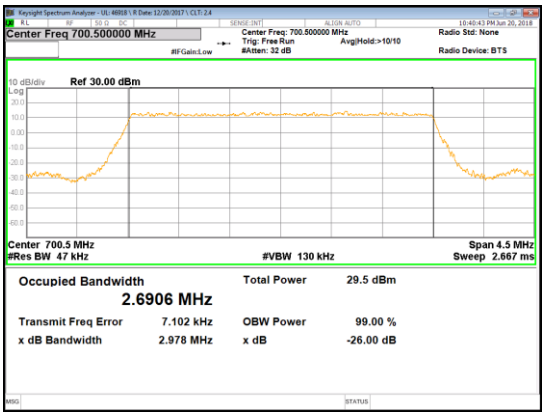
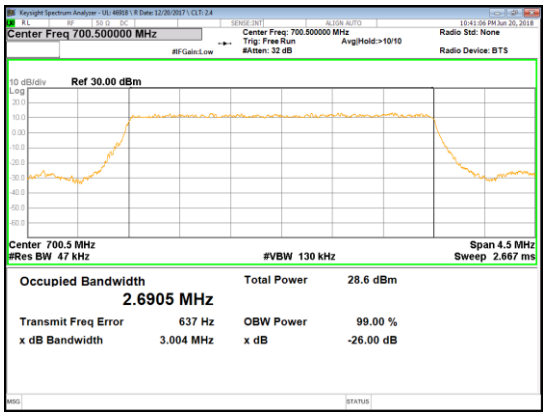
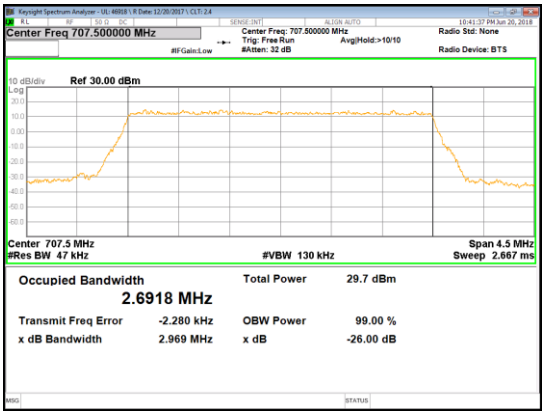
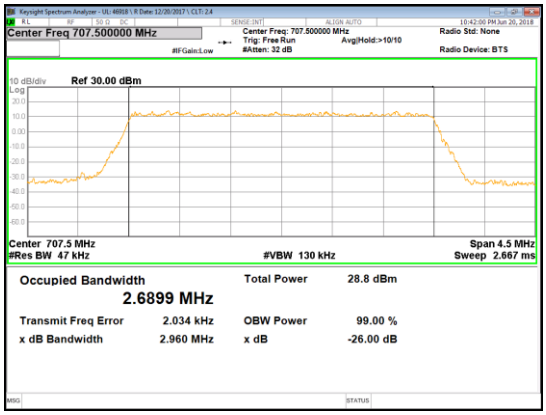
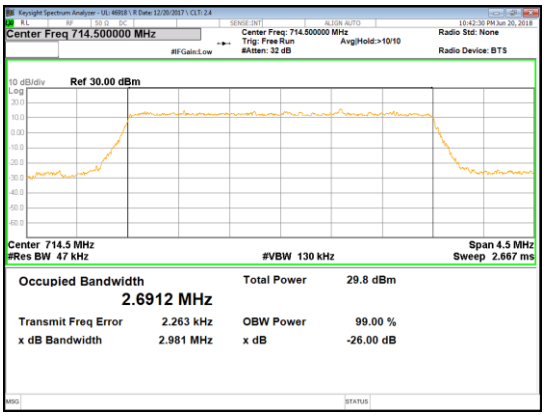
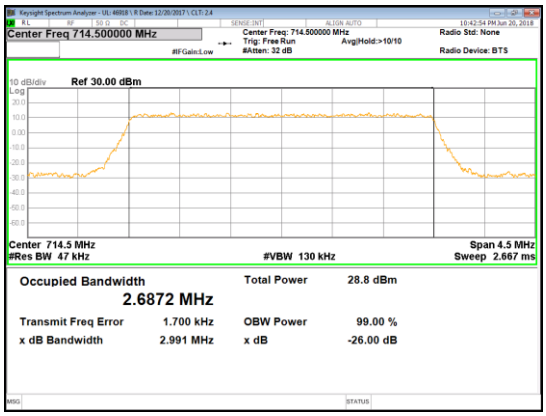
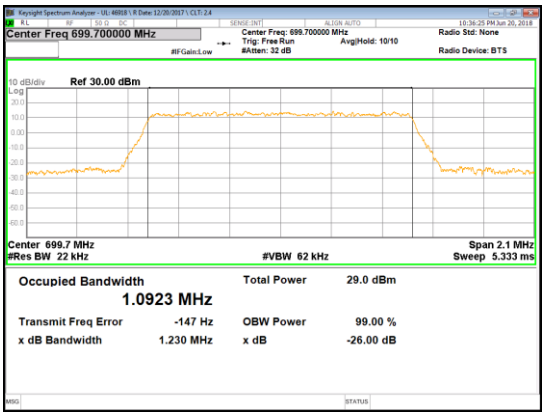
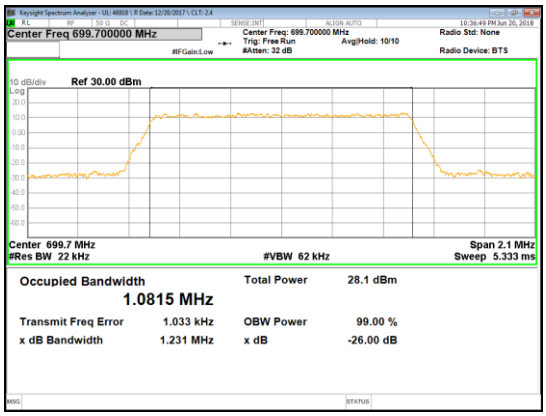
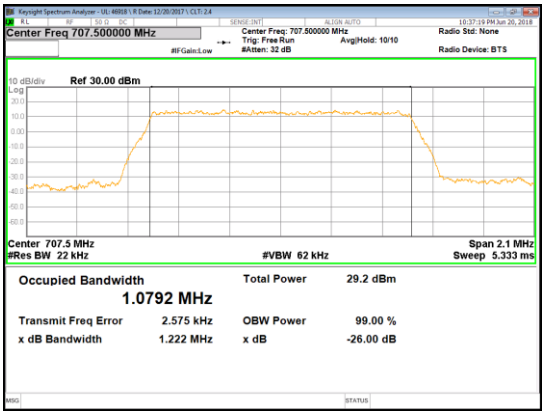
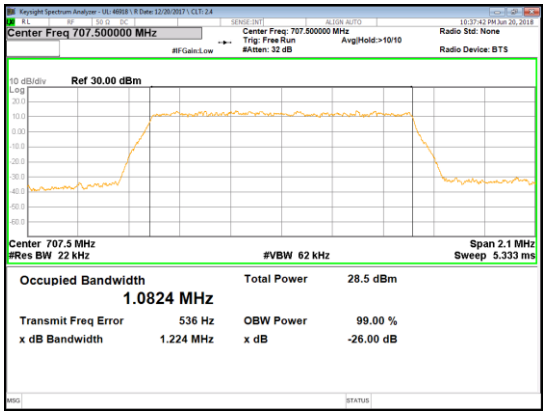
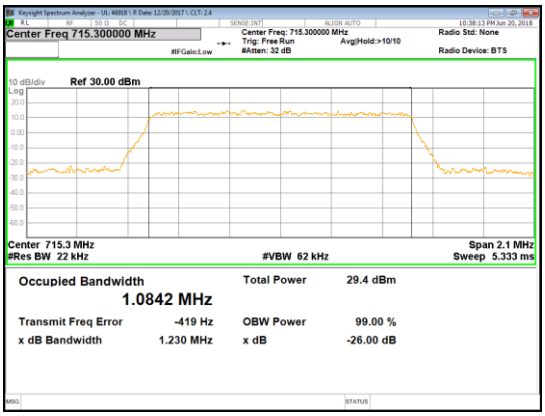
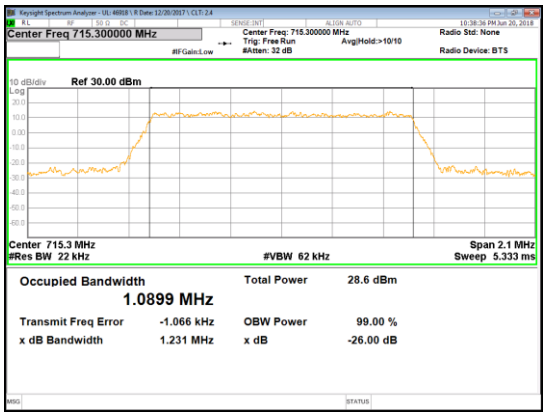
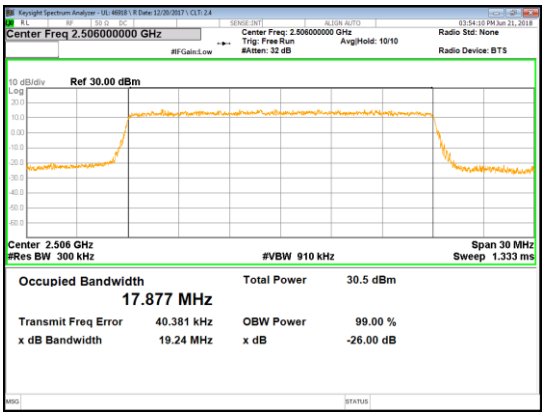
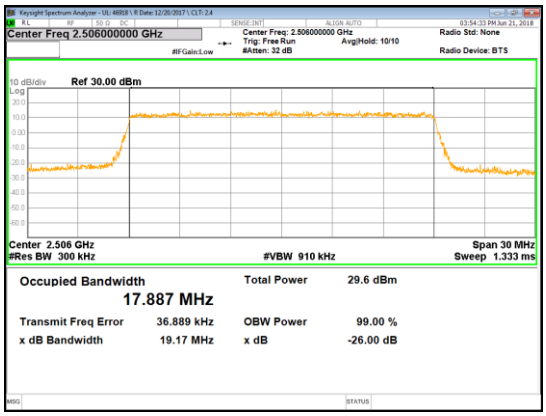
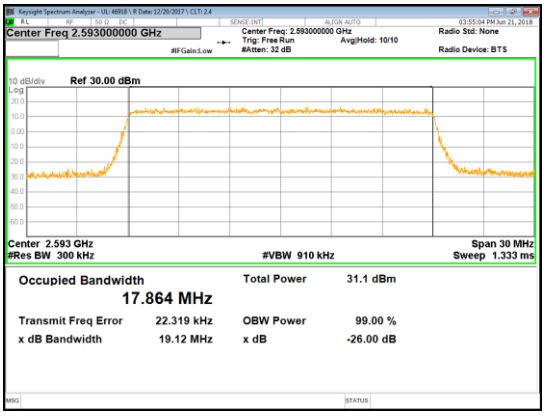
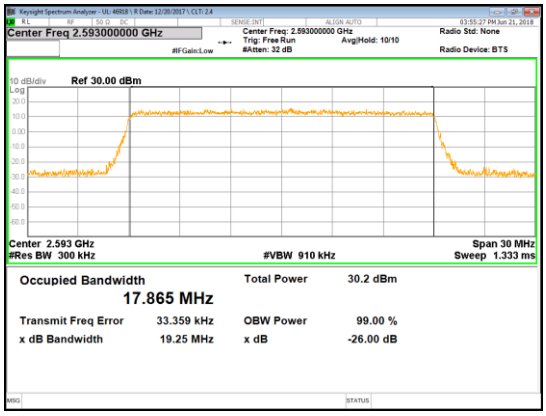
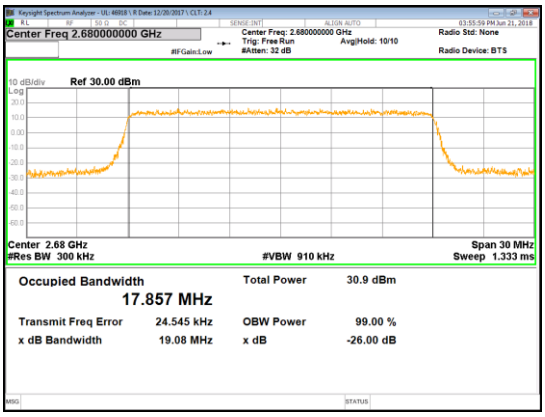
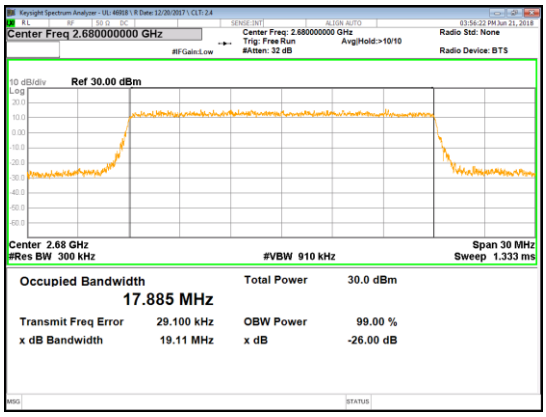
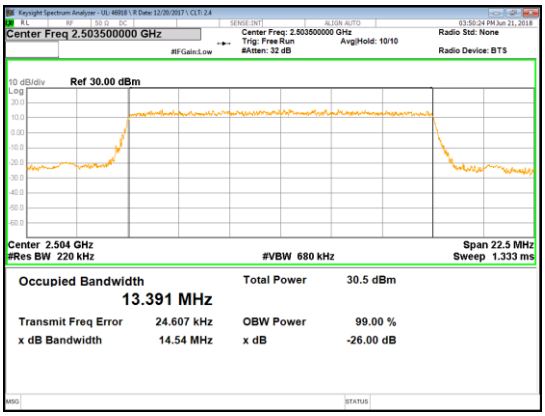
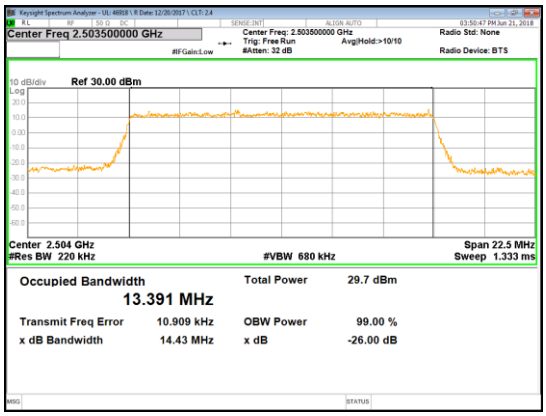
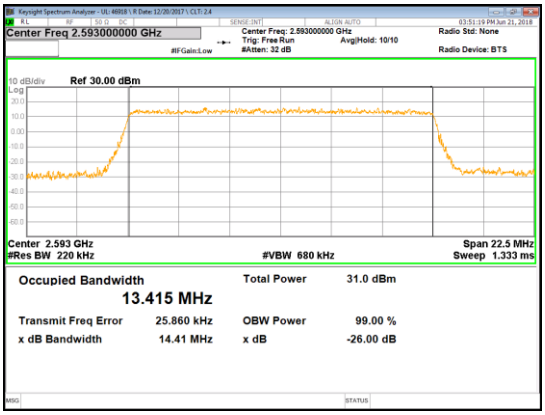
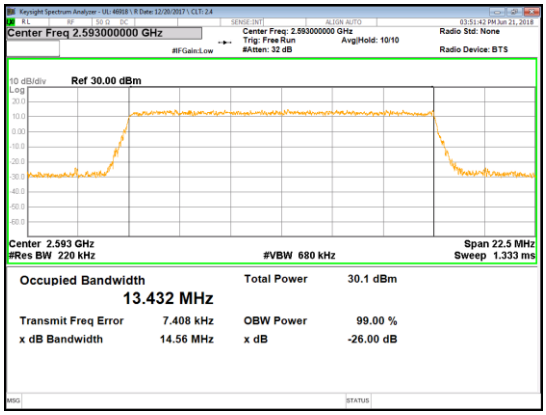
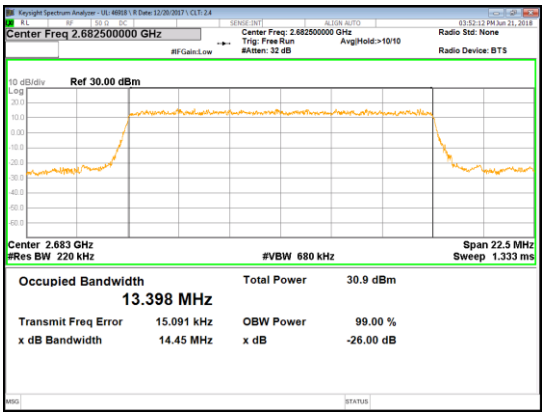
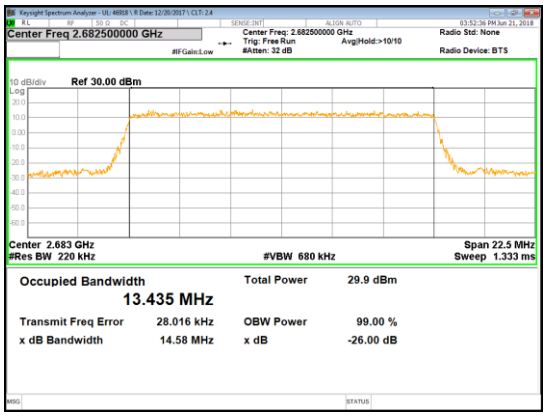
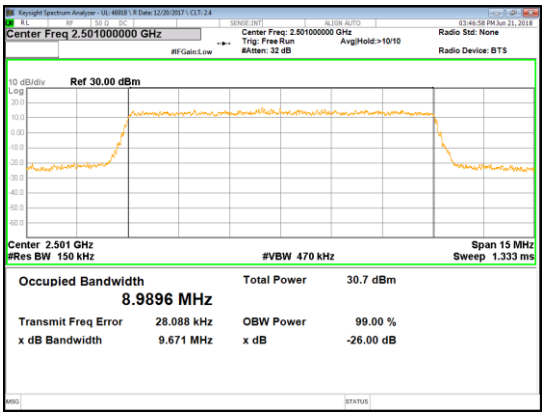
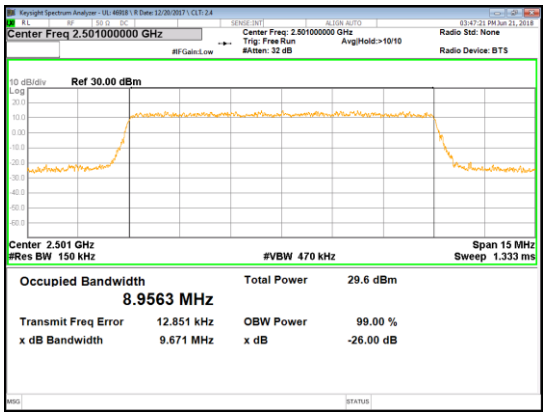
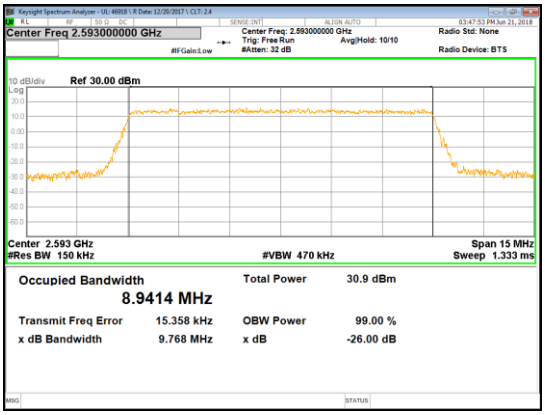
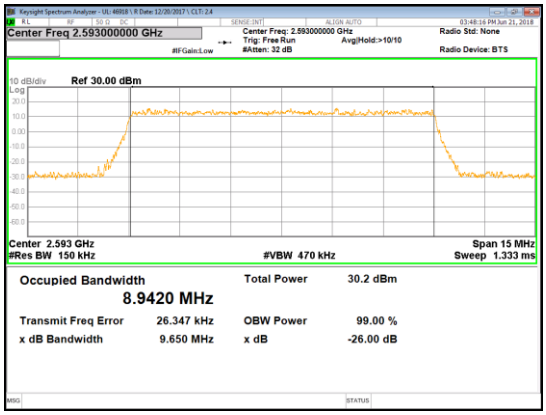
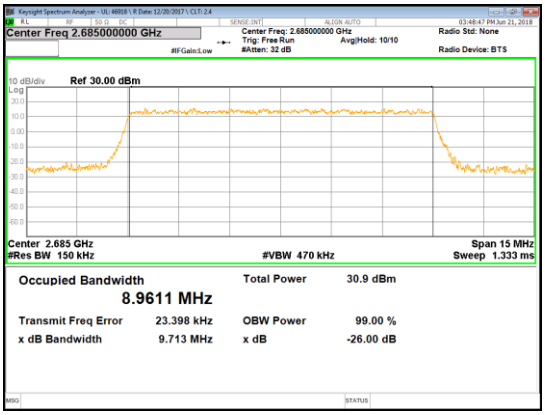
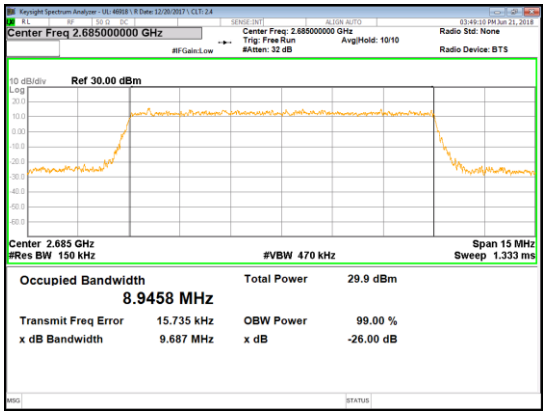
Band 12 3MHz	 3MHz QPSK Low channel	 3MHz 16QAM Low channel
	 3MHz QPSK Mid channel	 3MHz 16QAM Mid channel
	 3MHz QPSK High channel	 3MHz 16QAM High channel

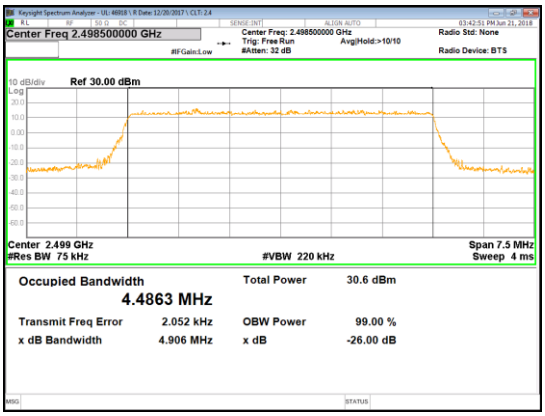
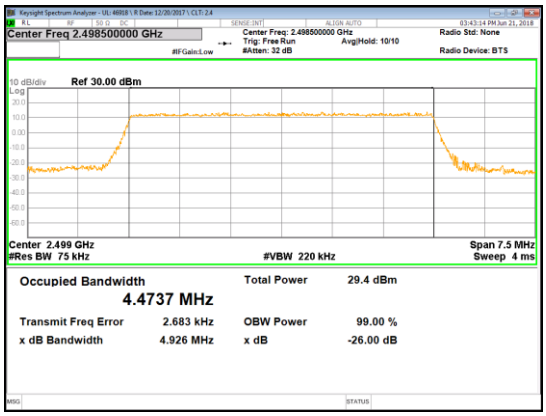
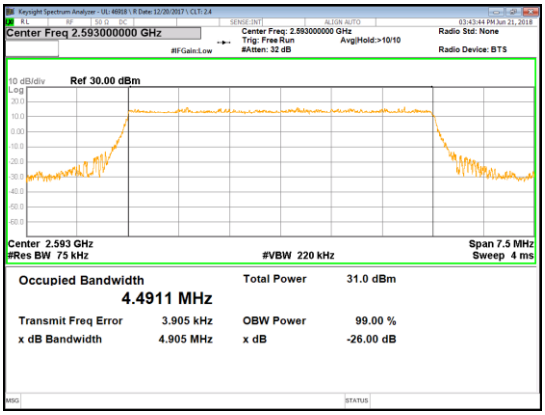
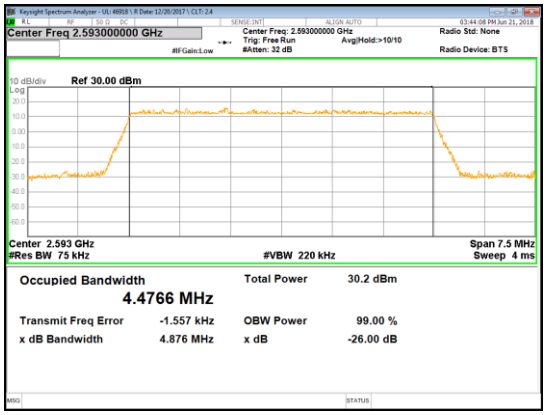
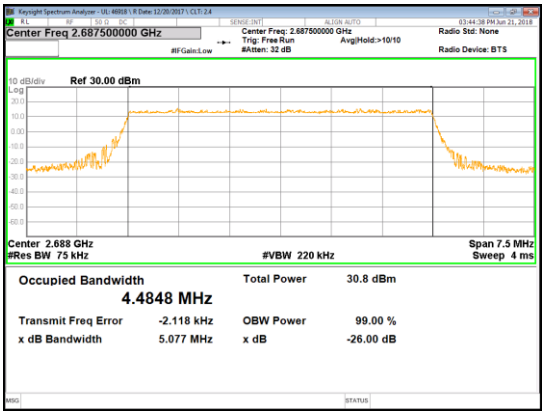
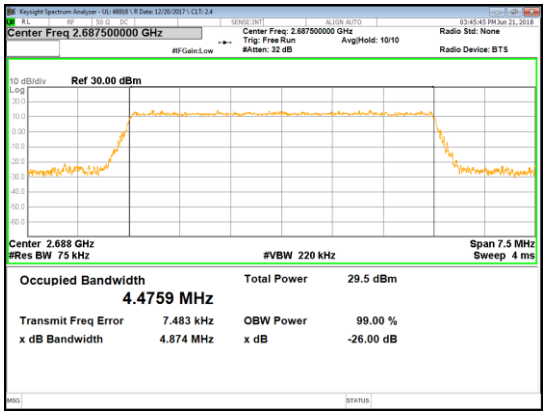
	 1.4MHz QPSK Low channel	 1.4MHz 16QAM Low channel
Band 12 1.4MHz	 1.4MHz QPSK Mid channel	 1.4MHz 16QAM Mid channel
	 1.4MHz QPSK High channel	 1.4MHz 16QAM High channel

LTE Band 41

Band 41 20MHz	 20MHz QPSK Low channel	 20MHz 16QAM Low channel
	 20MHz QPSK Mid channel	 20MHz 16QAM Mid channel
	 20MHz QPSK High channel	 20MHz 16QAM High channel

Band 41 15MHz	 15MHz QPSK Low channel	 15MHz 16QAM Low channel
	 15MHz QPSK Mid channel	 15MHz 16QAM Mid channel
	 15MHz QPSK High channel	 15MHz 16QAM High channel

Band 41 10MHz	 10MHz QPSK Low channel	 10MHz 16QAM Low channel
	 10MHz QPSK Mid channel	 10MHz 16QAM Mid channel
	 10MHz QPSK High channel	 10MHz 16QAM High channel

Band 41 5MHz	 5MHz QPSK Low channel	 5MHz 16QAM Low channel
	 5MHz QPSK Mid channel	 5MHz 16QAM Mid channel
	 5MHz QPSK High channel	 5MHz 16QAM High channel

9.2. BAND EDGE EMISSIONS

RULE PART(S)

FCC: §22.359, §24.238, §27. 53 (g) / (m)

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 that 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.

(g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v03r01
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.

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_22/24/27
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

GSM

a) Set the RBW = 1 ~ 5% of OBW(GSM850 – 8.2KHz, GSM1900 – 9.1KHz)

b) Set VBW ≥ 3 × RBW;

c) Set span ≥ 1.5 times the OBW;

d) Sweep time = 1S ;

e) Detector = RMS;

f) Ensure that the number of measurement points ≥ 2*Span/RBW;

g) Trace mode = Average(100);

h) Add duty cycle correction factor (9dB)

WCDMA/LTE

a) Set the RBW = 1 ~ 1.5 % of OBW(Typically limited to a minimum RBW of 1% of the OBW)

b) Set VBW ≥ 3 × RBW;

c) Set span ≥ 1.5 times the OBW;

d) Sweep time = Auto;

e) Detector = RMS;

f) Ensure that the number of measurement points ≥ 2*Span/RBW;

g) Trace mode = Average (100);

NOTE1

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]
GSM850	GPRS	Lower	823.982	-16.261	-13.00
		Upper	849.023	-15.344	
	EGPRS	Lower	823.977	-24.839	
		Upper	849.038	-25.635	
GSM1900	GPRS	Lower	1849.977	-18.686	
		Upper	1910.018	-17.826	
	EGPRS	Lower	1849.987	-25.734	
		Upper	1910.008	-24.652	

WCDMA

Band	Mode	Side	f [MHz]	Level [dBm]	Limit [dBm]
Band 5	REL99	Lower	824.000	-27.445	-13.00
		Upper	849.000	-28.861	
	HSDPA	Lower	824.000	-29.314	
		Upper	849.000	-30.375	
Band 2	REL99	Lower	1850.000	-29.022	
		Upper	1910.000	-28.307	
	HSDPA	Lower	1850.000	-31.806	
		Upper	1910.000	-30.449	

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.

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_22/24/27
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

LTE 5

Bandwidth	Mode	Side	RB Status	f [MHz]	Level [dBm]	Limit [dBm]
10 MHz	QPSK	Lower	1RB	824.000	-36.028	-13.00
			FRB	849.000	-34.098	
		Upper	1RB	824.000	-32.096	
			FRB	849.000	-34.475	
	16QAM	Lower	1RB	824.000	-36.709	
			FRB	849.000	-35.171	
		Upper	1RB	824.000	-35.901	
			FRB	849.000	-39.674	
5 MHz	QPSK	Lower	1RB	824.000	-24.531	
			FRB	849.000	-30.984	
		Upper	1RB	824.000	-24.364	
			FRB	849.000	-29.916	
	16QAM	Lower	1RB	824.000	-25.316	
			FRB	849.000	-32.380	
		Upper	1RB	824.000	-25.939	
			FRB	849.000	-32.782	
3 MHz	QPSK	Lower	1RB	824.000	-24.048	
			FRB	849.000	-28.092	
		Upper	1RB	824.000	-19.857	
			FRB	849.000	-29.467	
	16QAM	Lower	1RB	824.000	-23.873	
			FRB	849.000	-29.612	
		Upper	1RB	824.000	-21.312	
			FRB	849.000	-31.386	
1.4 MHz	QPSK	Lower	1RB	824.000	-38.562	
			FRB	849.000	-39.887	
		Upper	1RB	824.000	-32.496	
			FRB	849.000	-43.453	
	16QAM	Lower	1RB	824.000	-39.082	
			FRB	849.000	-41.210	
		Upper	1RB	824.000	-34.442	
			FRB	849.000	-44.934	

LTE 12

Bandwidth	Mode	Side	RB Status	f [MHz]	Level [dBm]	Limit [dBm]
10 MHz	QPSK	Lower	1RB	699.000	-39.120	-13.00
			FRB	699.000	-34.906	
		Upper	1RB	716.000	-29.444	
			FRB	716.000	-29.631	
	16QAM	Lower	1RB	699.000	-33.372	
			FRB	699.000	-35.165	
		Upper	1RB	716.000	-33.758	
			FRB	716.000	-32.050	
5 MHz	QPSK	Lower	1RB	699.000	-27.643	
			FRB	699.000	-31.521	
		Upper	1RB	716.000	-22.274	
			FRB	716.000	-32.354	
	16QAM	Lower	1RB	699.000	-27.276	
			FRB	699.000	-34.595	
		Upper	1RB	716.000	-26.023	
			FRB	716.000	-33.296	
3 MHz	QPSK	Lower	1RB	699.000	-21.815	
			FRB	699.000	-28.281	
		Upper	1RB	716.000	-21.764	
			FRB	716.000	-28.074	
	16QAM	Lower	1RB	699.000	-22.950	
			FRB	699.000	-30.195	
		Upper	1RB	716.000	-22.289	
			FRB	716.000	-29.390	
1.4 MHz	QPSK	Lower	1RB	699.000	-37.600	
			FRB	699.000	-39.368	
		Upper	1RB	716.000	-34.794	
			FRB	716.000	-36.271	
	16QAM	Lower	1RB	699.000	-30.407	
			FRB	699.000	-40.970	
		Upper	1RB	716.000	-37.646	
			FRB	716.000	-36.877	

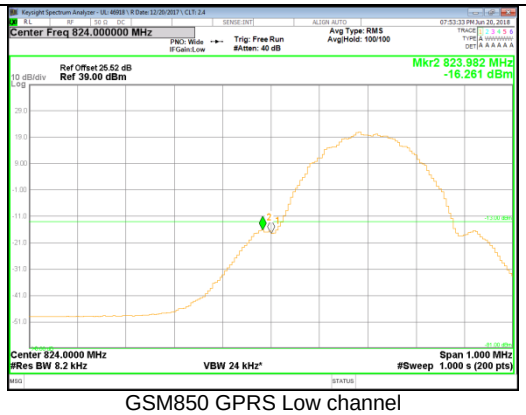
LTE 41

Please refer to Emission Mask Plots.

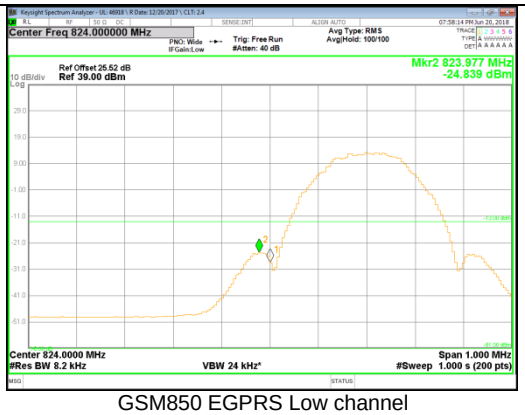
9.2.1. BAND EDGE PLOTS

GSM

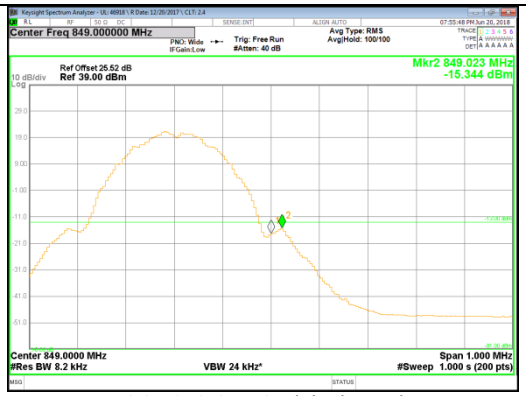
GSM 850



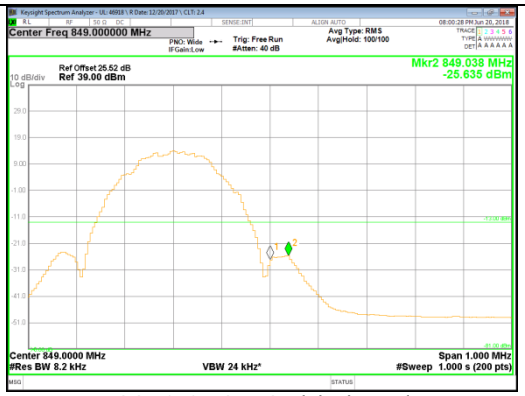
GSM850 GPRS Low channel



GSM850 EGPRS Low channel

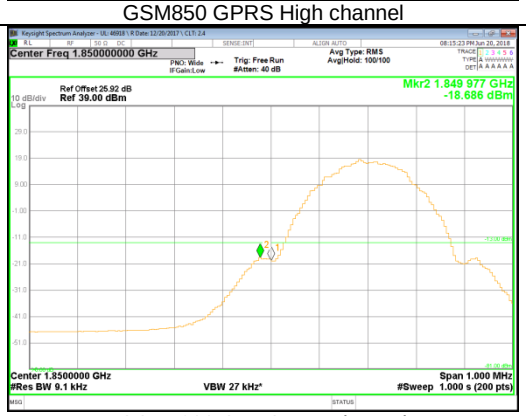


GSM850 GPRS High channel

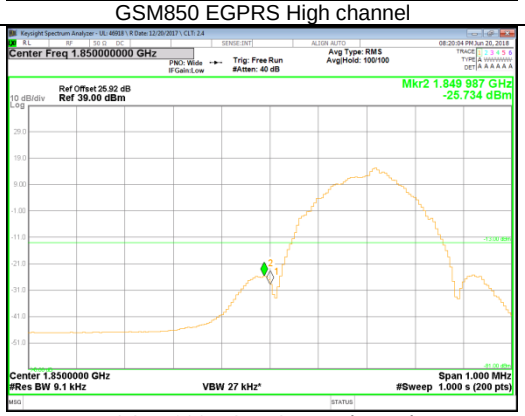


GSM850 EGPRS High channel

GSM 1900



GSM1900 GPRS Low channel



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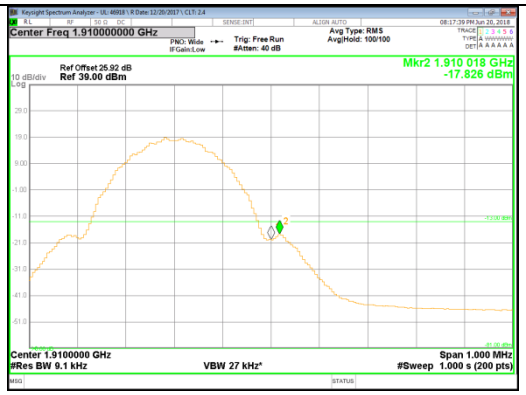
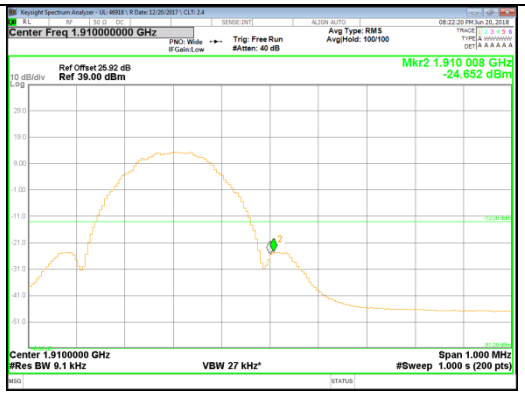
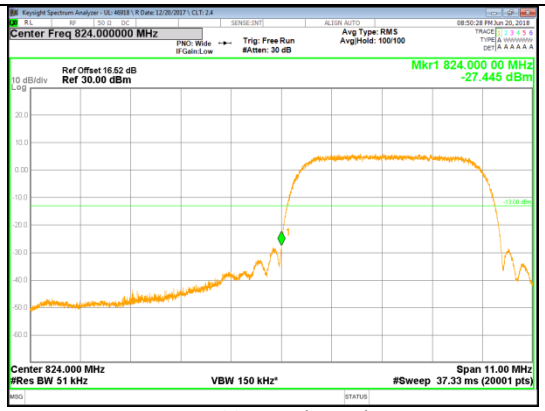
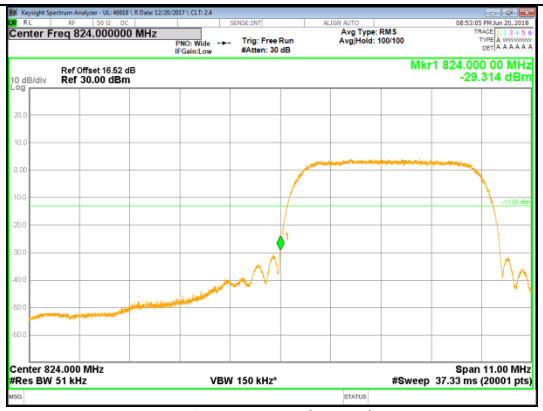
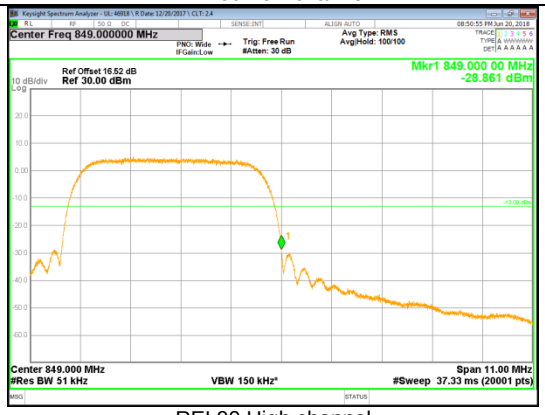
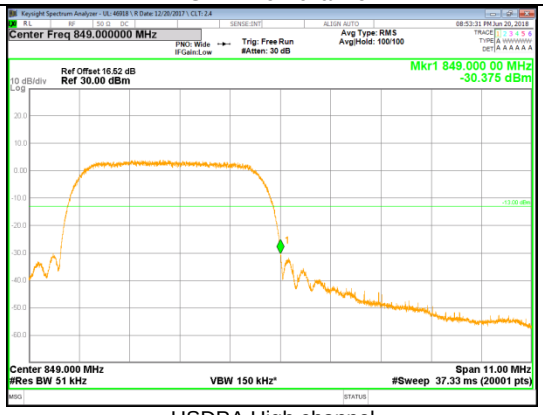
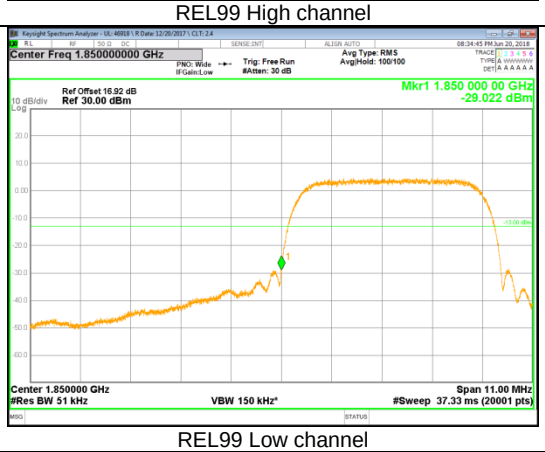
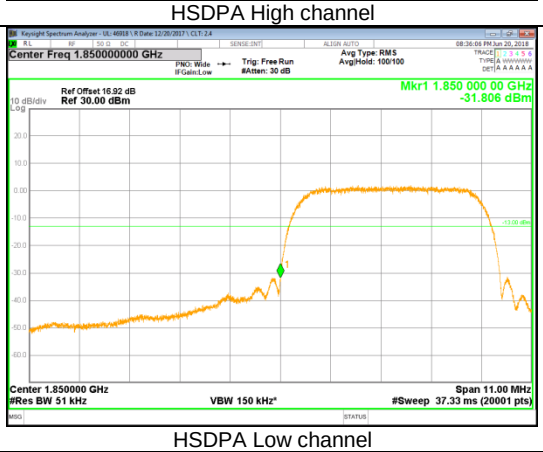
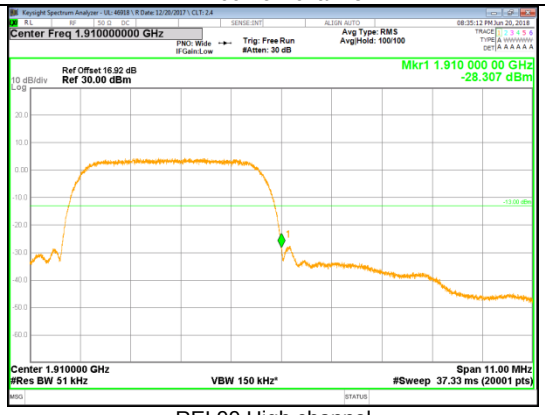
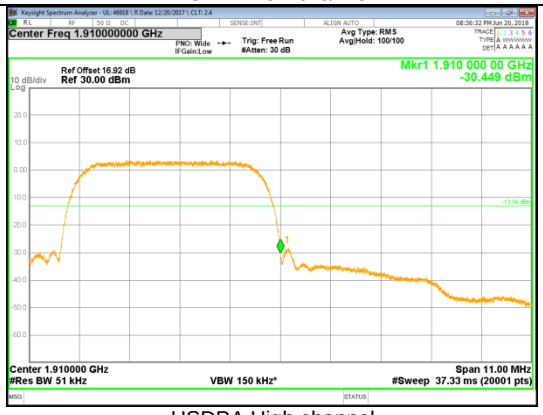


GSM1900 GPRS High channel

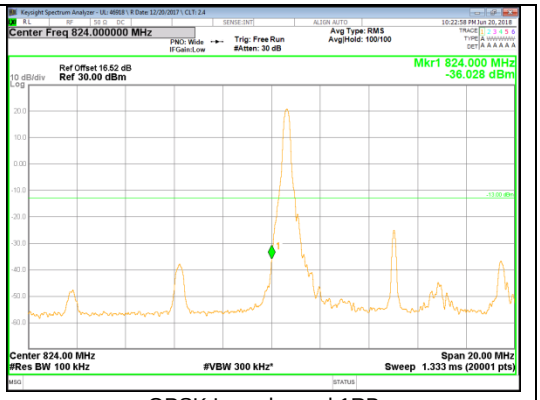
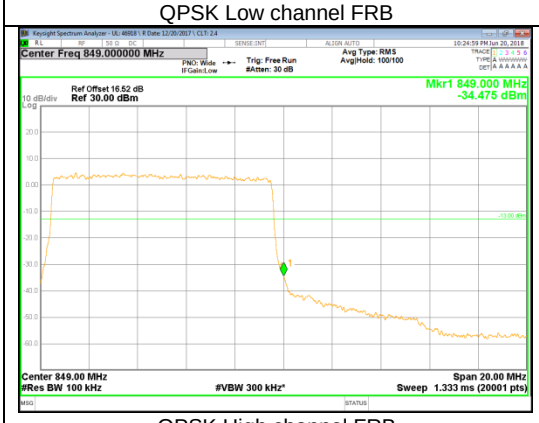
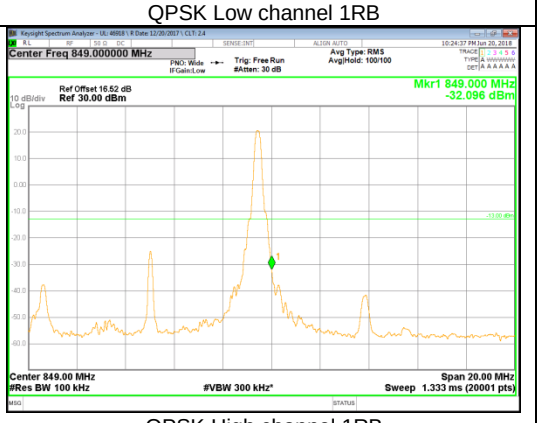
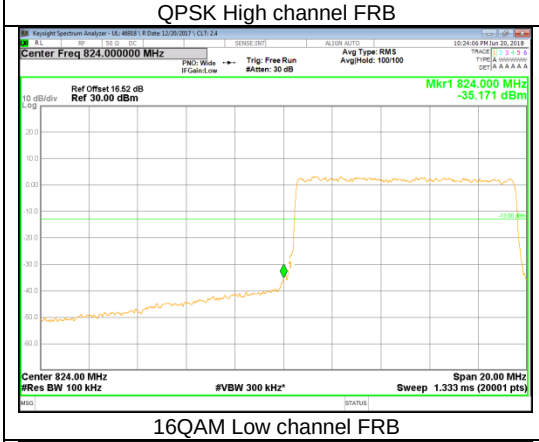
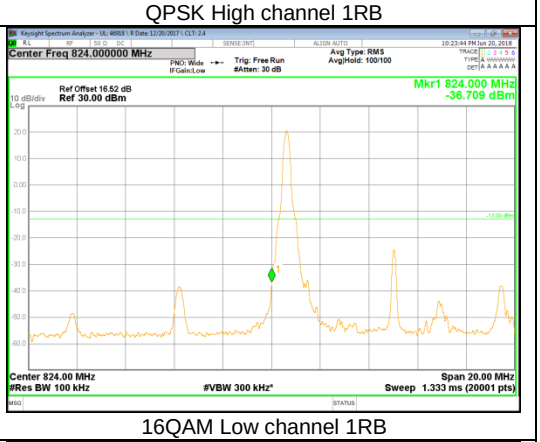
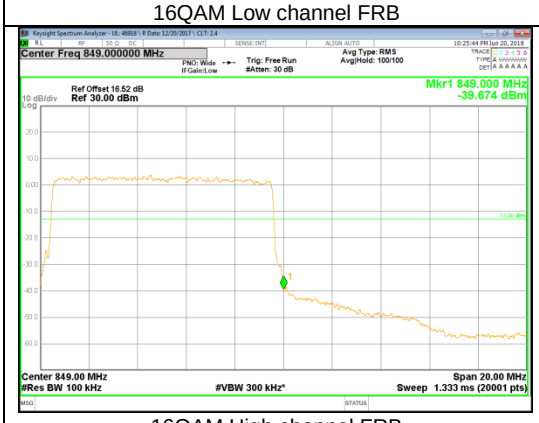
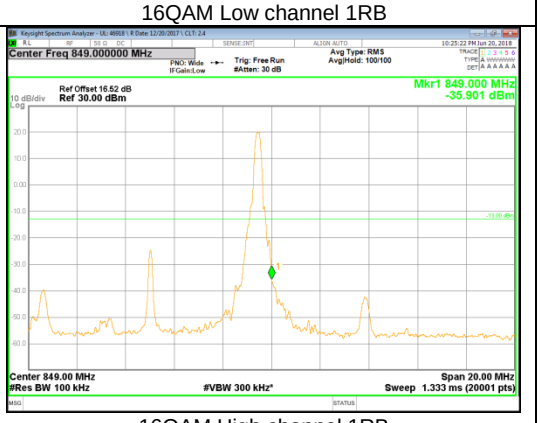


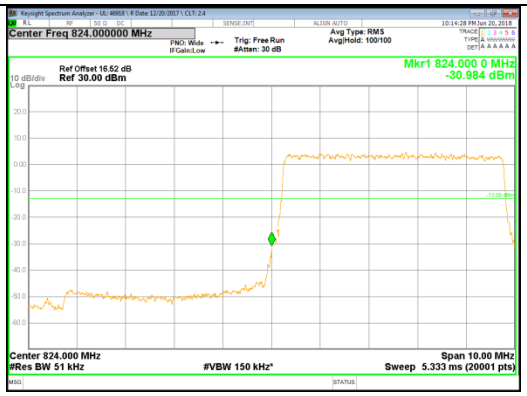
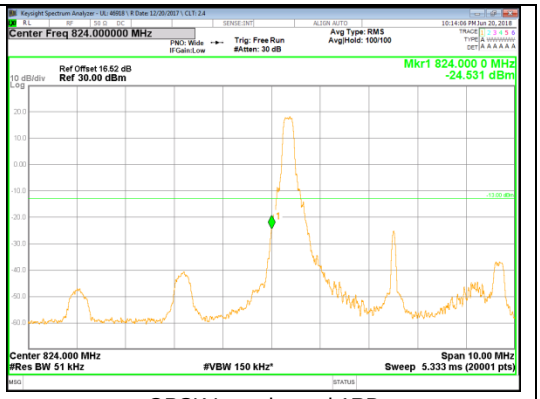
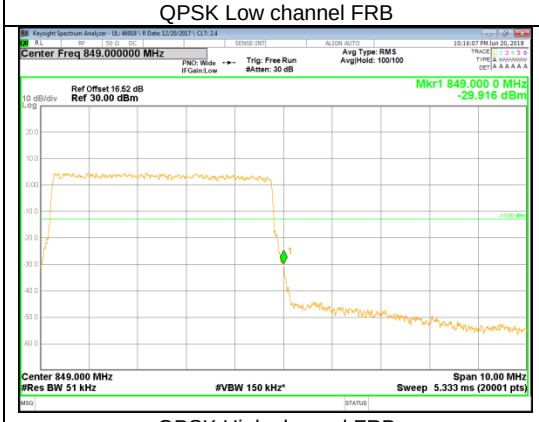
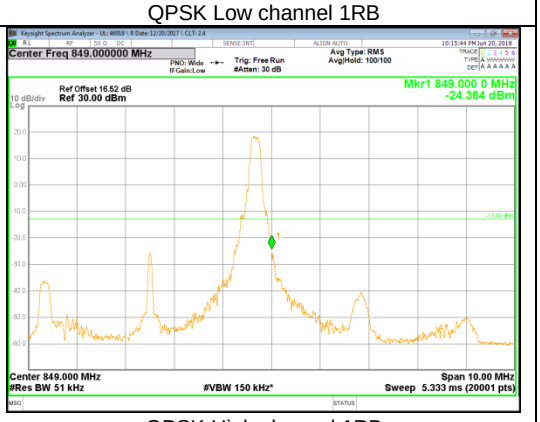
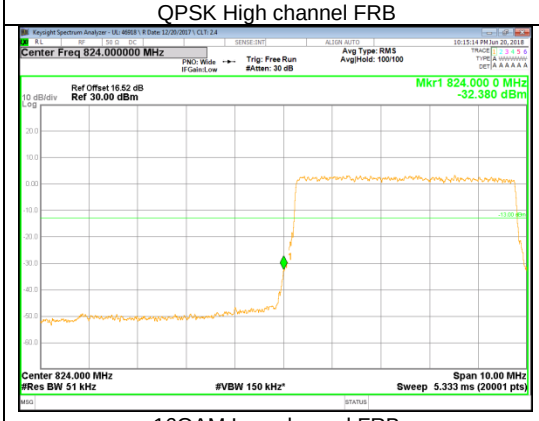
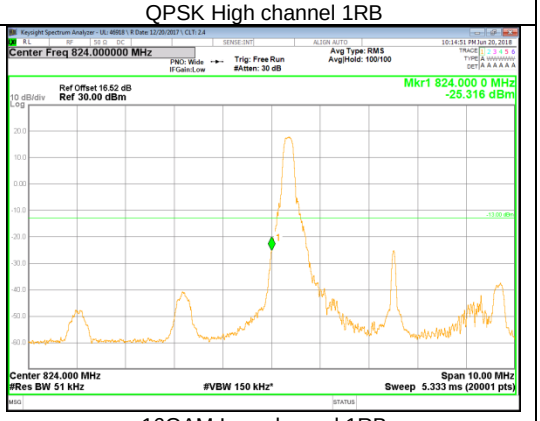
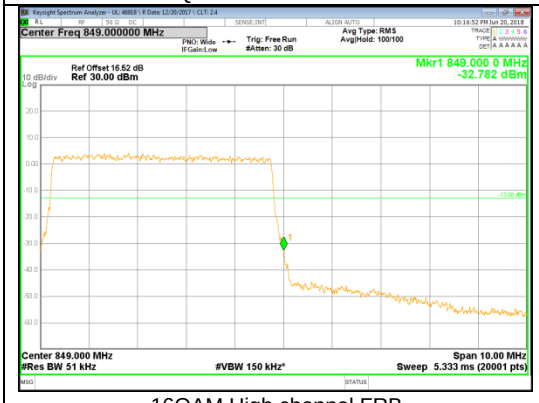
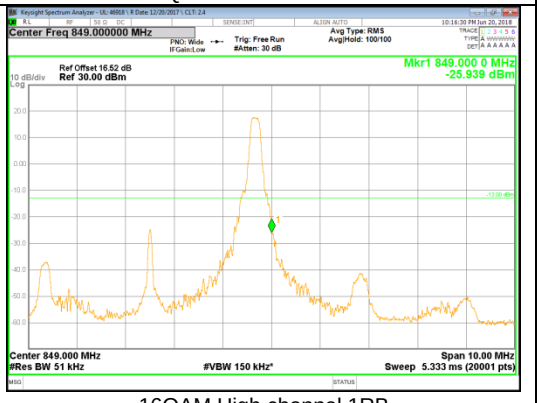
GSM1900 EGPRS High channel

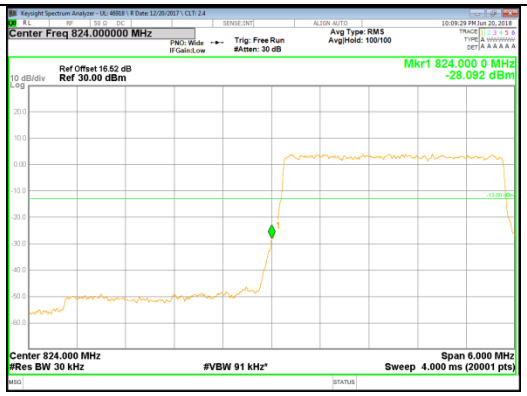
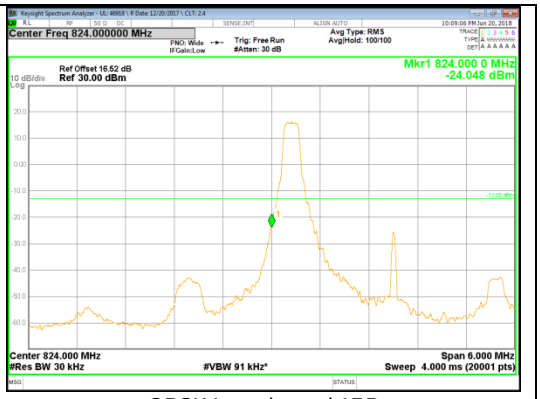
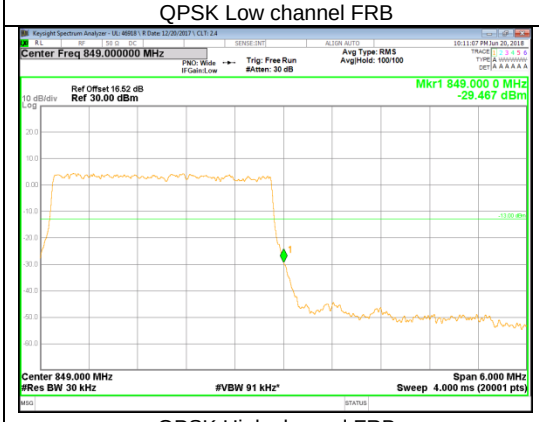
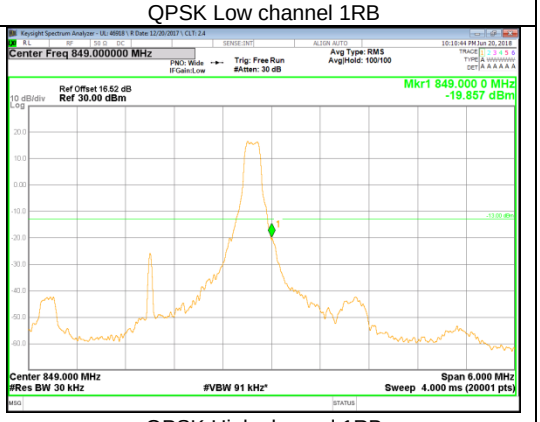
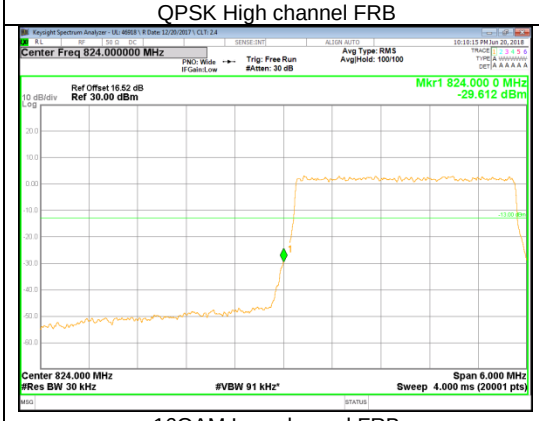
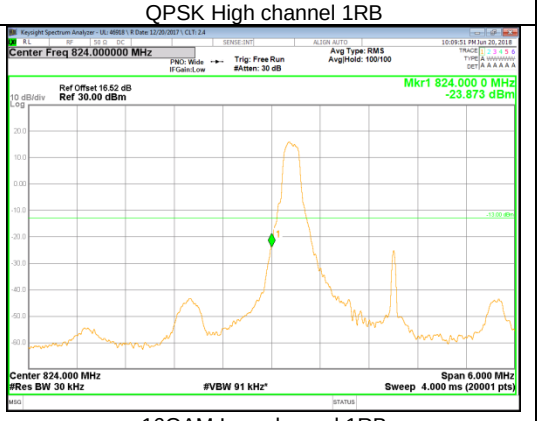
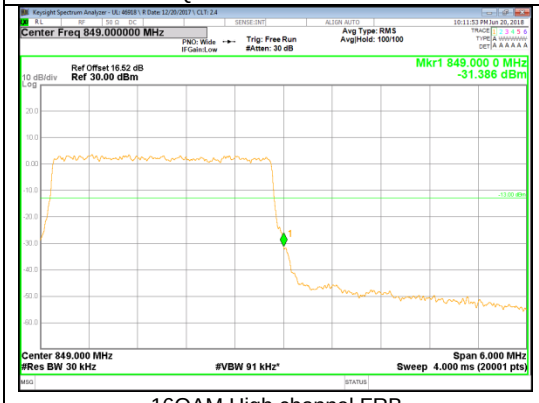
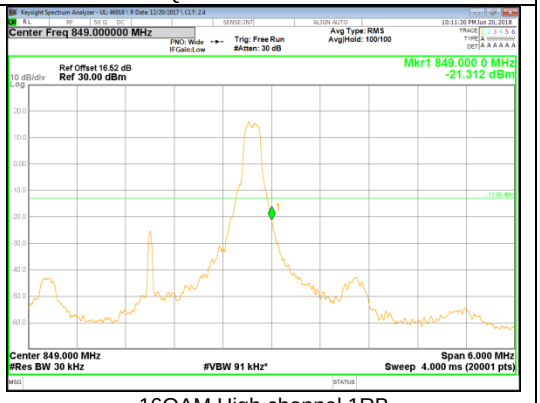
WCDMA

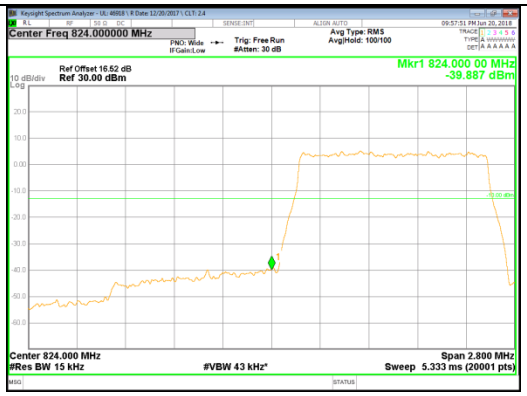
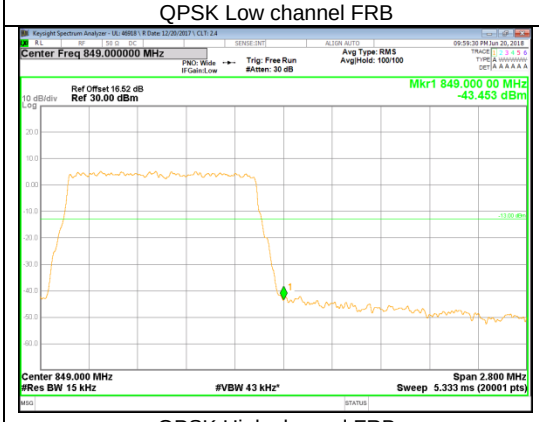
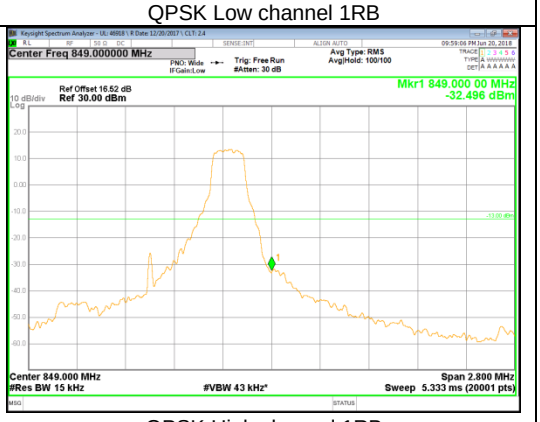
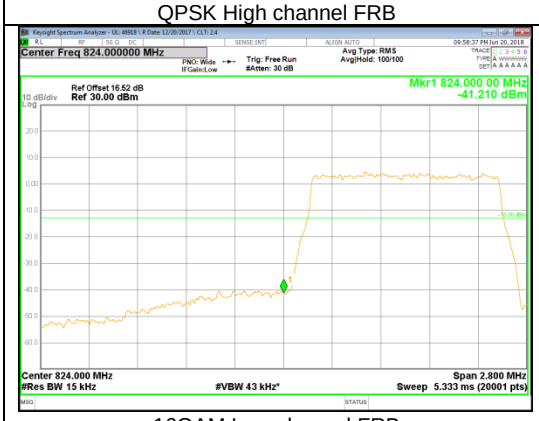
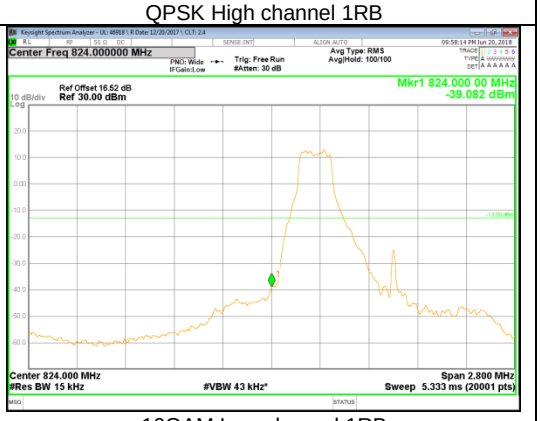
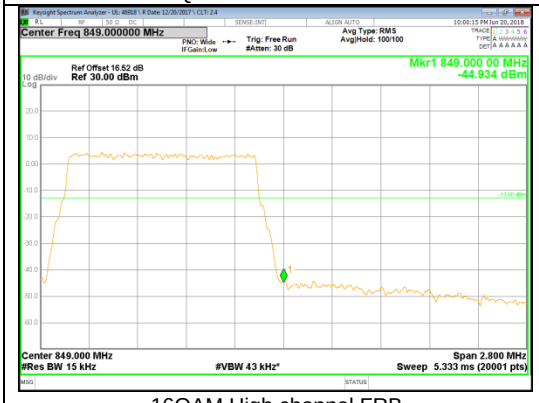
Band 5	 REL99 Low channel	 HSDPA Low channel
	 REL99 High channel	 HSDPA High channel
Band 2	 REL99 Low channel	 HSDPA Low channel
	 REL99 High channel	 HSDPA High channel

LTE Band 5

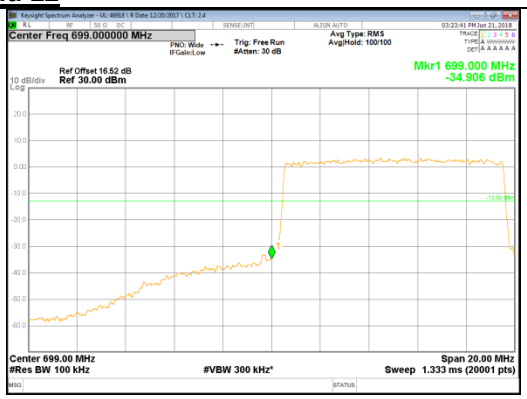
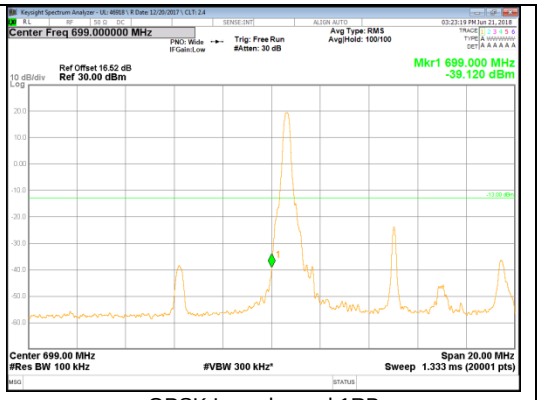
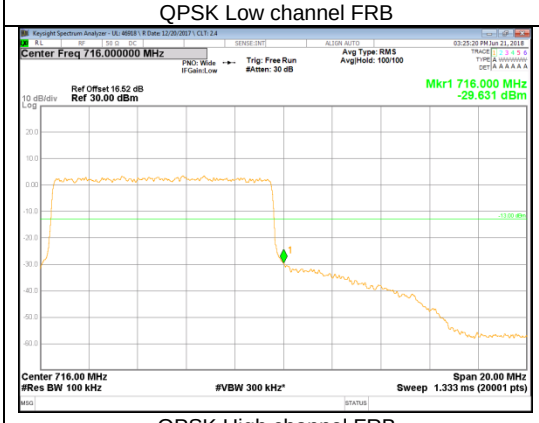
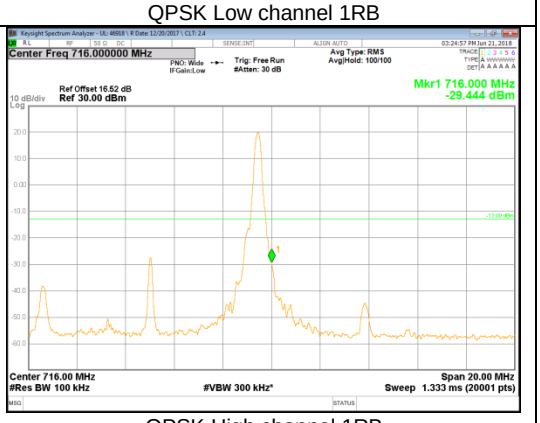
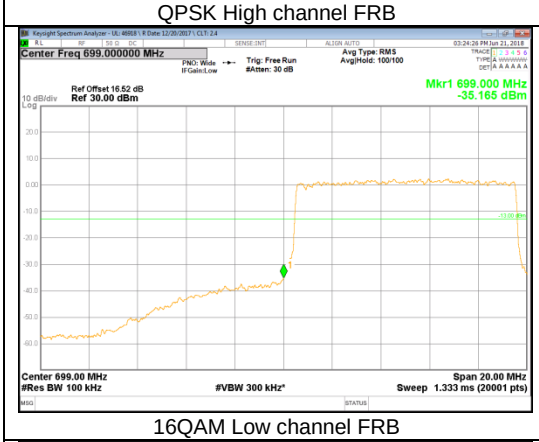
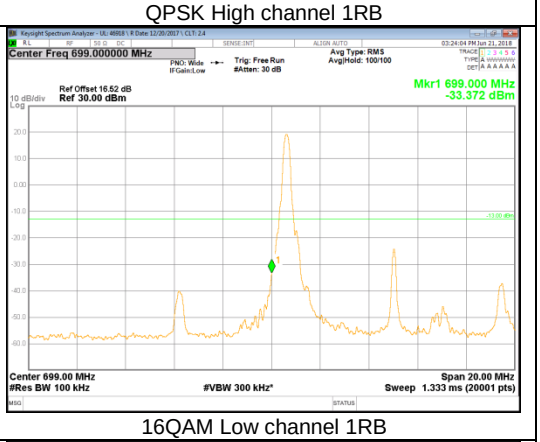
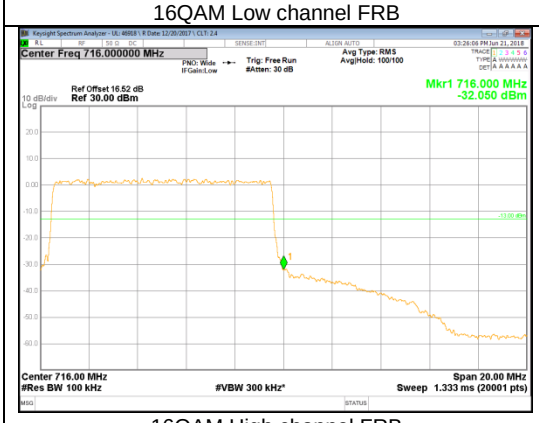
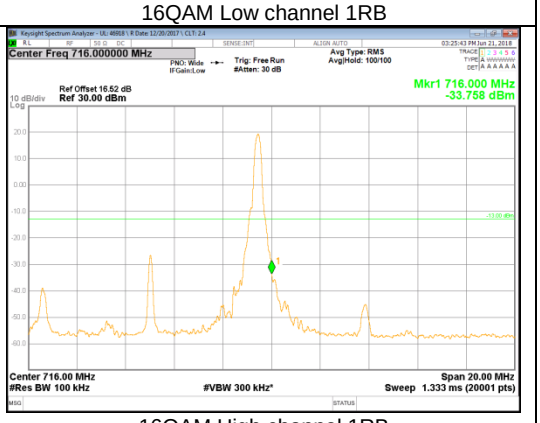
Band 5 10MHz	 QPSK Low channel FRB	 QPSK Low channel 1RB
	 QPSK High channel FRB	 QPSK High channel 1RB
	 16QAM Low channel FRB	 16QAM Low channel 1RB
	 16QAM High channel FRB	 16QAM High channel 1RB

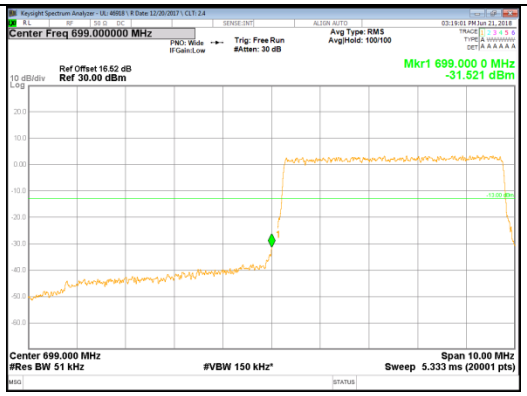
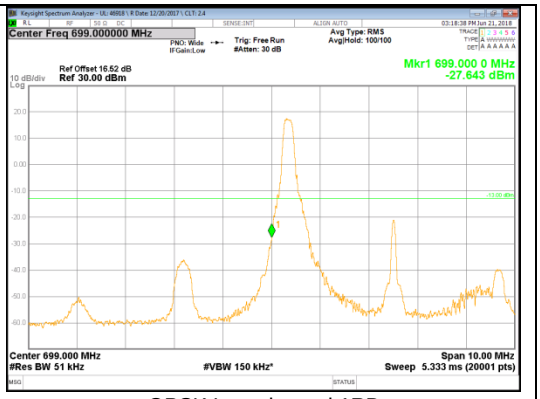
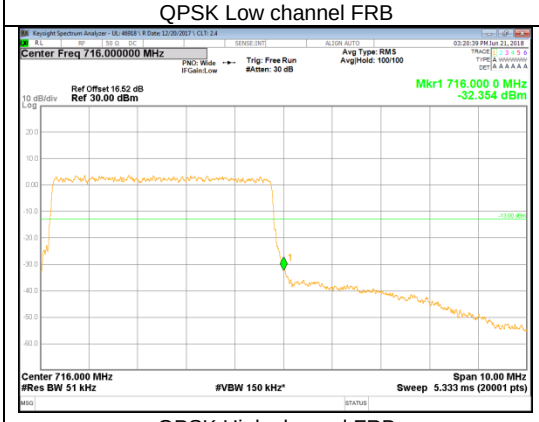
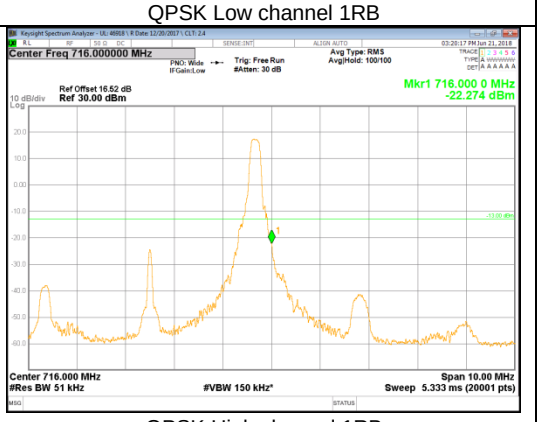
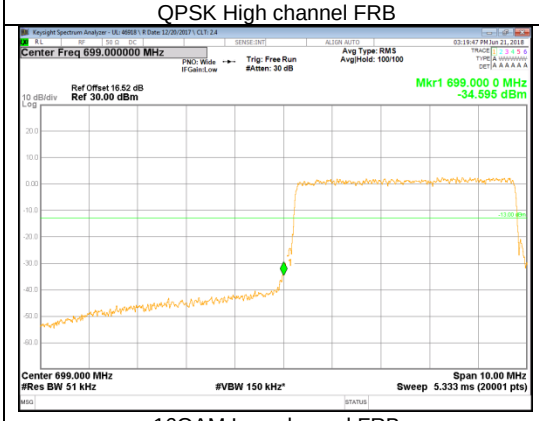
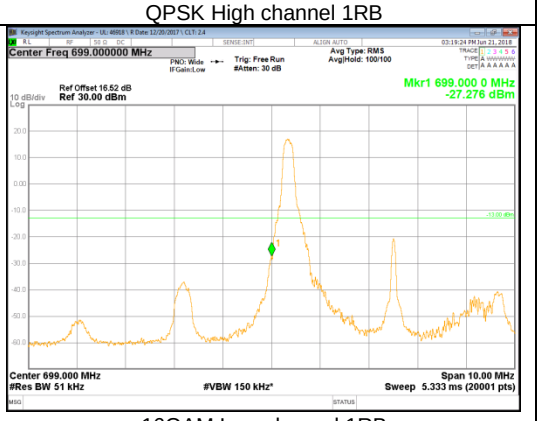
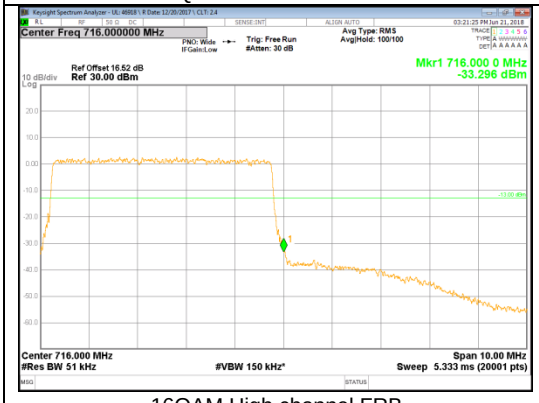
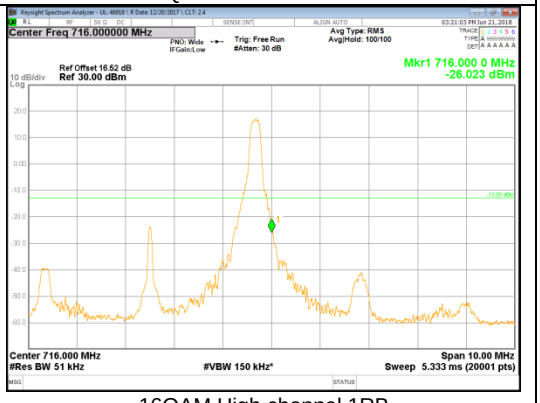
Band 5 5MHz	 QPSK Low channel FRB	 QPSK Low channel 1RB
	 QPSK High channel FRB	 QPSK High channel 1RB
	 16QAM Low channel FRB	 16QAM Low channel 1RB
	 16QAM High channel FRB	 16QAM High channel 1RB

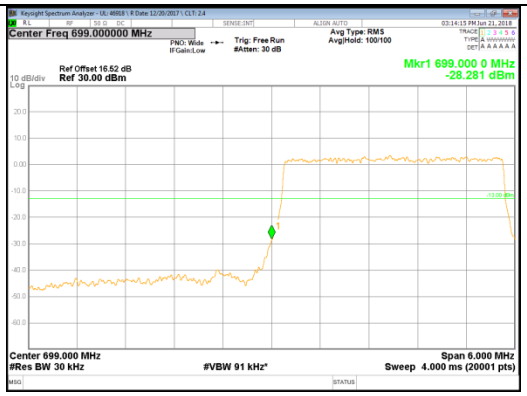
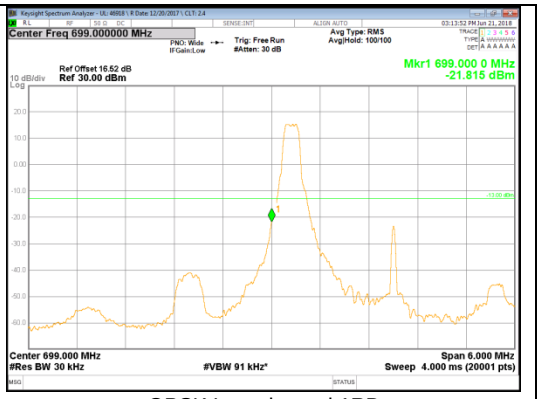
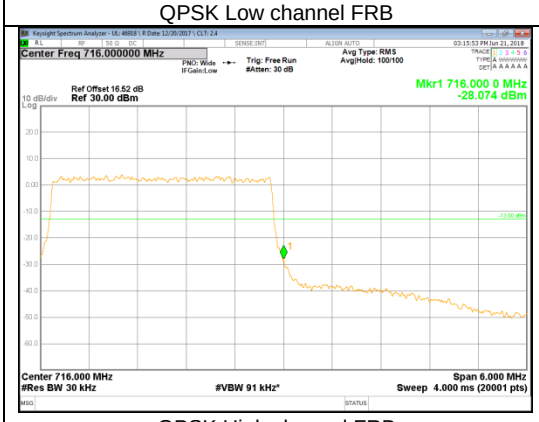
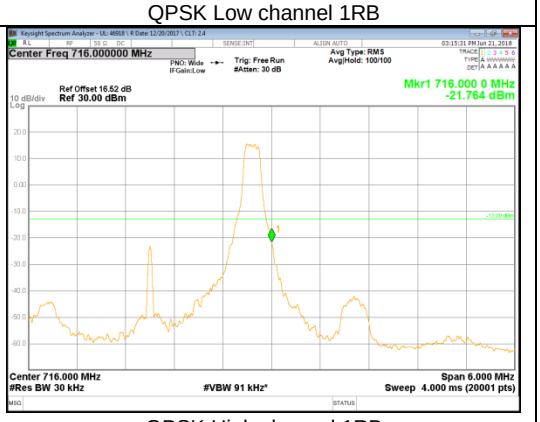
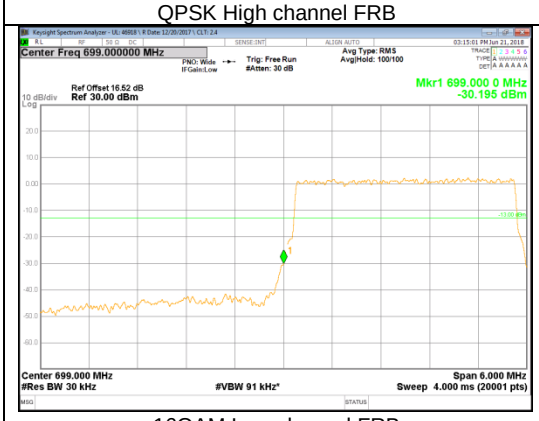
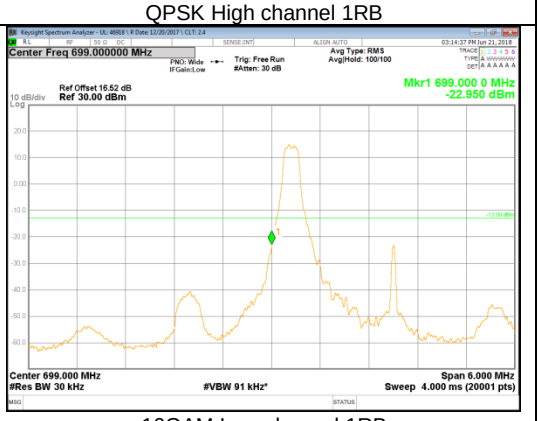
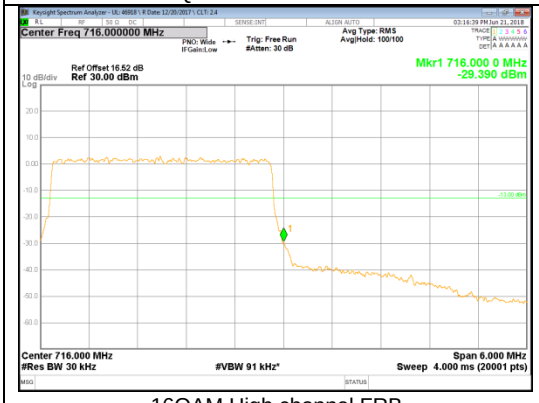
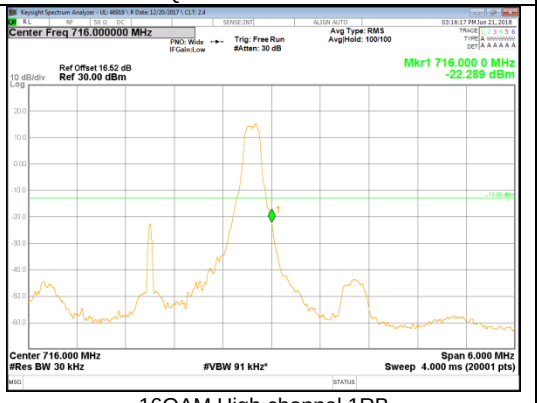
Band 5 3MHz	 QPSK Low channel FRB	 QPSK Low channel 1RB
	 QPSK High channel FRB	 QPSK High channel 1RB
	 16QAM Low channel FRB	 16QAM Low channel 1RB
	 16QAM High channel FRB	 16QAM High channel 1RB

Band 5 1.4MHz	 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

LTE Band 12

Band 12 10MHz	 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 12 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

Band 12 3MHz	 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