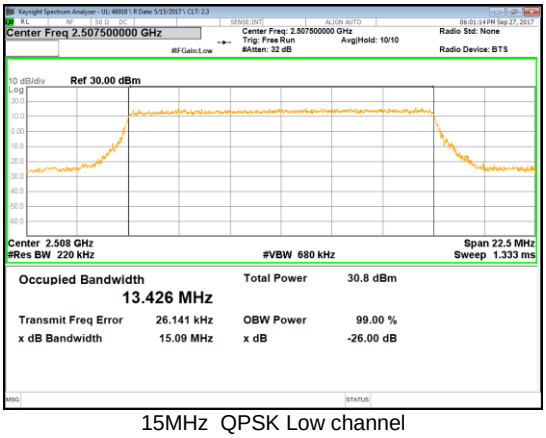
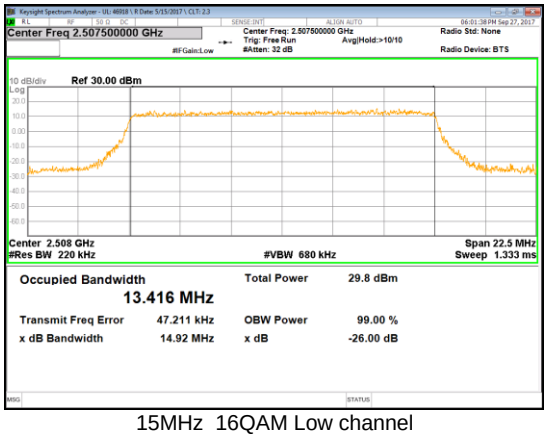
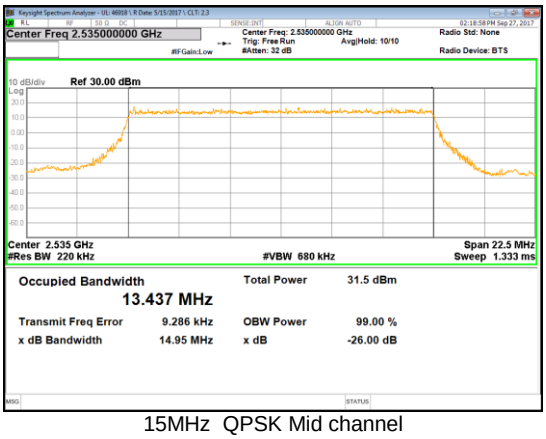
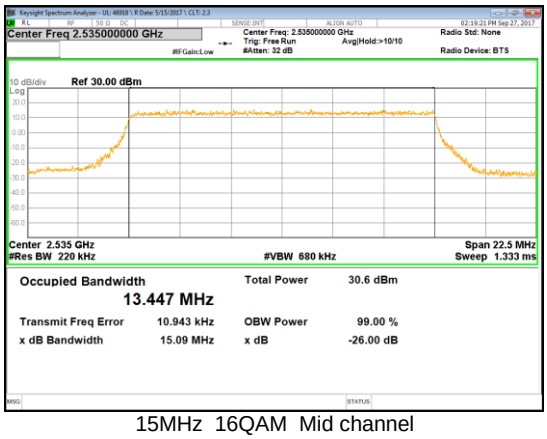
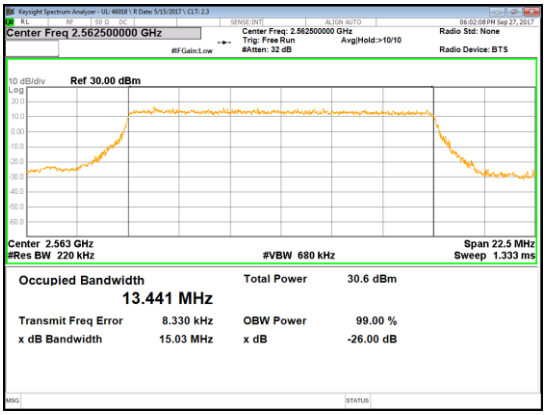
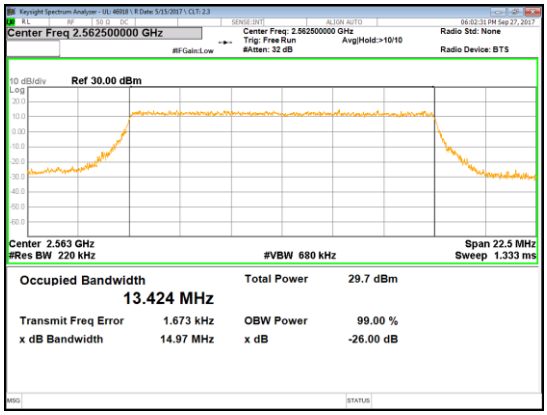
Band 7 15MHz	 15MHz QPSK Low channel	 15MHz 16QAM Low channel
	 15MHz QPSK Mid channel	 15MHz 16QAM Mid channel
	 15MHz QPSK High channel	 15MHz 16QAM High channel

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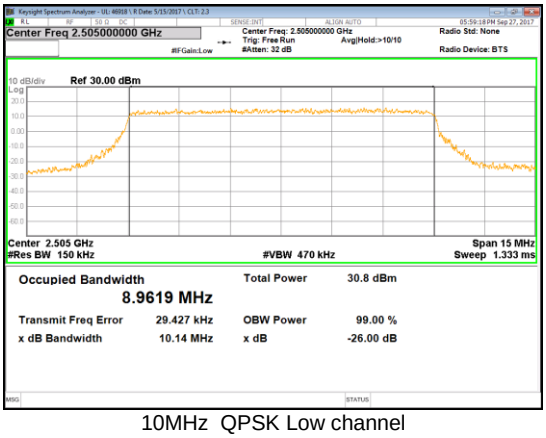
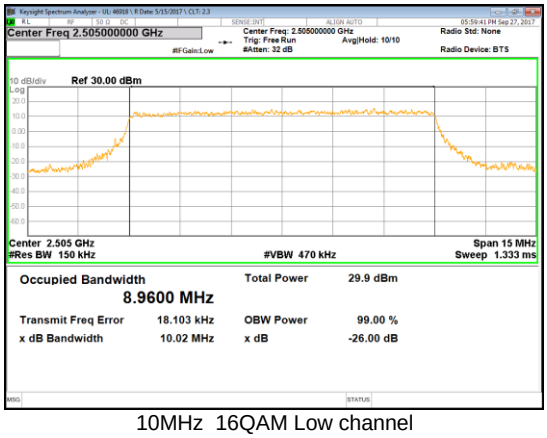
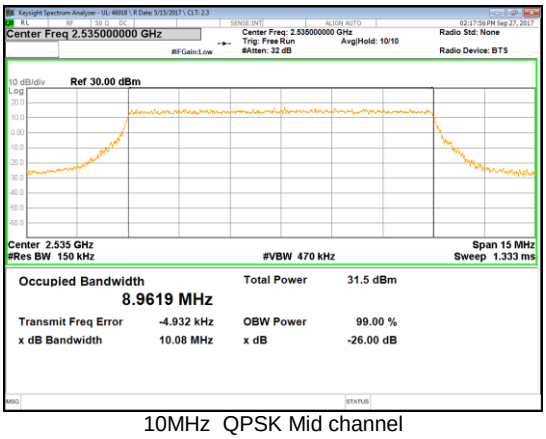
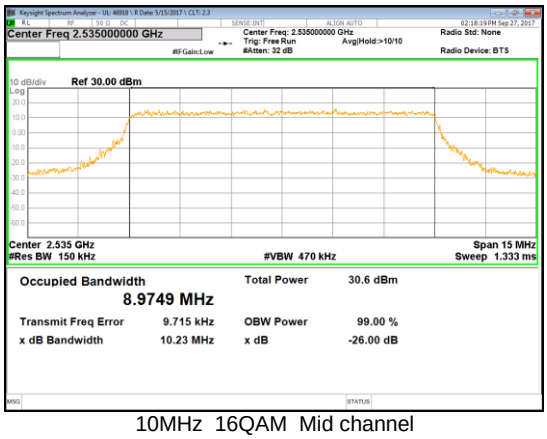
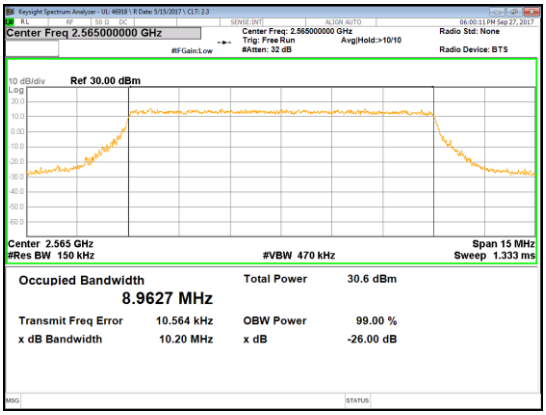
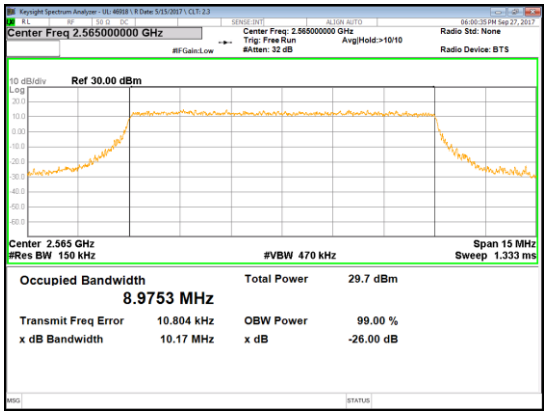
Band 7 10MHz	 10MHz QPSK Low channel	 10MHz 16QAM Low channel
	 10MHz QPSK Mid channel	 10MHz 16QAM Mid channel
	 10MHz QPSK High channel	 10MHz 16QAM High channel

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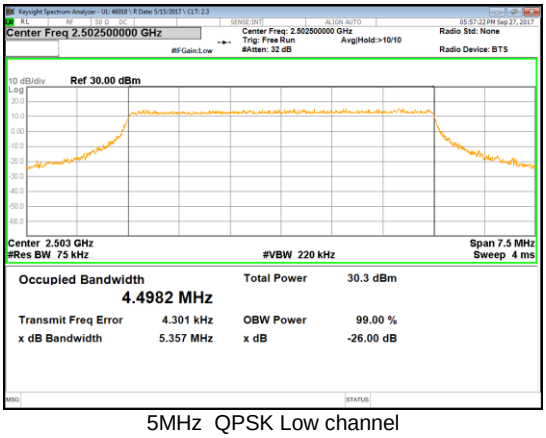
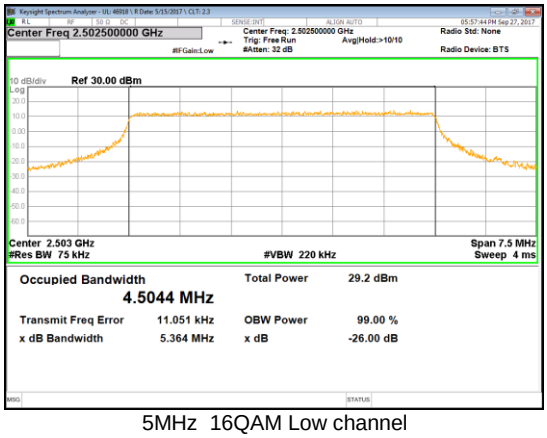
Band 7

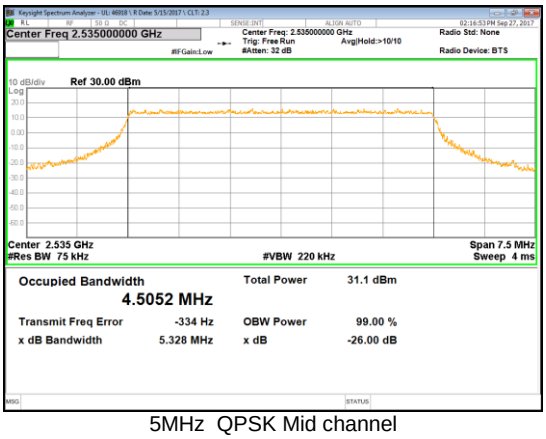
5MHz



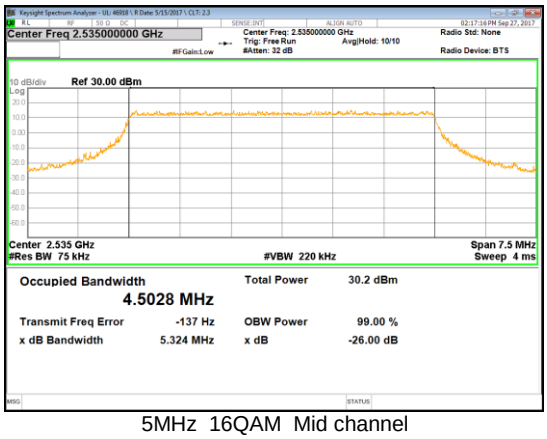
5MHz QPSK Low channel



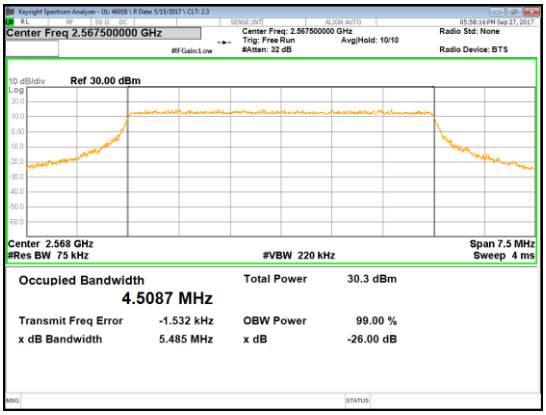
5MHz 16QAM Low channel



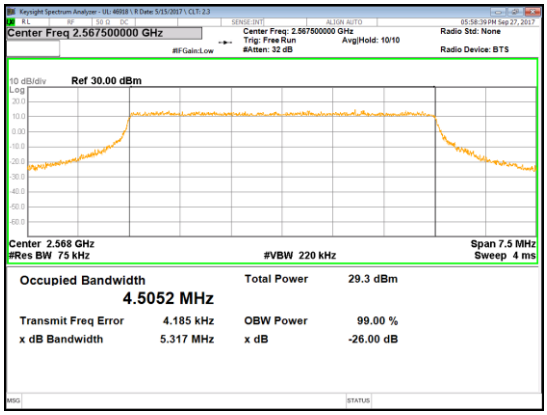
5MHz QPSK Mid channel



5MHz 16QAM Mid channel



5MHz QPSK High channel



5MHz 16QAM High channel

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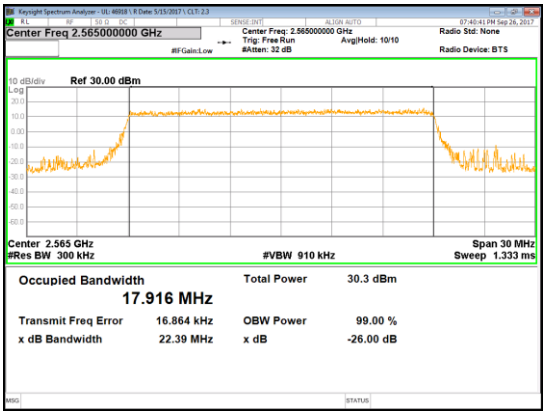
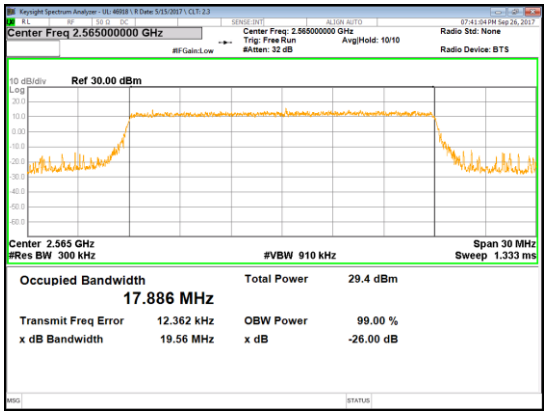
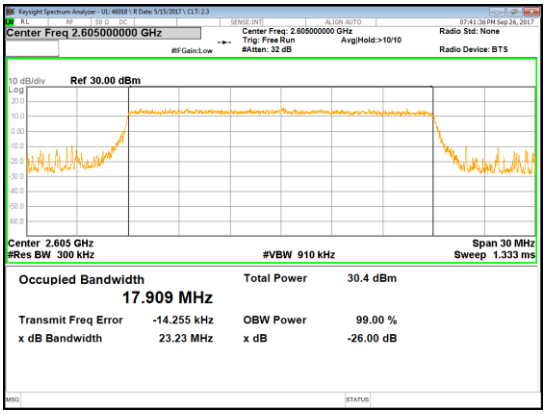
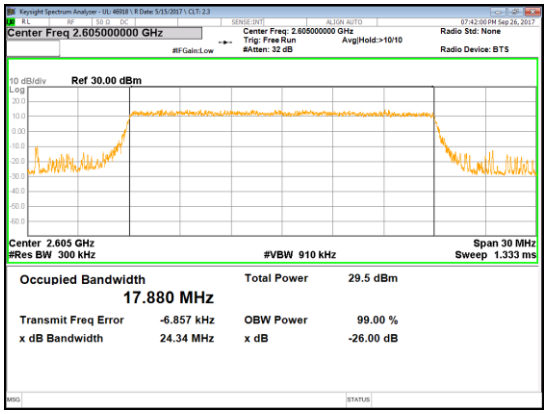
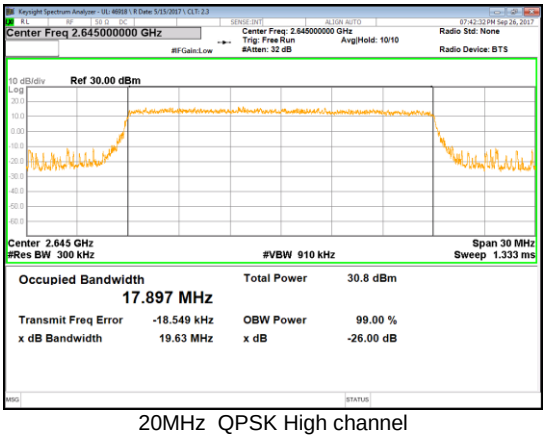
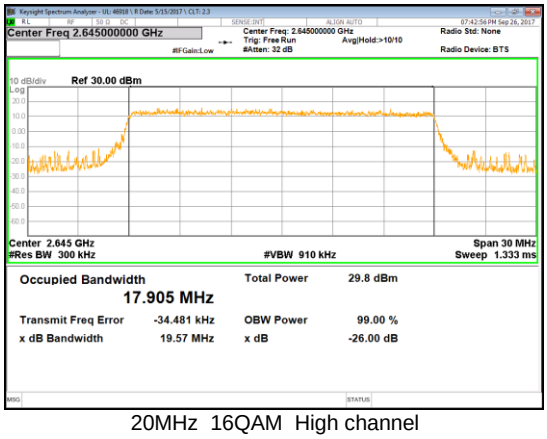
LTE Band 41

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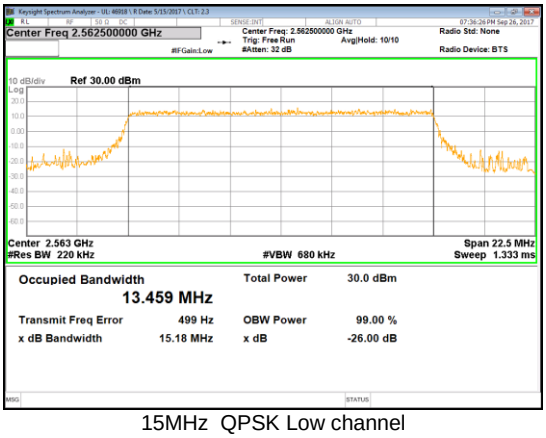
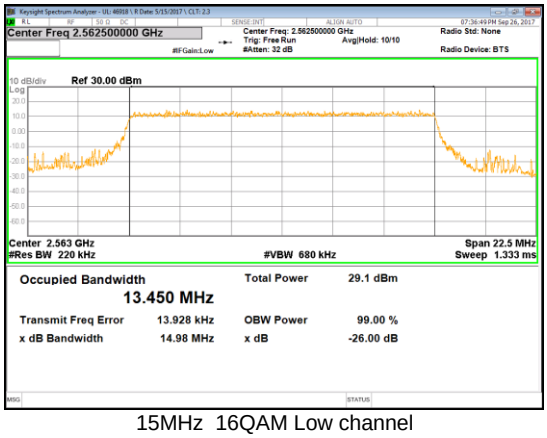
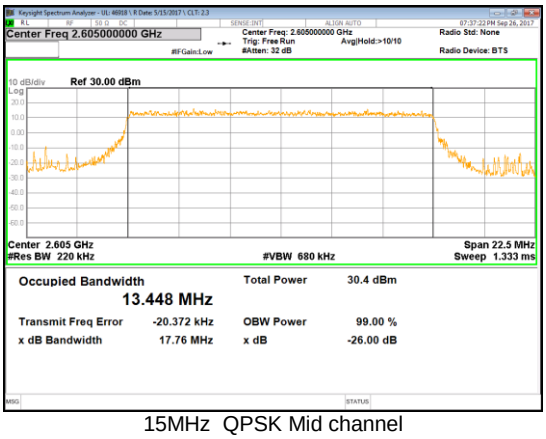
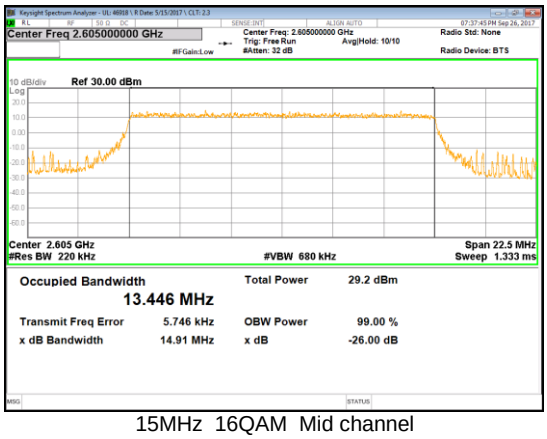
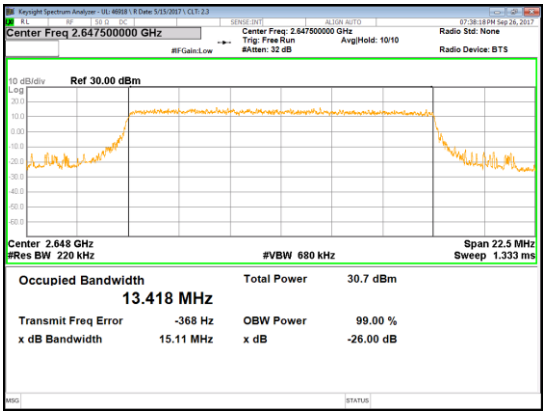
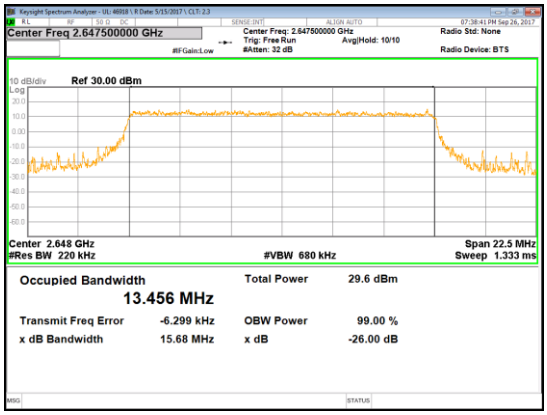
Band 41 15MHz	 15MHz QPSK Low channel	 15MHz 16QAM Low channel
	 15MHz QPSK Mid channel	 15MHz 16QAM Mid channel
	 15MHz QPSK High channel	 15MHz 16QAM High channel

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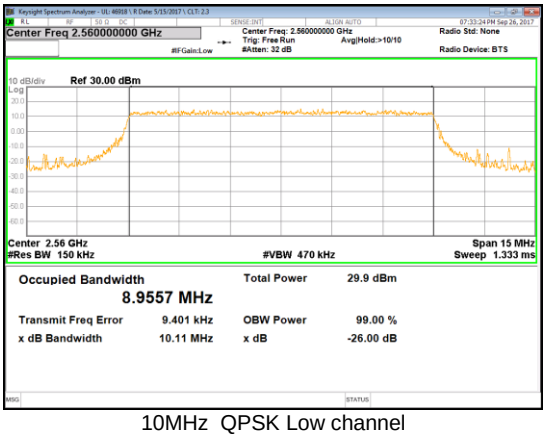
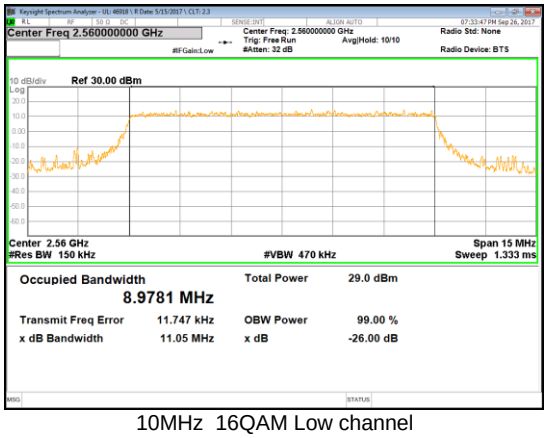
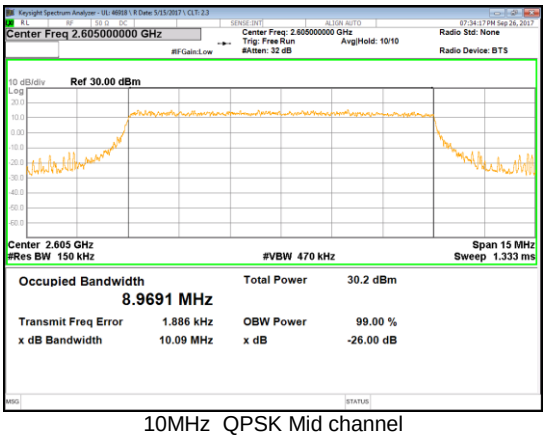
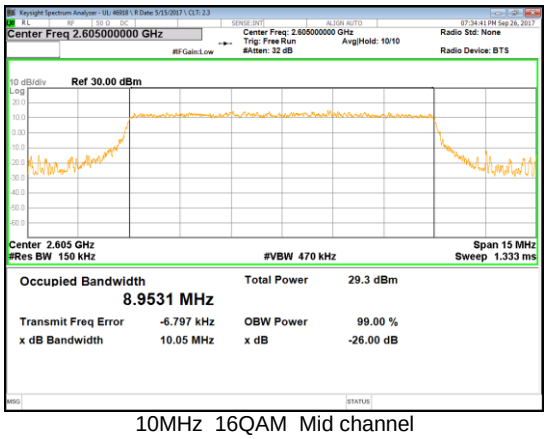
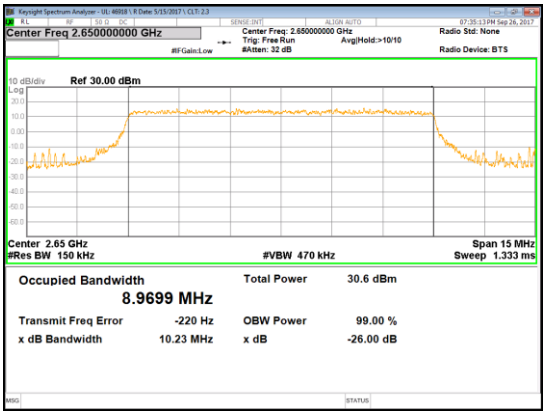
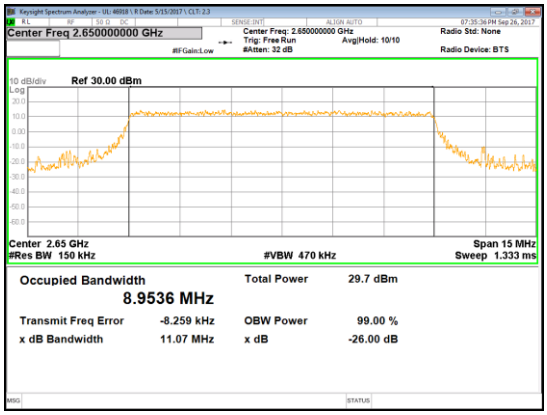
Band 41 10MHz	 10MHz QPSK Low channel	 10MHz 16QAM Low channel
	 10MHz QPSK Mid channel	 10MHz 16QAM Mid channel
	 10MHz QPSK High channel	 10MHz 16QAM High channel

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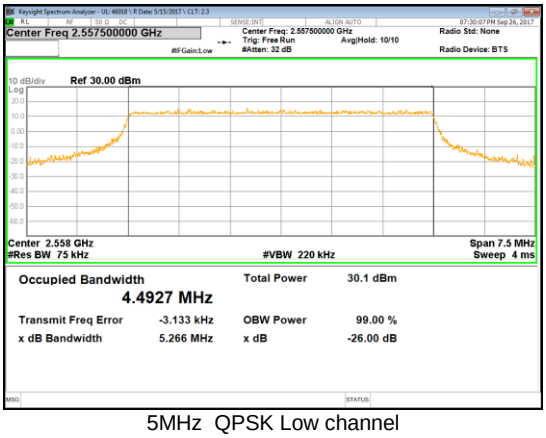
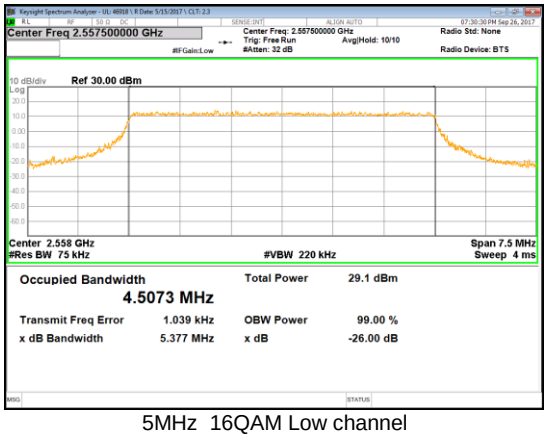
Band 41

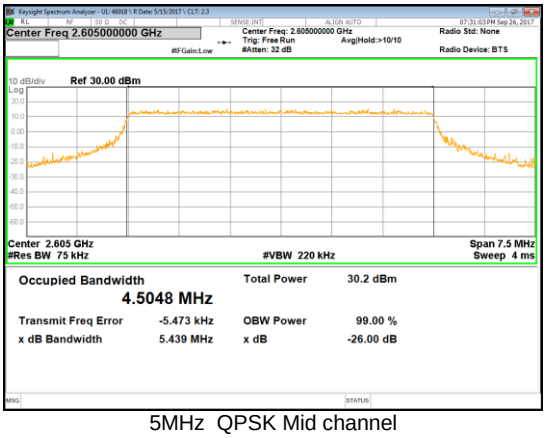
5MHz



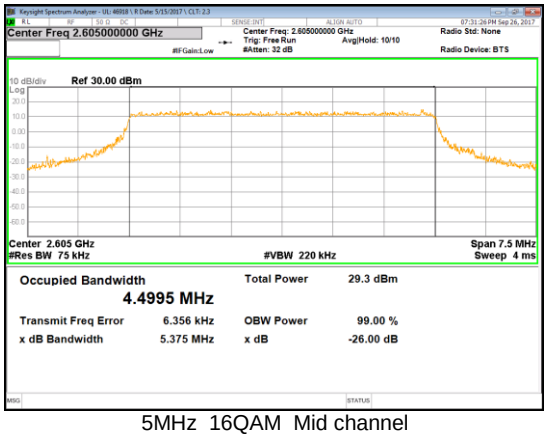
5MHz QPSK Low channel



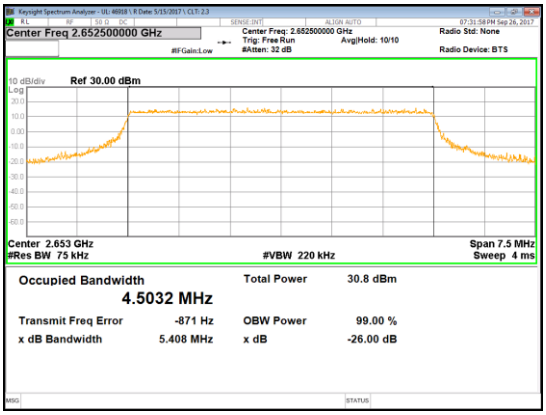
5MHz 16QAM Low channel



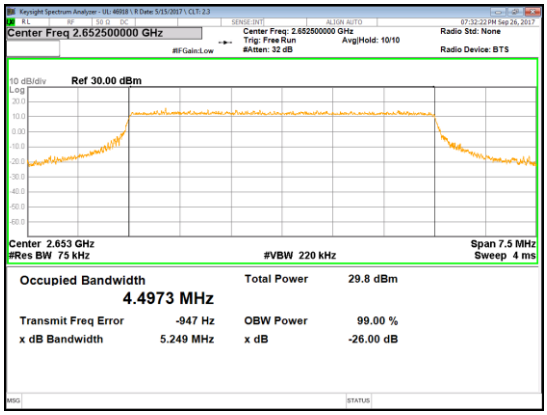
5MHz QPSK Mid channel



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 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 ≥ 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(2.248dB) 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	

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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	

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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	

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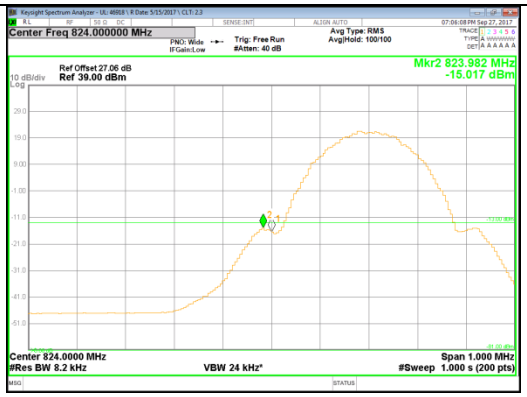
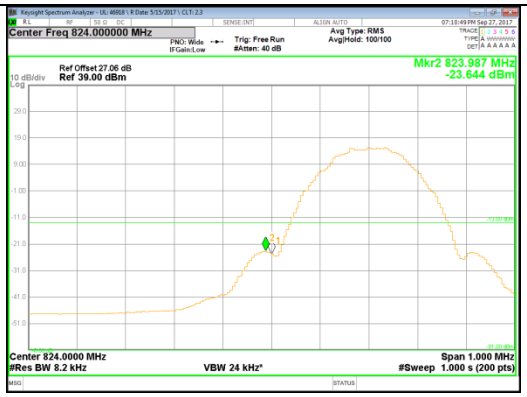
9.2.1. BAND EDGE PLOTS

GSM

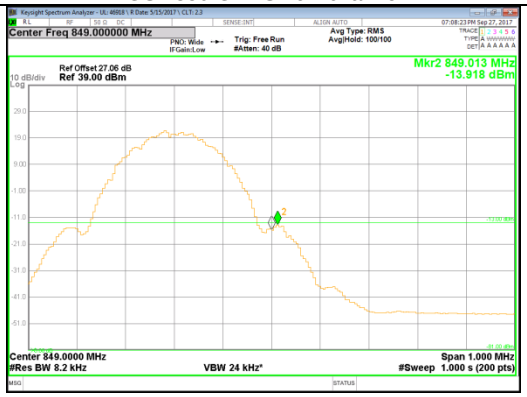
GSM 850



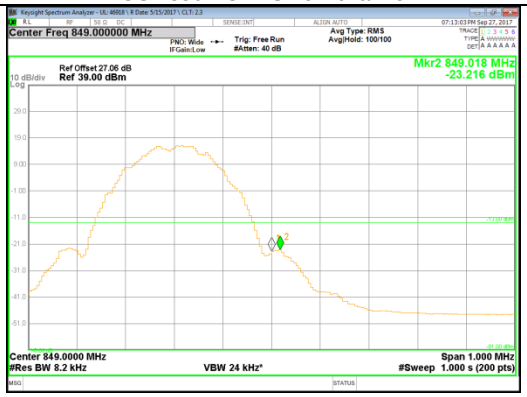
GSM850 GPRS Low channel



GSM850 EGPRS Low channel

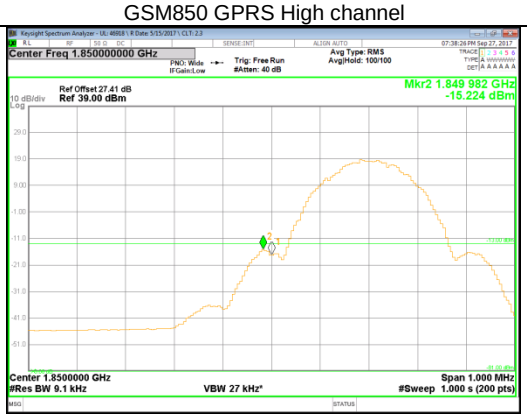


GSM850 GPRS High channel



GSM850 EGPRS High channel

GSM 1900



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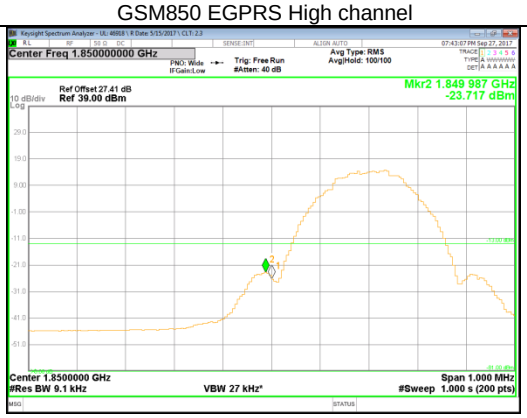

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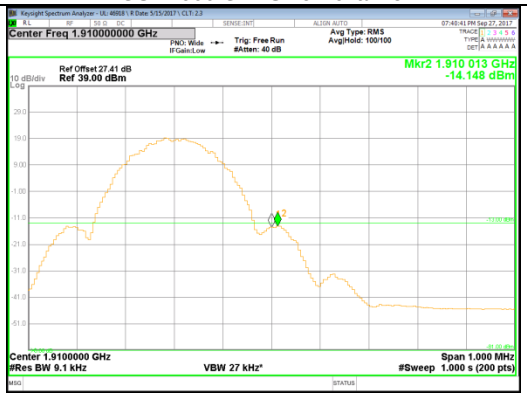

GSM1900 GPRS High channel

GSM1900 EGPRS High channel

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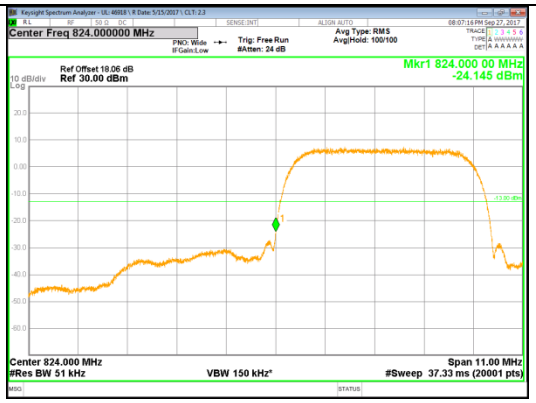
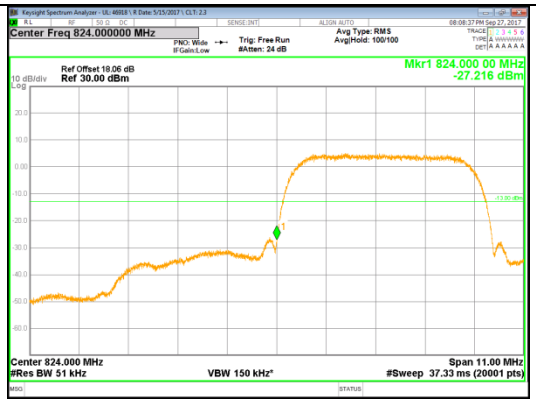
WCDMA

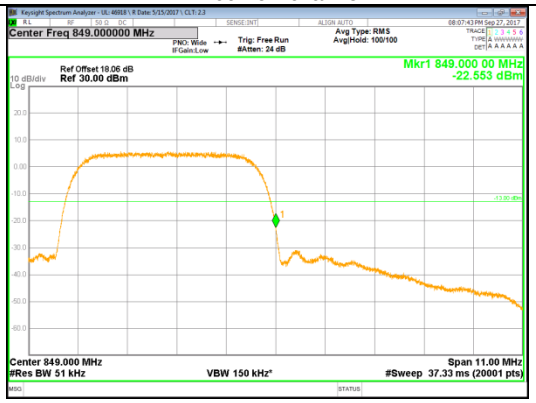
Band 5



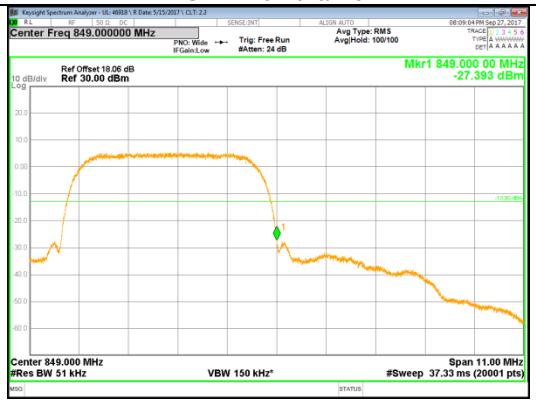
REL99 Low channel



HSDPA Low channel

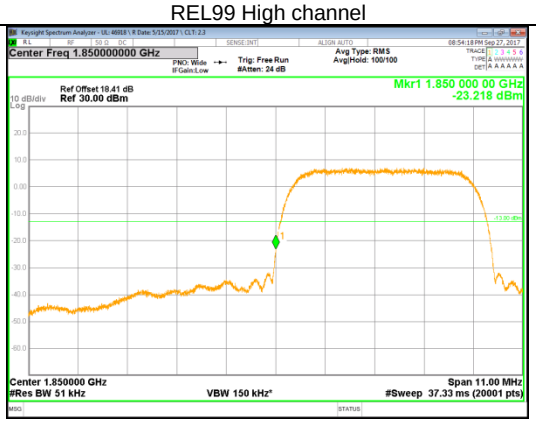


REL99 High channel

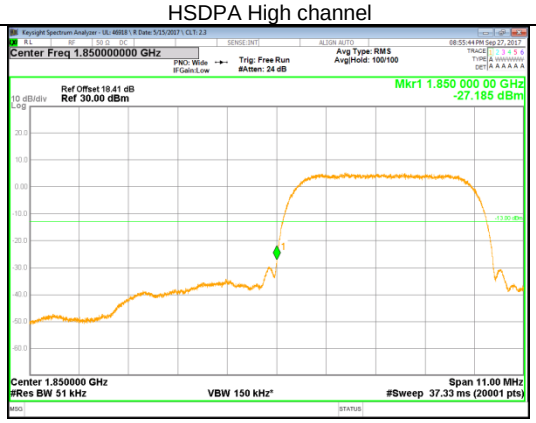


HSDPA High channel

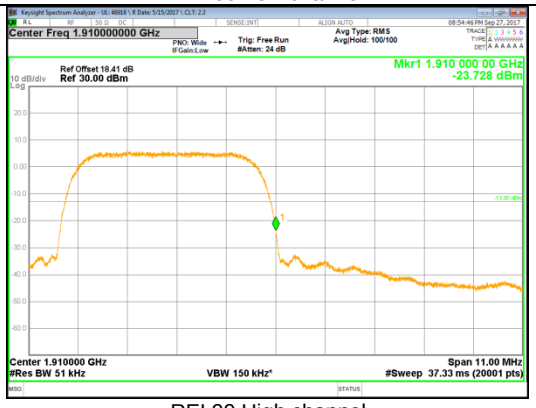
Band 2



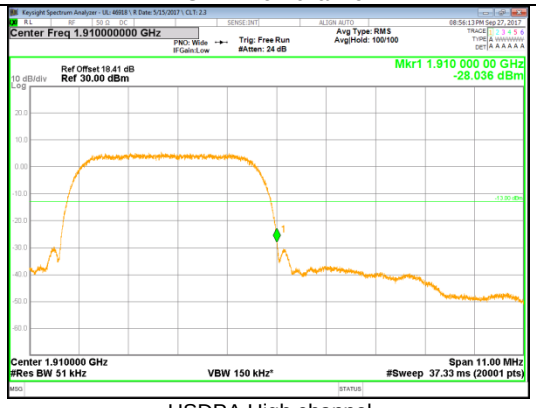
REL99 Low channel



HSDPA Low channel



REL99 High channel



HSDPA High channel

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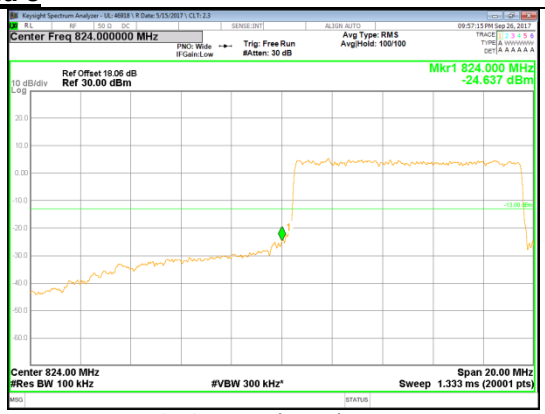
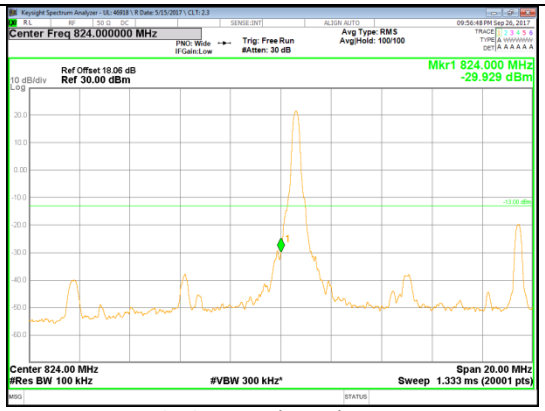
LTE Band 5

Band 5

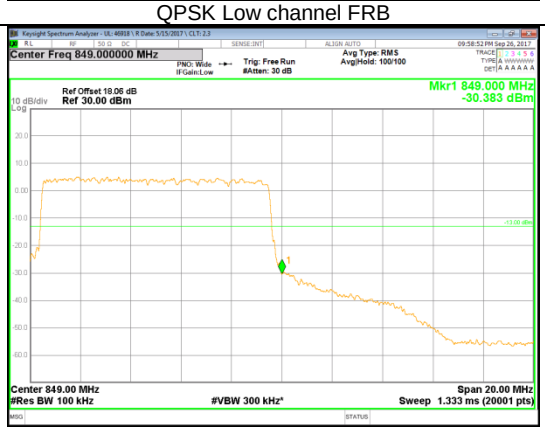
10MHz



QPSK Low channel FRB



QPSK Low channel 1RB



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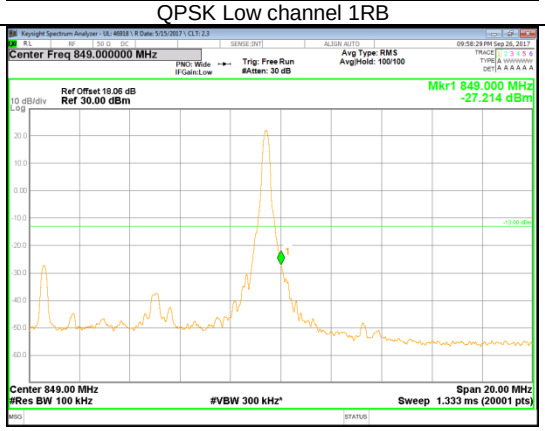

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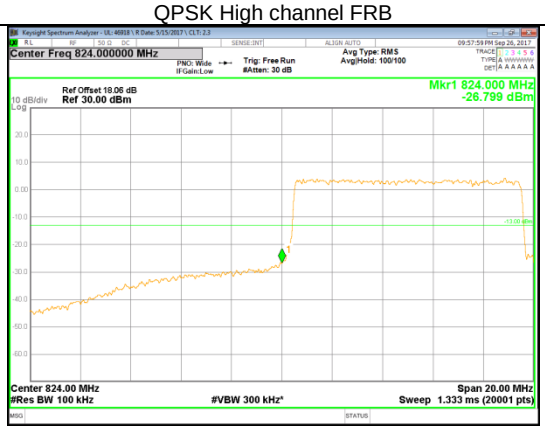
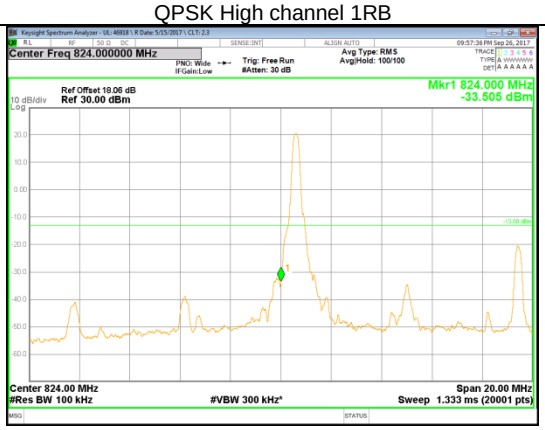


16QAM Low channel FRB



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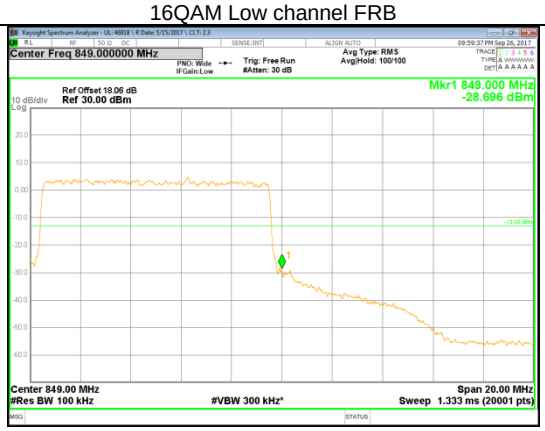

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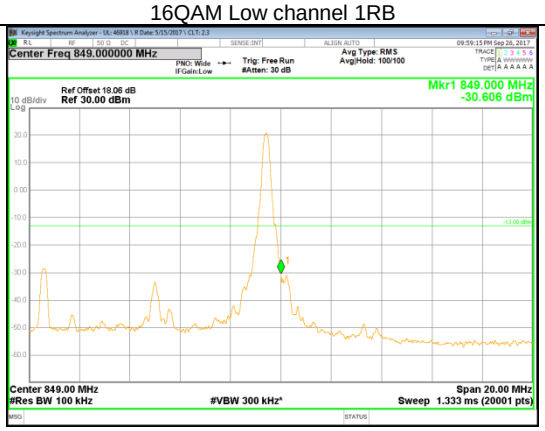

16QAM High channel 1RB

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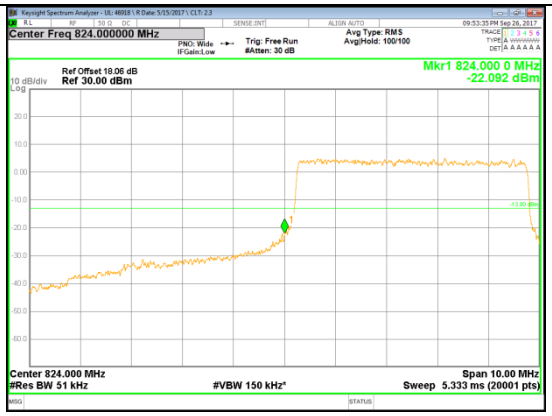
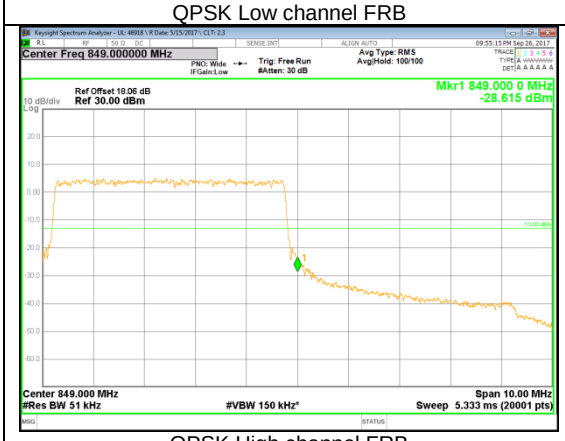
Band 5

5MHz



QPSK Low channel FRB

QPSK Low channel 1RB



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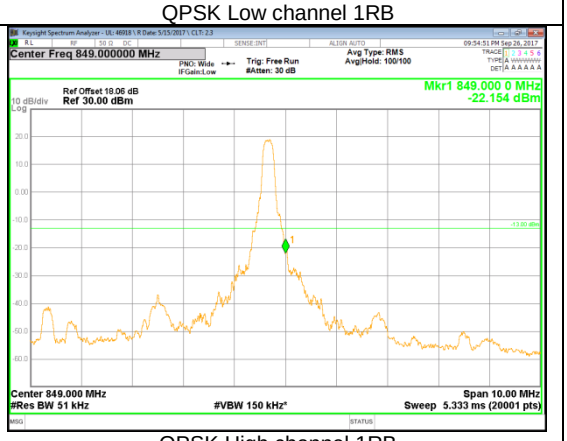

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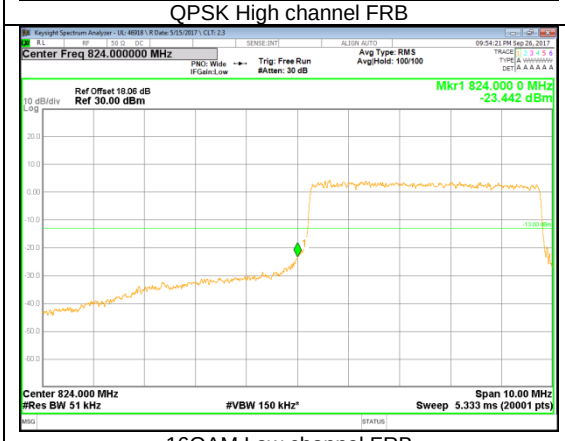

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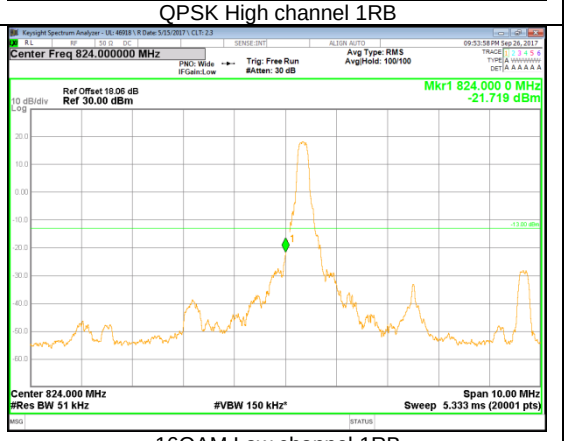

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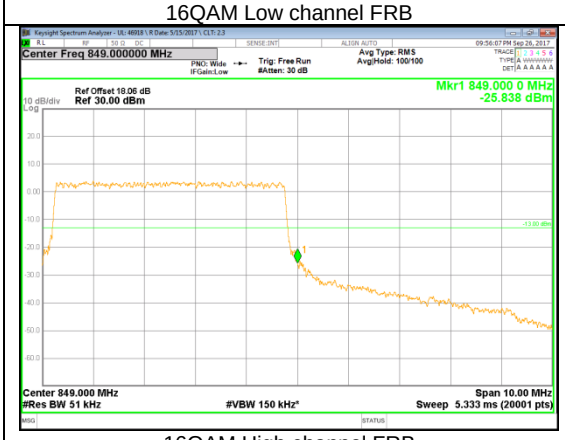

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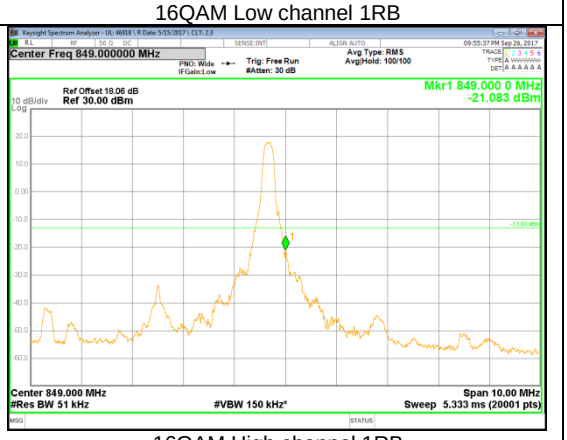

16QAM High channel 1RB

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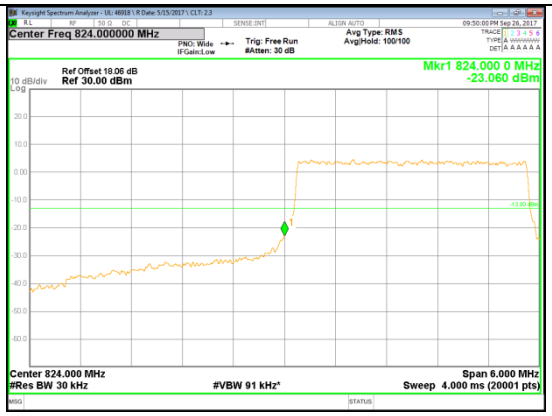
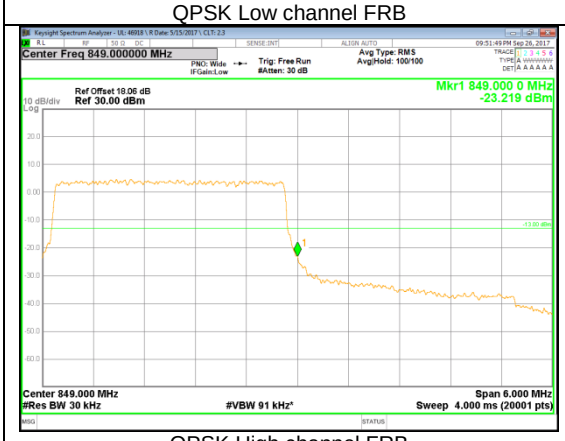
Band 5

3MHz

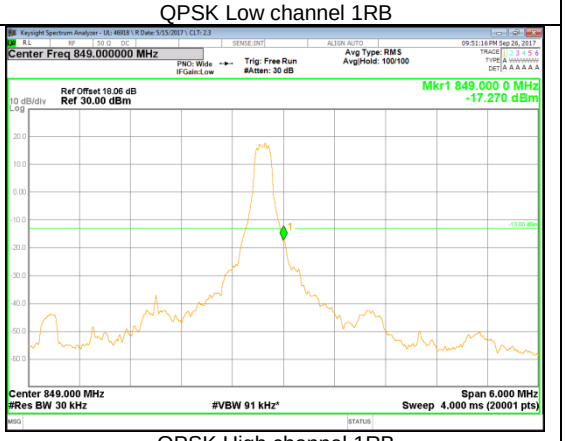


QPSK Low channel FRB

QPSK Low channel 1RB



QPSK High channel FRB



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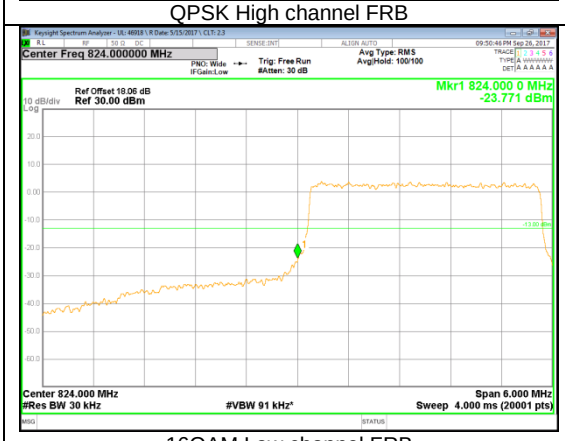

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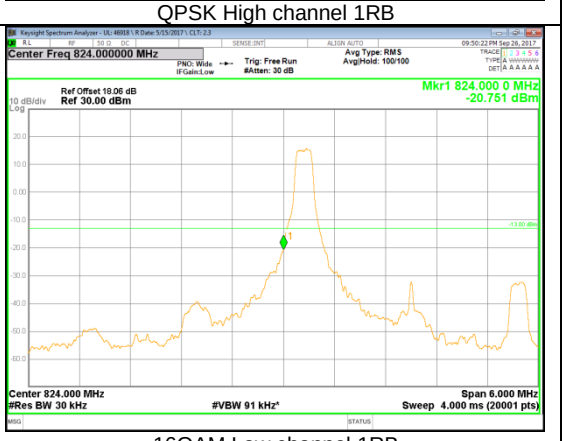

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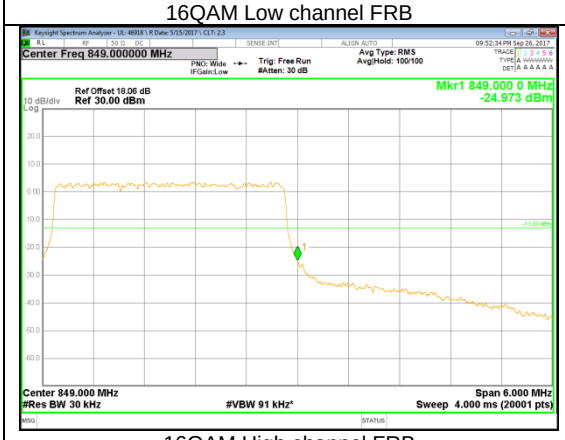
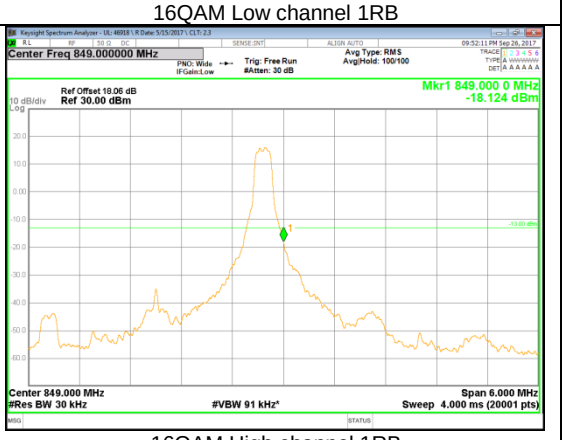


16QAM High channel FRB



16QAM High channel 1RB

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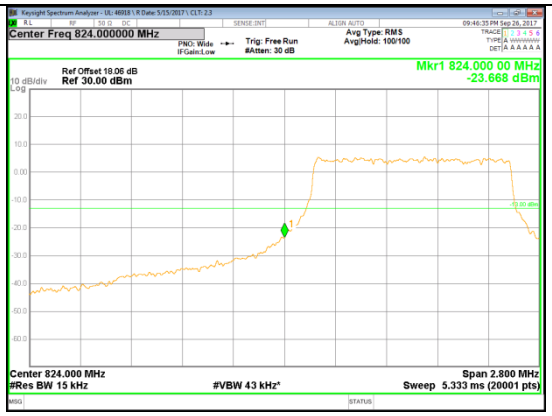
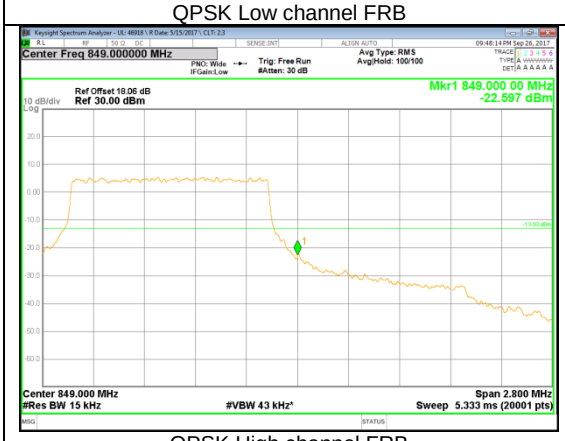
Band 5

1.4MHz

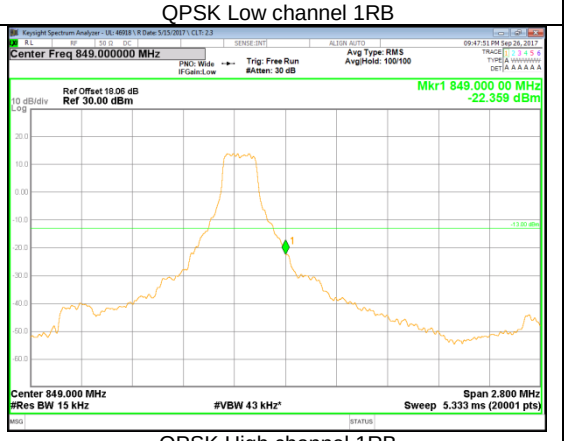


QPSK Low channel FRB

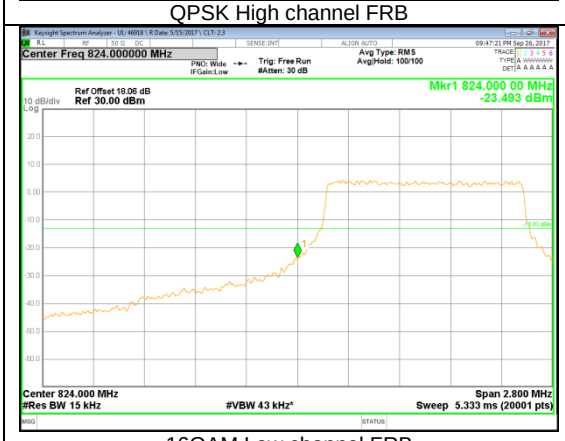
QPSK Low channel 1RB



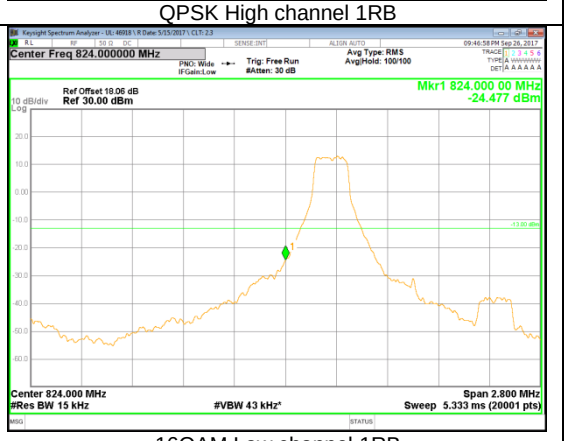
QPSK High channel FRB



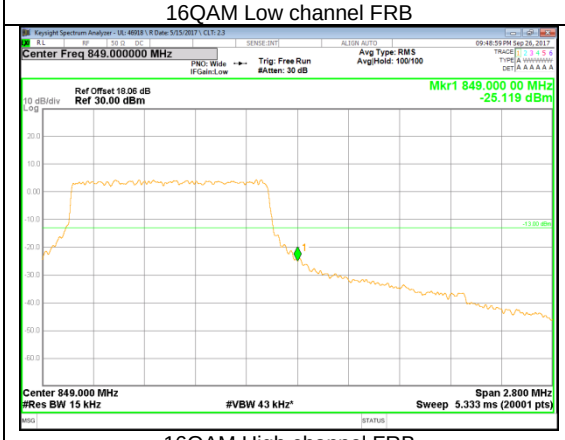
QPSK High channel 1RB



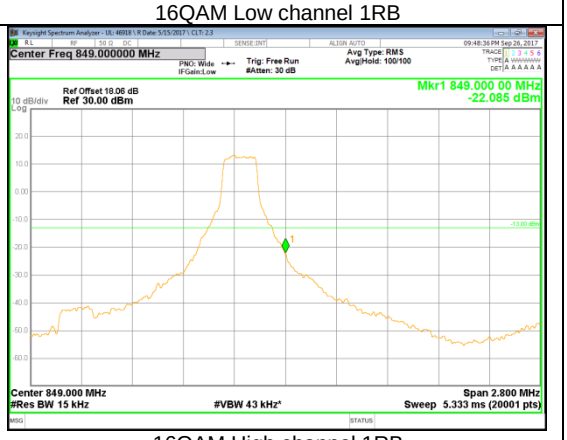
16QAM Low channel FRB



16QAM Low channel 1RB



16QAM High channel FRB



16QAM High channel 1RB

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218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

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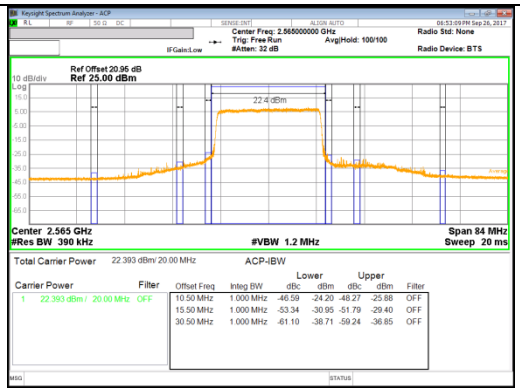
9.2.2. EMISSION MASK PLOTS

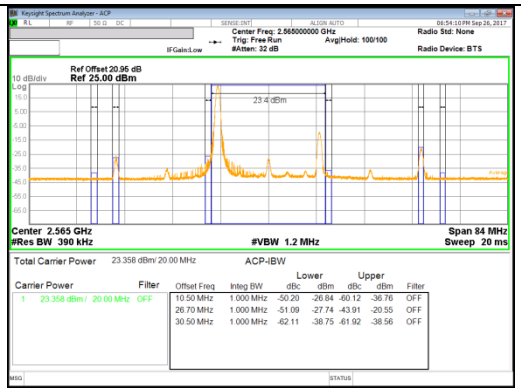
LTE Band 41

Band 41

20MHz



QPSK Low channel FRB



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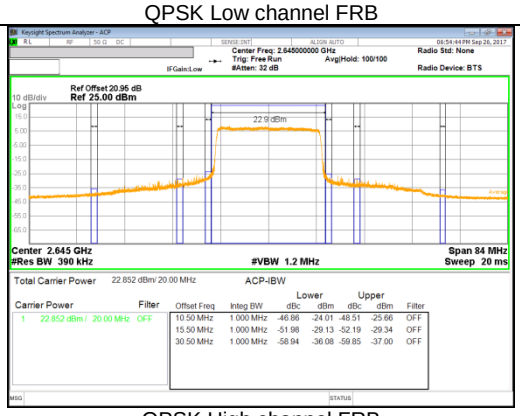

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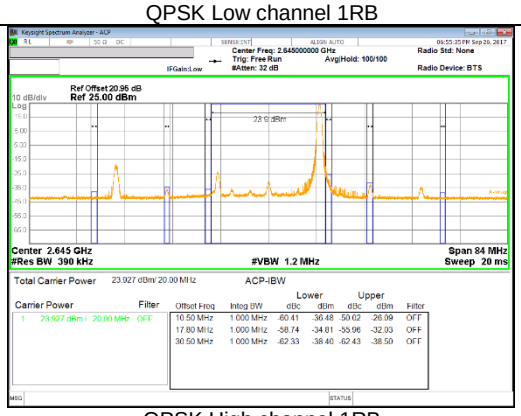
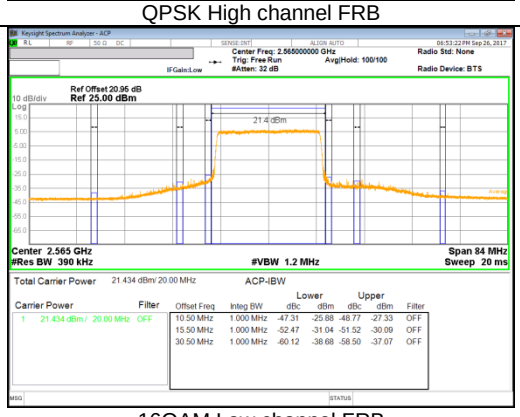
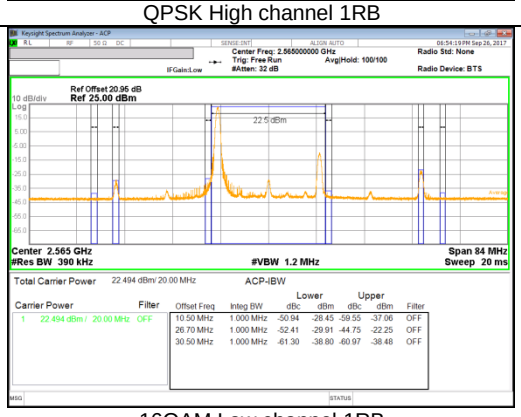


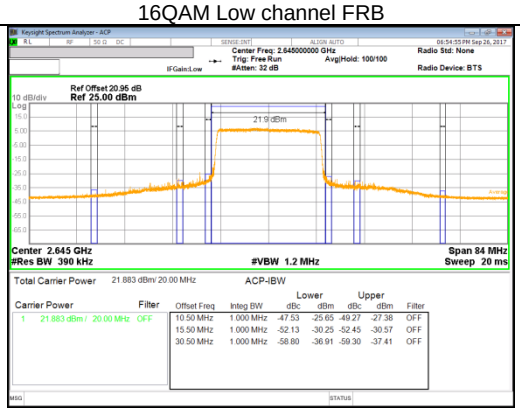
QPSK High channel 1RB



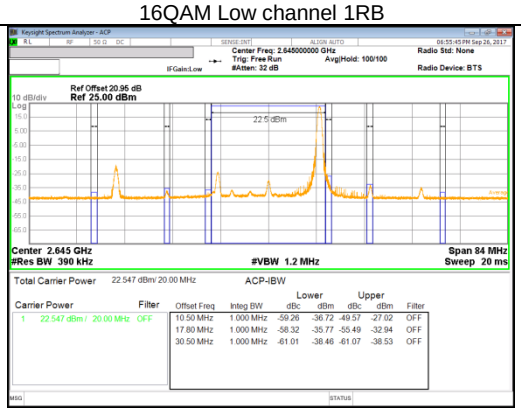
16QAM Low channel FRB



16QAM Low channel 1RB



16QAM High channel FRB



16QAM High channel 1RB

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