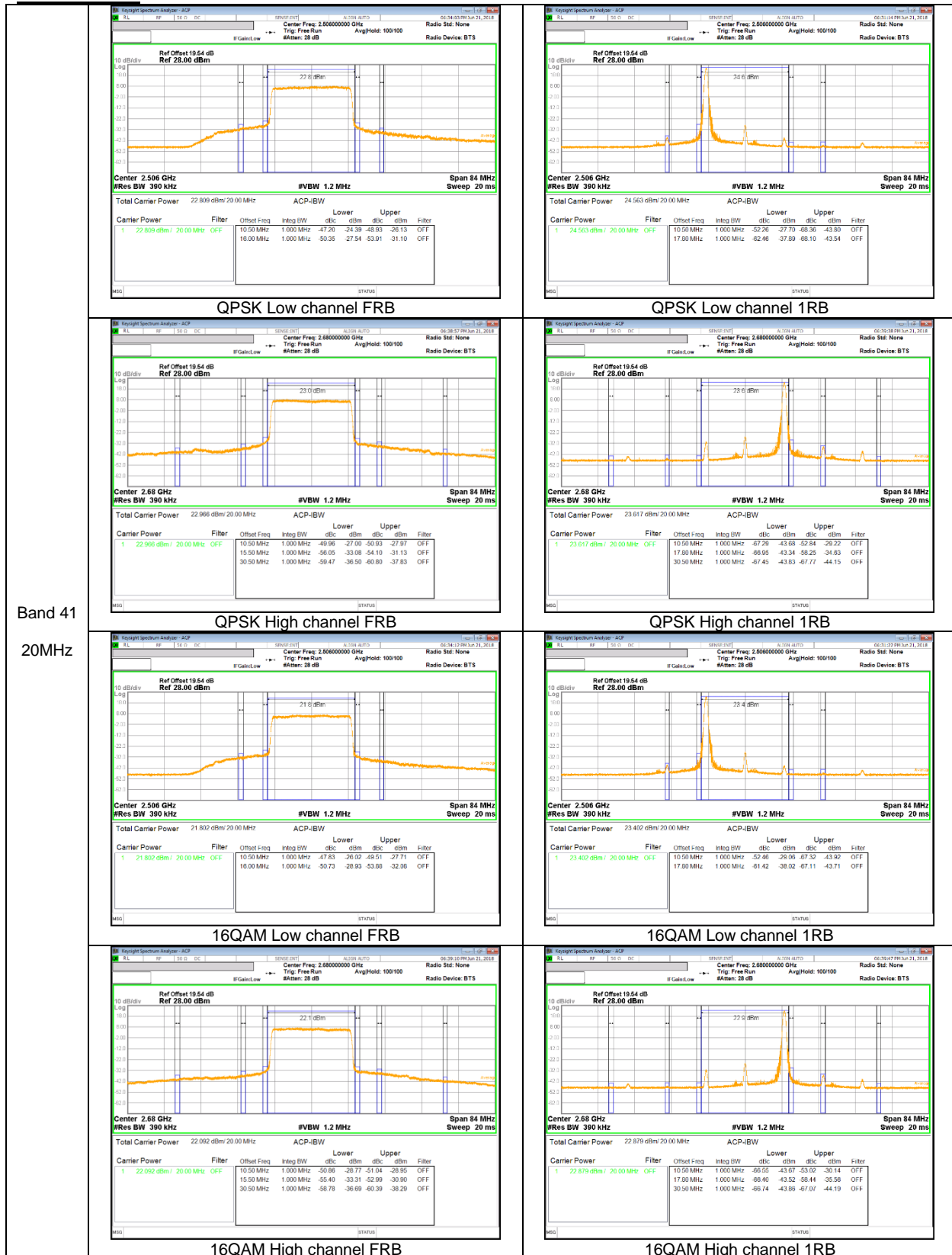


9.2.2. EMISSION MASK PLOTS

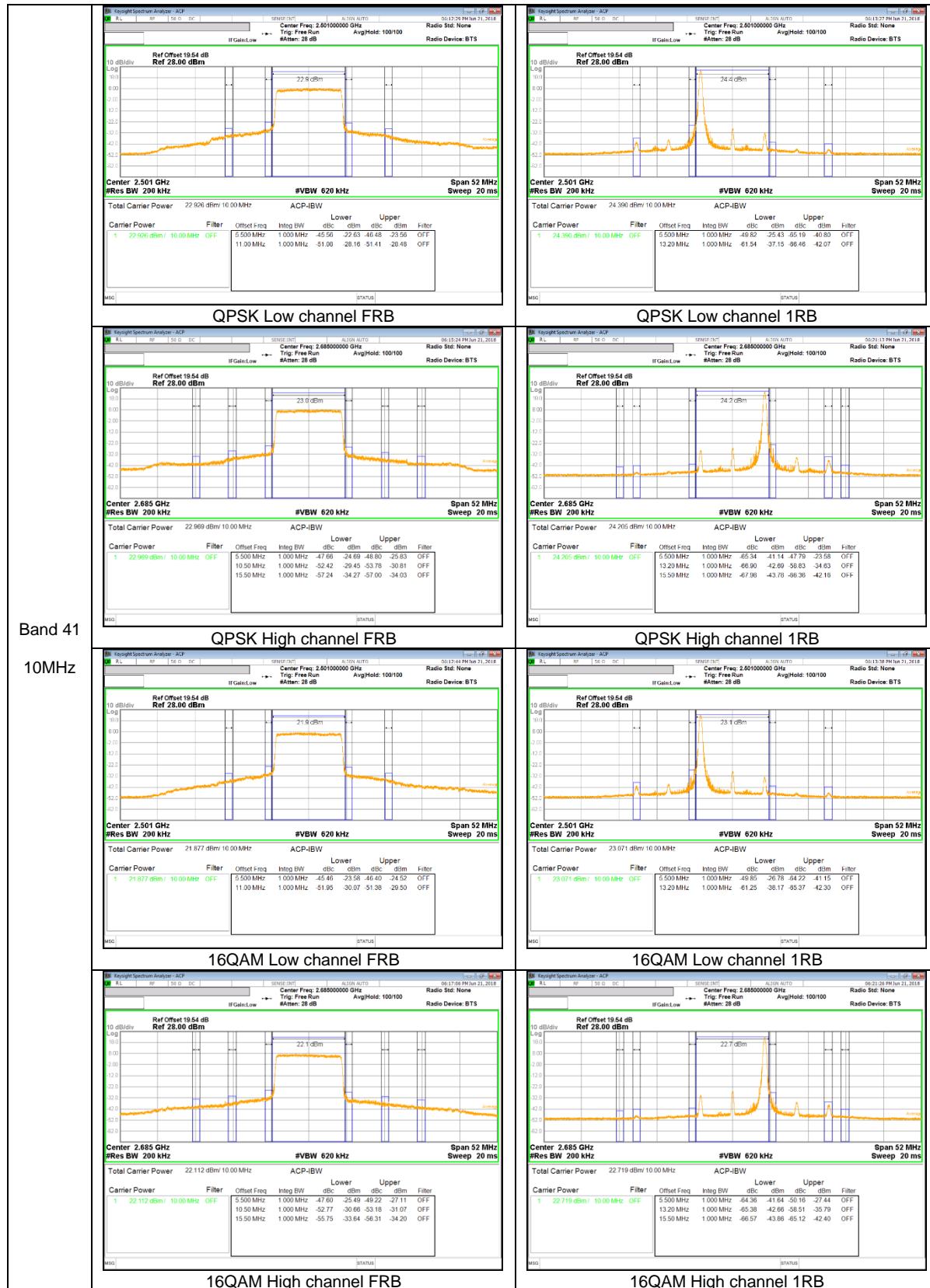
LTE Band 41

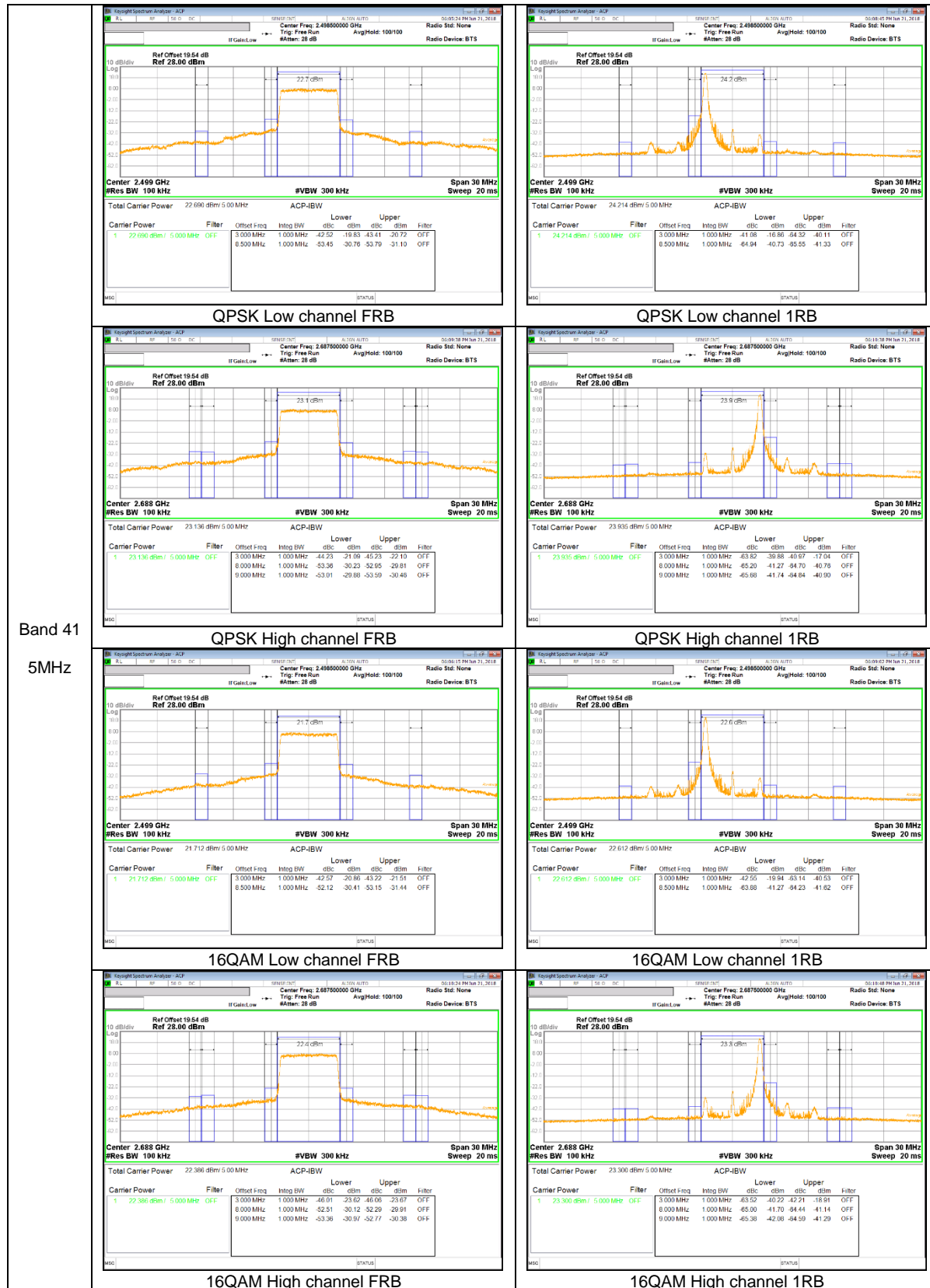


Band 41
20MHz



Band 41
 15MHz





9.3. 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 v03r01

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 ≥ 1.5 times the OBW;
- d) Sweep time = auto couple;
- e) Detector = rms;
- f) Ensure that the number of measurement points = Max (40001);
- g) Trace mode = average(WCDMA, LTE), Maxhold(GSM, LTE Band41);

RESULTS

GSM

Band	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]
GSM850	GPRS	824.2	-24.46	-13.00
		836.6	-25.32	
		848.8	-24.61	
	EGPRS	824.2	-24.83	
		836.6	-24.14	
		848.8	-24.67	
GSM1900	GPRS	1850.2	-24.17	-13.00
		1880.0	-23.72	
		1909.8	-23.80	
	EGPRS	1850.2	-24.35	
		1880.0	-22.52	
		1909.8	-23.23	

WCDMA

Band	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]
Band 5	REL99	826.4	-42.737	-13.00
		836.6	-42.433	
		846.6	-42.788	
	HSDPA	826.4	-42.390	
		836.6	-42.728	
		846.6	-42.561	
Band 2	REL99	1852.4	-42.234	-13.00
		1880.0	-42.150	
		1907.6	-42.116	
	HSDPA	1852.4	-42.234	
		1880.0	-42.245	
		1907.6	-42.293	

LTE 5

Bandwidth	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]
10 MHz	QPSK	829.0	-40.823	-13.00
		836.5	-40.690	
		844.0	-40.826	
	16QAM	829.0	-40.849	
		836.5	-40.555	
		844.0	-40.701	
5 MHz	QPSK	826.5	-40.788	
		836.5	-40.595	
		846.5	-40.768	
	16QAM	826.5	-40.683	
		836.5	-40.817	
		846.5	-40.837	
3 MHz	QPSK	825.5	-40.797	
		836.5	-40.872	
		847.5	-40.902	
	16QAM	825.5	-40.841	
		836.5	-40.745	
		847.5	-40.808	
1.4 MHz	QPSK	824.7	-40.823	
		836.5	-40.760	
		848.3	-40.872	
	16QAM	824.7	-40.743	
		836.5	-40.831	
		848.3	-40.839	

LTE 12

Bandwidth	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]
10 MHz	QPSK	704.0	-40.639	-13.00
		707.5	-40.730	
		711.0	-40.879	
	16QAM	704.0	-40.524	
		707.5	-40.371	
		711.0	-40.833	
5 MHz	QPSK	701.5	-40.472	
		707.5	-40.875	
		713.5	-40.745	
	16QAM	701.5	-40.806	
		707.5	-40.615	
		713.5	-40.925	
3 MHz	QPSK	700.5	-40.730	
		707.5	-40.593	
		714.5	-40.712	
	16QAM	700.5	-40.738	
		707.5	-40.481	
		714.5	-40.861	
1.4 MHz	QPSK	699.7	-40.762	
		707.5	-40.787	
		715.3	-40.833	
	16QAM	699.7	-40.717	
		707.5	-40.610	
		715.3	-40.574	

LTE Band 17

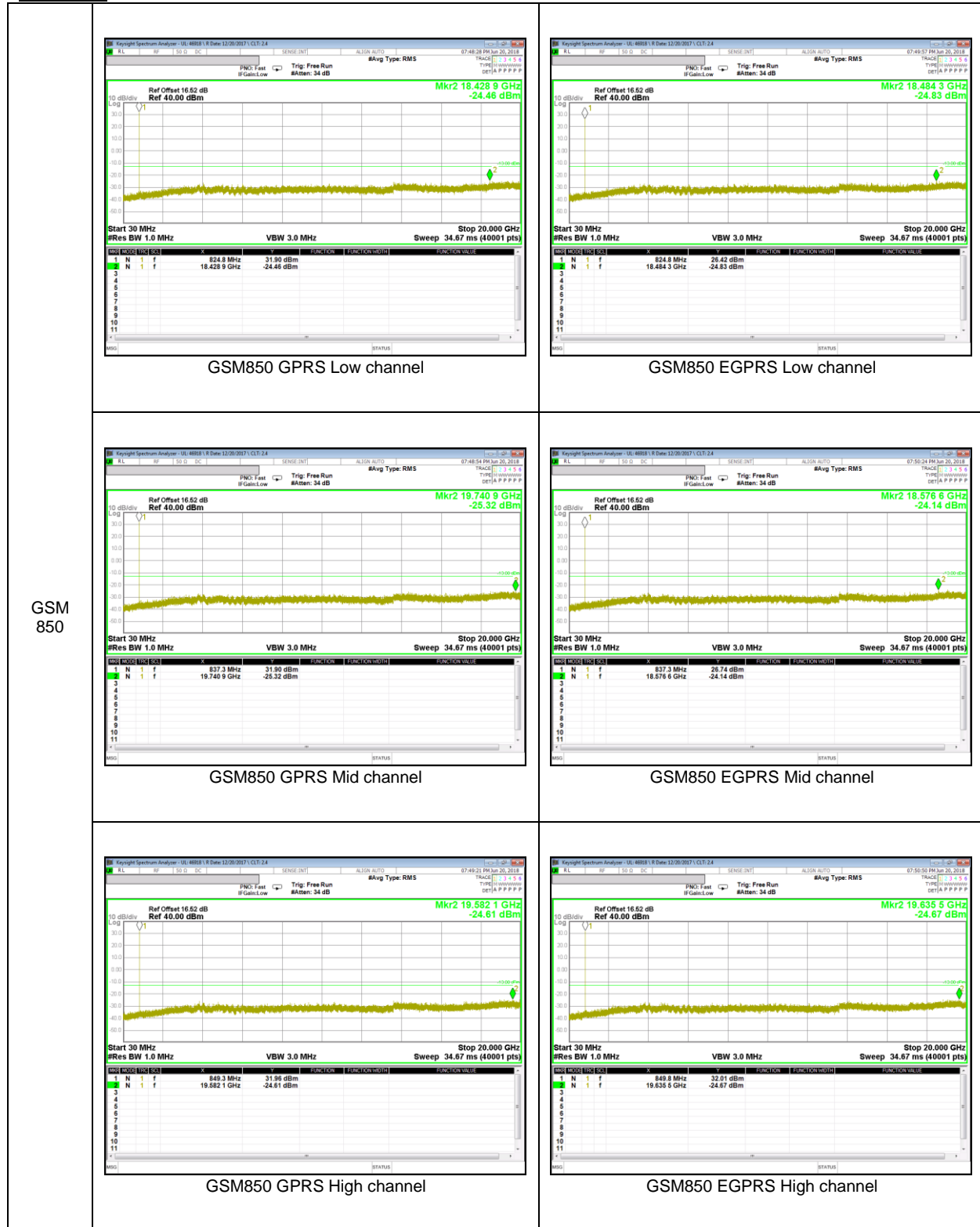
LTE Band 17 (Frequency range: 704-716 MHz) is covered by LTE Band 12 (Frequency range: 699-716 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

LTE 41

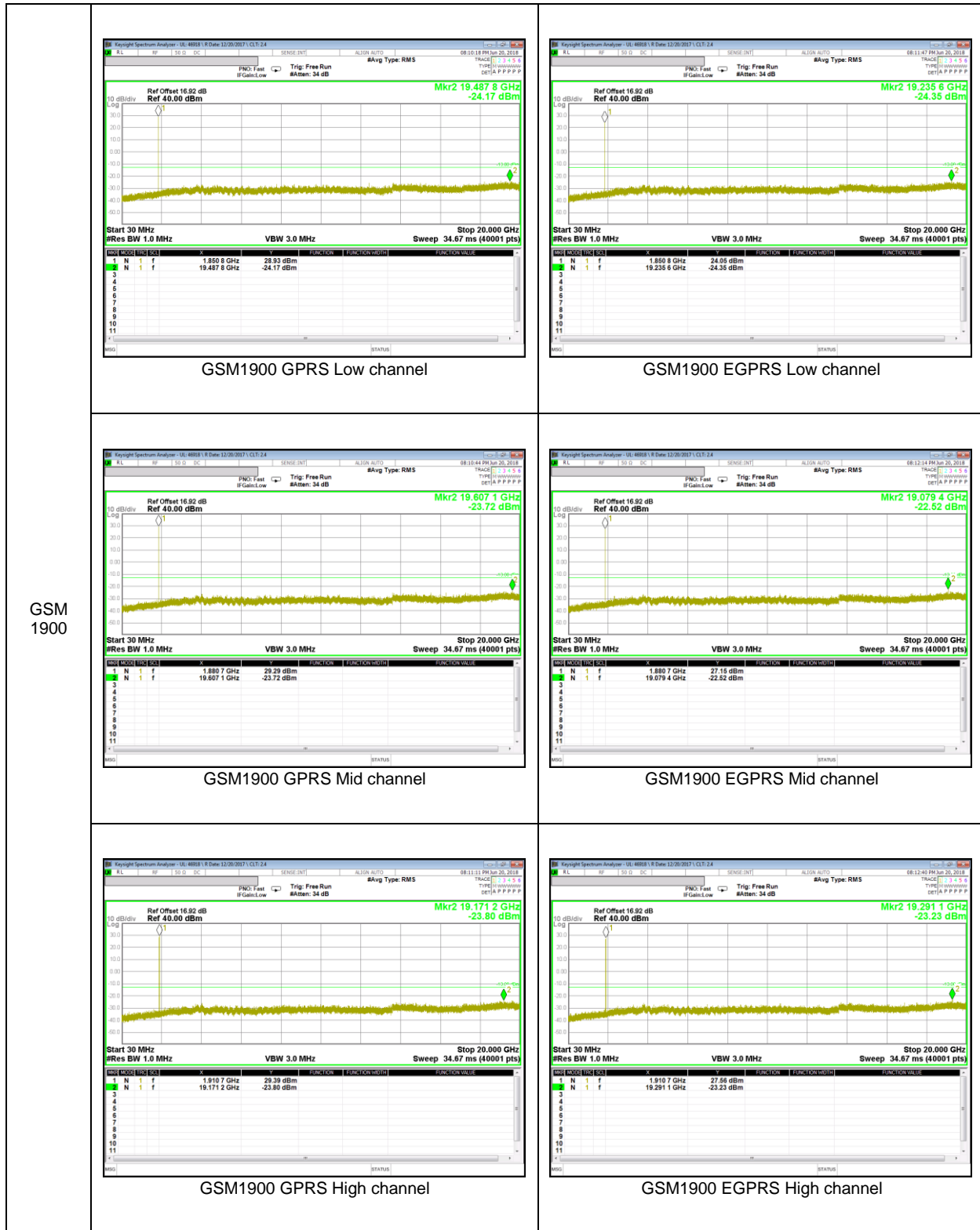
Bandwidth	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]
20 MHz	QPSK	2506.0	-32.90	-25.00
		2593.0	-33.25	
		2680.0	-32.39	
	16QAM	2506.0	-32.75	
		2593.0	-32.90	
		2680.0	-33.13	
15 MHz	QPSK	2503.5	-32.61	
		2593.0	-33.07	
		2682.5	-33.18	
	16QAM	2503.5	-33.13	
		2593.0	-33.25	
		2682.5	-33.07	
10 MHz	QPSK	2501.0	-32.54	
		2593.0	-32.50	
		2685.0	-33.48	
	16QAM	2501.0	-33.40	
		2593.0	-32.99	
		2685.0	-32.61	
5 MHz	QPSK	2498.5	-33.33	
		2593.0	-31.60	
		2687.5	-33.27	
	16QAM	2498.5	-31.86	
		2593.0	-31.53	
		2687.5	-32.51	

9.3.1. OUT OF BAND EMISSIONS PLOTS

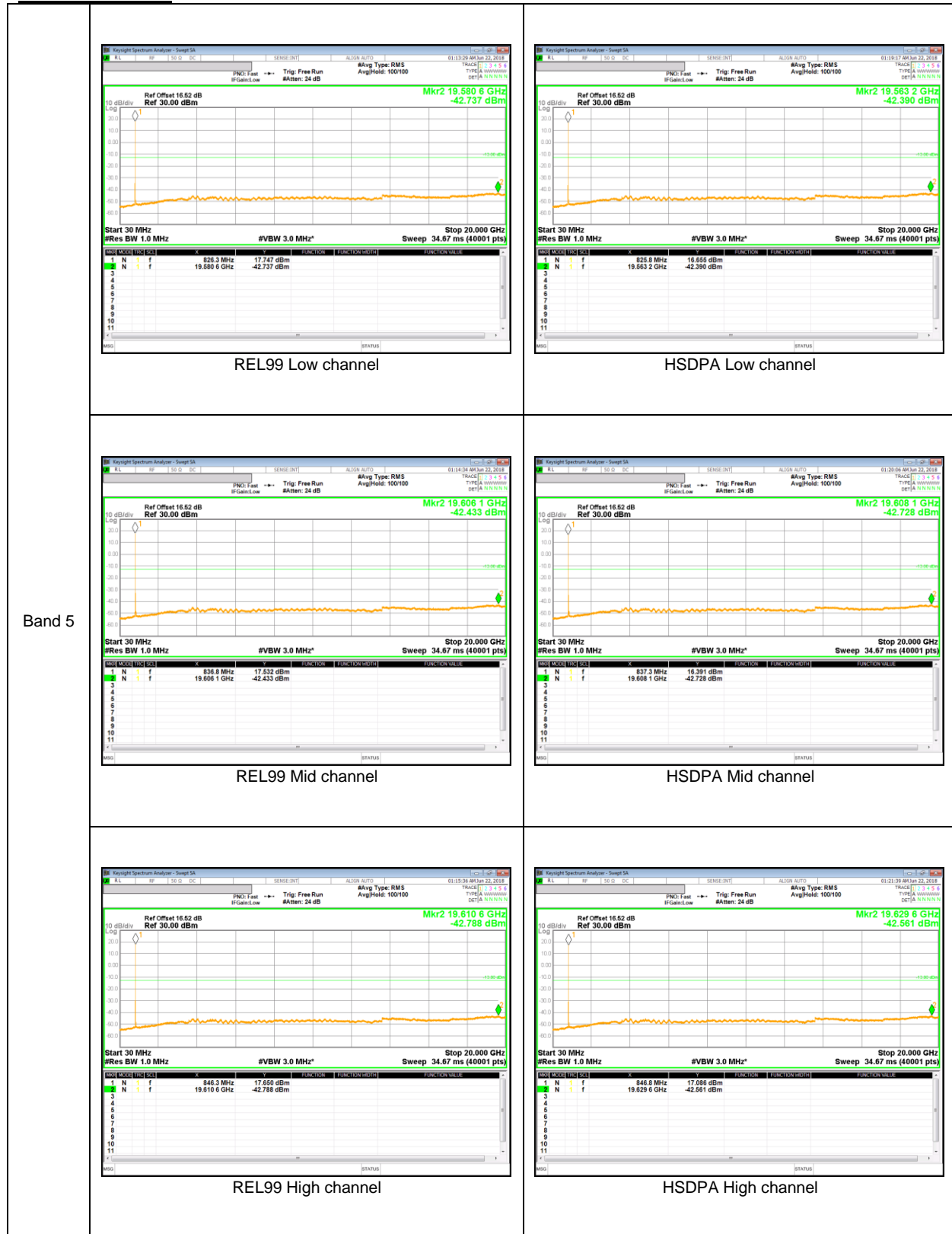
GSM 850



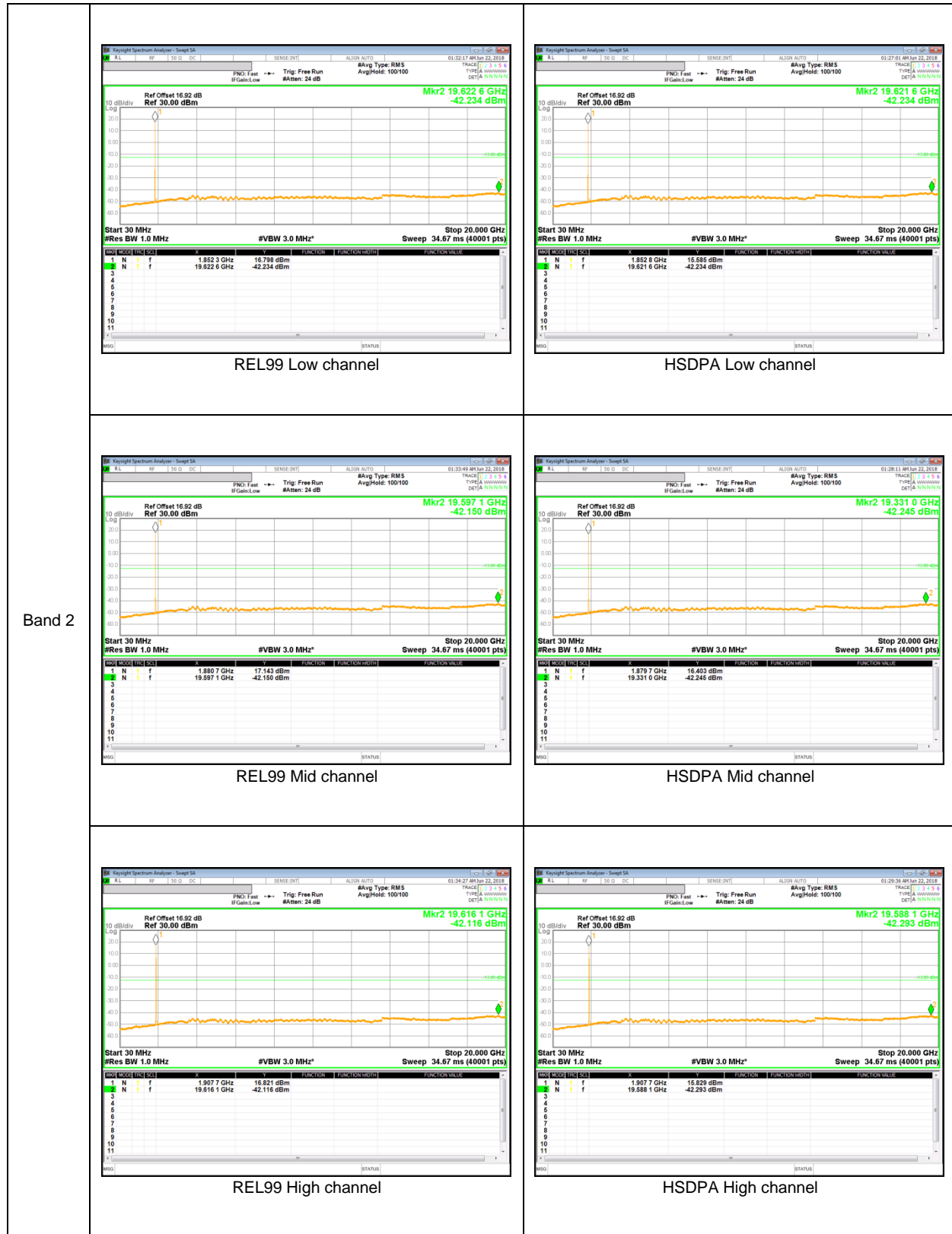
GSM 1900



WCDMA Band 5



WCDMA Band 2



Band 2

REL99 Low channel

HSDPA Low channel

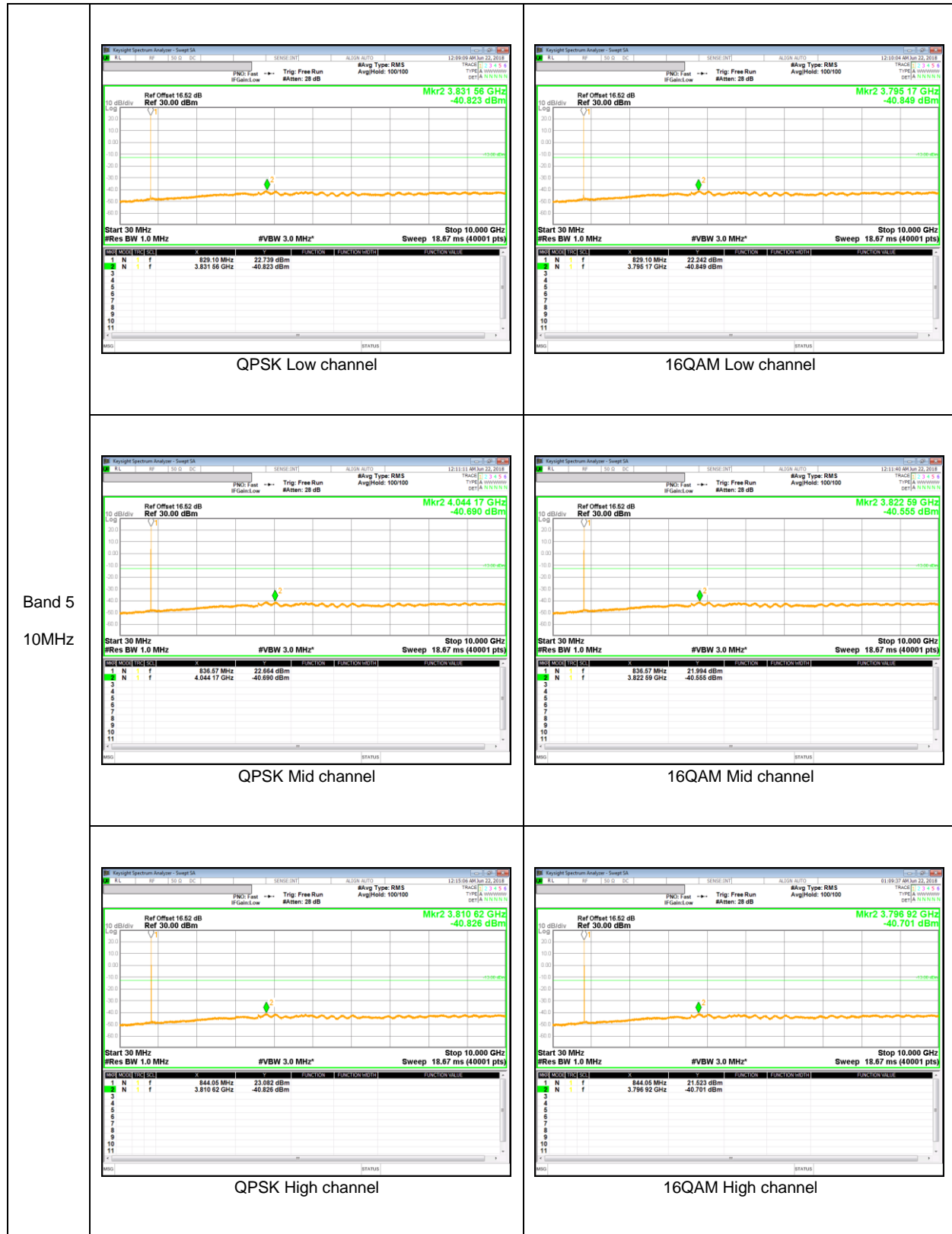
REL99 Mid channel

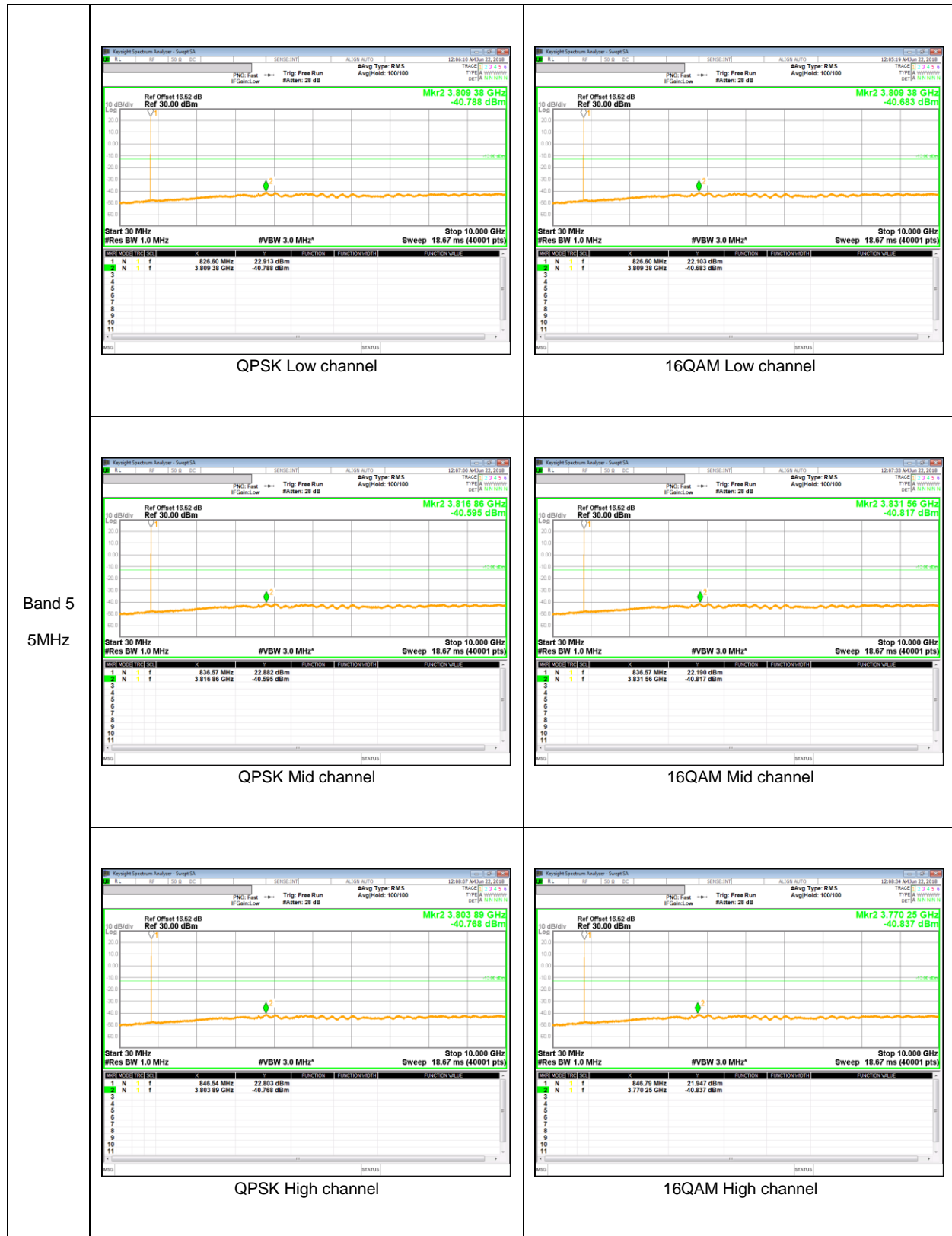
HSDPA Mid channel

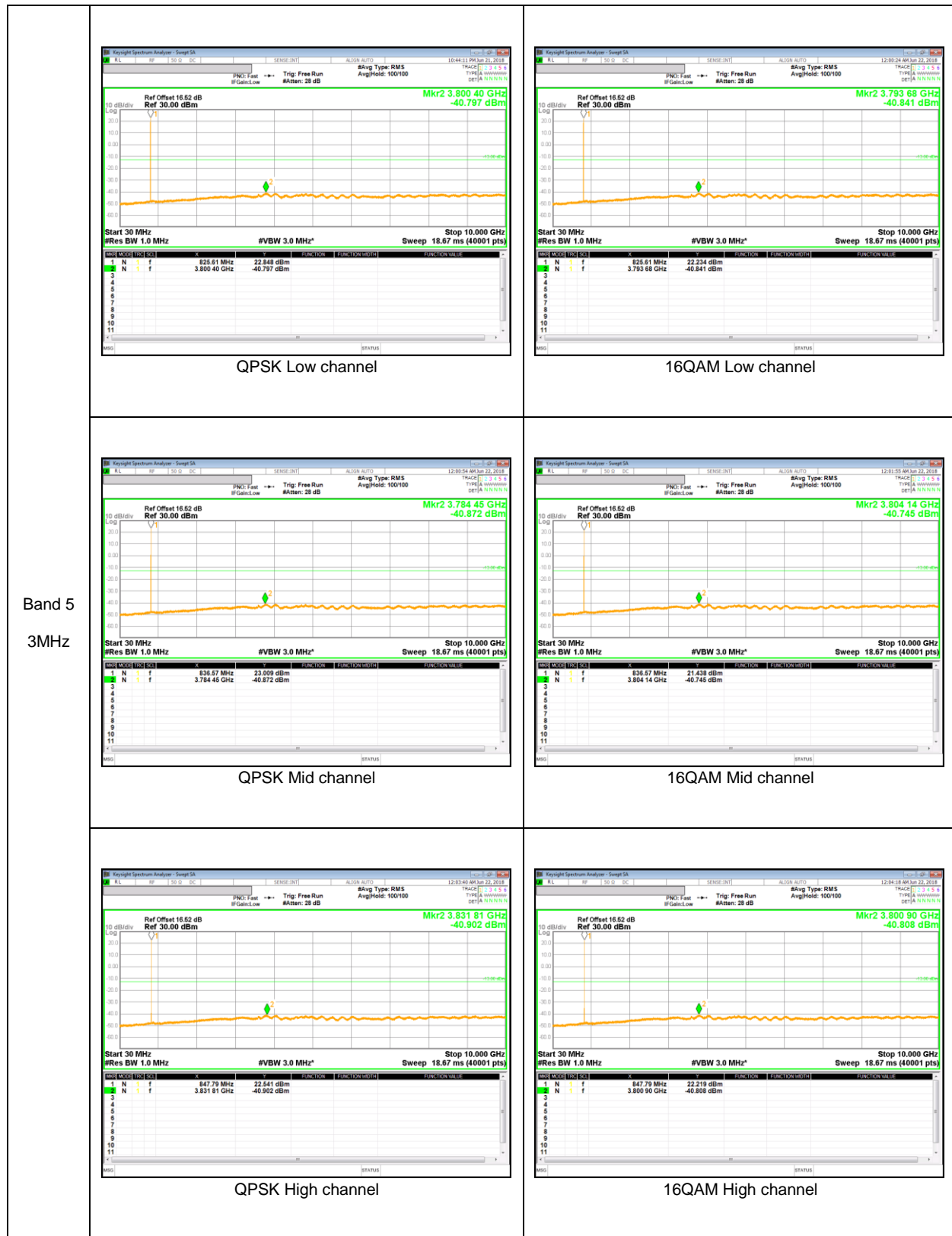
REL99 High channel

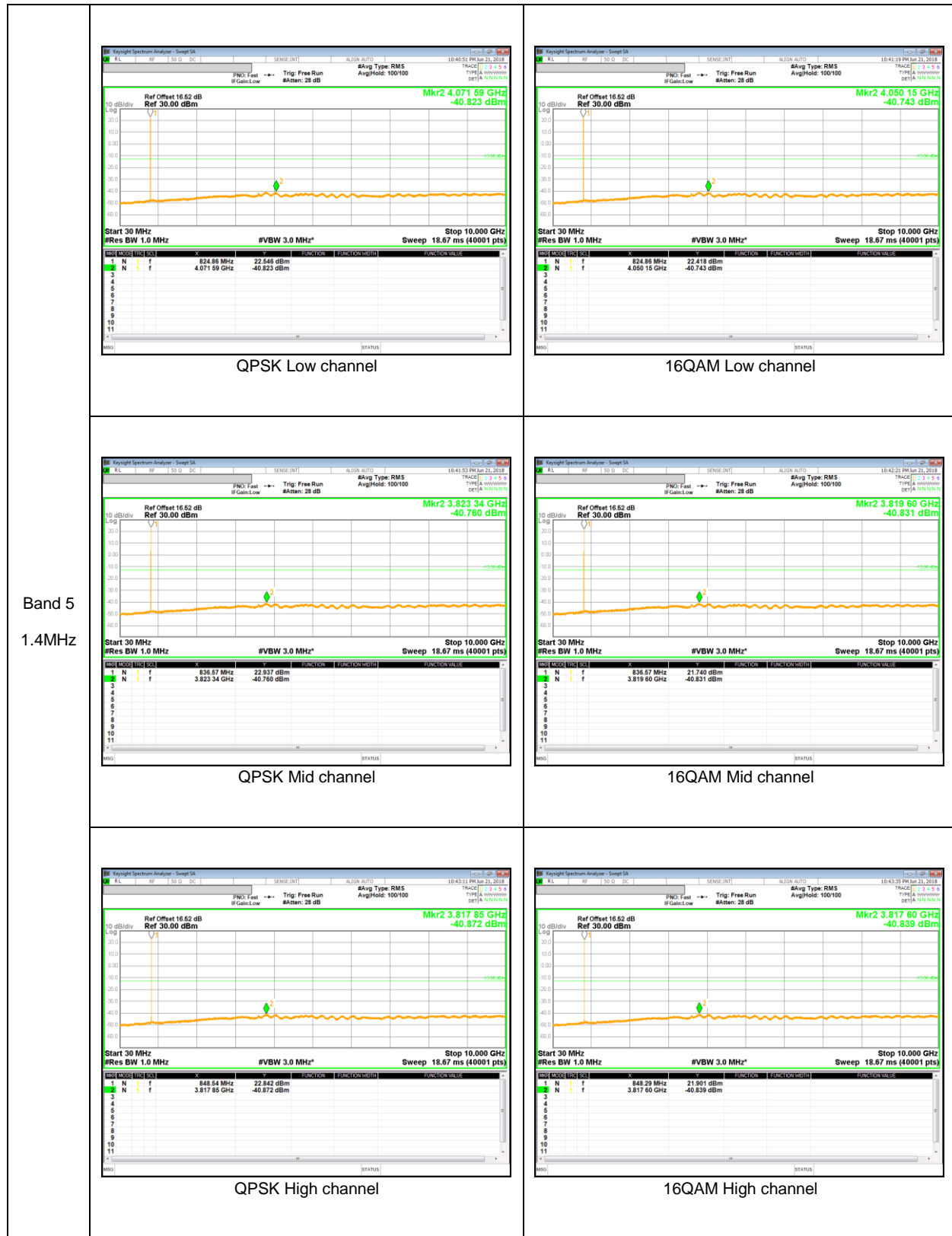
HSDPA High channel

LTE Band 5









LTE Band 12

