

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 41 (15MHz) QPSK	Lowest	75	0	H	V	23.74	33.00	Pass
					H	23.14		
				E1	V	23.84		
					H	22.09		
				E2	V	23.09		
					H	21.66		
	Middle	75	0	H	V	22.92	33.00	Pass
					H	23.24		
				E1	V	22.90		
					H	23.60		
				E2	V	23.45		
					H	23.21		
	Highest	75	0	H	V	23.50	33.00	Pass
					H	23.96		
				E1	V	23.80		
					H	23.44		
				E2	V	23.60		
					H	23.27		

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 41 (20MHz) QPSK	Lowest	100	0	H	V	24.10	33.00	Pass
					H	23.09		
				E1	V	23.87		
					H	21.43		
				E2	V	23.77		
					H	21.41		
	Middle	100	0	H	V	22.61	33.00	Pass
					H	23.47		
				E1	V	23.45		
					H	23.72		
				E2	V	23.69		
					H	23.90		
	Highest	100	0	H	V	23.29	33.00	Pass
					H	24.00		
				E1	V	23.74		
					H	23.19		
				E2	V	23.79		
					H	23.55		

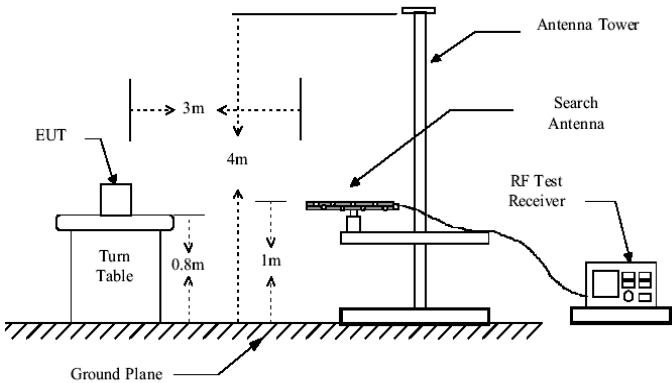
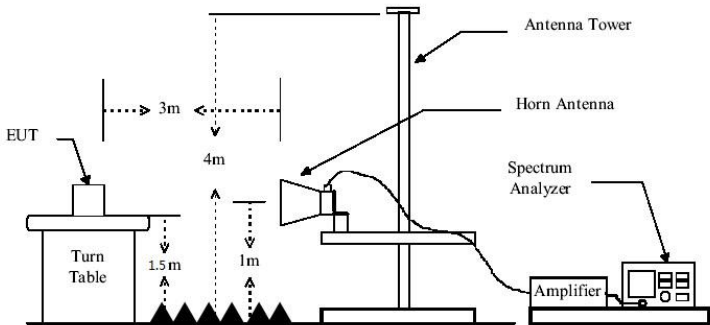
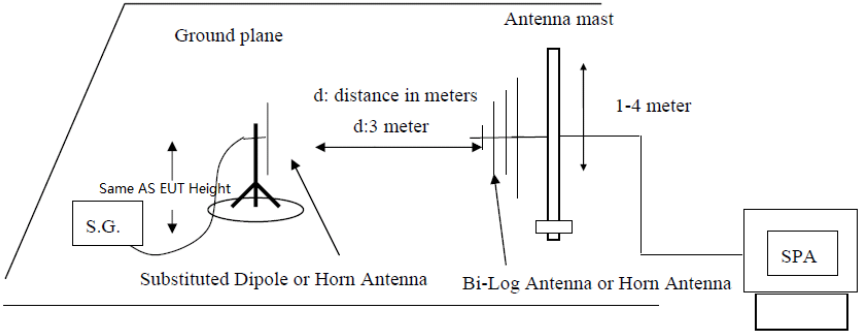
EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 41 (5MHz) 16 QAM	Lowest	25	0	H	V	24.02	33.00	Pass
					H	23.31		
				E1	V	23.36		
					H	22.08		
				E2	V	23.29		
					H	21.30		
	Middle	25	0	H	V	23.04	33.00	Pass
					H	23.93		
				E1	V	22.90		
					H	23.81		
				E2	V	23.16		
					H	23.92		
	Highest	25	0	H	V	23.34	33.00	Pass
					H	23.59		
				E1	V	23.24		
					H	23.78		
				E2	V	23.06		
					H	24.08		

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 41 (10MHz) 16 QAM	Lowest	50	0	H	V	23.41	33.00	Pass
					H	23.19		
				E1	V	24.02		
					H	23.40		
				E2	V	23.36		
					H	23.46		
	Middle	50	0	H	V	23.82	33.00	Pass
					H	23.14		
				E1	V	23.22		
					H	23.30		
				E2	V	23.50		
					H	23.06		
	Highest	50	0	H	V	23.11	33.00	Pass
					H	23.76		
				E1	V	22.85		
					H	23.19		
				E2	V	23.58		
					H	23.39		

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 41 (15MHz) 16 QAM	Lowest	75	0	H	V	23.67	33.00	Pass
					H	23.39		
				E1	V	23.30		
					H	23.72		
				E2	V	23.04		
					H	23.75		
	Middle	75	0	H	V	23.21	33.00	Pass
					H	23.84		
				E1	V	23.87		
					H	22.93		
				E2	V	23.51		
					H	23.64		
	Highest	75	0	H	V	23.49	33.00	Pass
					H	24.05		
				E1	V	23.59		
					H	23.26		
				E2	V	23.37		
					H	23.62		

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 41 (20MHz) 16 QAM	Lowest	100	0	H	V	23.37	33.00	Pass
					H	23.70		
				E1	V	23.94		
					H	23.98		
				E2	V	23.76		
					H	22.82		
	Middle	100	0	H	V	23.55	33.00	Pass
					H	23.09		
				E1	V	23.56		
					H	23.31		
				E2	V	23.12		
					H	23.46		
	Highest	100	0	H	V	23.28	33.00	Pass
					H	23.21		
				E1	V	23.42		
					H	23.40		
				E2	V	23.82		
					H	23.63		

4.9 Field strength of spurious radiation measurement

Test Requirement:	FCC part22.913(a), FCC part24.238(a) and FCC part27.53
Test Method:	ANSI C63.26:2015
Limit:	Band 2/4/5/12/17/26:-13dBm Band 7/41:-25dBm
Test setup:	Below 1GHz  Above 1GHz  Substituted method: 

Test Procedure:	1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. 2. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. 3. The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method. 4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency. $\text{ERP / EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain(dB/dBi)} - \text{Cable Loss (dB)}$ 5. Compliance with the provisions of part 27 paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.
Test Instruments:	Refer to section 3 for details
Test mode:	Refer to section 4.1 for details
Test results:	Pass

Measurement Data:

QPSK Mode:

Test mode:	LTE Band 2(1.4MHz)		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3700.49	V	-38.21	-13.00	Pass
5553.48	V	-34.72		
7403.07	V	-36.99		
9253.14	V	-35.36		
11101.33	V	-36.02		
3702.21	H	-35.38	-13.00	Pass
5553.04	H	-34.87		
7402.60	H	-33.63		
9251.88	H	-36.08		
11103.68	H	-37.12		
Test mode:	LTE Band 2(1.4MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3758.97	V	-35.45	-13.00	Pass
5640.03	V	-34.61		
7516.73	V	-34.33		
9397.64	V	-35.86		
11280.33	V	-36.01		
3760.61	H	-37.33	-13.00	Pass
5639.40	H	-31.97		
7520.18	H	-35.36		
9399.21	H	-34.65		
11279.86	H	-35.67		
Test mode:	LTE Band 2(1.4MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3819.71	V	-35.13	-13.00	Pass
5727.69	V	-33.18		
7636.06	V	-33.69		
9546.56	V	-32.62		
11454.52	V	-37.91		
3818.90	H	-36.04	-13.00	Pass
5726.13	H	-34.66		
7637.39	H	-35.59		
9545.37	H	-36.13		
11454.93	H	-37.19		

Remark :

1. The emission behaviour belongs to narrowband spurious emission, all modes investigated and only worst case is reported.
2. Remark"---" means that the emission level is too low (20dB lower than the limit) to be measured
3. The emission levels of below 1 GHz are very lower (20dB lower than the limit) than the limit and not show in test report.

Test mode:	LTE Band 4(1.4MHz)		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3420.81	V	-31.07	-13.00	Pass
5130.93	V	-32.06		
6840.66	V	-28.01		
8554.69	V	-28.82		
10262.66	V	-31.40		
3421.81	H	-28.06	-13.00	Pass
5133.91	H	-29.87		
6843.44	H	-26.57		
8551.40	H	-27.72		
10264.60	H	-36.14		
Test mode:	LTE Band 4(1.4MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3465.07	V	-32.60	-13.00	Pass
5196.39	V	-32.76		
6930.81	V	-27.40		
8662.22	V	-28.99		
10395.48	V	-27.40		
3466.31	H	-26.79	-13.00	Pass
5198.19	H	-26.16		
6930.40	H	-28.74		
8661.30	H	-29.07		
10394.61	H	-29.35		
Test mode:	LTE Band 4(1.4MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3506.35	V	-32.11	-13.00	Pass
5262.87	V	-30.40		
7016.37	V	-28.66		
8772.31	V	-31.83		
10524.58	V	-28.89		
3508.84	H	-26.72	-13.00	Pass
5264.12	H	-29.28		
7016.73	H	-28.87		
8773.11	H	-28.02		
10524.68	H	-27.12		

Remark:

1. The emission behaviour belongs to narrowband spurious emission, all modes investigated and only worst case is reported.
2. Remark"---" means that the emission level is too low (20dB lower than the limit) to be measured
3. The emission levels of below 1 GHz are very lower (20dB lower than the limit) than the limit and not show in test report.

Test mode:	LTE Band 5(1.4MHz)		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1649.98	V	-30.94	-13.00	Pass
2475.96	V	-28.49		
3302.43	V	-28.19		
4129.39	V	-31.26		
4954.16	V	-27.48		
1650.04	H	-30.04	-13.00	Pass
2479.27	H	-26.96		
3305.16	H	-31.69		
4125.55	H	-27.71		
4952.27	H	-29.97		
Test mode:	LTE Band 5(1.4MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1671.43	V	-35.85	-13.00	Pass
2511.70	V	-28.17		
3345.71	V	-30.88		
4184.54	V	-32.10		
5019.61	V	-31.35		
1673.73	H	-33.52	-13.00	Pass
2511.40	H	-27.84		
3349.39	H	-31.36		
4185.54	H	-30.58		
5022.38	H	-28.15		
Test mode:	LTE Band 5(1.4MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1695.29	V	-36.67	-13.00	Pass
2541.81	V	-28.62		
3394.40	V	-28.24		
4238.64	V	-30.47		
5089.24	V	-29.15		
1694.83	H	-29.79	-13.00	Pass
2544.63	H	-29.05		
3393.47	H	-30.14		
4239.32	H	-30.85		
5088.16	H	-29.63		

Remark :

1. The emission behaviour belongs to narrowband spurious emission, all modes investigated and only worst case is reported.
2. Remark"---" means that the emission level is too low (20dB lower than the limit) to be measured
3. The emission levels of below 1 GHz are very lower (20dB lower than the limit) than the limit and not show in test report.

Test mode:	LTE Band 7(5MHz)		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
5006.88	V	-32.14	-25.00	Pass
7505.09	V	-29.32		
10011.57	V	-28.07		
12513.39	V	-27.28		
15013.01	V	-31.82		
5005.71	H	-25.55	-25.00	Pass
7508.43	H	-29.94		
10011.74	H	-33.03		
12512.75	H	-28.85		
15014.39	H	-29.40		
Test mode:	LTE Band 7(5MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
5069.73	V	-32.30	-25.00	Pass
7602.13	V	-32.42		
10139.26	V	-30.20		
12676.60	V	-28.79		
15209.70	V	-29.06		
5069.34	H	-28.63	-25.00	Pass
7605.39	H	-27.28		
10141.62	H	-28.48		
12674.21	H	-27.87		
15208.81	H	-30.23		
Test mode:	LTE Band 7(5MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
5135.80	V	-34.49	-25.00	Pass
7701.87	V	-28.34		
10268.24	V	-27.73		
12836.61	V	-31.62		
15404.43	V	-28.93		
5133.25	H	-30.10	-25.00	Pass
7702.31	H	-32.01		
10267.74	H	-31.80		
12837.17	H	-29.72		
15405.28	H	-29.40		

Remark :

1. The emission behaviour belongs to narrowband spurious emission, all modes investigated and only worst case is reported.
2. Remark"---" means that the emission level is too low (20dB lower than the limit) to be measured
3. The emission levels of below 1 GHz are very lower (20dB lower than the limit) than the limit and not show in test report.

Test mode:	LTE Band 12(1.4MHz)		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1399.50	V	-32.88	-13.00	Pass
2097.13	V	-31.16		
2797.22	V	-26.19		
3496.55	V	-30.38		
4196.68	V	-27.58		
1399.60	H	-29.91	-13.00	Pass
2100.19	H	-29.74		
2797.87	H	-26.48		
3498.69	H	-28.59		
4196.78	H	-26.85		
Test mode:	LTE Band 12(1.4MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1413.04	V	-32.67	-13.00	Pass
2123.33	V	-27.74		
2827.88	V	-29.73		
3537.44	V	-27.11		
4245.70	V	-29.36		
1412.71	H	-27.97	-13.00	Pass
2122.53	H	-28.73		
2831.96	H	-28.05		
3537.55	H	-26.39		
4244.84	H	-28.17		
Test mode:	LTE Band 12(1.4MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1428.88	V	-29.25	-13.00	Pass
2143.22	V	-25.77		
2861.95	V	-32.62		
3575.67	V	-26.67		
4291.24	V	-27.91		
1431.57	H	-28.83	-13.00	Pass
2146.68	H	-27.47		
2860.59	H	-28.72		
3575.43	H	-29.41		
4290.23	H	-30.56		

Remark :

- 1 The emission behaviour belongs to narrowband spurious emission, all modes investigated and only worst case is reported.
- 2 Remark"---" means that the emission level is too low (20dB lower than the limit) to be measured
- 3 The emission levels of below 1 GHz are very lower (20dB lower than the limit) than the limit and not show in test report.

Test mode:	LTE Band 13(5MHz)		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1588.36	V	-42.38	-40.00	Pass
770.01	V	-39.40	-35.00	Pass
802.66	V	-38.38	-35.00	Pass
5004.74	V	-33.97	-13.00	Pass
7507.98	V	-32.17		
10010.08	V	-27.39		
12508.91	V	-30.39		
15013.15	V	-25.93		
1586.04	H	-42.86	-40.00	Pass
768.25	H	-38.59	-35.00	Pass
798.88	H	-40.19	-35.00	Pass
5005.61	H	-29.30	-13.00	Pass
7506.41	H	-28.80		
10009.88	H	-33.37		
12509.52	H	-29.20		
15014.93	H	-28.70		
Test mode:	LTE Band 13(5MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1593.18	V	-43.93	-40.00	Pass
771.87	V	-39.79	-35.00	Pass
800.58	V	-41.62	-35.00	Pass
5070.18	V	-27.24	-13.00	Pass
7603.46	V	-30.73		
10141.41	V	-28.55		
12673.80	V	-29.05		
15209.63	V	-31.36		
1593.79	H	-45.71	-40.00	Pass
768.89	H	-38.46	-35.00	Pass
797.92	H	-39.60	-35.00	Pass
5065.87	H	-29.40	-13.00	Pass
7603.31	H	-29.52		
10139.45	H	-28.04		
12675.48	H	-25.29		
15209.86	H	-27.45		

Test mode:	LTE Band 13(5MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1579.92	V	-41.83	-40.00	Pass
768.61	V	-39.00	-35.00	Pass
797.88	V	-39.98	-35.00	Pass
5134.62	V	-35.27	-13.00	Pass
7704.59	V	-32.04		
10270.33	V	-27.13		
12836.51	V	-32.47		
15402.84	V	-29.52		
1580.46	H	-45.33	-40.00	Pass
769.03	H	-39.12	-35.00	Pass
801.20	H	-37.35	-35.00	Pass
5133.43	H	-31.24	-13.00	Pass
7702.90	H	-30.04		
10268.47	H	-31.34		
12834.61	H	-29.17		
15404.15	H	-31.36		

Remark :

- 1 The emission behaviour belongs to narrowband spurious emission, all modes investigated and only worst case is reported.
- 2 Remark"---" means that the emission level is too low (20dB lower than the limit) to be measured
- 3 The emission levels of below 1 GHz are very lower (20dB lower than the limit) than the limit and not show in test report.

Test mode:	LTE Band 41(5MHz)		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
4997.97	V	-37.34	-25.00	Pass
7494.40	V	-37.67		
9994.06	V	-34.28		
12492.40	V	-33.57		
14989.62	V	-34.64		
4996.16	H	-37.17	-25.00	Pass
7494.33	H	-35.94		
9994.15	H	-34.89		
12491.30	H	-35.59		
14988.26	H	-35.60		
Test mode:	LTE Band 41(5MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
5184.00	V	-37.11	-25.00	Pass
7778.92	V	-35.32		
10371.29	V	-33.05		
12964.26	V	-33.36		
15557.11	V	-35.85		
5185.06	H	-35.36	-25.00	Pass
7778.47	H	-36.91		
10371.29	H	-38.86		
12964.01	H	-36.43		
15557.81	H	-36.06		
Test mode:	LTE Band 41(5MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
5374.82	V	-32.66	-25.00	Pass
8061.25	V	-37.20		
10749.85	V	-34.64		
13437.73	V	-35.87		
16124.02	V	-35.29		
5374.49	H	-36.07	-25.00	Pass
8060.68	H	-38.01		
10748.49	H	-33.16		
13437.45	H	-35.17		
16125.78	H	-37.46		

Remark :

- 1 The emission behaviour belongs to narrowband spurious emission, all modes investigated and only worst case is reported.
- 2 Remark"---" means that the emission level is too low (20dB lower than the limit) to be measured
- 3 The emission levels of below 1 GHz are very lower (20dB lower than the limit) than the limit and not show in test report.

16 QAM Mode:

Test mode:	LTE Band 2 (1.4MHz)		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3701.88	V	-34.81	-13.00	Pass
5551.56	V	-29.43		
7401.51	V	-34.39		
9254.08	V	-25.73		
11102.36	V	-34.74		
3702.89	H	-29.46	-13.00	Pass
5552.78	H	-37.83		
7402.88	H	-25.19		
9252.47	H	-35.32		
11104.48	H	-27.21		
Test mode:	LTE Band 2 (1.4MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3759.01	V	-30.84	-13.00	Pass
5642.23	V	-27.68		
7519.74	V	-27.23		
9398.83	V	-30.82		
11278.37	V	-29.65		
3760.12	H	-29.73	-13.00	Pass
5639.52	H	-31.08		
7519.85	H	-29.90		
9399.97	H	-31.15		
11278.55	H	-28.09		
Test mode:	LTE Band 2 (1.4MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3818.38	V	-31.91	-13.00	Pass
5726.99	V	-29.04		
7636.10	V	-28.27		
9545.44	V	-29.22		
11457.56	V	-30.15		
3817.54	H	-31.87	-13.00	Pass
5728.52	H	-30.08		
7637.39	H	-29.15		
9544.69	H	-31.51		
11454.73	H	-27.23		

Remark :

- 1 The emission behaviour belongs to narrowband spurious emission, all modes investigated and only worst case is reported.
- 2 Remark"---" means that the emission level is too low (20dB lower than the limit) to be measured
- 3 The emission levels of below 1 GHz are very lower (20dB lower than the limit) than the limit and not show in test report.

Test mode:	LTE Band 4(1.4MHz)		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3420.06	V	-31.64	-13.00	Pass
5133.80	V	-30.16		
6843.42	V	-26.77		
8554.35	V	-29.21		
10262.57	V	-28.74		
3419.75	H	-31.27	-13.00	Pass
5132.39	H	-25.37		
6840.51	H	-28.53		
8553.98	H	-29.03		
10265.51	H	-29.04		
Test mode:	LTE Band 4(1.4MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3464.22	V	-27.69	-13.00	Pass
5194.61	V	-27.50		
6926.32	V	-27.62		
8662.27	V	-31.91		
10395.80	V	-27.52		
3462.43	H	-28.37	-13.00	Pass
5198.42	H	-31.20		
6930.18	H	-31.24		
8663.77	H	-27.21		
10395.24	H	-29.04		
Test mode:	LTE Band 4(1.4MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3489.26	V	-28.20	-13.00	Pass
5236.14	V	-29.91		
6981.16	V	-31.33		
8724.59	V	-32.14		
10473.04	V	-29.30		
3490.84	H	-29.13	-13.00	Pass
5237.72	H	-32.30		
6979.42	H	-26.98		
8727.50	H	-28.83		
10472.43	H	-30.90		

Remark:

- 1 The emission behaviour belongs to narrowband spurious emission, all modes investigated and only worst case is reported.
- 2 Remark"---" means that the emission level is too low (20dB lower than the limit) to be measured
- 3 The emission levels of below 1 GHz are very lower (20dB lower than the limit) than the limit and not show in test report.

Test mode:	LTE Band 5(1.4MHz)		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1651.43	V	-32.96	-13.00	Pass
2476.05	V	-33.79		
3300.05	V	-31.27		
4127.42	V	-33.60		
4956.00	V	-28.58		
1650.56	H	-33.20	-13.00	Pass
2476.23	H	-29.75		
3303.66	H	-35.76		
4128.87	H	-33.23		
4952.95	H	-30.07		
Test mode:	LTE Band 5(1.4MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1671.99	V	-30.73	-13.00	Pass
2509.59	V	-32.75		
3347.41	V	-28.00		
4184.83	V	-29.57		
5021.58	V	-36.03		
1671.87	H	-33.42	-13.00	Pass
2508.11	H	-32.56		
3348.39	H	-30.84		
4181.60	H	-30.79		
5023.94	H	-32.25		
Test mode:	LTE Band 5(1.4MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1697.22	V	-31.55	-13.00	Pass
2545.30	V	-28.43		
3392.61	V	-30.67		
4237.88	V	-34.10		
5087.87	V	-30.16		
1696.74	H	-31.51	-13.00	Pass
2542.81	H	-34.65		
3393.76	H	-30.48		
4242.12	H	-34.87		
5089.50	H	-30.20		

Remark :

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- 2 Remark"---" means that the emission level is too low (20dB lower than the limit) to be measured
- 3 The emission levels of below 1 GHz are very lower (20dB lower than the limit) than the limit and not show in test report.

Test mode:	LTE Band 7(5MHz)		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
5002.82	V	-32.97	-25.00	Pass
7509.25	V	-34.36		
10010.34	V	-33.43		
12510.12	V	-34.44		
15015.76	V	-34.47		
5003.41	H	-34.03	-25.00	Pass
7505.71	H	-32.42		
10009.59	H	-32.11		
12511.41	H	-28.63		
15016.38	H	-30.46		
Test mode:	LTE Band 7(5MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
5070.10	V	-33.43	-25.00	Pass
7604.07	V	-33.32		
10139.26	V	-31.02		
12672.38	V	-29.50		
15209.12	V	-29.71		
5068.96	H	-28.19	-25.00	Pass
7602.97	H	-29.26		
10142.25	H	-35.30		
12674.27	H	-33.39		
15209.70	H	-34.47		
Test mode:	LTE Band 7(5MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
5134.79	V	-31.87	-25.00	Pass
7703.21	V	-32.53		
10269.08	V	-33.08		
12837.10	V	-32.66		
15403.61	V	-34.15		
5133.06	H	-33.37	-25.00	Pass
7699.24	H	-30.10		
10271.83	H	-32.22		
12837.01	H	-31.54		
15404.60	H	-30.29		

Remark :

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- 3 The emission levels of below 1 GHz are very lower (20dB lower than the limit) than the limit and not show in test report.

Test mode:	LTE Band 12 (1.4MHz)		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1401.49	V	-31.72	-13.00	Pass
2098.34	V	-31.93		
2795.66	V	-31.29		
3497.99	V	-30.45		
4199.60	V	-30.73		
1399.53	H	-28.81	-13.00	Pass
2098.81	H	-31.30		
2797.68	H	-31.99		
3497.85	H	-32.81		
4195.92	H	-29.38		
Test mode:	LTE Band 12 (1.4MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1415.50	V	-32.35	-13.00	Pass
2121.57	V	-32.61		
2831.40	V	-31.56		
3538.55	V	-32.31		
4244.66	V	-32.79		
1414.19	H	-29.59	-13.00	Pass
2123.57	H	-30.96		
2832.19	H	-34.12		
3536.85	H	-31.33		
4241.57	H	-30.93		
Test mode:	LTE Band 12 (1.4MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1431.21	V	-32.44	-13.00	Pass
2145.70	V	-36.65		
2861.57	V	-33.88		
3576.06	V	-29.98		
4291.28	V	-29.20		
1431.04	H	-30.90	-13.00	Pass
2144.40	H	-32.05		
2860.86	H	-36.41		
3574.10	H	-32.03		
4291.35	H	-36.76		

Remark :

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- 3 The emission levels of below 1 GHz are very lower (20dB lower than the limit) than the limit and not show in test report.

Test mode:	LTE Band 13(5MHz)		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1589.32	V	-44.87	-40.00	Pass
770.09	V	-38.24	-35.00	Pass
801.14	V	-40.60	-35.00	Pass
5006.24	V	-33.91	-13.00	Pass
7507.02	V	-32.84		
10006.57	V	-25.98		
12511.57	V	-31.41		
15012.88	V	-29.08		
1586.80	H	-46.59	-40.00	Pass
768.55	H	-39.91	-35.00	Pass
802.10	H	-37.91	-35.00	Pass
5003.95	H	-31.03	-13.00	Pass
7509.05	H	-30.29		
10010.82	H	-31.89		
12508.42	H	-28.14		
15014.00	H	-29.17		
Test mode:	LTE Band 13(5MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1591.48	V	-43.30	-40.00	Pass
769.11	V	-38.33	-35.00	Pass
800.04	V	-39.51	-35.00	Pass
5070.60	V	-26.77	-13.00	Pass
7602.98	V	-29.03		
10138.84	V	-28.00		
12675.45	V	-27.39		
15207.43	V	-28.43		
1592.43	H	-43.65	-40.00	Pass
771.33	H	-37.57	-35.00	Pass
800.62	H	-40.47	-35.00	Pass
5068.20	H	-30.31	-13.00	Pass
7604.44	H	-27.26		
10139.45	H	-29.47		
12678.34	H	-27.06		
15209.80	H	-26.76		

Test mode:	LTE Band 13(5MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1578.07	V	-45.50	-40.00	Pass
771.51	V	-36.70	-35.00	Pass
799.62	V	-39.70	-35.00	Pass
5135.11	V	-34.74	-13.00	Pass
7703.17	V	-29.74		
10267.81	V	-28.88		
12838.41	V	-30.42		
15402.65	V	-29.41		
1579.87	H	-46.85	-40.00	Pass
769.44	H	-41.04	-35.00	Pass
800.10	H	-38.70	-35.00	Pass
5135.71	H	-32.38	-13.00	Pass
7703.00	H	-33.49		
10267.48	H	-34.03		
12836.88	H	-29.50		
15405.82	H	-29.20		

Remark :

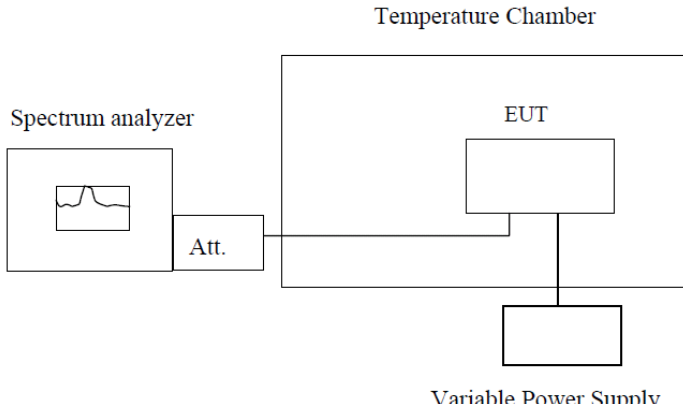
- 1 The emission behaviour belongs to narrowband spurious emission, all modes investigated and only worst case is reported.
- 2 Remark"---" means that the emission level is too low (20dB lower than the limit) to be measured
- 3 The emission levels of below 1 GHz are very lower (20dB lower than the limit) than the limit and not show in test report.

Test mode:	LTE Band 41 (5MHz)		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
4996.38	V	-36.98	-25.00	Pass
7494.74	V	-34.85		
9991.75	V	-34.95		
12492.73	V	-39.27		
14992.87	V	-32.31		
4998.05	H	-36.05	-25.00	Pass
7493.68	H	-35.93		
9991.84	H	-32.22		
12490.10	H	-35.32		
14988.47	H	-35.06		
Test mode:	LTE Band 41 (5MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
5186.57	V	-31.83	-25.00	Pass
7778.48	V	-34.07		
10372.59	V	-37.69		
12965.16	V	-33.84		
15556.56	V	-35.35		
5186.93	H	-35.25	-25.00	Pass
7776.67	H	-35.14		
10369.76	H	-36.56		
12964.98	H	-35.88		
15556.54	H	-35.25		
Test mode:	LTE Band 41 (5MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
5375.60	V	-37.66	-25.00	Pass
8063.20	V	-34.34		
10750.04	V	-37.64		
13435.33	V	-33.20		
16124.05	V	-37.34		
5375.79	H	-33.49	-25.00	Pass
8062.68	H	-39.41		
10749.43	H	-35.60		
13437.17	H	-33.48		
16123.97	H	-35.76		

Remark :

- 1 The emission behaviour belongs to narrowband spurious emission, all modes investigated and only worst case is reported.
- 2 Remark"---" means that the emission level is too low (20dB lower than the limit) to be measured
- 3 The emission levels of below 1 GHz are very lower (20dB lower than the limit) than the limit and not show in test report.

4.10 Frequency stability V.S. Temperature measurement

Test Requirement:	FCC Part2.1055(a)(1)(b)
Test Method:	ANSI C63.26:2015
Limit:	2.5ppm(Part 22) Within the authorized bands of operation(Part 24, Part 27)
Test setup:	 Note : Measurement setup for testing on Antenna connector
Test procedure:	1. The equipment under test was connected to an external DC power supply and input rated voltage. 2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. 3. The EUT was placed inside the temperature chamber. 4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. 5. Turn EUT off and set the chamber temperature to –20°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. 6. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.
Test Instruments:	Refer to section 3 for details
Test mode:	Refer to section 4.1 for details
Test results:	Pass
Remark:	If all frequencies stability are comply with the lower limit, then all results can be considered qualified

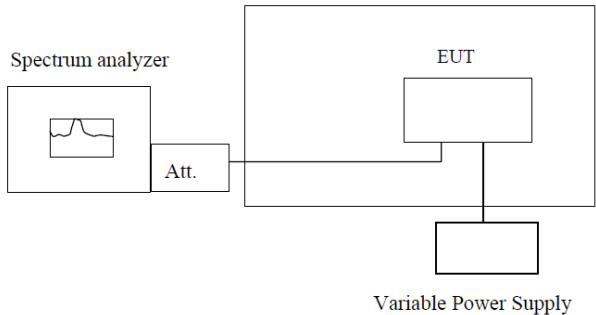
Measurement Data

Reference Frequency: LTE Band 2 Middle channel=18900 channel=1880MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
24	-20	13	0.0067	Within the authorized bands	Pass
	-10	-17	-0.0091		
	0	23	0.0120		
	10	-3	-0.0017		
	20	18	0.0094		
	30	17	0.0093		
	40	17	0.0091		
	50	13	0.0070		
	60	22	0.0115		
Reference Frequency: LTE Band 4 Middle channel=20175 channel=1732.5MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
24	-20	18	0.0102	2.5	Pass
	-10	-7	-0.0041		
	0	18	0.0103		
	10	3	0.0017		
	20	24	0.0137		
	30	13	0.0074		
	40	8	0.0049		
	50	1	0.0008		
	60	6	0.0033		
Reference Frequency: LTE Band 5 Middle channel=20175 channel=836.5MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
24	-20	12	0.0146	2.5	Pass
	-10	-8	-0.0101		
	0	25	0.0300		
	10	-11	-0.0137		
	20	16	0.0188		
	30	14	0.0163		
	40	19	0.0227		
	50	9	0.0112		
	60	20	0.0239		

Reference Frequency: LTE Band 7 Middle channel=21100 channel=2535MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
24	-20	24	0.0094	Within the authorized bands	Pass
	-10	-4	-0.0017		
	0	22	0.0085		
	10	-9	-0.0034		
	20	27	0.0106		
	30	13	0.0053		
	40	11	0.0044		
	50	15	0.0060		
	60	10	0.0039		
Reference Frequency: LTE Band 12 Middle channel=23095 channel=707.5MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
24	-20	25	0.0356	2.5	Pass
	-10	-8	-0.0109		
	0	14	0.0195		
	10	-6	-0.0080		
	20	21	0.0295		
	30	15	0.0216		
	40	18	0.0248		
	50	17	0.0236		
	60	15	0.0217		
Reference Frequency: LTE Band 13 Middle channel=23230 channel=782MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
24	-20	15	0.0198	Within the authorized bands	Pass
	-10	-15	-0.0195		
	0	17	0.0217		
	10	-8	-0.0097		
	20	20	0.0251		
	30	5	0.0070		
	40	17	0.0214		
	50	1	0.0016		
	60	14	0.0178		

Reference Frequency: LTE Band 41 Middle channel=40620 channel=2593MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
24	-20	18	0.0070	Within the authorized bands	Pass
	-10	-11	-0.0044		
	0	20	0.0078		
	10	-6	-0.0025		
	20	22	0.0086		
	30	19	0.0073		
	40	12	0.0045		
	50	11	0.0042		
	60	7	0.0027		

4.11 Frequency stability V.S. Voltage measurement

Test Requirement:	FCC Part2.1055(d)(1)(2)
Test Method:	ANSI C63.26:2015
Limit:	2.5ppm Band II & Band VII should be within authorized band.
Test setup:	Temperature Chamber  Variable Power Supply Note : Measurement setup for testing on Antenna connector
Test procedure:	1. Set chamber temperature to 20°C. Use a variable DC power source to power the EUT and set the voltage to rated voltage. 2. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency. 3. Reduce the input voltage to specified extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.
Test Instruments:	Refer to section 3 for details
Test mode:	Refer to section 4.1 for details
Test results:	Pass
Remark:	1. Manufacturer specified the battery operating end point voltage is 3.6VDC, max voltage is 4.2VDC. 2. If all frequencies stability are comply with the lower limit, then all results can be considered qualified

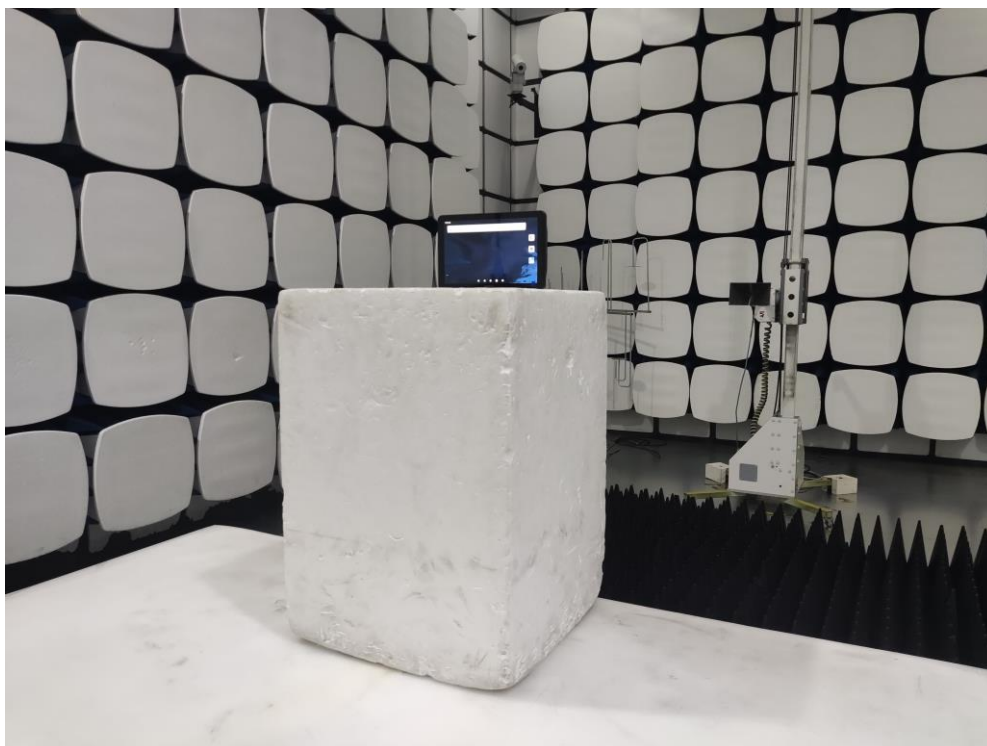
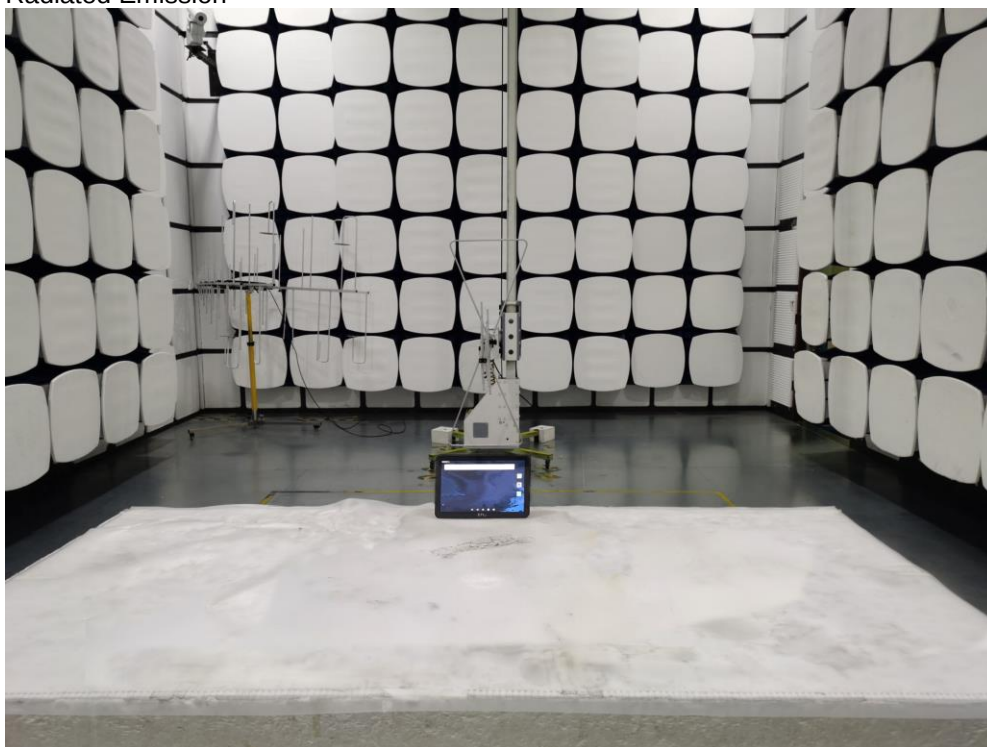
Measurement Data

Reference Frequency: LTE Band 2 Middle channel=18900 channel=1880MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	9	26	0.0138	within authorized band	Pass
	24	-18	-0.0097		
	36	19	0.0099		
Reference Frequency: LTE Band 4 Middle channel=20175 channel=1732.5MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	9	12	0.0067	2.5	Pass
	24	-14	-0.0082		
	36	18	0.0104		
Reference Frequency: LTE Band 5 Middle channel=20175 channel=836.5MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	9	24	0.0284	2.5	Pass
	24	-12	-0.0138		
	36	28	0.0339		
Reference Frequency: LTE Band 7 Middle channel=21100 channel=2535MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	9	24	0.0095	within authorized band	Pass
	24	-17	-0.0065		
	36	24	0.0093		

Reference Frequency: LTE Band 12 Middle channel=23095 channel=707.5MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	9	14	0.0203	2.5	Pass
	24	-6	-0.0092		
	36	22	0.0314		
Reference Frequency: LTE Band 13 Middle channel=23230 channel=782MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	9	21	0.0262	within authorized band	Pass
	24	-2	-0.0028		
	36	25	0.0324		
Reference Frequency: LTE Band 41 Middle channel=40620 channel=2593MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	9	24	0.0091	within authorized band	Pass
	24	-5	-0.0018		
	36	17	0.0064		

4.12 Test Setup Photo

Radiated Emission



-----END OF REPORT-----