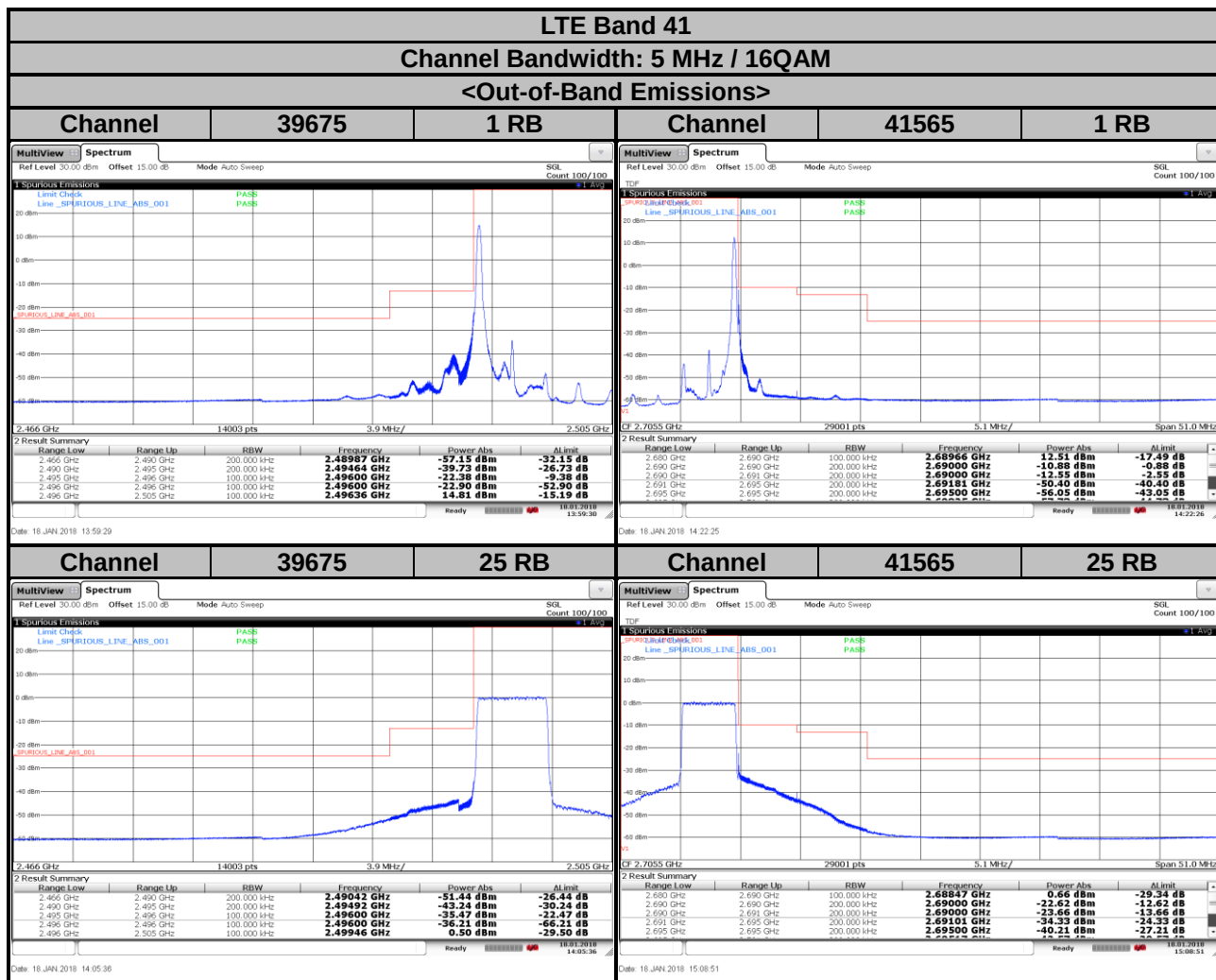
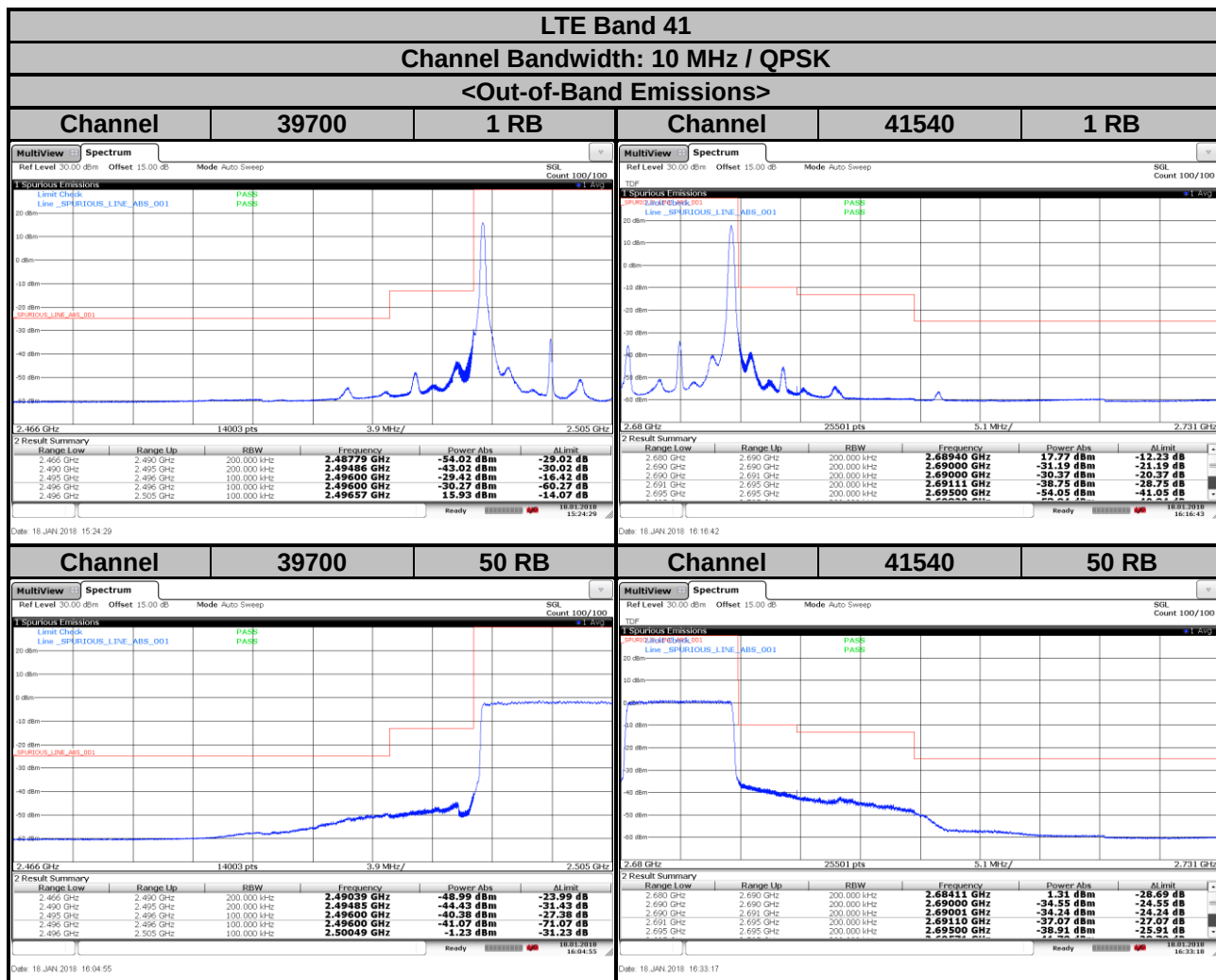
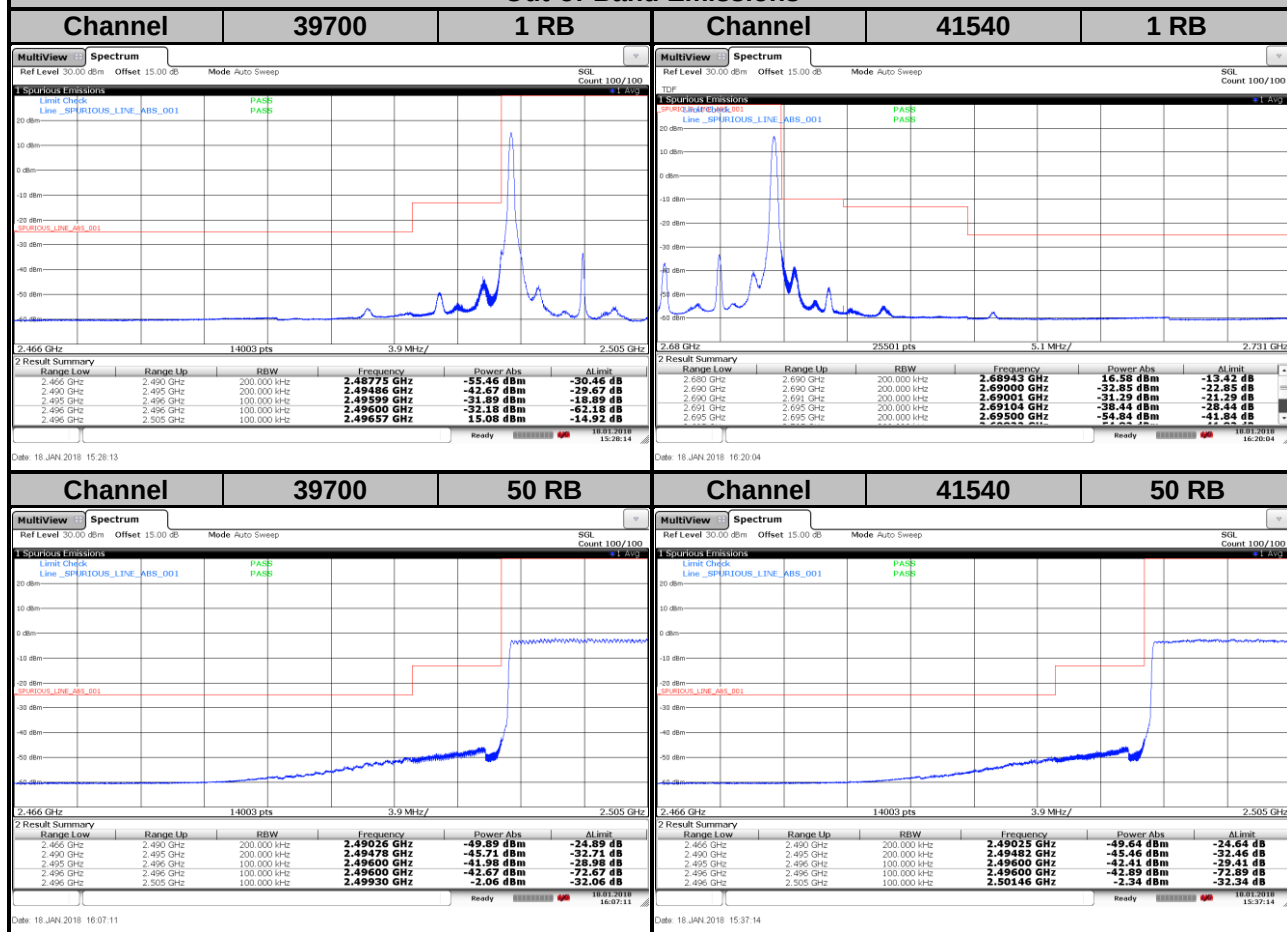




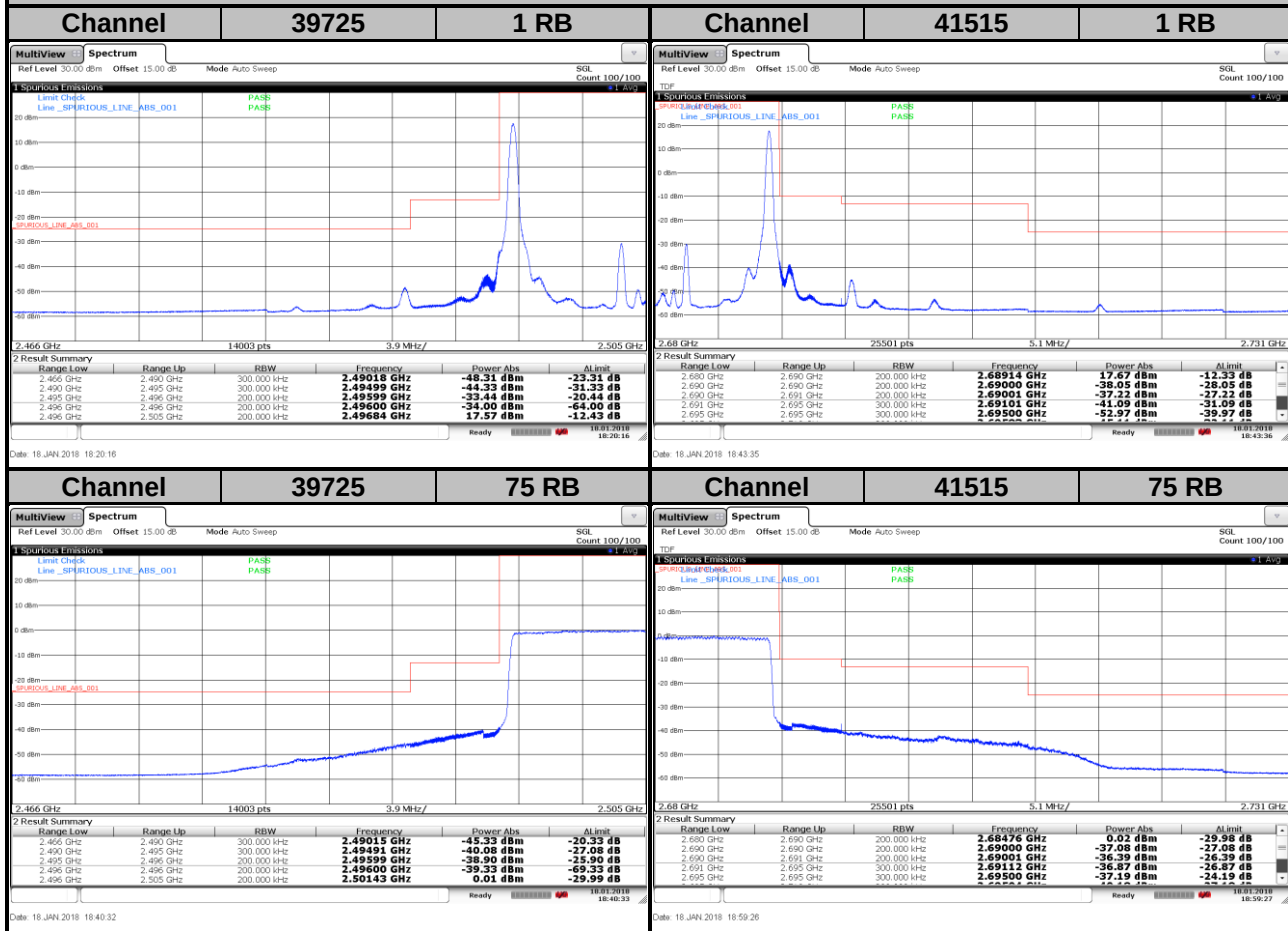


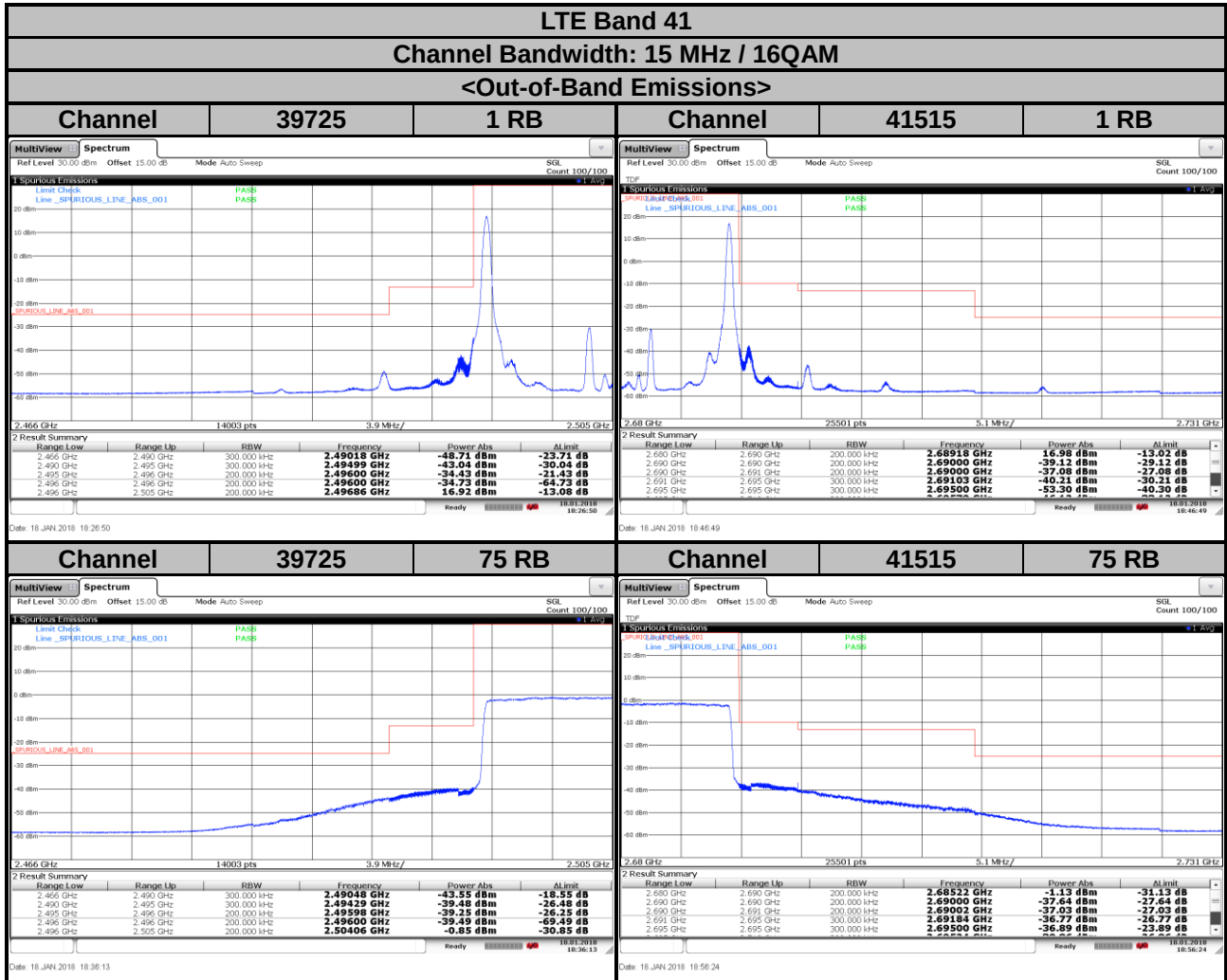
LTE Band 41
Channel Bandwidth: 10 MHz / 16QAM

<Out-of-Band Emissions>

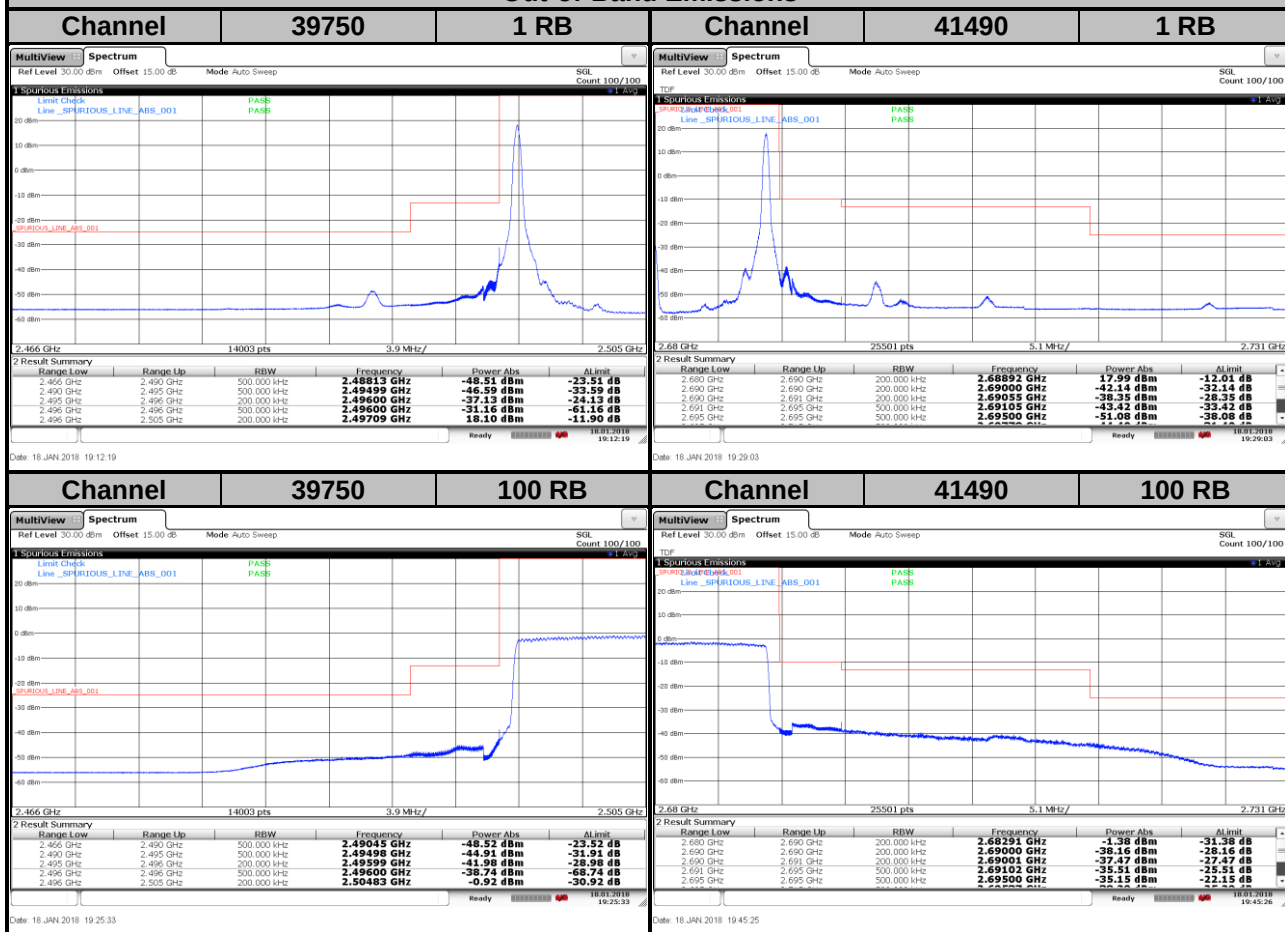


LTE Band 41
Channel Bandwidth: 15 MHz / QPSK
<Out-of-Band Emissions>

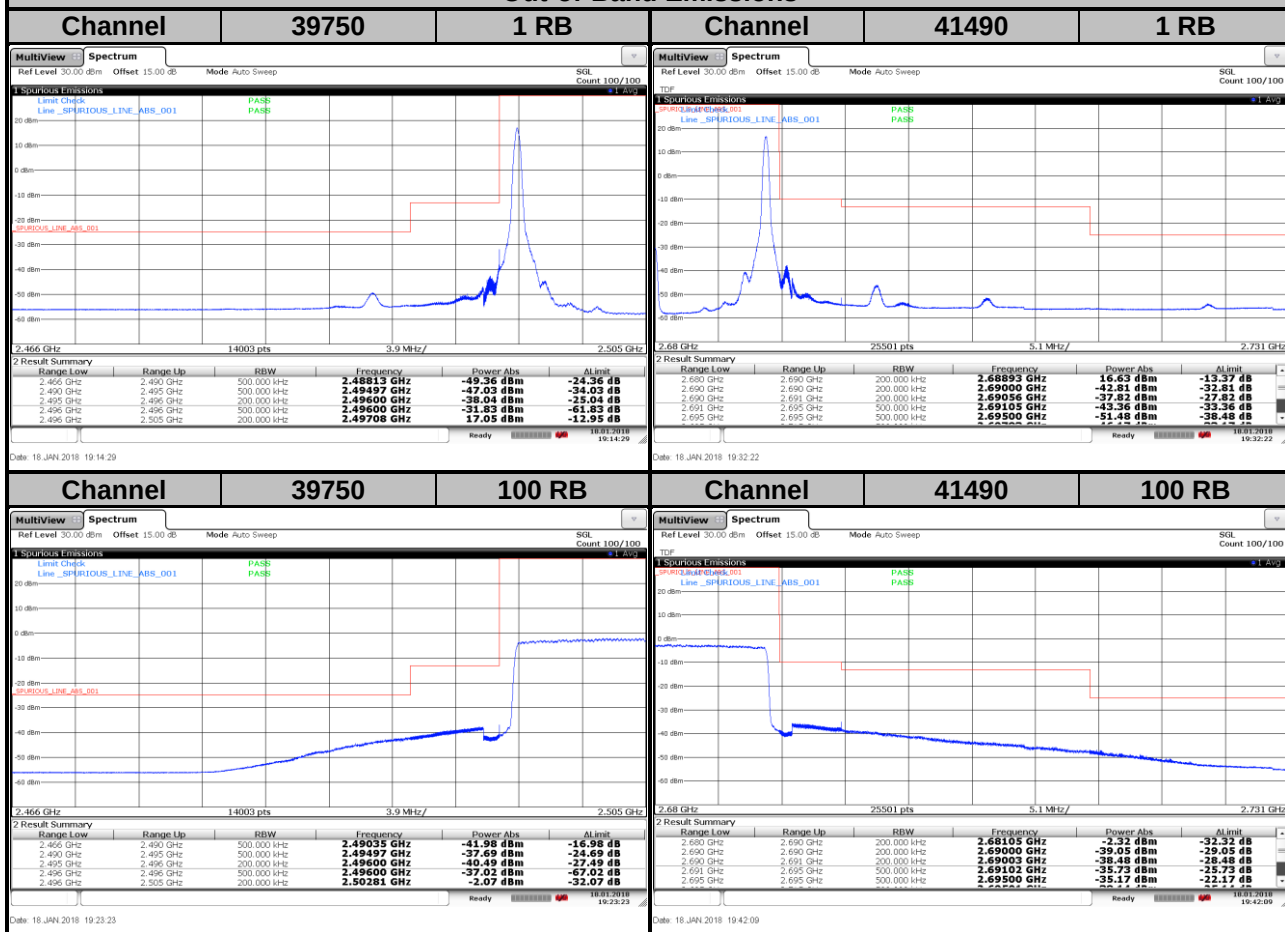




LTE Band 41
Channel Bandwidth: 20 MHz / QPSK
<Out-of-Band Emissions>



LTE Band 41
Channel Bandwidth: 20 MHz / 16QAM
<Out-of-Band Emissions>

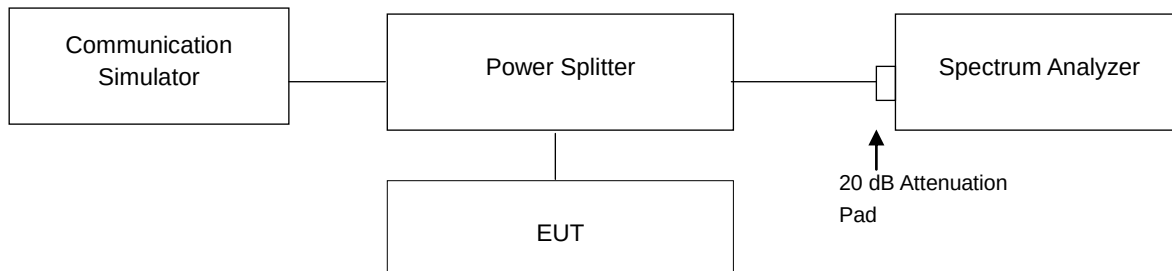


4.5 Peak to Average Ratio

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

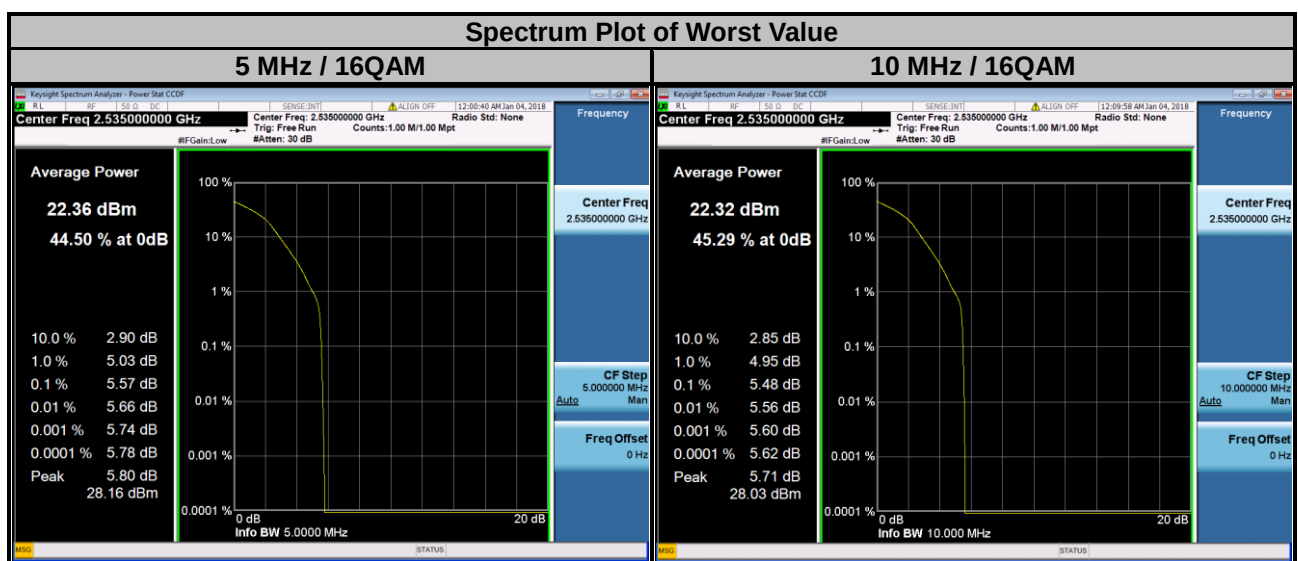


4.5.3 Test Procedures

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

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	4.19	5.00	4.90	20800	2505.0	4.18	5.01	4.94
21100	2535.0	4.74	5.57	5.47	21100	2535.0	4.62	5.48	5.43
21425	2567.5	3.94	4.69	4.61	21400	2565.0	4.03	4.87	4.69



LTE Band 7

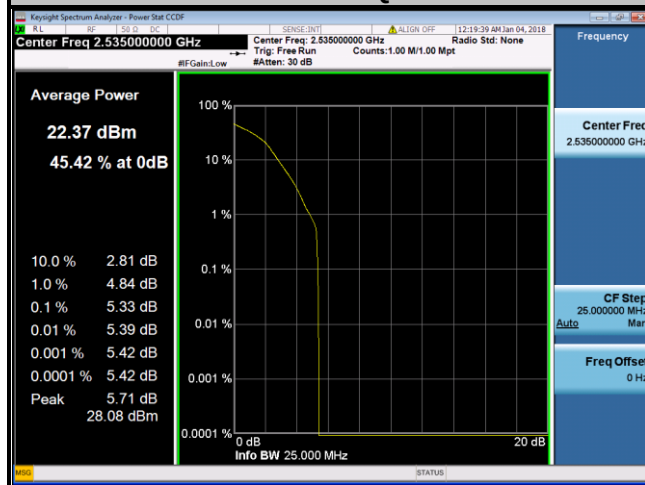
Channel Bandwidth: 15 MHz

Channel Bandwidth: 20 MHz

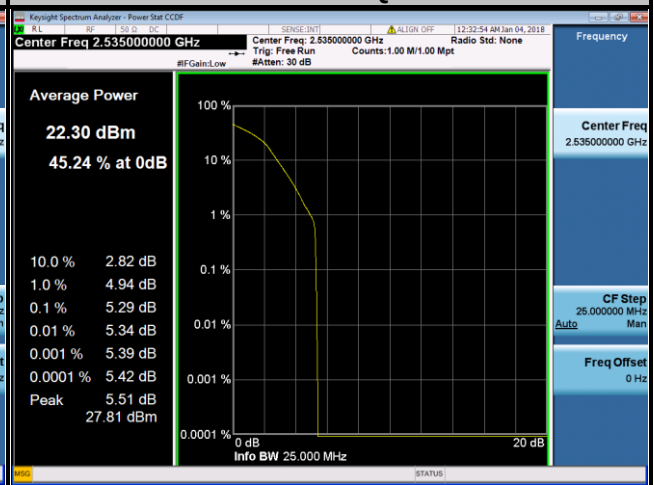
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
20825	2507.5	4.29	5.10	4.95	20850	2510.0	4.31	5.11	4.93
21100	2535.0	4.53	5.33	5.29	21100	2535.0	4.45	5.29	5.24
21375	2562.5	4.41	5.24	5.17	21350	2560.0	4.45	5.25	5.12

Spectrum Plot of Worst Value

15 MHz / 16QAM



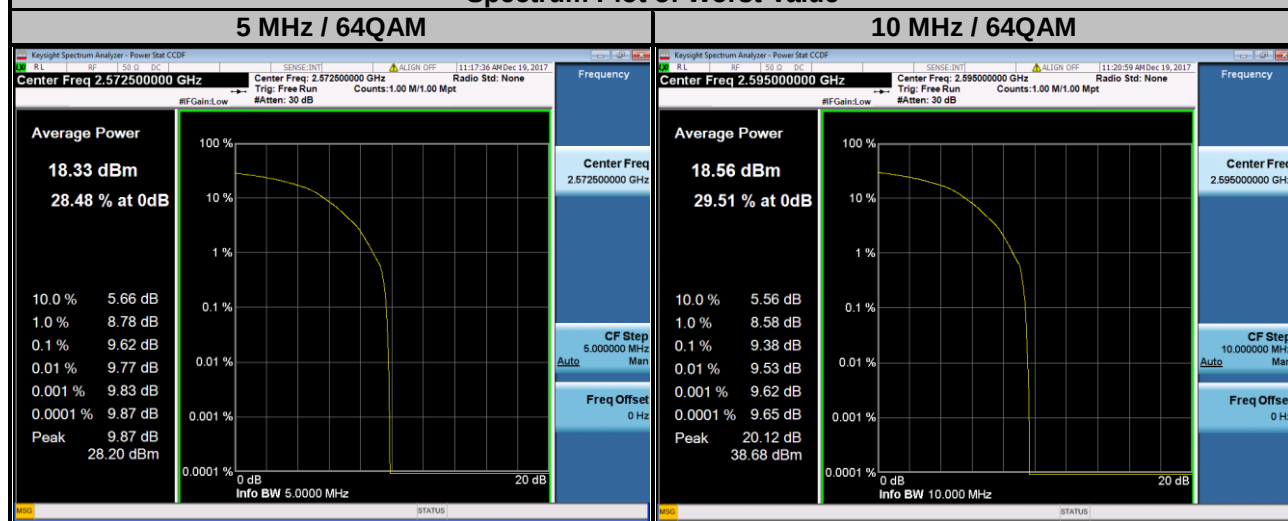
20 MHz / 16QAM



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	7.41	8.86	9.62	37800	2575.0	7.35	8.99	8.94
38000	2595.0	7.29	8.32	9.31	38000	2595.0	7.02	7.89	9.38
38225	2617.5	7.39	8.07	8.88	38200	2615.0	6.73	8.98	9.10

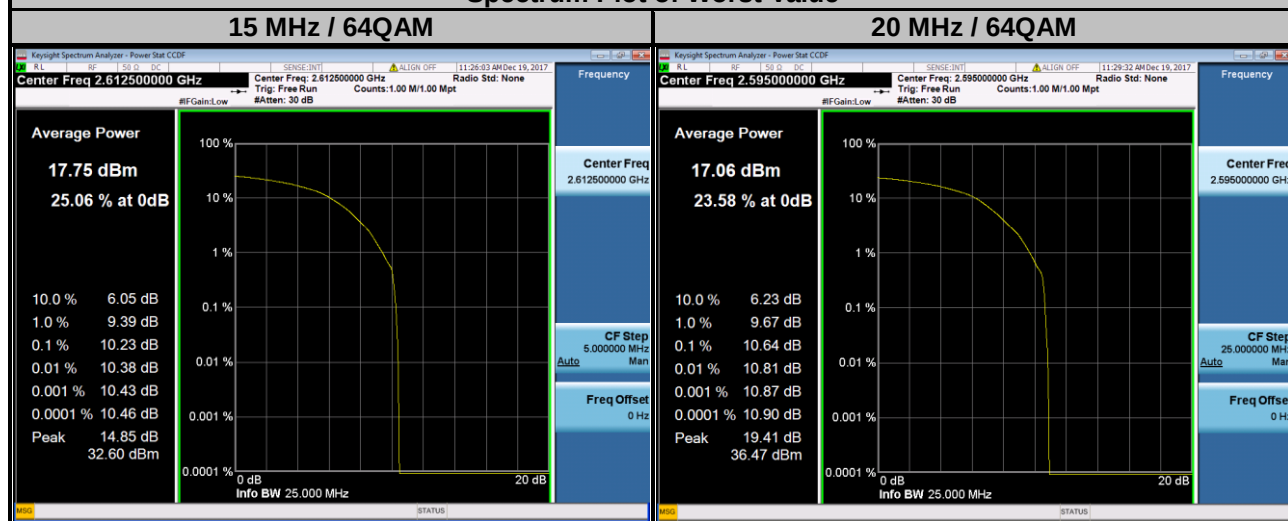
Spectrum Plot of Worst Value



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	7.76	8.10	10.15	37850	2580.0	6.38	8.27	9.83
38000	2595.0	7.81	7.28	8.69	38000	2595.0	8.06	7.95	10.64
38175	2612.5	8.00	10.14	10.23	38150	2610.0	7.70	7.74	9.82

Spectrum Plot of Worst Value



LTE Band 41

Channel Bandwidth: 5 MHz

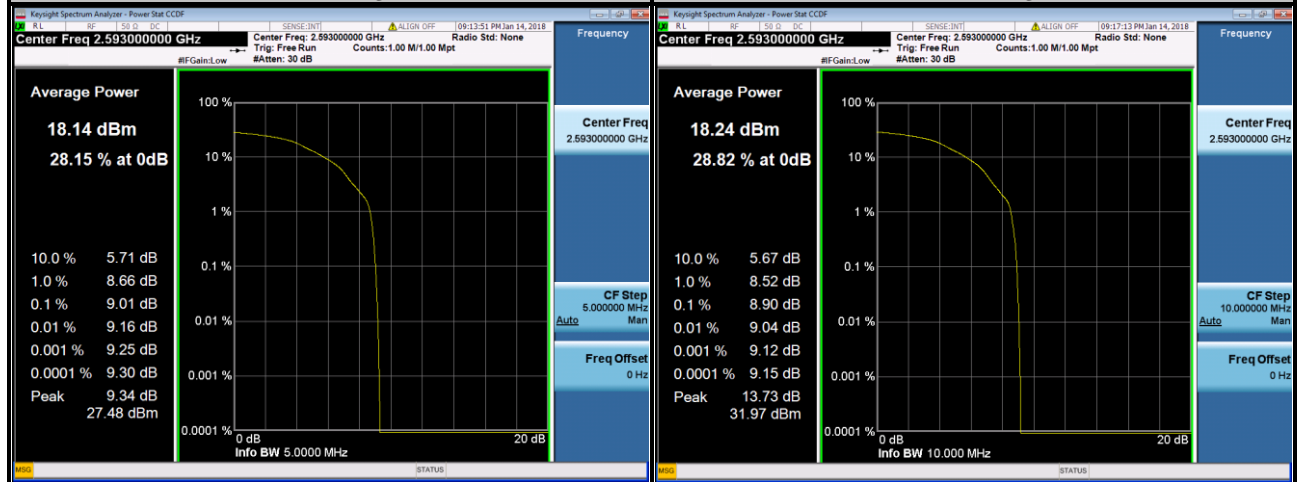
Channel Bandwidth: 10 MHz

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	7.62	8.07	8.16	39700	2501.0	7.42	8.68	7.54
40620	2593.0	7.66	8.60	9.01	40620	2593.0	7.03	8.66	8.90
41565	2687.5	8.70	7.65	8.72	41540	2685.0	7.25	8.78	7.39

Spectrum Plot of Worst Value

5 MHz / 64QAM

10 MHz / 64QAM



LTE Band 41

Channel Bandwidth: 15 MHz

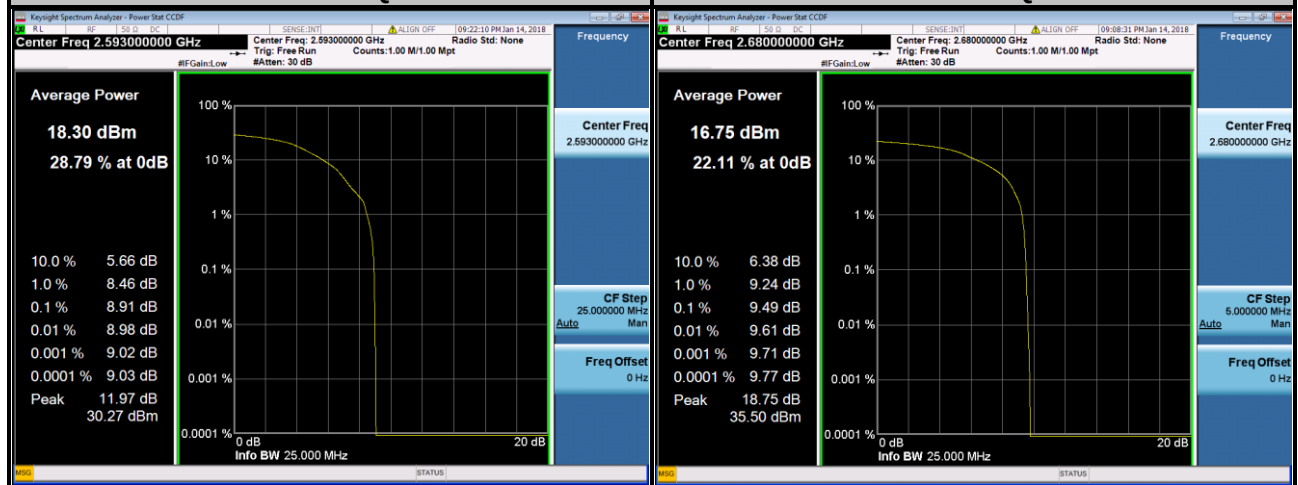
Channel Bandwidth: 20 MHz

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	8.02	8.03	7.77	39750	2506.0	7.92	7.99	8.37
40620	2593.0	6.60	8.08	8.91	40620	2593.0	8.93	7.89	8.55
41515	2682.5	6.31	7.86	8.18	41490	2680.0	7.23	9.49	8.31

Spectrum Plot of Worst Value

15 MHz / 64QAM

20 MHz / 16QAM

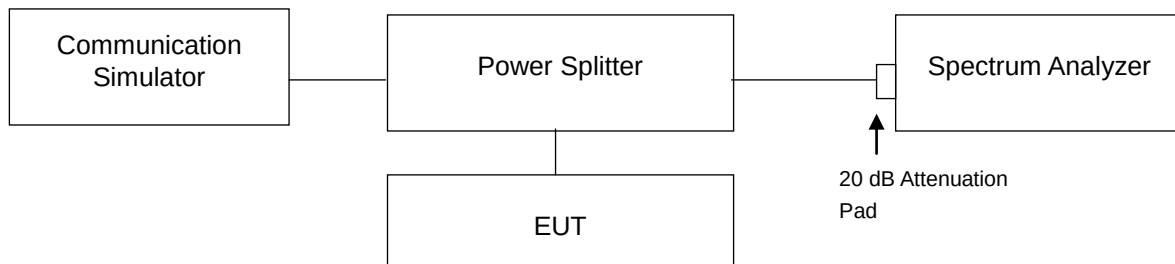


4.6 Conducted Spurious Emissions

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 $55 + 10 \log_{10}(P)$ dB. The limit of emission is equal to -25 dBm.

4.6.2 Test Setup



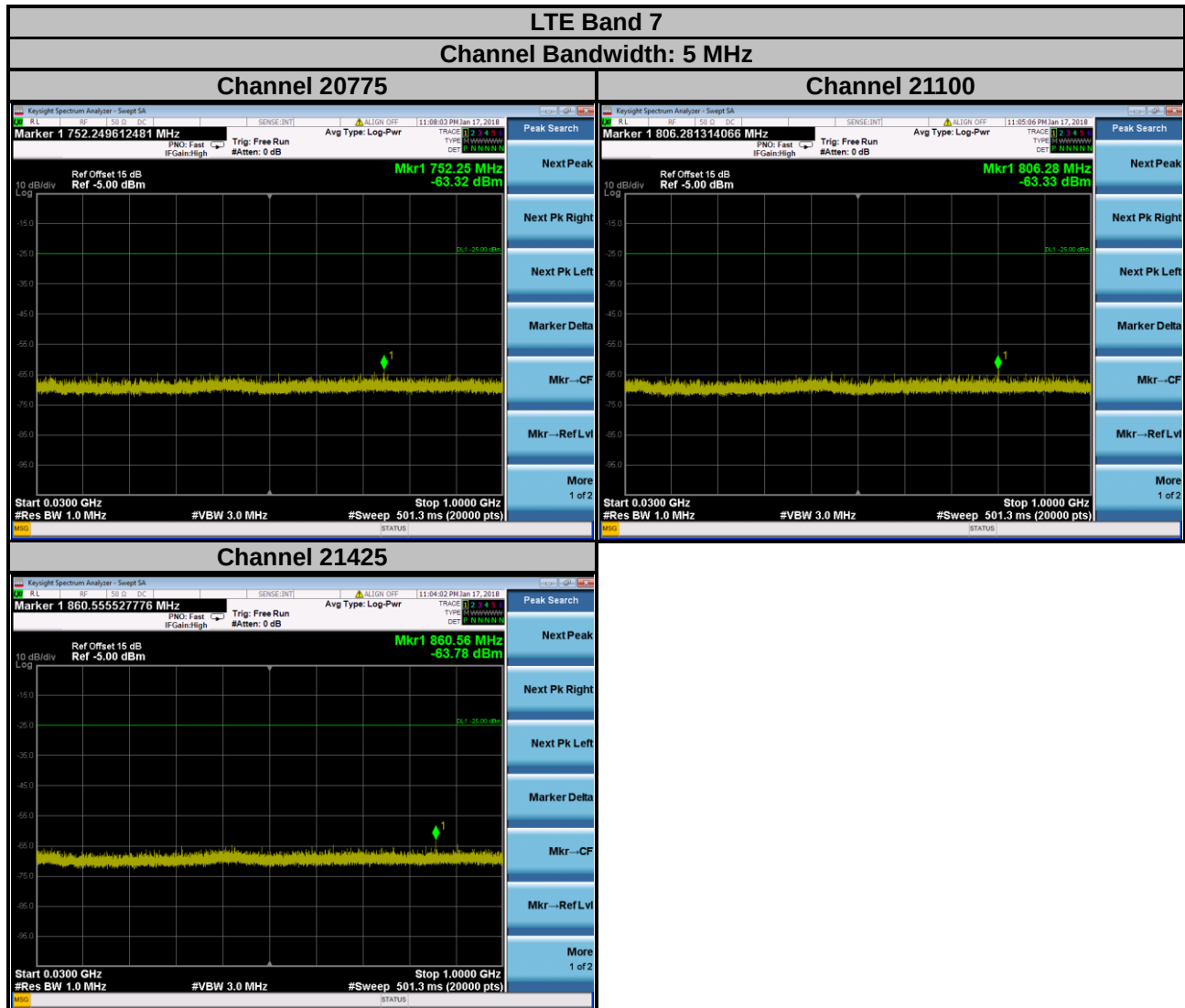
4.6.3 Test Procedure

- 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 30MHz to 1 GHz, 1 GHz to 3GHz, and 3 GHz to 26GHz for LTE Band 7, and 30MHz to 1 GHz, 1 GHz to 3GHz, and 3 GHz to 27GHz for LTE Band 38/41. 10 dB attenuation pad is connected with spectrum. RBW = 100 kHz and VBW = 300 kHz are used for conducted emission measurement.

4.6.4 Test Results

LTE Band 7

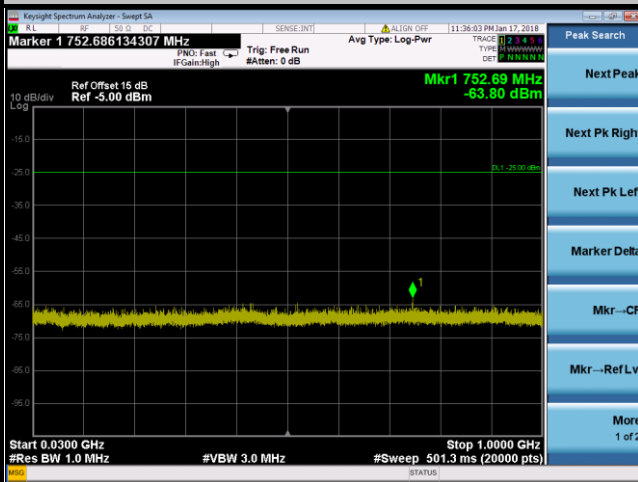
30MHz ~ 1GHz



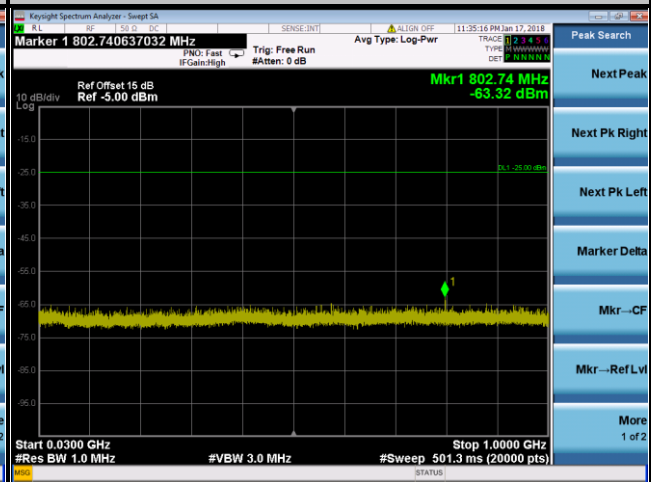
LTE Band 7

Channel Bandwidth: 10 MHz

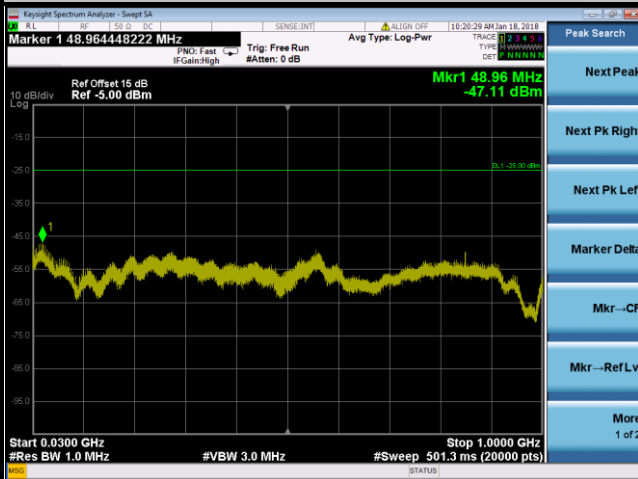
Channel 20800



Channel 21100



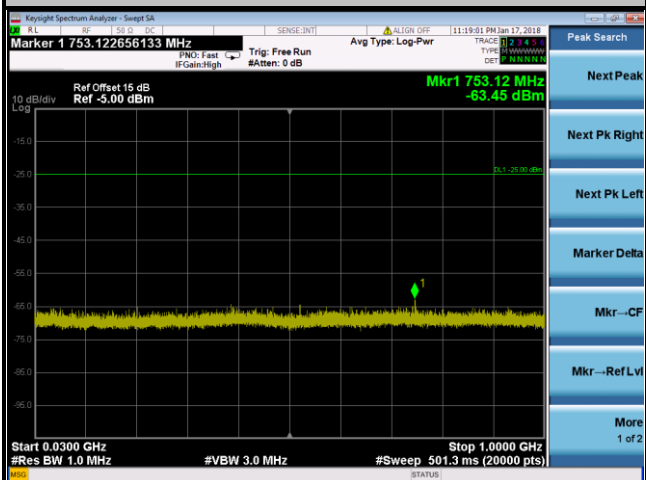
Channel 21400



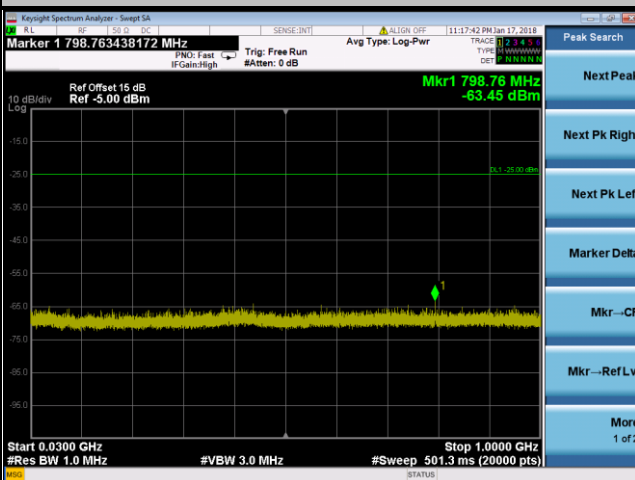
LTE Band 7

Channel Bandwidth: 15 MHz

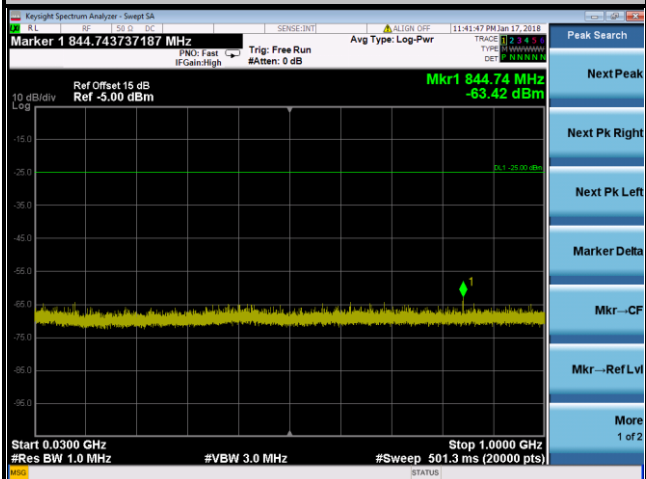
Channel 20825



Channel 21100



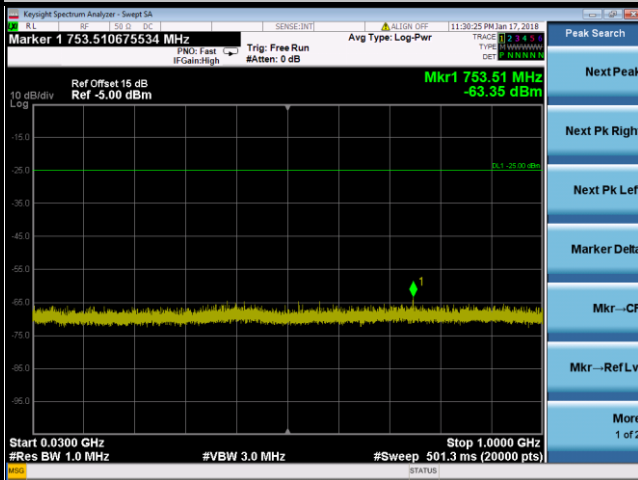
Channel 21375



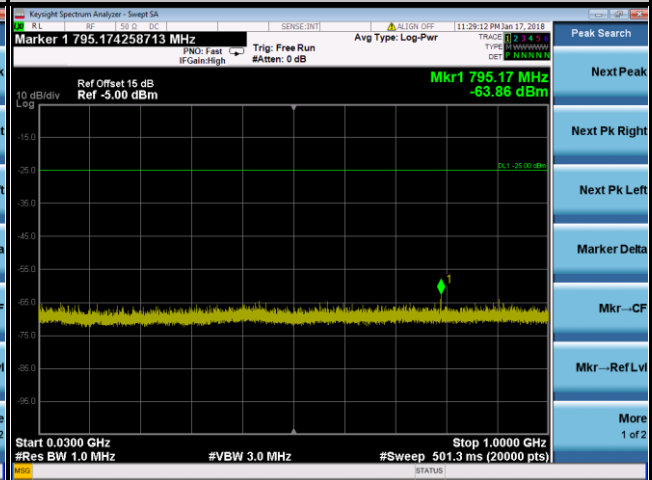
LTE Band 7

Channel Bandwidth: 20 MHz

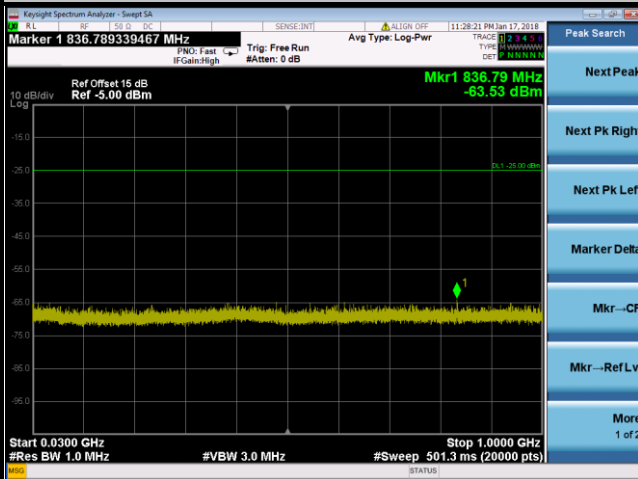
Channel 20850



Channel 21100



Channel 21350

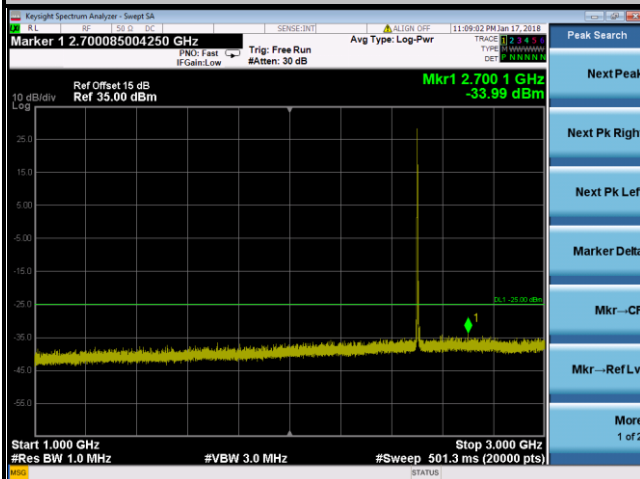


1GHz ~ 3GHz

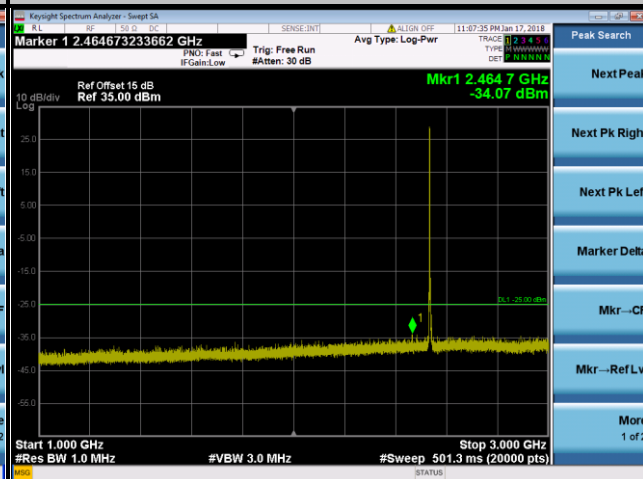
LTE Band 7

Channel Bandwidth: 5 MHz

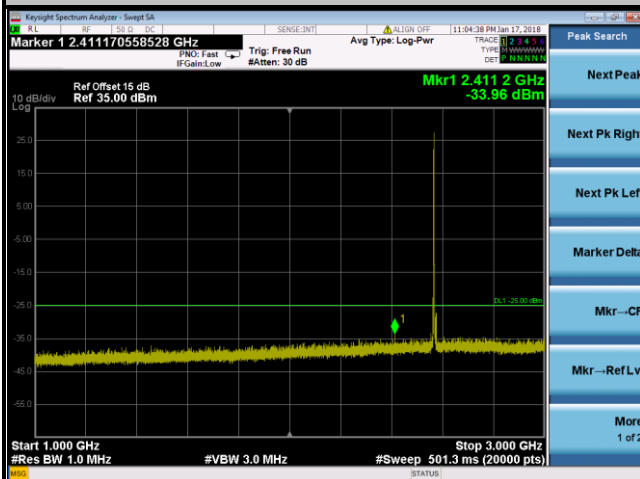
Channel 20775



Channel 21100



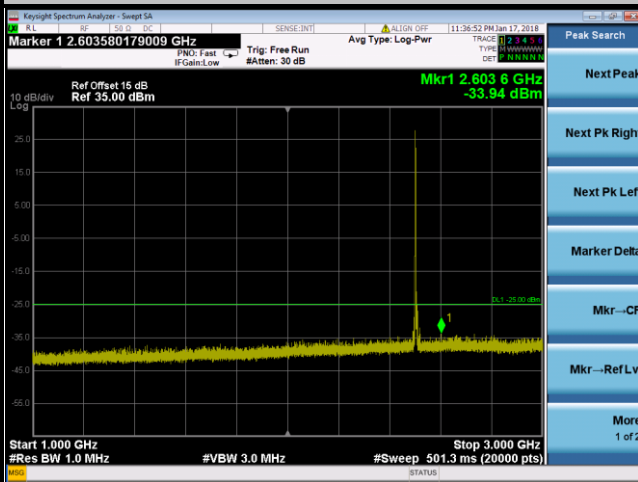
Channel 21425



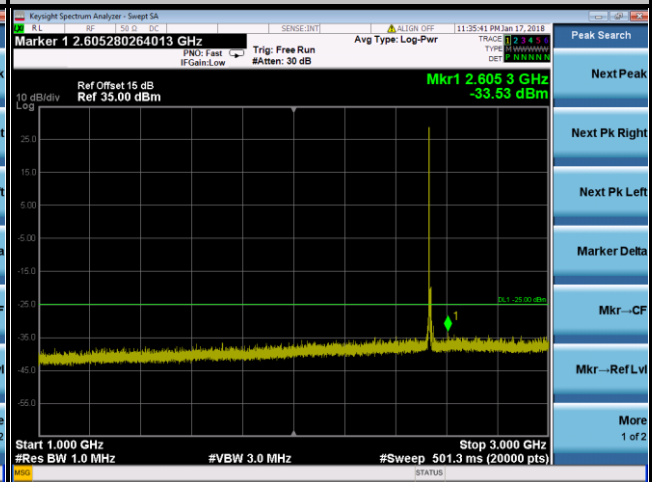
LTE Band 7

Channel Bandwidth: 10 MHz

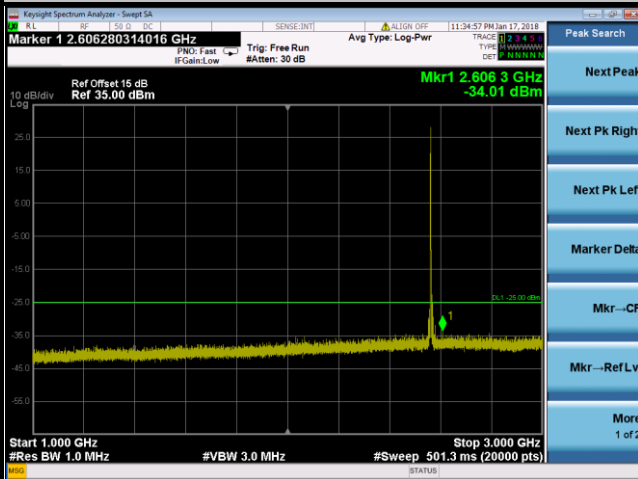
Channel 20800



Channel 21100



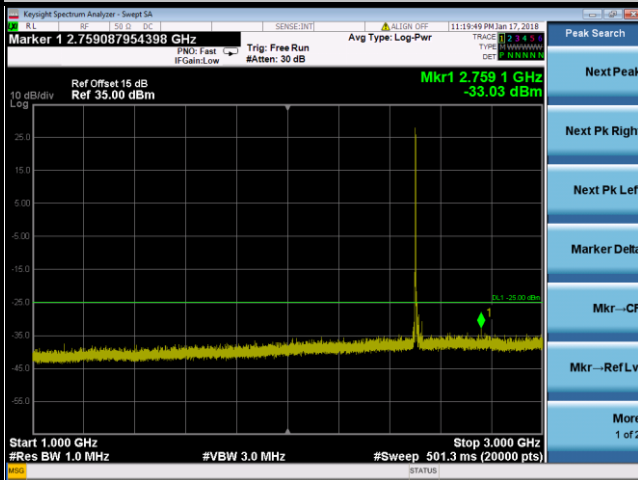
Channel 21400



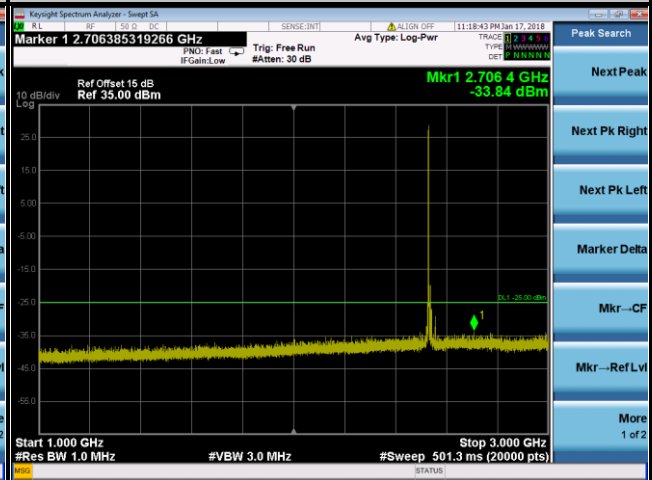
LTE Band 7

Channel Bandwidth: 15 MHz

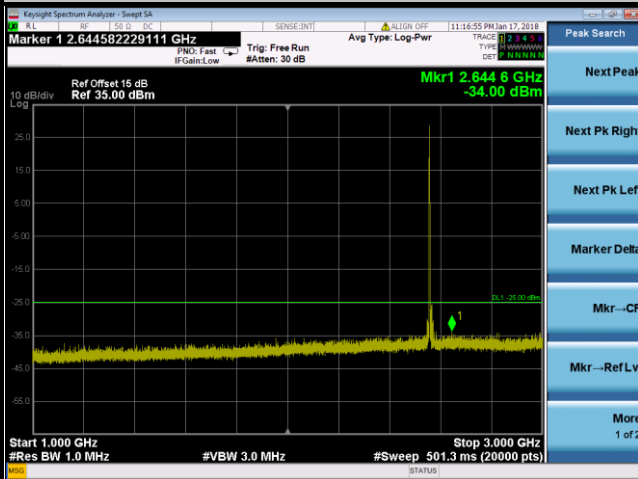
Channel 20825



Channel 21100



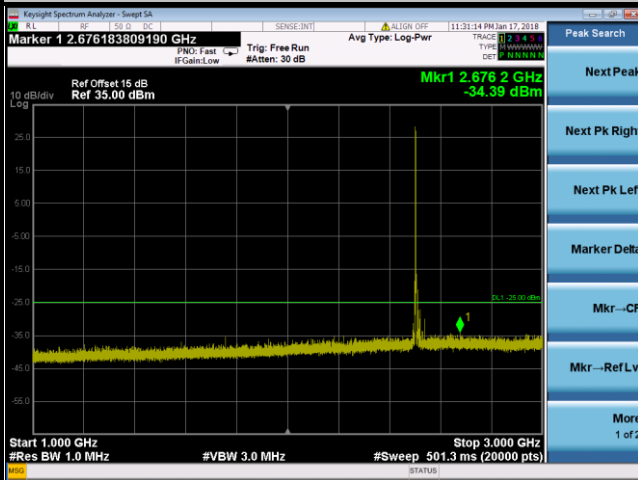
Channel 21375



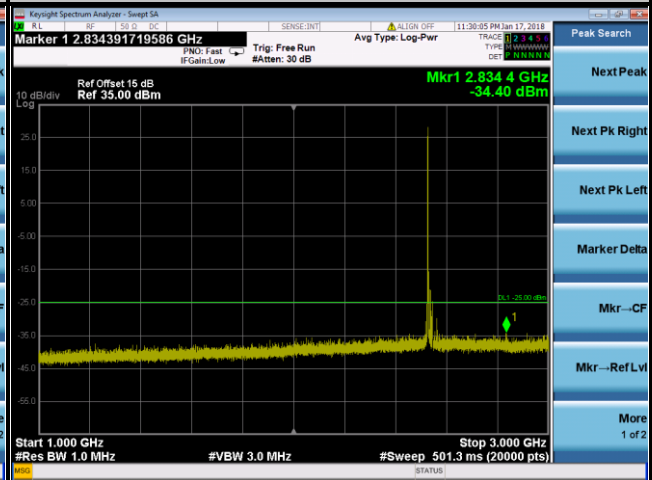
LTE Band 7

Channel Bandwidth: 20 MHz

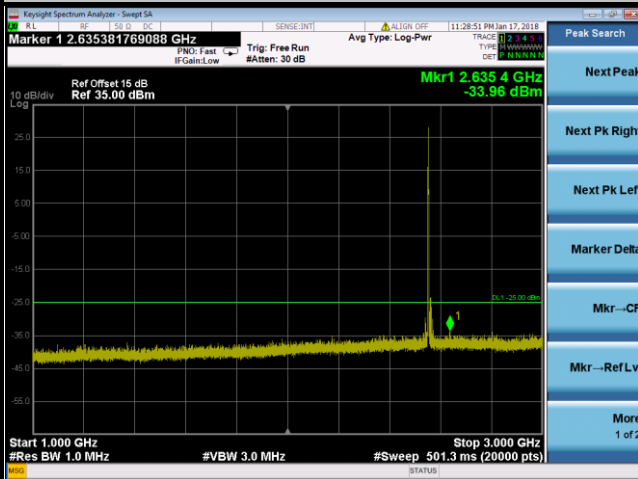
Channel 20850



Channel 21100



Channel 21350

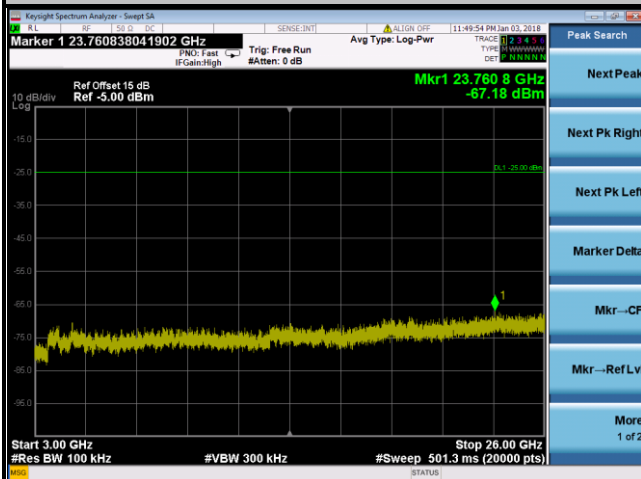


3GHz ~ 26GHz

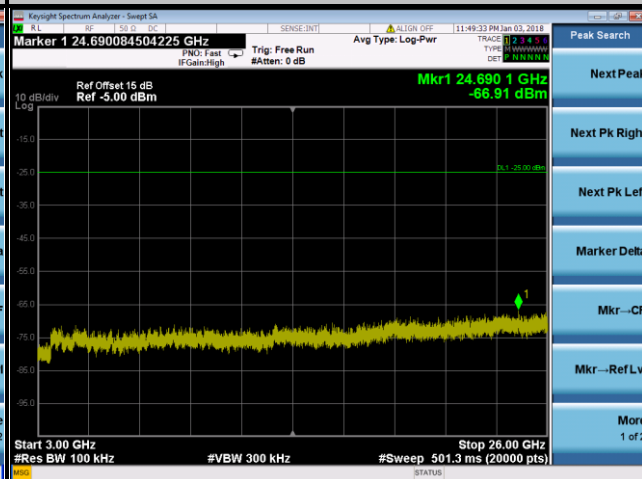
LTE Band 7

Channel Bandwidth: 5 MHz

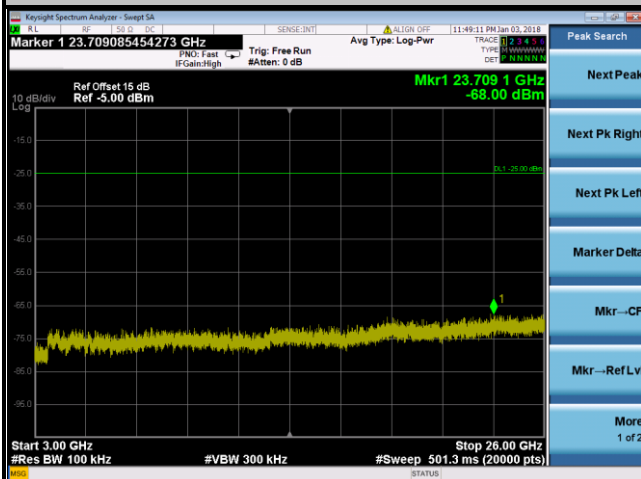
Channel 20775



Channel 21100



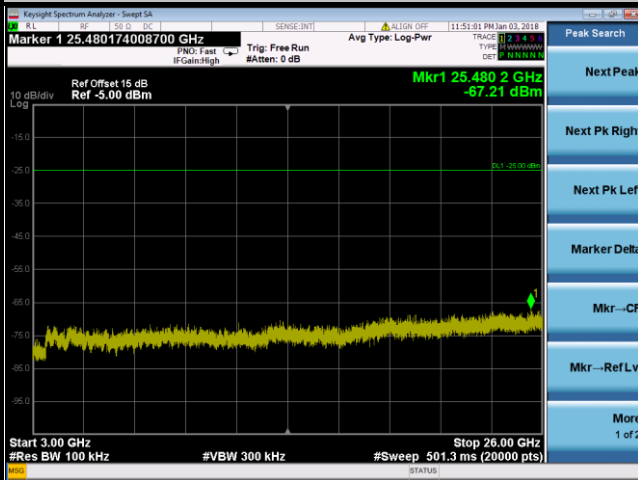
Channel 21425



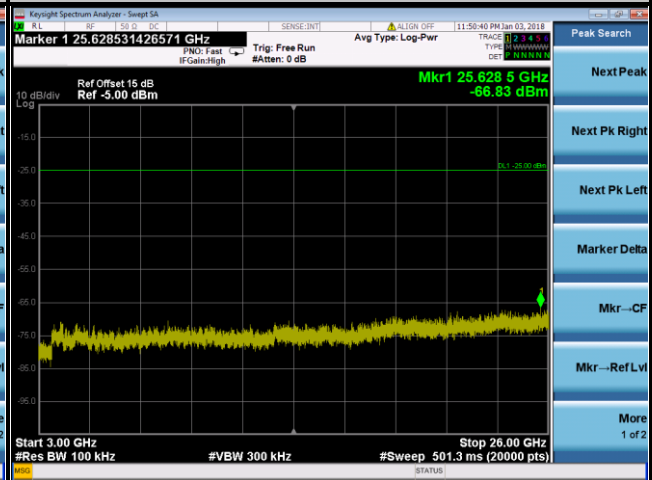
LTE Band 7

Channel Bandwidth: 10 MHz

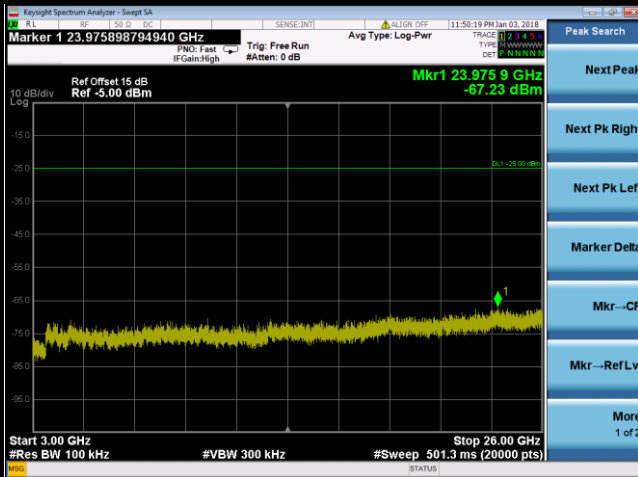
Channel 20800



Channel 21100



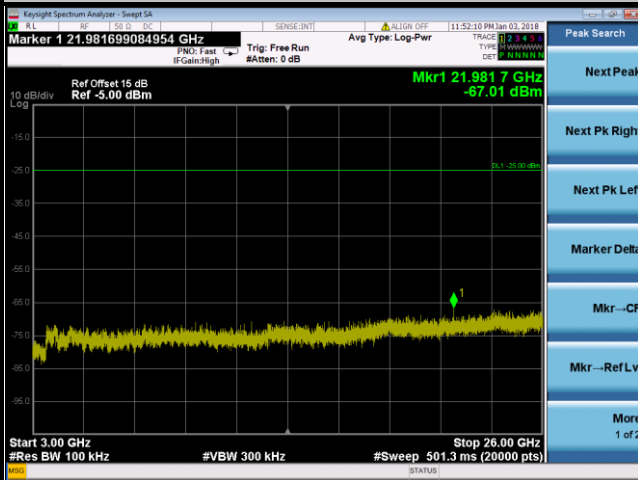
Channel 21400



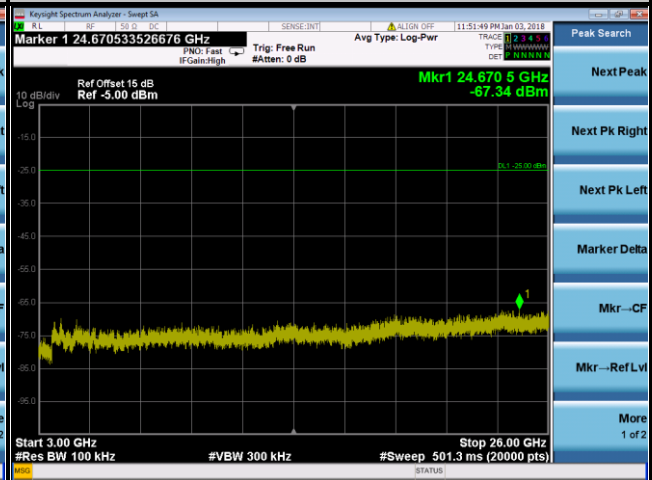
LTE Band 7

Channel Bandwidth: 15 MHz

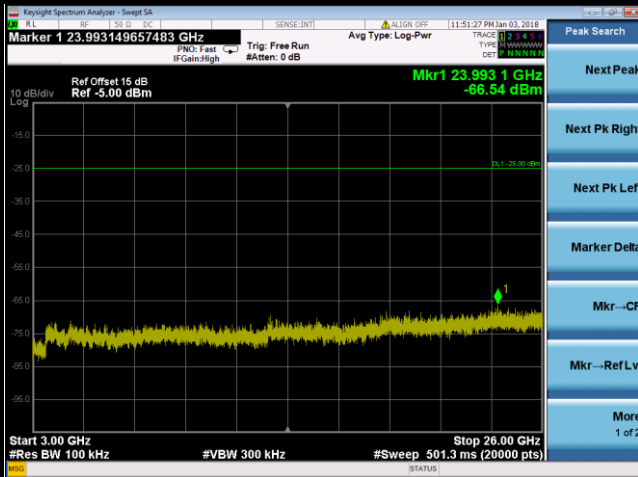
Channel 20825



Channel 21100



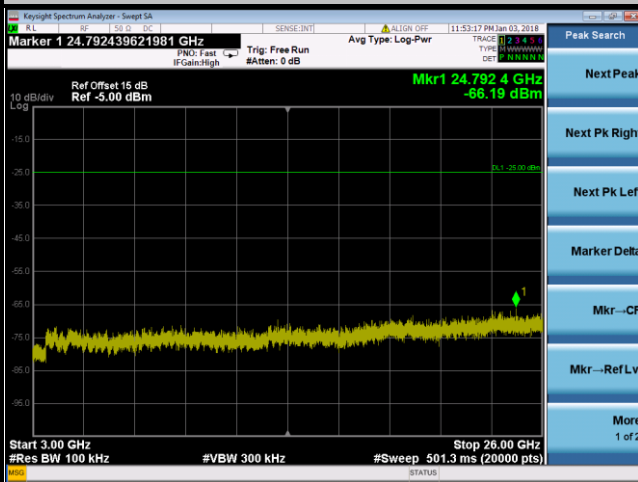
Channel 21375



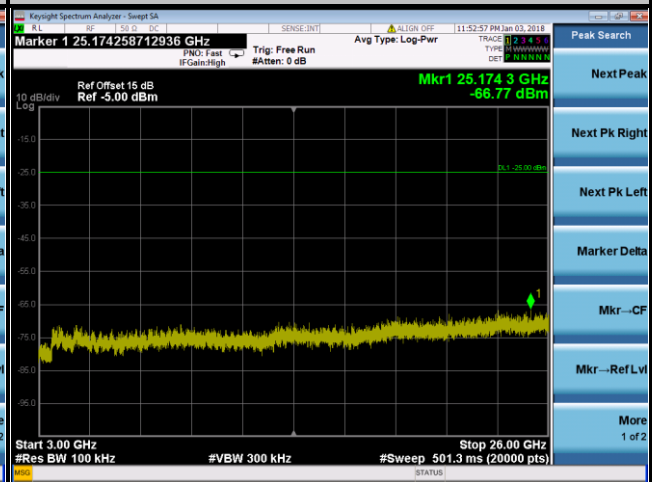
LTE Band 7

Channel Bandwidth: 20 MHz

Channel 20850



Channel 21100



Channel 21350

