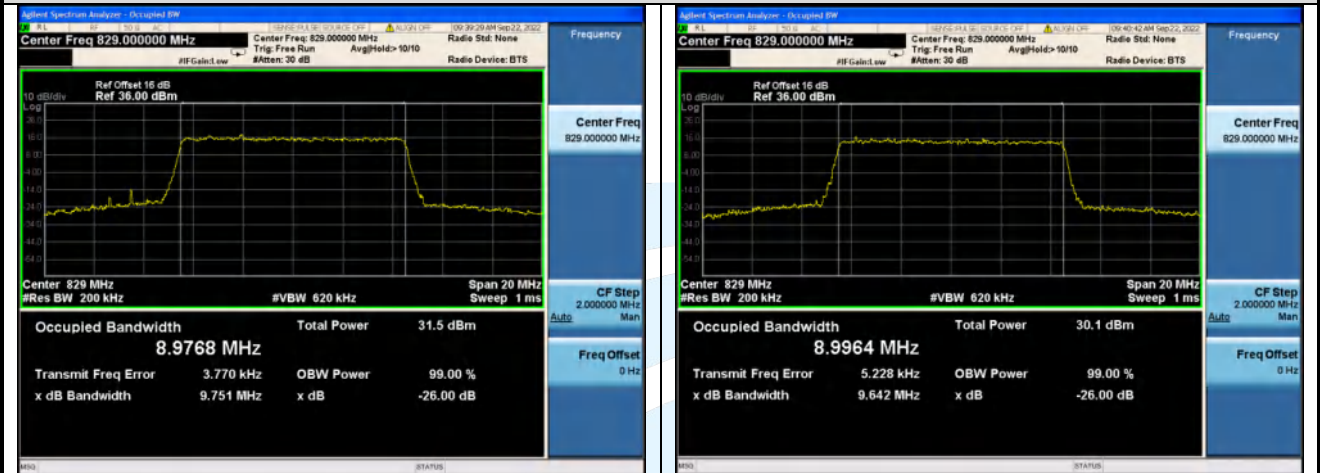


LTE Band 5_ Channel Bandwidth: 10 MHz

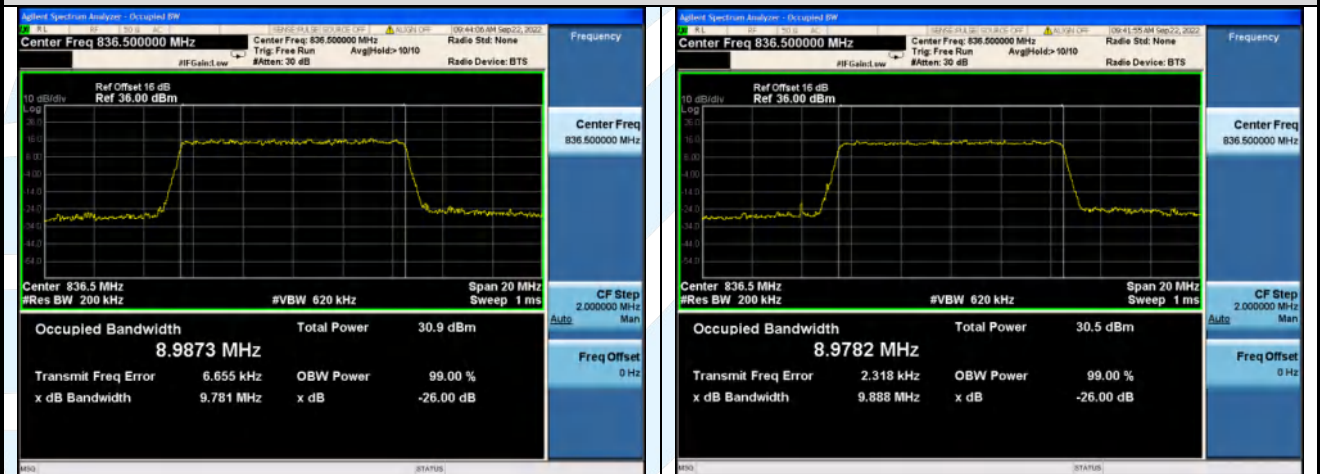
QPSK

16QAM

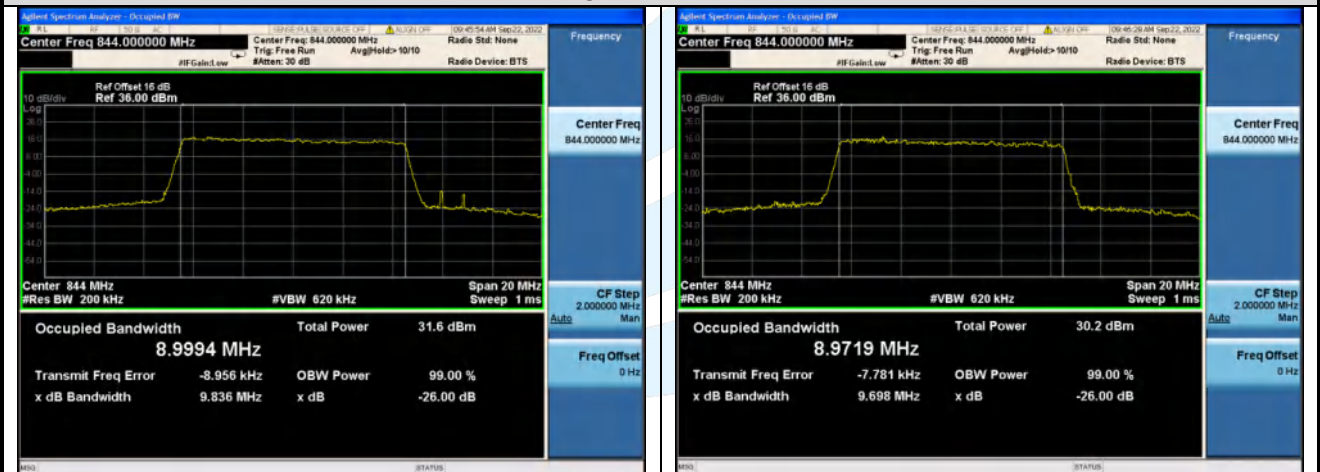
Lowest Channel

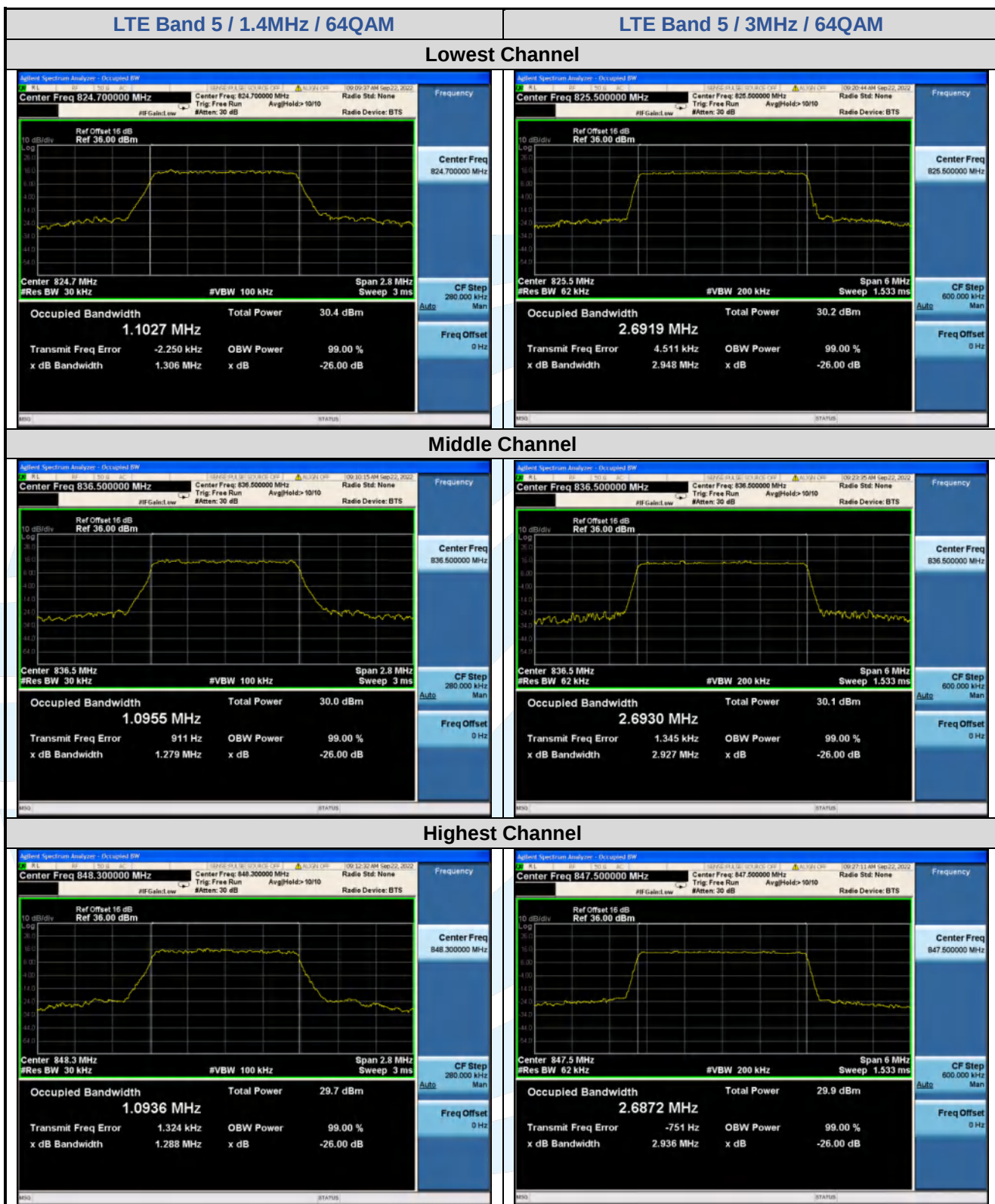


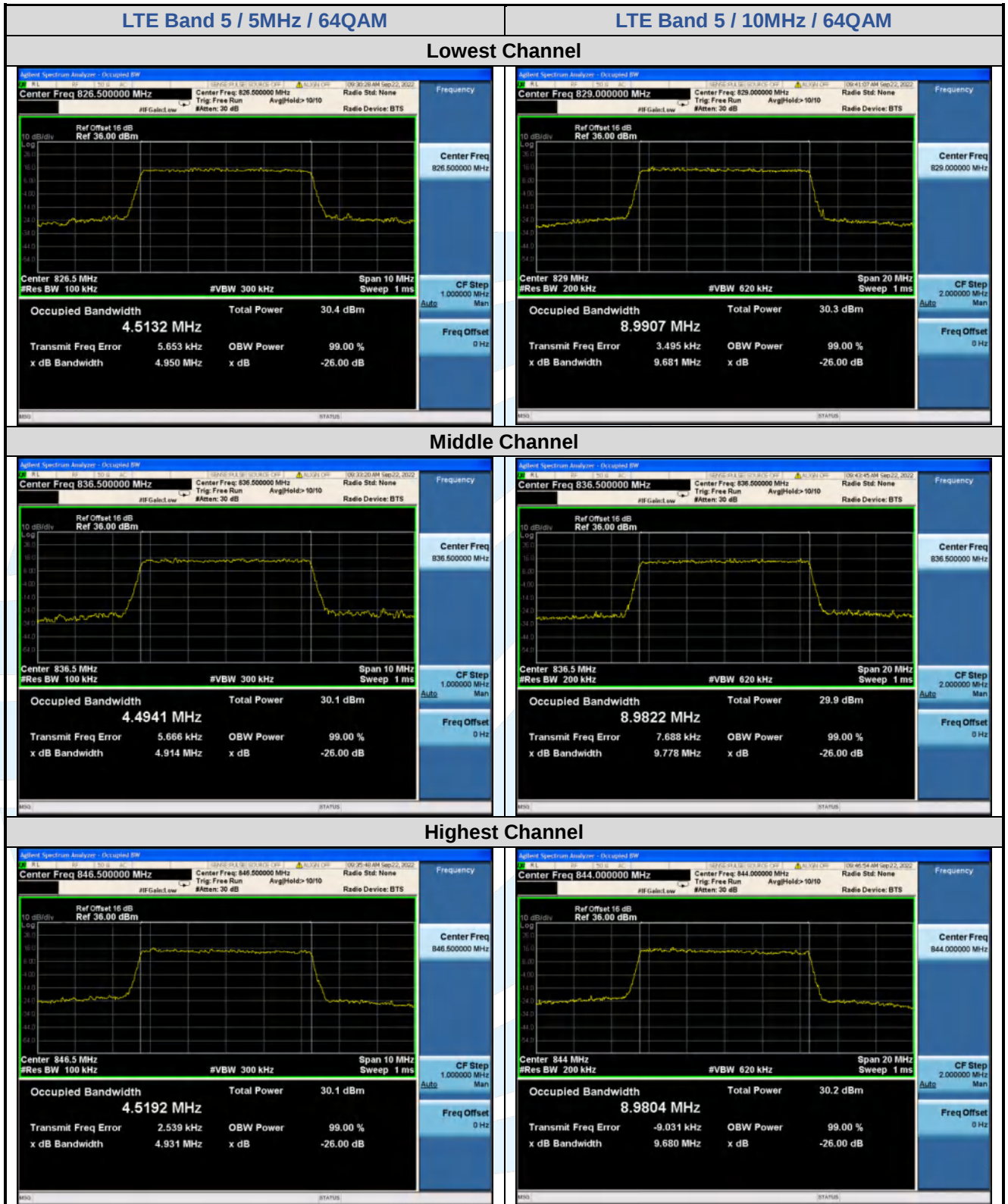
Middle Channel



Highest Channel

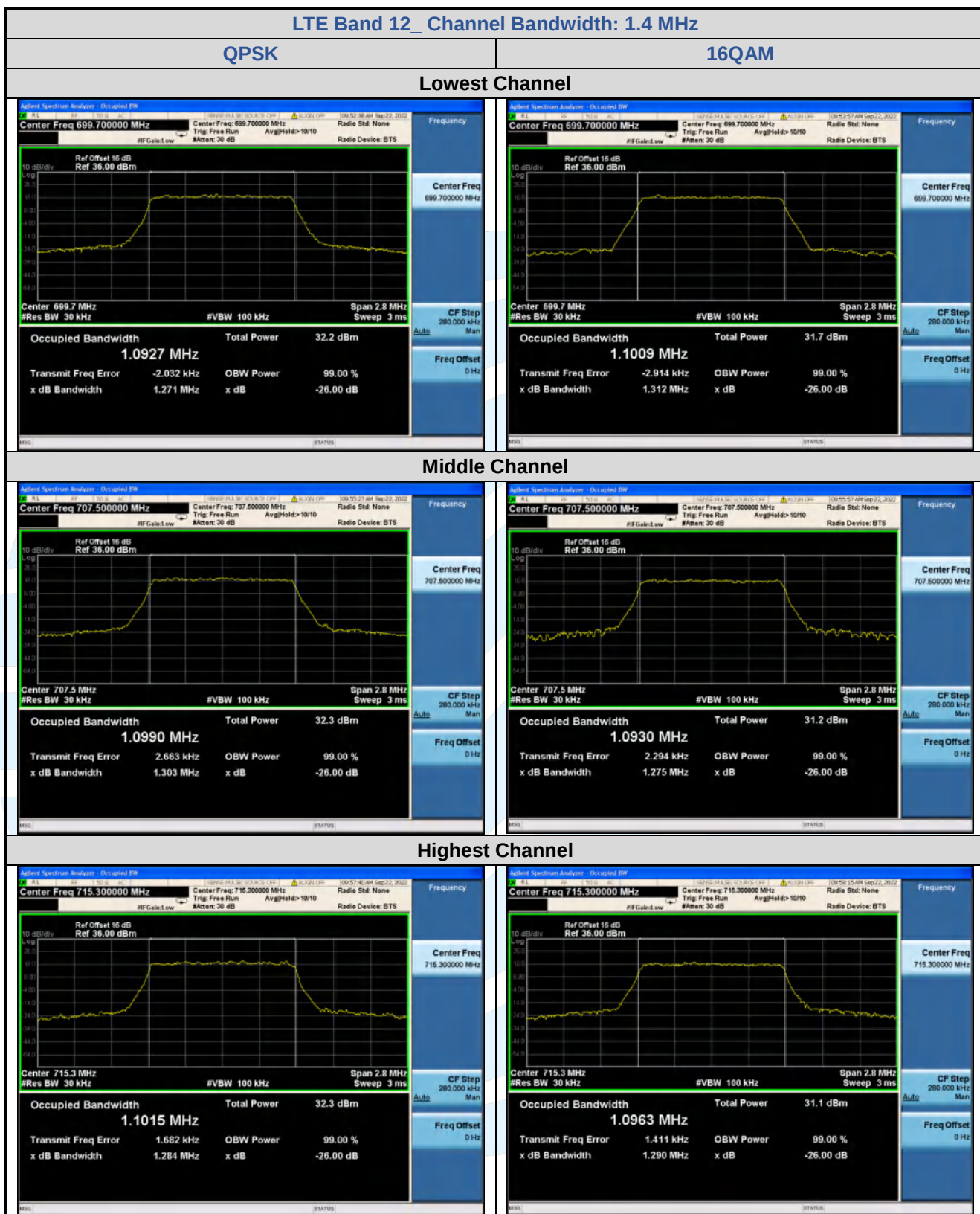






5.5.4 LTE Band 12

LTE Band 12								
Channel	RB Configuration		26 dB BW (MHz)			99% BW (MHz)		
	Size	Offset	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Channel Bandwidth: 1.4 MHz								
Lowest	6	0	1.271	1.312	1.308	1.0927	1.1009	1.1006
Middle	6	0	1.303	1.275	1.279	1.0990	1.0930	1.0962
Highest	6	0	1.284	1.290	1.293	1.1015	1.0963	1.0972
Channel Bandwidth: 3 MHz								
Lowest	15	0	2.931	2.936	2.936	2.7011	2.6931	2.6922
Middle	15	0	2.929	2.942	2.915	2.6925	2.6901	2.6893
Highest	15	0	2.935	2.938	2.923	2.7005	2.6952	2.6985
Channel Bandwidth: 5 MHz								
Lowest	25	0	5.208	5.168	5.111	4.5472	4.5222	4.5230
Middle	25	0	5.183	5.127	5.159	4.5181	4.5363	4.5360
Highest	25	0	5.179	5.222	5.171	4.5212	4.5537	4.5469
Channel Bandwidth: 10 MHz								
Lowest	50	0	10.23	10.11	10.05	9.0408	9.0125	9.0175
Middle	50	0	10.01	10.07	10.02	8.9789	8.9840	8.9684
Highest	50	0	10.07	10.11	10.07	9.0060	9.0081	9.0037

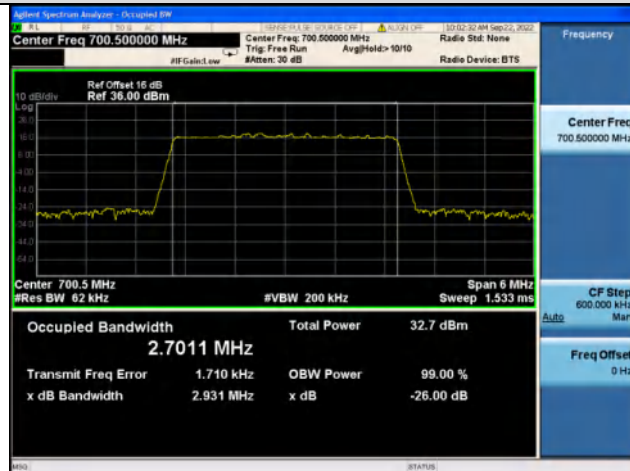


LTE Band 12_ Channel Bandwidth: 3 MHz

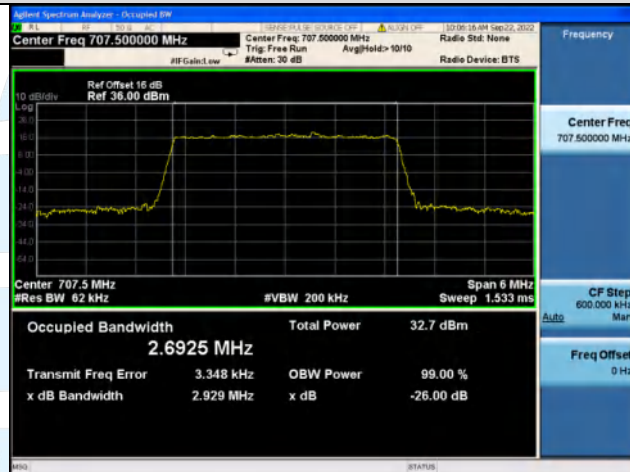
QPSK

16QAM

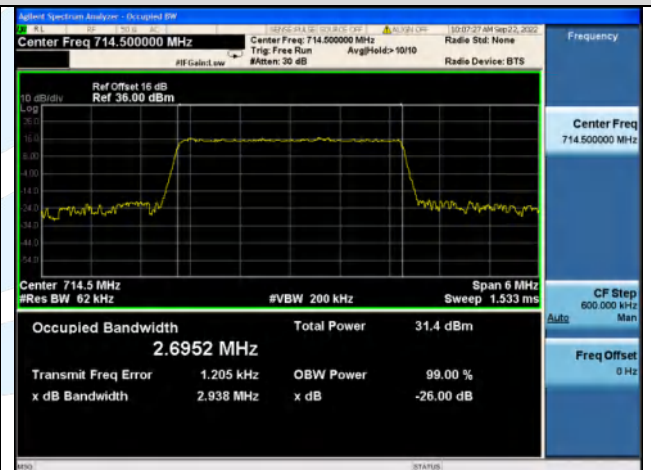
Lowest Channel

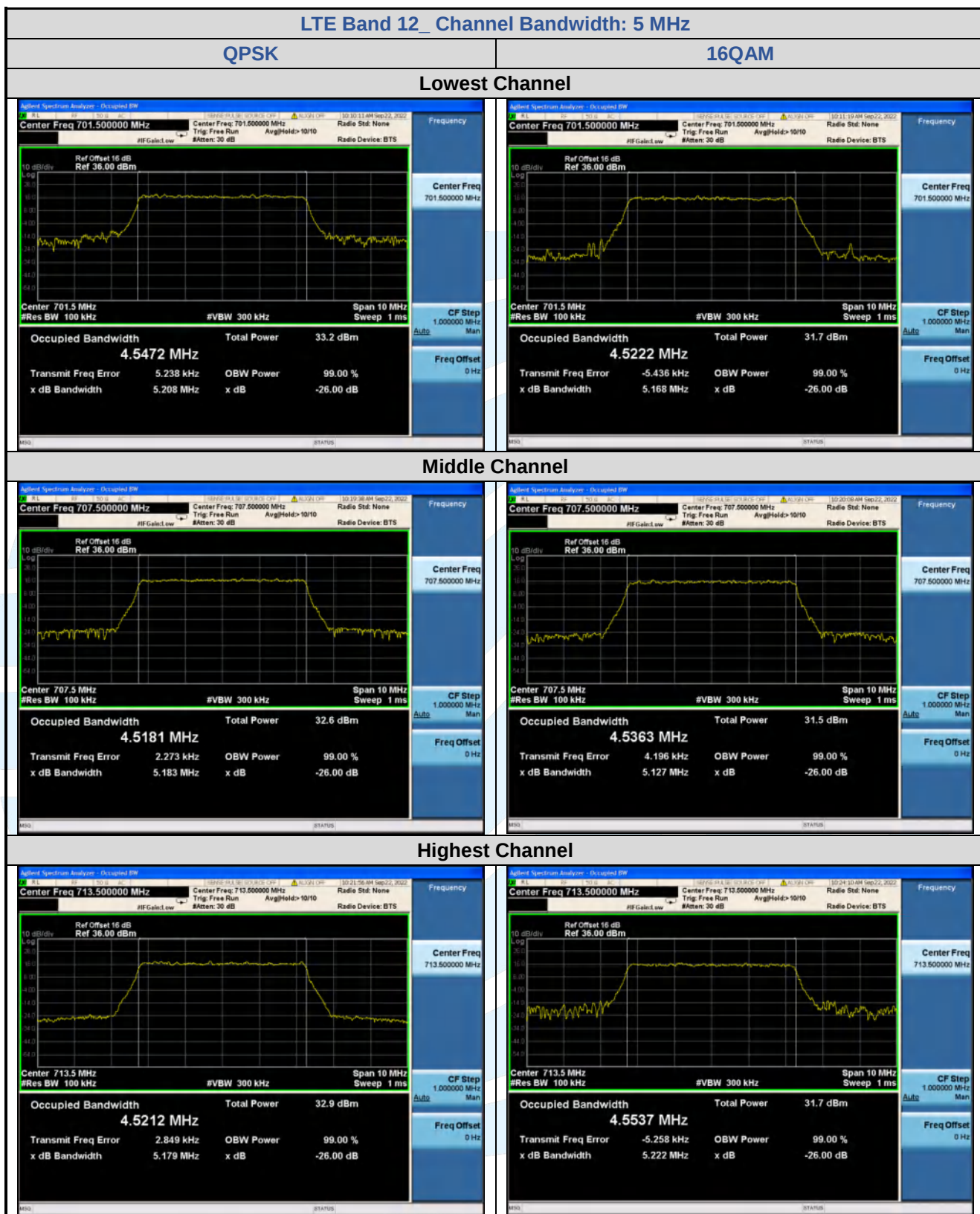


Middle Channel



Highest Channel





LTE Band 12_ Channel Bandwidth: 10 MHz

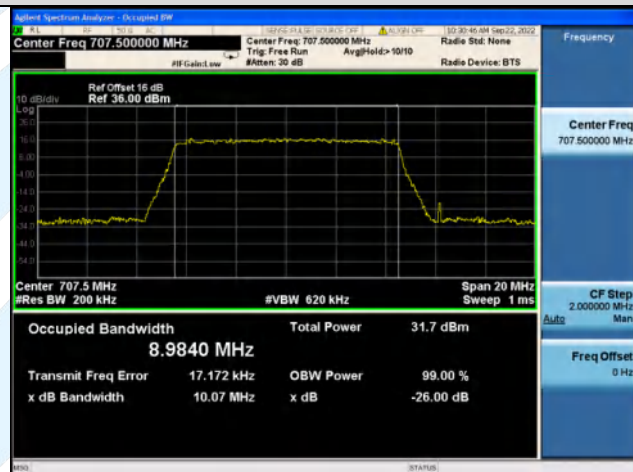
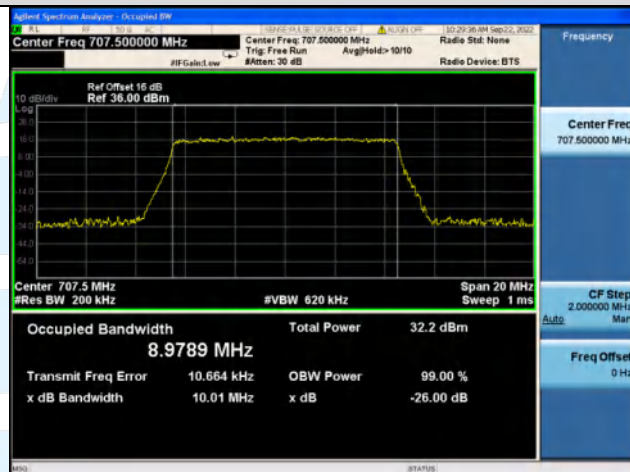
QPSK

16QAM

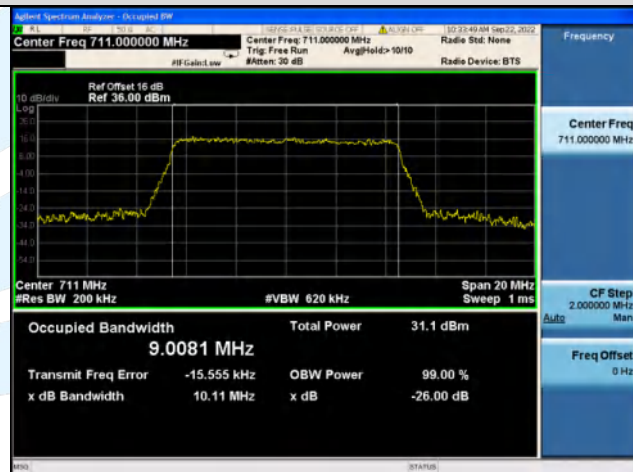
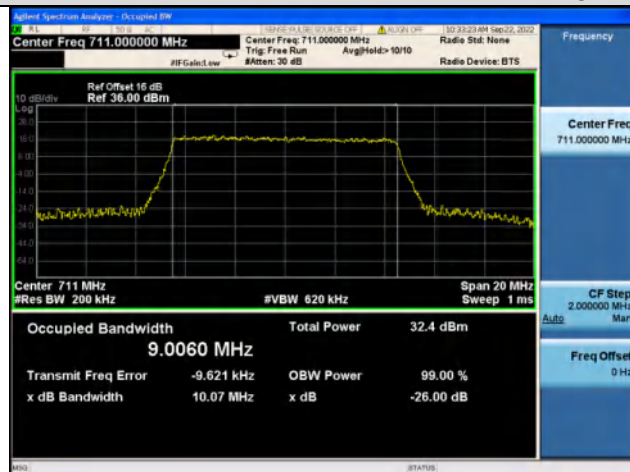
Lowest Channel

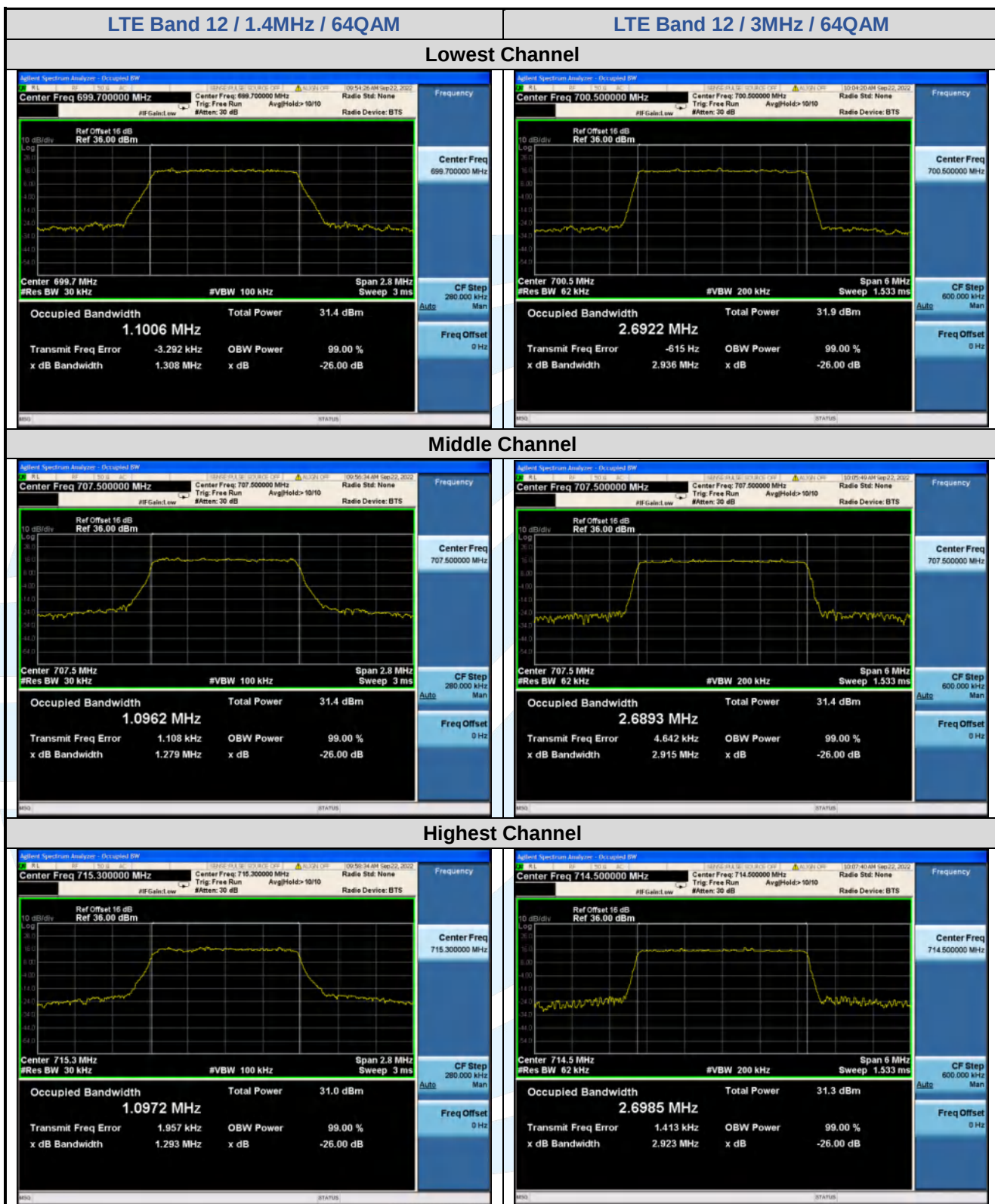


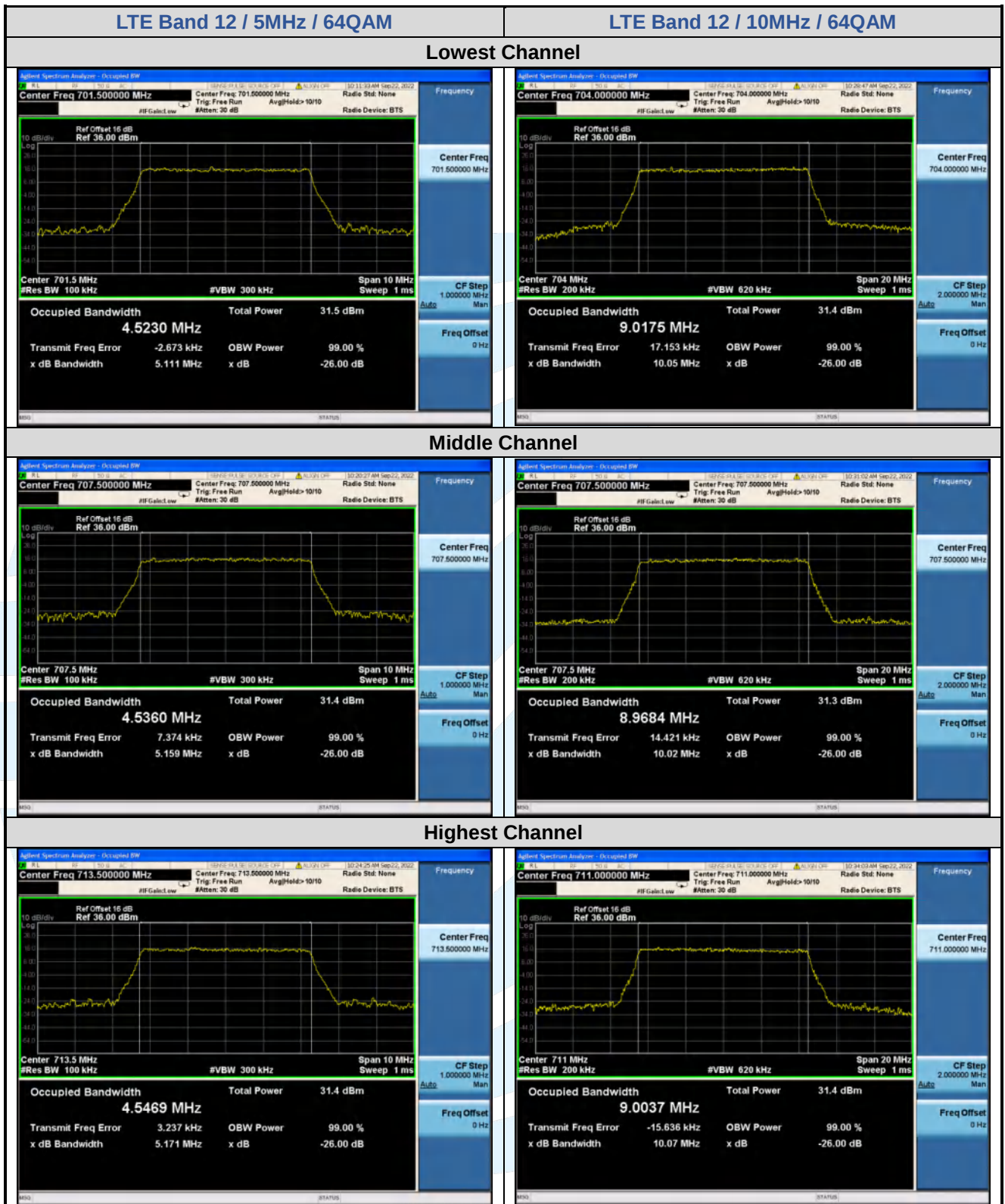
Middle Channel



Highest Channel

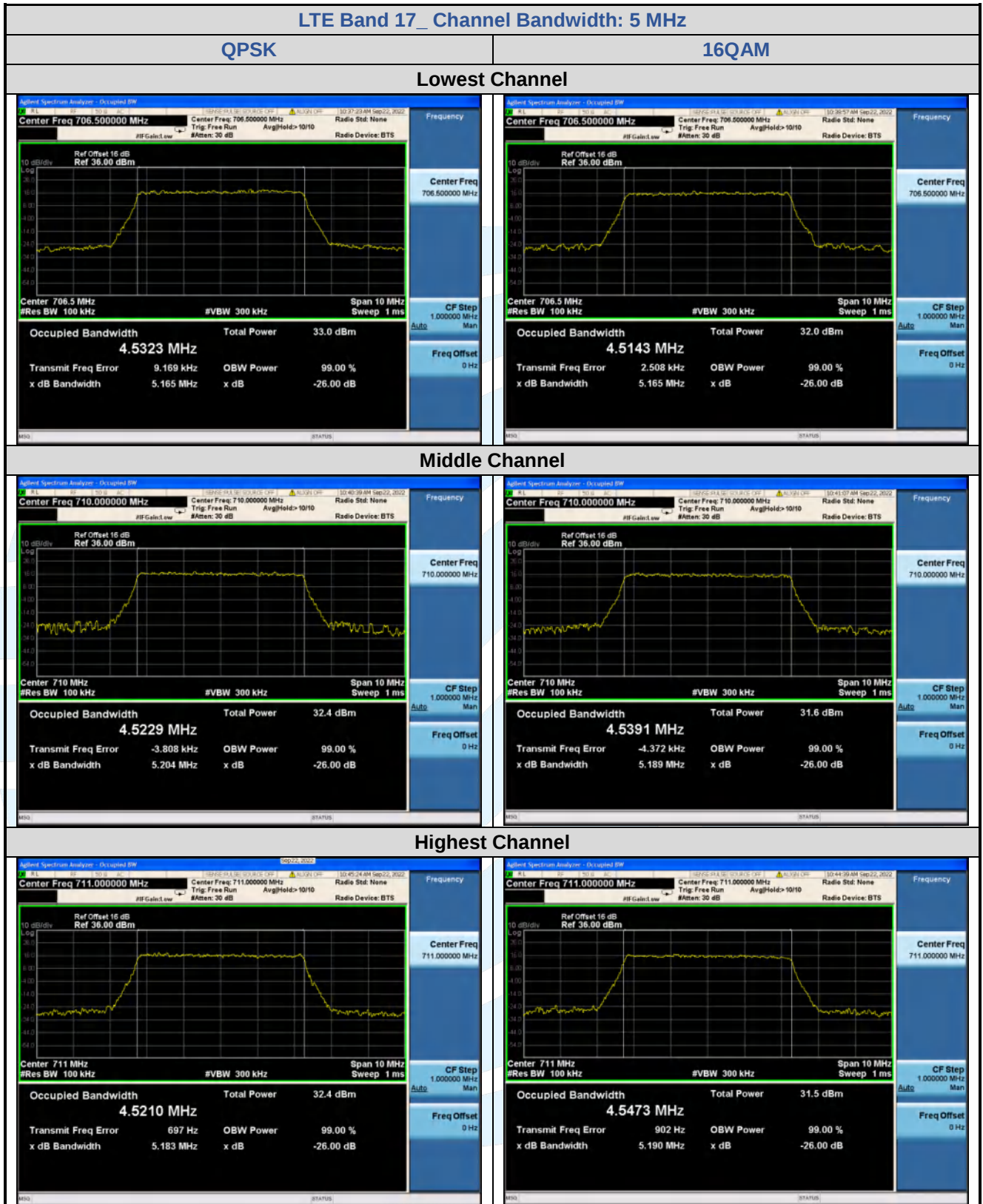






5.5.5 LTE Band 17

LTE Band 17								
Channel	RB Configuration		26 dB BW (MHz)			99% BW (MHz)		
	Size	Offset	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Channel Bandwidth: 5 MHz								
Lowest	25	0	5.165	5.165	5.165	4.5323	4.5143	4.5202
Middle	25	0	5.204	5.189	5.128	4.5229	4.5391	4.5371
Highest	25	0	5.183	5.190	5.163	4.5210	4.5473	4.5285
Channel Bandwidth: 10 MHz								
Lowest	50	0	9.999	10.02	9.963	8.9674	8.9887	8.9775
Middle	50	0	10.14	10.04	10.09	8.9949	8.9816	8.9907
Highest	50	0	10.25	9.835	9.980	9.0252	8.9947	9.0090

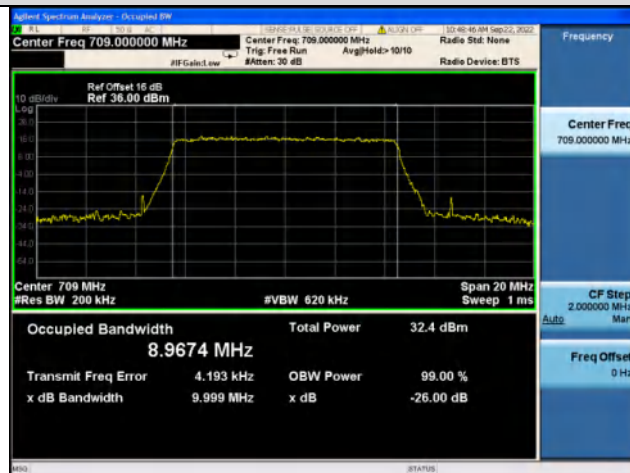


LTE Band 17_ Channel Bandwidth: 10 MHz

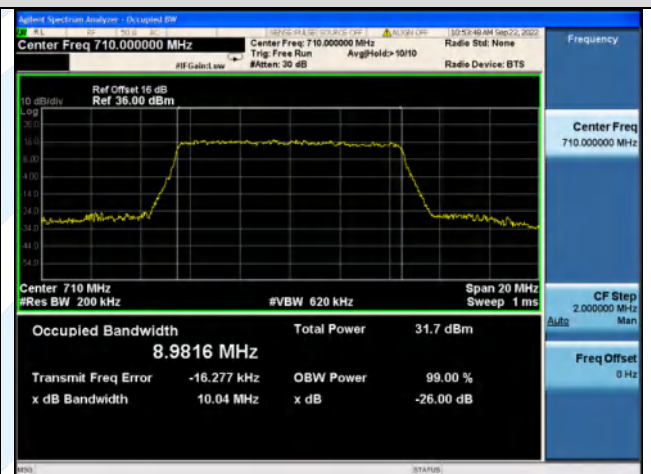
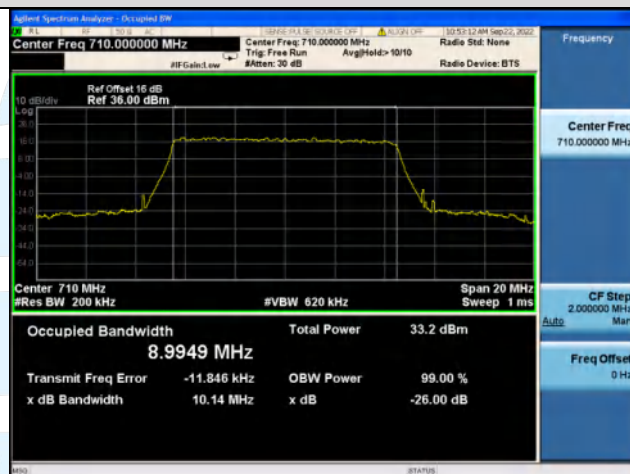
QPSK

16QAM

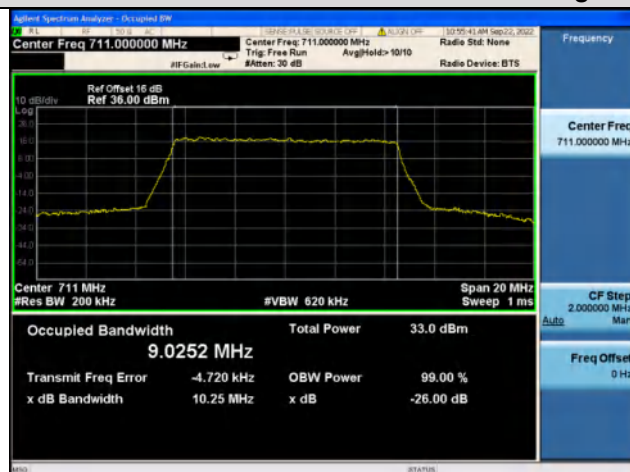
Lowest Channel

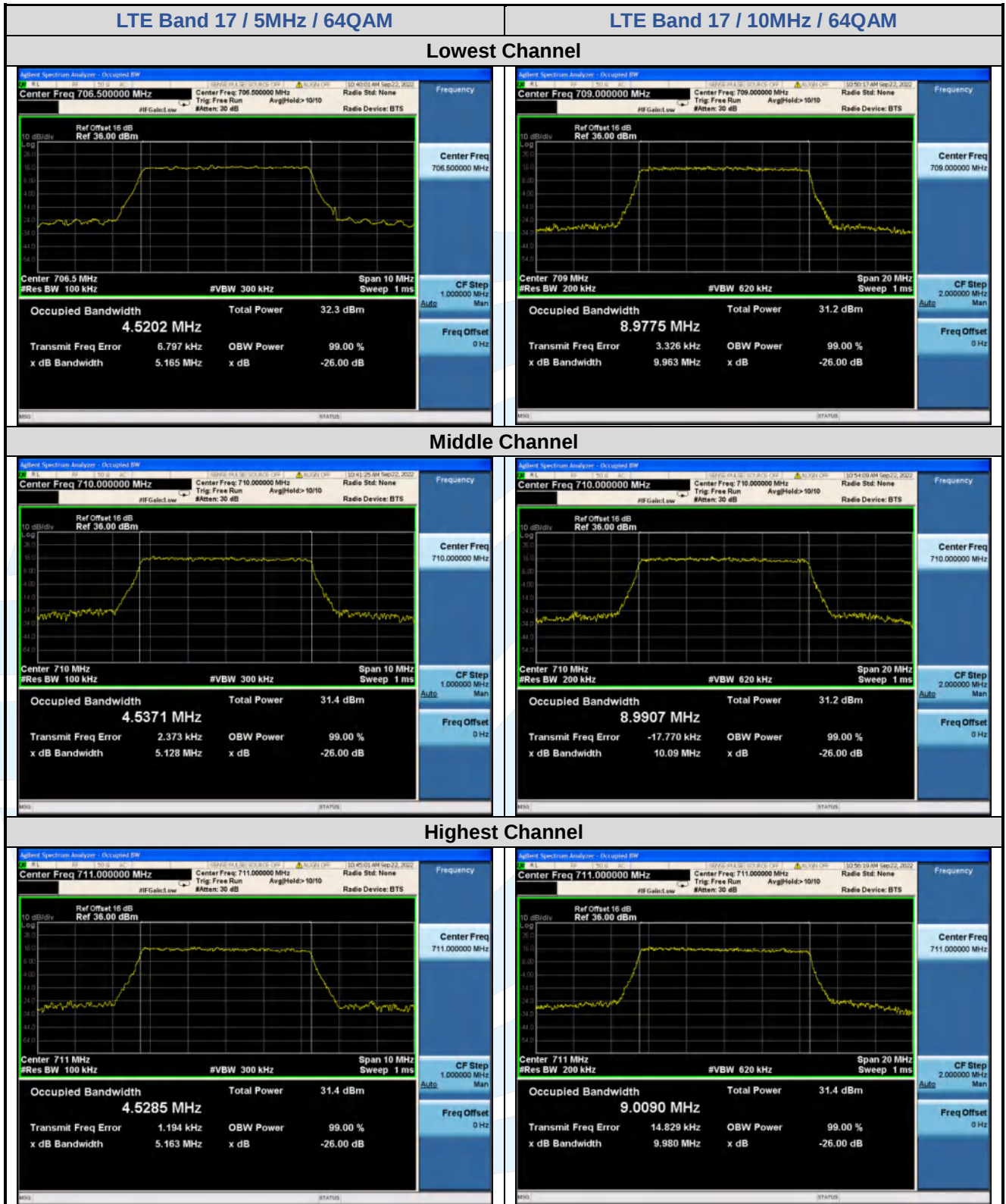


Middle Channel



Highest Channel





5.5.6 LTE Band 30

LTE Band 30								
Channel	RB Configuration		26 dB BW (MHz)			99% BW (MHz)		
	Size	Offset	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Channel Bandwidth: 5 MHz								
Lowest	6	0	4.926	4.971	4.969	4.5015	4.5166	4.5182
Middle	6	0	4.958	4.950	4.956	4.5080	4.5198	4.5190
Highest	6	0	4.950	4.898	4.922	4.5120	4.4898	4.4898
Channel Bandwidth: 10 MHz								
Middle	15	0	9.786	9.807	9.726	8.9810	8.9717	8.9775

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Tel: +86-755-28230888

Fax: +86-755-28230886

E-mail: info@uttlab.com
<http://www.uttlab.com>

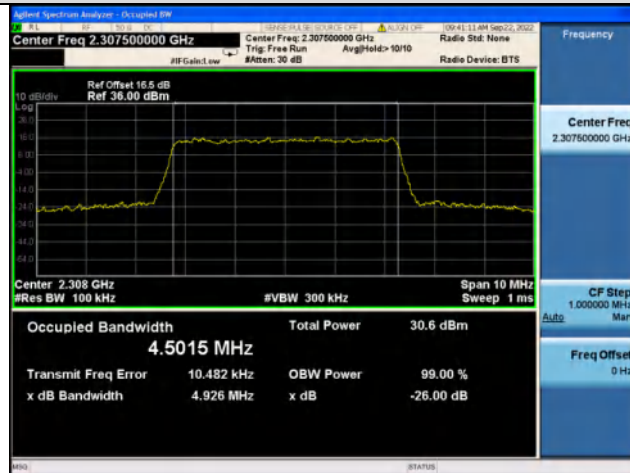
UTTR-RF-FCC4G-V1.1

LTE Band 30_ Channel Bandwidth: 5 MHz

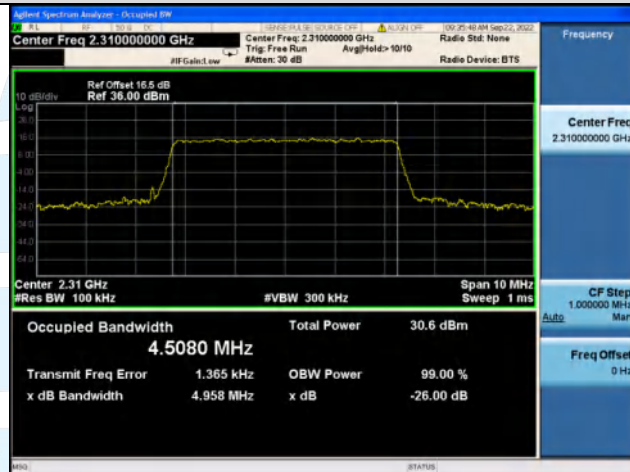
QPSK

16QAM

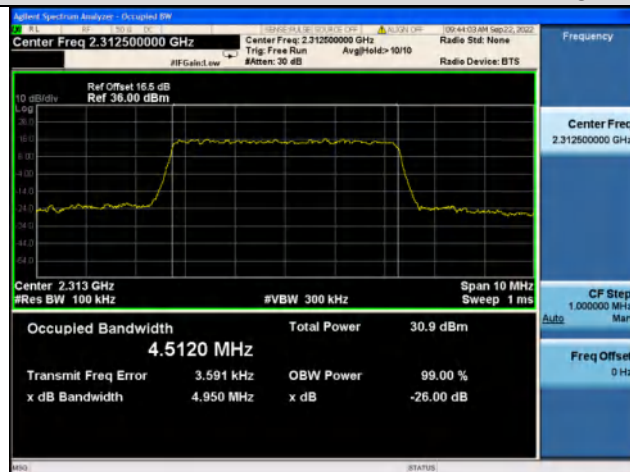
Lowest Channel

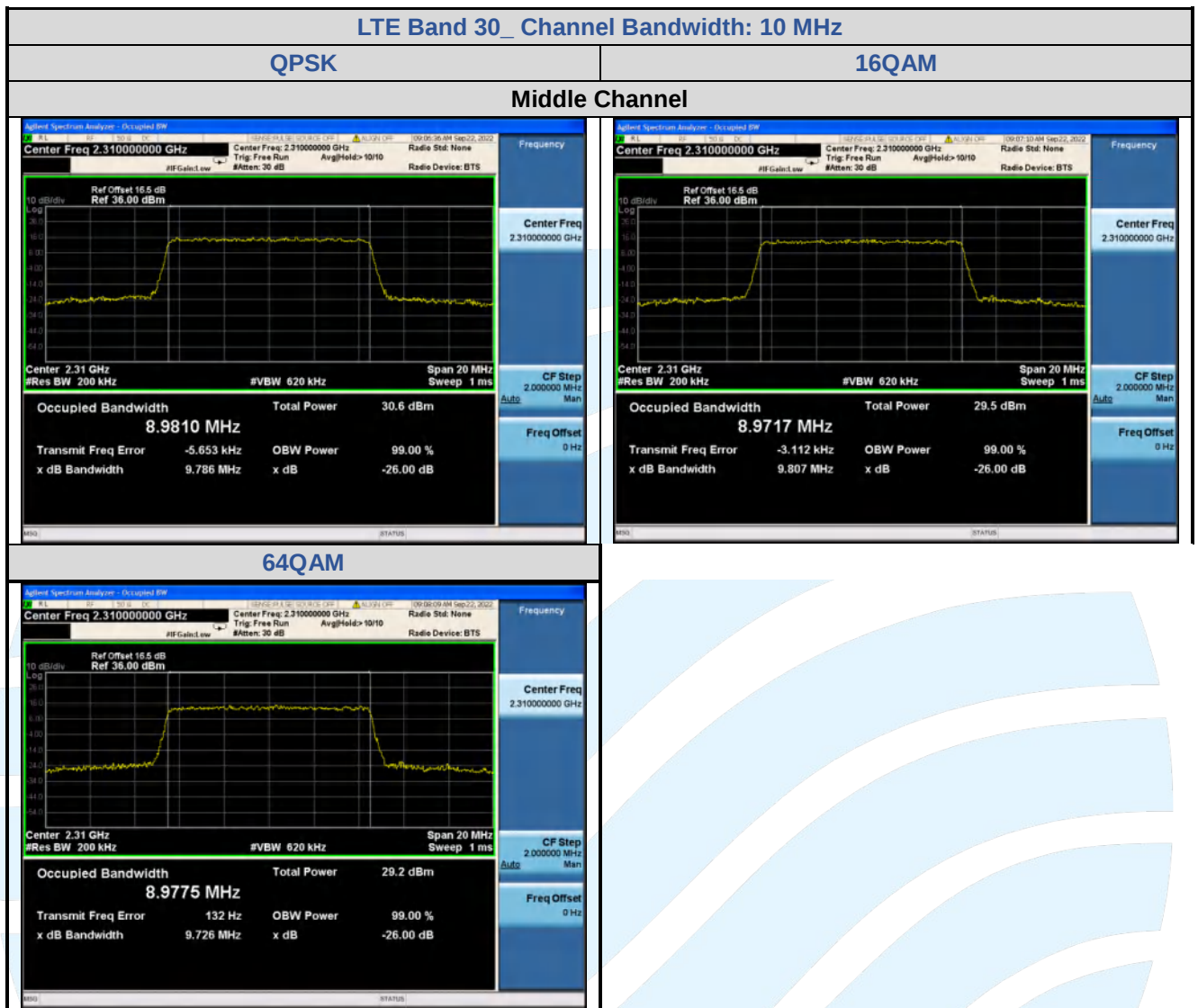


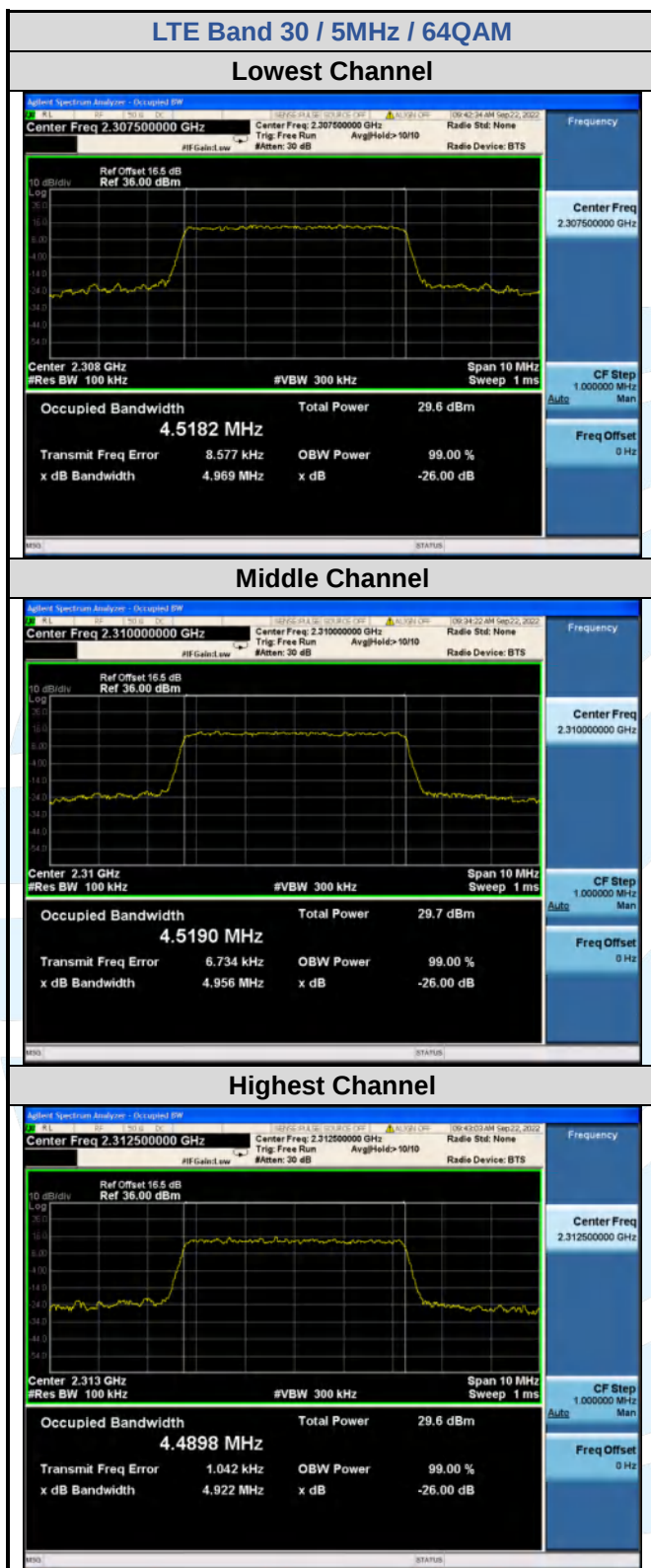
Middle Channel



Highest Channel

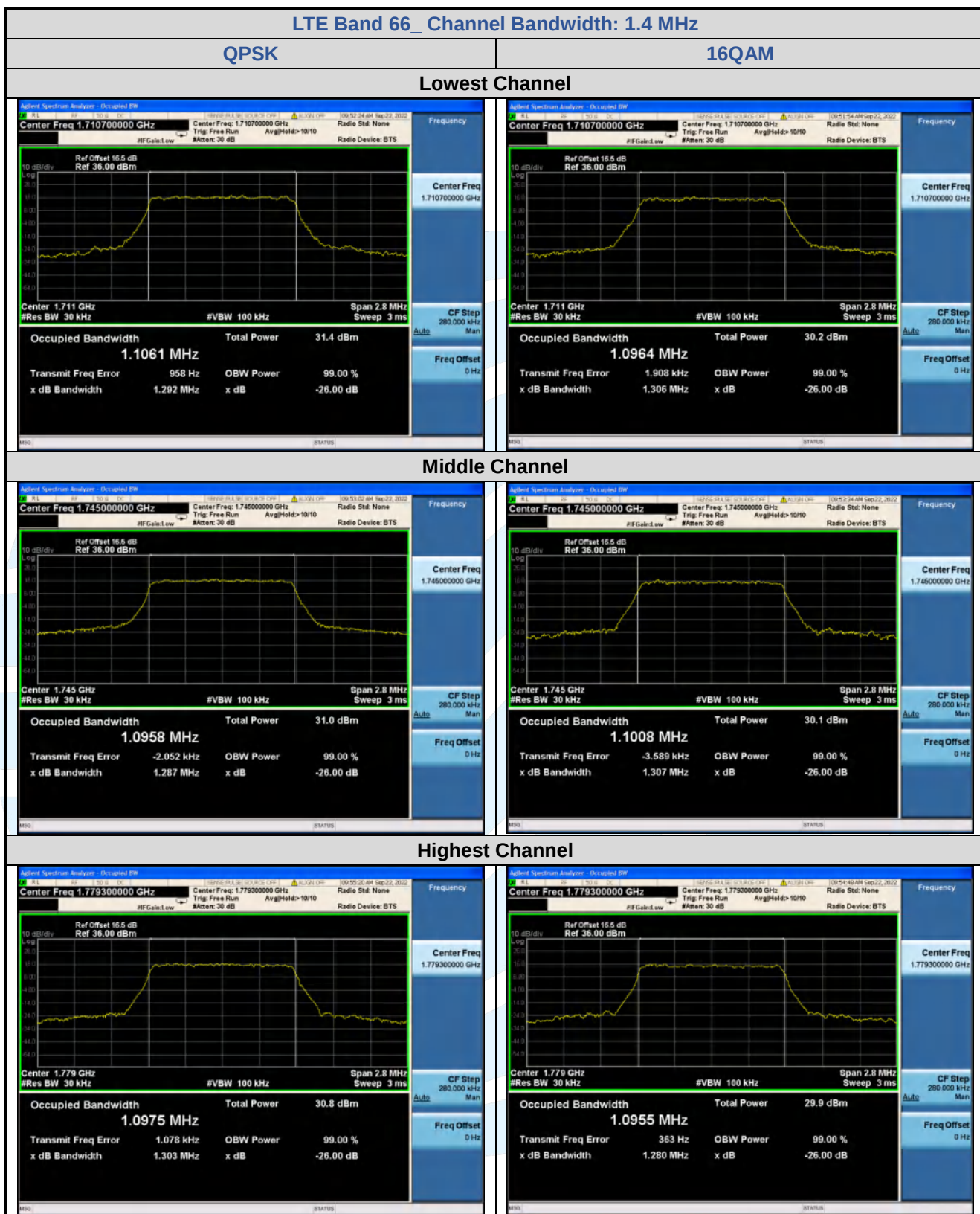


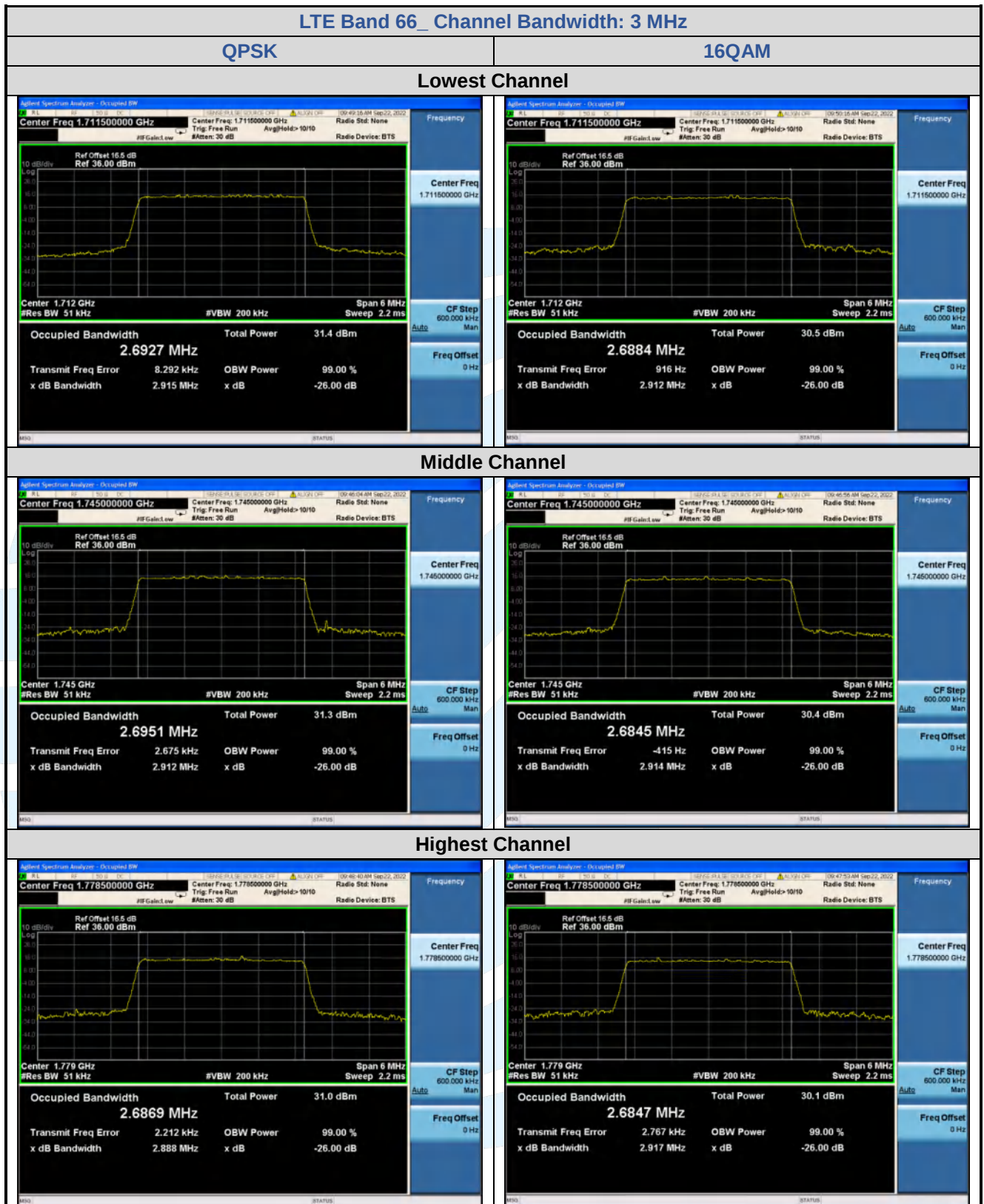




5.5.7 LTE Band 66

LTE Band 66								
Channel	RB Configuration		26 dB BW (MHz)			99% BW (MHz)		
	Size	Offset	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Channel Bandwidth: 1.4 MHz								
Lowest	6	0	1.292	1.306	1.303	1.1061	1.0964	1.0964
Middle	6	0	1.287	1.307	1.292	1.0958	1.1008	1.1006
Highest	6	0	1.303	1.280	1.279	1.0975	1.0955	1.0966
Channel Bandwidth: 3 MHz								
Lowest	15	0	2.915	2.912	2.919	2.6927	2.6884	2.6862
Middle	15	0	2.912	2.914	2.905	2.6951	2.6845	2.6856
Highest	15	0	2.888	2.917	2.916	2.6869	2.6847	2.6789
Channel Bandwidth: 5 MHz								
Lowest	25	0	5.172	5.193	5.229	4.5146	4.5498	4.5484
Middle	25	0	5.193	5.199	5.288	4.5261	4.5483	4.5465
Highest	25	0	5.194	5.133	5.139	5.5427	4.5203	4.5267
Channel Bandwidth: 10 MHz								
Lowest	50	0	10.19	10.07	10.08	9.0226	9.0006	9.0077
Middle	50	0	10.09	10.07	10.11	8.9975	9.0156	9.0119
Highest	50	0	10.12	10.15	10.12	9.0100	8.9990	8.9943
Channel Bandwidth: 15 MHz								
Lowest	75	0	15.02	15.01	15.00	13.947	13.512	13.500
Middle	75	0	14.99	14.98	14.99	13.460	13.499	13.508
Highest	75	0	15.19	14.95	15.52	13.495	13.500	13.501
Channel Bandwidth: 20 MHz								
Lowest	100	0	19.66	19.73	19.72	17.951	17.995	18.004
Middle	100	0	19.71	19.83	19.88	17.966	17.984	17.990
Highest	100	0	20.00	19.78	19.69	18.008	17.960	17.975



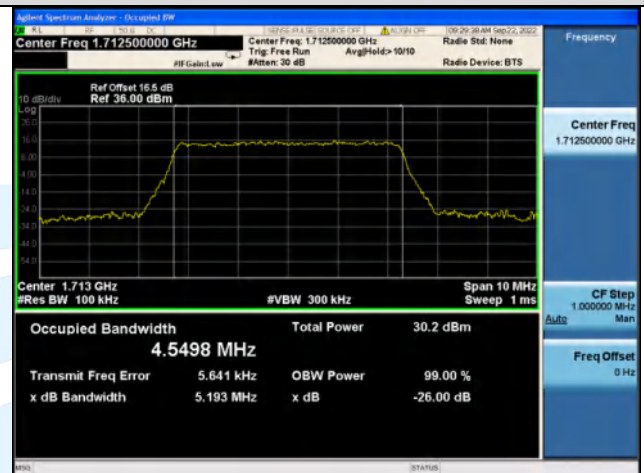
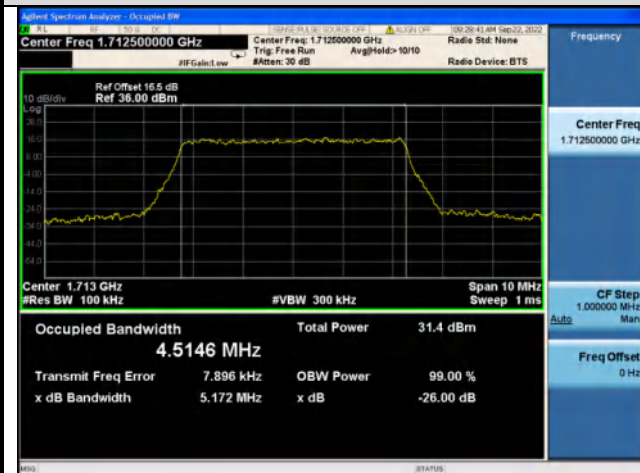


LTE Band 66_ Channel Bandwidth: 5 MHz

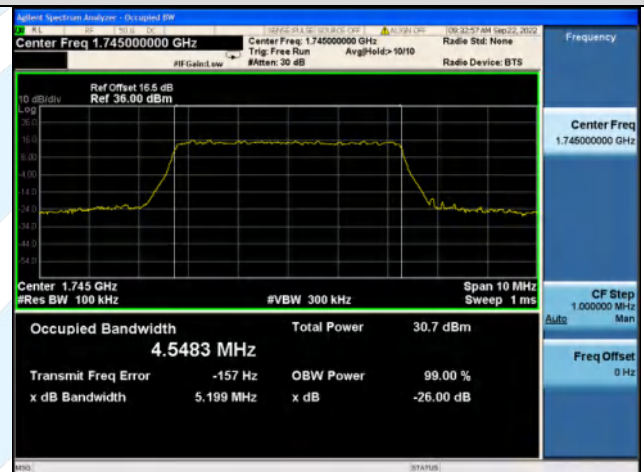
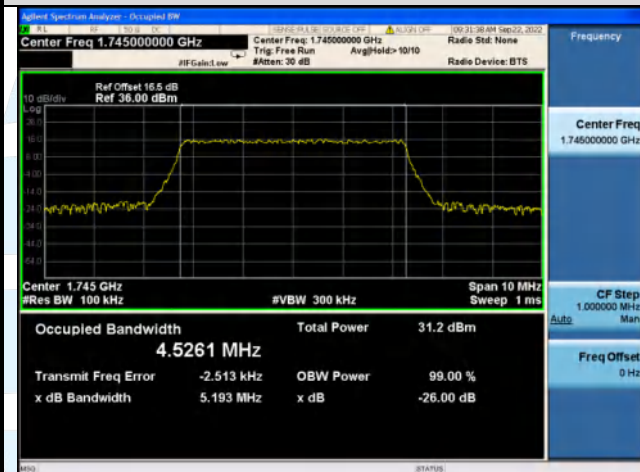
QPSK

16QAM

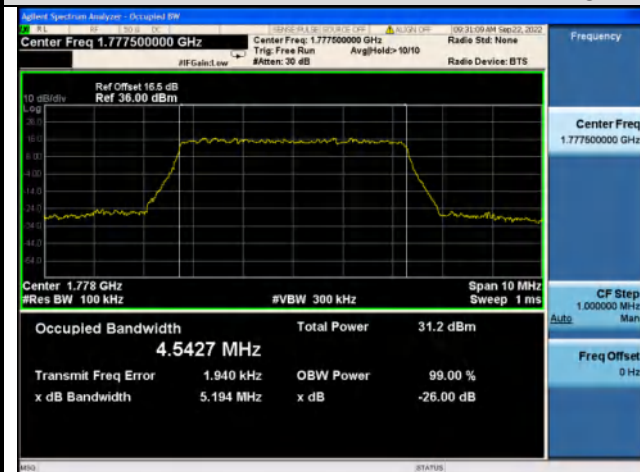
Lowest Channel



Middle Channel



Highest Channel

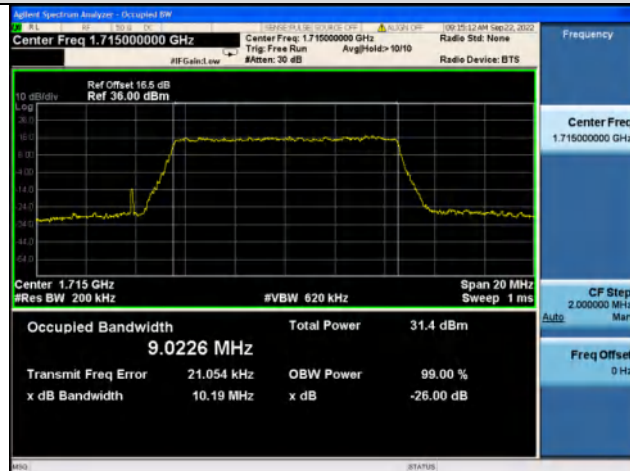


LTE Band 66_ Channel Bandwidth: 10 MHz

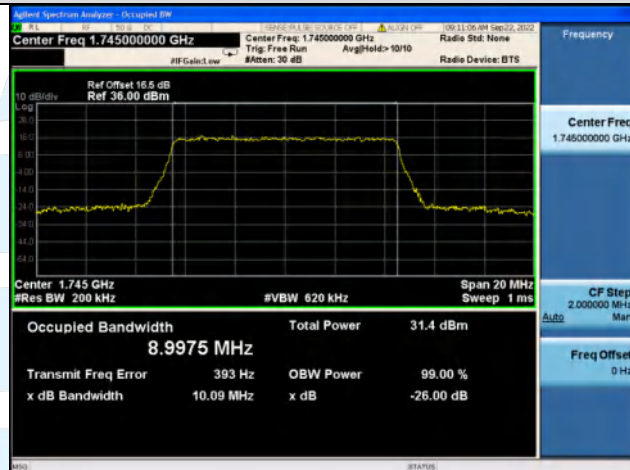
QPSK

16QAM

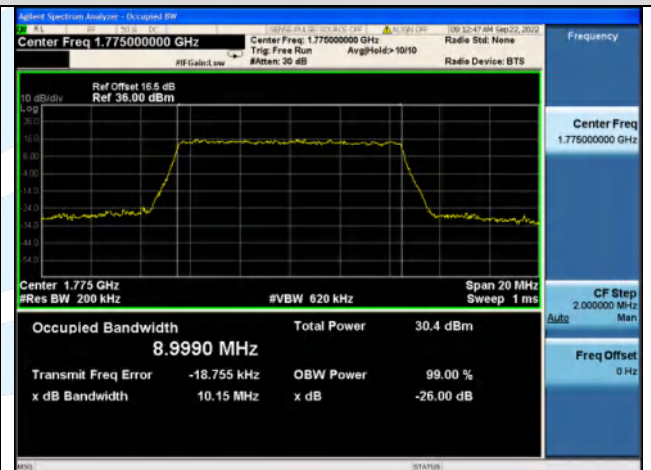
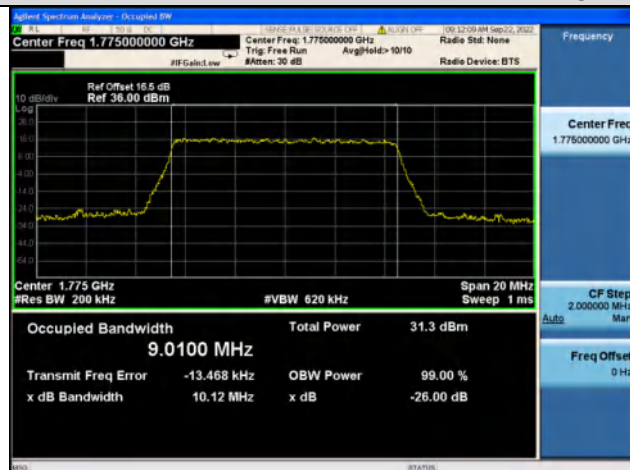
Lowest Channel



Middle Channel



Highest Channel

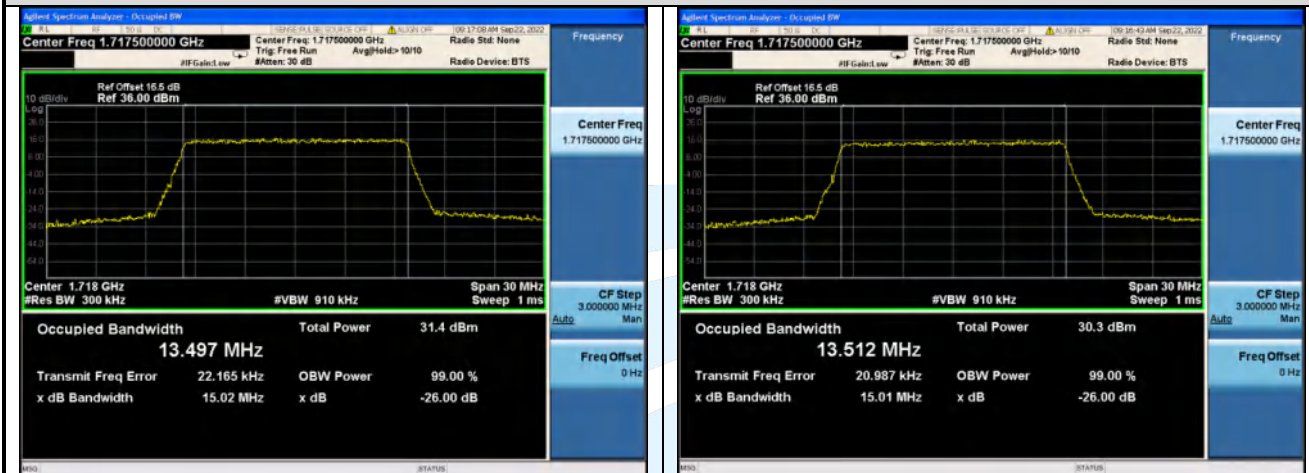


LTE Band 66_ Channel Bandwidth: 15 MHz

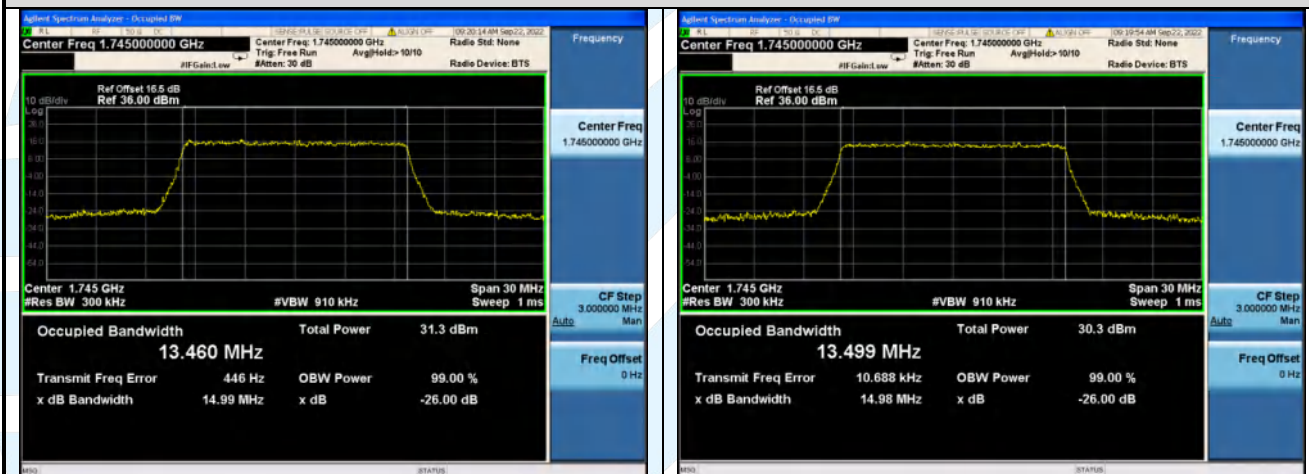
QPSK

16QAM

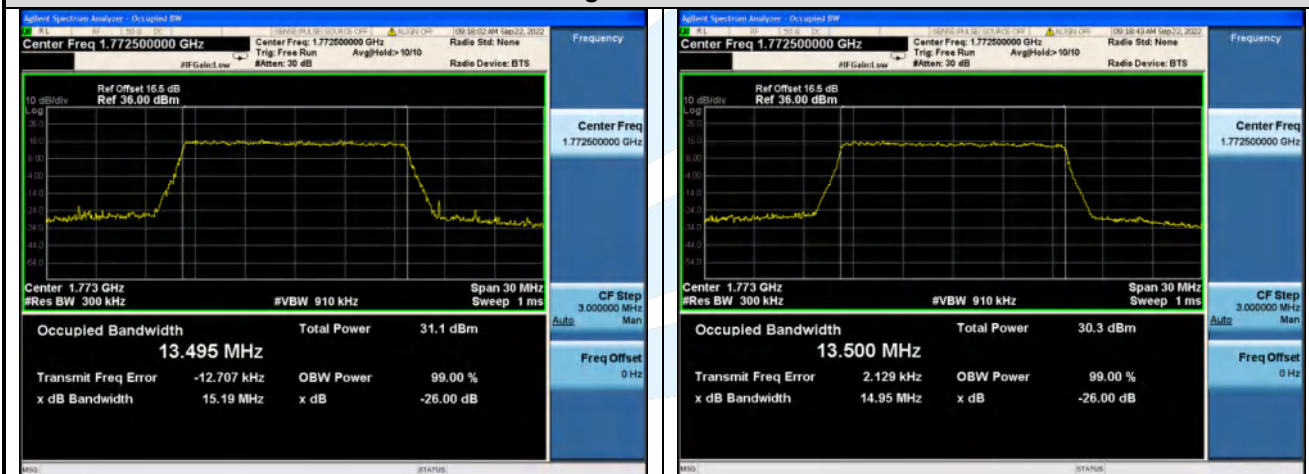
Lowest Channel



Middle Channel



Highest Channel

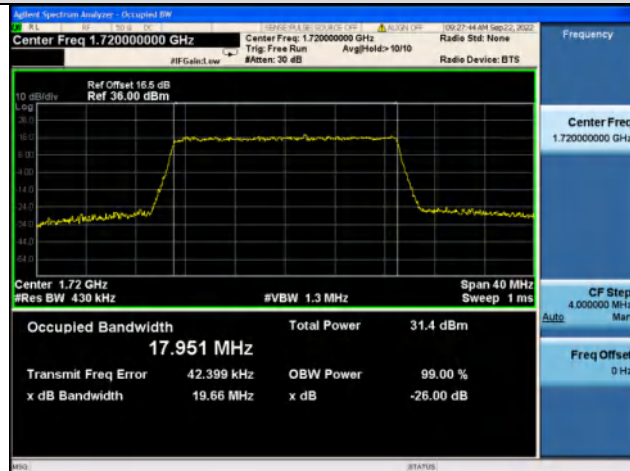


LTE Band 66_ Channel Bandwidth: 20 MHz

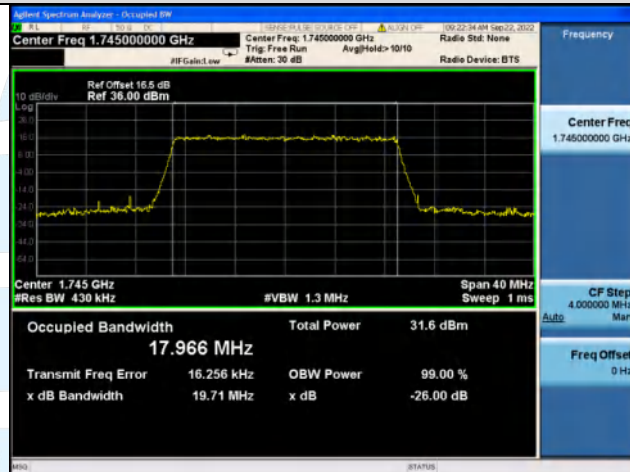
QPSK

16QAM

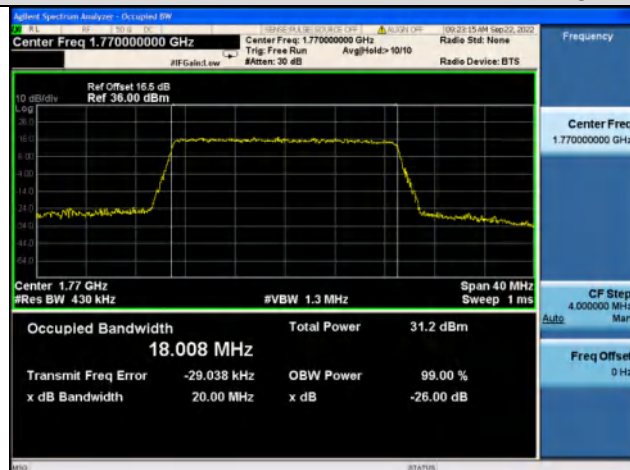
Lowest Channel

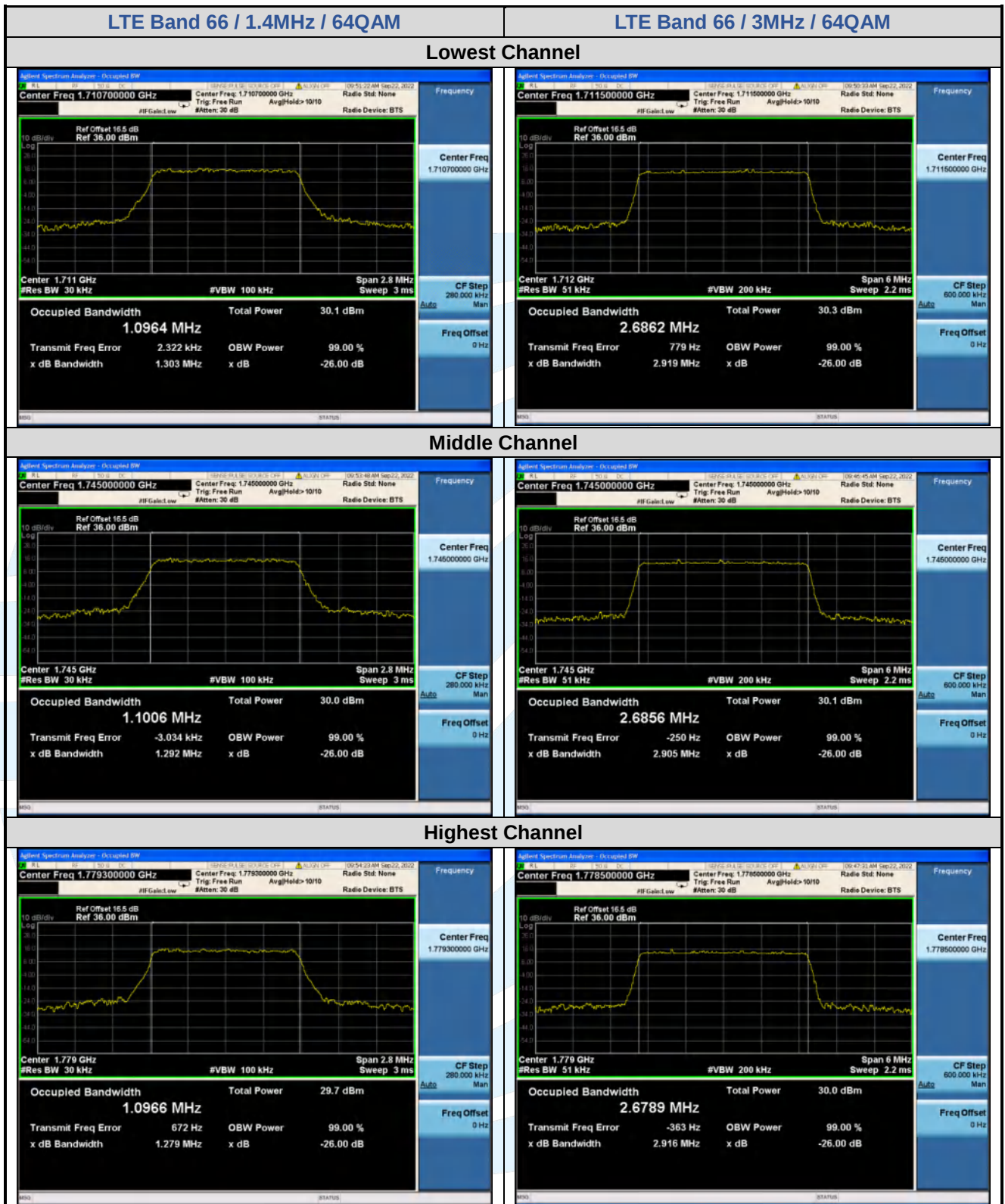


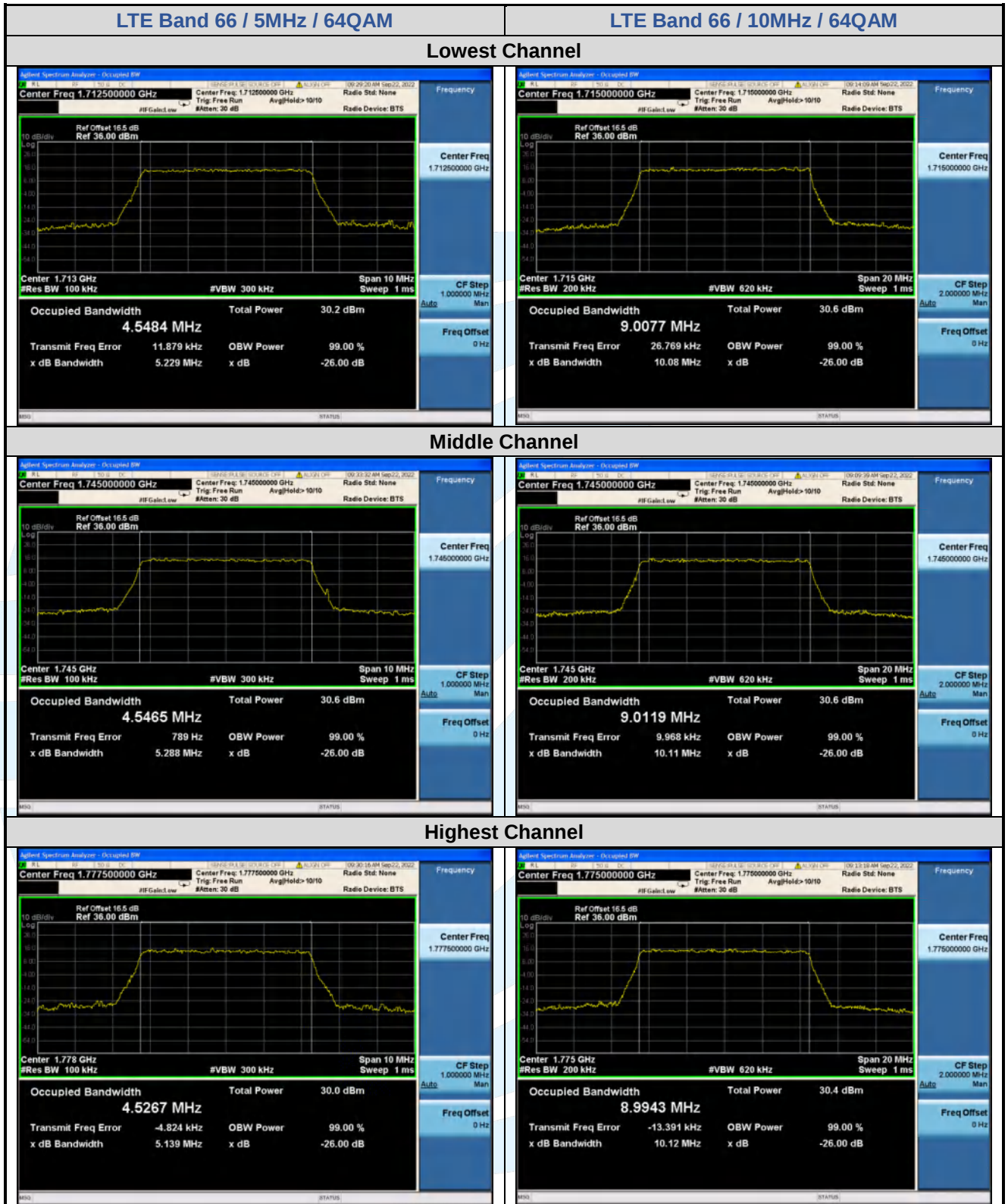
Middle Channel

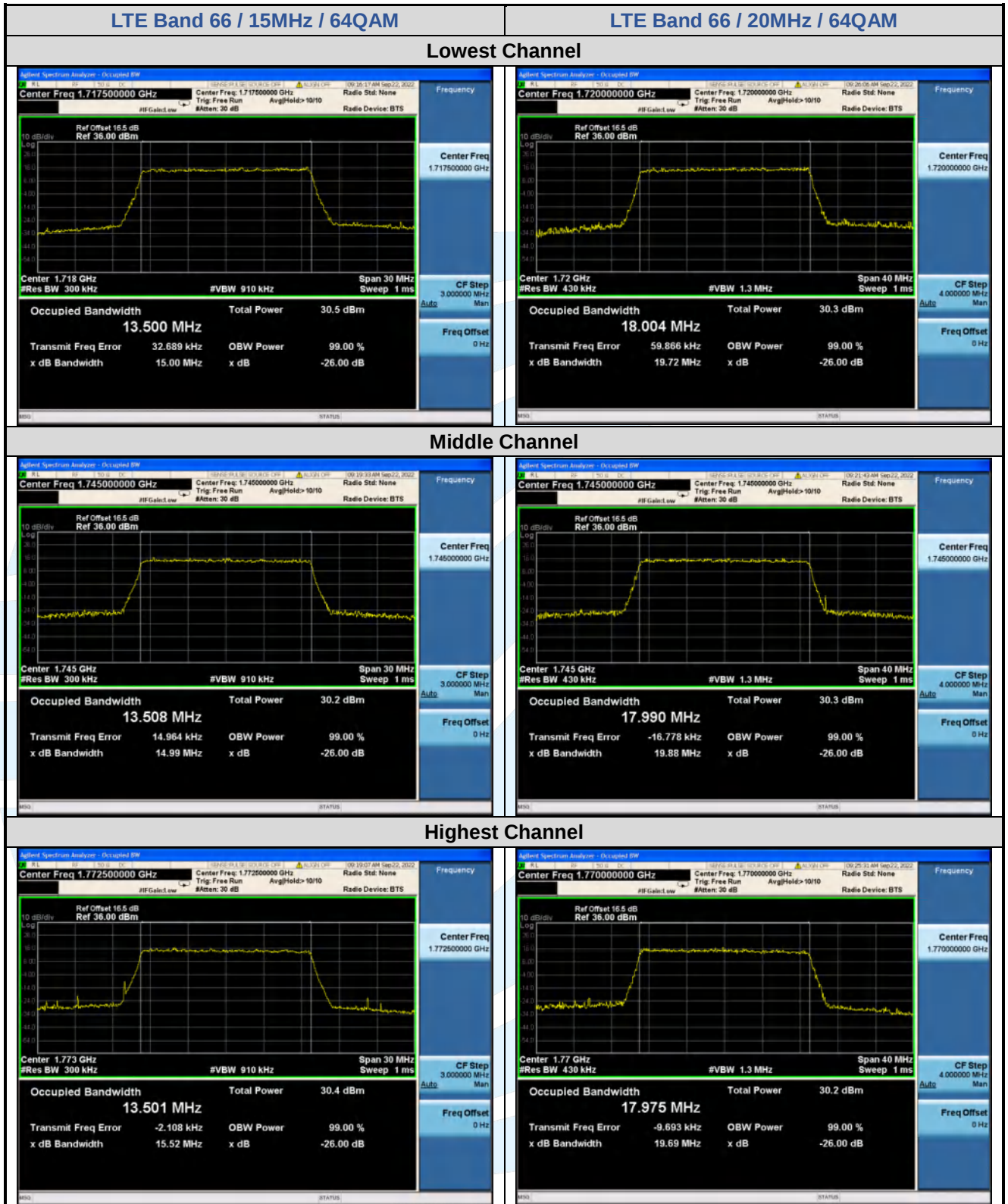


Highest Channel









5.6 BAND EDGE AT ANTENNA TERMINALS

Test Requirement: **LTE Band 2:** FCC 47 CFR Part 24.238(a)
LTE Band 4 & LTE Band 66: FCC 47 CFR Part 27.53(h)(1)
LTE Band 5: FCC 47 CFR Part 22.917(a)
LTE Band 12 & Band 17: FCC 47 CFR Part 27.53(g)
LTE Band 30: FCC 47 CFR Part 27.53(a)(4)

Test Method: ANSI C63.26-2015 & KDB 971168 D01v03r01

Limit:

FCC 47 CFR Part 24.238(a), 27.53(h)(1), 22.917(a):

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. The emission limit equal to -13 dBm.

FCC 47 CFR Part 27.53(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. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FCC 47 CFR Part 27.53(a)(4): For mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:

(i) By a factor of not less than: $43 + 10 \log(P)$ dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than $55 + 10 \log(P)$ dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than $61 + 10 \log(P)$ dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than $67 + 10 \log(P)$ dB on all frequencies between 2328 and 2337 MHz;

(ii) By a factor of not less than $43 + 10 \log(P)$ dB on all frequencies between 2300 and 2305 MHz, $55 + 10 \log(P)$ dB on all frequencies between 2296 and 2300 MHz, $61 + 10 \log(P)$ dB on all frequencies between 2292 and 2296 MHz, $67 + 10 \log(P)$ dB on all frequencies between 2288 and 2292 MHz, and $70 + 10 \log(P)$ dB below 2288 MHz;

(iii) By a factor of not less than $43 + 10 \log(P)$ dB on all frequencies between 2360 and 2365 MHz, and not less than $70 + 10 \log(P)$ dB above 2365 MHz.

Test Procedure:

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer.

For each band edge measurement:

- 1) Set the spectrum analyzer span to include the block edge frequency.
- 2) Set a marker to point the corresponding band edge frequency in each test case.
- 3) Set display line at -13 dBm
- 4) Set resolution bandwidth to at least 1% of emission bandwidth.
- 5) Set spectrum analyzer with RMS detector.
- 6) Record the max trace plot into the test report

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.2.2 for details.

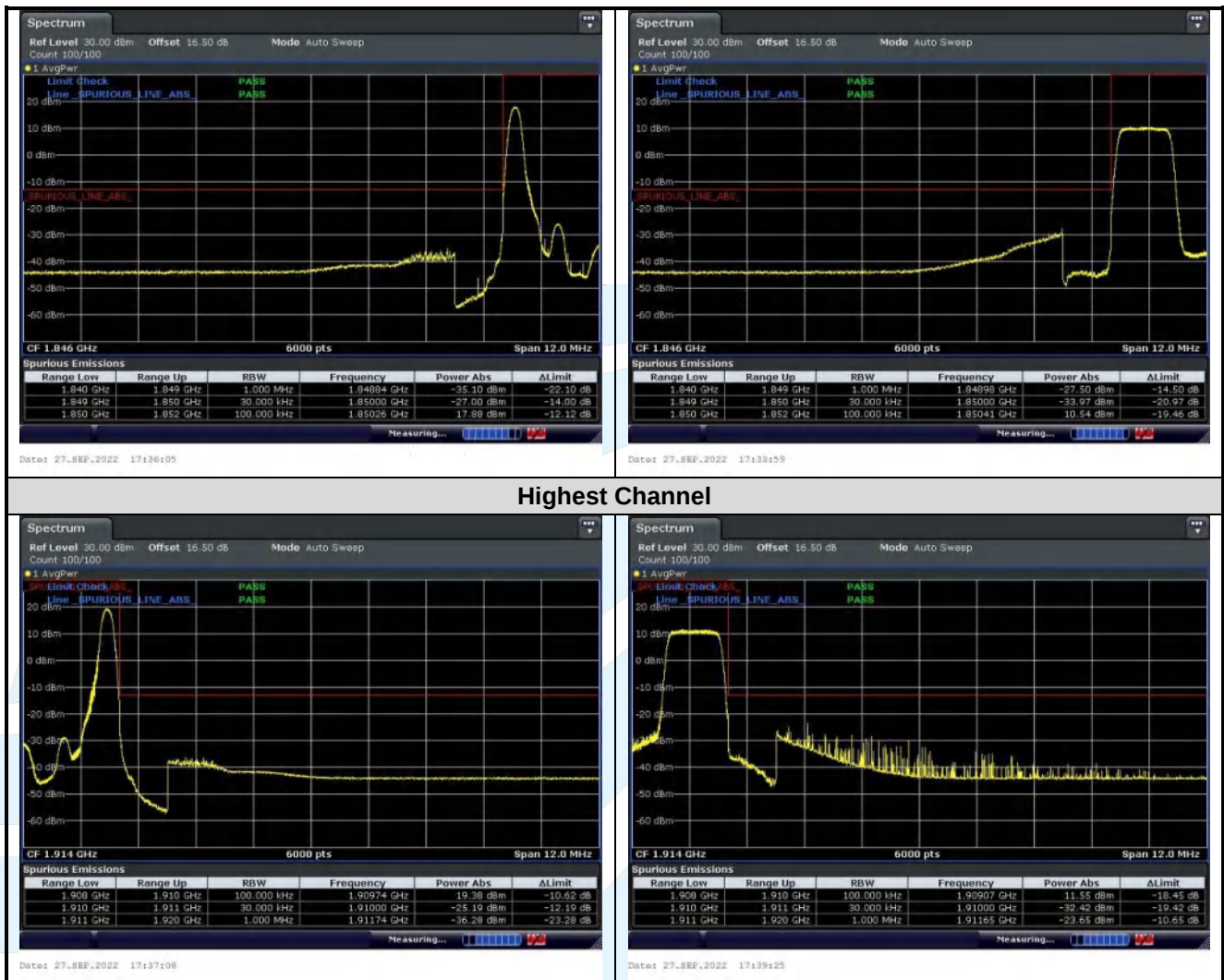
Instruments Used: Refer to section 3 for details

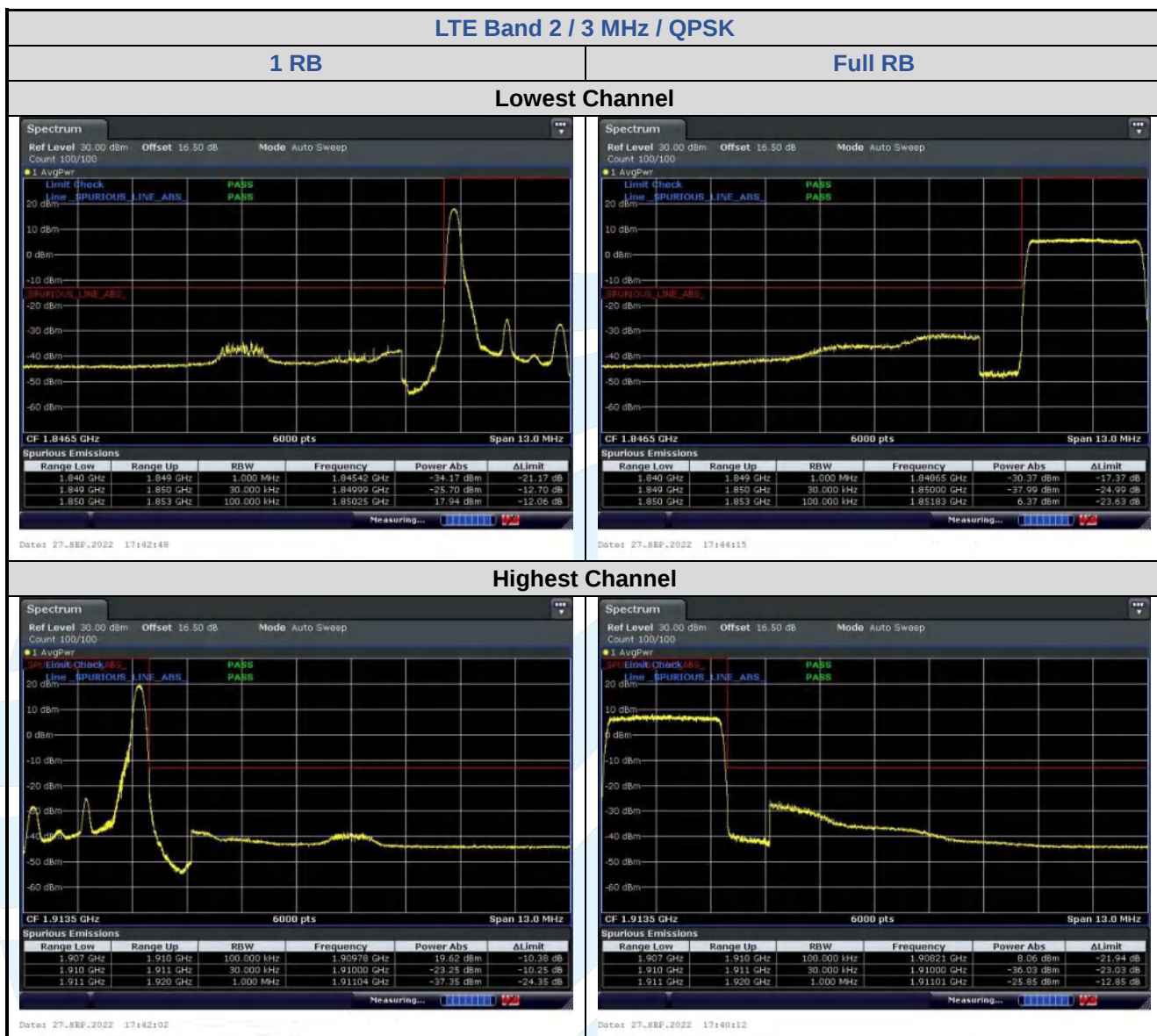
Test Mode: Link mode

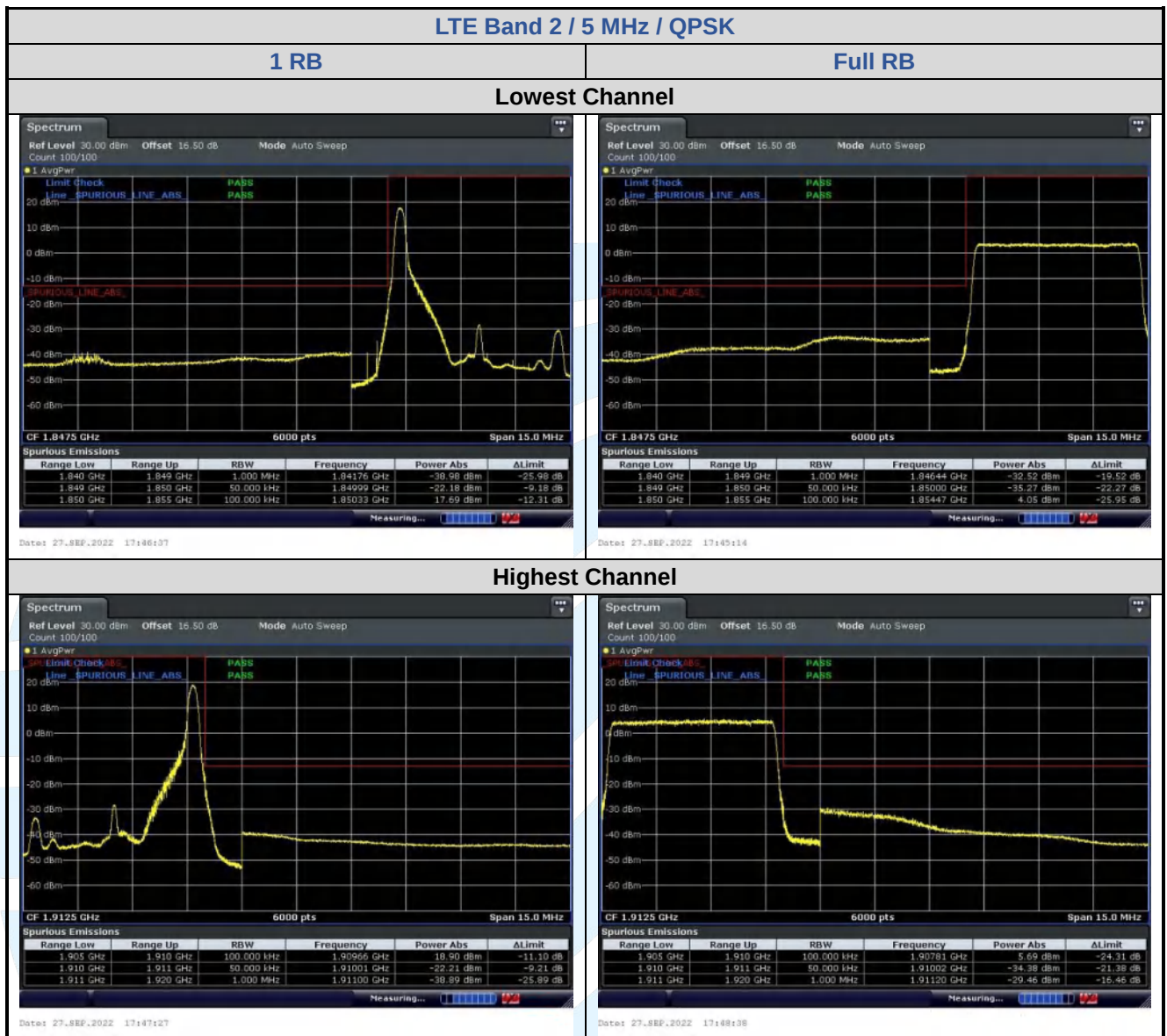
Test Results: Pass

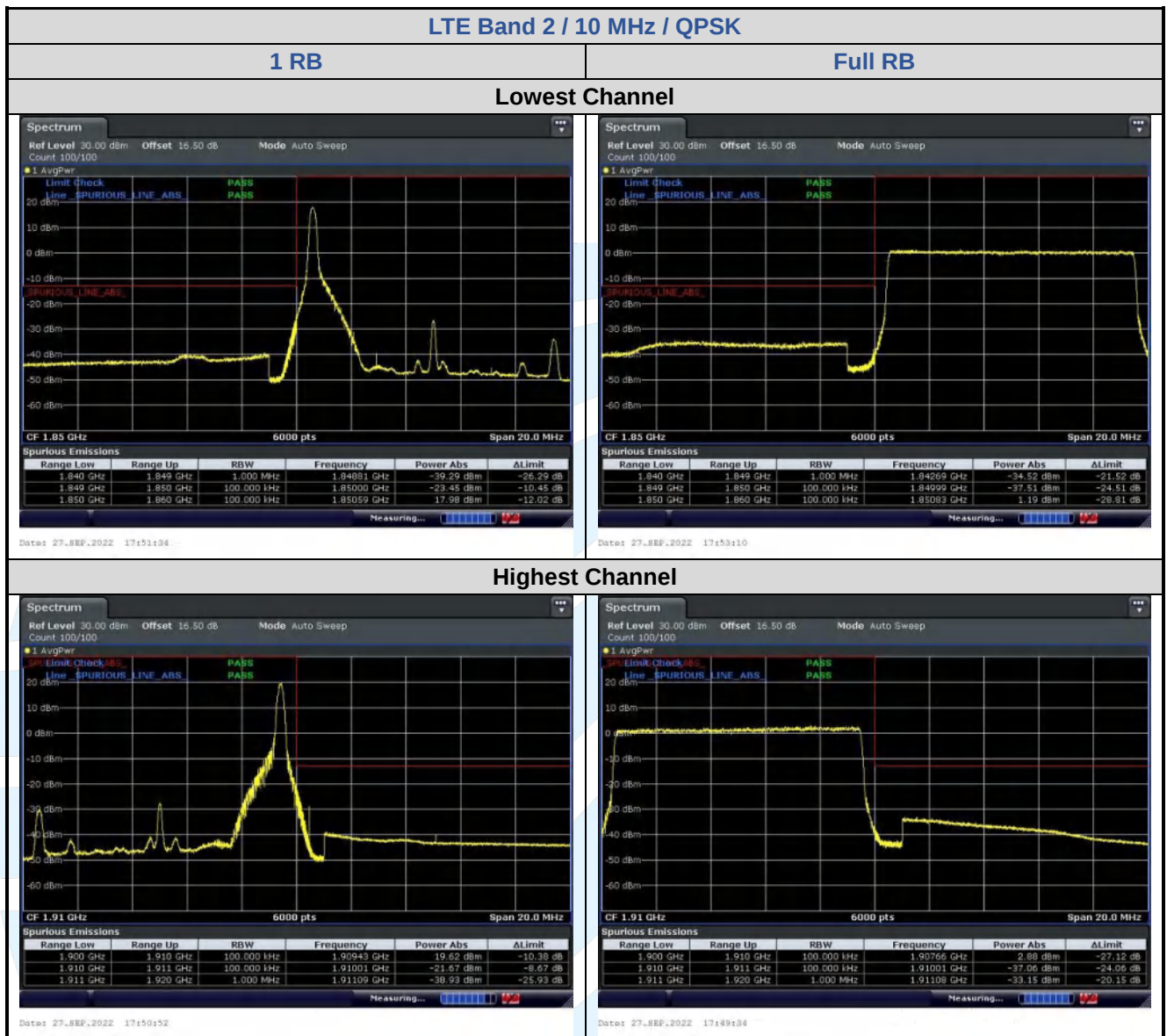
5.6.1 LTE Band 2

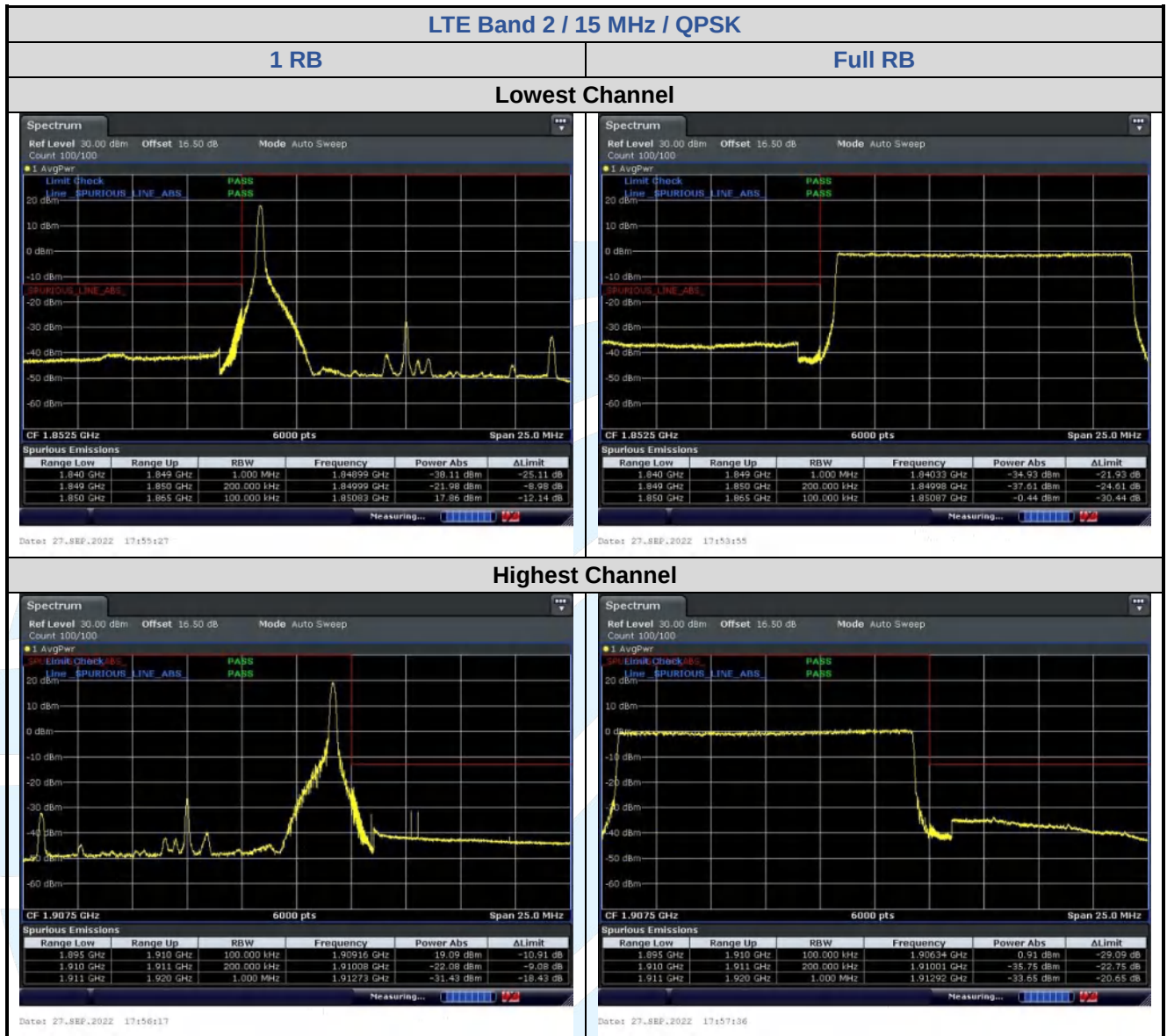
LTE Band 2 / 1.4 MHz / QPSK	
1 RB	Full RB
Lowest Channel	

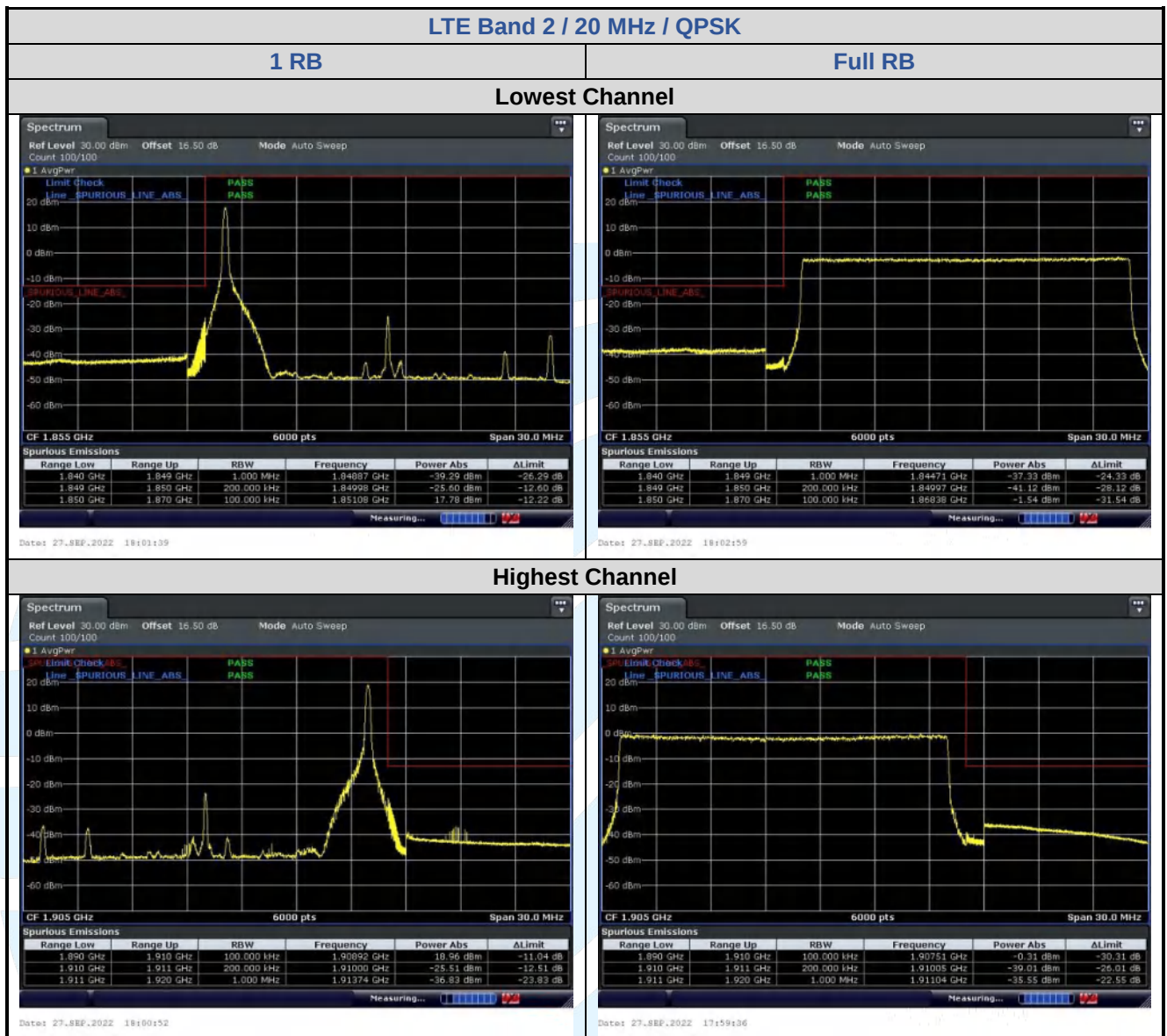


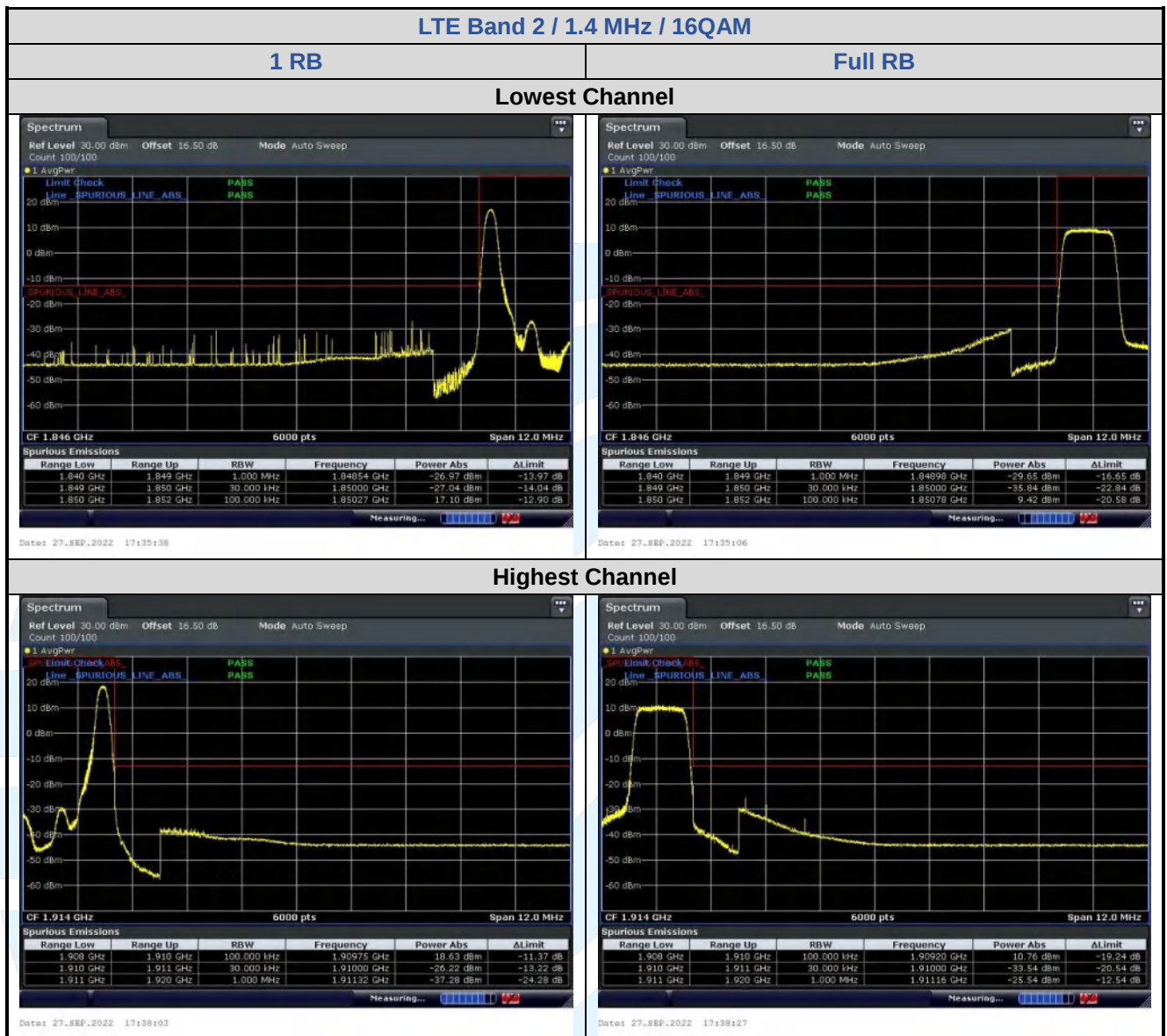


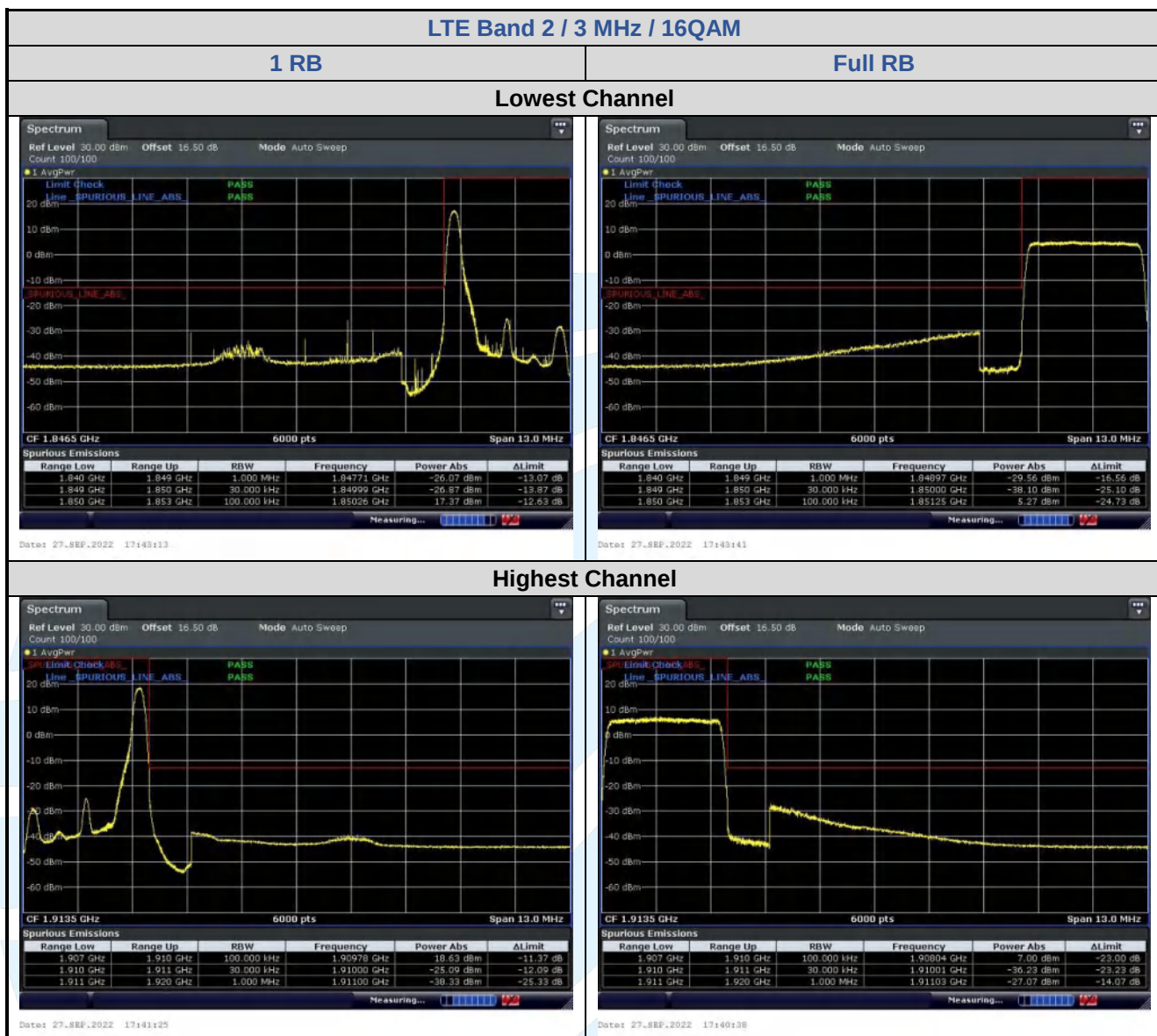


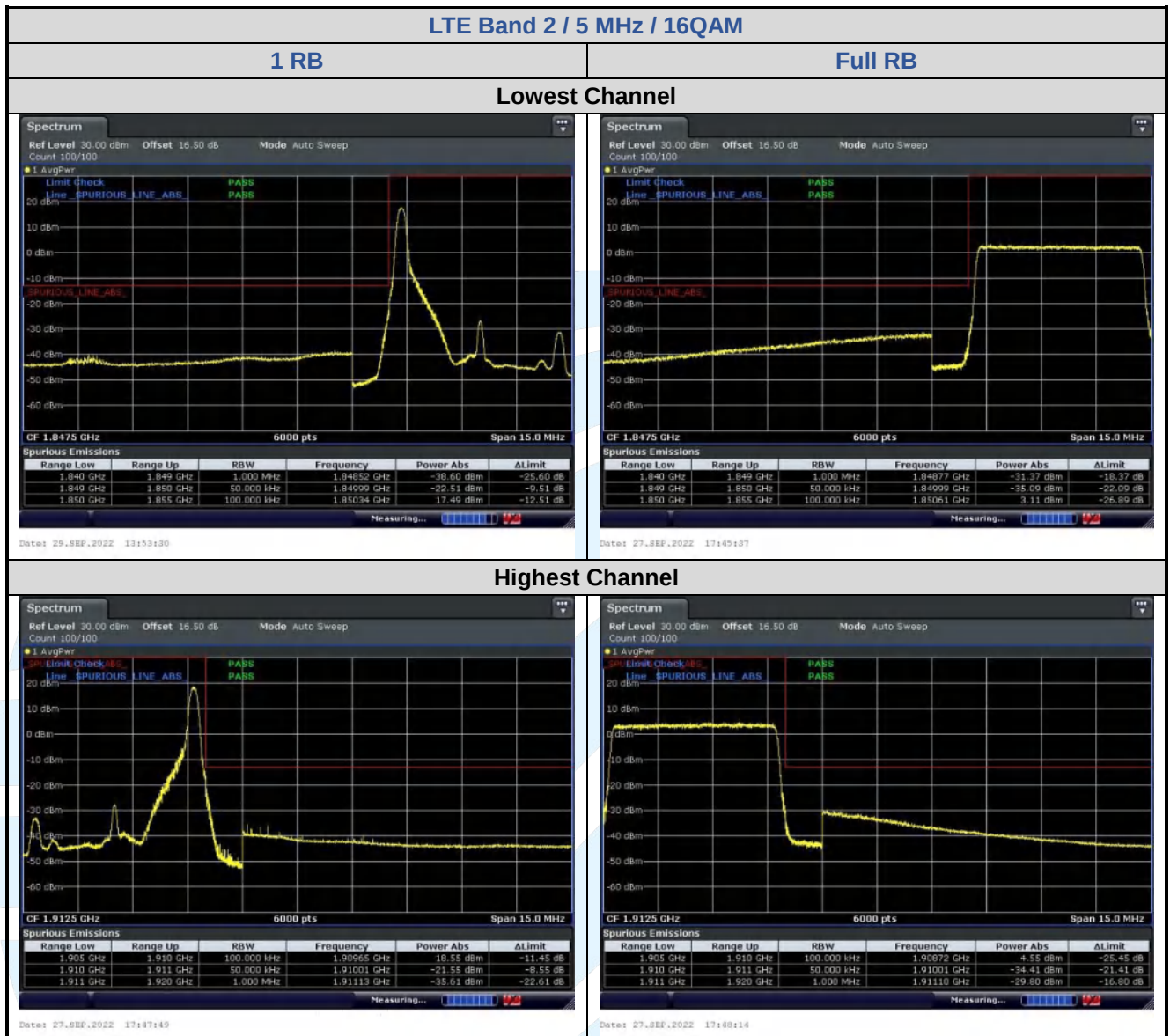


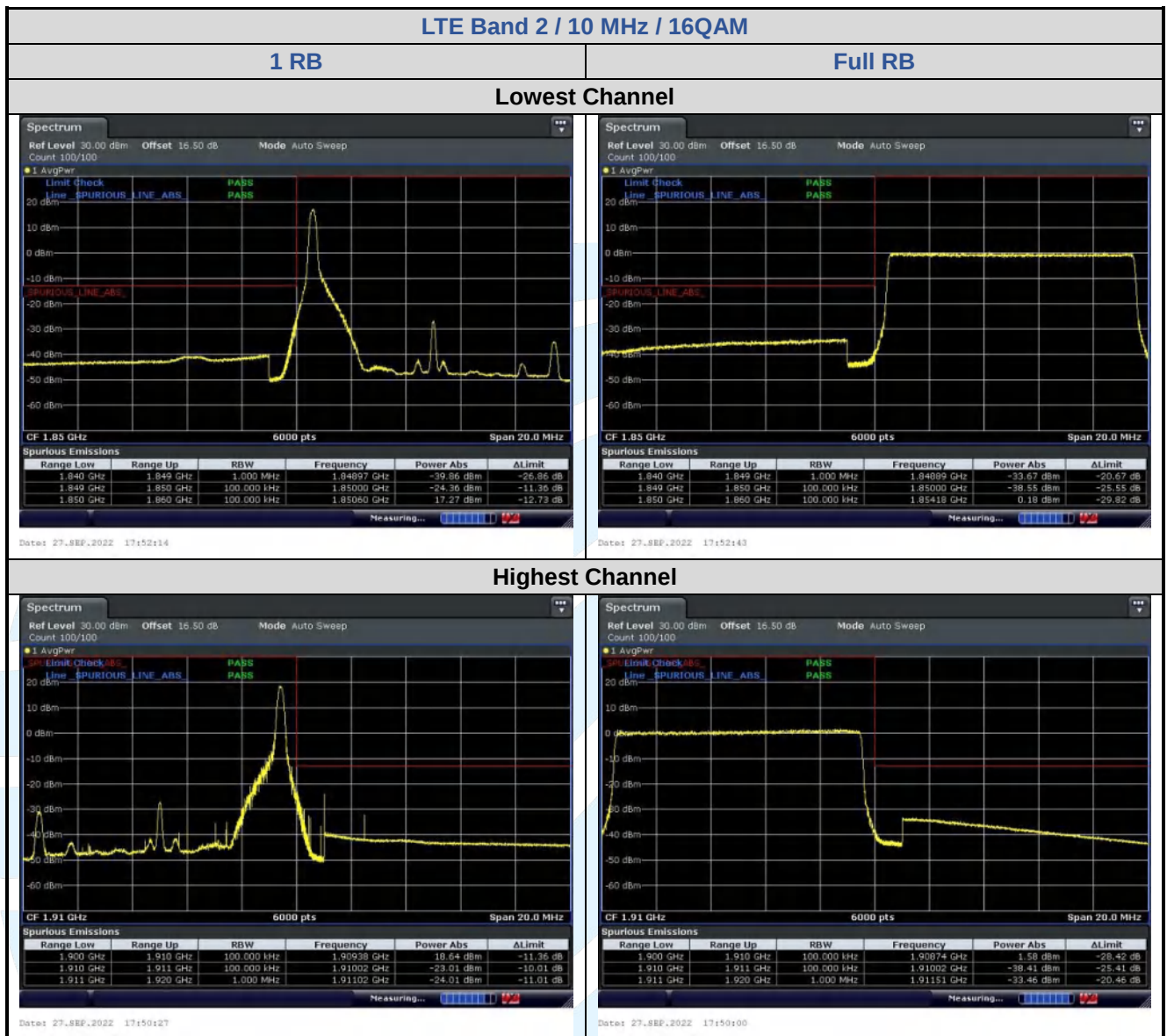


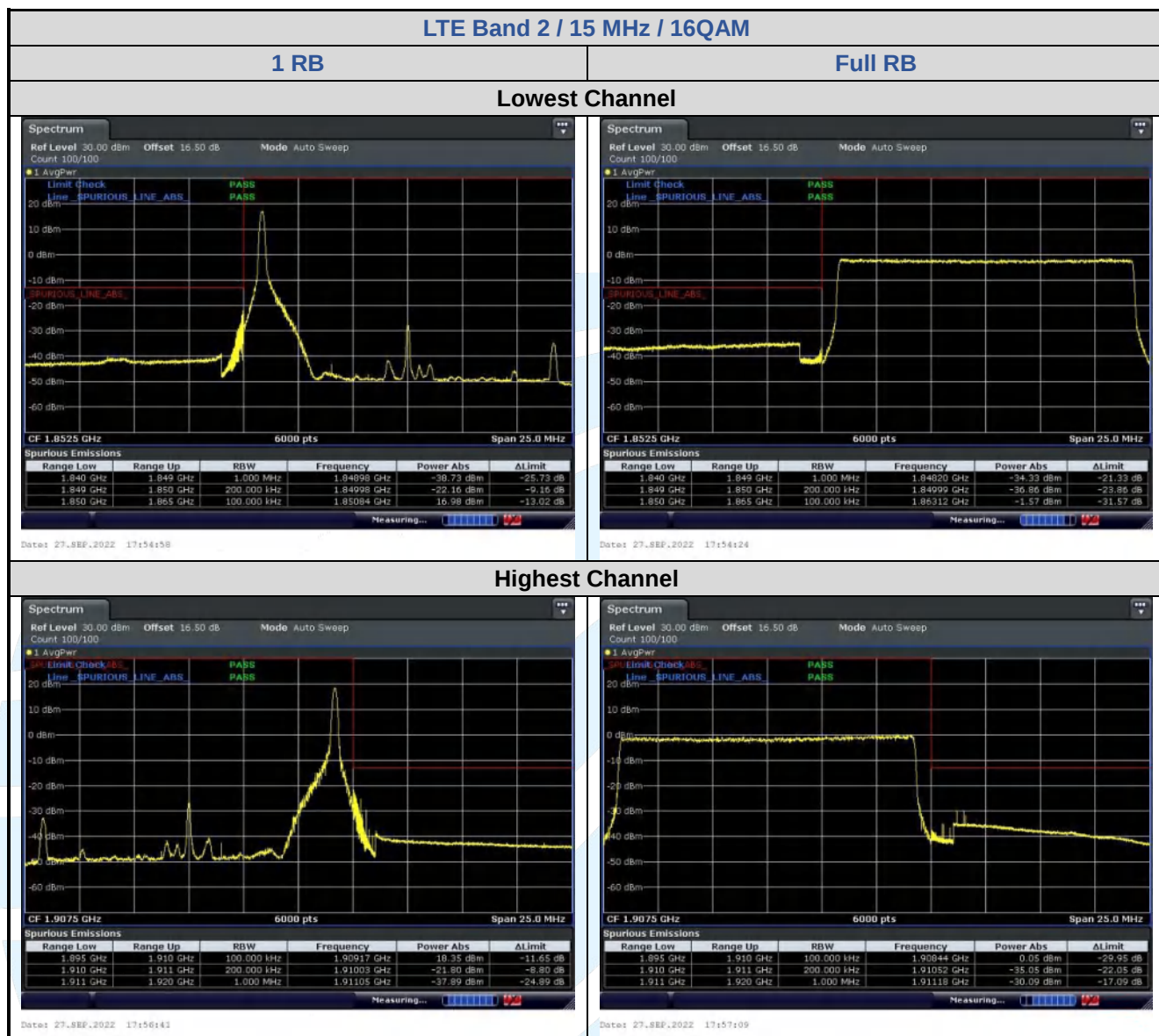


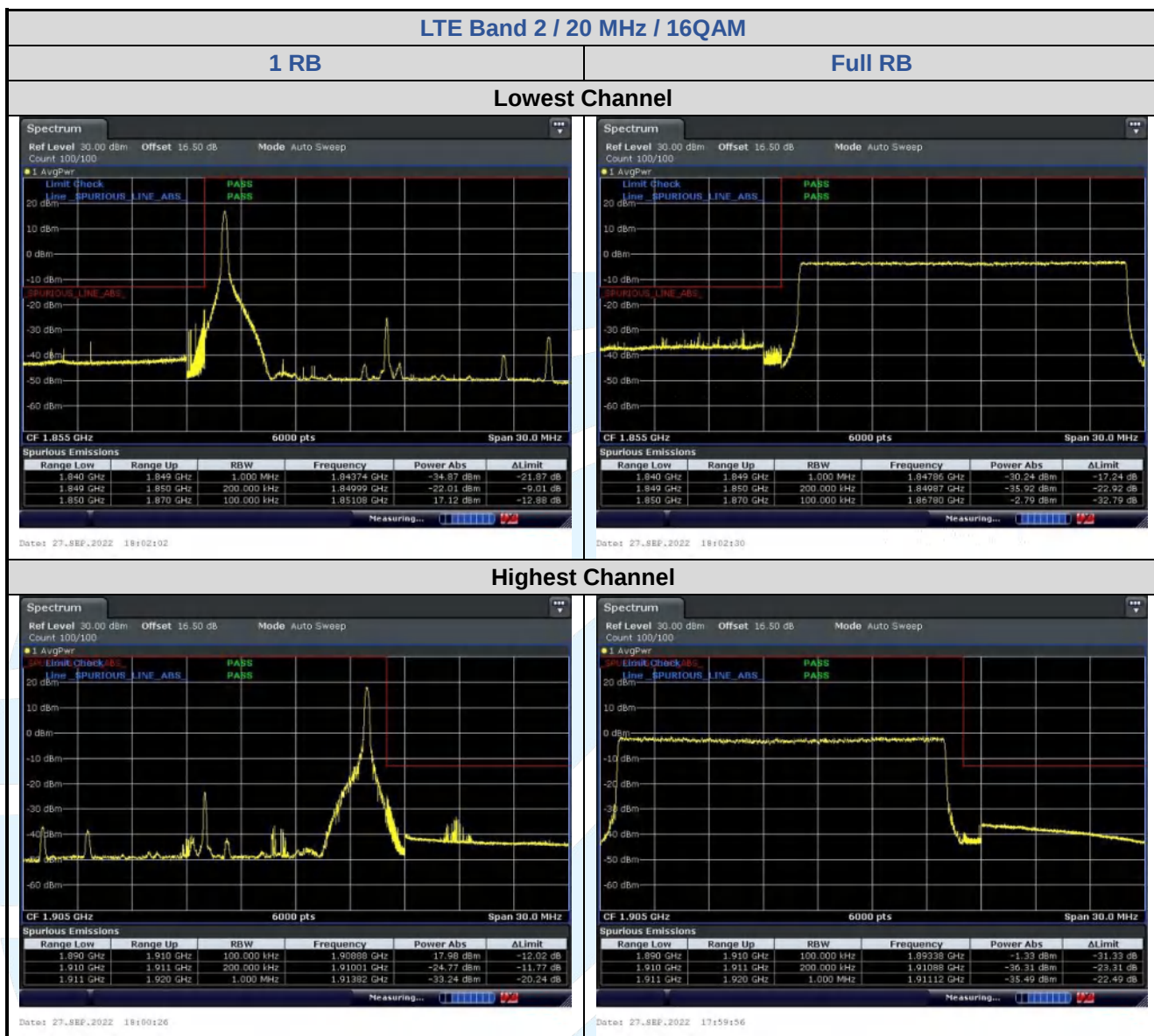


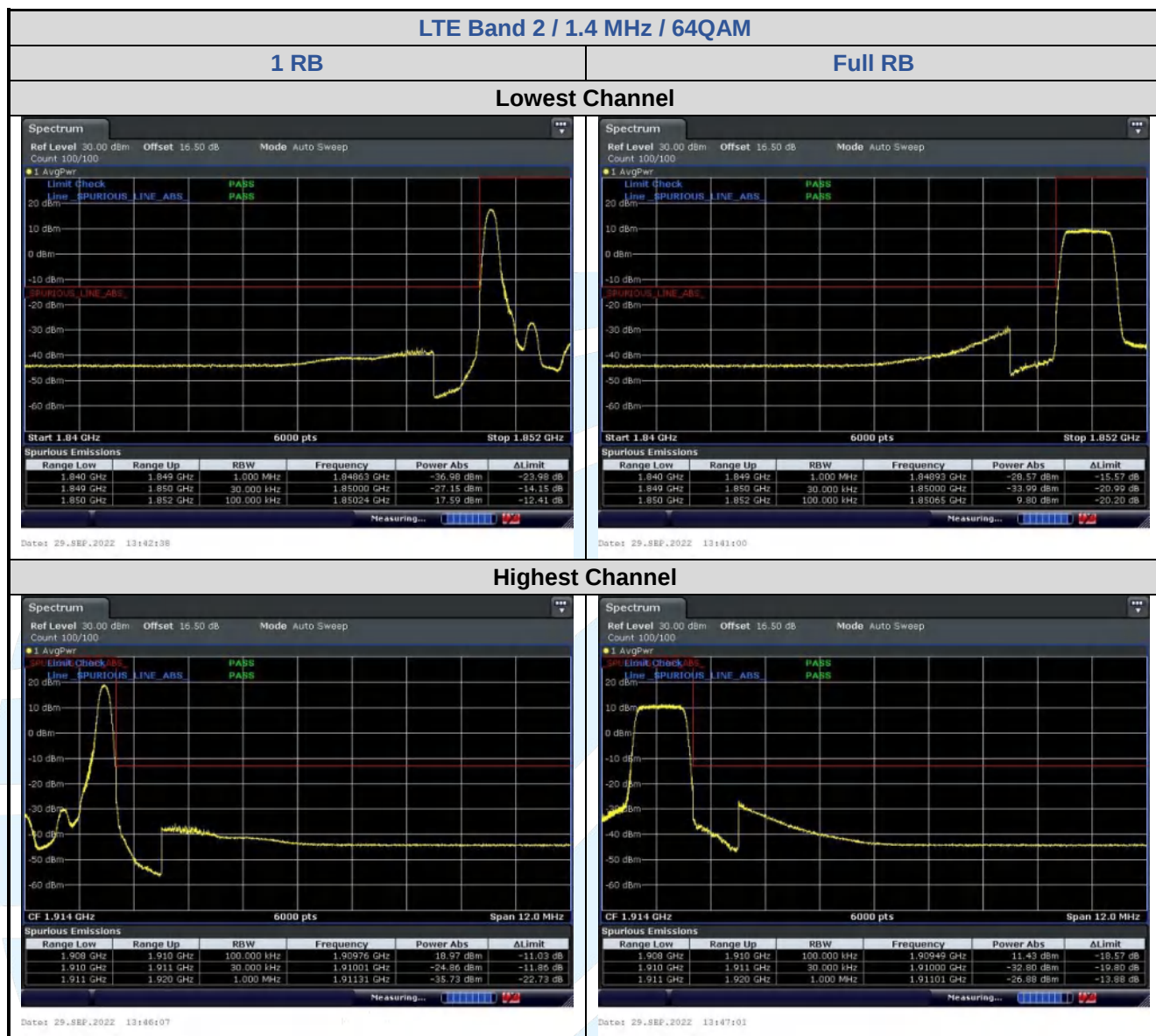


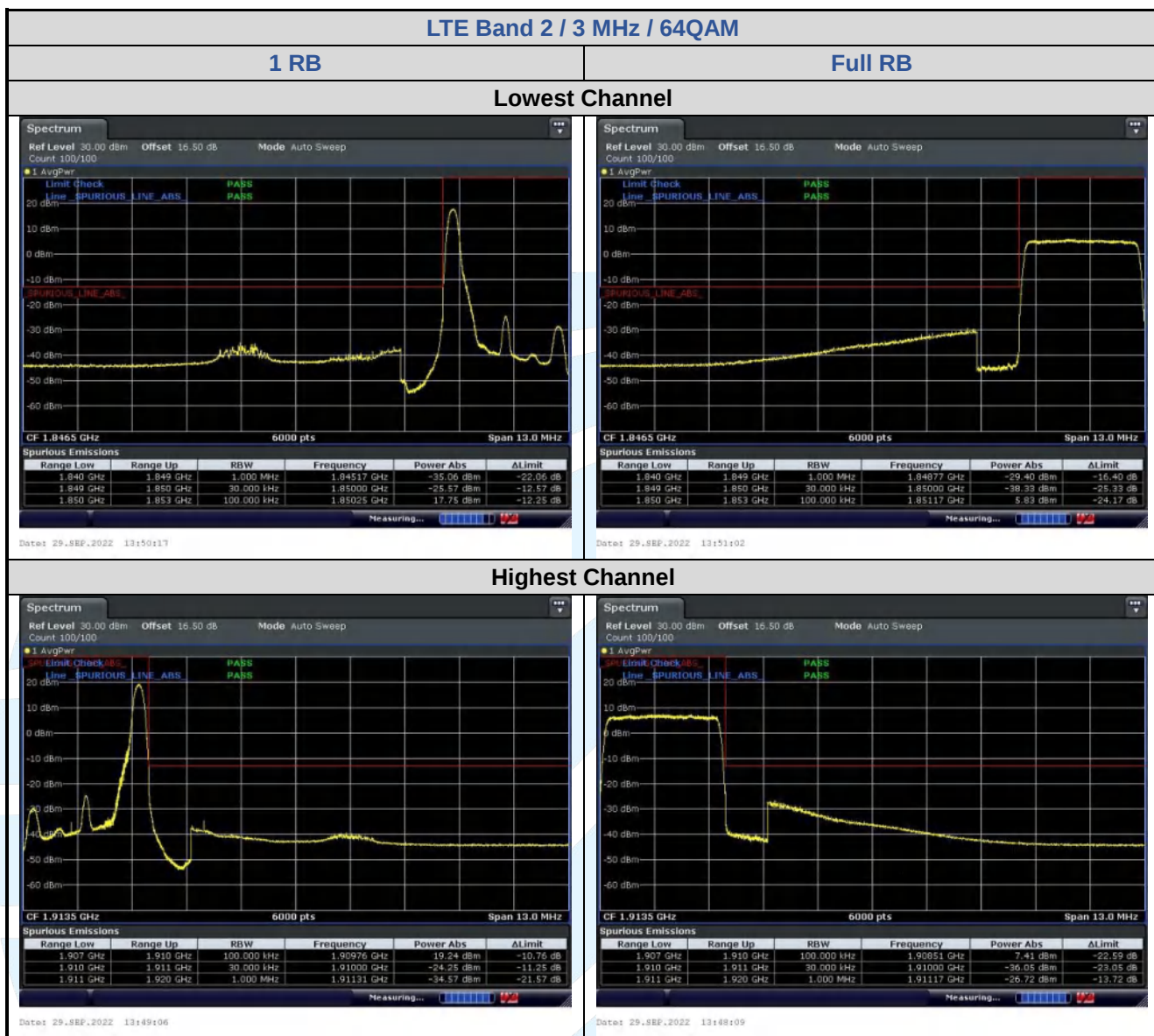


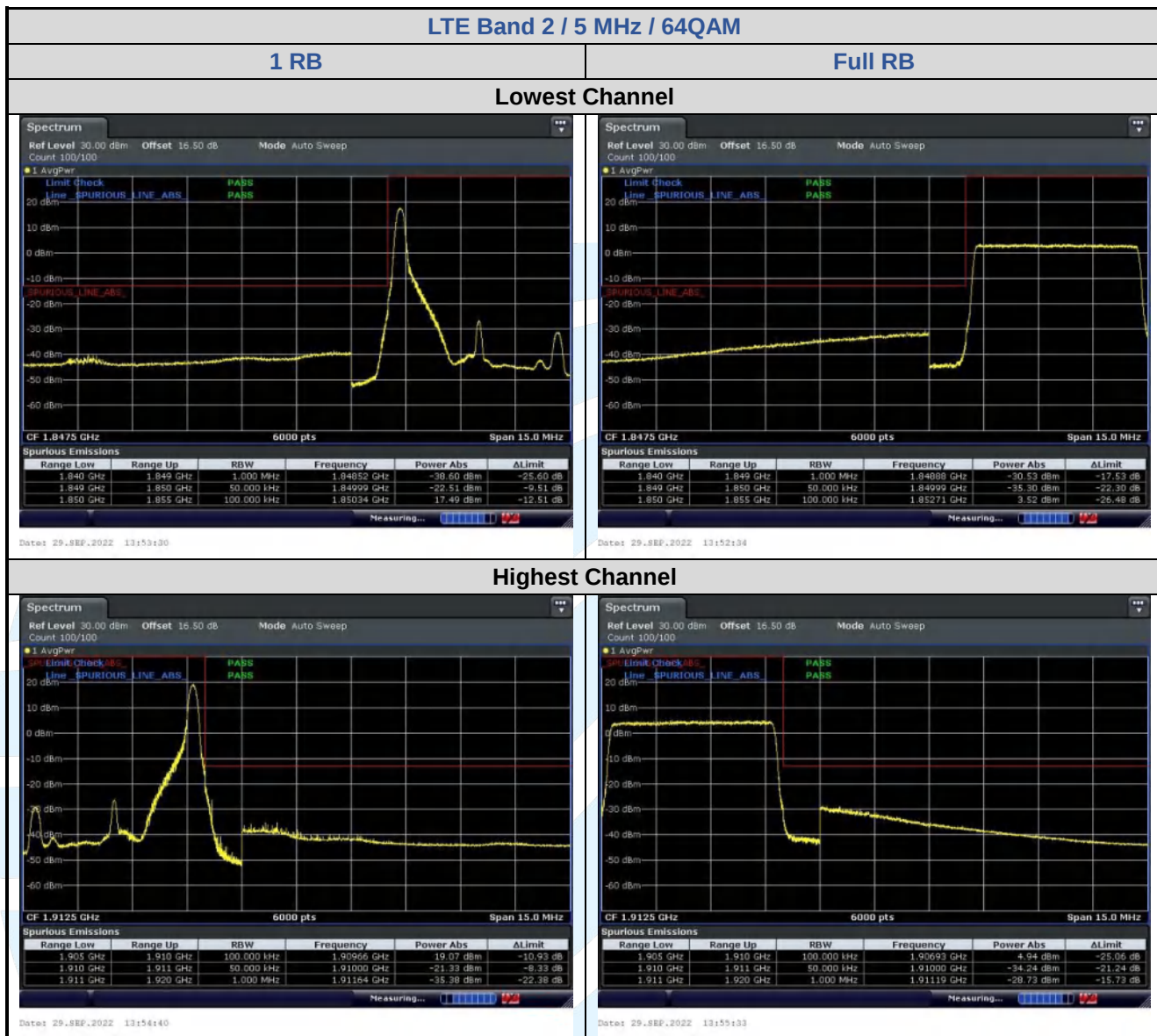


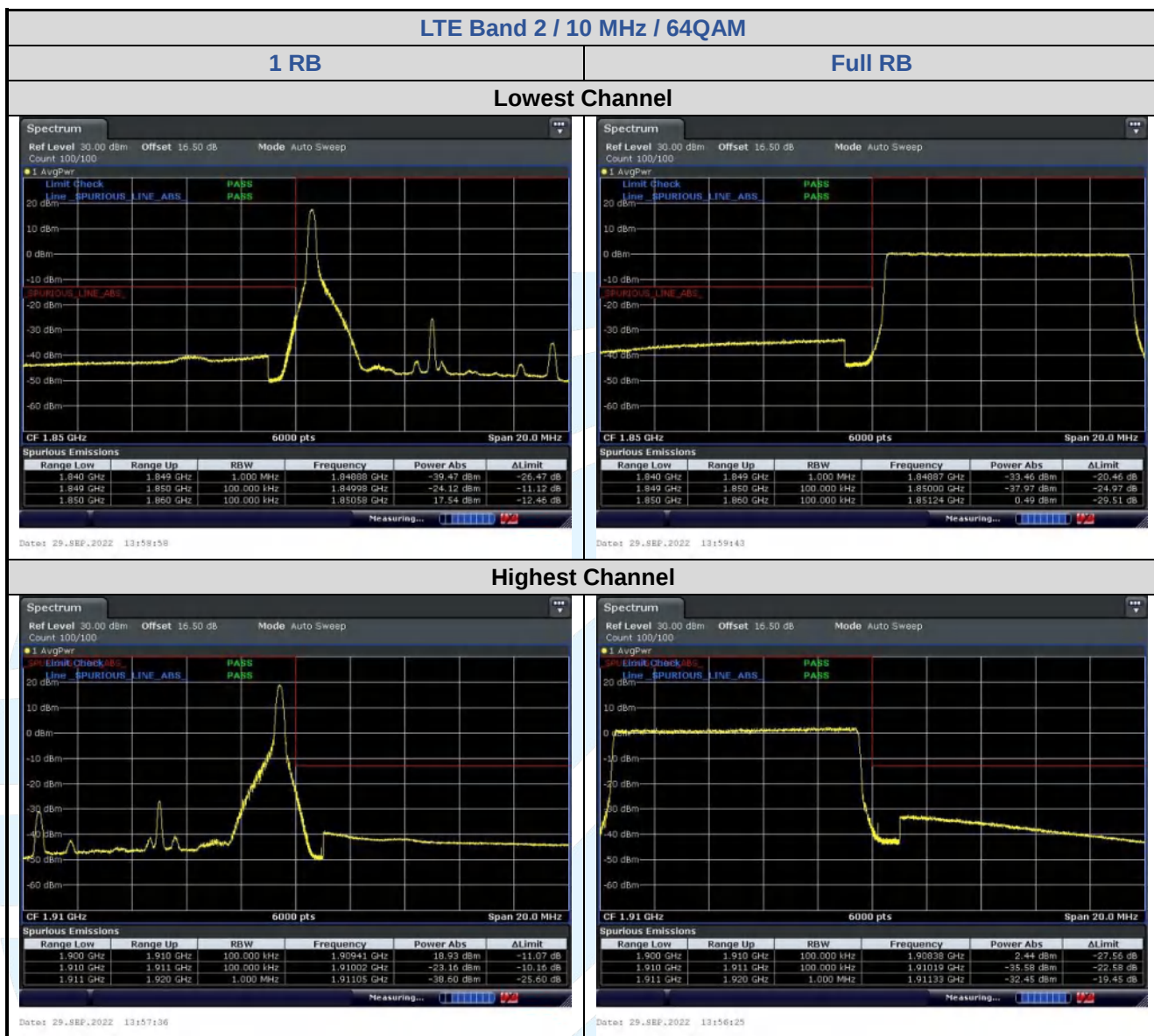


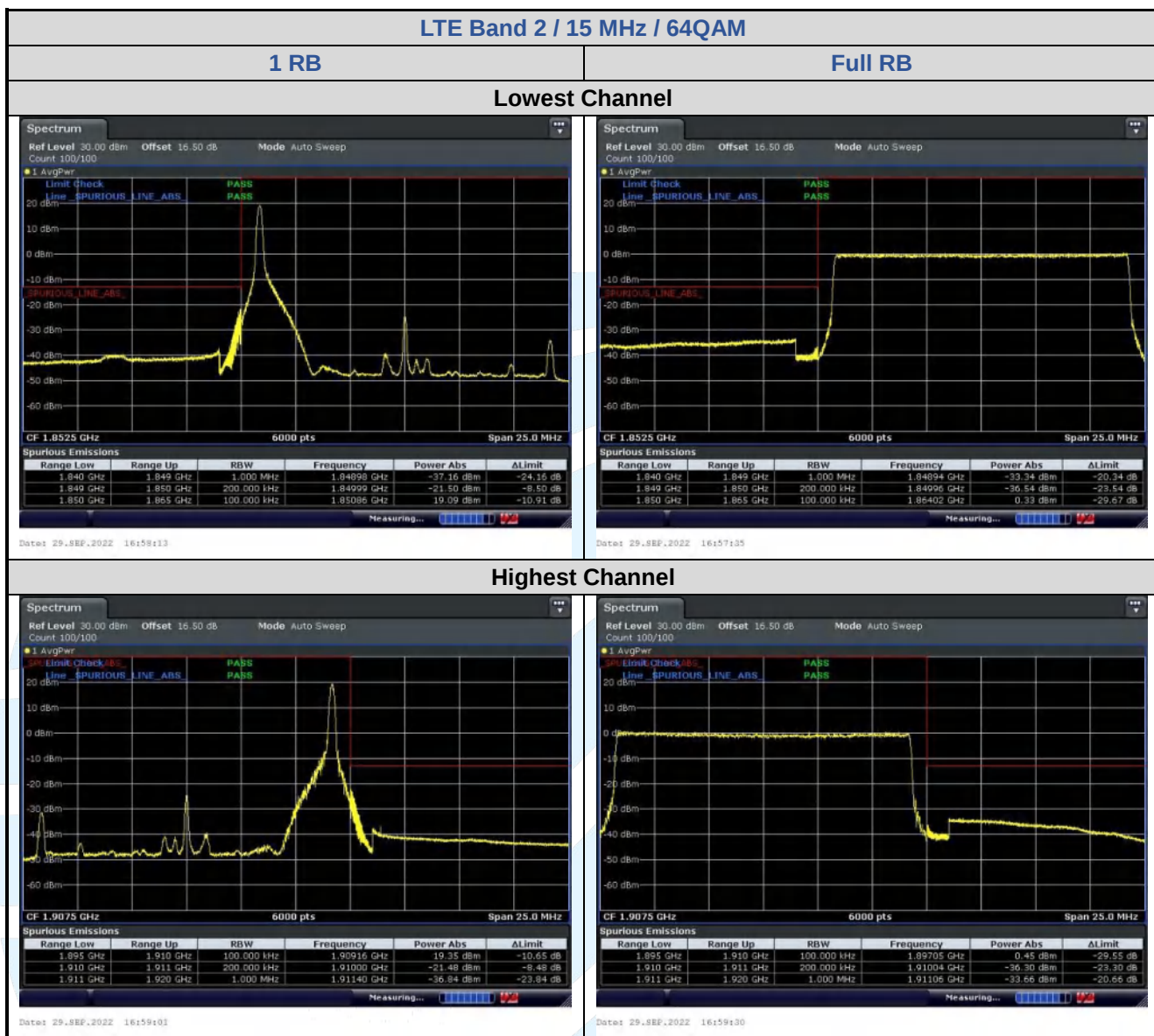


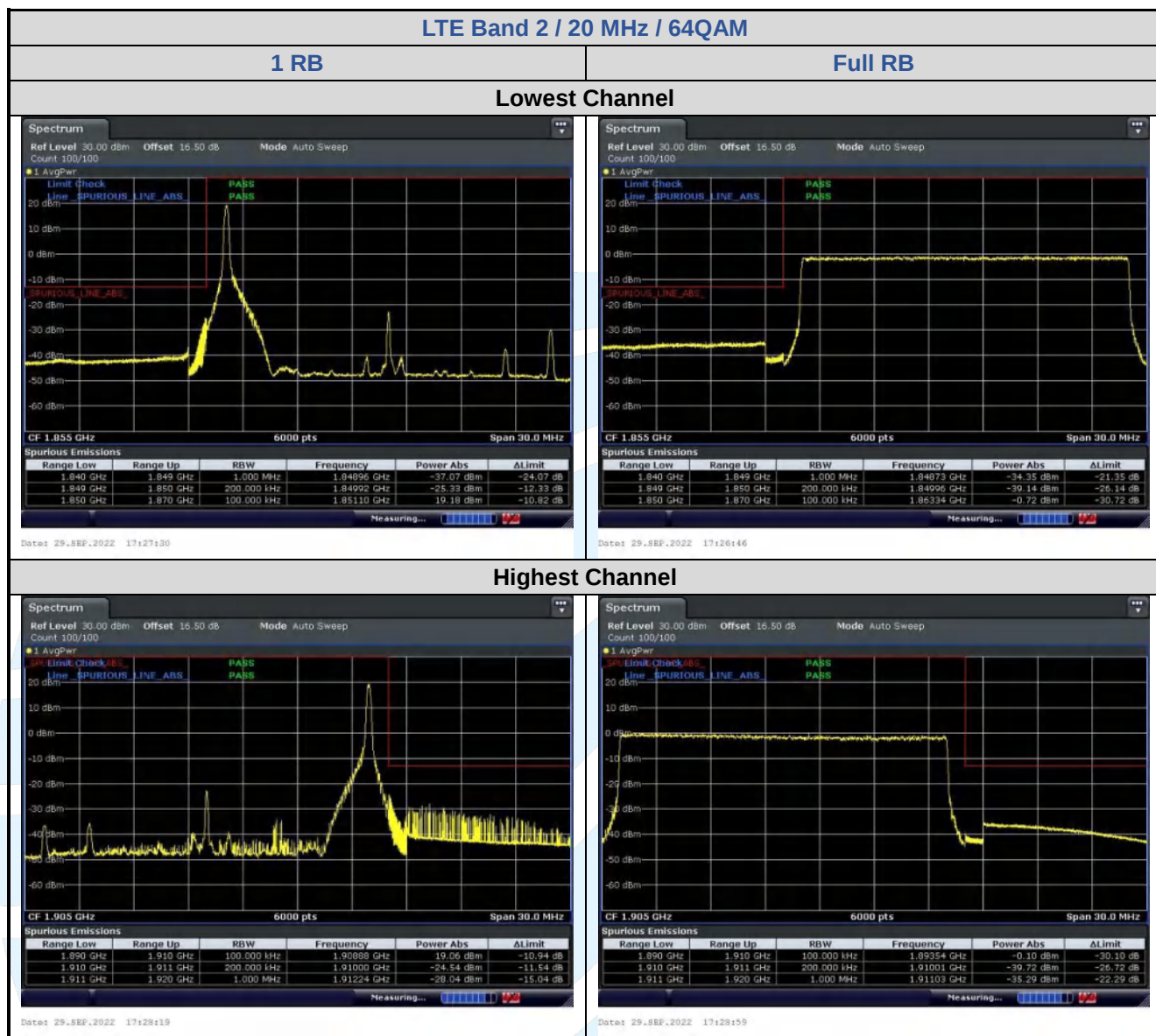












5.6.2 LTE Band 4

