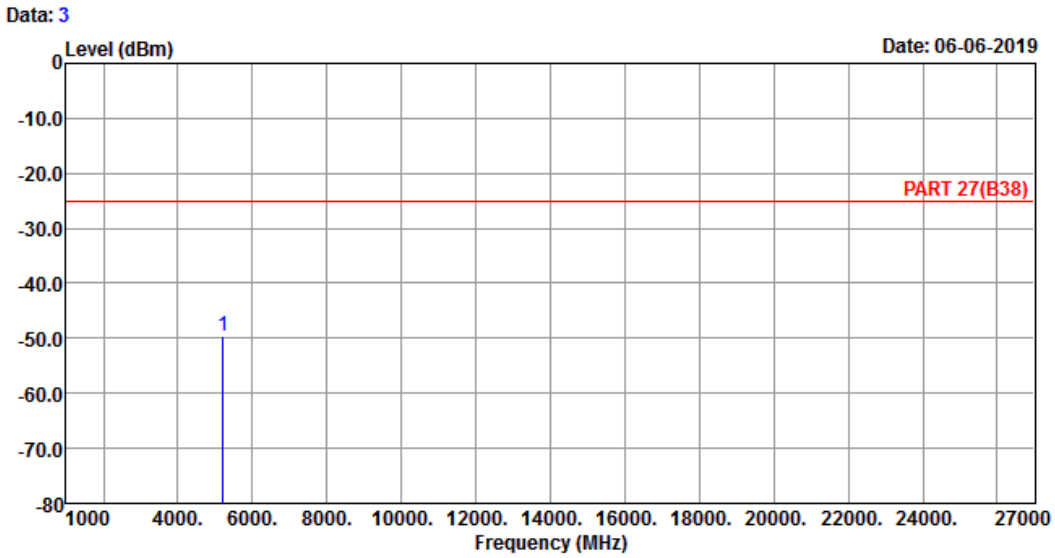


Site : 966 Chamber 5
Condition: PART 27(B38) VERTICAL
Remak : LTE Band 38 QPSK_20M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	31.94	-42.21	-41.61	-25.00	-0.60	-17.21	Peak
2	42.61	-46.62	-45.68	-25.00	-0.94	-21.62	Peak
3	171.62	-50.45	-44.58	-25.00	-5.87	-25.45	Peak
4	251.16	-54.58	-48.57	-25.00	-6.01	-29.58	Peak
5	306.45	-53.91	-47.00	-25.00	-6.91	-28.91	Peak
6	532.46	-57.24	-53.77	-25.00	-3.47	-32.24	Peak
7	5190.00	-51.12	-49.05	-25.00	-2.07	-26.12	Peak

High Channel

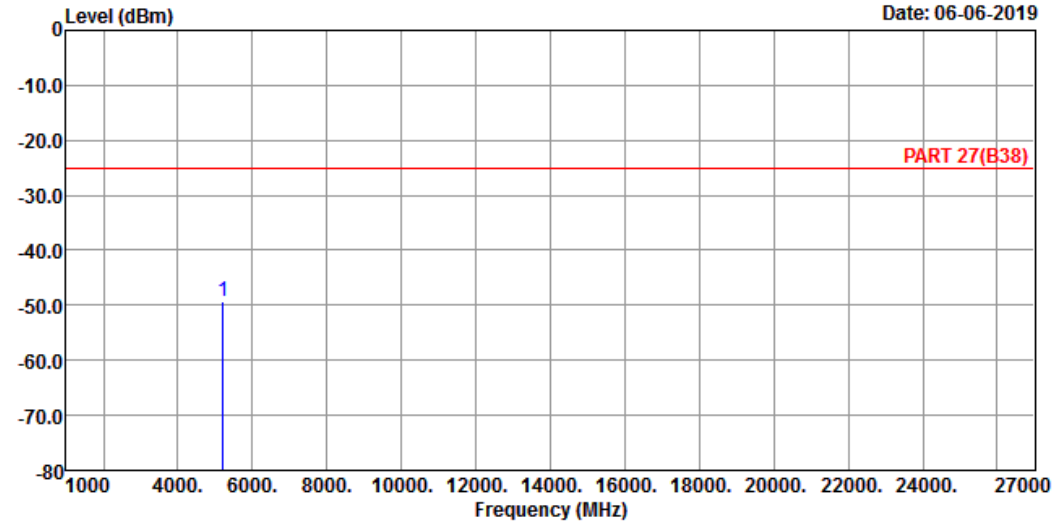
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART 27(B38) HORIZONTAL
Remak : LTE Band 38 QPSK_20M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5220.00	-49.46	-47.16	-25.00	-2.30	-24.46	Peak

Data: 4

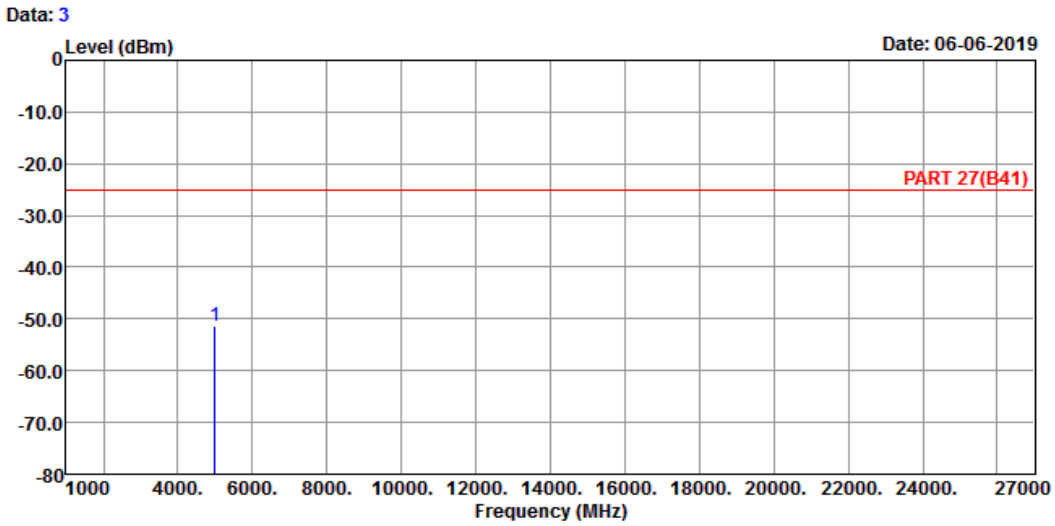


Site : 966 Chamber 5
Condition: PART 27(B38) VERTICAL
Remak : LTE Band 38 QPSK_20M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5220.00	-49.44	-47.14	-25.00	-2.30	-24.44	Peak

LTE Band 41
Channel Bandwidth: 5 MHz / QPSK
Low Channel

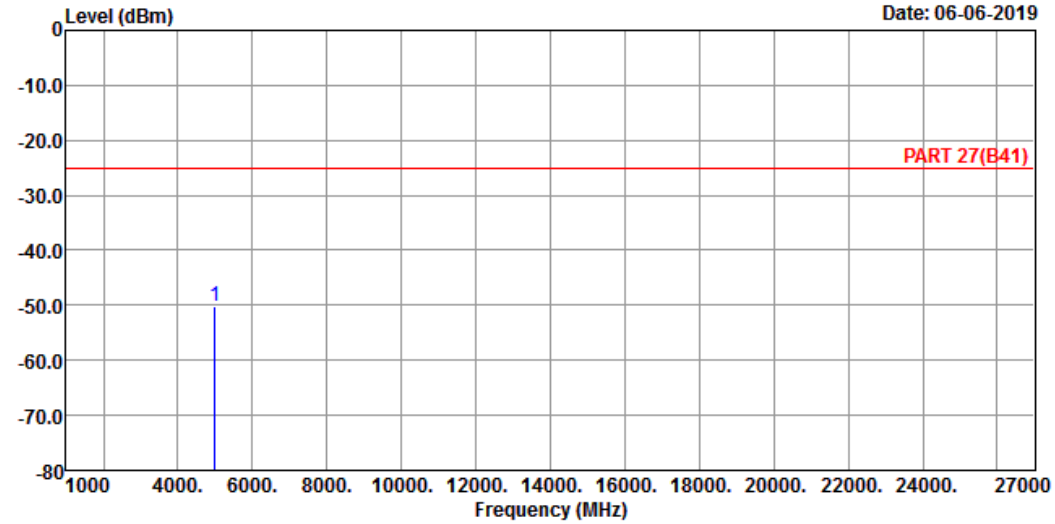
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART 27(B41) HORIZONTAL
Remak : LTE Band 41 QPSK_5M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	4997.00	-51.47	-48.86	-25.00	-2.61	-26.47	Peak

Data: 4

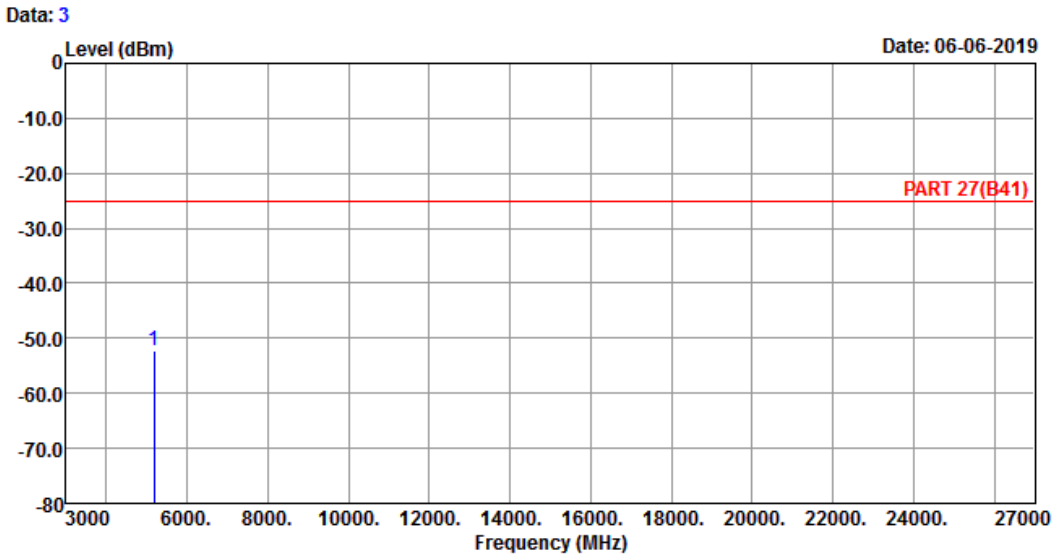


Site : 966 Chamber 5
Condition: PART 27(B41) VERTICAL
Remak : LTE Band 41 QPSK_5M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	4997.00	-50.29	-47.68	-25.00	-2.61	-25.29	Peak

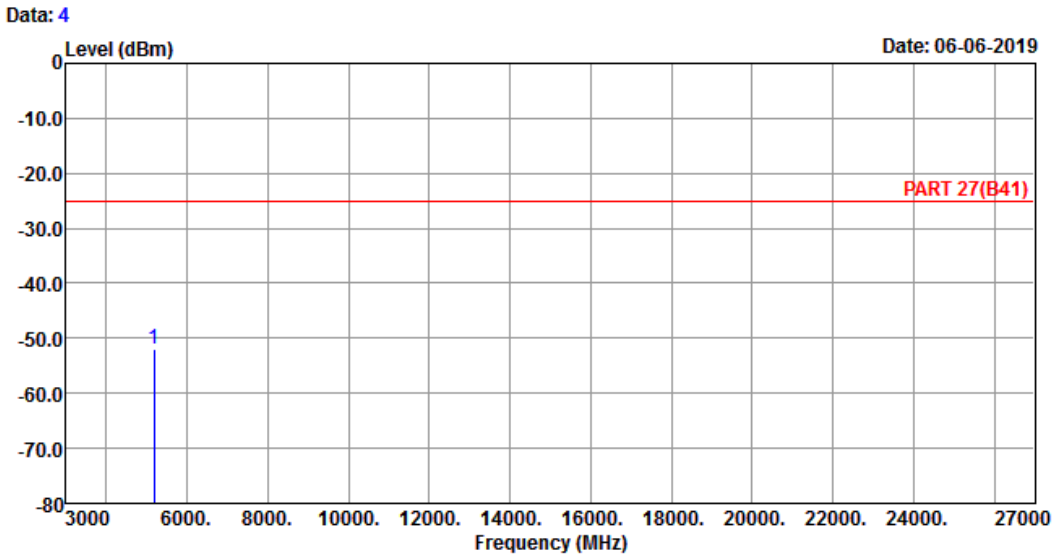
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART 27(B41) HORIZONTAL
Remak : LTE Band 41 QPSK_5M Link_M-CH
Tested by: Getaz Yang

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5186.00	-52.23	-50.24	-25.00	-1.99	-27.23	Peak



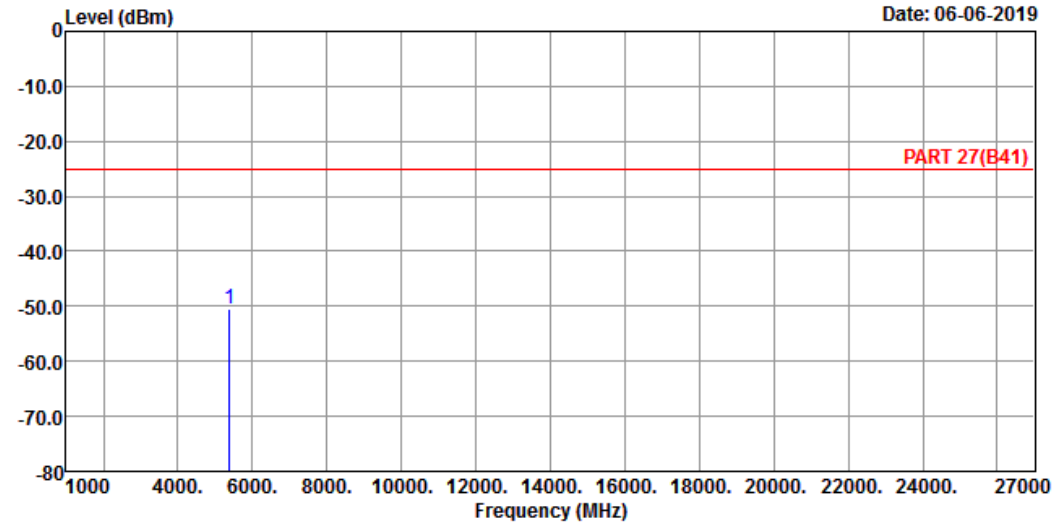
Site : 966 Chamber 5
Condition: PART 27(B41) VERTICAL
Remak : LTE Band 41 QPSK_5M Link_M-CH
Tested by: Getaz Yang

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5186.00	-51.96	-49.97	-25.00	-1.99	-26.96	Peak

High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch

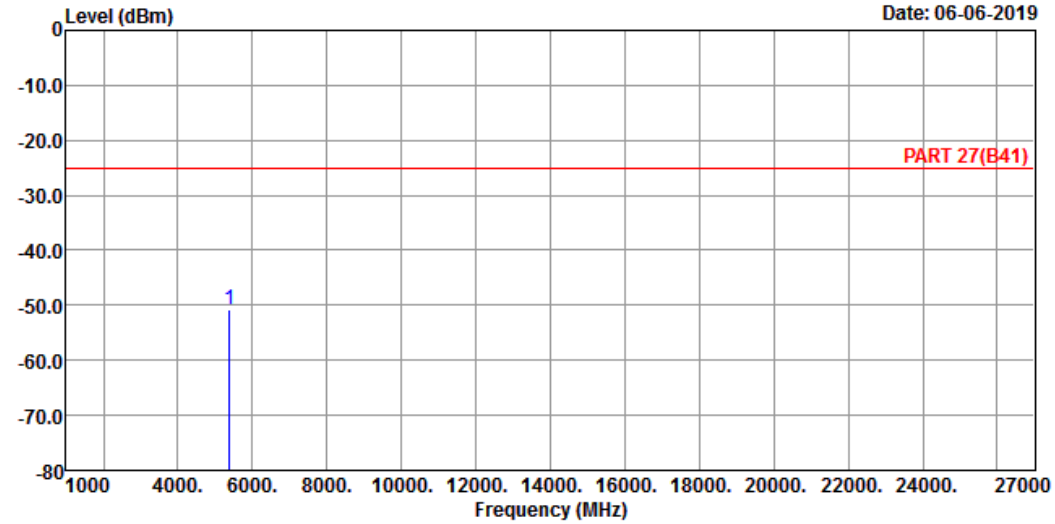
Data: 3



Site : 966 Chamber 5
Condition: PART 27(B41) HORIZONTAL
Remak : LTE Band 41 QPSK_5M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5375.00	-50.58	-48.18	-25.00	-2.40	-25.58	Peak

Data: 4

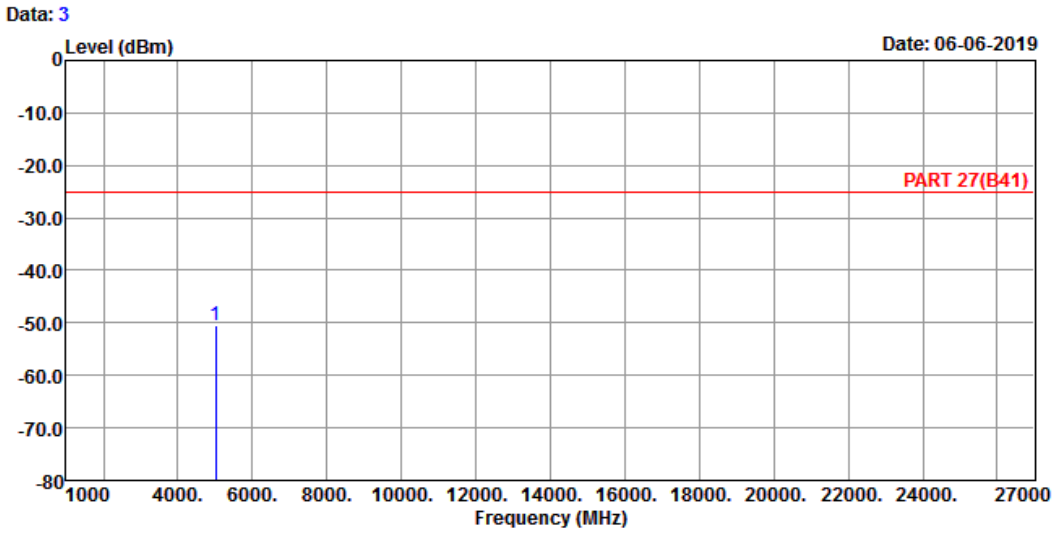


Site : 966 Chamber 5
Condition: PART 27(B41) VERTICAL
Remak : LTE Band 41 QPSK_5M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5375.00	-50.71	-48.31	-25.00	-2.40	-25.71	Peak

Channel Bandwidth: 20 MHz / QPSK
Low Channel

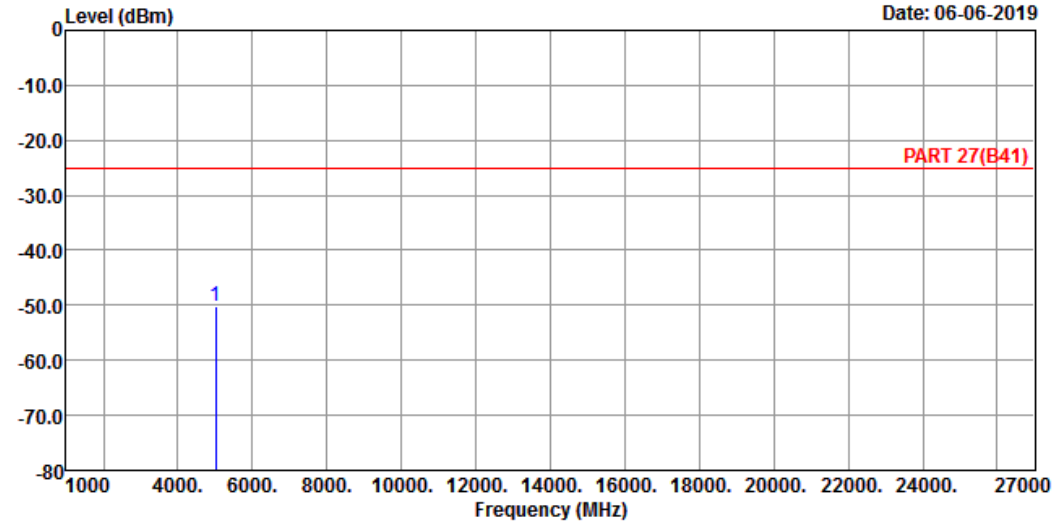
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART 27(B41) HORIZONTAL
Remak : LTE Band 41 QPSK_20M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5012.00	-50.54	-48.08	-25.00	-2.46	-25.54	Peak

Data: 4

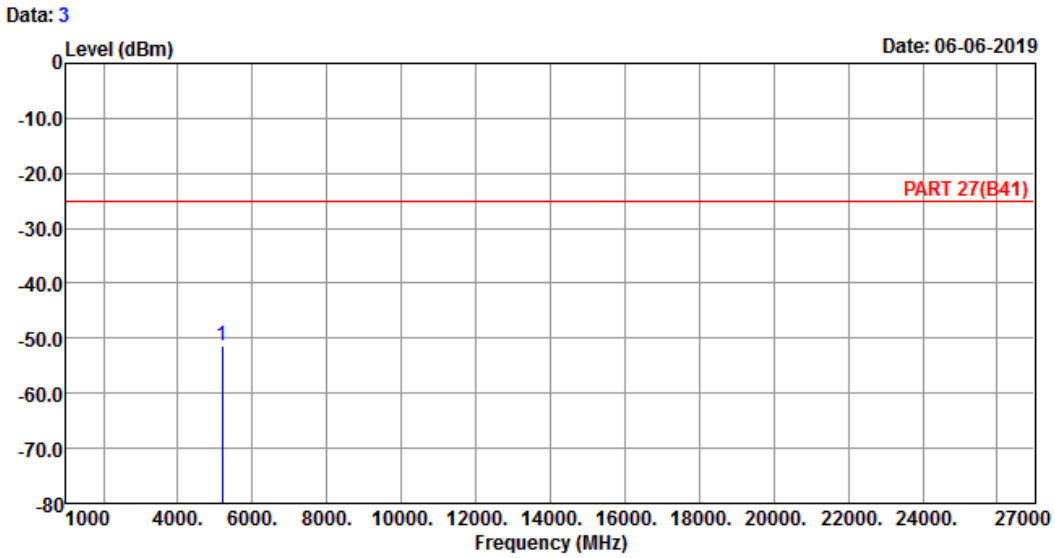


Site : 966 Chamber 5
Condition: PART 27(B41) VERTICAL
Remak : LTE Band 41 QPSK_20M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5012.00	-50.29	-47.83	-25.00	-2.46	-25.29	Peak

Middle Channel

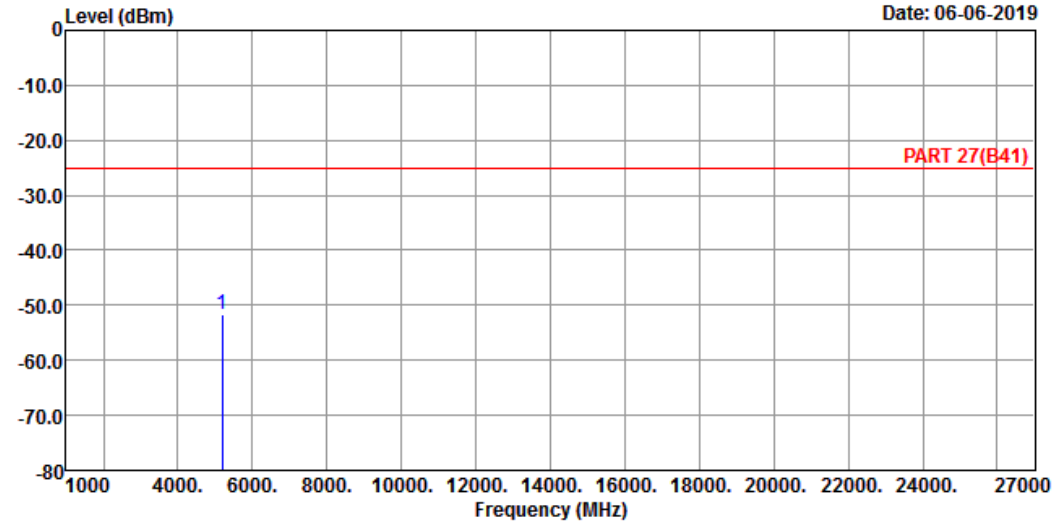
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART 27(B41) HORIZONTAL
Remak : LTE Band 41 QPSK_20M Link_M-CH
Tested by: Getaz Yang

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5186.00	-51.31	-49.32	-25.00	-1.99	-26.31	Peak

Data: 4

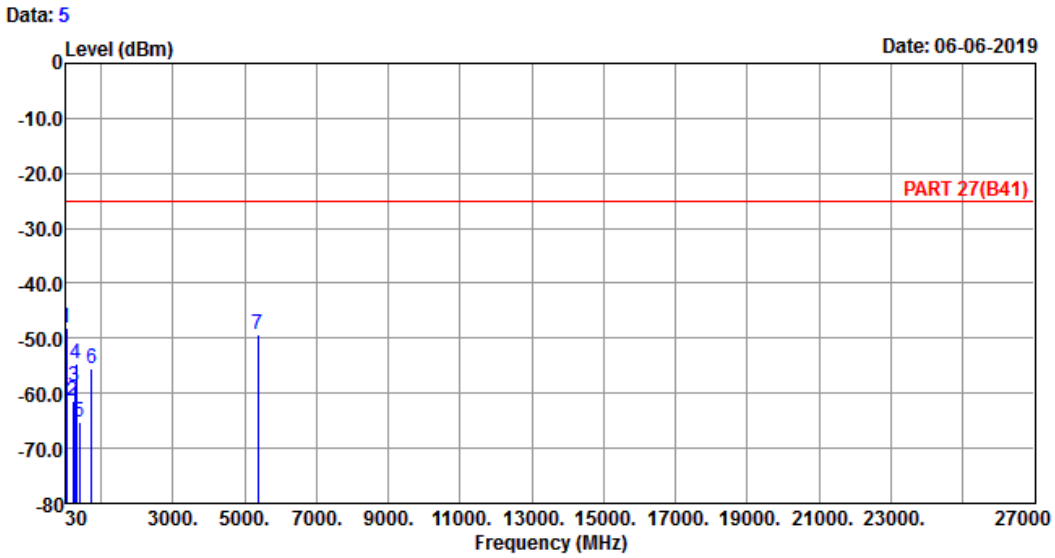


Site : 966 Chamber 5
Condition: PART 27(B41) VERTICAL
Remak : LTE Band 41 QPSK_20M Link_M-CH
Tested by: Getaz Yang

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5186.00	-51.76	-49.77	-25.00	-1.99	-26.76	Peak

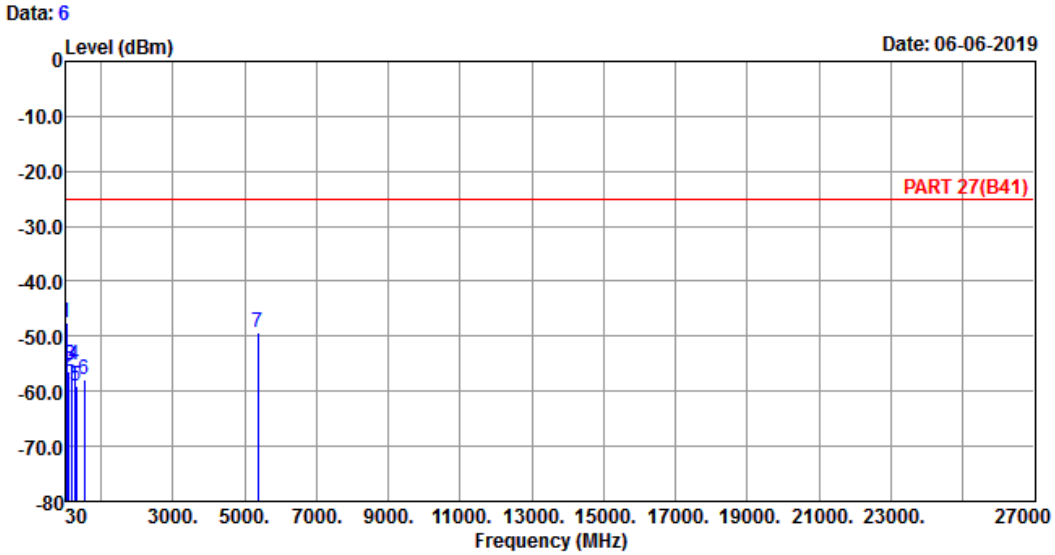
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART 27(B41) HORIZONTAL
Remak : LTE Band 41 QPSK_20M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	43.58	-48.12	-46.65	-25.00	-1.47	-23.12	Peak
2	210.42	-61.40	-53.81	-25.00	-7.59	-36.40	Peak
3	256.01	-58.67	-52.56	-25.00	-6.11	-33.67	Peak
4	312.27	-54.72	-47.90	-25.00	-6.82	-29.72	Peak
5	395.69	-65.31	-59.34	-25.00	-5.97	-40.31	Peak
6	734.22	-55.58	-56.15	-25.00	0.57	-30.58	Peak
7	5360.00	-49.28	-46.77	-25.00	-2.51	-24.28	Peak



Site : 966 Chamber 5
Condition: PART 27(B41) VERTICAL
Remak : LTE Band 41 QPSK_20M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	43.58	-47.48	-46.01	-25.00	-1.47	-22.48	Peak
2	97.90	-56.37	-45.70	-25.00	-10.67	-31.37	Peak
3	171.62	-55.34	-49.47	-25.00	-5.87	-30.34	Peak
4	255.04	-55.09	-49.00	-25.00	-6.09	-30.09	Peak
5	316.15	-59.08	-52.32	-25.00	-6.76	-34.08	Peak
6	533.43	-58.00	-54.56	-25.00	-3.44	-33.00	Peak
7	5360.00	-49.32	-46.81	-25.00	-2.51	-24.32	Peak

5 Pictures of Test Arrangements

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

Appendix – Information of 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:

Lin Kou EMC/RF Lab
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab
Tel: 886-3-6668565
Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab
Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

--- END ---