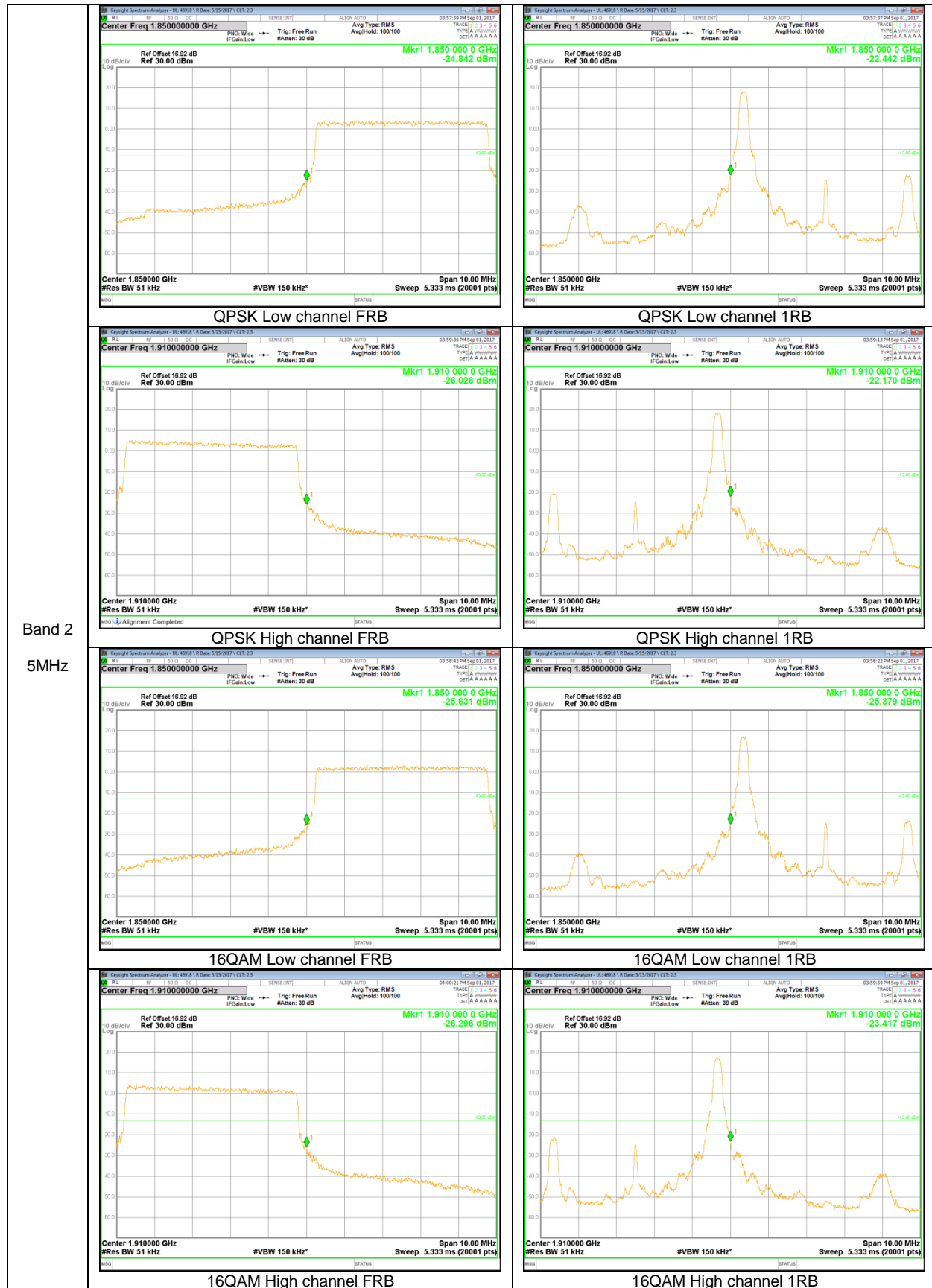
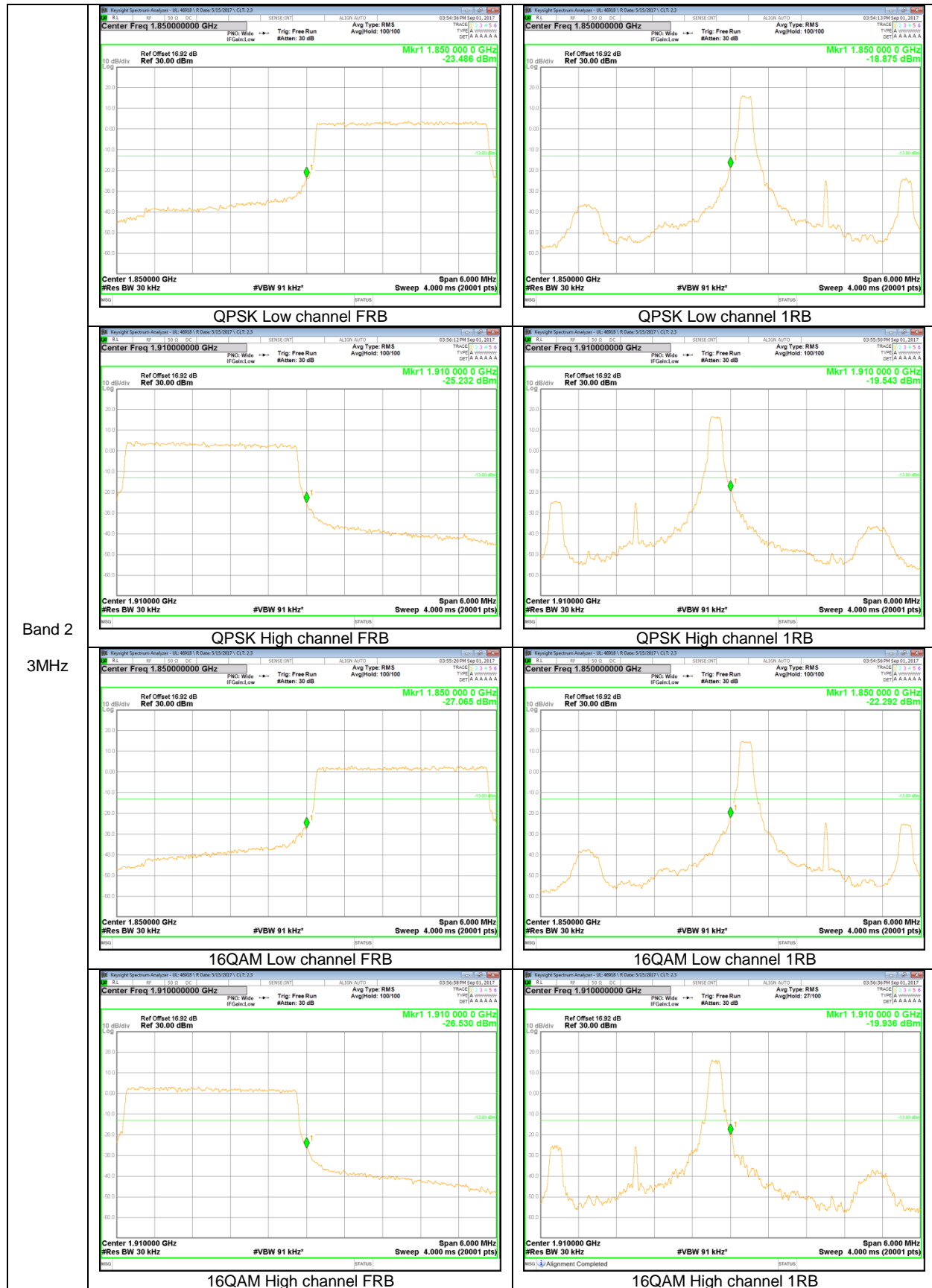


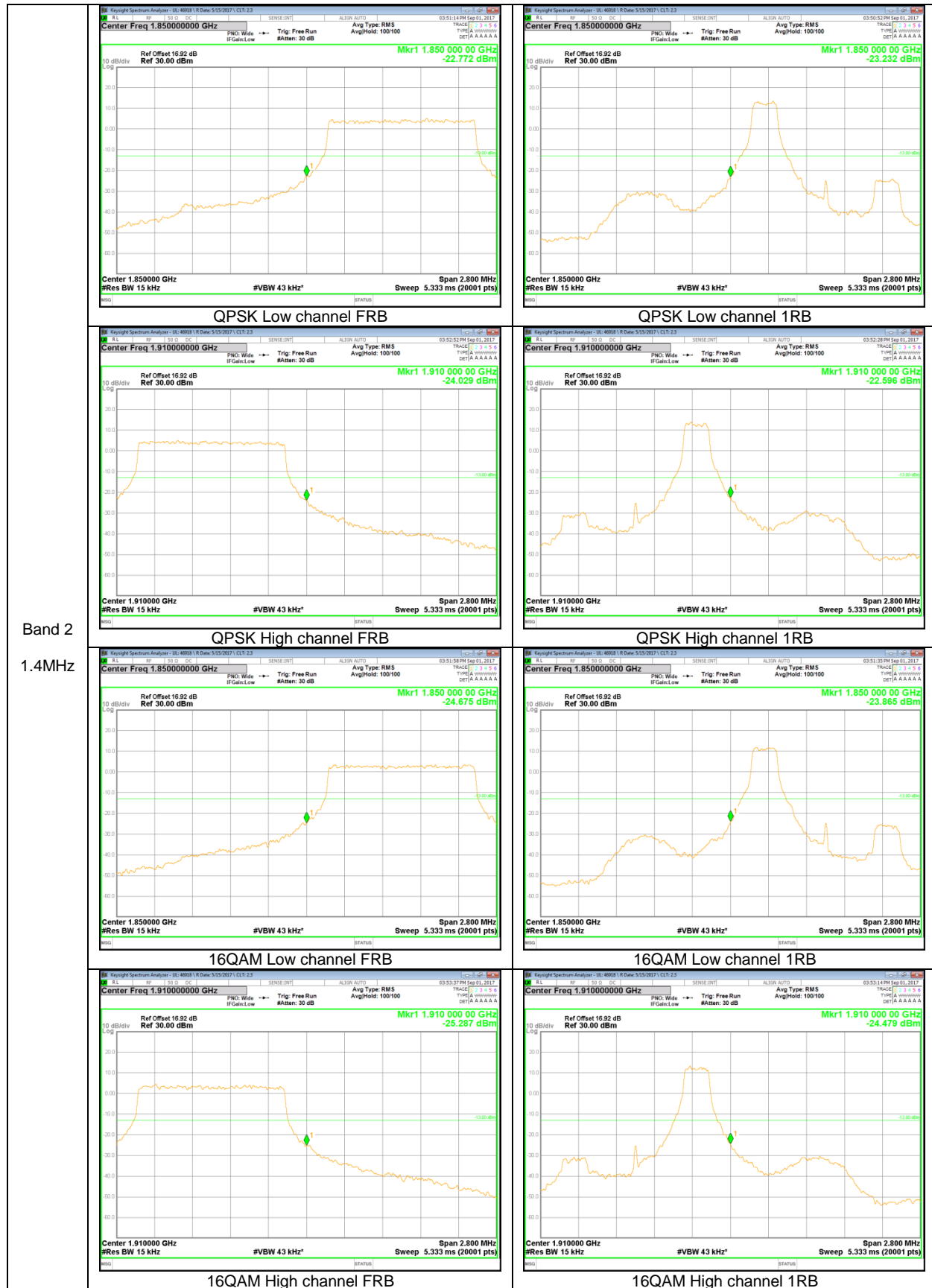
Band 2  
 10MHz



Band 2  
 5MHz

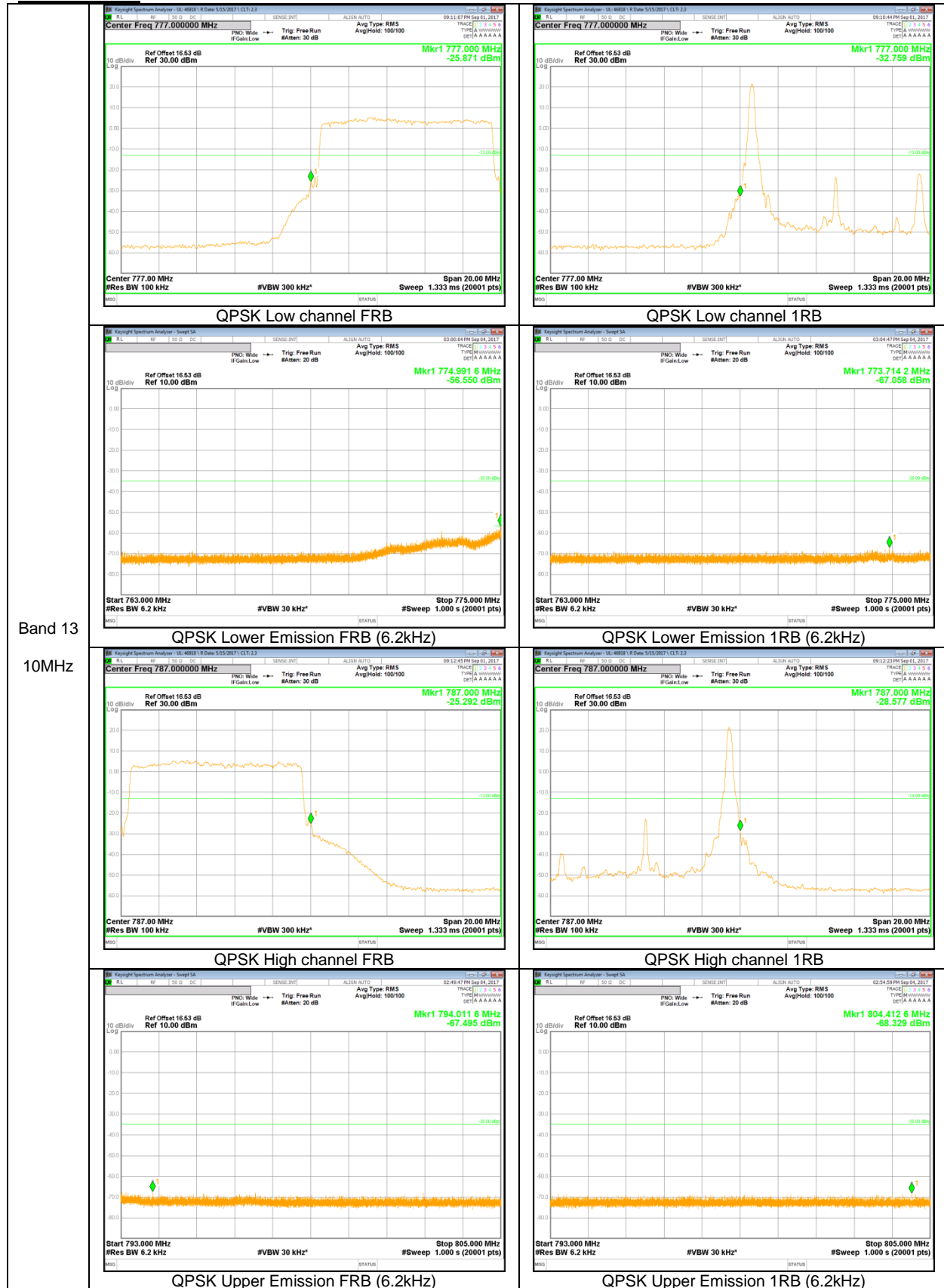


Band 2  
 3MHz

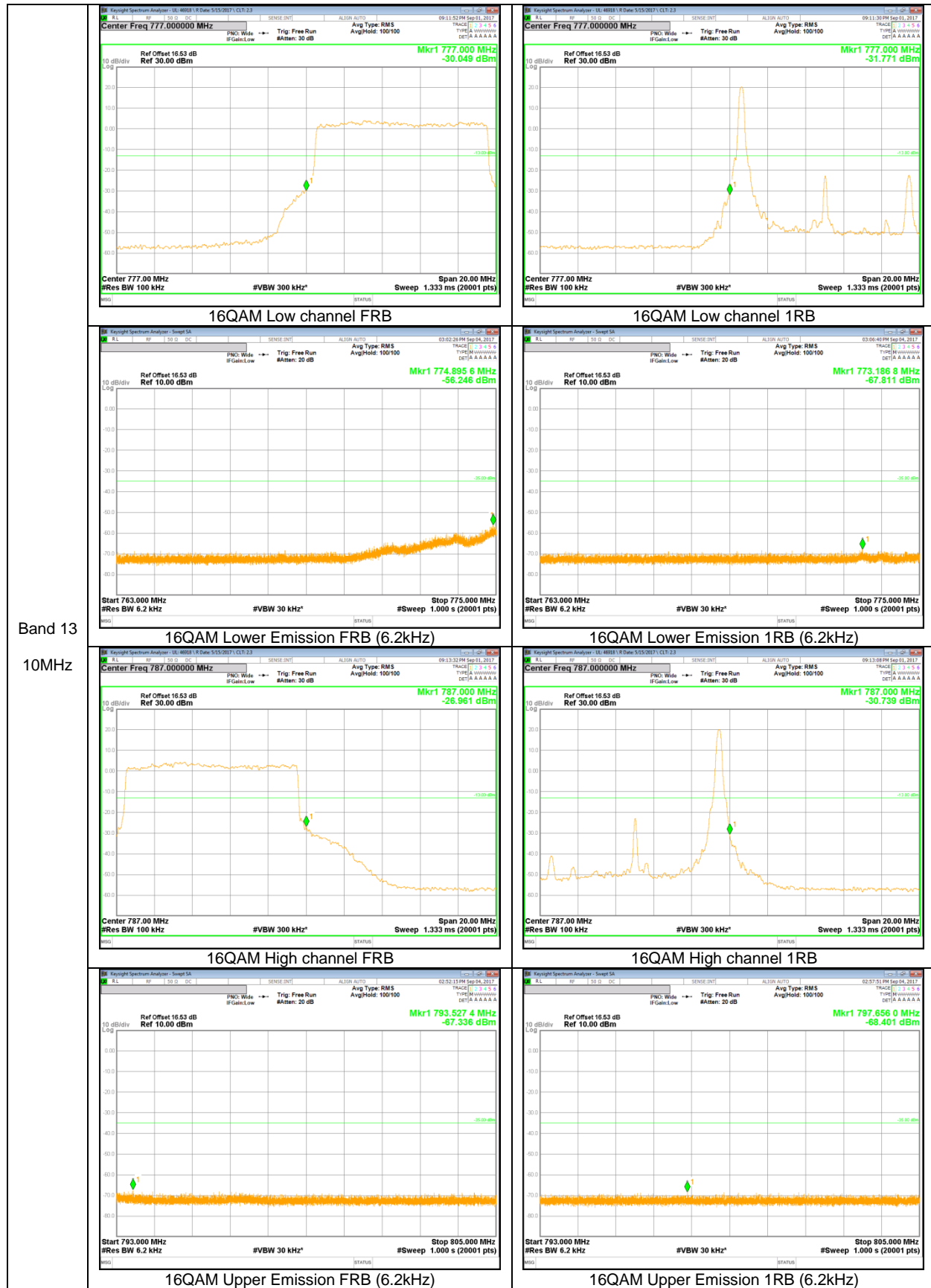


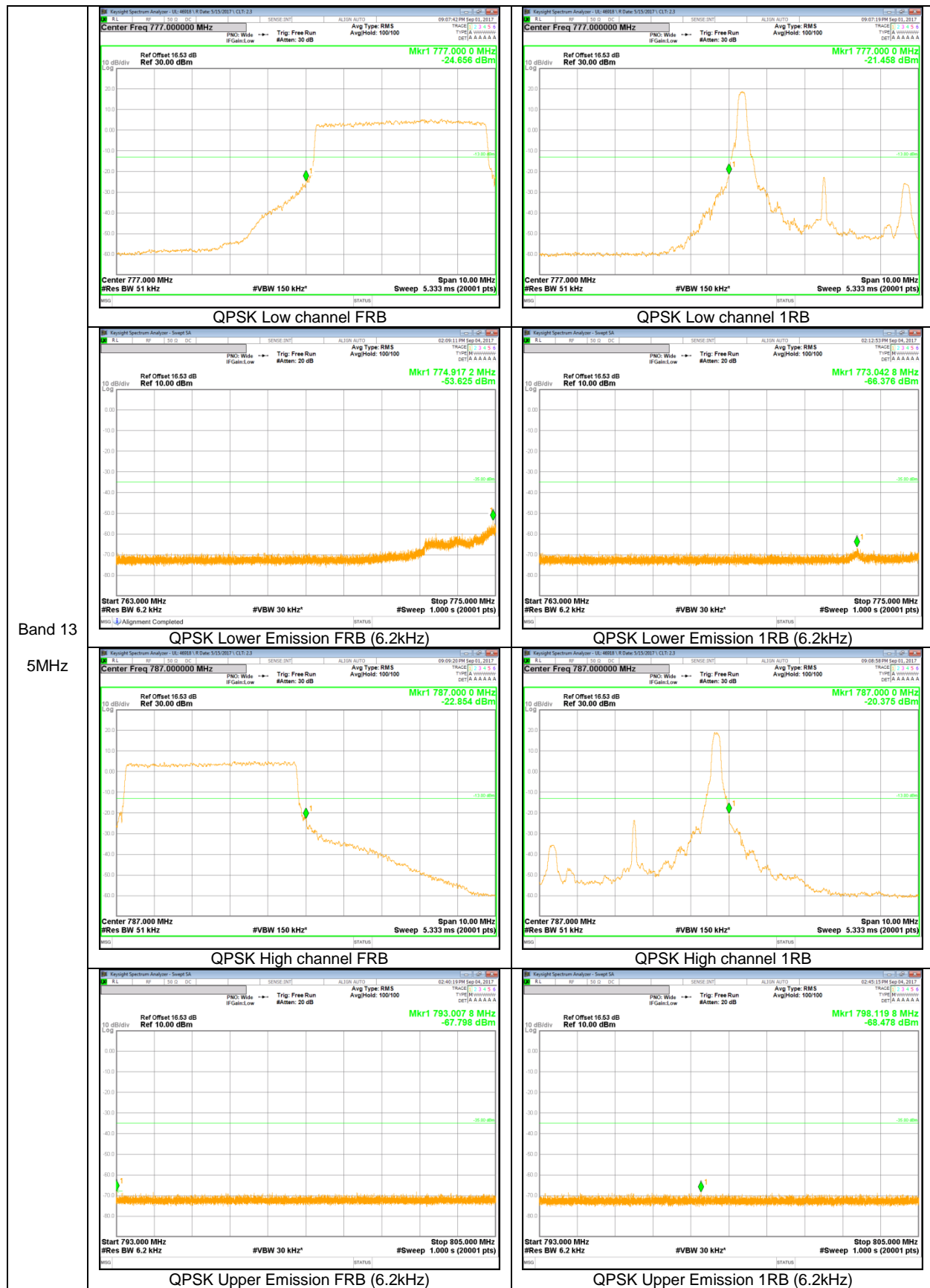
Band 2  
 1.4MHz

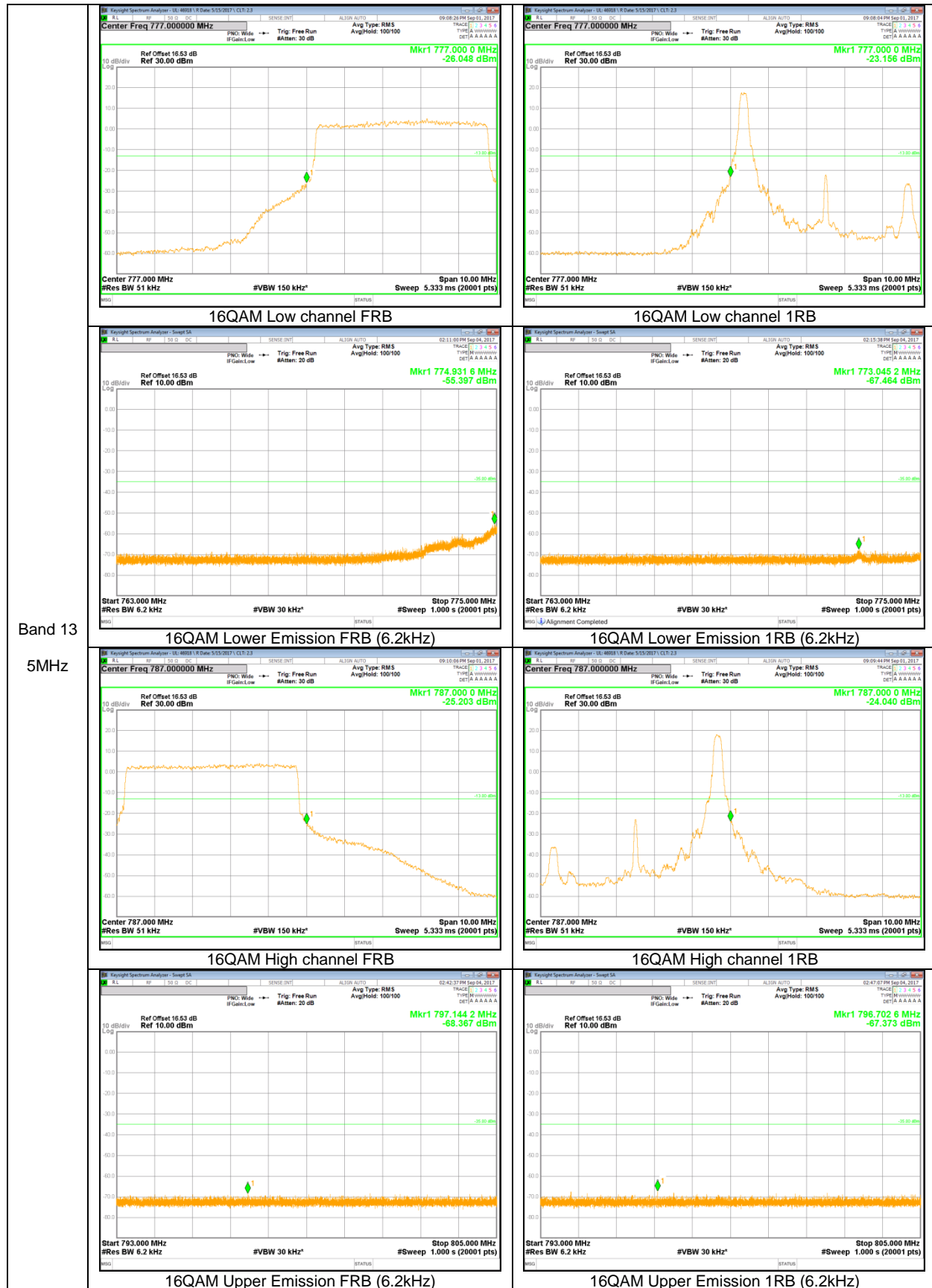
**LTE Band 13**



Band 13  
10MHz

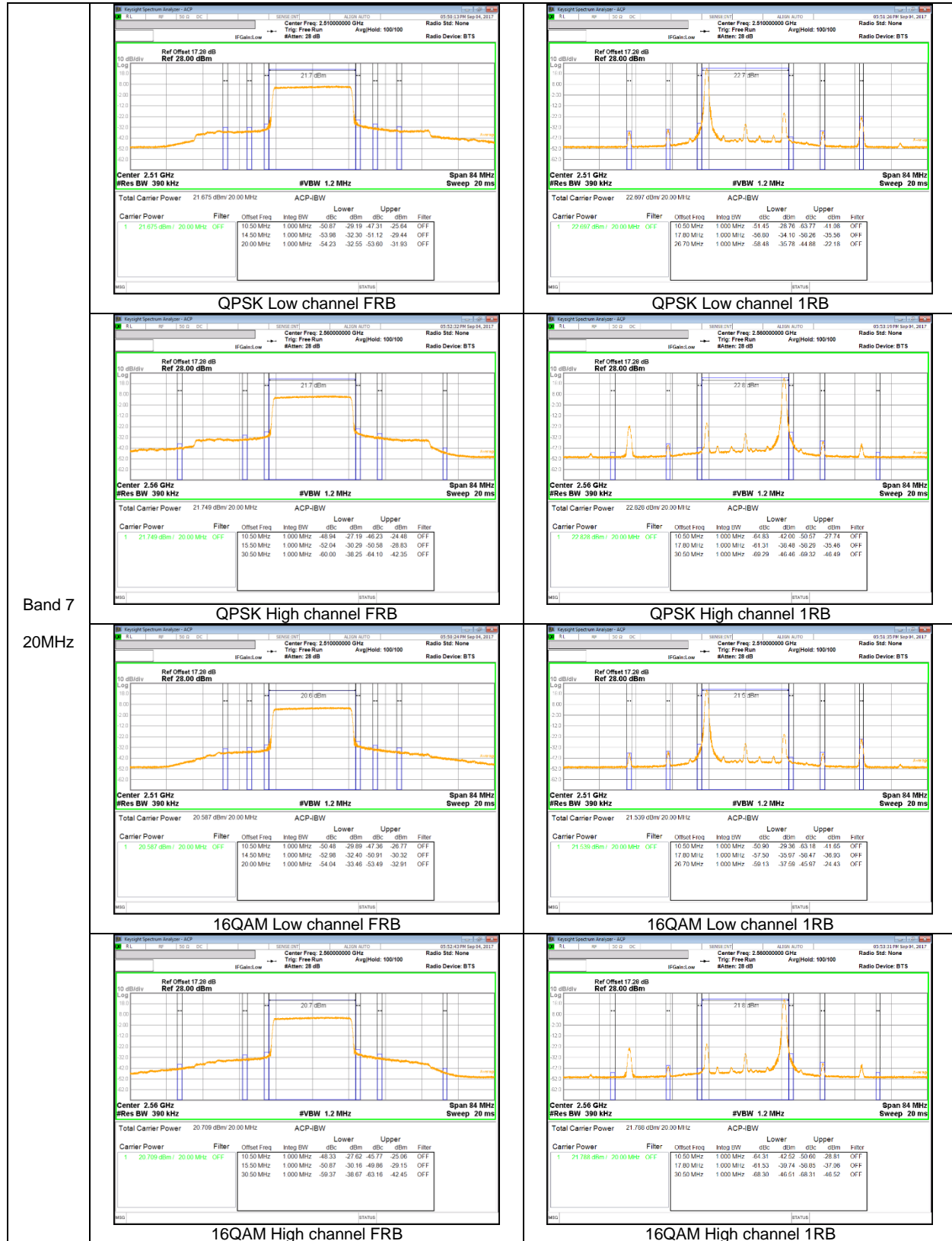






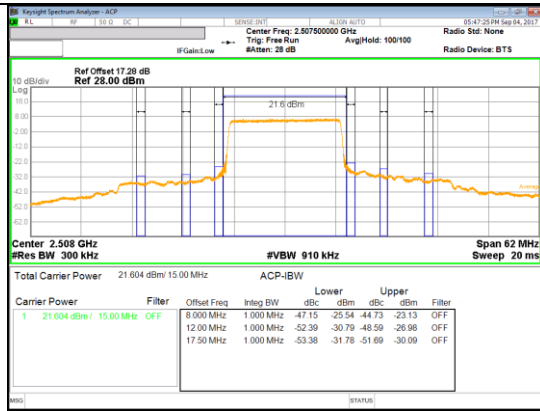
## 9.2.2. EMISSION MASK PLOTS

### LTE Band 7

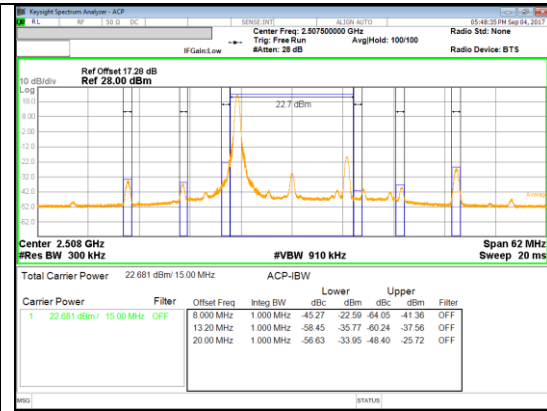


Band 7  
20MHz

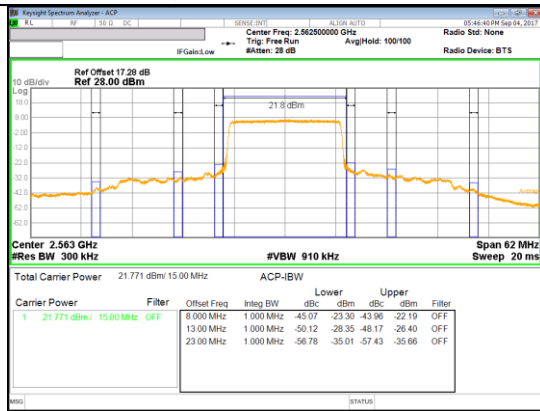
Band 7  
 15MHz



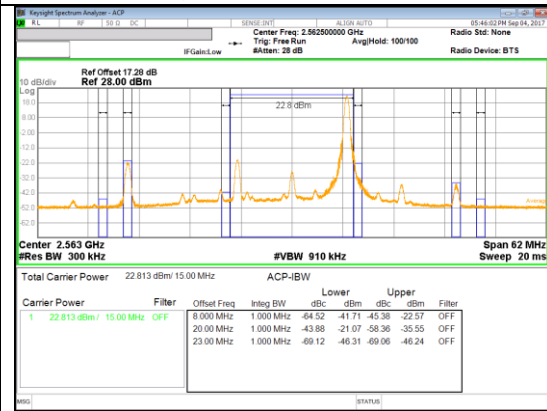
QPSK Low channel FRB



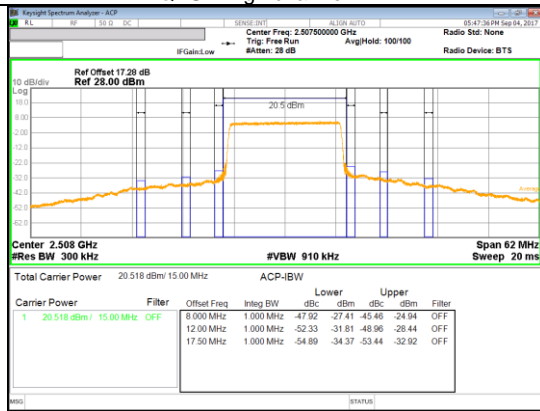
QPSK Low channel 1RB



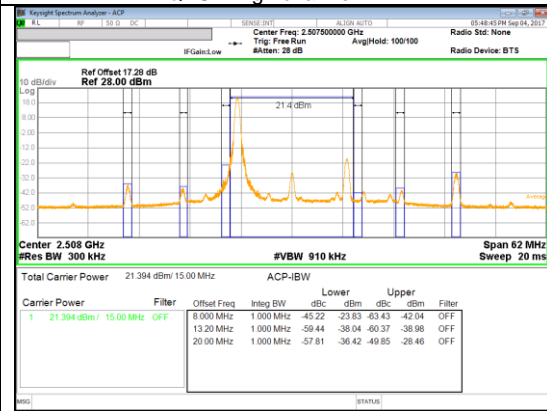
QPSK High channel FRB



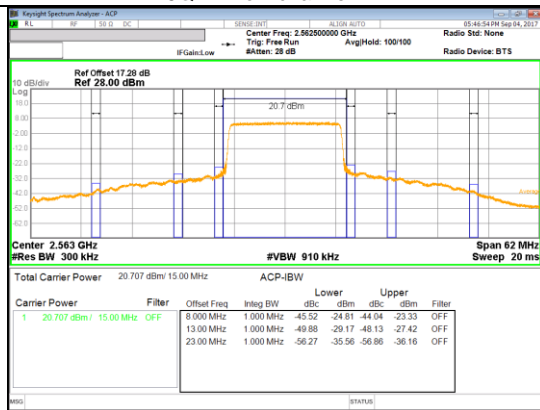
QPSK High channel 1RB



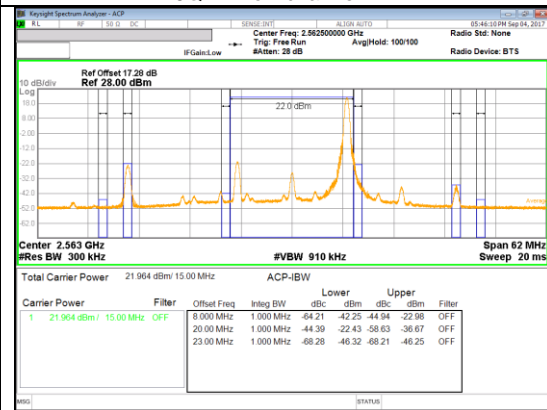
16QAM Low channel FRB



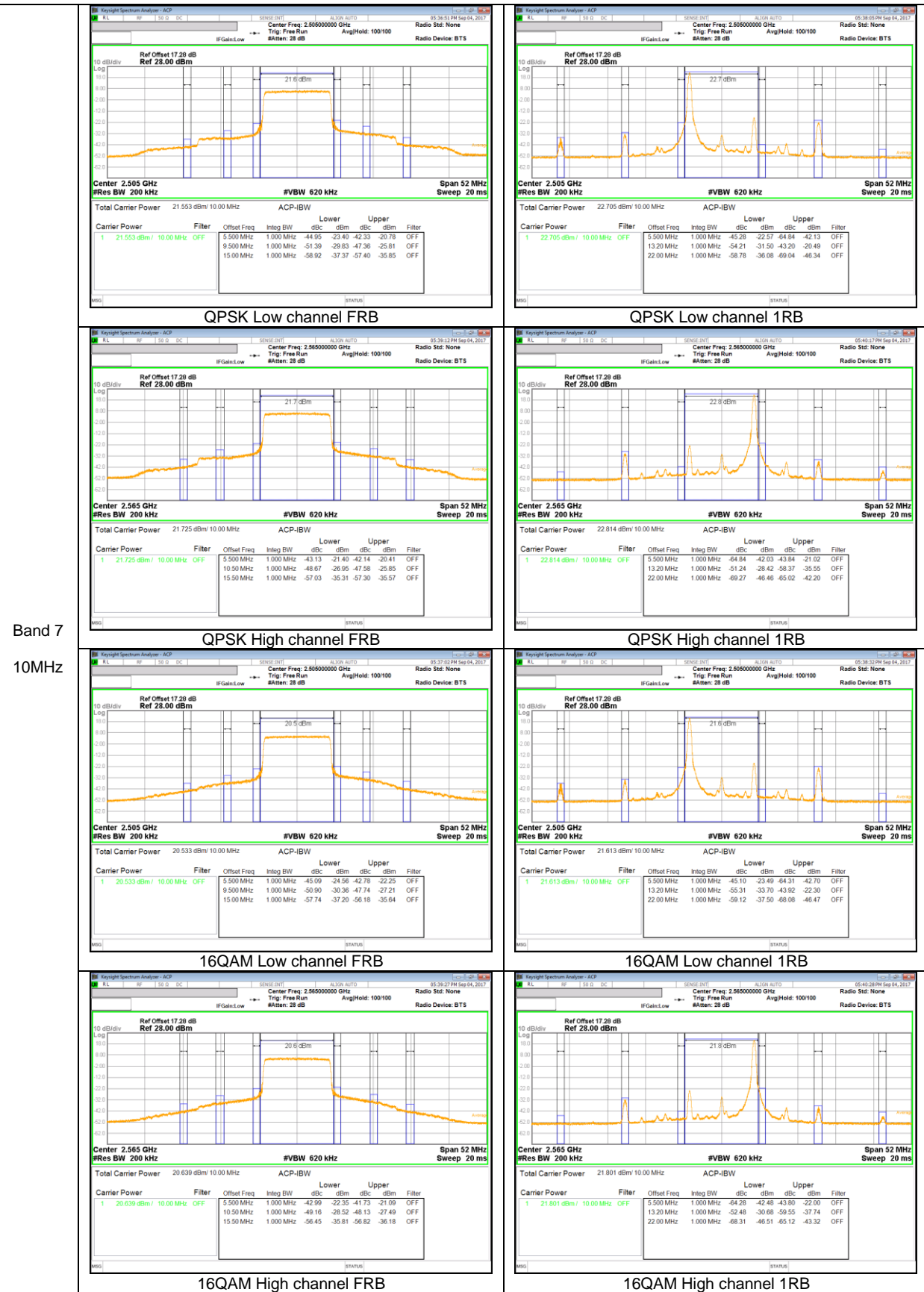
16QAM Low channel 1RB



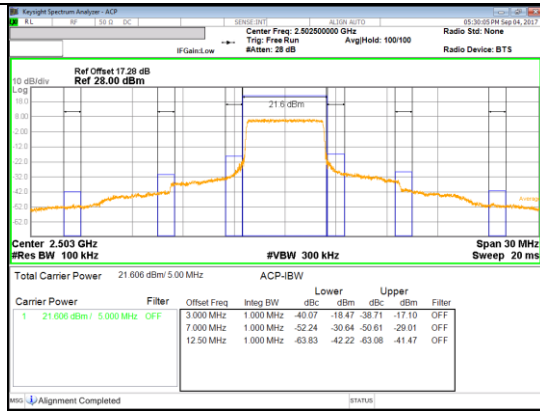
16QAM High channel FRB



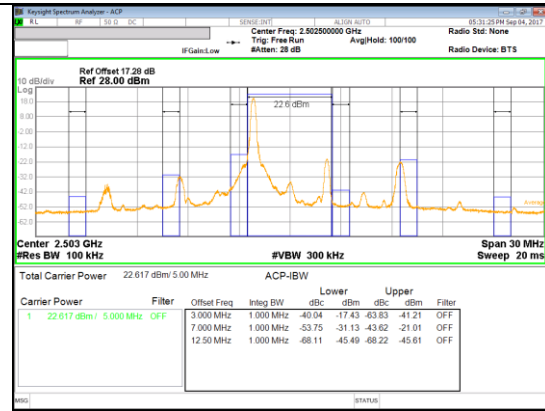
16QAM High channel 1RB



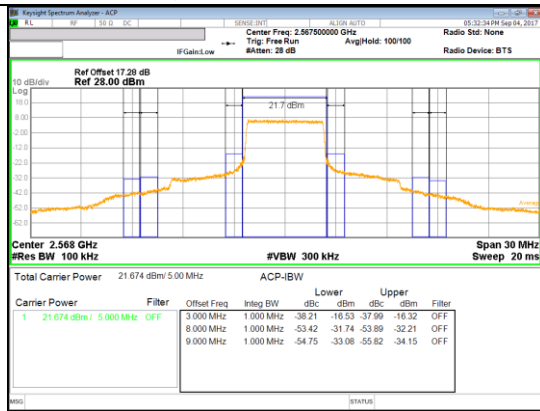
Band 7  
 5MHz



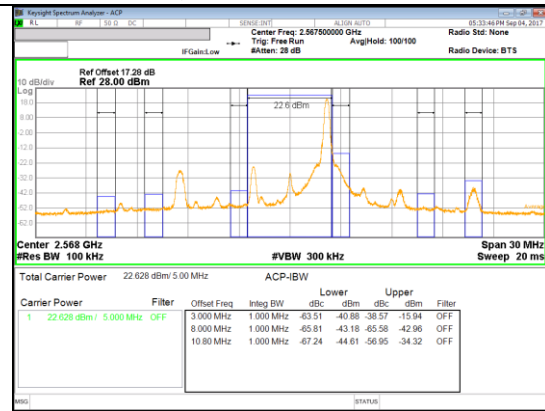
QPSK Low channel FRB



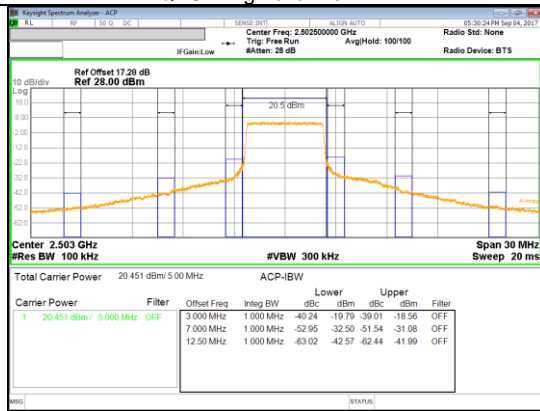
QPSK Low channel 1RB



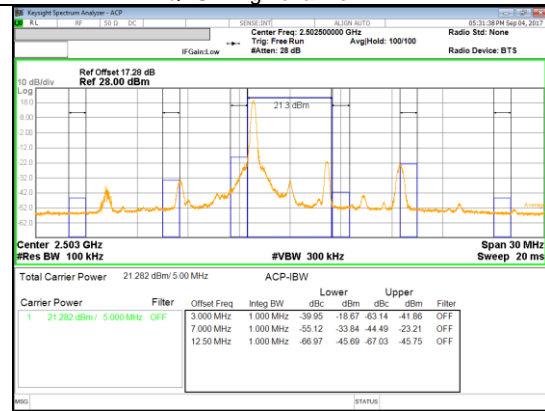
QPSK High channel FRB



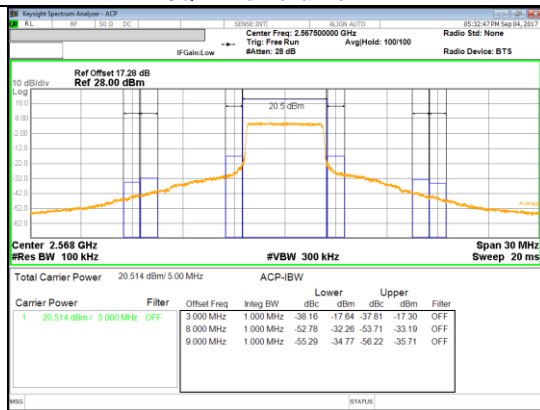
QPSK High channel 1RB



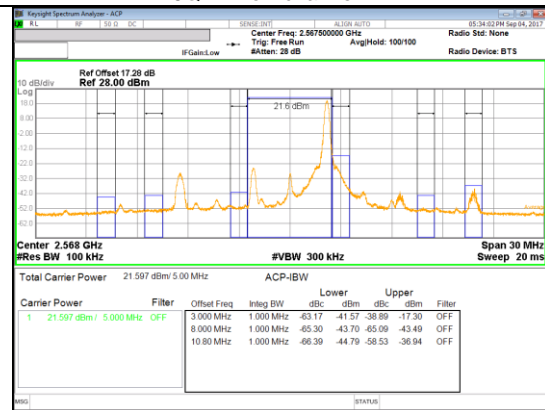
16QAM Low channel FRB



16QAM Low channel 1RB



16QAM High channel FRB



16QAM High channel 1RB

## 10.3 OUT OF BAND EMISSIONS

### RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238 and §27.53

### LIMITS

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

Part 27: (m)(4) For mobile station, the attenuation factor shall be not less than  $43 + 10 \log (P)$  dB at the channel edge and  $(55 + 10 \log (P))$  dB at the 5.5 MHz from the channel edges.

### TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

- a) Set the RBW = 100KHz for emission below 1GHz and 1MHz for emissions above 1GHz (Tests were performed 1MHz [Worst case], to sweep 1 time for all frequency range)
- b) Set VBW  $\geq 3 \times$  RBW;
- c) Set span  $\geq 1.5$  times the OBW;
- d) Sweep time = auto couple;
- e) Detector = peak;
- f) Ensure that the number of measurement points = Max (40001);
- g) Trace mode = max hold;

**RESULTS**

**WCDMA**

Band	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]
Band 5	REL99	826.4	-33.08	-13.00
		836.6	-32.75	
		846.6	-32.63	
	HSDPA	826.4	-32.65	
		836.6	-32.63	
		846.6	-32.56	
Band 2	REL99	1852.4	-32.77	
		1880.0	-33.04	
		1907.6	-32.07	
	HSDPA	1852.4	-31.98	
		1880.0	-32.12	
		1907.6	-32.07	

**LTE 5**

Bandwidth	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]
10 MHz	QPSK	829.0	-30.49	-13.00
		836.5	-31.09	
		844.0	-31.02	
	16QAM	829.0	-31.21	
		836.5	-30.55	
		844.0	-31.21	
5 MHz	QPSK	826.5	-30.97	
		836.5	-30.67	
		846.5	-30.83	
	16QAM	826.5	-31.41	
		836.5	-31.73	
		846.5	-31.00	
3 MHz	QPSK	825.5	-30.54	
		836.5	-31.31	
		847.5	-31.24	
	16QAM	825.5	-31.05	
		836.5	-31.33	
		847.5	-30.96	
1.4 MHz	QPSK	824.7	-31.52	
		836.5	-31.51	
		848.3	-30.50	
	16QAM	824.7	-30.43	
		836.5	-31.68	
		848.3	-31.10	

**LTE 4**

Bandwidth	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]
20 MHz	QPSK	1720.0	-27.85	-13.00
		1732.5	-28.93	
		1745.0	-28.37	
	16QAM	1720.0	-28.38	
		1732.5	-28.49	
		1745.0	-28.70	
15 MHz	QPSK	1717.5	-28.79	
		1732.5	-28.90	
		1747.5	-28.94	
	16QAM	1717.5	-28.39	
		1732.5	-28.56	
		1747.5	-28.08	
10 MHz	QPSK	1715.0	-28.30	
		1732.5	-28.29	
		1750.0	-27.74	
	16QAM	1715.0	-28.53	
		1732.5	-28.37	
		1750.0	-28.89	
5 MHz	QPSK	1712.5	-28.48	
		1732.5	-27.82	
		1752.5	-28.36	
	16QAM	1712.5	-28.62	
		1732.5	-28.75	
		1752.5	-28.41	
3 MHz	QPSK	1711.5	-27.80	
		1732.5	-28.44	
		1753.5	-28.59	
	16QAM	1711.5	-28.39	
		1732.5	-28.41	
		1753.5	-28.55	
1.4 MHz	QPSK	1710.7	-28.35	
		1732.5	-28.58	
		1754.3	-28.75	
	16QAM	1710.7	-27.63	
		1732.5	-28.07	
		1754.3	-28.50	

**LTE 2**

Bandwidth	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]
20 MHz	QPSK	1860.0	-28.39	-13.00
		1880.0	-28.79	
		1900.0	-29.00	
	16QAM	1860.0	-27.76	
		1880.0	-29.04	
		1900.0	-28.74	
15 MHz	QPSK	1857.5	-27.97	
		1880.0	-28.78	
		1902.5	-28.73	
	16QAM	1857.5	-28.79	
		1880.0	-29.04	
		1902.5	-28.50	
10 MHz	QPSK	1855.0	-29.00	
		1880.0	-28.83	
		1905.0	-28.47	
	16QAM	1855.0	-28.73	
		1880.0	-28.69	
		1905.0	-28.78	
5 MHz	QPSK	1852.5	-28.66	
		1880.0	-29.13	
		1907.5	-27.68	
	16QAM	1852.5	-28.89	
		1880.0	-28.67	
		1907.5	-28.48	
3 MHz	QPSK	1851.5	-28.74	
		1880.0	-28.70	
		1908.5	-27.63	
	16QAM	1851.5	-28.04	
		1880.0	-29.27	
		1908.5	-28.69	
1.4 MHz	QPSK	1850.7	-28.04	
		1880.0	-28.14	
		1909.3	-28.49	
	16QAM	1850.7	-28.40	
		1880.0	-28.85	
		1909.3	-28.35	

**LTE 13**

Bandwidth	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]
10 MHz	QPSK	782.0	-31.29	-13.00
	16QAM	782.0	-30.70	
5 MHz	QPSK	779.5	-30.39	
		782.0	-31.07	
		784.5	-31.25	
	16QAM	779.5	-30.71	
		782.0	-31.29	
		784.5	-30.11	

**LTE 7**

Bandwidth	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]
20 MHz	QPSK	2510.0	-31.61	-25.00
		2535.0	-30.84	
		2560.0	-31.37	
	16QAM	2510.0	-30.71	
		2535.0	-31.69	
		2560.0	-30.02	
15 MHz	QPSK	2507.5	-31.33	
		2535.0	-30.64	
		2562.5	-31.93	
	16QAM	2507.5	-31.03	
		2535.0	-31.33	
		2562.5	-31.23	
10 MHz	QPSK	2505.0	-31.25	
		2535.0	-31.28	
		2565.0	-31.30	
	16QAM	2505.0	-31.34	
		2535.0	-30.79	
		2565.0	-30.88	
5 MHz	QPSK	2502.5	-31.22	
		2535.0	-30.89	
		2567.5	-30.89	
	16QAM	2502.5	-31.42	
		2535.0	-30.17	
		2567.5	-30.75	