

**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

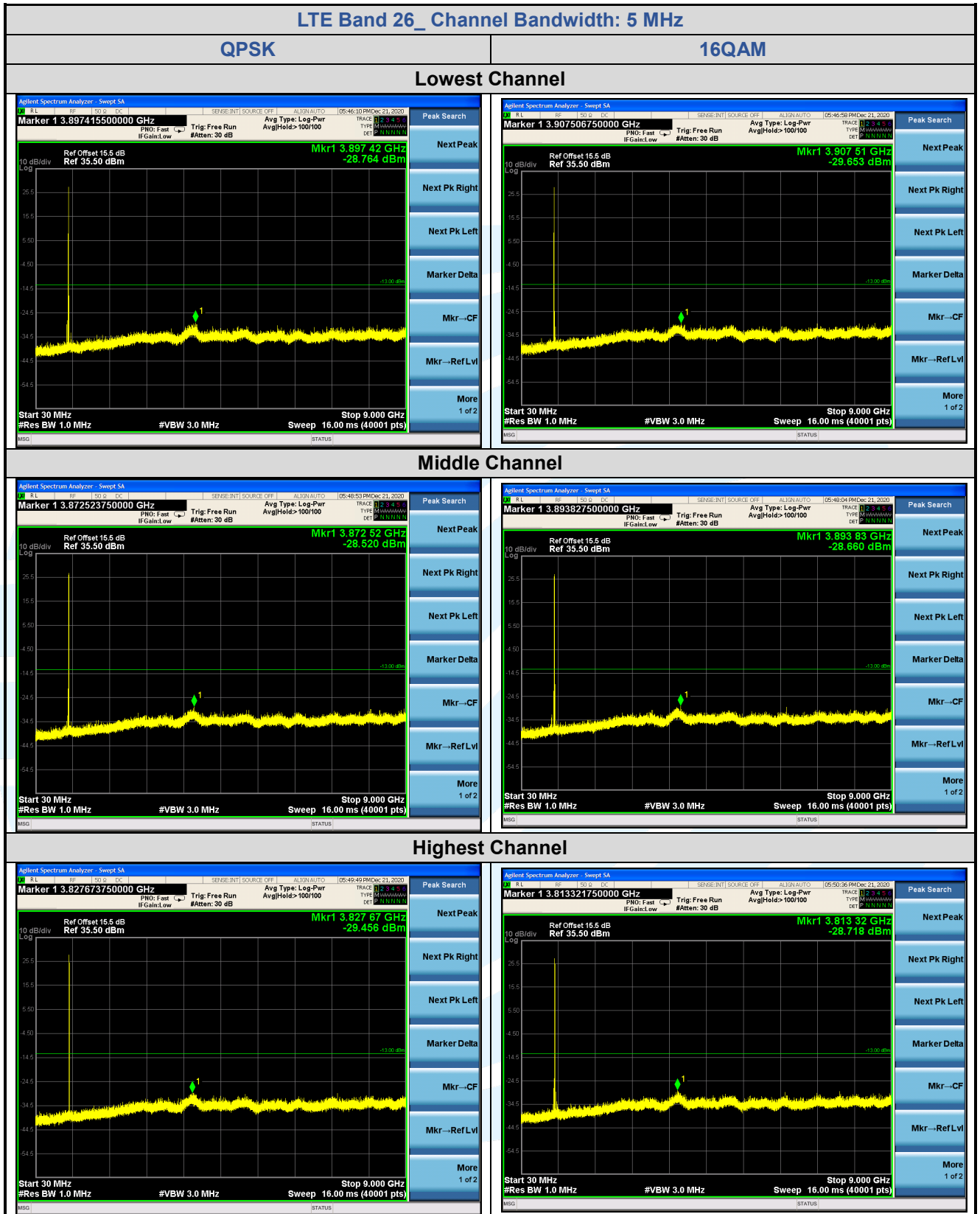
Tel: +86-755-28230888

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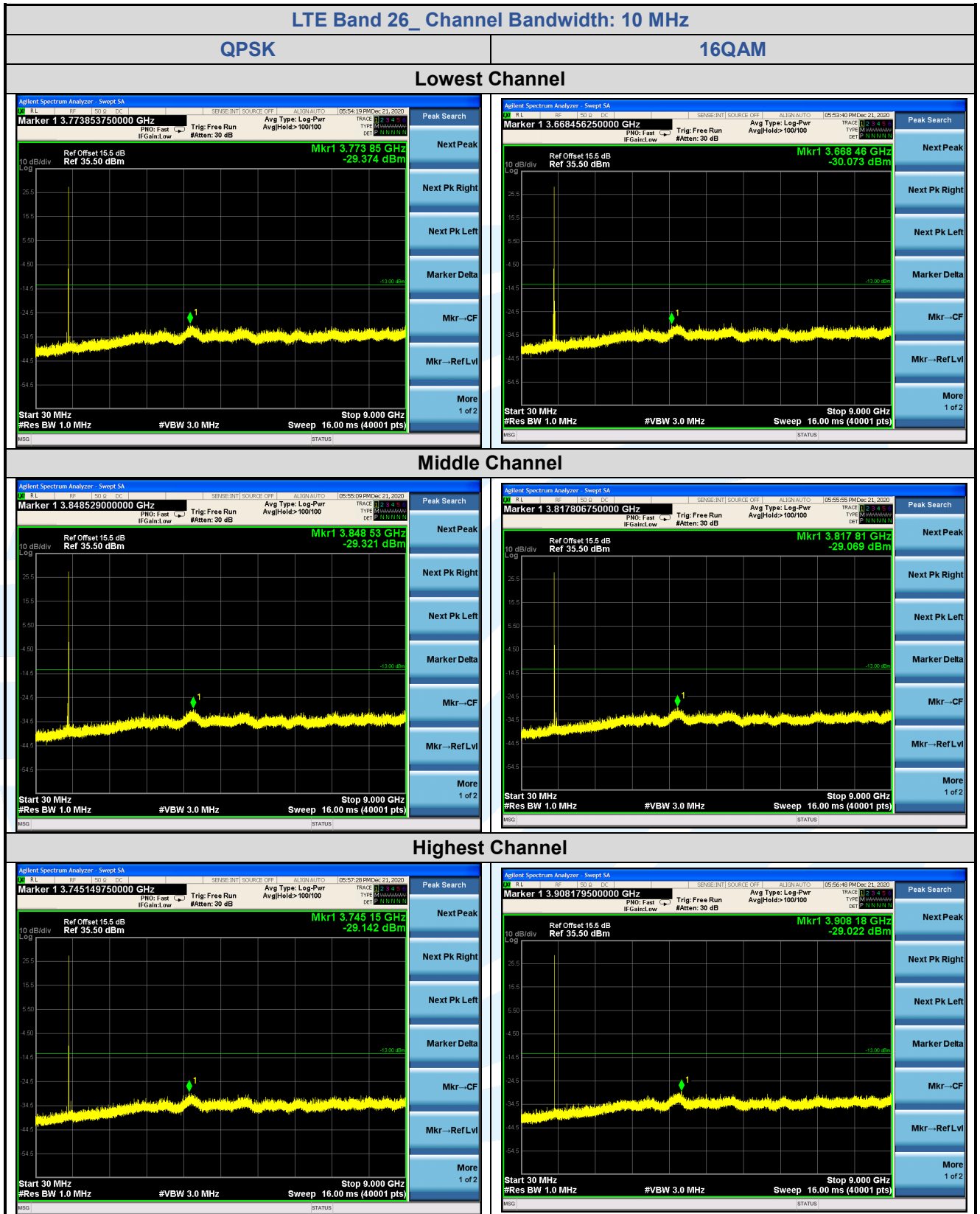
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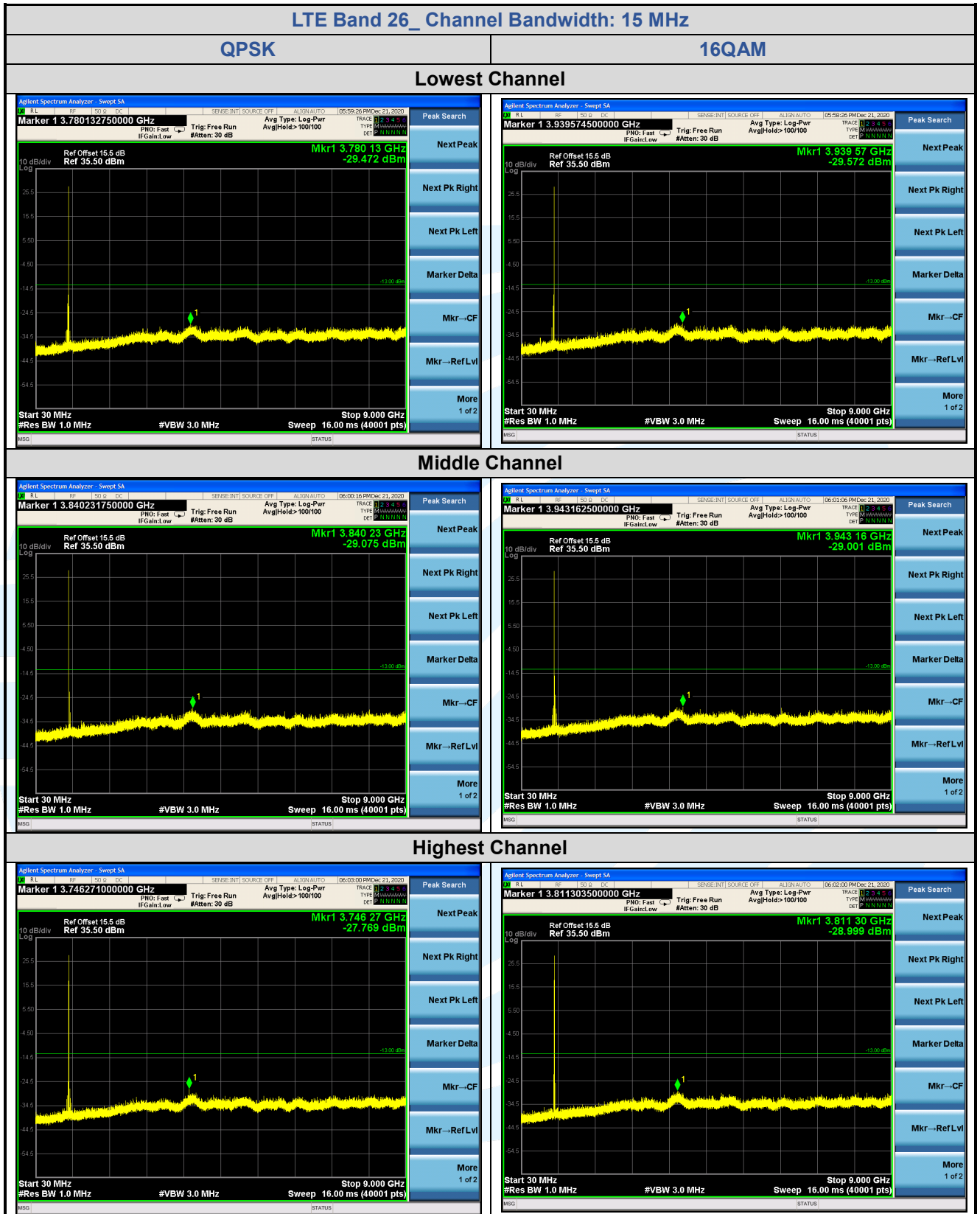
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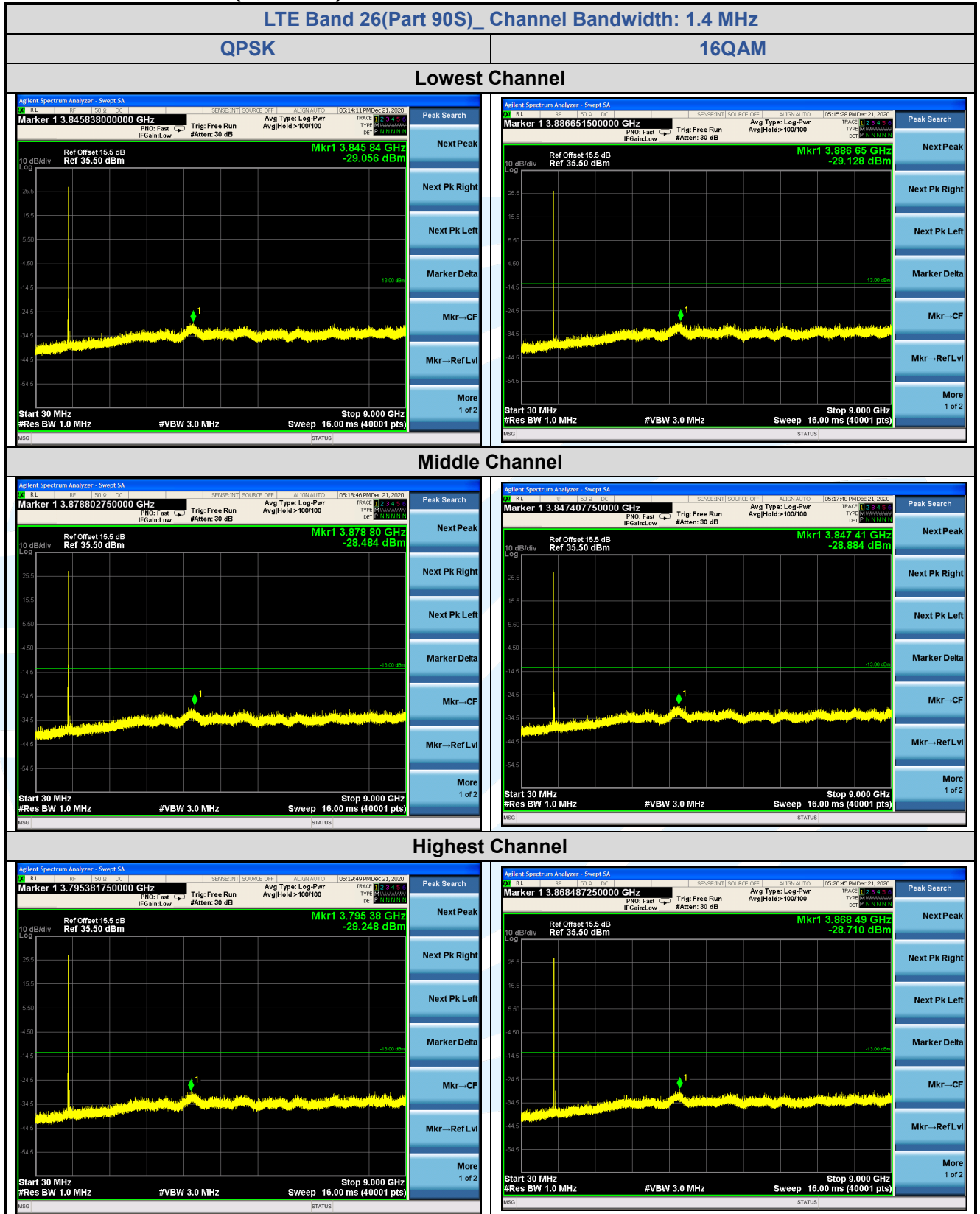
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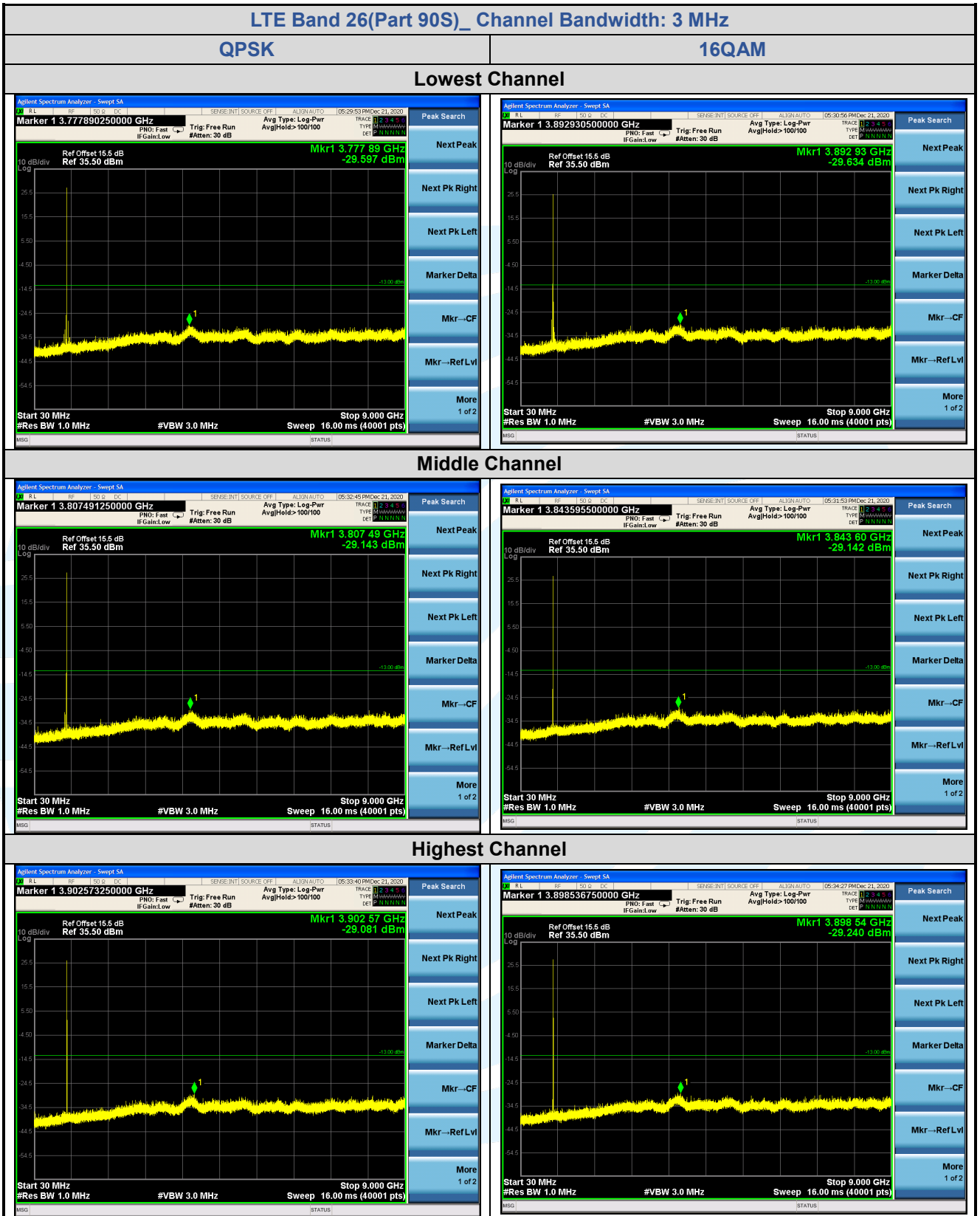
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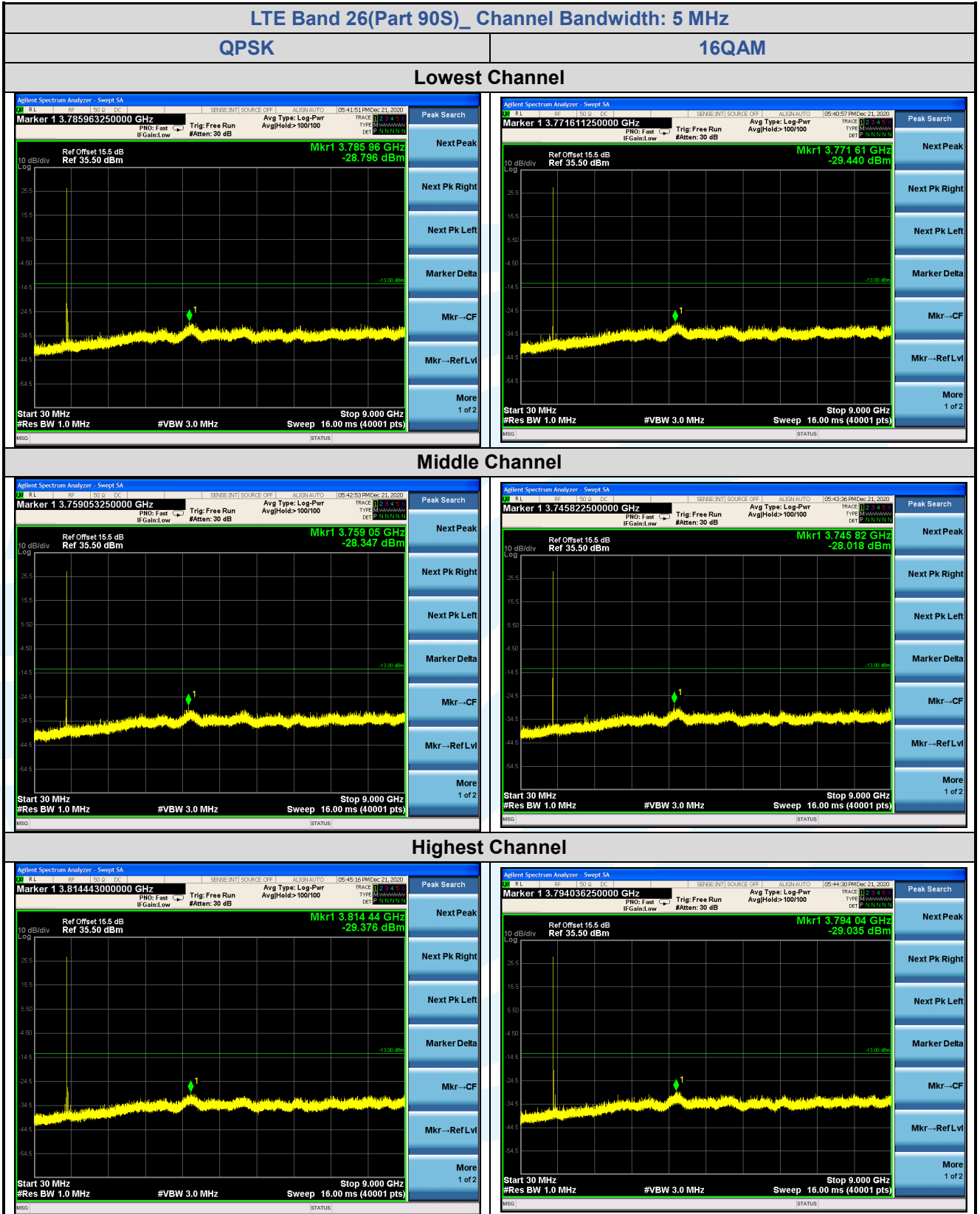
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5.7.8 LTE Band 26 (Part 90S)







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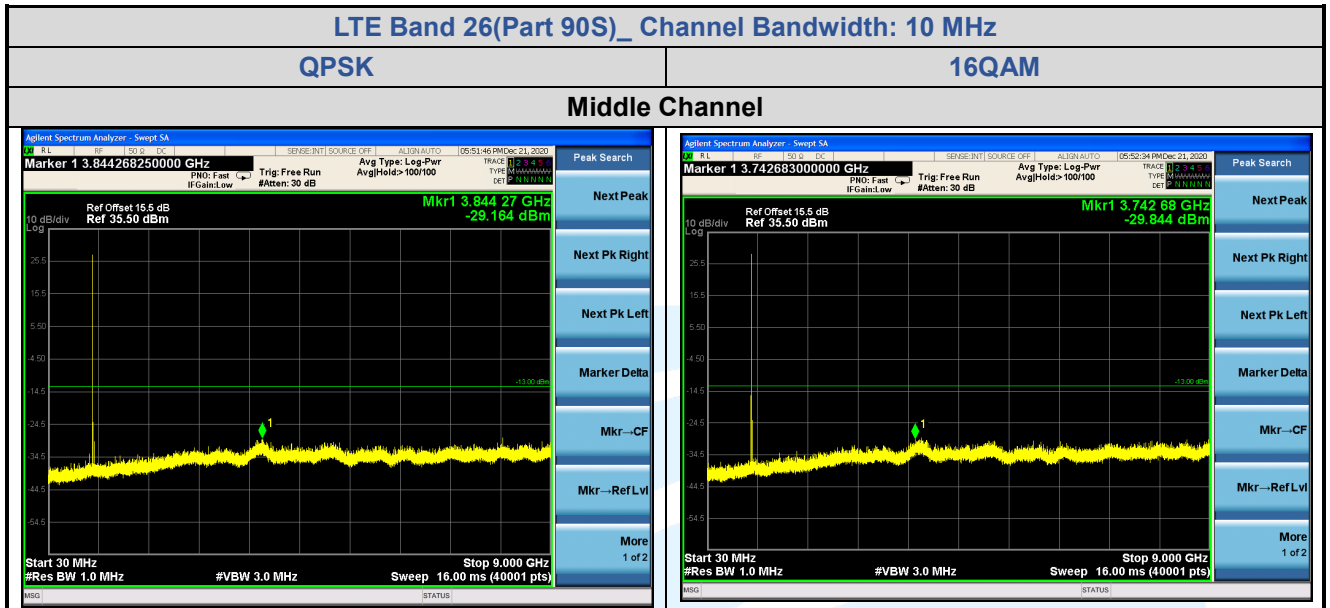
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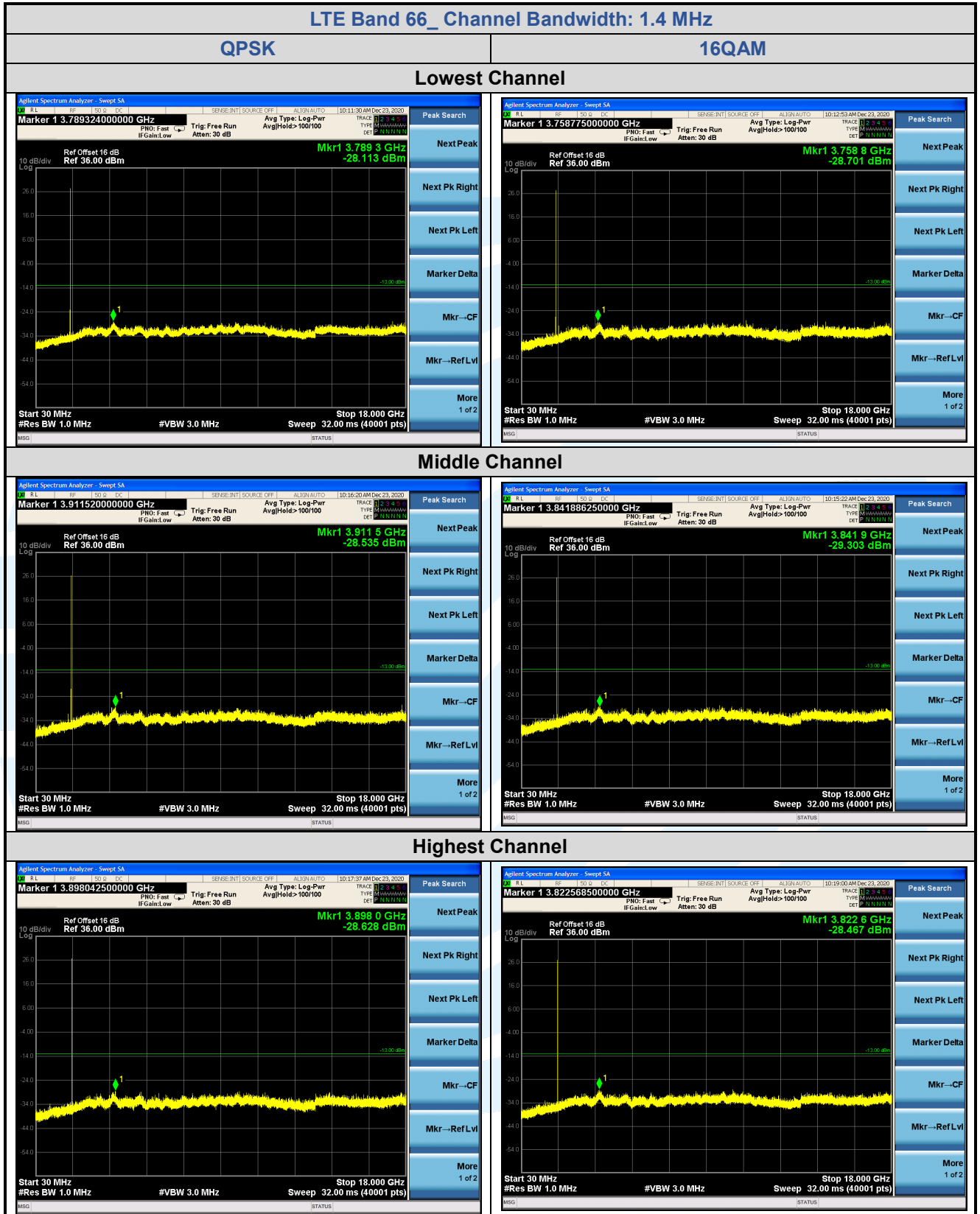
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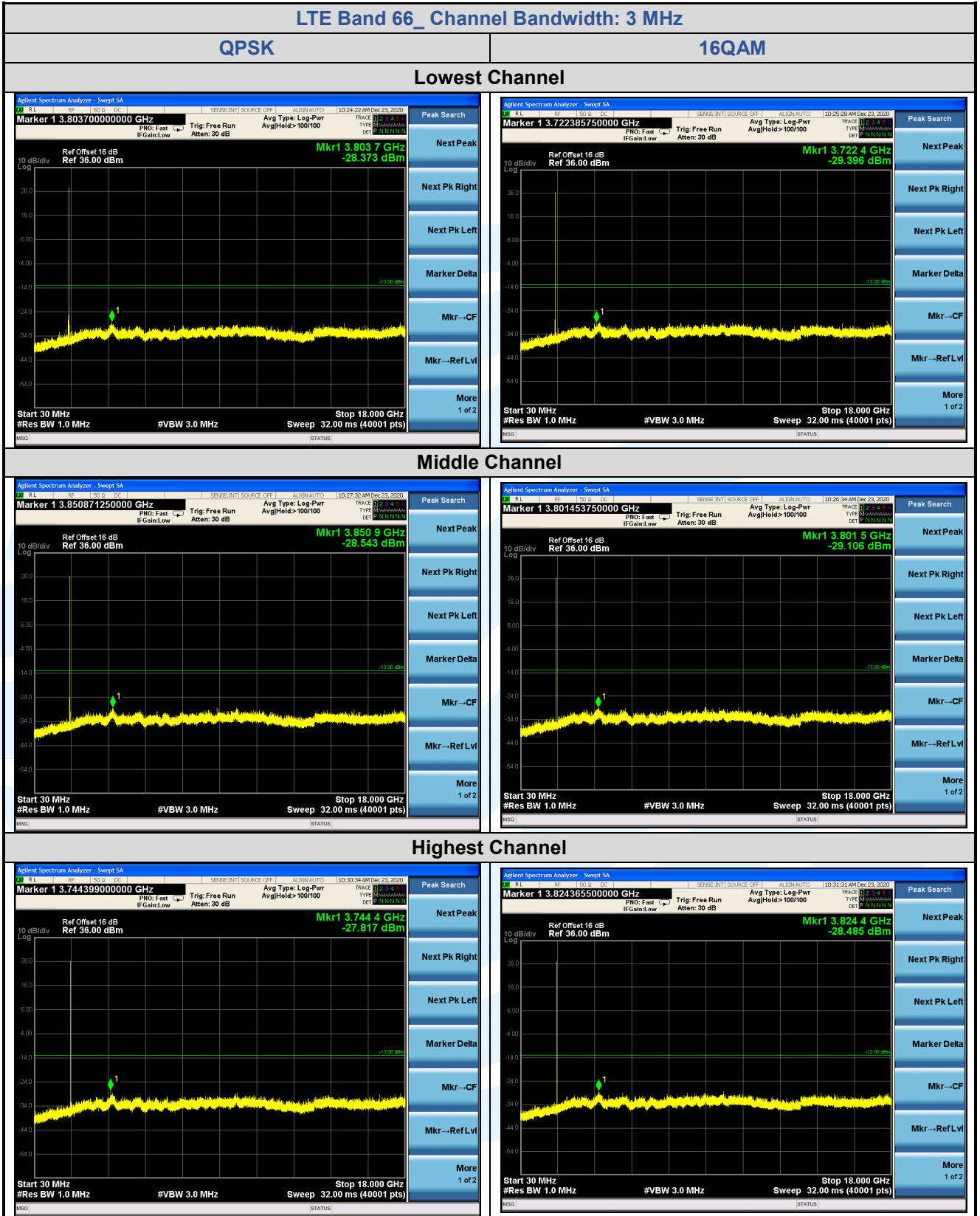
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## 5.7.9 LTE Band 66





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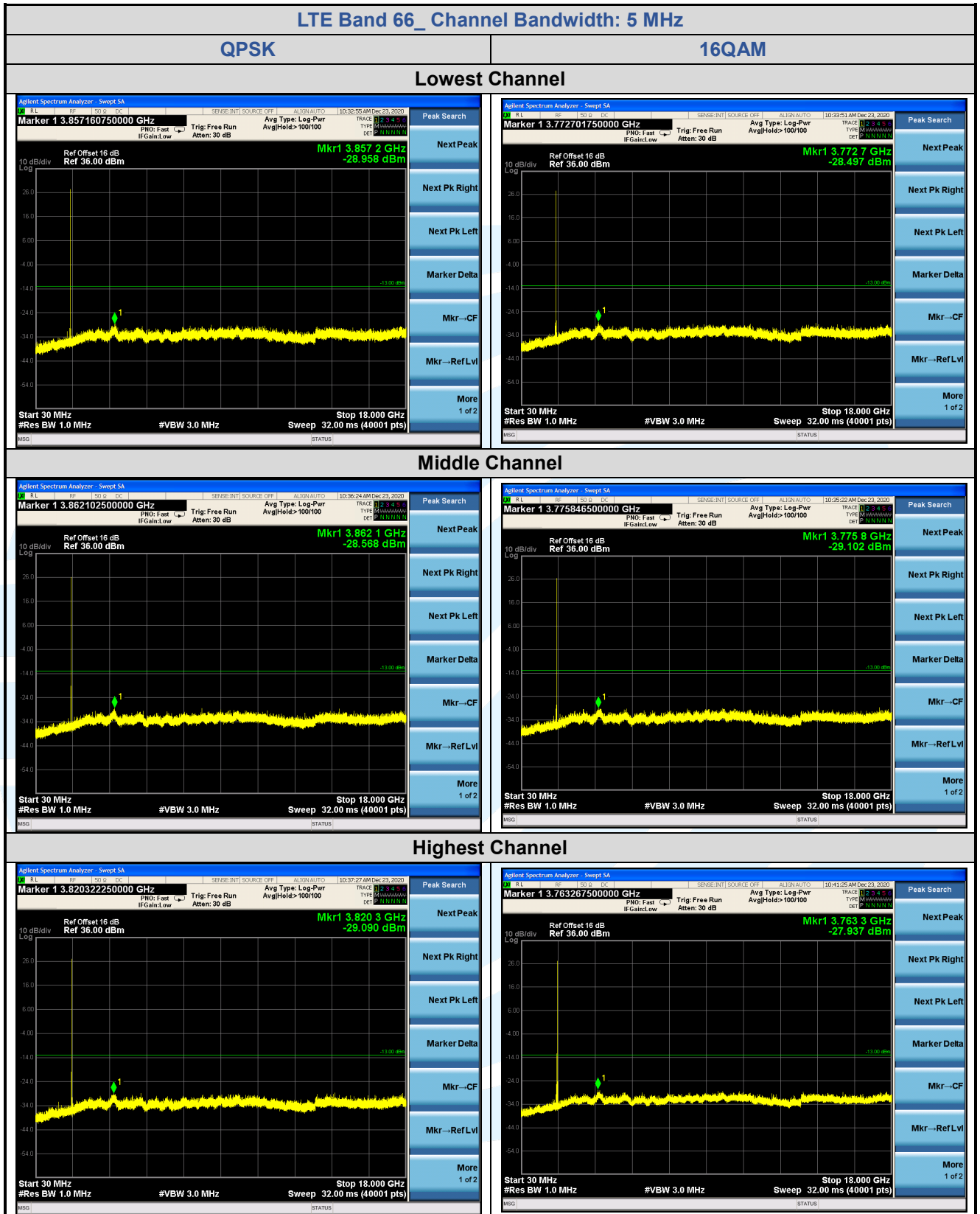
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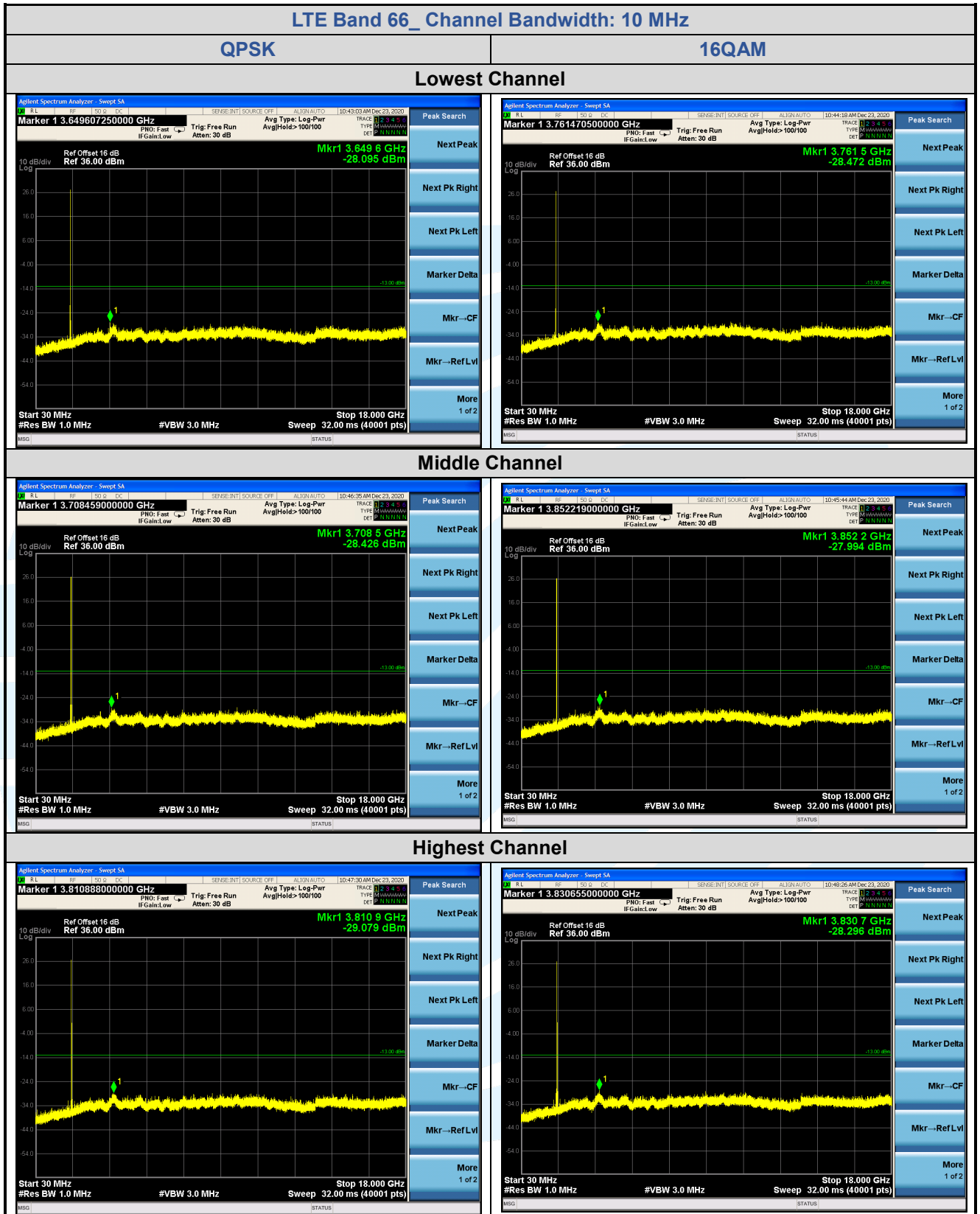
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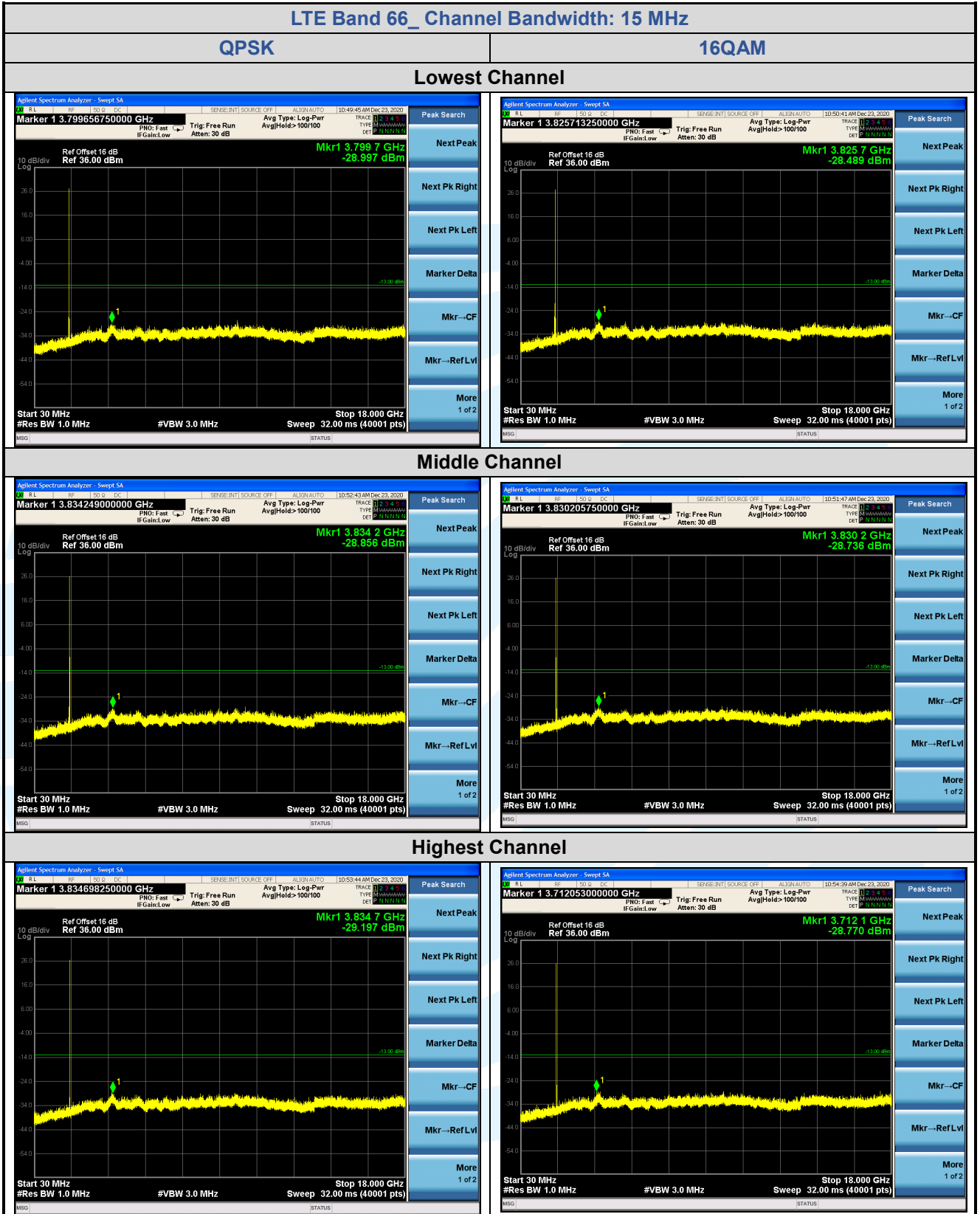
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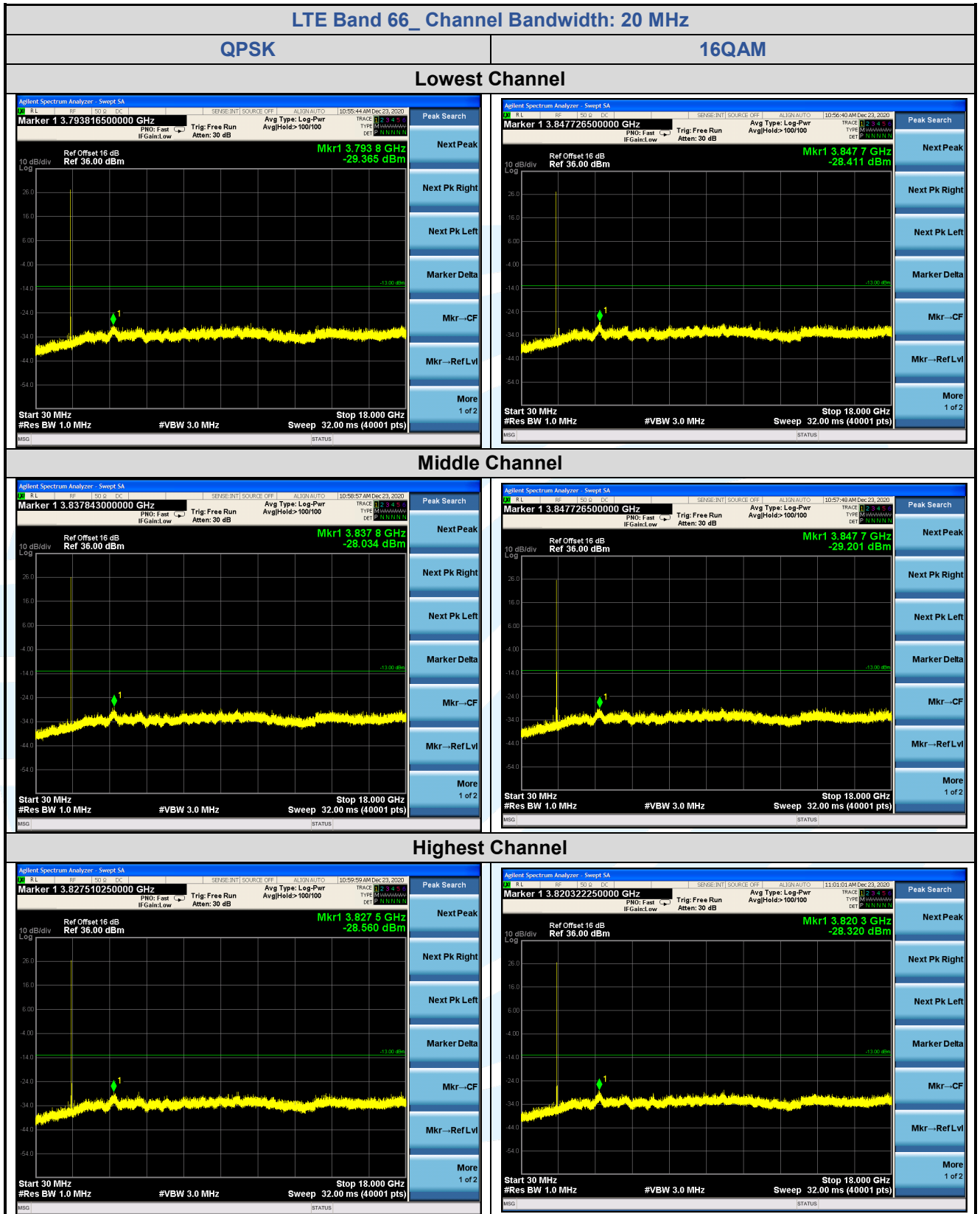
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**Remark:**

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

### 5.8 FIELD STRENGTH OF SPURIOUS RADIATION

**Test Requirement:** LTE Band 2 & LTE Band 25: FCC 47 CFR Part 24.238(a)  
 LTE Band 4 & LTE Band 66: FCC 47 CFR Part 27.53(h)  
 LTE Band 5 & LTE Band 26: FCC 47 CFR Part 22.917(a)  
 LTE Band 12 : FCC 47 CFR Part 27.53(g)  
 LTE Band 13: FCC 47 CFR Part 27.53  
 LTE Band 26: FCC 47 CFR Part 90.691  
 LTE Band 2 & LTE Band 25: RSS-133 Issue 6, Section 6.5  
 LTE Band 4 & LTE Band 66: RSS-139 Issue 3, Section 6.6  
 LTE Band 5: RSS-132 Issue 3, Section 5.5  
 LTE Band 12 & LTE Band 13: RSS-130 Issue 2, Section 4.7

**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), 90.691:**

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:**

(c) 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.

(f) Emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals. (-70 dBW/MHz = -40dBm/MHz).

**RSS-132 Issue 3, Section 5.5, RSS-133 Issue 6, Section 6.6, RSS-139 Issue 3, Section 6.5, RSS-130 Issue 2, Section 4.7:**

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.

**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:**

All bands emission had tested and emission margin more than 20dB

**5.8.1 LTE Band 2**

LTE Band 2_QPSK							
No.	Frequency (MHz)	SA Reading (dBm)	Correction factor (dB/m)	EIRP Result (dBm)	Limit (dBm)	Margin (dB)	Ant. Pol.
<b>Lowest Channel</b>							
1	53.756	-70.27	-5.28	-75.55	-13.00	-62.55	Horizontal
2	104.798	-75.37	-3.21	-78.58	-13.00	-65.58	Horizontal
3	938.714	-82.34	14.28	-68.06	-13.00	-55.06	Horizontal
4	3701.400	-61.94	7.14	-54.80	-13.00	-41.80	Horizontal
5	5552.100	-63.26	11.15	-52.11	-13.00	-39.11	Horizontal
6	55.288	-59.68	-5.32	-65.00	-13.00	-52.00	Vertical
7	67.786	-58.87	-4.98	-63.85	-13.00	-50.85	Vertical
8	97.002	-61.13	-3.39	-64.52	-13.00	-51.52	Vertical
9	3701.400	-61.53	7.12	-54.41	-13.00	-41.41	Vertical
10	5552.100	-63.42	11.64	-51.78	-13.00	-38.78	Vertical
<b>Middle Channel</b>							
1	55.678	-69.57	-5.42	-74.99	-13.00	-61.99	Horizontal
2	103.335	-75.39	-3.20	-78.59	-13.00	-65.59	Horizontal
3	925.613	-81.57	13.82	-67.75	-13.00	-54.75	Horizontal
4	3760.000	-63.01	7.28	-55.73	-13.00	-42.73	Horizontal
5	5640.000	-65.36	11.11	-54.25	-13.00	-41.25	Horizontal
6	54.517	-58.88	-5.33	-64.21	-13.00	-51.21	Vertical
7	68.264	-59.74	-4.96	-64.70	-13.00	-51.70	Vertical
8	94.979	-62.04	-3.56	-65.60	-13.00	-52.60	Vertical
9	3760.000	-63.33	7.28	-56.05	-13.00	-43.05	Vertical
10	5640.000	-64.98	11.59	-53.39	-13.00	-40.39	Vertical
<b>Highest Channel</b>							
1	53.756	-68.25	-5.28	-73.53	-13.00	-60.53	Horizontal
2	246.990	-79.70	1.47	-78.23	-13.00	-65.23	Horizontal
3	804.252	-80.52	12.04	-68.48	-13.00	-55.48	Horizontal
4	3818.600	-62.80	7.42	-55.38	-13.00	-42.38	Horizontal
5	5727.900	-65.21	11.07	-54.14	-13.00	-41.14	Horizontal
6	53.756	-58.93	-5.34	-64.27	-13.00	-51.27	Vertical
7	67.311	-60.30	-4.99	-65.29	-13.00	-52.29	Vertical
8	93.653	-62.04	-3.65	-65.69	-13.00	-52.69	Vertical
9	3818.600	-64.06	7.45	-56.61	-13.00	-43.61	Vertical
10	5727.900	-63.55	11.53	-52.02	-13.00	-39.02	Vertical



**5.8.2 LTE Band 4**

LTE Band 4_QPSK							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	54.901	-68.10	-5.36	-73.46	-13.00	-60.46	Horizontal
2	542.610	-79.41	7.97	-71.44	-13.00	-58.44	Horizontal
3	952.000	-81.90	14.62	-67.28	-13.00	-54.28	Horizontal
4	3421.400	-62.34	6.29	-56.05	-13.00	-43.05	Horizontal
5	5132.100	-63.03	9.45	-53.58	-13.00	-40.58	Horizontal
6	54.517	-59.32	-5.33	-64.65	-13.00	-51.65	Vertical
7	67.311	-59.75	-4.99	-64.74	-13.00	-51.74	Vertical
8	94.979	-61.26	-3.56	-64.82	-13.00	-51.82	Vertical
9	3421.400	-62.37	6.08	-56.29	-13.00	-43.29	Vertical
10	5132.100	-63.36	9.80	-53.56	-13.00	-40.56	Vertical
<b>Middle Channel</b>							
1	54.135	-69.29	-5.31	-74.60	-13.00	-61.60	Horizontal
2	684.226	-81.18	10.97	-70.21	-13.00	-57.21	Horizontal
3	958.714	-82.18	14.49	-67.69	-13.00	-54.69	Horizontal
4	3465.000	-63.31	6.43	-56.88	-13.00	-43.88	Horizontal
5	5197.500	-64.41	9.67	-54.74	-13.00	-41.74	Horizontal
6	53.756	-58.59	-5.34	-63.93	-13.00	-50.93	Vertical
7	68.264	-60.15	-4.96	-65.11	-13.00	-52.11	Vertical
8	93.653	-61.95	-3.65	-65.60	-13.00	-52.60	Vertical
9	3465.000	-63.67	6.28	-57.39	-13.00	-44.39	Vertical
10	5197.500	-63.14	10.05	-53.09	-13.00	-40.09	Vertical
<b>Highest Channel</b>							
1	55.678	-67.71	-5.42	-73.13	-13.00	-60.13	Horizontal
2	491.770	-79.10	6.76	-72.34	-13.00	-59.34	Horizontal
3	919.132	-80.98	13.67	-67.31	-13.00	-54.31	Horizontal
4	3508.600	-62.31	6.57	-55.74	-13.00	-42.74	Horizontal
5	5262.900	-64.15	9.98	-54.17	-13.00	-41.17	Horizontal
6	54.901	-59.56	-5.32	-64.88	-13.00	-51.88	Vertical
7	67.311	-59.94	-4.99	-64.93	-13.00	-51.93	Vertical
8	97.002	-63.46	-3.39	-66.85	-13.00	-53.85	Vertical
9	3508.600	-65.11	6.47	-58.64	-13.00	-45.64	Vertical
10	5262.900	-64.24	10.39	-53.85	-13.00	-40.85	Vertical

**5.8.3 LTE Band 5**

LTE Band 5_QPSK							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	401.105	-90.03	35.07	-54.96	-13.00	-41.96	Horizontal
2	523.876	-89.15	37.44	-51.71	-13.00	-38.71	Horizontal
3	798.620	-87.90	41.42	-46.48	-13.00	-33.48	Horizontal
4	1649.400	-62.58	0.41	-62.17	-13.00	-49.17	Horizontal
5	2474.100	-63.35	3.13	-60.22	-13.00	-47.22	Horizontal
6	67.311	-85.83	23.91	-61.92	-13.00	-48.92	Vertical
7	520.208	-89.07	37.28	-51.79	-13.00	-38.79	Vertical
8	684.226	-87.87	38.81	-49.06	-13.00	-36.06	Vertical
9	1649.400	-62.90	-0.37	-63.27	-13.00	-50.27	Vertical
10	2474.100	-63.94	2.73	-61.21	-13.00	-48.21	Vertical
<b>Middle Channel</b>							
1	173.815	-88.56	26.90	-61.66	-13.00	-48.66	Horizontal
2	436.396	-87.90	35.08	-52.82	-13.00	-39.82	Horizontal
3	679.435	-88.55	40.32	-48.23	-13.00	-35.23	Horizontal
4	1673.000	-62.46	0.56	-61.90	-13.00	-48.90	Horizontal
5	2509.500	-64.79	3.22	-61.57	-13.00	-48.57	Horizontal
6	222.281	-89.21	28.46	-60.75	-13.00	-47.75	Vertical
7	452.001	-88.95	35.15	-53.80	-13.00	-40.80	Vertical
8	713.692	-87.26	39.52	-47.74	-13.00	-34.74	Vertical
9	1673.000	-62.55	-0.20	-62.75	-13.00	-49.75	Vertical
10	2509.500	-65.28	2.81	-62.47	-13.00	-49.47	Vertical
<b>Highest Channel</b>							
1	415.449	-88.86	34.98	-53.88	-13.00	-40.88	Horizontal
2	679.435	-88.98	40.32	-48.66	-13.00	-35.66	Horizontal
3	776.485	-88.10	40.93	-47.17	-13.00	-34.17	Horizontal
4	1696.600	-61.72	0.72	-61.00	-13.00	-48.00	Horizontal
5	2544.900	-66.05	3.34	-62.71	-13.00	-49.71	Horizontal
6	96.323	-85.52	25.37	-60.15	-13.00	-47.15	Vertical
7	542.610	-88.97	37.71	-51.26	-13.00	-38.26	Vertical
8	698.804	-89.12	39.59	-49.53	-13.00	-36.53	Vertical
9	1696.600	-63.34	-0.02	-63.36	-13.00	-50.36	Vertical
10	2544.900	-65.16	2.90	-62.26	-13.00	-49.26	Vertical

**5.8.4 LTE Band 12**

LTE Band 12_QPSK							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	89.787	-88.16	24.89	-63.27	-13.00	-50.27	Horizontal
2	439.473	-88.48	35.11	-53.37	-13.00	-40.37	Horizontal
3	535.038	-88.08	37.47	-50.61	-13.00	-37.61	Horizontal
4	1399.400	-62.91	-0.08	-62.99	-13.00	-49.99	Horizontal
5	2099.100	-64.10	2.46	-61.64	-13.00	-48.64	Horizontal
6	53.756	-86.32	23.56	-62.76	-13.00	-49.76	Vertical
7	94.979	-88.26	25.27	-62.99	-13.00	-49.99	Vertical
8	491.770	-88.49	36.63	-51.86	-13.00	-38.86	Vertical
9	1399.400	-62.27	-0.84	-63.11	-13.00	-50.11	Vertical
10	2099.100	-62.65	1.98	-60.67	-13.00	-47.67	Vertical
<b>Middle Channel</b>							
1	211.611	-88.17	28.01	-60.16	-13.00	-47.16	Horizontal
2	322.590	-87.58	31.82	-55.76	-13.00	-42.76	Horizontal
3	602.929	-88.90	38.90	-50.00	-13.00	-37.00	Horizontal
4	1415.000	-63.39	-0.12	-63.51	-13.00	-50.51	Horizontal
5	2122.500	-62.48	2.48	-60.00	-13.00	-47.00	Horizontal
6	95.649	-86.52	25.33	-61.19	-13.00	-48.19	Vertical
7	478.139	-88.17	36.29	-51.88	-13.00	-38.88	Vertical
8	535.038	-87.83	37.57	-50.26	-13.00	-37.26	Vertical
9	1415.000	-63.31	-0.90	-64.21	-13.00	-51.21	Vertical
10	2122.500	-63.12	2.01	-61.11	-13.00	-48.11	Vertical
<b>Highest Channel</b>							
1	254.031	-89.64	30.02	-59.62	-13.00	-46.62	Horizontal
2	355.940	-89.20	33.13	-56.07	-13.00	-43.07	Horizontal
3	523.876	-88.70	37.44	-51.26	-13.00	-38.26	Horizontal
4	1430.600	-62.89	-0.17	-63.06	-13.00	-50.06	Horizontal
5	2145.900	-60.62	2.48	-58.14	-13.00	-45.14	Horizontal
6	252.252	-89.29	29.98	-59.31	-13.00	-46.31	Vertical
7	415.449	-89.31	35.04	-54.27	-13.00	-41.27	Vertical
8	523.876	-88.56	37.37	-51.19	-13.00	-38.19	Vertical
9	1430.600	-60.87	-0.97	-61.84	-13.00	-48.84	Vertical
10	2145.900	-63.17	2.01	-61.16	-13.00	-48.16	Vertical

**5.8.5 LTE Band 13**

LTE Band 13_QPSK							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	255.823	-88.01	30.06	-57.95	-13.00	-44.95	Horizontal
2	401.105	-88.36	35.07	-53.29	-13.00	-40.29	Horizontal
3	698.804	-88.00	40.73	-47.27	-13.00	-34.27	Horizontal
4	1559.000	-63.03	-0.11	-63.14	-13.00	-50.14	Horizontal
5	2338.500	-63.69	2.83	-60.86	-13.00	-47.86	Horizontal
6	264.971	-89.30	30.26	-59.04	-13.00	-46.04	Vertical
7	565.978	-89.07	38.20	-50.87	-13.00	-37.87	Vertical
8	728.897	-88.16	39.32	-48.84	-13.00	-35.84	Vertical
9	1559.000	-63.14	-0.96	-64.10	-13.00	-51.10	Vertical
10	2338.500	-63.79	2.40	-61.39	-13.00	-48.39	Vertical
<b>Middle Channel</b>							
1	151.025	-87.66	26.53	-61.13	-13.00	-48.13	Horizontal
2	403.934	-89.45	35.06	-54.39	-13.00	-41.39	Horizontal
3	708.694	-88.94	40.56	-48.38	-13.00	-35.38	Horizontal
4	1564.000	-62.54	-0.08	-62.62	-13.00	-49.62	Horizontal
5	2346.000	-62.84	2.84	-60.00	-13.00	-47.00	Horizontal
6	288.284	-89.05	30.78	-58.27	-13.00	-45.27	Vertical
7	523.876	-88.25	37.37	-50.88	-13.00	-37.88	Vertical
8	708.694	-89.20	39.57	-49.63	-13.00	-36.63	Vertical
9	1564.000	-62.60	-0.93	-63.53	-13.00	-50.53	Vertical
10	2346.000	-62.79	2.41	-60.38	-13.00	-47.38	Vertical
<b>Highest Channel</b>							
1	288.284	-88.74	30.78	-57.96	-13.00	-44.96	Horizontal
2	398.296	-89.08	34.95	-54.13	-13.00	-41.13	Horizontal
3	542.610	-87.92	37.46	-50.46	-13.00	-37.46	Horizontal
4	1569.000	-61.89	-0.06	-61.95	-13.00	-48.95	Horizontal
5	2353.500	-64.43	2.86	-61.57	-13.00	-48.57	Horizontal
6	296.502	-88.82	30.96	-57.86	-13.00	-44.86	Vertical
7	409.651	-89.18	34.76	-54.42	-13.00	-41.42	Vertical
8	684.226	-87.88	38.81	-49.07	-13.00	-36.07	Vertical
9	1569.000	-62.52	-0.91	-63.43	-13.00	-50.43	Vertical
10	2353.500	-63.78	2.44	-61.34	-13.00	-48.34	Vertical

**5.8.6 LTE Band 25**

LTE Band 25_QPSK							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	55.678	-67.80	-5.42	-73.22	-13.00	-60.22	Horizontal
2	637.795	-79.57	9.84	-69.73	-13.00	-56.73	Horizontal
3	965.474	-81.83	14.34	-67.49	-13.00	-54.49	Horizontal
4	3701.400	-63.77	7.14	-56.63	-13.00	-43.63	Horizontal
5	5552.100	-63.86	11.15	-52.71	-13.00	-39.71	Horizontal
6	54.517	-58.44	-5.33	-63.77	-13.00	-50.77	Vertical
7	67.786	-58.92	-4.98	-63.90	-13.00	-50.90	Vertical
8	95.649	-60.51	-3.49	-64.00	-13.00	-51.00	Vertical
9	3701.400	-62.36	7.12	-55.24	-13.00	-42.24	Vertical
10	5552.100	-63.77	11.64	-52.13	-13.00	-39.13	Vertical
<b>Middle Channel</b>							
1	56.071	-68.49	-5.46	-73.95	-13.00	-60.95	Horizontal
2	360.977	-80.99	4.57	-76.42	-13.00	-63.42	Horizontal
3	798.620	-80.60	12.02	-68.58	-13.00	-55.58	Horizontal
4	3765.000	-63.15	7.29	-55.86	-13.00	-42.86	Horizontal
5	5647.500	-65.16	11.12	-54.04	-13.00	-41.04	Horizontal
6	54.135	-59.01	-5.34	-64.35	-13.00	-51.35	Vertical
7	67.786	-59.41	-4.98	-64.39	-13.00	-51.39	Vertical
8	97.686	-63.41	-3.33	-66.74	-13.00	-53.74	Vertical
9	3765.000	-63.44	7.29	-56.15	-13.00	-43.15	Vertical
10	5647.500	-63.86	11.59	-52.27	-13.00	-39.27	Vertical
<b>Highest Channel</b>							
1	55.288	-68.50	-5.39	-73.89	-13.00	-60.89	Horizontal
2	713.692	-80.58	11.02	-69.56	-13.00	-56.56	Horizontal
3	979.139	-82.07	14.16	-67.91	-13.00	-54.91	Horizontal
4	3828.600	-62.32	7.44	-54.88	-13.00	-41.88	Horizontal
5	5742.900	-62.60	11.07	-51.53	-13.00	-38.53	Horizontal
6	54.135	-58.72	-5.34	-64.06	-13.00	-51.06	Vertical
7	67.311	-60.21	-4.99	-65.20	-13.00	-52.20	Vertical
8	95.649	-61.51	-3.49	-65.00	-13.00	-52.00	Vertical
9	3828.600	-61.76	7.47	-54.29	-13.00	-41.29	Vertical
10	5742.900	-65.55	11.52	-54.03	-13.00	-41.03	Vertical

**5.8.7 LTE Band 26**

LTE Band 26_QPSK							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	158.640	-88.32	27.25	-61.07	-13.00	-48.07	Horizontal
2	531.291	-87.88	37.48	-50.40	-13.00	-37.40	Horizontal
3	698.804	-88.52	40.73	-47.79	-13.00	-34.79	Horizontal
4	1658.000	-63.93	0.47	-63.46	-13.00	-50.46	Horizontal
5	2487.000	-61.95	3.16	-58.79	-13.00	-45.79	Horizontal
6	133.081	-88.02	25.34	-62.68	-13.00	-49.68	Vertical
7	471.467	-88.07	36.03	-52.04	-13.00	-39.04	Vertical
8	718.725	-88.69	39.47	-49.22	-13.00	-36.22	Vertical
9	1658.000	-62.35	-0.30	-62.65	-13.00	-49.65	Vertical
10	2487.000	-64.22	2.76	-61.46	-13.00	-48.46	Vertical
<b>Middle Channel</b>							
1	266.839	-88.86	30.31	-58.55	-13.00	-45.55	Horizontal
2	488.326	-88.38	36.17	-52.21	-13.00	-39.21	Horizontal
3	611.462	-87.81	39.04	-48.77	-13.00	-35.77	Horizontal
4	1673.000	-62.14	0.56	-61.58	-13.00	-48.58	Horizontal
5	2509.500	-63.94	3.22	-60.72	-13.00	-47.72	Horizontal
6	409.651	-88.77	34.76	-54.01	-13.00	-41.01	Vertical
7	569.969	-88.97	38.29	-50.68	-13.00	-37.68	Vertical
8	698.804	-88.72	39.59	-49.13	-13.00	-36.13	Vertical
9	1673.000	-62.49	-0.20	-62.69	-13.00	-49.69	Vertical
10	2509.500	-65.13	2.81	-62.32	-13.00	-49.32	Vertical
<b>Highest Channel</b>							
1	418.378	-88.82	34.96	-53.86	-13.00	-40.86	Horizontal
2	542.610	-88.99	37.46	-51.53	-13.00	-38.53	Horizontal
3	679.435	-88.59	40.32	-48.27	-13.00	-35.27	Horizontal
4	1688.000	-62.47	0.66	-61.81	-13.00	-48.81	Horizontal
5	2532.000	-65.37	3.29	-62.08	-13.00	-49.08	Horizontal
6	307.105	-89.07	31.17	-57.90	-13.00	-44.90	Vertical
7	546.437	-89.15	37.78	-51.37	-13.00	-38.37	Vertical
8	821.387	-87.87	41.12	-46.75	-13.00	-33.75	Vertical
9	1688.000	-63.01	-0.09	-63.10	-13.00	-50.10	Vertical
10	2532.000	-65.46	2.87	-62.59	-13.00	-49.59	Vertical

**5.8.8 LTE Band 26(Part 90S)**

LTE Band 26(Part90S)_ QPSK							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	379.178	-89.07	33.37	-55.70	-13.00	-42.70	Horizontal
2	527.571	-89.64	37.49	-52.15	-13.00	-39.15	Horizontal
3	693.910	-88.68	40.62	-48.06	-13.00	-35.06	Horizontal
4	1629.400	-62.90	0.28	-62.62	-13.00	-49.62	Horizontal
5	2444.100	-64.07	3.06	-61.01	-13.00	-48.01	Horizontal
6	223.848	-88.71	28.52	-60.19	-13.00	-47.19	Vertical
7	520.208	-88.80	37.28	-51.52	-13.00	-38.52	Vertical
8	708.694	-87.57	39.57	-48.00	-13.00	-35.00	Vertical
9	1629.400	-63.49	-0.52	-64.01	-13.00	-51.01	Vertical
10	2444.100	-64.14	2.65	-61.49	-13.00	-48.49	Vertical
<b>Middle Channel</b>							
1	401.105	-89.17	35.07	-54.10	-13.00	-41.10	Horizontal
2	565.978	-88.66	37.42	-51.24	-13.00	-38.24	Horizontal
3	781.961	-88.06	41.05	-47.01	-13.00	-34.01	Horizontal
4	1638.000	-62.36	0.34	-62.02	-13.00	-49.02	Horizontal
5	2457.000	-63.93	3.10	-60.83	-13.00	-47.83	Horizontal
6	95.649	-86.60	25.33	-61.27	-13.00	-48.27	Vertical
7	512.948	-88.39	37.13	-51.26	-13.00	-38.26	Vertical
8	689.051	-88.08	39.07	-49.01	-13.00	-36.01	Vertical
9	1638.000	-60.40	-0.45	-60.85	-13.00	-47.85	Vertical
10	2457.000	-63.60	2.69	-60.91	-13.00	-47.91	Vertical
<b>Highest Channel</b>							
1	41.741	-89.16	27.18	-61.98	-13.00	-48.98	Horizontal
2	324.864	-89.39	31.90	-57.49	-13.00	-44.49	Horizontal
3	611.462	-88.75	39.04	-49.71	-13.00	-36.71	Horizontal
4	1646.600	-62.81	0.39	-62.42	-13.00	-49.42	Horizontal
5	2469.900	-63.95	3.13	-60.82	-13.00	-47.82	Horizontal
6	403.934	-88.77	34.48	-54.29	-13.00	-41.29	Vertical
7	562.014	-89.28	38.11	-51.17	-13.00	-38.17	Vertical
8	713.692	-88.51	39.52	-48.99	-13.00	-35.99	Vertical
9	1646.600	-61.86	-0.39	-62.25	-13.00	-49.25	Vertical
10	2469.900	-64.23	2.72	-61.51	-13.00	-48.51	Vertical

**5.8.9 LTE Band 66**

LTE Band 66_QPSK							
No.	Frequency (MHz)	SA Reading (dBm)	Correction factor (dB/m)	EIRP Result (dBm)	Limit (dBm)	Margin (dB)	Ant. Pol.
<b>Lowest Channel</b>							
1	54.135	-69.68	-5.31	-74.99	-13.00	-61.99	Horizontal
2	804.252	-81.31	12.04	-69.27	-13.00	-56.27	Horizontal
3	952.000	-81.96	14.62	-67.34	-13.00	-54.34	Horizontal
4	3421.400	-62.07	6.29	-55.78	-13.00	-42.78	Horizontal
5	5132.100	-63.46	9.45	-54.01	-13.00	-41.01	Horizontal
6	53.756	-59.52	-5.34	-64.86	-13.00	-51.86	Vertical
7	67.786	-60.36	-4.98	-65.34	-13.00	-52.34	Vertical
8	95.649	-62.17	-3.49	-65.66	-13.00	-52.66	Vertical
9	3421.400	-62.46	6.08	-56.38	-13.00	-43.38	Vertical
10	5132.100	-63.80	9.80	-54.00	-13.00	-41.00	Vertical
<b>Middle Channel</b>							
1	53.756	-69.34	-5.28	-74.62	-13.00	-61.62	Horizontal
2	66.371	-70.65	-5.20	-75.85	-13.00	-62.85	Horizontal
3	952.000	-82.26	14.62	-67.64	-13.00	-54.64	Horizontal
4	3510.000	-61.75	6.57	-55.18	-13.00	-42.18	Horizontal
5	5265.000	-62.26	10.00	-52.26	-13.00	-39.26	Horizontal
6	54.135	-59.27	-5.34	-64.61	-13.00	-51.61	Vertical
7	69.718	-60.11	-4.91	-65.02	-13.00	-52.02	Vertical
8	94.979	-60.34	-3.56	-63.90	-13.00	-50.90	Vertical
9	3510.000	-65.87	6.47	-59.40	-13.00	-46.40	Vertical
10	5265.000	-64.98	10.41	-54.57	-13.00	-41.57	Vertical
<b>Highest Channel</b>							
1	55.678	-68.78	-5.42	-74.20	-13.00	-61.20	Horizontal
2	101.893	-75.75	-3.17	-78.92	-13.00	-65.92	Horizontal
3	958.714	-82.01	14.49	-67.52	-13.00	-54.52	Horizontal
4	3558.600	-63.12	6.72	-56.40	-13.00	-43.40	Horizontal
5	5337.900	-63.86	10.37	-53.49	-13.00	-40.49	Horizontal
6	53.379	-59.43	-5.35	-64.78	-13.00	-51.78	Vertical
7	68.264	-60.21	-4.96	-65.17	-13.00	-52.17	Vertical
8	97.686	-61.84	-3.33	-65.17	-13.00	-52.17	Vertical
9	3558.600	-63.07	6.64	-56.43	-13.00	-43.43	Vertical
10	5337.900	-63.80	10.81	-52.99	-13.00	-39.99	Vertical



## 5.9 FREQUENCY STABILITY

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 Requirement:**

**LTE Band 2 & LTE Band 25:** RSS-133 Issue 6, Section 6.3  
**LTE Band 4 & LTE Band 66:** RSS-139 Issue 3, Section 6.4  
**LTE Band 5:** RSS-132 Issue 3, Section 5.3  
**LTE Band 12 & LTE Band 13:** RSS-130 Issue 2, Section 4.5

**Test Method:**

ANSI C63.26-2015 & KDB 971168 D01v03r01

**Limits:****FCC 47 CFR Part 22.355, FCC 47 CFR Part 90.213**

The carrier frequency shall not depart from the reference frequency in excess of  $\pm 2.5$  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.

**RSS-132 Issue 3, Section 5.3:**

The carrier frequency shall not depart from the reference frequency in excess of  $\pm 2.5$  ppm for mobile stations and  $\pm 1.5$  ppm for base stations

**RSS-133 Issue 6, Section 6.3:**

The carrier frequency shall not depart from the reference frequency, in excess of  $\pm 2.5$  ppm for mobile stations and  $\pm 1.0$  ppm for base stations.

**RSS-139 Issue 3, Section 6.4, RSS-130 Issue 2, Section 4.5:**

The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.

**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. =  $-30^{\circ}$  to  $+50^{\circ}\text{C}$
  - b) Voltage = low voltage, 2.5 Vdc, Normal, 3.8 Vdc and High voltage, 4.6Vdc.
- 2) Frequency Stability vs Temperature:

The EUT is placed inside a temperature chamber. The temperature is set to  $20^{\circ}\text{C}$  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	Temperature	Deviation	Deviation	Limit	Pass/ Fail
		(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	
<b>LTE Band 2 / 20MHz / Full RB</b>							
QPSK	18900 / 1880.0	VL	TN	3.41	0.0018	N/A	Pass
		VN		4.73	0.0025		Pass
		VH		6.38	0.0034		Pass
		VN	50	6.33	0.0034		Pass
			40	4.46	0.0024		Pass
			30	3.98	0.0021		Pass
			20	3.21	0.0017		Pass
			10	4.94	0.0026		Pass
			0	-3.13	-0.0017		Pass
			-10	-2.73	-0.0015		Pass
			-20	-3.15	-0.0017		Pass
			-30	-4.24	-0.0023		Pass

**5.9.2 LTE Band 4**

Modulation	Channel/ Frequency (MHz)	Voltage	Temperature	Deviation	Deviation	Limit	Pass/ Fail
		(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	
<b>LTE Band 4 / 20MHz / Full RB</b>							
QPSK	20175 / 1732.5	VL	TN	-5.32	-0.0031	N/A	Pass
		VN		-5.15	-0.0030		Pass
		VH		-6.11	-0.0035		Pass
		VN	50	-8.69	-0.0050		Pass
			40	-9.24	-0.0053		Pass
			30	-7.22	-0.0042		Pass
			20	-6.19	-0.0036		Pass
			10	-5.15	-0.0030		Pass
			0	-7.22	-0.0042		Pass
			-10	-8.24	-0.0048		Pass
			-20	-6.33	-0.0037		Pass
			-30	-7.37	-0.0043		Pass

**5.9.3 LTE Band 5**

Modulation	Channel/ Frequency (MHz)	Voltage	Temperature	Deviation	Deviation	Limit	Result
		(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	
<b>LTE Band 5 / 10MHz / Full RB</b>							
QPSK	20525 / 836.5	VL	TN	6.17	0.0074	± 2.5	Pass
		VN		5.42	0.0065	± 2.5	Pass
		VH		6.33	0.0076	± 2.5	Pass
		VN	50	7.14	0.0085	± 2.5	Pass
			40	7.89	0.0094	± 2.5	Pass
			30	6.36	0.0076	± 2.5	Pass
			20	-4.15	-0.0050	± 2.5	Pass
			10	-4.57	-0.0055	± 2.5	Pass
			0	-2.81	-0.0034	± 2.5	Pass
			-10	-3.79	-0.0045	± 2.5	Pass
			-20	-3.49	-0.0042	± 2.5	Pass
			-30	3.63	0.0043	± 2.5	Pass

**5.9.4 LTE Band 12**

Modulation	Channel/ Frequency (MHz)	Voltage	Temperature	Deviation	Deviation	Limit	Result
		(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	
<b>LTE Band 12 / 10MHz / Full RB</b>							
QPSK	23095 / 707.5	VL	TN	4.32	0.0061	N/A	Pass
		VN		4.88	0.0069		Pass
		VH		3.94	0.0056		Pass
		VN	50	6.28	0.0089		Pass
			40	5.78	0.0082		Pass
			30	4.79	0.0068		Pass
			20	4.38	0.0062		Pass
			10	6.11	0.0086		Pass
			0	4.24	0.0060		Pass
			-10	5.41	0.0076		Pass
			-20	6.34	0.0090		Pass
			-30	4.79	0.0068		Pass

**5.9.5 LTE Band 13**

Modulation	Channel/ Frequency (MHz)	Voltage	Temperature	Deviation	Deviation	Limit	Result
		(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	
<b>LTE Band 13 / 10MHz / Full RB</b>							
QPSK	23230 / 782	VL	TN	-3.87	-0.0049	N/A	Pass
		VN		-5.08	-0.0065		Pass
		VH		-4.35	-0.0056		Pass
		VN	50	-6.51	-0.0083		Pass
			40	-4.98	-0.0064		Pass
			30	-6.45	-0.0082		Pass
			20	-3.64	-0.0047		Pass
			10	-3.71	-0.0047		Pass
			0	-4.78	-0.0061		Pass
			-10	-4.51	-0.0058		Pass
			-20	-6.14	-0.0079		Pass
			-30	-6.67	-0.0085		Pass

**5.9.6 LTE Band 25**

Modulation	Channel/ Frequency (MHz)	Voltage	Temperature	Deviation	Deviation	Limit	Result
		(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	
<b>LTE Band 25 / 20MHz / Full RB</b>							
QPSK	26340 / 1880.0	VL	TN	3.11	0.0017	N/A	Pass
		VN		4.88	0.0026		Pass
		VH		4.35	0.0023		Pass
		VN	50	5.15	0.0027		Pass
			40	4.66	0.0025		Pass
			30	7.32	0.0039		Pass
			20	6.14	0.0033		Pass
			10	4.39	0.0023		Pass
			0	5.33	0.0028		Pass
			-10	6.22	0.0033		Pass
			-20	6.16	0.0033		Pass
			-30	5.32	0.0028		Pass

**5.9.7 LTE Band 26**

Modulation	Channel/ Frequency (MHz)	Voltage	Temperature	Deviation	Deviation	Limit	Result
		(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	
<b>LTE Band 26 / 15MHz / Full RB</b>							
QPSK	26915 / 836.5	VL	TN	-6.27	-0.0075	± 2.5	Pass
		VN		-6.25	-0.0075	± 2.5	Pass
		VH		-6.05	-0.0072	± 2.5	Pass
		VN	50	-5.43	-0.0065	± 2.5	Pass
			40	-4.15	-0.0050	± 2.5	Pass
			30	-3.06	-0.0037	± 2.5	Pass
			20	-7.11	-0.0085	± 2.5	Pass
			10	-5.32	-0.0064	± 2.5	Pass
			0	-6.23	-0.0074	± 2.5	Pass
			-10	-7.34	-0.0088	± 2.5	Pass
			-20	-8.31	-0.0099	± 2.5	Pass
			-30	-7.11	-0.0085	± 2.5	Pass

**5.9.8 LTE Band 26 (Part 90S)**

Modulation	Channel/ Frequency (MHz)	Voltage	Temperature	Deviation	Deviation	Limit	Result
		(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	
<b>LTE Band 26 / 10MHz / Full RB</b>							
QPSK	26740 / 819	VL	TN	-4.16	-0.0051	± 2.5	Pass
		VN		-8.33	-0.0102	± 2.5	Pass
		VH		-5.68	-0.0069	± 2.5	Pass
		VN	50	-7.22	-0.0088	± 2.5	Pass
			40	-7.23	-0.0088	± 2.5	Pass
			30	-8.33	-0.0102	± 2.5	Pass
			20	-8.21	-0.0100	± 2.5	Pass
			10	-7.23	-0.0088	± 2.5	Pass
			0	-8.33	-0.0102	± 2.5	Pass
			-10	-9.17	-0.0112	± 2.5	Pass
			-20	-10.33	-0.0126	± 2.5	Pass
			-30	-7.37	-0.0090	± 2.5	Pass

**5.9.9 LTE Band 66**

Modulation	Channel/ Frequency (MHz)	Voltage	Temperature	Deviation	Deviation	Limit	Result
		(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	
<b>LTE Band 66 / 20MHz / Full RB</b>							
QPSK	132322 / 1745	VL	TN	6.97	0.0040	N/A	Pass
		VN		8.34	0.0048		Pass
		VH		7.41	0.0042		Pass
		VN	50	10.33	0.0059		Pass
			40	8.45	0.0048		Pass
			30	9.11	0.0052		Pass
			20	7.46	0.0043		Pass
			10	5.49	0.0031		Pass
			0	6.43	0.0037		Pass
			-10	7.32	0.0042		Pass
			-20	3.66	0.0021		Pass
			-30	5.39	0.0031		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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The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of UnionTrust, this report can't be reproduced except in full.

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