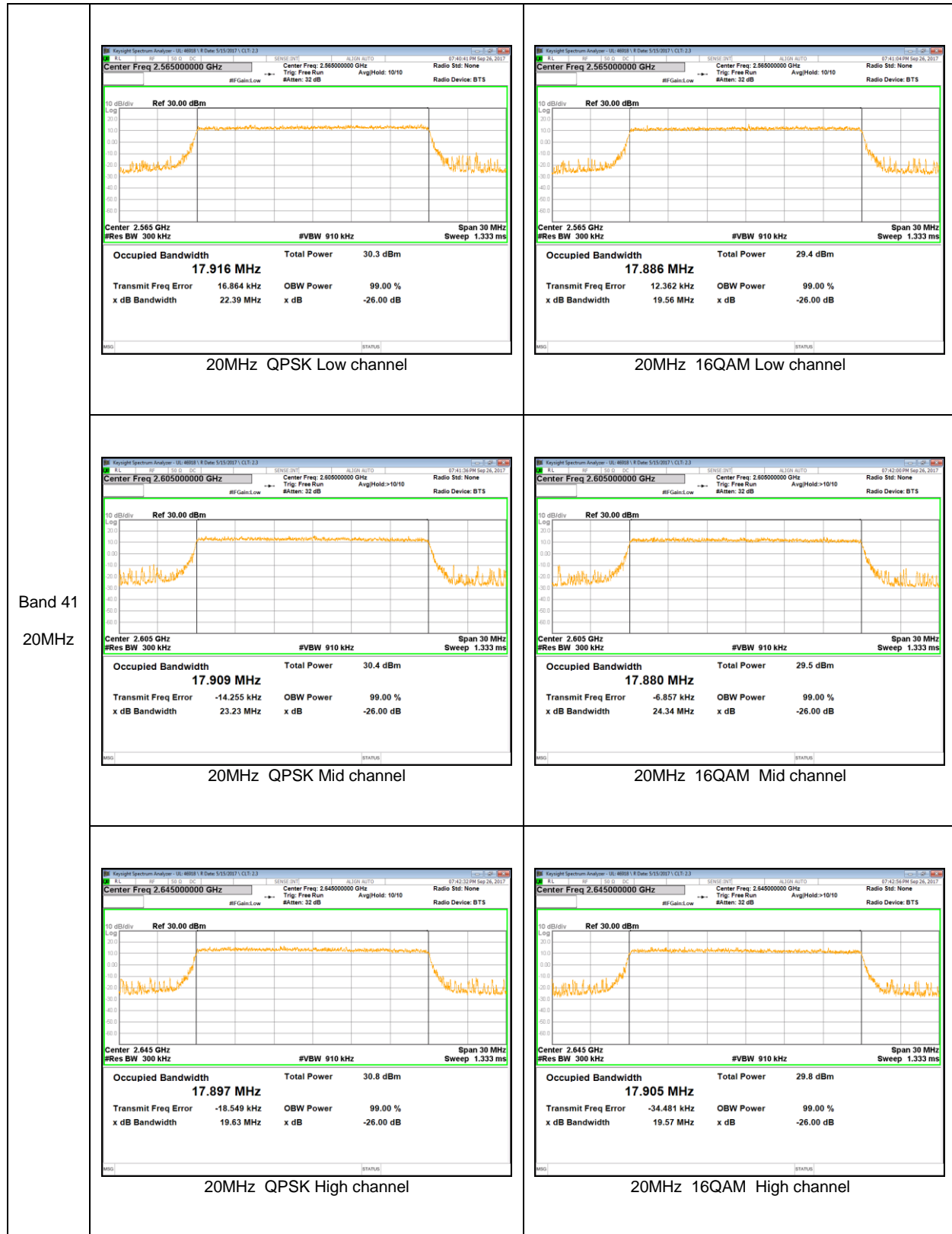
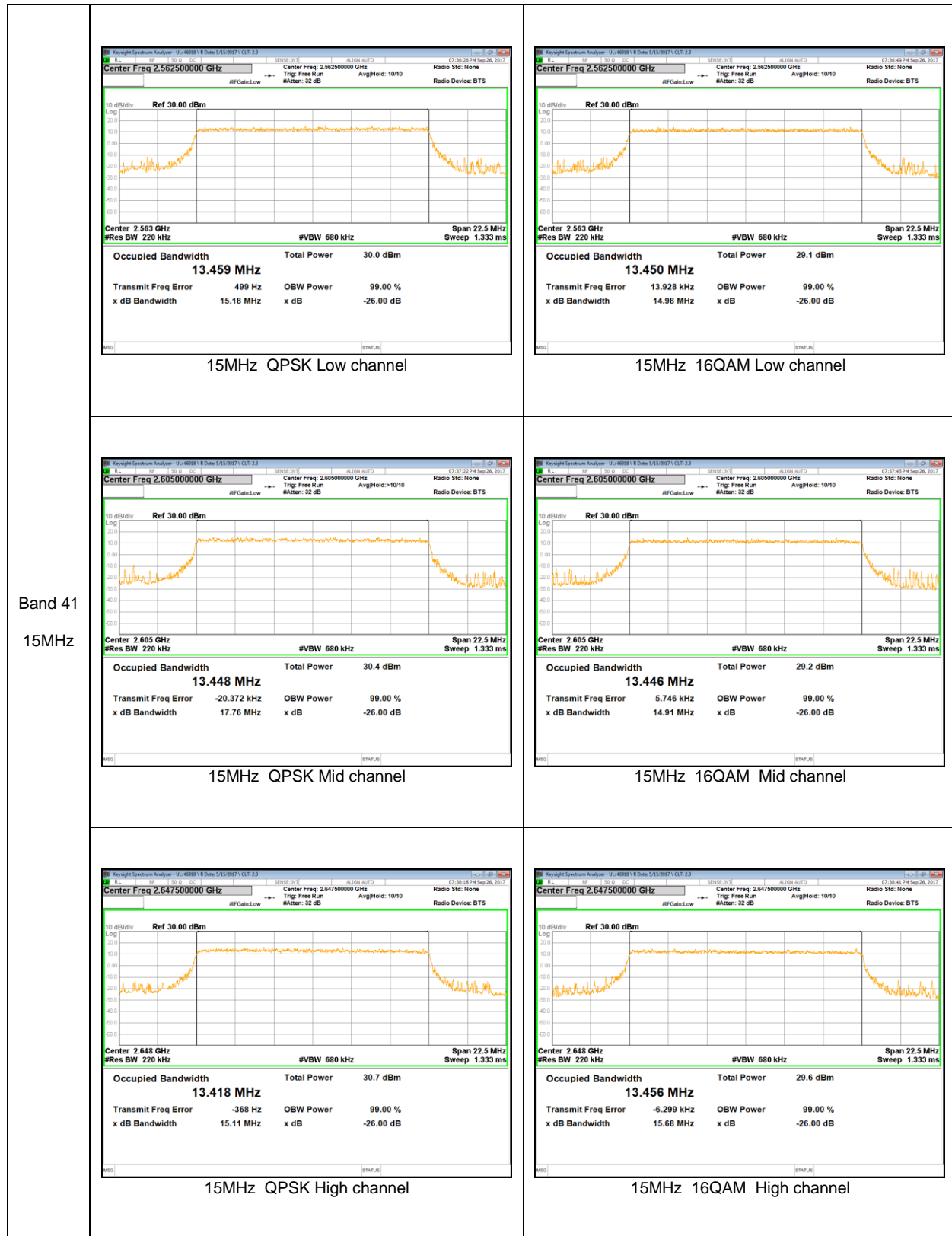
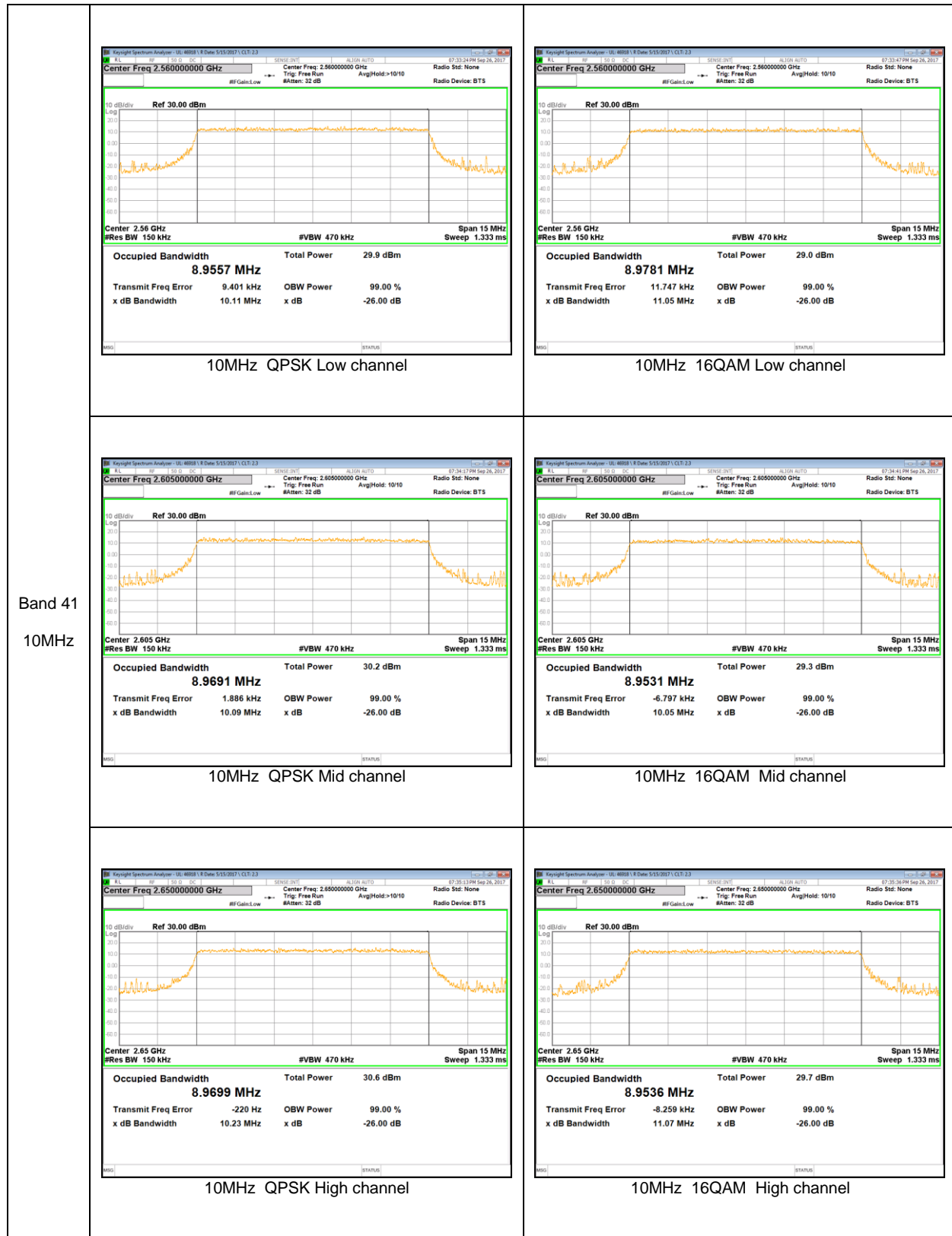
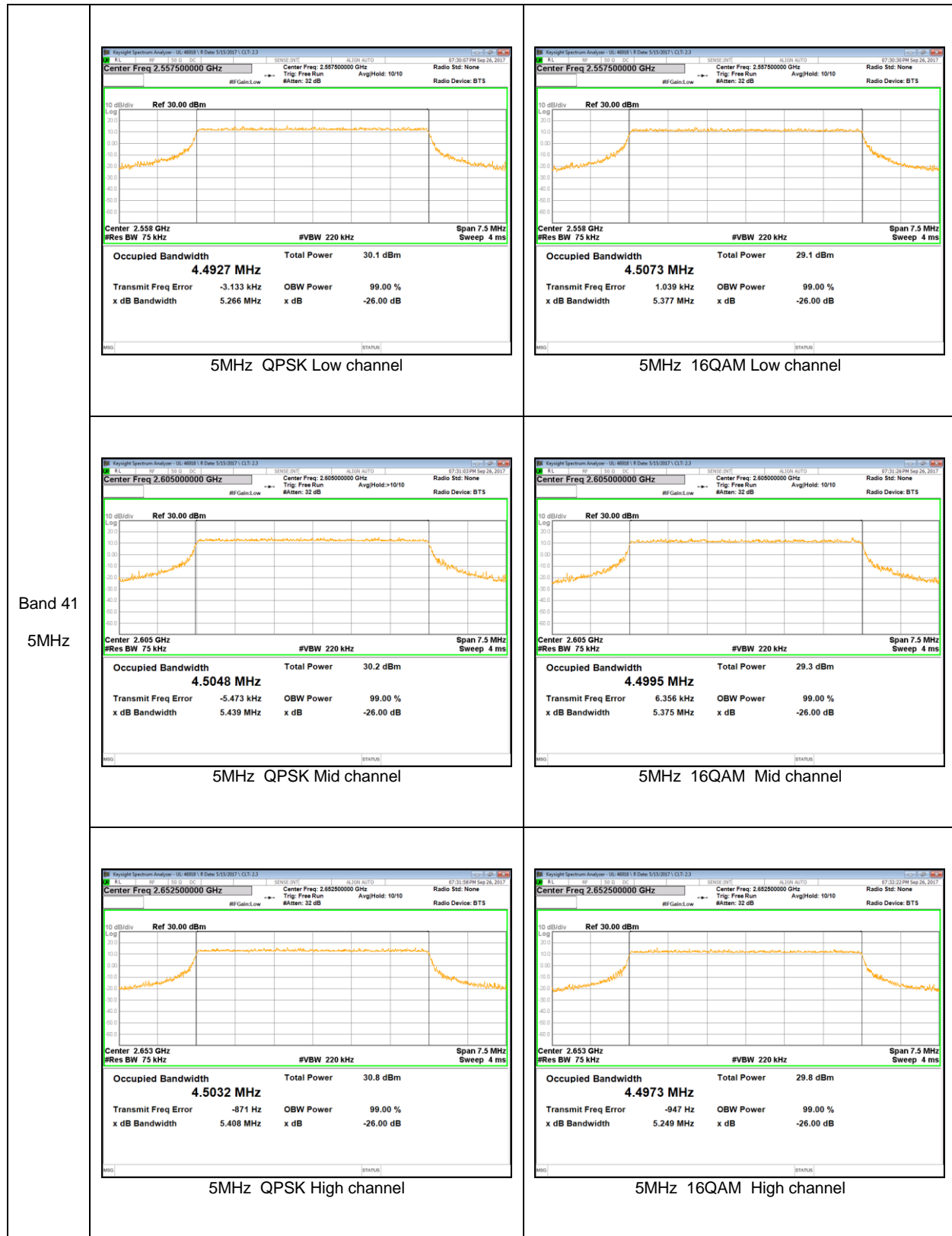


LTE Band 41









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.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02

The transmitter output was connected to a CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

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 $\geq 2 \times$ Span/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 $\geq 2 \times$ Span/RBW;
- g) Trace mode = Average (100);

NOTE

LTE Band 41 - Duty cycle correction factor(2.248dB) already applied on the plot.

RESULTS

GSM

Band	Mode	Side	f [MHz]	Level [dBm]	Limit [dBm]
GSM850	GPRS	Lower	823.982	-15.017	-13.00
		Upper	849.013	-13.918	
	EGPRS	Lower	823.987	-23.644	
		Upper	849.018	-23.216	
GSM1900	GPRS	Lower	1849.982	-15.224	
		Upper	1910.013	-14.148	
	EGPRS	Lower	1849.987	-23.717	
		Upper	1910.013	-22.179	

WCDMA

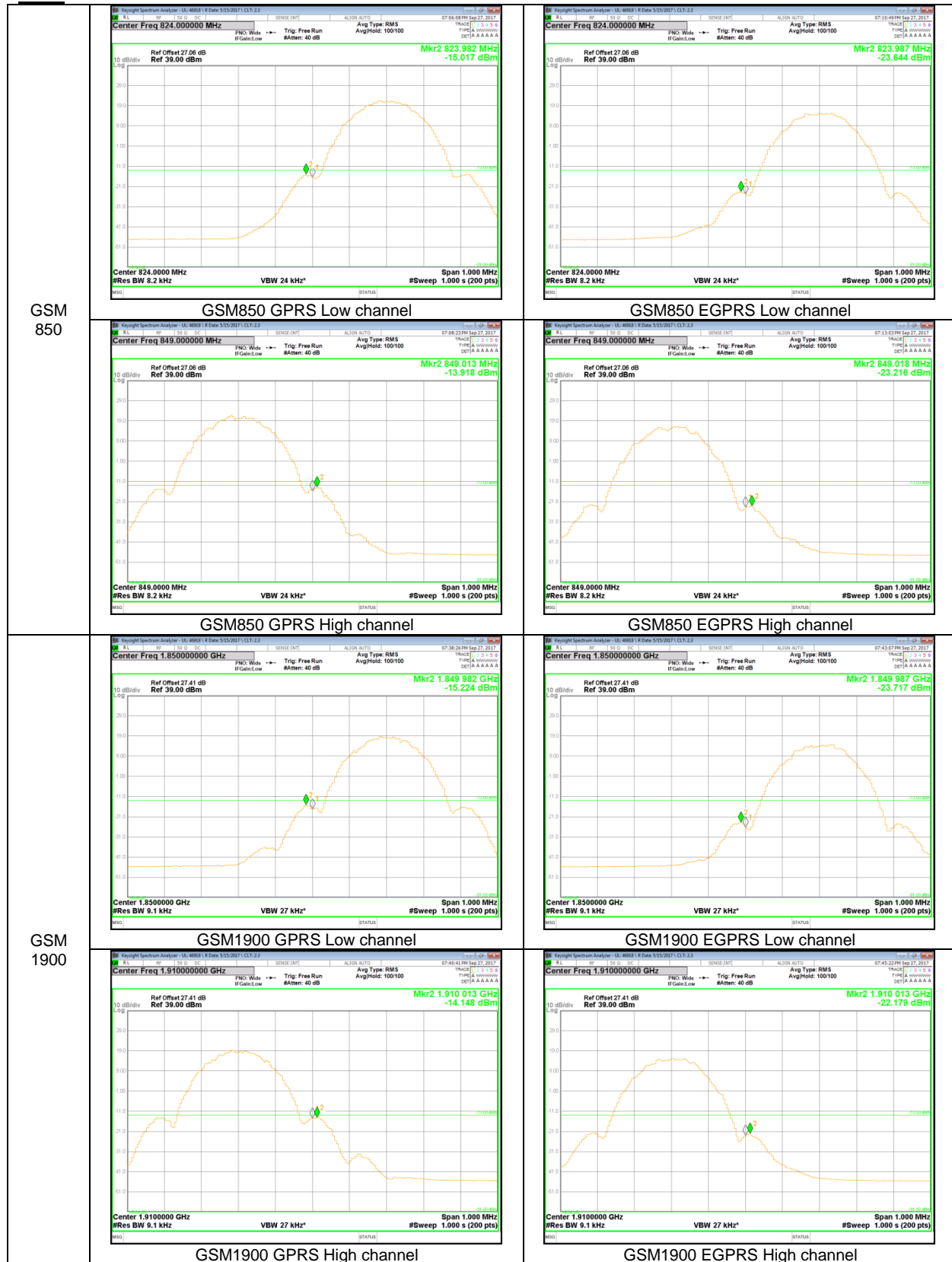
Band	Mode	Side	f [MHz]	Level [dBm]	Limit [dBm]
Band 5	REL99	Lower	824.000	-24.145	-13.00
		Upper	849.000	-22.553	
	HSDPA	Lower	824.000	-27.216	
		Upper	849.000	-27.393	
Band 2	REL99	Lower	1850.000	-23.218	
		Upper	1910.000	-23.728	
	HSDPA	Lower	1850.000	-27.185	
		Upper	1910.000	-28.036	

LTE 5

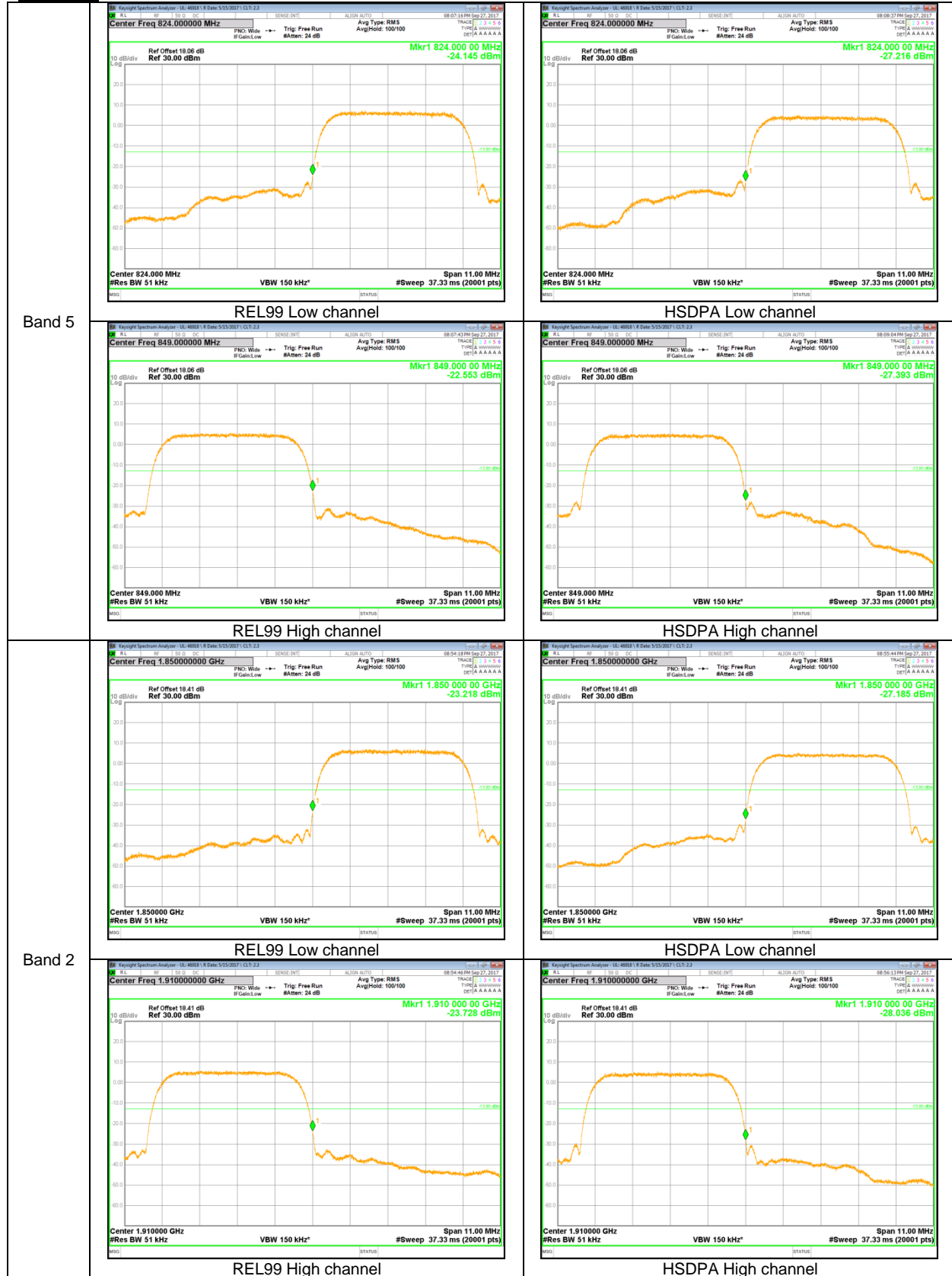
Bandwidth	Mode	Side	RB Status	f [MHz]	Level [dBm]	Limit [dBm]
10 MHz	QPSK	Lower	1RB	824.000	-29.929	-13.00
			FRB	824.000	-24.637	
		Upper	1RB	849.000	-27.214	
			FRB	849.000	-30.383	
	16QAM	Lower	1RB	824.000	-33.505	
			FRB	824.000	-26.799	
		Upper	1RB	849.000	-30.606	
			FRB	849.000	-28.696	
5 MHz	QPSK	Lower	1RB	824.000	-21.251	
			FRB	824.000	-22.092	
		Upper	1RB	849.000	-22.154	
			FRB	849.000	-28.615	
	16QAM	Lower	1RB	824.000	-21.719	
			FRB	824.000	-23.442	
		Upper	1RB	849.000	-21.083	
			FRB	849.000	-25.838	
3 MHz	QPSK	Lower	1RB	824.000	-18.883	
			FRB	824.000	-23.060	
		Upper	1RB	849.000	-17.270	
			FRB	849.000	-23.219	
	16QAM	Lower	1RB	824.000	-20.751	
			FRB	824.000	-23.771	
		Upper	1RB	849.000	-18.124	
			FRB	849.000	-24.973	
1.4 MHz	QPSK	Lower	1RB	824.000	-23.225	
			FRB	824.000	-23.668	
		Upper	1RB	849.000	-22.359	
			FRB	849.000	-22.597	
	16QAM	Lower	1RB	824.000	-24.477	
			FRB	824.000	-23.493	
		Upper	1RB	849.000	-22.085	
			FRB	849.000	-25.119	

9.2.1. BAND EDGE PLOTS

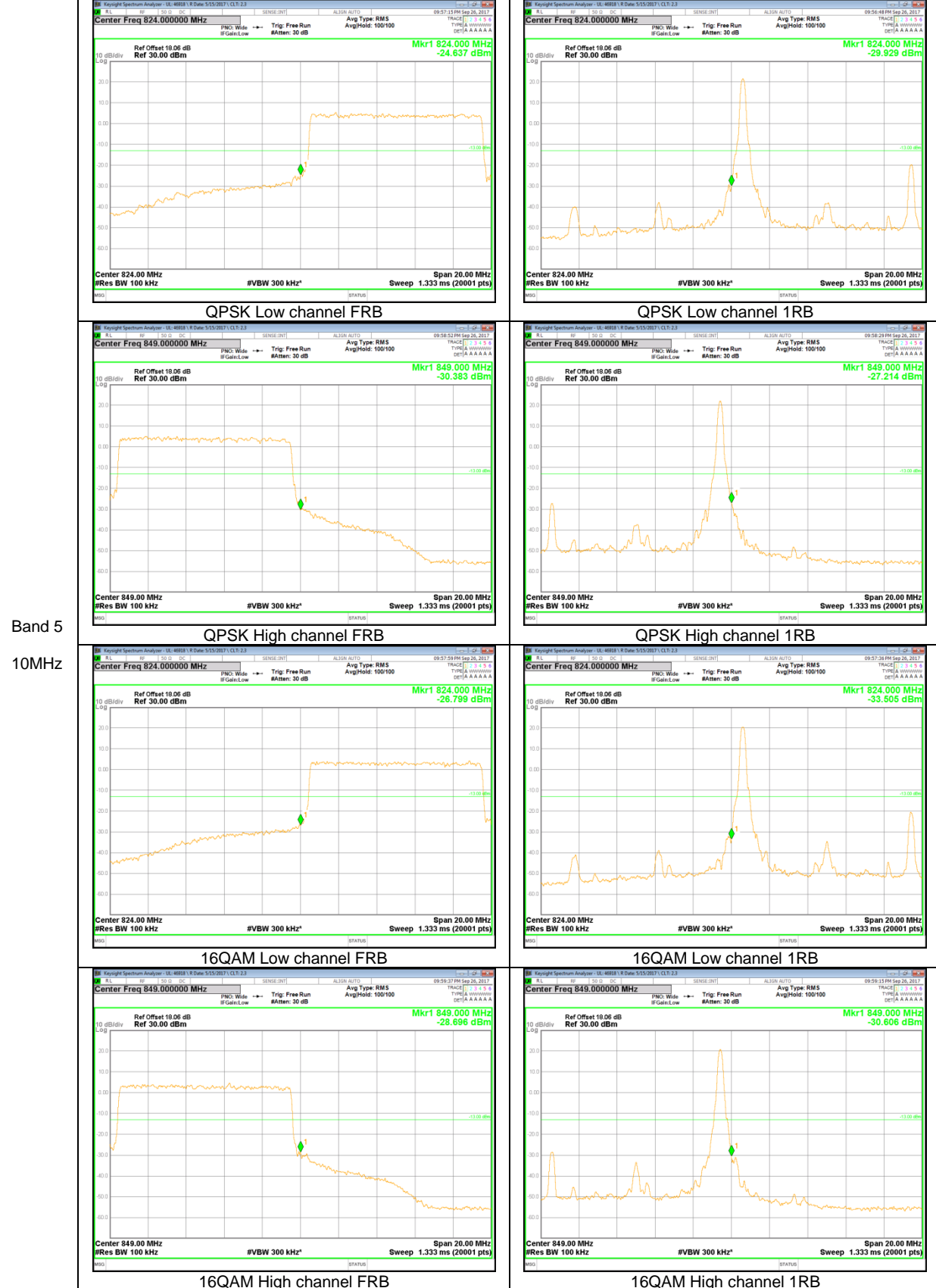
GSM



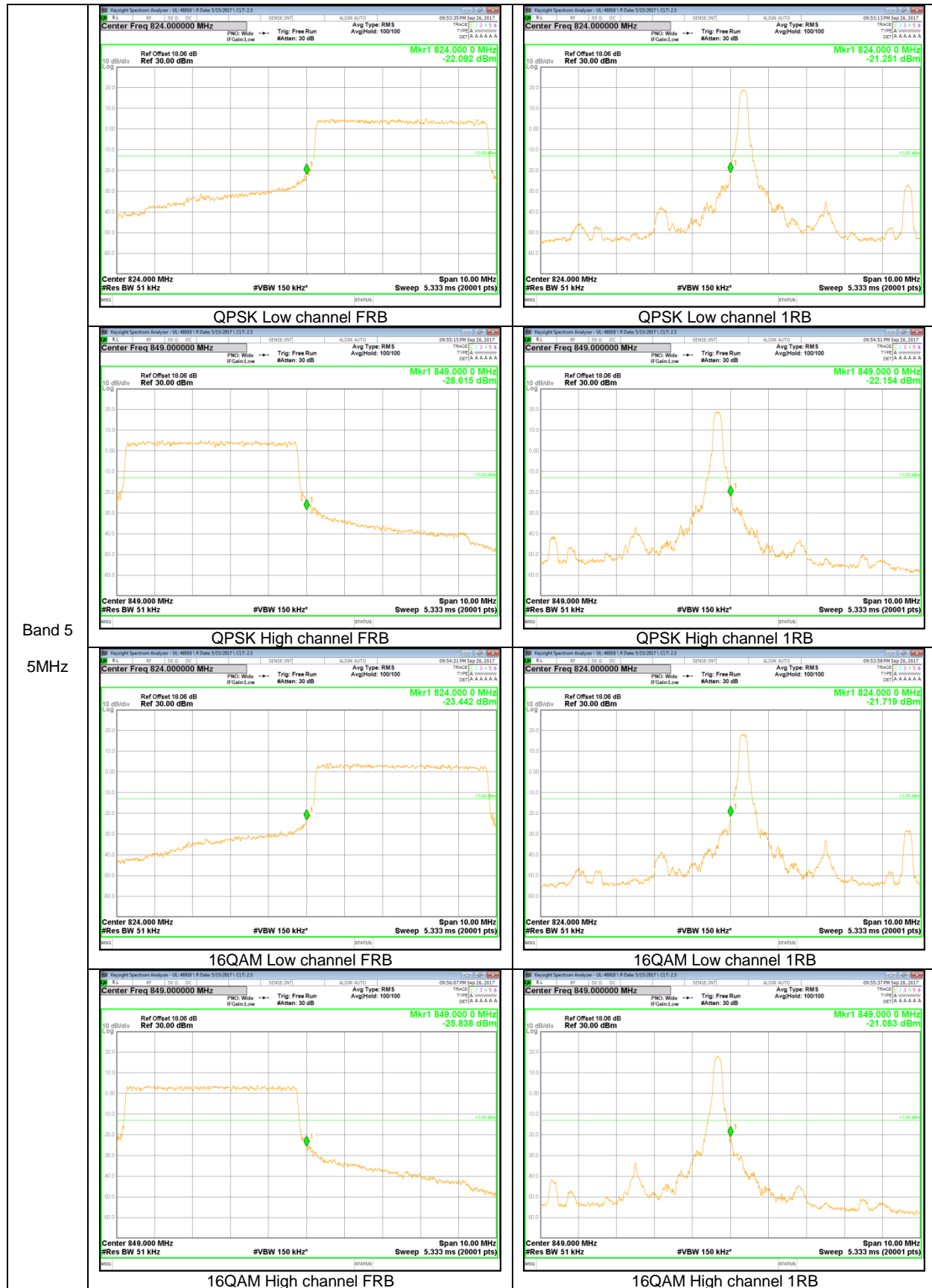
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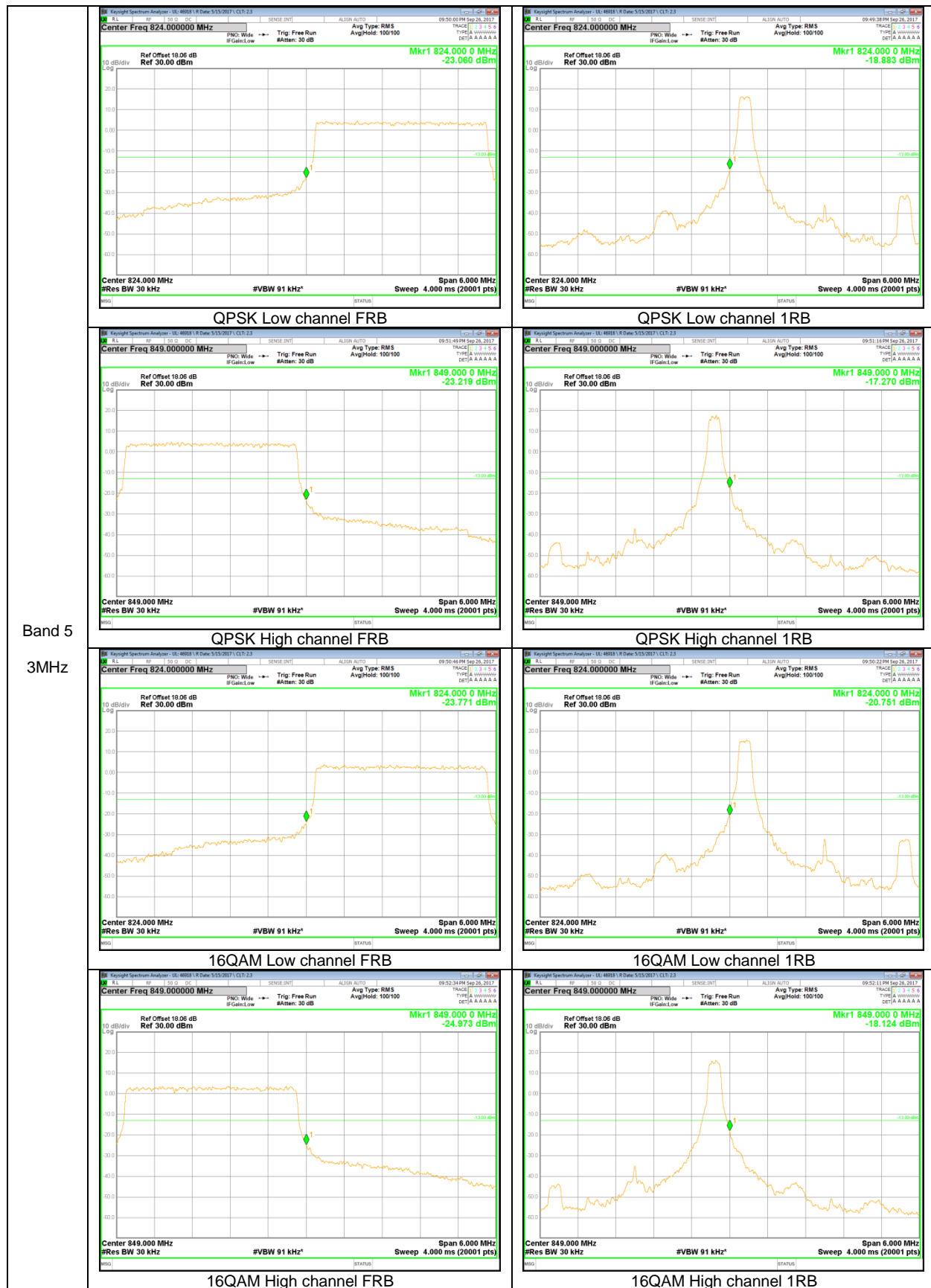


LTE Band 5

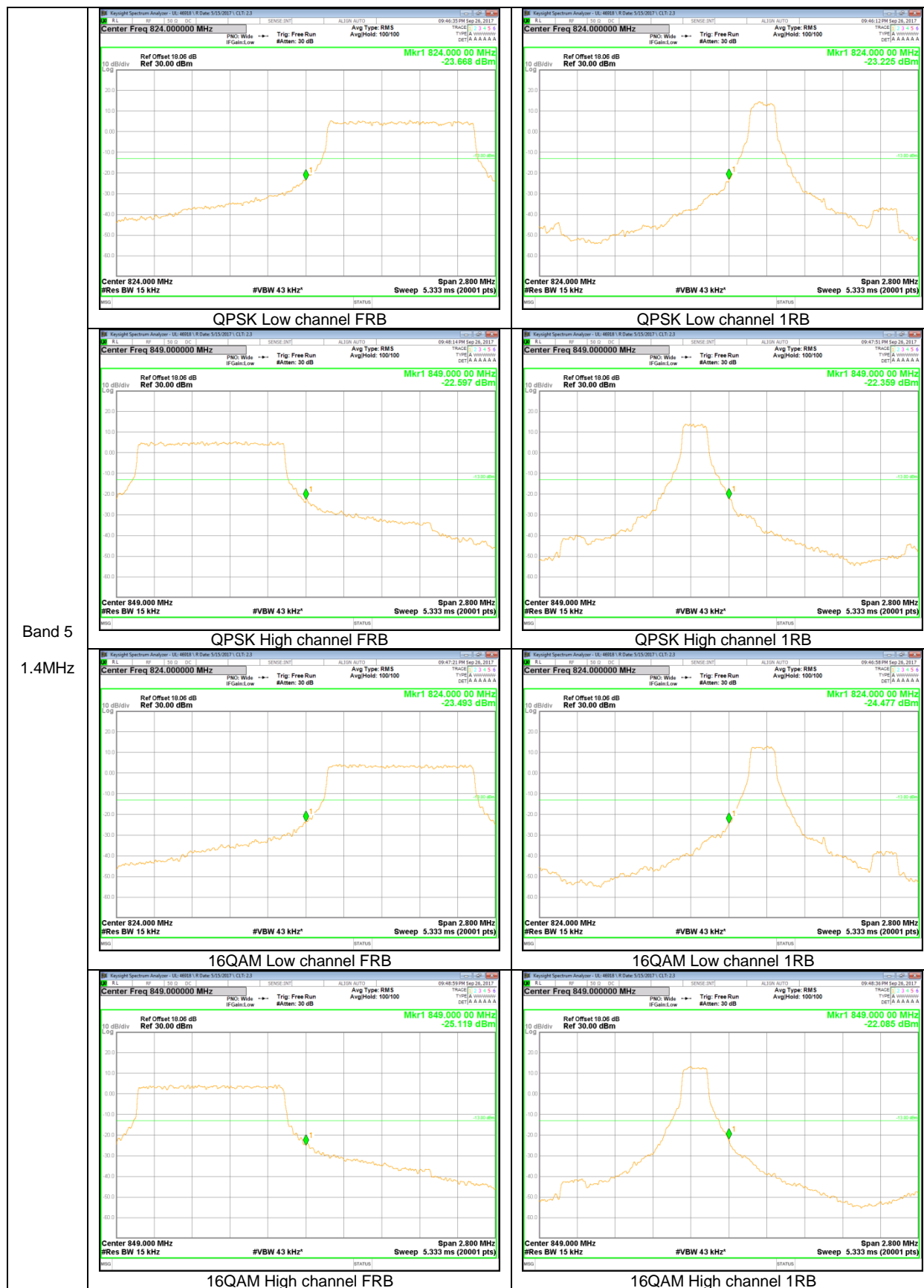


Band 5
10MHz



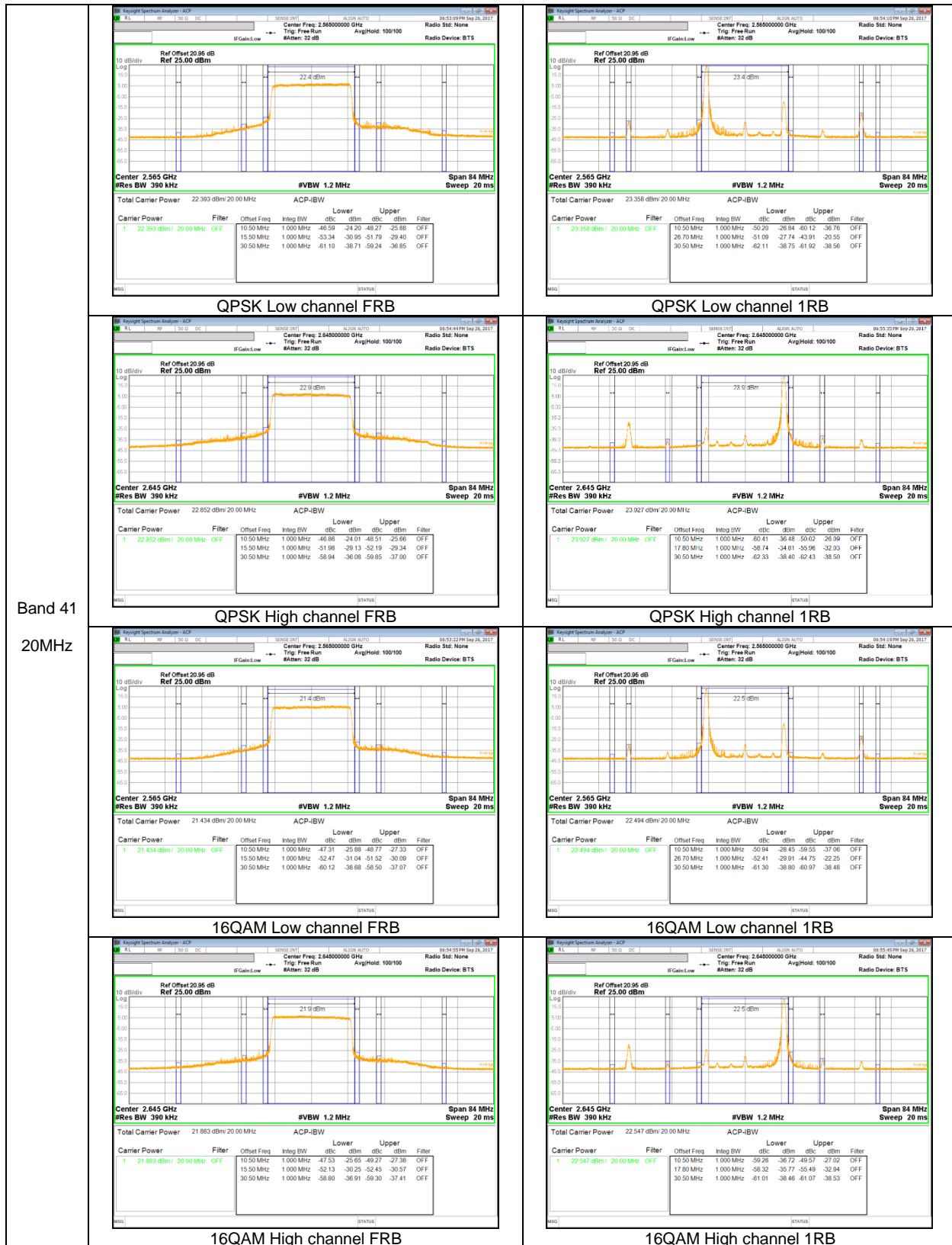


Band 5
 3MHz



9.2.2. EMISSION MASK PLOTS

LTE Band 41



Band 41
20MHz