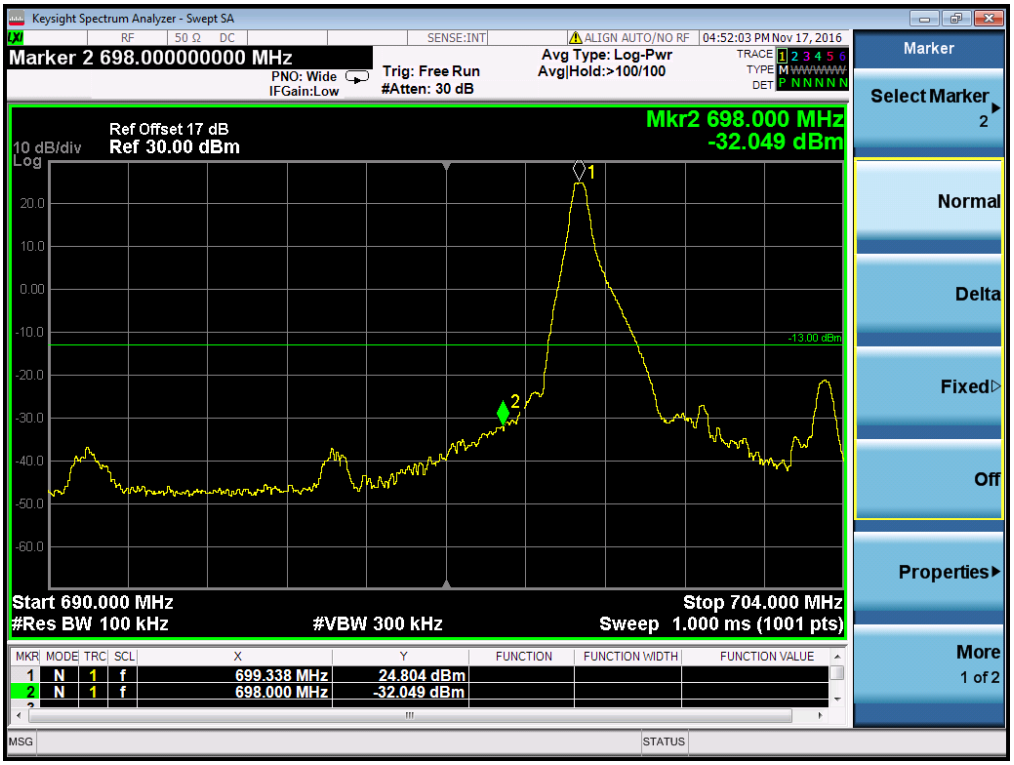
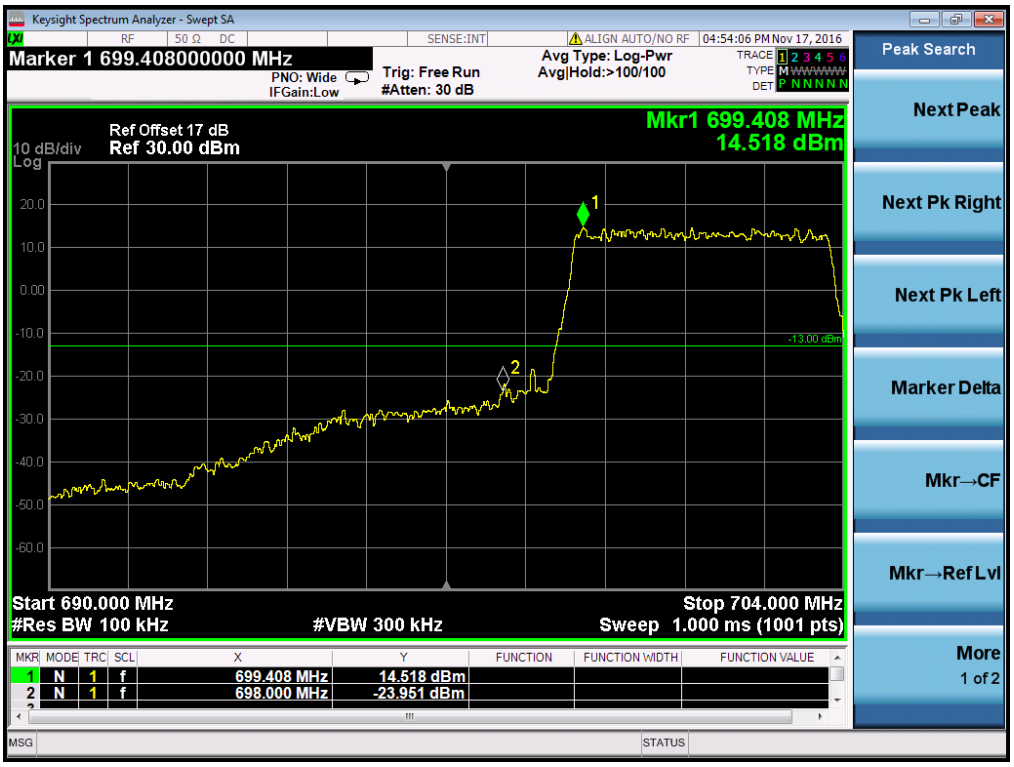
Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 24

Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0

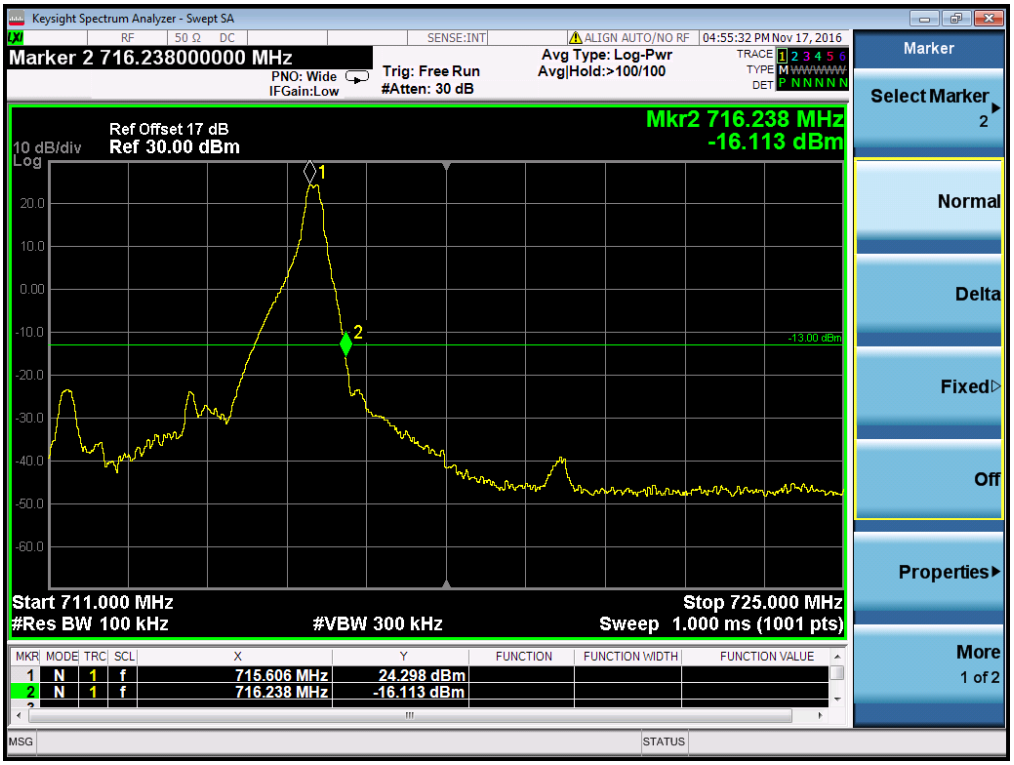
Band	LTE Band 12	Modulation	16QAM
Bandwidth	5MHz		



Lower Band Edge Plot for 16QAM -RB Size 1, RB Offset 0



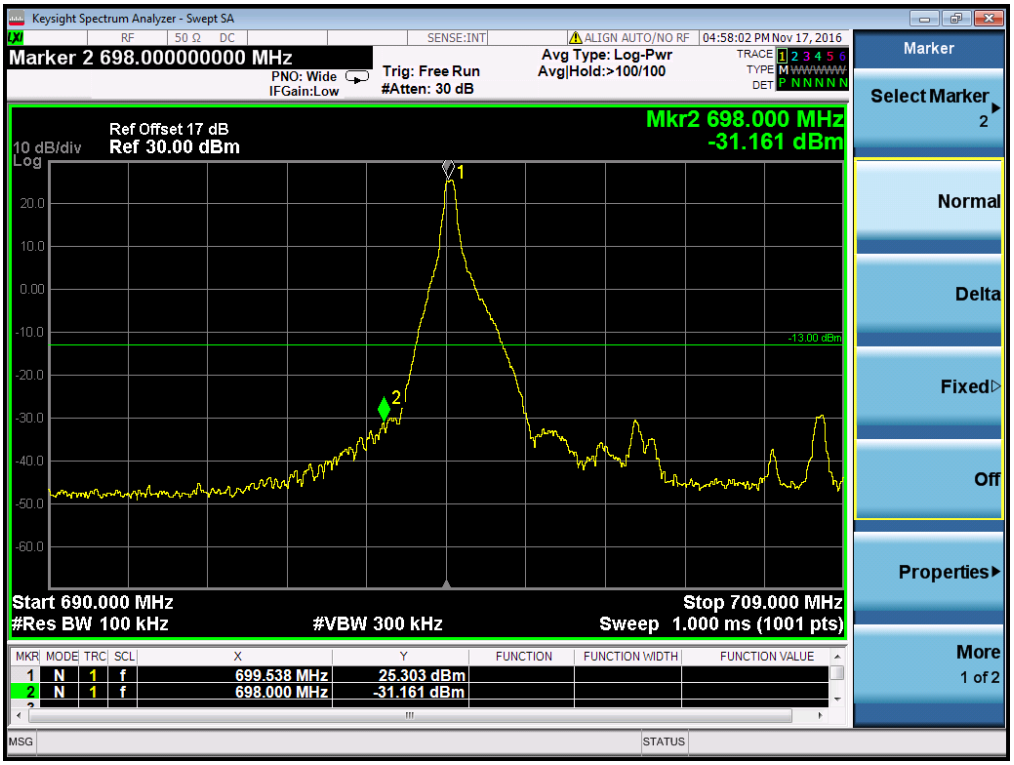
Lower Band Edge Plot for 16QAM -RB Size 25, RB Offset 0



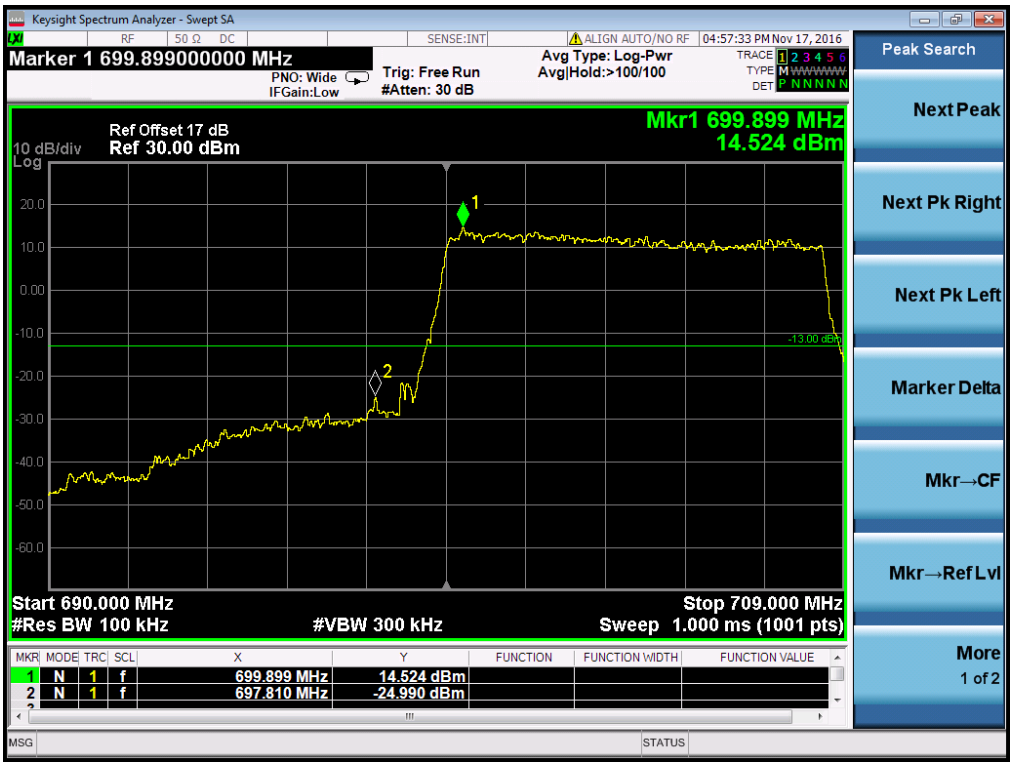
Higher Band Edge Plot for 16QAM -RB Size 1, RB Offset 24

Higher Band Edge Plot for 16QAM -RB Size 25, RB Offset 0

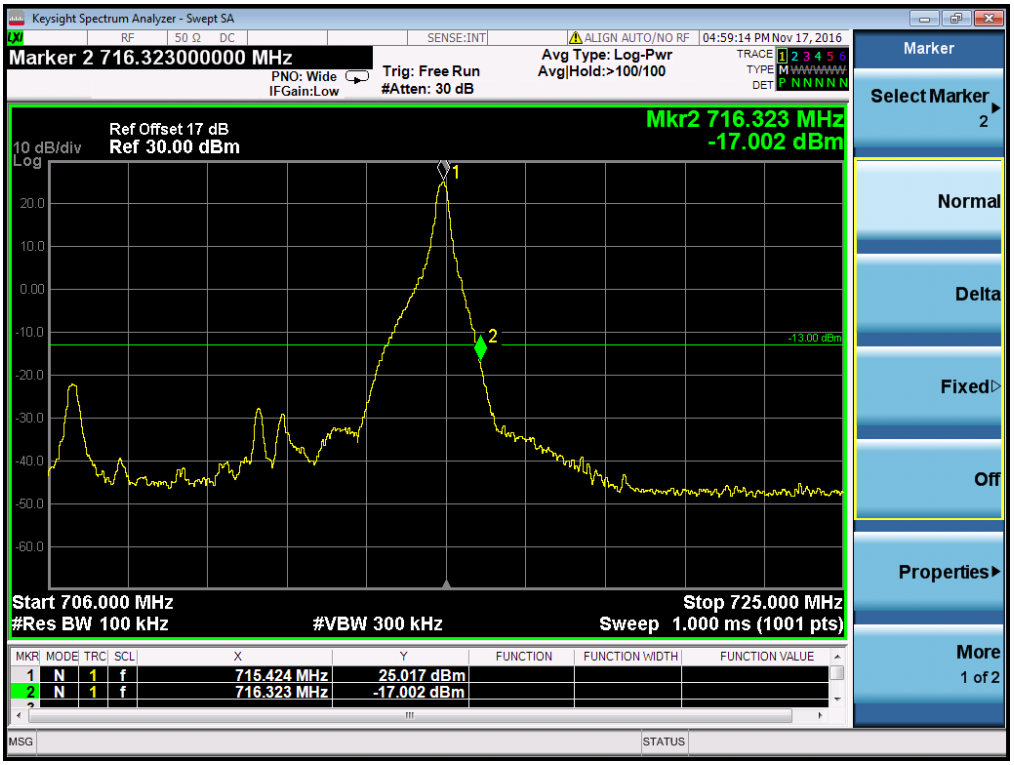
Band	LTE Band 12	Modulation	QPSK
Bandwidth	10MHz		



Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



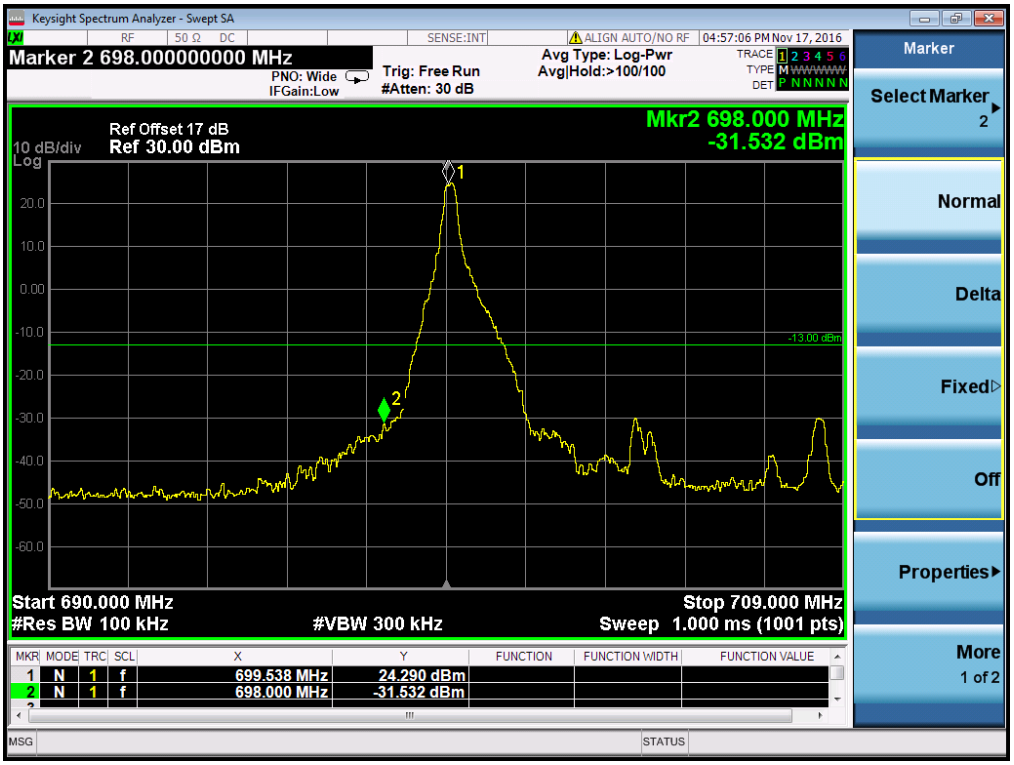
Lower Band Edge Plot for QPSK-RB Size 50, RB Offset 0



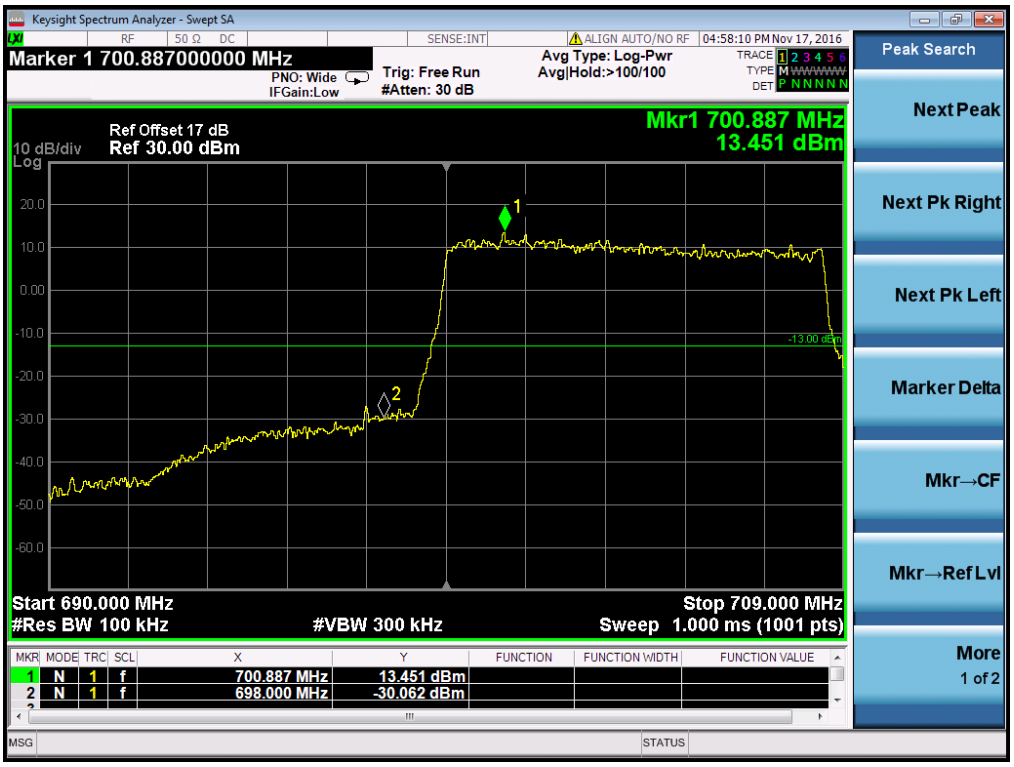
Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 49

Higher Band Edge Plot for QPSK-RB Size 50, RB Offset 0

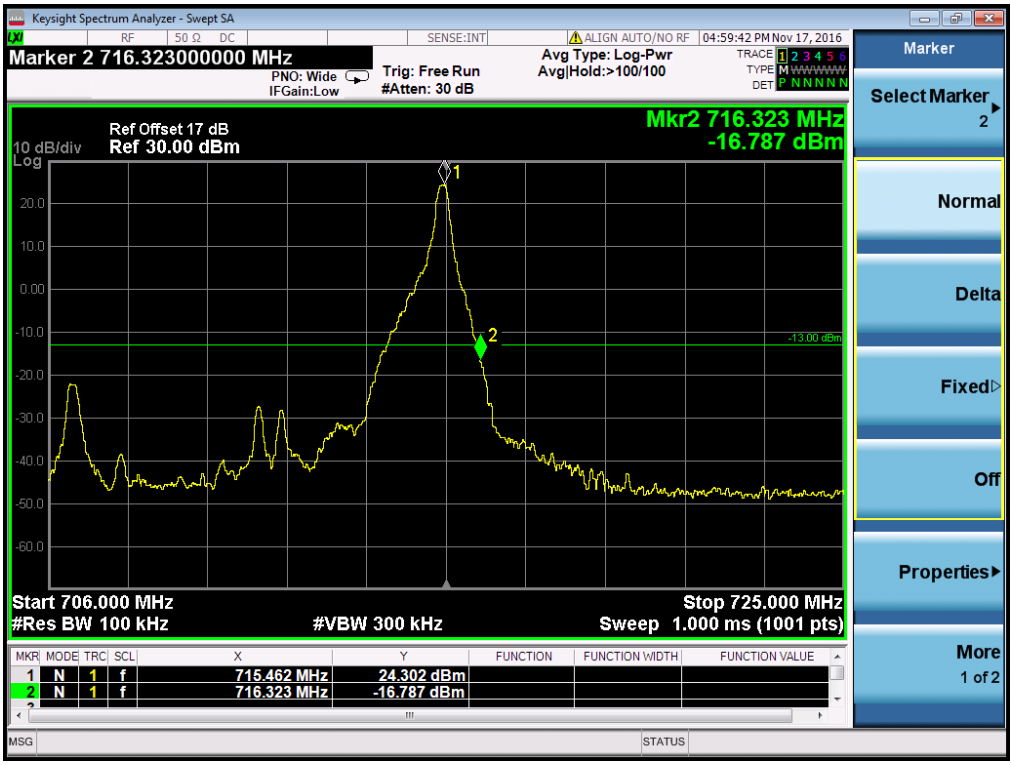
Band	LTE Band 12	Modulation	16QAM
Bandwidth	10MHz		



Lower Band Edge Plot for 16QAM -RB Size 1, RB Offset 0



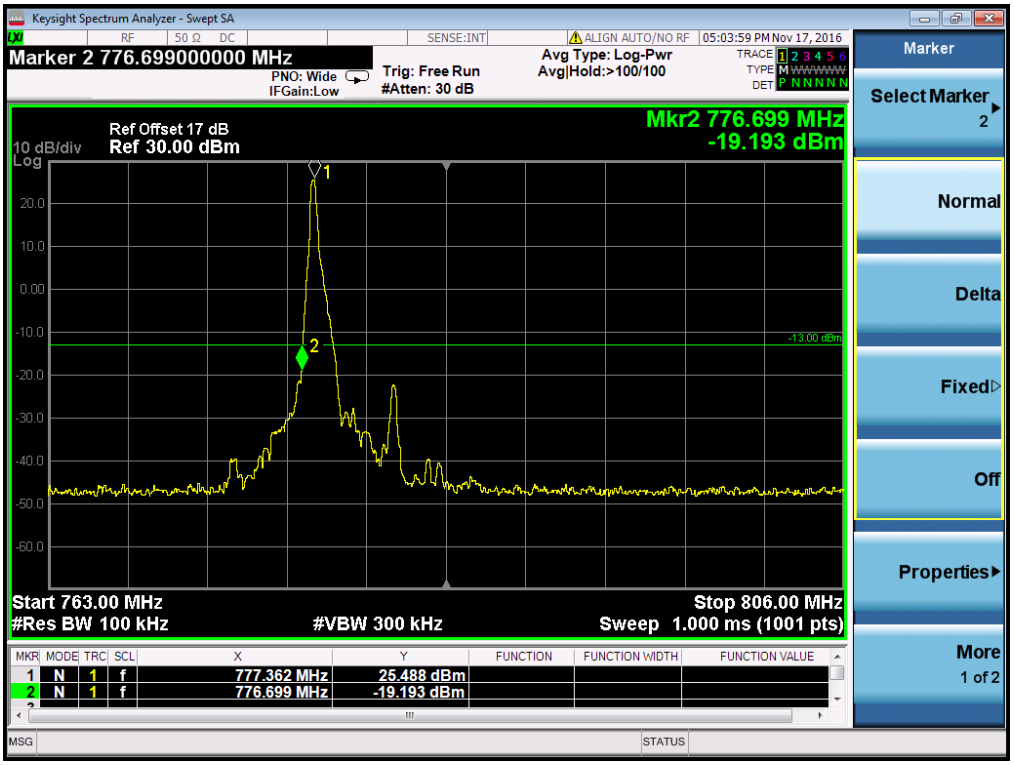
Lower Band Edge Plot for 16QAM -RB Size 50, RB Offset 0



Higher Band Edge Plot for 16QAM -RB Size 1, RB Offset 49

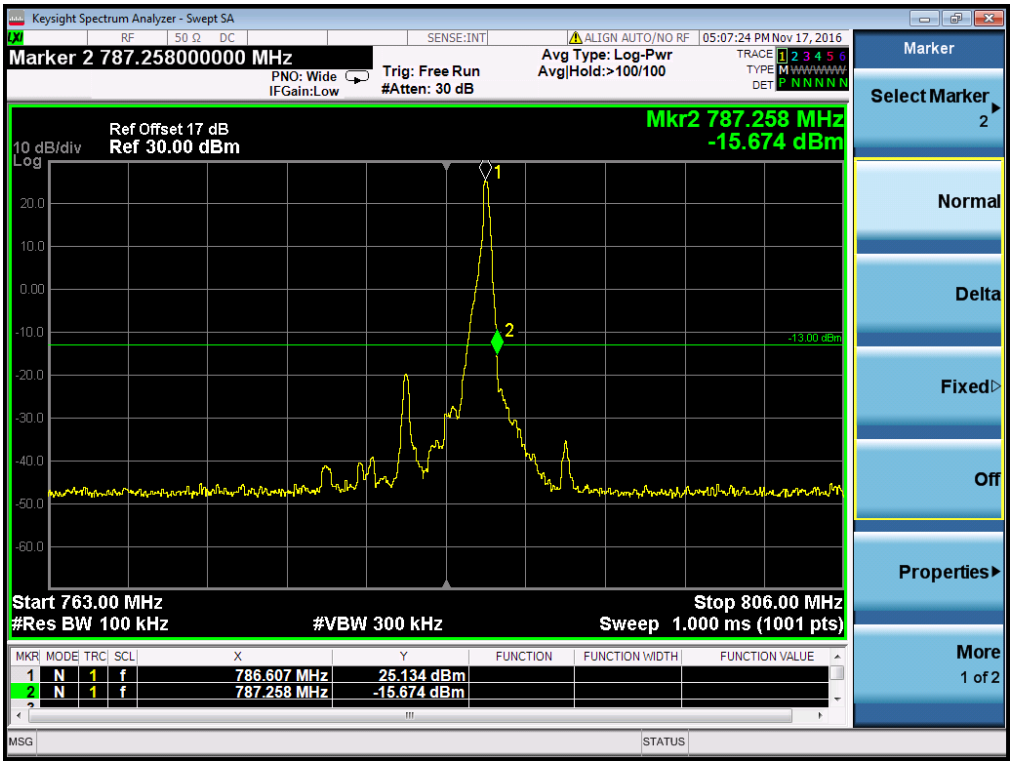
Higher Band Edge Plot for 16QAM -RB Size 50, RB Offset 0

Band	LTE Band 13	Modulation	QPSK
Bandwidth	5MHz		



Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0

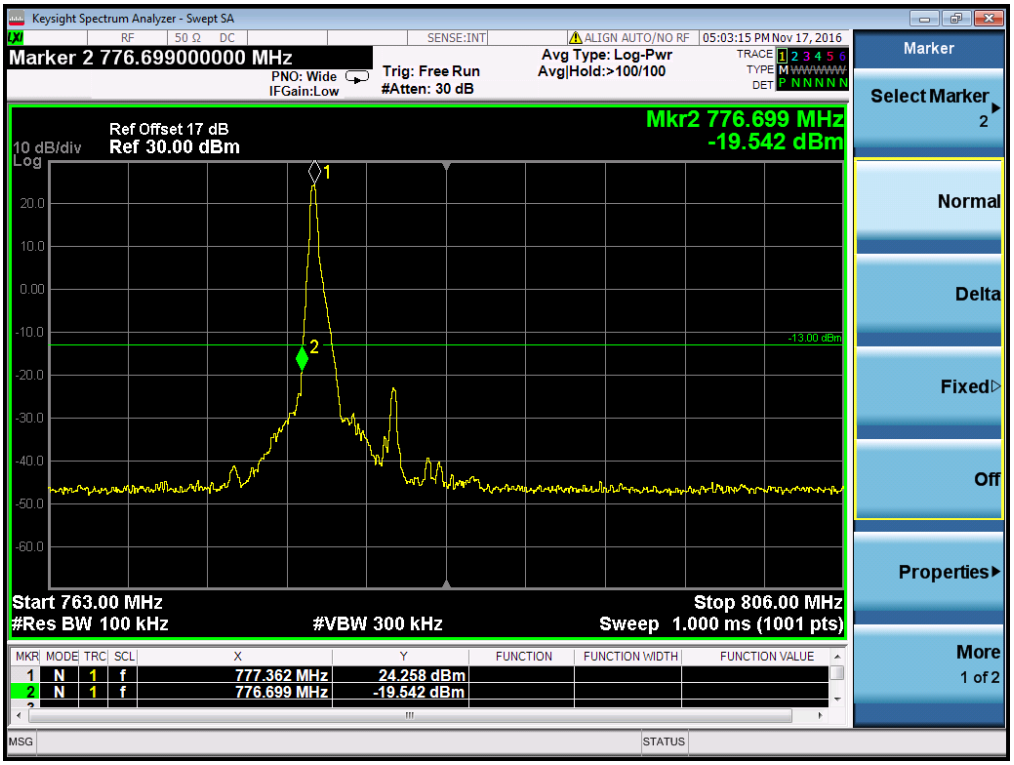
Lower Band Edge Plot for QPSK-RB Size 25, RB Offset 0



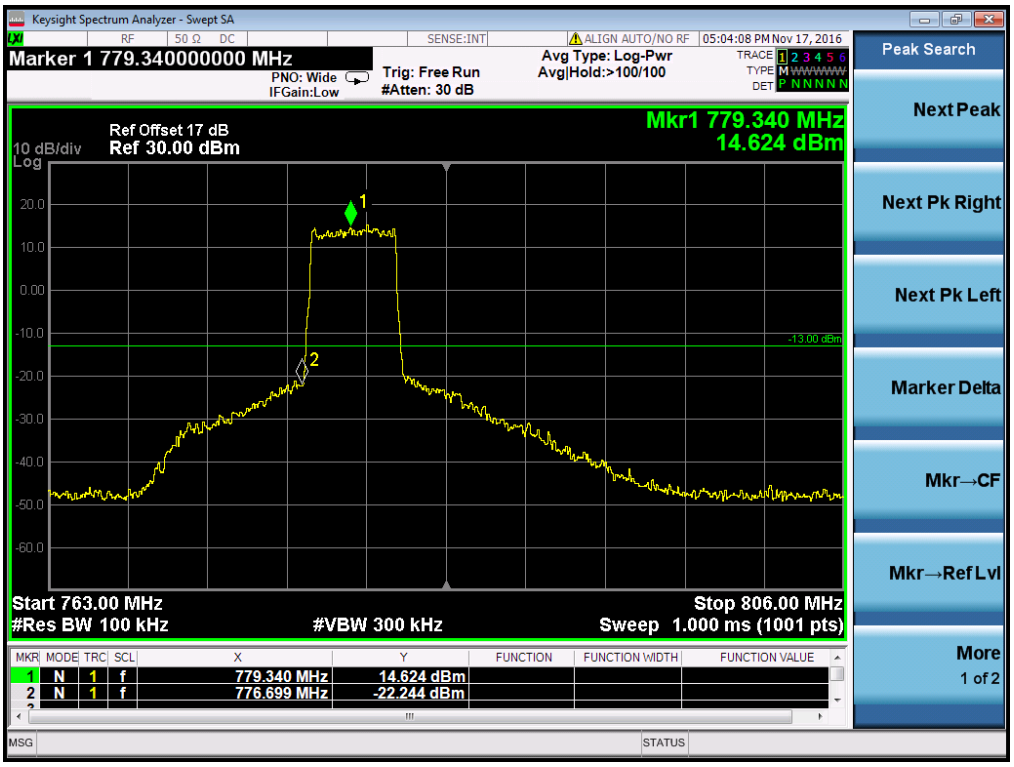
Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 24

Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0

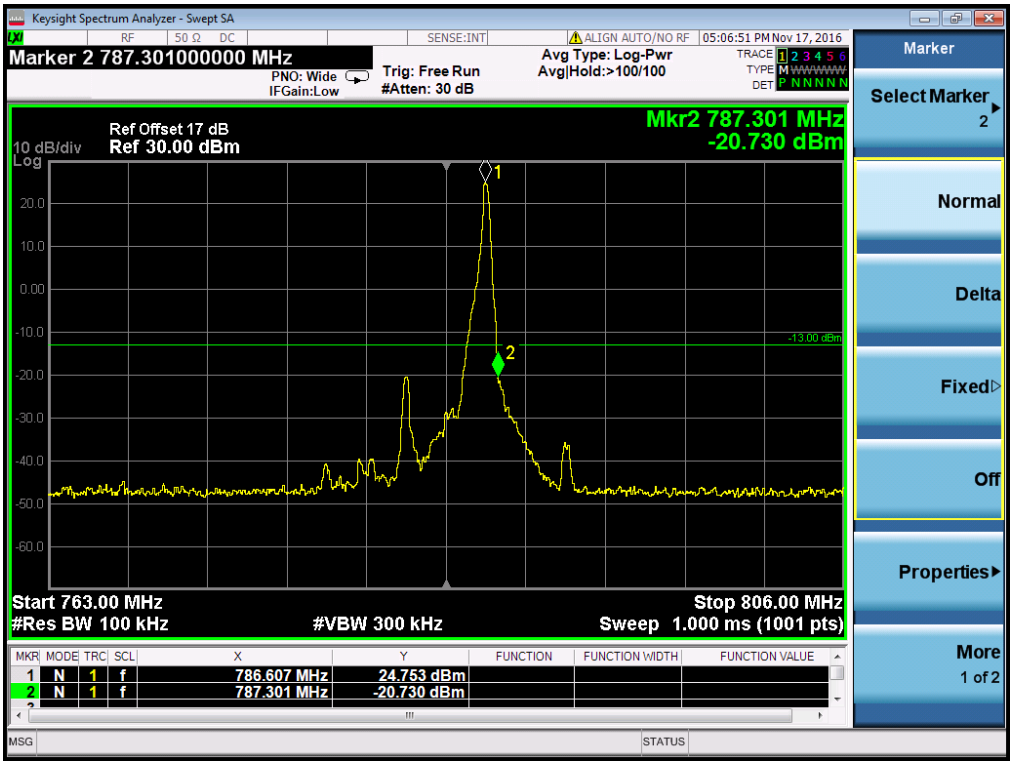
Band	LTE Band 13	Modulation	16QAM
Bandwidth	5MHz		



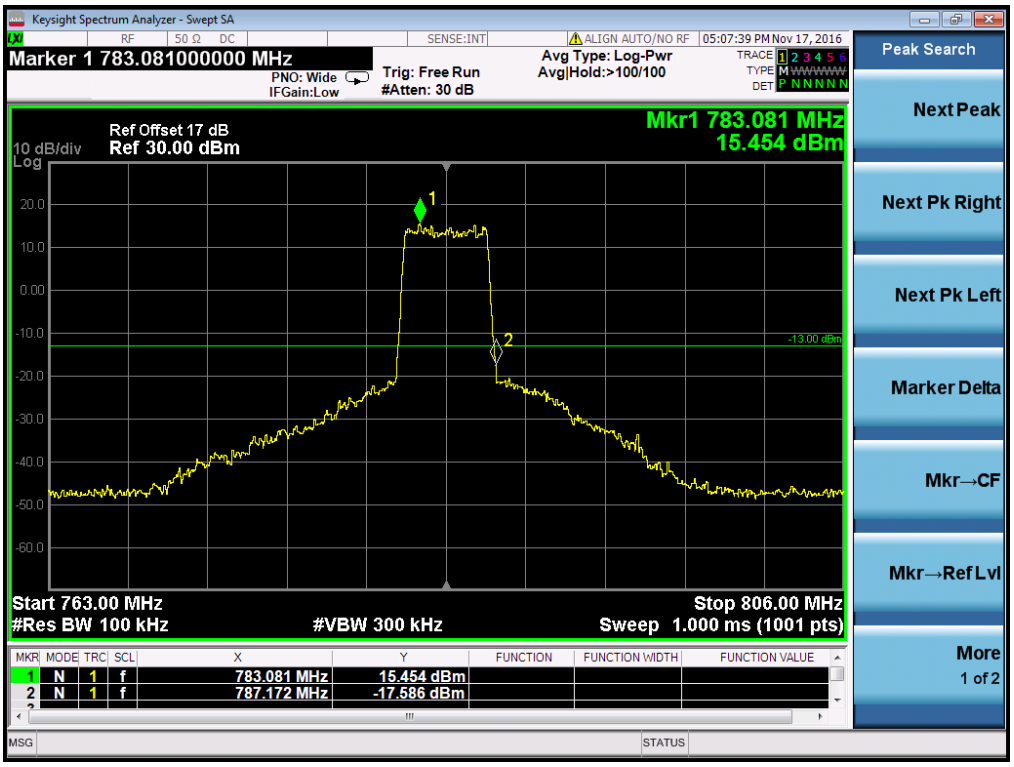
Lower Band Edge Plot for 16QAM -RB Size 1, RB Offset 0



Lower Band Edge Plot for 16QAM -RB Size 25, RB Offset 0

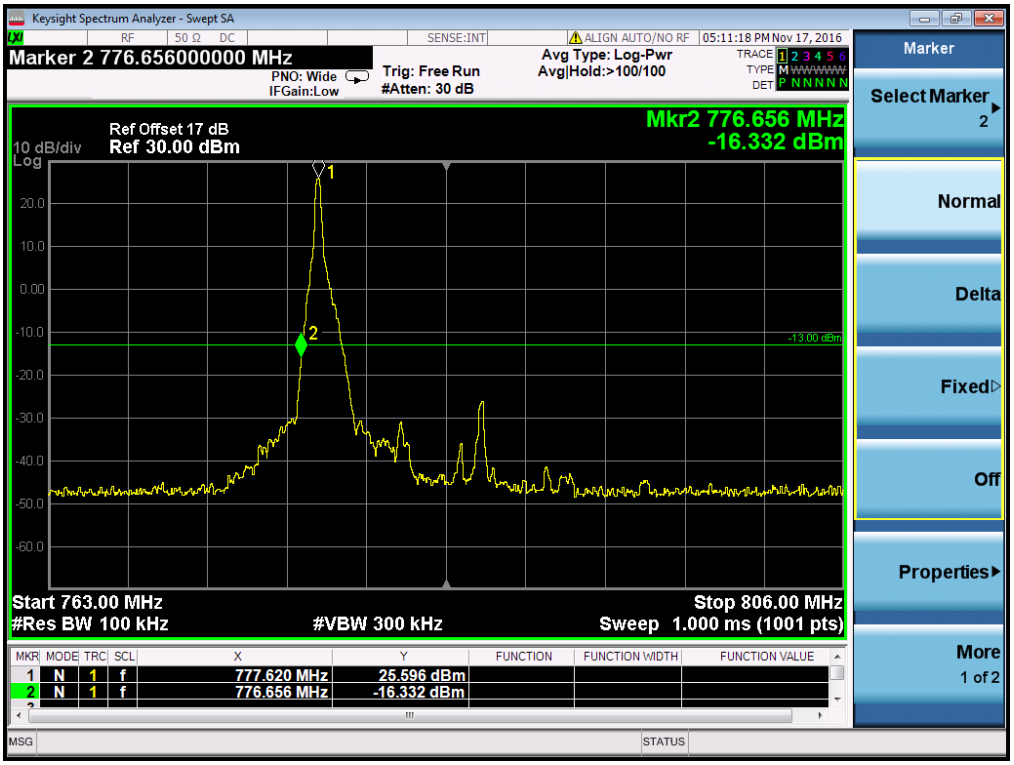


Higher Band Edge Plot for 16QAM -RB Size 1, RB Offset 24



Higher Band Edge Plot for 16QAM -RB Size 25, RB Offset 0

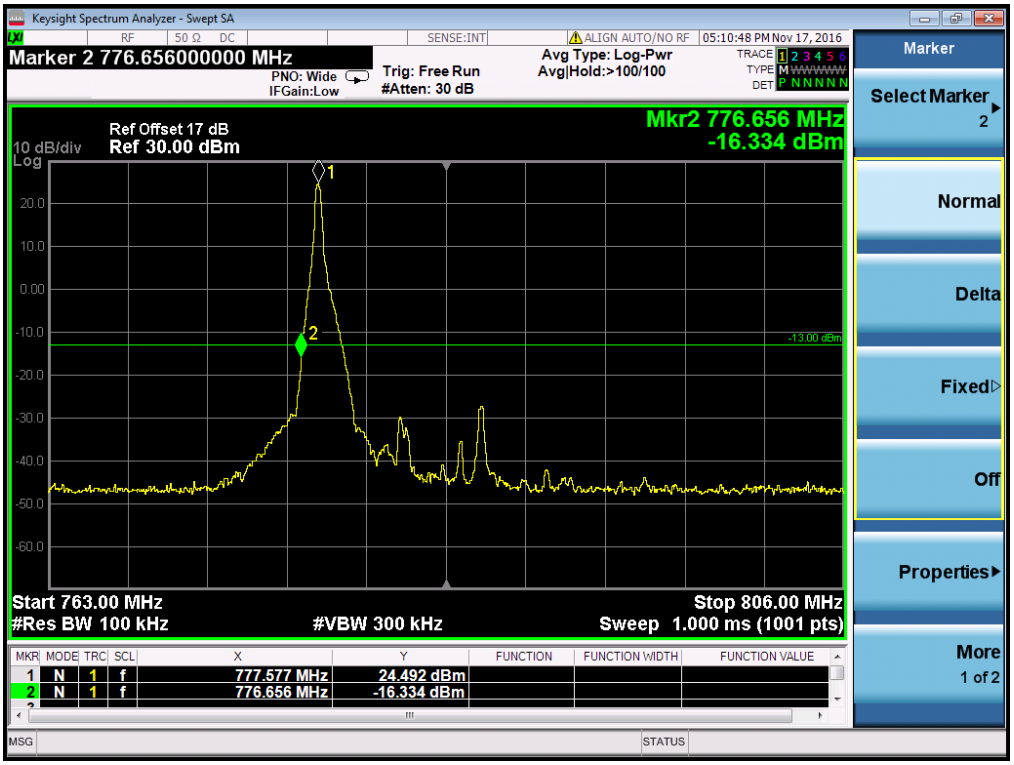
Band	LTE Band 13	Modulation	QPSK
Bandwidth	10MHz		



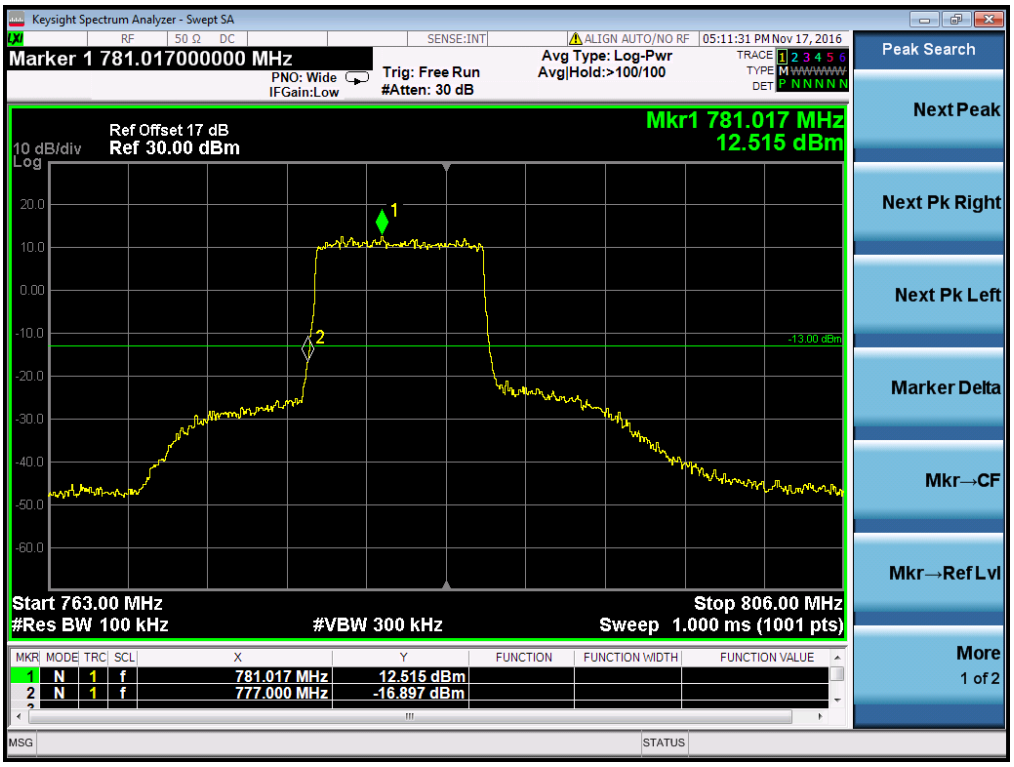
Lower/Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 0

Lower/Higher Band Edge Plot for QPSK-RB Size 50, RB Offset 0

Band	LTE Band 13	Modulation	16QAM
Bandwidth	10MHz		

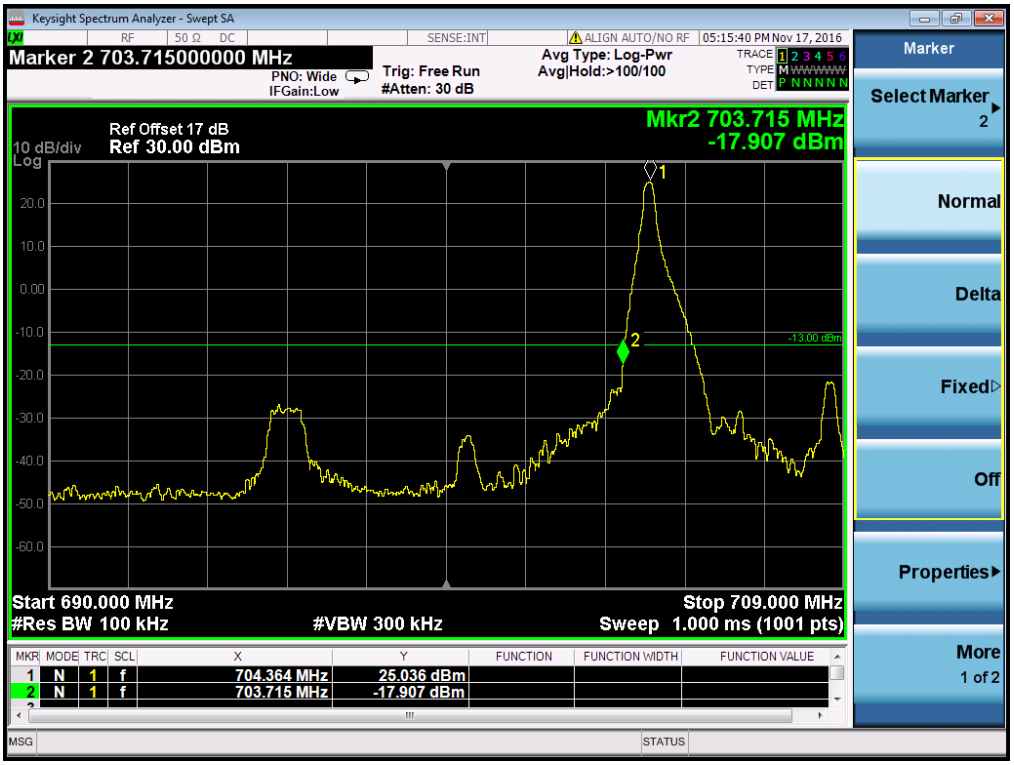


Lower/Higher Band Edge Plot for 16QAM -RB Size 1, RB Offset 0

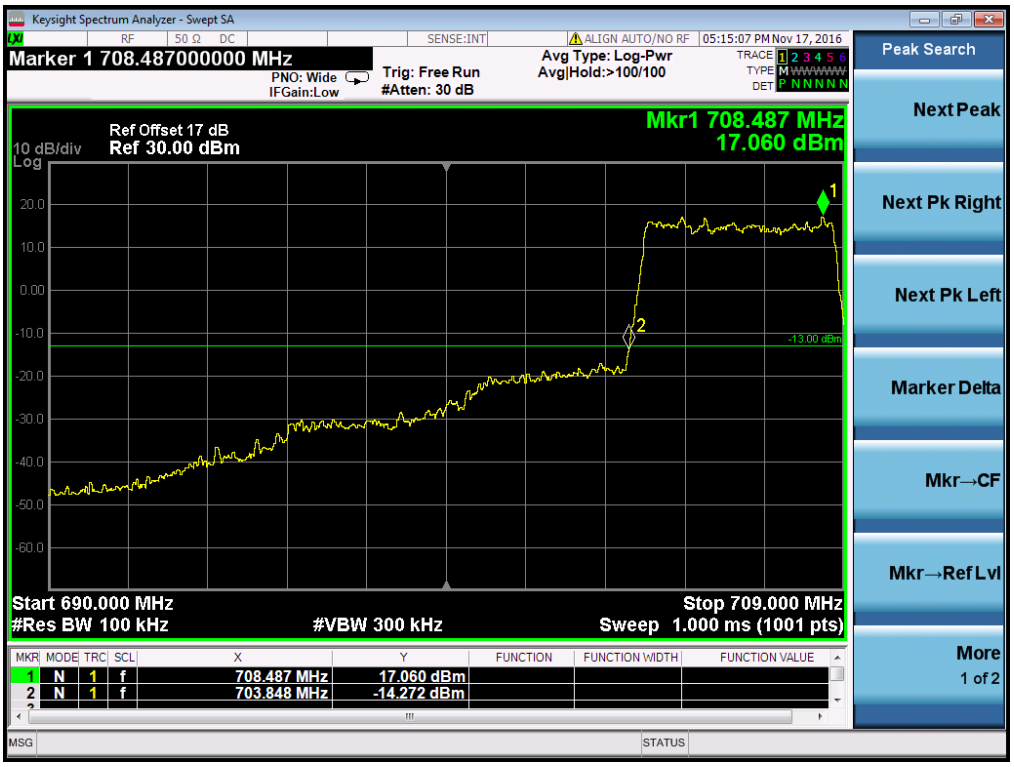


Lower/Higher Band Edge Plot for 16QAM -RB Size 50, RB Offset 0

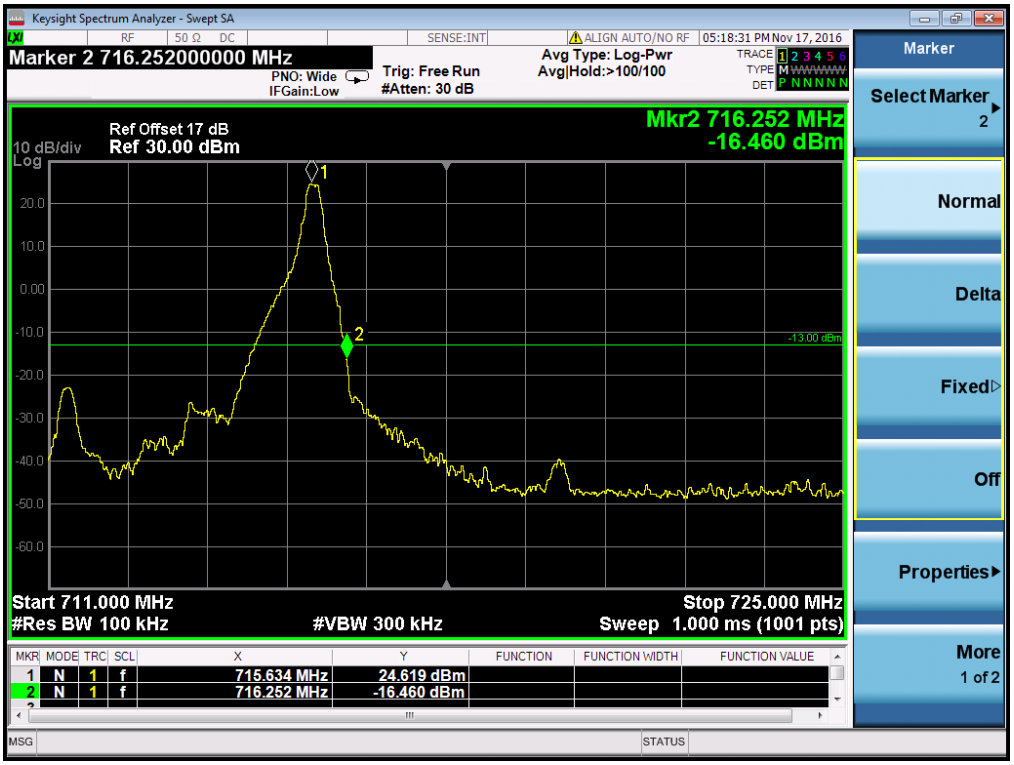
Band	LTE Band 17	Modulation	QPSK
Bandwidth	5MHz		



Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



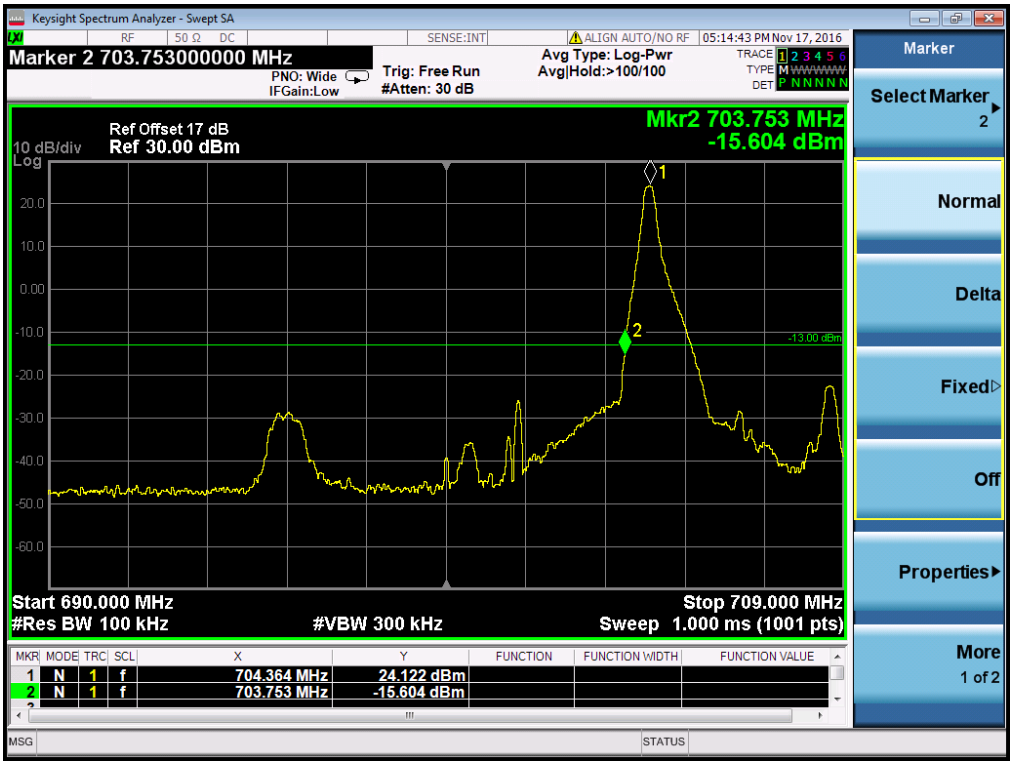
Lower Band Edge Plot for QPSK-RB Size 25, RB Offset 0



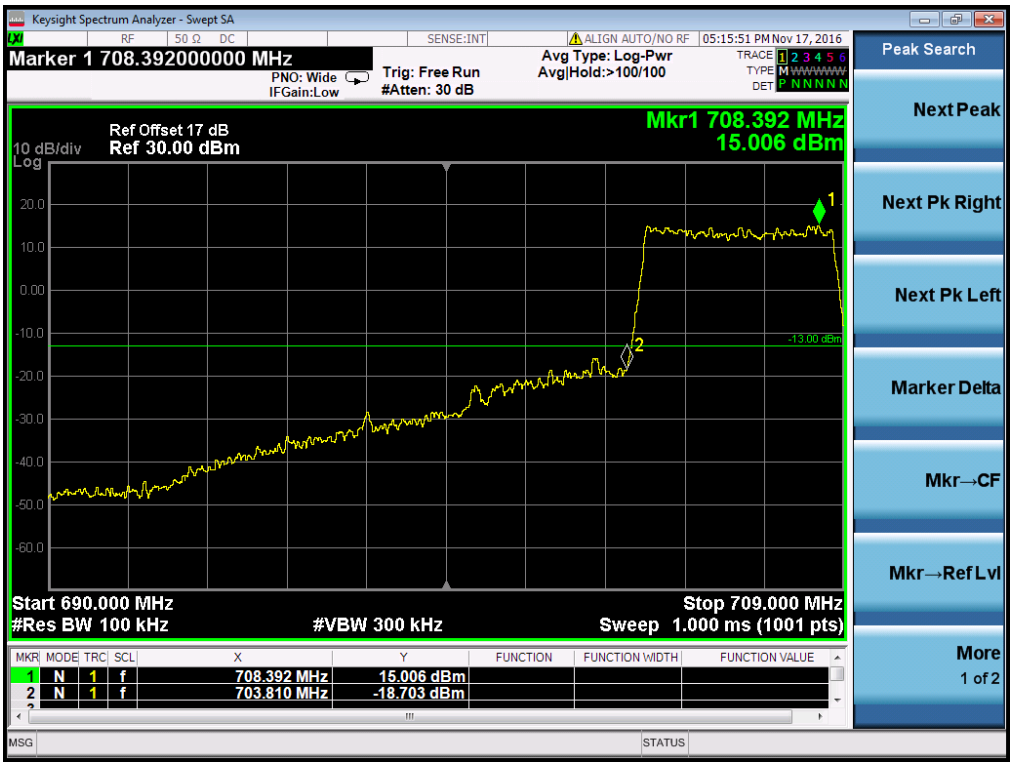
Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 24

Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0

Band	LTE Band 17	Modulation	16QAM
Bandwidth	5MHz		



Lower Band Edge Plot for 16QAM -RB Size 1, RB Offset 0

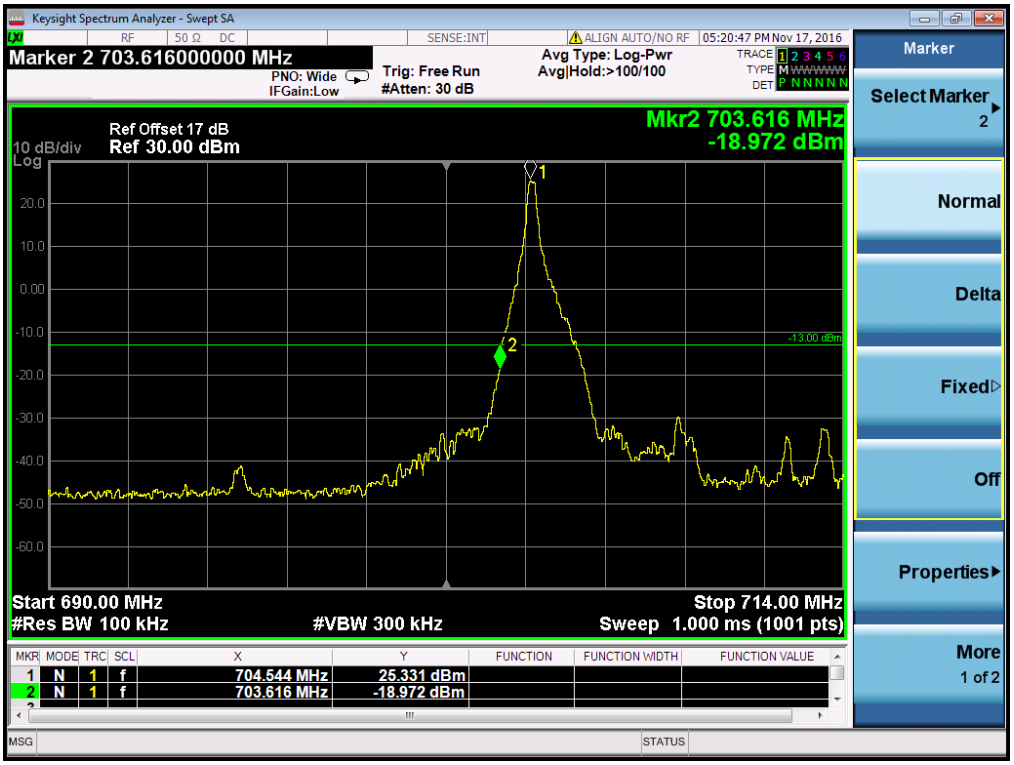


Lower Band Edge Plot for 16QAM -RB Size 25, RB Offset 0

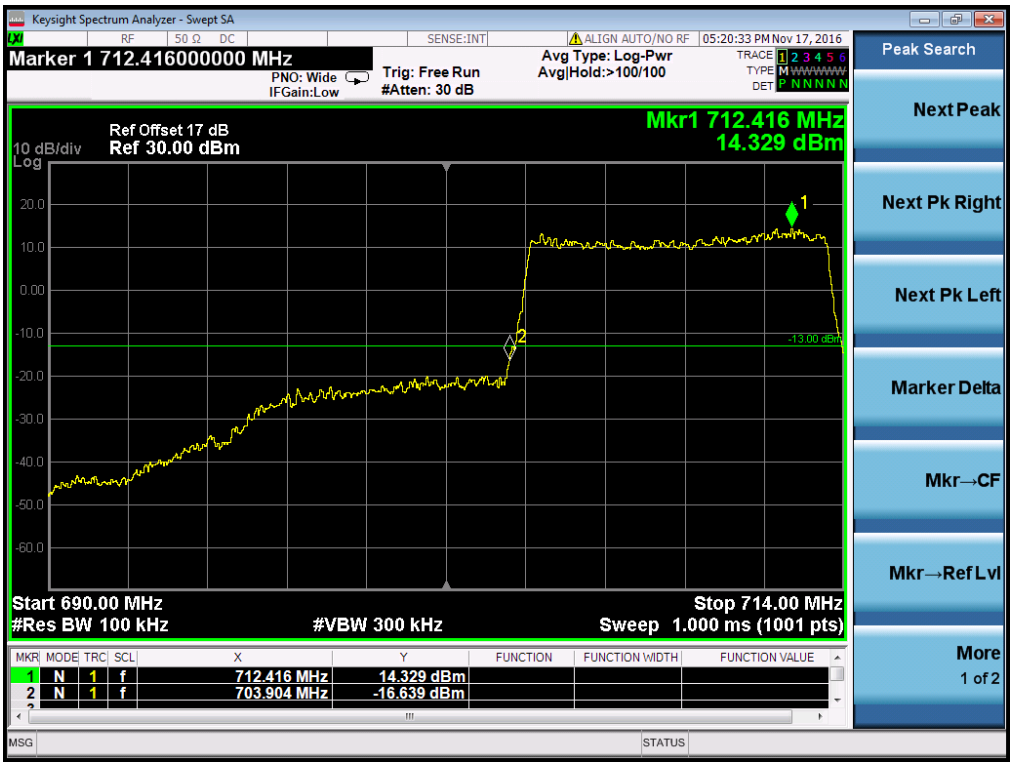
Higher Band Edge Plot for 16QAM -RB Size 1, RB Offset 24

Higher Band Edge Plot for 16QAM -RB Size 25, RB Offset 0

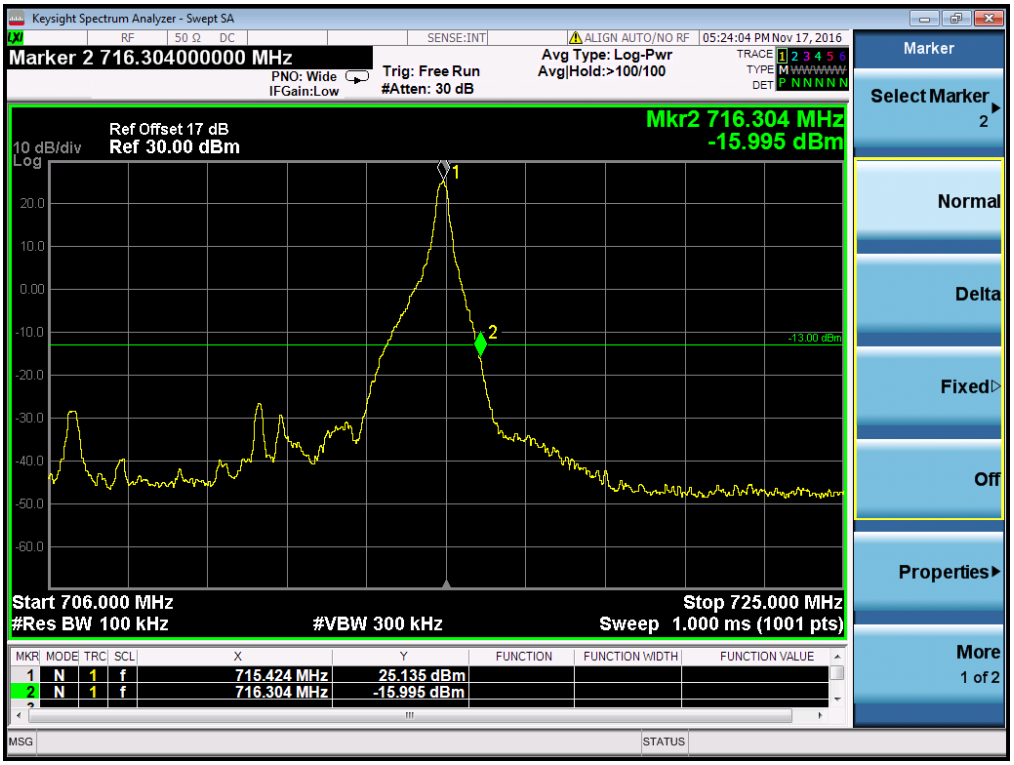
Band	LTE Band 17	Modulation	QPSK
Bandwidth	10MHz		



Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



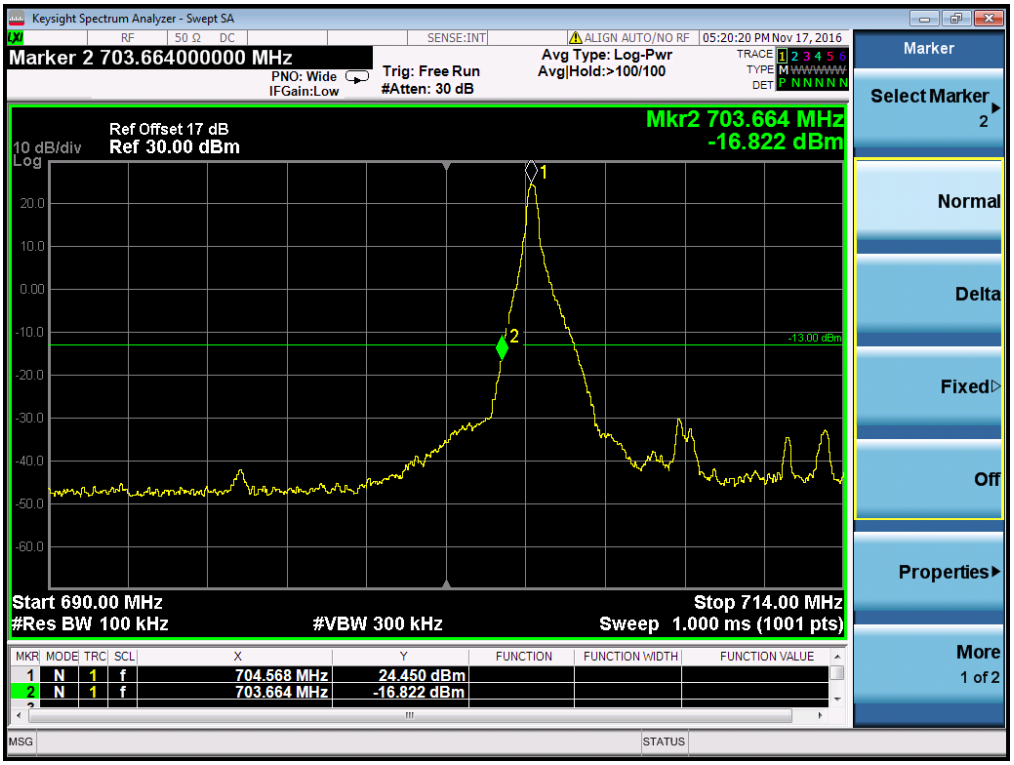
Lower Band Edge Plot for QPSK-RB Size 50, RB Offset 0



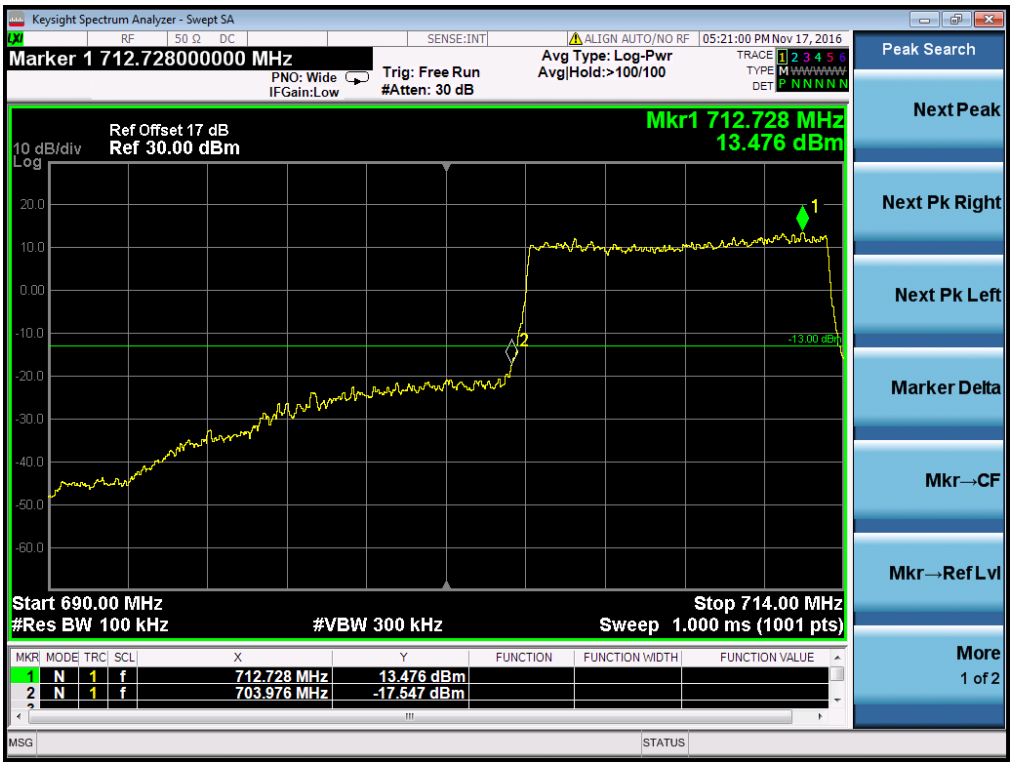
Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 49

Higher Band Edge Plot for QPSK-RB Size 50, RB Offset 0

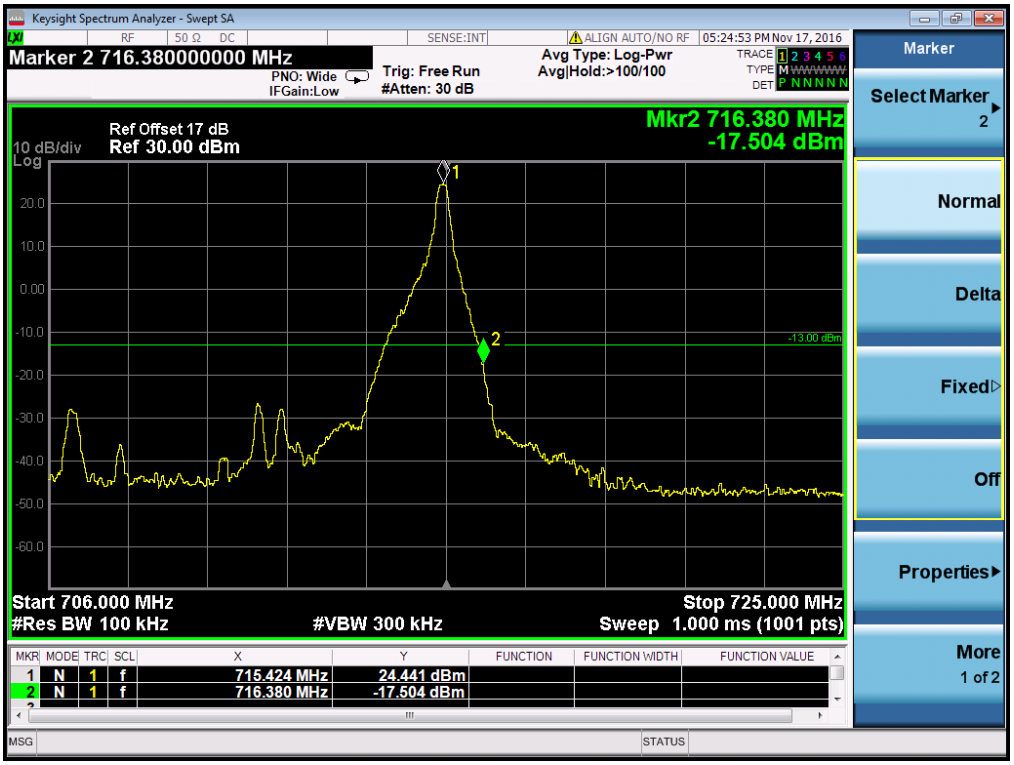
Band	LTE Band 17	Modulation	16QAM
Bandwidth	10MHz		



Lower Band Edge Plot for 16QAM -RB Size 1, RB Offset 0



Lower Band Edge Plot for 16QAM -RB Size 50, RB Offset 0



Higher Band Edge Plot for 16QAM -RB Size 1, RB Offset 49

Higher Band Edge Plot for 16QAM -RB Size 50, RB Offset 0

2.7 Transmitter Radiated Power (EIRP/ERP)

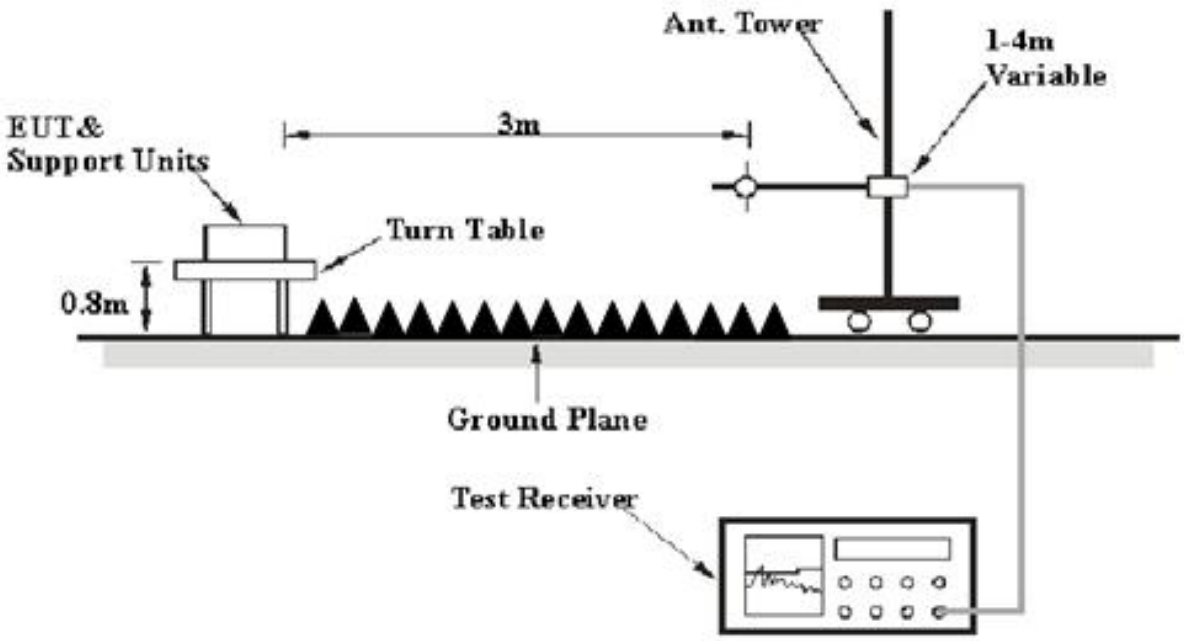
2.7.1 Requirement

Equivalent isotropic radiated power output measurements by substitution method according to ANSI /TIA / EIA-603-C-2004, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v02r02. Mobile and portable (hand-held) stations operating are limited to average EIRP of 2 watts with LTE band 2 / 7 and 1 watt with LTE band 4.

2.7.2 Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.7.3 Test Setup



2.7.4 Test Procedures

1. The EUT was placed on a turntable with 1.5 meter height in a fully anechoic chamber.
2. The EUT was set at 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer which used a channel power option across EUT's signal

bandwidth per section 4.0 of KDB 971168 D01v02r02.

4. The table was rotated 360 degrees to determine the position of the highest radiated power.
5. The height of the receiving antenna is adjusted to look for the maximum ERP/EIRP.
6. Taking the record of maximum ERP/EIRP.
7. A dipole antenna was substituted in place of the EUT and was driven by a signal generator.
8. The conducted power at the terminal of the dipole antenna is measured.
9. Repeat step 3 to step 5 to get the maximum ERP/EIRP of the substitution antenna.
10. ERP/EIRP = Ps + Et – Es + Gs = Ps + Rt – Rs + Gs

    Ps (dBm)：Input power to substitution antenna.

    Gs (dBi or dBd)：Substitution antenna Gain.

    Et = Rt + AF

    Es = Rs + AF

    AF (dB/m)：Receive antenna factor

    Rt：The highest received signal in spectrum analyzer for EUT.

    Rs：The highest received signal in spectrum analyzer for substitution antenna.

2.7.5 Test Result of ERP/EIRP

1. LTE Band 2 Test Verdict:

LTE Band	BW (MHz)	Modulation	RB Configuration		Freq. (MHz)	EIRP (dBm)	H/V	Verdict
			RB Size	RB Offset				
2	1.4	QPSK	1	2	1850.7	20.81	H	PASS
2	1.4	QPSK	1	5	1880	**20.82**	H	PASS
2	1.4	QPSK	3	2	1909.3	20.80	H	PASS
2	1.4	QPSK	1	2	1850.7	18.03	V	PASS
2	1.4	QPSK	1	5	1880	18.06	V	PASS
2	1.4	QPSK	3	2	1909.3	18.05	V	PASS
2	1.4	16QAM	1	0	1850.7	**20.10**	H	PASS
2	1.4	16QAM	1	2	1880	20.08	H	PASS
2	1.4	16QAM	3	2	1909.3	20.07	H	PASS
2	1.4	16QAM	1	0	1850.7	17.30	V	PASS
2	1.4	16QAM	1	2	1880	17.28	V	PASS
2	1.4	16QAM	3	2	1909.3	17.27	V	PASS
2	3	QPSK	1	7	1851.5	**20.86**	H	PASS
2	3	QPSK	1	14	1880	20.84	H	PASS
2	3	QPSK	1	0	1908.5	20.82	H	PASS
2	3	QPSK	1	7	1851.5	18.10	V	PASS
2	3	QPSK	1	14	1880	18.14	V	PASS
2	3	QPSK	1	0	1908.5	18.12	V	PASS
2	3	16QAM	1	14	1851.5	**20.13**	H	PASS
2	3	16QAM	1	0	1880	20.08	H	PASS
2	3	16QAM	1	0	1908.5	20.10	H	PASS
2	3	16QAM	1	14	1851.5	17.38	V	PASS
2	3	16QAM	1	0	1880	17.35	V	PASS
2	3	16QAM	1	0	1908.5	17.36	V	PASS
2	5	QPSK	1	0	1852.5	20.88	H	PASS
2	5	QPSK	1	0	1880	**20.90**	H	PASS
2	5	QPSK	1	24	1907.5	20.87	H	PASS
2	5	QPSK	1	0	1852.5	18.22	V	PASS
2	5	QPSK	1	0	1880	18.19	V	PASS
2	5	QPSK	1	24	1907.5	18.21	V	PASS
2	5	16QAM	1	12	1852.5	20.17	H	PASS
2	5	16QAM	1	0	1880	20.15	H	PASS
2	5	16QAM	1	12	1907.5	**20.18**	H	PASS
2	5	16QAM	1	12	1852.5	17.25	V	PASS
2	5	16QAM	1	0	1880	17.24	V	PASS
2	5	16QAM	1	12	1907.5	17.22	V	PASS

LTE Band	BW (MHz)	Modulation	RB Configuration		Freq. (MHz)	EIRP (dBm)	H/V	Verdict
			RB Size	RB Offset				
2	10	QPSK	1	0	1855	**20.95**	H	PASS
2	10	QPSK	1	0	1880	20.92	H	PASS
2	10	QPSK	1	49	1905	20.94	H	PASS
2	10	QPSK	1	0	1855	18.29	V	PASS
2	10	QPSK	1	0	1880	18.31	V	PASS
2	10	QPSK	1	49	1905	18.28	V	PASS
2	10	16QAM	1	0	1855	**20.23**	H	PASS
2	10	16QAM	1	0	1880	20.22	H	PASS
2	10	16QAM	1	24	1905	20.20	H	PASS
2	10	16QAM	1	0	1855	17.32	V	PASS
2	10	16QAM	1	0	1880	17.30	V	PASS
2	10	16QAM	1	24	1905	17.33	V	PASS
2	15	QPSK	1	0	1857.5	**20.99**	H	PASS
2	15	QPSK	1	0	1880	20.97	H	PASS
2	15	QPSK	1	74	1902.5	20.98	H	PASS
2	15	QPSK	1	0	1857.5	18.36	V	PASS
2	15	QPSK	1	0	1880	18.33	V	PASS
2	15	QPSK	1	74	1902.5	18.38	V	PASS
2	15	16QAM	1	0	1857.5	**20.27**	H	PASS
2	15	16QAM	1	0	1880	20.25	H	PASS
2	15	16QAM	1	74	1902.5	20.26	H	PASS
2	15	16QAM	1	0	1857.5	17.40	V	PASS
2	15	16QAM	1	0	1880	17.38	V	PASS
2	15	16QAM	1	74	1902.5	17.41	V	PASS
2	20	QPSK	1	0	1860	21.02	H	PASS
2	20	QPSK	1	0	1880	**21.04**	H	PASS
2	20	QPSK	1	0	1900	21.03	H	PASS
2	20	QPSK	1	0	1860	18.43	V	PASS
2	20	QPSK	1	0	1880	18.45	V	PASS
2	20	QPSK	1	0	1900	18.44	V	PASS
2	20	16QAM	1	0	1860	20.32	H	PASS
2	20	16QAM	1	0	1880	**20.33**	H	PASS
2	20	16QAM	1	49	1900	20.31	H	PASS
2	20	16QAM	1	0	1860	17.48	V	PASS
2	20	16QAM	1	0	1880	17.45	V	PASS
2	20	16QAM	1	49	1900	17.46	V	PASS

2. LTE Band 4 Test Verdict:

LTE Band	BW (MHz)	Modulation	RB Configuration		Freq. (MHz)	EIRP (dBm)	H/V	Verdict
			RB Size	RB Offset				
4	1.4	QPSK	3	0	1710.7	20.30	H	PASS
4	1.4	QPSK	3	2	1732.5	**20.32**	H	PASS
4	1.4	QPSK	1	2	1754.3	20.29	H	PASS
4	1.4	QPSK	3	0	1710.7	19.02	V	PASS
4	1.4	QPSK	3	2	1732.5	19.10	V	PASS
4	1.4	QPSK	1	2	1754.3	19.05	V	PASS
4	1.4	16QAM	3	2	1710.7	19.51	H	PASS
4	1.4	16QAM	3	2	1732.5	**19.60**	H	PASS
4	1.4	16QAM	3	2	1754.3	19.57	H	PASS
4	1.4	16QAM	3	2	1710.7	18.12	V	PASS
4	1.4	16QAM	3	2	1732.5	18.15	V	PASS
4	1.4	16QAM	3	2	1754.3	18.12	V	PASS
4	3	QPSK	1	0	1711.5	**20.35**	H	PASS
4	3	QPSK	1	0	1732.5	20.32	H	PASS
4	3	QPSK	1	7	1753.5	20.33	H	PASS
4	3	QPSK	1	0	1711.5	19.13	V	PASS
4	3	QPSK	1	0	1732.5	19.14	V	PASS
4	3	QPSK	1	7	1753.5	19.12	V	PASS
4	3	16QAM	1	14	1711.5	**19.68**	H	PASS
4	3	16QAM	1	14	1732.5	19.66	H	PASS
4	3	16QAM	1	14	1753.5	19.64	H	PASS
4	3	16QAM	1	14	1711.5	18.17	V	PASS
4	3	16QAM	1	14	1732.5	18.15	V	PASS
4	3	16QAM	1	14	1753.5	18.20	V	PASS
4	5	QPSK	1	12	1712.5	20.37	H	PASS
4	5	QPSK	1	24	1732.5	20.36	H	PASS
4	5	QPSK	1	24	1752.5	**20.39**	H	PASS
4	5	QPSK	1	12	1712.5	19.16	V	PASS
4	5	QPSK	1	24	1732.5	19.20	V	PASS
4	5	QPSK	1	24	1752.5	19.18	V	PASS
4	5	16QAM	1	24	1712.5	**19.75**	H	PASS
4	5	16QAM	1	0	1732.5	19.71	H	PASS
4	5	16QAM	1	0	1752.5	19.73	H	PASS
4	5	16QAM	1	24	1712.5	18.22	V	PASS
4	5	16QAM	1	0	1732.5	18.25	V	PASS
4	5	16QAM	1	0	1752.5	18.24	V	PASS

LTE Band	BW (MHz)	Modulation	RB Configuration		Freq. (MHz)	EIRP (dBm)	H/V	Verdict
			RB Size	RB Offset				
4	10	QPSK	1	24	1715	**20.42**	H	PASS
4	10	QPSK	1	0	1732.5	20.40	H	PASS
4	10	QPSK	1	24	1750	20.39	H	PASS
4	10	QPSK	1	24	1715	19.25	V	PASS
4	10	QPSK	1	0	1732.5	19.22	V	PASS
4	10	QPSK	1	24	1750	19.23	V	PASS
4	10	16QAM	1	24	1715	19.76	H	PASS
4	10	16QAM	1	0	1732.5	**19.78**	H	PASS
4	10	16QAM	1	24	1750	19.75	H	PASS
4	10	16QAM	1	24	1715	18.32	V	PASS
4	10	16QAM	1	0	1732.5	18.35	V	PASS
4	10	16QAM	1	24	1750	18.33	V	PASS
4	15	QPSK	1	74	1717.5	**20.45**	H	PASS
4	15	QPSK	1	74	1732.5	20.42	H	PASS
4	15	QPSK	1	0	1747.5	20.43	H	PASS
4	15	QPSK	1	74	1717.5	19.32	V	PASS
4	15	QPSK	1	74	1732.5	19.35	V	PASS
4	15	QPSK	1	0	1747.5	19.33	V	PASS
4	15	16QAM	1	74	1717.5	19.84	H	PASS
4	15	16QAM	1	0	1732.5	19.82	H	PASS
4	15	16QAM	1	0	1747.5	**19.85**	H	PASS
4	15	16QAM	1	74	1717.5	18.46	V	PASS
4	15	16QAM	1	0	1732.5	18.41	V	PASS
4	15	16QAM	1	0	1747.5	18.43	V	PASS
4	20	QPSK	1	0	1720	**20.52**	H	PASS
4	20	QPSK	1	0	1732.5	20.50	H	PASS
4	20	QPSK	1	0	1745	20.49	H	PASS
4	20	QPSK	1	0	1720	19.39	V	PASS
4	20	QPSK	1	0	1732.5	19.42	V	PASS
4	20	QPSK	1	0	1745	19.44	V	PASS
4	20	16QAM	1	0	1720	**19.93**	H	PASS
4	20	16QAM	1	0	1732.5	19.86	H	PASS
4	20	16QAM	1	0	1745	19.89	H	PASS
4	20	16QAM	1	0	1720	18.53	V	PASS
4	20	16QAM	1	0	1732.5	18.56	V	PASS
4	20	16QAM	1	0	1745	18.55	V	PASS

3. LTE Band 7 Test Verdict:

LTE Band	BW (MHz)	Modulation	RB Configuration		Freq. (MHz)	ERP (dBm)	H/V	Verdict
			RB Size	RB Offset				
7	5	QPSK	1	12	2502.5	**19.51**	H	PASS
7	5	QPSK	1	0	2535	19.48	H	PASS
7	5	QPSK	1	24	2567.5	19.50	H	PASS
7	5	QPSK	1	12	2502.5	18.03	V	PASS
7	5	QPSK	1	0	2535	18.00	V	PASS
7	5	QPSK	1	24	2567.5	18.01	V	PASS
7	5	16QAM	1	24	2502.5	**18.70**	H	PASS
7	5	16QAM	1	24	2535	18.68	H	PASS
7	5	16QAM	1	0	2567.5	18.69	H	PASS
7	5	16QAM	1	24	2502.5	17.18	V	PASS
7	5	16QAM	1	24	2535	17.15	V	PASS
7	5	16QAM	1	0	2567.5	17.16	V	PASS
7	10	QPSK	1	24	2505	19.52	H	PASS
7	10	QPSK	1	49	2535	**19.55**	H	PASS
7	10	QPSK	1	24	2565	19.54	H	PASS
7	10	QPSK	1	24	2505	18.08	V	PASS
7	10	QPSK	1	49	2535	18.09	V	PASS
7	10	QPSK	1	24	2565	18.05	V	PASS
7	10	16QAM	1	24	2505	18.74	H	PASS
7	10	16QAM	1	49	2535	**18.75**	H	PASS
7	10	16QAM	1	24	2565	18.73	H	PASS
7	10	16QAM	1	24	2505	17.22	V	PASS
7	10	16QAM	1	49	2535	17.24	V	PASS
7	10	16QAM	1	24	2565	17.21	V	PASS
7	15	QPSK	1	37	2507.5	**19.59**	H	PASS
7	15	QPSK	1	74	2535	19.57	H	PASS
7	15	QPSK	1	0	2562.5	19.56	H	PASS
7	15	QPSK	1	37	2507.5	18.13	V	PASS
7	15	QPSK	1	74	2535	18.10	V	PASS
7	15	QPSK	1	0	2562.5	18.15	V	PASS
7	15	16QAM	1	37	2507.5	18.77	H	PASS
7	15	16QAM	1	18	2535	**18.80**	H	PASS
7	15	16QAM	1	0	2562.5	18.78	H	PASS
7	15	16QAM	1	37	2507.5	17.28	V	PASS
7	15	16QAM	1	18	2535	17.30	V	PASS
7	15	16QAM	1	0	2562.5	17.31	V	PASS

LTE Band	BW (MHz)	Modulation	RB Configuration		Freq. (MHz)	ERP (dBm)	H/V	Verdict
7	20	QPSK	1	0	2510	19.63	H	PASS
7	20	QPSK	1	0	2535	**19.65**	H	PASS
7	20	QPSK	1	0	2560	19.61	H	PASS
7	20	QPSK	1	0	2510	18.23	V	PASS
7	20	QPSK	1	0	2535	18.24	V	PASS
7	20	QPSK	1	0	2560	18.25	V	PASS
7	20	16QAM	1	0	2510	18.83	H	PASS
7	20	16QAM	1	0	2535	**18.86**	H	PASS
7	20	16QAM	1	0	2560	18.82	H	PASS
7	20	16QAM	1	0	2510	17.33	V	PASS
7	20	16QAM	1	0	2535	17.36	V	PASS
7	20	16QAM	1	0	2560	17.34	V	PASS

4. LTE Band 12 Test Verdict:

LTE Band	BW (MHz)	Modulation	RB Configuration		Freq. (MHz)	EIRP (dBm)	H/V	Verdict
			RB Size	RB Offset				
12	1.4	QPSK	3	0	699.7	**21.18**	H	PASS
12	1.4	QPSK	3	2	707.5	21.14	H	PASS
12	1.4	QPSK	1	2	715.3	21.16	H	PASS
12	1.4	QPSK	3	0	699.7	19.66	V	PASS
12	1.4	QPSK	3	2	707.5	19.64	V	PASS
12	1.4	QPSK	1	2	715.3	19.67	V	PASS
12	1.4	16QAM	3	2	699.7	**20.30**	H	PASS
12	1.4	16QAM	3	2	707.5	20.28	H	PASS
12	1.4	16QAM	3	2	715.3	20.27	H	PASS
12	1.4	16QAM	3	2	699.7	18.82	V	PASS
12	1.4	16QAM	3	2	707.5	18.81	V	PASS
12	1.4	16QAM	3	2	715.3	18.79	V	PASS
12	3	QPSK	1	0	700.5	**21.22**	H	PASS
12	3	QPSK	1	0	707.5	21.21	H	PASS
12	3	QPSK	1	7	714.5	21.19	H	PASS
12	3	QPSK	1	0	700.5	19.70	V	PASS
12	3	QPSK	1	0	707.5	19.72	V	PASS
12	3	QPSK	1	7	714.5	19.71	V	PASS
12	3	16QAM	1	14	700.5	20.31	H	PASS
12	3	16QAM	1	14	707.5	**20.34**	H	PASS
12	3	16QAM	1	14	714.5	20.32	H	PASS
12	3	16QAM	1	14	700.5	18.87	V	PASS
12	3	16QAM	1	14	707.5	18.89	V	PASS
12	3	16QAM	1	14	714.5	18.90	V	PASS
12	5	QPSK	1	12	701.5	21.28	H	PASS
12	5	QPSK	1	24	707.5	**21.29**	H	PASS
12	5	QPSK	1	24	713.5	21.25	H	PASS
12	5	QPSK	1	12	701.5	19.82	V	PASS
12	5	QPSK	1	24	707.5	19.80	V	PASS
12	5	QPSK	1	24	713.5	19.78	V	PASS
12	5	16QAM	1	24	701.5	20.39	H	PASS
12	5	16QAM	1	0	707.5	**20.41**	H	PASS
12	5	16QAM	1	0	713.5	20.38	H	PASS
12	5	16QAM	1	24	701.5	18.92	V	PASS
12	5	16QAM	1	0	707.5	18.95	V	PASS
12	5	16QAM	1	0	713.5	18.94	V	PASS

LTE Band	BW (MHz)	Modulation	RB Configuration		Freq. (MHz)	EIRP (dBm)	H/V	Verdict
			RB Size	RB Offset				
12	10	QPSK	1	24	704	21.33	H	PASS
12	10	QPSK	1	0	707.5	**21.35**	H	PASS
12	10	QPSK	1	24	711	21.34	H	PASS
12	10	QPSK	1	24	704	19.87	V	PASS
12	10	QPSK	1	0	707.5	19.89	V	PASS
12	10	QPSK	1	24	711	19.91	V	PASS
12	10	16QAM	1	24	704	**20.48**	H	PASS
12	10	16QAM	1	0	707.5	20.45	H	PASS
12	10	16QAM	1	24	711	20.47	H	PASS
12	10	16QAM	1	24	704	19.04	V	PASS
12	10	16QAM	1	0	707.5	19.03	V	PASS
12	10	16QAM	1	24	711	19.00	V	PASS

5. LTE Band 13 Test Verdict:

LTE Band	BW (MHz)	Modulation	RB Configuration		Freq. (MHz)	ERP (dBm)	H/V	Verdict
			RB Size	RB Offset				
13	5	QPSK	1	24	779.5	21.45	H	PASS
13	5	QPSK	1	24	782	**21.50**	H	PASS
13	5	QPSK	1	12	784.5	21.48	H	PASS
13	5	QPSK	1	24	779.5	19.92	V	PASS
13	5	QPSK	1	24	782	19.95	V	PASS
13	5	QPSK	1	12	784.5	19.94	V	PASS
13	5	16QAM	1	24	779.5	**20.69**	H	PASS
13	5	16QAM	1	24	782	20.65	H	PASS
13	5	16QAM	1	12	784.5	20.66	H	PASS
13	5	16QAM	1	24	779.5	19.12	V	PASS
13	5	16QAM	1	24	782	19.08	V	PASS
13	5	16QAM	1	12	784.5	19.10	V	PASS
13	10	QPSK	1	49	782	**21.53**	H	PASS
13	10	QPSK	1	49	782	21.51	H	PASS
13	10	QPSK	1	49	782	21.49	H	PASS
13	10	QPSK	1	49	782	20.03	V	PASS
13	10	QPSK	1	49	782	19.98	V	PASS
13	10	QPSK	1	49	782	20.01	V	PASS
13	10	16QAM	1	24	782	20.73	H	PASS
13	10	16QAM	1	49	782	**20.76**	H	PASS
13	10	16QAM	1	24	782	20.75	H	PASS
13	10	16QAM	1	24	782	19.19	V	PASS
13	10	16QAM	1	49	782	19.16	V	PASS
13	10	16QAM	1	24	782	19.18	V	PASS

6. LTE Band 17 Test Verdict:

LTE Band	BW (MHz)	Modulation	RB Configuration		Freq. (MHz)	ERP (dBm)	H/V	Verdict
			RB Size	RB Offset				
17	5	QPSK	1	24	706.5	**21.45**	H	PASS
17	5	QPSK	1	24	710	21.42	H	PASS
17	5	QPSK	1	12	713.5	21.43	H	PASS
17	5	QPSK	1	24	706.5	19.89	V	PASS
17	5	QPSK	1	24	710	19.85	V	PASS
17	5	QPSK	1	12	713.5	19.87	V	PASS
17	5	16QAM	1	24	706.5	20.62	H	PASS
17	5	16QAM	1	24	710	**20.65**	H	PASS
17	5	16QAM	1	12	713.5	20.63	H	PASS
17	5	16QAM	1	24	706.5	19.11	V	PASS
17	5	16QAM	1	24	710	19.08	V	PASS
17	5	16QAM	1	12	713.5	19.10	V	PASS
17	10	QPSK	1	49	709	21.49	H	PASS
17	10	QPSK	1	49	710	**21.51**	H	PASS
17	10	QPSK	1	49	711	21.48	H	PASS
17	10	QPSK	1	49	709	19.93	V	PASS
17	10	QPSK	1	49	710	19.94	V	PASS
17	10	QPSK	1	49	711	19.92	V	PASS
17	10	16QAM	1	24	709	20.73	H	PASS
17	10	16QAM	1	49	710	**20.76**	H	PASS
17	10	16QAM	1	24	711	20.71	H	PASS
17	10	16QAM	1	24	709	19.20	V	PASS
17	10	16QAM	1	49	710	19.24	V	PASS
17	10	16QAM	1	24	711	19.22	V	PASS

2.8 Radiated Out of Band Emissions

2.8.1 Requirement

The radiated spurious emission was measured by substitution method according to ANSI / TIA /EIA-603-C-2004. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

For Band 7

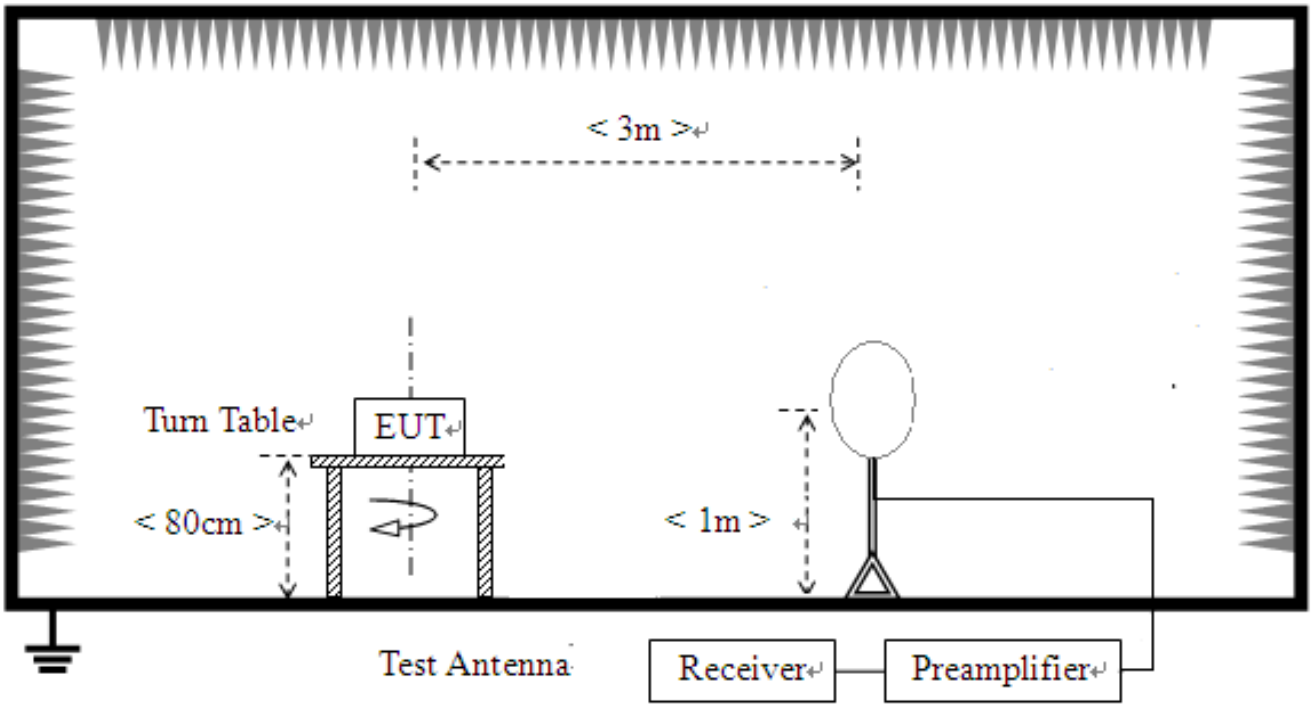
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 55 + 10 log (P) dB.

2.8.2 Measuring Instruments

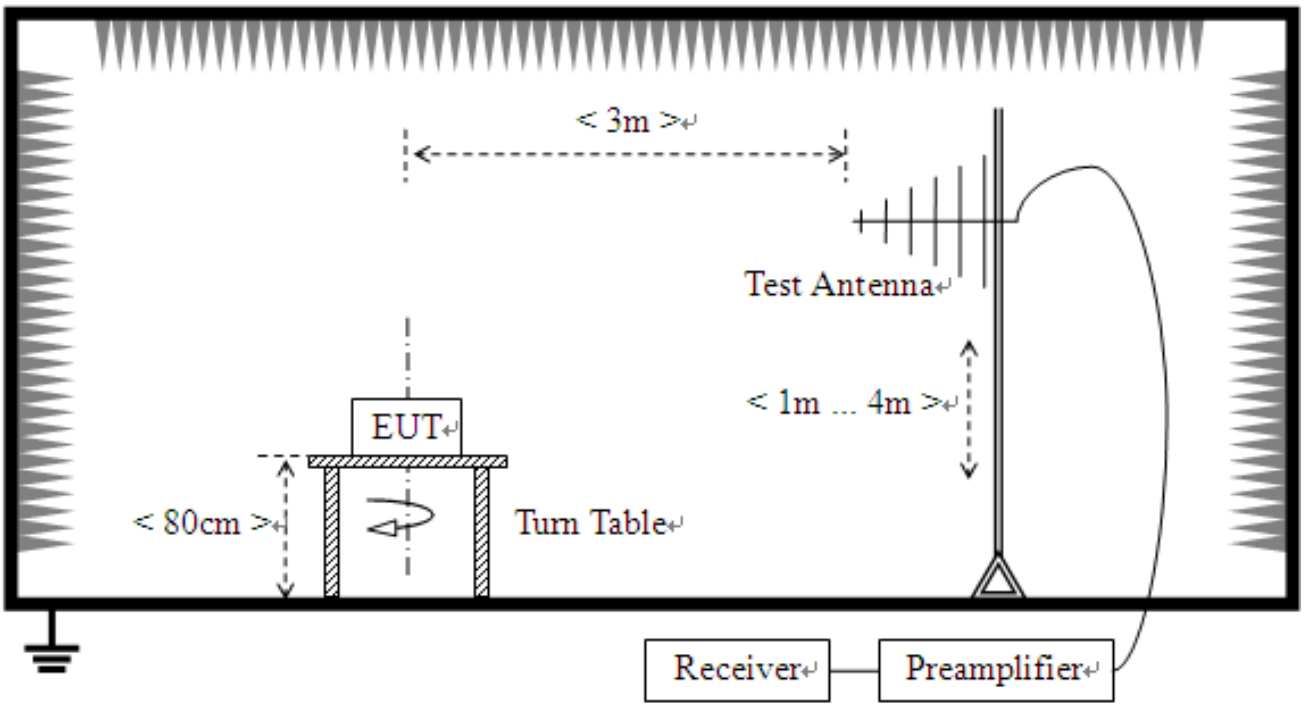
The measuring equipment is listed in the section 3 of this test report.

2.8.3 Test Setup

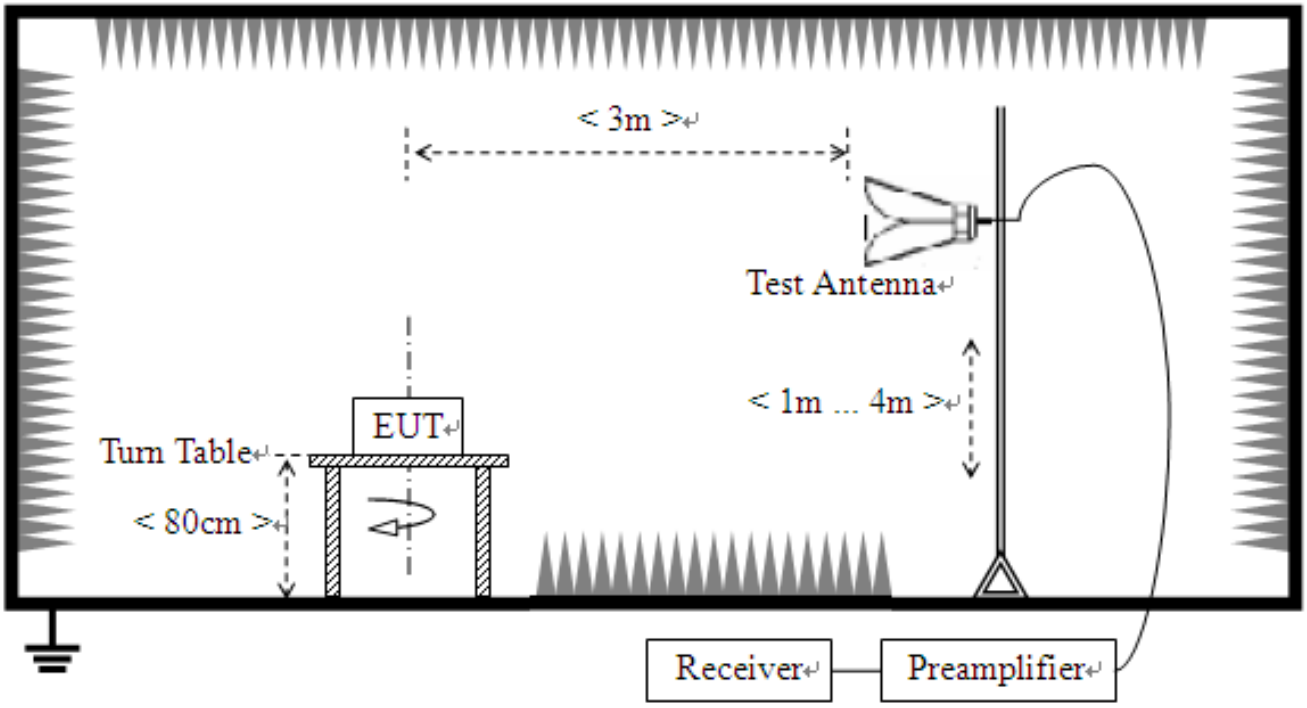
For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



2.8.4 Test Procedures

1. The EUT was placed on a rotatable wooden table with 0.8 meter above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

    The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

    = P(W)- [43 + 10log(P)] (dB)

    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)

    = -13dBm.

    <For Band 7>

    The limit line is derived from 55+ 10log(P)dB below the transmitter power P(Watts)

    = P(W)- [55 + 10log(P)] (dB)

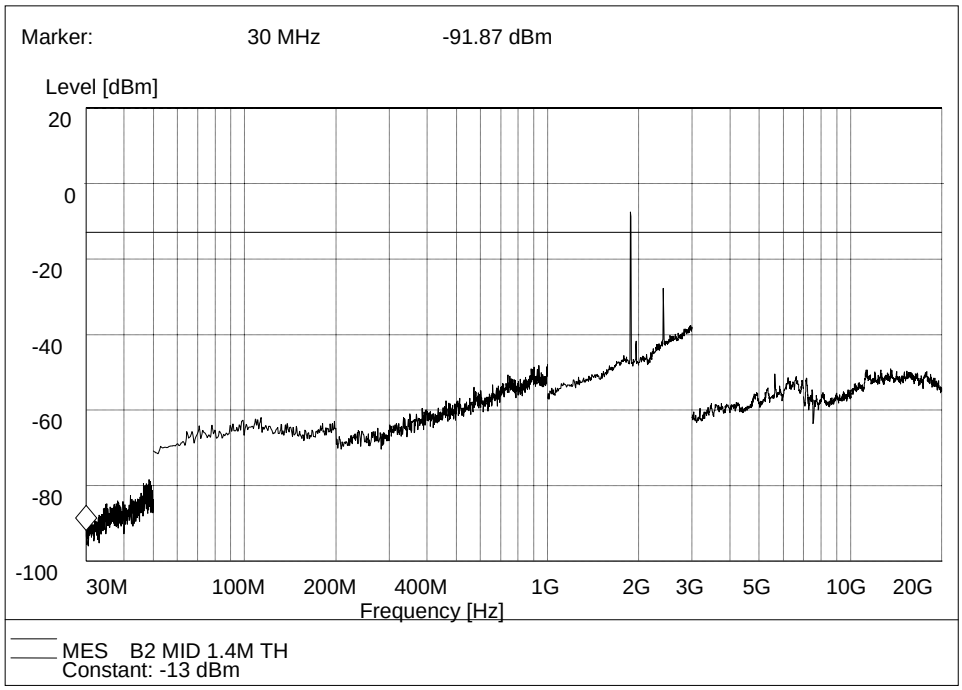
    = [30 + 10log(P)] (dBm) - [55 + 10log(P)] (dB)

    = -25dBm.
11. All Spurious Emission tests were performed in X, Y, Z axis direction and low, middle, high channel. And only the worst axis test condition was recorded in this test report.
12. The spectrum is measured from 9 KHz to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. The worst case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.

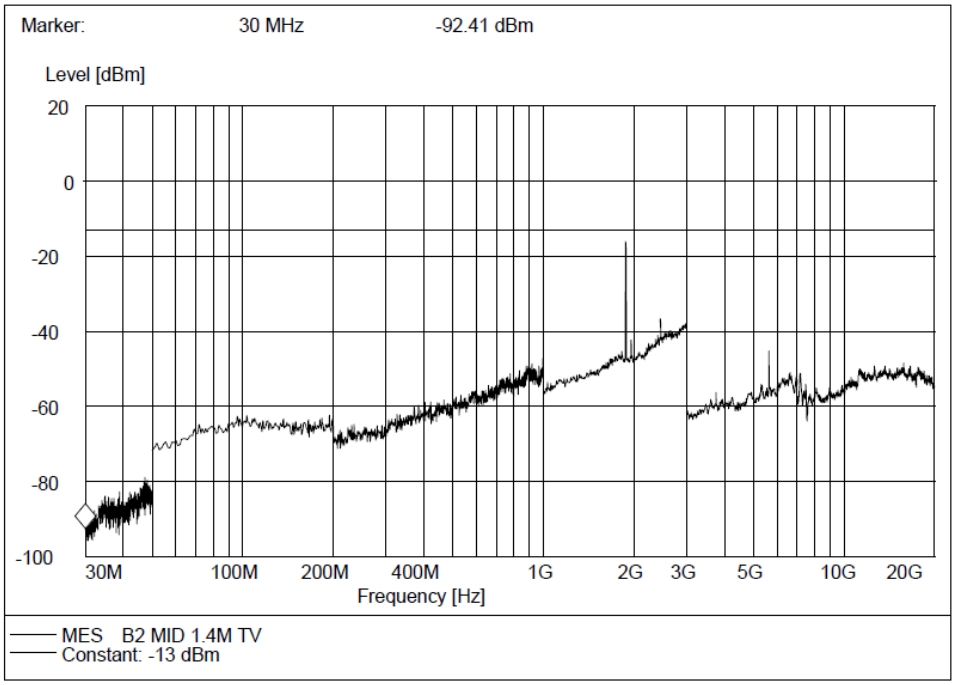
13. The maximum RB configurations of the Radiated Spurious Emissions as RB Size 1, RB Offset 0

2.8.5 Test Result (Plots) of Radiated Spurious Emission

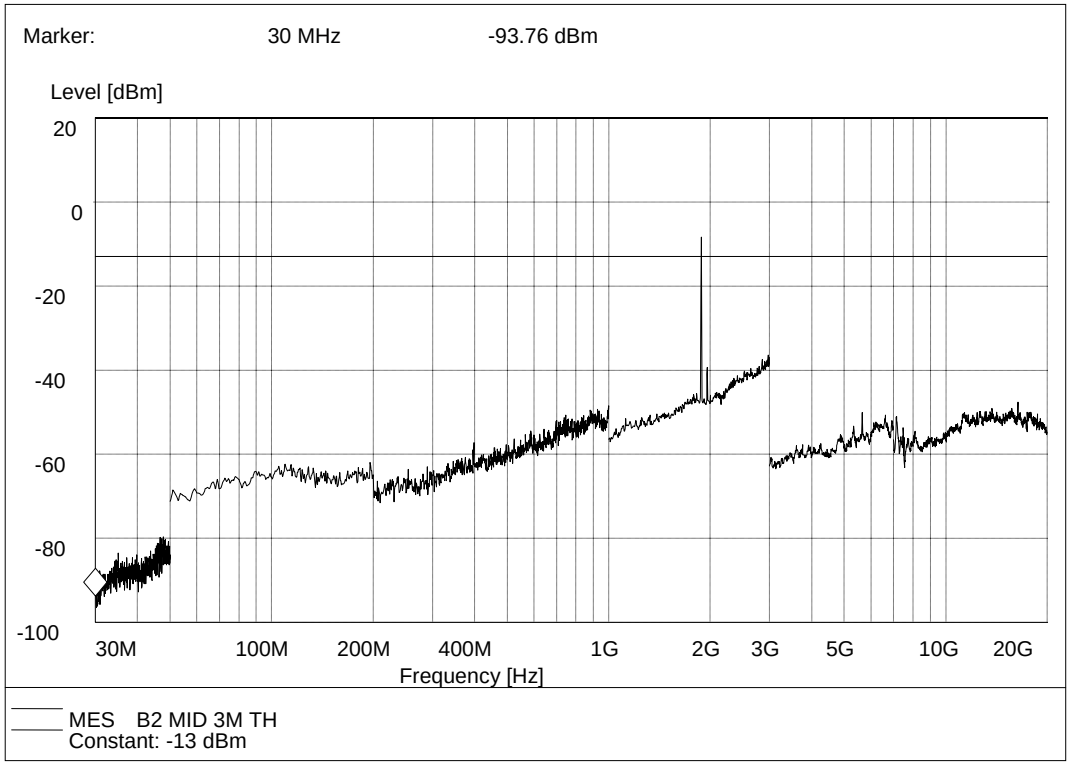
Note: For 9 KHz to 30MHz: the amplitude of spurious emissions is attenuated by more than 20dB below the permissible value, so we not provide the test result here.



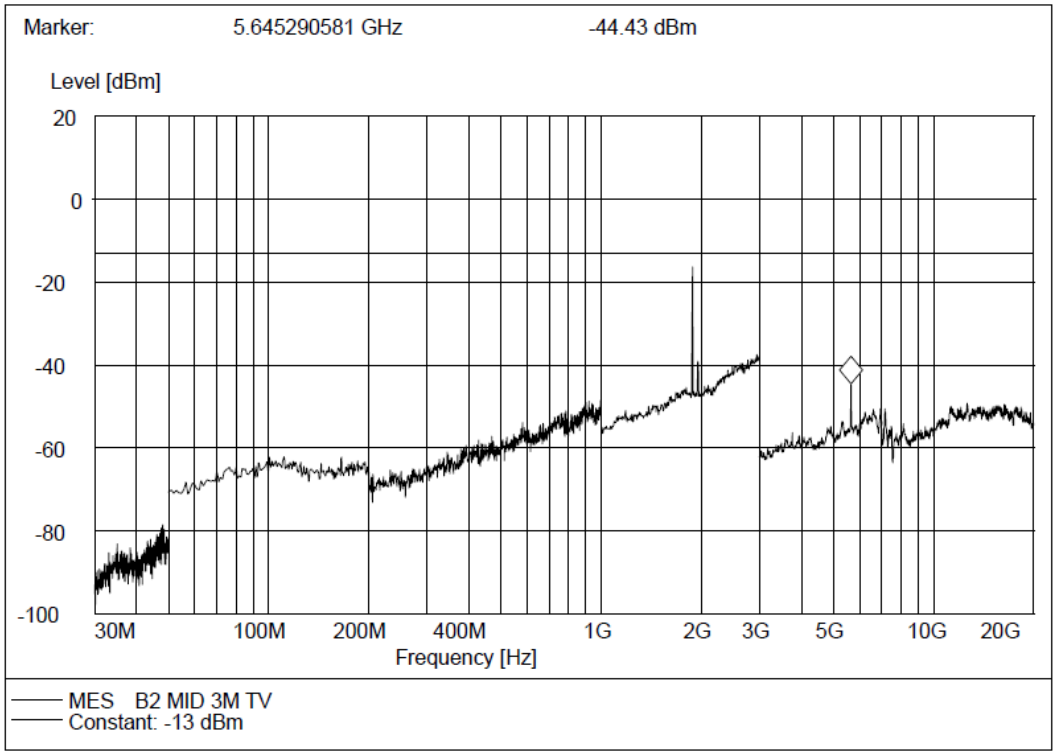
LTE Band 2 QPSK 1.4MHz BW Test Antenna Horizontal



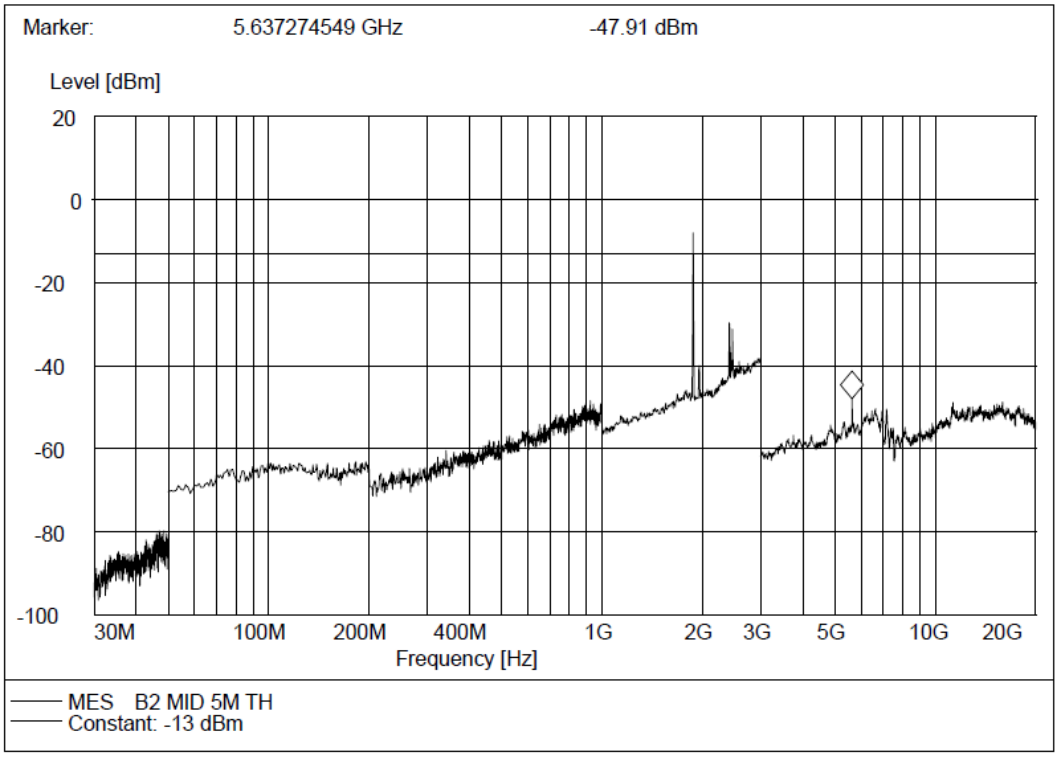
LTE Band 2 QPSK 1.4MHz BW Test Antenna Vertical



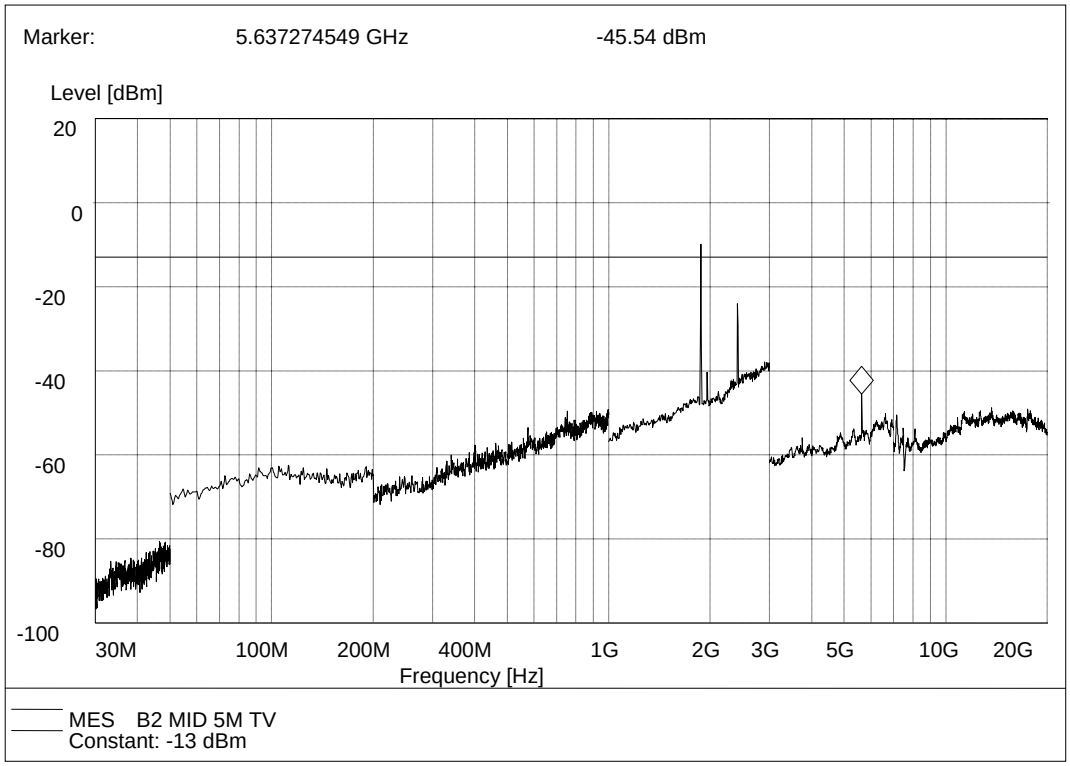
LTE Band 2 QPSK 3MHz BW Test Antenna Horizontal



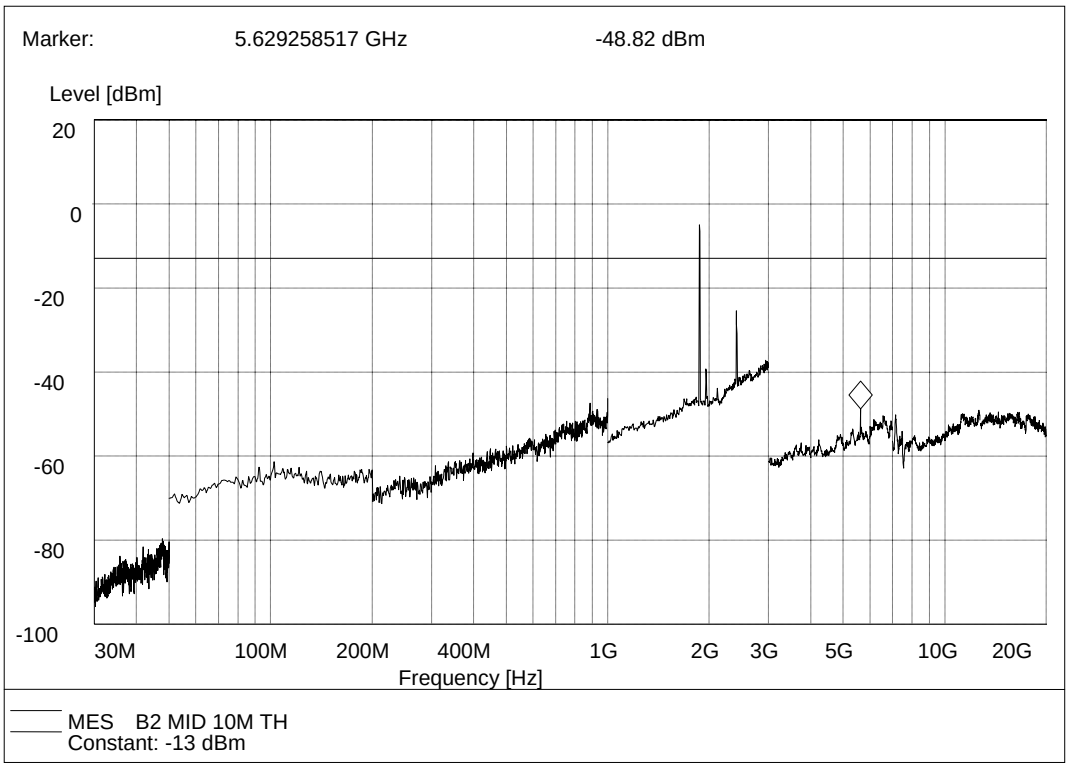
LTE Band 2 QPSK 3MHz BW Test Antenna Vertical



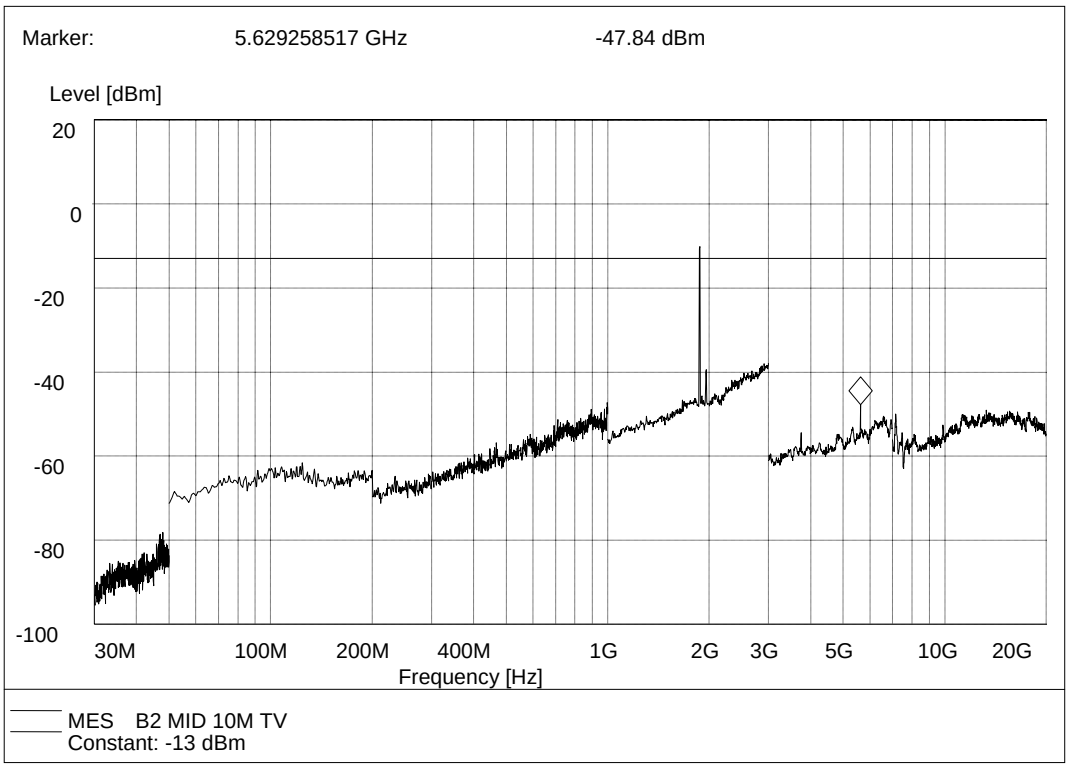
LTE Band 2 QPSK 5MHz BW Test Antenna Horizontal



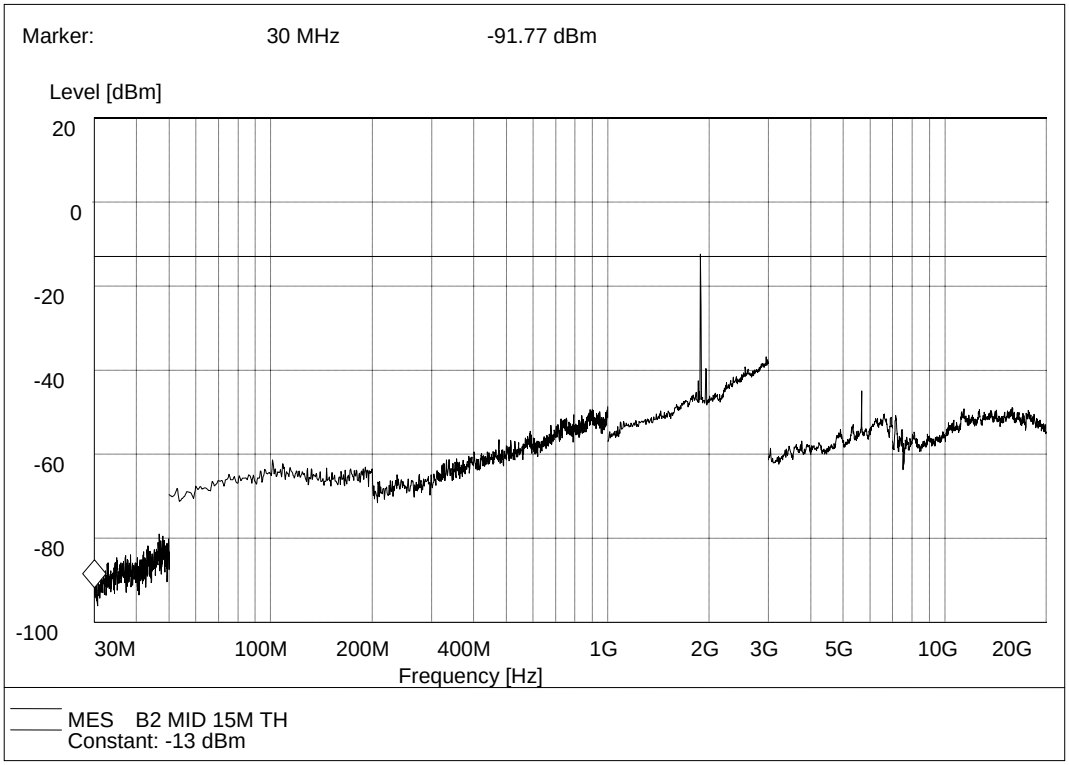
LTE Band 2 QPSK 5MHz BW Test Antenna Vertical



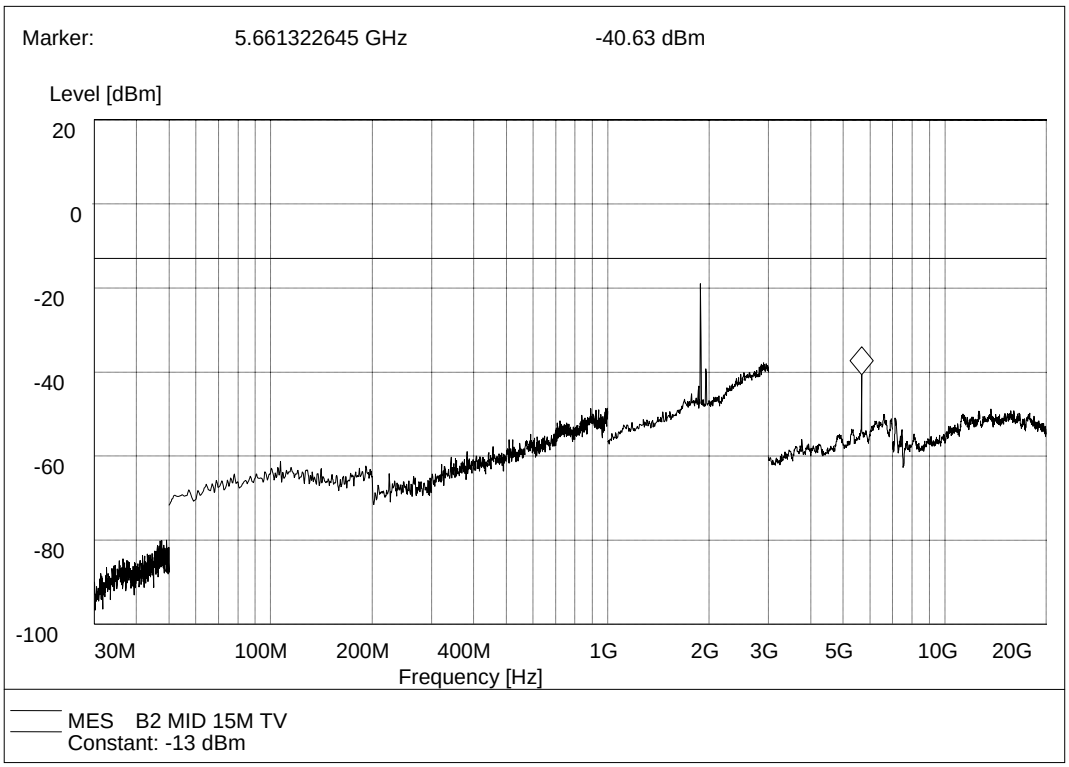
LTE Band 2 QPSK 10MHz BW Test Antenna Horizontal



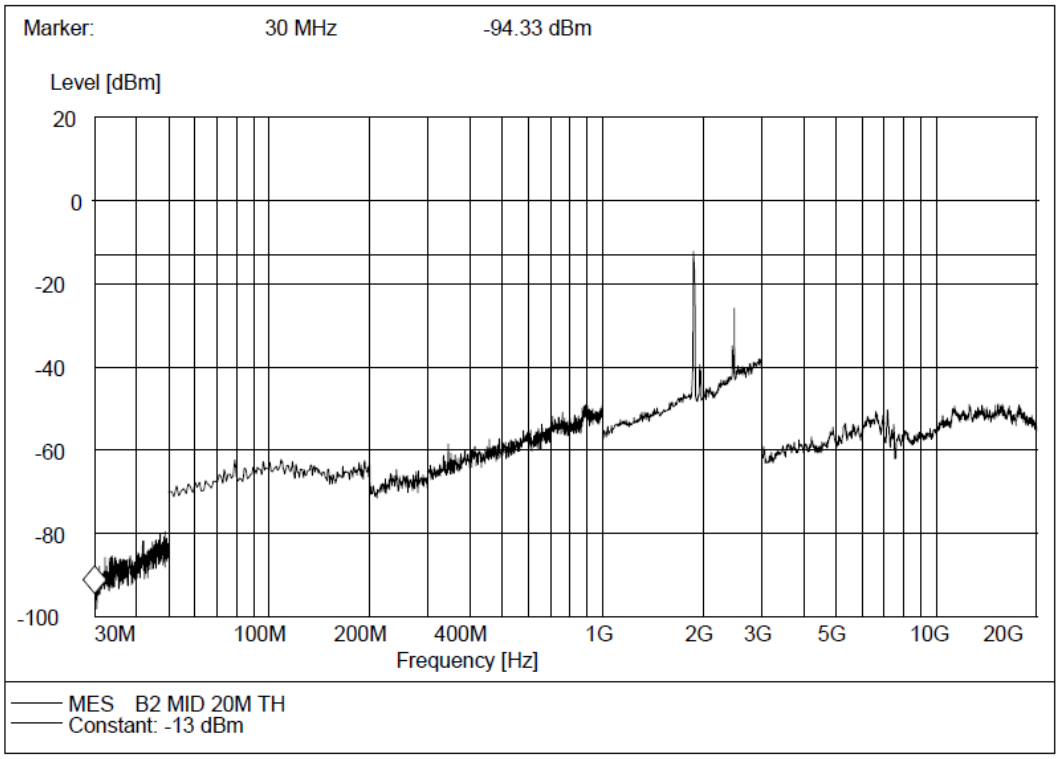
LTE Band 2 QPSK 10MHz BW Test Antenna Vertical



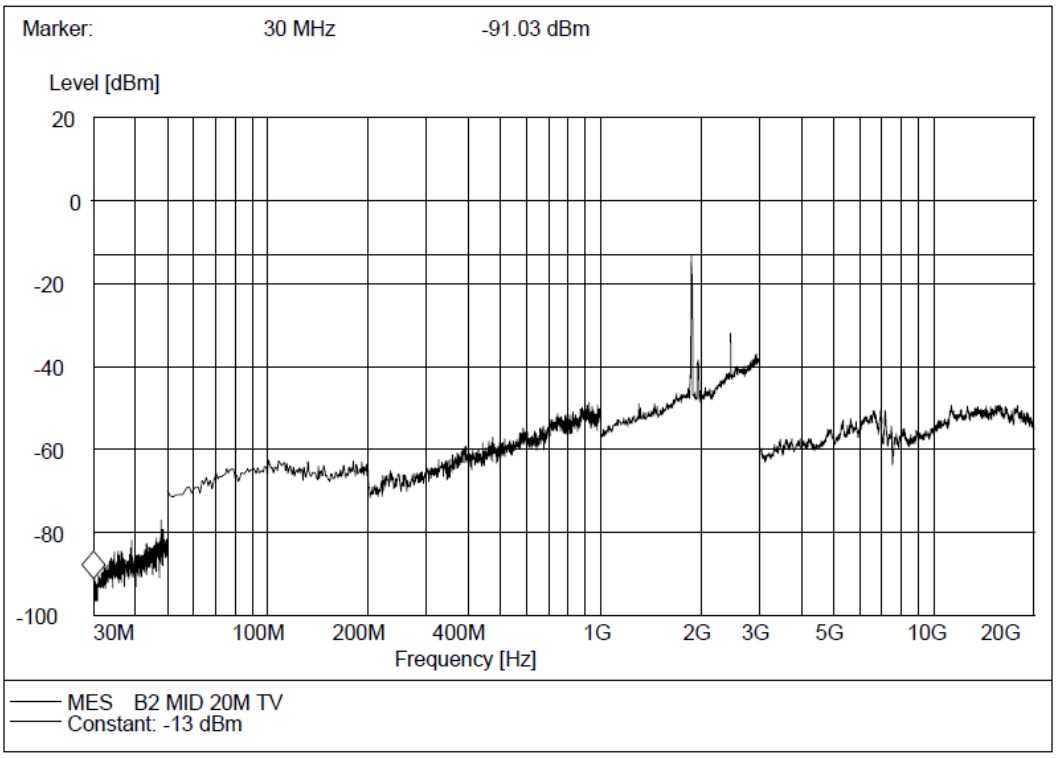
LTE Band 2 QPSK 15MHz BW Test Antenna Horizontal



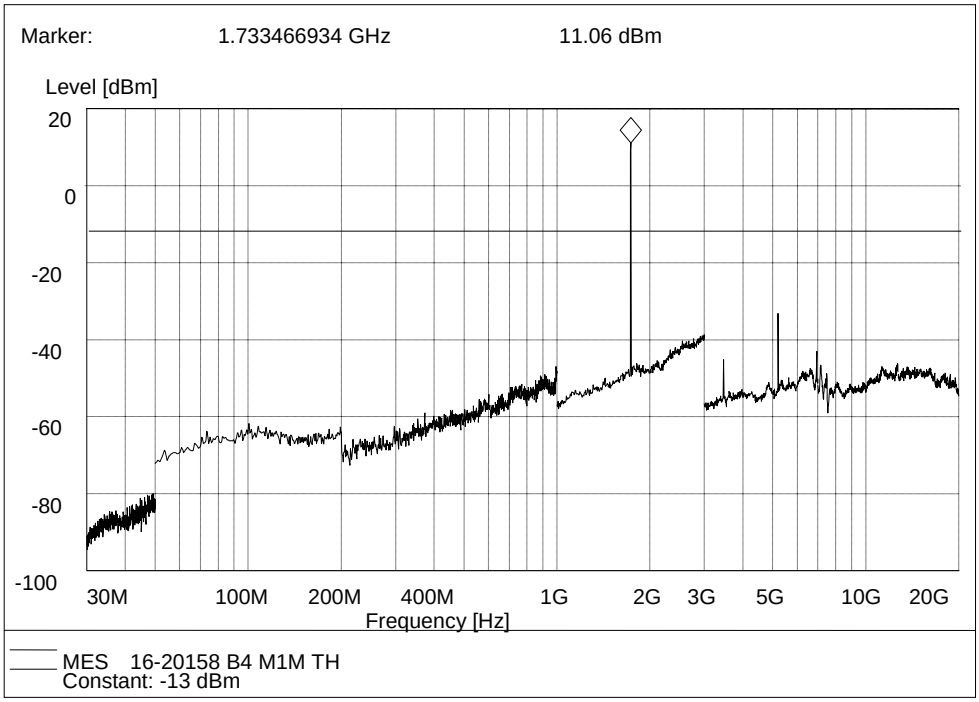
LTE Band 2 QPSK 15MHz BW Test Antenna Vertical



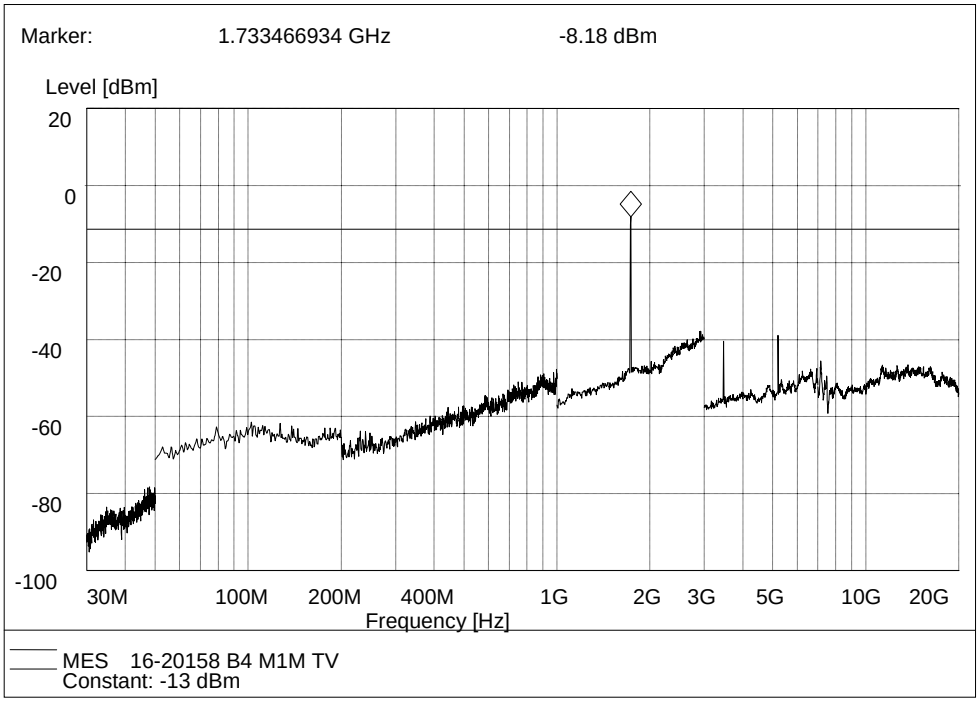
LTE Band 2 QPSK 20MHz BW Test Antenna Horizontal



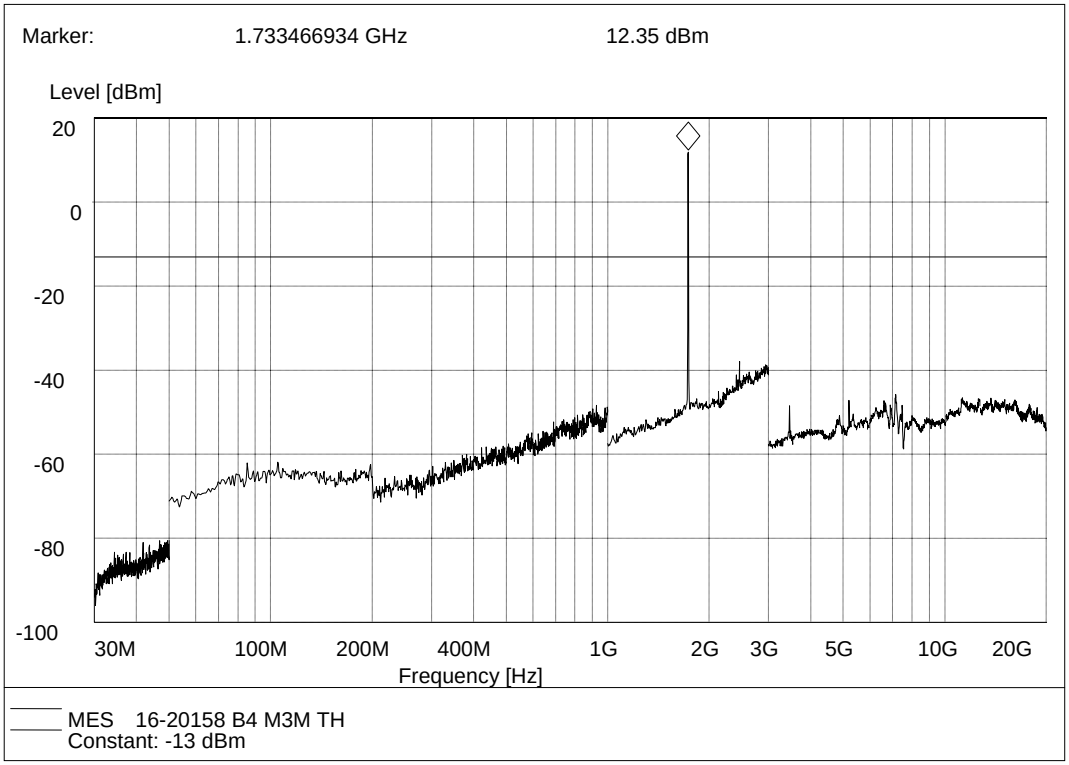
LTE Band 2 QPSK 20MHz BW Test Antenna Vertical



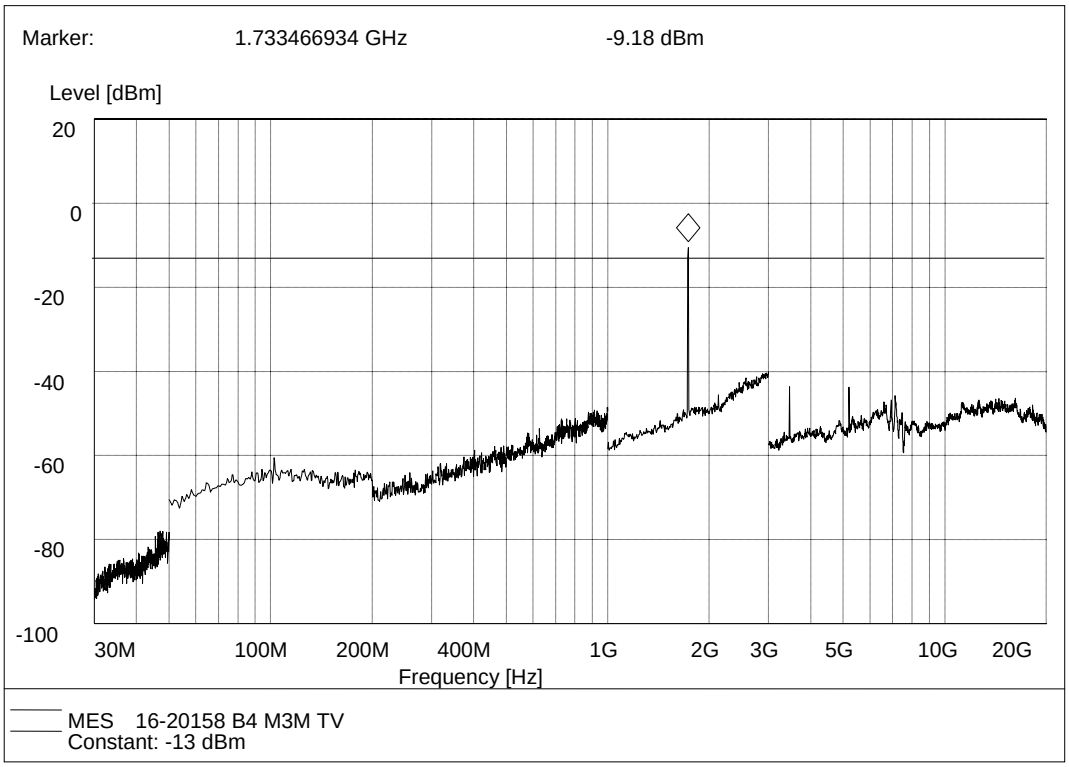
LTE Band 4 QPSK 1.4MHz BW Test Antenna Horizontal



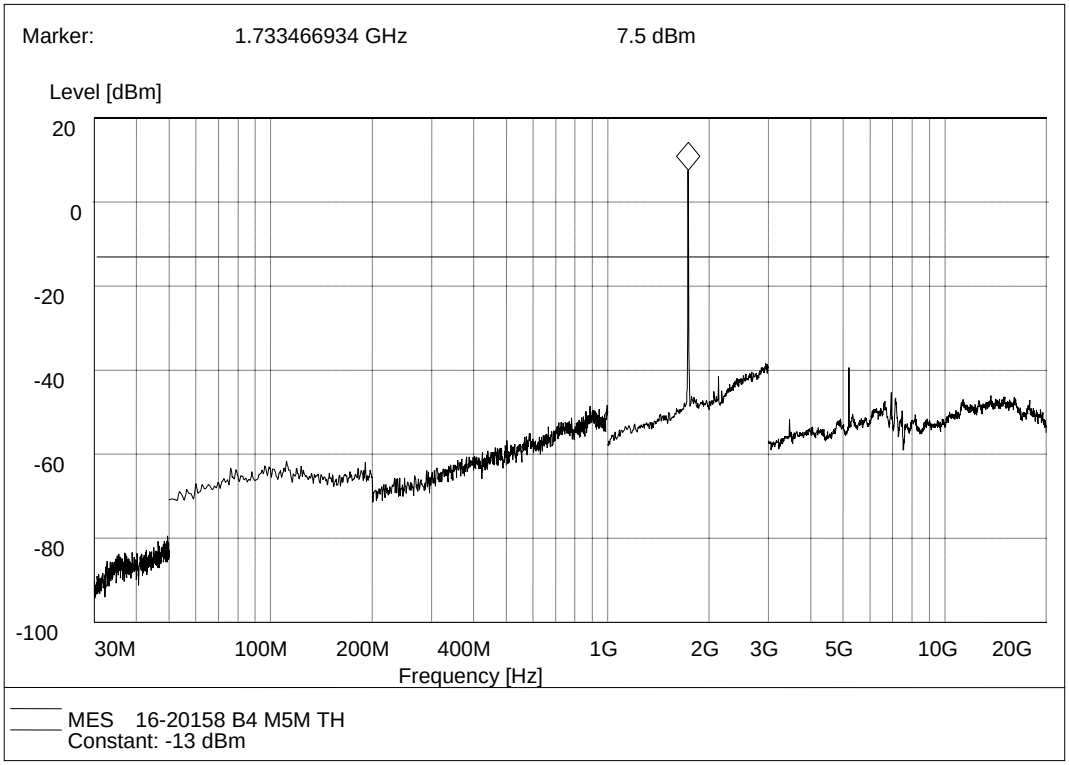
LTE Band 4 QPSK 1.4MHz BW Test Antenna Vertical



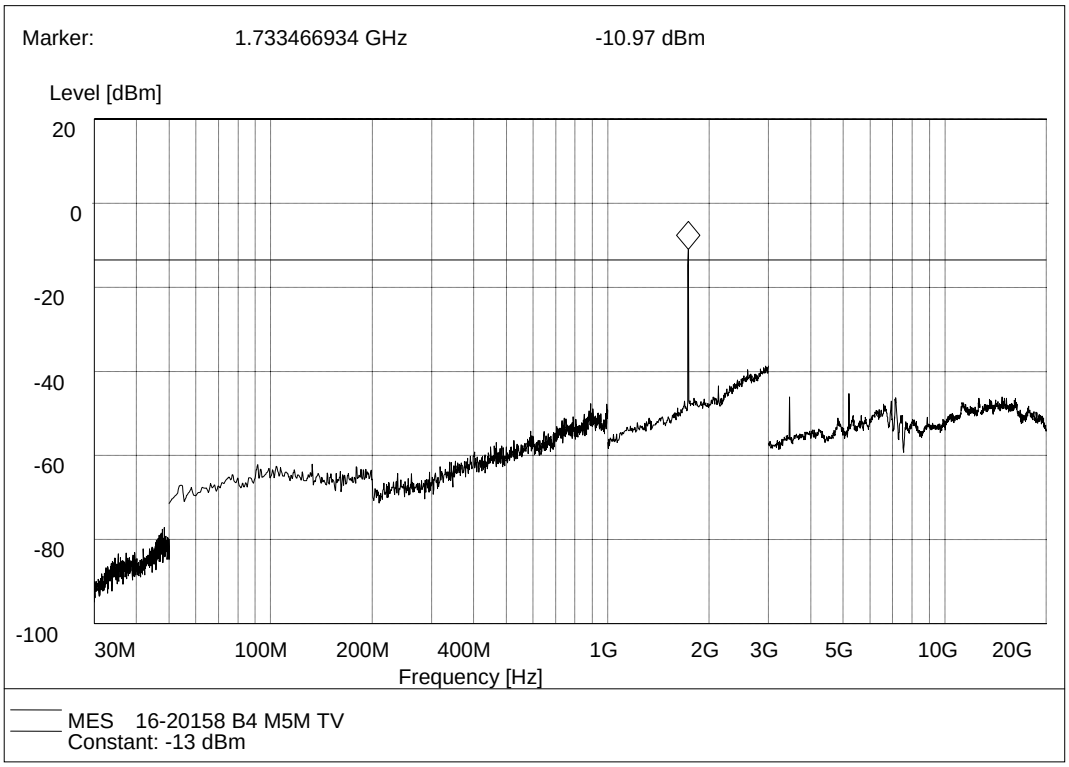
` LTE Band 4 QPSK 3MHz BW Test Antenna Horizontal



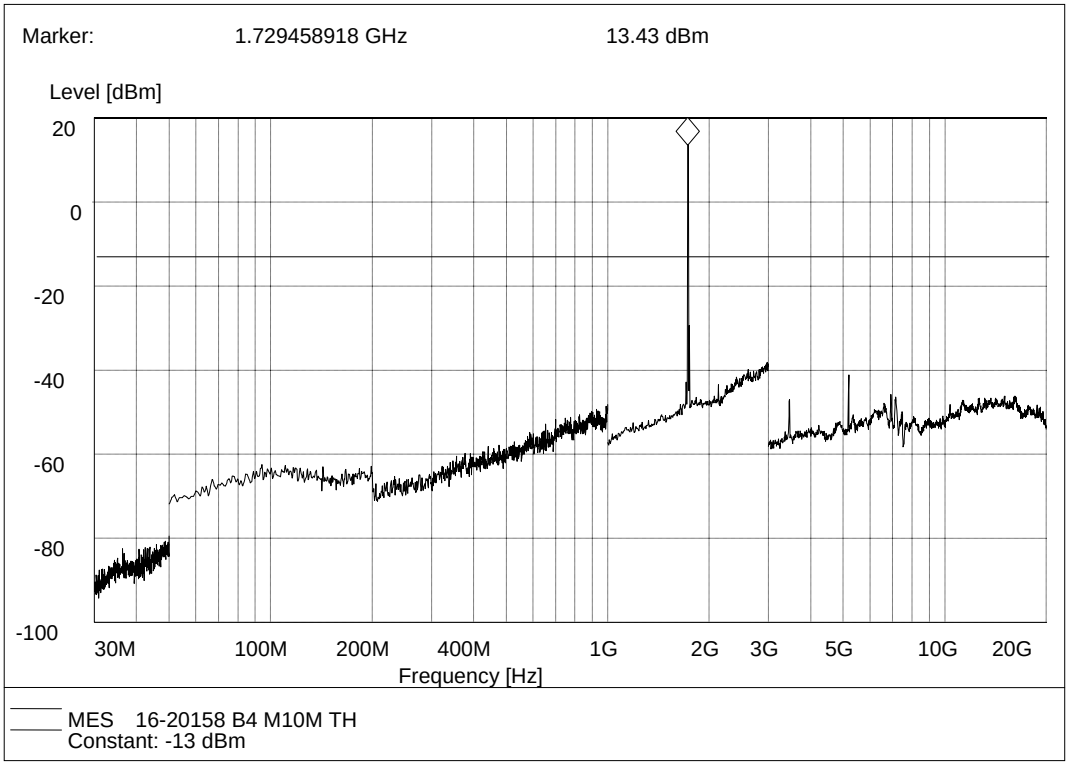
LTE Band 4 QPSK 3MHz BW Test Antenna Vertical



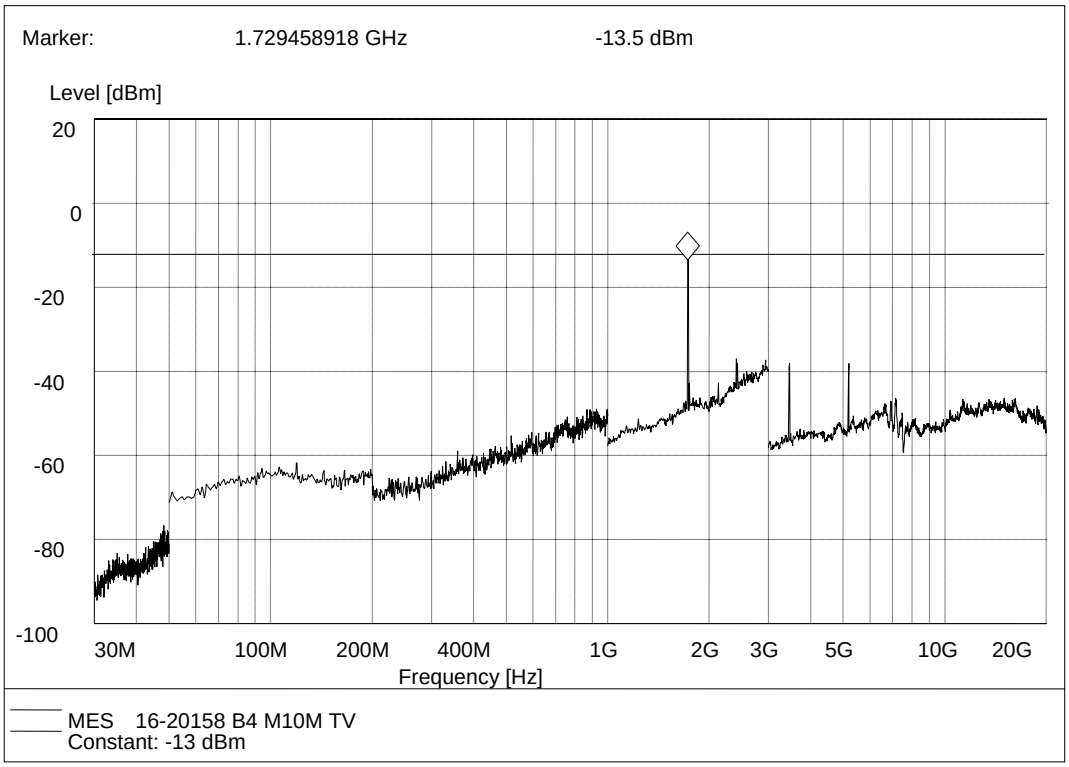
` LTE Band 4 QPSK 5MHz BW Test Antenna Horizontal



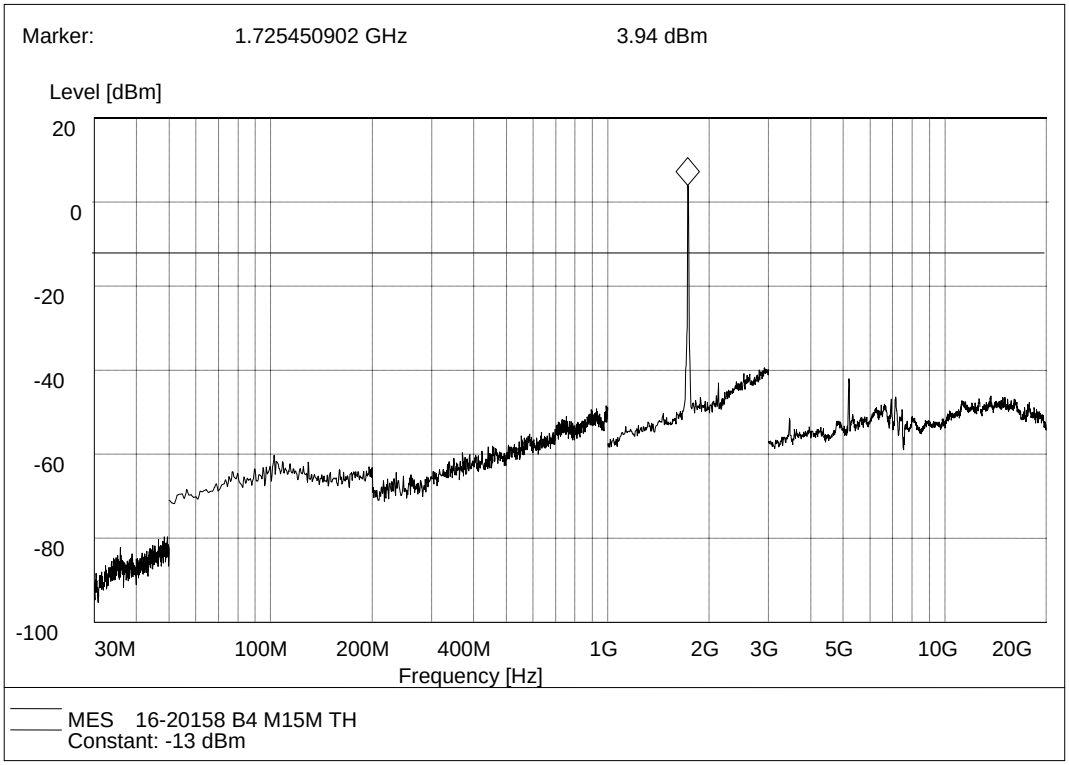
LTE Band 4 QPSK 5MHz BW Test Antenna Vertical



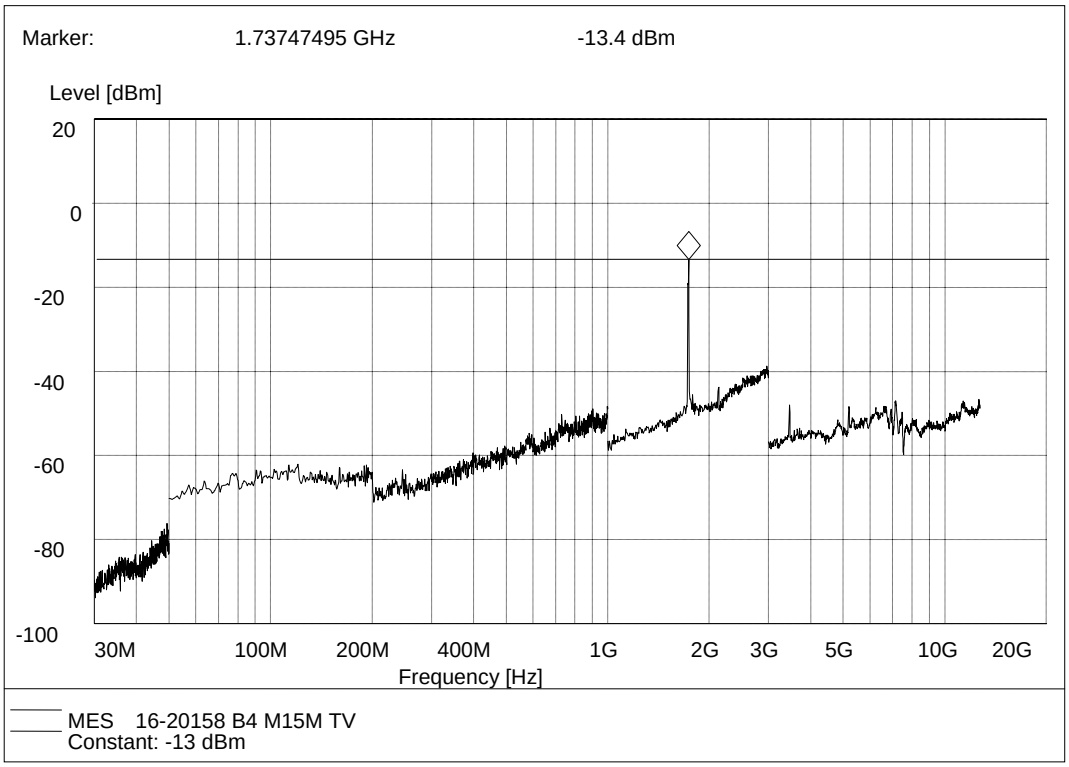
` LTE Band 4 QPSK 10MHz BW Test Antenna Horizontal



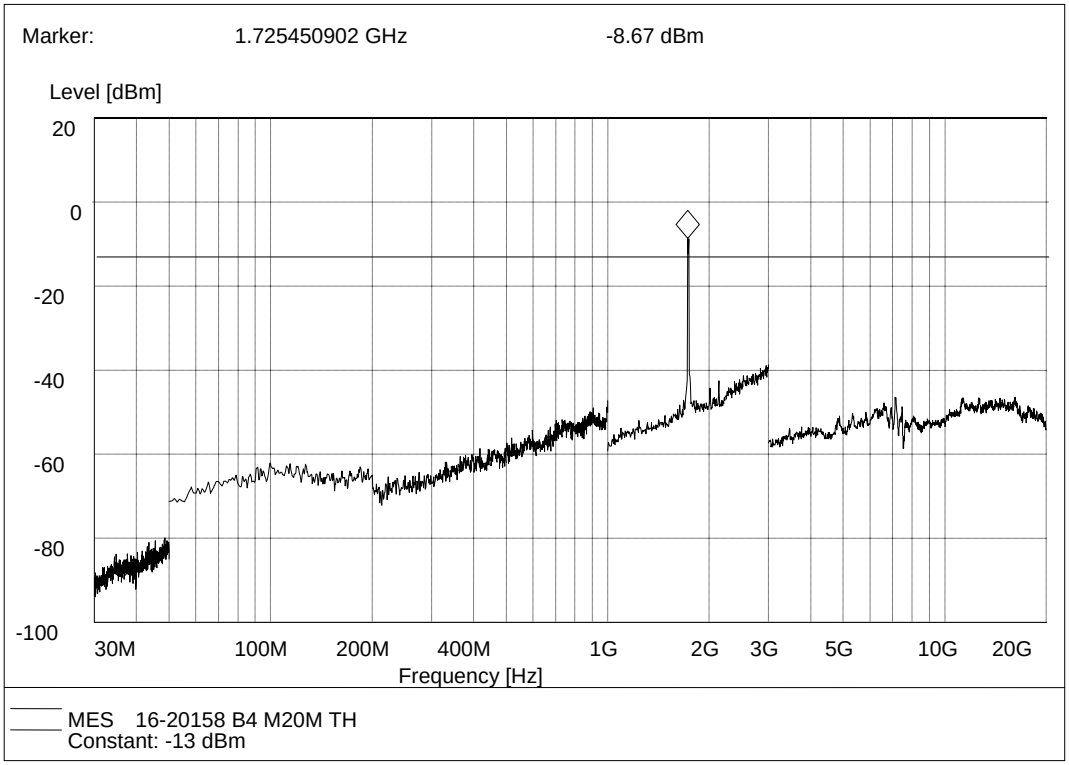
LTE Band 4 QPSK 10MHz BW Test Antenna Vertical



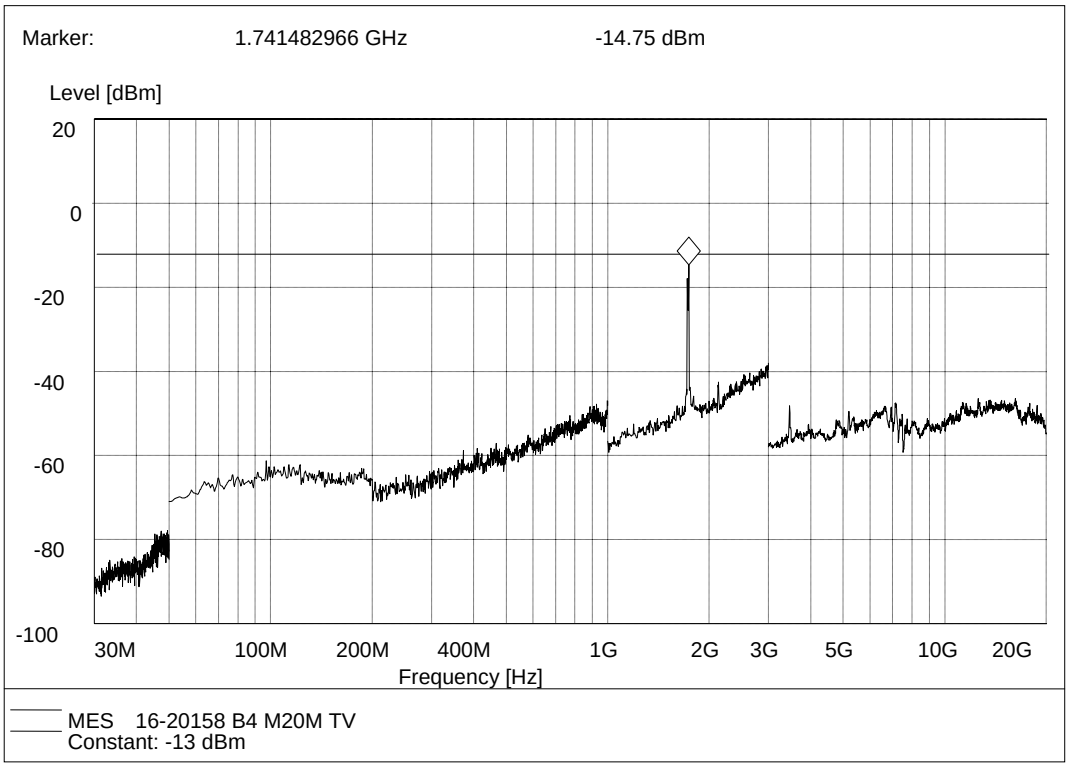
` LTE Band 4 QPSK 15MHz BW Test Antenna Horizontal



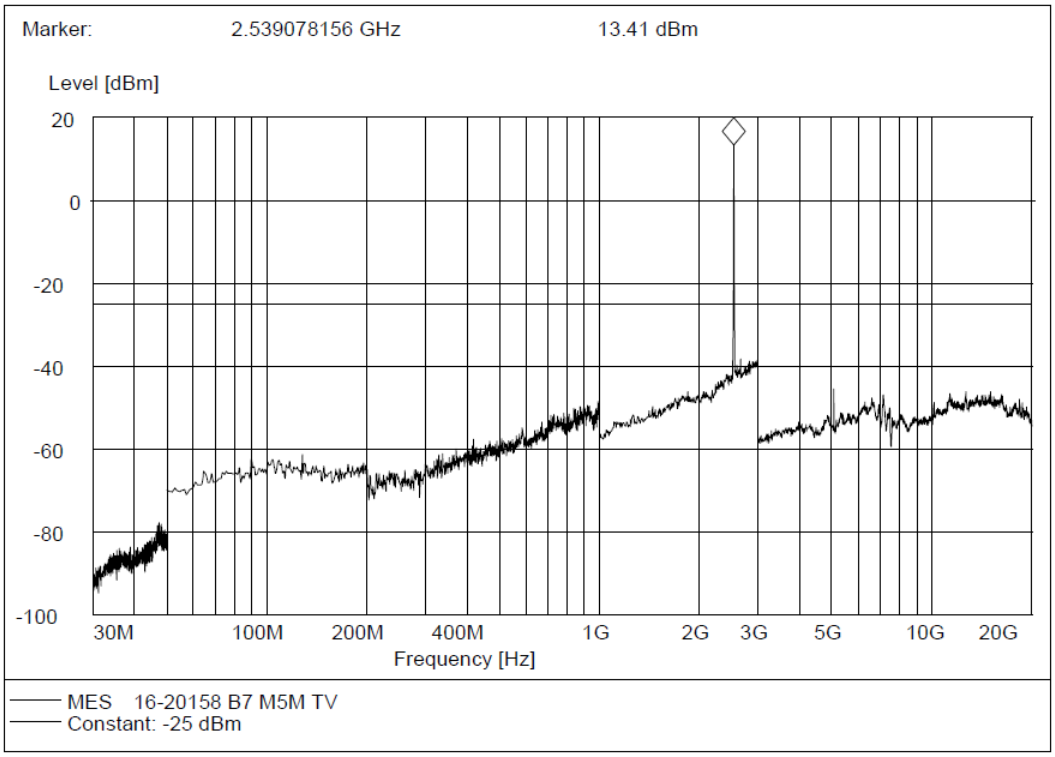
LTE Band 4 QPSK 15MHz BW Test Antenna Vertical



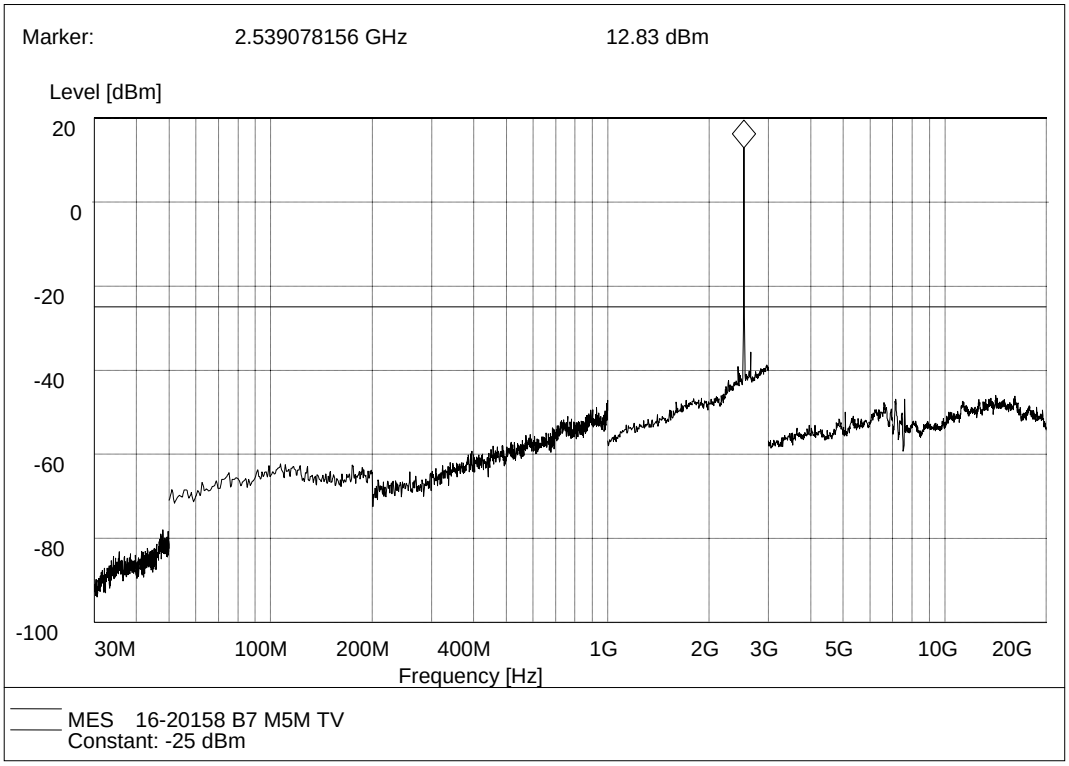
` LTE Band 4 QPSK 20MHz BW Test Antenna Horizontal



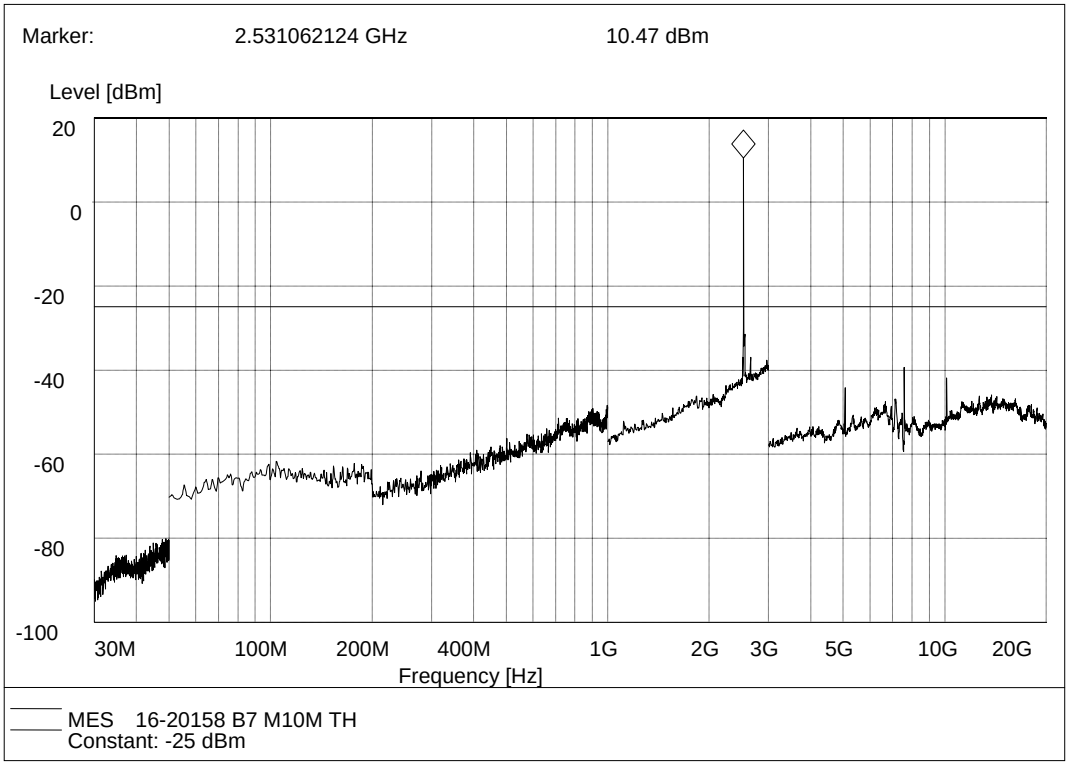
LTE Band 4 QPSK 20MHz BW Test Antenna Vertical



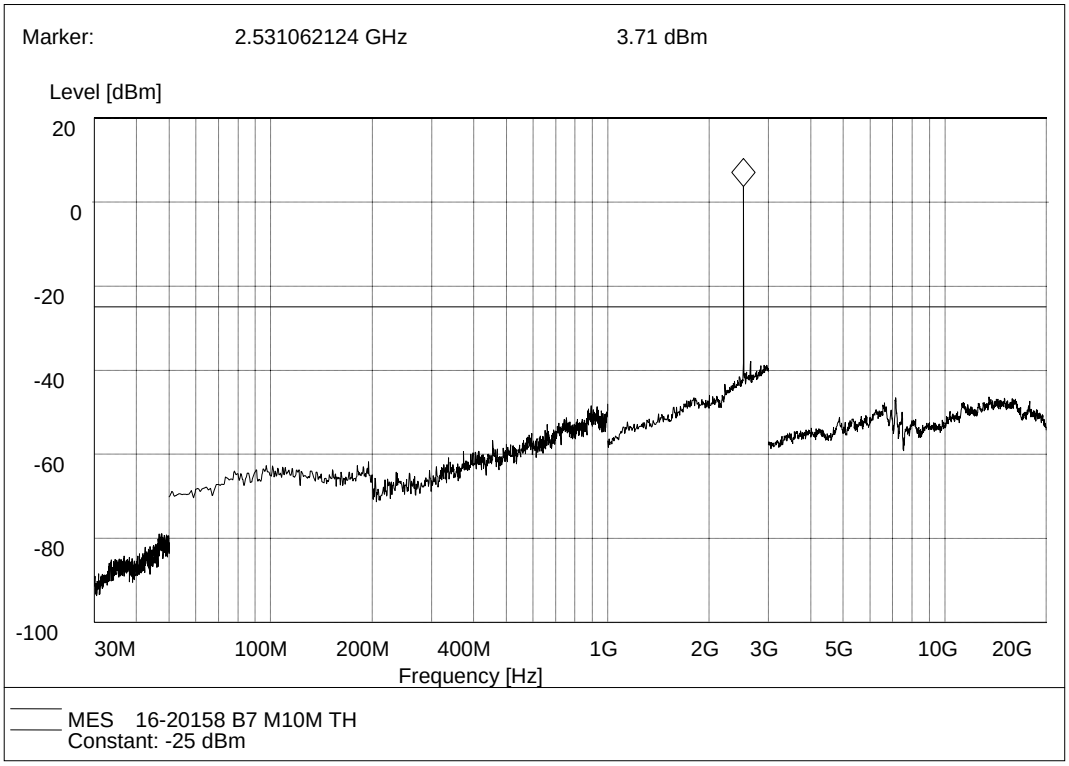
` LTE Band 7 QPSK 5MHz BW Test Antenna Horizontal



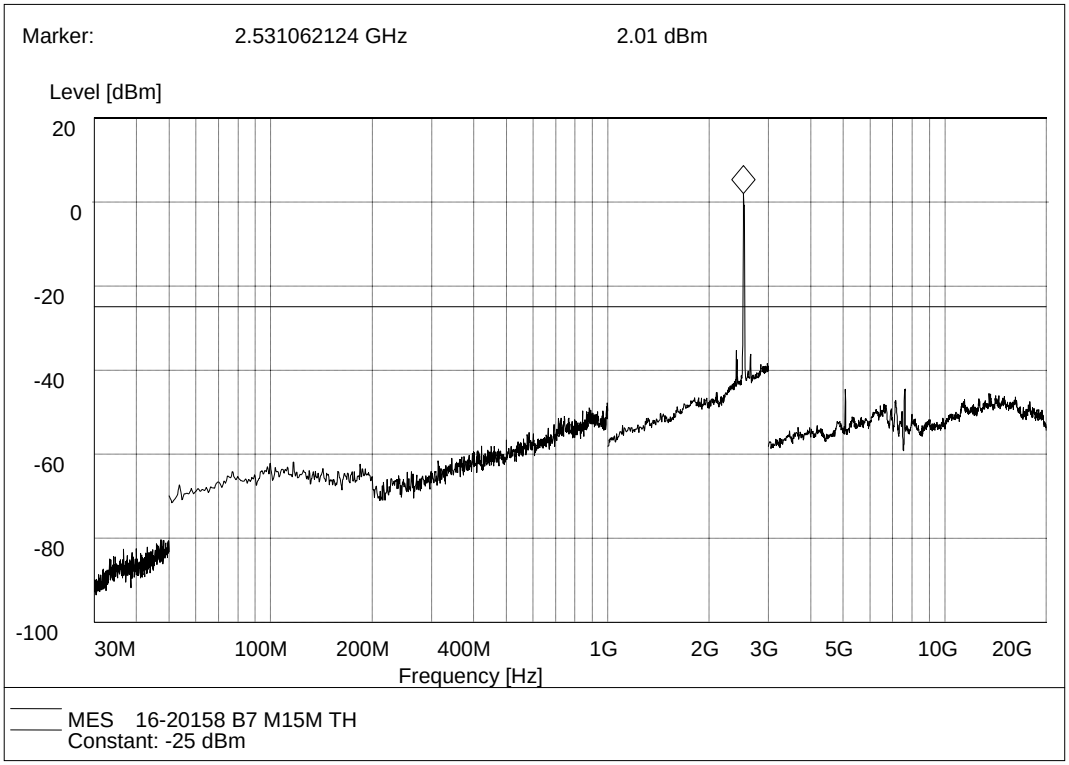
LTE Band 7 QPSK 5MHz BW Test Antenna Vertical



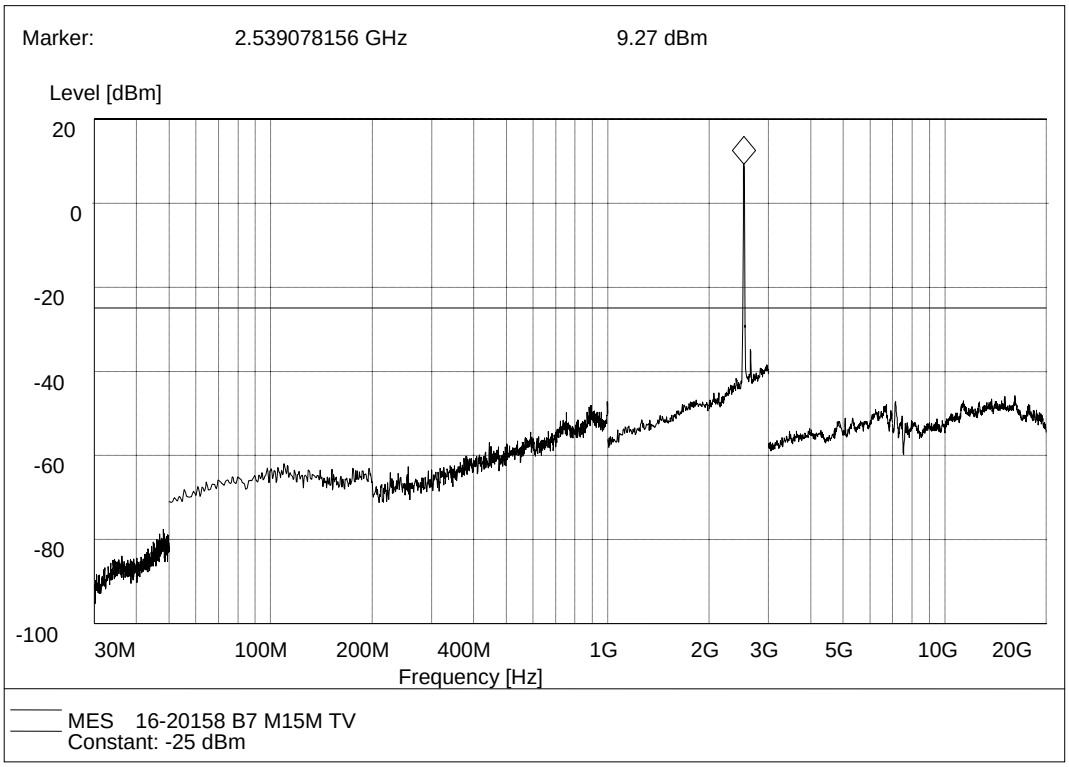
LTE Band 7 QPSK 10MHz BW Test Antenna Horizontal



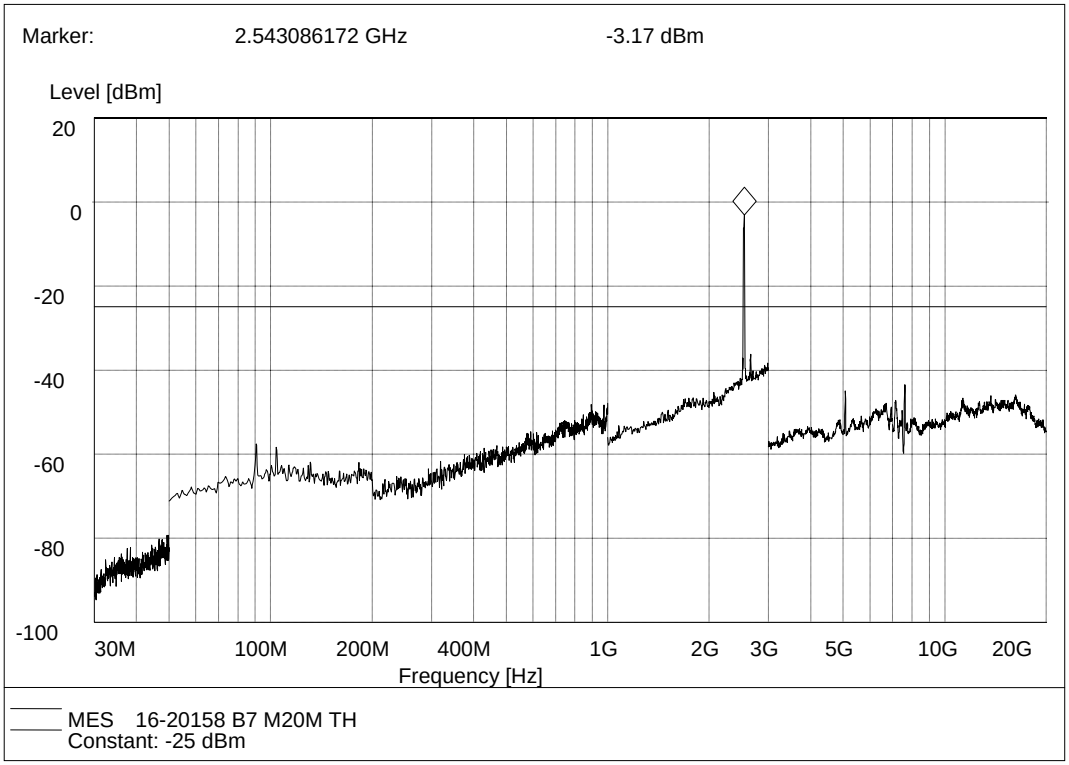
LTE Band 7 QPSK 10MHz BW Test Antenna Vertical



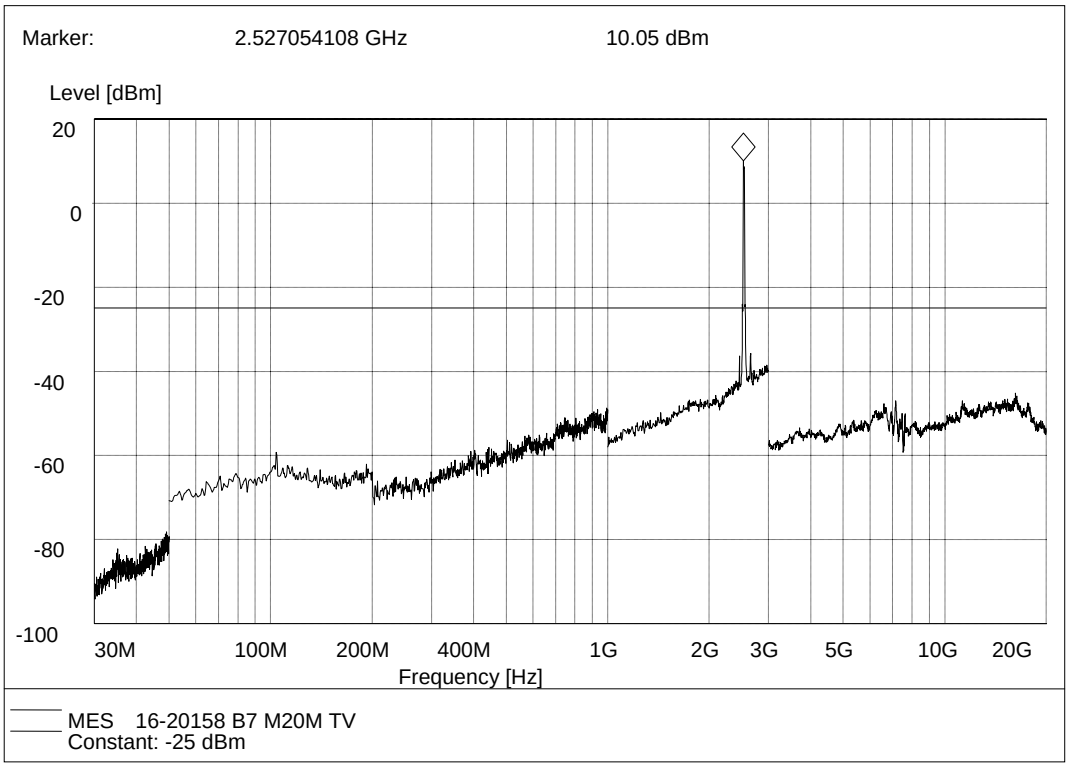
LTE Band 7 QPSK 15MHz BW Test Antenna Horizontal



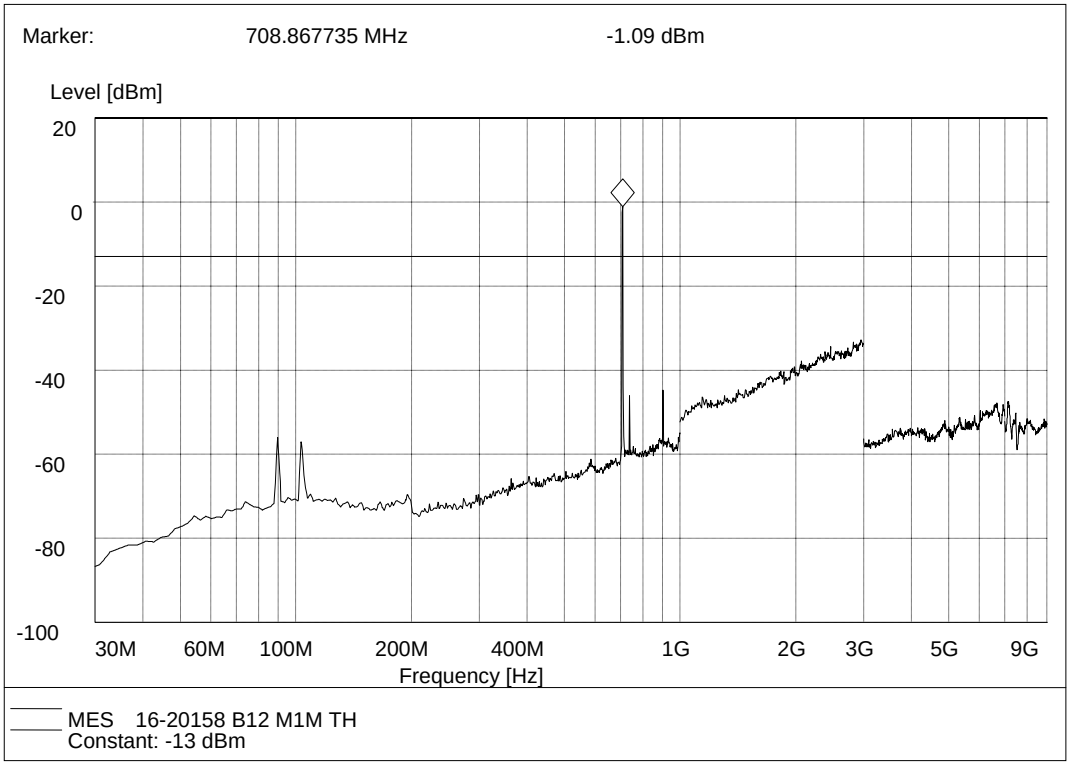
LTE Band 7 QPSK 15MHz BW Test Antenna Vertical



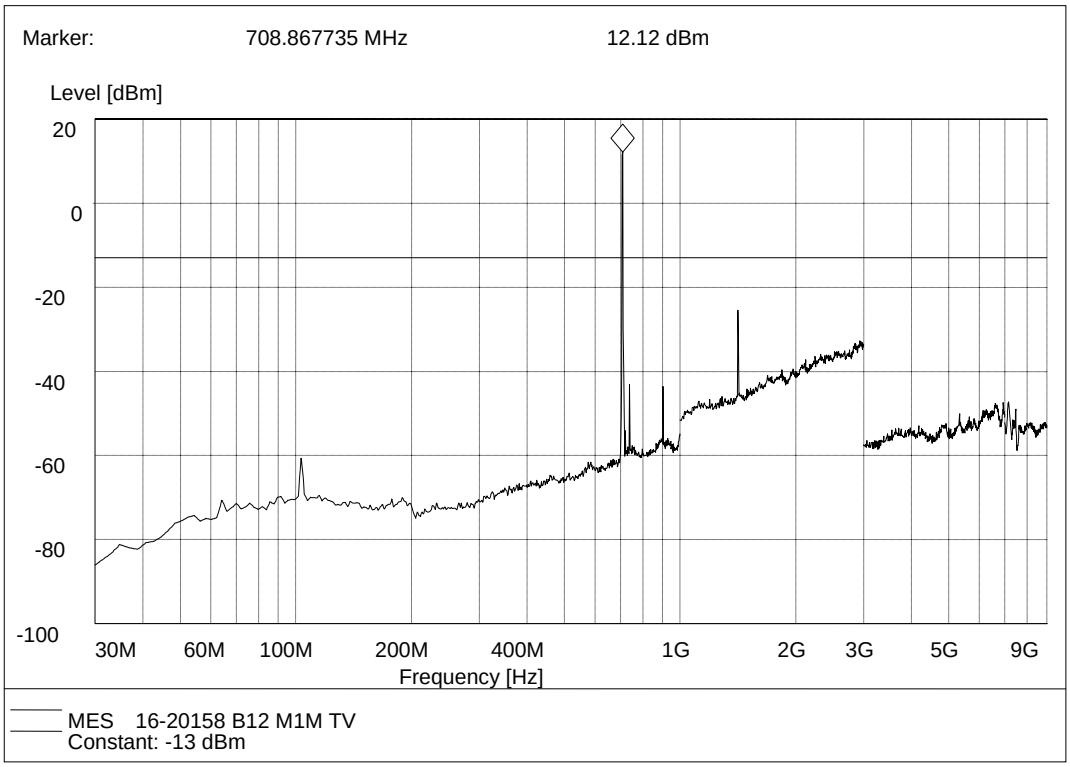
LTE Band 7 QPSK 20MHz BW Test Antenna Horizontal



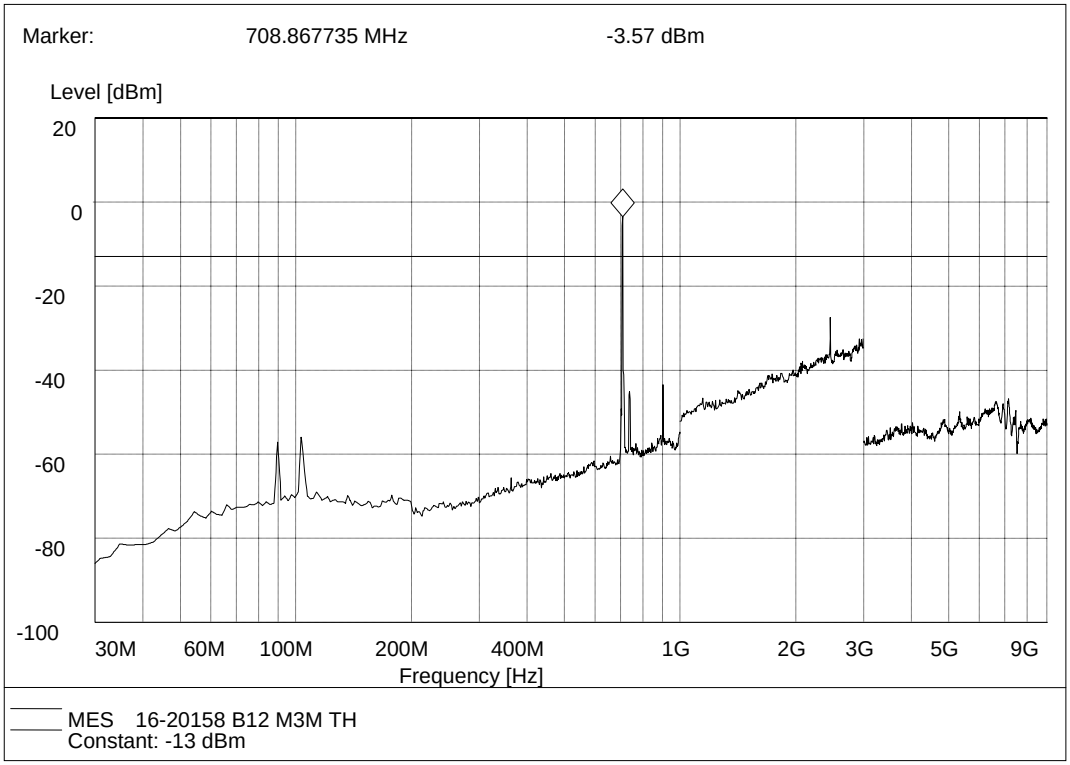
LTE Band 7 QPSK 20MHz BW Test Antenna Vertical



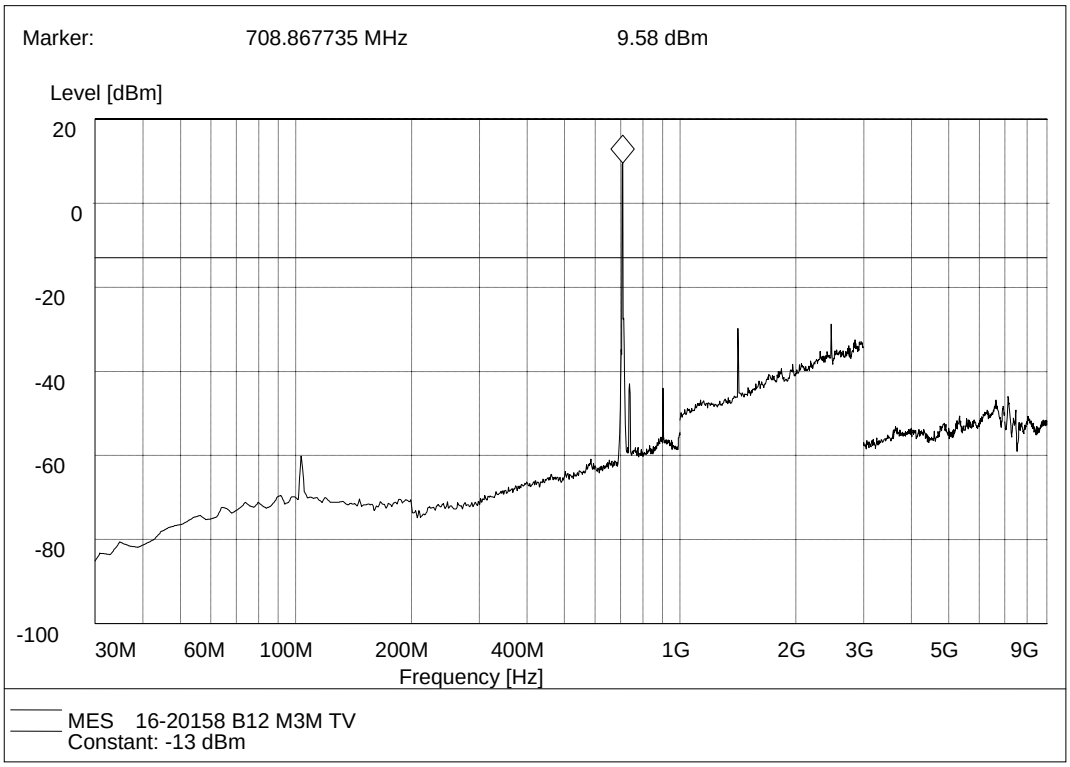
LTE Band 12 QPSK 1.4MHz BW Test Antenna Horizontal



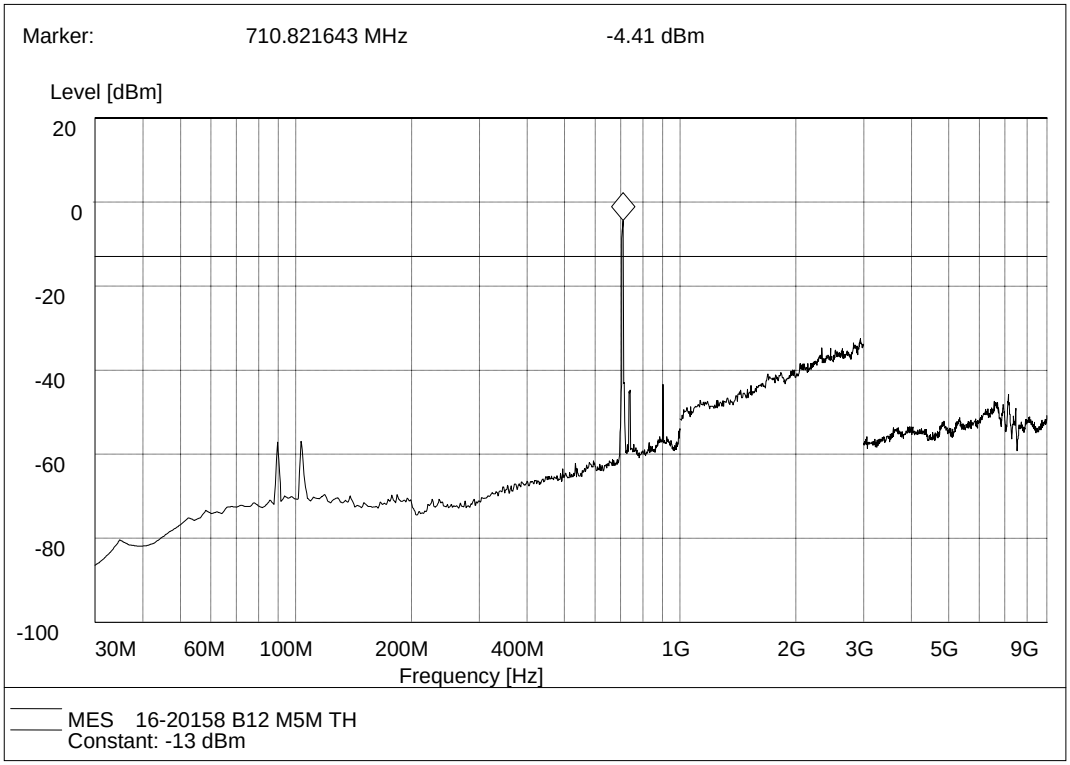
LTE Band 12 QPSK 1.4MHz BW Test Antenna Vertical



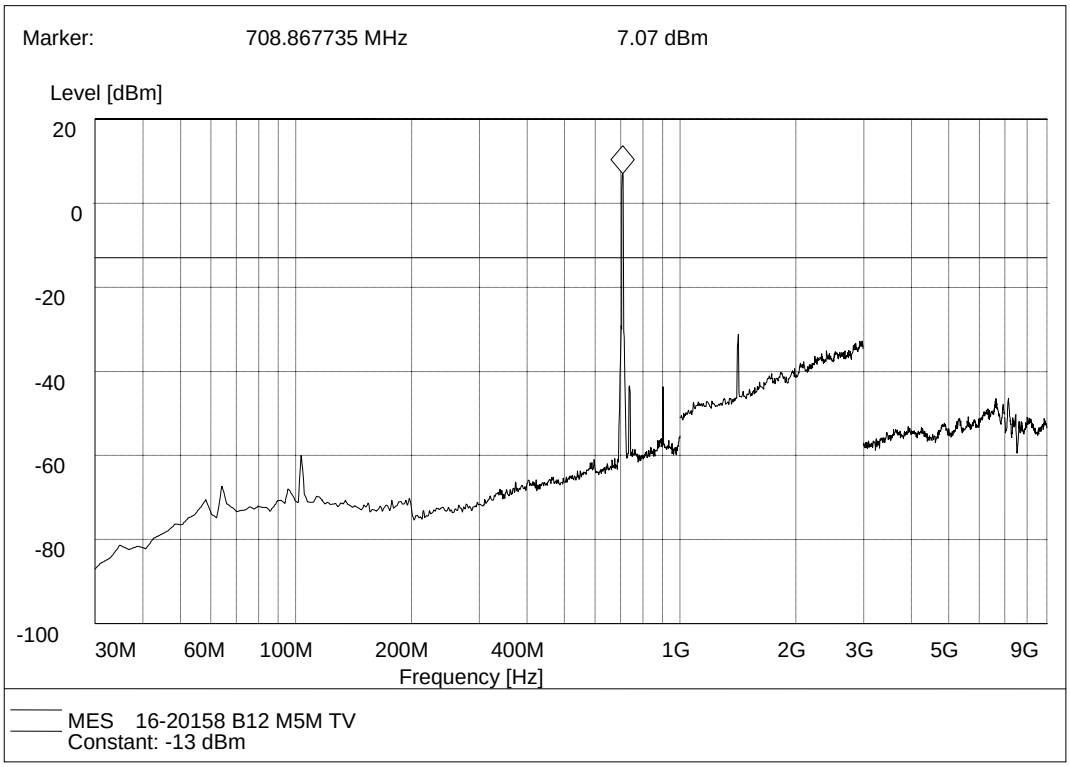
LTE Band 12 QPSK 3MHz BW Test Antenna Horizontal



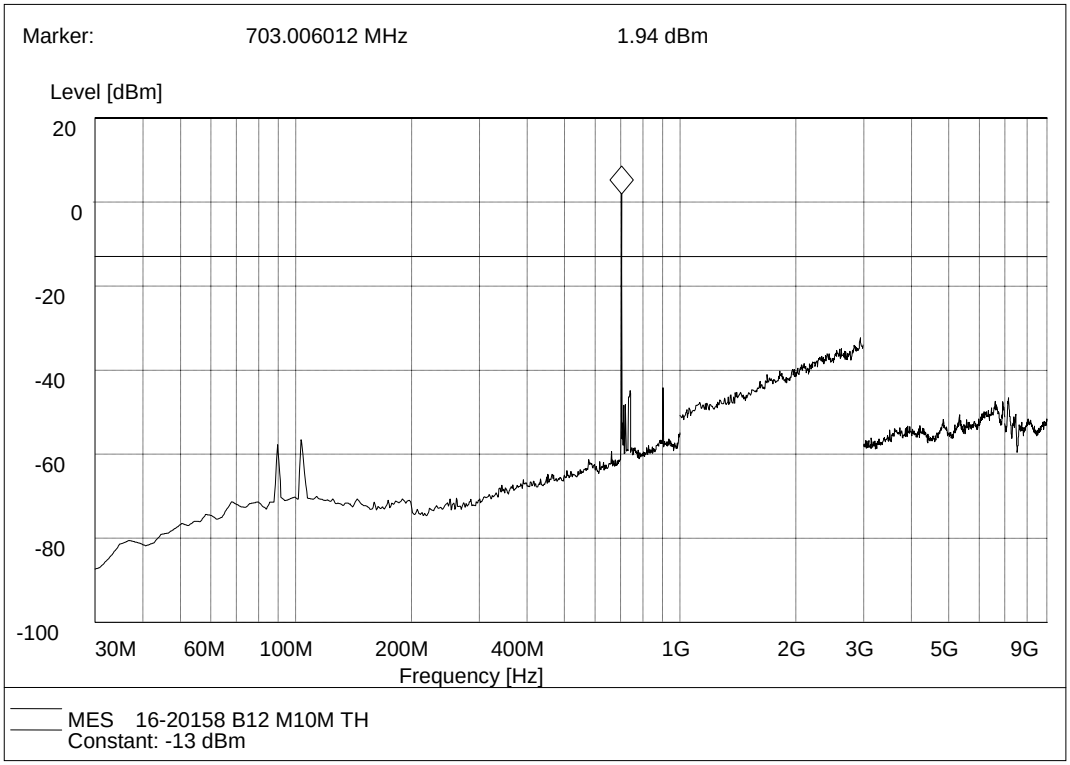
LTE Band 12 QPSK 3MHz BW Test Antenna Vertical



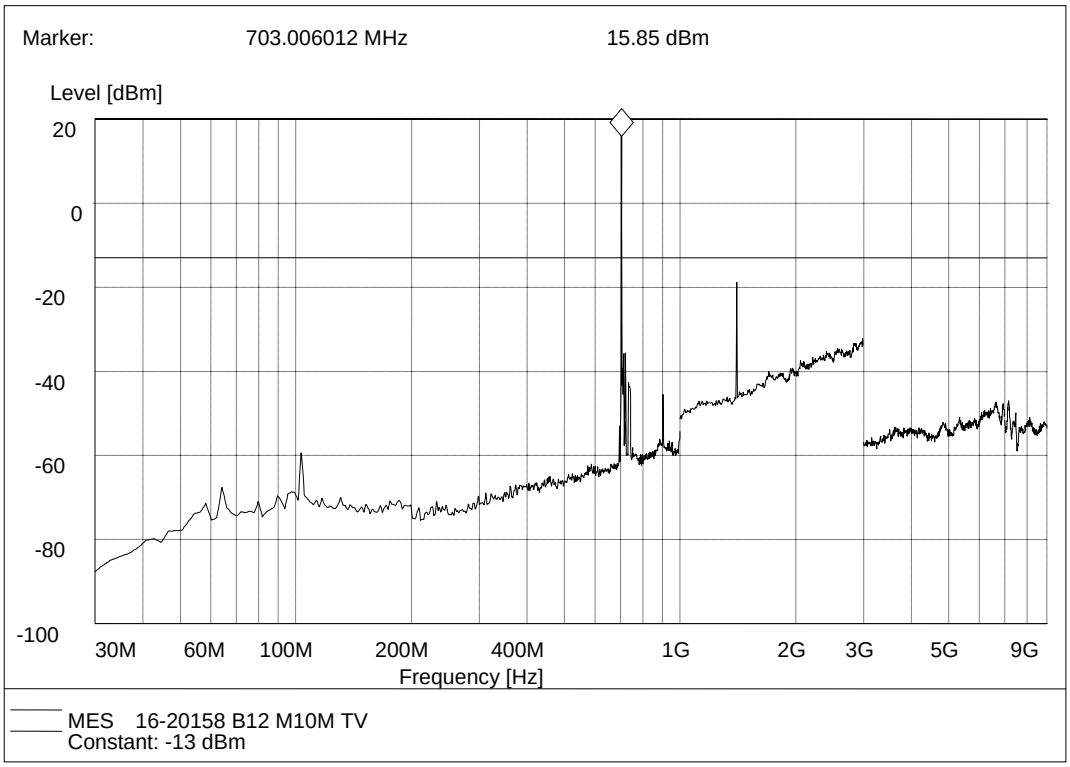
LTE Band 12 QPSK 5MHz BW Test Antenna Horizontal



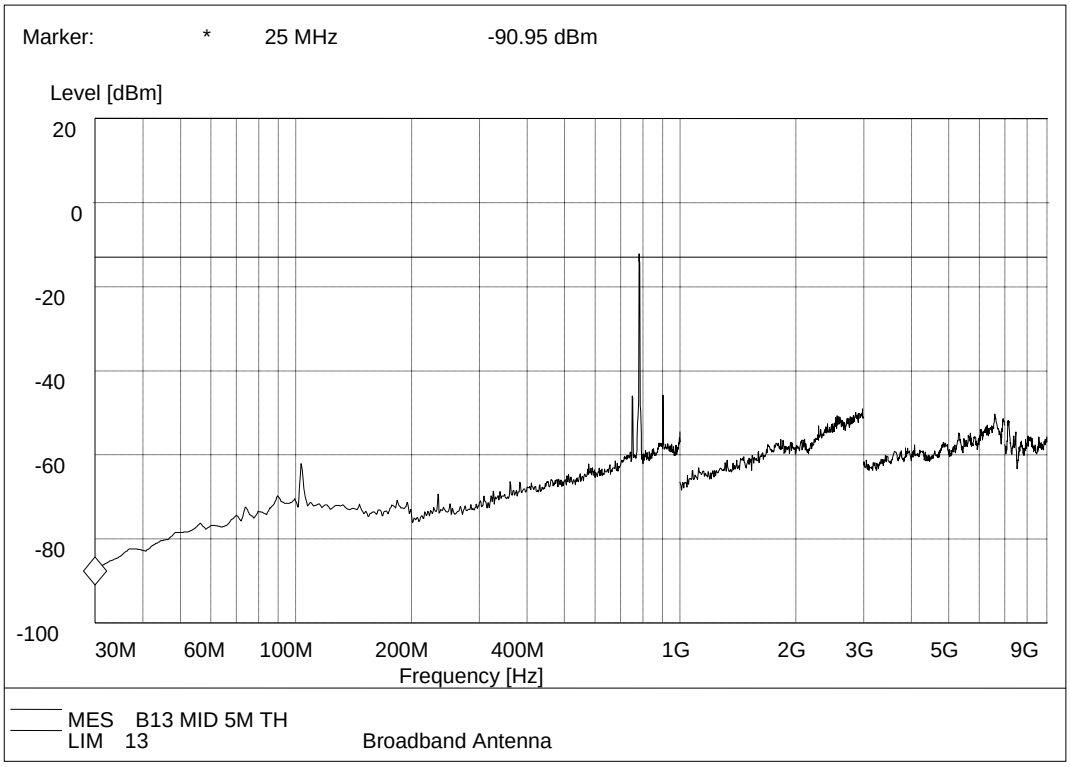
LTE Band 12 QPSK 5MHz BW Test Antenna Vertical



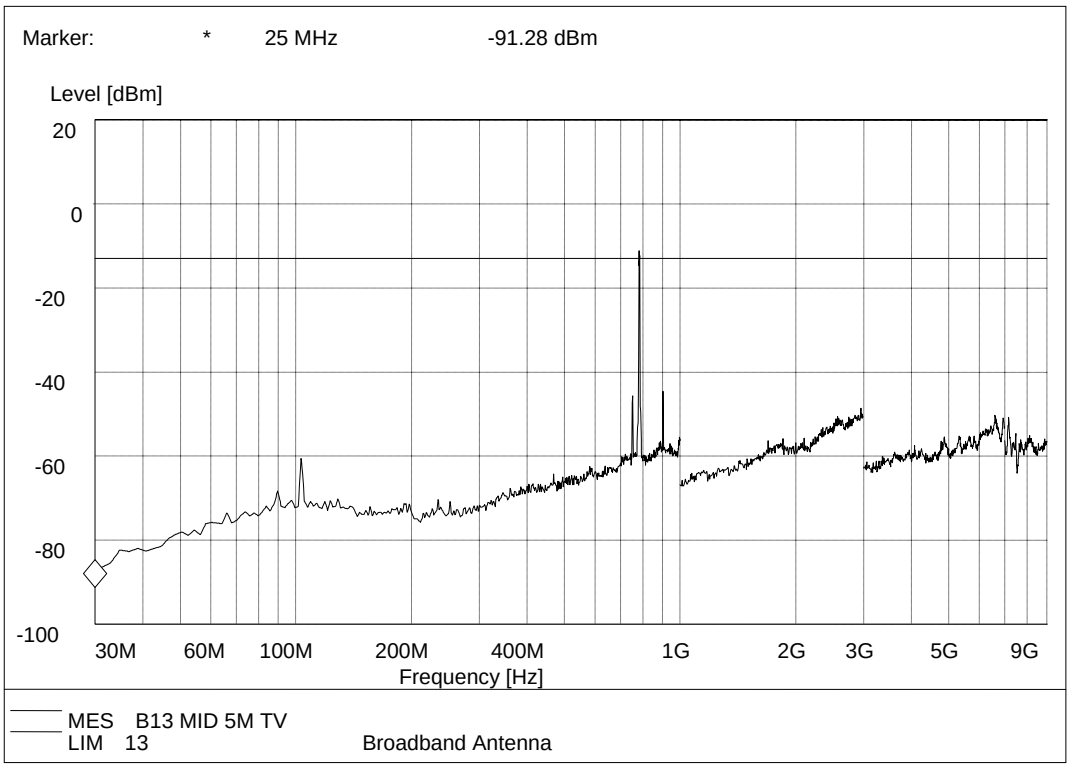
LTE Band 12 QPSK 10MHz BW Test Antenna Horizontal



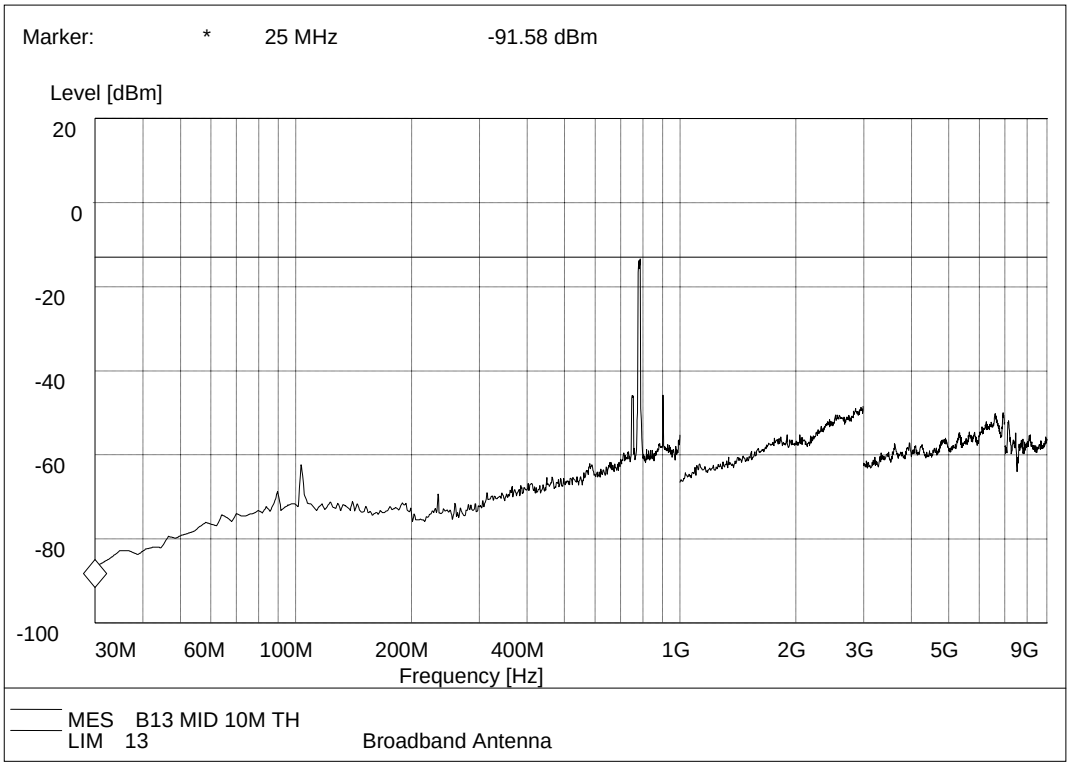
LTE Band 12 QPSK 10MHz BW Test Antenna Vertical



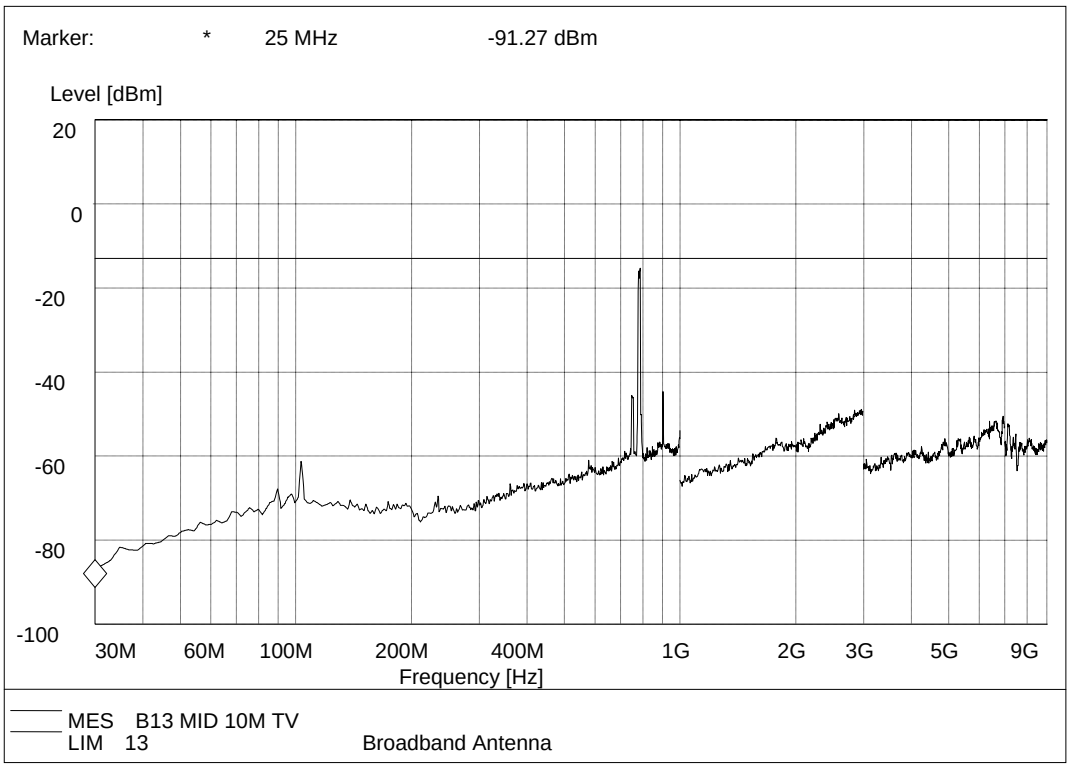
LTE Band 13 QPSK 5MHz BW Test Antenna Horizontal



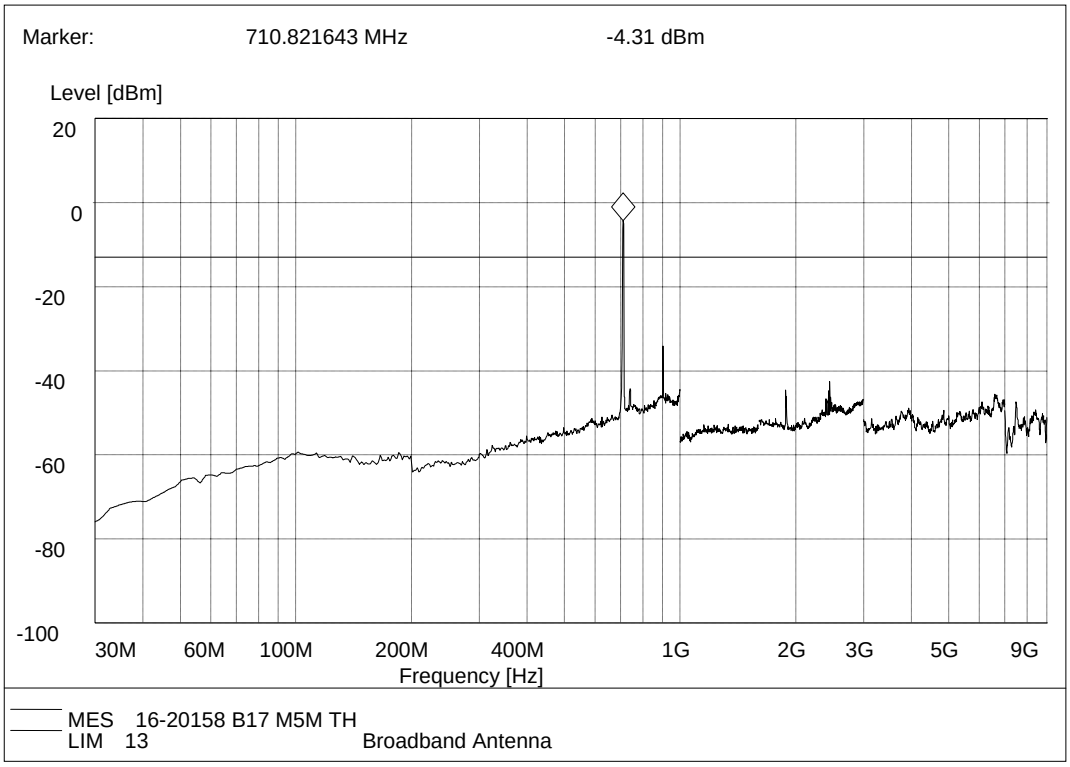
LTE Band 13 QPSK 5MHz BW Test Antenna Vertical



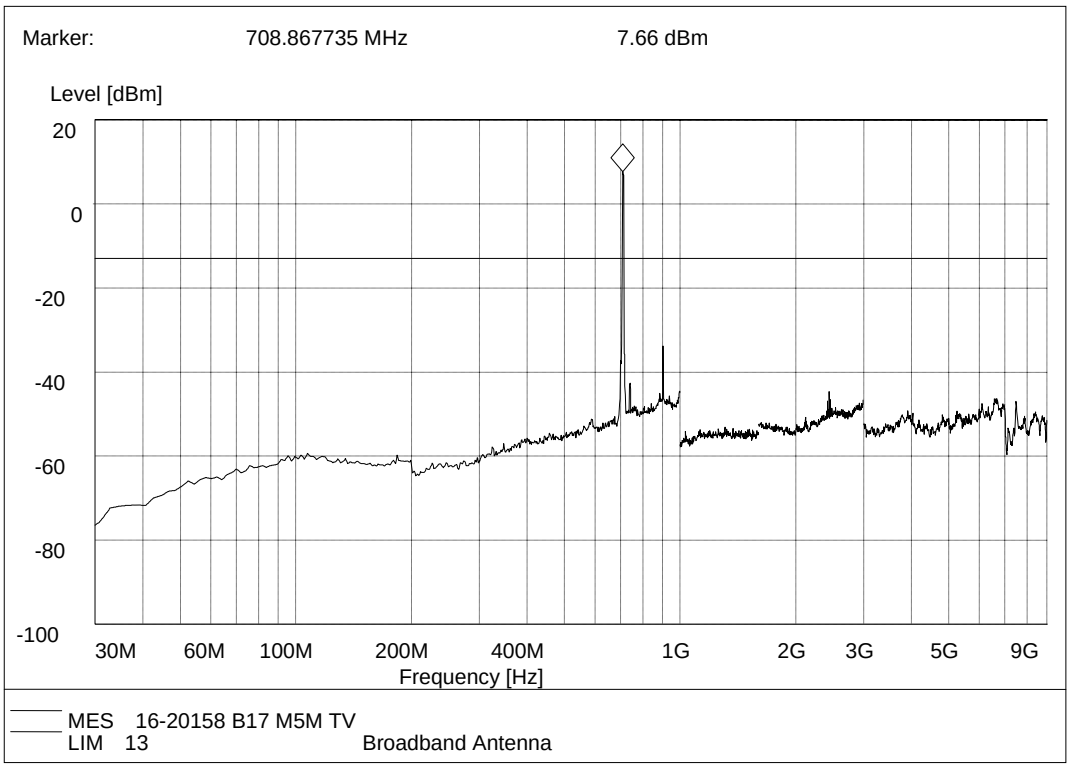
LTE Band 13 QPSK 10MHz BW Test Antenna Horizontal



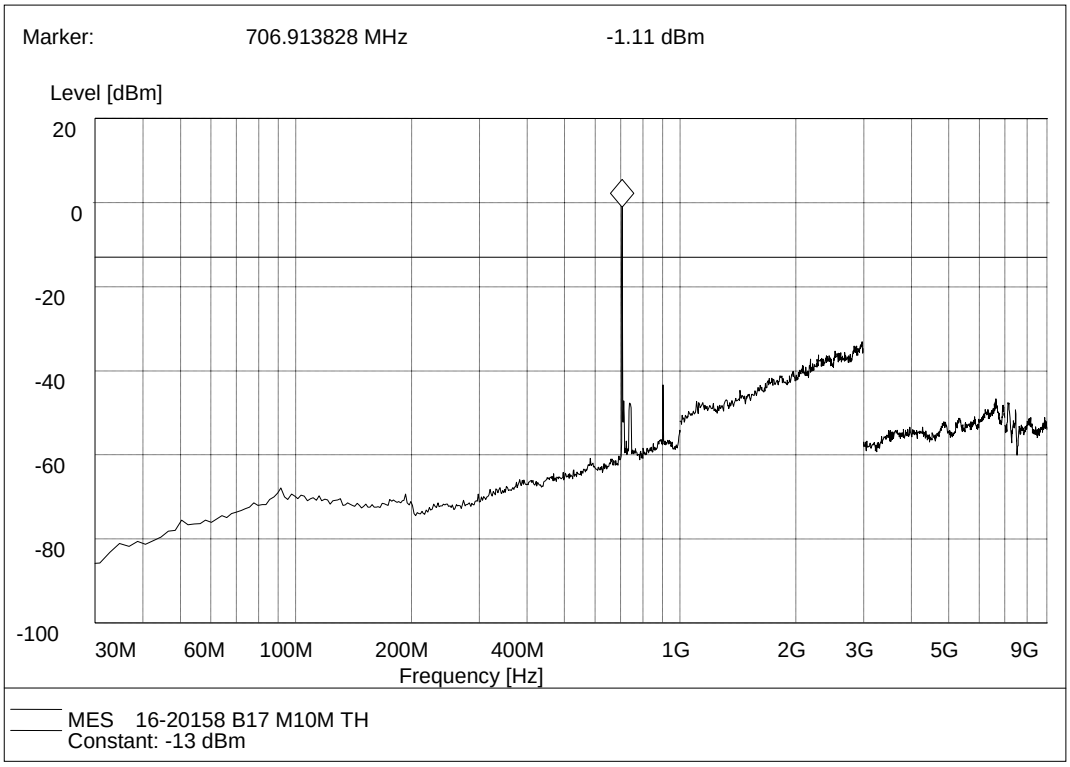
LTE Band 13 QPSK 10MHz BW Test Antenna Vertical



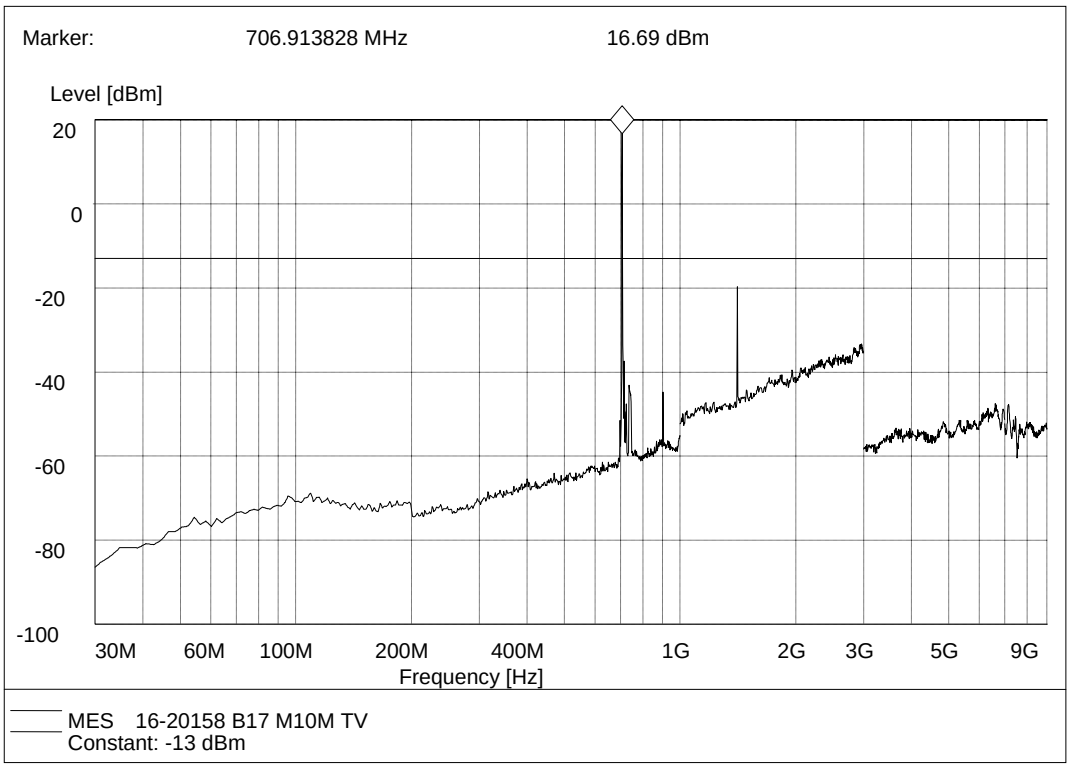
LTE Band 17 QPSK 5MHz BW Test Antenna Horizontal



LTE Band 17 QPSK 5MHz BW Test Antenna Vertical



LTE Band 17 QPSK 10MHz BW Test Antenna Horizontal



LTE Band 17 QPSK 10MHz BW Test Antenna Vertical

3. LIST OF MEASURING EQUIPMENT

Radiated Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal
1	Ultra-Broadband Antenna	ShwarzBeck	VULB9163	538	11/13/2016
2	EMI TEST RECEIVER	Rohde&Schwarz	ESI 26	100009	11/13/2016
3	EMI TEST Software	Audix	E3	N/A	N/A
4	TURNTABLE	ETS	2088	2149	N/A
5	ANTENNA MAST	ETS	2075	2346	N/A
6	EMI TEST Software	Rohde&Schwarz	ESK1	N/A	N/A
7	HORNANTENNA	ShwarzBeck	9120D	1011	11/13/2016
8	Amplifer	Sonoma	310N	E009-13	11/13/2016
9	JS amplifer	Rohde&Schwarz	JS4-00101800-28-5A	F201504	11/13/2016
10	High pass filter	Compliance Direction systems	BSU-6	34202	11/13/2016
11	HORNANTENNA	ShwarzBeck	9120D	1012	11/13/2016
12	Amplifer	Compliance Direction systems	PAP1-4060	120	11/13/2016
13	Loop Antenna	Rohde&Schwarz	HFH2-Z2	100020	11/13/2016
14	TURNTABLE	MATURO	TT2.0	----	N/A
15	ANTENNA MAST	MATURO	TAM-4.0-P	----	N/A
16	Horn Antenna	SCHWARZBECK	BBHA9170	25841	11/13/2016
17	ULTRA-BROADBAND ANTENNA	Rohde&Schwarz	HL562	100015	11/13/2016
18	UNIVERSAL RADIO COMMUNICATION	Rohde&Schwarz	CMU200	112012	11/13/2016

Maximum Peak Output Power / Power Spectral Density / 6dB Bandwidth / Band Edge Compliance of RF Emission / Spurious RF Conducted Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal
1	Spectrum Analyzer	Rohde&Schwarz	FSP	1164.4391.40	11/13/2016
3	Spectrum Analyzer	Keysight	N9030A	ATO-67098	07/19/2016
4	Power Meter	Anritsu	ML2480B	100798	11/13/2016
5	Power Sensor	Anritsu	MA2411B	100258	11/13/2016
6	UNIVERSAL RADIO COMMUNICATION	Rohde&Schwarz	CMU200	112012	11/13/2016

4. UNCERTAINTY OF EVALUATION

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2

Measurement	Frequency	Uncertainty
Radiated emissions	9KHz~40GHz	2.20dB
RF Conducted	9KHz~40GHz	1.60 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

** END OF REPORT **