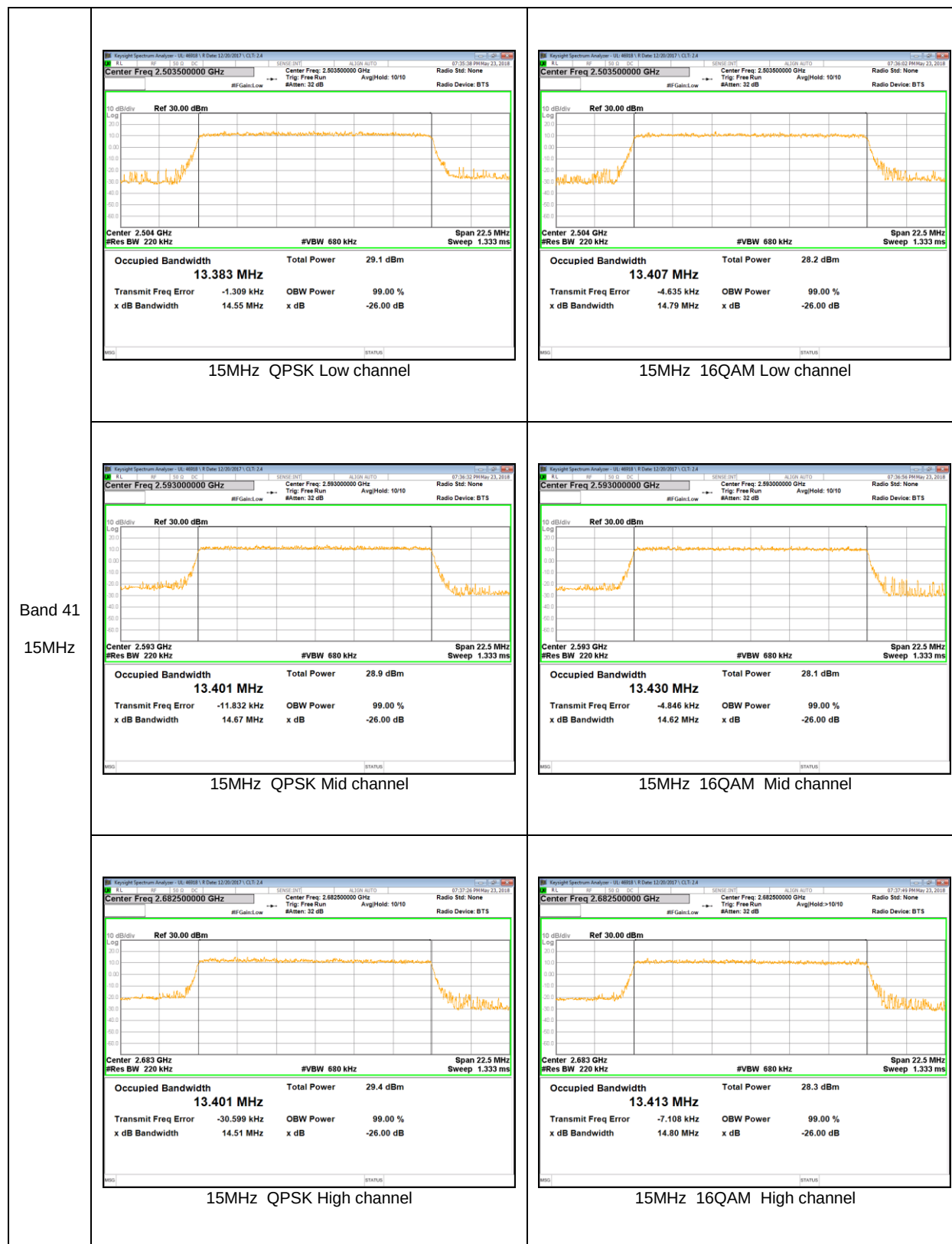
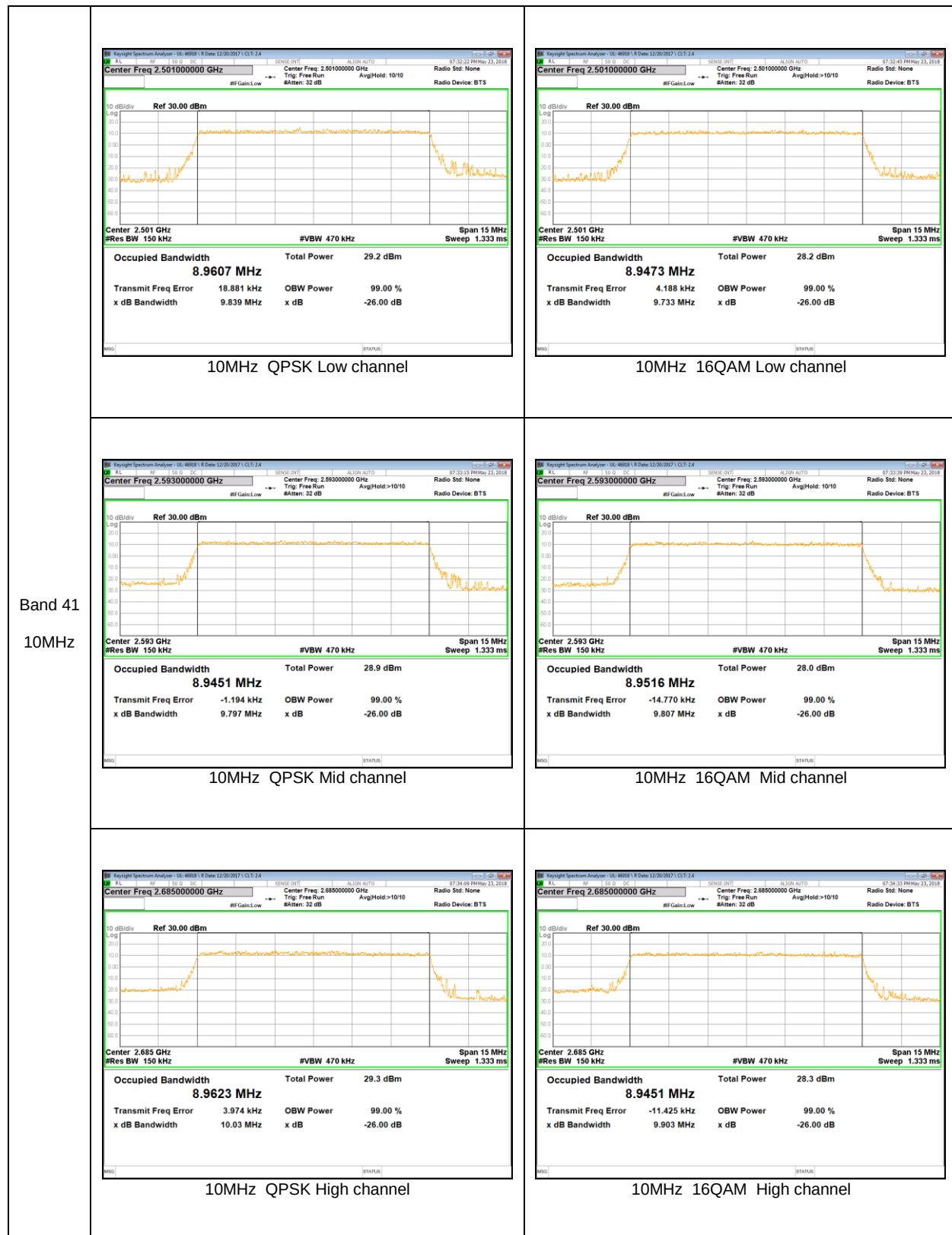
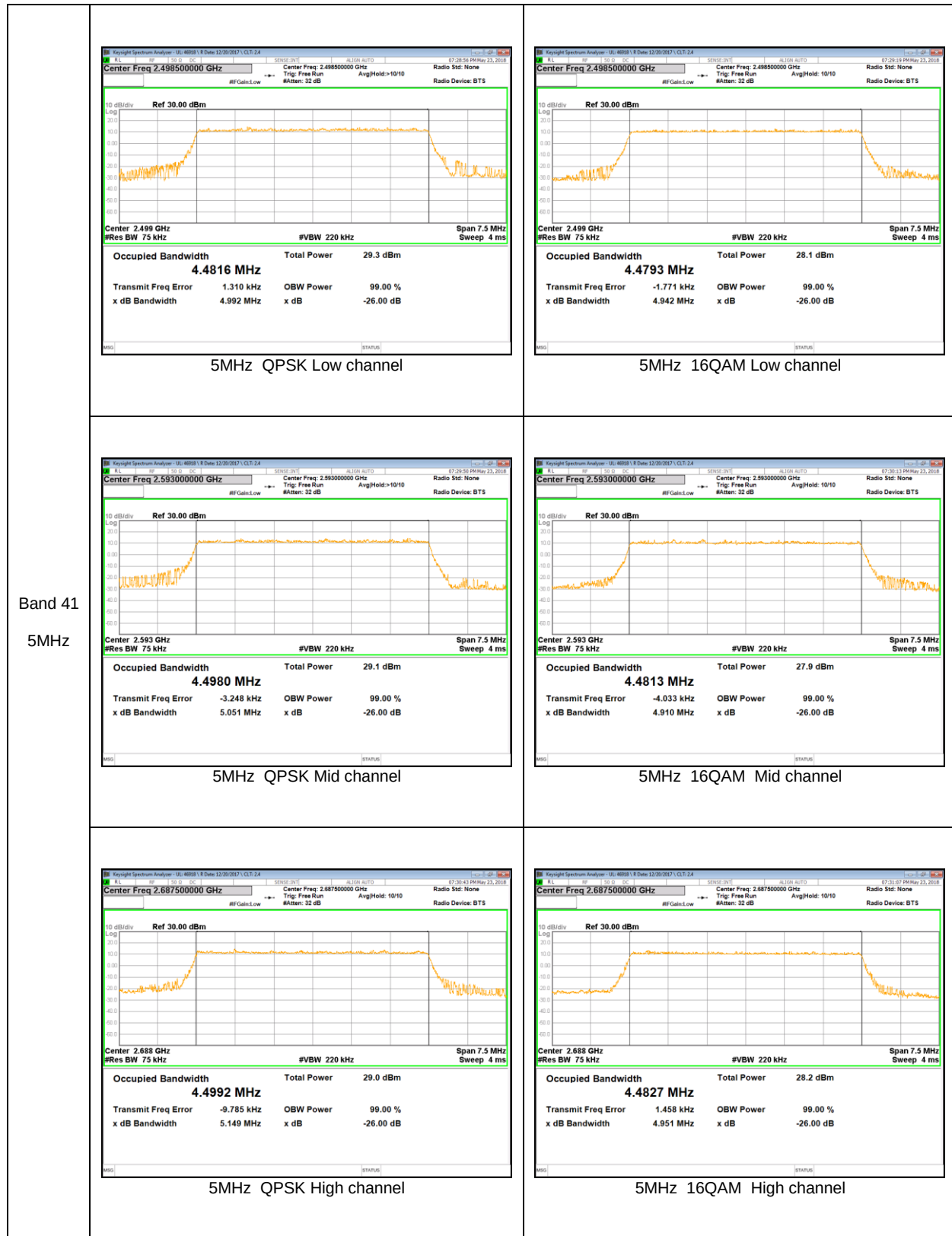








9.2. BAND EDGE EMISSIONS

RULE PART(S)

FCC: §22.359, §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 27.53(m) For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

GSM

- a) Set the RBW = 1 ~ 5% of OBW(GSM850 – 8.2KHz, GSM1900 – 9.1KHz)
- b) Set VBW $\geq 3 \times$ RBW;
- c) Set span ≥ 1.5 times the OBW;
- d) Sweep time = 1S ;
- e) Detector = RMS;
- f) Ensure that the number of measurement points $\geq 2 \times \text{Span} / \text{RBW}$;
- g) Trace mode = Average(100);
- h) Add duty cycle correction factor (9dB)

WCDMA/LTE

- b) Set the RBW = 1 ~ 1.5 % of OBW(Typically limited to a minimum RBW of 1% of the OBW)
- b) Set VBW $\geq 3 \times$ RBW;
- c) Set span ≥ 1.5 times the OBW;
- d) Sweep time = Auto;
- e) Detector = RMS;
- f) Ensure that the number of measurement points $\geq 2 \times \text{Span} / \text{RBW}$;
- g) Trace mode = Average (100);

NOTE

LTE Band 41 - Duty cycle correction factor(2.25dB) already applied on the plot.

RESULTS

GSM

Band	Mode	Side	f [MHz]	Level [dBm]	Limit [dBm]
GSM1900	GPRS	Lower	1849.977	-19.612	-13.00
		Upper	1910.023	-18.872	
	EGPRS	Lower	1849.992	-25.644	
		Upper	1910.018	-25.853	

WCDMA

Band	Mode	Side	f [MHz]	Level [dBm]	Limit [dBm]
Band 5	REL99	Lower	824.000	-26.128	-13.00
		Upper	849.000	-26.876	
	HSDPA	Lower	824.000	-28.785	
		Upper	849.000	-28.024	
Band 2	REL99	Lower	1850.000	-29.177	
		Upper	1910.000	-29.644	
	HSDPA	Lower	1850.000	-32.741	
		Upper	1910.000	-31.945	

LTE 5

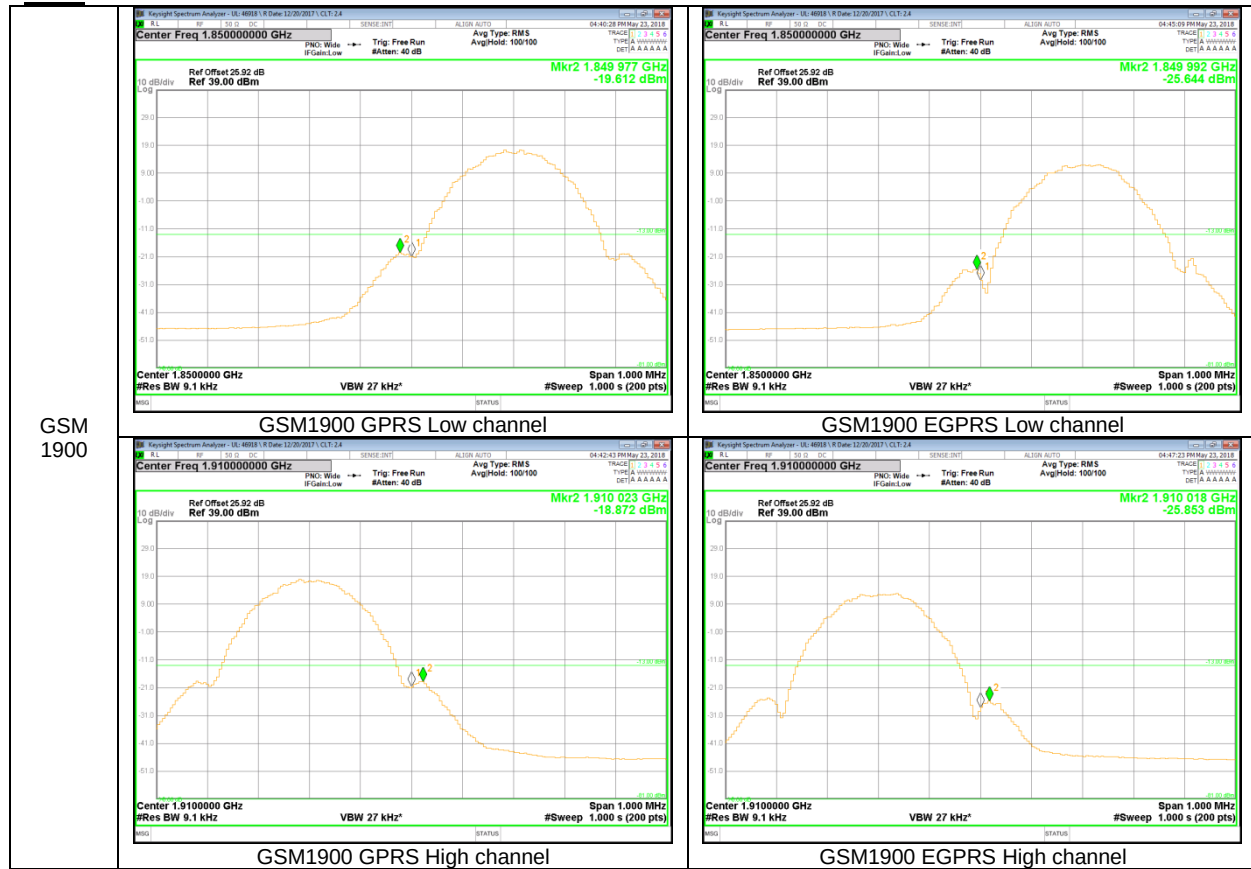
Bandwidth	Mode	Side	RB Status	f [MHz]	Level [dBm]	Limit [dBm]
10 MHz	QPSK	Lower	1RB	824.000	-29.666	-13.00
			FRB	824.000	-32.007	
		Upper	1RB	849.000	-29.025	
			FRB	849.000	-30.974	
	16QAM	Lower	1RB	824.000	-30.350	
			FRB	824.000	-32.407	
		Upper	1RB	849.000	-31.135	
			FRB	849.000	-33.119	
5 MHz	QPSK	Lower	1RB	824.000	-21.725	
			FRB	824.000	-28.711	
		Upper	1RB	849.000	-20.575	
			FRB	849.000	-28.470	
	16QAM	Lower	1RB	824.000	-22.361	
			FRB	824.000	-32.811	
		Upper	1RB	849.000	-21.221	
			FRB	849.000	-31.134	
3 MHz	QPSK	Lower	1RB	824.000	-19.697	
			FRB	824.000	-30.350	
		Upper	1RB	849.000	-17.273	
			FRB	849.000	-27.037	
	16QAM	Lower	1RB	824.000	-20.239	
			FRB	824.000	-29.691	
		Upper	1RB	849.000	-19.249	
			FRB	849.000	-29.690	
1.4 MHz	QPSK	Lower	1RB	824.000	-24.205	
			FRB	824.000	-29.799	
		Upper	1RB	849.000	-21.675	
			FRB	849.000	-29.891	
	16QAM	Lower	1RB	824.000	-23.640	
			FRB	824.000	-32.251	
		Upper	1RB	849.000	-22.246	
			FRB	849.000	-30.375	

LTE 17

Bandwidth	Mode	Side	RB Status	f [MHz]	Level [dBm]	Limit [dBm]
10 MHz	QPSK	Lower	1RB	704.000	-35.371	-13.00
			FRB	704.000	-32.685	
		Upper	1RB	716.000	-35.889	
			FRB	716.000	-34.629	
	16QAM	Lower	1RB	704.000	-32.292	
			FRB	704.000	-34.676	
		Upper	1RB	716.000	-34.453	
			FRB	716.000	-33.692	
5 MHz	QPSK	Lower	1RB	704.000	-22.732	-13.00
			FRB	704.000	-32.805	
		Upper	1RB	716.000	-21.476	
			FRB	716.000	-32.168	
	16QAM	Lower	1RB	704.000	-23.114	
			FRB	704.000	-32.854	
		Upper	1RB	716.000	-24.921	
			FRB	716.000	-32.955	

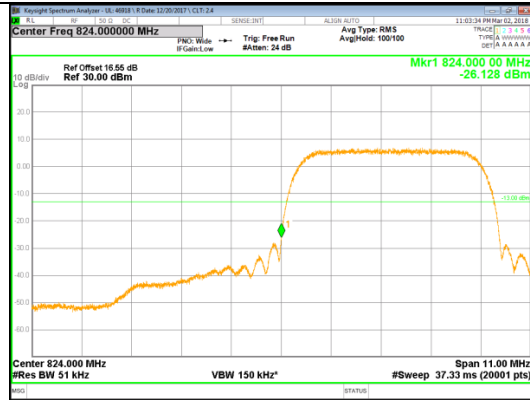
9.2.1. BAND EDGE PLOTS

GSM

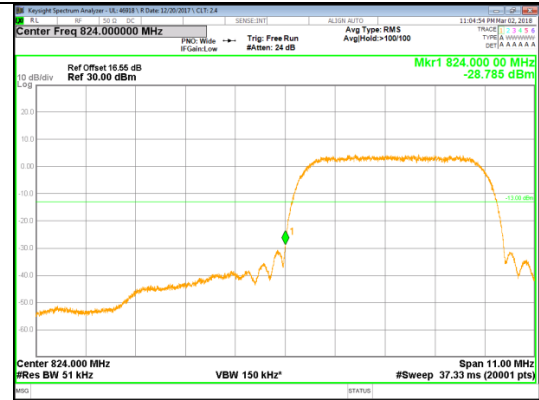


WCDMA

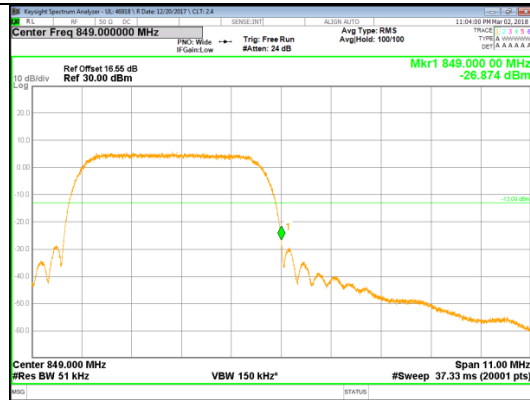
Band 5



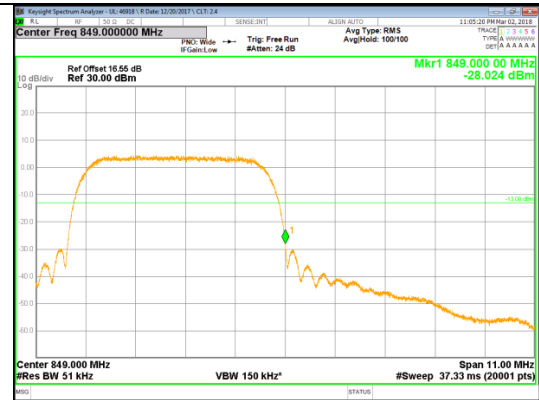
REL99 Low channel



HSDPA Low channel

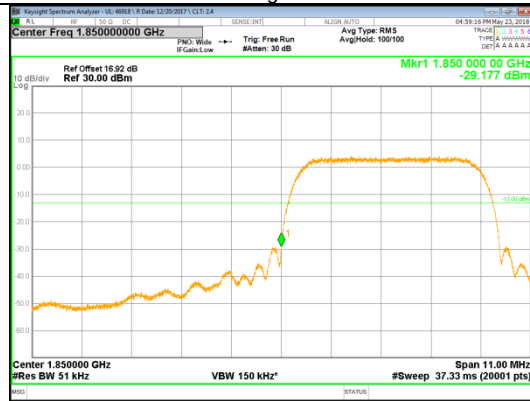


REL99 High channel

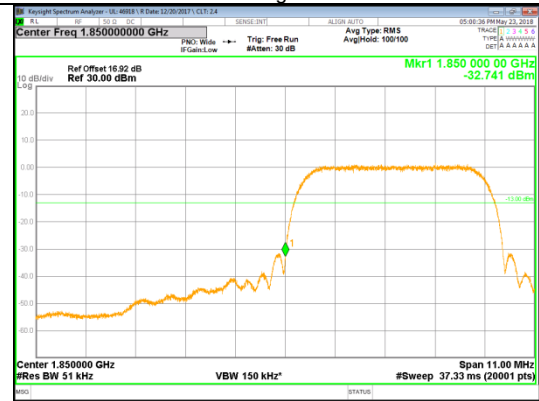


HSDPA High channel

Band 2



REL99 Low channel



HSDPA Low channel

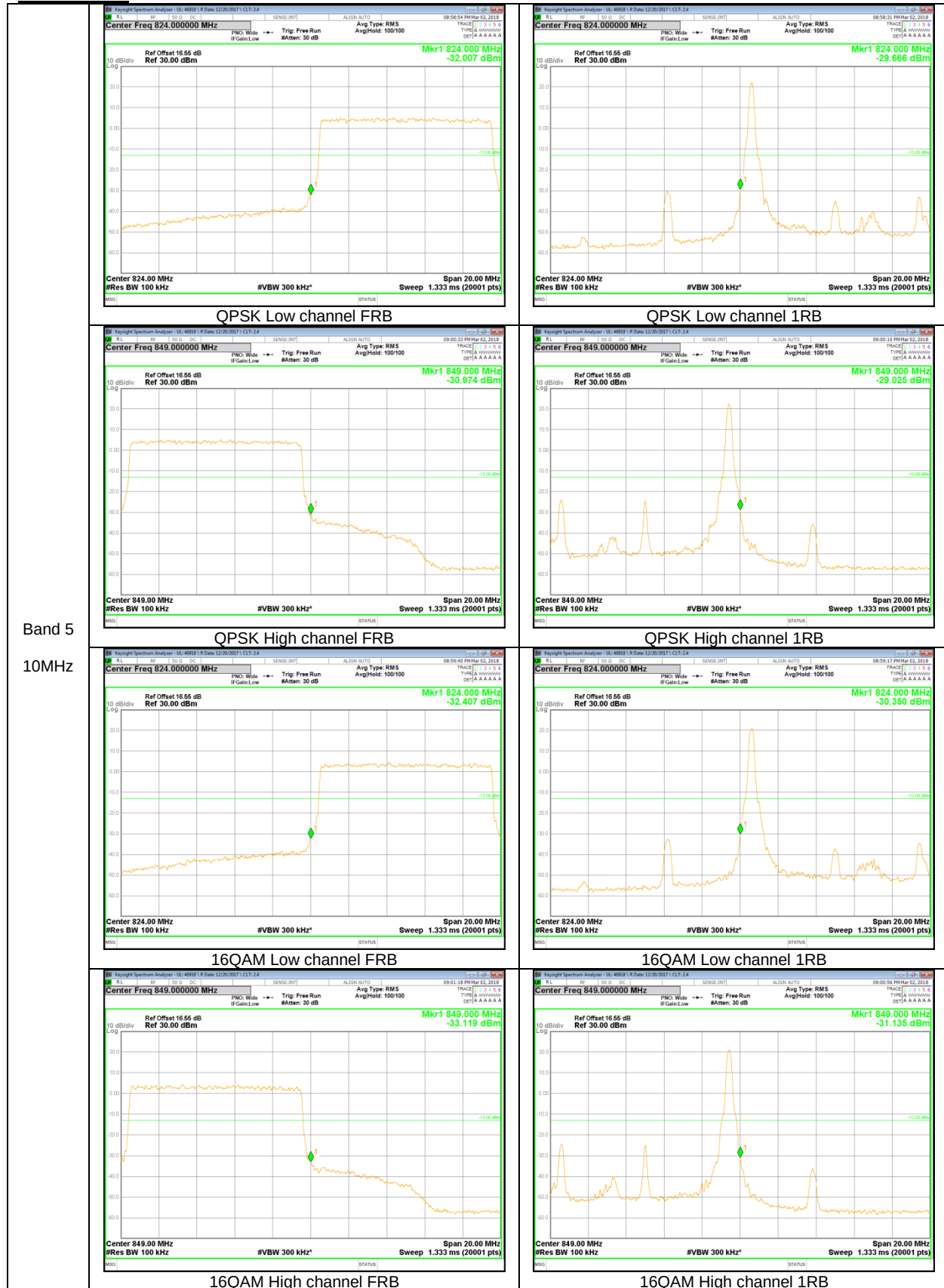


REL99 High channel

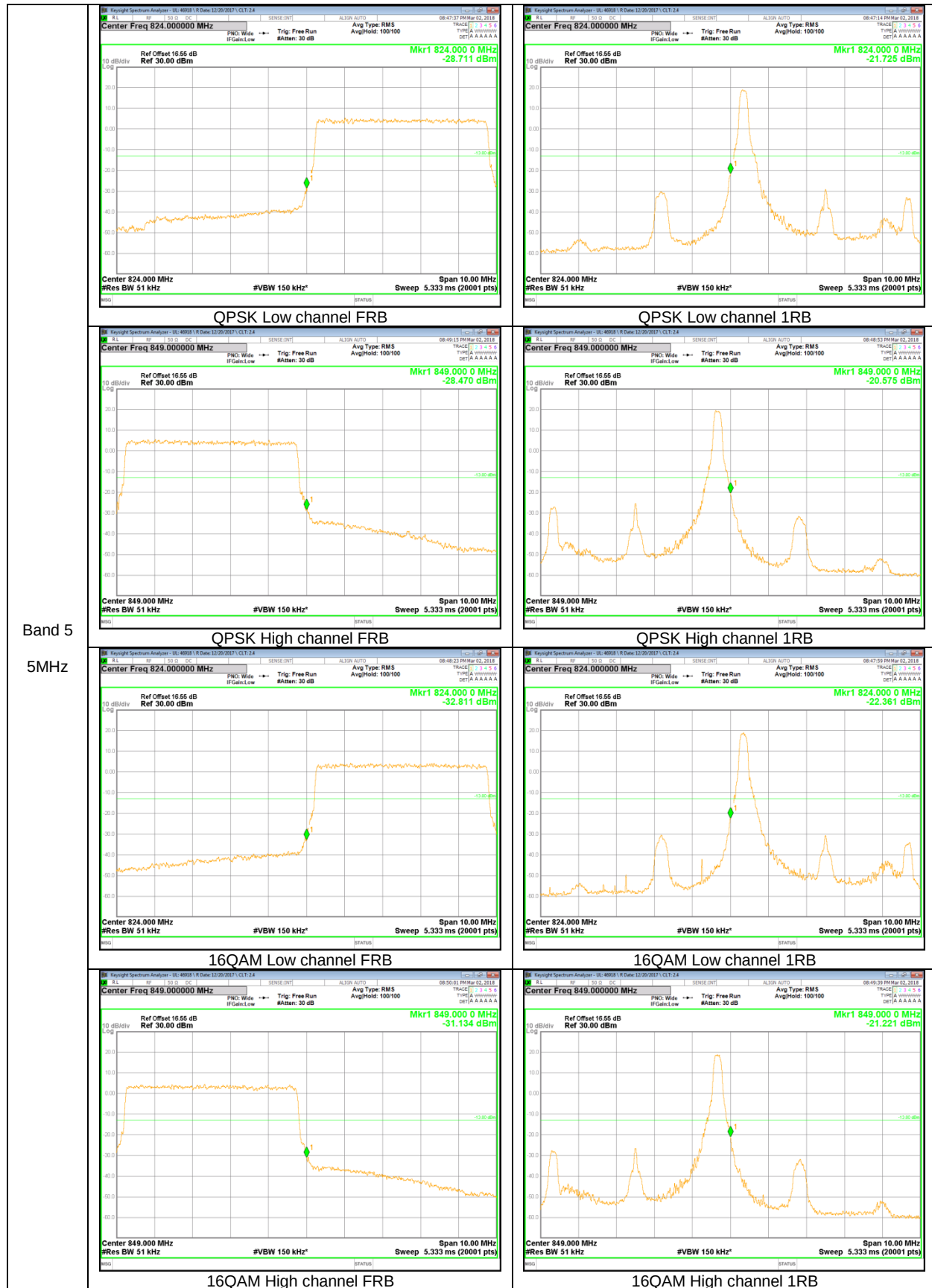


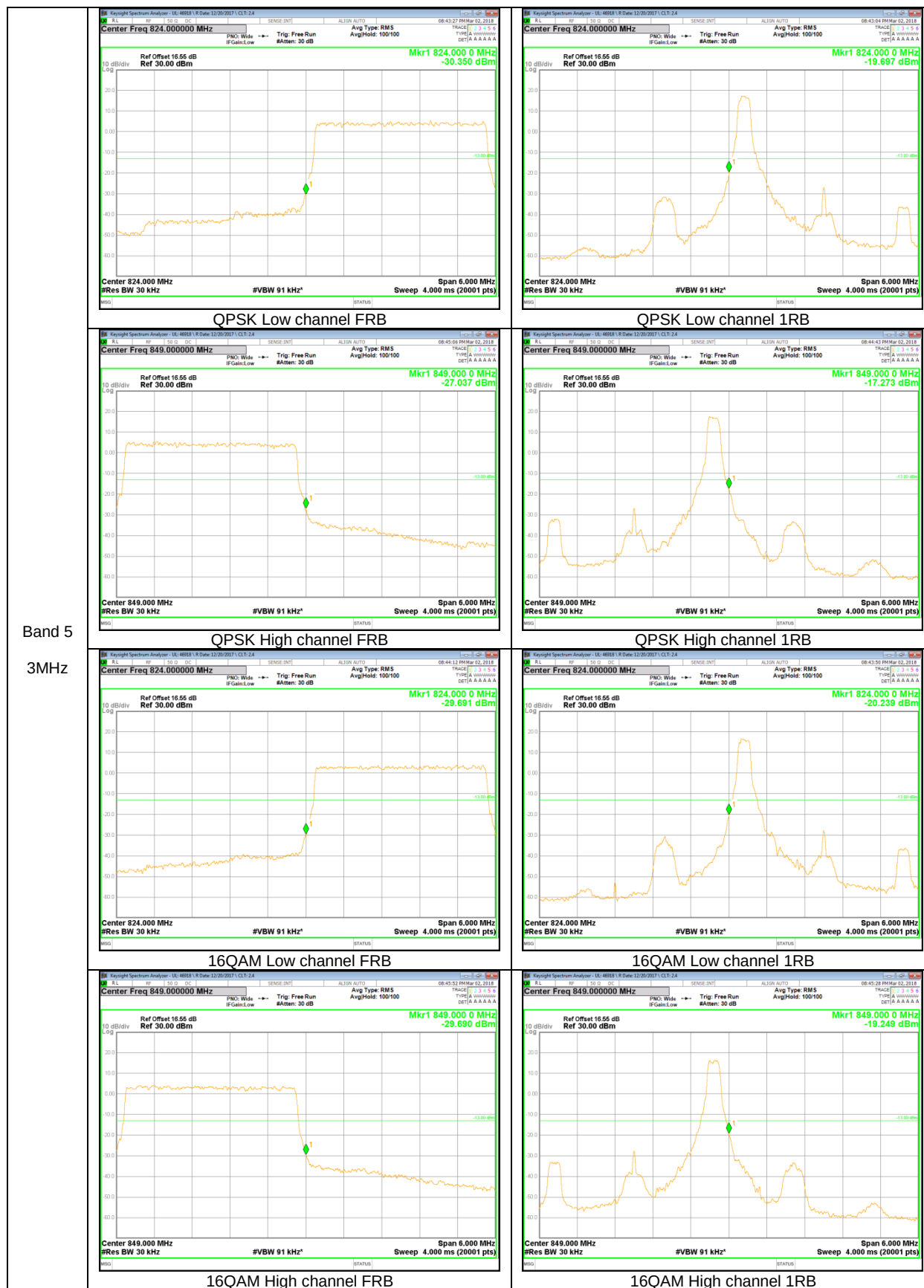
HSDPA High channel

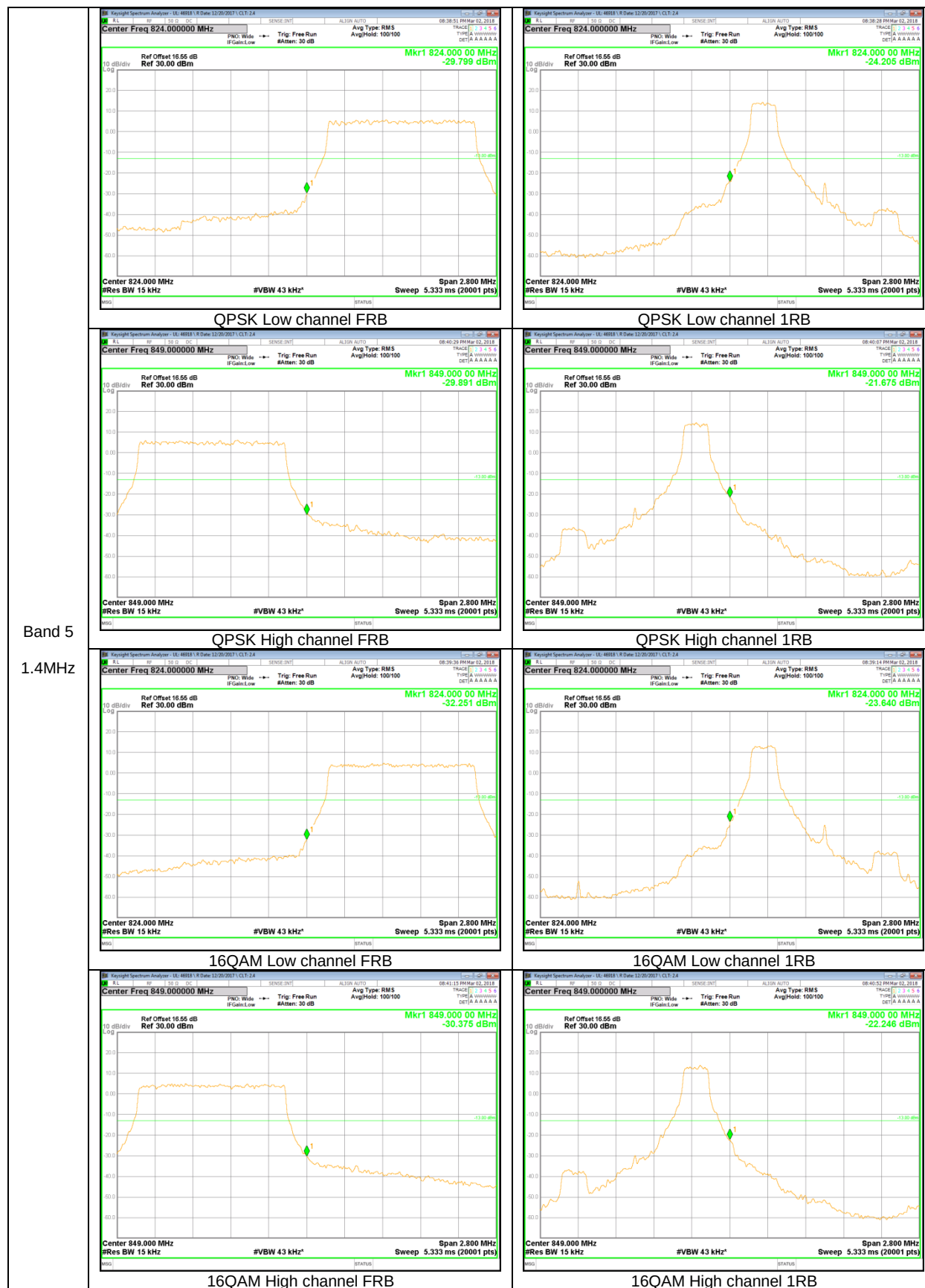
LTE Band 5



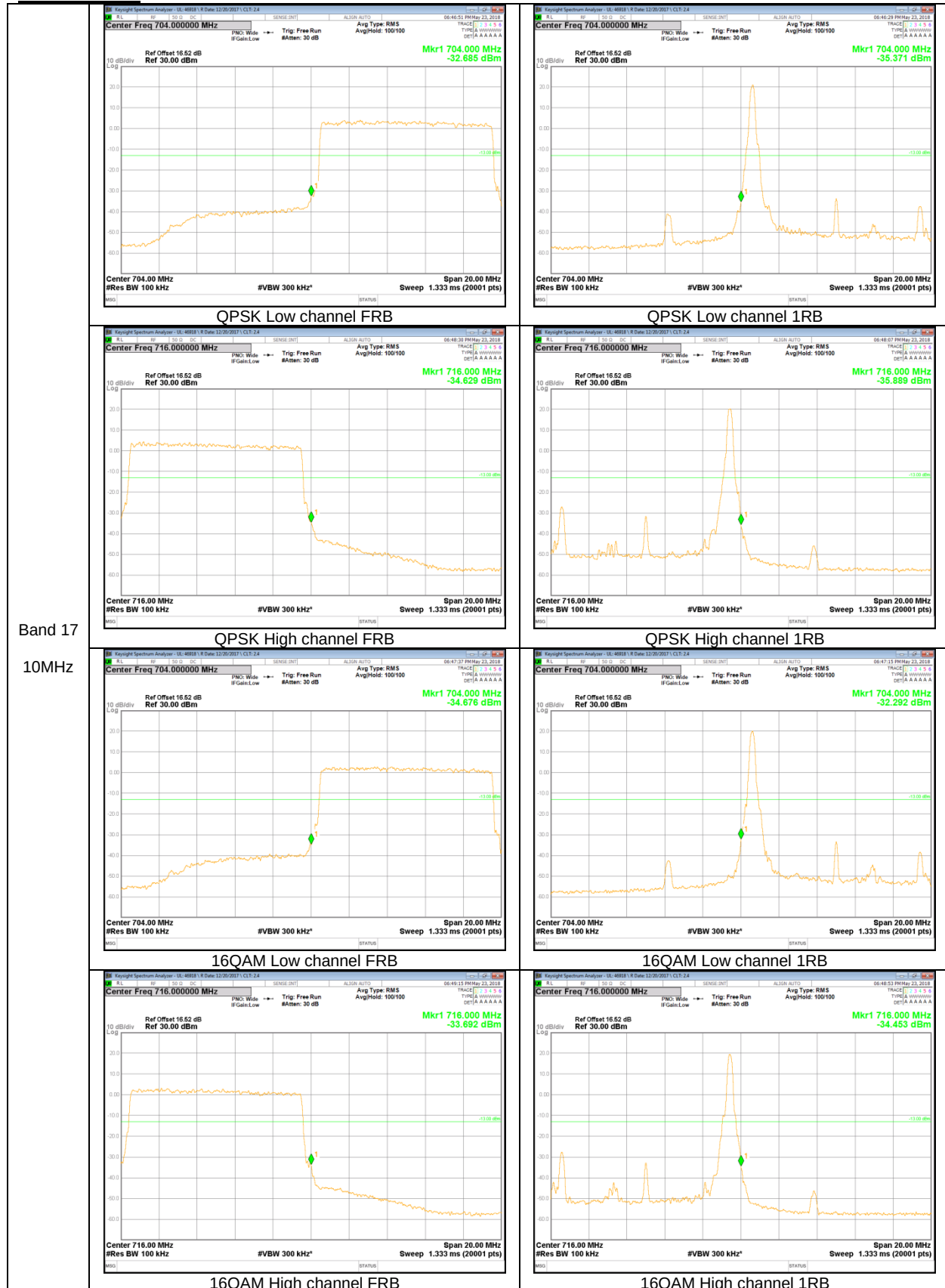
Band 5
10MHz

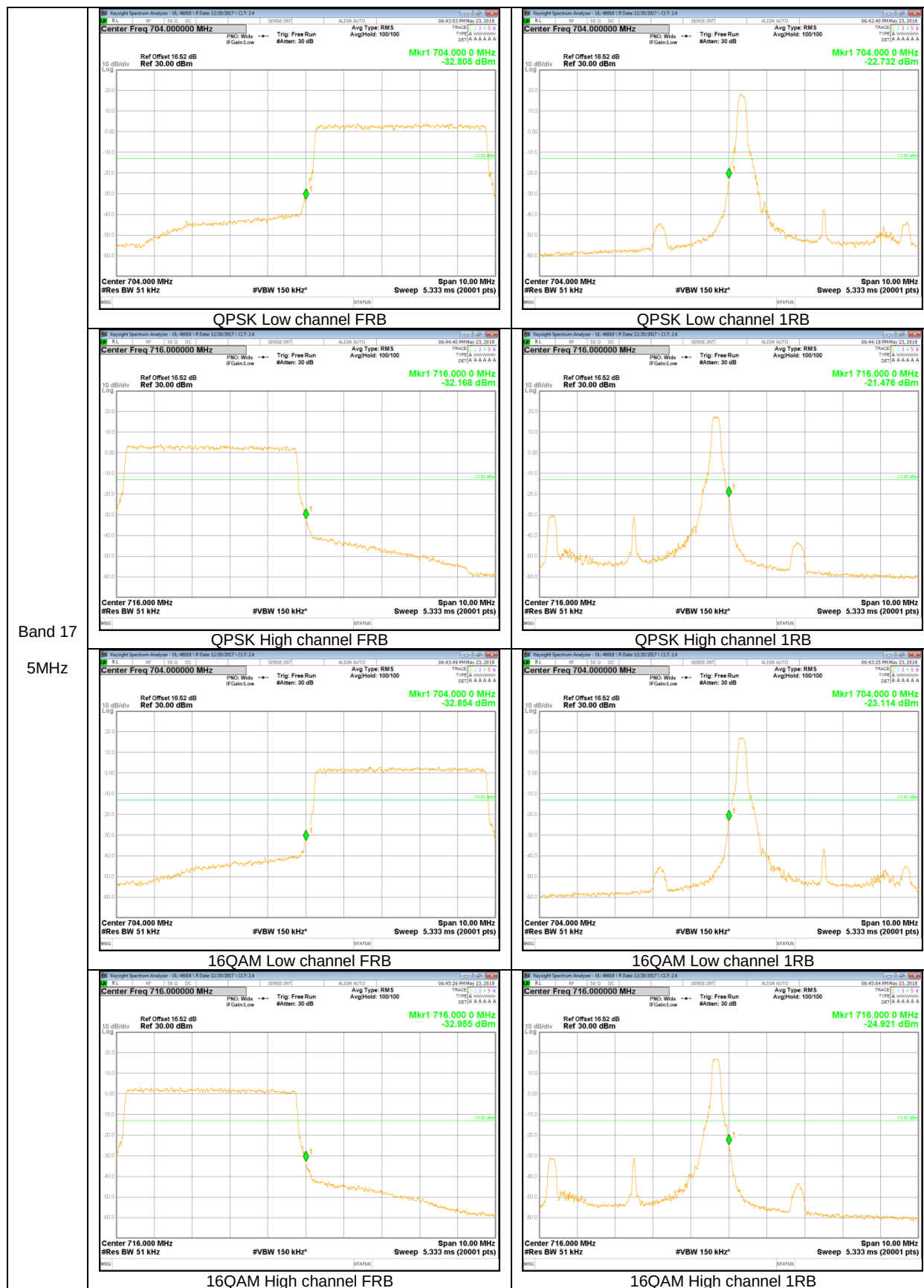






LTE Band 17





9.2.1. EMISSION MASK PLOTS

LTE Band 41

