

5.2.10 LTE Band 66

Conducted Power(dBm)											
Modulation			QPSK			16QAM			64QAM		
Band	Bandwidth (MHz)	RB	131979	132322	132665	131979	132322	132665	131979	132322	132665
			1710.7	1745	1779.3	1710.7	1745	1779.3	1710.7	1745	1779.3
66	1.4	1@0	21.83	21.78	21.77	21.01	20.95	20.96	20.20	20.02	20.03
		1@3	21.76	21.62	21.74	20.82	20.73	20.90	19.84	19.81	20.02
		1@5	21.91	21.68	21.92	21.02	20.80	21.10	20.17	20.00	20.18
		3@0	20.69	20.72	20.76	19.73	19.78	19.85	18.81	18.89	18.99
		3@1	20.74	21.03	20.62	19.88	20.14	19.71	19.07	19.19	18.86
		3@3	20.82	20.75	21.05	19.99	19.80	20.12	18.99	18.99	19.30
		6@0	20.80	20.96	20.71	19.85	20.03	19.82	19.05	19.06	18.90
66	3	1@0	21.81	21.73	21.79	20.87	20.75	20.94	19.92	19.75	20.06
		1@8	21.93	21.44	21.74	20.94	20.60	20.88	20.14	19.75	20.00
		1@14	21.80	21.36	21.77	20.96	20.54	20.82	20.15	19.57	19.83
		8@0	20.80	20.32	20.80	19.94	19.44	19.93	18.96	18.44	19.09
		8@4	20.74	20.88	20.74	19.94	20.04	19.94	19.05	19.10	18.99
		8@7	20.92	20.82	20.77	20.02	20.00	19.88	19.07	19.18	19.03
		15@0	20.81	20.88	20.68	19.82	19.96	19.83	18.91	19.06	18.90
66	5	1@0	21.73	21.92	21.75	20.77	21.08	20.81	19.87	20.19	19.87
		1@12	21.56	21.66	21.60	20.66	20.79	20.62	19.85	19.86	19.72
		1@24	21.57	21.78	21.88	20.71	20.81	20.94	19.80	19.97	19.95
		12@0	20.75	20.61	20.65	19.91	19.75	19.69	18.95	18.88	18.78
		12@7	20.63	20.60	20.89	19.78	19.60	20.09	18.98	18.77	19.25
		12@13	20.91	20.83	21.01	20.08	19.89	20.11	19.17	18.90	19.12
		25@0	20.67	20.62	20.75	19.71	19.65	19.80	18.86	18.69	18.92
66	10	1@0	21.79	21.66	21.79	20.80	20.71	20.98	19.81	19.87	20.08
		1@25	22.01	21.88	21.82	21.02	20.96	20.98	20.04	19.98	20.16
		1@49	21.98	21.89	21.75	21.00	21.00	20.90	20.05	20.09	19.96
		25@0	20.71	20.89	21.01	19.72	20.06	20.18	18.86	19.16	19.20
		25@12	20.85	20.31	20.71	19.86	19.35	19.76	19.01	18.43	18.85
		25@25	20.74	20.60	20.77	19.83	19.75	19.78	19.02	18.80	18.95
		50@0	20.79	20.26	20.88	19.91	19.30	20.06	19.07	18.43	19.19
66	15	1@0	21.62	21.65	21.67	20.70	20.71	20.86	19.88	19.84	19.92
		1@37	21.75	21.80	21.74	20.80	20.95	20.87	19.83	19.95	20.06
		1@74	21.66	21.53	21.63	20.81	20.63	20.81	19.89	19.64	19.86
		36@0	20.79	20.69	20.83	19.83	19.82	19.85	18.98	18.95	18.88
		36@20	20.67	20.72	20.79	19.78	19.77	19.83	18.88	18.83	18.83
		36@39	20.75	20.86	20.75	19.89	20.06	19.88	18.97	19.15	18.95
		75@0	20.62	21.02	20.73	19.74	20.08	19.75	18.79	19.23	18.94
66	20	1@0	21.56	21.53	21.51	20.72	20.62	20.59	19.87	19.68	19.74
		1@49	22.04	22.11	21.84	21.10	21.11	20.87	20.15	20.13	19.97
		1@99	21.58	21.41	21.37	20.78	20.48	20.51	19.85	19.63	19.59
		50@0	20.84	20.83	20.75	20.02	19.93	19.91	19.17	19.07	19.06
		50@24	20.69	20.77	20.82	19.78	19.82	19.89	18.80	18.82	18.99
		50@50	20.53	20.69	20.61	19.70	19.88	19.80	18.77	19.01	18.86
		100@0	20.71	20.79	20.72	19.88	19.97	19.76	18.89	19.15	18.94

5.2.11 LTE Band 71

Conducted Power(dBm)											
Modulation			QPSK			16QAM			64QAM		
Band	Bandwidth (MHz)	RB	133147	133297	133447	133147	133297	133447	133147	133297	133447
			665.5	680.5	695.5	665.5	680.5	695.5	665.5	680.5	695.5
71	5	1@0	22.18	22.14	22.11	21.28	21.26	21.03	20.35	20.45	20.05
		1@12	22.23	22.16	22.12	21.35	21.38	21.16	20.37	20.41	20.32
		1@24	22.17	22.12	22.09	21.13	21.15	21.03	20.23	20.31	20.20
		12@0	21.16	21.32	21.26	20.25	20.40	20.09	19.37	19.58	19.13
		12@7	21.29	21.21	21.42	20.46	20.60	20.33	19.51	19.72	19.39
		12@13	21.26	21.36	21.32	20.28	20.51	20.14	19.43	19.59	19.20
		25@0	21.35	21.29	21.21	20.45	20.42	20.31	19.47	19.43	19.32
Band	Bandwidth (MHz)	RB	133172	133297	133422	133172	133297	133422	133172	133297	133422
			668	680.5	693	668	680.5	693	668	680.5	693
71	10	1@0	22.18	22.27	22.25	21.37	21.42	21.84	20.57	20.50	20.99
		1@25	22.42	22.56	22.28	21.51	21.47	22.11	20.59	20.54	21.19
		1@49	22.30	22.36	22.10	21.25	21.37	21.99	20.43	20.51	21.18
		25@0	21.48	21.39	21.39	20.49	20.51	20.46	19.55	19.62	19.50
		25@12	21.34	21.34	21.29	20.47	20.48	20.48	19.66	19.64	19.67
		25@25	21.32	21.40	21.43	20.42	20.55	20.50	19.49	19.62	19.50
		50@0	21.51	21.43	21.47	20.50	20.47	20.48	19.70	19.54	19.58
Band	Bandwidth (MHz)	RB	133197	133297	133397	133197	133297	133397	133197	133297	133397
			670.5	680.5	690.5	670.5	680.5	690.5	670.5	680.5	690.5
71	15	1@0	22.08	22.18	22.14	21.90	21.24	21.69	21.07	20.38	20.88
		1@37	22.15	22.31	22.14	22.01	21.35	21.82	21.04	20.38	20.85
		1@74	22.13	22.13	22.12	21.95	21.25	21.60	21.05	20.37	20.70
		36@0	21.33	21.37	21.32	20.30	20.45	20.31	19.41	19.48	19.38
		36@20	21.31	21.31	21.41	20.47	20.50	20.29	19.63	19.68	19.48
		36@39	21.36	21.41	21.43	20.46	20.40	20.44	19.64	19.54	19.59
		75@0	21.23	21.41	21.51	20.36	20.46	20.32	19.44	19.59	19.42
Band	Bandwidth (MHz)	RB	133222	133322	133372	133222	133322	133372	133222	133322	133372
			673	683	688	673	683	688	673	683	688
71	20	1@0	22.17	22.20	22.14	21.14	21.24	21.50	20.26	20.29	20.57
		1@49	22.45	22.57	22.46	21.32	21.64	21.88	20.41	20.80	20.91
		1@99	22.23	22.25	22.22	21.15	21.30	21.60	20.30	20.39	20.74
		50@0	21.52	21.57	21.38	20.58	20.55	20.54	19.58	19.73	19.70
		50@24	21.54	21.50	21.40	20.62	20.68	20.38	19.68	19.81	19.41
		50@50	21.50	21.54	21.38	20.49	20.45	20.43	19.65	19.58	19.49
		100@0	21.44	21.49	21.42	20.58	20.52	20.44	19.65	19.62	19.46

5.3 ERP OR EIRP

Test Requirement: FCC 47 CFR Part 2.1046(a)
LTE Band 2 & LTE Band 25: FCC 47 CFR Part 24.232(c)
LTE Band 4 & LTE Band 66: FCC 47 CFR Part 27.50(d)(4)
LTE Band 5 & LTE Band 26: FCC 47 CFR Part 22.913(a)
LTE Band 41: FCC 47 CFR Part 27.50(h)(2)
LTE Band 12 & Band 71: FCC 47 CFR Part 27.50(c)(10)
LTE Band 13: FCC 47 CFR Part 27.50(b)(10)
LTE Band 26: FCC 47 CFR Part 90.635

Test Method: KDB 971168 D01v03r01 Section 5.6 & ANSI C63.26-2015

Limit:

FCC 47 CFR Part 22.913(a):

The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

FCC 47 CFR Part 24.232(c):

Mobile and portable stations are limited to 2 watts EIRP.

FCC 47 CFR Part 27.50(d)(4):

Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

FCC 47 CFR Part 27.50(c)(10):

Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

FCC 47 CFR Part 27.50(h)(2):

Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

FCC 47 CFR Part 27.50(b)(10):

Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

FCC 47 CFR Part 90.635:

(a) The effective radiated power and antenna height for base stations may not exceed 1 kilowatt (30 dBw) and 304 m. (1,000 ft.) above average terrain (AAT), respectively, or the equivalent thereof as determined from the Table. These are maximum values, and applicants will be required to justify power levels and antenna heights requested.

(b) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

Table—Equivalent Power and Antenna Heights for Base Stations in the 851–869 MHz and 935–940 MHz Bands Which Have a Requirement for a 32 km (20 mi) Service Area Radius

Antenna height (ATT) meters (feet)	Effective radiated power (watts) ^{1 2 4}
Above 1,372 (4,500)	65
Above 1,220 (4,000) to 1,372 (4,500)	70
Above 1,067 (3,500) to 1,220 (4,000)	75
Above 915 (3,000) to 1,067 (3,500)	100
Above 763 (2,500) to 915 (3,000)	140
Above 610 (2,000) to 763 (2,500)	200
Above 458 (1,500) to 610 (2,000)	350
Above 305 (1,000) to 458 (1,500)	600
Up to 305 (1,000)	³ 1,000

1. Power is given in terms of effective radiated power (ERP).

2. Applicants in the Los Angeles, CA, area who demonstrate a need to serve both the downtown and fringe

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng science and technology park, Longhua district, Shenzhen, China

Tel: +86-755-28230888

Fax: +86-755-28230886

E-mail: info@uttlab.com

<http://www.uttlab.com>

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areas will be permitted to utilize an ERP of 1 kw at the following mountaintop sites: Santiago Park, Sierra Peak, Mount Lukens, and Mount Wilson.

3. Stations with antennas below 305 m (1,000 ft) (AAT) will be restricted to a maximum power of 1 kw (ERP).
4. Licensees in San Diego, CA, will be permitted to utilize an ERP of 500 watts at the following mountaintop sites: Palomar, Otay, Woodson and Miguel.

Test Procedure:

According to KDB 412172 D01 Power Approach,

- **ERP or EIRP = $P_T + G_T - L_c$**
- **ERP = EIRP - 2.15**

where

- **P_T** = transmitter output power, expressed in dBW, dBm, or PSD;
- **G_T** = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);
- **L_c** = **signal attenuation in the connecting cable between the transmitter and antenna, in dB.**

Test Setup: Refer to section 4.2.1 for details.

Instruments Used: Refer to section 3 for details

Test Mode: Link mode

Test Results: Pass

Test Data: See table below

Note: The maximum ERP/EIRP is calculated from max output power and antenna gain, the antenna gain provided by the customer, and the customer takes all the responsibilities for the accuracy of antenna gain.

5.3.1 LTE Band 2

Channel	Maximum EIRP (dBm)				Maximum EIRP (W)				Result
	QPSK	16QAM	64QAM	Limit (dBm)	QPSK	16QAM	64QAM	Limit (W)	
Channel Bandwidth: 1.4MHz									
Lowest	23.85	22.90	22.03	33.01	0.2427	0.1950	0.1596	2	Pass
Middle	24.05	22.89	22.03	33.01	0.2541	0.1945	0.1596	2	Pass
Highest	23.98	22.83	22.00	33.01	0.2500	0.1919	0.1585	2	Pass
Channel Bandwidth: 3MHz									
Lowest	23.92	22.90	21.96	33.01	0.2466	0.1950	0.1570	2	Pass
Middle	23.86	23.06	22.14	33.01	0.2432	0.2023	0.1637	2	Pass
Highest	23.81	22.78	21.89	33.01	0.2404	0.1897	0.1545	2	Pass
Channel Bandwidth: 5MHz									
Lowest	23.79	22.77	21.78	33.01	0.2393	0.1892	0.1507	2	Pass
Middle	23.89	22.84	22.01	33.01	0.2449	0.1923	0.1589	2	Pass
Highest	23.79	22.58	21.62	33.01	0.2393	0.1811	0.1452	2	Pass
Channel Bandwidth: 10MHz									
Lowest	23.95	22.89	22.05	33.01	0.2483	0.1945	0.1603	2	Pass
Middle	23.93	23.14	22.22	33.01	0.2472	0.2061	0.1667	2	Pass
Highest	23.83	23.34	22.40	33.01	0.2415	0.2158	0.1738	2	Pass
Channel Bandwidth: 15MHz									
Lowest	23.71	23.50	22.56	33.01	0.2350	0.2239	0.1803	2	Pass
Middle	23.92	22.84	21.99	33.01	0.2466	0.1923	0.1581	2	Pass
Highest	23.71	23.16	22.20	33.01	0.2350	0.2070	0.1660	2	Pass
Channel Bandwidth: 20MHz									
Lowest	24.15	22.84	22.01	33.01	0.2600	0.1923	0.1589	2	Pass
Middle	24.05	23.02	22.19	33.01	0.2541	0.2004	0.1656	2	Pass
Highest	23.98	23.59	22.67	33.01	0.2500	0.2286	0.1849	2	Pass

5.3.2 LTE Band 4

Channel	Maximum EIRP (dBm)				Maximum EIRP (W)				Result
	QPSK	16QAM	64QAM	Limit (dBm)	QPSK	16QAM	64QAM	Limit (W)	
Channel Bandwidth: 1.4MHz									
Lowest	23.27	22.39	21.52	30.00	0.2123	0.1734	0.1419	1	Pass
Middle	23.16	22.29	21.44	30.00	0.2070	0.1694	0.1393	1	Pass
Highest	23.44	22.47	21.59	30.00	0.2208	0.1766	0.1442	1	Pass
Channel Bandwidth: 3MHz									
Lowest	23.33	22.42	21.49	30.00	0.2153	0.1746	0.1409	1	Pass
Middle	23.33	22.47	21.63	30.00	0.2153	0.1766	0.1455	1	Pass
Highest	23.23	22.39	21.47	30.00	0.2104	0.1734	0.1403	1	Pass
Channel Bandwidth: 5MHz									
Lowest	23.11	22.27	21.41	30.00	0.2046	0.1687	0.1384	1	Pass
Middle	23.21	22.36	21.47	30.00	0.2094	0.1722	0.1403	1	Pass
Highest	23.24	22.34	21.39	30.00	0.2109	0.1714	0.1377	1	Pass
Channel Bandwidth: 10MHz									
Lowest	23.37	22.51	21.55	30.00	0.2173	0.1782	0.1429	1	Pass
Middle	23.37	22.67	21.76	30.00	0.2173	0.1849	0.1500	1	Pass
Highest	23.49	22.52	21.70	30.00	0.2234	0.1786	0.1479	1	Pass
Channel Bandwidth: 15MHz									
Lowest	23.22	22.67	21.78	30.00	0.2099	0.1849	0.1507	1	Pass
Middle	23.18	22.81	21.94	30.00	0.2080	0.1910	0.1563	1	Pass
Highest	23.23	22.28	21.48	30.00	0.2104	0.1690	0.1406	1	Pass
Channel Bandwidth: 20MHz									
Lowest	23.52	22.68	21.82	30.00	0.2249	0.1854	0.1521	1	Pass
Middle	23.32	22.45	21.49	30.00	0.2148	0.1758	0.1409	1	Pass
Highest	23.26	22.37	21.42	30.00	0.2118	0.1726	0.1387	1	Pass

5.3.3 LTE Band 5

Channel	Maximum ERP (dBm)				Maximum ERP (W)				Result
	QPSK	16QAM	64QAM	Limit (dBm)	QPSK	16QAM	64QAM	Limit (W)	
Channel Bandwidth: 1.4MHz									
Lowest	21.17	20.33	19.43	38.45	0.1309	0.1079	0.0877	7	Pass
Middle	20.67	19.72	18.89	38.45	0.1167	0.0938	0.0774	7	Pass
Highest	20.79	19.95	19.03	38.45	0.1199	0.0989	0.0800	7	Pass
Channel Bandwidth: 3MHz									
Lowest	21.11	20.26	19.39	38.45	0.1291	0.1062	0.0869	7	Pass
Middle	20.68	19.71	18.79	38.45	0.1169	0.0935	0.0757	7	Pass
Highest	20.59	19.79	18.86	38.45	0.1146	0.0953	0.0769	7	Pass
Channel Bandwidth: 5MHz									
Lowest	21.04	20.04	19.21	38.45	0.1271	0.1009	0.0834	7	Pass
Middle	20.57	19.40	18.50	38.45	0.1140	0.0871	0.0708	7	Pass
Highest	20.57	19.59	18.60	38.45	0.1140	0.0910	0.0724	7	Pass
Channel Bandwidth: 10MHz									
Lowest	21.13	20.21	19.40	38.45	0.1297	0.1050	0.0871	7	Pass
Middle	21.19	20.32	19.32	38.45	0.1315	0.1076	0.0855	7	Pass
Highest	20.88	19.94	18.94	38.45	0.1225	0.0986	0.0783	7	Pass

5.3.4 LTE Band 12

Channel	Maximum ERP (dBm)				Maximum ERP (W)				Result
	QPSK	16QAM	64QAM	Limit (dBm)	QPSK	16QAM	64QAM	Limit (W)	
Channel Bandwidth: 1.4MHz									
Lowest	19.73	18.82	17.84	34.77	0.0940	0.0762	0.0608	3	Pass
Middle	19.85	18.58	17.74	34.77	0.0966	0.0721	0.0594	3	Pass
Highest	19.62	18.53	17.66	34.77	0.0916	0.0713	0.0583	3	Pass
Channel Bandwidth: 3MHz									
Lowest	19.56	18.57	17.63	34.77	0.0904	0.0719	0.0579	3	Pass
Middle	19.68	18.68	17.80	34.77	0.0929	0.0738	0.0603	3	Pass
Highest	19.55	19.19	18.38	34.77	0.0902	0.0830	0.0689	3	Pass
Channel Bandwidth: 5MHz									
Lowest	19.56	18.75	17.82	34.77	0.0904	0.0750	0.0605	3	Pass
Middle	19.73	18.86	18.03	34.77	0.0940	0.0769	0.0635	3	Pass
Highest	19.56	19.27	18.47	34.77	0.0904	0.0845	0.0703	3	Pass
Channel Bandwidth: 10MHz									
Lowest	19.75	18.51	17.61	34.77	0.0944	0.0710	0.0577	3	Pass
Middle	19.88	18.46	17.50	34.77	0.0973	0.0701	0.0562	3	Pass
Highest	19.78	18.60	17.73	34.77	0.0951	0.0724	0.0593	3	Pass

5.3.5 LTE Band 13

Channel	Maximum ERP (dBm)				Maximum ERP (W)				Result
	QPSK	16QAM	64QAM	Limit (dBm)	QPSK	16QAM	64QAM	Limit (W)	
Channel Bandwidth: 5MHz									
Lowest	19.72	18.62	17.69	34.77	0.0938	0.0728	0.0587	3	Pass
Middle	19.74	18.63	17.76	34.77	0.0942	0.0729	0.0597	3	Pass
Highest	19.76	18.73	17.84	34.77	0.0946	0.0746	0.0608	3	Pass
Channel Bandwidth: 10MHz									
Lowest	-2.31	-2.31	-2.31	34.77	0.0006	0.0006	0.0006	3	Pass
Middle	19.87	18.85	17.95	34.77	0.0971	0.0767	0.0624	3	Pass
Highest	-2.31	-2.31	-2.31	34.77	0.0006	0.0006	0.0006	3	Pass

5.3.6 LTE Band 25

Channel	Maximum EIRP (dBm)				Maximum EIRP (W)				Result
	QPSK	16QAM	64QAM	Limit (dBm)	QPSK	16QAM	64QAM	Limit (W)	
Channel Bandwidth: 1.4MHz									
Lowest	24.13	23.08	22.17	33.01	0.2588	0.2032	0.1648	2	Pass
Middle	24.28	23.02	22.06	33.01	0.2679	0.2004	0.1607	2	Pass
Highest	24.24	23.08	22.24	33.01	0.2655	0.2032	0.1675	2	Pass
Channel Bandwidth: 3MHz									
Lowest	23.95	23.03	22.19	33.01	0.2483	0.2009	0.1656	2	Pass
Middle	24.07	23.00	22.14	33.01	0.2553	0.1995	0.1637	2	Pass
Highest	24.02	23.01	22.10	33.01	0.2523	0.2000	0.1622	2	Pass
Channel Bandwidth: 5MHz									
Lowest	24.35	22.78	21.97	33.01	0.2723	0.1897	0.1574	2	Pass
Middle	23.98	22.87	21.97	33.01	0.2500	0.1936	0.1574	2	Pass
Highest	23.88	22.98	22.01	33.01	0.2443	0.1986	0.1589	2	Pass
Channel Bandwidth: 10MHz									
Lowest	24.36	23.24	22.39	33.01	0.2729	0.2109	0.1734	2	Pass
Middle	24.28	23.67	22.82	33.01	0.2679	0.2328	0.1914	2	Pass
Highest	23.91	22.94	22.00	33.01	0.2460	0.1968	0.1585	2	Pass
Channel Bandwidth: 15MHz									
Lowest	24.05	22.99	22.14	33.01	0.2541	0.1991	0.1637	2	Pass
Middle	23.97	23.49	22.64	33.01	0.2495	0.2234	0.1837	2	Pass
Highest	23.89	23.54	22.66	33.01	0.2449	0.2259	0.1845	2	Pass
Channel Bandwidth: 20MHz									
Lowest	24.21	23.65	22.66	33.01	0.2636	0.2317	0.1845	2	Pass
Middle	24.19	23.23	22.28	33.01	0.2624	0.2104	0.1690	2	Pass
Highest	24.37	23.08	22.12	33.01	0.2735	0.2032	0.1629	2	Pass

5.3.7 LTE Band 26

Channel	Maximum ERP (dBm)				Maximum ERP (W)				Result
	QPSK	16QAM	64QAM	Limit (dBm)	QPSK	16QAM	64QAM	Limit (W)	
Channel Bandwidth: 1.4MHz									
Lowest	20.71	19.79	18.96	38.45	0.1178	0.0953	0.0787	7	Pass
Middle	20.69	19.66	18.83	38.45	0.1172	0.0925	0.0764	7	Pass
Highest	20.87	19.71	18.87	38.45	0.1222	0.0935	0.0771	7	Pass
Channel Bandwidth: 3MHz									
Lowest	21.15	20.71	19.76	38.45	0.1303	0.1178	0.0946	7	Pass
Middle	20.61	19.58	18.67	38.45	0.1151	0.0908	0.0736	7	Pass
Highest	20.74	19.68	18.87	38.45	0.1186	0.0929	0.0771	7	Pass
Channel Bandwidth: 5MHz									
Lowest	20.61	19.46	18.60	38.45	0.1151	0.0883	0.0724	7	Pass
Middle	20.52	19.51	18.60	38.45	0.1127	0.0893	0.0724	7	Pass
Highest	20.58	19.48	18.68	38.45	0.1143	0.0887	0.0738	7	Pass
Channel Bandwidth: 10MHz									
Lowest	20.64	20.35	19.55	38.45	0.1159	0.1084	0.0902	7	Pass
Middle	20.80	19.71	18.80	38.45	0.1202	0.0935	0.0759	7	Pass
Highest	20.97	19.76	18.78	38.45	0.1250	0.0946	0.0755	7	Pass
Channel Bandwidth: 15MHz									
Lowest	21.22	20.16	19.22	38.45	0.1324	0.1038	0.0836	7	Pass
Middle	21.13	20.50	19.65	38.45	0.1297	0.1122	0.0923	7	Pass
Highest	21.14	20.84	19.99	38.45	0.1300	0.1213	0.0998	7	Pass

5.3.8 LTE Band 26 (Part 90S)

Channel	Maximum ERP (dBm)				Maximum ERP (W)				Result
	QPSK	16QAM	64QAM	Limit (dBm)	QPSK	16QAM	64QAM	Limit (W)	
Channel Bandwidth: 1.4MHz									
Lowest	21.18	20.22	19.34	50.00	0.1312	0.1052	0.0859	100	Pass
Middle	21.20	20.26	19.42	50.00	0.1318	0.1062	0.0875	100	Pass
Highest	21.21	20.36	19.53	50.00	0.1321	0.1086	0.0897	100	Pass
Channel Bandwidth: 3MHz									
Lowest	21.21	20.22	19.38	50.00	0.1321	0.1052	0.0867	100	Pass
Middle	21.18	20.21	19.32	50.00	0.1312	0.1050	0.0855	100	Pass
Highest	21.22	20.14	19.21	50.00	0.1324	0.1033	0.0834	100	Pass
Channel Bandwidth: 5MHz									
Lowest	21.23	20.21	19.26	50.00	0.1327	0.1050	0.0843	100	Pass
Middle	21.23	20.22	19.37	50.00	0.1327	0.1052	0.0865	100	Pass
Highest	21.15	20.18	19.36	50.00	0.1303	0.1042	0.0863	100	Pass
Channel Bandwidth: 10MHz									
Lowest	-1.38	-1.38	-1.38	50.00	0.0007	0.0007	0.0007	100	Pass
Middle	21.23	20.23	19.27	50.00	0.1327	0.1054	0.0845	100	Pass
Highest	-1.38	-1.38	-1.38	50.00	0.0007	0.0007	0.0007	100	Pass
Channel Bandwidth: 15MHz									
Lowest	-1.38	-1.38	-1.38	50.00	0.0007	0.0007	0.0007	100	Pass
Middle	-1.38	-1.38	-1.38	50.00	0.0007	0.0007	0.0007	100	Pass
Highest	21.30	20.69	19.73	50.00	0.1349	0.1172	0.0940	100	Pass

5.3.9 LTE Band 41

Channel	Maximum EIRP (dBm)				Maximum EIRP (W)				Result
	QPSK	16QAM	64QAM	Limit (dBm)	QPSK	16QAM	64QAM	Limit (W)	
Channel Bandwidth: 5MHz									
Lowest	23.89	23.02	22.13	33.01	0.2449	0.2004	0.1633	2	Pass
Middle	24.07	22.94	22.09	33.01	0.2553	0.1968	0.1618	2	Pass
Highest	23.53	22.66	21.69	33.01	0.2254	0.1845	0.1476	2	Pass
Channel Bandwidth: 10MHz									
Lowest	24.22	23.23	22.27	33.01	0.2642	0.2104	0.1687	2	Pass
Middle	24.21	22.38	21.41	33.01	0.2636	0.1730	0.1384	2	Pass
Highest	23.98	22.83	22.02	33.01	0.2500	0.1919	0.1592	2	Pass
Channel Bandwidth: 15MHz									
Lowest	23.78	22.99	22.16	33.01	0.2388	0.1991	0.1644	2	Pass
Middle	23.97	22.67	21.78	33.01	0.2495	0.1849	0.1507	2	Pass
Highest	23.96	22.98	22.04	33.01	0.2489	0.1986	0.1600	2	Pass
Channel Bandwidth: 20MHz									
Lowest	23.95	22.98	22.08	33.01	0.2483	0.1986	0.1614	2	Pass
Middle	24.19	23.21	22.39	33.01	0.2624	0.2094	0.1734	2	Pass
Highest	24.24	22.74	21.78	33.01	0.2655	0.1879	0.1507	2	Pass

5.3.10 LTE Band 66

Channel	Maximum EIRP (dBm)				Maximum EIRP (W)				Result
	QPSK	16QAM	64QAM	Limit (dBm)	QPSK	16QAM	64QAM	Limit (W)	
Channel Bandwidth: 1.4MHz									
Lowest	23.37	22.48	21.66	30.00	0.2173	0.1770	0.1466	1	Pass
Middle	23.24	22.41	21.48	30.00	0.2109	0.1742	0.1406	1	Pass
Highest	23.38	22.56	21.64	30.00	0.2178	0.1803	0.1459	1	Pass
Channel Bandwidth: 3MHz									
Lowest	23.39	22.42	21.61	30.00	0.2183	0.1746	0.1449	1	Pass
Middle	23.19	22.21	21.21	30.00	0.2084	0.1663	0.1321	1	Pass
Highest	23.25	22.40	21.52	30.00	0.2113	0.1738	0.1419	1	Pass
Channel Bandwidth: 5MHz									
Lowest	23.19	22.23	21.33	30.00	0.2084	0.1671	0.1358	1	Pass
Middle	23.38	22.54	21.65	30.00	0.2178	0.1795	0.1462	1	Pass
Highest	23.34	22.40	21.41	30.00	0.2158	0.1738	0.1384	1	Pass
Channel Bandwidth: 10MHz									
Lowest	23.47	22.48	21.51	30.00	0.2223	0.1770	0.1416	1	Pass
Middle	23.35	22.46	21.55	30.00	0.2163	0.1762	0.1429	1	Pass
Highest	23.28	22.44	21.62	30.00	0.2128	0.1754	0.1452	1	Pass
Channel Bandwidth: 15MHz									
Lowest	23.21	22.27	21.35	30.00	0.2094	0.1687	0.1365	1	Pass
Middle	23.26	22.41	21.41	30.00	0.2118	0.1742	0.1384	1	Pass
Highest	23.20	22.33	21.52	30.00	0.2089	0.1710	0.1419	1	Pass
Channel Bandwidth: 20MHz									
Lowest	23.50	22.56	21.61	30.00	0.2239	0.1803	0.1449	1	Pass
Middle	23.57	22.57	21.59	30.00	0.2275	0.1807	0.1442	1	Pass
Highest	23.30	22.33	21.43	30.00	0.2138	0.1710	0.1390	1	Pass

5.3.11 LTE Band 71

Channel	Maximum ERP (dBm)				Maximum ERP (W)				Result
	QPSK	16QAM	64QAM	Limit (dBm)	QPSK	16QAM	64QAM	Limit (W)	
Channel Bandwidth: 5MHz									
Lowest	19.72	18.84	17.86	34.77	0.0938	0.0766	0.0611	3	Pass
Middle	19.65	18.87	17.94	34.77	0.0923	0.0771	0.0622	3	Pass
Highest	19.61	18.65	17.81	34.77	0.0914	0.0733	0.0604	3	Pass
Channel Bandwidth: 10MHz									
Lowest	19.91	19.00	18.08	34.77	0.0979	0.0794	0.0643	3	Pass
Middle	20.05	18.96	18.03	34.77	0.1012	0.0787	0.0635	3	Pass
Highest	19.77	19.60	18.68	34.77	0.0948	0.0912	0.0738	3	Pass
Channel Bandwidth: 15MHz									
Lowest	19.64	19.50	18.56	34.77	0.0920	0.0891	0.0718	3	Pass
Middle	19.80	18.84	17.87	34.77	0.0955	0.0766	0.0612	3	Pass
Highest	19.63	19.31	18.37	34.77	0.0918	0.0853	0.0687	3	Pass
Channel Bandwidth: 20MHz									
Lowest	19.94	18.81	17.90	34.77	0.0986	0.0760	0.0617	3	Pass
Middle	20.06	19.13	18.29	34.77	0.1014	0.0818	0.0675	3	Pass
Highest	19.95	19.37	18.40	34.77	0.0989	0.0865	0.0692	3	Pass

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng science and technology park, Longhua district, Shenzhen, China

Tel: +86-755-28230888

Fax: +86-755-28230886

E-mail: info@uttlab.com

<http://www.uttlab.com>

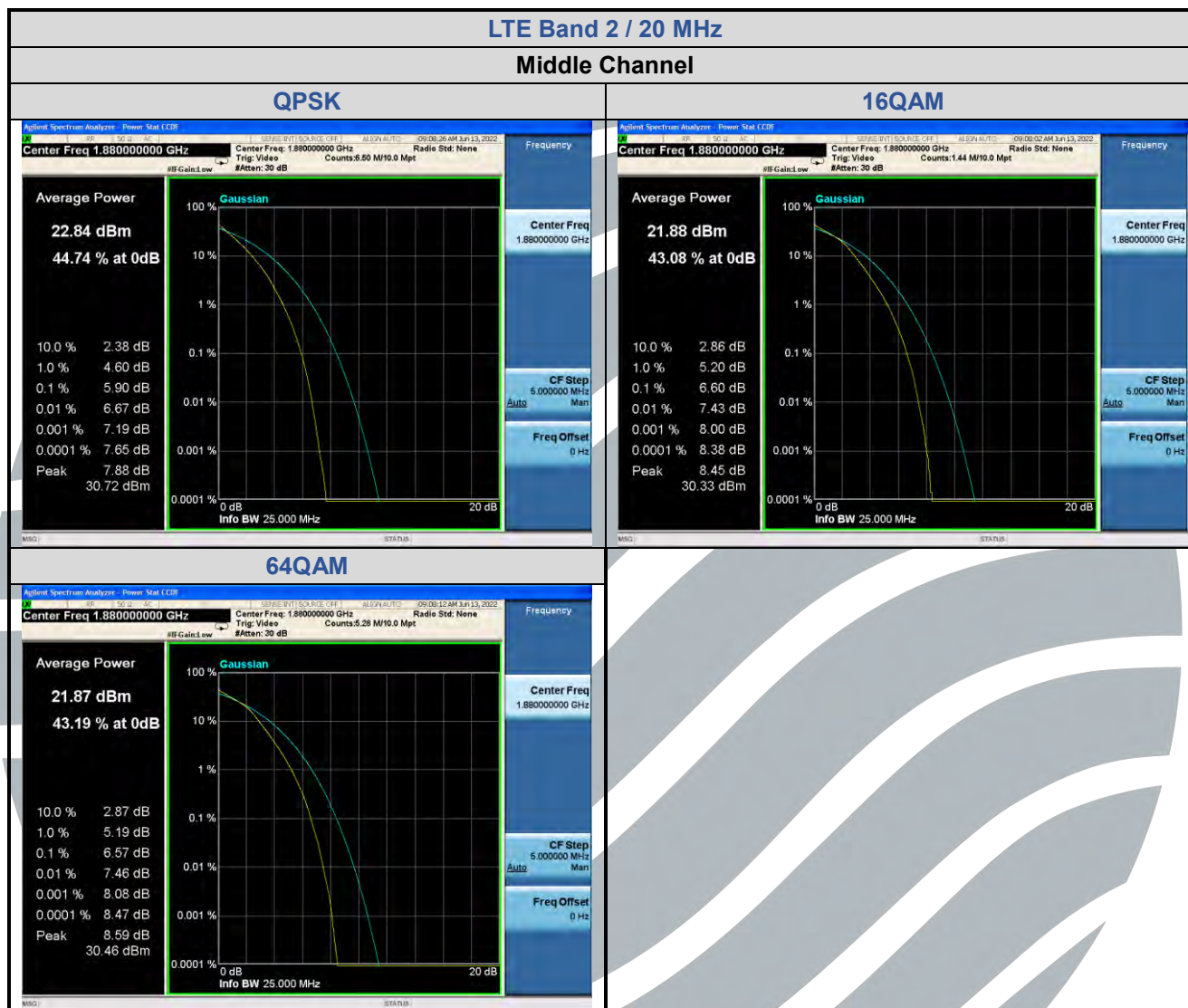
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5.4 PEAK-TO-AVERAGE RATIO

Test Requirement:	LTE Band 2 & LTE Band 25: FCC 47 CFR Part 24.232(d)
	LTE Band 4 & LTE Band 66: FCC 47 CFR Part 27.50(d)(5)
	LTE Band 5 & LTE Band 26: FCC 47 CFR Part 22.913(a)
	LTE Band 41: FCC 47 CFR Part 27.50(d)(5)
	LTE Band 12 & Band 71: FCC 47 CFR Part 27.50(d)(5)
Test Method:	LTE Band 13: FCC 47 CFR Part 27.50(d)(5)
Test Method:	KDB 971168 D01v03r01 Section 5.7
Limit:	In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB
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.	
a) Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth	
b) Set the number of counts to a value that stabilizes the measured CCDF curve	
c) Record the maximum PAPR level associated with a probability of 0.1 %	
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
Test Data:	See table below

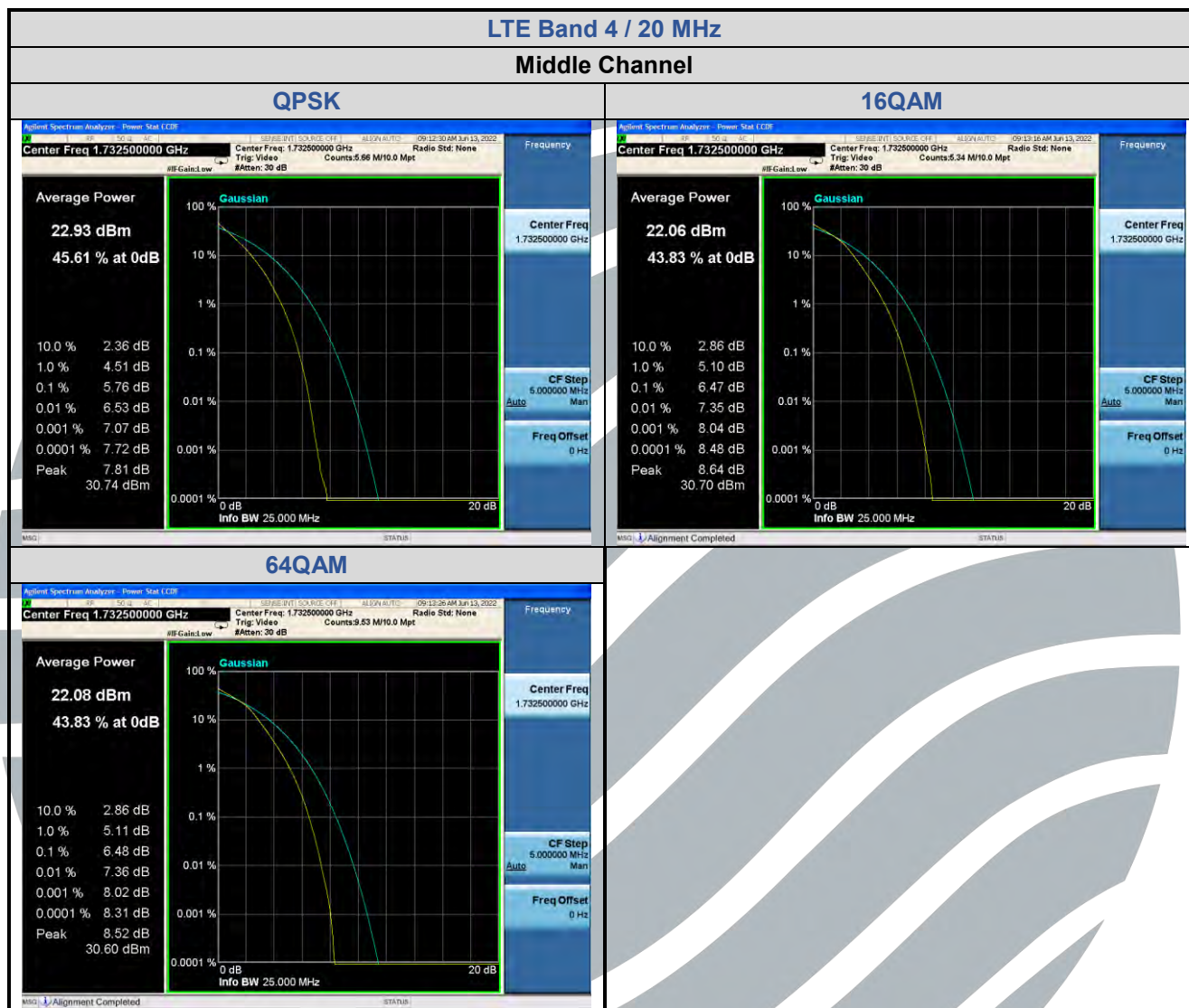
5.4.1 LTE Band 2

Peak-to-average ratio (dB)						
Channel	RB Configuration	Channel Bandwidth: 20 MHz			Limit (dB)	Result
		QPSK	16QAM	64QAM		
Middle	Full RB	5.90	6.60	6.57	13	Pass



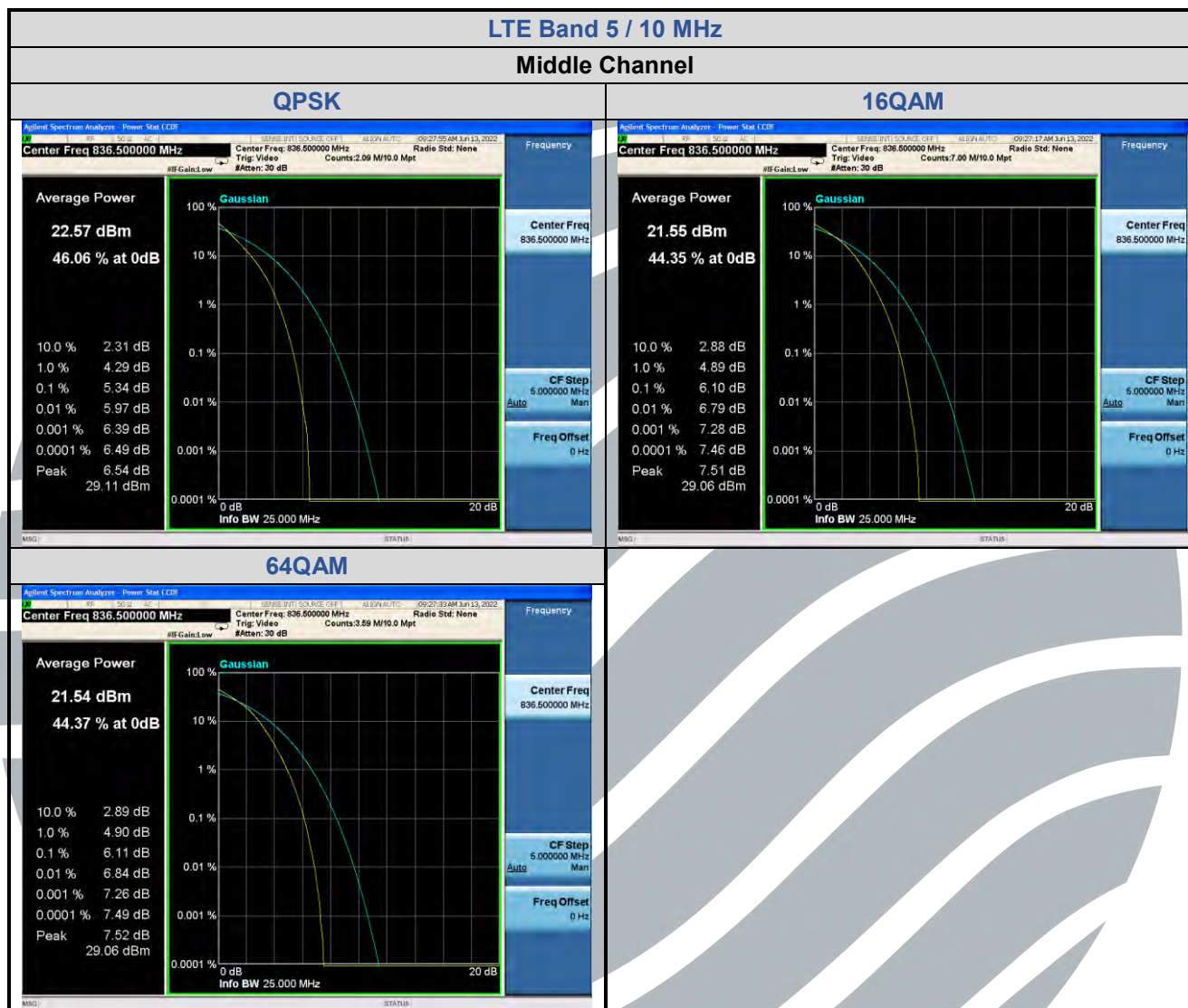
5.4.2 LTE Band 4

Peak-to-average ratio (dB)						
Channel	RB Configuration	Channel Bandwidth: 20 MHz			Limit (dB)	Result
		QPSK	16QAM	64QAM		
Middle	Full RB	5.76	6.47	6.48	13	Pass



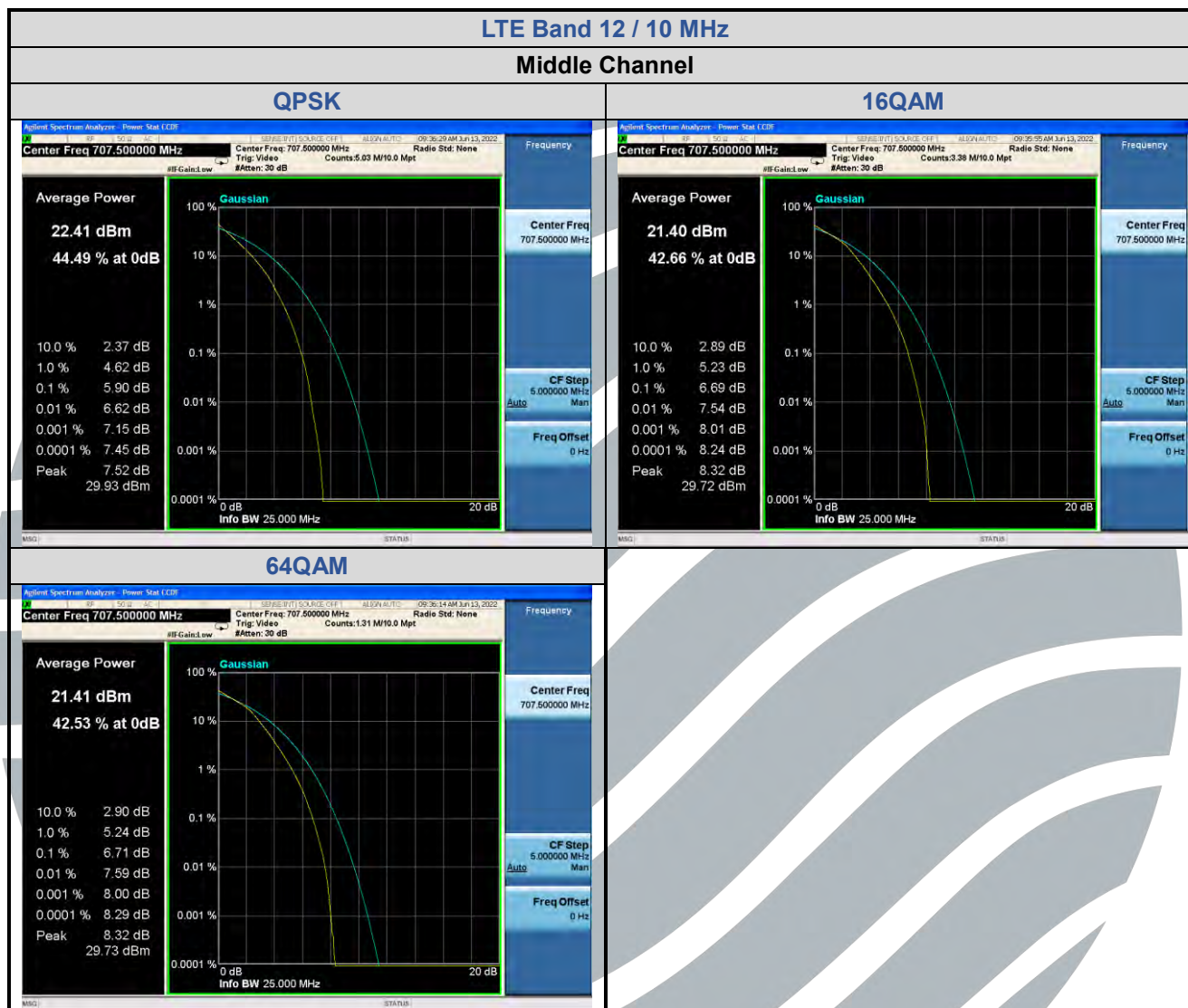
5.4.3 LTE Band 5

Peak-to-average ratio (dB)						
Channel	RB Configuration	Channel Bandwidth: 10 MHz			Limit (dB)	Result
		QPSK	16QAM	64QAM		
Middle	Full RB	5.34	6.10	6.11	13	Pass



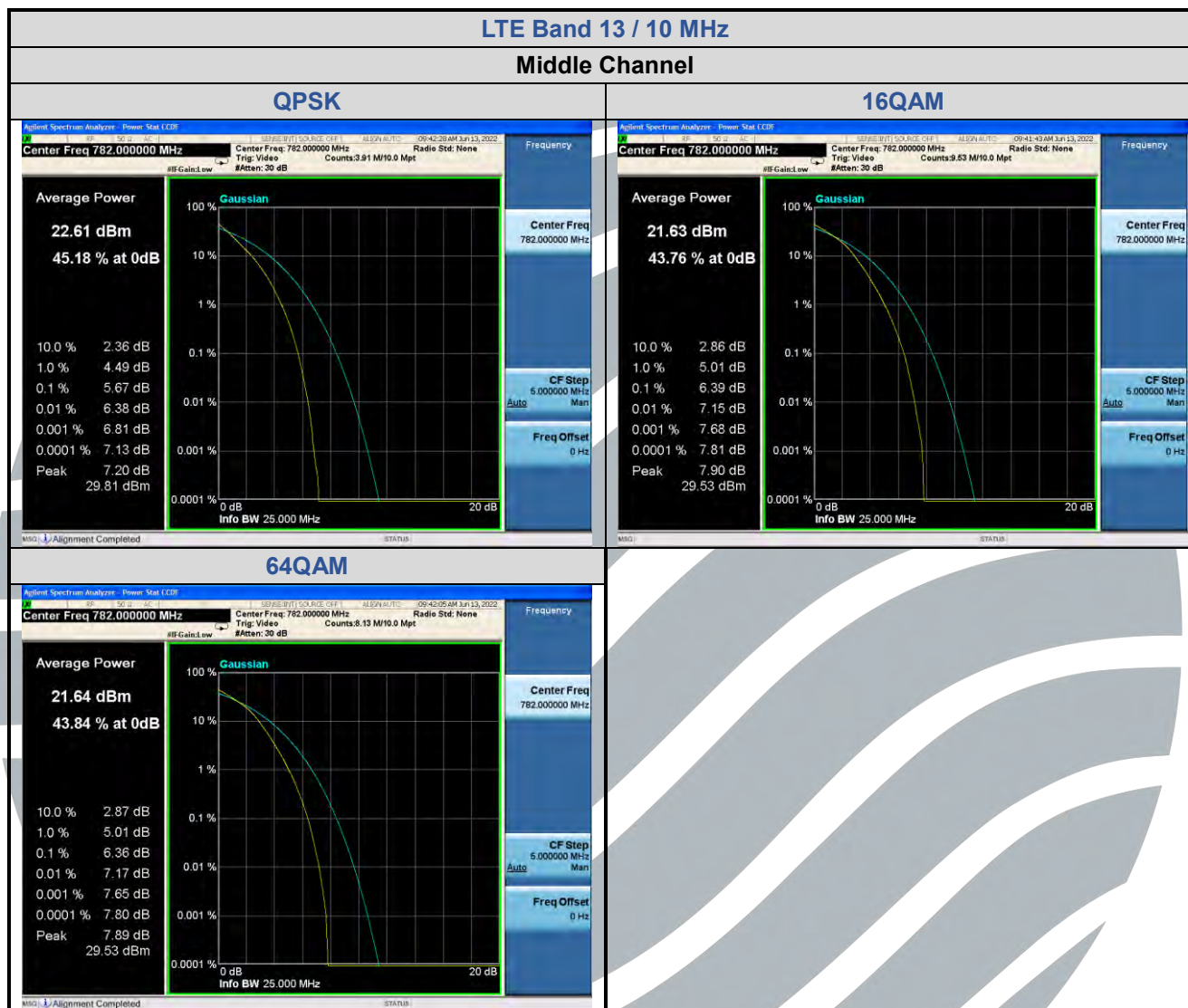
5.4.4 LTE Band 12

Peak-to-average ratio (dB)						
Channel	RB Configuration	Channel Bandwidth: 10 MHz			Limit (dB)	Result
		QPSK	16QAM	64QAM		
Middle	Full RB	5.90	6.69	6.71	13	Pass



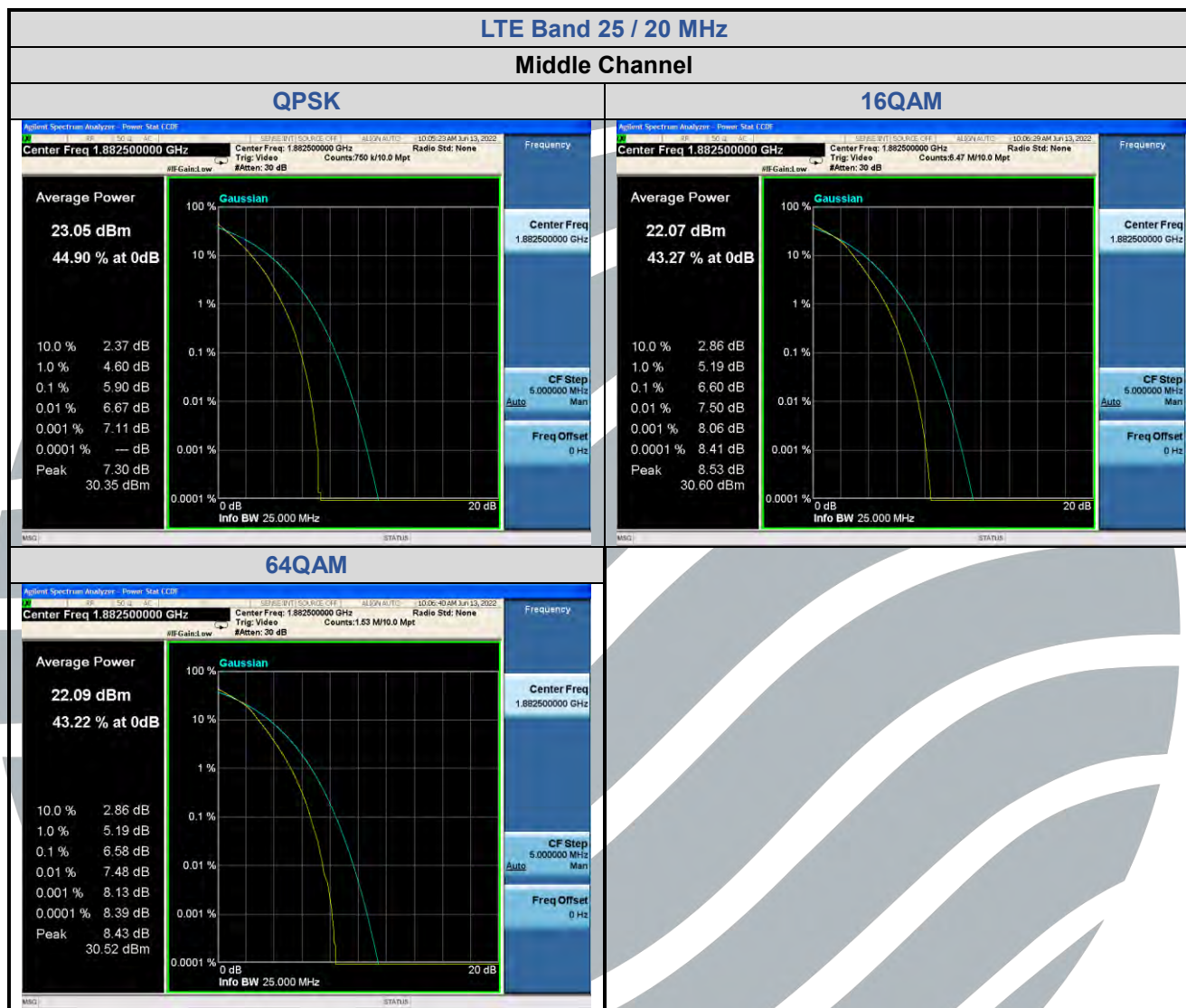
5.4.5 LTE Band 13

Peak-to-average ratio (dB)						
Channel	RB Configuration	Channel Bandwidth: 10 MHz			Limit (dB)	Result
		QPSK	16QAM	64QAM		
Middle	Full RB	5.67	6.39	6.36	13	Pass



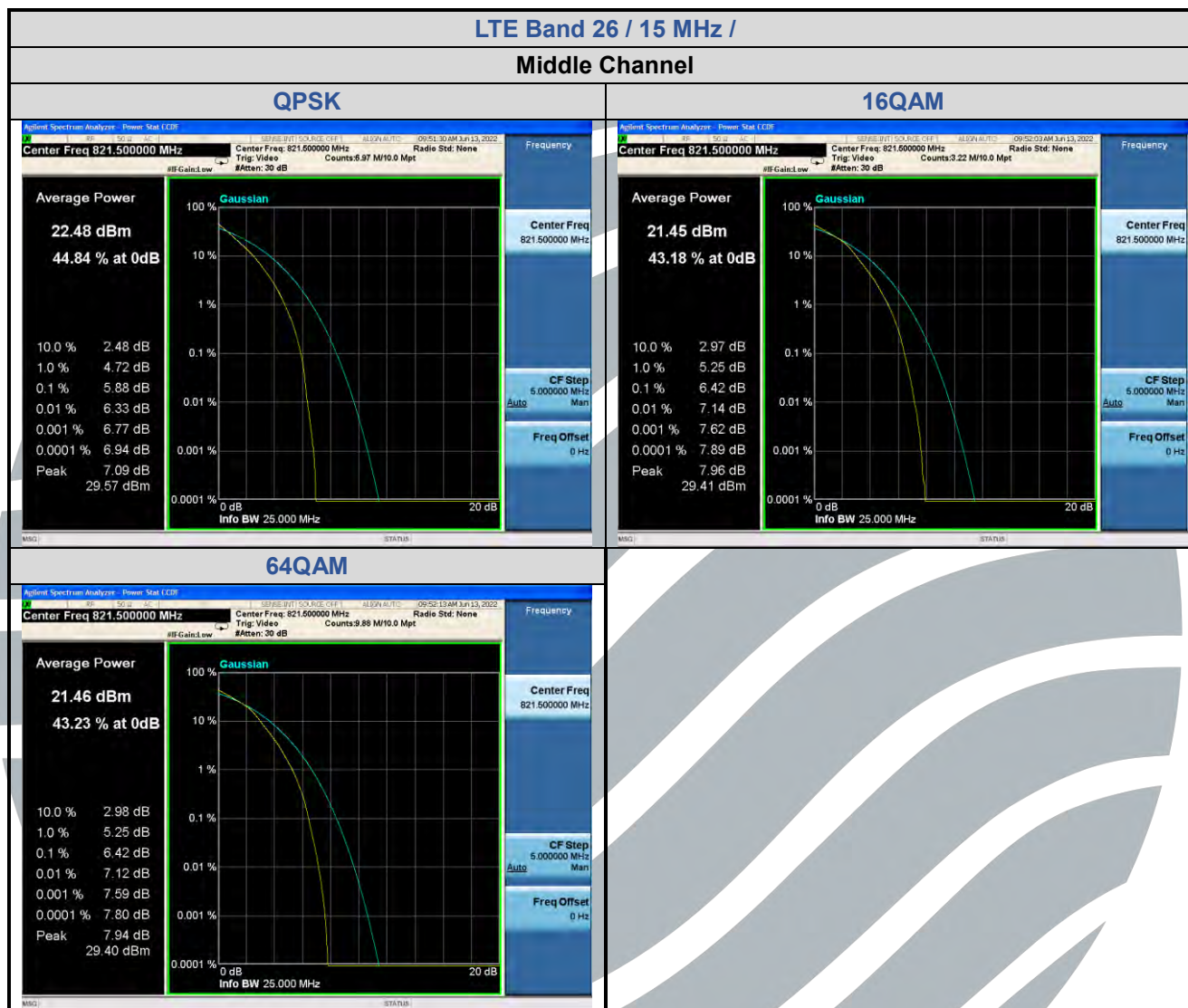
5.4.6 LTE Band 25

Peak-to-average ratio (dB)						
Channel	RB Configuration	Channel Bandwidth: 20 MHz			Limit (dB)	Result
		QPSK	16QAM	64QAM		
Middle	Full RB	5.90	6.60	6.58	13	Pass



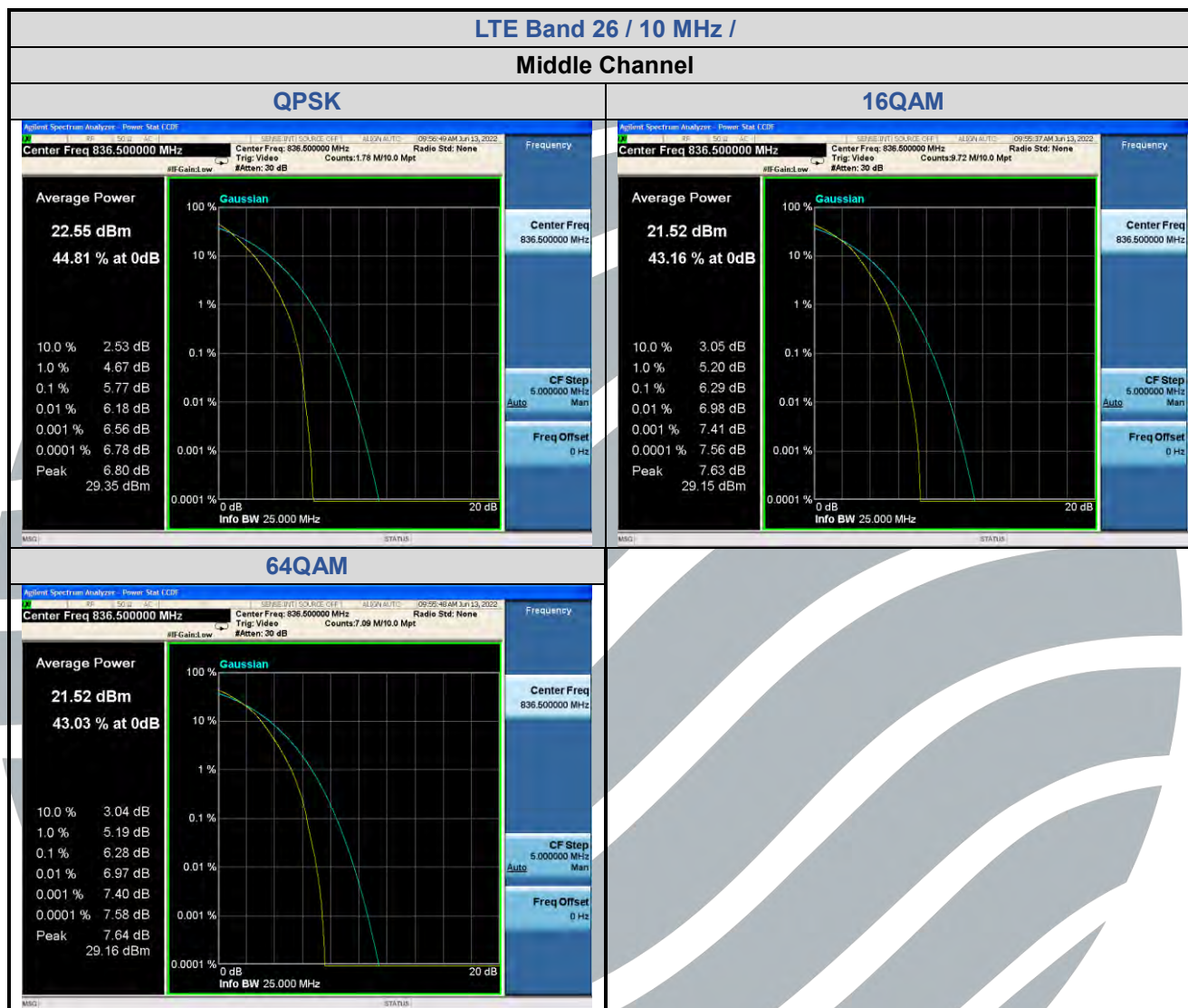
5.4.7 LTE Band 26

Peak-to-average ratio (dB)						
Channel	RB Configuration	Channel Bandwidth: 15 MHz			Limit (dB)	Result
		QPSK	16QAM	64QAM		
Middle	Full RB	5.88	6.42	6.42	13	Pass

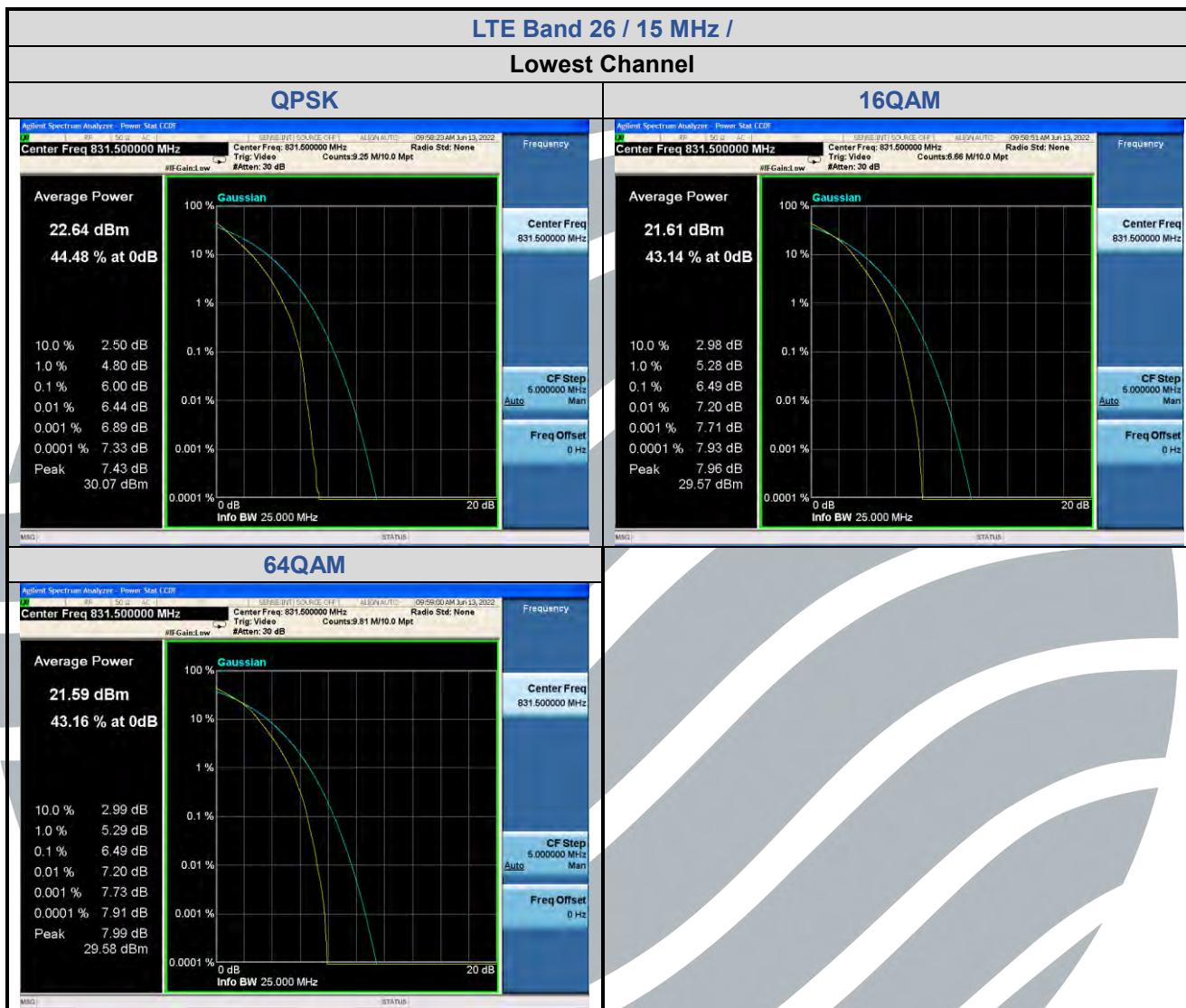


5.4.8 LTE Band 26 (Part 90S)

Peak-to-average ratio (dB)						
Channel	RB Configuration	Channel Bandwidth: 10 MHz			Limit (dB)	Result
		QPSK	16QAM	64QAM		
Middle	Full RB	5.77	6.29	6.28	13	Pass

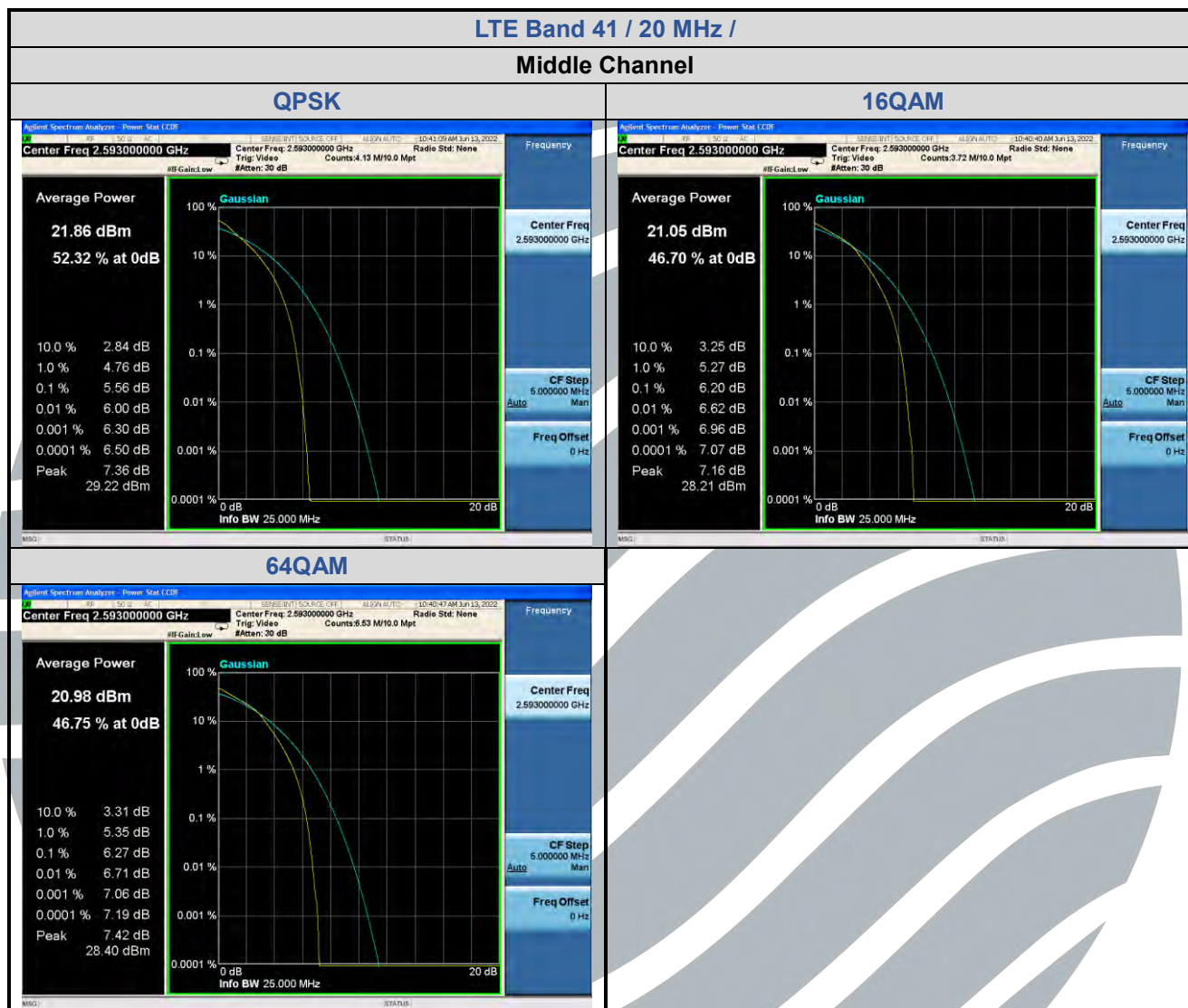


Peak-to-average ratio (dB)						
Channel	RB Configuration	Channel Bandwidth: 15 MHz			Limit (dB)	Result
		QPSK	16QAM	64QAM		
Lowest	Full RB	6.00	6.49	6.49	13	Pass



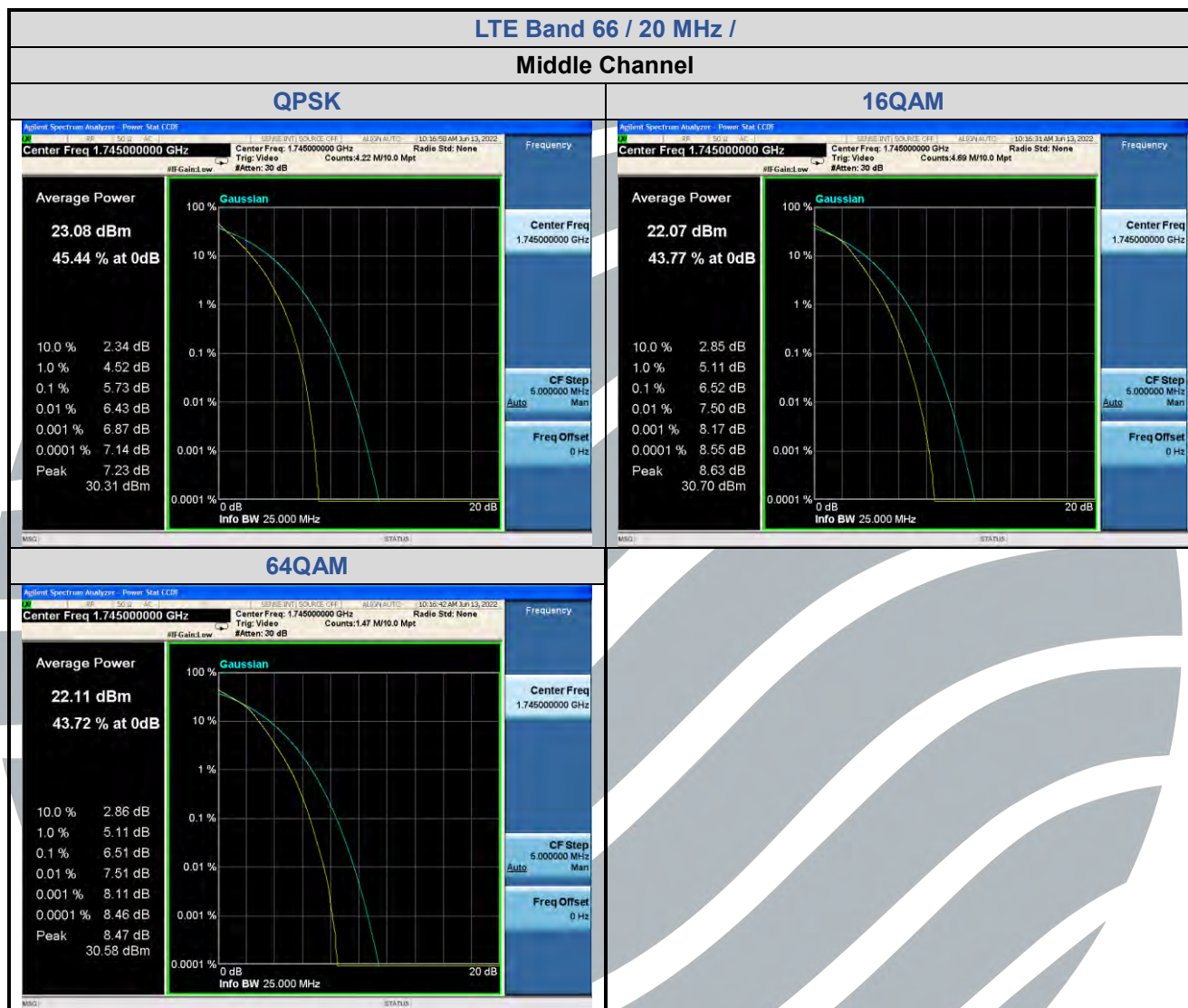
5.4.9 LTE Band 41

Peak-to-average ratio (dB)						
Channel	RB Configuration	Channel Bandwidth: 20 MHz			Limit (dB)	Result
		QPSK	16QAM	64QAM		
Middle	Full RB	5.56	6.20	6.27	13	Pass



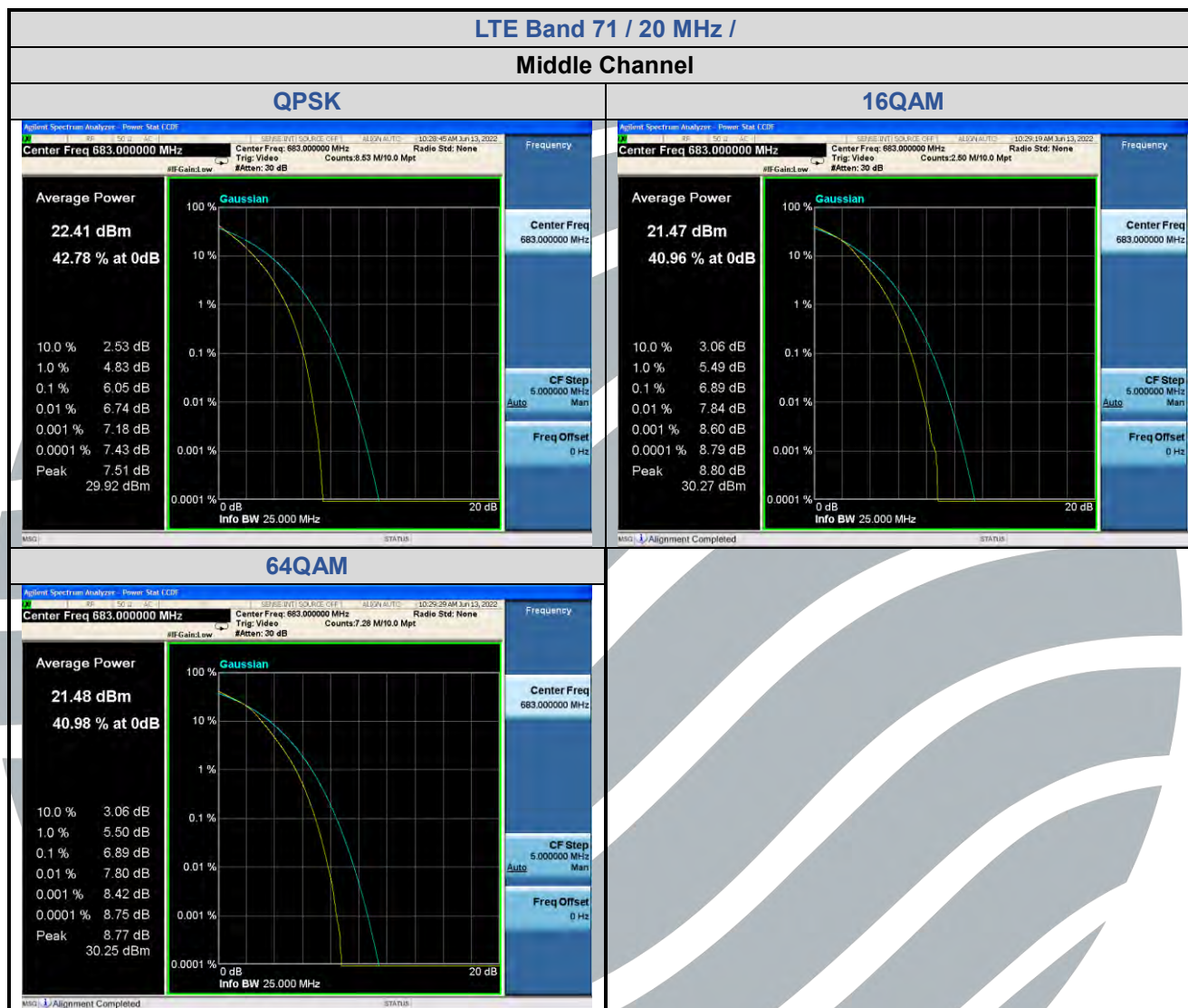
5.4.10 LTE Band 66

Peak-to-average ratio (dB)						
Channel	RB Configuration	Channel Bandwidth: 20 MHz			Limit (dB)	Result
		QPSK	16QAM	64QAM		
Middle	Full RB	5.73	6.52	6.51	13	Pass



5.4.11 LTE Band 71

Peak-to-average ratio (dB)						
Channel	RB Configuration	Channel Bandwidth: 20 MHz			Limit (dB)	Result
		QPSK	16QAM	64QAM		
Middle	Full RB	6.05	6.89	6.89	13	Pass



5.599%&26DB BANDWIDTH

Test Requirement: FCC 47 CFR Part 2.1049(h)

Test Method: ANSI C63.26-2015 & KDB 971168 D01v03r01 Section 4

Limit: No Limit, for reporting purposes only.

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. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The 99% and -26dB bandwidths was also measured and recorded.

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

Test Data: See table below

5.5.1 LTE Band 2

LTE Band 2								
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	1.273	1.285	1.284	1.0999	1.0962	1.0954
Middle	6	0	1.296	1.285	1.287	1.0966	1.0955	1.0965
Highest	6	0	1.271	1.306	1.312	1.0945	1.0981	1.0990
Channel Bandwidth: 3 MHz								
Lowest	15	0	2.899	2.913	2.911	2.6927	2.6853	2.6897
Middle	15	0	2.898	2.894	2.912	2.6809	2.6804	2.6844
Highest	15	0	2.900	2.903	2.918	2.6927	2.6862	2.6876
Channel Bandwidth: 5 MHz								
Lowest	25	0	5.099	5.164	5.198	4.5289	4.5485	4.5488
Middle	25	0	5.157	5.088	5.186	4.5233	4.5236	4.5250
Highest	25	0	5.147	5.220	5.240	4.5360	4.5503	4.5547
Channel Bandwidth: 10 MHz								
Lowest	50	0	10.04	9.980	10.02	9.0114	9.0224	9.0291
Middle	50	0	10.09	10.06	10.06	9.0312	9.0245	9.0225
Highest	50	0	10.20	10.11	10.12	9.0191	9.0183	9.0117
Channel Bandwidth: 15 MHz								
Lowest	75	0	14.90	14.94	15.03	13.507	13.528	13.539
Middle	75	0	15.15	15.03	15.09	13.485	13.514	13.537
Highest	75	0	14.87	14.99	15.01	13.517	13.504	13.494
Channel Bandwidth: 20 MHz								
Lowest	100	0	19.69	19.60	19.86	17.983	17.957	17.970
Middle	100	0	19.71	19.46	19.79	18.026	17.982	18.056
Highest	100	0	19.95	19.97	19.78	17.965	17.951	17.975

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng science and technology park, Longhua district, Shenzhen, China

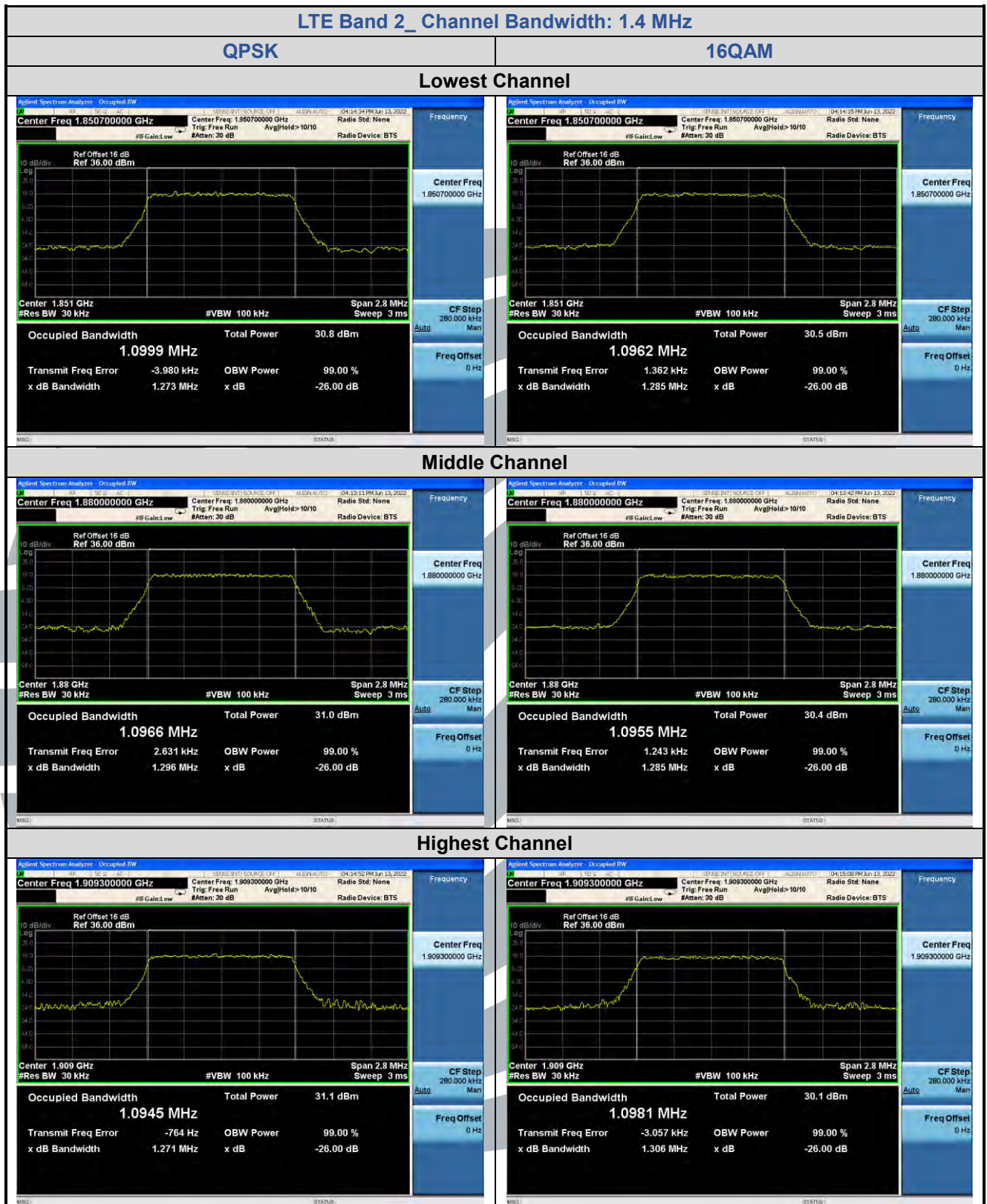
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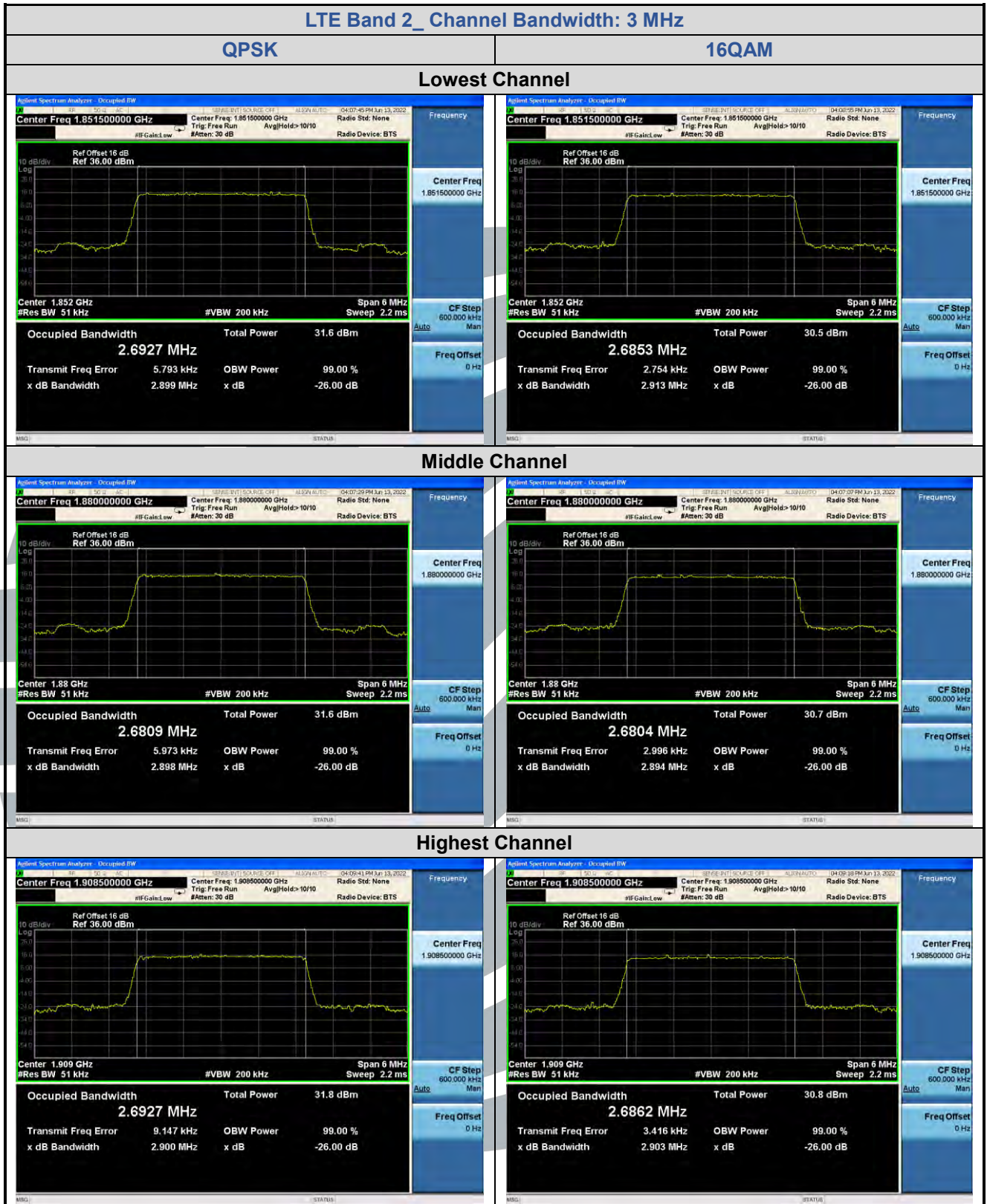
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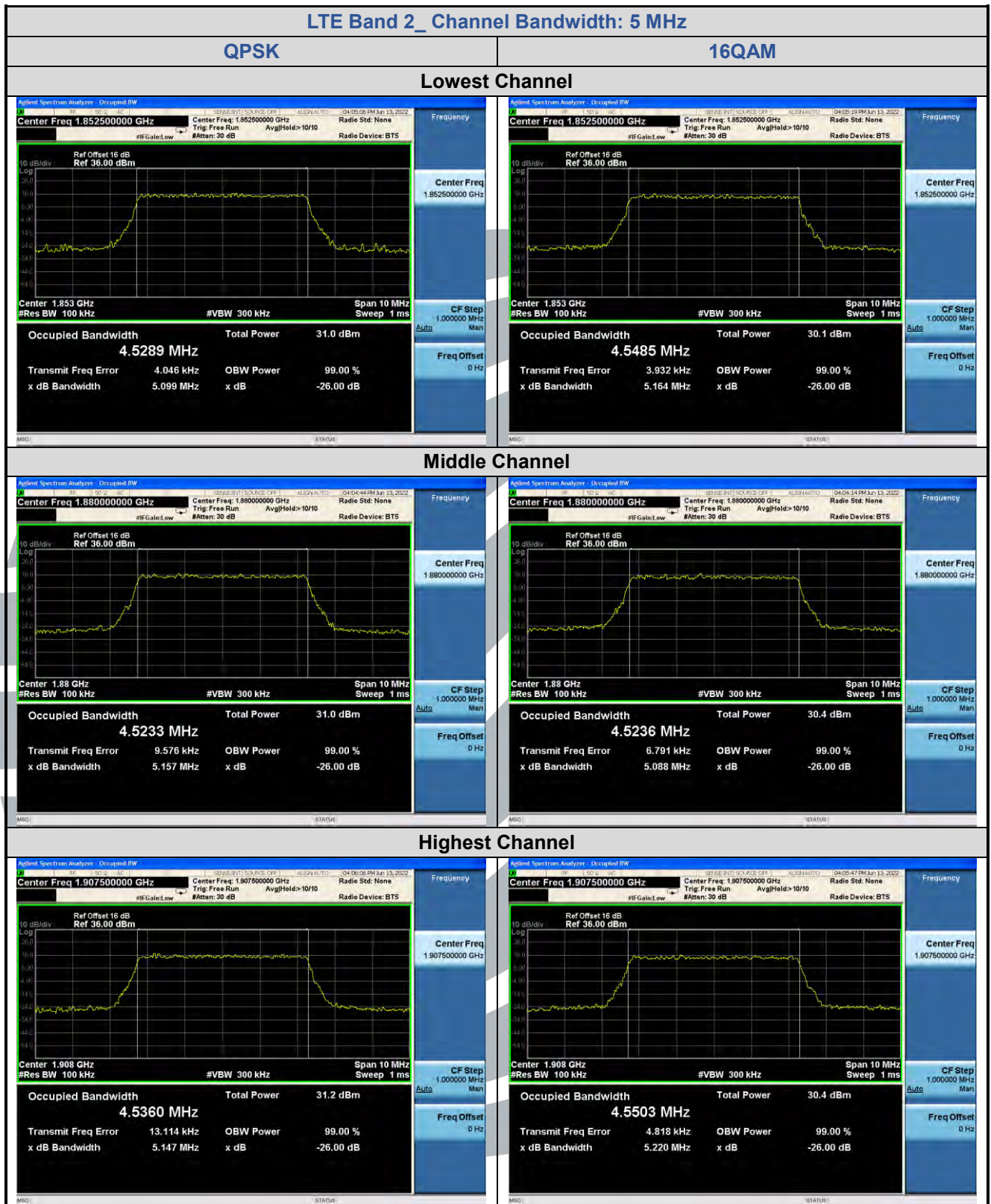
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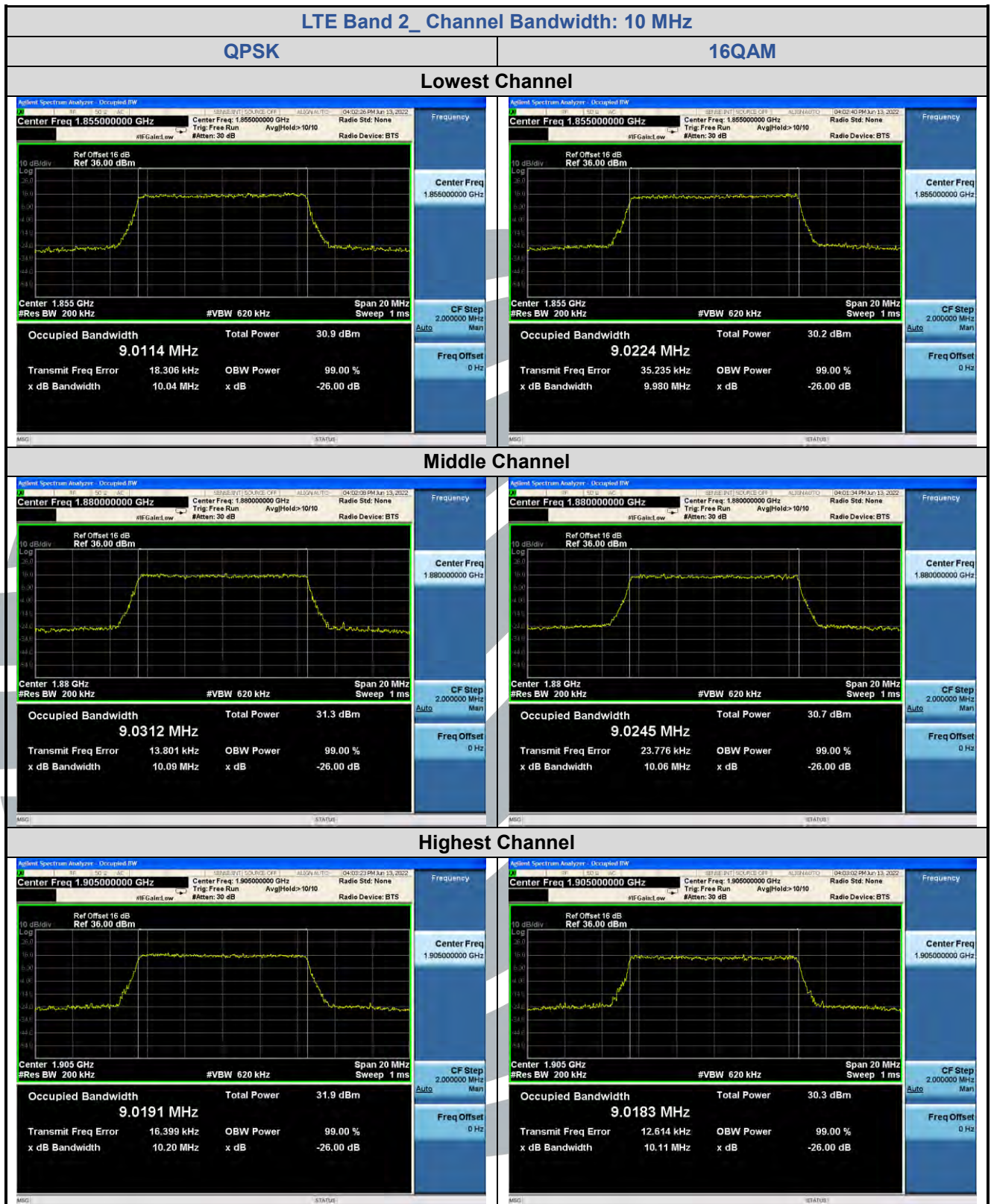
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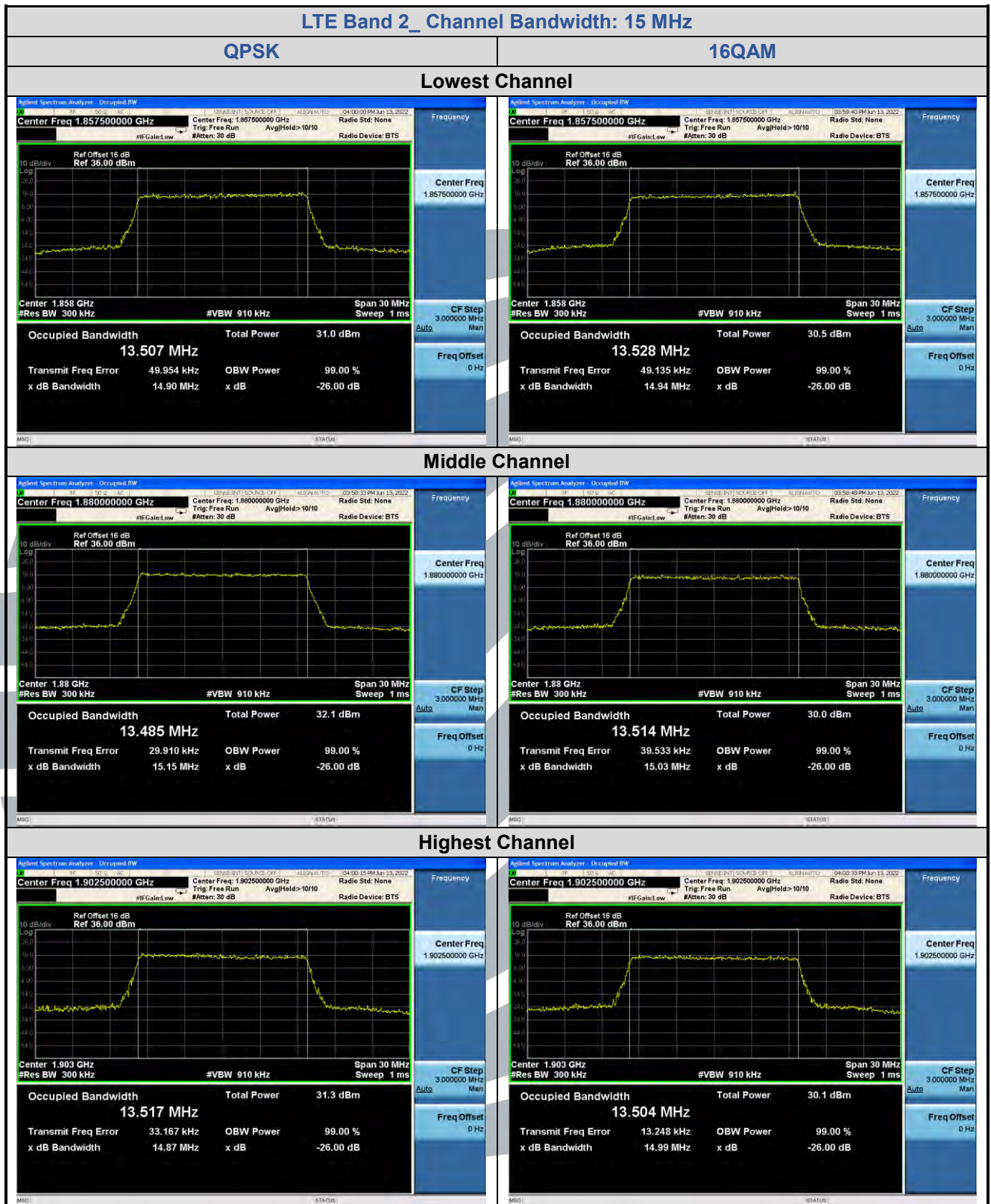
UTTR-RF-FCC4G-V1.1

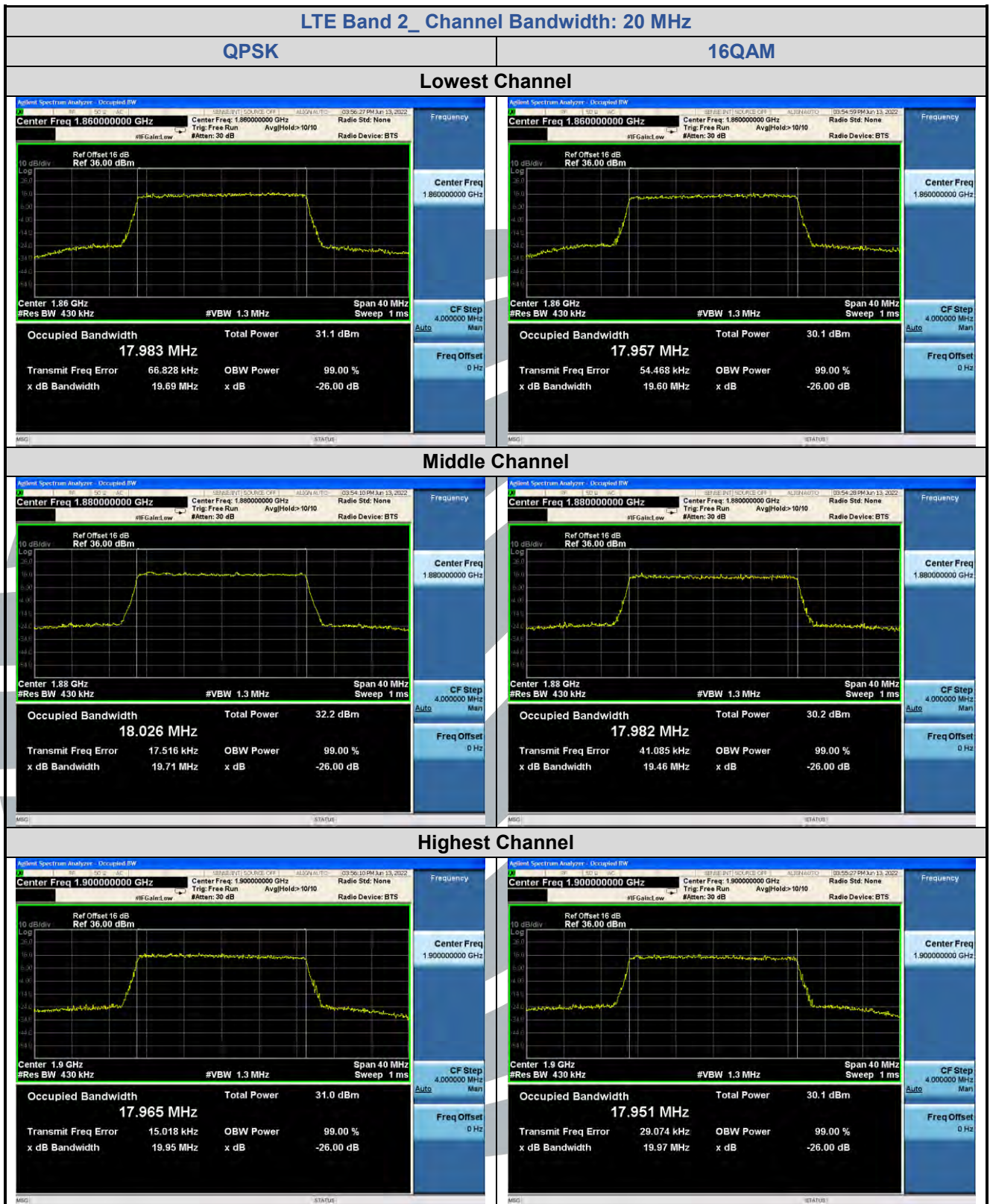


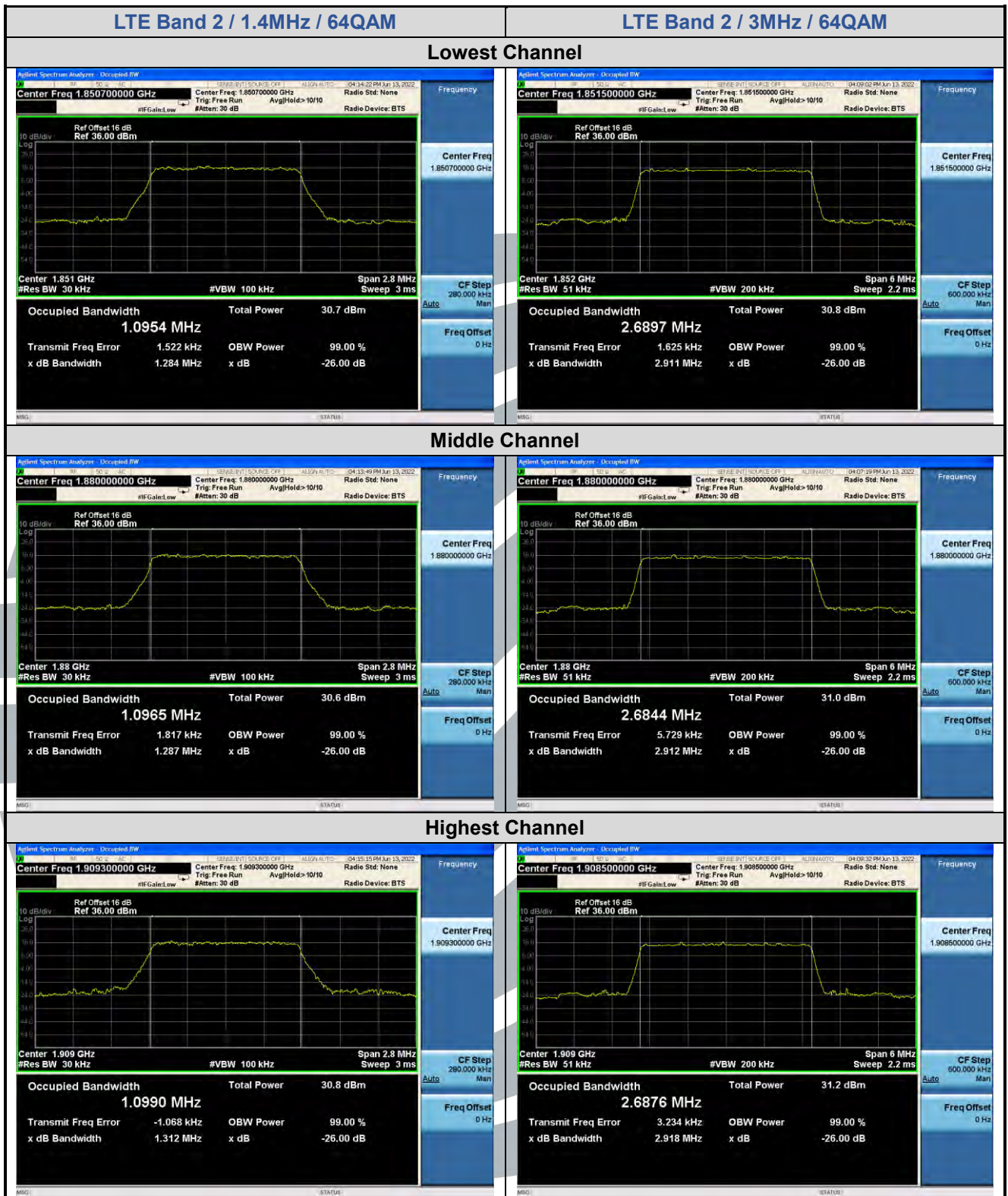


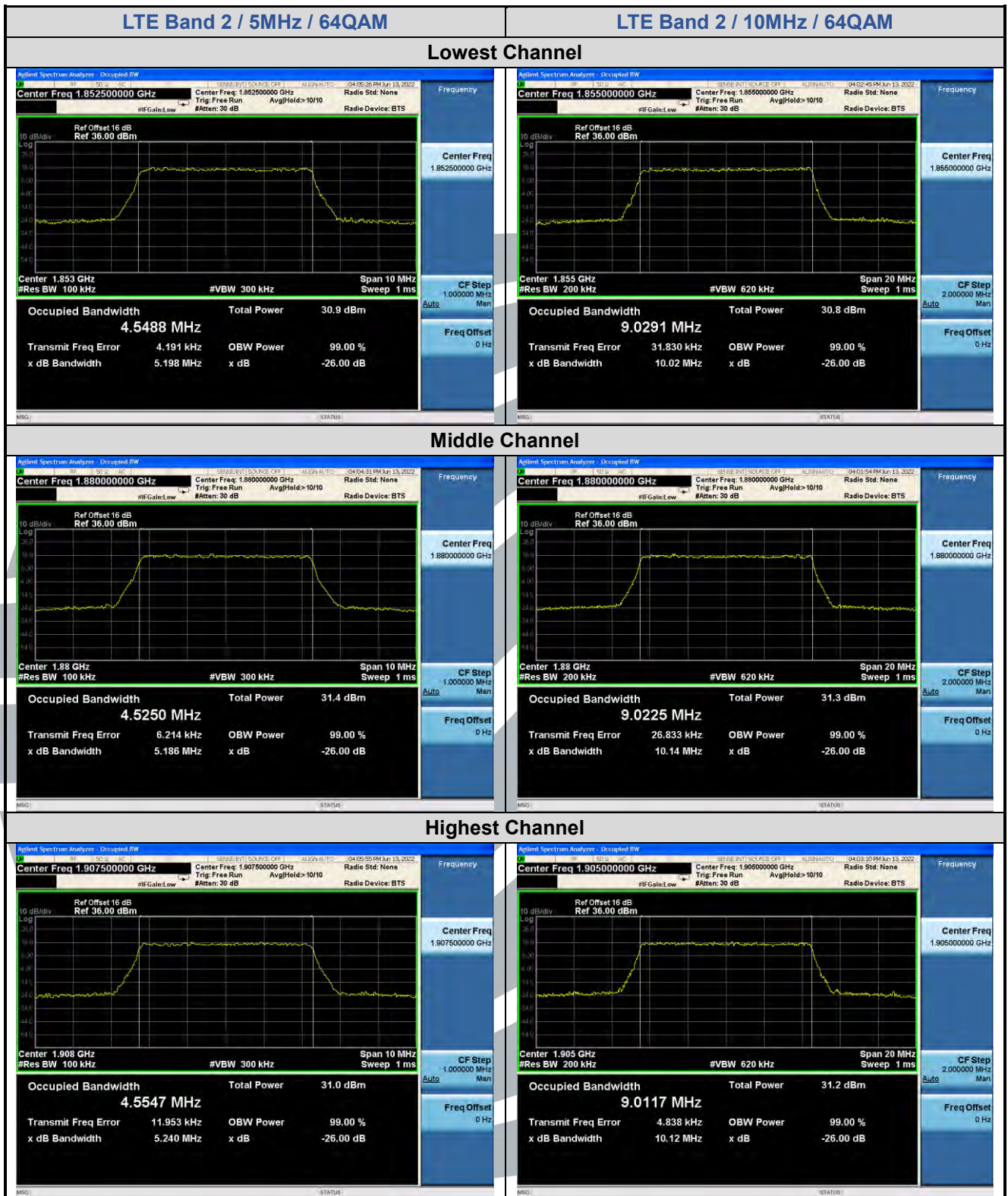


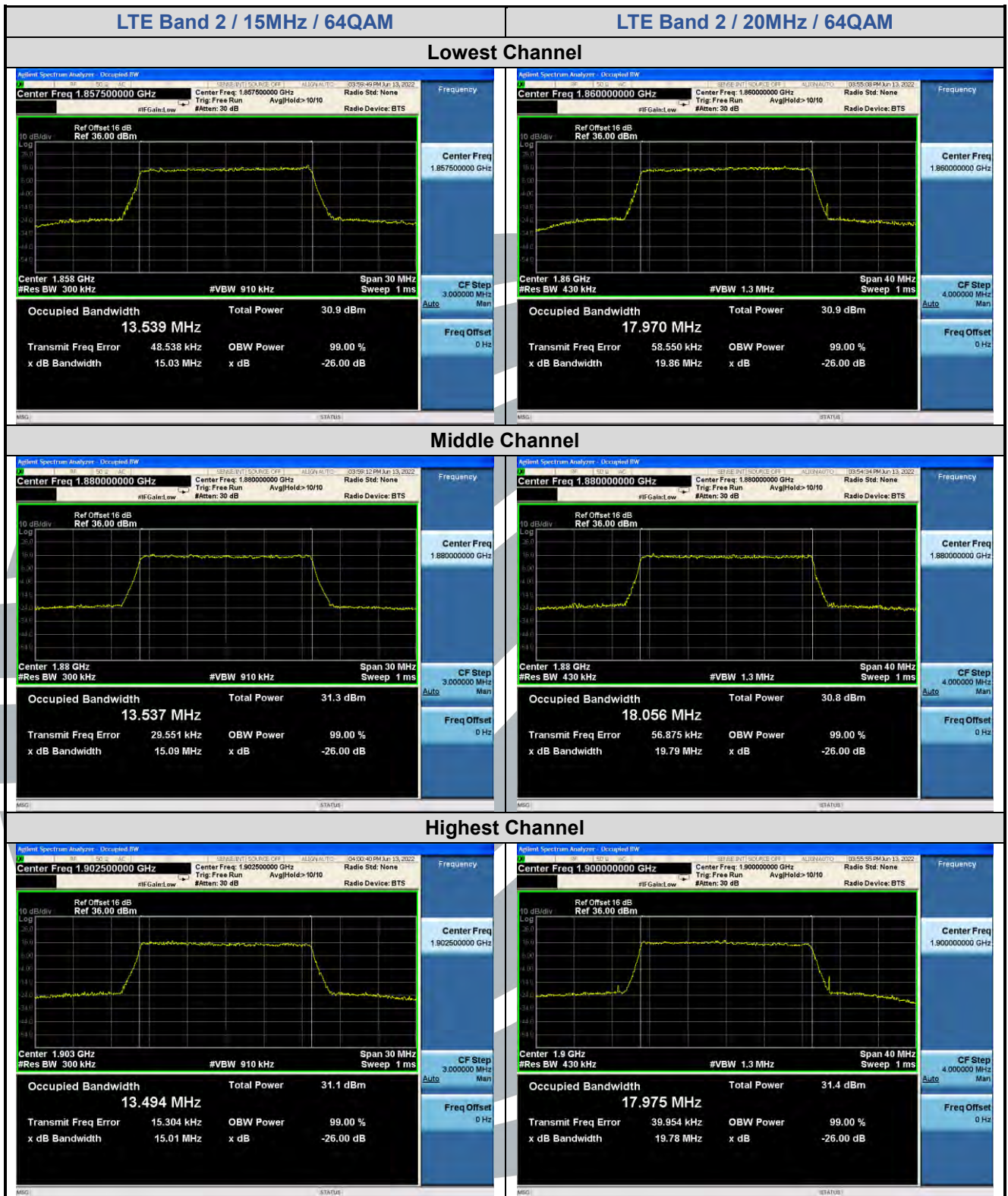












5.5.2 LTE Band 4

LTE Band 4								
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	1.287	1.281	1.282	1.1002	1.0956	1.0963
Middle	6	0	1.313	1.278	1.284	1.0985	1.0875	1.0959
Highest	6	0	1.268	1.319	1.308	1.0930	1.0958	1.1009
Channel Bandwidth: 3 MHz								
Lowest	15	0	2.948	2.918	2.918	2.6805	2.6821	2.6889
Middle	15	0	2.896	2.936	2.904	2.6804	2.6781	2.6811
Highest	15	0	2.911	2.912	2.918	2.6973	2.6835	2.6846
Channel Bandwidth: 5 MHz								
Lowest	25	0	5.187	5.195	5.217	4.5228	4.5372	4.5335
Middle	25	0	5.150	5.110	5.149	4.5431	4.5050	4.5104
Highest	25	0	5.800	5.334	5.564	4.5261	4.5364	4.5449
Channel Bandwidth: 10 MHz								
Lowest	50	0	10.02	9.984	10.01	9.0049	9.0069	9.0133
Middle	50	0	10.02	9.905	10.00	9.0164	8.9934	8.9961
Highest	50	0	11.05	10.51	10.46	9.0324	9.0093	9.0082
Channel Bandwidth: 15 MHz								
Lowest	75	0	15.18	14.96	15.06	13.462	13.463	13.507
Middle	75	0	15.22	14.93	14.96	13.522	13.492	13.485
Highest	75	0	14.94	14.74	15.08	13.501	13.500	13.512
Channel Bandwidth: 20 MHz								
Lowest	100	0	19.70	19.51	19.84	17.973	17.978	17.992
Middle	100	0	19.46	19.71	19.80	17.978	18.013	18.053
Highest	100	0	19.93	19.71	19.79	17.965	18.011	18.008

