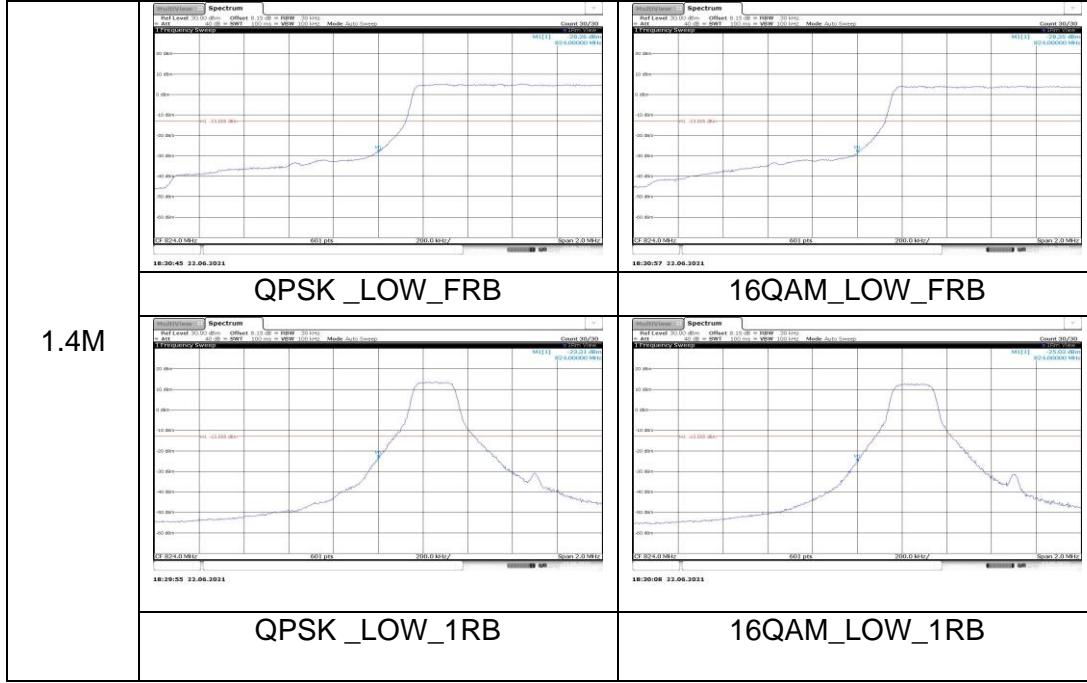
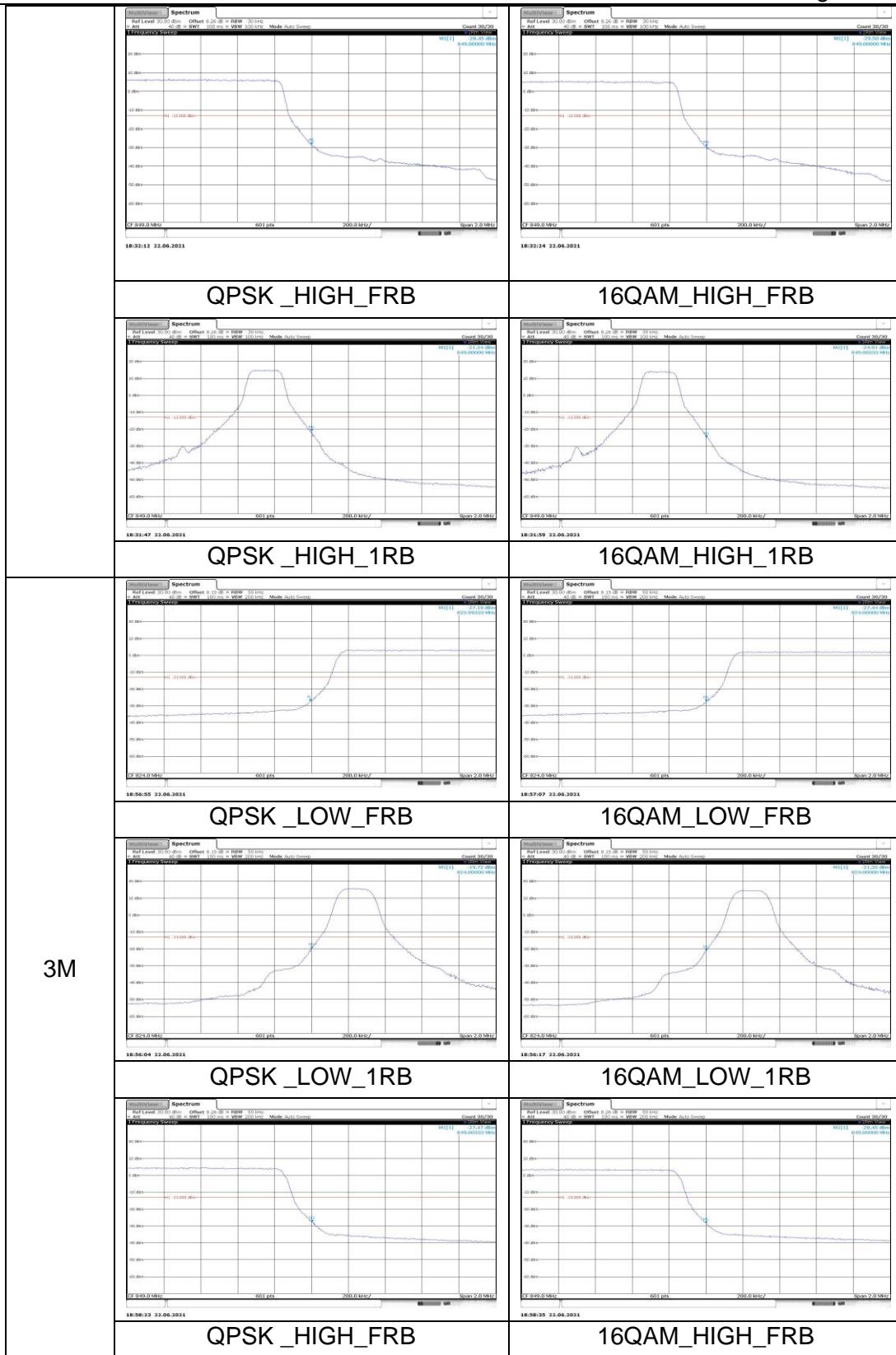
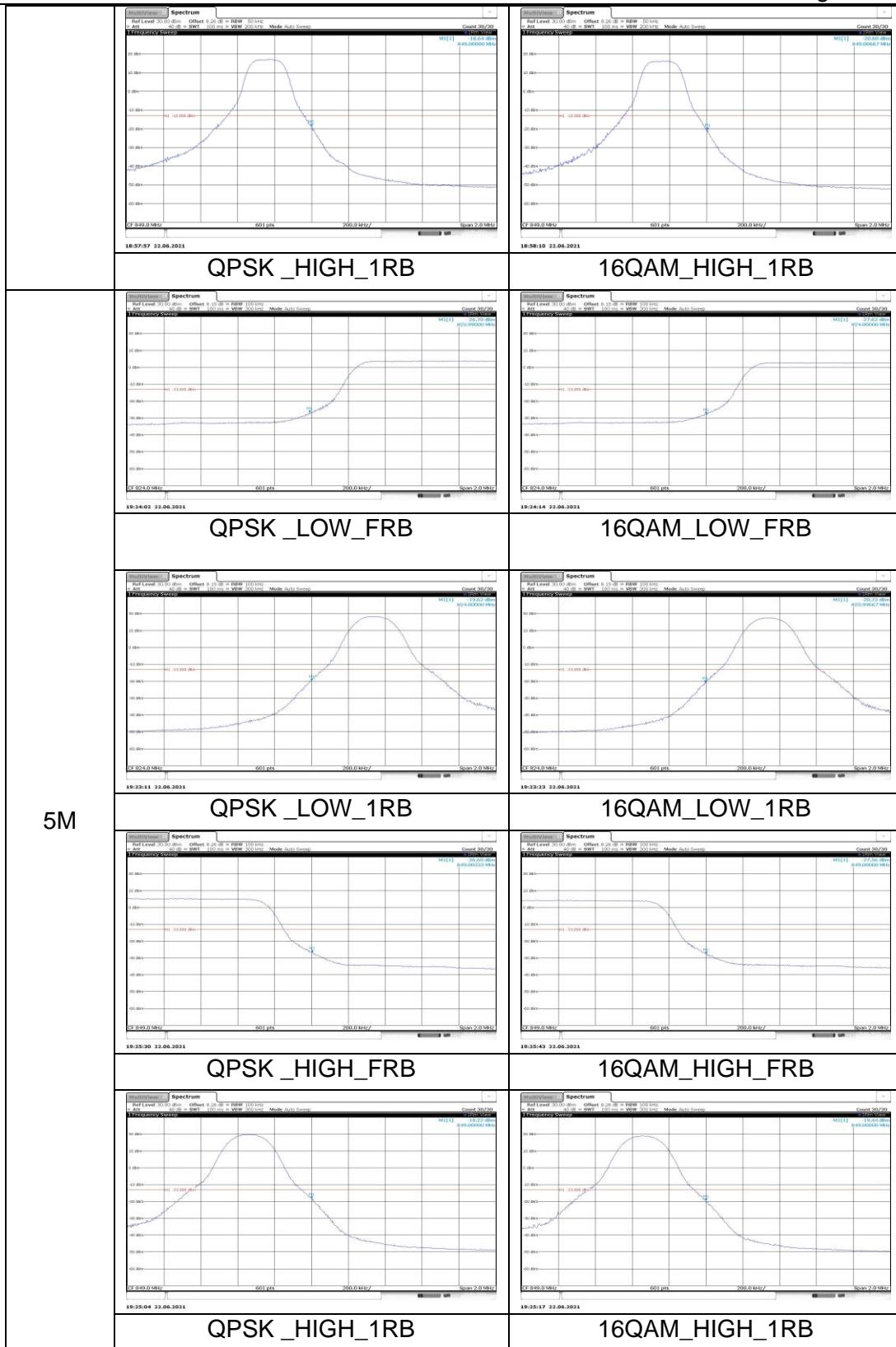
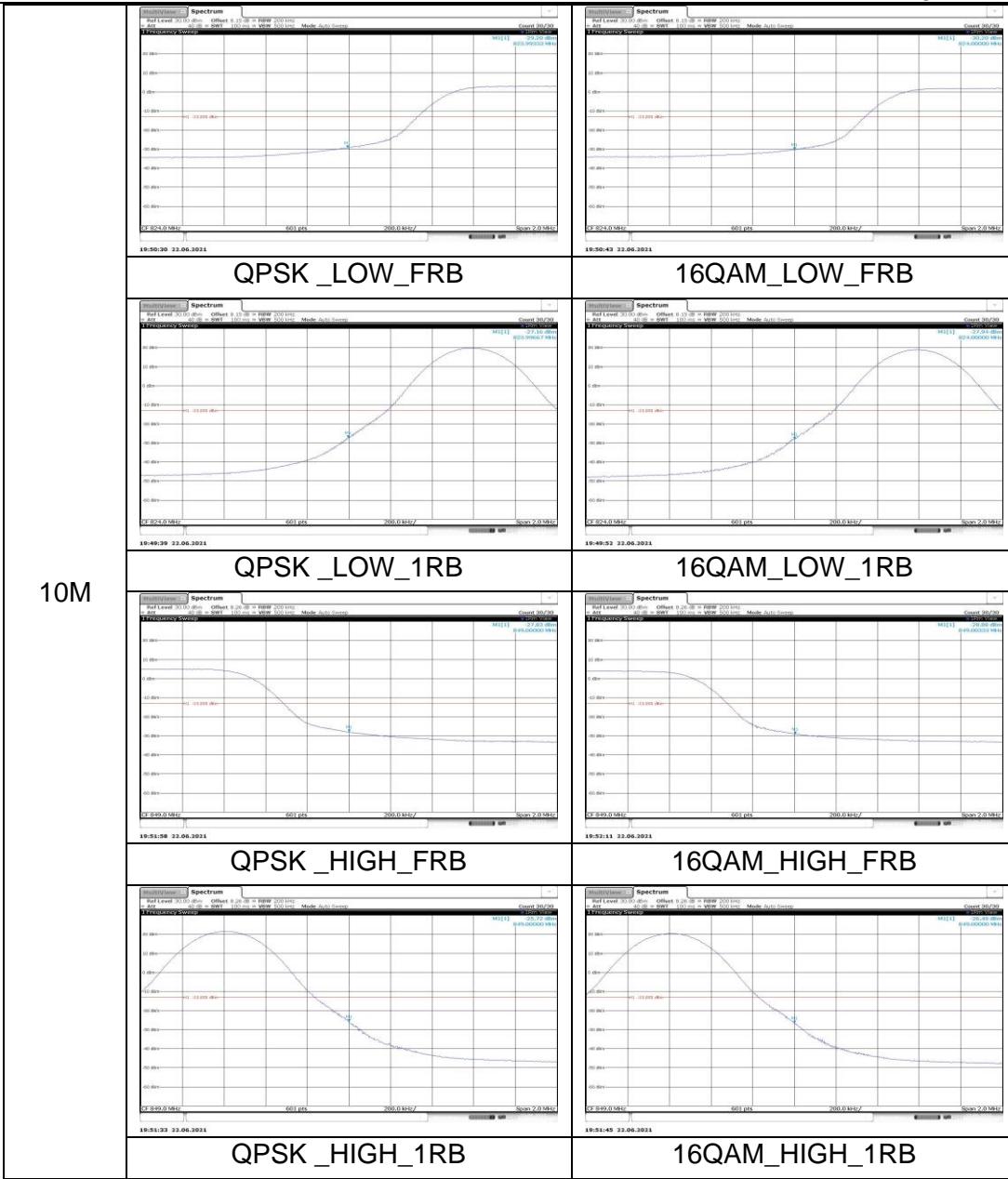


LTE Band 5

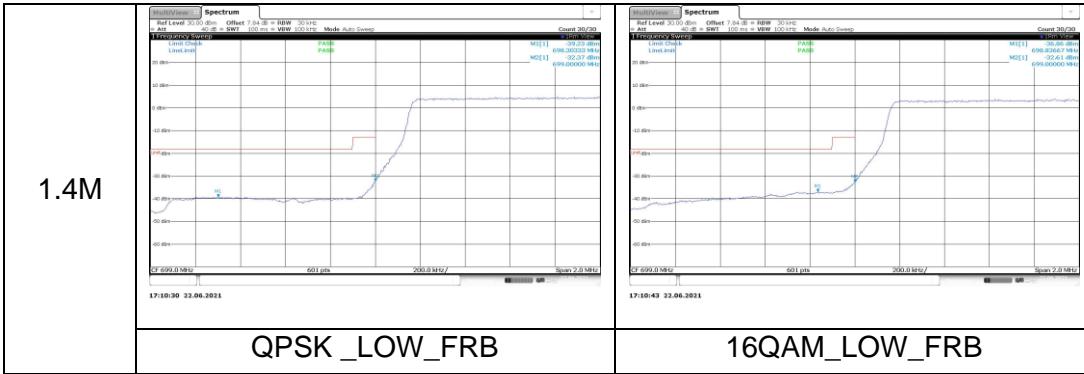


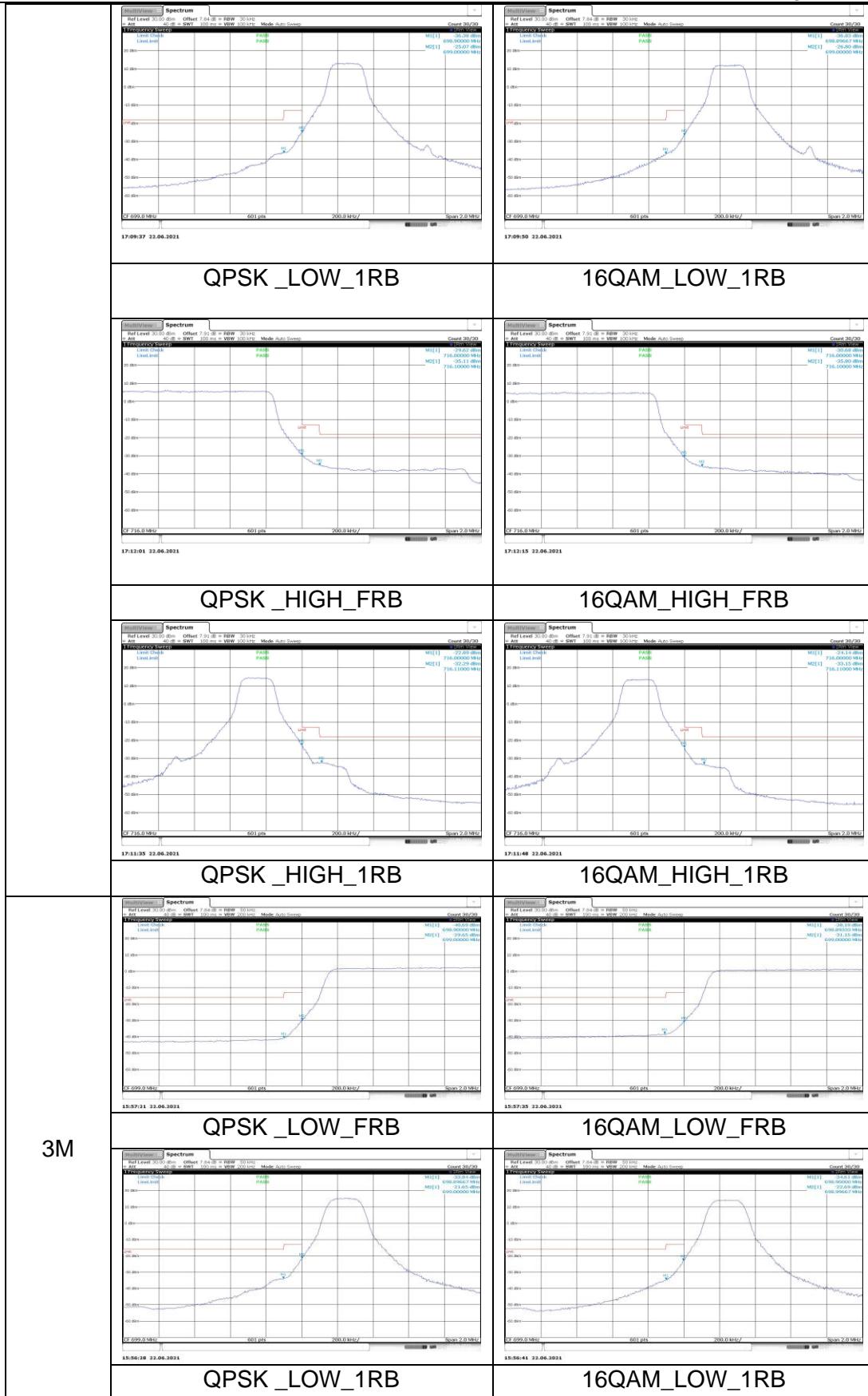


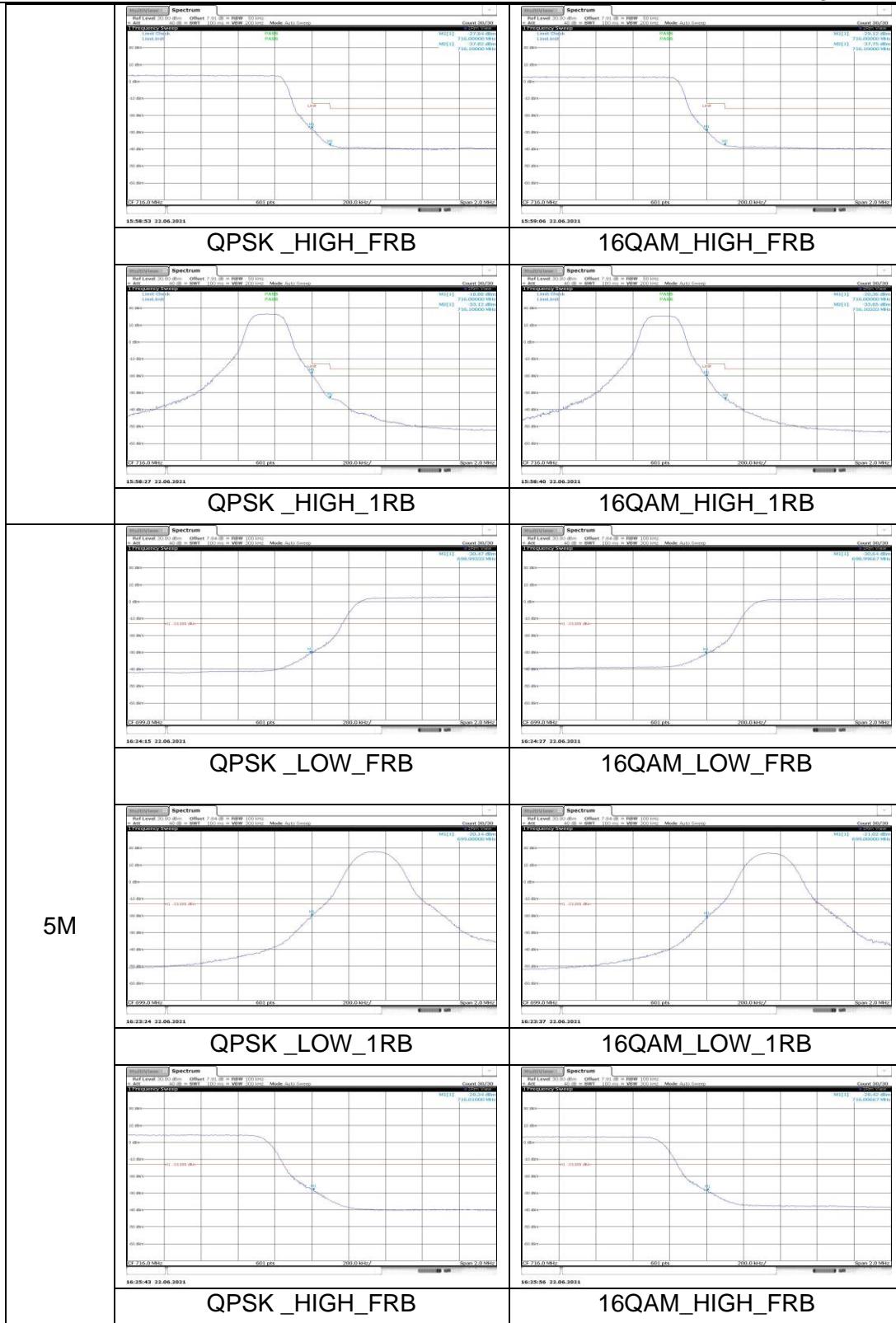


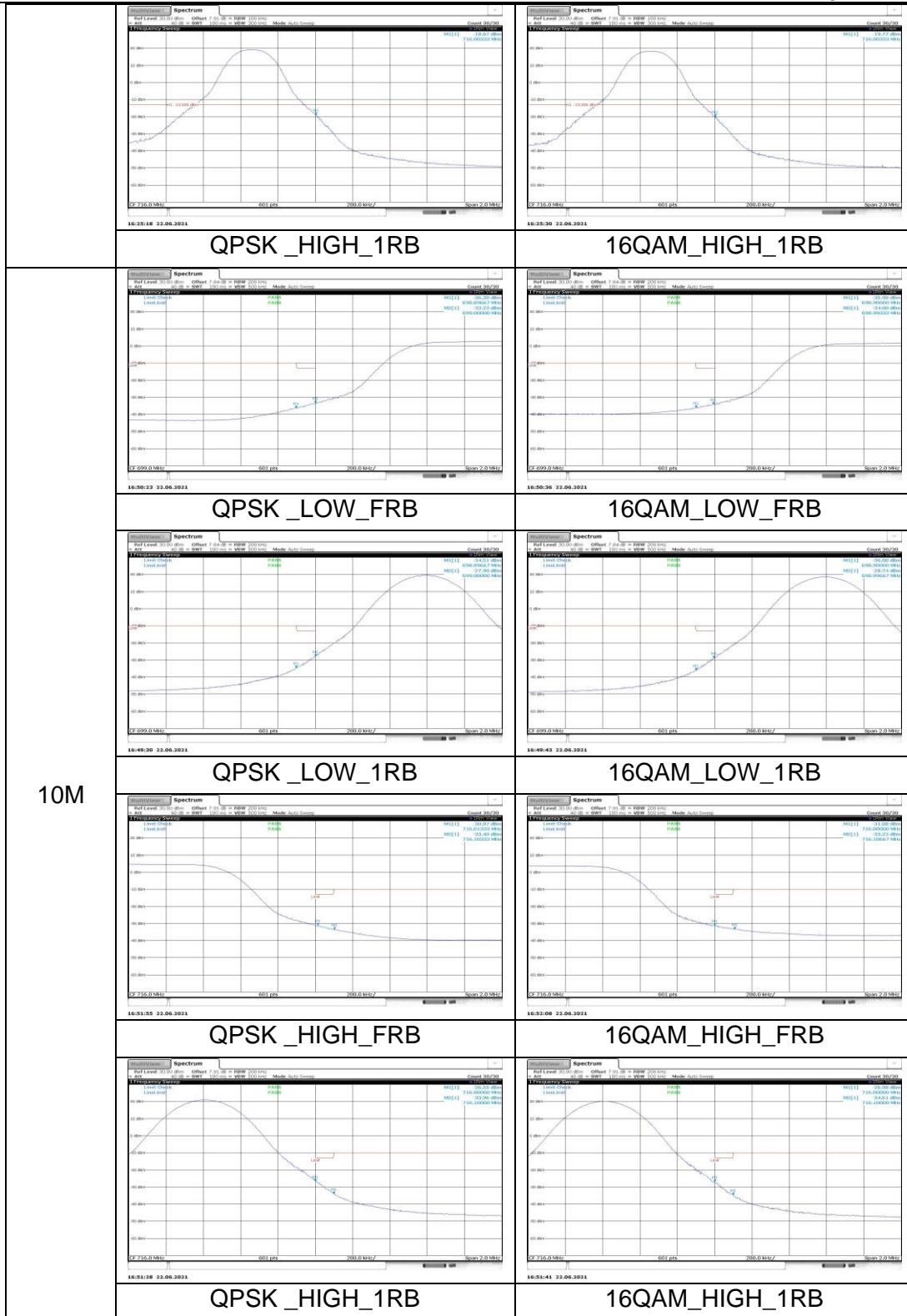


LTE Band 12

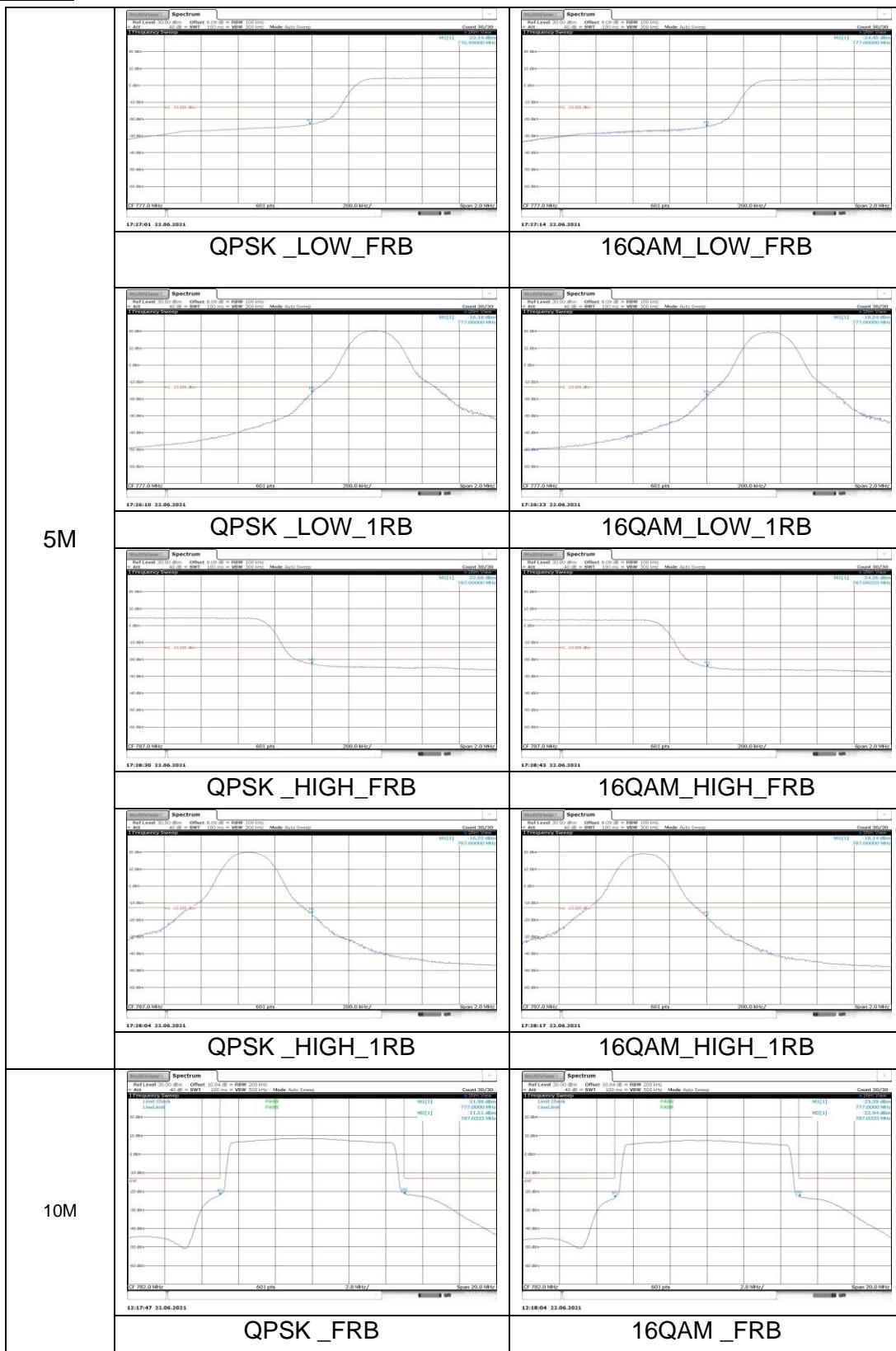


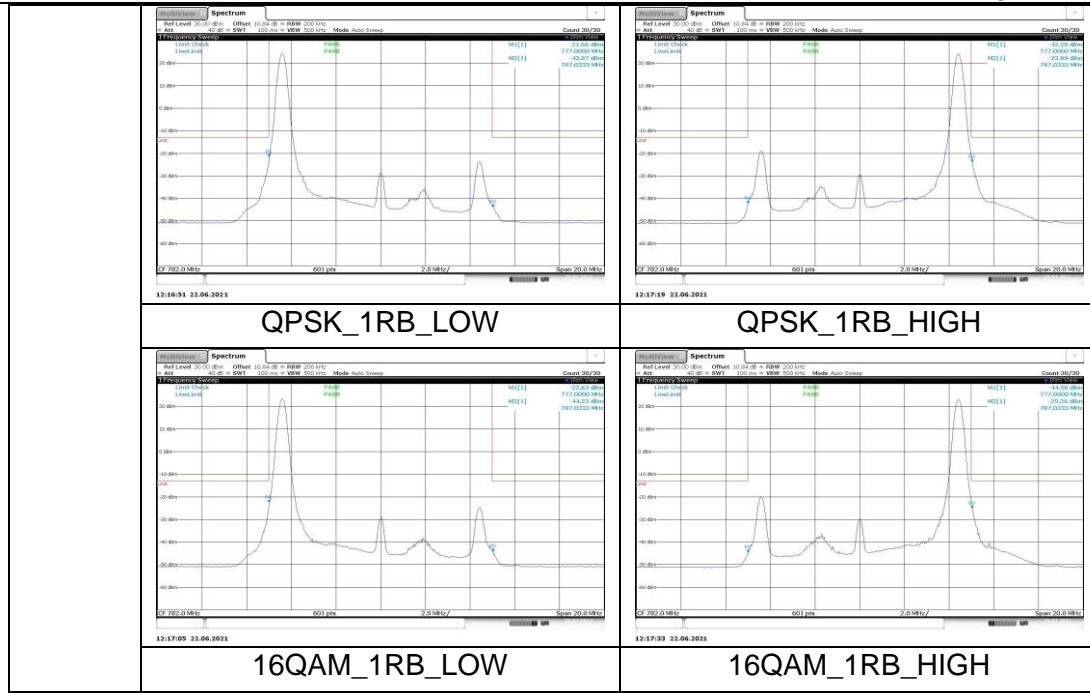




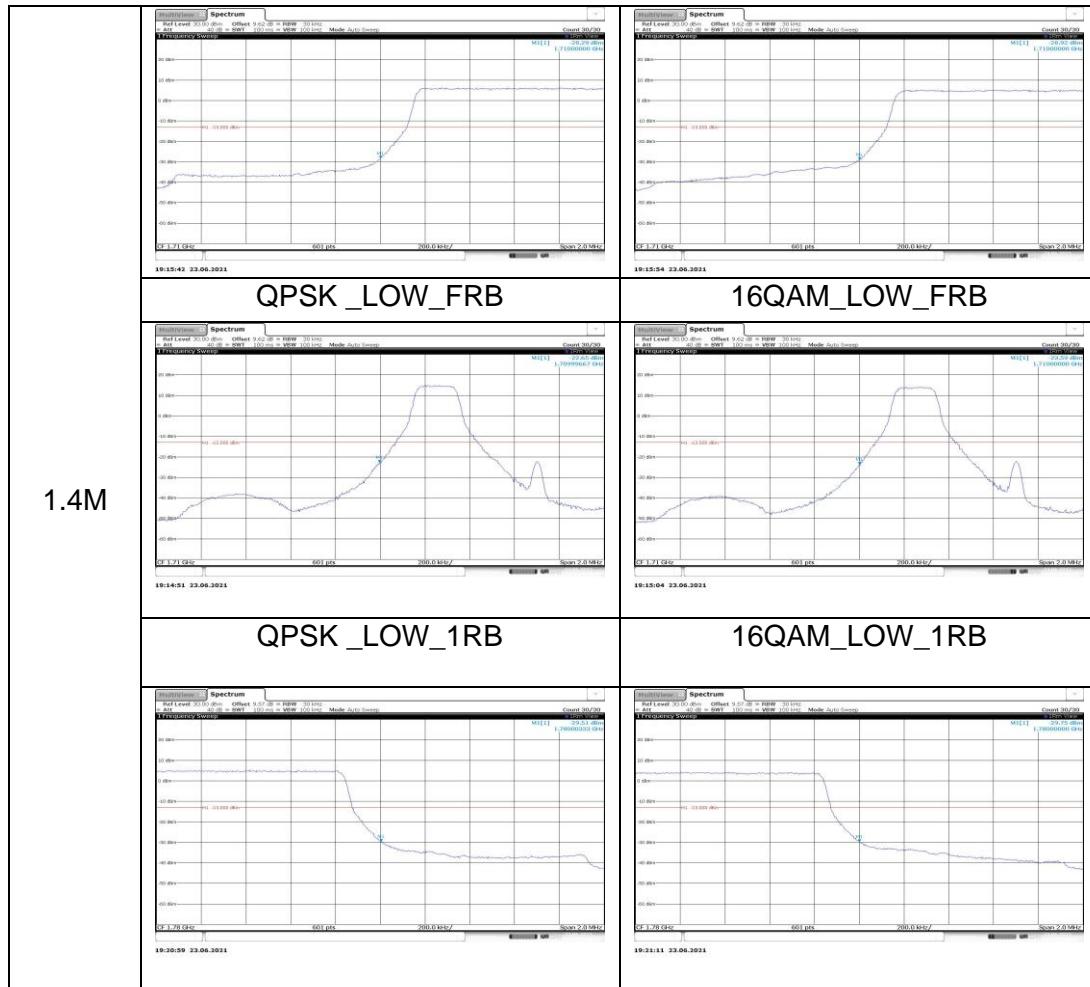


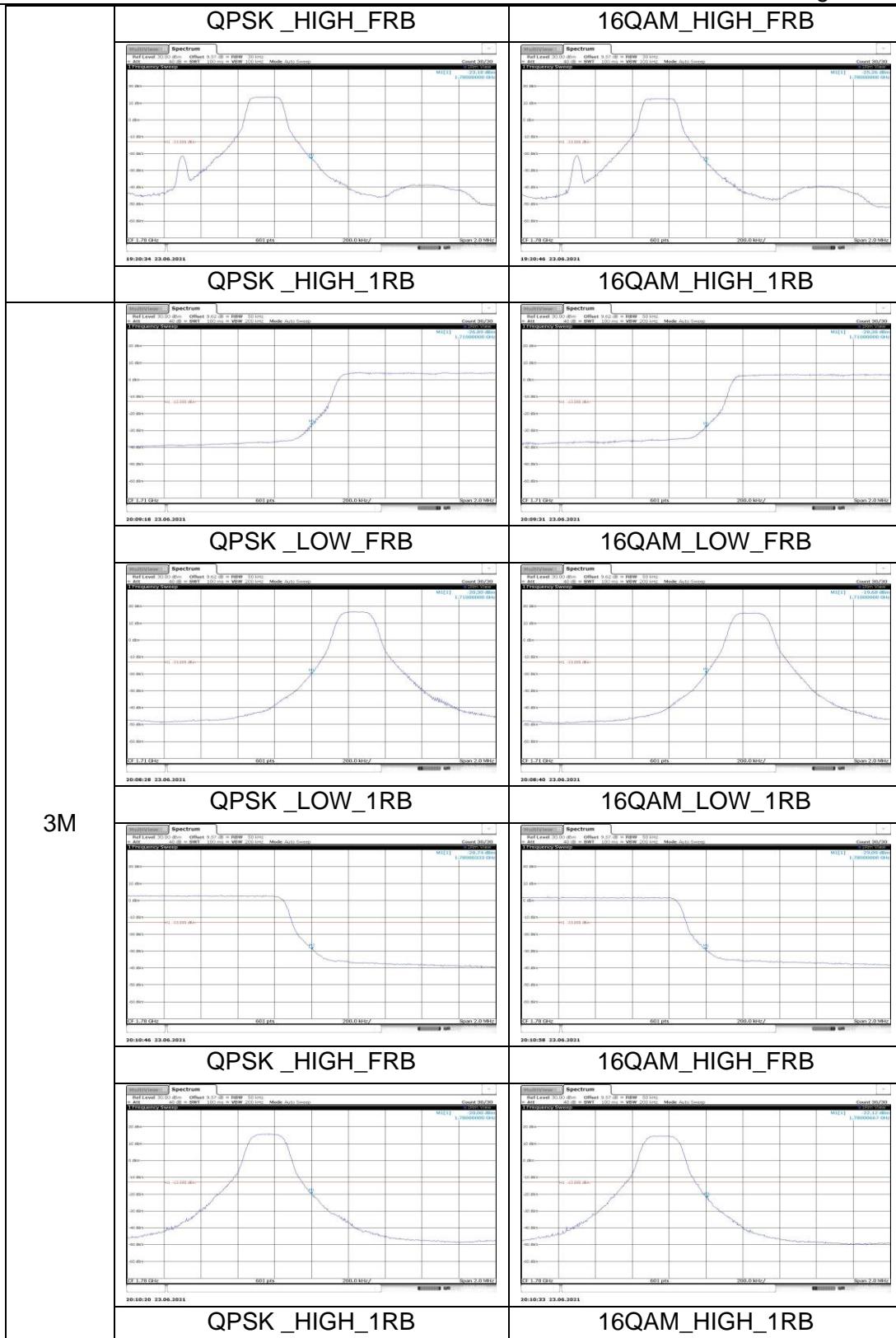
LTE Band 13

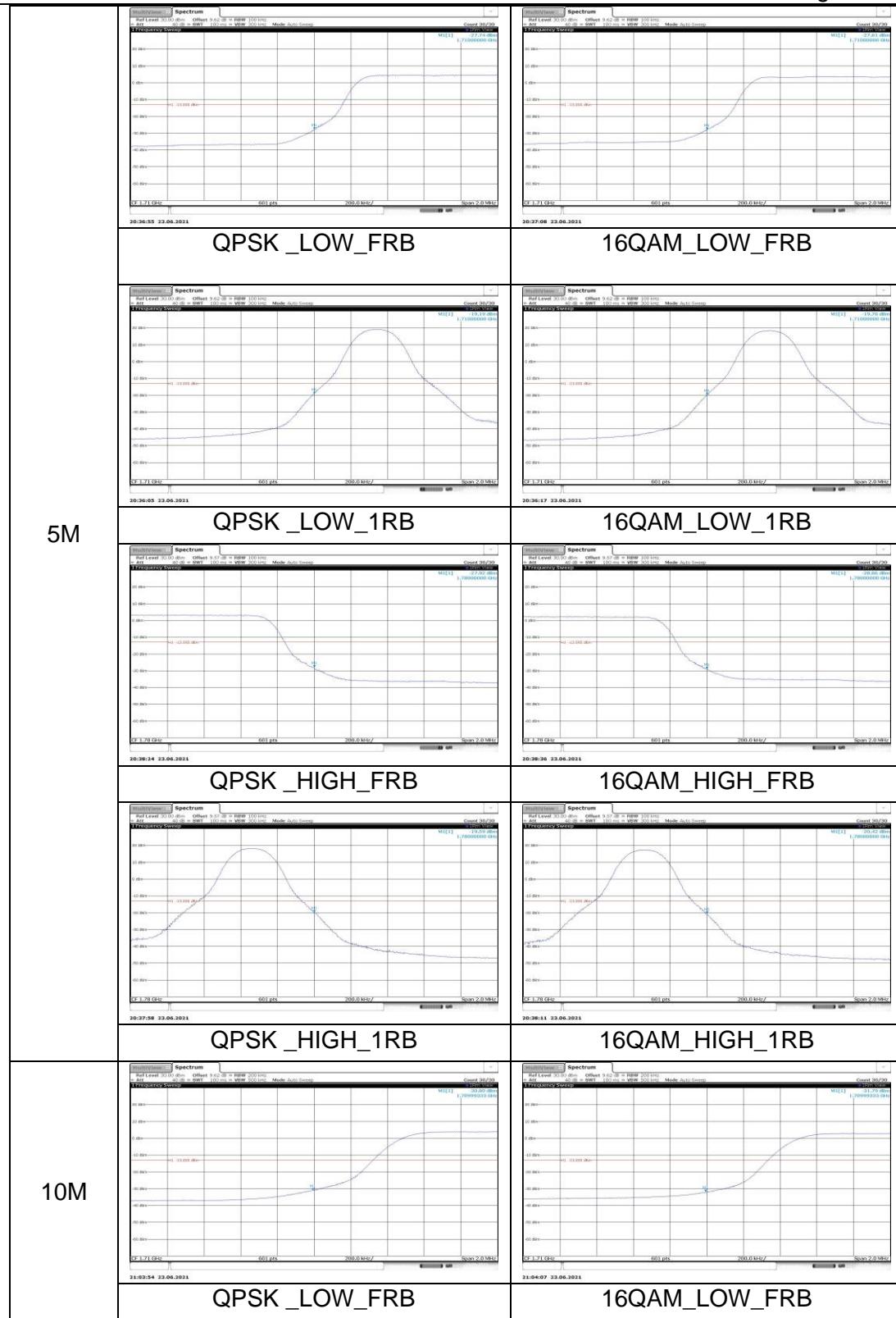


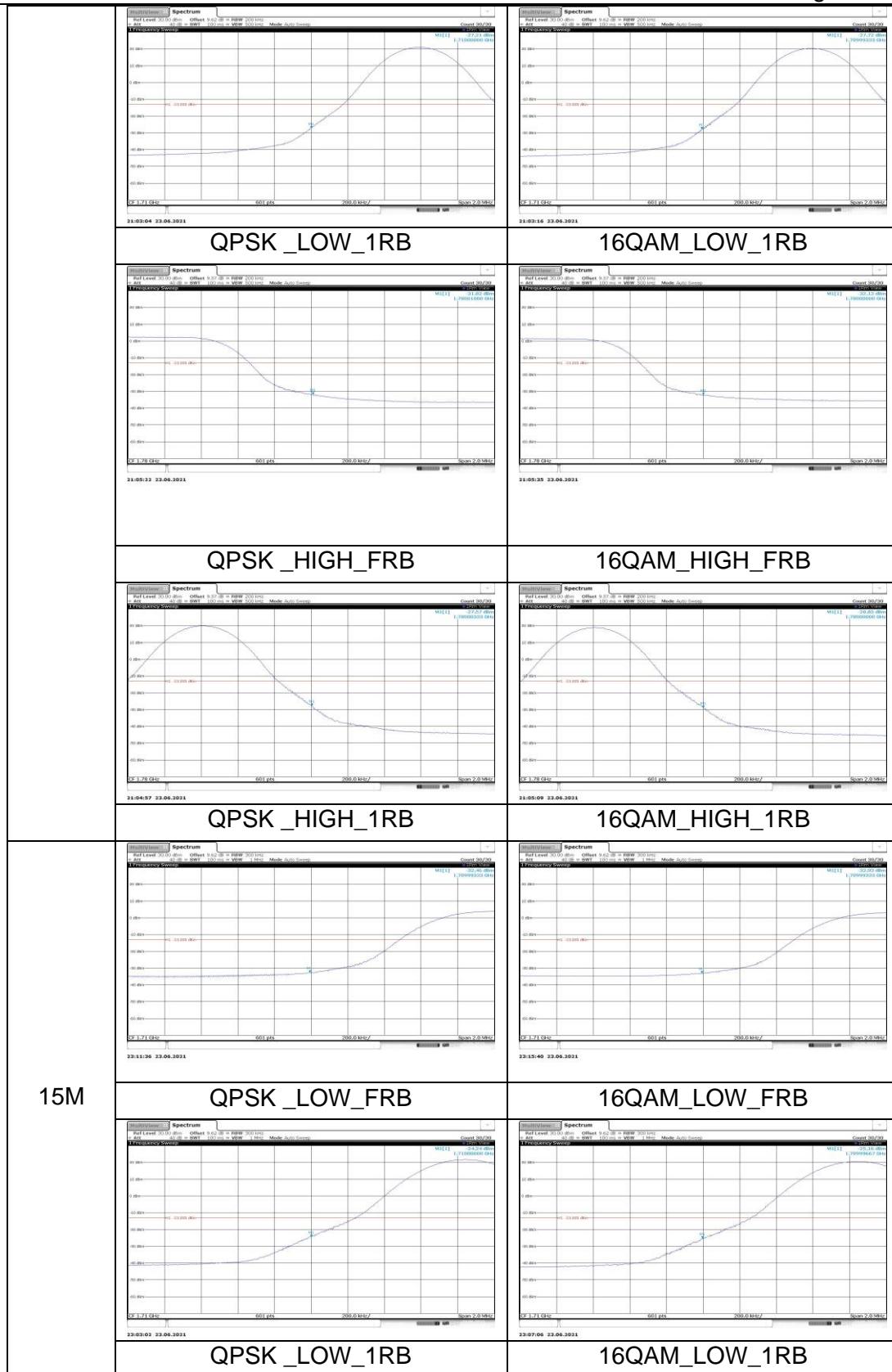


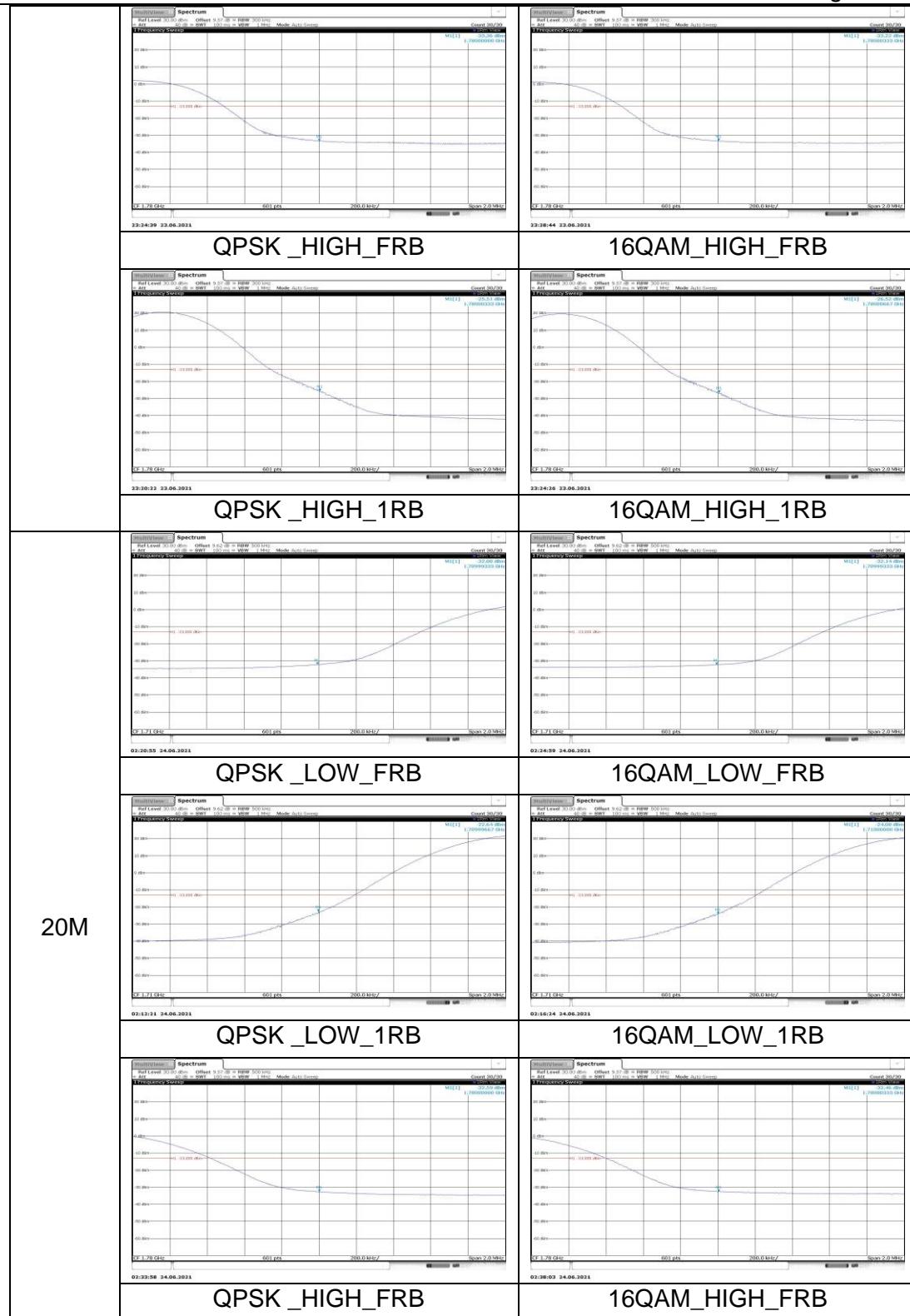
LTE Band 66

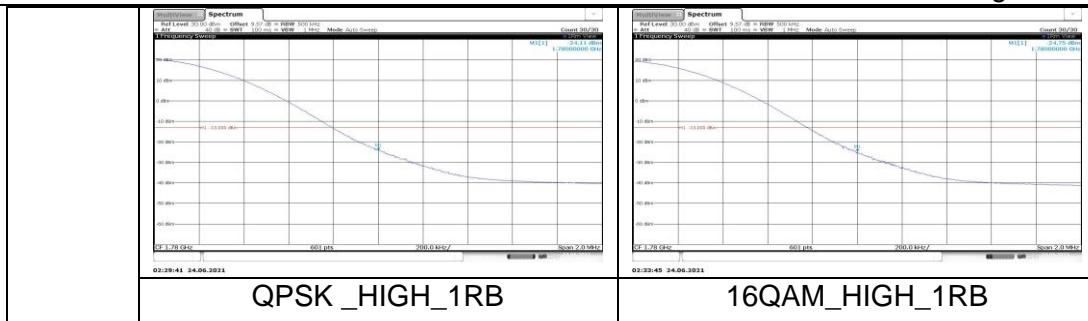












6.6 CONDUCTED OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238, §27.53.
ISED: RSS-130, RSS-132, RSS-133, RSS-139.

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.

FCC: §90.691 Emission mask requirements for EA-based systems.

(a) Out-of-band emission requirement shall apply only to the "outer" channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116 \log_{10}(f/6.1)$ decibels or $50 + 10\log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10\log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v03r01

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

- a) Set the RBW = 100KHz for emission below 1GHz and 1MHz for emissions above 1GHz
(Tests were performed 1MHz [Worst case], to sweep 1 time for all frequency range)
- b) Set VBW $\geq 3 \times$ RBW;
- c) Set span ≥ 1.5 times the OBW;
- d) Sweep time = auto couple;
- e) Detector = rms;
- f) Ensure that the number of measurement points = Max (40001);
- g) Trace mode = average (LTE 5), Maxhold (LTE Band7);

Note: Please refer to section 5.4 for bandwidth and RB setting about LTE bands.

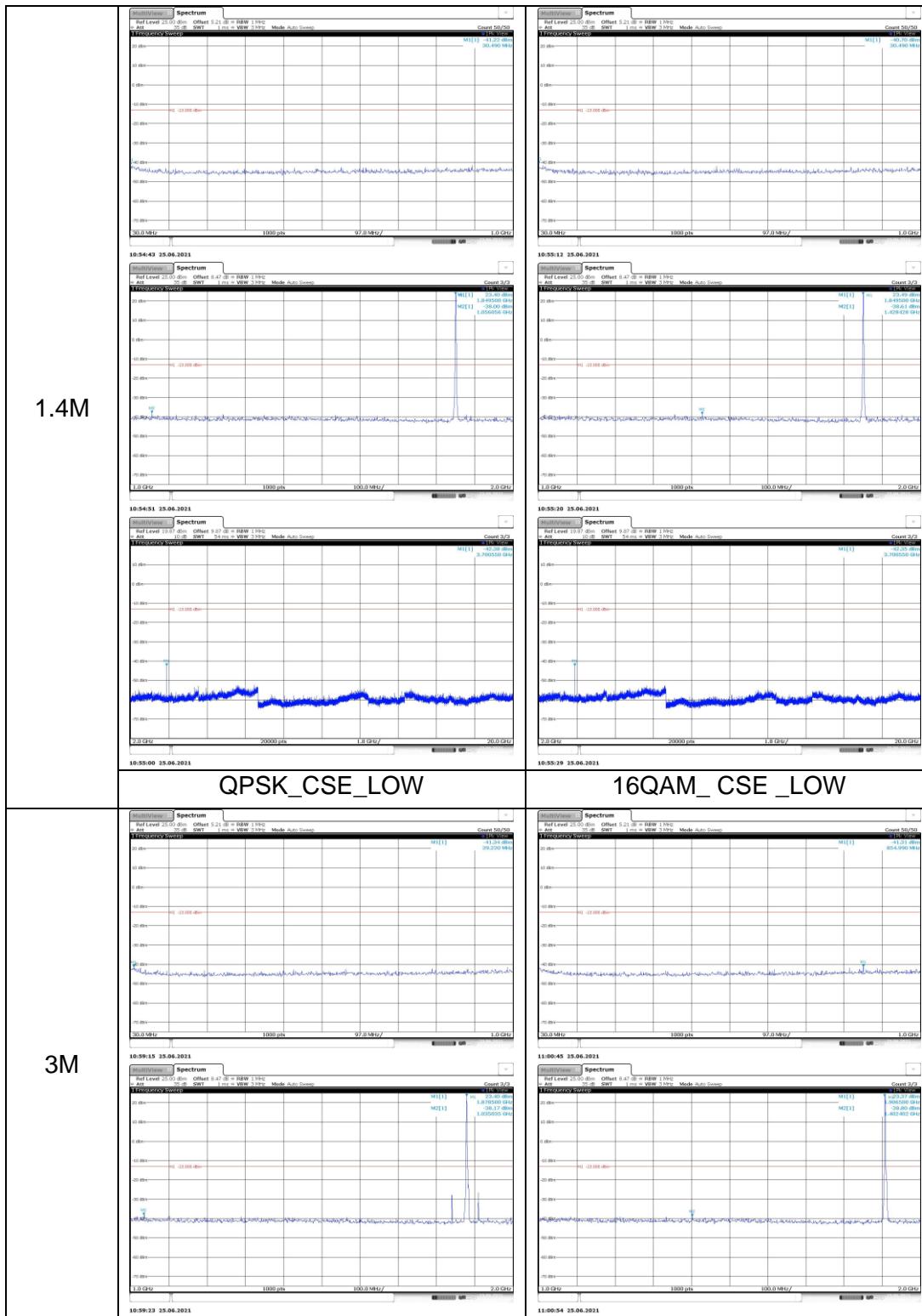
RESULTS

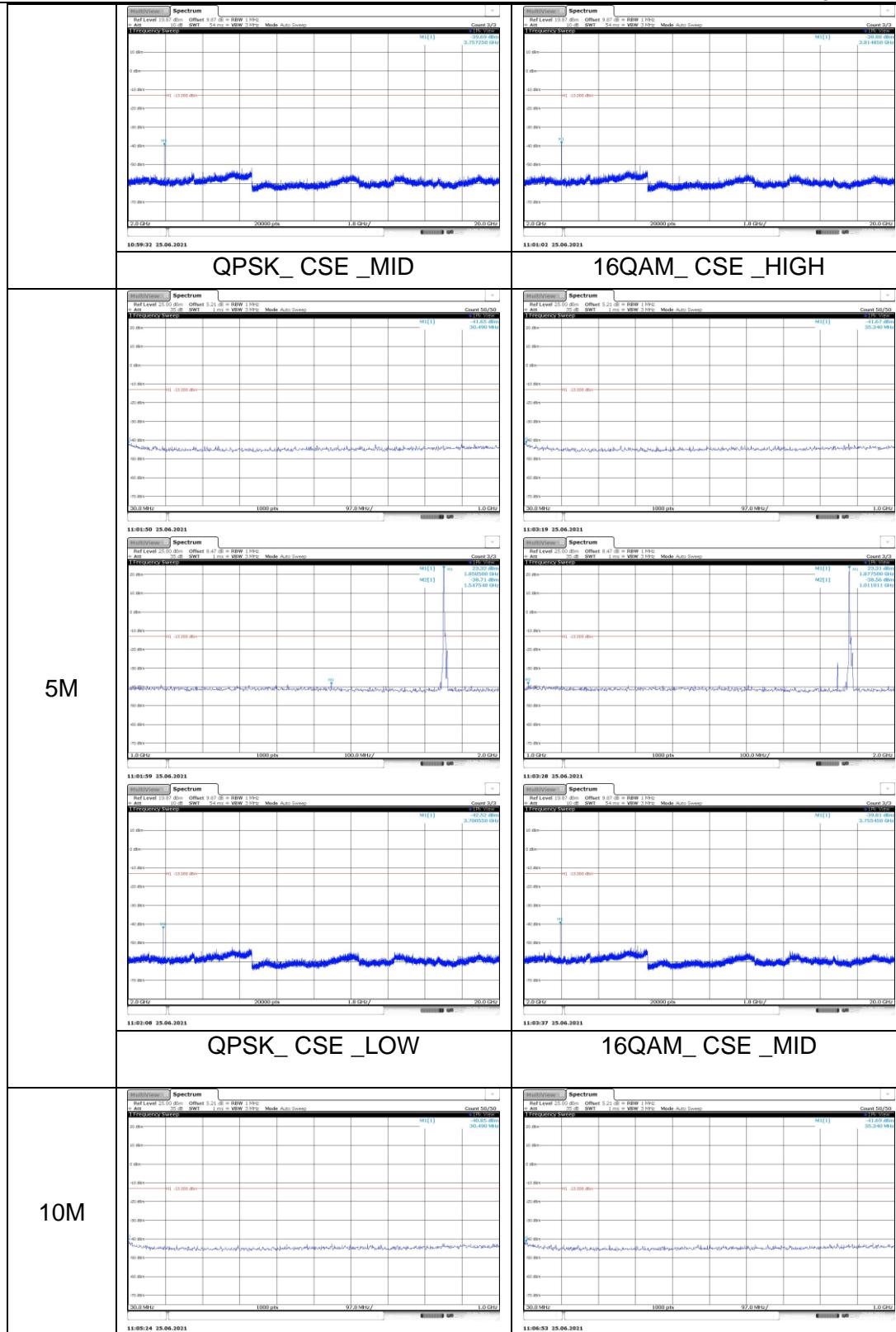
See the following pages.

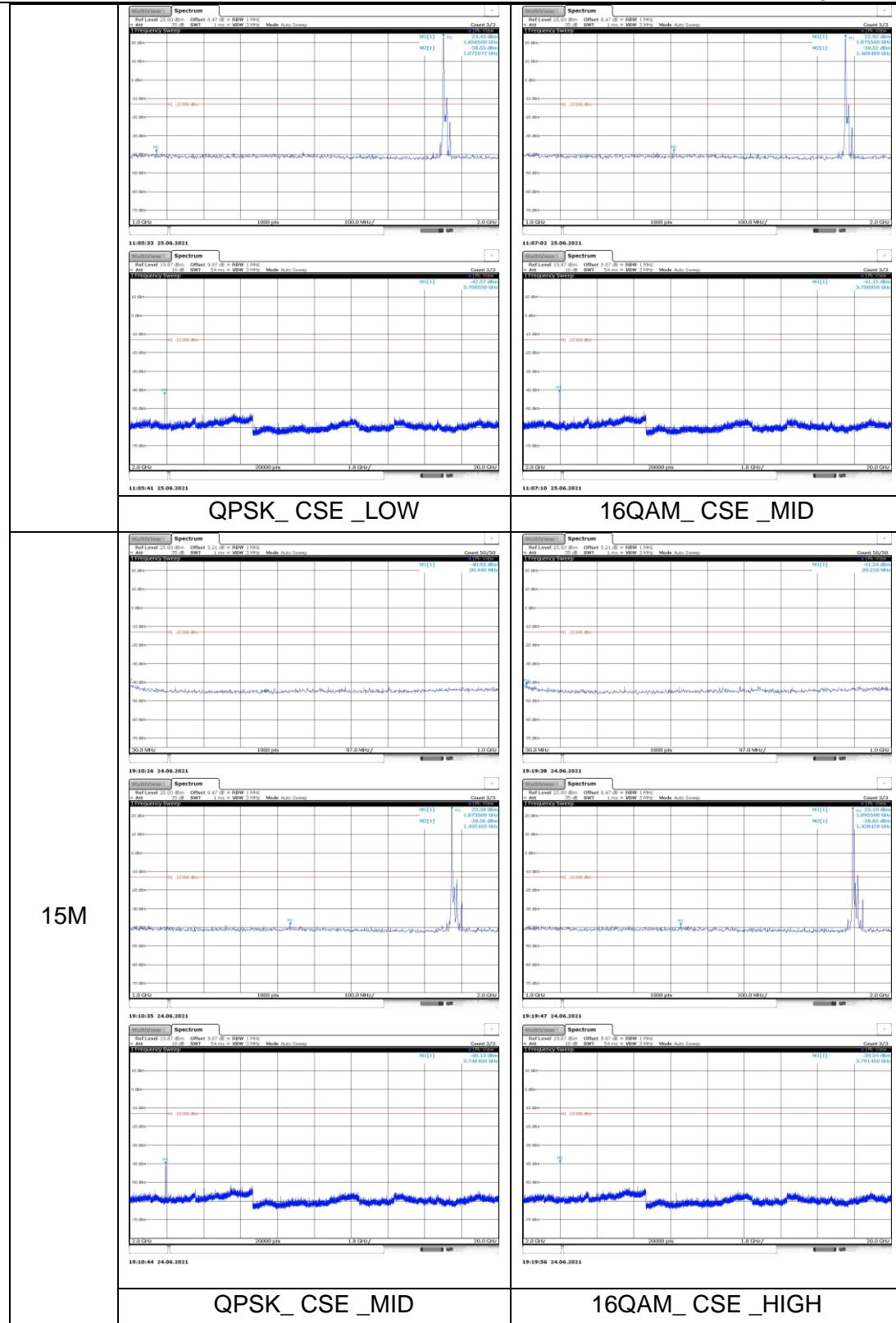
Note: Only Worst case for each bandwidth was recorded.

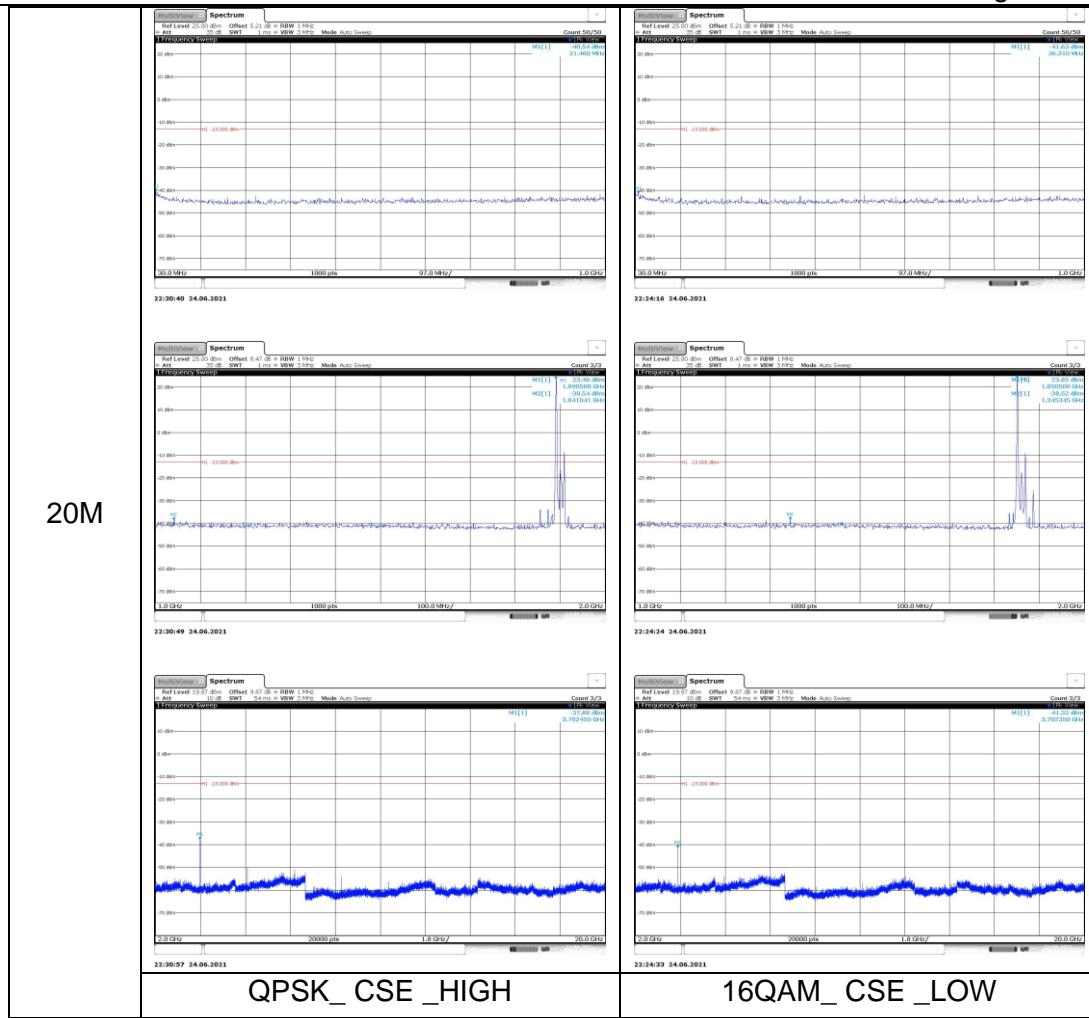
LTE Band 2

Band	Bandwidth	Channel	RB Cfg	Modulation	Result	Verdict
Band2	1.4MHz	18607	1RB#0	QPSK	30~1000MHz@-41.22dBm	PASS
Band2	1.4MHz	18607	1RB#0	QPSK	1000~2000MHz@-38dBm	PASS
Band2	1.4MHz	18607	1RB#0	QPSK	2000~20000MHz@-42.38dBm	PASS
Band2	1.4MHz	18607	1RB#0	16QAM	30~1000MHz@-40.7dBm	PASS
Band2	1.4MHz	18607	1RB#0	16QAM	1000~2000MHz@-38.61dBm	PASS
Band2	1.4MHz	18607	1RB#0	16QAM	2000~20000MHz@-42.35dBm	PASS
Band2	3MHz	18900	1RB#0	QPSK	30~1000MHz@-41.34dBm	PASS
Band2	3MHz	18900	1RB#0	QPSK	1000~2000MHz@-38.17dBm	PASS
Band2	3MHz	18900	1RB#0	QPSK	2000~20000MHz@-39.69dBm	PASS
Band2	3MHz	19185	1RB#0	16QAM	30~1000MHz@-41.31dBm	PASS
Band2	3MHz	19185	1RB#0	16QAM	1000~2000MHz@-38.8dBm	PASS
Band2	3MHz	19185	1RB#0	16QAM	2000~20000MHz@-38.88dBm	PASS
Band2	5MHz	18625	1RB#0	QPSK	30~1000MHz@-41.65dBm	PASS
Band2	5MHz	18625	1RB#0	QPSK	1000~2000MHz@-38.71dBm	PASS
Band2	5MHz	18625	1RB#0	QPSK	2000~20000MHz@-42.52dBm	PASS
Band2	5MHz	18900	1RB#0	16QAM	30~1000MHz@-41.67dBm	PASS
Band2	5MHz	18900	1RB#0	16QAM	1000~2000MHz@-38.56dBm	PASS
Band2	5MHz	18900	1RB#0	16QAM	2000~20000MHz@-39.81dBm	PASS
Band2	10MHz	18650	1RB#0	QPSK	30~1000MHz@-40.85dBm	PASS
Band2	10MHz	18650	1RB#0	QPSK	1000~2000MHz@-38.55dBm	PASS
Band2	10MHz	18650	1RB#0	QPSK	2000~20000MHz@-42.57dBm	PASS
Band2	10MHz	18900	1RB#0	16QAM	30~1000MHz@-41.69dBm	PASS
Band2	10MHz	18900	1RB#0	16QAM	1000~2000MHz@-38.52dBm	PASS
Band2	10MHz	18900	1RB#0	16QAM	2000~20000MHz@-41.15dBm	PASS
Band2	15MHz	18900	1RB#0	QPSK	30~1000MHz@-40.93dBm	PASS
Band2	15MHz	18900	1RB#0	QPSK	1000~2000MHz@-38.56dBm	PASS
Band2	15MHz	18900	1RB#0	QPSK	2000~20000MHz@-40.13dBm	PASS
Band2	15MHz	19125	1RB#0	16QAM	30~1000MHz@-41.34dBm	PASS
Band2	15MHz	19125	1RB#0	16QAM	1000~2000MHz@-38.85dBm	PASS
Band2	15MHz	19125	1RB#0	16QAM	2000~20000MHz@-39.34dBm	PASS
Band2	20MHz	19100	1RB#0	QPSK	30~1000MHz@-40.54dBm	PASS
Band2	20MHz	19100	1RB#0	QPSK	1000~2000MHz@-38.54dBm	PASS
Band2	20MHz	19100	1RB#0	QPSK	2000~20000MHz@-37.88dBm	PASS
Band2	20MHz	18700	1RB#0	16QAM	30~1000MHz@-41.63dBm	PASS
Band2	20MHz	18700	1RB#0	16QAM	1000~2000MHz@-38.52dBm	PASS
Band2	20MHz	18700	1RB#0	16QAM	2000~20000MHz@-41.33dBm	PASS









LTE Band 4

Band	Bandwidth	Channel	RB Cfg	Modulation	Result	Verdict
Band4	1.4MHz	20175	1RB#0	QPSK	30~1000MHz@-41.45dBm	PASS
Band4	1.4MHz	20175	1RB#0	QPSK	1000~2000MHz@-38.04dBm	PASS
Band4	1.4MHz	20175	1RB#0	QPSK	2000~20000MHz@-49.62dBm	PASS
Band4	1.4MHz	19957	1RB#0	16QAM	30~1000MHz@-39.69dBm	PASS
Band4	1.4MHz	19957	1RB#0	16QAM	1000~2000MHz@-39.02dBm	PASS
Band4	1.4MHz	19957	1RB#0	16QAM	2000~20000MHz@-43.41dBm	PASS
Band4	3MHz	20385	1RB#0	QPSK	30~1000MHz@-40.84dBm	PASS
Band4	3MHz	20385	1RB#0	QPSK	1000~2000MHz@-38.42dBm	PASS
Band4	3MHz	20385	1RB#0	QPSK	2000~20000MHz@-45.94dBm	PASS
Band4	3MHz	20175	1RB#0	16QAM	30~1000MHz@-40.33dBm	PASS
Band4	3MHz	20175	1RB#0	16QAM	1000~2000MHz@-38.41dBm	PASS
Band4	3MHz	20175	1RB#0	16QAM	2000~20000MHz@-46.73dBm	PASS
Band4	5MHz	20375	1RB#0	QPSK	30~1000MHz@-40.99dBm	PASS
Band4	5MHz	20375	1RB#0	QPSK	1000~2000MHz@-38.43dBm	PASS
Band4	5MHz	20375	1RB#0	QPSK	2000~20000MHz@-46.38dBm	PASS
Band4	5MHz	19975	1RB#0	16QAM	30~1000MHz@-39.81dBm	PASS
Band4	5MHz	19975	1RB#0	16QAM	1000~2000MHz@-37.96dBm	PASS
Band4	5MHz	19975	1RB#0	16QAM	2000~20000MHz@-43.17dBm	PASS
Band4	10MHz	20175	1RB#0	QPSK	30~1000MHz@-41.09dBm	PASS
Band4	10MHz	20175	1RB#0	QPSK	1000~2000MHz@-38.78dBm	PASS
Band4	10MHz	20175	1RB#0	QPSK	2000~20000MHz@-46.43dBm	PASS
Band4	10MHz	20000	1RB#0	16QAM	30~1000MHz@-40.51dBm	PASS
Band4	10MHz	20000	1RB#0	16QAM	1000~2000MHz@-38.54dBm	PASS
Band4	10MHz	20000	1RB#0	16QAM	2000~20000MHz@-43.35dBm	PASS
Band4	15MHz	20175	1RB#0	QPSK	30~1000MHz@-41.14dBm	PASS
Band4	15MHz	20175	1RB#0	QPSK	1000~2000MHz@-38.48dBm	PASS
Band4	15MHz	20175	1RB#0	QPSK	2000~20000MHz@-47.37dBm	PASS
Band4	15MHz	20025	1RB#0	16QAM	30~1000MHz@-41dBm	PASS
Band4	15MHz	20025	1RB#0	16QAM	1000~2000MHz@-38.32dBm	PASS
Band4	15MHz	20025	1RB#0	16QAM	2000~20000MHz@-44.64dBm	PASS
Band4	20MHz	20175	1RB#0	QPSK	30~1000MHz@-40.57dBm	PASS
Band4	20MHz	20175	1RB#0	QPSK	1000~2000MHz@-38.09dBm	PASS
Band4	20MHz	20175	1RB#0	QPSK	2000~20000MHz@-45.59dBm	PASS
Band4	20MHz	20300	1RB#0	16QAM	30~1000MHz@-39.7dBm	PASS
Band4	20MHz	20300	1RB#0	16QAM	1000~2000MHz@-38.64dBm	PASS
Band4	20MHz	20300	1RB#0	16QAM	2000~20000MHz@-49.93dBm	PASS