

Channel Bandwidth: 15MHz

Channel 20825
(2507.5MHz)

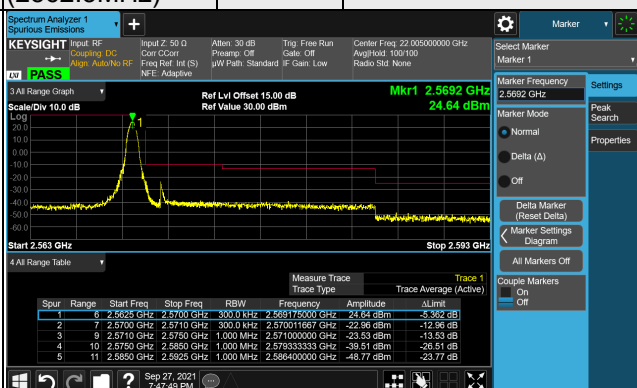
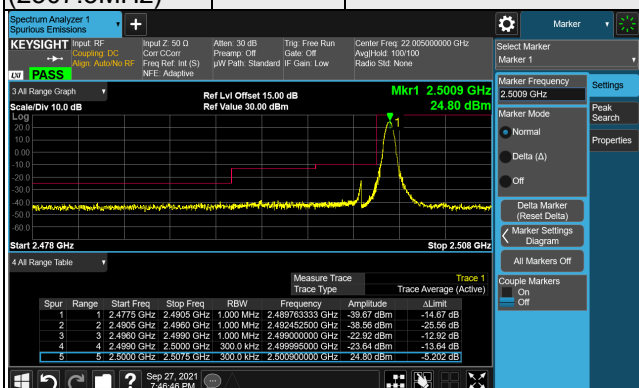
QPSK

1 RB / 0 RB Offset

Channel 21375
(2562.5MHz)

QPSK

1 RB / 74 RB Offset



Channel 20825
(2507.5MHz)

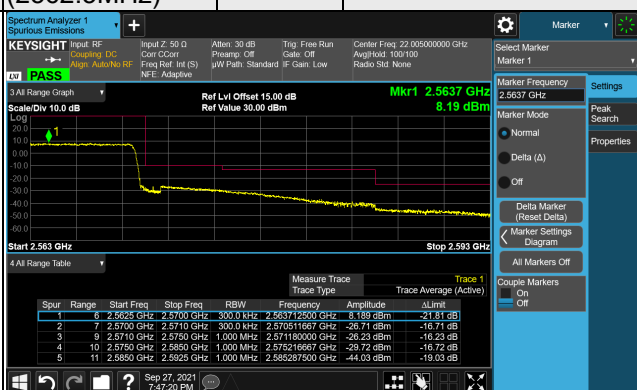
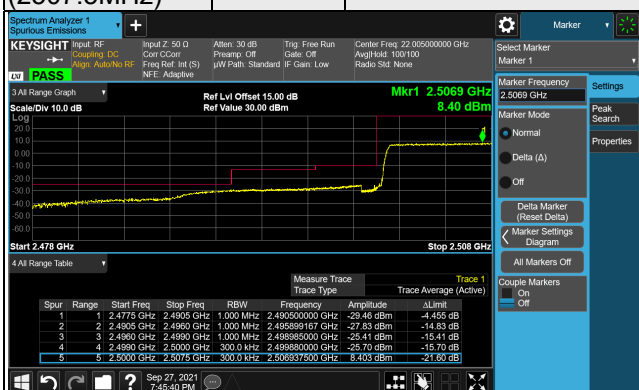
QPSK

75 RB / 0 RB Offset

Channel 21375
(2562.5MHz)

QPSK

75 RB / 0 RB Offset



Channel Bandwidth: 20MHz

Channel 20850
(2510.0MHz)

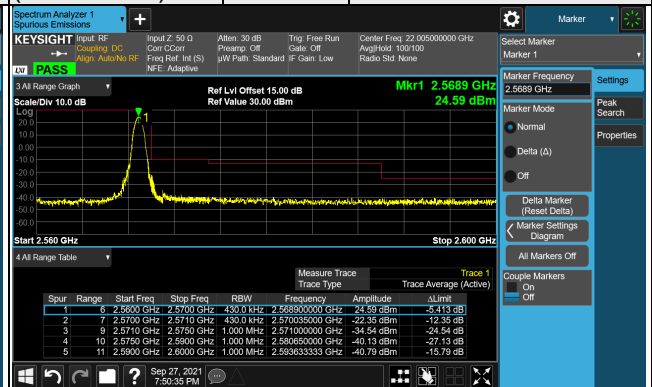
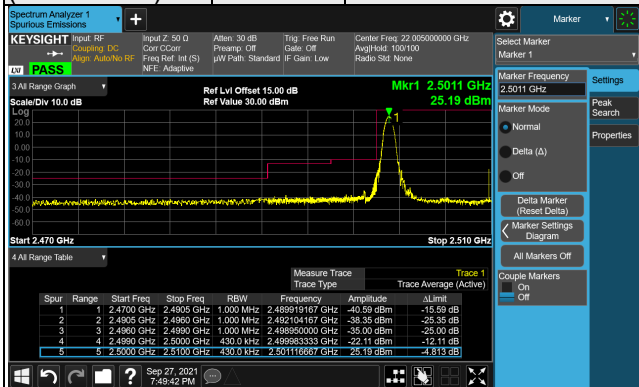
QPSK

1 RB / 0 RB Offset

Channel 21350
(2560.0MHz)

QPSK

1 RB / 99 RB Offset



Channel 20850
(2510.0MHz)

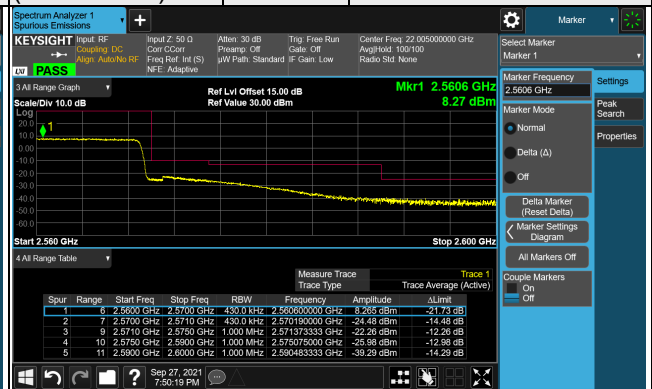
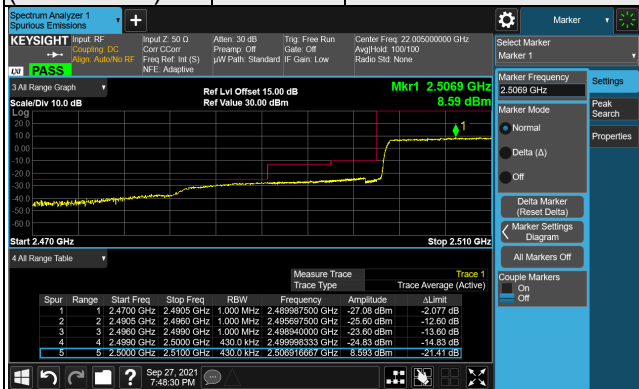
QPSK

100 RB / 0 RB Offset

Channel 21350
(2560.0MHz)

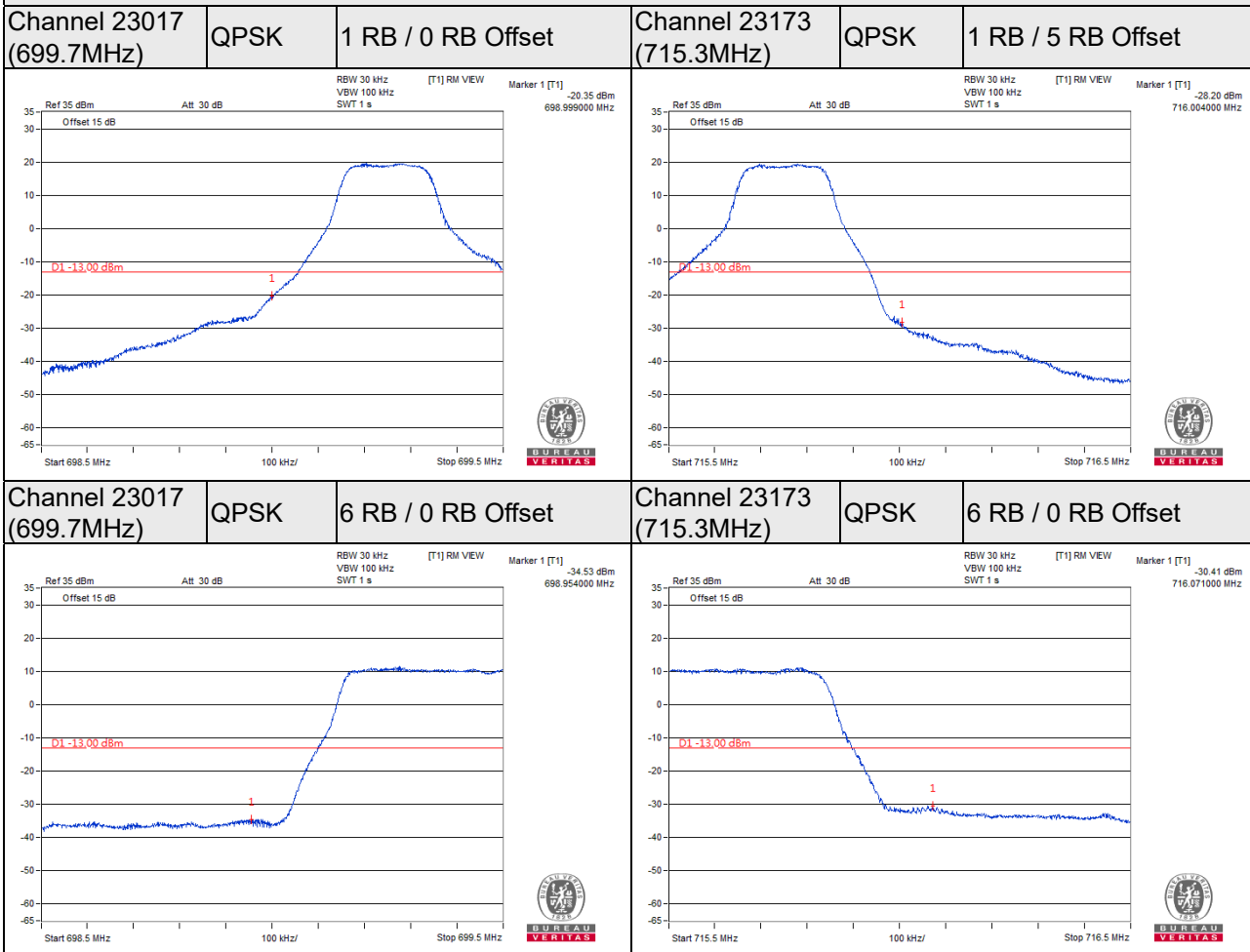
QPSK

100 RB / 0 RB Offset

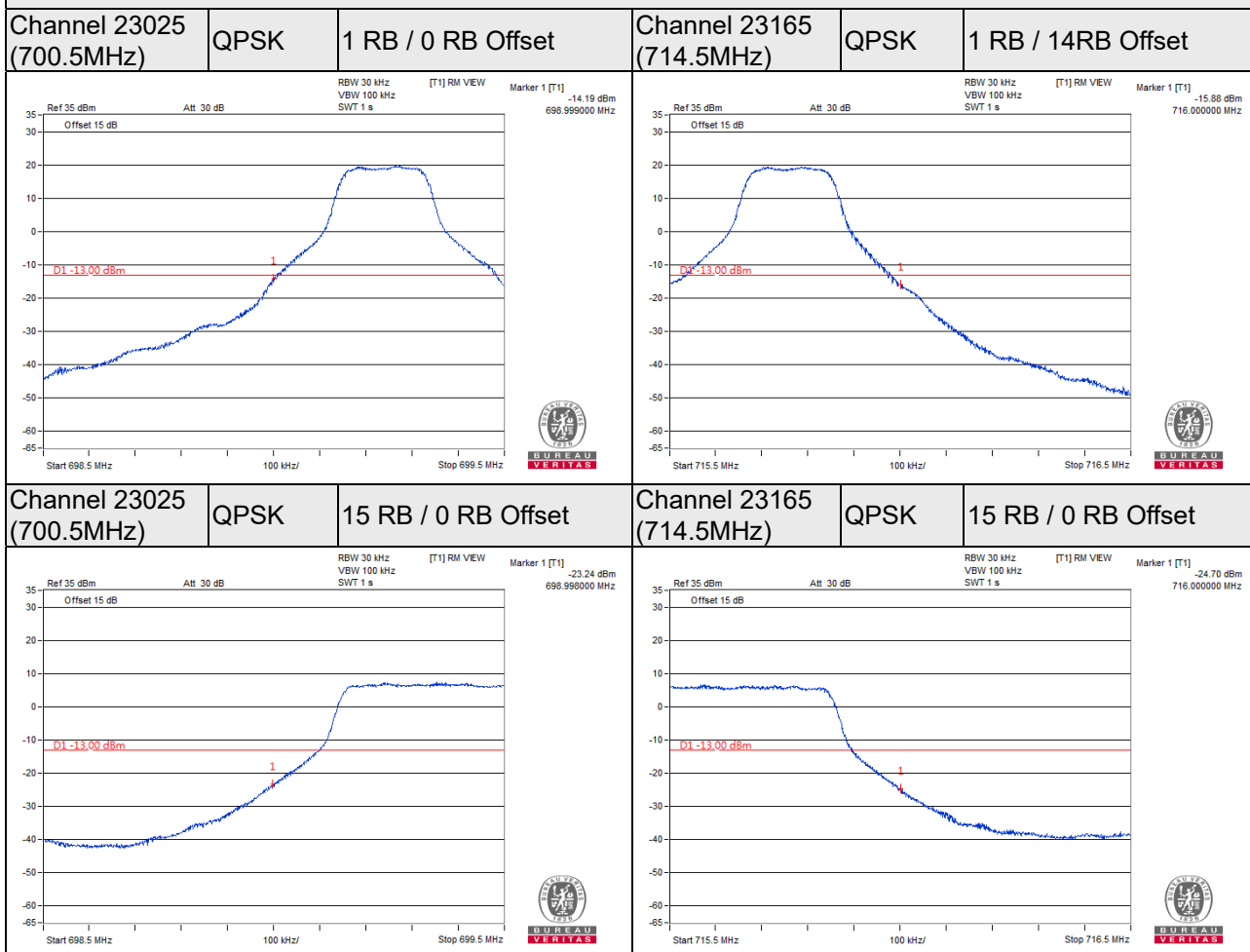


LTE Band 12

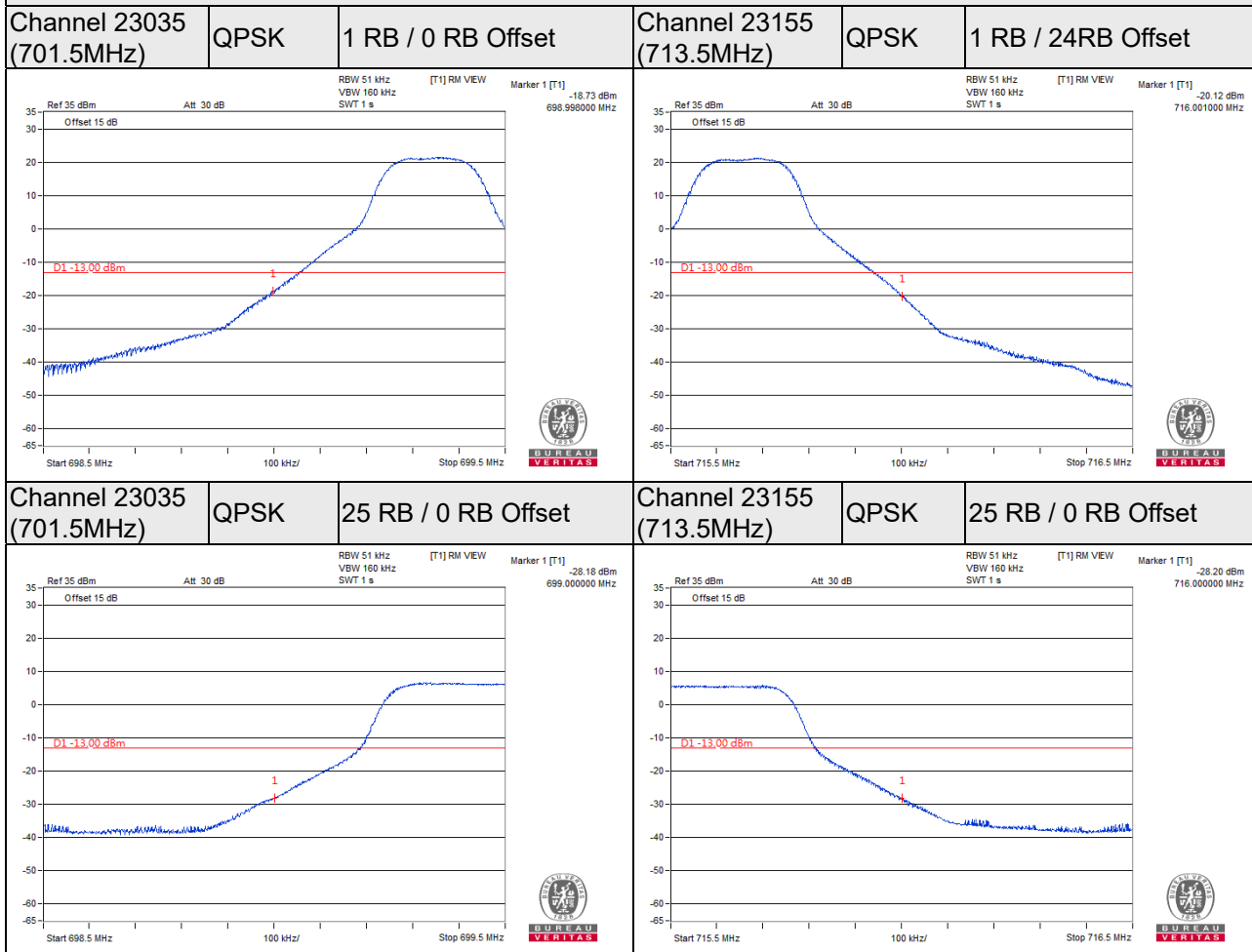
Channel Bandwidth: 1.4MHz



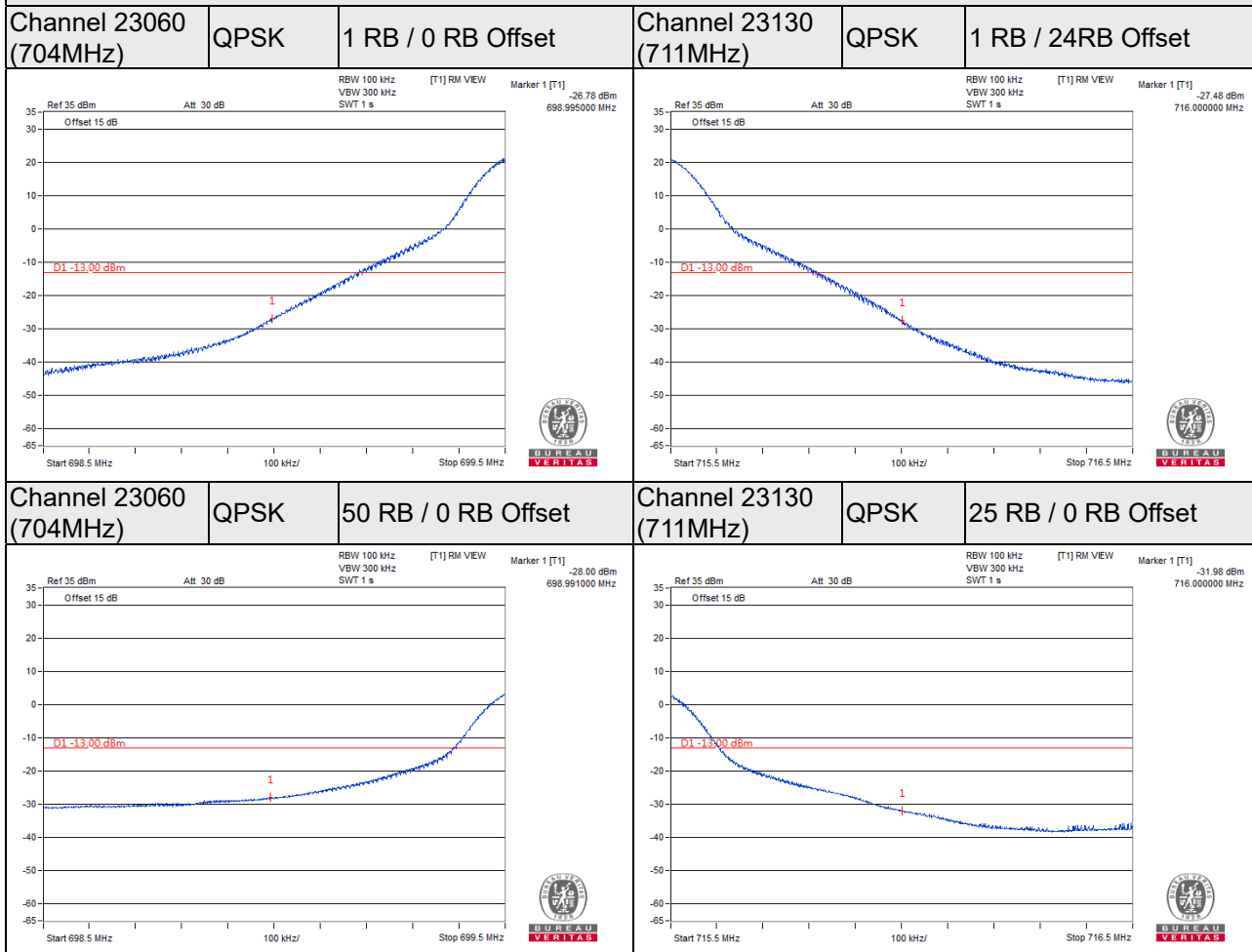
Channel Bandwidth: 3MHz



Channel Bandwidth: 5MHz

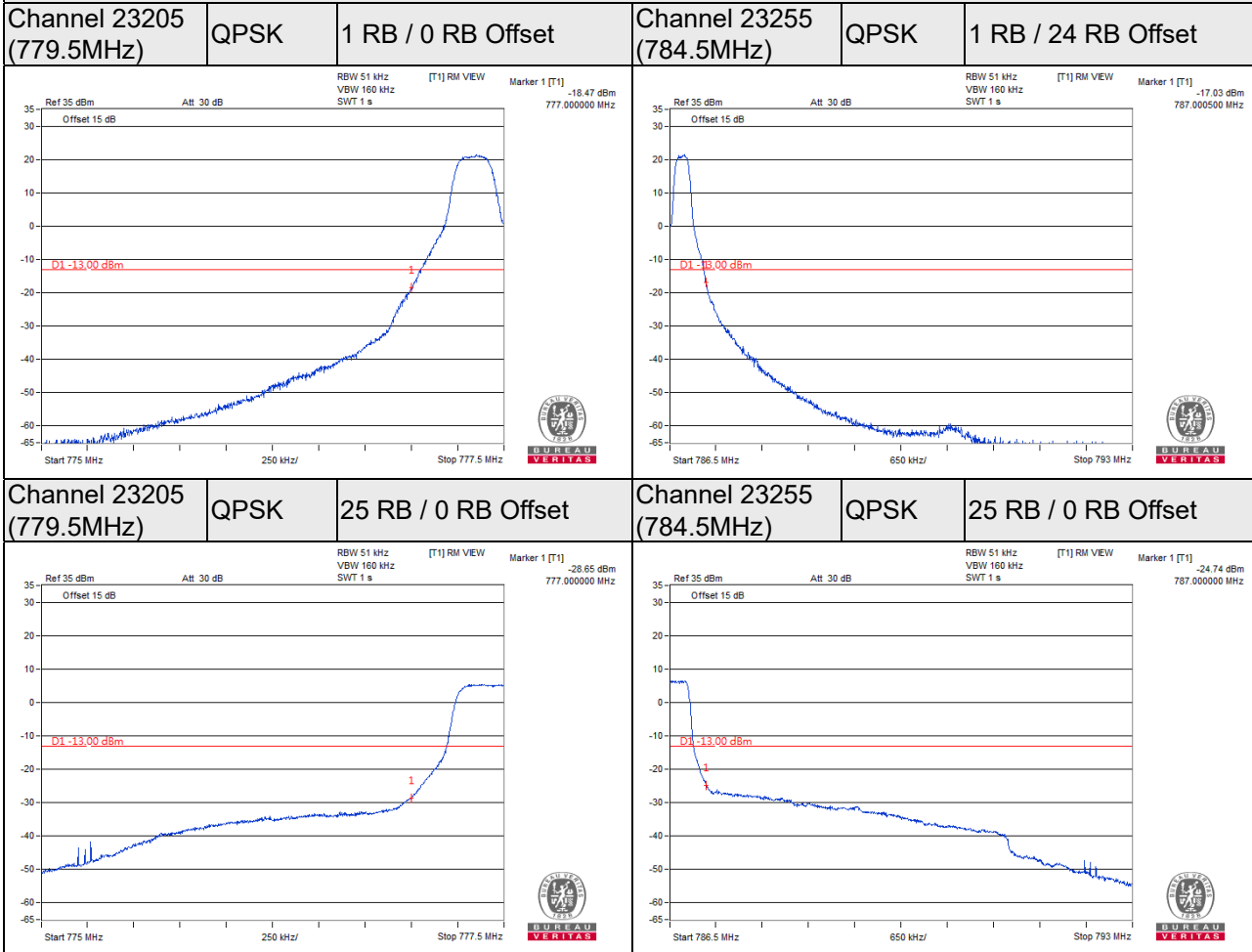


Channel Bandwidth: 10MHz

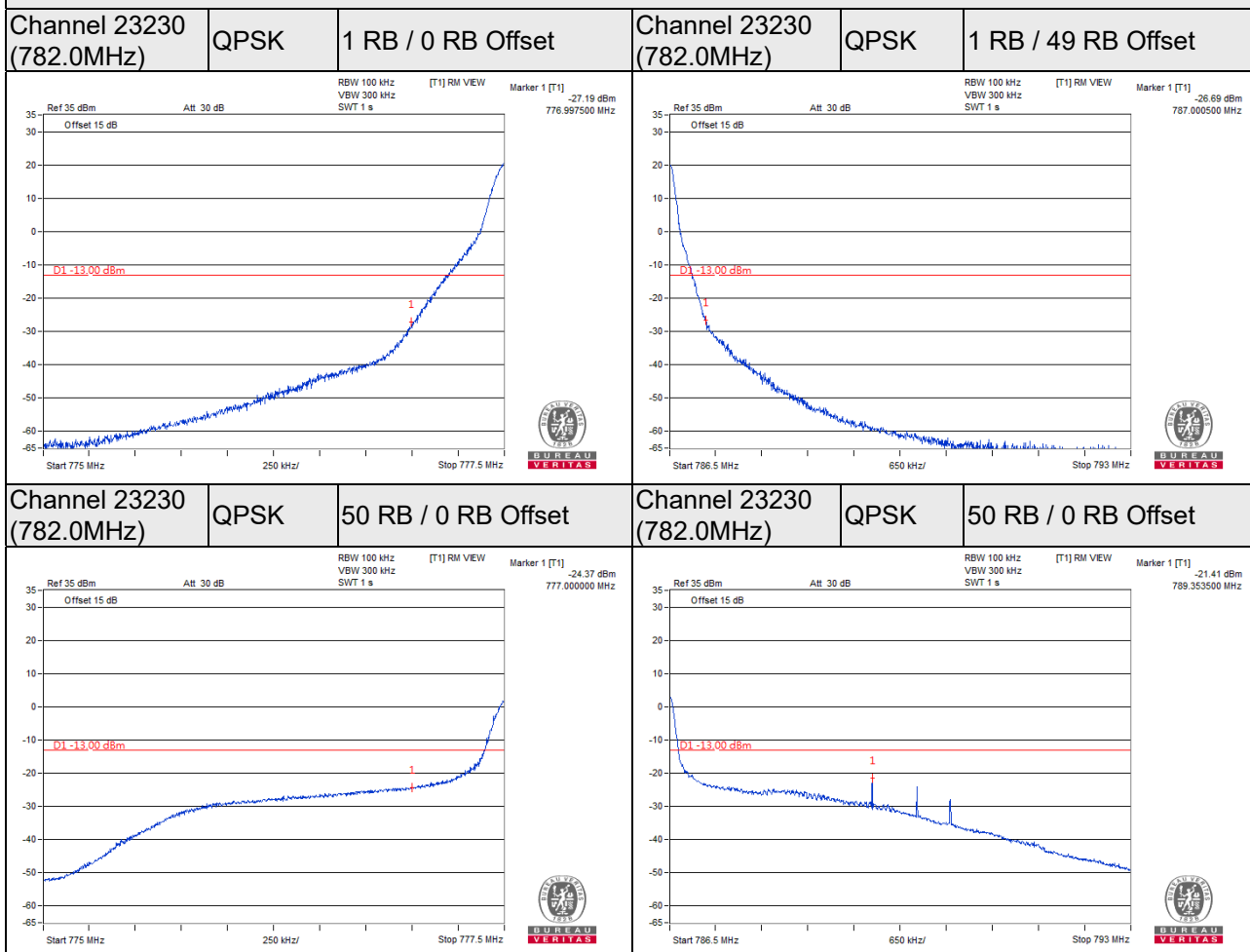


LTE Band 13

Channel Bandwidth: 5MHz

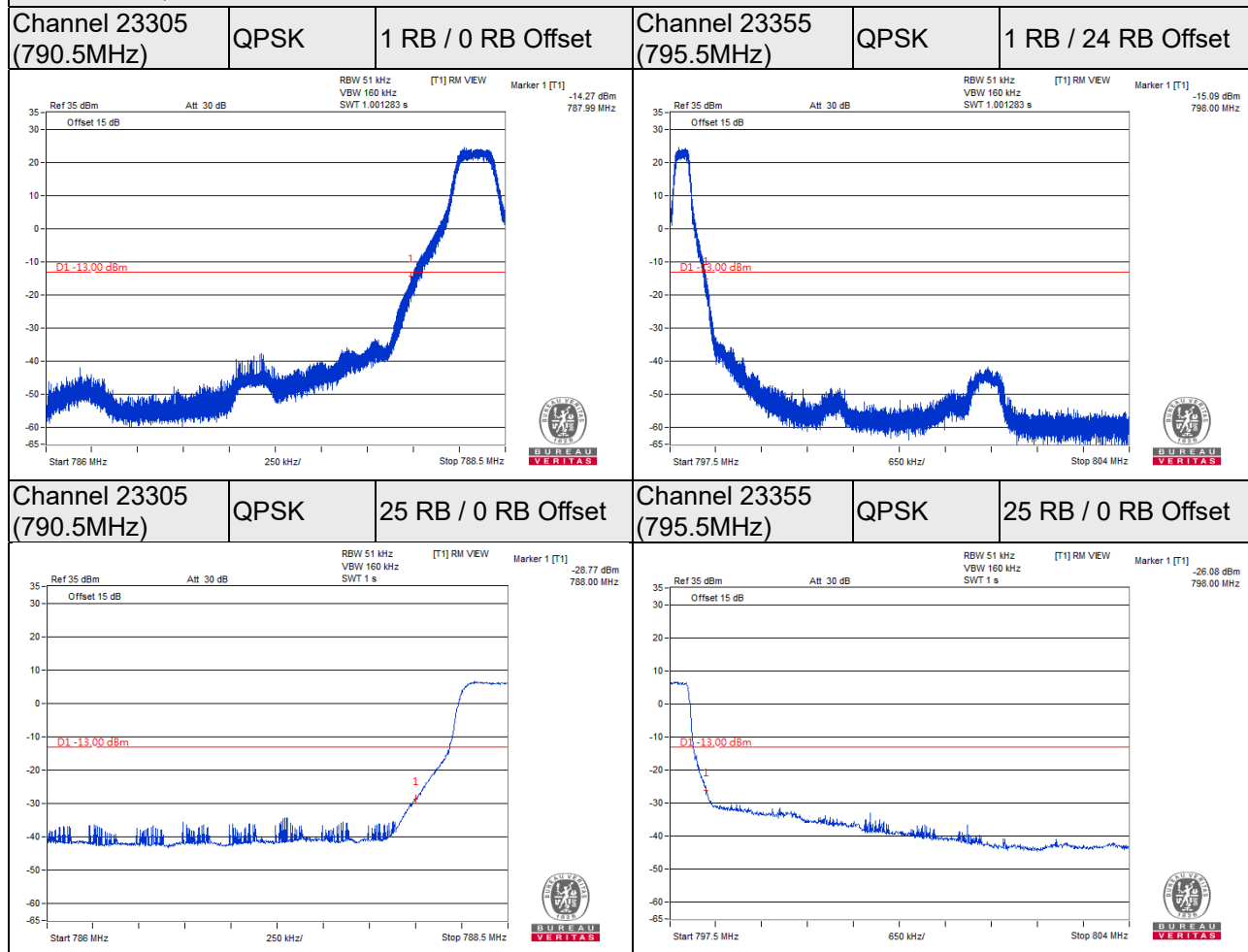


Channel Bandwidth: 10MHz

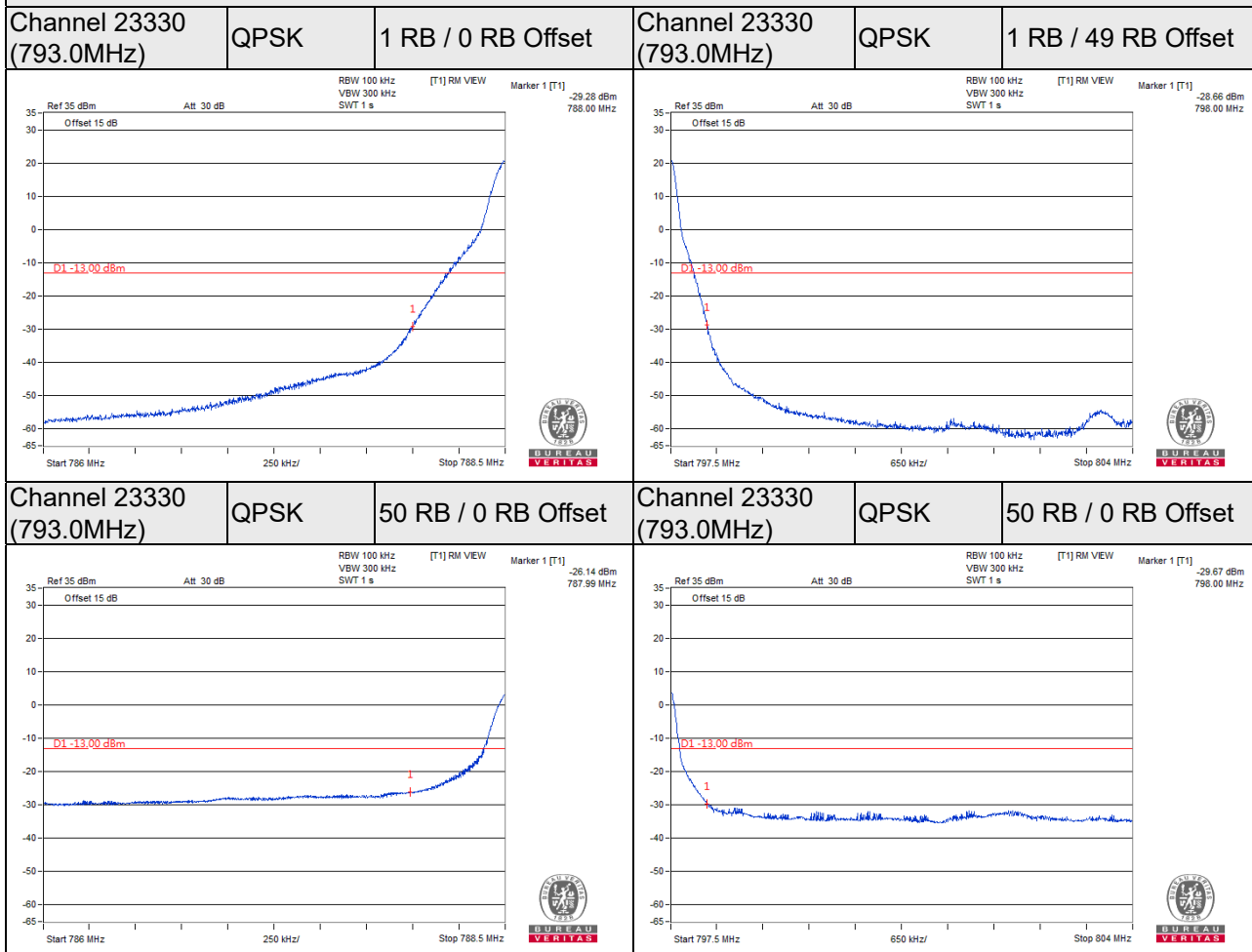


LTE Band 14

LTE Band 14, Channel Bandwidth 5MHz

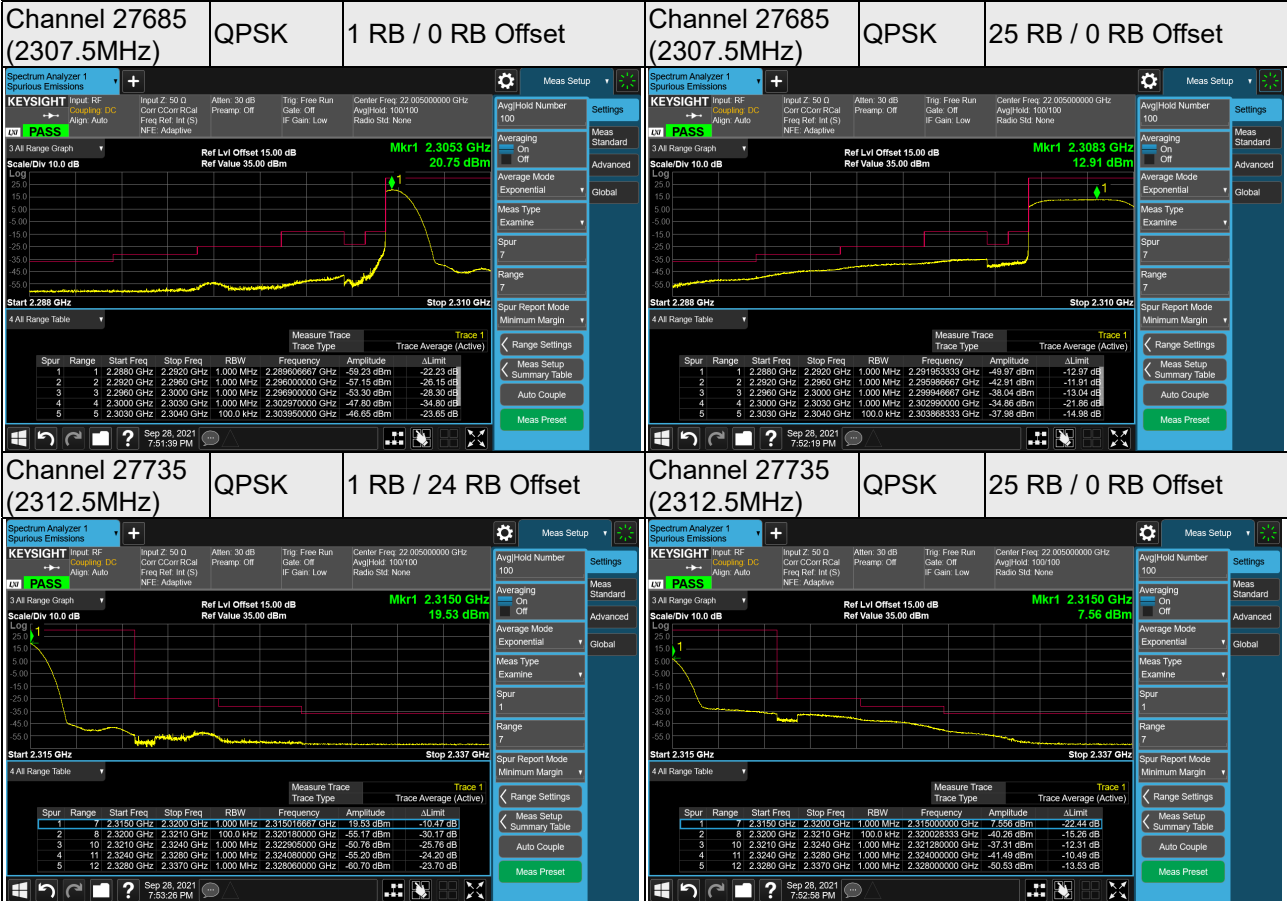


LTE Band 14, Channel Bandwidth 10MHz



LTE Band 30
Emission Mask:

Channel Bandwidth: 5MHz



Channel Bandwidth: 10MHz

Channel 27710
(2310.0MHz)

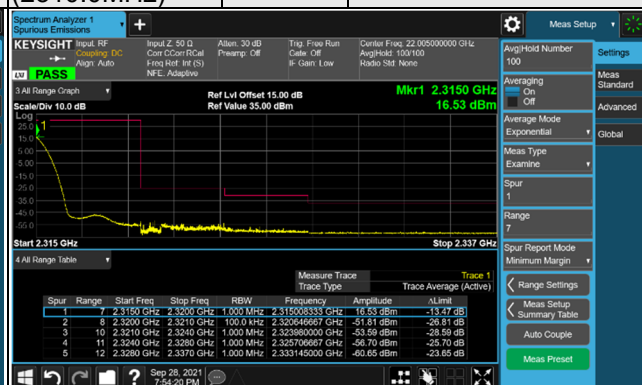
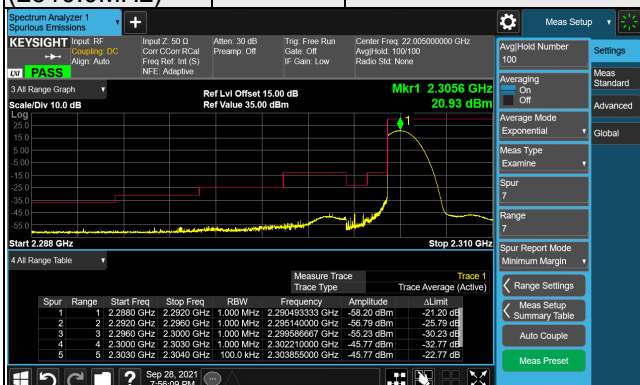
QPSK

1 RB / 0 RB Offset

Channel 27710
(2310.0MHz)

QPSK

1 RB / 49 RB Offset



Channel 27710
(2310.0MHz)

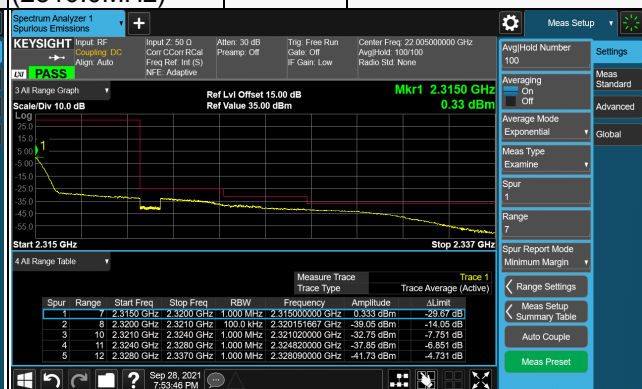
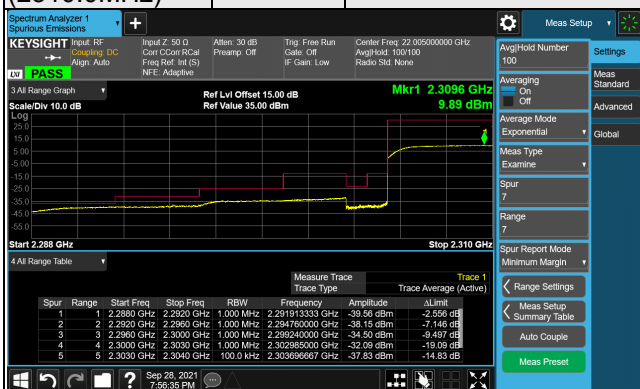
QPSK

50 RB / 0 RB Offset

Channel 27710
(2310.0MHz)

QPSK

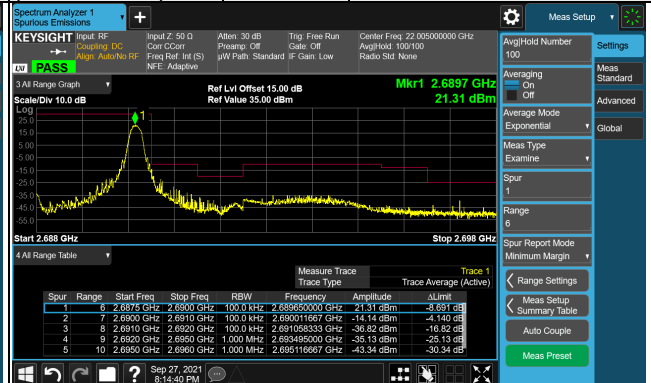
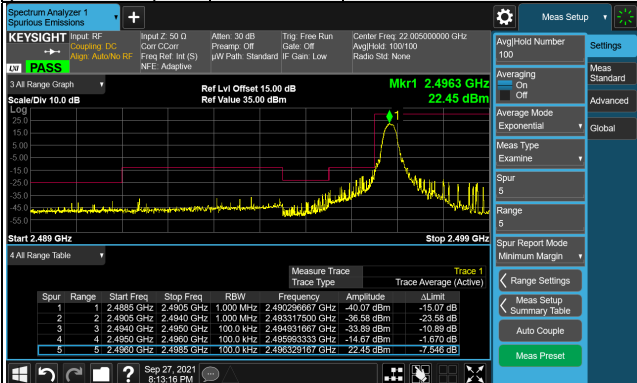
50 RB / 0 RB Offset



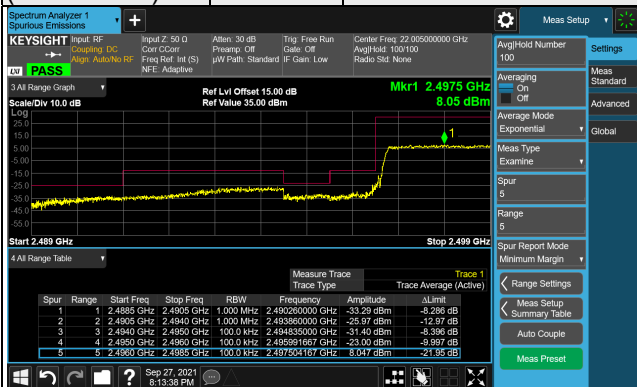
LTE Band 41
Emission Mask:

Channel Bandwidth: 5MHz

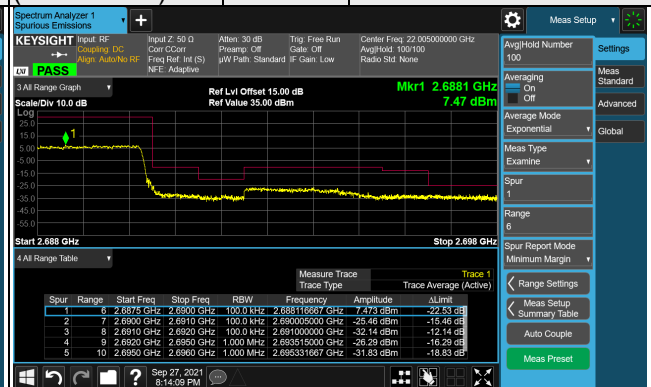
Channel 39675 (2498.5MHz)	QPSK	1 RB / 0 RB Offset	Channel 41565 (2687.5MHz)	QPSK	1 RB / 24 RB Offset
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Channel 39675 (2498.5MHz)	QPSK	25 RB / 0 RB Offset
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Channel 41565 (2687.5MHz)	QPSK	25 RB / 0 RB Offset
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LTE Band 41

Channel Bandwidth: 10MHz

Channel 39700
(2501.0MHz)

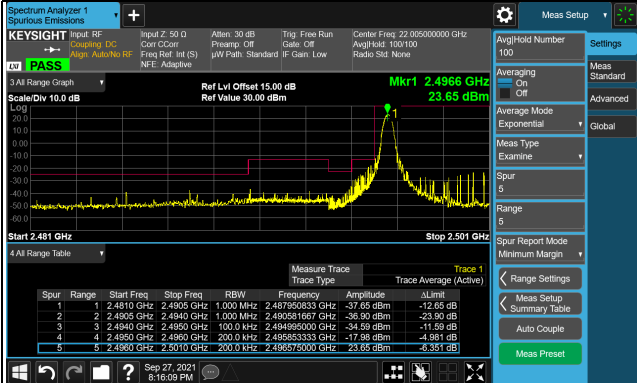
QPSK

1 RB / 0 RB Offset

Channel 41540
(2685.0MHz)

QPSK

1 RB / 49 RB Offset



Channel 39700
(2501.0MHz)

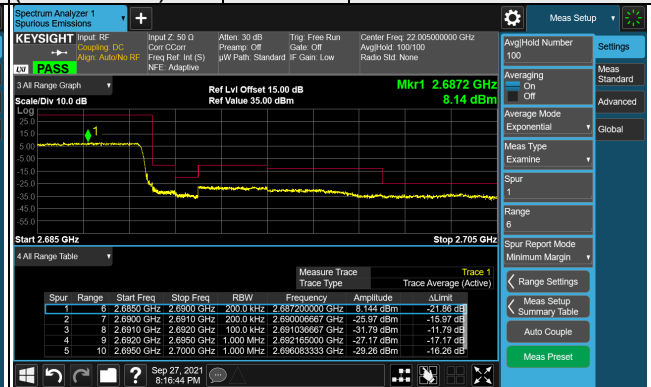
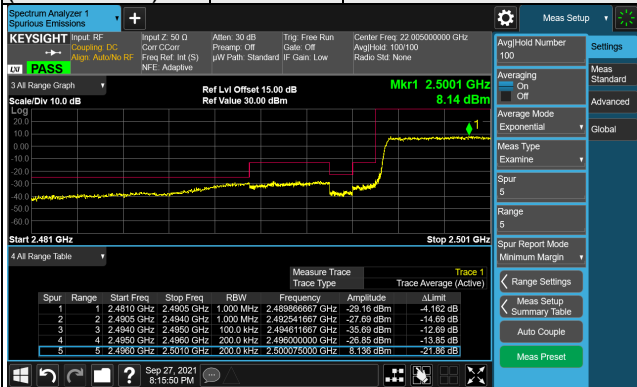
QPSK

50 RB / 0 RB Offset

Channel 41540
(2685.0MHz)

QPSK

50 RB / 0 RB Offset



LTE Band 41

Channel Bandwidth: 15MHz

Channel 39725
(2503.5MHz)

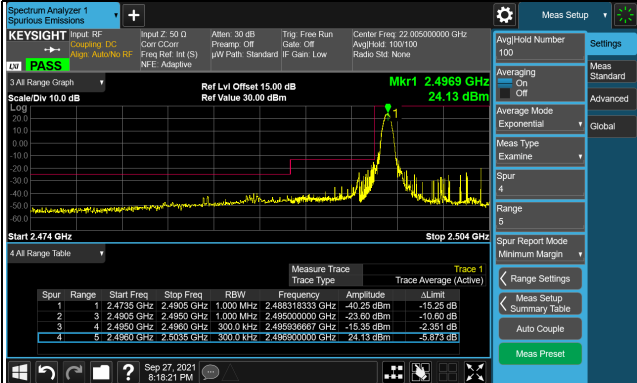
QPSK

1 RB / 0 RB Offset

Channel 41515
(2682.5MHz)

QPSK

1 RB / 74 RB Offset



Channel 39725
(2503.5MHz)

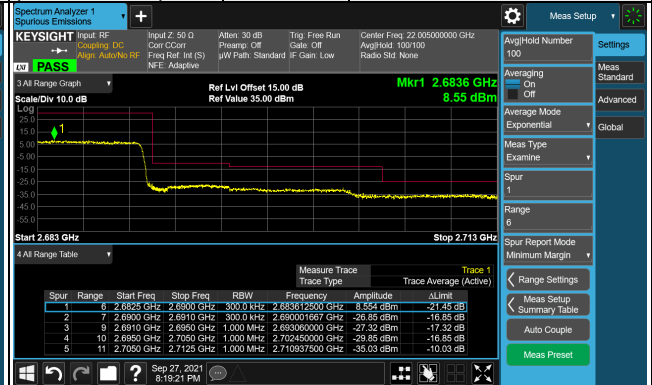
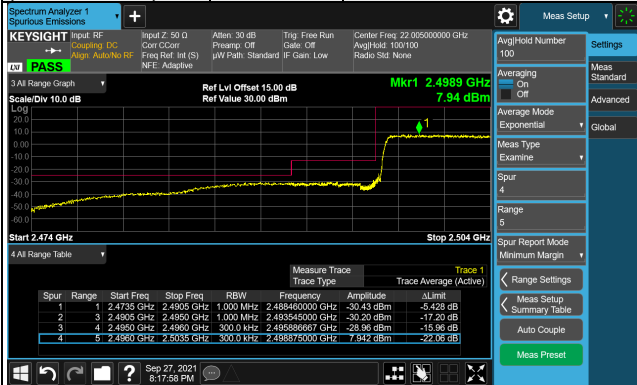
QPSK

75 RB / 0 RB Offset

Channel 41515
(2682.5MHz)

QPSK

75 RB / 0 RB Offset



LTE Band 41

Channel Bandwidth: 20MHz

Channel 39750
(2506.0MHz)

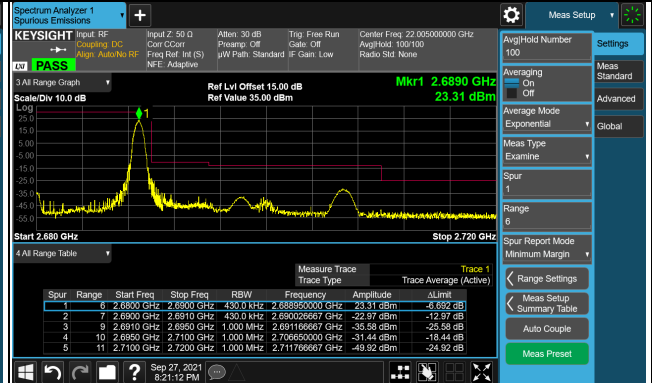
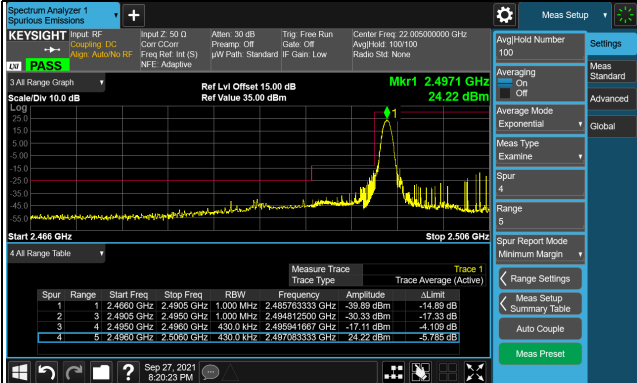
QPSK

1 RB / 0 RB Offset

Channel 41490
(2680.0MHz)

QPSK

1 RB / 99 RB Offset



Channel 39750
(2506.0MHz)

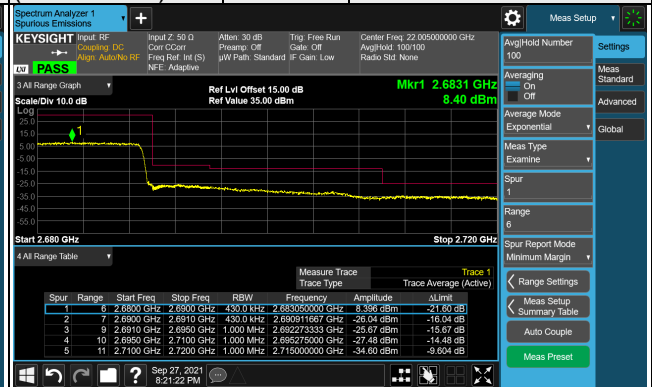
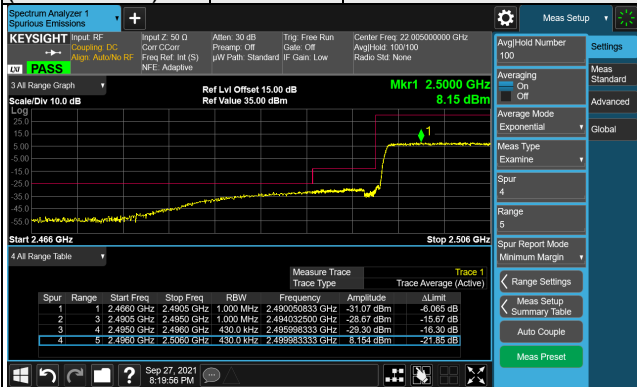
QPSK

100 RB / 0 RB Offset

Channel 41490
(2680.0MHz)

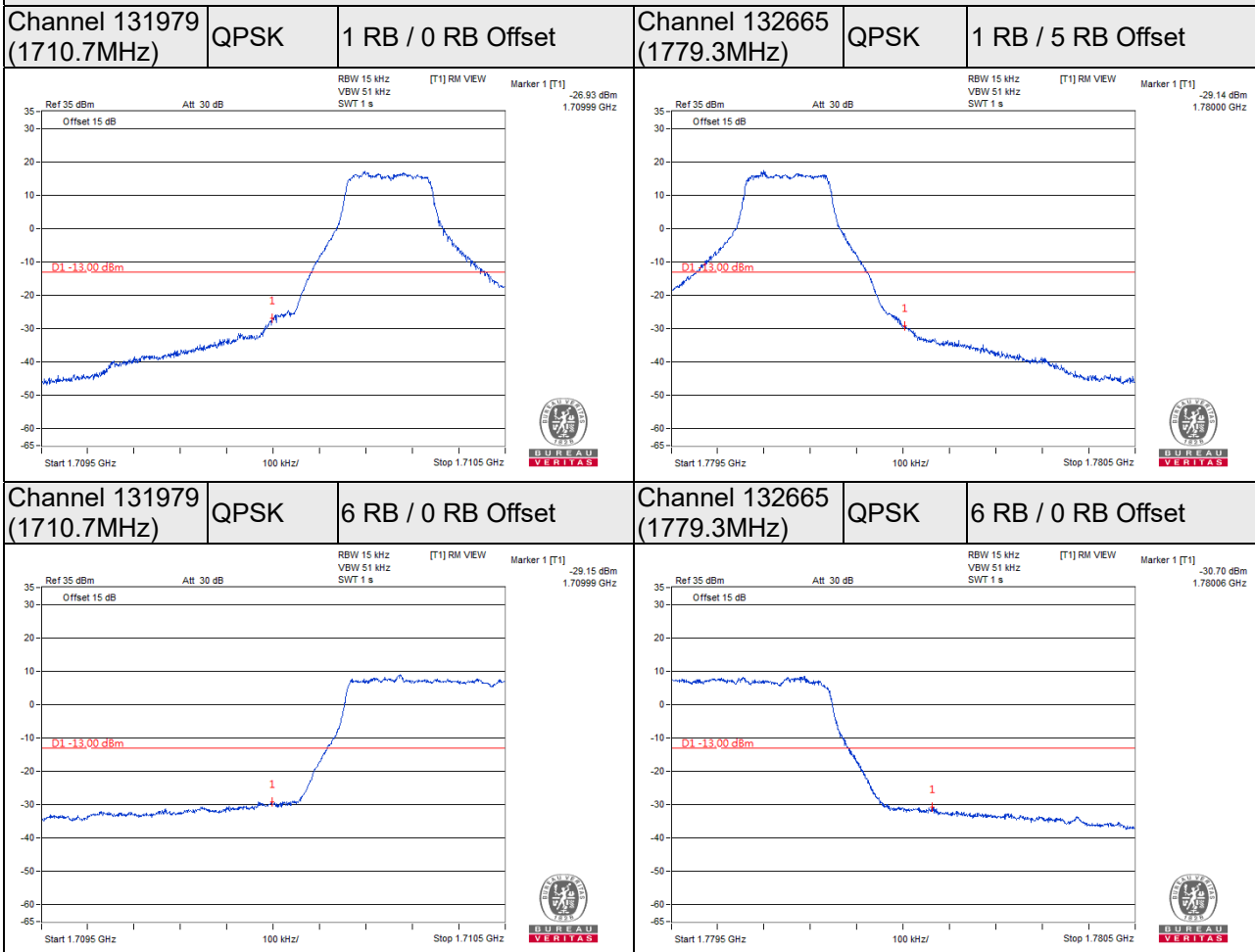
QPSK

100 RB / 0 RB Offset



LTE Band 66

Channel Bandwidth: 1.4MHz



Channel Bandwidth: 3MHz

Channel 131987
(1711.5MHz)

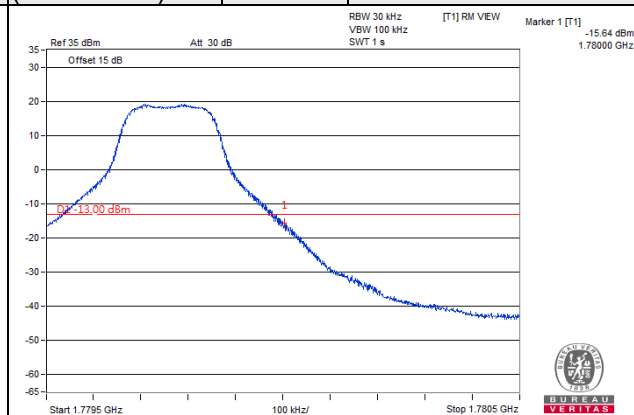
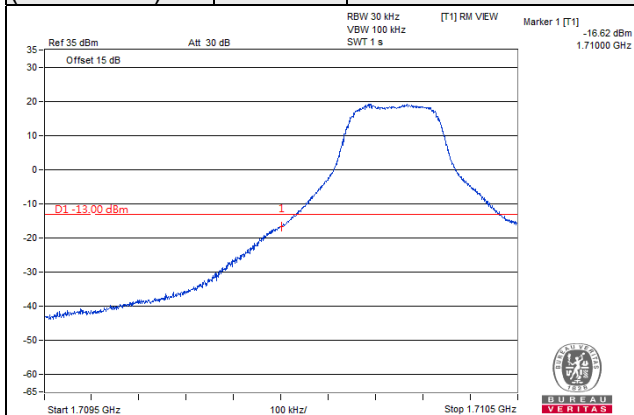
QPSK

1 RB / 0 RB Offset

Channel 132657
(1778.5MHz)

QPSK

1 RB / 14 RB Offset



Channel 131987
(1711.5MHz)

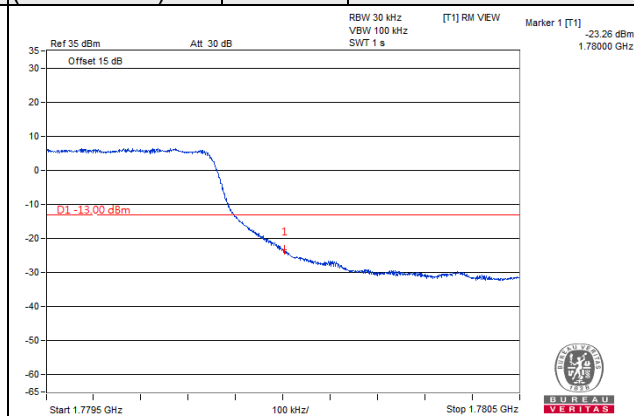
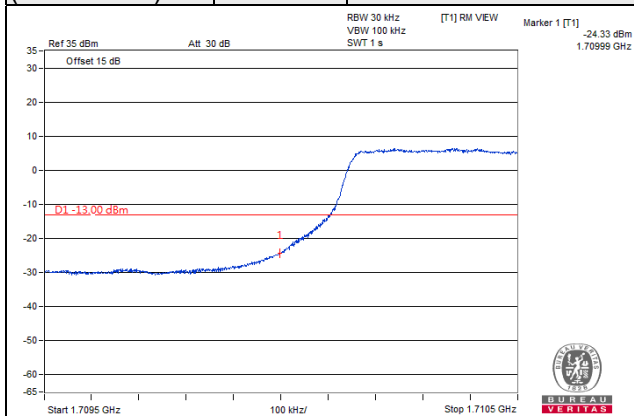
QPSK

15 RB / 0 RB Offset

Channel 132657
(1778.5MHz)

QPSK

15 RB / 0 RB Offset



Channel Bandwidth: 5MHz

Channel 131997
(1712.5MHz)

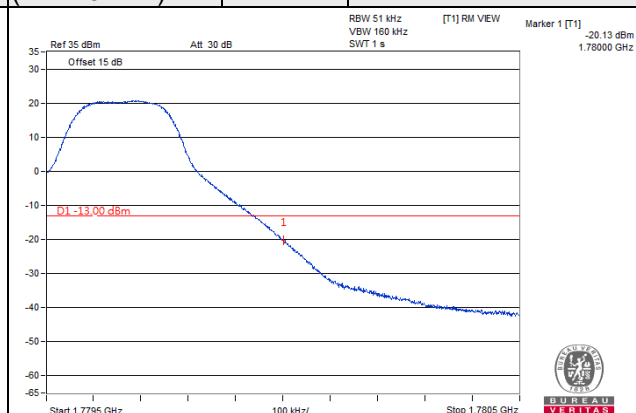
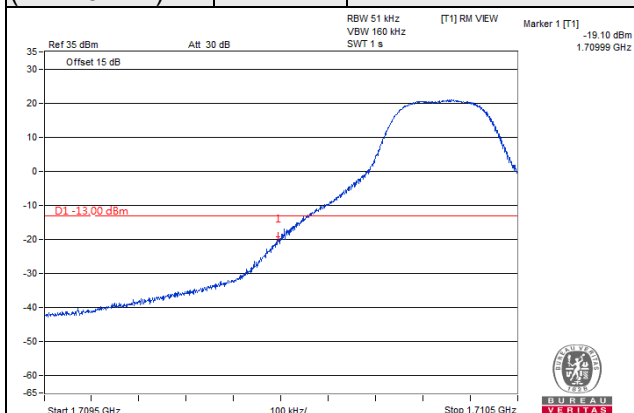
QPSK

1 RB / 0 RB Offset

Channel 132647
(1777.5MHz)

QPSK

1 RB / 24 RB Offset



Channel 131997
(1712.5MHz)

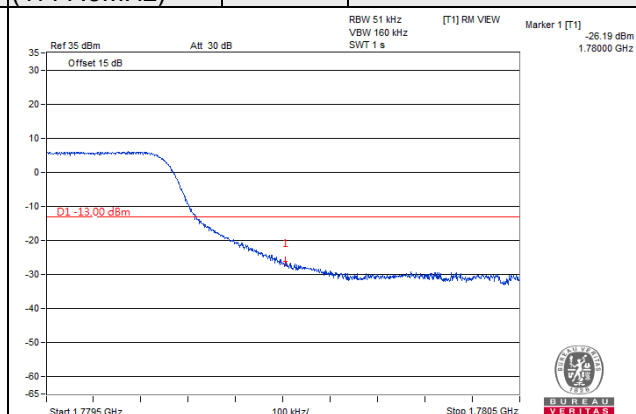
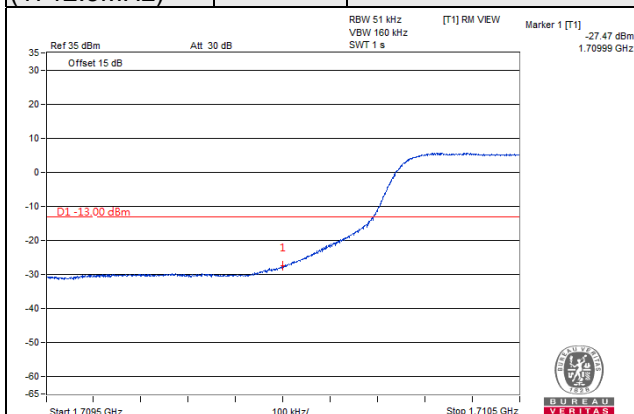
QPSK

25 RB / 0 RB Offset

Channel 132647
(1777.5MHz)

QPSK

25 RB / 0 RB Offset



Channel Bandwidth: 10MHz

Channel 132022
(1715.0MHz)

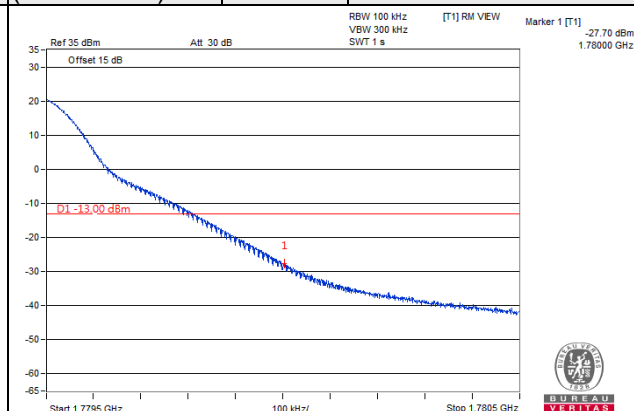
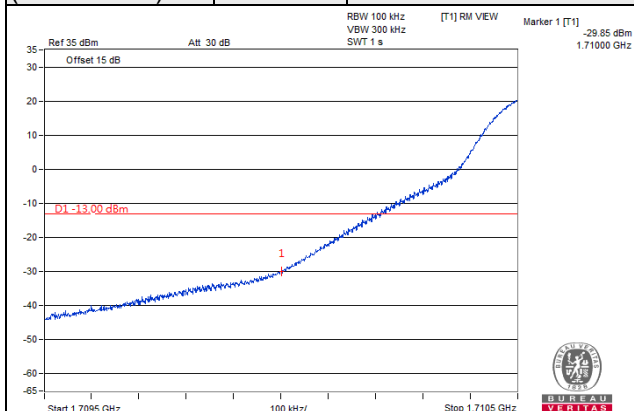
QPSK

1 RB / 0 RB Offset

Channel 132622
(1775.0MHz)

QPSK

1 RB / 49 RB Offset



Channel 132022
(1715.0MHz)

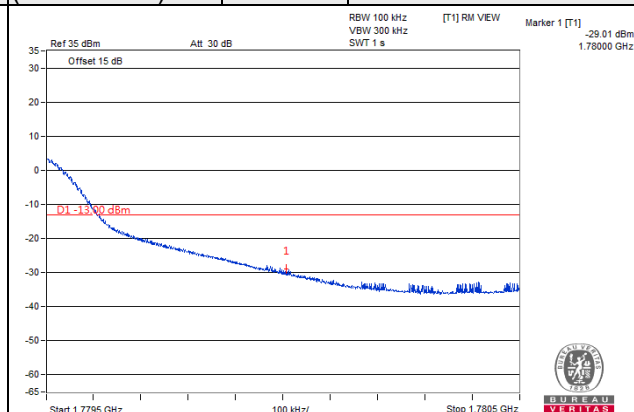
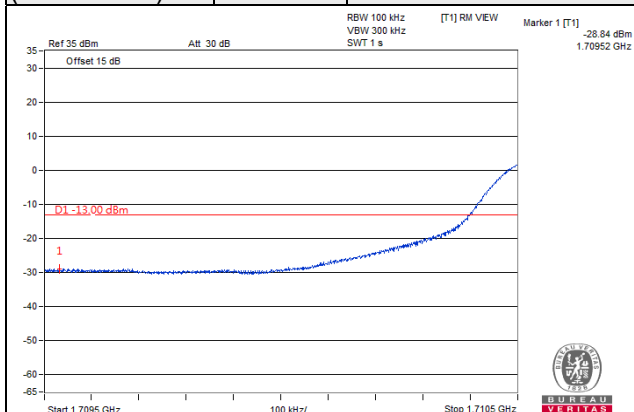
QPSK

50 RB / 0 RB Offset

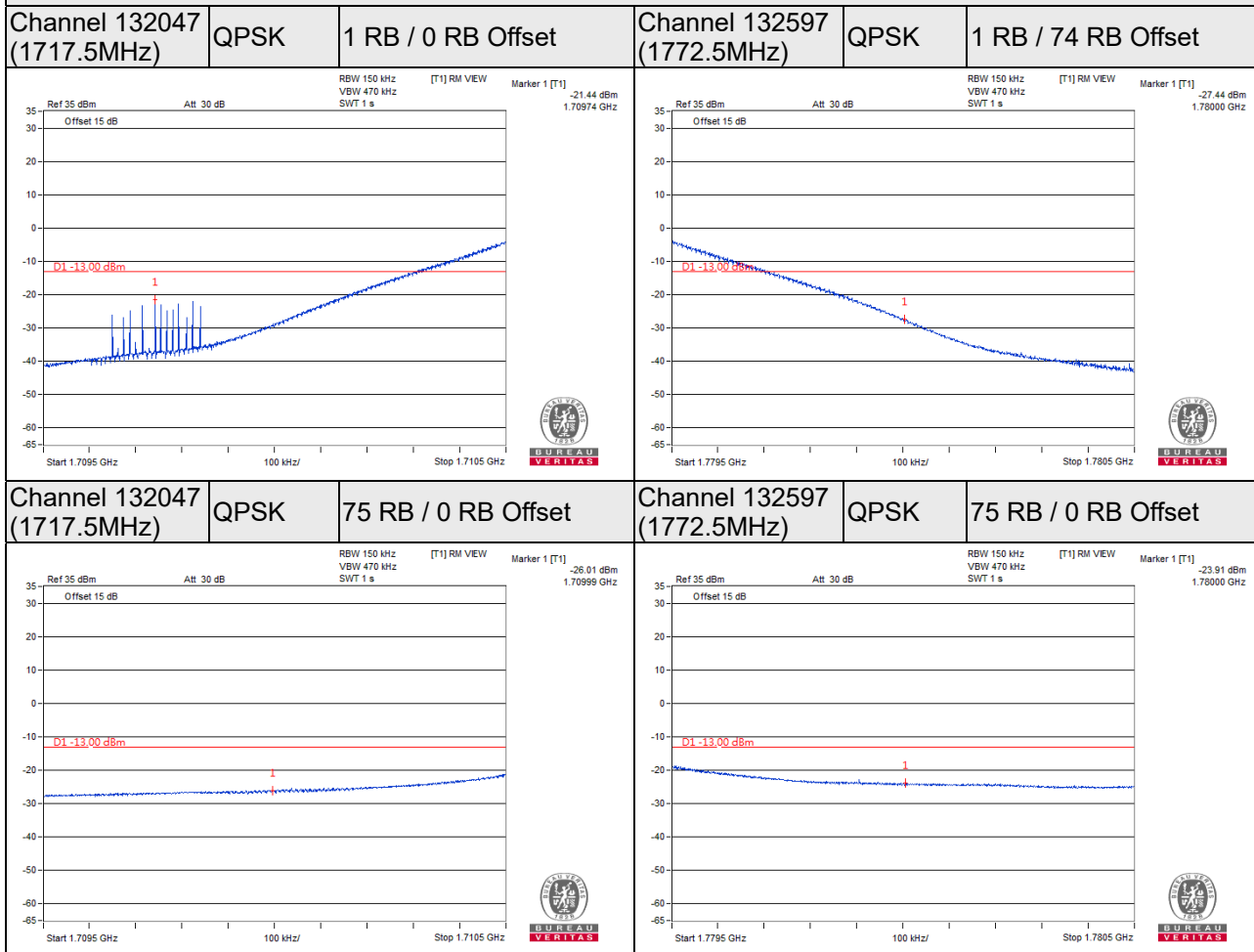
Channel 132622
(1775.0MHz)

QPSK

50 RB / 0 RB Offset



Channel Bandwidth: 15MHz



Channel Bandwidth: 20MHz

Channel 132072
(1720.0MHz)

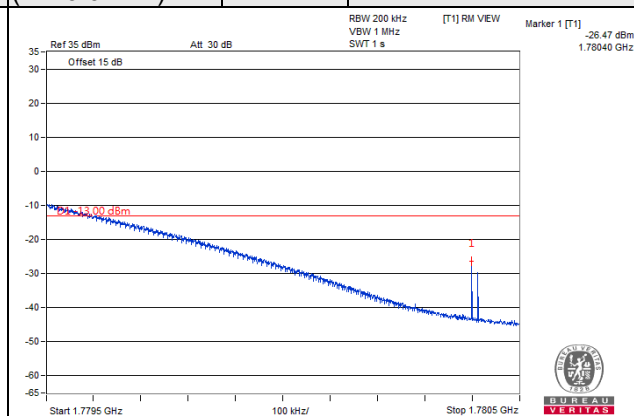
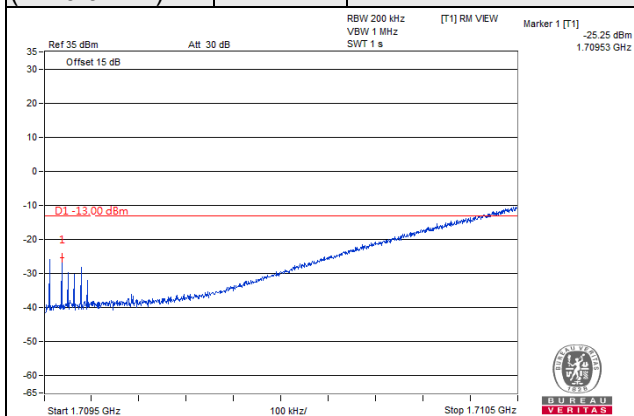
QPSK

1 RB / 0 RB Offset

Channel 132572
(1770.0MHz)

QPSK

1 RB / 99 RB Offset



Channel 132072
(1720.0MHz)

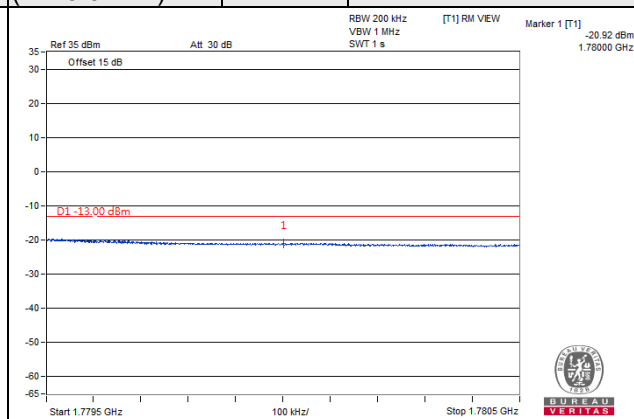
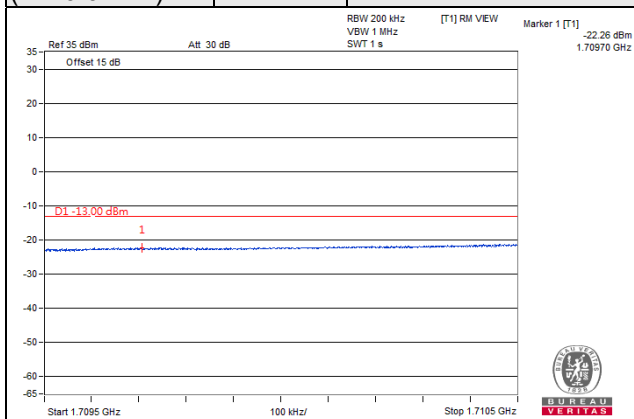
QPSK

100 RB / 0 RB Offset

Channel 132572
(1770.0MHz)

QPSK

100 RB / 0 RB Offset

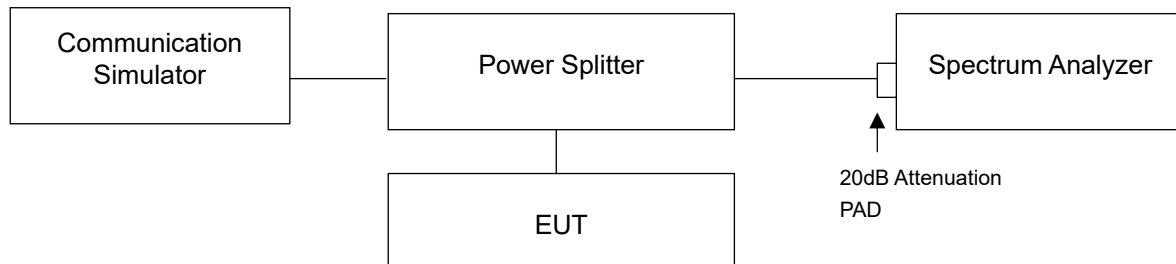


4.6 Peak to Average Ratio

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

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

4.6.4 Test Results

5GNR n77 (Part 270):

5GNR n77 (Part 270), Channel Bandwidth 20MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
647334	3710.01	5.23	6.58	6.57	7.02	8.60
656000	3840	5.18	6.77	6.77	7.22	8.48
664666	3969.99	5.45	7.18	7.19	7.63	8.49
5GNR n77 (Part 270), Channel Bandwidth 40MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
648000	3720	4.82	6.57	6.58	6.98	8.54
656000	3840	5.39	6.78	6.79	7.25	8.58
664000	3960	4.79	7.26	7.29	7.76	8.54
5GNR n77 (Part 270) Channel Bandwidth 50MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
648334	3725.01	5.45	6.66	6.79	7.21	7.27
656000	3840	4.85	6.89	6.88	7.43	8.58
663666	3954.99	5.74	7.37	7.30	7.90	8.61
5GNR n77 (Part 270) Channel Bandwidth 60MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
648668	3730.02	4.56	6.82	6.72	7.17	8.60
656000	3840	5.36	6.98	6.98	7.38	8.57
663332	3949.98	4.56	7.53	7.47	7.89	8.55
5GNR n77 (Part 270), Channel Bandwidth 80MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
649334	3740.01	5.38	6.75	6.75	7.30	8.64
656000	3840	5.17	7.41	7.04	7.51	8.54
662666	3939.99	5.83	7.53	7.55	7.98	8.54

5GNR n77 (Part 270), Channel Bandwidth 90MHz

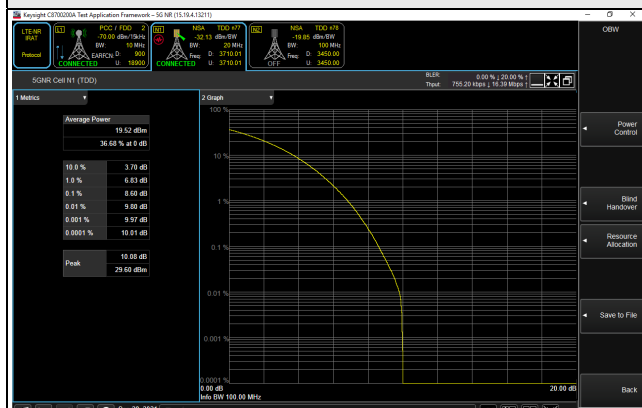
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
649558	3745.02	4.56	6.81	6.86	7.25	8.61
656000	3840	5.47	7.08	7.07	7.48	8.55
662332	3934.98	4.50	7.61	7.56	7.98	8.54

5GNR n77 (Part 270), Channel Bandwidth 100MHz

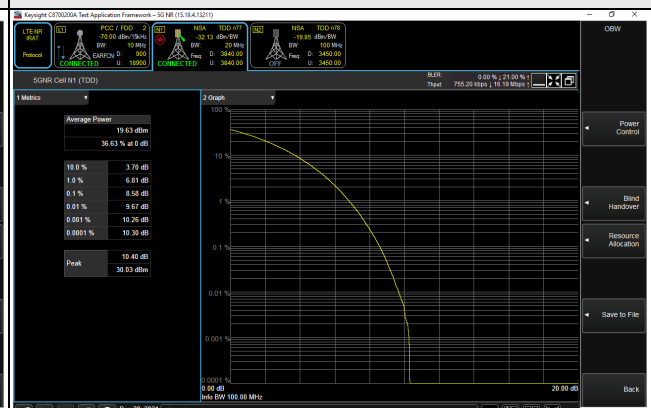
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
650000	3750	5.45	6.86	6.89	7.39	8.59
656000	3840	5.22	7.21	7.21	7.72	8.57
662000	3930	6.02	7.57	7.60	8.01	8.57

Spectrum Plot of Worst Value

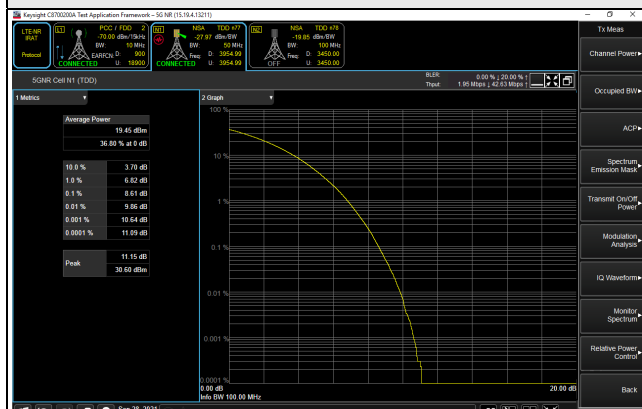
20MHz / 256QAM



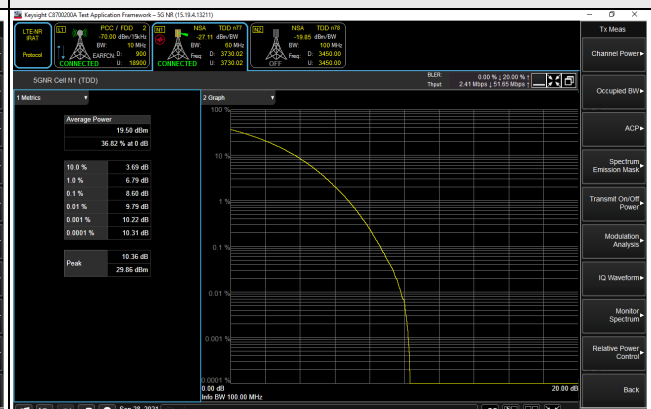
40MHz / 256QAM



50MHz / 256QAM



60MHz / 256QAM



5GNR n77 (Part 27Q):

5GNR n77 (Part 27Q), Channel Bandwidth 20MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
630668	3460.02	4.59	7.67	7.71	8.16	8.71
633334	3500.01	4.39	6.64	6.58	7.08	8.70
636000	3540	4.20	7.23	7.14	7.68	8.72
5GNR n77 (Part 27Q), Channel Bandwidth 40MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
631334	3470.01	4.02	6.61	6.57	6.99	8.67
633334	3500.01	3.87	7.18	7.15	7.65	8.64
635332	3529.98	4.08	6.62	6.63	7.04	8.65
5GNR n77 (Part 27Q) Channel Bandwidth 50MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
631668	3475.02	4.57	6.56	6.58	7.08	8.64
633334	3500.01	4.74	6.53	6.56	7.01	8.64
635000	3525	4.36	7.40	7.40	7.88	8.66
5GNR n77 (Part 27Q) Channel Bandwidth 60MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
632000	3480	4.39	6.63	6.62	7.02	8.66
633334	3500.01	4.34	7.61	7.57	8.04	8.71
634666	3519.99	4.26	6.62	6.59	6.99	8.64
5GNR n77 (Part 27Q), Channel Bandwidth 80MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
632668	3490.02	4.48	6.61	6.62	7.13	8.59
633334	3500.01	4.84	6.61	6.61	7.13	8.64
634000	3510	4.42	6.60	6.61	7.13	8.64