

Shenzhen UnionTrust Quality and Technology Co., Ltd.

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Tel: +86-755-28230888

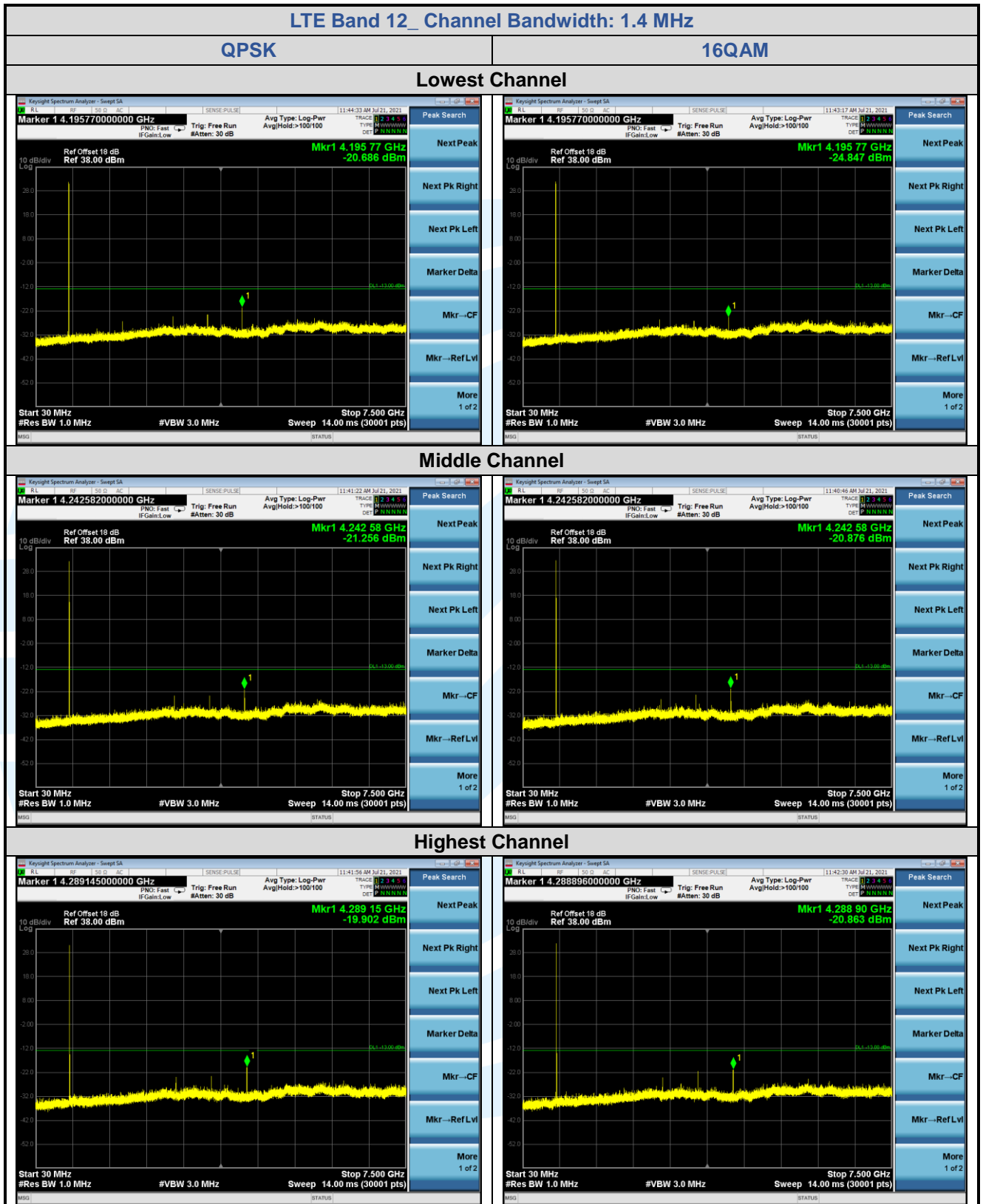
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UTTR-RF-FCC4G-V1.1

5.7.5 LTE Band 12



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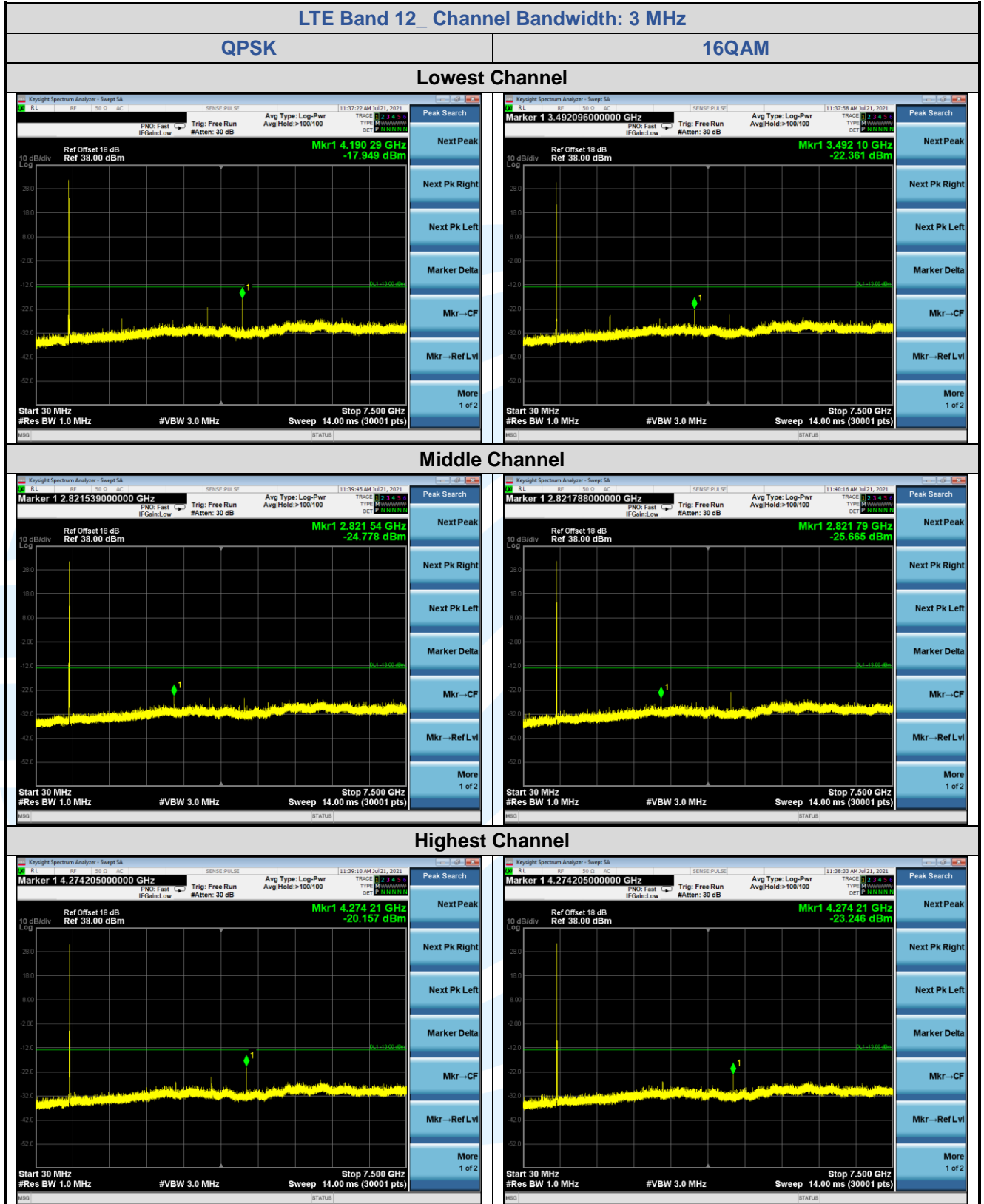
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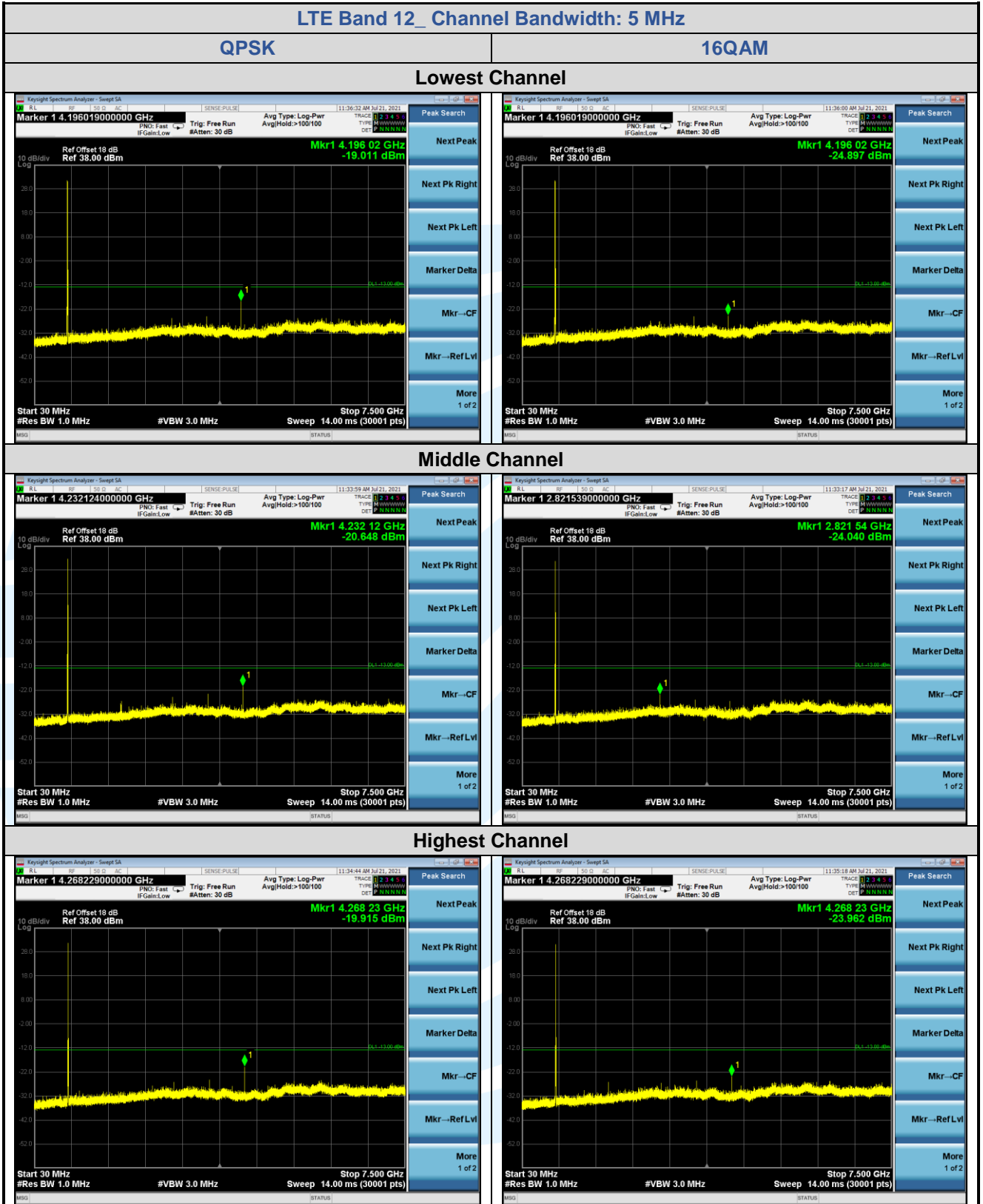
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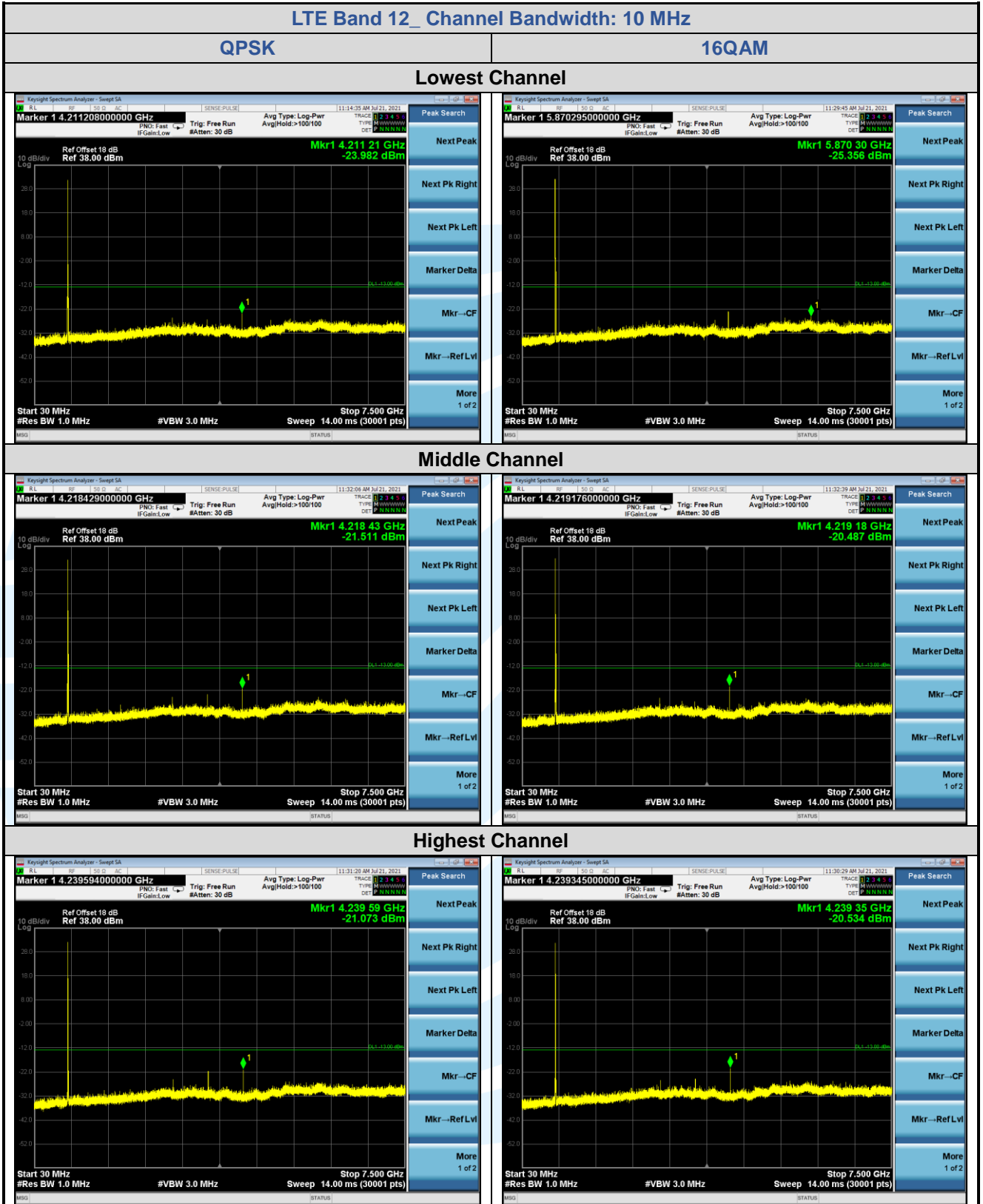
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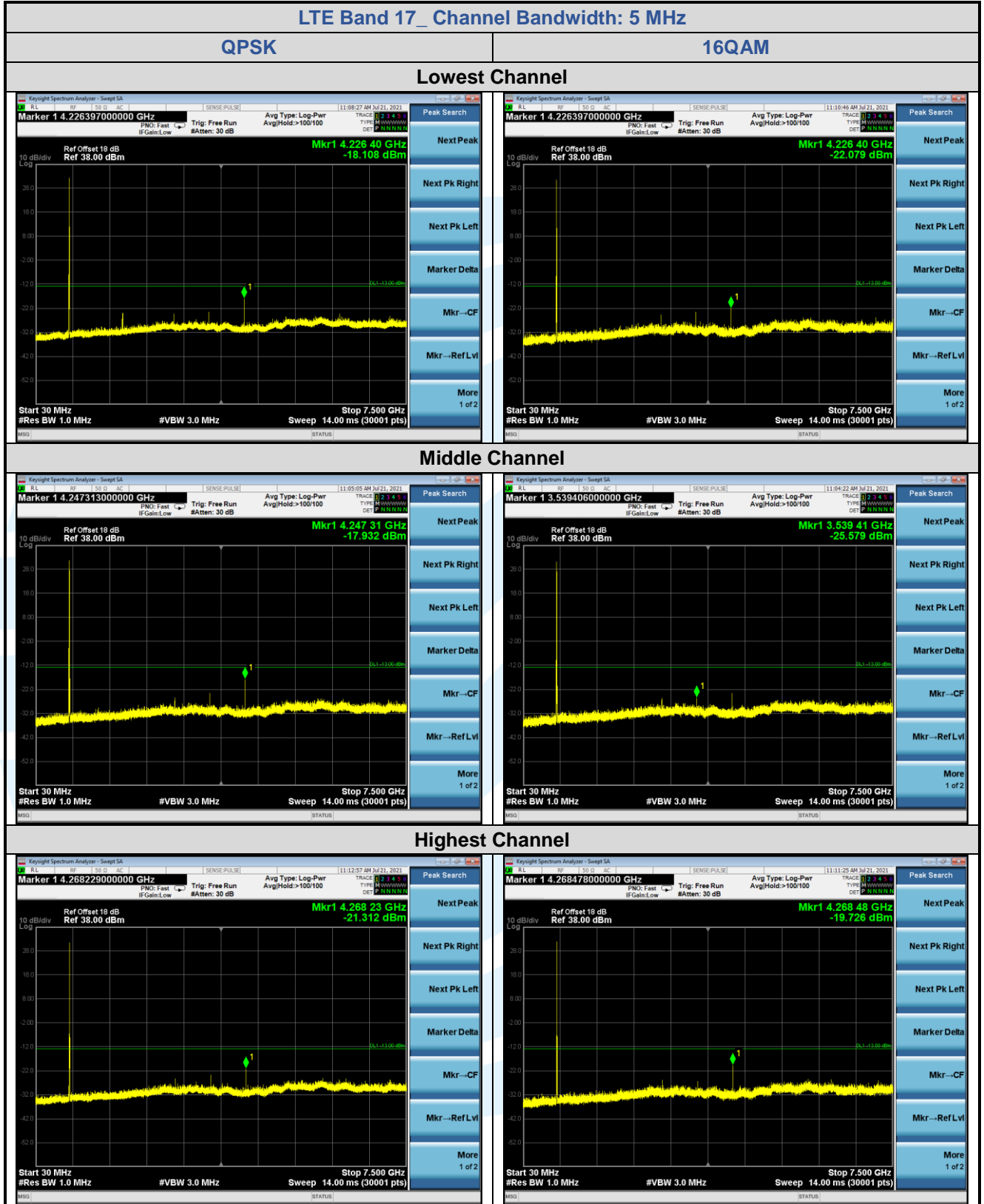
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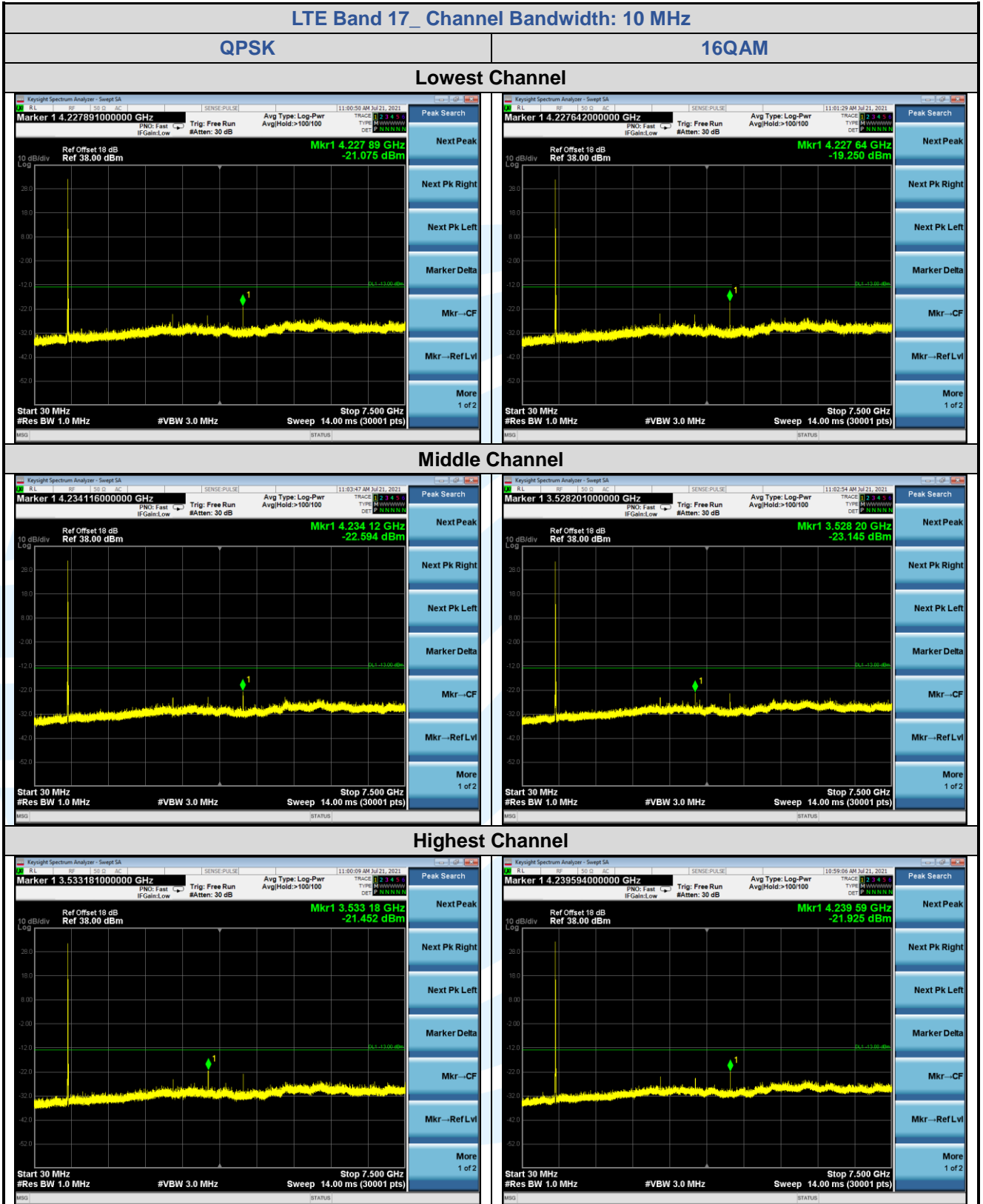
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5.7.6 LTE Band 17





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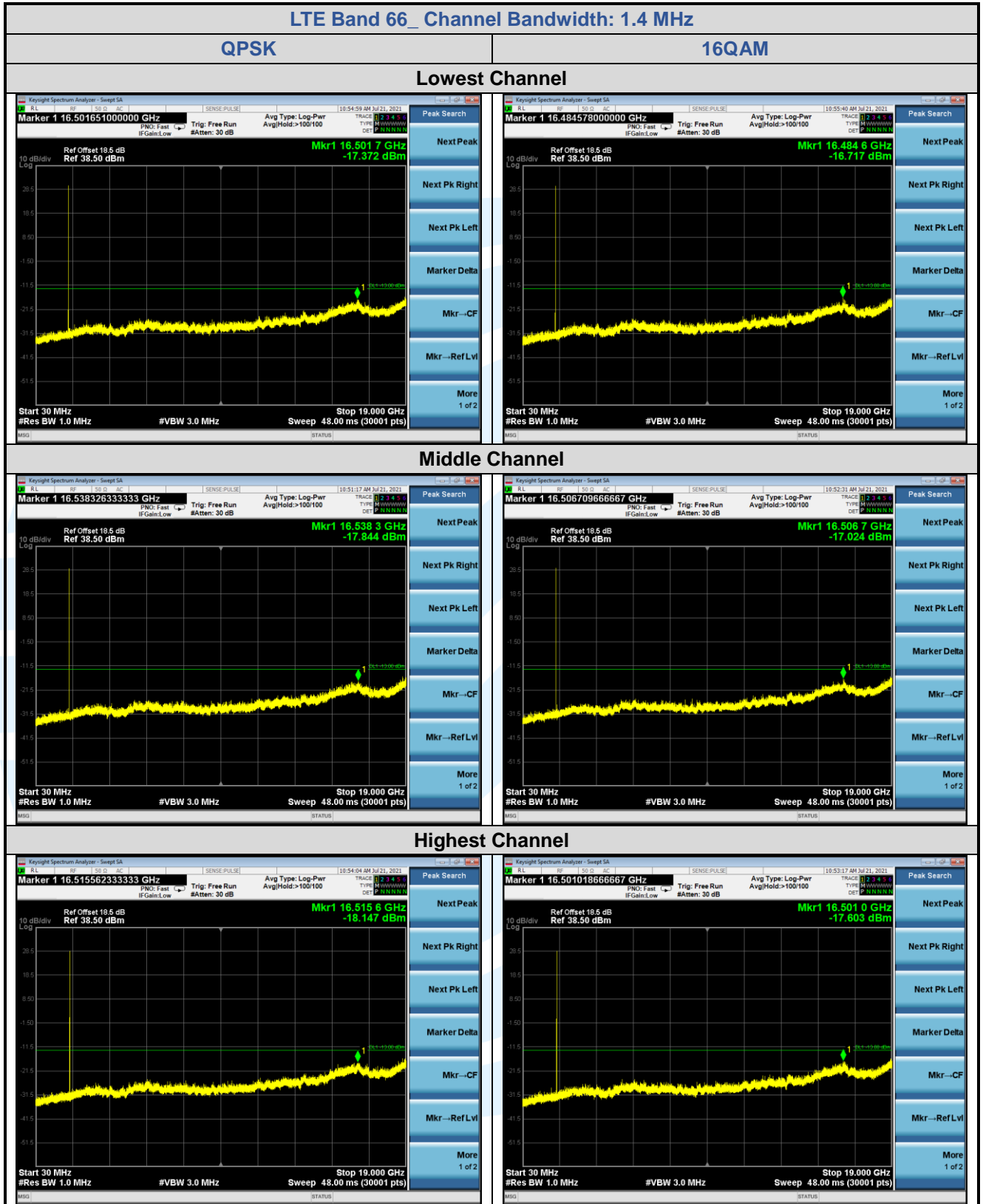
Fax: +86-755-28230886

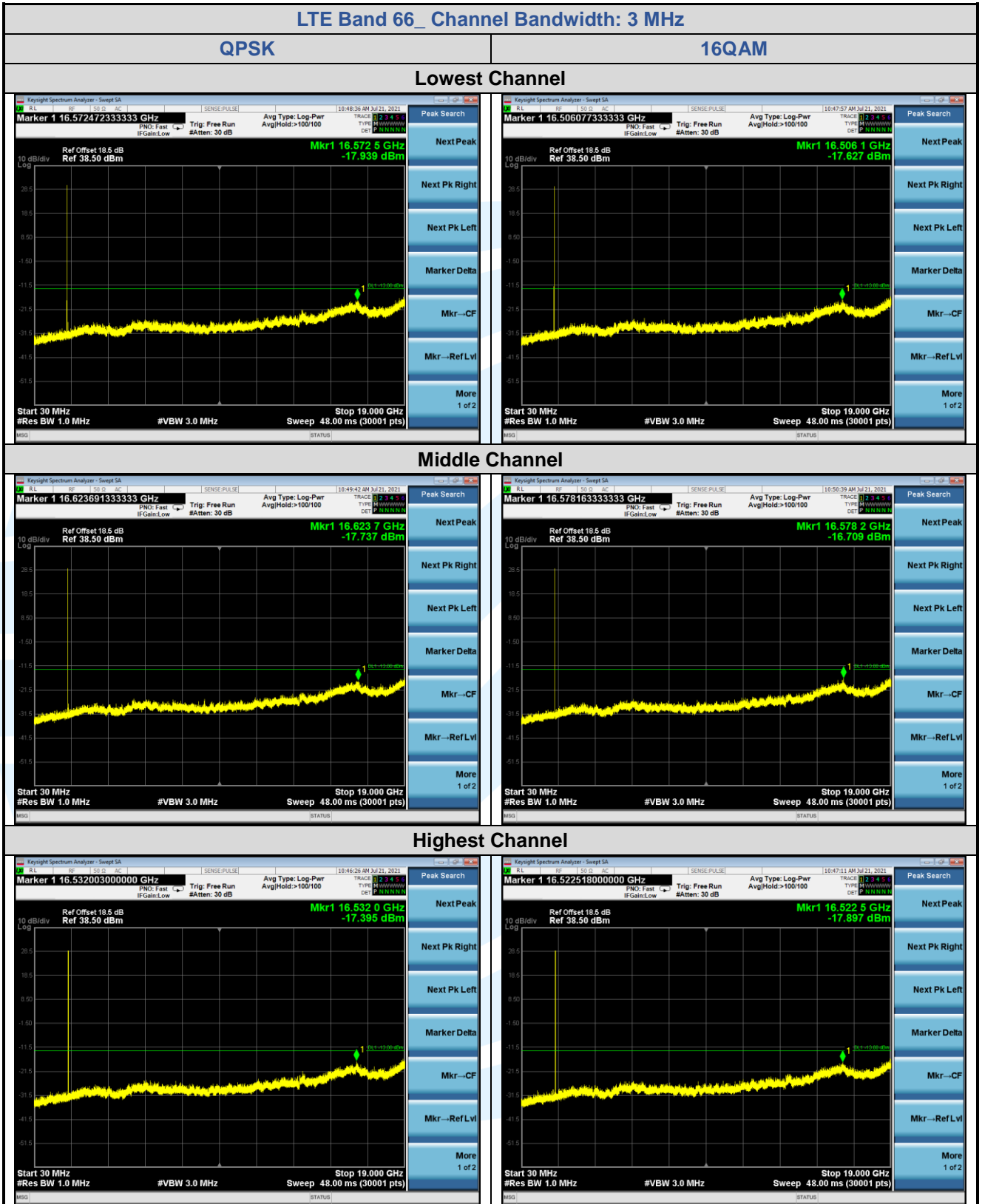
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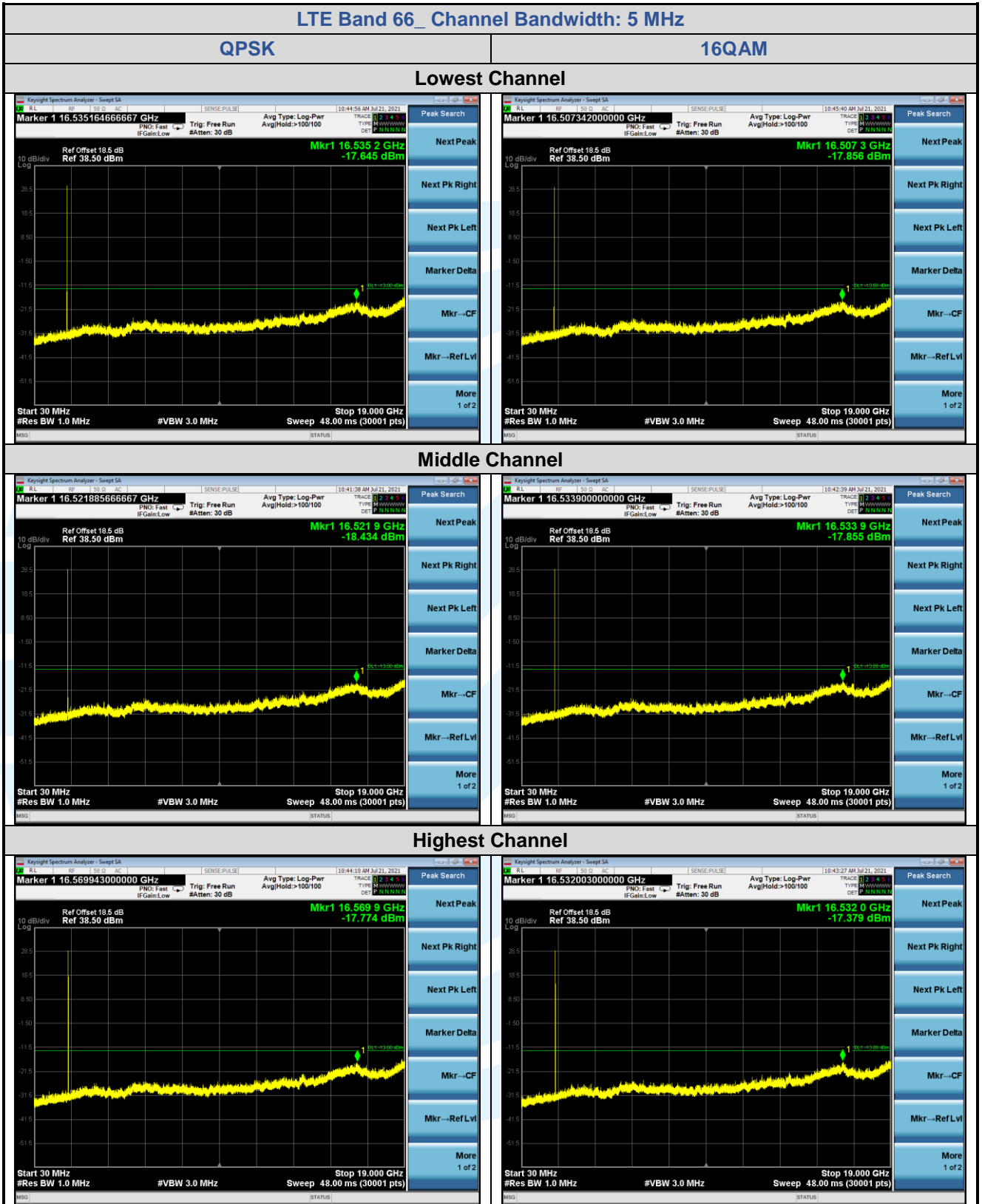
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5.7.7 LTE Band 66







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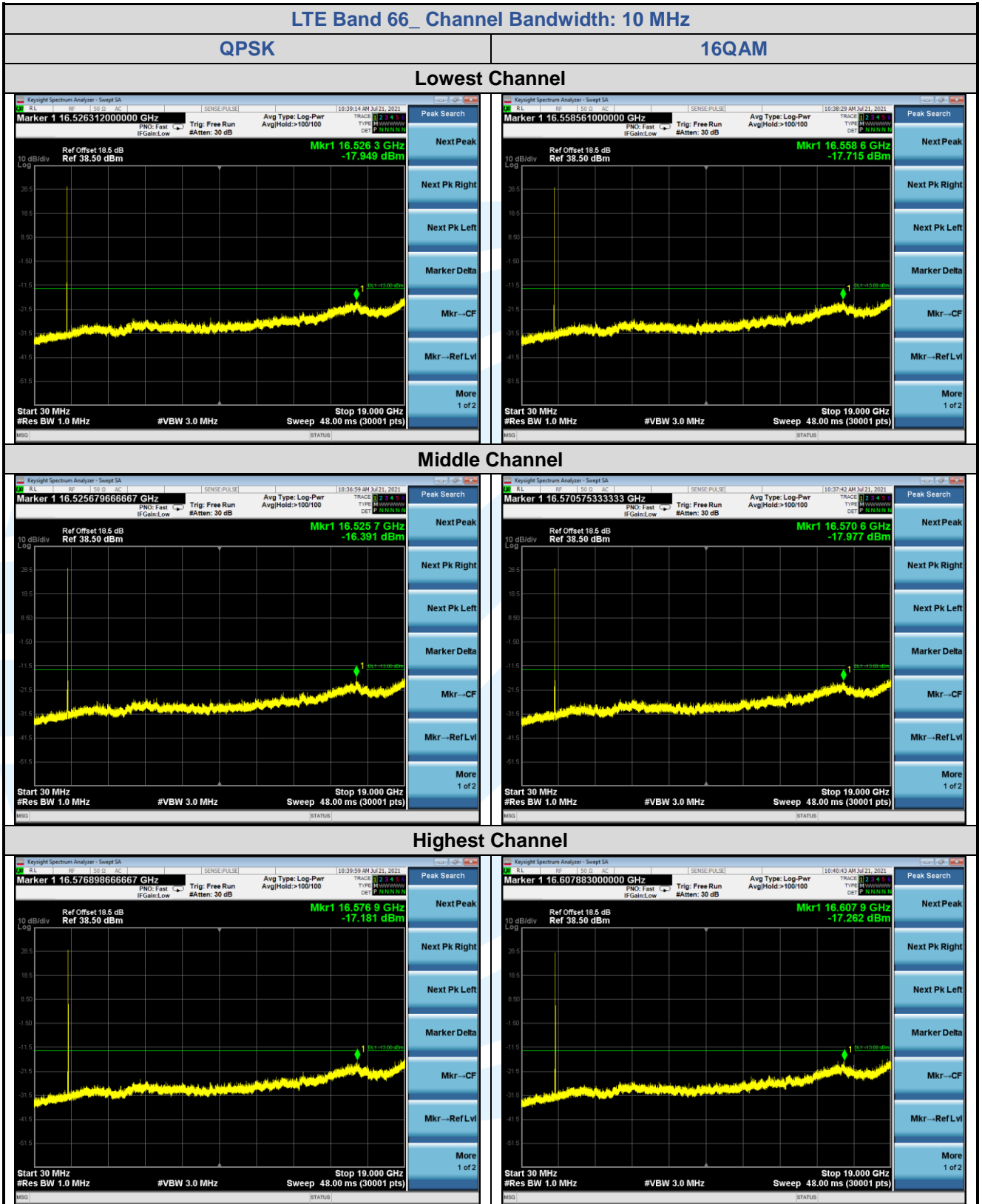
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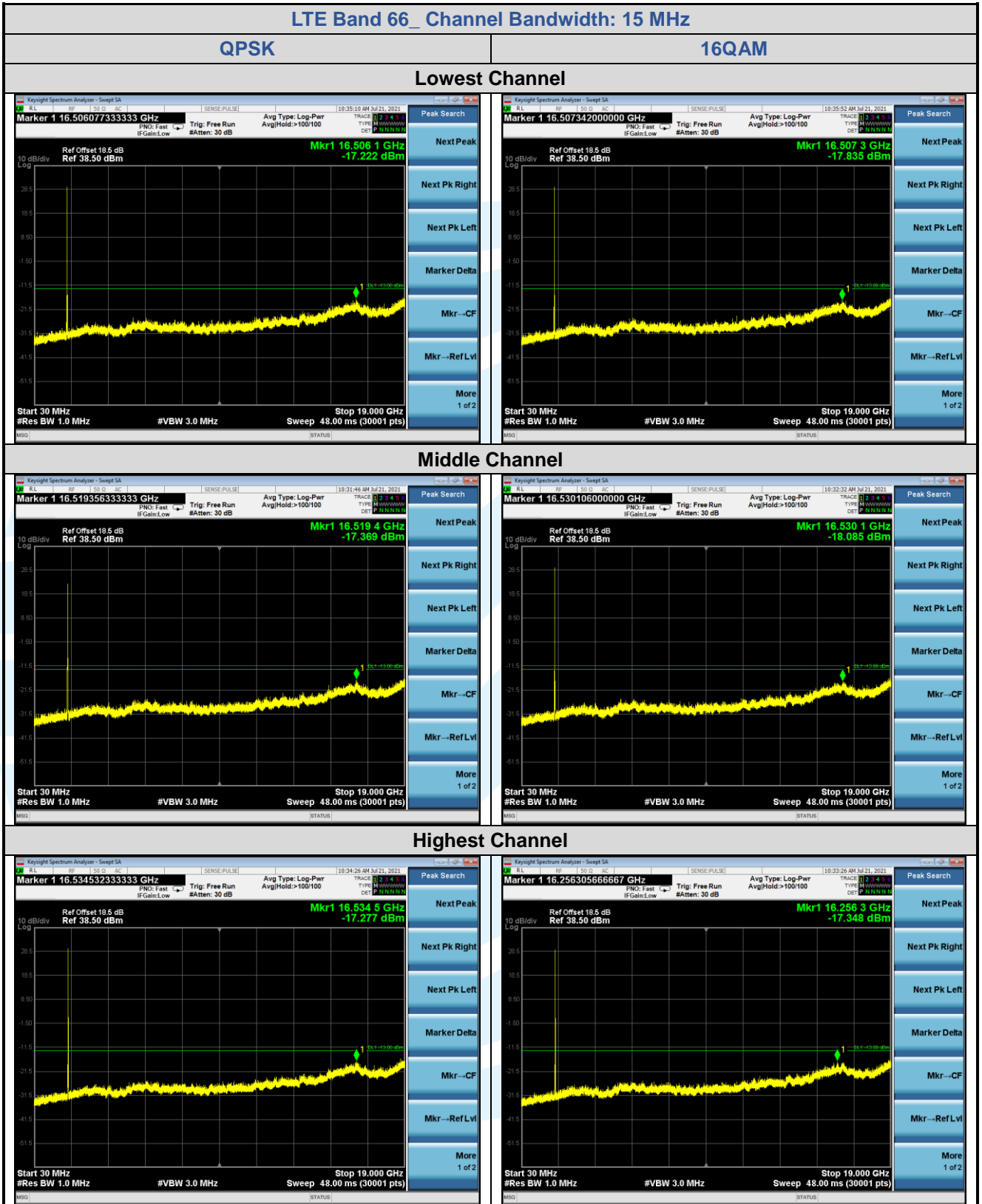
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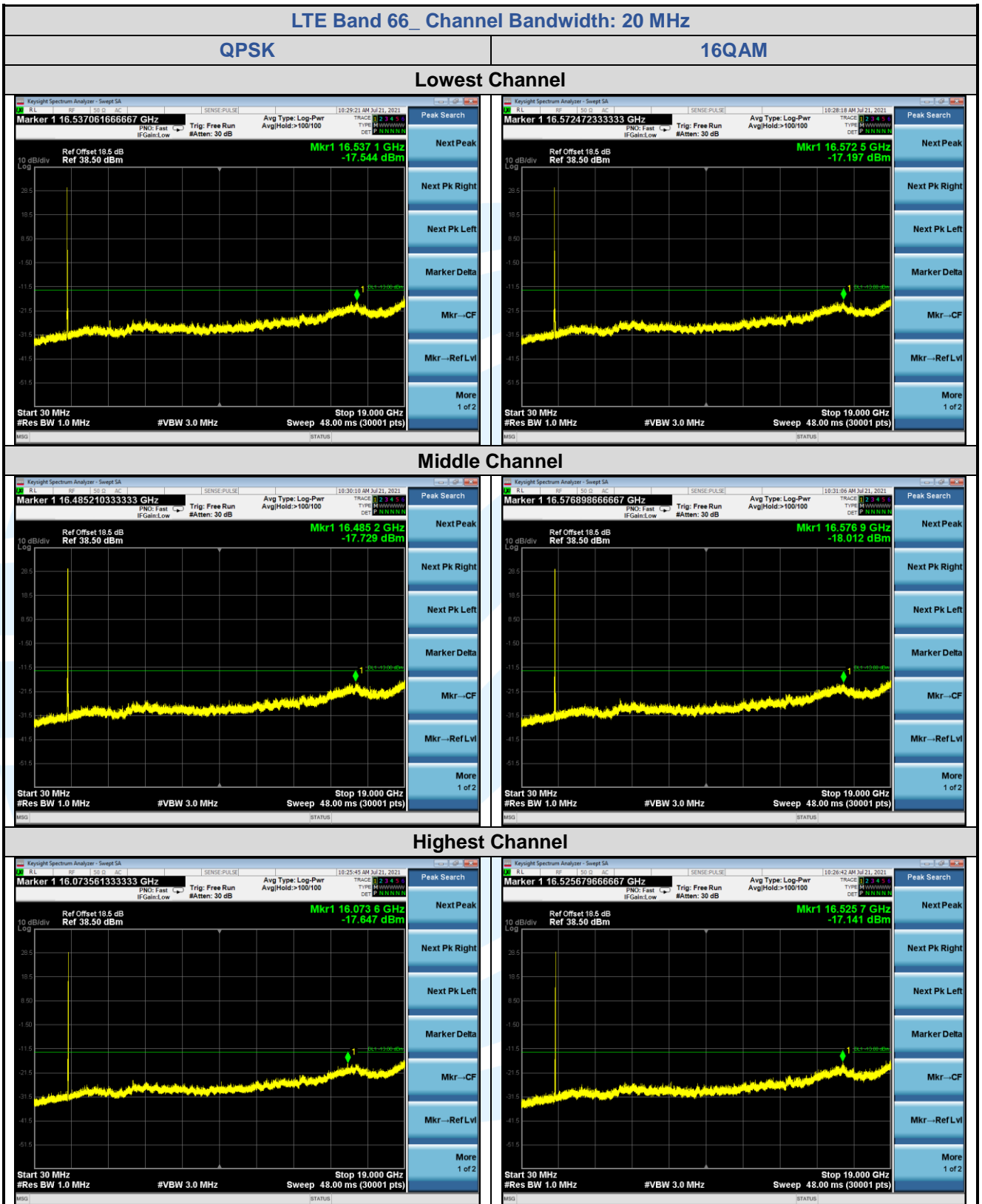
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Remark:

- 1) All the above radiation data, the fundamental frequency is not marked, it may exceed the limit, please ignore it.

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5.8 FIELD STRENGTH OF SPURIOUS RADIATION

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)
 LTE Band 5: FCC 47 CFR Part 22.917(a)
 LTE Band 7: FCC 47 CFR Part 27.53(m)(4)
 LTE Band 12 & Band 17: FCC 47 CFR Part 27.53(g)

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

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
0.009 MHz-30 MHz	Peak	10 kHz	30 KHz	Peak
30 MHz-1 GHz	Quasi-peak	100 kHz	300 KHz	Peak
Above 1 GHz	Peak	1 MHz	3 MHz	Peak

Limits:

FCC 47 CFR Part 24.238(a), 27.53(h)(1), 22.917(a), 27.53(g), 27.53(c)(2):

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(m)(4):

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 $55 + 10 \log(P)$ dB. The emission limit equal to -25 dBm.

Test Setup: Refer to section 4.2.1 for details.

Test Procedures: KDB 971168 D01v03r01 Section 7

Equipment Used: Refer to section 3 for details.

Test Result: Pass

The measurement data as follows:

5.8.1 LTE Band 2

LTE Band 2_ 20 MHz_ QPSK_ Below 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
Lowest Channel							
1	30.855	-90.58	33.79	-56.79	-13.00	-43.79	Horizontal
2	538.811	-88.70	36.75	-51.95	-13.00	-38.95	Horizontal
3	932.141	-86.10	42.65	-43.45	-13.00	-30.45	Horizontal
1	34.770	-89.53	33.32	-56.21	-13.00	-43.21	Vertical
2	346.074	-88.15	32.50	-55.65	-13.00	-42.65	Vertical
3	952.000	-86.85	42.55	-44.30	-13.00	-31.30	Vertical
Middle Channel							
1	33.335	-91.57	33.67	-57.90	-13.00	-44.90	Horizontal
2	607.181	-89.12	38.31	-50.81	-13.00	-37.81	Horizontal
3	932.141	-87.44	42.65	-44.79	-13.00	-31.79	Horizontal
1	34.045	-89.54	33.60	-55.94	-13.00	-42.94	Vertical
2	665.261	-87.87	39.71	-48.16	-13.00	-35.16	Vertical
3	932.141	-87.17	42.65	-44.52	-13.00	-31.52	Vertical
Highest Channel							
1	33.570	-91.75	33.64	-58.11	-13.00	-45.11	Horizontal
2	615.774	-88.81	38.56	-50.25	-13.00	-37.25	Horizontal
3	952.000	-86.47	42.55	-43.92	-13.00	-30.92	Horizontal
1	34.527	-88.30	33.42	-54.88	-13.00	-41.88	Vertical
2	343.651	-89.31	32.40	-56.91	-13.00	-43.91	Vertical
3	952.000	-86.48	42.55	-43.93	-13.00	-30.93	Vertical

LTE Band 2_ 20 MHz_ QPSK_ Above 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
Lowest Channel							
1	3720.000	-52.24	7.65	-44.59	-13.00	-31.59	Horizontal
2	5580.000	-66.36	11.70	-54.66	-13.00	-41.66	Horizontal
1	3720.000	-50.50	7.65	-42.85	-13.00	-29.85	Vertical
2	5580.000	-67.09	11.70	-55.39	-13.00	-42.39	Vertical
Middle Channel							
1	3760.000	-53.80	7.79	-46.01	-13.00	-33.01	Horizontal
2	5640.000	-62.36	11.56	-50.80	-13.00	-37.80	Horizontal
1	3760.000	-49.91	7.79	-42.12	-13.00	-29.12	Vertical
2	5640.000	-64.78	11.56	-53.22	-13.00	-40.22	Vertical
Highest Channel							
1	3800.000	-52.99	7.93	-45.06	-13.00	-32.06	Horizontal
2	5700.000	-66.69	11.43	-55.26	-13.00	-42.26	Horizontal
1	3800.000	-52.79	7.93	-44.86	-13.00	-31.86	Vertical
2	5700.000	-66.83	11.43	-55.40	-13.00	-42.40	Vertical

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5.8.2 LTE Band 4

LTE Band 4_ 20 MHz_ QPSK_ Below 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
Lowest Channel							
1	35.016	-91.90	33.23	-58.67	-13.00	-45.67	Horizontal
2	266.839	-89.19	29.74	-59.45	-13.00	-46.45	Horizontal
3	972.283	-86.83	42.83	-44.00	-13.00	-31.00	Horizontal
1	34.527	-88.50	33.42	-55.08	-13.00	-42.08	Vertical
2	734.037	-88.41	40.69	-47.72	-13.00	-34.72	Vertical
3	938.714	-87.38	42.67	-44.71	-13.00	-31.71	Vertical
Middle Channel							
1	32.411	-90.76	33.55	-57.21	-13.00	-44.21	Horizontal
2	787.475	-87.68	40.98	-46.70	-13.00	-33.70	Horizontal
3	945.334	-86.75	42.56	-44.19	-13.00	-31.19	Horizontal
1	35.016	-90.10	33.23	-56.87	-13.00	-43.87	Vertical
2	491.770	-88.80	35.61	-53.19	-13.00	-40.19	Vertical
3	945.334	-87.88	42.56	-45.32	-13.00	-32.32	Vertical
Highest Channel							
1	31.292	-90.62	33.65	-56.97	-13.00	-43.97	Horizontal
2	546.437	-88.84	36.95	-51.89	-13.00	-38.89	Horizontal
3	1000.000	-87.05	43.50	-43.55	-13.00	-30.55	Horizontal
1	34.527	-89.28	33.42	-55.86	-13.00	-42.86	Vertical
2	516.565	-89.34	36.35	-52.99	-13.00	-39.99	Vertical
3	952.000	-86.89	42.55	-44.34	-13.00	-31.34	Vertical

LTE Band 4_ 20 MHz_ QPSK_ Above 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
Lowest Channel							
1	3440.000	-61.60	6.53	-55.07	-13.00	-42.07	Horizontal
2	5160.000	-65.18	10.10	-55.08	-13.00	-42.08	Horizontal
1	3440.000	-58.24	6.53	-51.71	-13.00	-38.71	Vertical
2	5160.000	-65.71	10.10	-55.61	-13.00	-42.61	Vertical
Middle Channel							
1	3465.000	-63.70	6.62	-57.08	-13.00	-44.08	Horizontal
2	5197.500	-66.34	10.25	-56.09	-13.00	-43.09	Horizontal
1	3465.000	-62.96	6.62	-56.34	-13.00	-43.34	Vertical
2	5197.500	-65.86	10.25	-55.61	-13.00	-42.61	Vertical
Highest Channel							
1	3490.000	-63.09	6.71	-56.38	-13.00	-43.38	Horizontal
2	5235.000	-65.15	10.44	-54.71	-13.00	-41.71	Horizontal
1	3490.000	-61.02	6.71	-54.31	-13.00	-41.31	Vertical
2	5235.000	-64.45	10.44	-54.01	-13.00	-41.01	Vertical

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5.8.3 LTE Band 5

LTE Band 5_ 10 MHz_ QPSK_ Below 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
Lowest Channel							
1	35.016	-91.00	33.23	-57.77	-13.00	-44.77	Horizontal
2	689.051	-87.22	40.05	-47.17	-13.00	-34.17	Horizontal
3	868.886	-76.44	42.08	-34.36	-13.00	-21.36	Horizontal
1	34.527	-88.62	33.42	-55.20	-13.00	-42.20	Vertical
2	343.651	-87.83	32.40	-55.43	-13.00	-42.43	Vertical
3	887.398	-79.02	42.59	-36.43	-13.00	-23.43	Vertical
Middle Channel							
1	33.335	-90.81	33.67	-57.14	-13.00	-44.14	Horizontal
2	542.610	-87.55	36.84	-50.71	-13.00	-37.71	Horizontal
3	893.656	-77.82	42.73	-35.09	-13.00	-22.09	Horizontal
1	33.807	-89.59	33.63	-55.96	-13.00	-42.96	Vertical
2	723.793	-88.30	40.56	-47.74	-13.00	-34.74	Vertical
3	893.656	-80.32	42.73	-37.59	-13.00	-24.59	Vertical
Highest Channel							
1	34.045	-91.13	33.60	-57.53	-13.00	-44.53	Horizontal
2	713.692	-88.34	40.41	-47.93	-13.00	-34.93	Horizontal
3	899.958	-76.44	42.67	-33.77	-13.00	-20.77	Horizontal
1	34.527	-89.40	33.42	-55.98	-13.00	-42.98	Vertical
2	409.651	-88.76	33.81	-54.95	-13.00	-41.95	Vertical
3	893.656	-78.25	42.73	-35.52	-13.00	-22.52	Vertical

LTE Band 5_ 10 MHz_ QPSK_ Above 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
Lowest Channel							
1	1658.000	-63.62	0.27	-63.35	-13.00	-50.35	Horizontal
2	2487.000	-64.27	3.64	-60.63	-13.00	-47.63	Horizontal
1	1658.000	-63.75	0.27	-63.48	-13.00	-50.48	Vertical
2	2487.000	-65.73	3.64	-62.09	-13.00	-49.09	Vertical
Middle Channel							
1	1673.000	-63.57	0.36	-63.21	-13.00	-50.21	Horizontal
2	2509.500	-64.68	3.71	-60.97	-13.00	-47.97	Horizontal
1	1673.000	-63.37	0.36	-63.01	-13.00	-50.01	Vertical
2	2509.500	-65.94	3.71	-62.23	-13.00	-49.23	Vertical
Highest Channel							
1	1688.000	-63.15	0.46	-62.69	-13.00	-49.69	Horizontal
2	2532.000	-66.00	3.76	-62.24	-13.00	-49.24	Horizontal
1	1688.000	-63.01	0.46	-62.55	-13.00	-49.55	Vertical
2	2532.000	-66.49	3.76	-62.73	-13.00	-49.73	Vertical

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5.8.4 LTE Band 7

LTE Band 7_ 20 MHz_ QPSK_ Below 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
Lowest Channel							
1	30.855	-91.91	33.79	-58.12	-25.00	-33.12	Horizontal
2	334.126	-90.06	32.08	-57.98	-25.00	-32.98	Horizontal
3	925.613	-87.38	42.58	-44.80	-25.00	-19.80	Horizontal
1	34.527	-88.41	33.42	-54.99	-25.00	-29.99	Vertical
2	611.462	-88.72	38.43	-50.29	-25.00	-25.29	Vertical
3	932.141	-87.03	42.65	-44.38	-25.00	-19.38	Vertical
Middle Channel							
1	30.000	-92.03	34.11	-57.92	-25.00	-32.92	Horizontal
2	728.897	-87.55	40.54	-47.01	-25.00	-22.01	Horizontal
3	912.695	-87.52	42.81	-44.71	-25.00	-19.71	Horizontal
1	34.770	-90.43	33.32	-57.11	-25.00	-32.11	Vertical
2	620.117	-87.94	38.48	-49.46	-25.00	-24.46	Vertical
3	945.334	-87.65	42.56	-45.09	-25.00	-20.09	Vertical
Highest Channel							
1	34.527	-91.72	33.42	-58.30	-25.00	-33.30	Horizontal
2	198.642	-88.38	27.24	-61.14	-25.00	-36.14	Horizontal
3	945.334	-88.06	42.56	-45.50	-25.00	-20.50	Horizontal
1	34.770	-89.59	33.32	-56.27	-25.00	-31.27	Vertical
2	703.731	-88.76	40.30	-48.46	-25.00	-23.46	Vertical
3	932.141	-87.24	42.65	-44.59	-25.00	-19.59	Vertical

LTE Band 7_ 20 MHz_ QPSK_ Above 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
Lowest Channel							
1	5020.000	-64.58	9.58	-55.00	-25.00	-30.00	Horizontal
2	7530.000	-65.14	13.67	-51.47	-25.00	-26.47	Horizontal
1	5020.000	-65.23	9.58	-55.65	-25.00	-30.65	Vertical
2	7530.000	-65.51	13.67	-51.84	-25.00	-26.84	Vertical
Middle Channel							
1	5070.000	-64.59	9.77	-54.82	-25.00	-29.82	Horizontal
2	7605.000	-66.61	13.78	-52.83	-25.00	-27.83	Horizontal
1	5070.000	-64.23	9.77	-54.46	-25.00	-29.46	Vertical
2	7605.000	-67.31	13.78	-53.53	-25.00	-28.53	Vertical
Highest Channel							
1	5120.000	-64.12	9.95	-54.17	-25.00	-29.17	Horizontal
2	7680.000	-67.46	13.86	-53.60	-25.00	-28.60	Horizontal
1	5120.000	-63.29	9.95	-53.34	-25.00	-28.34	Vertical
2	7680.000	-67.06	13.86	-53.20	-25.00	-28.20	Vertical

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No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
Lowest Channel							
1	33.101	-91.38	33.68	-57.70	-13.00	-44.70	Horizontal
2	611.462	-88.89	38.43	-50.46	-13.00	-37.46	Horizontal
3	734.037	-74.78	40.69	-34.09	-13.00	-21.09	Horizontal
1	30.425	-88.04	33.95	-54.09	-13.00	-41.09	Vertical
2	34.527	-88.75	33.42	-55.33	-13.00	-42.33	Vertical
3	734.037	-78.28	40.69	-37.59	-13.00	-24.59	Vertical
Middle Channel							
1	31.959	-91.01	33.47	-57.54	-13.00	-44.54	Horizontal
2	538.811	-88.53	36.75	-51.78	-13.00	-38.78	Horizontal
3	734.037	-75.44	40.69	-34.75	-13.00	-21.75	Horizontal
1	35.016	-88.33	33.23	-55.10	-13.00	-42.10	Vertical
2	509.356	-88.33	36.34	-51.99	-13.00	-38.99	Vertical
3	734.037	-79.54	40.69	-38.85	-13.00	-25.85	Vertical
Highest Channel							
1	30.639	-90.26	33.87	-56.39	-13.00	-43.39	Horizontal
2	516.565	-88.66	36.35	-52.31	-13.00	-39.31	Horizontal
3	739.214	-76.59	40.82	-35.77	-13.00	-22.77	Horizontal
1	34.527	-89.01	33.42	-55.59	-13.00	-42.59	Vertical
2	637.795	-87.74	38.91	-48.83	-13.00	-35.83	Vertical
3	739.214	-80.29	40.82	-39.47	-13.00	-26.47	Vertical

LTE Band 12_ 10 MHz_ QPSK_ Above 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
Lowest Channel							
1	1408.000	-62.51	-0.88	-63.39	-13.00	-50.39	Horizontal
2	2112.000	-63.35	2.42	-60.93	-13.00	-47.93	Horizontal
1	1408.000	-63.53	-0.88	-64.41	-13.00	-51.41	Vertical
2	2112.000	-63.93	2.42	-61.51	-13.00	-48.51	Vertical
Middle Channel							
1	1415.000	-63.83	-0.85	-64.68	-13.00	-51.68	Horizontal
2	2122.500	-63.81	2.45	-61.36	-13.00	-48.36	Horizontal
1	1415.000	-63.90	-0.85	-64.75	-13.00	-51.75	Vertical
2	2122.500	-63.59	2.45	-61.14	-13.00	-48.14	Vertical
Highest Channel							
1	1422.000	-63.65	-0.83	-64.48	-13.00	-51.48	Horizontal
2	2133.000	-63.40	2.46	-60.94	-13.00	-47.94	Horizontal
1	1422.000	-62.27	-0.83	-63.10	-13.00	-50.10	Vertical
2	2133.000	-64.51	2.46	-62.05	-13.00	-49.05	Vertical

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5.8.6 LTE Band 17

LTE Band 17_ 10 MHz_ QPSK_ Below 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
Lowest Channel							
1	33.570	-90.01	33.64	-56.37	-13.00	-43.37	Horizontal
2	633.328	-88.35	38.76	-49.59	-13.00	-36.59	Horizontal
3	739.214	-80.04	40.82	-39.22	-13.00	-26.22	Horizontal
1	30.000	-90.46	34.11	-56.35	-13.00	-43.35	Vertical
2	558.079	-87.60	36.95	-50.65	-13.00	-37.65	Vertical
3	1000.000	-87.05	43.50	-43.55	-13.00	-30.55	Vertical
Middle Channel							
1	34.045	-90.77	33.60	-57.17	-13.00	-44.17	Horizontal
2	624.490	-87.28	38.57	-48.71	-13.00	-35.71	Horizontal
3	739.214	-81.06	40.82	-40.24	-13.00	-27.24	Horizontal
1	30.639	-90.12	33.87	-56.25	-13.00	-43.25	Vertical
2	602.929	-88.76	38.22	-50.54	-13.00	-37.54	Vertical
3	744.427	-82.28	40.58	-41.70	-13.00	-28.70	Vertical
Highest Channel							
1	35.016	-89.49	33.23	-56.26	-13.00	-43.26	Horizontal
2	550.290	-88.20	36.97	-51.23	-13.00	-38.23	Horizontal
3	739.214	-81.42	40.82	-40.60	-13.00	-27.60	Horizontal
1	30.212	-90.67	34.04	-56.63	-13.00	-43.63	Vertical
2	542.610	-88.66	36.84	-51.82	-13.00	-38.82	Vertical
3	958.714	-86.41	42.45	-43.96	-13.00	-30.96	Vertical

LTE Band 17_ 10 MHz_ QPSK_ Above 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
Lowest Channel							
1	1418.000	-64.08	-0.84	-64.92	-13.00	-51.92	Horizontal
2	2127.000	-63.73	2.45	-61.28	-13.00	-48.28	Horizontal
1	1418.000	-63.82	-0.84	-64.66	-13.00	-51.66	Vertical
2	2127.000	-63.12	2.45	-60.67	-13.00	-47.67	Vertical
Middle Channel							
1	1420.000	-63.44	-0.83	-64.27	-13.00	-51.27	Horizontal
2	2130.000	-64.22	2.45	-61.77	-13.00	-48.77	Horizontal
1	1420.000	-63.89	-0.83	-64.72	-13.00	-51.72	Vertical
2	2130.000	-63.73	2.45	-61.28	-13.00	-48.28	Vertical
Highest Channel							
1	1422.000	-63.73	-0.83	-64.56	-13.00	-51.56	Horizontal
2	2133.000	-64.36	2.46	-61.90	-13.00	-48.90	Horizontal
1	1422.000	-63.70	-0.83	-64.53	-13.00	-51.53	Vertical
2	2133.000	-63.23	2.46	-60.77	-13.00	-47.77	Vertical

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5.8.7 LTE Band 66

LTE Band 66_ 20 MHz_ QPSK_ Below 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
Lowest Channel							
1	30.425	-91.42	33.95	-57.47	-13.00	-44.47	Horizontal
2	334.126	-87.98	32.08	-55.90	-13.00	-42.90	Horizontal
3	986.044	-87.83	43.10	-44.73	-13.00	-31.73	Horizontal
1	31.292	-90.29	33.65	-56.64	-13.00	-43.64	Vertical
2	565.978	-88.15	37.27	-50.88	-13.00	-37.88	Vertical
3	919.132	-86.61	42.67	-43.94	-13.00	-30.94	Vertical
Middle Channel							
1	33.101	-90.45	33.68	-56.77	-13.00	-43.77	Horizontal
2	665.261	-88.36	39.71	-48.65	-13.00	-35.65	Horizontal
3	1000.000	-86.83	43.50	-43.33	-13.00	-30.33	Horizontal
1	32.184	-90.95	33.51	-57.44	-13.00	-44.44	Vertical
2	178.770	-88.17	27.99	-60.18	-13.00	-47.18	Vertical
3	979.139	-86.79	42.83	-43.96	-13.00	-30.96	Vertical
Highest Channel							
1	32.640	-91.12	33.61	-57.51	-13.00	-44.51	Horizontal
2	236.793	-88.82	27.95	-60.87	-13.00	-47.87	Horizontal
3	893.656	-87.36	42.73	-44.63	-13.00	-31.63	Horizontal
1	33.570	-90.48	33.64	-56.84	-13.00	-43.84	Vertical
2	739.214	-88.56	40.82	-47.74	-13.00	-34.74	Vertical
3	932.141	-86.97	42.65	-44.32	-13.00	-31.32	Vertical

LTE Band 66_ 20 MHz_ QPSK_ Above 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
Lowest Channel							
1	3440.000	-49.83	6.53	-43.30	-13.00	-30.30	Horizontal
2	5160.000	-62.59	10.10	-52.49	-13.00	-39.49	Horizontal
1	3440.000	-52.38	6.53	-45.85	-13.00	-32.85	Vertical
2	5160.000	-60.17	10.10	-50.07	-13.00	-37.07	Vertical
Middle Channel							
1	3490.000	-51.02	6.71	-44.31	-13.00	-31.31	Horizontal
2	5235.000	-64.00	10.44	-53.56	-13.00	-40.56	Horizontal
1	3490.000	-52.69	6.71	-45.98	-13.00	-32.98	Vertical
2	5235.000	-62.70	10.44	-52.26	-13.00	-39.26	Vertical
Highest Channel							
1	3540.000	-58.70	6.91	-51.79	-13.00	-38.79	Horizontal
2	5310.000	-66.44	10.85	-55.59	-13.00	-42.59	Horizontal
1	3540.000	-61.89	6.91	-54.98	-13.00	-41.98	Vertical
2	5310.000	-63.10	10.85	-52.25	-13.00	-39.25	Vertical

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Remark:

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result - Limit



5.9 FREQUENCY STABILITY

Test Requirement: FCC 47 CFR Part 2.1055 &
 FCC 47 CFR Part 22.355 &
 FCC 47 CFR Part 24.235 &
 FCC 47 CFR Part 27.54,

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

Limits:

FCC 47 CFR Part 22.355, FCC 47 CFR Par 90.213

The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations.

FCC 47 CFR Part 24.235, FCC 47 CFR Part 27.54

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Setup: Refer to section 4.2.2 for details.

Test Procedures:

- 1) Use CMW 500 or CMU 200 with Frequency Error measurement capability.
 - a) Temp. = -30° to $+50^{\circ}\text{C}$
 - b) Voltage = low voltage, 3.6 Vdc, Normal, 3.85 Vdc and High voltage, 4.35 Vdc.

2) Frequency Stability vs Temperature:

The EUT is place inside a temperature chamber. The temperature is set to 20°C and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until $+50^{\circ}\text{C}$ is reached.

3) Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case).

Equipment Used: Refer to section 3 for details.

Test Result: Pass

5.9.1 LTE Band 2

Modulation	Channel/ Frequency (MHz)	Voltage (Vdc)	Temperatur e ($^{\circ}\text{C}$)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Pass/ Fail
LTE Band 2 / 20MHz / Full RB							
QPSK	18900 / 1880.0	VL	TN	26	0.0138	N/A	Pass
		VN		33	0.0176		Pass
		VH		32	0.0170		Pass
		VN	50	26	0.0138		Pass
			40	31	0.0165		Pass
			30	36	0.0191		Pass
			20	28	0.0149		Pass
			10	26	0.0138		Pass
			0	31	0.0165		Pass
			-10	28	0.0149		Pass
			-20	33	0.0176		Pass
			-30	27	0.0144		Pass

5.9.2 LTE Band 4

Modulation	Channel/ Frequency (MHz)	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Pass/ Fail
LTE Band 4 / 20MHz / Full RB							
QPSK	20175 / 1732.5	VL	TN	29	0.0167	N/A	Pass
		VN		27	0.0156		Pass
		VH		33	0.0190		Pass
		VN	50	32	0.0185		Pass
			40	28	0.0162		Pass
			30	27	0.0156		Pass
			20	26	0.0150		Pass
			10	33	0.0190		Pass
			0	33	0.0190		Pass
			-10	25	0.0144		Pass
			-20	28	0.0162		Pass
			-30	32	0.0185		Pass

5.9.3 LTE Band 5

Modulation	Channel/ Frequency (MHz)	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
LTE Band 5 / 10MHz / Full RB							
QPSK	20525 / 836.5	VL	TN	26	0.0311	± 2.5	Pass
		VN		18	0.0215	± 2.5	Pass
		VH		26	0.0311	± 2.5	Pass
		VN	50	24	0.0287	± 2.5	Pass
			40	26	0.0311	± 2.5	Pass
			30	21	0.0251	± 2.5	Pass
			20	26	0.0311	± 2.5	Pass
			10	24	0.0287	± 2.5	Pass
			0	22	0.0263	± 2.5	Pass
			-10	25	0.0299	± 2.5	Pass
			-20	26	0.0311	± 2.5	Pass
			-30	27	0.0323	± 2.5	Pass

5.9.4 LTE Band 7

Modulation	Channel/ Frequency (MHz)	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
LTE Band 7 / 20MHz / Full RB							
QPSK	21100 / 2535	VL	TN	25	0.0099	N/A	Pass
		VN		32	0.0126		Pass
		VH		28	0.0110		Pass
		VN	50	31	0.0122		Pass
			40	32	0.0126		Pass
			30	28	0.0110		Pass
			20	33	0.0130		Pass
			10	28	0.0110		Pass
			0	32	0.0126		Pass
			-10	28	0.0110		Pass
			-20	27	0.0107		Pass
			-30	30	0.0118		Pass

5.9.5 LTE Band 12

Modulation	Channel/ Frequency (MHz)	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
LTE Band 12 / 10MHz / Full RB							
QPSK	23095 / 707.5	VL	TN	-35	-0.0495	N/A	Pass
		VN		-22	-0.0311		Pass
		VH		-29	-0.0410		Pass
		VN	50	-31	-0.0438		Pass
			40	-30	-0.0424		Pass
			30	-21	-0.0297		Pass
			20	-32	-0.0452		Pass
			10	-22	-0.0311		Pass
			0	-29	-0.0410		Pass
			-10	-31	-0.0438		Pass
			-20	-27	-0.0382		Pass
			-30	-24	-0.0339		Pass

5.9.6 LTE Band 17

Modulation	Channel/ Frequency (MHz)	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
LTE Band 17 / 10MHz / Full RB							
QPSK	23790 / 710	VL	TN	33	0.0422	N/A	Pass
		VN		32	0.0409		Pass
		VH		27	0.0345		Pass
		VN	50	26	0.0332		Pass
			40	26	0.0332		Pass
			30	32	0.0409		Pass
			20	27	0.0345		Pass
			10	31	0.0396		Pass
			0	24	0.0307		Pass
			-10	32	0.0409		Pass
			-20	21	0.0269		Pass
			-30	28	0.0358		Pass

5.9.7 LTE Band 66

Modulation	Channel/ Frequency (MHz)	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
LTE Band 66 / 20MHz / Full RB							
QPSK	132322 / 1745	VL	TN	-31	-0.0178	N/A	Pass
		VN		-25	-0.0143		Pass
		VH		-22	-0.0126		Pass
		VN	50	-31	-0.0178		Pass
			40	-25	-0.0143		Pass
			30	-28	-0.0160		Pass
			20	-27	-0.0155		Pass
			10	-31	-0.0178		Pass
			0	-23	-0.0132		Pass
			-10	-32	-0.0183		Pass
			-20	-28	-0.0160		Pass
			-30	-28	-0.0160		Pass

APPENDIX 1 PHOTOS OF TEST SETUP

See test photos attached in Appendix 1 for the actual connections between Product and support equipment.

APPENDIX 2 PHOTOS OF EUT CONSTRUCTIONAL DETAILS

Refer to Appendix 2 for EUT external and internal photos.

*** End of Report ***

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