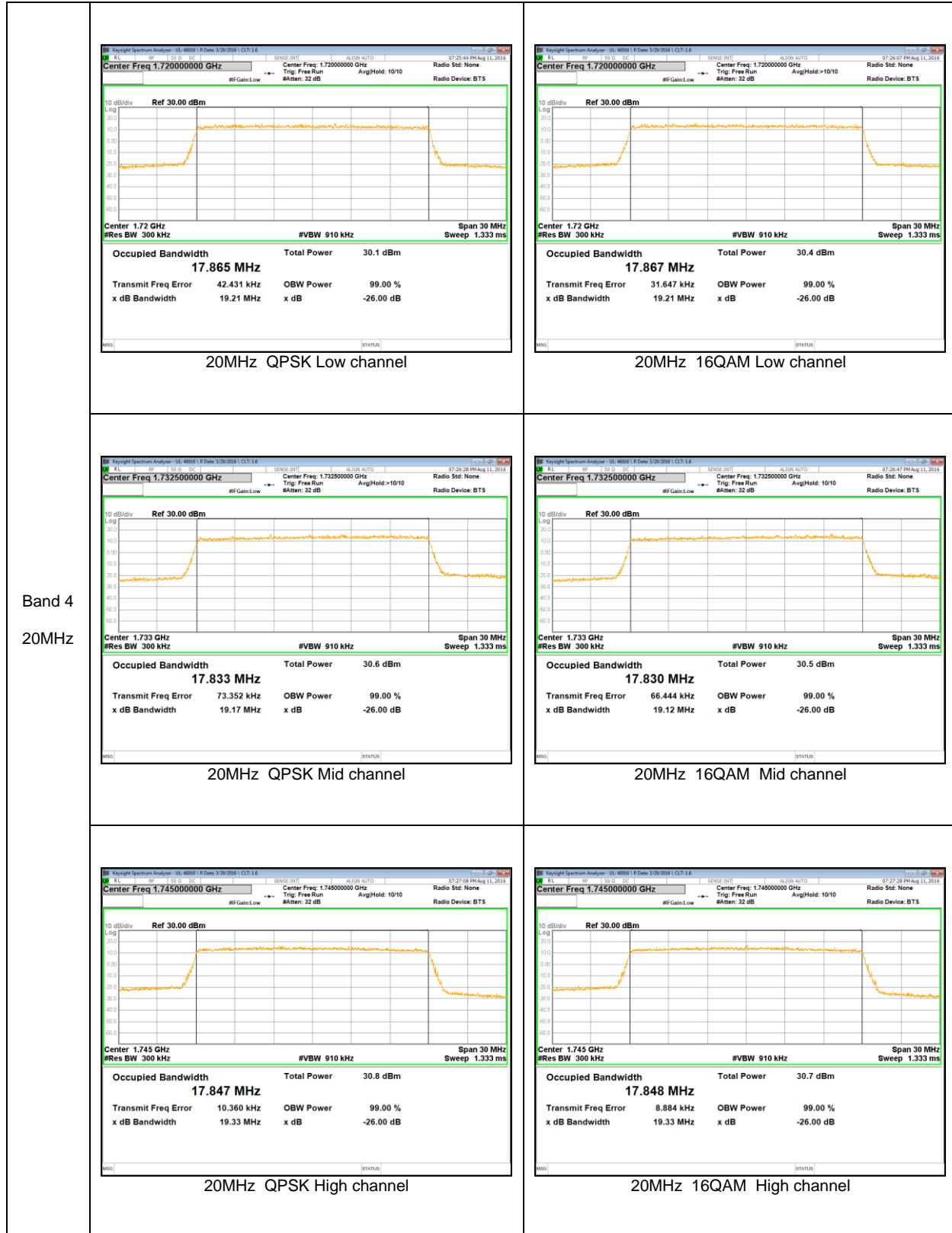
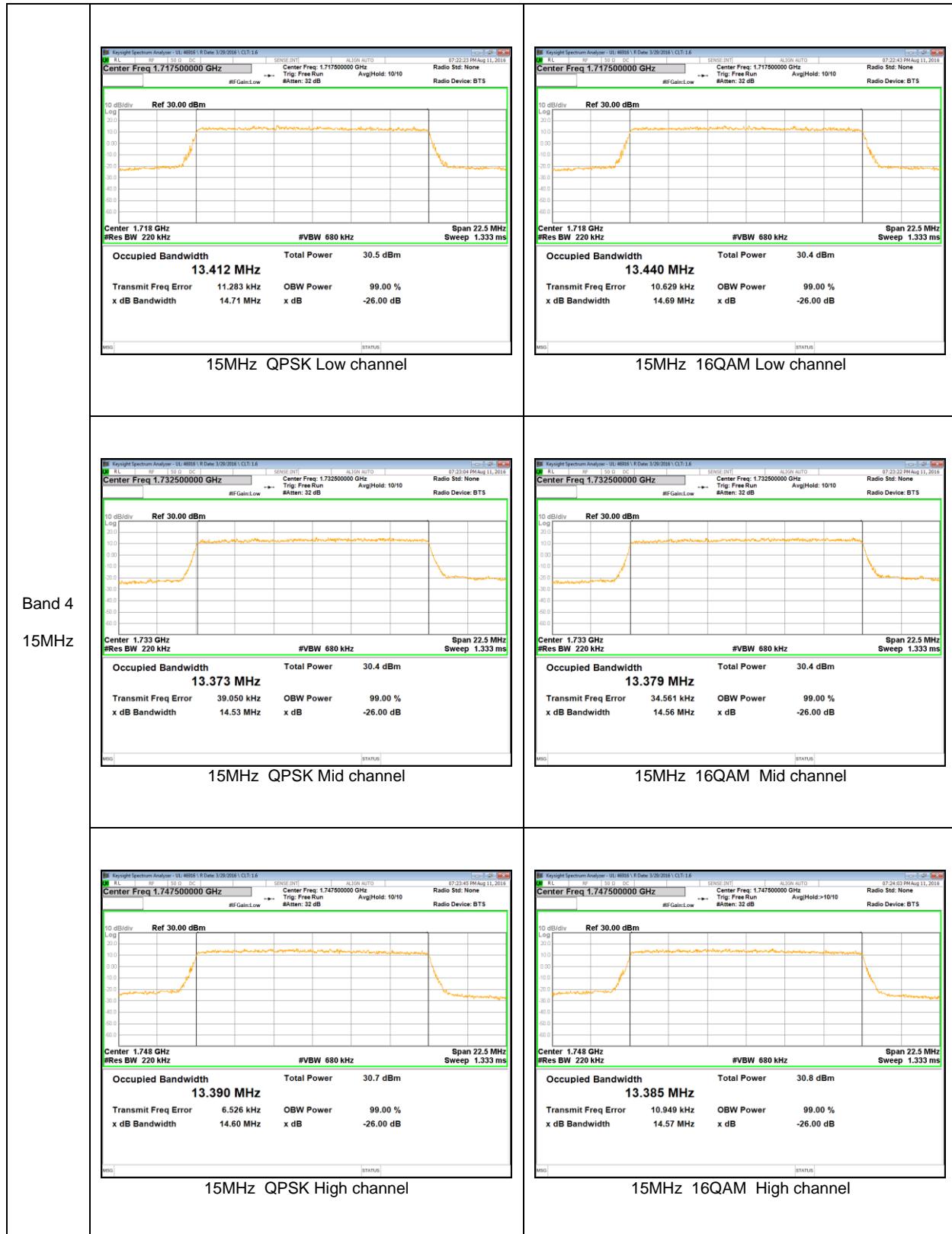
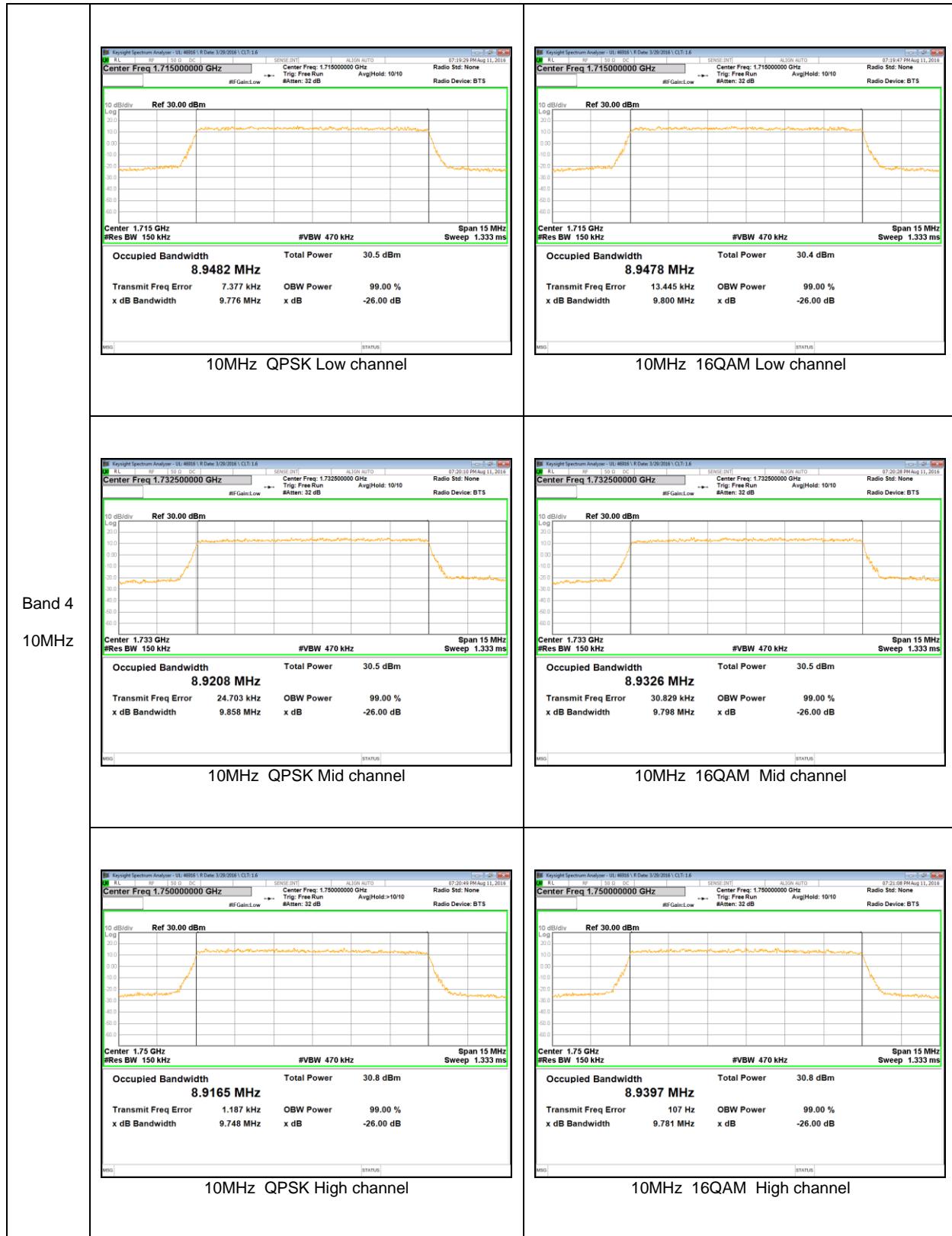
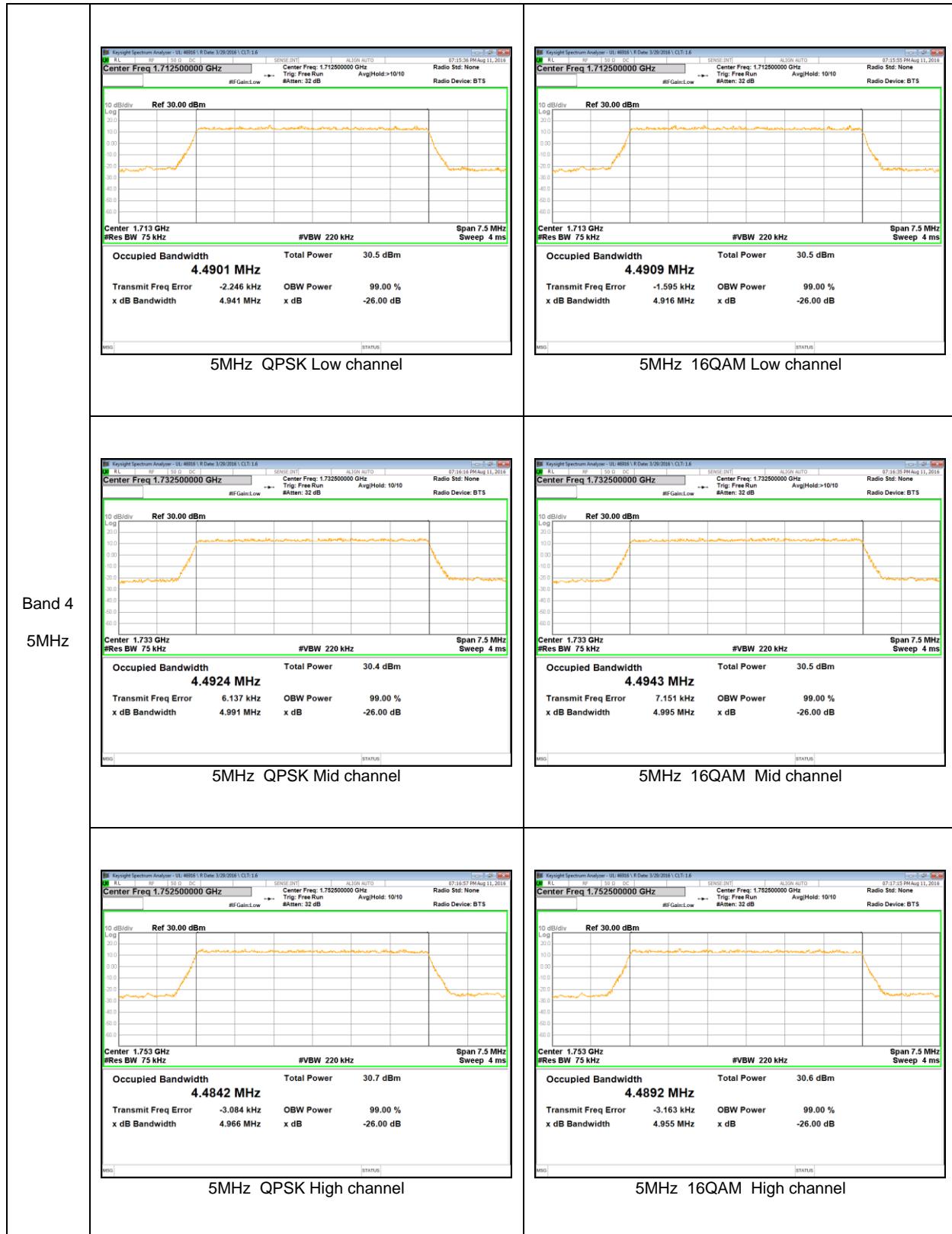


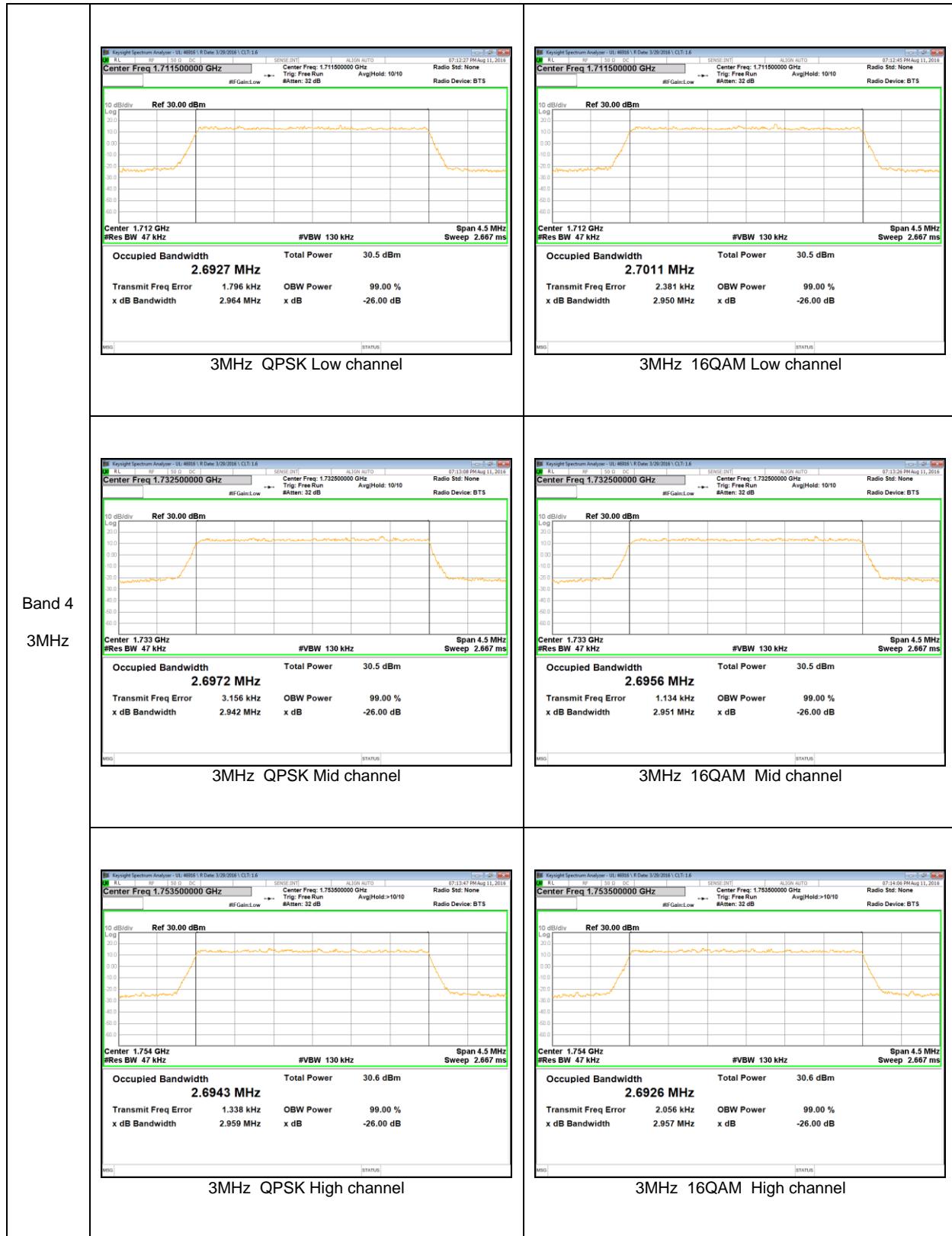
## LTE Band 4





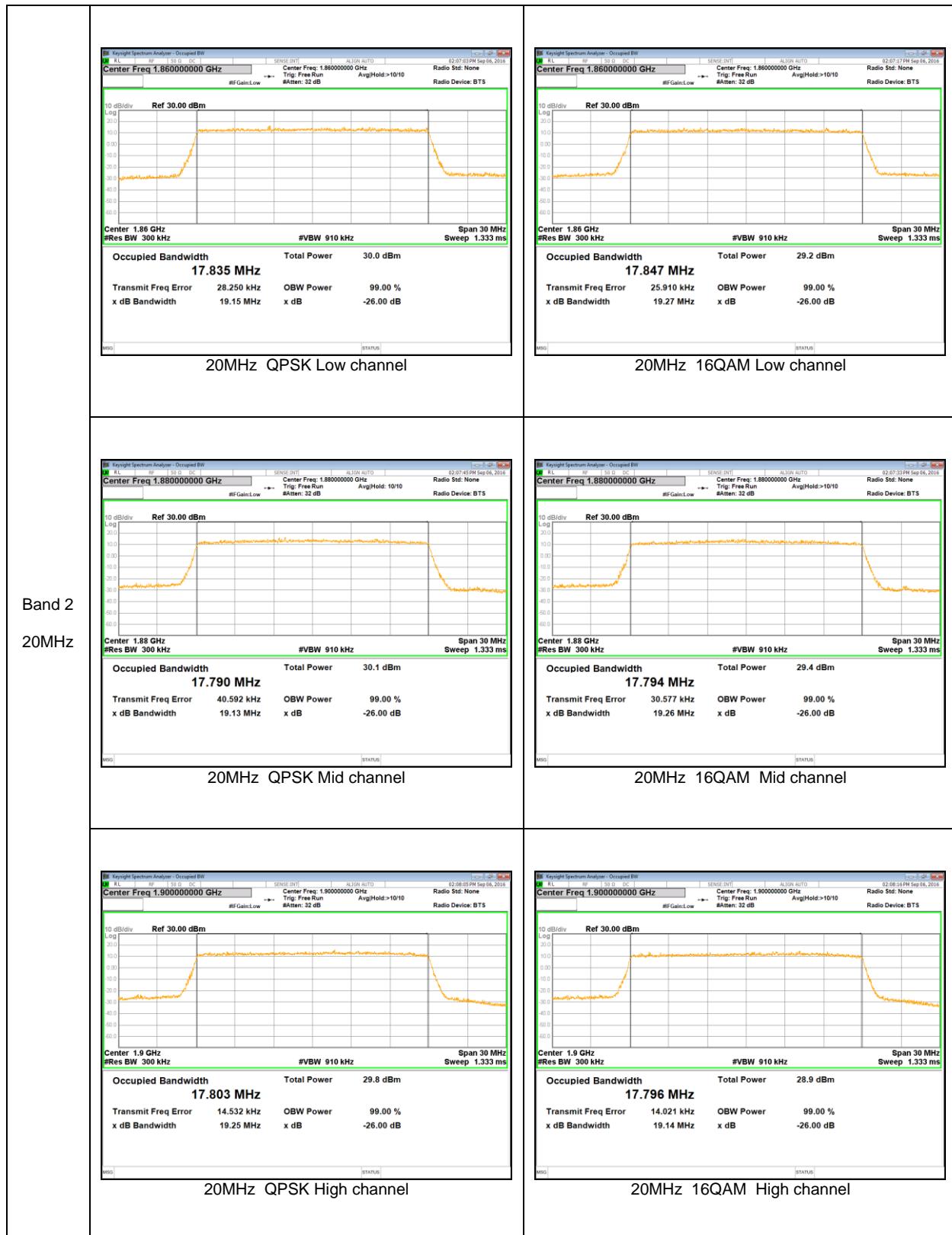


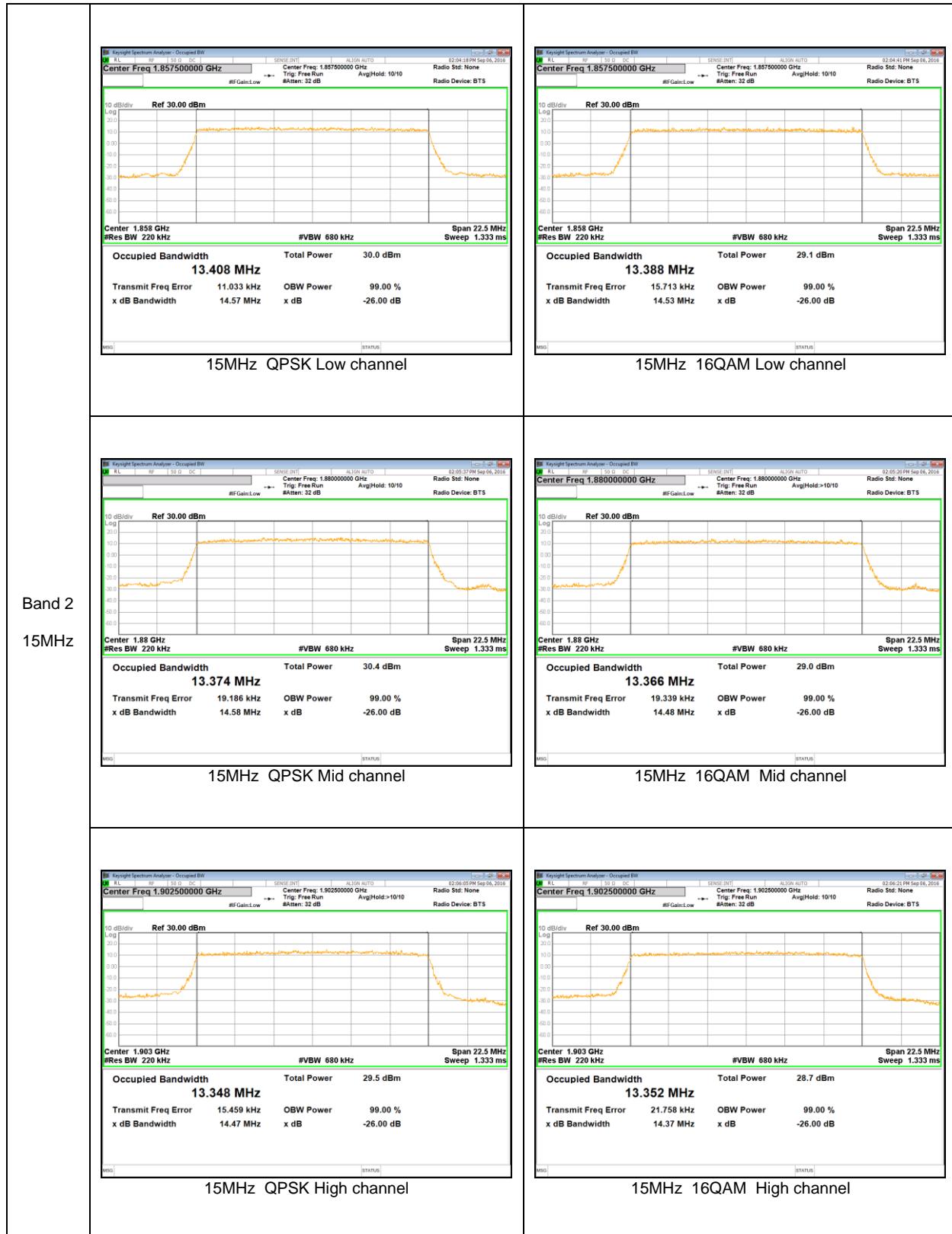


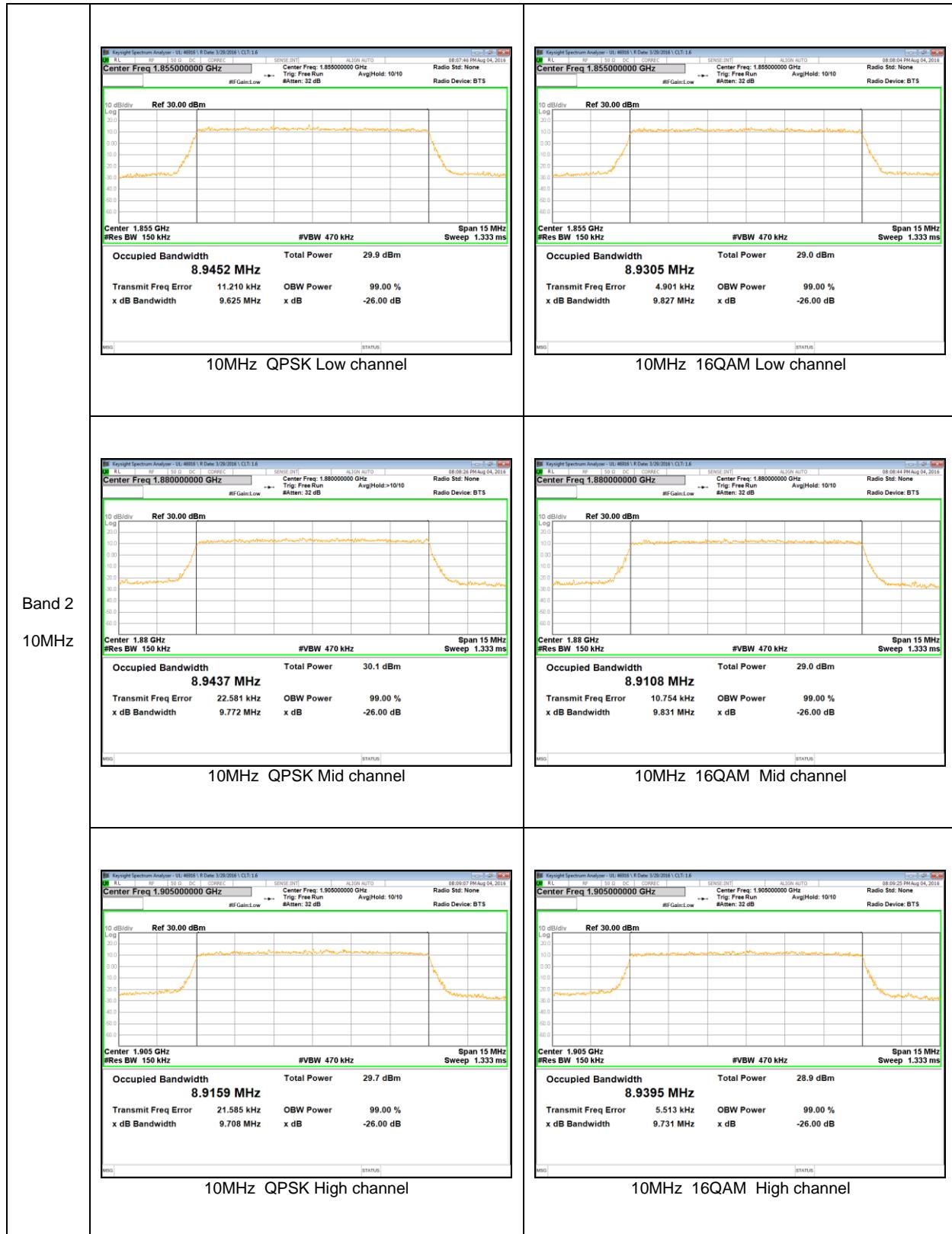


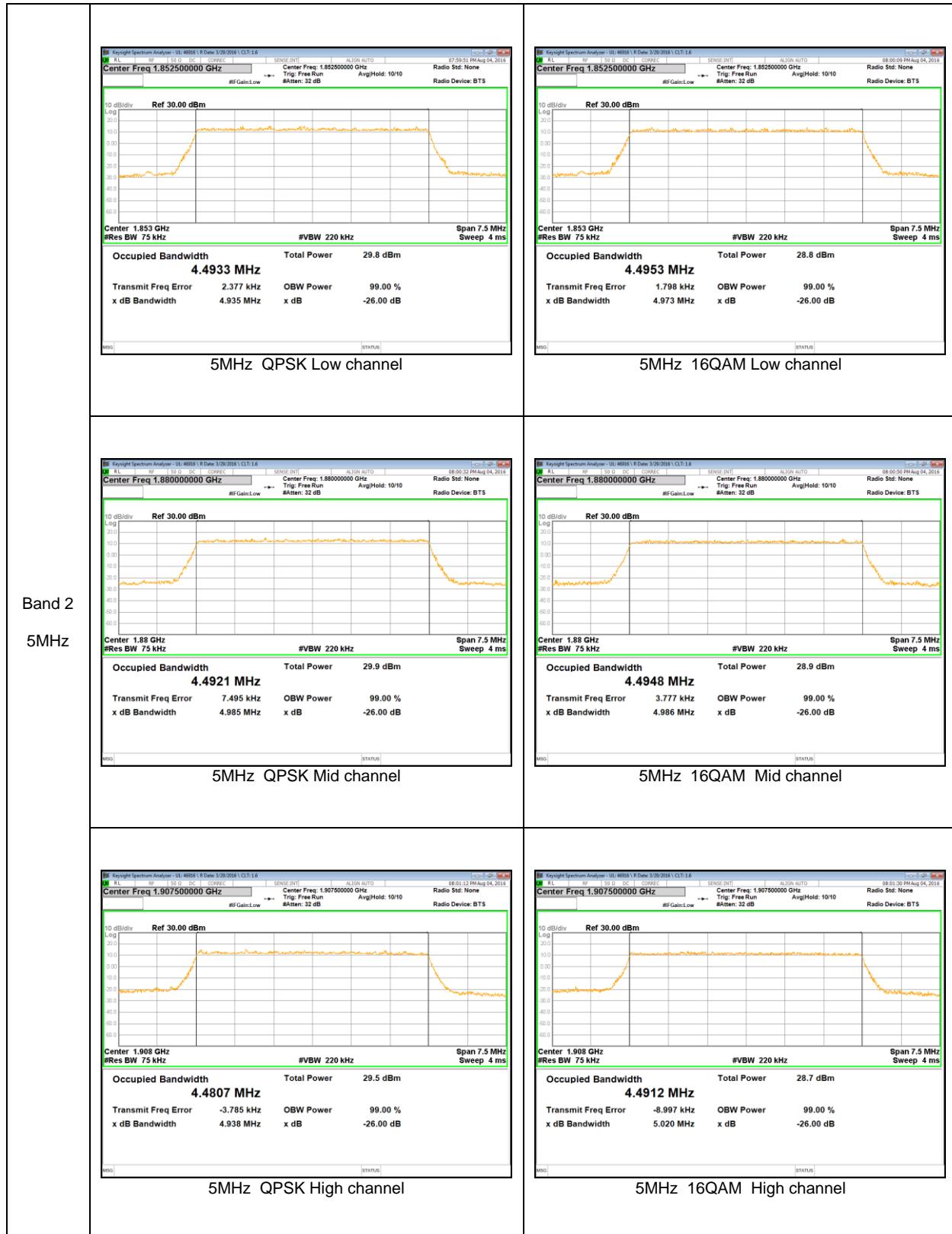


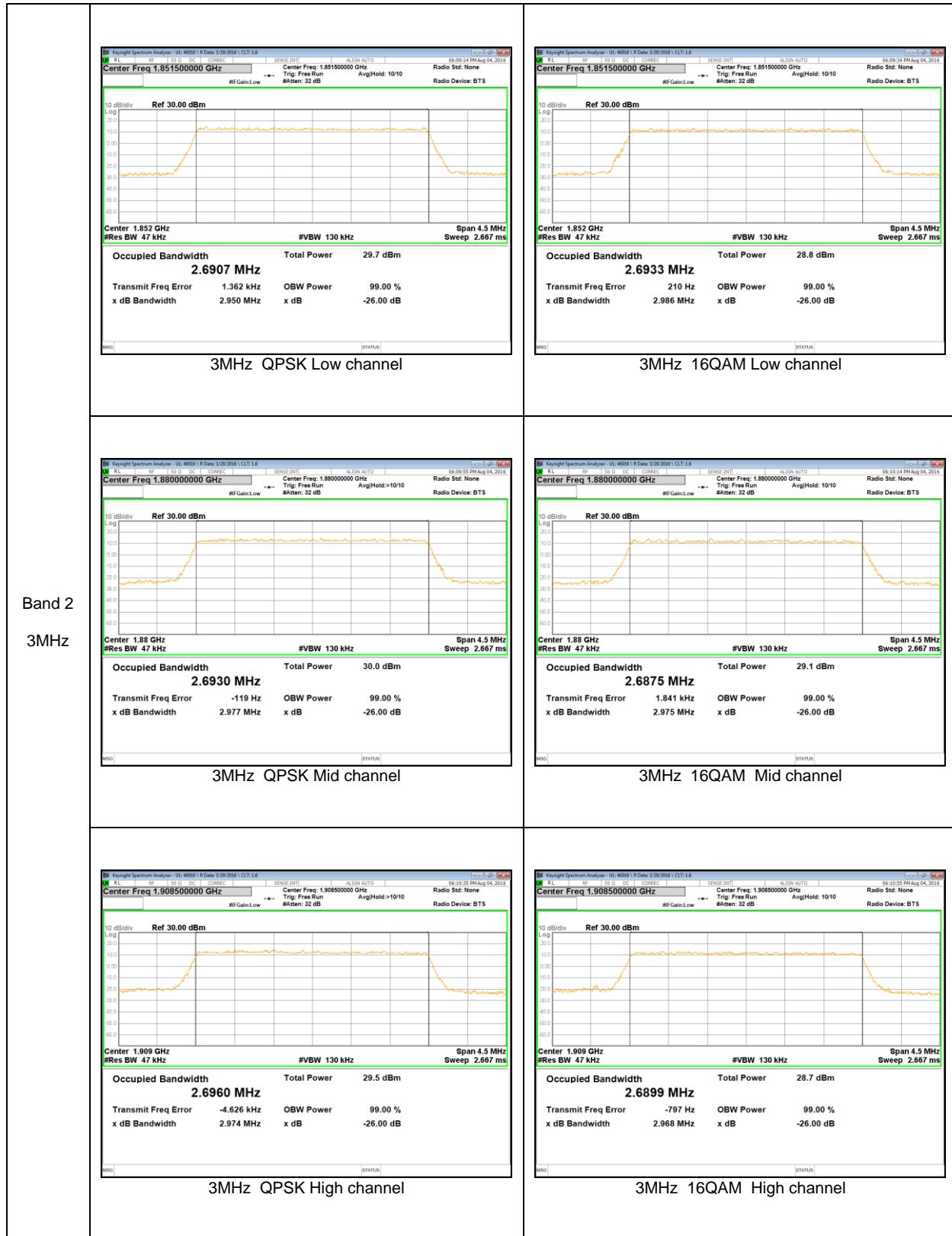
## LTE Band 2













## 10.2. 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.

### TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02

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

#### GSM

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

#### WCDMA/LTE

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

## RESULTS

### GSM

Band	Mode	Side	f [MHz]	Level [dBm]	Limit [dBm]
GSM850	GPRS	Lower	823.977	-16.166	-13.00
		Upper	849.023	-15.911	
GSM1900	GPRS	Lower	1849.987	-18.870	-13.00
		Upper	1910.018	-18.372	

### WCDMA

Band	Mode	Side	f [MHz]	Level [dBm]	Limit [dBm]
Band 5	REL99	Lower	824.000	-25.861	-13.00
		Upper	849.000	-28.204	
	HSDPA	Lower	824.000	-27.933	
		Upper	849.000	-29.115	
Band 4	REL99	Lower	1710.000	-25.746	-13.00
		Upper	1755.000	-26.773	
	HSDPA	Lower	1710.000	-28.515	
		Upper	1755.000	-29.220	
Band 2	REL99	Lower	1850.000	-25.795	-13.00
		Upper	1910.000	-23.894	
	HSDPA	Lower	1850.000	-30.293	
		Upper	1910.000	-28.963	

**LTE 5**

Bandwidth	Mode	Side	RB Status	f [MHz]	Level [dBm]	Limit [dBm]
10 MHz	QPSK	Lower	1RB	824.000	-26.527	-13.00
			FRB	824.000	-28.026	
		Upper	1RB	849.000	-25.680	
			FRB	849.000	-26.937	
	16QAM	Lower	1RB	824.000	-29.043	
			FRB	824.000	-30.798	
		Upper	1RB	849.000	-31.442	
			FRB	849.000	-28.935	
5 MHz	QPSK	Lower	1RB	824.000	-20.275	-13.00
			FRB	824.000	-25.321	
		Upper	1RB	849.000	-20.968	
			FRB	849.000	-28.270	
	16QAM	Lower	1RB	824.000	-23.222	
			FRB	824.000	-27.815	
		Upper	1RB	849.000	-22.731	
			FRB	849.000	-27.846	
3 MHz	QPSK	Lower	1RB	824.000	-19.586	-13.00
			FRB	824.000	-24.306	
		Upper	1RB	849.000	-18.745	
			FRB	849.000	-27.281	
	16QAM	Lower	1RB	824.000	-19.097	
			FRB	824.000	-27.500	
		Upper	1RB	849.000	-19.521	
			FRB	849.000	-26.110	
1.4 MHz	QPSK	Lower	1RB	824.000	-24.076	-13.00
			FRB	824.000	-26.879	
		Upper	1RB	849.000	-22.539	
			FRB	849.000	-28.326	
	16QAM	Lower	1RB	824.000	-24.346	
			FRB	824.000	-29.028	
		Upper	1RB	849.000	-24.571	
			FRB	849.000	-30.512	

**LTE 4**

Bandwidth	Mode	Side	RB Status	f [MHz]	Level [dBm]	Limit [dBm]
20 MHz	QPSK	Lower	1RB	1710.000	-29.415	-13.00
			FRB	1710.000	-28.591	
		Upper	1RB	1755.000	-30.711	
			FRB	1755.000	-32.092	
	16QAM	Lower	1RB	1710.000	-34.245	
			FRB	1710.000	-28.322	
		Upper	1RB	1755.000	-27.496	
			FRB	1755.000	-32.326	
15 MHz	QPSK	Lower	1RB	1710.000	-26.300	-13.00
			FRB	1710.000	-28.905	
		Upper	1RB	1755.000	-25.359	
			FRB	1755.000	-30.839	
	16QAM	Lower	1RB	1710.000	-26.898	
			FRB	1710.000	-28.664	
		Upper	1RB	1755.000	-32.637	
			FRB	1755.000	-31.361	
10 MHz	QPSK	Lower	1RB	1710.000	-31.428	-13.00
			FRB	1710.000	-27.929	
		Upper	1RB	1755.000	-27.741	
			FRB	1755.000	-29.804	
	16QAM	Lower	1RB	1710.000	-33.004	
			FRB	1710.000	-27.590	
		Upper	1RB	1755.000	-28.956	
			FRB	1755.000	-30.429	
5 MHz	QPSK	Lower	1RB	1710.000	-21.651	-13.00
			FRB	1710.000	-26.404	
		Upper	1RB	1755.000	-19.189	
			FRB	1755.000	-28.622	
	16QAM	Lower	1RB	1710.000	-21.362	
			FRB	1710.000	-24.920	
		Upper	1RB	1755.000	-20.147	
			FRB	1755.000	-27.993	

Bandwidth	Mode	Side	RB Status	f [MHz]	Level [dBm]	Limit [dBm]
3 MHz	QPSK	Lower	1RB	1710.000	-19.872	-13.00
			FRB	1710.000	-26.400	
		Upper	1RB	1755.000	-19.791	
			FRB	1755.000	-26.936	
	16QAM	Lower	1RB	1710.000	-18.758	
			FRB	1710.000	-25.787	
		Upper	1RB	1755.000	-18.962	
			FRB	1755.000	-27.176	
1.4 MHz	QPSK	Lower	1RB	1710.000	-22.140	-13.00
			FRB	1710.000	-26.982	
		Upper	1RB	1755.000	-22.882	
			FRB	1755.000	-28.336	
	16QAM	Lower	1RB	1710.000	-23.523	
			FRB	1710.000	-27.497	
		Upper	1RB	1755.000	-24.219	
			FRB	1755.000	-29.501	

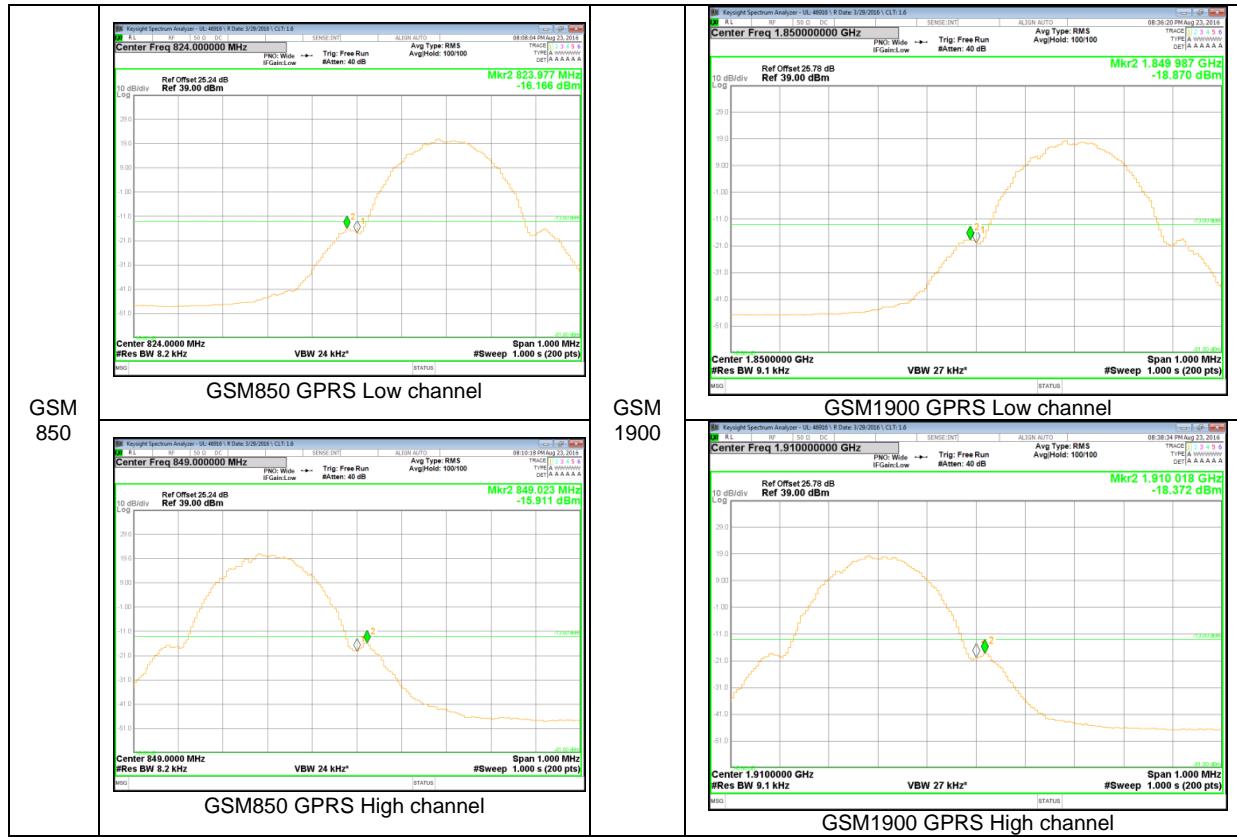
## LTE 2

Bandwidth	Mode	Side	RB Status	f [MHz]	Level [dBm]	Limit [dBm]
20 MHz	QPSK	Lower	1RB	1850.000	-30.529	-13.00
			FRB	1850.000	-31.027	
		Upper	1RB	1910.000	-28.421	
			FRB	1910.000	-33.572	
	16QAM	Lower	1RB	1850.000	-28.818	
			FRB	1850.000	-30.531	
		Upper	1RB	1910.000	-32.127	
			FRB	1910.000	-34.818	
15 MHz	QPSK	Lower	1RB	1850.000	-27.040	-13.00
			FRB	1850.000	-30.917	
		Upper	1RB	1910.000	-28.120	
			FRB	1910.000	-33.050	
	16QAM	Lower	1RB	1850.000	-30.182	
			FRB	1850.000	-31.217	
		Upper	1RB	1910.000	-31.687	
			FRB	1910.000	-35.350	

Bandwidth	Mode	Side	RB Status	f [MHz]	Level [dBm]	Limit [dBm]
10 MHz	QPSK	Lower	1RB	1850.000	-27.539	-13.00
			FRB	1850.000	-28.508	
		Upper	1RB	1910.000	-32.674	
			FRB	1910.000	-31.920	
	16QAM	Lower	1RB	1850.000	-29.327	
			FRB	1850.000	-30.882	
		Upper	1RB	1910.000	-35.314	
			FRB	1910.000	-33.804	
5 MHz	QPSK	Lower	1RB	1850.000	-18.667	-13.00
			FRB	1850.000	-25.606	
		Upper	1RB	1910.000	-21.608	
			FRB	1910.000	-29.432	
	16QAM	Lower	1RB	1850.000	-17.615	
			FRB	1850.000	-26.506	
		Upper	1RB	1910.000	-21.961	
			FRB	1910.000	-27.982	
3 MHz	QPSK	Lower	1RB	1850.000	-16.735	-13.00
			FRB	1850.000	-26.407	
		Upper	1RB	1910.000	-21.126	
			FRB	1910.000	-27.999	
	16QAM	Lower	1RB	1850.000	-18.521	
			FRB	1850.000	-26.521	
		Upper	1RB	1910.000	-21.154	
			FRB	1910.000	-29.339	
1.4 MHz	QPSK	Lower	1RB	1850.000	-21.215	-13.00
			FRB	1850.000	-27.221	
		Upper	1RB	1910.000	-24.634	
			FRB	1910.000	-29.772	
	16QAM	Lower	1RB	1850.000	-22.570	
			FRB	1850.000	-28.399	
		Upper	1RB	1910.000	-26.045	
			FRB	1910.000	-30.683	

## 10.2.1. BAND EDGE PLOTS

### GSM



## WCDMA

