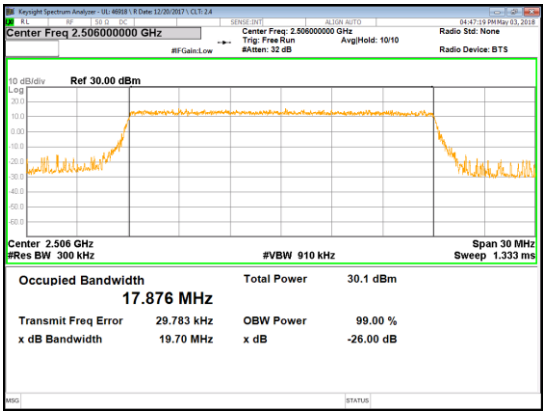
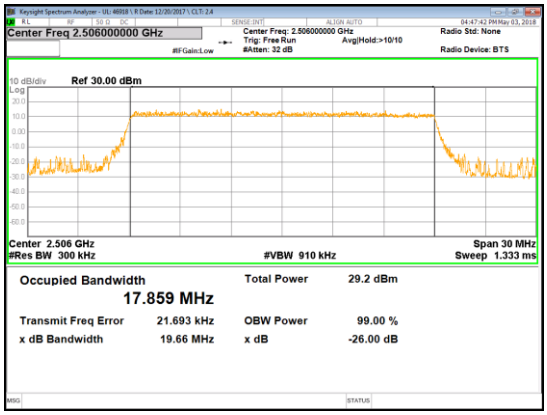
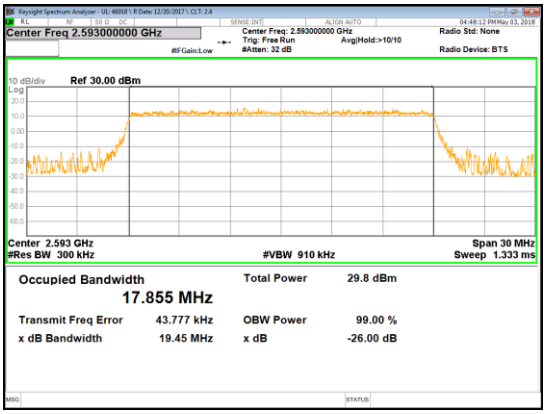
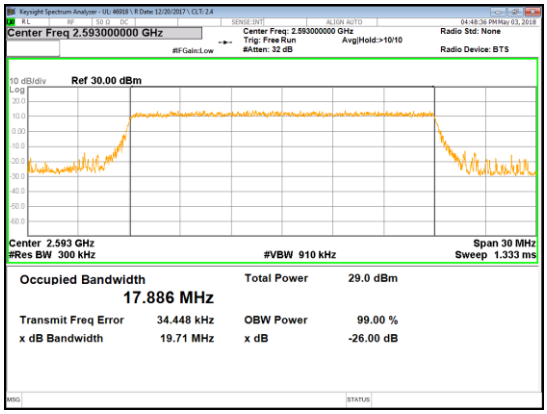
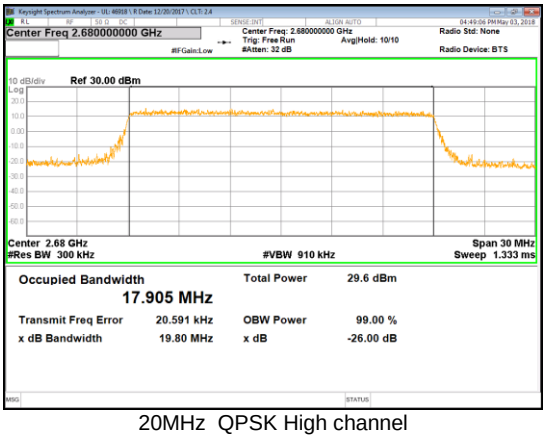
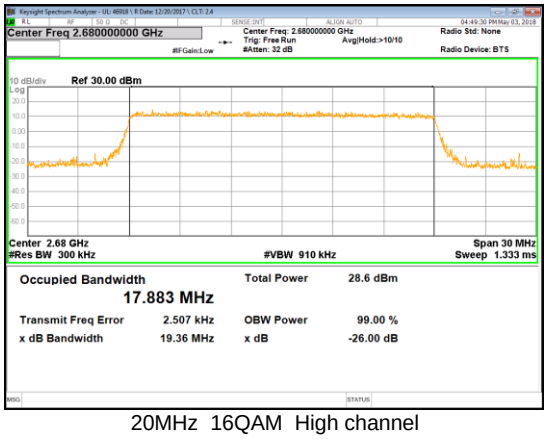
LTE Band 41

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

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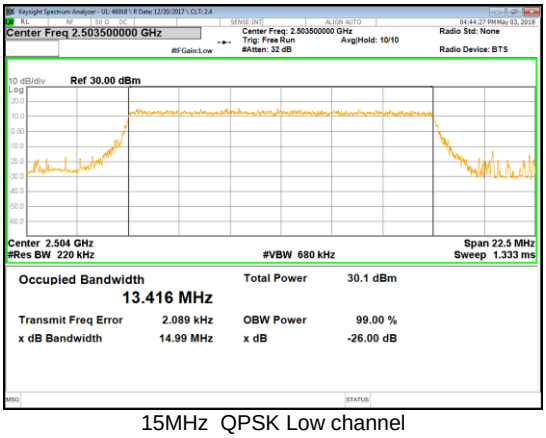
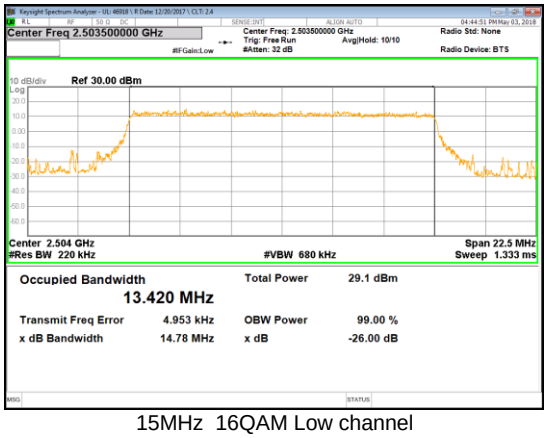
Band 41

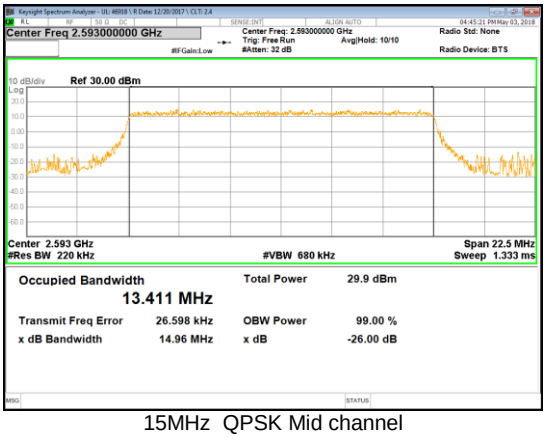
15MHz



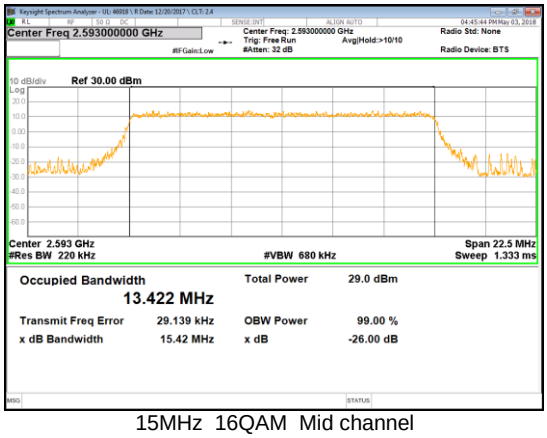
15MHz QPSK Low channel



15MHz 16QAM Low channel



15MHz QPSK Mid channel



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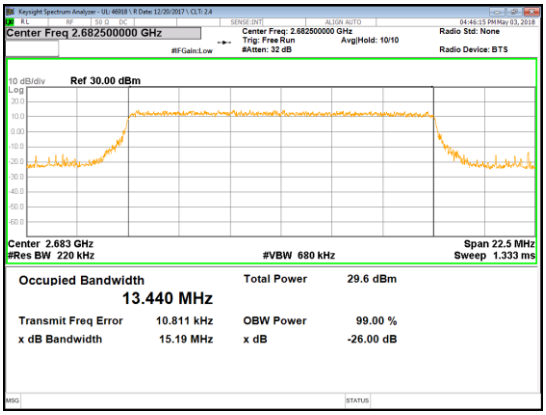
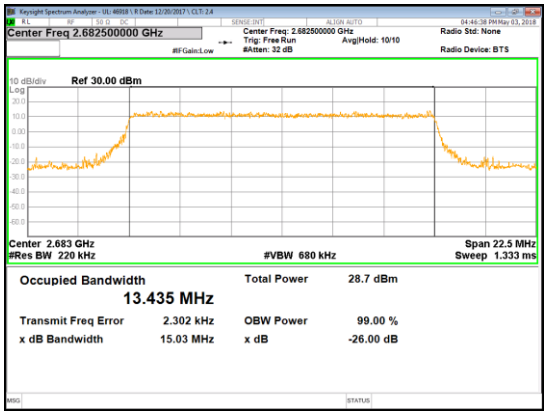


15MHz QPSK High channel



15MHz 16QAM High channel

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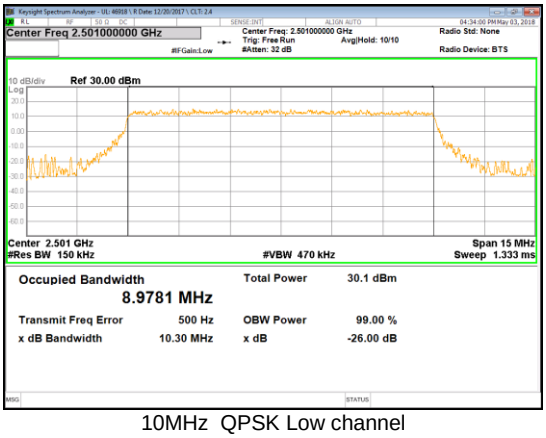
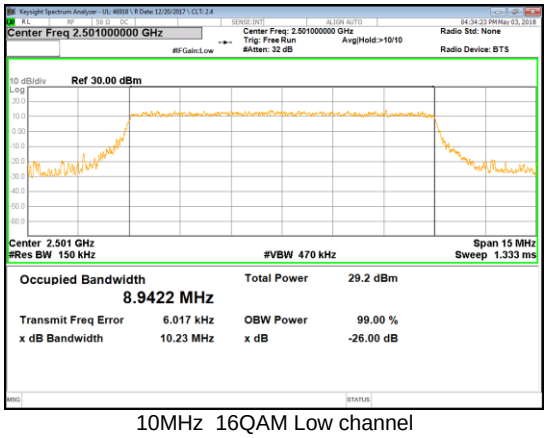
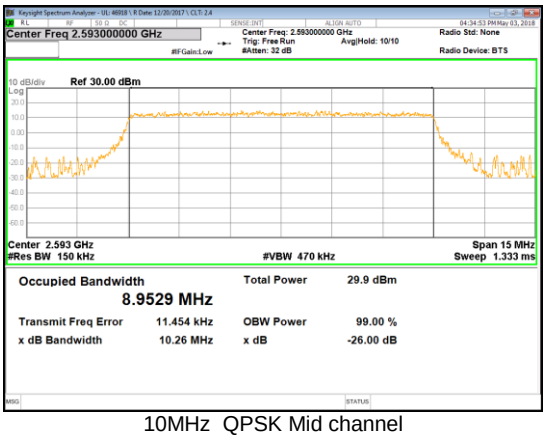
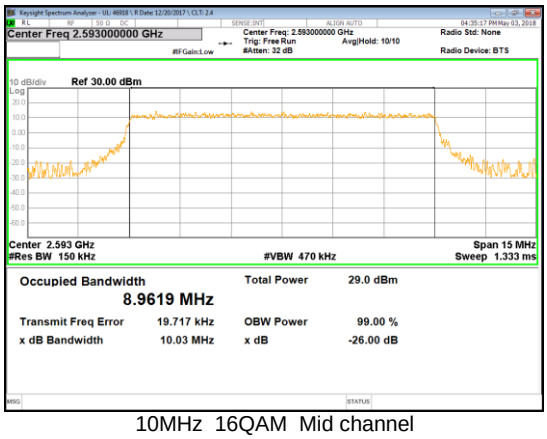
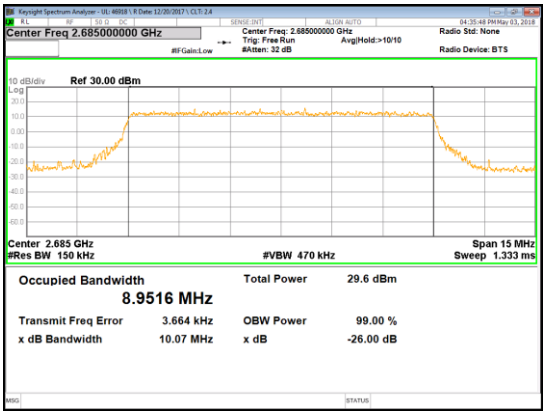
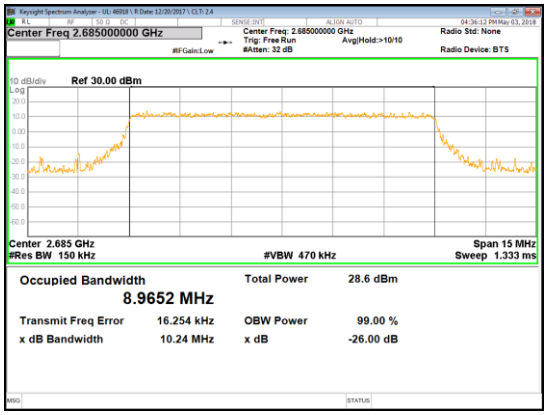
Band 41 10MHz	 10MHz QPSK Low channel	 10MHz 16QAM Low channel
	 10MHz QPSK Mid channel	 10MHz 16QAM Mid channel
	 10MHz QPSK High channel	 10MHz 16QAM High channel

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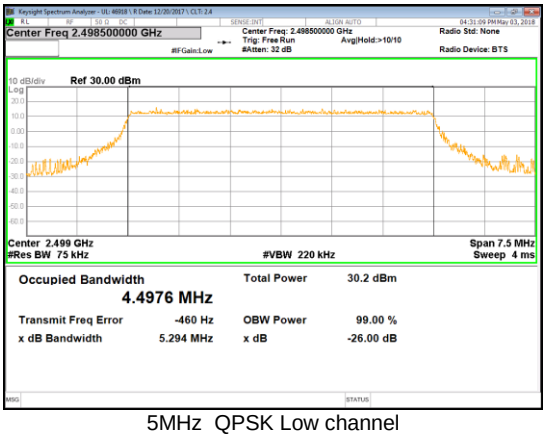
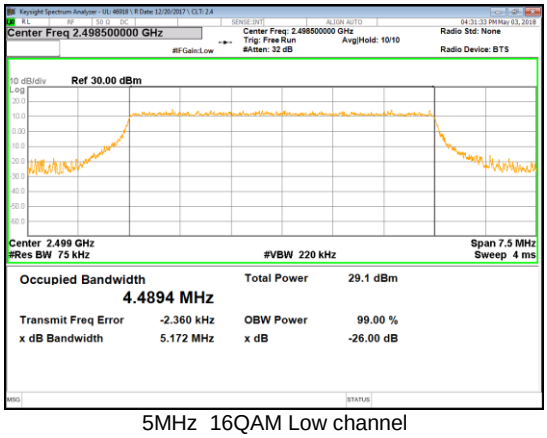
Band 41

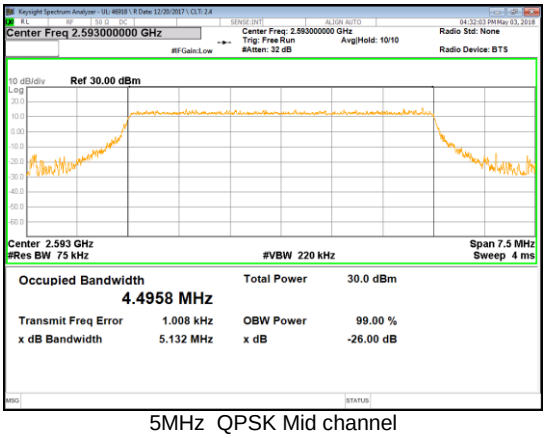
5MHz



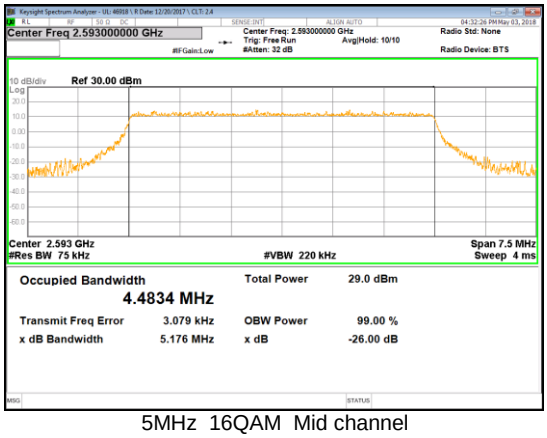
5MHz QPSK Low channel



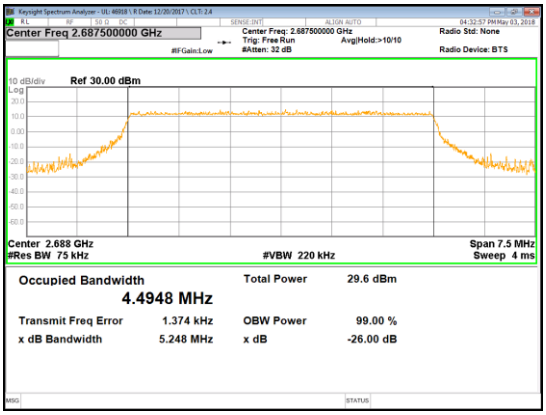
5MHz 16QAM Low channel



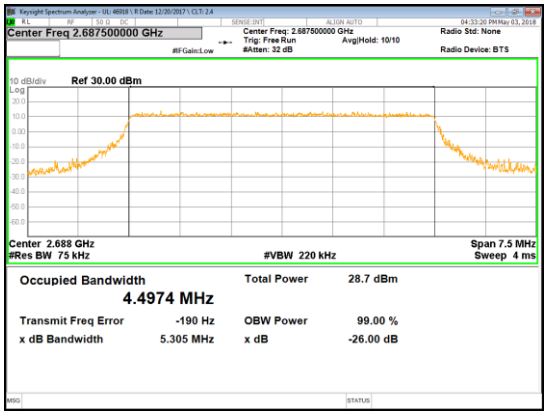
5MHz QPSK Mid channel



5MHz 16QAM Mid channel



5MHz QPSK High channel



5MHz 16QAM High channel

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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 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.

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.

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)

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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 ≥ 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);

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	1849.982	-16.508	13.00
		Upper	1910.008	-15.423	
	EGPRS	Lower	1849.987	-26.106	
		Upper	1910.008	-24.951	

WCDMA

Band	Mode	Side	f [MHz]	Level [dBm]	Limit [dBm]
Band 5	REL99	Lower	824.000	-25.426	-13.00
		Upper	849.000	-26.881	
	HSDPA	Lower	824.000	-28.540	
		Upper	849.000	-28.906	
Band 2	REL99	Lower	1850.000	-25.867	
		Upper	1910.000	-24.573	
	HSDPA	Lower	1850.000	-28.357	
		Upper	1910.000	-27.759	

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LTE 5

Bandwidth	Mode	Side	RB Status	f [MHz]	Level [dBm]	Limit [dBm]
10 MHz	QPSK	Lower	1RB	824.000	-34.343	-13.00
			FRB	824.000	-27.016	
		Upper	1RB	849.000	-31.030	
			FRB	849.000	-29.484	
	16QAM	Lower	1RB	824.000	-33.438	
			FRB	824.000	-31.011	
		Upper	1RB	849.000	-31.431	
			FRB	849.000	-31.548	
5 MHz	QPSK	Lower	1RB	824.000	-21.308	
			FRB	824.000	-23.852	
		Upper	1RB	849.000	-22.360	
			FRB	849.000	-26.353	
	16QAM	Lower	1RB	824.000	-24.354	
			FRB	824.000	-25.877	
		Upper	1RB	849.000	-22.283	
			FRB	849.000	-24.800	
3 MHz	QPSK	Lower	1RB	824.000	-19.234	
			FRB	824.000	-24.604	
		Upper	1RB	849.000	-18.832	
			FRB	849.000	-25.027	
	16QAM	Lower	1RB	824.000	-21.548	
			FRB	824.000	-24.489	
		Upper	1RB	849.000	-19.781	
			FRB	849.000	-25.512	
1.4 MHz	QPSK	Lower	1RB	824.000	-24.205	
			FRB	824.000	-23.495	
		Upper	1RB	849.000	-22.477	
			FRB	849.000	-23.658	
	16QAM	Lower	1RB	824.000	-25.280	
			FRB	824.000	-26.281	
		Upper	1RB	849.000	-23.466	
			FRB	849.000	-25.019	

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LTE 17

Bandwidth	Mode	Side	RB Status	f [MHz]	Level [dBm]	Limit [dBm]
10 MHz	QPSK	Lower	1RB	704.000	-32.211	-13.00
			FRB	704.000	-27.796	
		Upper	1RB	716.000	-31.917	
			FRB	716.000	-28.221	
	16QAM	Lower	1RB	704.000	-34.491	
			FRB	704.000	-30.044	
		Upper	1RB	716.000	-31.205	
			FRB	716.000	-31.679	
5 MHz	QPSK	Lower	1RB	704.000	-22.138	
			FRB	704.000	-24.709	
		Upper	1RB	716.000	-21.895	
			FRB	716.000	-25.453	
	16QAM	Lower	1RB	704.000	-22.182	
			FRB	704.000	-26.080	
		Upper	1RB	716.000	-25.073	
			FRB	716.000	-26.420	

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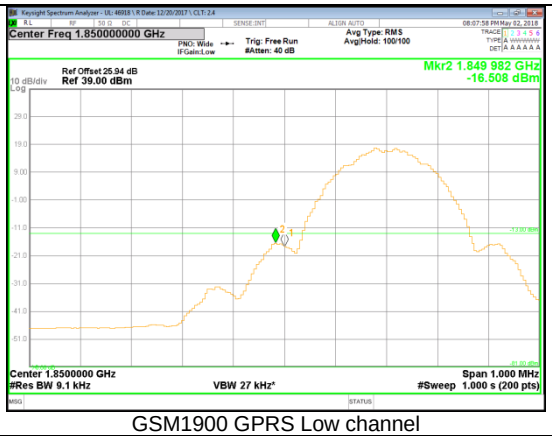
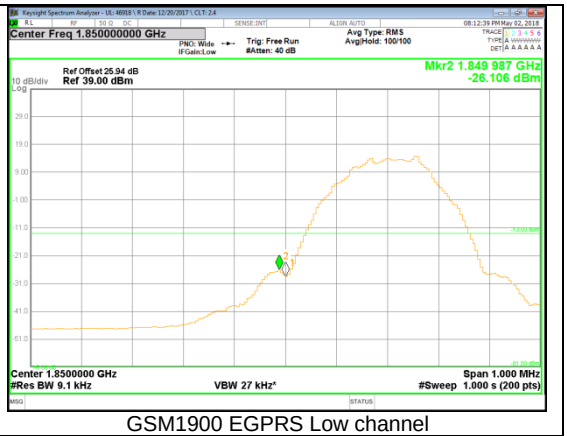
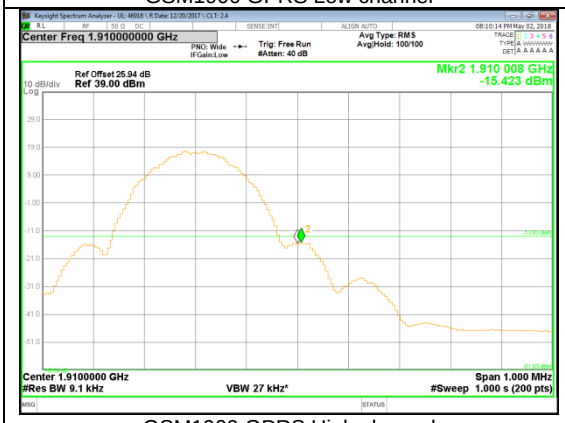
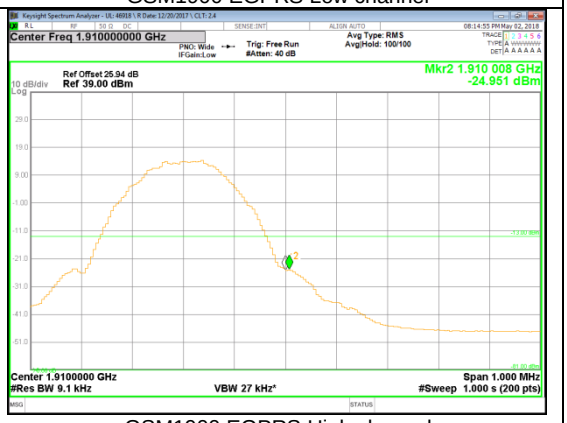
9.2.1. BAND EDGE PLOTS

GSM

GSM 1900	 GSM1900 GPRS Low channel	 GSM1900 EGPRS Low channel
	 GSM1900 GPRS High channel	 GSM1900 EGPRS High channel

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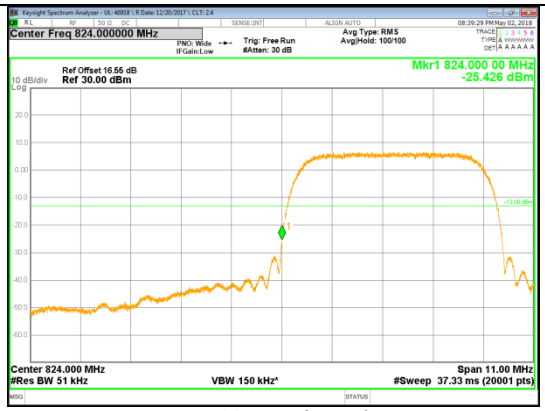
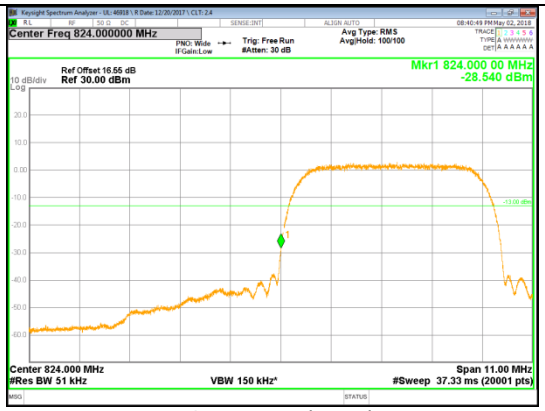
WCDMA

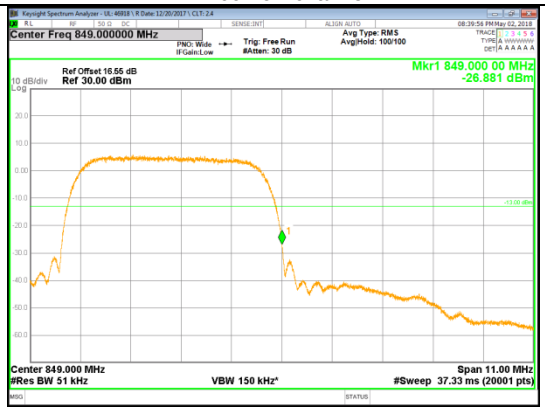
Band 5



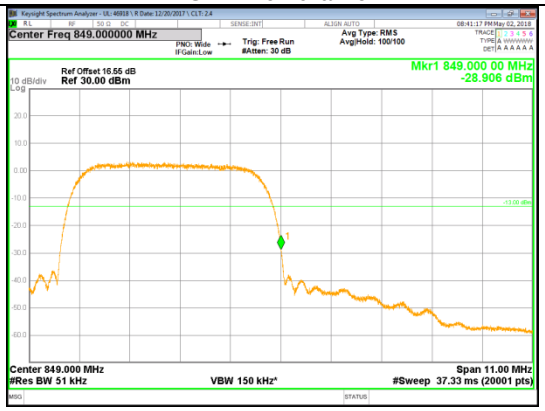
REL99 Low channel



HSDPA Low channel

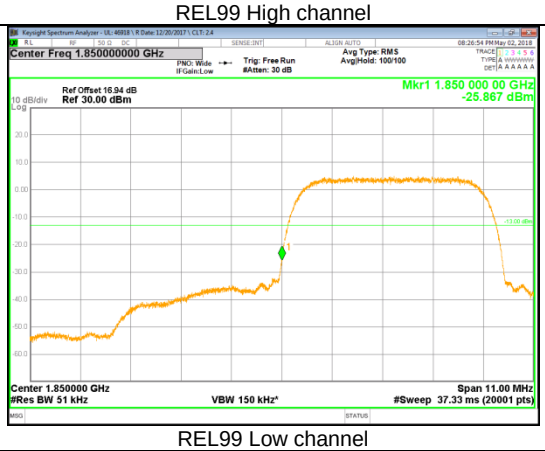


REL99 High channel

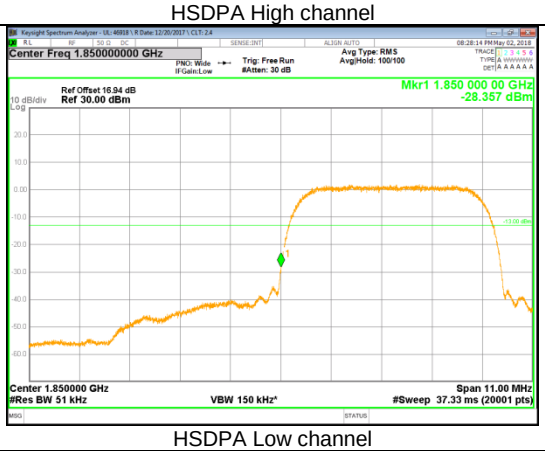


HSDPA High channel

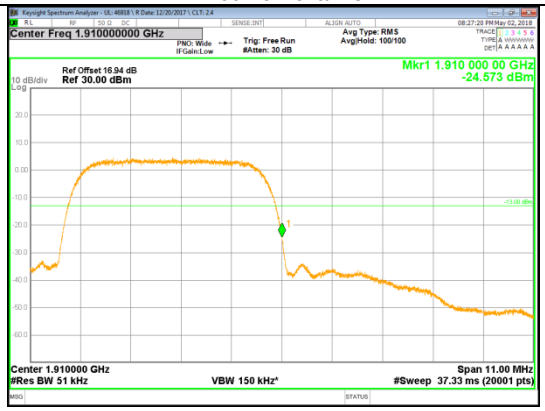
Band 2



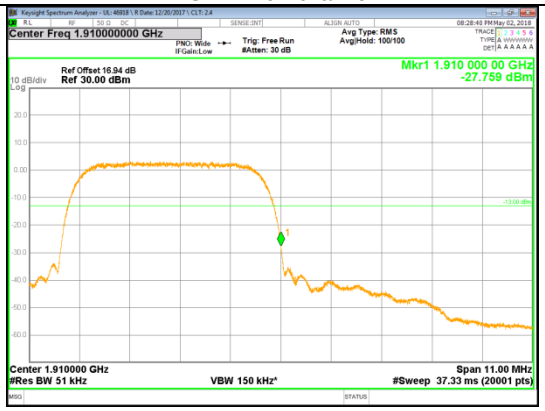
REL99 Low channel



HSDPA Low channel



REL99 High channel



HSDPA High channel

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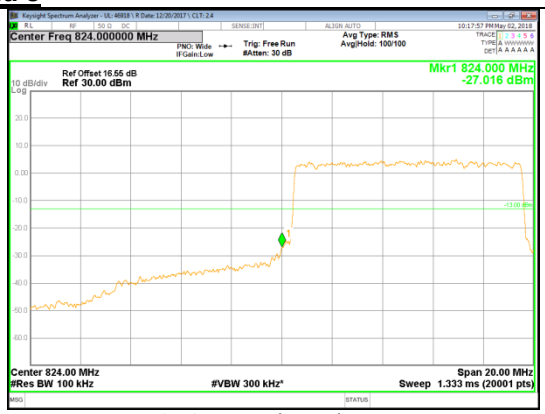
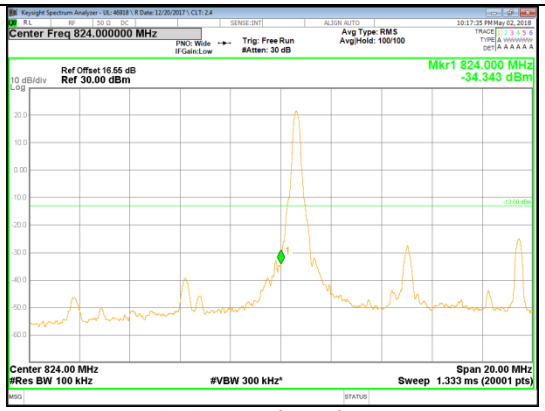
LTE Band 5

Band 5

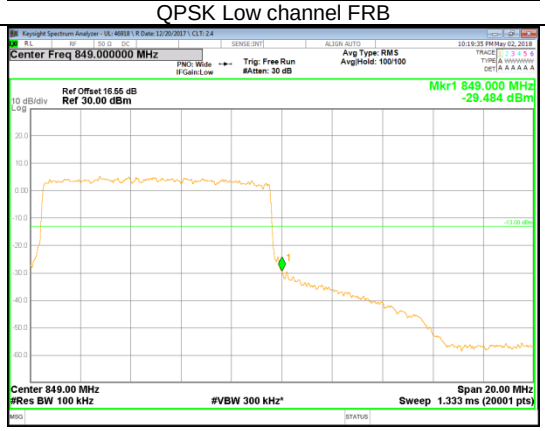
10MHz



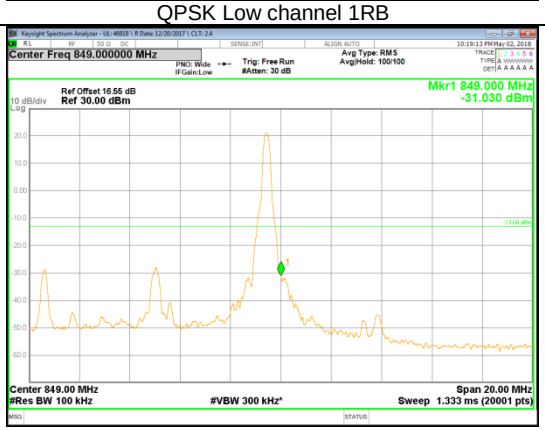
QPSK Low channel FRB



QPSK Low channel 1RB



QPSK High channel FRB



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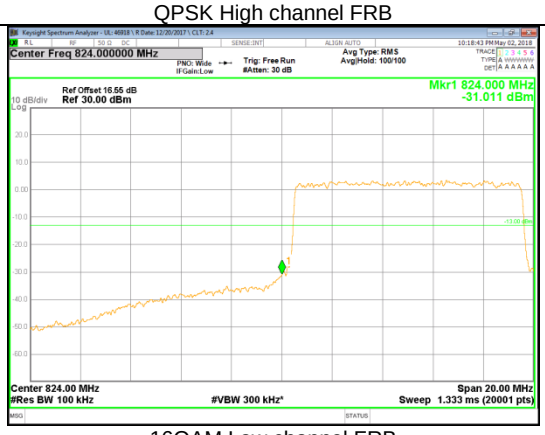
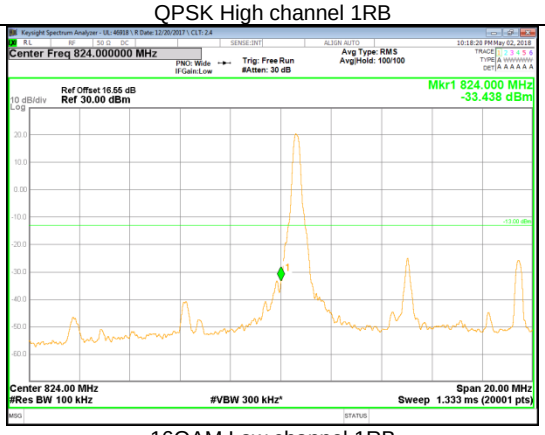


16QAM Low channel FRB



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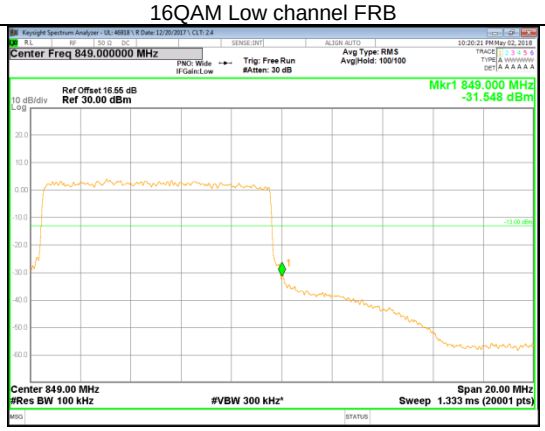

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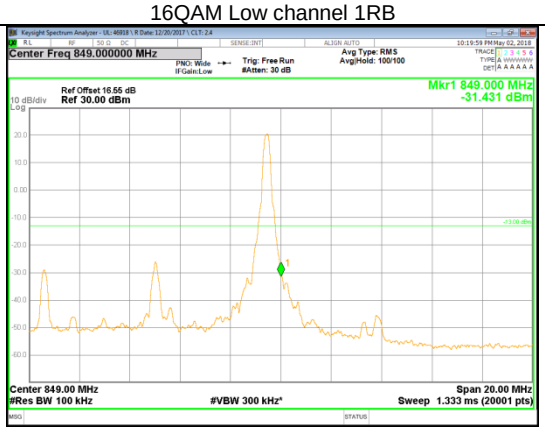

16QAM High channel 1RB

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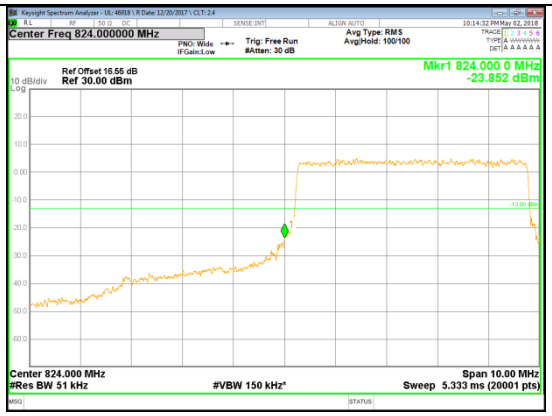
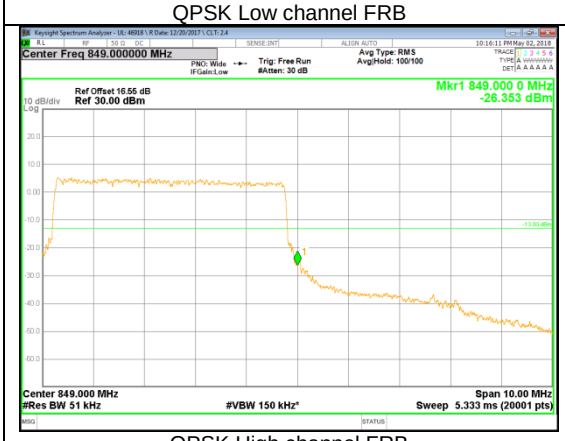
Band 5

5MHz

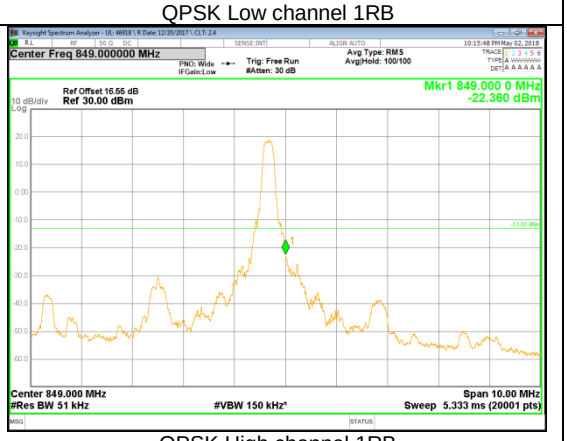


QPSK Low channel FRB

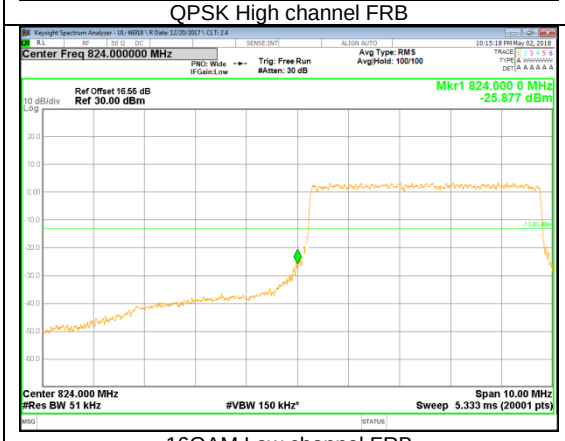
QPSK Low channel 1RB



QPSK High channel FRB



QPSK High channel 1RB



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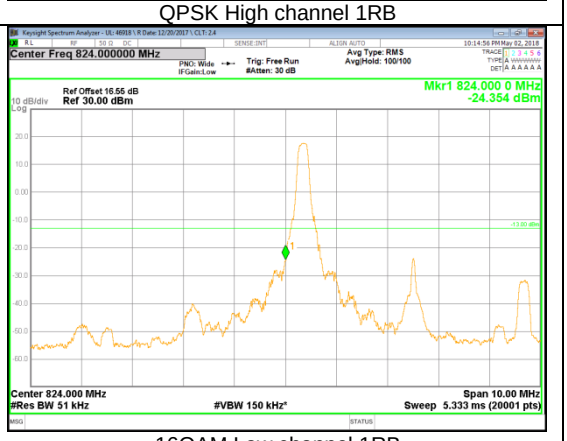
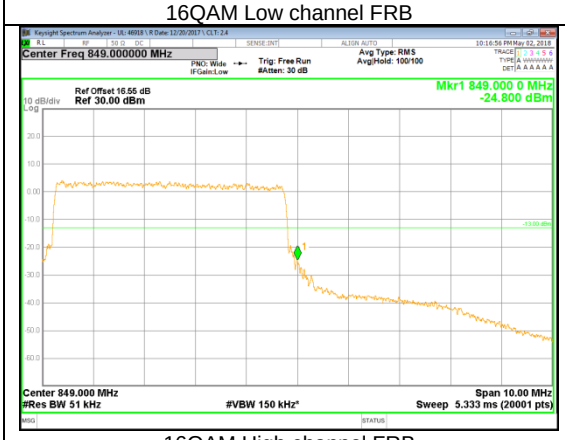


16QAM Low channel 1RB



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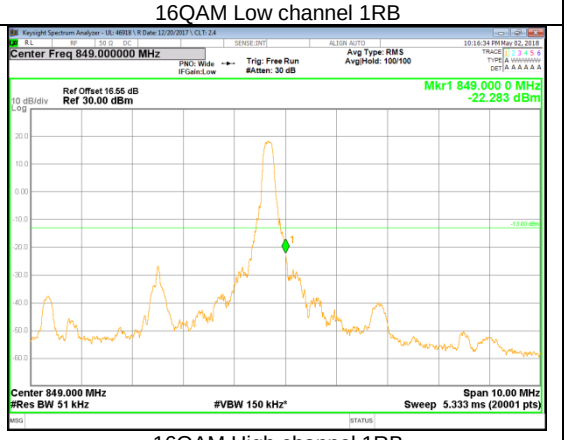

16QAM High channel 1RB

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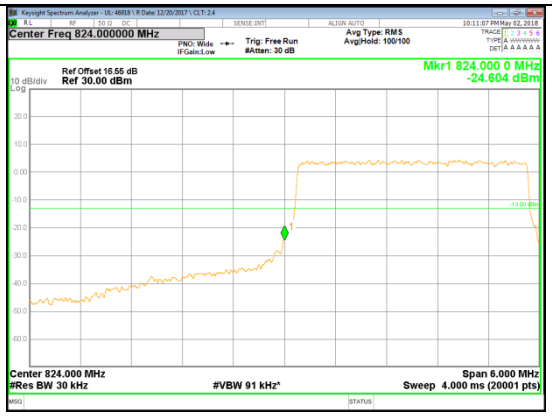
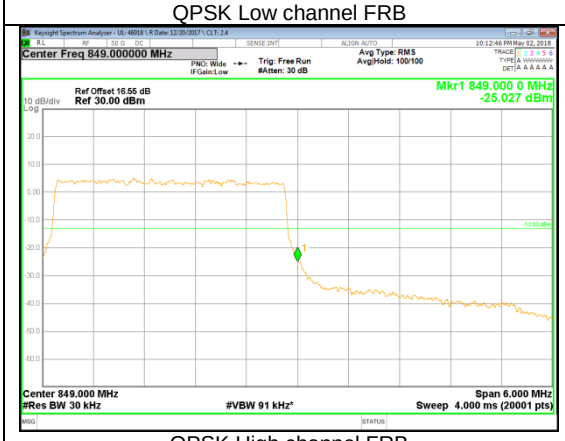
Band 5

3MHz

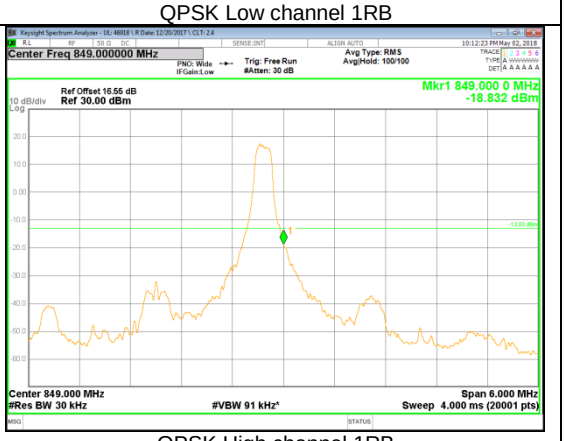


QPSK Low channel FRB

QPSK Low channel 1RB



QPSK High channel FRB



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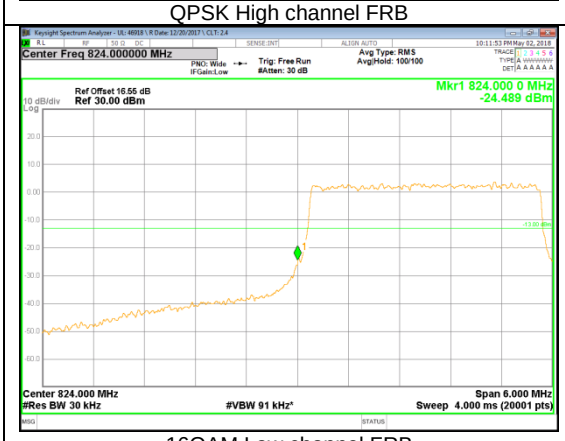

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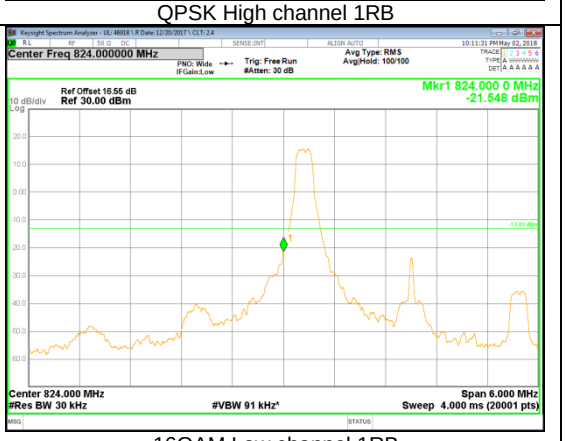

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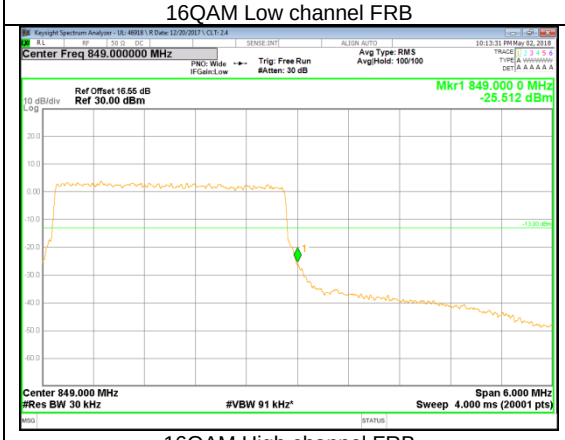

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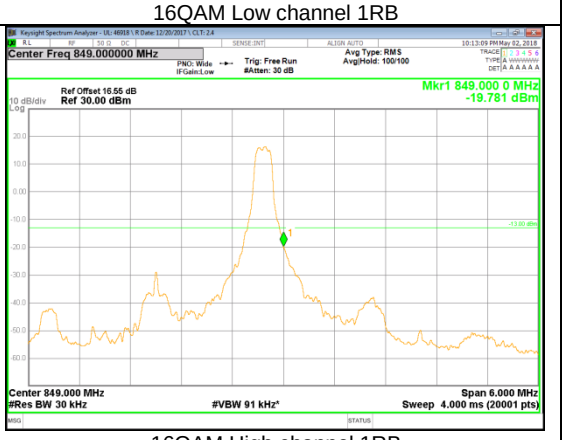

16QAM High channel 1RB

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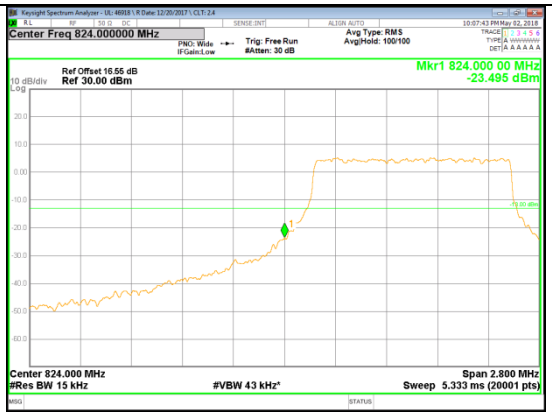
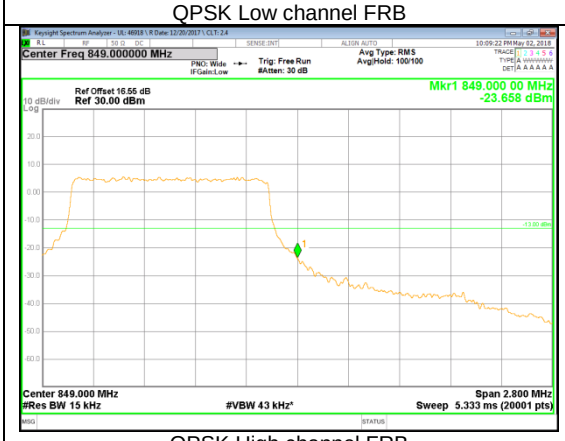
Band 5

1.4MHz

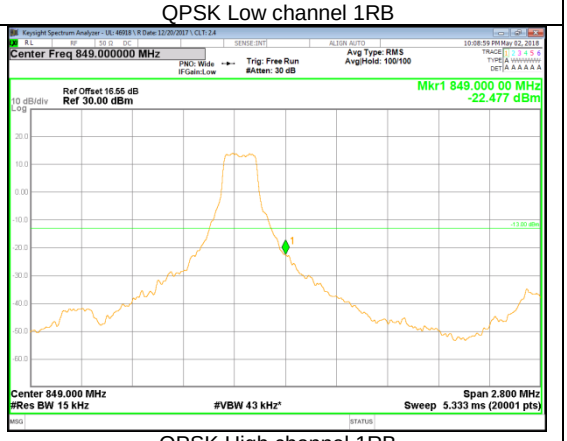


QPSK Low channel FRB

QPSK Low channel 1RB



QPSK High channel FRB



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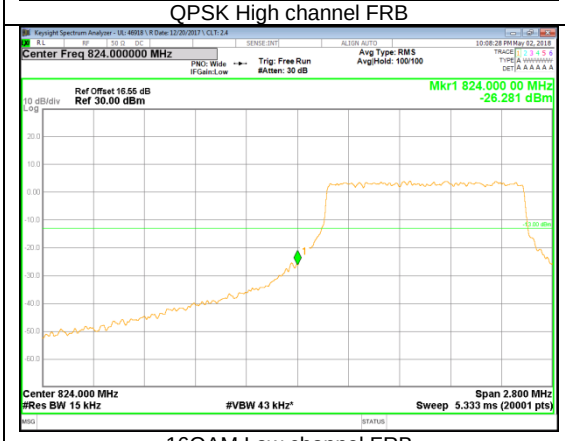

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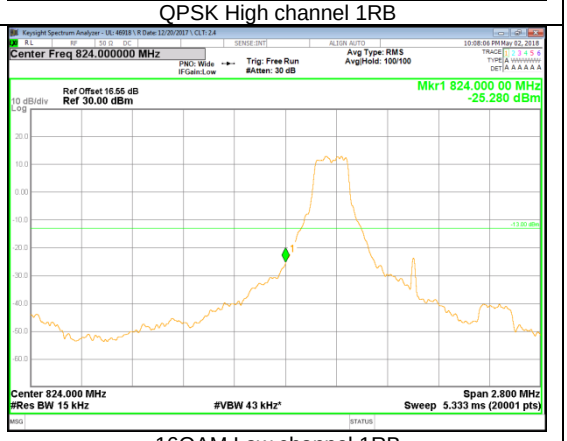

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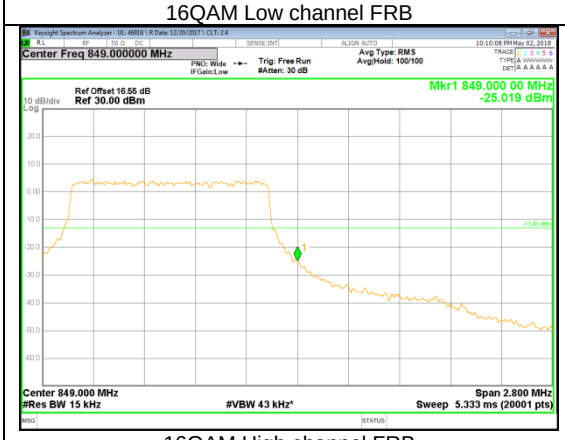

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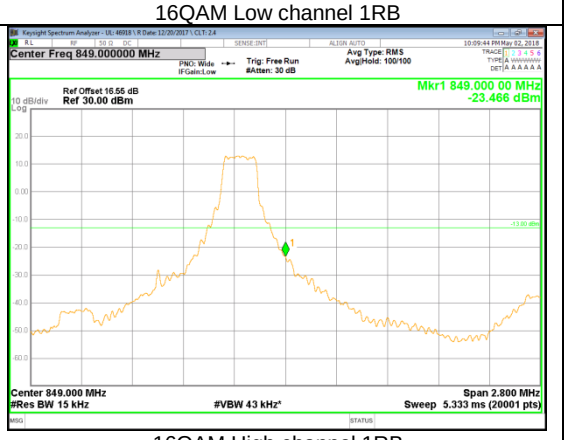

16QAM High channel 1RB

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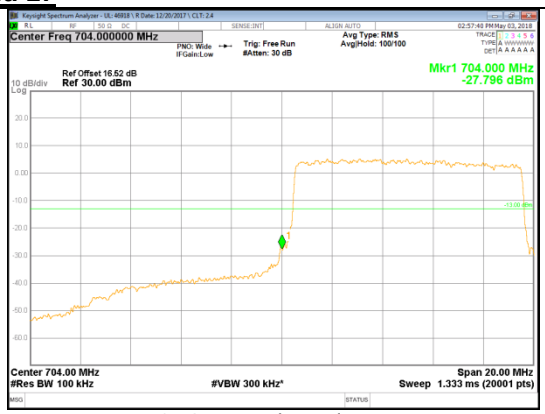
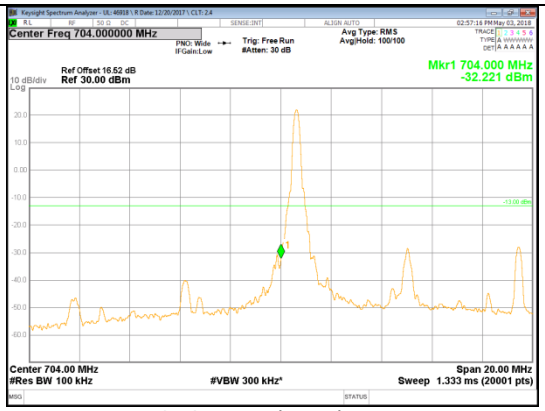
LTE Band 17

Band 17

10MHz



QPSK Low channel FRB



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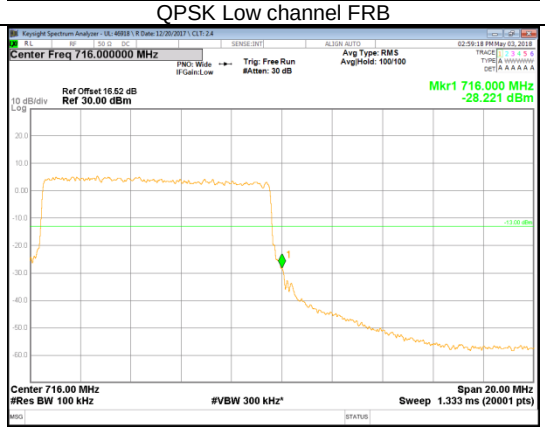

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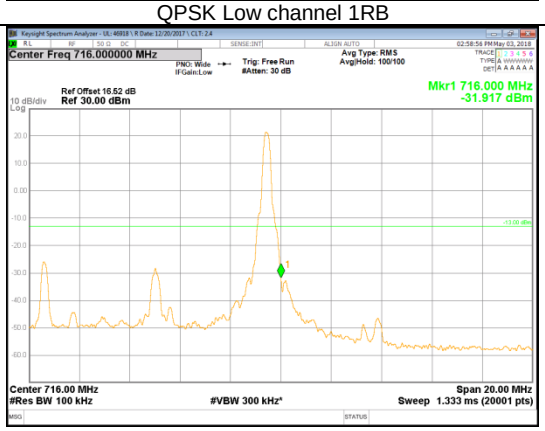

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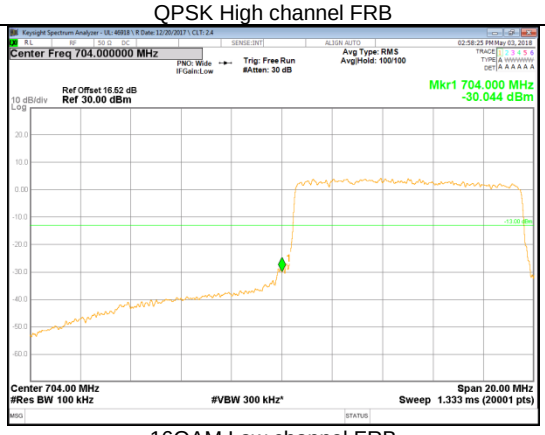

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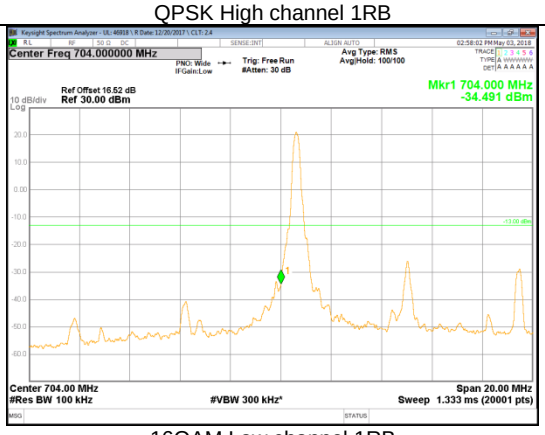

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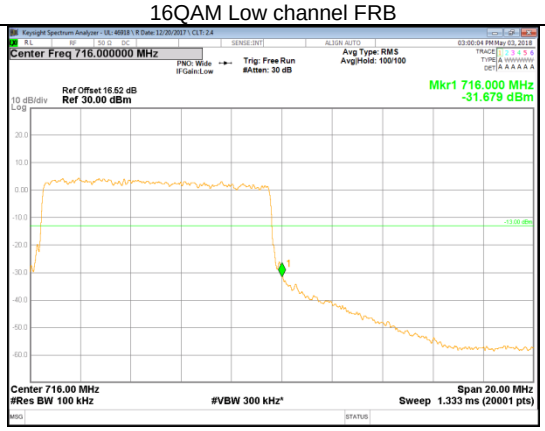
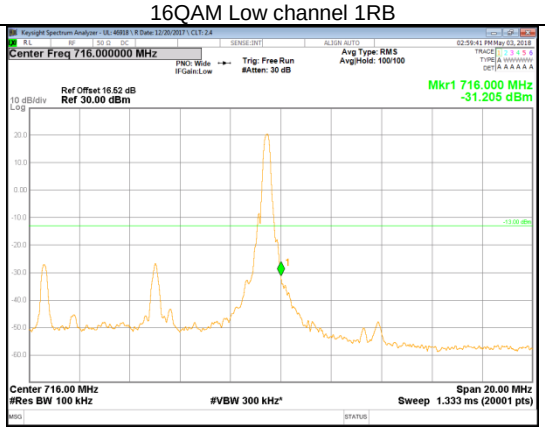


16QAM High channel FRB



16QAM High channel 1RB

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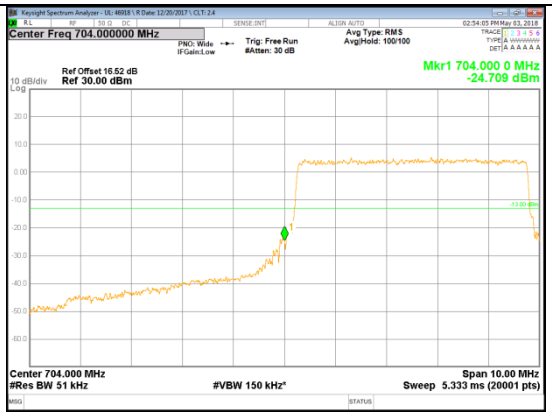
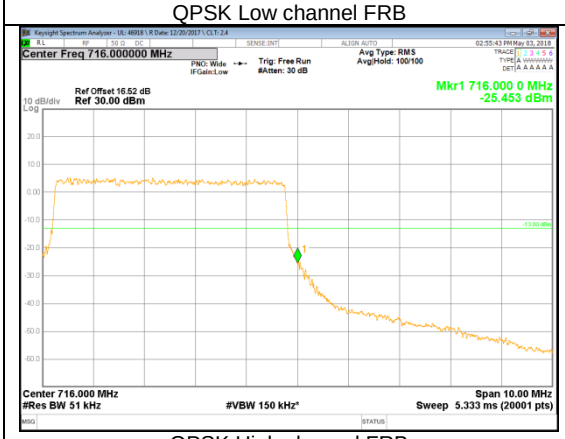
Band 17

5MHz



QPSK Low channel FRB

QPSK Low channel 1RB



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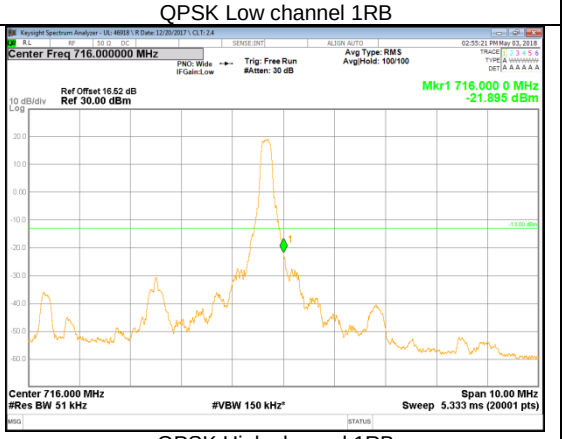

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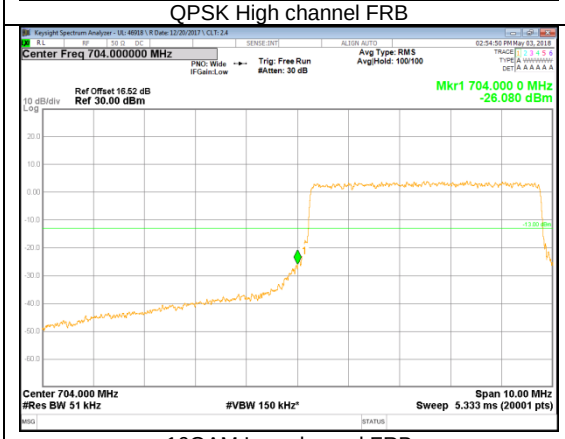

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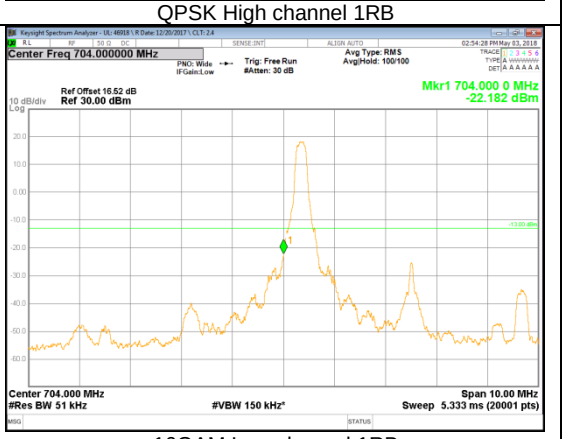
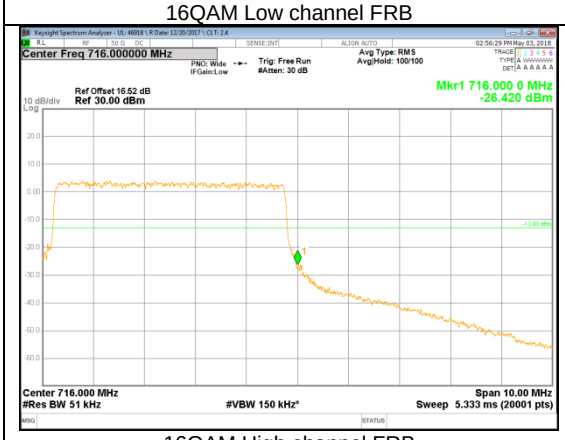
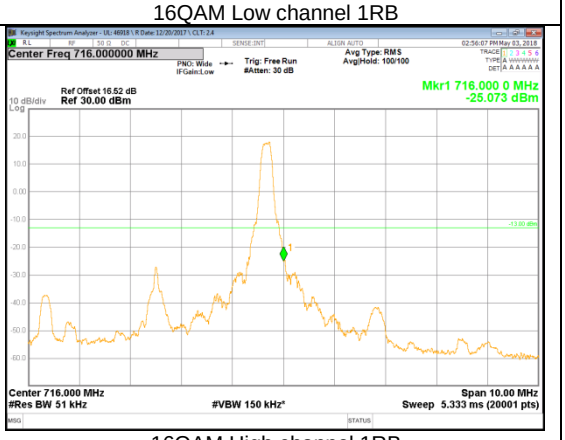


16QAM Low channel 1RB



16QAM High channel FRB



16QAM High channel 1RB

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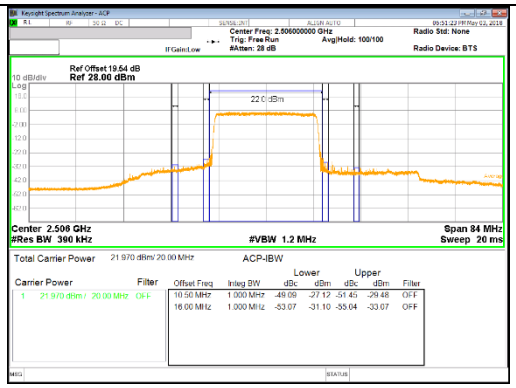
9.2.2. EMISSION MASK PLOTS

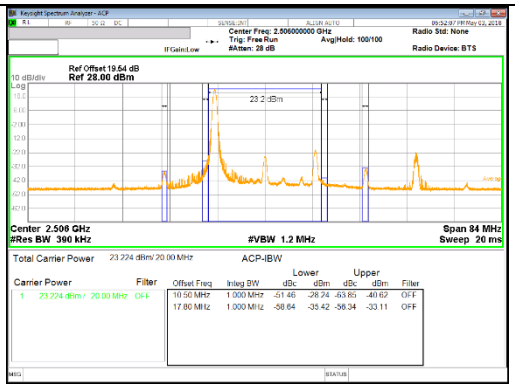
LTE Band 41

Band 41

20MHz



QPSK Low channel FRB



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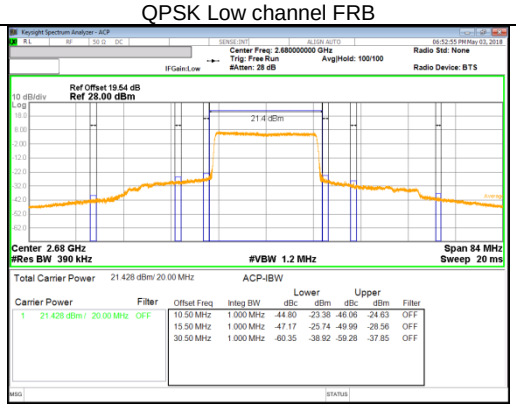

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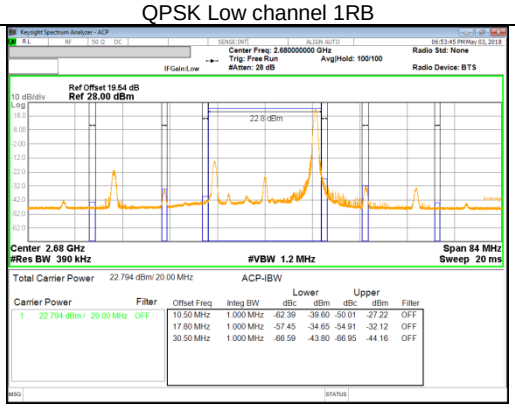

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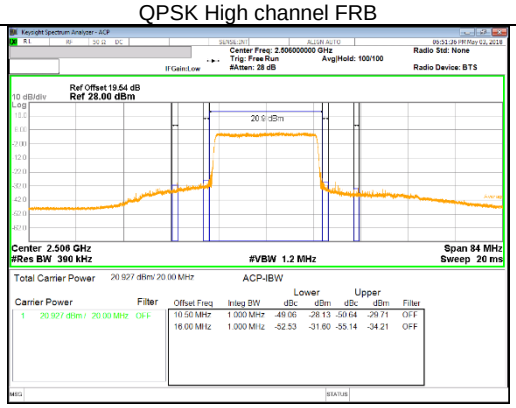
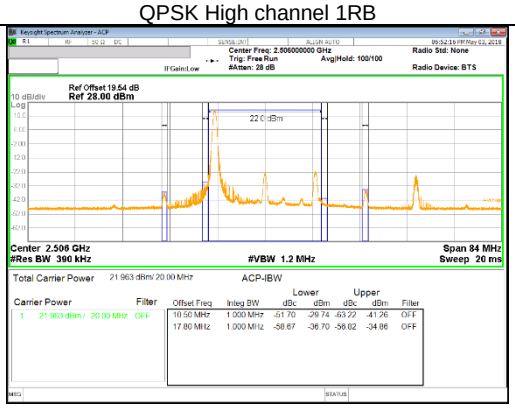


16QAM Low channel FRB



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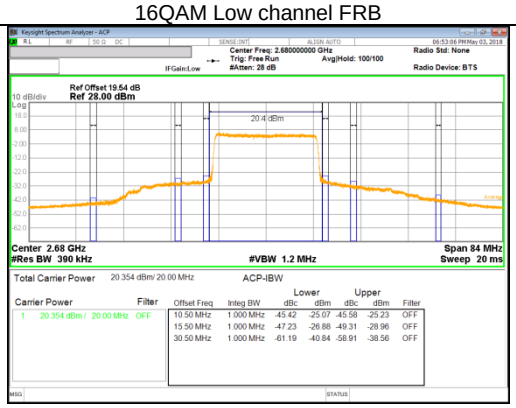
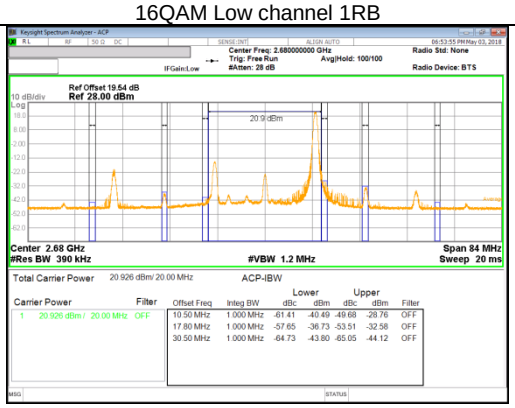


16QAM High channel FRB



16QAM High channel 1RB

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