

LTE Band12 (Low Channel, QPSK & 16QAM)							
Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Ant Gain (dBd)	ERP Measure (dBm)	Limit (dBm)	Margin (dB)
QPSK, CH23017 / 699.7MHz, Bandwidth 1.4MHz							
699.7	H	13.17	0.84	7.4	19.730	34.8	-15.07
699.7	V	8.59	0.84	7.4	15.150	34.8	-19.65
QPSK, CH23025 / 700.5MHz, Bandwidth 3MHz							
700.5	H	12.82	0.84	7.4	19.380	34.8	-15.42
700.5	V	9.67	0.84	7.4	16.230	34.8	-18.57
QPSK, CH23035 / 701.5MHz, Bandwidth 5MHz							
701.5	H	13.3	0.84	7.4	19.860	34.8	-14.94
701.5	V	9.87	0.84	7.4	16.430	34.8	-18.37
QPSK, CH23060 / 704MHz, Bandwidth 10MHz							
704	H	13.07	0.84	7.4	19.630	34.8	-15.17
704	V	7.33	0.84	7.4	13.890	34.8	-20.91
16QAM, CH23017 / 699.7MHz, Bandwidth 1.4MHz							
699.7	H	12.442	0.84	7.4	19.002	34.8	-15.80
699.7	V	7.67	0.84	7.4	14.230	34.8	-20.57
16QAM, CH23025 / 700.5MHz, Bandwidth 3MHz							
700.5	H	11.96	0.84	7.4	18.520	34.8	-16.28
700.5	V	9.2	0.84	7.4	15.760	34.8	-19.04
16QAM, CH23035 / 701.5MHz, Bandwidth 5MHz							
701.5	H	12.56	0.84	7.4	19.120	34.8	-15.68
701.5	V	9.2	0.84	7.4	15.760	34.8	-19.04
16QAM, CH23060 / 704MHz, Bandwidth 10MHz							
704	H	12.327	0.84	7.4	18.887	34.8	-15.91
704	V	6.564	0.84	7.4	13.124	34.8	-21.68

NOTES:

1. ERP (dBm) / EIRP (dBm)=
SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBd/dBi)
2. This unit was tested with its standard adapter.
3. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning.

LTE Band12 (Mid Channel, QPSK & 16QAM)							
Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Ant Gain (dBd)	ERP Measure (dBm)	Limit (dBm)	Margin (dB)
QPSK, CH23095 / 707.5MHz, Bandwidth 1.4MHz							
707.5	H	15.98	0.84	5.28	20.420	34.8	-14.38
707.5	V	9.86	0.84	5.28	14.300	34.8	-20.50
QPSK, CH23095 / 707.5MHz, Bandwidth 3MHz							
707.5	H	16.15	0.84	5.28	20.590	34.8	-14.21
707.5	V	9.99	0.84	5.28	14.430	34.8	-20.37
QPSK, CH23095 / 707.5MHz, Bandwidth 5MHz							
707.5	H	13.67	0.84	7.43	20.260	34.8	-14.54
707.5	V	7.98	0.84	7.43	14.570	34.8	-20.23
QPSK, CH23095 / 707.5MHz, Bandwidth 10MHz							
707.5	H	16.18	0.84	5.28	20.620	34.8	-14.18
707.5	V	10.25	0.84	5.28	14.690	34.8	-20.11
16QAM, CH23095 / 707.5MHz, Bandwidth 1.4MHz							
707.5	H	14.32	0.84	5.28	18.760	34.8	-16.04
707.5	V	9.23	0.84	5.28	13.670	34.8	-21.13
16QAM, CH23095 / 707.5MHz, Bandwidth 3MHz							
707.5	H	15.41	0.84	5.28	19.852	34.8	-14.95
707.5	V	9.34	0.84	5.28	13.782	34.8	-21.02
16QAM, CH23095 / 707.5MHz, Bandwidth 5MHz							
707.5	H	15.23	0.84	5.28	19.670	34.8	-15.13
707.5	V	9.23	0.84	5.28	13.665	34.8	-21.14
16QAM, CH23095 / 707.5MHz, Bandwidth 10MHz							
707.5	H	14.68	0.84	5.28	19.123	34.8	-15.68
707.5	V	9.43	0.84	5.28	13.870	34.8	-20.93

NOTES:

- ERP (dBm) / EIRP (dBm)=
SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBd/dBi)
- This unit was tested with its standard adapter.
- The EUT was tested in three orthogonal planes and in all possible test configurations and positioning.

LTE Band12 (High Channel, QPSK & 16QAM)							
Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Ant Gain (dBd)	ERP Measure (dBm)	Limit (dBm)	Margin (dB)
QPSK, CH23173 / 715.3MHz, Bandwidth 1.4MHz							
715.3	H	17.18	0.84	5.28	21.620	34.8	-13.18
715.3	V	10.31	0.84	5.28	14.750	34.8	-20.05
QPSK, CH23165 / 714.5MHz, Bandwidth 3MHz							
714.5	H	15.55	0.84	7.48	22.190	34.8	-12.61
714.5	V	8.92	0.84	7.48	15.560	34.8	-19.24
QPSK, CH23155 / 713.5MHz, Bandwidth 5MHz							
713.5	H	16.78	0.84	5.28	21.221	34.8	-13.58
713.5	V	10.28	0.84	5.28	14.720	34.8	-20.08
QPSK, CH23130 / 711MHz, Bandwidth 10MHz							
711	H	14.51	0.84	7.48	21.150	34.8	-13.65
711	V	8.46	0.84	7.48	15.100	34.8	-19.70
16QAM, CH23173 / 715.3MHz, Bandwidth 1.4MHz							
715.3	H	14.316	0.84	7.48	20.956	34.8	-13.84
715.3	V	7.386	0.84	7.48	14.026	34.8	-20.77
16QAM, CH23165 / 714.5MHz, Bandwidth 3MHz							
714.5	H	14.79	0.84	7.48	21.430	34.8	-13.37
714.5	V	8.049	0.84	7.48	14.689	34.8	-20.11
16QAM, CH23155 / 713.5MHz, Bandwidth 5MHz							
713.5	H	16.564	0.84	5.28	21.004	34.8	-13.80
713.5	V	9.558	0.84	5.28	13.998	34.8	-20.80
16QAM, CH23130 / 711MHz, Bandwidth 10MHz							
711	H	13.916	0.84	7.48	20.556	34.8	-14.24
711	V	7.736	0.84	7.48	14.376	34.8	-20.42

NOTES:

- ERP (dBm) / EIRP (dBm)=
SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBd/dBi)
- This unit was tested with its standard adapter.
- The EUT was tested in three orthogonal planes and in all possible test configurations and positioning.

Radiated Spurious Emission

LTE Band2							
Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Ant Gain (dBi)	EIRP Measure (dBm)	Limit (dBm)	Margin (dB)
QPSK, CH18900 / 1880MHz, Bandwidth 1.4MHz							
3760	H	-59.64	1.360	7.950	-53.050	-13	-40.05
5640	H	-67.13	1.790	10.100	-58.820	-13	-45.82
7520	H	-62.702	1.720	11.722	-52.700	-13	-39.70
3760	V	-65.34	1.360	7.950	-58.750	-13	-45.75
5640	V	-66.57	1.790	10.100	-58.260	-13	-45.26
7520	V	-65.192	1.720	11.722	-55.190	-13	-42.19
QPSK, CH18900 / 1880MHz, Bandwidth 3MHz							
3760	H	-59.57	1.360	7.950	-52.980	-13	-39.98
5640	H	-66.76	1.790	10.100	-58.450	-13	-45.45
7520	H	-62.003	1.720	11.722	-52.001	-13	-39.00
3760	V	-64.24	1.360	7.950	-57.650	-13	-44.65
5640	V	-66.09	1.790	10.100	-57.780	-13	-44.78
7520	V	-66.182	1.720	11.722	-56.180	-13	-43.18
QPSK, CH18900 / 1880MHz, Bandwidth 5MHz							
3760	H	-58.46	1.360	7.950	-51.870	-13	-38.87
5640	H	-66.49	1.790	10.100	-58.180	-13	-45.18
7520	H	-63.992	1.720	11.722	-53.990	-13	-40.99
3760	V	-65.48	1.360	7.950	-58.890	-13	-45.89
5640	V	-67.72	1.790	10.100	-59.410	-13	-46.41
7520	V	-64.982	1.720	11.722	-54.980	-13	-41.98

Note:

- Spurious emissions within 30-1000MHz & Other harmonic were found more than 20dB below limit line.
- $EIRP \text{ or } ERP \text{ (dBm)} = SG \text{ Reading (dBm)} - Cable \text{ Loss (dB)} + Substitute \text{ Antenna Gain (dBi)}$

LTE Band2							
Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Ant Gain (dBi)	EIRP Measure (dBm)	Limit (dBm)	Margin (dB)
QPSK, CH18900 / 1880MHz, Bandwidth 10MHz							
3760	H	-59.37	1.360	7.950	-52.780	-13	-39.78
5640	H	-66.68	1.790	10.100	-58.370	-13	-45.37
7520	H	-62.992	1.720	11.722	-52.990	-13	-39.99
3760	V	-65.12	1.360	7.950	-58.530	-13	-45.53
5640	V	-67.47	1.790	10.100	-59.160	-13	-46.16
7520	V	-64.232	1.720	11.722	-54.230	-13	-41.23
QPSK, CH18900 / 1880MHz, Bandwidth 15MHz							
3760	H	-60.37	1.360	7.950	-53.780	-13	-40.78
5640	H	-67.3098	1.790	10.100	-59.000	-13	-46.00
7520	H	-63.412	1.720	11.722	-53.410	-13	-40.41
3760	V	-64.27	1.360	7.950	-57.680	-13	-44.68
5640	V	-67.1	1.790	10.100	-58.790	-13	-45.79
7520	V	-65.652	1.720	11.722	-55.650	-13	-42.65
QPSK, CH18900 / 1880MHz, Bandwidth 20MHz							
3760	H	-60.13	1.360	7.950	-53.540	-13	-40.54
5640	H	-66.2	1.790	10.100	-57.890	-13	-44.89
7520	H	-64.492	1.720	11.722	-54.490	-13	-41.49
3760	V	-64.04	1.360	7.950	-57.450	-13	-44.45
5640	V	-67.02	1.790	10.100	-58.710	-13	-45.71
7520	V	-65.112	1.720	11.722	-55.110	-13	-42.11

Note:

1. Spurious emissions within 30-1000MHz & Other harmonic were found more than 20dB below limit line.
2. $EIRP \text{ or } ERP \text{ (dBm)} = SG \text{ Reading (dBm)} - Cable \text{ Loss (dB)} + Substitute \text{ Antenna Gain (dBi)}$

LTE Band4							
Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Ant Gain (dBi)	EIRP Measure (dBm)	Limit (dBm)	Margin (dB)
QPSK, CH20175 /1732.5MHz, Bandwidth 1.4MHz							
3465	H	-55.326	1.330	7.646	-49.010	-13	-36.01
5197.5	H	-63.04	1.680	9.880	-54.840	-13	-41.84
6930	H	-62.556	1.810	11.146	-53.220	-13	-40.22
3465	V	-55.506	1.330	7.646	-49.190	-13	-36.19
5197.5	V	-66.39	1.680	9.880	-58.190	-13	-45.19
6930	V	-62.526	1.810	11.146	-53.190	-13	-40.19
QPSK, CH20175 /1732.5MHz, Bandwidth 3MHz							
3465	H	-57.076	1.330	7.646	-50.760	-13	-37.76
5197.5	H	-63.32	1.680	9.880	-55.120	-13	-42.12
6930	H	-63.646	1.810	11.146	-54.310	-13	-41.31
3465	V	-56.202	1.330	7.646	-49.886	-13	-36.89
5197.5	V	-66.18	1.680	9.880	-57.980	-13	-44.98
6930	V	-64.122	1.810	11.146	-54.786	-13	-41.79
QPSK, CH20175 /1732.5MHz, Bandwidth 5MHz							
3465	H	-54.936	1.330	7.646	-48.620	-13	-35.62
5197.5	H	-63.69	1.680	9.880	-55.490	-13	-42.49
6930	H	-62.206	1.810	11.146	-52.870	-13	-39.87
3465	V	-55.786	1.330	7.646	-49.470	-13	-36.47
5197.5	V	-67.57	1.680	9.880	-59.370	-13	-46.37
6930	V	-62.786	1.810	11.146	-53.450	-13	-40.45

Note:

1. Spurious emissions within 30-1000MHz & Other harmonic were found more than 20dB below limit line.
2. $EIRP \text{ or } ERP \text{ (dBm)} = SG \text{ Reading (dBm)} - \text{Cable Loss (dB)} + \text{Substitute Antenna Gain (dBi)}$

LTE Band4							
Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Ant Gain (dBi)	EIRP Measure (dBm)	Limit (dBm)	Margin (dB)
QPSK, CH20175 /1732.5MHz, Bandwidth 10MHz							
3465	H	-51.706	1.330	7.646	-45.390	-13	-32.39
5197.5	H	-64.300	1.680	9.880	-56.100	-13	-43.10
6930	H	-62.486	1.810	11.146	-53.150	-13	-40.15
3465	V	-54.686	1.330	7.646	-48.370	-13	-35.37
5197.5	V	-67.78	1.680	9.880	-59.580	-13	-46.58
6930	V	-62.336	1.810	11.146	-53.000	-13	-40.00
QPSK, CH20175 /1732.5MHz, Bandwidth 15MHz							
3465	H	-55.526	1.330	7.646	-49.210	-13	-36.21
5197.5	H	-62.87	1.680	9.880	-54.670	-13	-41.67
6930	H	-63.096	1.810	11.146	-53.760	-13	-40.76
3465	V	-56.55	1.330	7.646	-50.234	-13	-37.23
5197.5	V	-66.968	1.680	9.880	-58.768	-13	-45.77
6930	V	-62.546	1.810	11.146	-53.210	-13	-40.21
QPSK, CH20175 /1732.5MHz, Bandwidth 20MHz							
3465	H	-53.926	1.330	7.646	-47.610	-13	-34.61
5197.5	H	-63.59	1.680	9.880	-55.390	-13	-42.39
6930	H	-61.626	1.810	11.146	-52.290	-13	-39.29
3465	V	-57.956	1.330	7.646	-51.640	-13	-38.64
5197.5	V	-67.36	1.680	9.880	-59.160	-13	-46.16
6930	V	-63.226	1.810	11.146	-53.890	-13	-40.89

Note:

1. Spurious emissions within 30-1000MHz & Other harmonic were found more than 20dB below limit line.
2. $EIRP \text{ or } ERP \text{ (dBm)} = SG \text{ Reading (dBm)} - Cable \text{ Loss (dB)} + Substitute \text{ Antenna Gain (dBi)}$

LTE Band5							
Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Ant Gain (dBi)	ERP Measure (dBm)	Limit (dBm)	Margin (dB)
QPSK, CH20525 / 836.5MHz, Bandwidth 1.4MHz							
1673	H	-50.304	1.050	5.024	-46.330	-13	-33.33
2509.5	H	-68.566	1.140	5.636	-64.070	-13	-51.07
3346	H	-65.832	1.320	7.122	-60.030	-13	-47.03
1673	V	-48.094	1.050	5.024	-44.120	-13	-31.12
2509.5	V	-64.236	1.140	5.636	-59.740	-13	-46.74
3346	V	-68.082	1.320	7.122	-62.280	-13	-49.28
QPSK, CH20525 / 836.5MHz, Bandwidth 3MHz							
1673	H	-51.184	1.050	5.024	-47.210	-13	-34.21
2509.5	H	-68.483	1.140	5.636	-63.987	-13	-50.99
3346	H	-66.354	1.320	7.122	-60.552	-13	-47.55
1673	V	-49.184	1.050	5.024	-45.210	-13	-32.21
2509.5	V	-64.95	1.140	5.636	-60.454	-13	-47.45
3346	V	-67.122	1.320	7.122	-61.320	-13	-48.32

Note:

1. Spurious emissions within 30-1000MHz & Other harmonic were found more than 20dB below limit line.
2. EIRP or ERP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBi)

LTE Band5							
Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Ant Gain (dBi)	ERP Measure (dBm)	Limit (dBm)	Margin (dB)
QPSK, CH20525 / 836.5MHz, Bandwidth 5MHz							
1673	H	-53.044	1.050	5.024	-49.070	-13	-36.07
2509.5	H	-64.806	1.140	5.636	-60.310	-13	-47.31
3346	H	-66.912	1.320	7.122	-61.110	-13	-48.11
1673	V	-49.304	1.050	5.024	-45.330	-13	-32.33
2509.5	V	-63.516	1.140	5.636	-59.020	-13	-46.02
3346	V	-67.012	1.320	7.122	-61.210	-13	-48.21
QPSK, CH20525 / 836.5MHz, Bandwidth 10MHz							
1673	H	-52.064	1.050	5.024	-48.090	-13	-35.09
2509.5	H	-64.386	1.140	5.636	-59.890	-13	-46.89
3346	H	-67.952	1.320	7.122	-62.150	-13	-49.15
1673	V	-48.024	1.050	5.024	-44.050	-13	-31.05
2509.5	V	-62.606	1.140	5.636	-58.110	-13	-45.11
3346	V	-66.582	1.320	7.122	-60.780	-13	-47.78

Note:

1. Spurious emissions within 30-1000MHz & Other harmonic were found more than 20dB below limit line.
2. EIRP or ERP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBi)

LTE Band12							
Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Ant Gain (dBi)	ERP Measure (dBm)	Limit (dBm)	Margin (dB)
QPSK, CH23095 / 707.5MHz, Bandwidth 1.4MHz							
1415	H	-53.224	1.020	4.754	-49.490	-13	-36.49
2122.5	H	-58.432	1.160	4.742	-54.850	-13	-41.85
2830	H	-65.318	1.270	6.438	-60.150	-13	-47.15
1415	V	-52.234	1.020	4.754	-48.500	-13	-35.50
2122.5	V	-61.312	1.160	4.742	-57.730	-13	-44.73
2830	V	-67.898	1.270	6.438	-62.730	-13	-49.73
QPSK, CH23095 / 707.5MHz, Bandwidth 3MHz							
1415	H	-54.244	1.020	4.754	-50.510	-13	-37.51
2122.5	H	-58.792	1.160	4.742	-55.210	-13	-42.21
2830	H	-66.638	1.270	6.438	-61.470	-13	-48.47
1415	V	-52.844	1.020	4.754	-49.110	-13	-36.11
2122.5	V	-62.492	1.160	4.742	-58.910	-13	-45.91
2830	V	-68.838	1.270	6.438	-63.670	-13	-50.67

Note:

1. Spurious emissions within 30-1000MHz & Other harmonic were found more than 20dB below limit line.
2. EIRP or ERP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBi)

LTE Band12							
Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Ant Gain (dBi)	ERP Measure (dBm)	Limit (dBm)	Margin (dB)
QPSK, CH23095 / 707.5MHz, Bandwidth 5MHz							
1415	H	-57.634	1.020	4.754	-53.900	-13	-40.90
2122.5	H	-62.458	1.160	4.742	-58.876	-13	-45.88
2830	H	-67.8856	1.270	6.438	-62.718	-13	-49.72
1415	V	-53.854	1.020	4.754	-50.120	-13	-37.12
2122.5	V	-60.601	1.160	4.742	-57.019	-13	-44.02
2830	V	-69.148	1.270	6.438	-63.980	-13	-50.98
QPSK, CH23095 / 707.5MHz, Bandwidth 10MHz							
1415	H	-56.924	1.020	4.754	-53.190	-13	-40.19
2122.5	H	-60.592	1.160	4.742	-57.010	-13	-44.01
2830	H	-68.408	1.270	6.438	-63.240	-13	-50.24
1415	V	-53.914	1.020	4.754	-50.180	-13	-37.18
2122.5	V	-62.012	1.160	4.742	-58.430	-13	-45.43
2830	V	-68.518	1.270	6.438	-63.350	-13	-50.35

Note:

1. Spurious emissions within 30-1000MHz & Other harmonic were found more than 20dB below limit line.
2. EIRP or ERP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBi)

7.6. Peak-Average Ratio

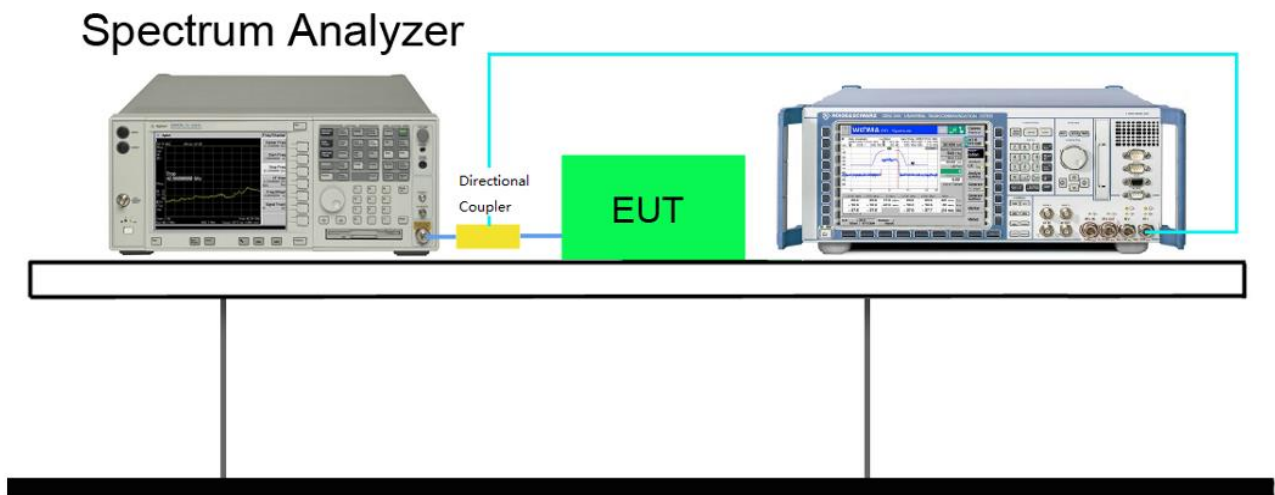
7.6.1 Test Limit

The transmitter's peak-to-average power ratio (PAPR) shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.

7.6.2 Test Procedure

KDB 971168 D01v03r01 - Section 5.7 & ANSI/TIA-603-E-2016

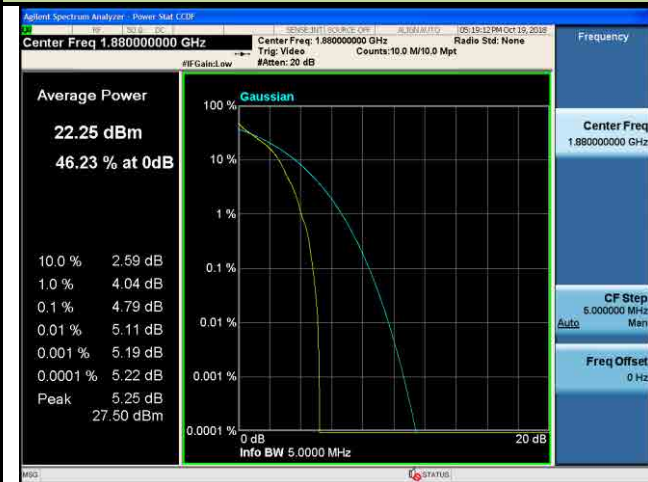
7.6.3 Test Setup



7.6.4 Test Result

Test Mode	Modulation	Channel/ Frequency (MHz)	Bandwidth (MHz)	RB Size	RB Offset	Test Result
LTE Band 2	QPSK	CH18900/1880MHz	1.4	1	2	Pass
			3	1	7	Pass
			5	1	12	Pass
			10	1	25	Pass
			15	1	36	Pass
			20	1	49	Pass
	16QAM		1.4	1	2	Pass
			3	1	7	Pass
			5	1	12	Pass
			10	1	25	Pass
			15	1	36	Pass
			20	1	49	Pass

LTE Band 2 QPSK 1.4MHz CH18900 1RB#2



LTE Band 2 QPSK 3MHz CH18900 1RB#7



LTE Band 2 QPSK 5MHz CH18900 1RB#12



LTE Band 2 QPSK 10MHz CH18900 1RB#25



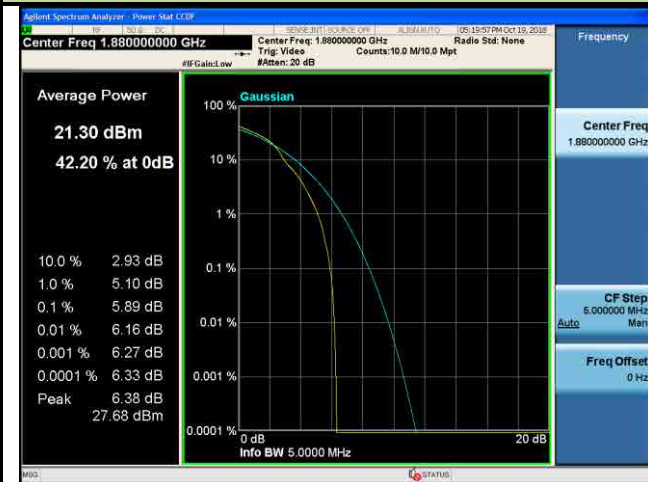
LTE Band 2 QPSK 15MHz CH18900 1RB#36



LTE Band 2 QPSK 20MHz CH18900 1RB#49



LTE Band 2 16QAM 1.4MHz CH18900 1RB#2



LTE Band 2 16QAM 3MHz CH18900 1RB#7



LTE Band 2 16QAM 5MHz CH18900 1RB#12



LTE Band 2 16QAM 10MHz CH18900 1RB#25



LTE Band 2 16QAM 15MHz CH18900 1RB#36

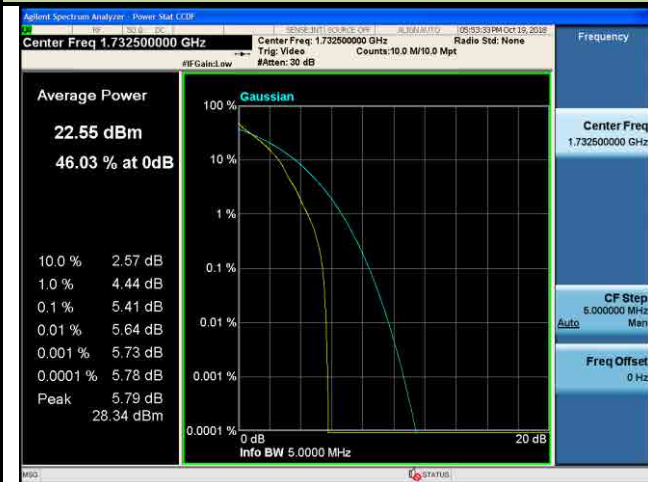


LTE Band 2 16QAM 20MHz CH18900 1RB#49



Test Mode	Modulation	Channel/ Frequency (MHz)	Bandwidth (MHz)	RB Size	RB Offset	Test Result
LTE Band 4	QPSK	CH20175 / 1732.5MHz	1.4	1	2	Pass
			3	1	7	Pass
			5	1	12	Pass
			10	1	25	Pass
			15	1	36	Pass
			20	1	49	Pass
	16QAM		1.4	1	2	Pass
			3	1	7	Pass
			5	1	12	Pass
			10	1	25	Pass
			15	1	36	Pass
			20	1	49	Pass

LTE Band 4 QPSK 1.4MHz CH20175 1RB#2



LTE Band 4 QPSK 3MHz CH20175 1RB#7



LTE Band 4 QPSK 5MHz CH20175 1RB#12



LTE Band 4 QPSK 10MHz CH20175 1RB#25



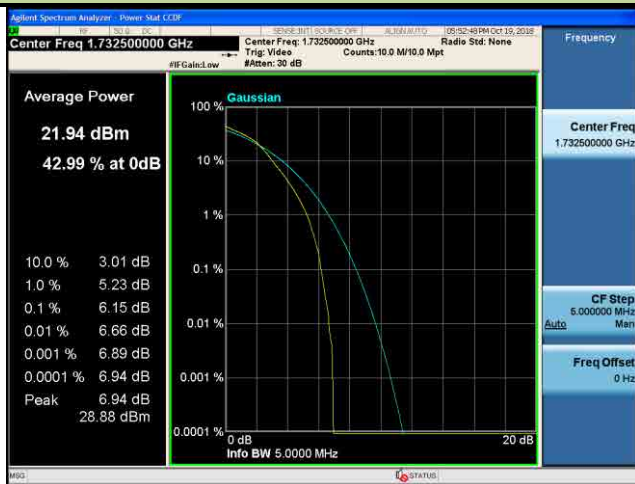
LTE Band 4 QPSK 15MHz CH20175 1RB#36



LTE Band 4 QPSK 20MHz CH20175 1RB#49



LTE Band 4 16QAM 1.4MHz CH20175 1RB#2



LTE Band 4 16QAM 3MHz CH20175 1RB#7



LTE Band 4 16QAM 5MHz CH20175 1RB#12



LTE Band 4 16QAM 10MHz CH20175 1RB#25



LTE Band 4 16QAM 15MHz CH20175 1RB#36



LTE Band 4 16QAM 20MHz CH20175 1RB#49



Test Mode	Modulation	Channel/ Frequency (MHz)	Bandwidth (MHz)	RB Size	RB Offset	Test Result
LTE Band 5	QPSK	CH20525 / 836.5MHz	1.4	1	2	Pass
			3	1	7	Pass
			5	1	12	Pass
			10	1	25	Pass
	16QAM		1.4	1	2	Pass
			3	1	7	Pass
			5	1	12	Pass
			10	1	25	Pass

LTE Band 5 QPSK 1.4MHz CH20525 1RB#2



LTE Band 5 QPSK 3MHz CH20525 1RB#7



LTE Band 5 QPSK 5MHz CH20525 1RB#12



LTE Band 5 QPSK 10MHz CH20525 1RB#25



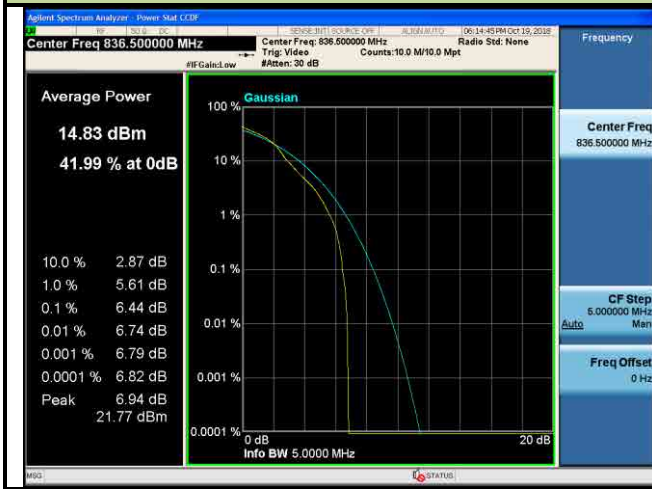
LTE Band 5 16QAM 1.4MHz CH20525 1RB#2



LTE Band 5 16QAM 3MHz CH20525 1RB#7



LTE Band 5 16QAM 5MHz CH20525 1RB#12

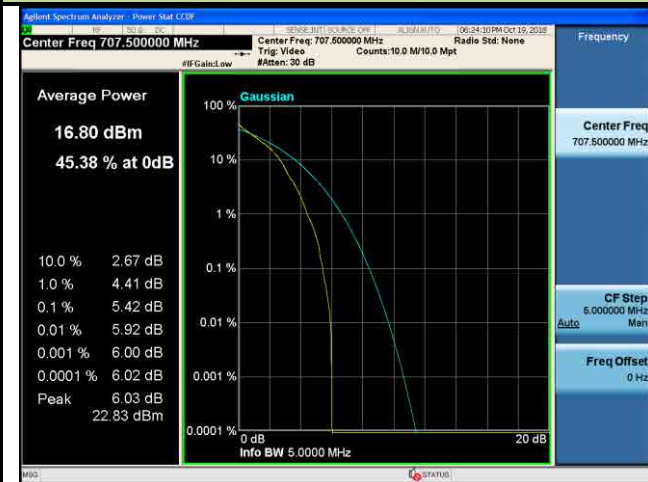


LTE Band 5 16QAM 10MHz CH20525 1RB#25



Test Mode	Modulation	Channel/ Frequency (MHz)	Bandwidth (MHz)	RB Size	RB Offset	Test Result
LTE Band 12	QPSK	CH23095 / 707.5MHz	1.4	1	2	Pass
			3	1	7	Pass
			5	1	12	Pass
			10	1	25	Pass
	16QAM		1.4	1	2	Pass
			3	1	7	Pass
			5	1	12	Pass
			10	1	25	Pass

LTE Band 12 QPSK 1.4MHz CH23095 1RB#2



LTE Band 12 QPSK 3MHz CH23095 1RB#7



LTE Band 12 QPSK 5MHz CH23095 1RB#12



LTE Band 12 QPSK 10MHz CH23095 1RB#25

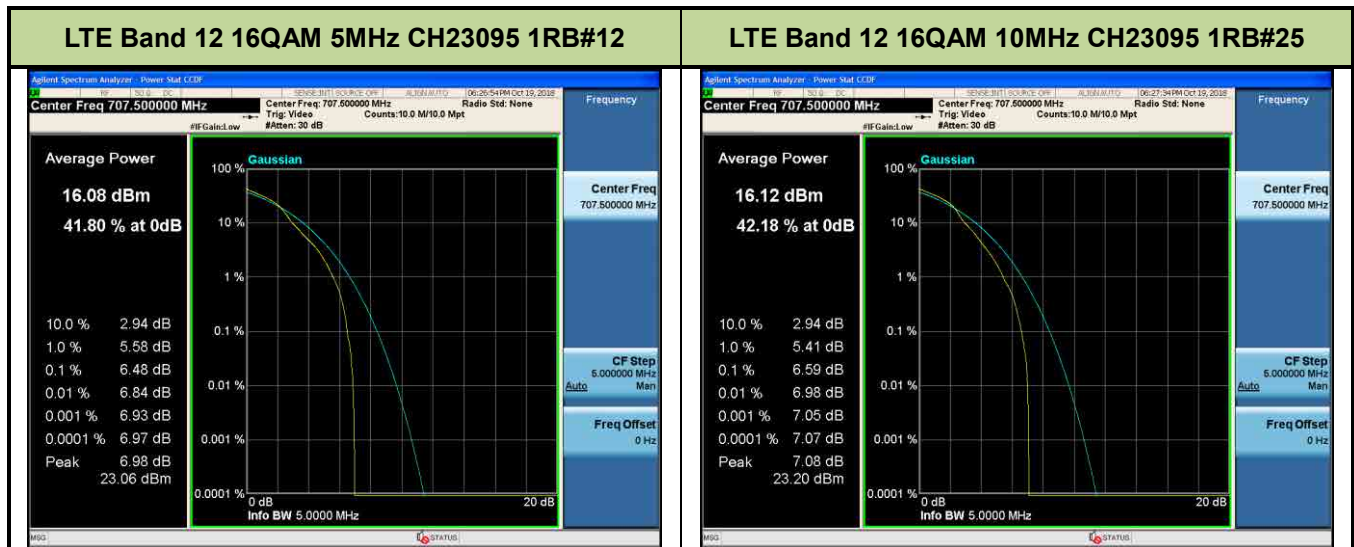


LTE Band 12 16QAM 1.4MHz CH23095 1RB#2



LTE Band 12 16QAM 3MHz CH23095 1RB#7





7.7. Frequency Stability Under Temperature & Voltage Variations

7.7.1 Test Limit

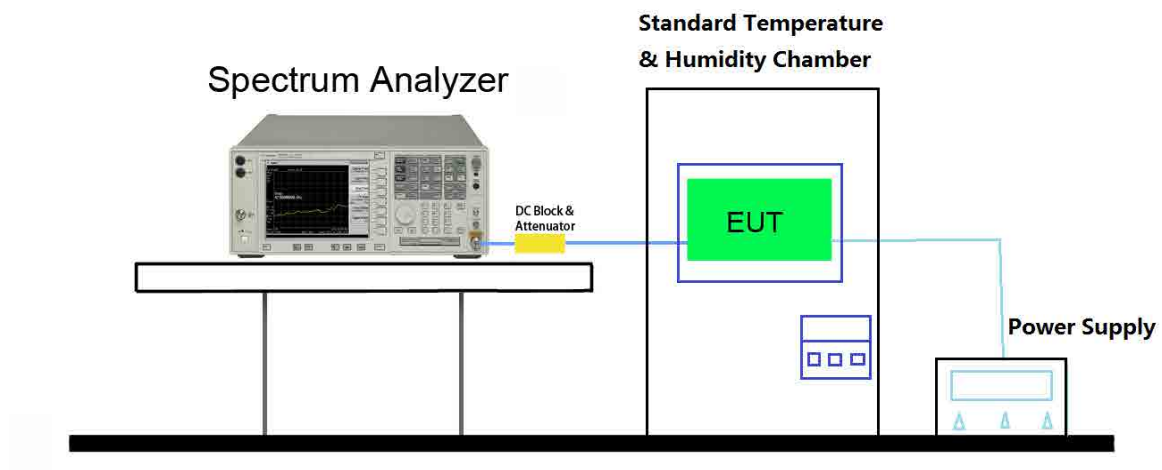
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Limit	$< \pm 2.5$ ppm
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7.7.2 Test Procedure

KDB 971168 D01v03r01 - Section 9.0 & ANSI/TIA-603-E-2016

7.7.3 Test Setup



7.7.4 Test Result

Operating Frequency	1880MHz
Channel	CH18900
Test Mode	LTE Band 2
Reference Voltage	DC 3.6V

Temperature vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.6V	-30	1880	-14.91	-0.008	±2.5
		-20	1880	-10.64	-0.006	±2.5
		-10	1880	-11.83	-0.006	±2.5
		0	1880	10.89	0.006	±2.5
		10	1880	11.01	0.006	±2.5
		+ 20 (Ref)	1880	-8.18	-0.004	±2.5
		30	1880	-11.00	-0.006	±2.5
		40	1880	12.99	0.007	±2.5
		50	1880	-17.95	-0.010	±2.5
Voltage vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.6V	20	1880	16.05	0.009	±2.5
115%	4.14V	20	1880	-10.30	-0.005	±2.5
85%	3.06V	20	1880	19.63	0.010	±2.5

Operating Frequency	1732.6MHz
Channel	CH20175
Test Mode	LTE Band 4
Reference Voltage	DC 3.6V

Temperature vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.6V	-30	1732.6	-7.44	-0.004	±2.5
		-20	1732.6	-13.99	-0.008	±2.5
		-10	1732.6	-10.96	-0.006	±2.5
		0	1732.6	-11.72	-0.007	±2.5
		10	1732.6	-13.49	-0.008	±2.5
		+ 20 (Ref)	1732.6	-14.42	-0.008	±2.5
		30	1732.6	11.70	0.007	±2.5
		40	1732.6	15.31	0.009	±2.5
		50	1732.6	14.18	0.008	±2.5
Voltage vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.6V	20	1732.6	-11.44	-0.007	±2.5
115%	4.14V	20	1732.6	-14.46	-0.008	±2.5
85%	3.06V	20	1732.6	-13.40	-0.008	±2.5

Operating Frequency	836.6MHz
Channel	CH20525
Test Mode	LTE Band 5
Reference Voltage	DC 3.6V

Temperature vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.6V	-30	836.6	7.34	0.009	±2.5
		-20	836.6	-5.65	-0.007	±2.5
		-10	836.6	7.00	0.008	±2.5
		0	836.6	8.34	0.010	±2.5
		10	836.6	10.49	0.013	±2.5
		+ 20 (Ref)	836.6	9.31	0.011	±2.5
		30	836.6	8.71	0.010	±2.5
		40	836.6	8.87	0.011	±2.5
		50	836.6	8.27	0.010	±2.5
Voltage vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.6V	20	836.6	9.28	0.011	±2.5
115%	4.14V	20	836.6	7.67	0.009	±2.5
85%	3.06V	20	836.6	7.00	0.008	±2.5

Operating Frequency	707.5MHz
Channel	CH23095
Test Mode	LTE Band 12
Reference Voltage	DC 3.6V

Temperature vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.6V	-30	707.5	6.54	0.009	±2.5
		-20	707.5	10.53	0.015	±2.5
		-10	707.5	7.95	0.011	±2.5
		0	707.5	7.64	0.011	±2.5
		10	707.5	6.71	0.009	±2.5
		+ 20 (Ref)	707.5	6.69	0.009	±2.5
		30	707.5	6.37	0.009	±2.5
		40	707.5	6.91	0.010	±2.5
		50	707.5	7.10	0.010	±2.5
Voltage vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.6V	20	707.5	9.10	0.013	±2.5
115%	4.14V	20	707.5	7.52	0.011	±2.5
85%	3.06V	20	707.5	7.77	0.011	±2.5

The End