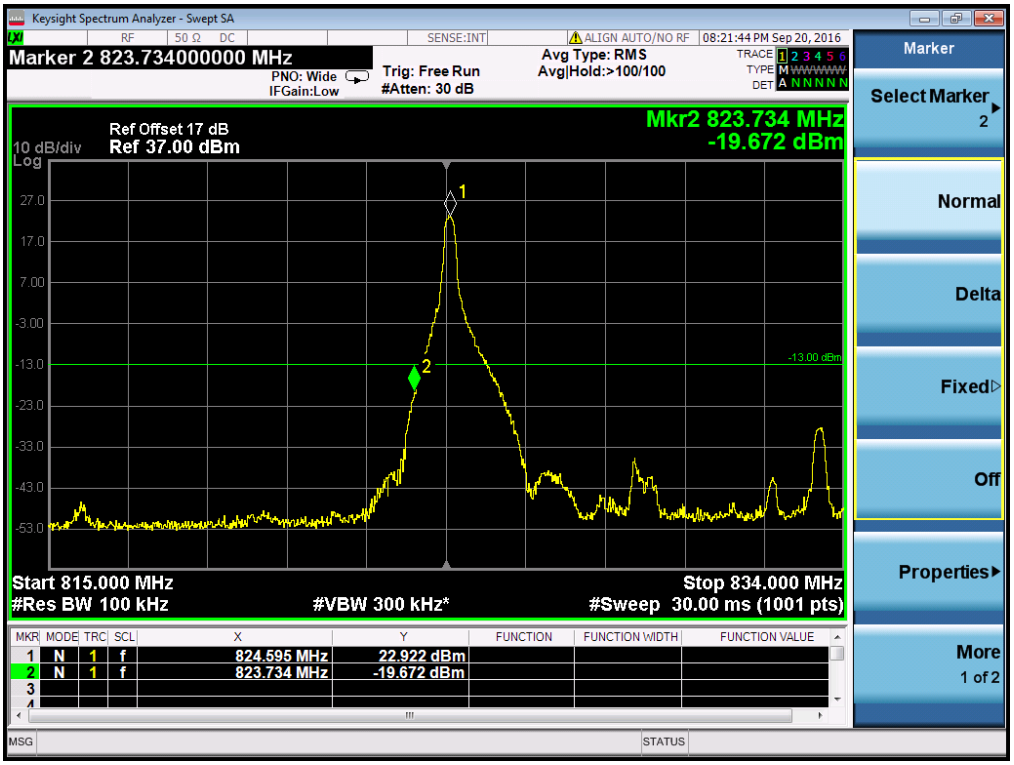
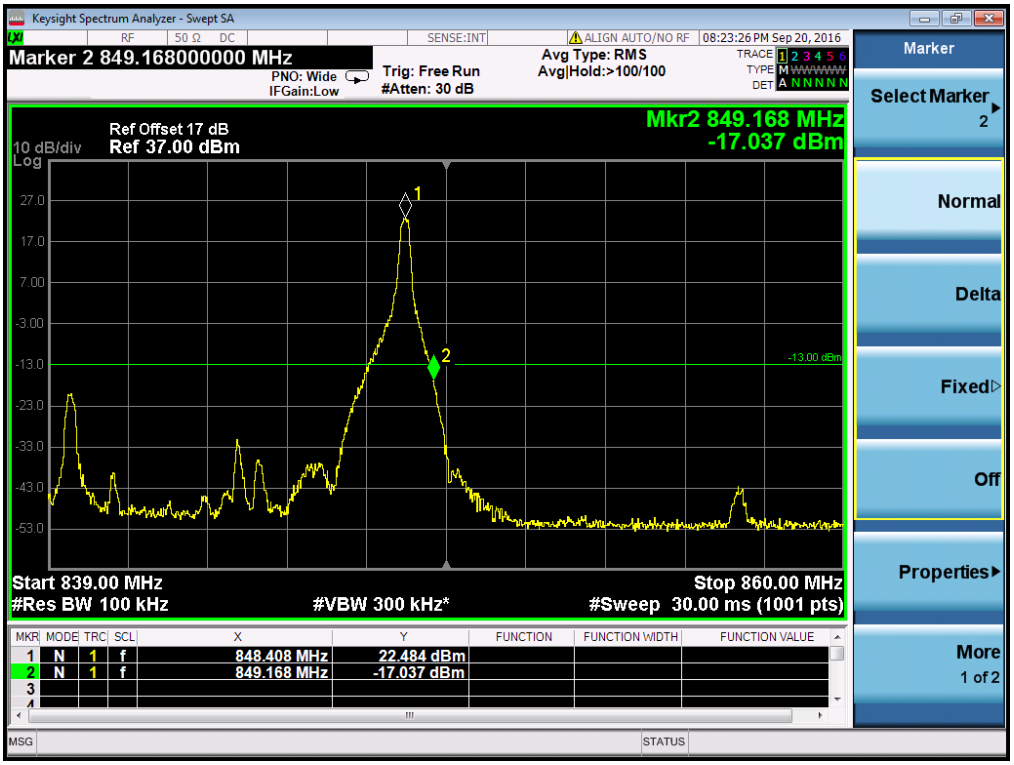
Band	LTE Band 5	Modulation	16QAM
Bandwidth	10MHz		



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

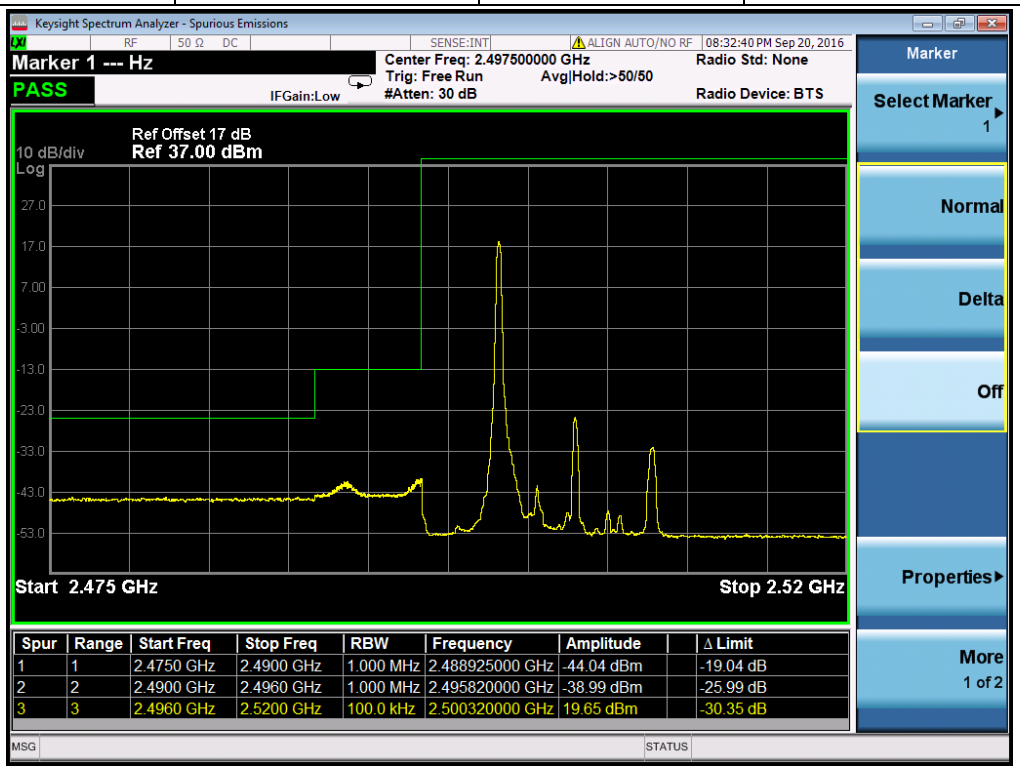
Lower Band Edge Plot for 16QAM -RB Size 50, RB Offset 0



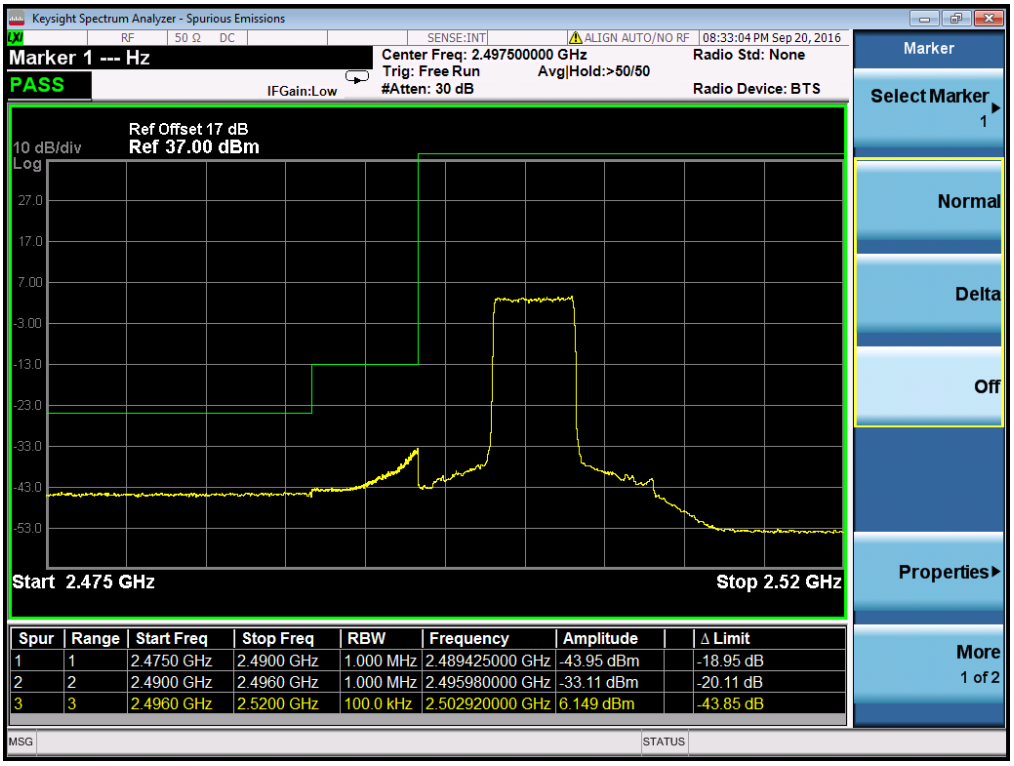
Higher Band Edge Plot for 16QAM -RB Size 1, RB Offset 49

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

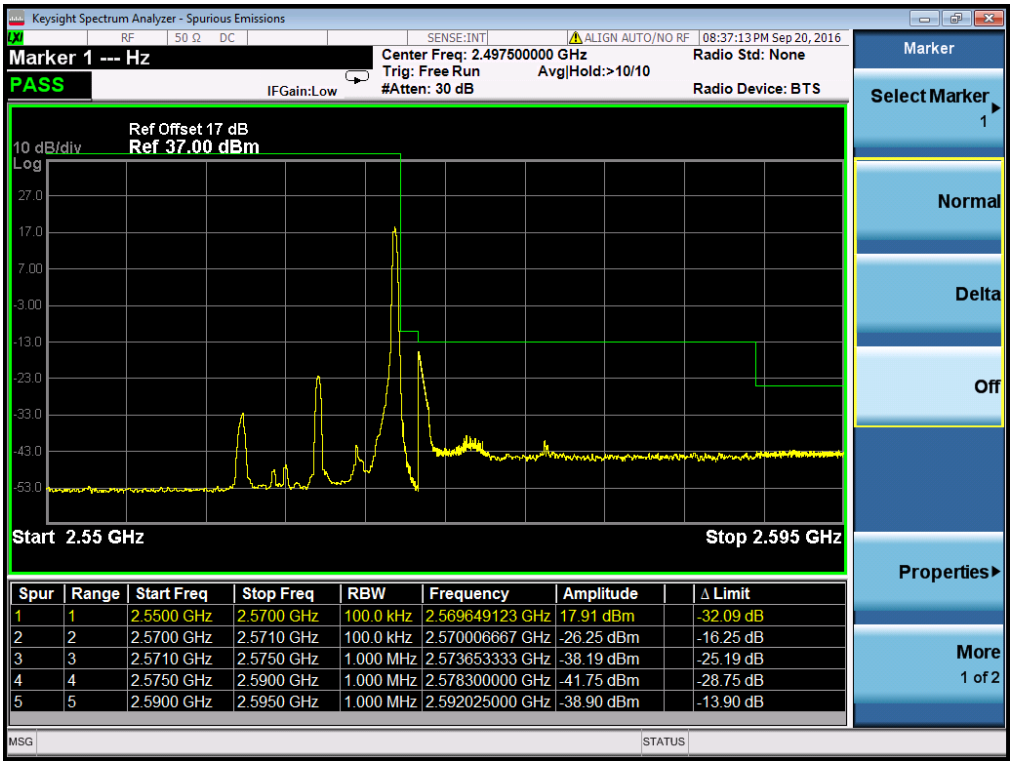
Band	LTE Band 7	Modulation	QPSK
Bandwidth	5MHz		



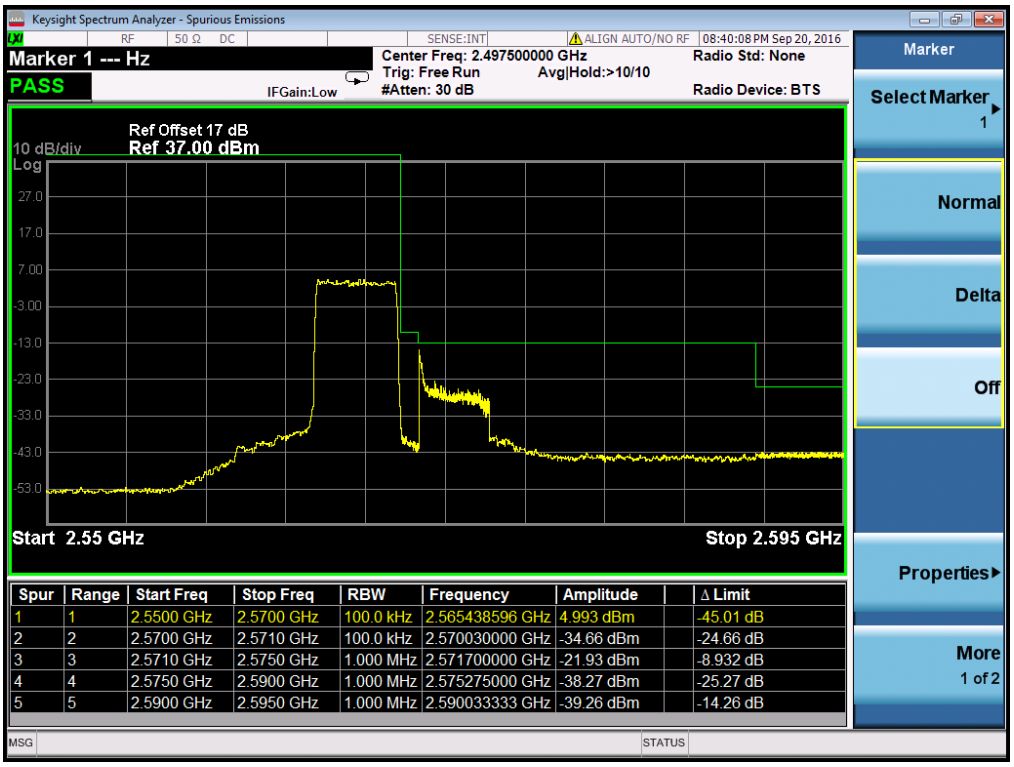
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



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

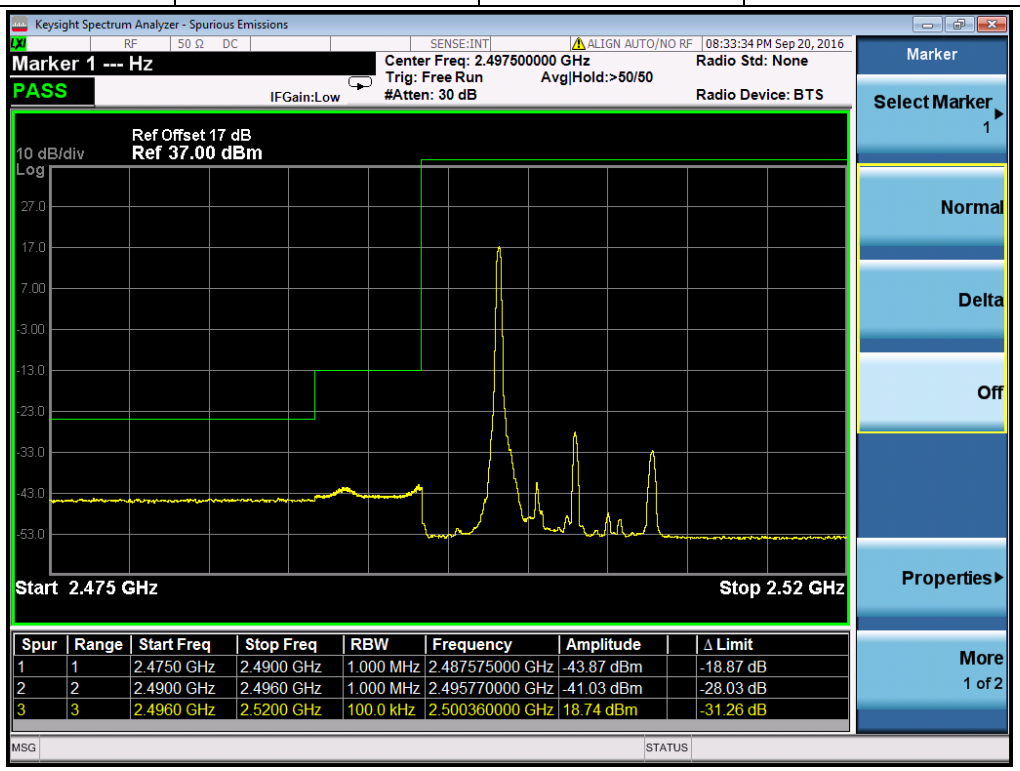


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 24



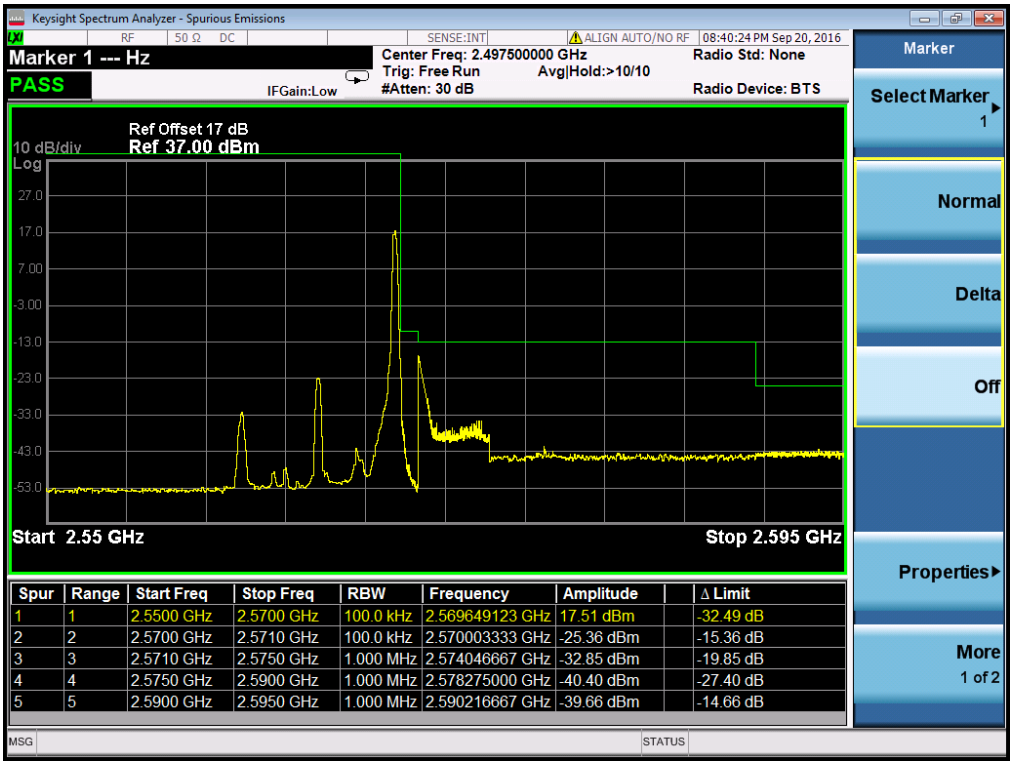
Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0

Band	LTE Band 7	Modulation	16QAM
Bandwidth	5MHz		



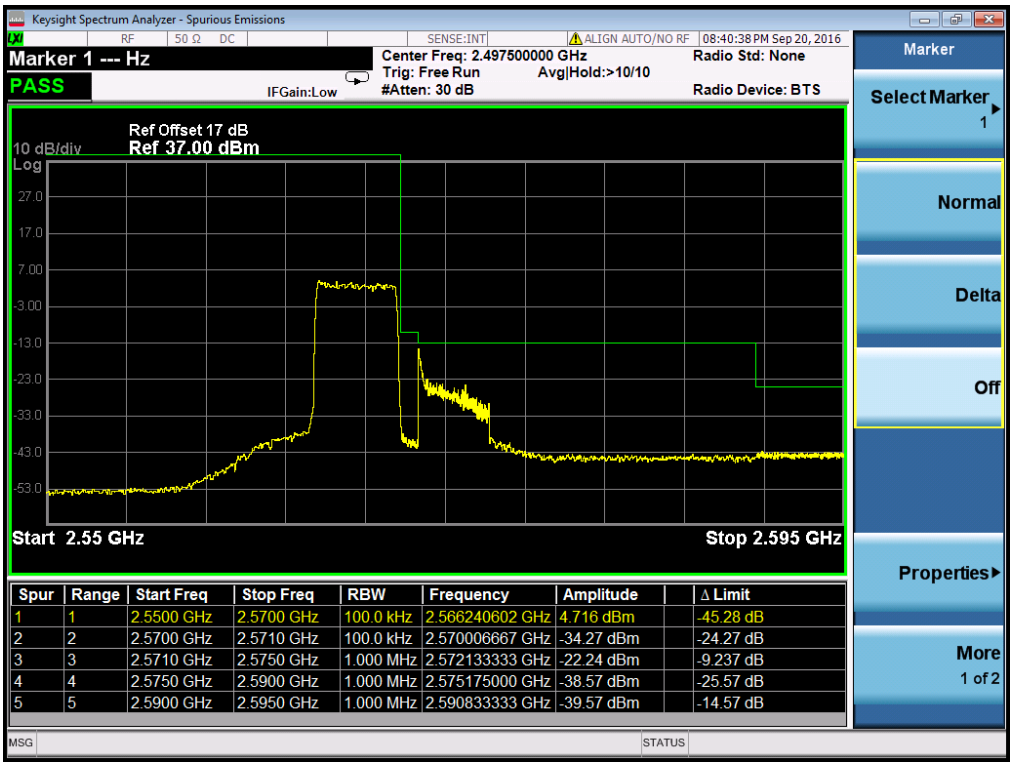
Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0

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



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude		Δ Limit
1	1	2.5500 GHz	2.5700 GHz	100.0 kHz	2.569649123 GHz	17.51 dBm		-32.49 dB
2	2	2.5700 GHz	2.5710 GHz	100.0 kHz	2.570003333 GHz	-25.36 dBm		-15.36 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.574046667 GHz	-32.85 dBm		-19.85 dB
4	4	2.5750 GHz	2.5900 GHz	1.000 MHz	2.578275000 GHz	-40.40 dBm		-27.40 dB
5	5	2.5900 GHz	2.5950 GHz	1.000 MHz	2.590216667 GHz	-39.66 dBm		-14.66 dB

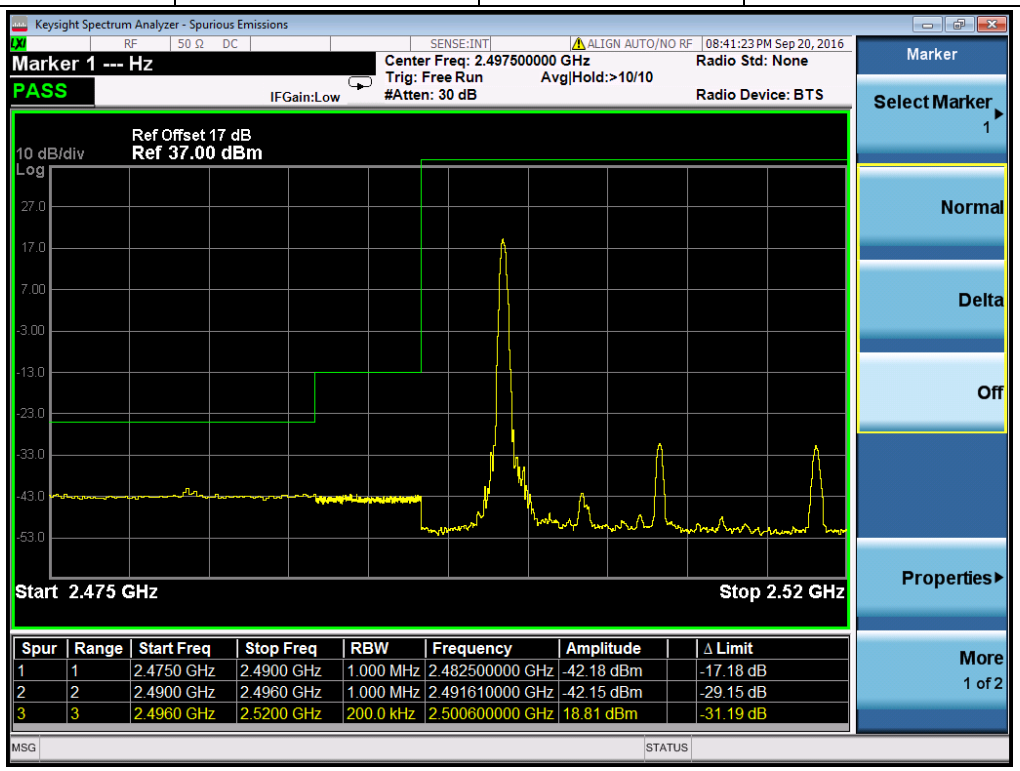
Higher Band Edge Plot for 16QAM -RB Size 1, RB Offset 24



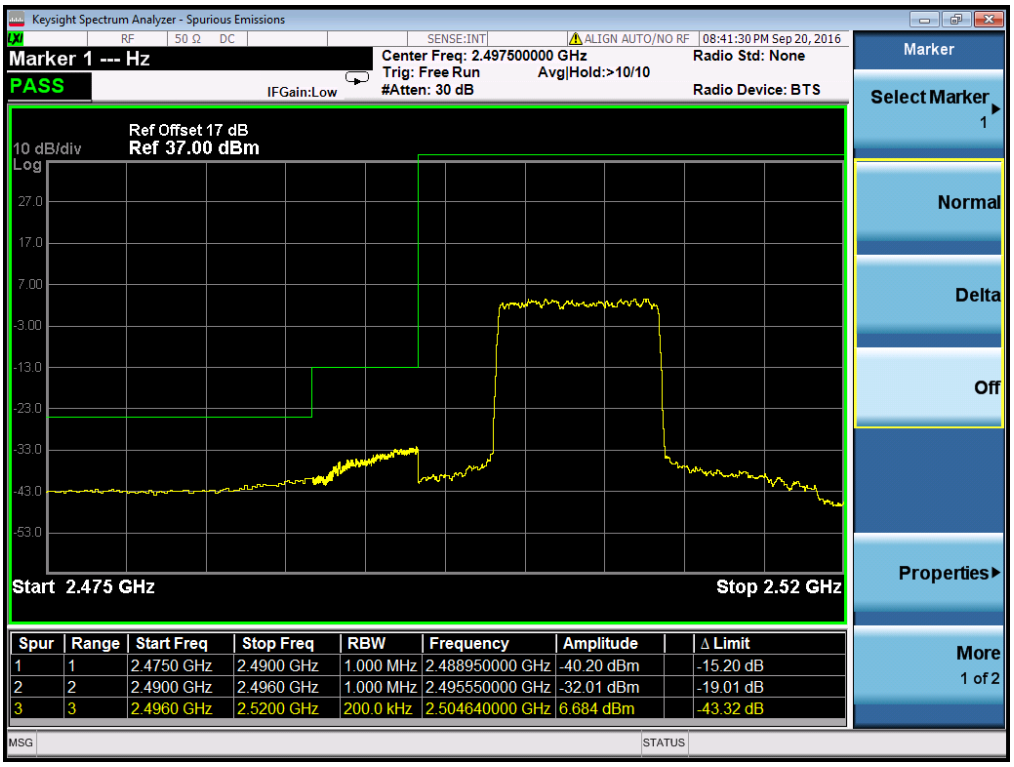
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude		Δ Limit
1	1	2.5500 GHz	2.5700 GHz	100.0 kHz	2.566240602 GHz	4.716 dBm		-45.28 dB
2	2	2.5700 GHz	2.5710 GHz	100.0 kHz	2.570006667 GHz	-34.27 dBm		-24.27 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.572133333 GHz	-22.24 dBm		-9.237 dB
4	4	2.5750 GHz	2.5900 GHz	1.000 MHz	2.575175000 GHz	-38.57 dBm		-25.57 dB
5	5	2.5900 GHz	2.5950 GHz	1.000 MHz	2.590833333 GHz	-39.57 dBm		-14.57 dB

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

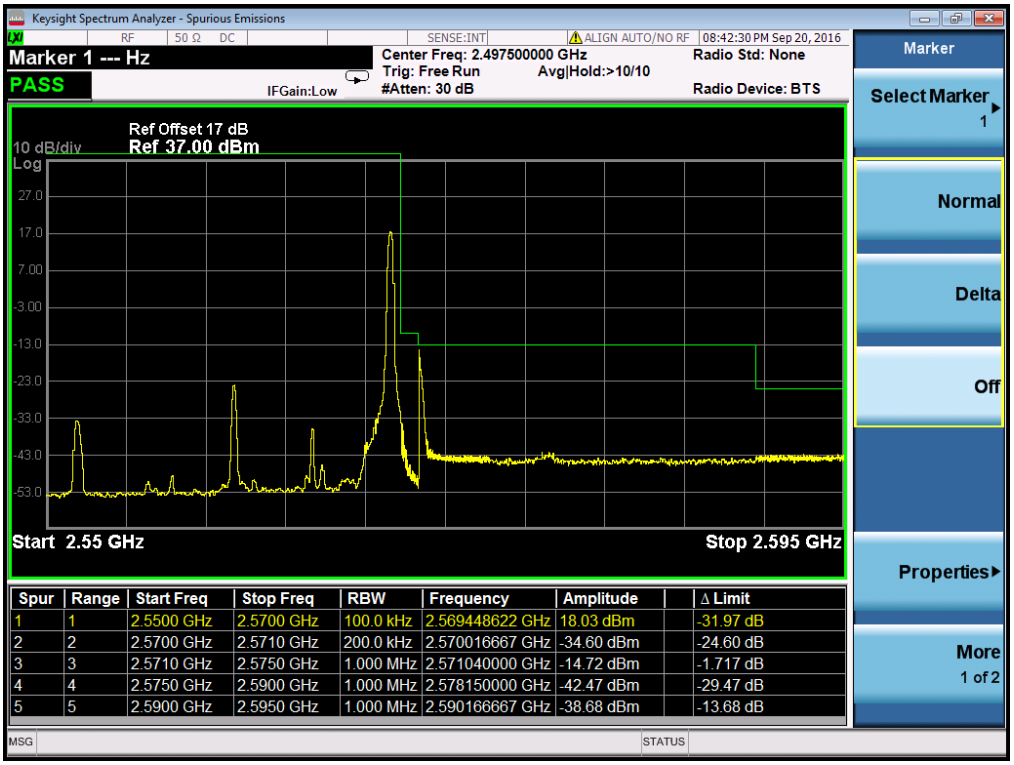
Band	LTE Band 7	Modulation	QPSK
Bandwidth	10MHz		



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



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



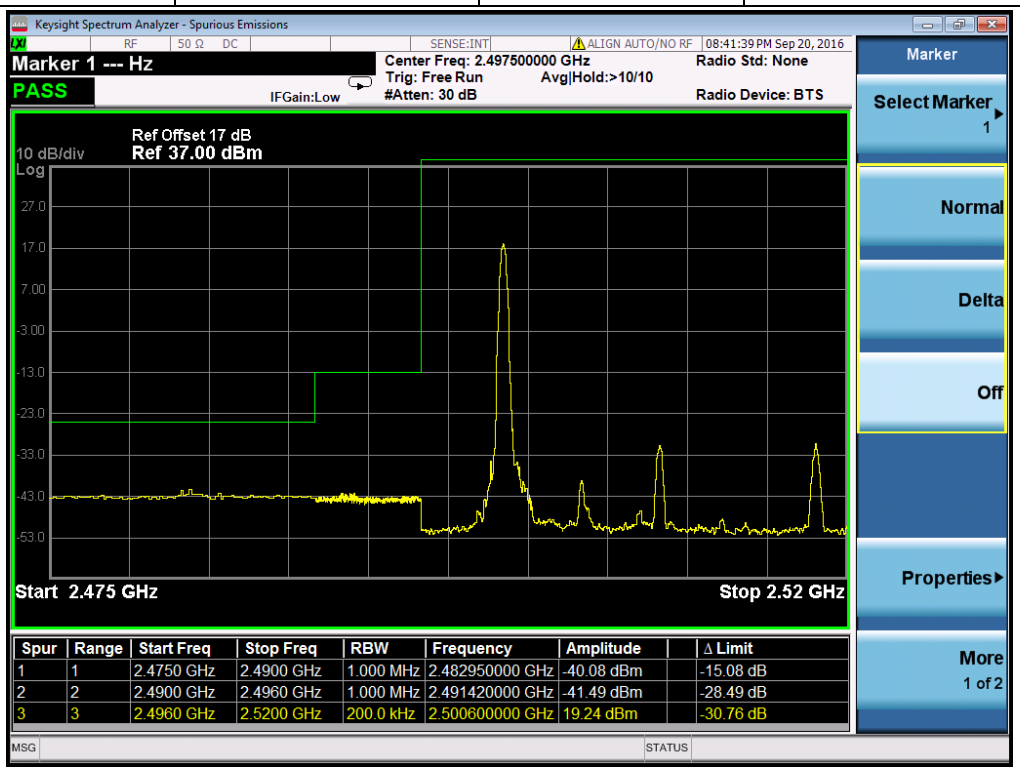
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5500 GHz	2.5700 GHz	100.0 kHz	2.569448622 GHz	18.03 dBm	-31.97 dB
2	2	2.5700 GHz	2.5710 GHz	200.0 kHz	2.570016667 GHz	-34.60 dBm	-24.60 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571040000 GHz	-14.72 dBm	-1.717 dB
4	4	2.5750 GHz	2.5900 GHz	1.000 MHz	2.578150000 GHz	-42.47 dBm	-29.47 dB
5	5	2.5900 GHz	2.5950 GHz	1.000 MHz	2.590166667 GHz	-38.68 dBm	-13.68 dB

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

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5500 GHz	2.5700 GHz	100.0 kHz	2.562531328 GHz	1.866 dBm	-48.13 dB
2	2	2.5700 GHz	2.5710 GHz	200.0 kHz	2.570046667 GHz	-36.89 dBm	-26.89 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571013333 GHz	-28.59 dBm	-15.59 dB
4	4	2.5750 GHz	2.5900 GHz	1.000 MHz	2.575650000 GHz	-33.19 dBm	-20.19 dB
5	5	2.5900 GHz	2.5950 GHz	1.000 MHz	2.593366667 GHz	-40.64 dBm	-15.64 dB

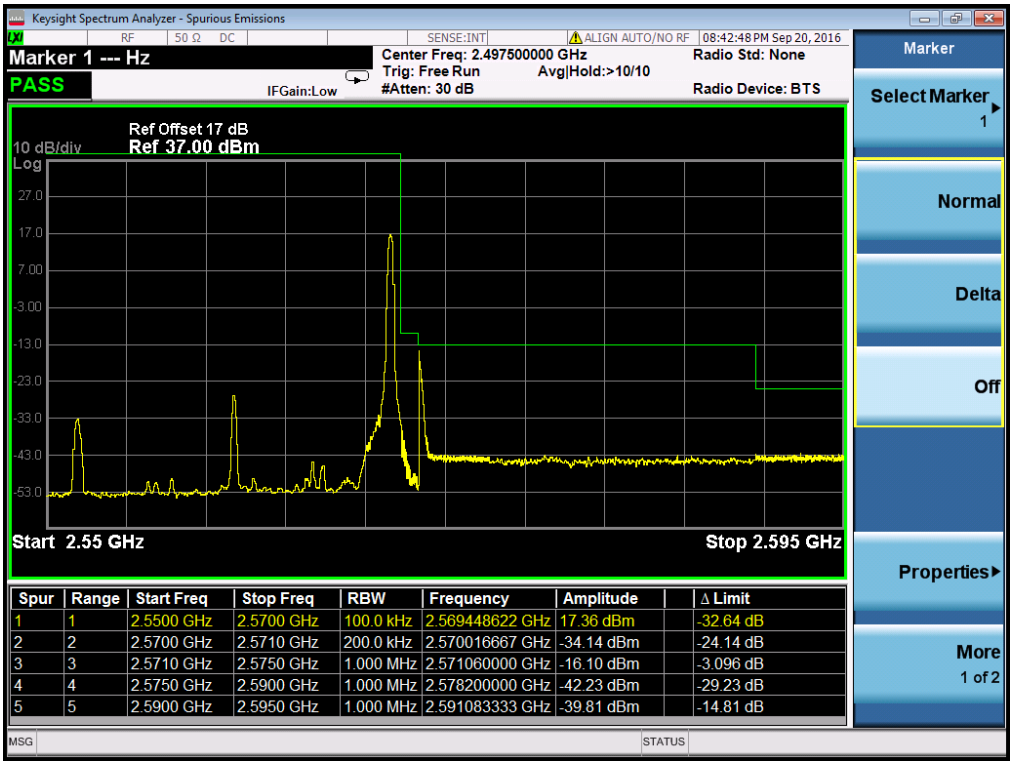
Higher Band Edge Plot for QPSK-RB Size 50, RB Offset 0

Band	LTE Band 7	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



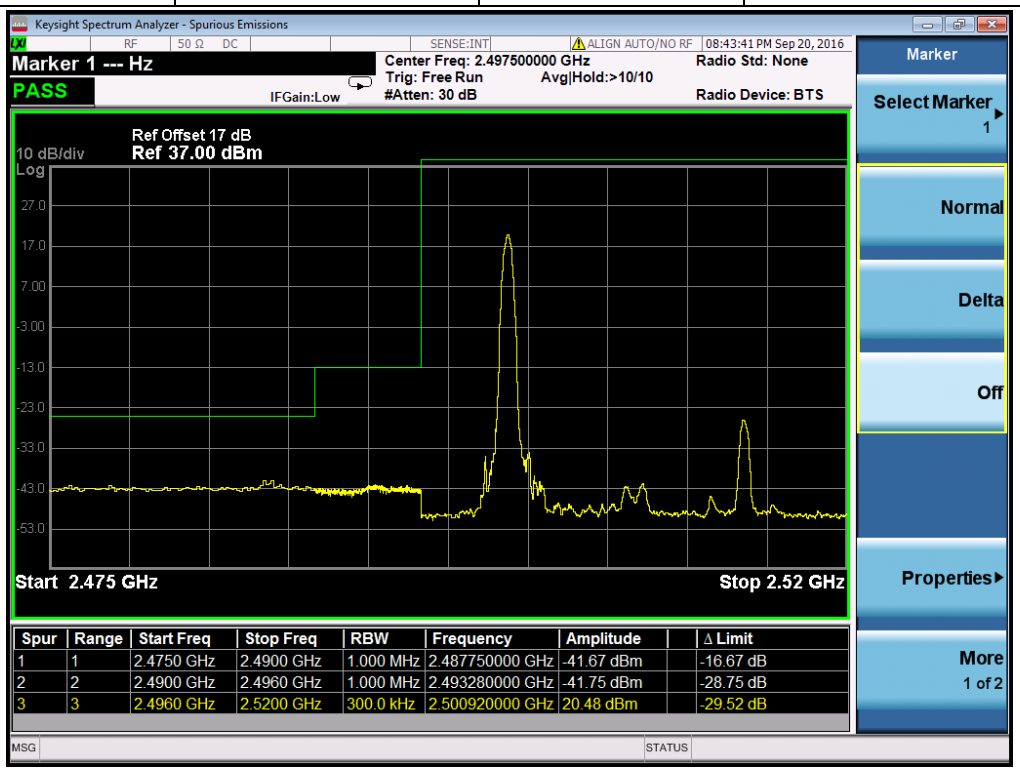
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5500 GHz	2.5700 GHz	100.0 kHz	2.569448622 GHz	17.36 dBm	-32.64 dB
2	2	2.5700 GHz	2.5710 GHz	200.0 kHz	2.570016667 GHz	-34.14 dBm	-24.14 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571060000 GHz	-16.10 dBm	-3.096 dB
4	4	2.5750 GHz	2.5900 GHz	1.000 MHz	2.578200000 GHz	-42.23 dBm	-29.23 dB
5	5	2.5900 GHz	2.5950 GHz	1.000 MHz	2.591083333 GHz	-39.81 dBm	-14.81 dB

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

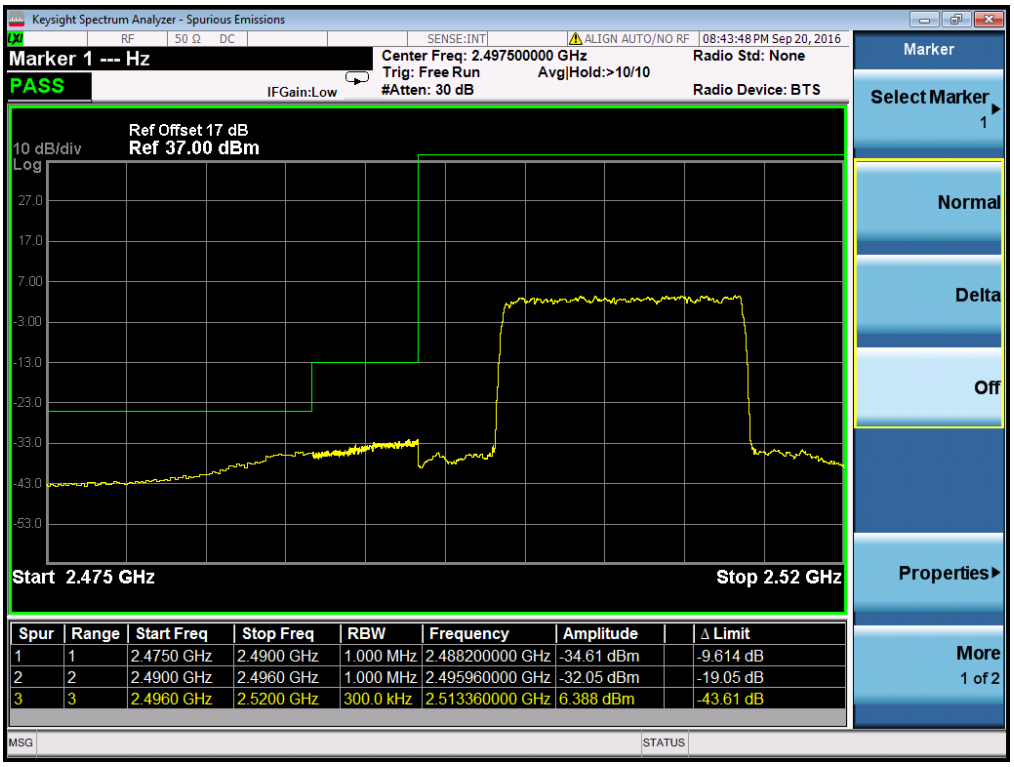
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5500 GHz	2.5700 GHz	100.0 kHz	2.564335840 GHz	1.756 dBm	-48.24 dB
2	2	2.5700 GHz	2.5710 GHz	200.0 kHz	2.570046667 GHz	-36.79 dBm	-26.79 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571053333 GHz	-29.60 dBm	-16.60 dB
4	4	2.5750 GHz	2.5900 GHz	1.000 MHz	2.575175000 GHz	-33.37 dBm	-20.37 dB
5	5	2.5900 GHz	2.5950 GHz	1.000 MHz	2.593158333 GHz	-38.84 dBm	-13.84 dB

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

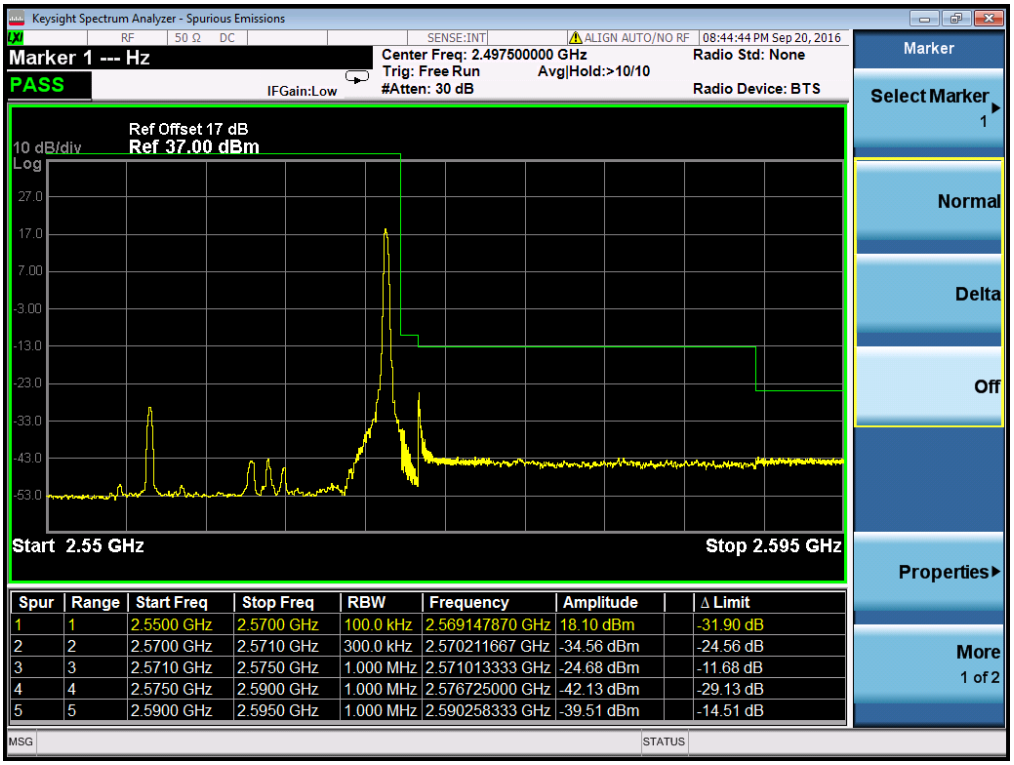
Band	LTE Band 7	Modulation	QPSK
Bandwidth	15MHz		



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



Lower Band Edge Plot for QPSK -RB Size 75, RB Offset 0



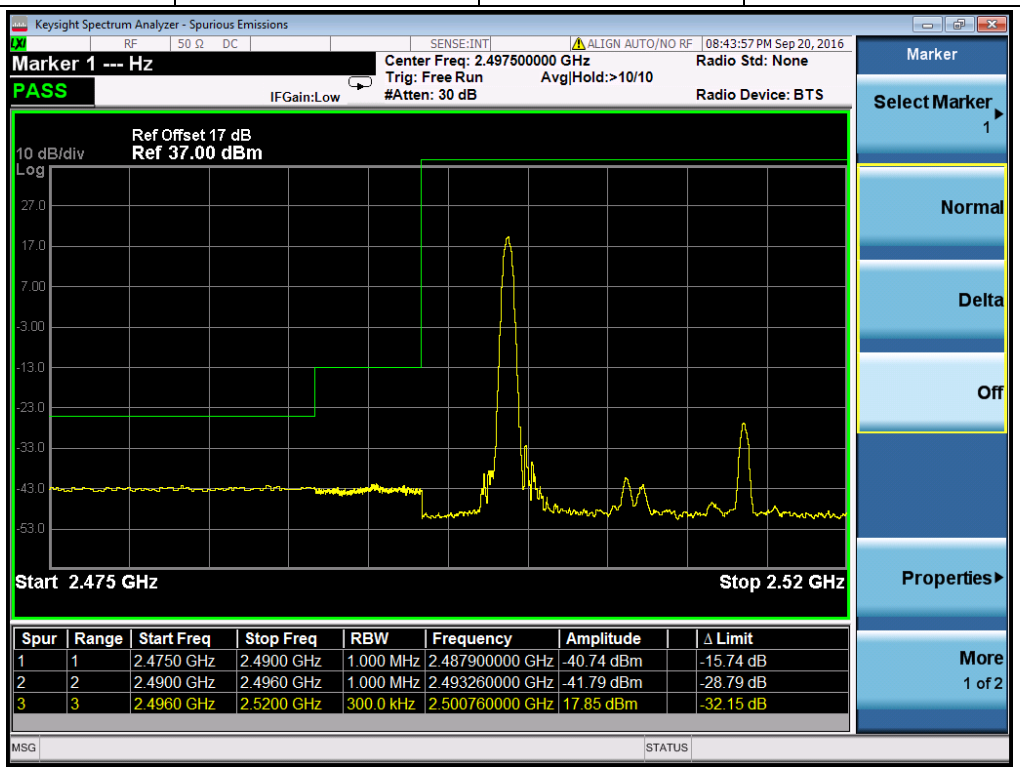
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5500 GHz	2.5700 GHz	100.0 kHz	2.569147870 GHz	18.10 dBm	-31.90 dB
2	2	2.5700 GHz	2.5710 GHz	300.0 kHz	2.570211667 GHz	-34.56 dBm	-24.56 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571013333 GHz	-24.68 dBm	-11.68 dB
4	4	2.5750 GHz	2.5900 GHz	1.000 MHz	2.576725000 GHz	-42.13 dBm	-29.13 dB
5	5	2.5900 GHz	2.5950 GHz	1.000 MHz	2.590258333 GHz	-39.51 dBm	-14.51 dB

Higher Band Edge Plot for QPSK -RB Size 1, RB Offset 74

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5500 GHz	2.5700 GHz	100.0 kHz	2.564235589 GHz	0.491 dBm	-49.51 dB
2	2	2.5700 GHz	2.5710 GHz	300.0 kHz	2.570090000 GHz	-36.14 dBm	-26.14 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571733333 GHz	-30.88 dBm	-17.88 dB
4	4	2.5750 GHz	2.5900 GHz	1.000 MHz	2.580750000 GHz	-33.04 dBm	-20.04 dB
5	5	2.5900 GHz	2.5950 GHz	1.000 MHz	2.591600000 GHz	-39.35 dBm	-14.35 dB

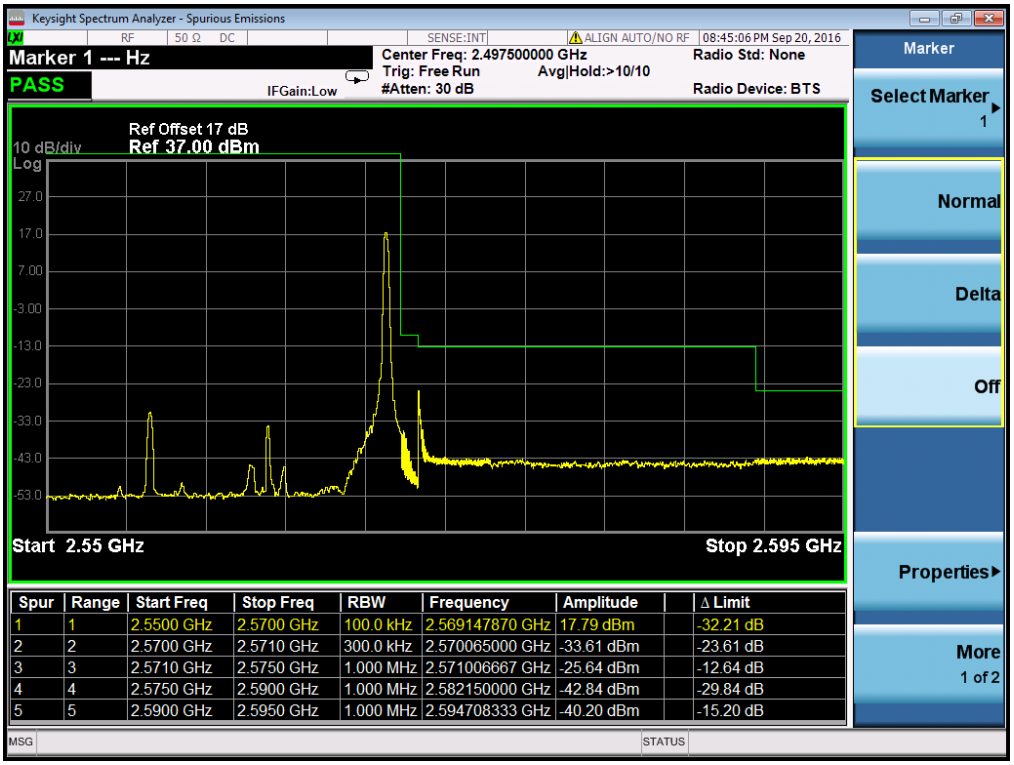
Higher Band Edge Plot for QPSK -RB Size 75, RB Offset 0

Band	LTE Band 7	Modulation	16QAM
Bandwidth	15MHz		



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

Lower Band Edge Plot for 16QAM -RB Size 75, RB Offset 0



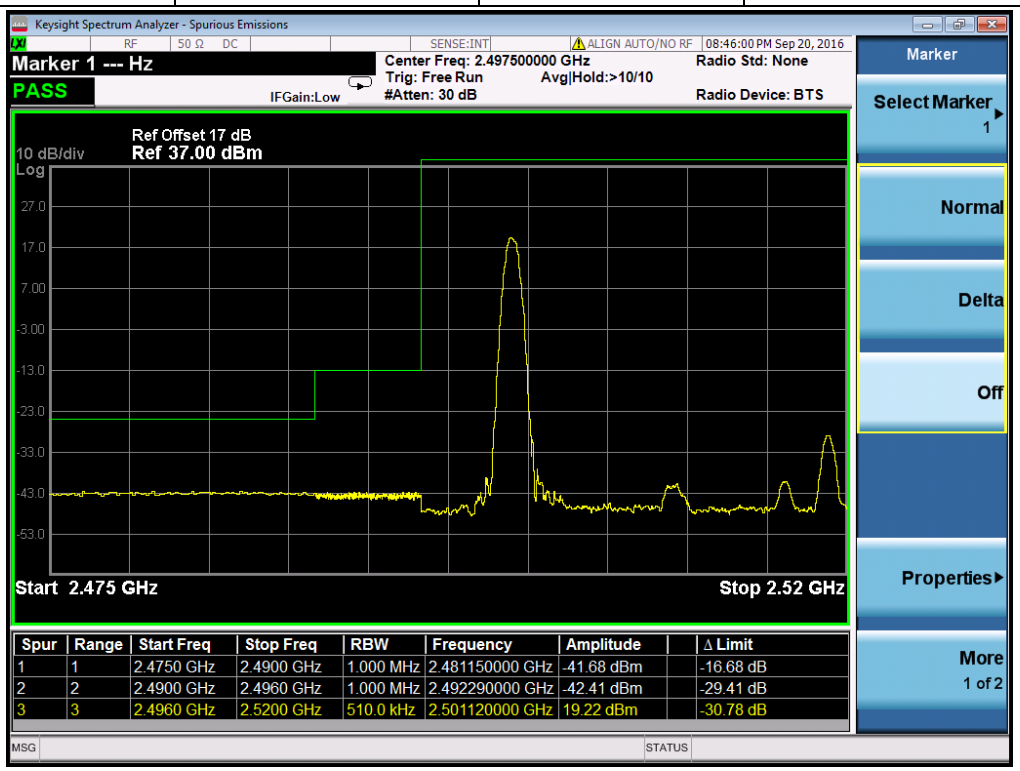
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5500 GHz	2.5700 GHz	100.0 kHz	2.569147870 GHz	17.79 dBm	-32.21 dB
2	2	2.5700 GHz	2.5710 GHz	300.0 kHz	2.570065000 GHz	-33.61 dBm	-23.61 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571006667 GHz	-25.64 dBm	-12.64 dB
4	4	2.5750 GHz	2.5900 GHz	1.000 MHz	2.582150000 GHz	-42.84 dBm	-29.84 dB
5	5	2.5900 GHz	2.5950 GHz	1.000 MHz	2.594708333 GHz	-40.20 dBm	-15.20 dB

Higher Band Edge Plot for 16QAM -RB Size 1, RB Offset 74

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5500 GHz	2.5700 GHz	100.0 kHz	2.560476190 GHz	-0.009 dBm	-50.01 dB
2	2	2.5700 GHz	2.5710 GHz	300.0 kHz	2.570168333 GHz	-36.27 dBm	-26.27 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571653333 GHz	-30.39 dBm	-17.39 dB
4	4	2.5750 GHz	2.5900 GHz	1.000 MHz	2.575725000 GHz	-32.33 dBm	-19.33 dB
5	5	2.5900 GHz	2.5950 GHz	1.000 MHz	2.594600000 GHz	-39.37 dBm	-14.37 dB

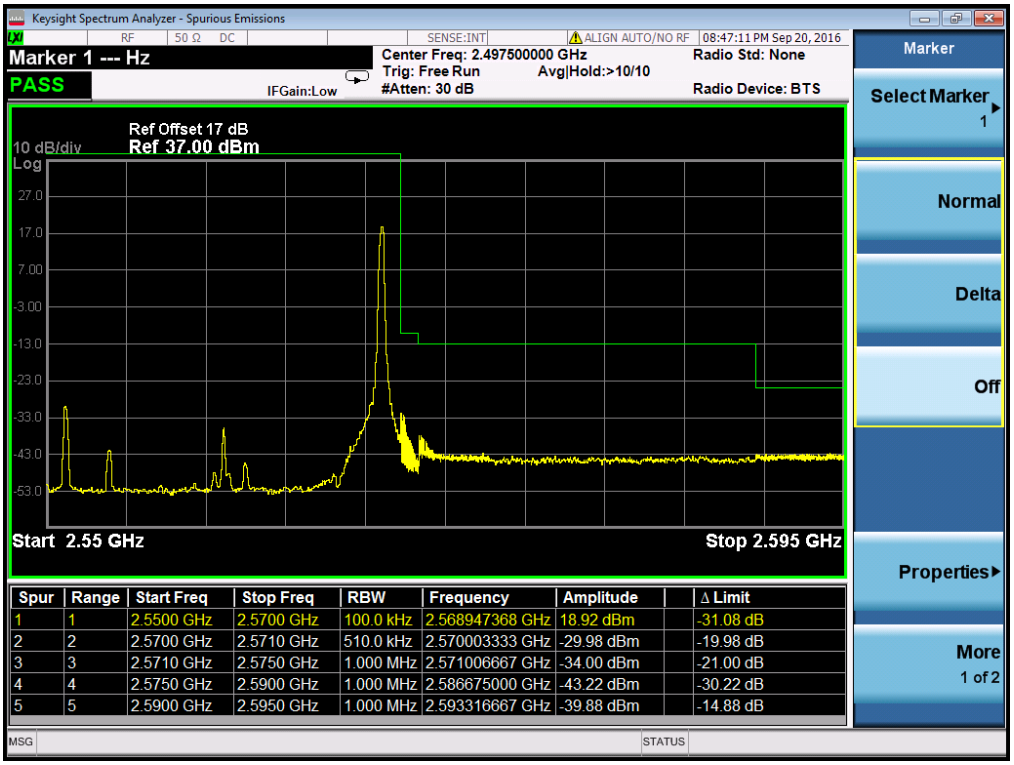
Higher Band Edge Plot for 16QAM -RB Size 75, RB Offset 0

Band	LTE Band 7	Modulation	QPSK
Bandwidth	20MHz		



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

Lower Band Edge Plot for QPSK -RB Size 100, RB Offset 0



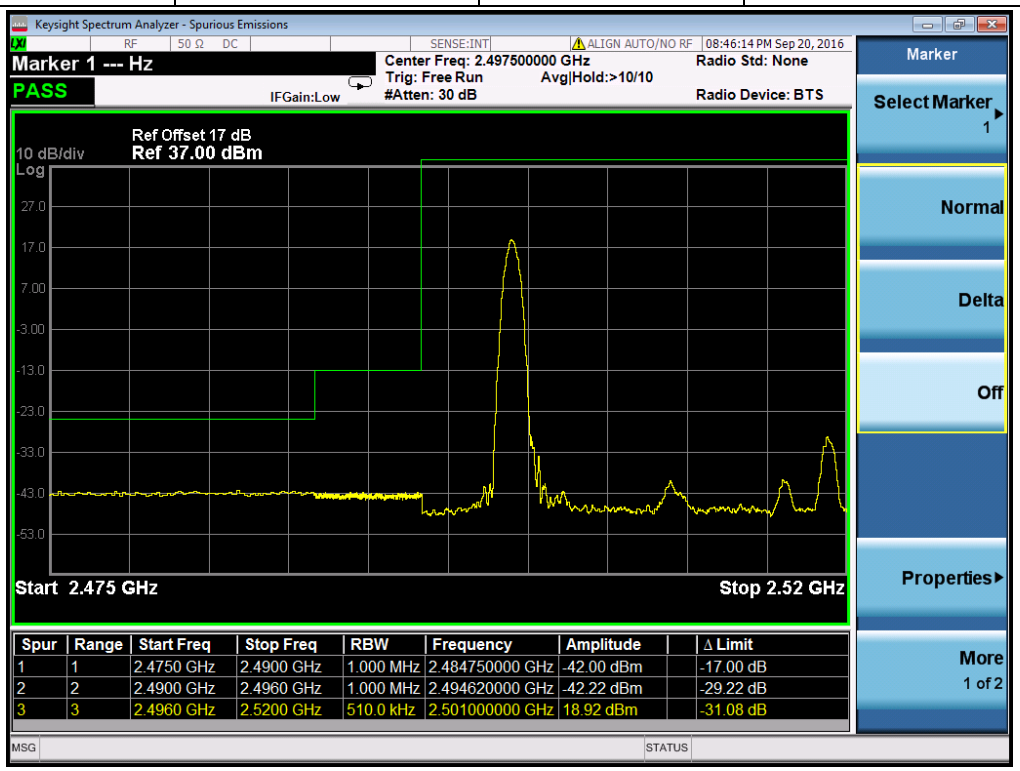
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5500 GHz	2.5700 GHz	100.0 kHz	2.568947368 GHz	18.92 dBm	-31.08 dB
2	2	2.5700 GHz	2.5710 GHz	510.0 kHz	2.570003333 GHz	-29.98 dBm	-19.98 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571006667 GHz	-34.00 dBm	-21.00 dB
4	4	2.5750 GHz	2.5900 GHz	1.000 MHz	2.586675000 GHz	-43.22 dBm	-30.22 dB
5	5	2.5900 GHz	2.5950 GHz	1.000 MHz	2.593316667 GHz	-39.88 dBm	-14.88 dB

Higher Band Edge Plot for QPSK -RB Size 1, RB Offset 99

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5500 GHz	2.5700 GHz	100.0 kHz	2.566240602 GHz	-0.206 dBm	-50.21 dB
2	2	2.5700 GHz	2.5710 GHz	510.0 kHz	2.570003333 GHz	-32.97 dBm	-22.97 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571066667 GHz	-30.86 dBm	-17.86 dB
4	4	2.5750 GHz	2.5900 GHz	1.000 MHz	2.581575000 GHz	-32.79 dBm	-19.79 dB
5	5	2.5900 GHz	2.5950 GHz	1.000 MHz	2.591225000 GHz	-38.53 dBm	-13.53 dB

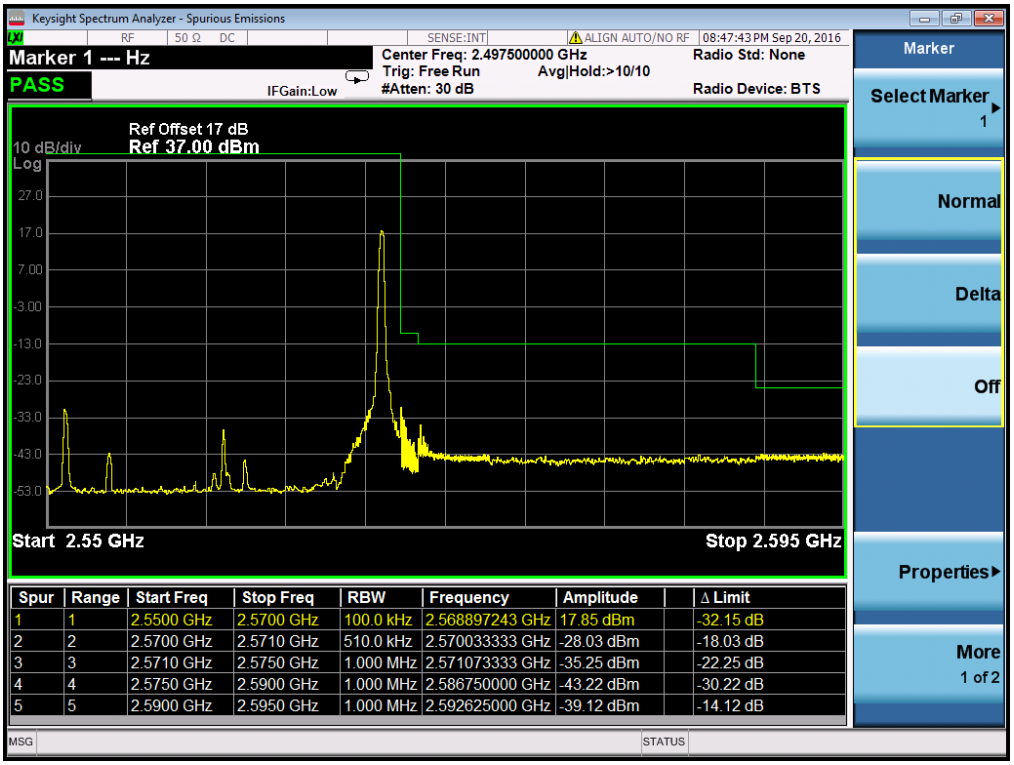
Higher Band Edge Plot for QPSK -RB Size 100, RB Offset 0

Band	LTE Band 7	Modulation	16QAM
Bandwidth	20MHz		



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

Lower Band Edge Plot for 16QAM -RB Size 100, RB Offset 0



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5500 GHz	2.5700 GHz	100.0 kHz	2.568897243 GHz	17.85 dBm	-32.15 dB
2	2	2.5700 GHz	2.5710 GHz	510.0 kHz	2.570033333 GHz	-28.03 dBm	-18.03 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571073333 GHz	-35.25 dBm	-22.25 dB
4	4	2.5750 GHz	2.5900 GHz	1.000 MHz	2.586750000 GHz	-43.22 dBm	-30.22 dB
5	5	2.5900 GHz	2.5950 GHz	1.000 MHz	2.592625000 GHz	-39.12 dBm	-14.12 dB

Higher Band Edge Plot for 16QAM -RB Size 1, RB Offset 99

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5500 GHz	2.5700 GHz	100.0 kHz	2.562832080 GHz	-1.063 dBm	-51.06 dB
2	2	2.5700 GHz	2.5710 GHz	510.0 kHz	2.570010000 GHz	-32.68 dBm	-22.68 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571126667 GHz	-30.68 dBm	-17.68 dB
4	4	2.5750 GHz	2.5900 GHz	1.000 MHz	2.579650000 GHz	-32.27 dBm	-19.27 dB
5	5	2.5900 GHz	2.5950 GHz	1.000 MHz	2.590425000 GHz	-37.98 dBm	-12.98 dB

Higher Band Edge Plot for 16QAM -RB Size 100, RB Offset 0

2.7 Transmitter Radiated Power (EIRP/ERP)

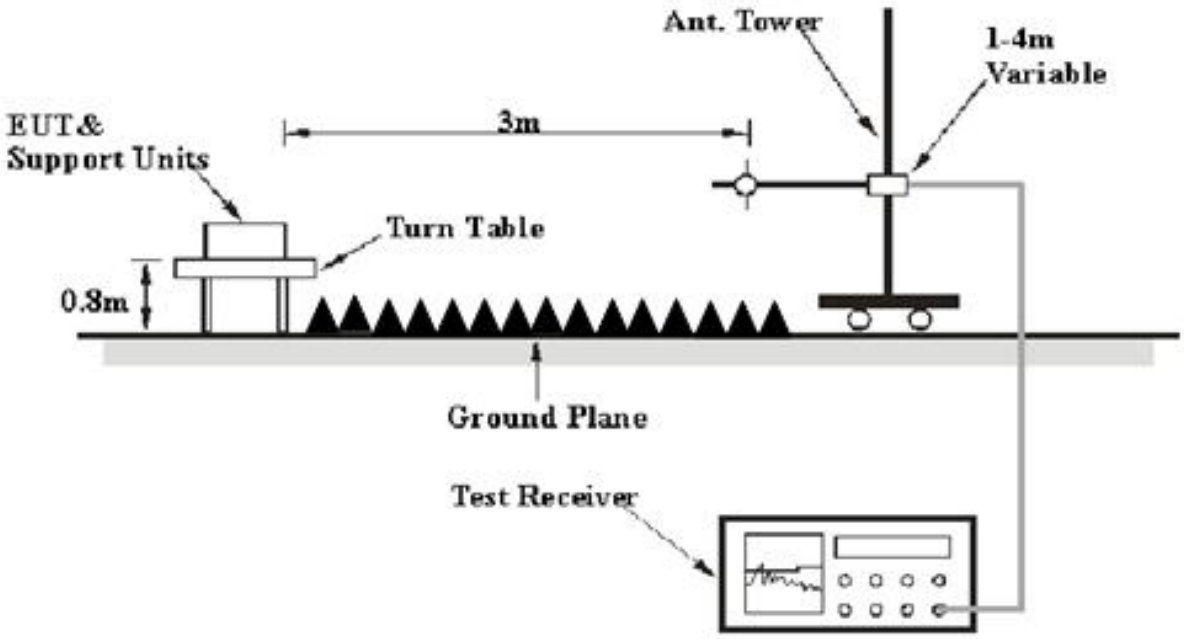
2.7.1 Requirement

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 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	20.52	H	PASS
4	1.4	QPSK	3	2	1732.5	20.49	H	PASS
4	1.4	QPSK	1	2	1754.3	**20.56**	H	PASS
4	1.4	QPSK	3	0	1710.7	20.12	V	PASS
4	1.4	QPSK	3	2	1732.5	20.15	V	PASS
4	1.4	QPSK	1	2	1754.3	20.14	V	PASS
4	1.4	16QAM	3	2	1710.7	19.65	H	PASS
4	1.4	16QAM	3	2	1732.5	**19.71**	H	PASS
4	1.4	16QAM	3	2	1754.3	19.66	H	PASS
4	1.4	16QAM	3	2	1710.7	18.82	V	PASS
4	1.4	16QAM	3	2	1732.5	18.79	V	PASS
4	1.4	16QAM	3	2	1754.3	18.85	V	PASS
4	3	QPSK	1	0	1711.5	20.53	H	PASS
4	3	QPSK	1	0	1732.5	**20.58**	H	PASS
4	3	QPSK	1	7	1753.5	20.56	H	PASS
4	3	QPSK	1	0	1711.5	20.18	V	PASS
4	3	QPSK	1	0	1732.5	20.14	V	PASS
4	3	QPSK	1	7	1753.5	20.17	V	PASS
4	3	16QAM	1	14	1711.5	19.69	H	PASS
4	3	16QAM	1	14	1732.5	19.67	H	PASS
4	3	16QAM	1	14	1753.5	**19.73**	H	PASS
4	3	16QAM	1	14	1711.5	18.84	V	PASS
4	3	16QAM	1	14	1732.5	18.85	V	PASS
4	3	16QAM	1	14	1753.5	18.87	V	PASS
4	5	QPSK	1	12	1712.5	20.54	H	PASS
4	5	QPSK	1	24	1732.5	**20.60**	H	PASS
4	5	QPSK	1	24	1752.5	20.57	H	PASS
4	5	QPSK	1	12	1712.5	20.19	V	PASS
4	5	QPSK	1	24	1732.5	20.22	V	PASS
4	5	QPSK	1	24	1752.5	20.21	V	PASS
4	5	16QAM	1	24	1712.5	19.70	H	PASS
4	5	16QAM	1	0	1732.5	19.71	H	PASS
4	5	16QAM	1	0	1752.5	**19.76**	H	PASS
4	5	16QAM	1	24	1712.5	18.92	V	PASS
4	5	16QAM	1	0	1732.5	18.88	V	PASS
4	5	16QAM	1	0	1752.5	18.85	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	**20.59**	H	PASS
4	10	QPSK	1	0	1732.5	20.55	H	PASS
4	10	QPSK	1	24	1750	20.56	H	PASS
4	10	QPSK	1	24	1715	20.19	V	PASS
4	10	QPSK	1	0	1732.5	20.25	V	PASS
4	10	QPSK	1	24	1750	20.24	V	PASS
4	10	16QAM	1	24	1715	19.74	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	18.82	V	PASS
4	10	16QAM	1	0	1732.5	18.91	V	PASS
4	10	16QAM	1	24	1750	18.87	V	PASS
4	15	QPSK	1	74	1717.5	20.57	H	PASS
4	15	QPSK	1	74	1732.5	**20.63**	H	PASS
4	15	QPSK	1	0	1747.5	20.58	H	PASS
4	15	QPSK	1	74	1717.5	20.23	V	PASS
4	15	QPSK	1	74	1732.5	20.26	V	PASS
4	15	QPSK	1	0	1747.5	20.25	V	PASS
4	15	16QAM	1	74	1717.5	19.77	H	PASS
4	15	16QAM	1	0	1732.5	19.78	H	PASS
4	15	16QAM	1	0	1747.5	**19.81**	H	PASS
4	15	16QAM	1	74	1717.5	18.86	V	PASS
4	15	16QAM	1	0	1732.5	18.91	V	PASS
4	15	16QAM	1	0	1747.5	18.89	V	PASS
4	20	QPSK	1	0	1720	20.61	H	PASS
4	20	QPSK	1	0	1732.5	**20.65**	H	PASS
4	20	QPSK	1	0	1745	20.64	H	PASS
4	20	QPSK	1	0	1720	20.19	V	PASS
4	20	QPSK	1	0	1732.5	20.24	V	PASS
4	20	QPSK	1	0	1745	20.26	V	PASS
4	20	16QAM	1	0	1720	19.79	H	PASS
4	20	16QAM	1	0	1732.5	19.80	H	PASS
4	20	16QAM	1	0	1745	**19.84**	H	PASS
4	20	16QAM	1	0	1720	18.93	V	PASS
4	20	16QAM	1	0	1732.5	18.86	V	PASS
4	20	16QAM	1	0	1745	18.84	V	PASS

2. LTE Band 5 Test Verdict:

LTE Band	BW (MHz)	Modulation	RB Configuration		Freq. (MHz)	EIRP (dBm)	H/V	Verdict
			RB Size	RB Offset				
5	1.4	QPSK	3	0	824.7	20.84	H	PASS
5	1.4	QPSK	3	2	836.5	20.87	H	PASS
5	1.4	QPSK	1	2	848.3	**20.89**	H	PASS
5	1.4	QPSK	3	0	824.7	20.45	V	PASS
5	1.4	QPSK	3	2	836.5	20.34	V	PASS
5	1.4	QPSK	1	2	848.3	20.37	V	PASS
5	1.4	16QAM	3	2	824.7	19.85	H	PASS
5	1.4	16QAM	3	2	836.5	**19.87**	H	PASS
5	1.4	16QAM	3	2	848.3	19.82	H	PASS
5	1.4	16QAM	3	2	824.7	19.37	V	PASS
5	1.4	16QAM	3	2	836.5	19.31	V	PASS
5	1.4	16QAM	3	2	848.3	19.32	V	PASS
5	3	QPSK	1	0	825.5	20.87	H	PASS
5	3	QPSK	1	0	836.5	**20.91**	H	PASS
5	3	QPSK	1	7	847.5	20.89	H	PASS
5	3	QPSK	1	0	825.5	20.40	V	PASS
5	3	QPSK	1	0	836.5	20.44	V	PASS
5	3	QPSK	1	7	847.5	20.41	V	PASS
5	3	16QAM	1	14	825.5	19.87	H	PASS
5	3	16QAM	1	14	836.5	19.84	H	PASS
5	3	16QAM	1	14	847.5	**19.89**	H	PASS
5	3	16QAM	1	14	825.5	19.34	V	PASS
5	3	16QAM	1	14	836.5	19.32	V	PASS
5	3	16QAM	1	14	847.5	19.30	V	PASS
5	5	QPSK	1	12	826.5	20.92	H	PASS
5	5	QPSK	1	24	836.5	**20.95**	H	PASS
5	5	QPSK	1	24	846.5	20.89	H	PASS
5	5	QPSK	1	12	826.5	20.46	V	PASS
5	5	QPSK	1	24	836.5	20.50	V	PASS
5	5	QPSK	1	24	846.5	20.48	V	PASS
5	5	16QAM	1	24	826.5	19.87	H	PASS
5	5	16QAM	1	0	836.5	19.89	H	PASS
5	5	16QAM	1	0	846.5	**19.92**	H	PASS
5	5	16QAM	1	24	826.5	19.32	V	PASS
5	5	16QAM	1	0	836.5	19.35	V	PASS
5	5	16QAM	1	0	846.5	19.38	V	PASS

LTE Band	BW (MHz)	Modulation	RB Configuration		Freq. (MHz)	EIRP (dBm)	H/V	Verdict
			RB Size	RB Offset				
5	10	QPSK	1	24	829	20.94	H	PASS
5	10	QPSK	1	0	836.5	**20.97**	H	PASS
5	10	QPSK	1	24	844	20.92	H	PASS
5	10	QPSK	1	24	829	20.47	V	PASS
5	10	QPSK	1	0	836.5	20.52	V	PASS
5	10	QPSK	1	24	844	20.48	V	PASS
5	10	16QAM	1	24	829	19.91	H	PASS
5	10	16QAM	1	0	836.5	**19.95**	H	PASS
5	10	16QAM	1	24	844	19.93	H	PASS
5	10	16QAM	1	24	829	19.35	V	PASS
5	10	16QAM	1	0	836.5	19.37	V	PASS
5	10	16QAM	1	24	844	19.33	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	**19.76**	H	PASS
7	5	QPSK	1	0	2535	19.70	H	PASS
7	5	QPSK	1	24	2567.5	19.78	H	PASS
7	5	QPSK	1	12	2502.5	19.16	V	PASS
7	5	QPSK	1	0	2535	19.20	V	PASS
7	5	QPSK	1	24	2567.5	19.18	V	PASS
7	5	16QAM	1	24	2502.5	18.45	H	PASS
7	5	16QAM	1	24	2535	18.48	H	PASS
7	5	16QAM	1	0	2567.5	**18.49**	H	PASS
7	5	16QAM	1	24	2502.5	17.72	V	PASS
7	5	16QAM	1	24	2535	17.65	V	PASS
7	5	16QAM	1	0	2567.5	17.75	V	PASS
7	10	QPSK	1	24	2505	**19.78**	H	PASS
7	10	QPSK	1	49	2535	19.69	H	PASS
7	10	QPSK	1	24	2565	19.71	H	PASS
7	10	QPSK	1	24	2505	19.23	V	PASS
7	10	QPSK	1	49	2535	19.18	V	PASS
7	10	QPSK	1	24	2565	19.15	V	PASS
7	10	16QAM	1	24	2505	18.50	H	PASS
7	10	16QAM	1	49	2535	18.45	H	PASS
7	10	16QAM	1	24	2565	**18.53**	H	PASS
7	10	16QAM	1	24	2505	17.82	V	PASS
7	10	16QAM	1	49	2535	17.75	V	PASS
7	10	16QAM	1	24	2565	17.83	V	PASS
7	15	QPSK	1	37	2507.5	**19.79**	H	PASS
7	15	QPSK	1	74	2535	19.74	H	PASS
7	15	QPSK	1	0	2562.5	19.77	H	PASS
7	15	QPSK	1	37	2507.5	19.25	V	PASS
7	15	QPSK	1	74	2535	19.20	V	PASS
7	15	QPSK	1	0	2562.5	19.19	V	PASS
7	15	16QAM	1	37	2507.5	18.51	H	PASS
7	15	16QAM	1	18	2535	18.54	H	PASS
7	15	16QAM	1	0	2562.5	**18.55**	H	PASS
7	15	16QAM	1	37	2507.5	17.86	V	PASS
7	15	16QAM	1	18	2535	17.81	V	PASS
7	15	16QAM	1	0	2562.5	17.79	V	PASS

LTE Band	BW (MHz)	Modulation	RB Configuration		Freq. (MHz)	ERP (dBm)	H/V	Verdict
			RB Size	RB Offset				
7	20	QPSK	1	0	2510	19.78	H	PASS
7	20	QPSK	1	0	2535	19.75	H	PASS
7	20	QPSK	1	0	2560	**19.81**	H	PASS
7	20	QPSK	1	0	2510	19.29	V	PASS
7	20	QPSK	1	0	2535	19.24	V	PASS
7	20	QPSK	1	0	2560	19.25	V	PASS
7	20	16QAM	1	0	2510	18.53	H	PASS
7	20	16QAM	1	0	2535	**18.57**	H	PASS
7	20	16QAM	1	0	2560	18.54	H	PASS
7	20	16QAM	1	0	2510	17.83	V	PASS
7	20	16QAM	1	0	2535	17.86	V	PASS
7	20	16QAM	1	0	2560	17.91	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

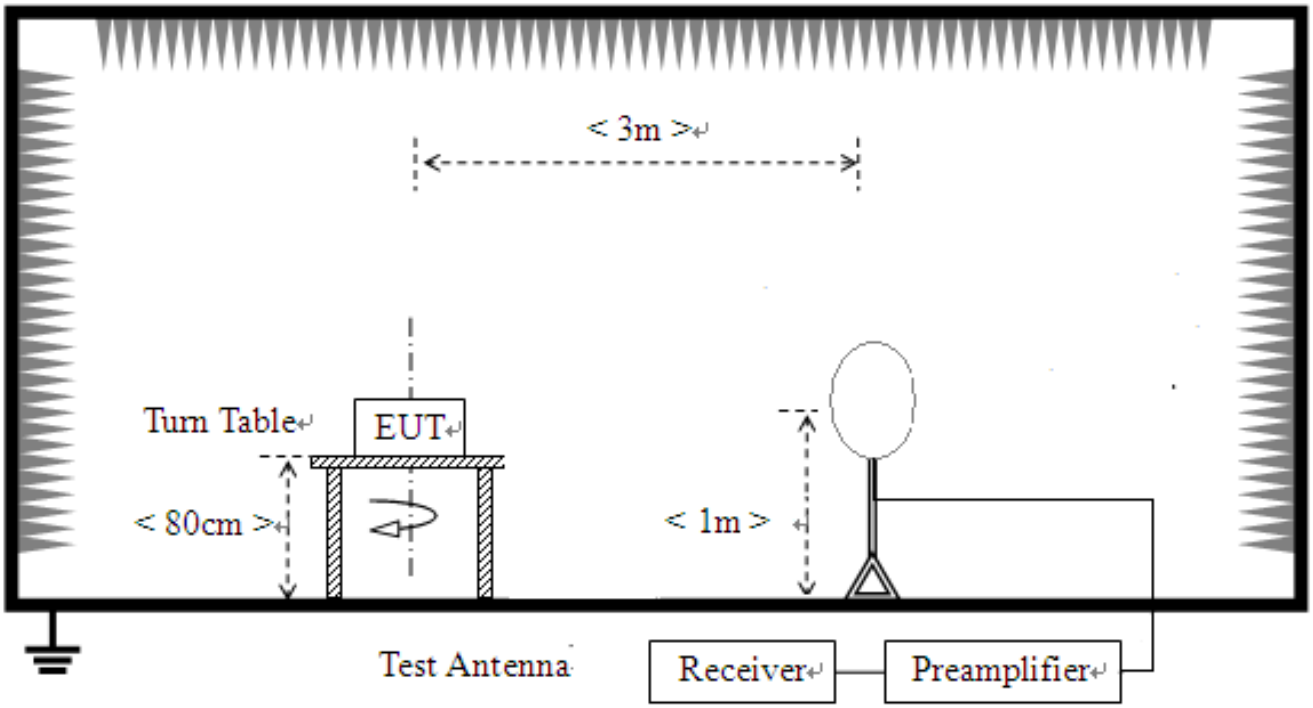
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 55 + 10 log (P) dB.

2.8.2 Measuring Instruments

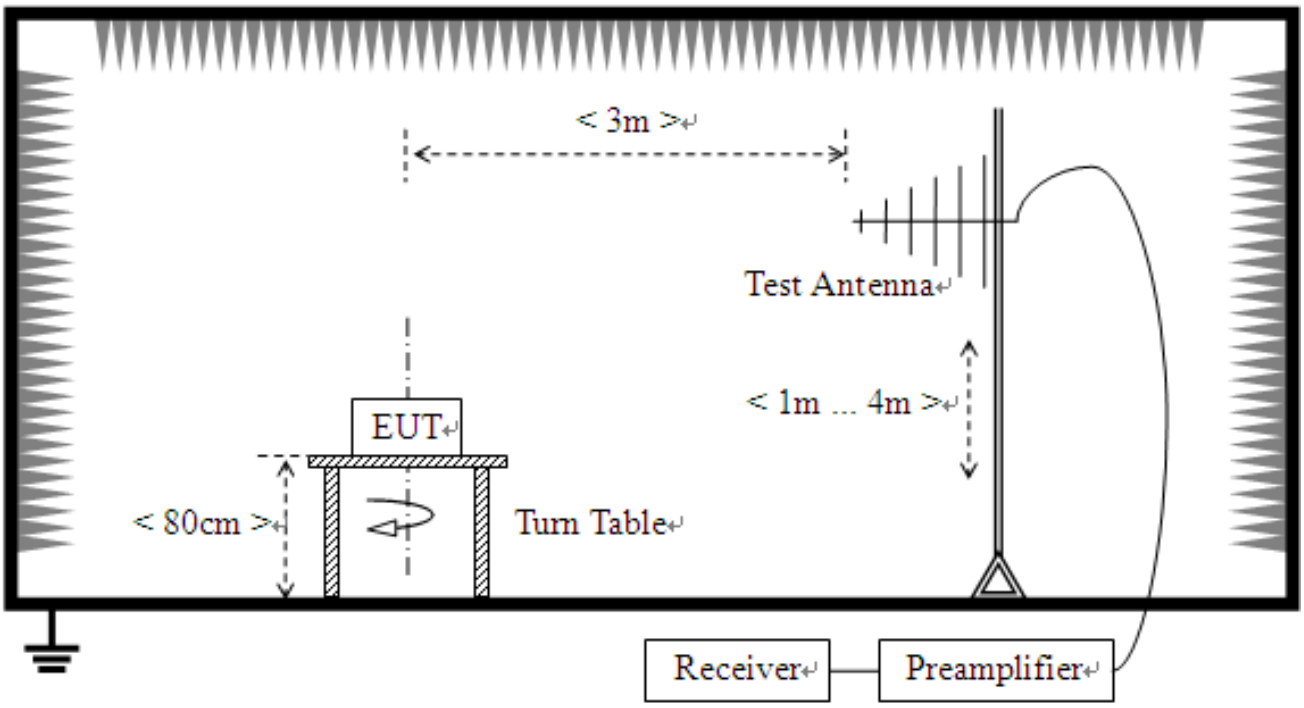
The measuring equipment is listed in the section 3 of this test report.

2.8.3 Test Setup

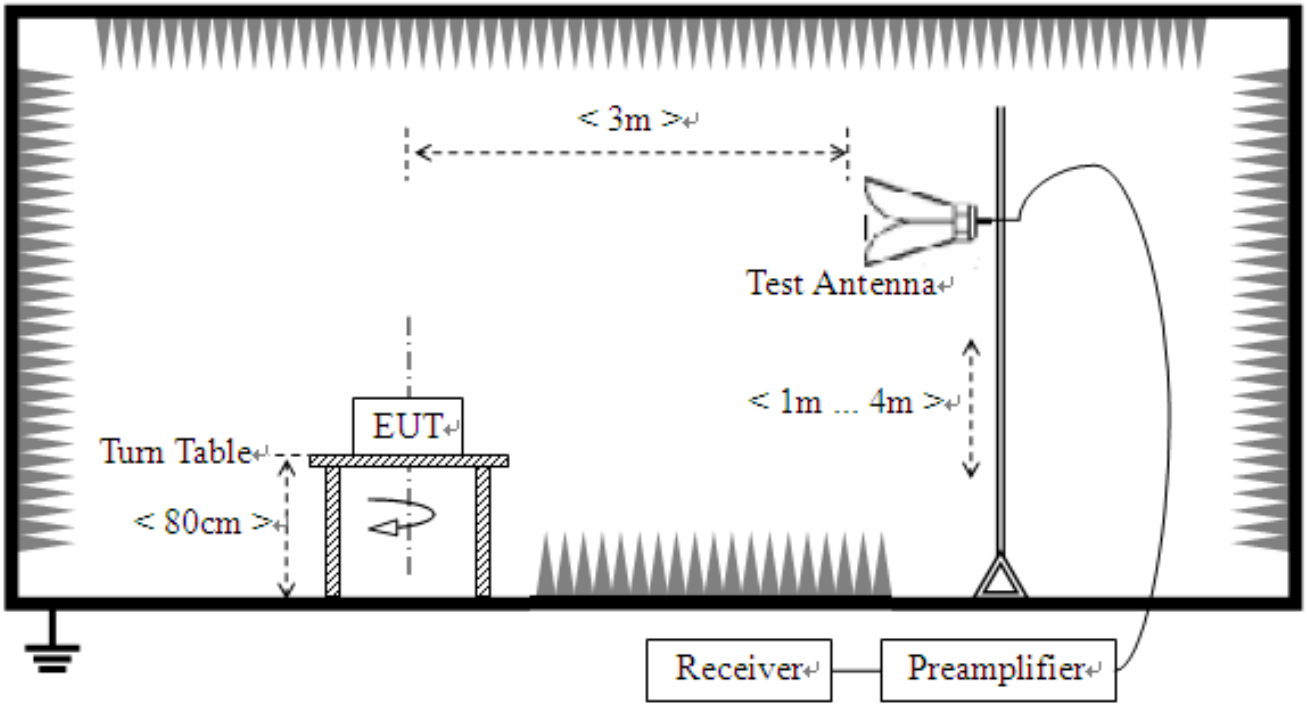
For radiated emissions from 9kHz to 30MHz



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)

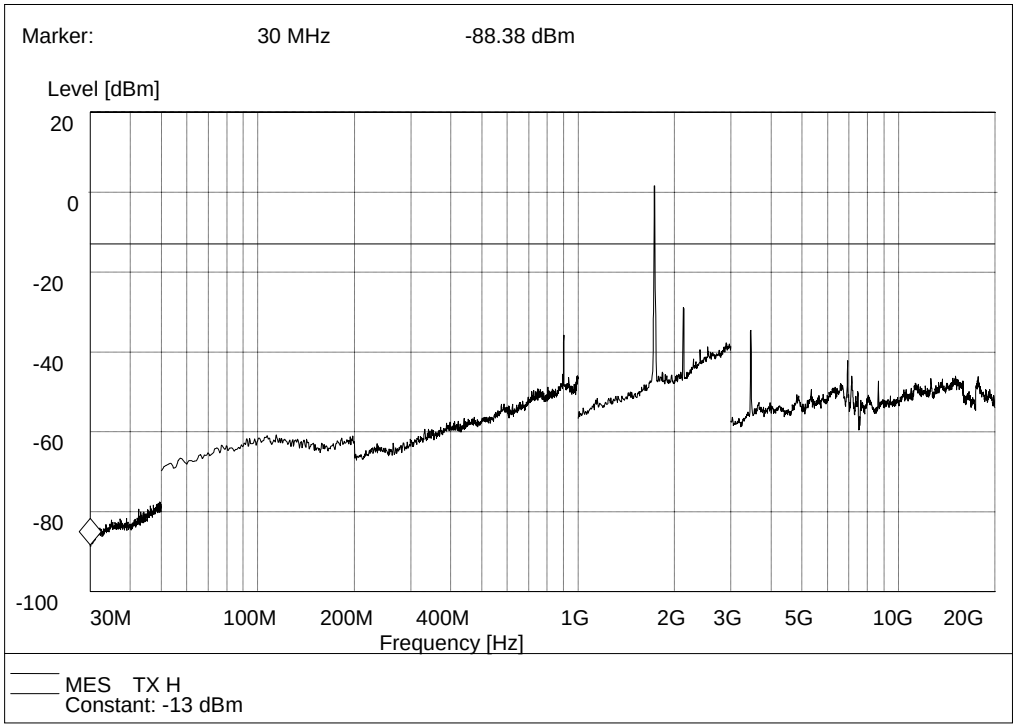
    = [30 + 10log(P)] (dBm) - [55 + 10log(P)] (dB)

    = -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.

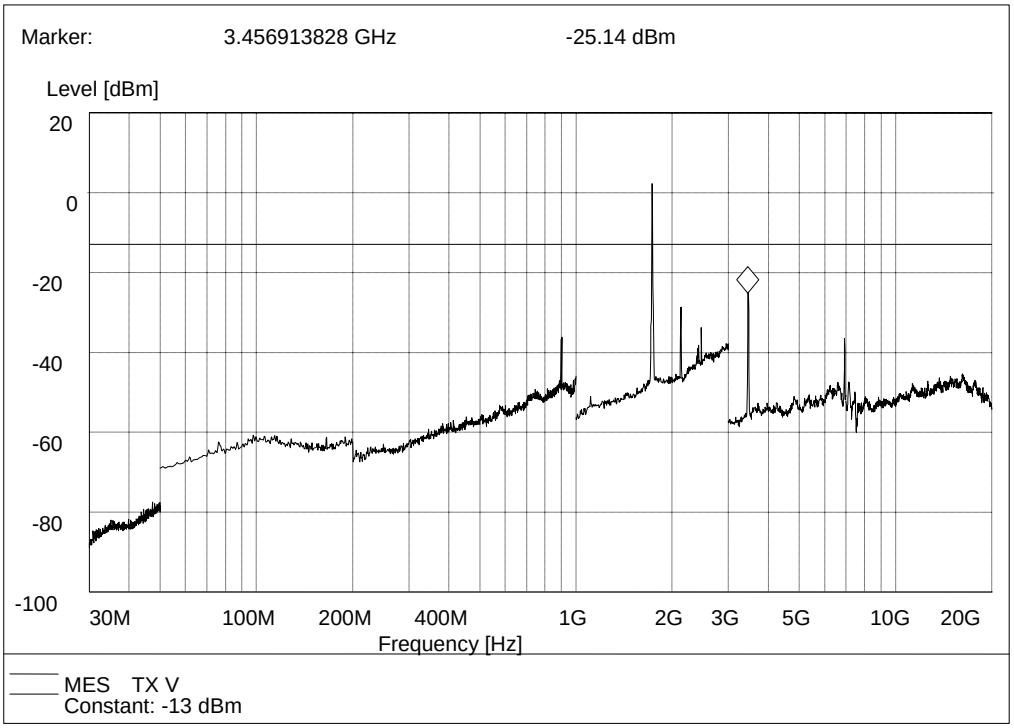
13. The maximum RB configurations of the Radiated Spurious Emissions as RB Size 1, RB Offset 0

2.8.5 Test Result (Plots) of Radiated Spurious Emission

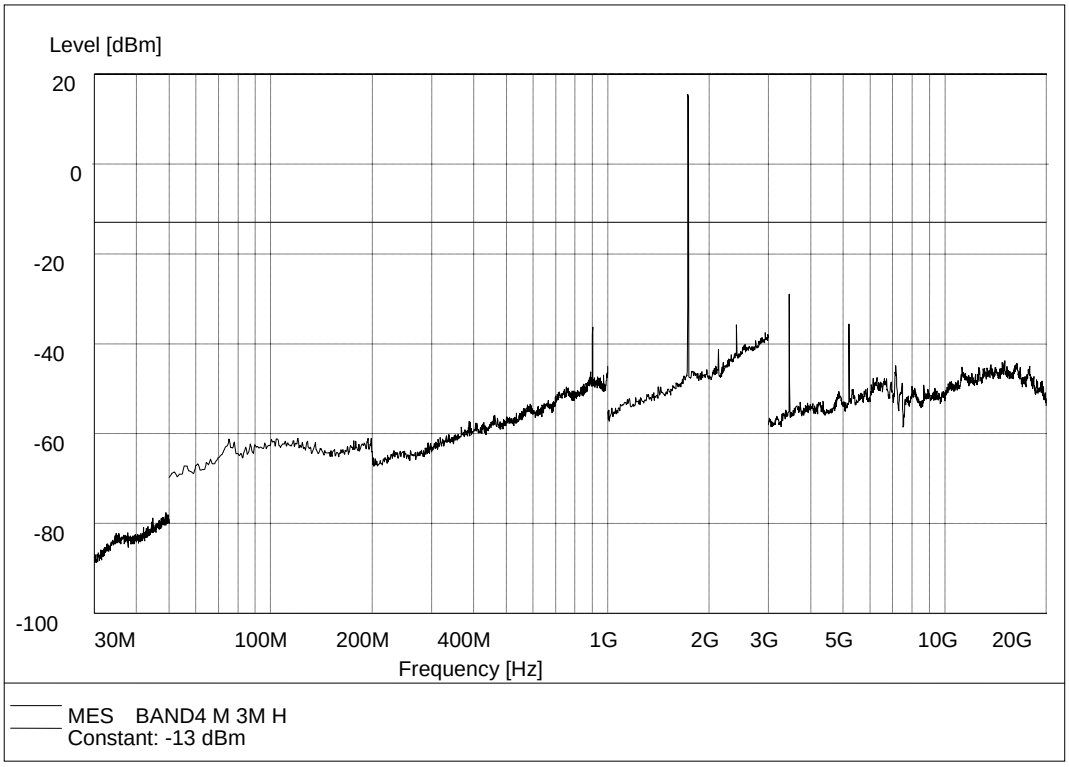
Note: For 9 KHz to 30MHz: the amplitude of spurious emissions is attenuated by more than 20dB below the permissible value, so we not provide the test result here.



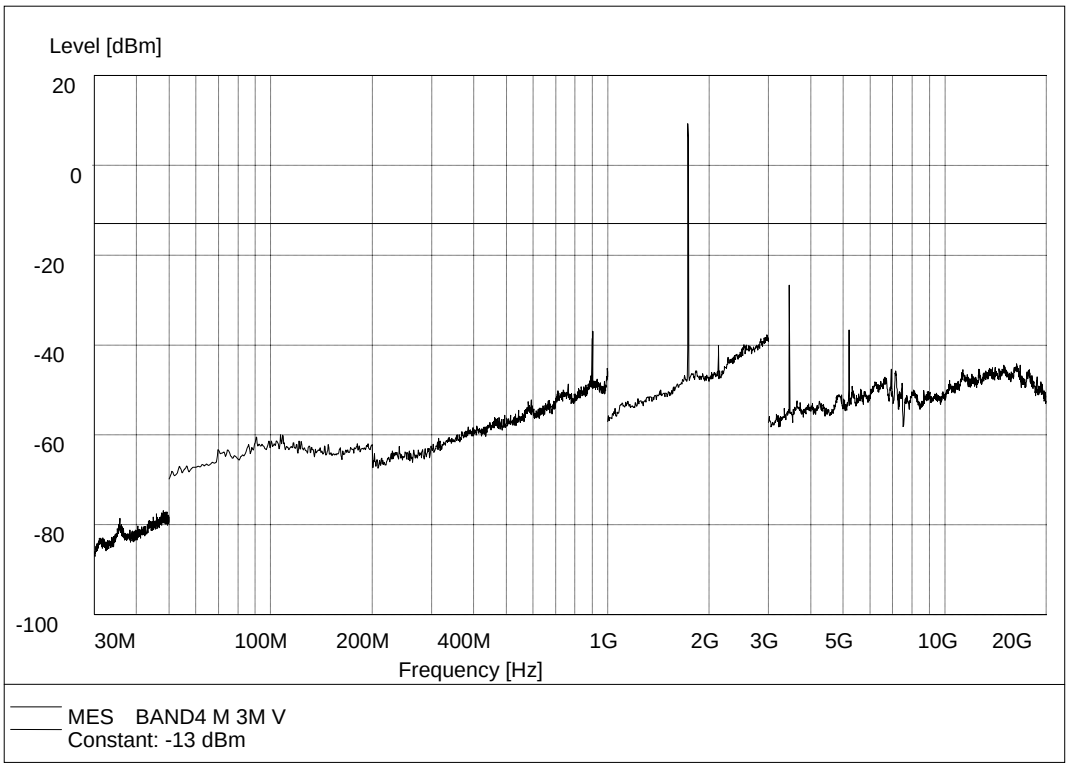
LTE Band 4 QPSK 1.4MHz BW Test Antenna Horizontal



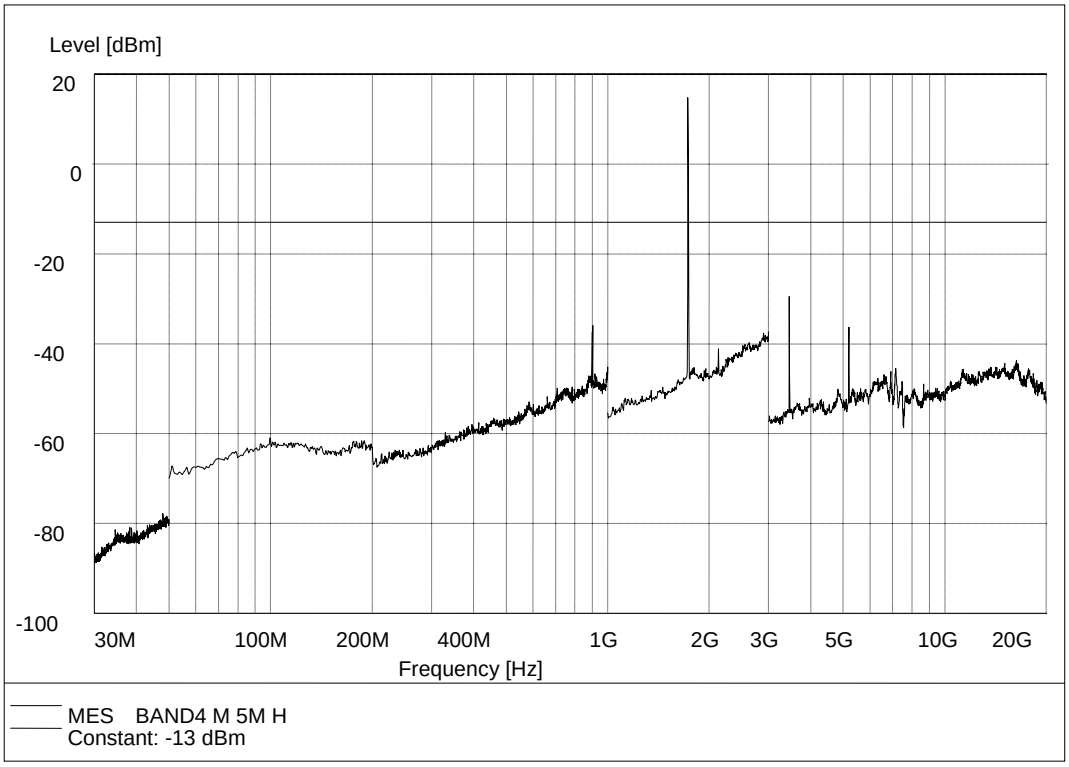
LTE Band 4 QPSK 1.4MHz BW Test Antenna Vertical



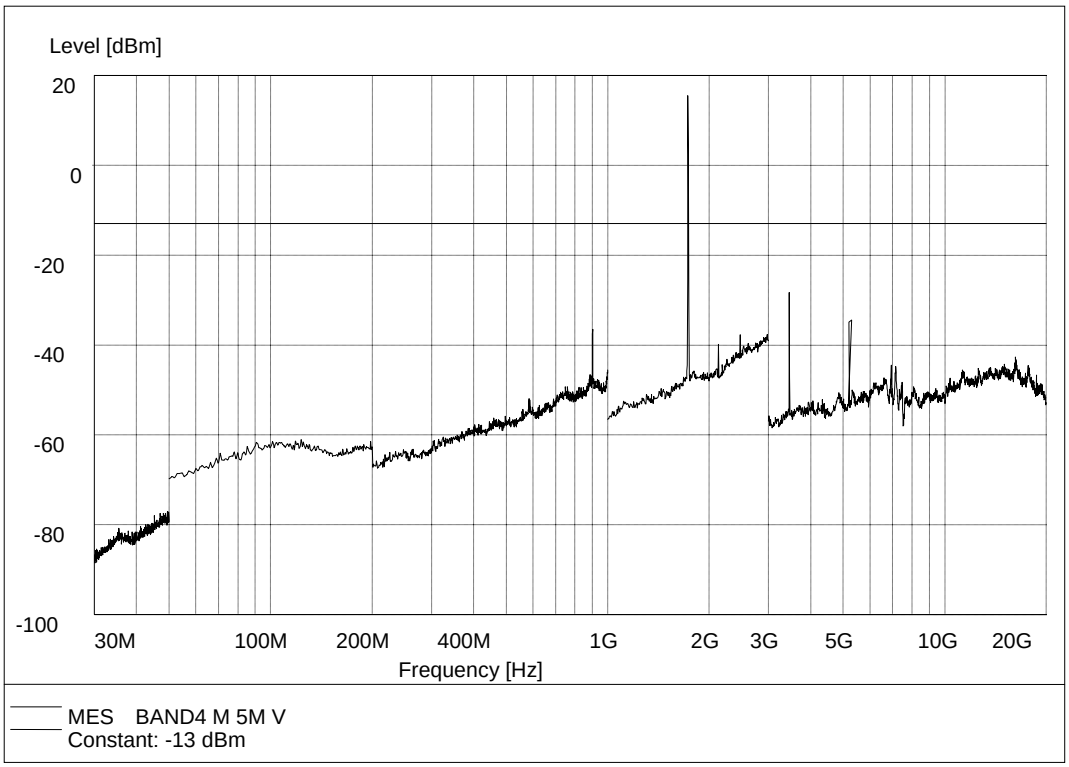
` LTE Band 4 QPSK 3MHz BW Test Antenna Horizontal



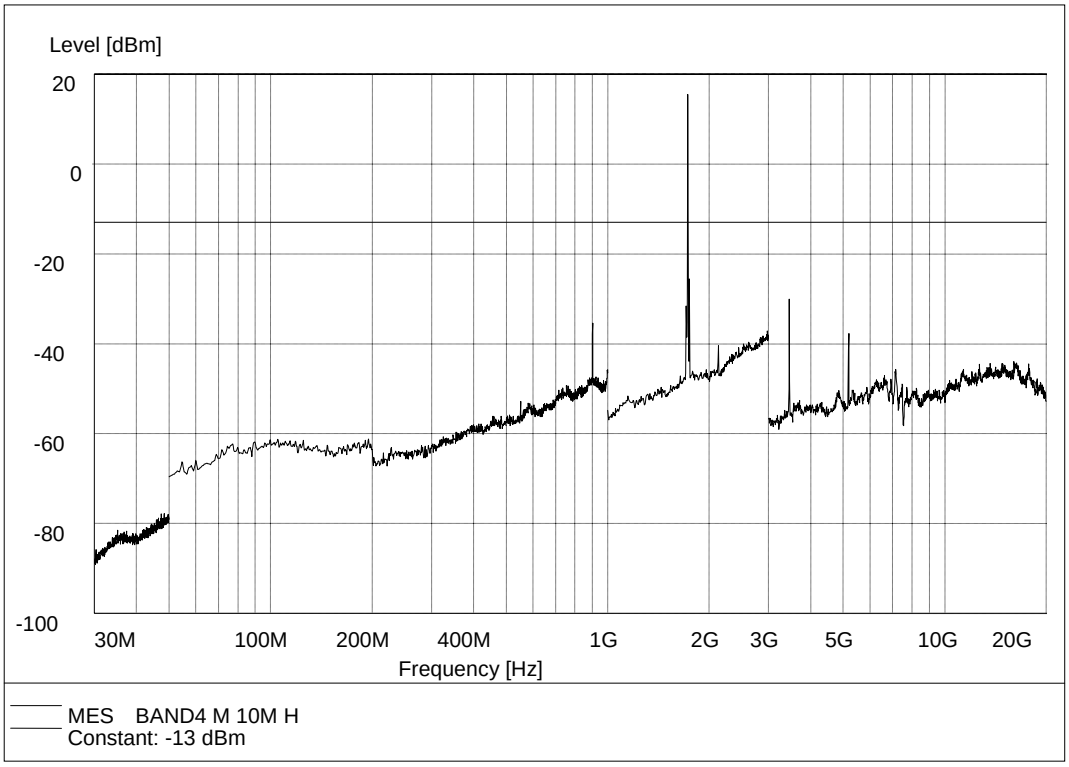
LTE Band 4 QPSK 3MHz BW Test Antenna Vertical



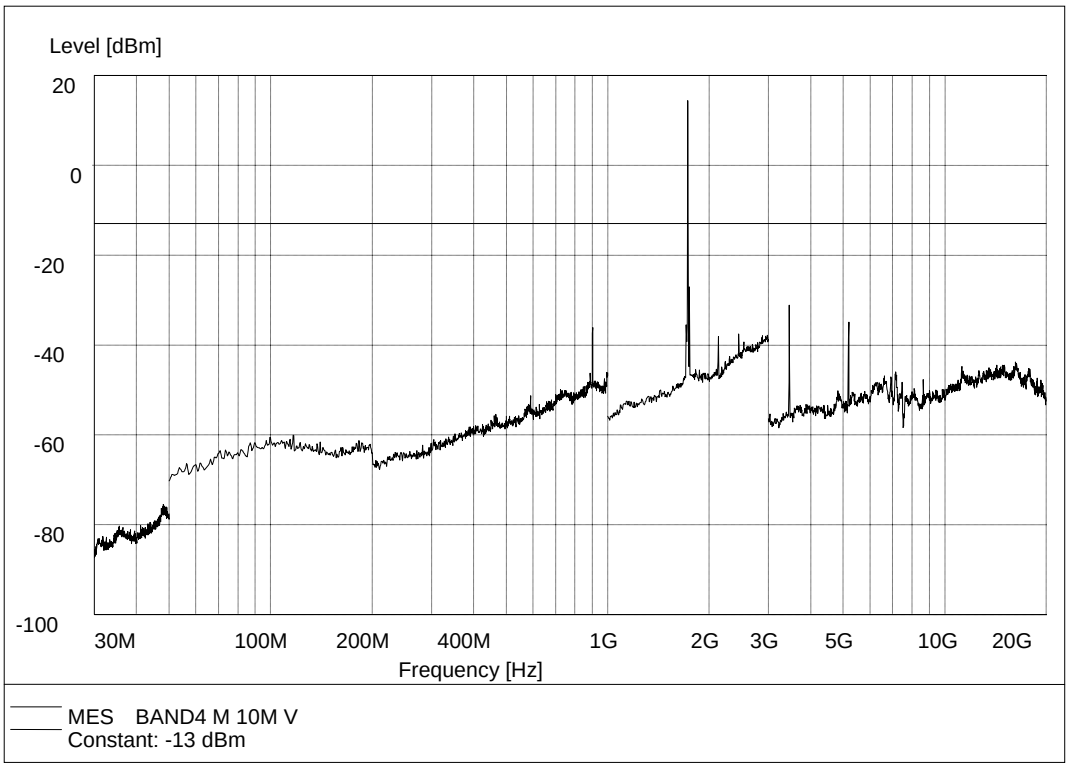
` LTE Band 4 QPSK 5MHz BW Test Antenna Horizontal



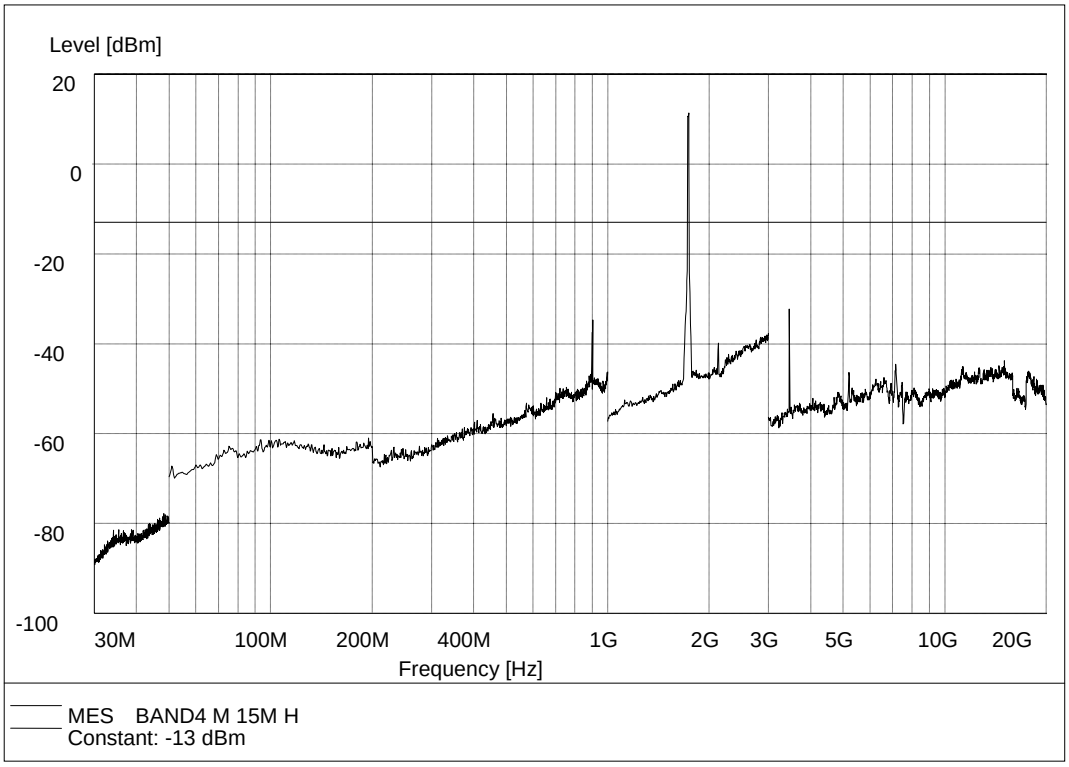
LTE Band 4 QPSK 5MHz BW Test Antenna Vertical



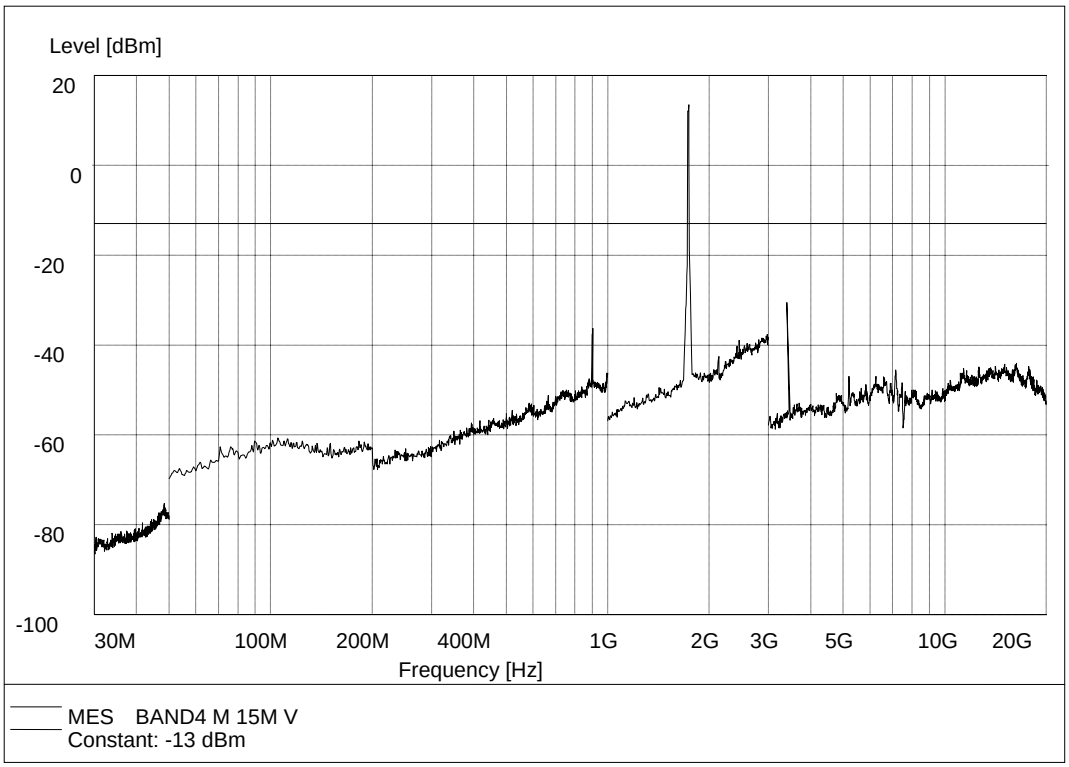
` LTE Band 4 QPSK 10MHz BW Test Antenna Horizontal



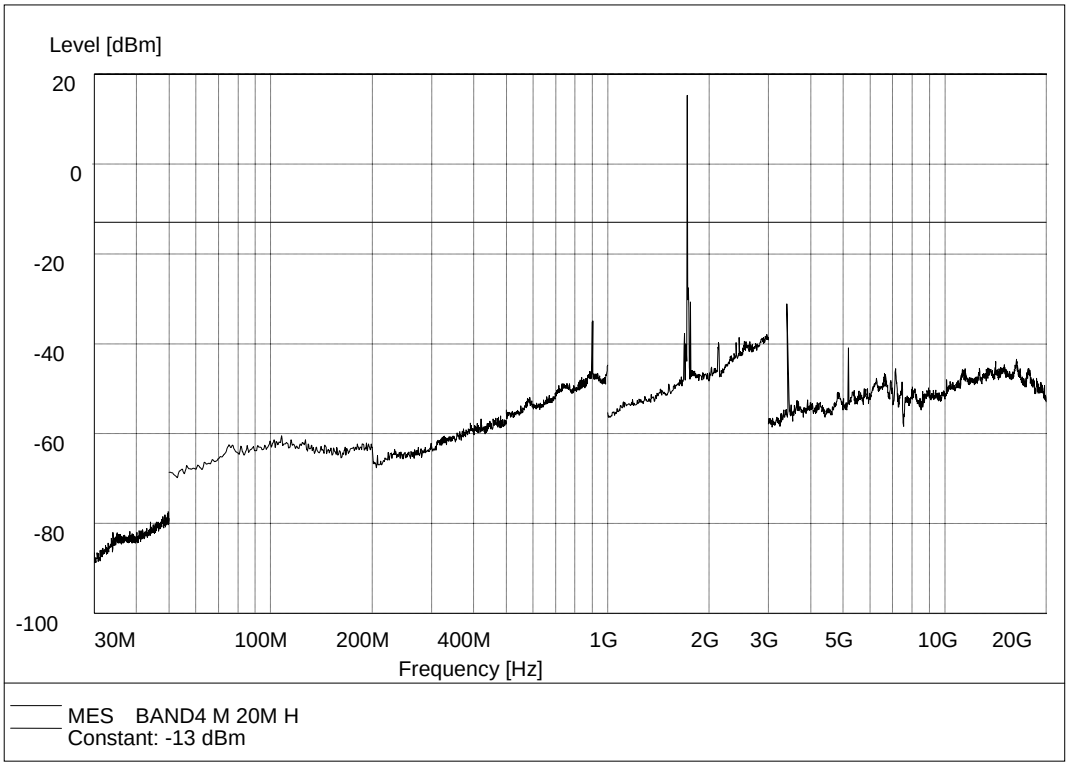
LTE Band 4 QPSK 10MHz BW Test Antenna Vertical



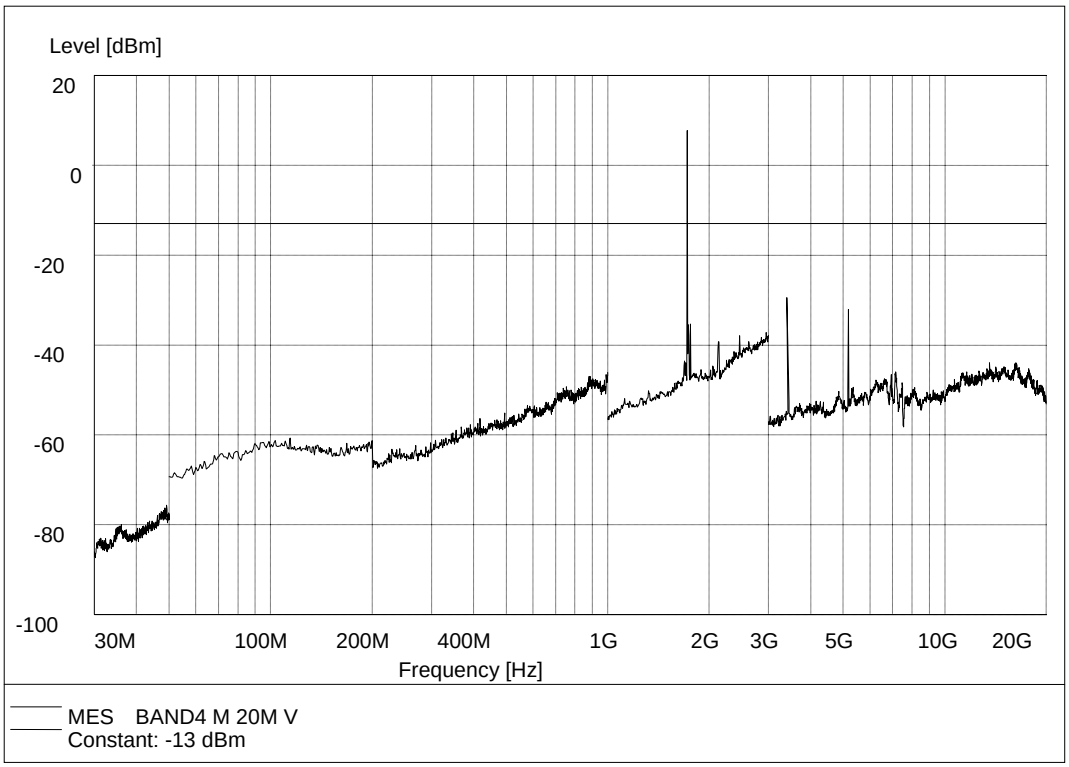
` LTE Band 4 QPSK 15MHz BW Test Antenna Horizontal



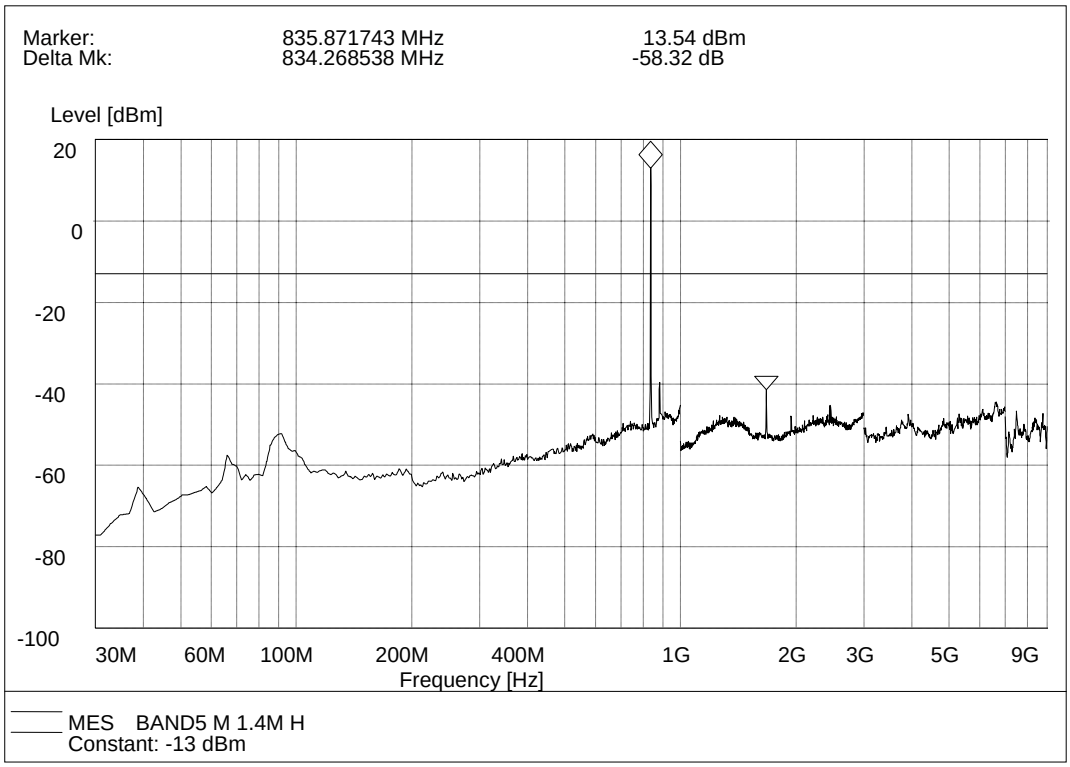
LTE Band 4 QPSK 15MHz BW Test Antenna Vertical



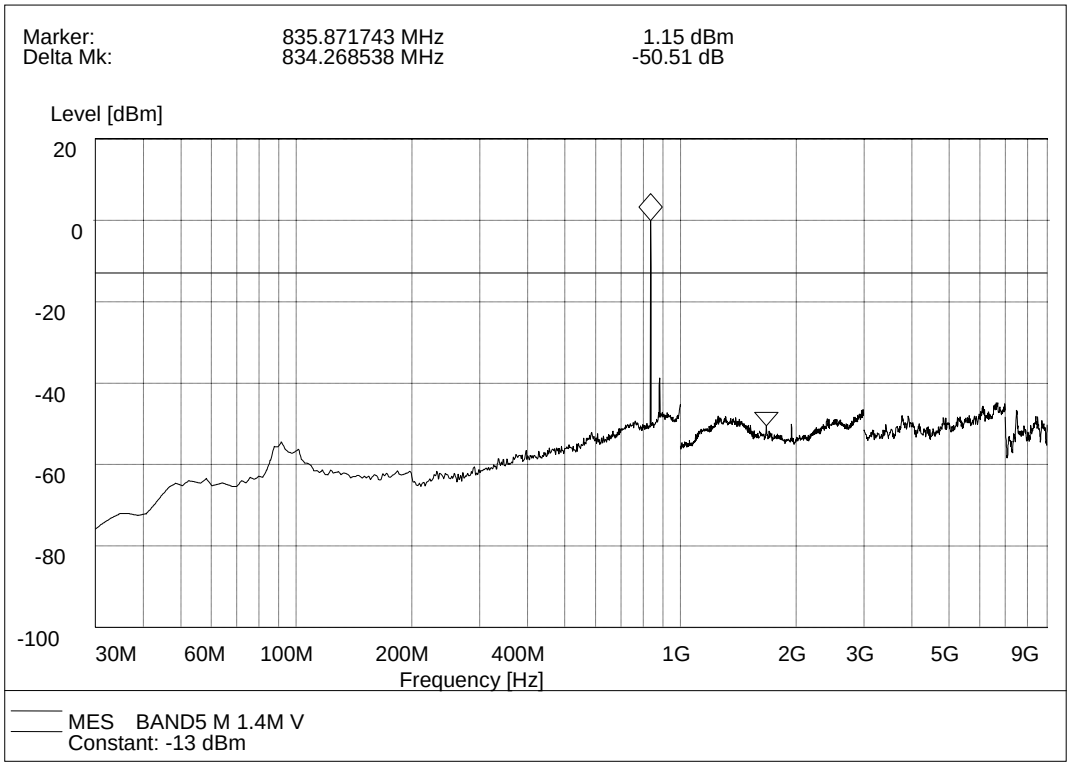
` LTE Band 4 QPSK 20MHz BW Test Antenna Horizontal



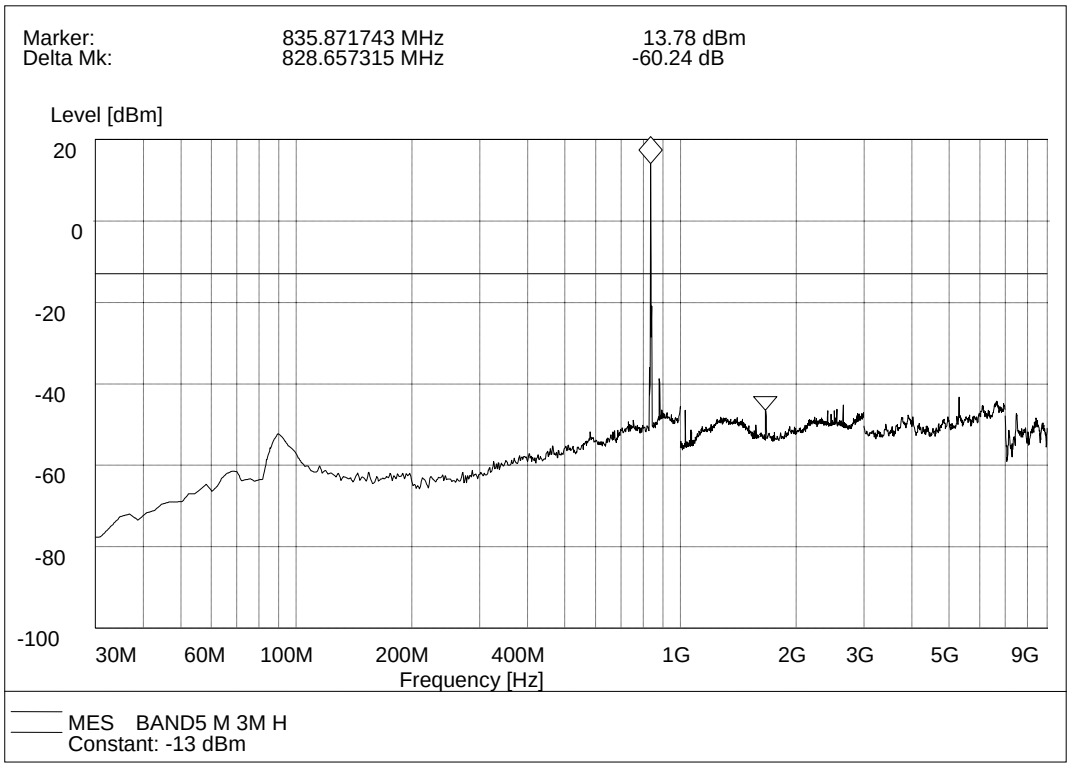
LTE Band 4 QPSK 20MHz BW Test Antenna Vertical



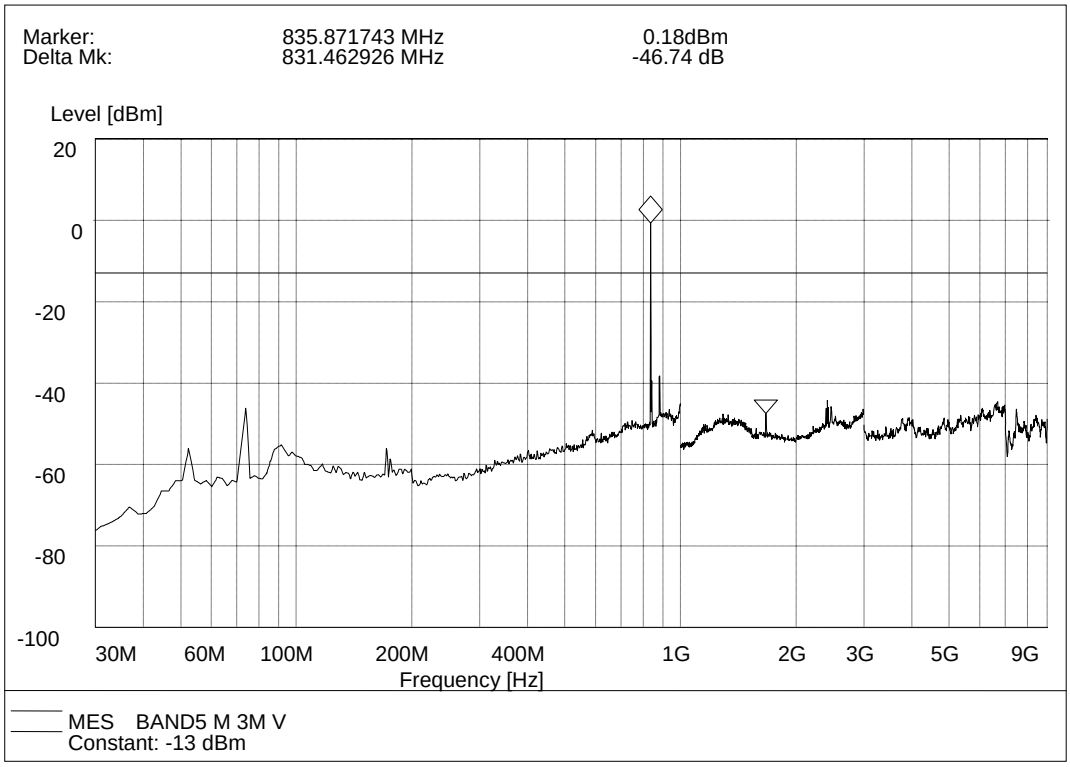
LTE Band 5 QPSK 1.4MHz BW Test Antenna Horizontal



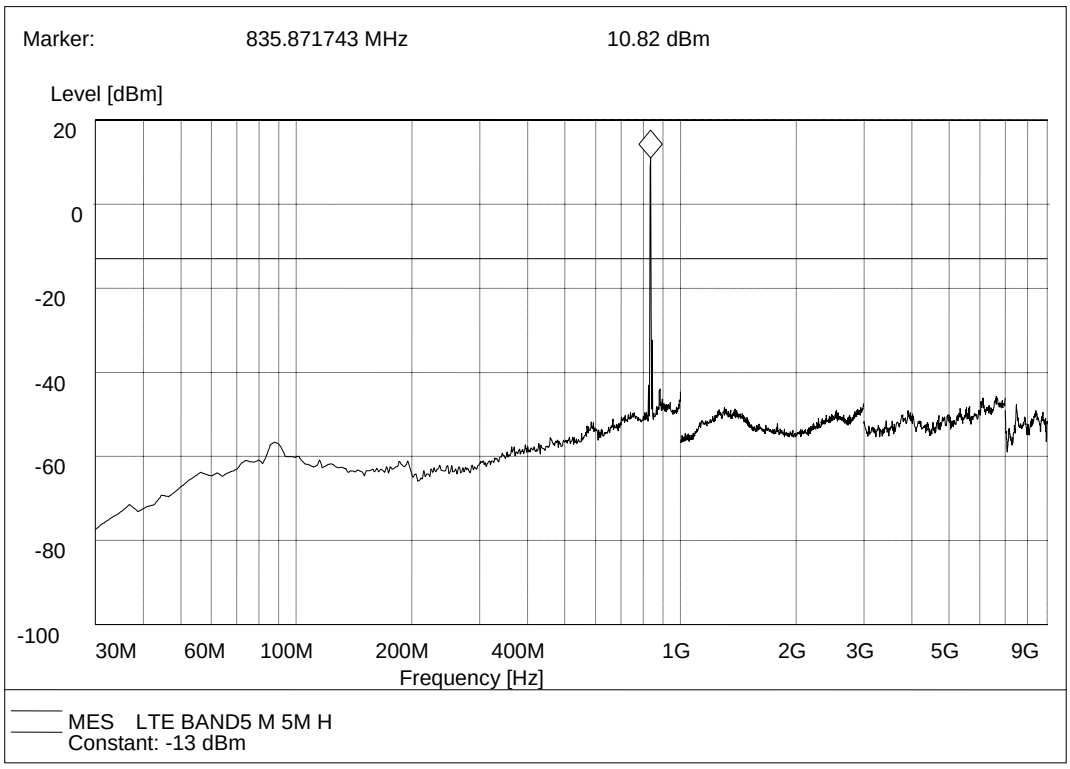
LTE Band 5 QPSK 1.4MHz BW Test Antenna Vertical



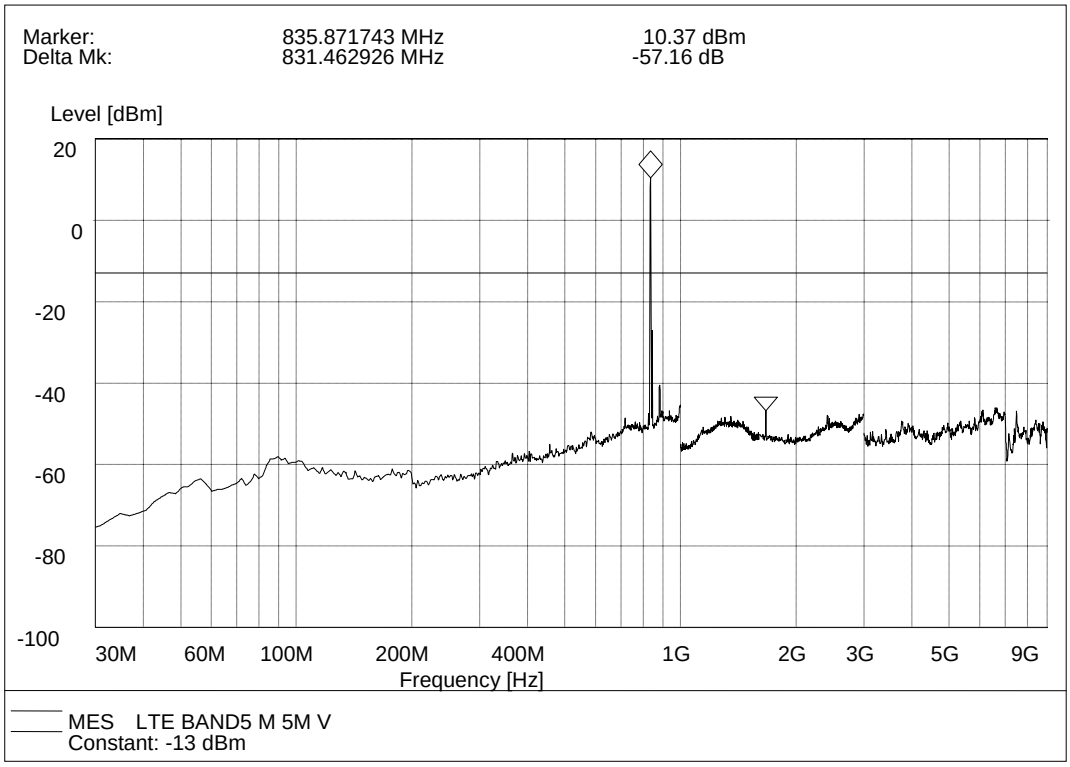
LTE Band 5 QPSK 3MHz BW Test Antenna Horizontal



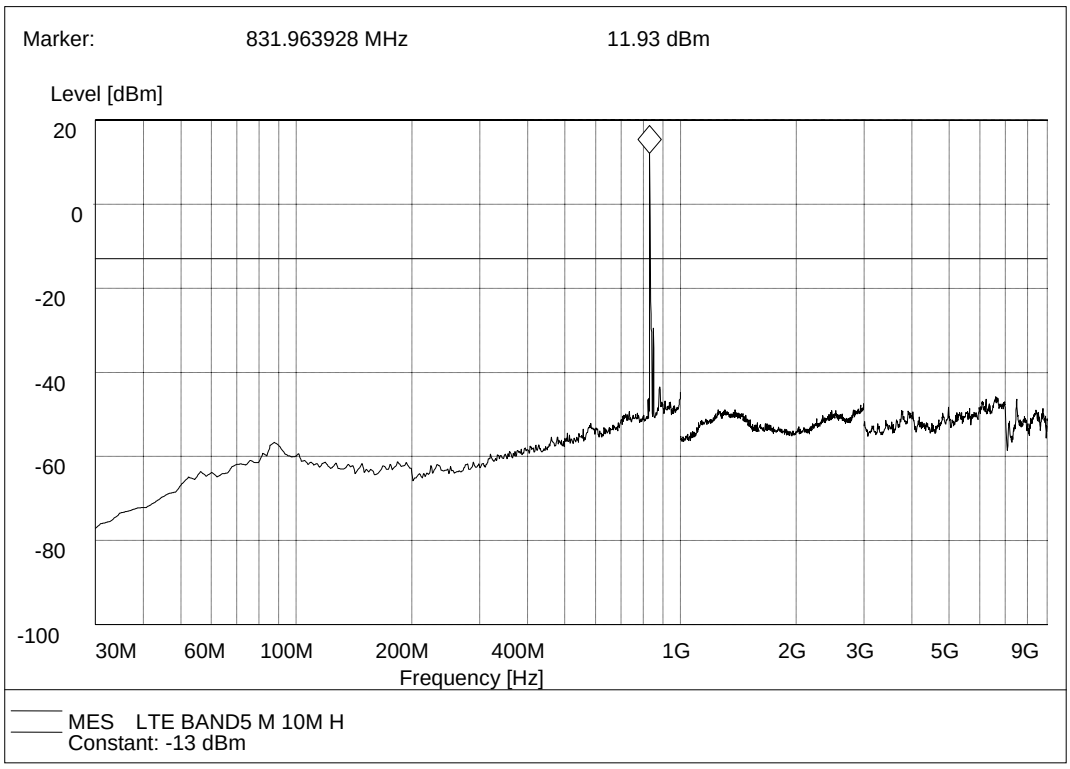
LTE Band 5 QPSK 3MHz BW Test Antenna Vertical



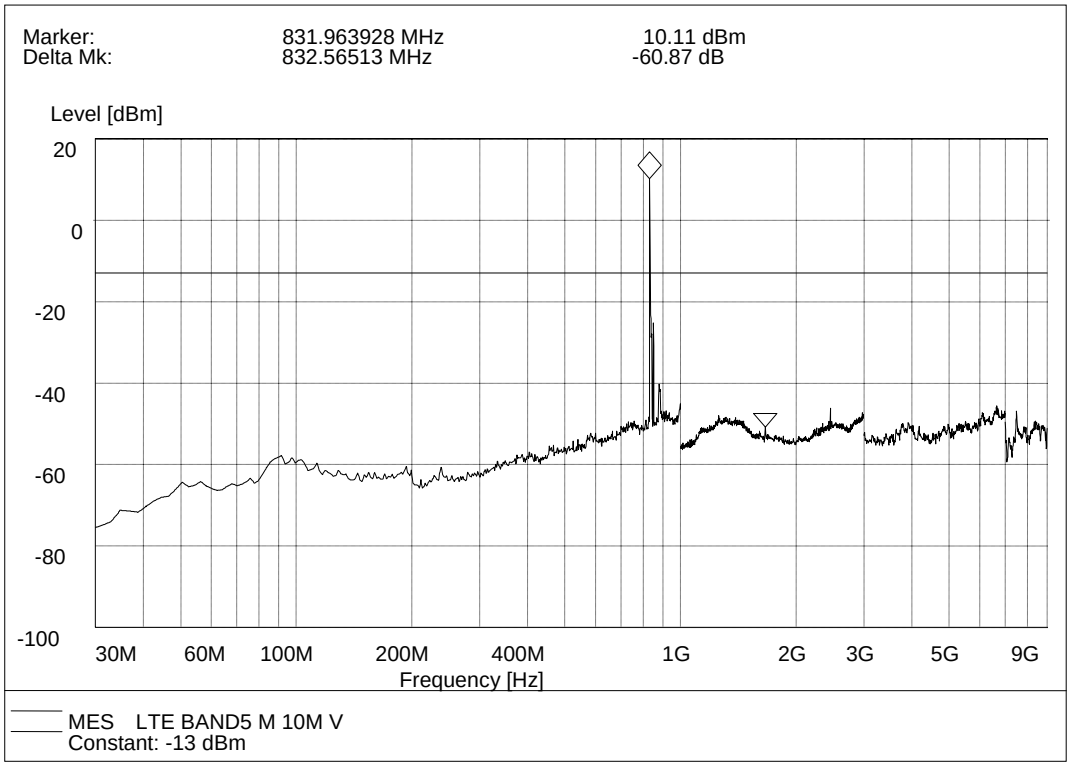
LTE Band 5 QPSK 5MHz BW Test Antenna Horizontal



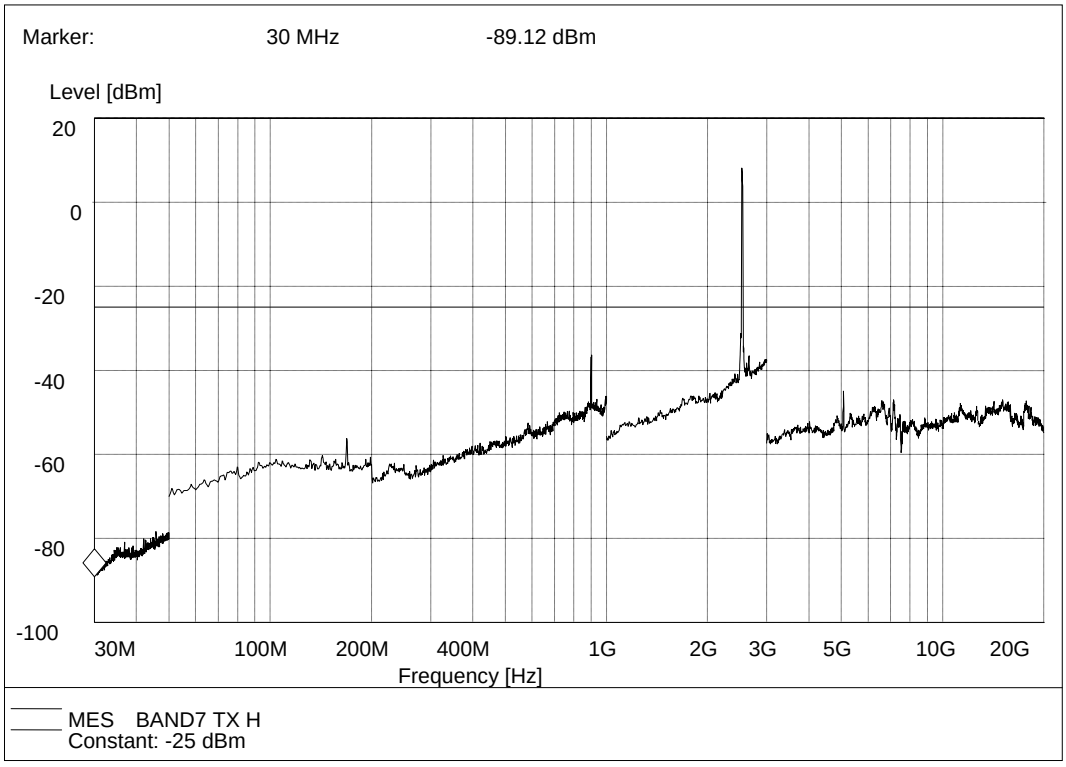
LTE Band 5 QPSK 5MHz BW Test Antenna Vertical



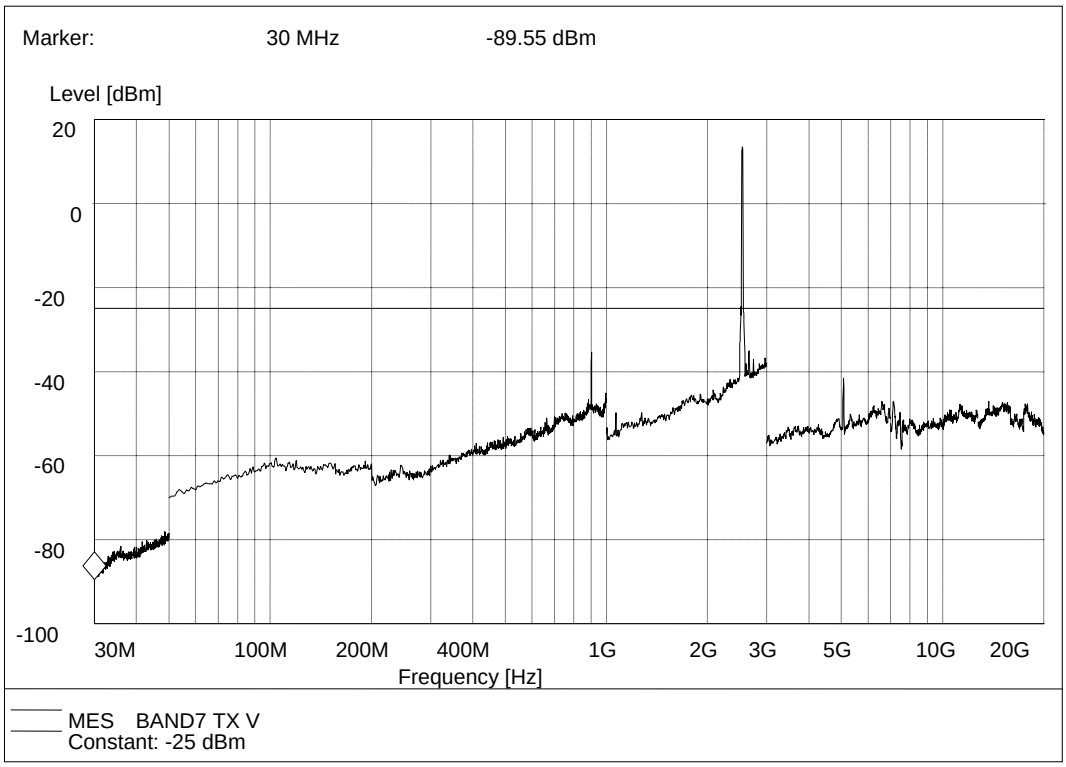
LTE Band 5 QPSK 10MHz BW Test Antenna Horizontal



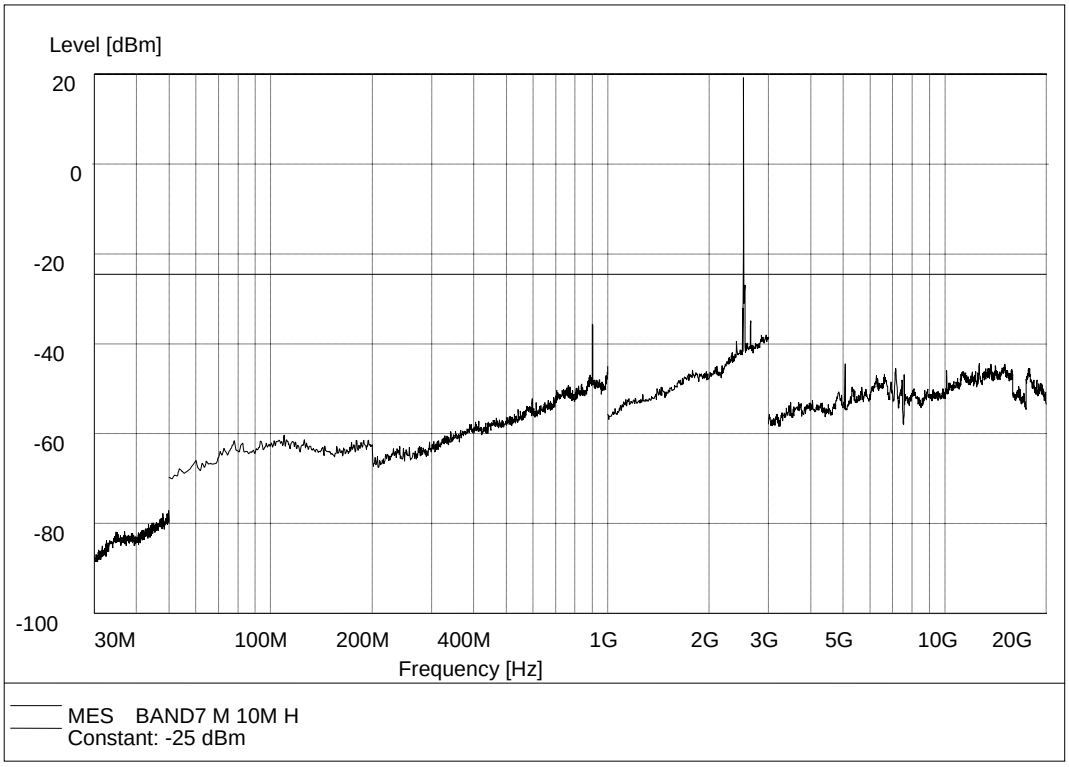
LTE Band 5 QPSK 10MHz BW Test Antenna Vertical



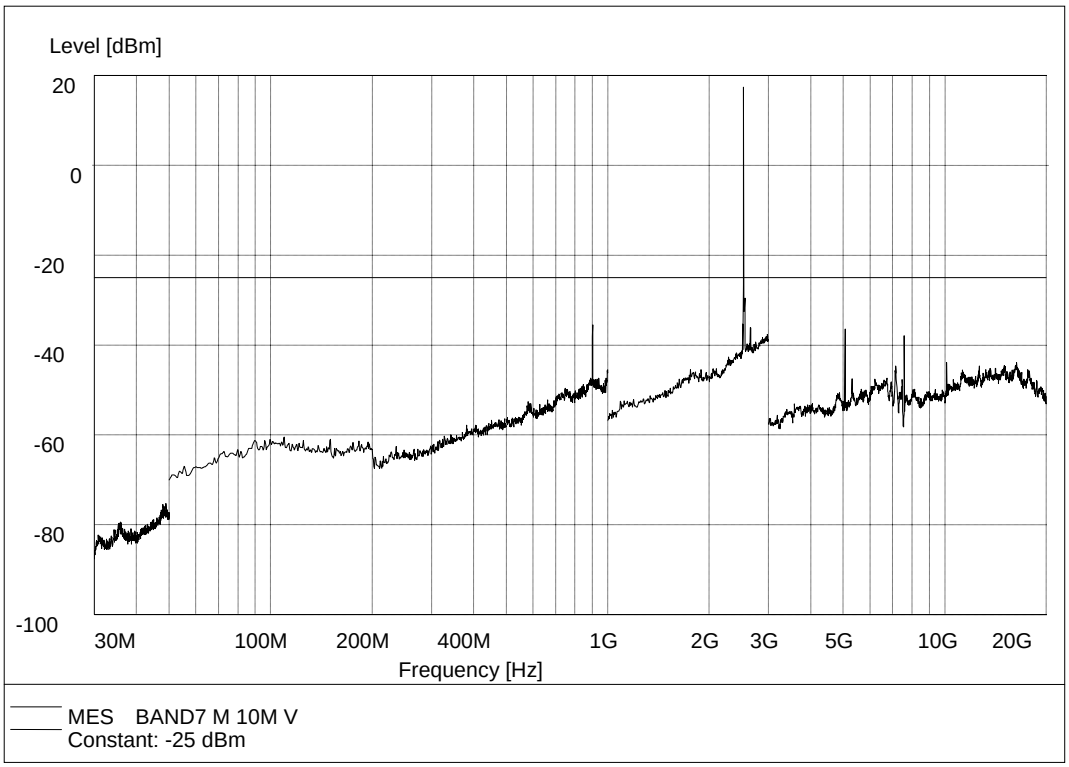
` LTE Band 7 QPSK 5MHz BW Test Antenna Horizontal



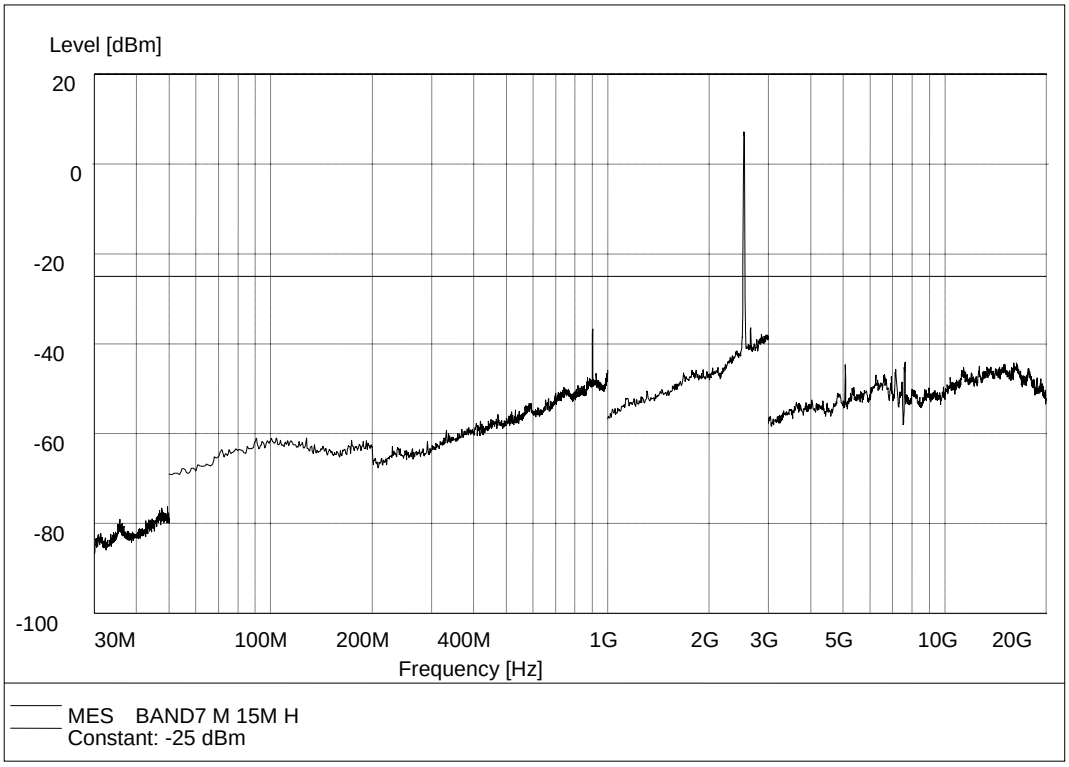
LTE Band 7 QPSK 5MHz BW Test Antenna Vertical



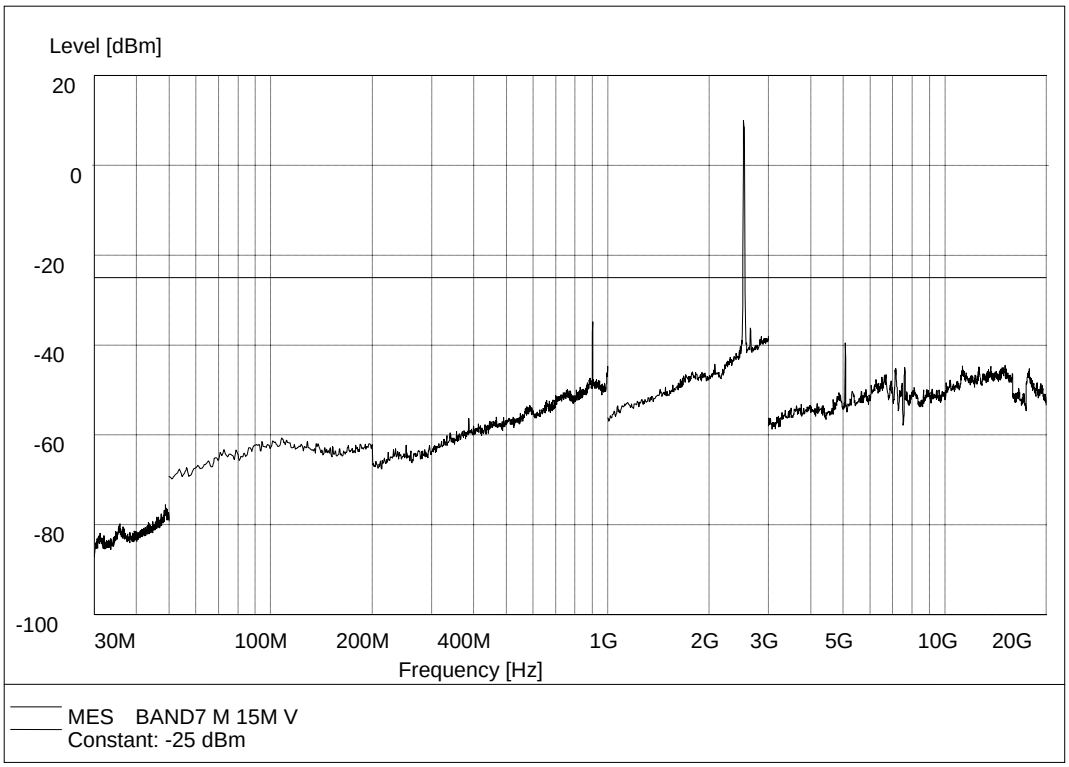
LTE Band 7 QPSK 10MHz BW Test Antenna Horizontal



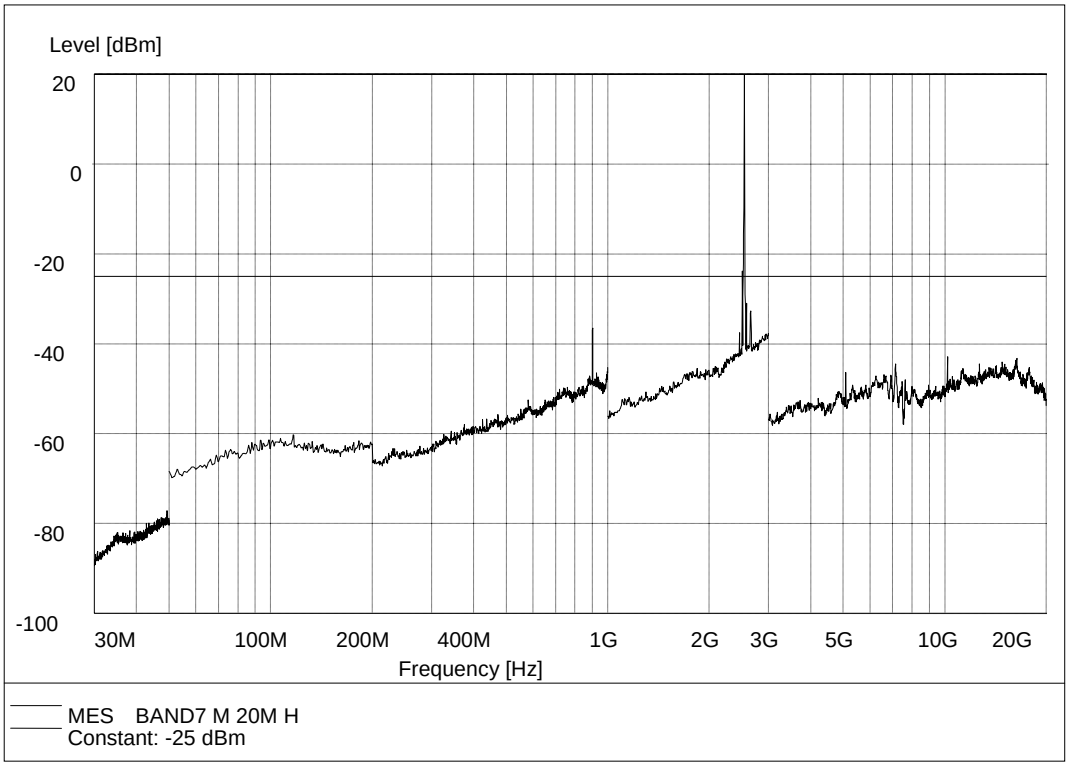
LTE Band 7 QPSK 10MHz BW Test Antenna Vertical



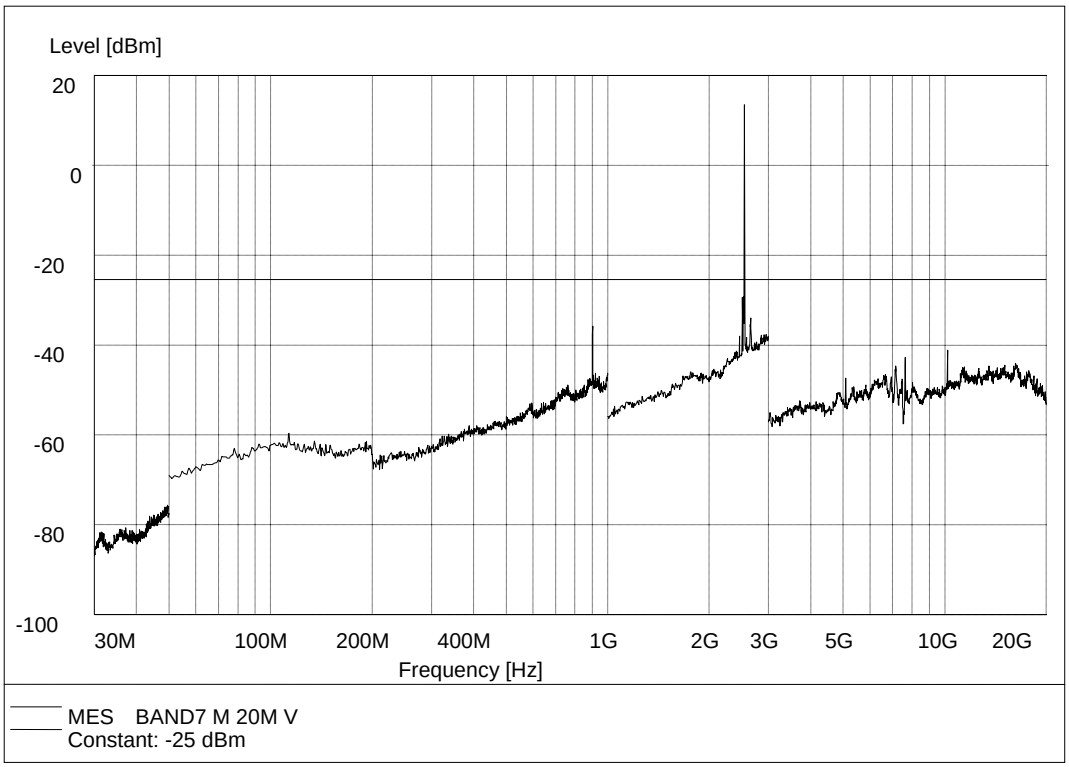
LTE Band 7 QPSK 15MHz BW Test Antenna Horizontal



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

3. LIST OF MEASURING EQUIPMENT

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI TEST RECEIVER	Rohde&Schwarz	ESI 26	100009	2015/11/02
2	RF TEST PANEL	Rohde&Schwarz	TS / RSP	335015/ 0017	N/A
3	EMI TEST SOFTWARE	Rohde&Schwarz	ESK1	N/A	N/A
4	Ultra-Broadband Antenna	ShwarzBeck	VULB9163	538	2015/11/08
5	Ultra-Broadband Antenna	ShwarzBeck	VULB9163	539	2015/11/08
6	HORN ANTENNA	ShwarzBeck	9120D	1011	2015/11/08
7	HORN ANTENNA	ShwarzBeck	9120D	1012	2015/11/08
8	Loop Antenna	Rohde&Schwarz	HZ-9	838622\013	2015/11/08
9	HORN ANTENNA	Rohde&Schwarz	HF906	10068	2015/11/02
10	HORN ANTENNA	Rohde&Schwarz	HF906	10039	2015/11/02
11	Pre-amplifer	ShwarzBeck	BBV 9743	9743-0022	2015/11/02
12	Pre-amplifier	ShwarzBeck	BBV 9718	BBV 9718	2015/11/02
13	TURNTABLE	MATURO	TT2.0	N/A	N/A
14	ANTENNA MAST	MATURO	TAM-4.0-P	N/A	N/A
15	EMI TEST SOFTWARE	Audix	E3	N/A	N/A
16	Test cable	Siva Cables Italy	RG 58A/U	W14.02	2015/12/05
17	Climate Chamber	ESPEC	EL-10KA	05107008	2015/11/02
18	Spectrum Analyzer	Kysight	N9030A	ATO-67098	2016/07/19
19	Power Meter	Rohde&Schwarz	NRP2	1020.1809.02	2016.06.02
20	Power Sensor	Rohde&Schwarz	NRP-Z81	823.3618.03	2016.06.02
21	System Simulator	Rohde&Schwarz	CMU200	112012	2015/11/2
22	System Simulator	R&S	CMW500	148888	2016.06.02

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
Conducted emissions	9kHz~30MHz	2.35dB
Radiated emissions	9kHz~30MHz	2.59dB
	30MHz~1000MHz	2.45dB
	1G~18GHz	2.21dB
	18G~40GHz	1.96dB

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

** END OF REPORT **