

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 7 (15MHz) QPSK	Lowest	75	0	H	V	23.37	33.00	Pass
					H	21.26		
				E1	V	23.03		
					H	23.21		
				E2	V	24.32		
					H	21.07		
	Middle	75	0	H	V	23.24	33.00	Pass
					H	21.00		
				E1	V	21.86		
					H	21.06		
				E2	V	22.39		
					H	22.05		
	Highest	75	0	H	V	21.38	33.00	Pass
					H	23.98		
				E1	V	23.57		
					H	22.89		
				E2	V	23.36		
					H	22.60		

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 7 (20MHz) QPSK	Lowest	100	0	H	V	24.09	33.00	Pass
					H	21.74		
				E1	V	23.25		
					H	22.90		
				E2	V	24.61		
					H	20.49		
	Middle	100	0	H	V	23.08	33.00	Pass
					H	21.81		
				E1	V	21.85		
					H	21.21		
				E2	V	22.15		
					H	21.82		
	Highest	100	0	H	V	21.48	33.00	Pass
					H	23.27		
				E1	V	23.56		
					H	22.25		
				E2	V	23.23		
					H	21.80		

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 7 (5MHz) 16 QAM	Lowest	25	0	H	V	23.91	33.00	Pass
					H	21.60		
				E1	V	23.36		
					H	22.86		
				E2	V	24.36		
					H	20.24		
	Middle	25	0	H	V	23.81	33.00	Pass
					H	21.09		
				E1	V	21.63		
					H	21.05		
				E2	V	22.14		
					H	22.33		
	Highest	25	0	H	V	20.71	33.00	Pass
					H	24.09		
				E1	V	23.15		
					H	22.13		
				E2	V	23.24		
					H	22.29		

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 7 (10MHz) 16 QAM	Lowest	50	0	H	V	23.52	33.00	Pass
					H	21.43		
				E1	V	23.38		
					H	22.91		
				E2	V	23.96		
					H	20.66		
	Middle	50	0	H	V	23.21	33.00	Pass
					H	21.22		
				E1	V	21.33		
					H	20.82		
				E2	V	22.08		
					H	22.38		
	Highest	50	0	H	V	21.08	33.00	Pass
					H	23.50		
				E1	V	23.96		
					H	22.94		
				E2	V	23.75		
					H	22.07		

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 7 (15MHz) 16 QAM	Lowest	75	0	H	V	24.21	33.00	Pass
					H	21.37		
				E1	V	22.85		
					H	23.16		
				E2	V	24.77		
					H	20.61		
	Middle	75	0	H	V	23.86	33.00	Pass
					H	21.49		
				E1	V	21.50		
					H	20.72		
				E2	V	22.37		
					H	22.11		
	Highest	75	0	H	V	20.82	33.00	Pass
					H	23.24		
				E1	V	23.66		
					H	22.59		
				E2	V	23.84		
					H	22.13		

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 7 (20MHz) 16 QAM	Lowest	100	0	H	V	24.00	33.00	Pass
					H	21.58		
				E1	V	23.52		
					H	23.08		
				E2	V	24.72		
					H	20.26		
	Middle	100	0	H	V	23.32	33.00	Pass
					H	21.42		
				E1	V	21.38		
					H	21.44		
				E2	V	22.80		
					H	21.78		
	Highest	100	0	H	V	21.04	33.00	Pass
					H	23.78		
				E1	V	23.43		
					H	22.73		
				E2	V	23.07		
					H	22.31		

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 12 (1.4MHz) QPSK	Lowest	6	0	H	V	23.80	33.00	Pass
					H	21.41		
				E1	V	22.83		
					H	22.62		
				E2	V	23.99		
					H	20.86		
	Middle	6	0	H	V	23.85	33.00	Pass
					H	21.28		
				E1	V	21.79		
					H	21.52		
				E2	V	22.51		
					H	22.12		
	Highest	6	0	H	V	21.19	33.00	Pass
					H	23.52		
				E1	V	23.65		
					H	22.42		
				E2	V	23.76		
					H	22.26		

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 12 (3MHz) QPSK	Lowest	15	0	H	V	24.12	33.00	Pass
					H	21.64		
				E1	V	23.16		
					H	23.02		
				E2	V	24.73		
					H	20.28		
	Middle	15	0	H	V	23.45	33.00	Pass
					H	21.85		
				E1	V	21.85		
					H	21.55		
				E2	V	22.14		
					H	22.25		
	Highest	15	0	H	V	21.03	33.00	Pass
					H	23.65		
				E1	V	23.88		
					H	22.53		
				E2	V	23.89		
					H	22.55		



EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 12 (5MHz) QPSK	Lowest	25	0	H	V	23.88	33.00	Pass
					H	22.03		
				E1	V	23.22		
					H	22.76		
				E2	V	24.46		
					H	20.70		
	Middle	25	0	H	V	23.70	33.00	Pass
					H	21.54		
				E1	V	21.58		
					H	21.22		
				E2	V	22.55		
					H	22.12		
	Highest	25	0	H	V	21.21	33.00	Pass
					H	23.85		
				E1	V	23.05		
					H	22.13		
				E2	V	23.76		
					H	21.95		

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 12 (10MHz) QPSK	Lowest	50	0	H	V	23.92	33.00	Pass
					H	21.46		
				E1	V	23.79		
					H	23.32		
				E2	V	24.58		
					H	20.62		
	Middle	50	0	H	V	23.46	33.00	Pass
					H	20.98		
				E1	V	21.85		
					H	20.62		
				E2	V	22.78		
					H	22.09		
	Highest	50	0	H	V	21.18	33.00	Pass
					H	23.66		
				E1	V	23.42		
					H	22.70		
				E2	V	23.24		
					H	22.40		

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 12 (1.4MHz) 16QAM	Lowest	6	0	H	V	23.65	33.00	Pass
					H	21.78		
				E1	V	23.78		
					H	22.58		
				E2	V	24.62		
					H	20.77		
	Middle	6	0	H	V	23.23	33.00	Pass
					H	21.55		
				E1	V	21.57		
					H	20.88		
				E2	V	22.59		
					H	22.41		
	Highest	6	0	H	V	20.92	33.00	Pass
					H	23.75		
				E1	V	22.97		
					H	23.00		
				E2	V	23.49		
					H	21.85		

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 12 (3MHz) 16QAM	Lowest	15	0	H	V	23.98	33.00	Pass
					H	21.70		
				E1	V	23.67		
					H	22.63		
				E2	V	24.25		
					H	20.54		
	Middle	15	0	H	V	23.57	33.00	Pass
					H	21.81		
				E1	V	22.05		
					H	20.72		
				E2	V	21.98		
					H	22.38		
	Highest	15	0	H	V	21.08	33.00	Pass
					H	23.92		
				E1	V	23.47		
					H	22.54		
				E2	V	23.52		
					H	22.28		

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 12 (5MHz) 16QAM	Lowest	25	0	H	V	23.45	33.00	Pass
					H	21.76		
				E1	V	23.27		
					H	23.05		
				E2	V	24.69		
					H	20.83		
	Middle	25	0	H	V	23.24	33.00	Pass
					H	21.11		
				E1	V	21.56		
					H	20.77		
				E2	V	21.87		
					H	22.26		
	Highest	25	0	H	V	20.74	33.00	Pass
					H	23.72		
				E1	V	23.20		
					H	22.97		
				E2	V	23.78		
					H	22.59		

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 12 (10MHz) 16QAM	Lowest	50	0	H	V	23.71	33.00	Pass
					H	21.55		
				E1	V	22.90		
					H	23.01		
				E2	V	23.82		
					H	20.22		
	Middle	50	0	H	V	22.98	33.00	Pass
					H	21.17		
				E1	V	22.21		
					H	21.31		
				E2	V	22.52		
					H	22.56		
	Highest	50	0	H	V	20.91	33.00	Pass
					H	23.34		
				E1	V	23.19		
					H	22.60		
				E2	V	23.29		
					H	21.76		

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 41 (5MHz) QPSK	Lowest	25	0	H	V	24.35	33.00	Pass
					H	21.80		
				E1	V	23.75		
					H	23.31		
				E2	V	24.75		
					H	20.95		
	Middle	25	0	H	V	23.76	33.00	Pass
					H	21.33		
				E1	V	21.88		
					H	20.84		
				E2	V	22.75		
					H	22.54		
	Highest	25	0	H	V	21.28	33.00	Pass
					H	24.00		
				E1	V	23.14		
					H	23.09		
				E2	V	23.27		
					H	21.90		

EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 41 (10MHz) QPSK	Lowest	50	0	H	V	23.81	33.00	Pass
					H	21.95		
				E1	V	23.78		
					H	22.71		
				E2	V	24.56		
					H	20.34		
	Middle	50	0	H	V	23.48	33.00	Pass
					H	21.30		
				E1	V	22.16		
					H	20.76		
				E2	V	22.31		
					H	22.14		
	Highest	50	0	H	V	21.27	33.00	Pass
					H	23.89		
				E1	V	23.83		
					H	22.98		
				E2	V	23.73		
					H	21.98		



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	24.26	33.00	Pass
					H	21.84		
				E1	V	23.48		
					H	23.07		
				E2	V	24.66		
					H	20.68		
	Middle	75	0	H	V	22.99	33.00	Pass
					H	20.96		
				E1	V	22.28		
					H	20.75		
				E2	V	22.57		
					H	22.33		
	Highest	75	0	H	V	21.21	33.00	Pass
					H	23.49		
				E1	V	23.01		
					H	22.35		
				E2	V	23.88		
					H	22.31		

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	23.49	33.00	Pass
					H	21.70		
				E1	V	23.65		
					H	23.09		
				E2	V	24.54		
					H	20.19		
	Middle	100	0	H	V	23.56	33.00	Pass
					H	21.67		
				E1	V	21.44		
					H	21.19		
				E2	V	22.60		
					H	22.07		
	Highest	100	0	H	V	21.05	33.00	Pass
					H	23.94		
				E1	V	23.54		
					H	22.66		
				E2	V	23.78		
					H	22.19		

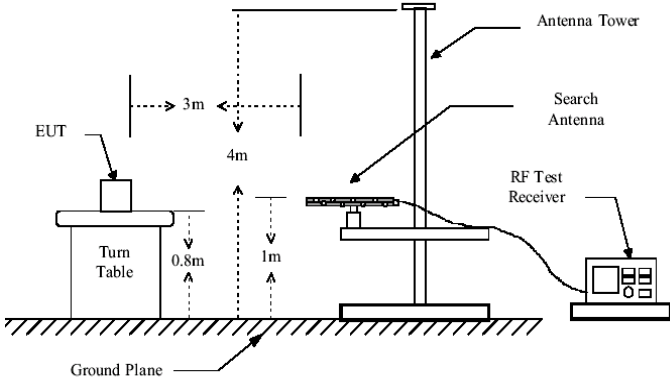
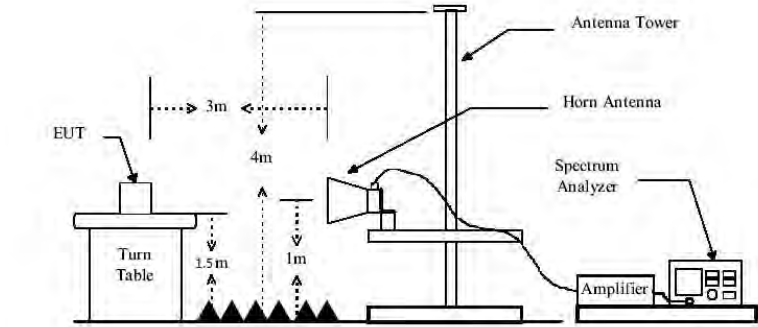
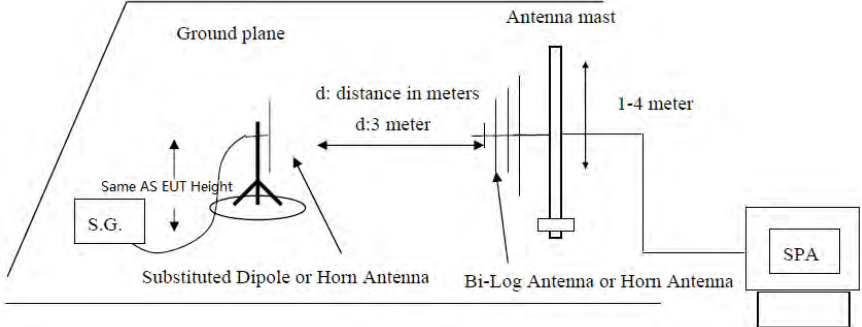
EUT mode	Channel	RB Size	RB Offset	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
LTE Band 41 (5MHz) 16 QAM	Lowest	25	0	H	V	23.85	33.00	Pass
					H	22.01		
				E1	V	23.13		
					H	22.86		
				E2	V	24.78		
					H	20.87		
	Middle	25	0	H	V	23.15	33.00	Pass
					H	21.33		
				E1	V	21.87		
					H	20.66		
				E2	V	22.60		
					H	22.30		
	Highest	25	0	H	V	21.17	33.00	Pass
					H	23.19		
				E1	V	23.47		
					H	22.76		
				E2	V	23.43		
					H	21.91		

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	23.66	33.00	Pass
					H	22.15		
				E1	V	23.26		
					H	22.44		
				E2	V	24.42		
					H	20.58		
	Middle	50	0	H	V	23.89	33.00	Pass
					H	21.74		
				E1	V	21.98		
					H	20.65		
				E2	V	22.25		
					H	22.10		
	Highest	50	0	H	V	21.58	33.00	Pass
					H	23.27		
				E1	V	23.06		
					H	23.05		
				E2	V	23.77		
					H	21.74		

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	23.42	33.00	Pass
					H	21.71		
				E1	V	23.73		
					H	22.50		
				E2	V	23.90		
					H	21.12		
	Middle	75	0	H	V	23.67	33.00	Pass
					H	21.36		
				E1	V	21.86		
					H	21.33		
				E2	V	22.16		
					H	22.68		
	Highest	75	0	H	V	21.59	33.00	Pass
					H	24.09		
				E1	V	23.02		
					H	22.77		
				E2	V	23.84		
					H	22.24		

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	23.36	33.00	Pass
					H	21.83		
				E1	V	23.30		
					H	22.56		
				E2	V	24.57		
					H	20.38		
	Middle	100	0	H	V	23.74	33.00	Pass
					H	21.06		
				E1	V	21.73		
					H	20.96		
				E2	V	21.94		
					H	22.19		
	Highest	100	0	H	V	20.80	33.00	Pass
					H	23.57		
				E1	V	23.58		
					H	22.82		
				E2	V	23.55		
					H	22.10		

### 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:-13dBm Band 7/41:-25dBm
Test setup:	<p>Below 1GHz</p>  <p>Above 1GHz</p>  <p>Substituted method:</p> 

Test Procedure:	<ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> <li>4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.  <math display="block">\text{ERP / EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain(dB/dBi)} - \text{Cable Loss (dB)}</math> </li> </ol>
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)			
3701.40	Vertical	-37.95	-13.00	Pass	
5552.10	V	-42.29			
7402.80	V	-43.54			
9253.50	V	-46.07			
11104.20	V	---			
3701.40	Horizontal	-44.11	-13.00	Pass	
5552.10	H	-48.39			
7402.80	H	-50.23			
9253.50	H	-53.69			
11104.20	H	---			
Test mode:		LTE Band 2(1.4MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result	
	Polarization	Level (dBm)			
3760.00	Vertical	-38.00	-13.00	Pass	
5640.00	V	-40.96			
7520.00	V	-44.31			
9400.00	V	-46.76			
11280.00	V	---			
3760.00	Horizontal	-44.83	-13.00	Pass	
5640.00	H	-48.29			
7520.00	H	-49.81			
9400.00	H	-53.59			
11280.00	H	---			
Test mode:		LTE Band 2(1.4MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result	
	Polarization	Level (dBm)			
3818.60	Vertical	-38.11	-13.00	Pass	
5727.90	V	-41.42			
7637.20	V	-44.20			
9546.50	V	-46.29			
11455.80	V	---			
3818.60	Horizontal	-44.34	-13.00	Pass	
5727.90	H	-48.62			
7637.20	H	-50.57			
9546.50	H	-53.11			
11455.80	H	---			

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)		
3421.40	Vertical	-38.11	-13.00	Pass
5132.10	V	-42.23		
6842.80	V	-44.20		
8553.50	V	-45.60		
10264.20	V	---		
3421.40	Horizontal	-44.34	-13.00	Pass
5132.10	H	-48.49		
6842.80	H	-50.67		
8553.50	H	-54.40		
10264.20	H	---		
Test mode:	LTE Band 4(1.4MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3465.00	Vertical	-38.10	-13.00	Pass
5197.50	V	-41.22		
6930.00	V	-43.94		
8662.50	V	-45.87		
10395.00	V	---		
3465.00	Horizontal	-44.65	-13.00	Pass
5197.50	H	-48.61		
6930.00	H	-50.58		
8662.50	H	-53.76		
10395.00	H	---		
Test mode:	LTE Band 4(1.4MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3508.60	Vertical	-38.08	-13.00	Pass
5262.90	V	-41.70		
7017.20	V	-44.09		
8771.50	V	-46.70		
10525.80	V	---		
3508.60	Horizontal	-44.25	-13.00	Pass
5262.90	H	-48.86		
7017.20	H	-50.02		
8771.50	H	-53.28		
10525.80	H	---		

## 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)		
1649.40	Vertical	-38.70	-13.00	Pass
2474.10	V	-42.28		
3298.80	V	-43.81		
4123.50	V	-46.47		
4948.20	V	---		
1649.40	Horizontal	-44.07	-13.00	Pass
2474.10	H	-48.76		
3298.80	H	-50.96		
4123.50	H	-53.54		
4948.20	H	---		
Test mode:	LTE Band 5(1.4MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1673.00	Vertical	-38.47	-13.00	Pass
2509.50	V	-41.22		
3346.00	V	-43.83		
4182.50	V	-46.44		
5019.00	V	---		
1673.00	Horizontal	-44.96	-13.00	Pass
2509.50	H	-48.64		
3346.00	H	-49.85		
4182.50	H	-53.52		
5019.00	H	---		
Test mode:	LTE Band 5(1.4MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1696.60	Vertical	-38.74	-13.00	Pass
2544.90	V	-40.94		
3393.20	V	-44.56		
4241.50	V	-46.44		
5089.80	V	---		
1696.60	Horizontal	-44.34	-13.00	Pass
2544.90	H	-48.41		
3393.20	H	-50.79		
4241.50	H	-53.31		
5089.80	H	---		

Remark :

4. The emission behaviour belongs to narrowband spurious emission, all modes investigated and only worst case is reported.
5. Remark"---" means that the emission level is too low (20dB lower than the limit) to be measured
4. 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)		
5005.00	Vertical	-38.32	-25.00	Pass
7507.50	V	-42.02		
10010.00	V	-44.48		
12512.50	V	-45.79		
15015.00	V	---		
5005.00	Horizontal	-43.70	-25.00	Pass
7507.50	H	-48.84		
10010.00	H	-50.49		
12512.50	H	-54.32		
15015.00	H	---		
Test mode:	LTE Band 7(5MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
5070.00	Vertical	-38.46	-25.00	Pass
7605.00	V	-41.27		
10140.00	V	-43.88		
12675.00	V	-45.91		
15210.00	V	---		
5070.00	Horizontal	-44.94	-25.00	Pass
7605.00	H	-48.79		
10140.00	H	-50.34		
12675.00	H	-54.13		
15210.00	H	---		
Test mode:	LTE Band 7(5MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
5135.00	Vertical	-37.88	-25.00	Pass
7702.50	V	-41.19		
10270.00	V	-44.53		
12837.50	V	-46.69		
15405.00	V	---		
5135.00	Horizontal	-44.21	-25.00	Pass
7702.50	H	-48.23		
10270.00	H	-50.26		
12837.50	H	-52.94		
15405.00	H	---		

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)			
5005.00	Vertical	-38.48	-25.00	Pass	
7507.50	V	-41.53			
10010.00	V	-44.10			
12512.50	V	-46.27			
15015.00	V	---			
5005.00	Horizontal	-44.20	-25.00	Pass	
7507.50	H	-48.93			
10010.00	H	-50.39			
12512.50	H	-54.14			
15015.00	H	---			
Test mode:		LTE Band 12(1.4MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result	
	Polarization	Level (dBm)			
5070.00	Vertical	-38.06	-25.00	Pass	
7605.00	V	-41.58			
10140.00	V	-43.50			
12675.00	V	-46.57			
15210.00	V	---			
5070.00	Horizontal	-44.85	-25.00	Pass	
7605.00	H	-48.80			
10140.00	H	-49.79			
12675.00	H	-53.82			
15210.00	H	---			
Test mode:		LTE Band 12(1.4MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result	
	Polarization	Level (dBm)			
5135.00	Vertical	-38.75	-25.00	Pass	
7702.50	V	-41.62			
10270.00	V	-44.18			
12837.50	V	-45.95			
15405.00	V	---			
5135.00	Horizontal	-45.04	-25.00	Pass	
7702.50	H	-48.62			
10270.00	H	-50.75			
12837.50	H	-53.28			
15405.00	H	---			

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)			
5005.00	Vertical	-35.91	-25.00	Pass	
7507.50	V	-38.73			
10010.00	V	-39.02			
12512.50	V	-39.00			
15015.00	V	---			
5005.00	Horizontal	-41.13	-25.00	Pass	
7507.50	H	-42.80			
10010.00	H	-44.91			
12512.50	H	-46.38			
15015.00	H	---			
Test mode:		LTE Band 41(5MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result	
	Polarization	Level (dBm)			
5070.00	Vertical	-35.54	-25.00	Pass	
7605.00	V	-38.77			
10140.00	V	-38.06			
12675.00	V	-39.34			
15210.00	V	---			
5070.00	Horizontal	-40.40	-25.00	Pass	
7605.00	H	-42.70			
10140.00	H	-44.90			
12675.00	H	-45.60			
15210.00	H	---			
Test mode:		LTE Band 41(5MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result	
	Polarization	Level (dBm)			
5135.00	Vertical	-35.76	-25.00	Pass	
7702.50	V	-39.21			
10270.00	V	-38.63			
12837.50	V	-39.25			
15405.00	V	---			
5135.00	Horizontal	-40.85	-25.00	Pass	
7702.50	H	-42.38			
10270.00	H	-44.59			
12837.50	H	-45.93			
15405.00	H	---			

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:**

<b>Test mode:</b>		<b>LTE Band 2 (1.4MHz)</b>		<b>Test channel:</b>	<b>Lowest</b>
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result	
	Polarization	Level (dBm)			
3701.40	Vertical	-32.72	-13.00	Pass	
5552.10	V	-38.52			
7402.80	V	-37.37			
9253.50	V	-39.65			
11104.20	V	---			
3701.40	Horizontal	-39.96	-13.00	Pass	
5552.10	H	-44.00			
7402.80	H	-43.72			
9253.50	H	-48.46			
11104.20	H	---			
<b>Test mode:</b>		<b>LTE Band 2 (1.4MHz)</b>		<b>Test channel:</b>	<b>Middle</b>
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result	
	Polarization	Level (dBm)			
3760.00	Vertical	-32.49	-13.00	Pass	
5640.00	V	-38.64			
7520.00	V	-36.76			
9400.00	V	-40.34			
11280.00	V	---			
3760.00	Horizontal	-40.33	-13.00	Pass	
5640.00	H	-44.20			
7520.00	H	-44.57			
9400.00	H	-49.00			
11280.00	H	---			
<b>Test mode:</b>		<b>LTE Band 2 (1.4MHz)</b>		<b>Test channel:</b>	<b>Highest</b>
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result	
	Polarization	Level (dBm)			
3818.60	Vertical	-35.12	-13.00	Pass	
5727.90	V	-38.98			
7637.20	V	-38.89			
9546.50	V	-38.82			
11455.80	V	---			
3818.60	Horizontal	-41.04	-13.00	Pass	
5727.90	H	-42.08			
7637.20	H	-44.69			
9546.50	H	-45.99			
11455.80	H	---			

## 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)		
3421.40	Vertical	-32.44	-13.00	Pass
5132.10	V	-38.25		
6842.80	V	-37.05		
8553.50	V	-40.50		
10264.20	V	---		
3421.40	Horizontal	-40.34	-13.00	Pass
5132.10	H	-44.03		
6842.80	H	-43.77		
8553.50	H	-48.77		
10264.20	H	---		
Test mode:	LTE Band 4(1.4MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3465.00	Vertical	-32.93	-13.00	Pass
5197.50	V	-38.30		
6930.00	V	-36.65		
8662.50	V	-39.87		
10395.00	V	---		
3465.00	Horizontal	-39.95	-13.00	Pass
5197.50	H	-44.10		
6930.00	H	-44.58		
8662.50	H	-48.42		
10395.00	H	---		
Test mode:	LTE Band 4(1.4MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3508.60	Vertical	-35.88	-13.00	Pass
5262.90	V	-39.23		
7017.20	V	-38.24		
8771.50	V	-39.45		
10525.80	V	---		
3508.60	Horizontal	-41.11	-13.00	Pass
5262.90	H	-42.10		
7017.20	H	-44.40		
8771.50	H	-45.60		
10525.80	H	---		

## 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)		
1649.40	Vertical	-32.26	-13.00	Pass
2474.10	V	-38.76		
3298.80	V	-37.29		
4123.50	V	-40.61		
4948.20	V	---		
1649.40	Horizontal	-39.61	-13.00	Pass
2474.10	H	-44.32		
3298.80	H	-44.47		
4123.50	H	-48.85		
4948.20	H	---		
Test mode:	LTE Band 5(1.4MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1673.00	Vertical	-32.60	-13.00	Pass
2509.50	V	-38.63		
3346.00	V	-37.15		
4182.50	V	-40.45		
5019.00	V	---		
1673.00	Horizontal	-40.46	-13.00	Pass
2509.50	H	-44.50		
3346.00	H	-44.51		
4182.50	H	-48.75		
5019.00	H	---		
Test mode:	LTE Band 5(1.4MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1696.60	Vertical	-36.11	-13.00	Pass
2544.90	V	-39.11		
3393.20	V	-39.05		
4241.50	V	-39.36		
5089.80	V	---		
1696.60	Horizontal	-40.93	-13.00	Pass
2544.90	H	-42.66		
3393.20	H	-45.08		
4241.50	H	-46.14		
5089.80	H	---		

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)		
5005.00	Vertical	-32.70	-25.00	Pass
7507.50	V	-38.72		
10010.00	V	-37.38		
12512.50	V	-40.19		
15015.00	V	---		
5005.00	Horizontal	-40.03	-25.00	Pass
7507.50	H	-44.17		
10010.00	H	-44.58		
12512.50	H	-48.99		
15015.00	H	---		
Test mode:	LTE Band 7(5MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
5070.00	Vertical	-32.42	-25.00	Pass
7605.00	V	-38.12		
10140.00	V	-36.66		
12675.00	V	-39.61		
15210.00	V	---		
5070.00	Horizontal	-40.17	-25.00	Pass
7605.00	H	-44.39		
10140.00	H	-44.06		
12675.00	H	-48.58		
15210.00	H	---		
Test mode:	LTE Band 7(5MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
5135.00	Vertical	-35.51	-25.00	Pass
7702.50	V	-39.04		
10270.00	V	-38.28		
12837.50	V	-38.81		
15405.00	V	---		
5135.00	Horizontal	-40.62	-25.00	Pass
7702.50	H	-41.94		
10270.00	H	-44.46		
12837.50	H	-35.51		
15405.00	H	---		

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)		
3701.40	Vertical	-32.67	-13.00	Pass
5552.10	V	-38.19		
7402.80	V	-36.51		
9253.50	V	-40.40		
11104.20	V	---		
3701.40	Horizontal	-39.83	-13.00	Pass
5552.10	H	-44.13		
7402.80	H	-44.06		
9253.50	H	-48.23		
11104.20	H	---		
Test mode:	LTE Band 12 (1.4MHz)		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3760.00	Vertical	-33.18	-13.00	Pass
5640.00	V	-38.79		
7520.00	V	-36.84		
9400.00	V	-39.81		
11280.00	V	---		
3760.00	Horizontal	-39.67	-13.00	Pass
5640.00	H	-44.04		
7520.00	H	-44.21		
9400.00	H	-48.72		
11280.00	H	---		
Test mode:	LTE Band 12 (1.4MHz)		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3818.60	Vertical	-35.96	-13.00	Pass
5727.90	V	-38.49		
7637.20	V	-38.22		
9546.50	V	-38.88		
11455.80	V	---		
3818.60	Horizontal	-40.20	-13.00	Pass
5727.90	H	-42.05		
7637.20	H	-44.73		
9546.50	H	-48.93		
11455.80	H	---		

## Remark :

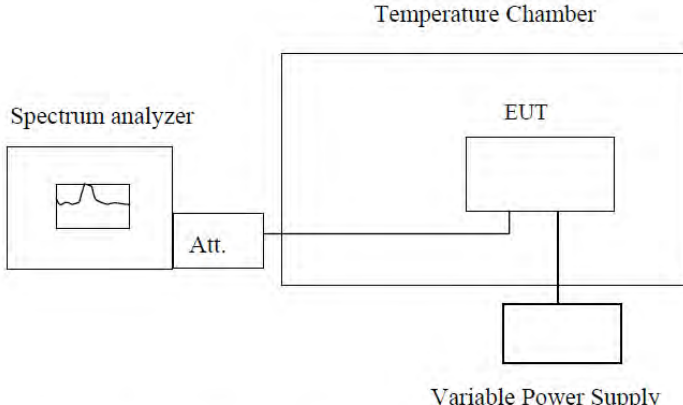
- 1 The emission behaviour belongs to narrowband spurious emission, all modes investigated and only worst case is reported.
- 2 Remark"---" means that the emission level is too low (20dB lower than the limit) to be measured
- 3 The emission levels of below 1 GHz are very lower (20dB lower than the limit)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

<b>Test mode:</b>	<b>LTE Band 41 (5MHz)</b>		<b>Test channel:</b>	<b>Lowest</b>
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3701.40	Vertical	-32.66	-13.00	Pass
5552.10	V	-37.98		
7402.80	V	-36.70		
9253.50	V	-39.89		
11104.20	V	---		
3701.40	Horizontal	-39.70	-13.00	Pass
5552.10	H	-44.39		
7402.80	H	-44.61		
9253.50	H	-48.18		
11104.20	H	---		
<b>Test mode:</b>	<b>LTE Band 41 (5MHz)</b>		<b>Test channel:</b>	<b>Middle</b>
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3760.00	Vertical	-32.98	-13.00	Pass
5640.00	V	-38.19		
7520.00	V	-36.68		
9400.00	V	-40.27		
11280.00	V	---		
3760.00	Horizontal	-40.03	-13.00	Pass
5640.00	H	-44.44		
7520.00	H	-43.97		
9400.00	H	-48.22		
11280.00	H	---		
<b>Test mode:</b>	<b>LTE Band 41 (5MHz)</b>		<b>Test channel:</b>	<b>Highest</b>
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3818.60	Vertical	-35.86	-13.00	Pass
5727.90	V	-38.68		
7637.20	V	-38.23		
9546.50	V	-39.18		
11455.80	V	---		
3818.60	Horizontal	-40.45	-13.00	Pass
5727.90	H	-42.28		
7637.20	H	-44.89		
9546.50	H	-46.49		
11455.80	H	---		

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

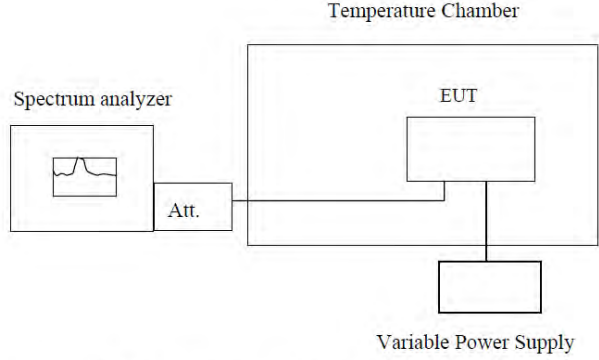
Test Requirement:	FCC Part 2.1055(a)(1)(b), FCC Part 27.54
Test Method:	ANSI C63.26:2015
Limit:	2.5ppm(Part 22) Within the authorized bands of operation(Part 24, Part 27)
Test setup:	 <p style="text-align: center;"><b>Note :</b> Measurement setup for testing on Antenna connector</p>
Test procedure:	<ol style="list-style-type: none"> <li>1. The equipment under test was connected to an external DC power supply and input rated voltage.</li> <li>2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.</li> <li>3. The EUT was placed inside the temperature chamber.</li> <li>4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency.</li> <li>5. Turn EUT off and set the chamber temperature to -20°C . After the temperature stabilized for approximately 30 minutes recorded the frequency.</li> <li>6. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.</li> </ol>
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		
7.2	-20	55	0.0293	Within the authorized bands	Pass
	-10	23	0.0122		
	0	65	0.0347		
	10	31	0.0167		
	20	31	0.0165		
	30	20	0.0105		
	40	31	0.0164		
	50	33	0.0177		
	55	32	0.0171		
Reference Frequency: LTE Band 4 Middle channel=20175 channel=1732.5MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
7.2	-20	56	0.0323	2.5	Pass
	-10	23	0.0133		
	0	65	0.0377		
	10	35	0.0201		
	20	29	0.0168		
	30	23	0.0132		
	40	31	0.0181		
	50	32	0.0185		
	55	32	0.0182		
Reference Frequency: LTE Band 5 Middle channel=20175 channel=836.5MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
7.2	-20	54	0.0646	2.5	Pass
	-10	23	0.0275		
	0	66	0.0786		
	10	34	0.0412		
	20	29	0.0342		
	30	24	0.0285		
	40	30	0.0362		
	50	32	0.0386		
	55	31	0.0367		

Reference Frequency: LTE Band 7 Middle channel=21100 channel=2535MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
7.2	-20	59	0.0232	Within the authorized bands	Pass
	-10	23	0.0091		
	0	71	0.0280		
	10	34	0.0135		
	20	32	0.0127		
	30	22	0.0087		
	40	32	0.0125		
	50	32	0.0126		
	55	34	0.0134		
Reference Frequency: LTE Band 12 Middle channel=20175 channel=1732.5MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
7.2	-20	54	0.0314	2.5	Pass
	-10	23	0.0133		
	0	68	0.0392		
	10	31	0.0180		
	20	31	0.0181		
	30	21	0.0121		
	40	34	0.0195		
	50	33	0.0193		
	55	32	0.0184		
Reference Frequency: LTE Band 41 Middle channel=21100 channel=2535MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
7.2	-20	55	0.0217	Within the authorized bands	Pass
	-10	23	0.0091		
	0	68	0.0270		
	10	32	0.0125		
	20	29	0.0112		
	30	22	0.0086		
	40	33	0.0129		
	50	33	0.0132		
	55	35	0.0138		

#### 4.11 Frequency stability V.S. Voltage measurement

Test Requirement:	FCC Part2.1055(d)(1)(2), FCC Part 27.54
Test Method:	ANSI C63.26:2015
Limit:	2.5ppm Band II & Band VII should be within authorized band.
Test setup:	 <p style="text-align: center;">Temperature Chamber</p> <p style="text-align: center;">Spectrum analyzer      Att.      EUT</p> <p style="text-align: center;">Variable Power Supply</p> <p><b>Note :</b> Measurement setup for testing on Antenna connector</p>
Test procedure:	<ol style="list-style-type: none"> <li>1. Set chamber temperature to 20°C . Use a variable DC power source to power the EUT and set the voltage to rated voltage.</li> <li>2. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.</li> <li>3. Reduce the input voltage to specified extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.</li> </ol>
Test Instruments:	Refer to section 3 for details
Test mode:	Refer to section 4.1 for details
Test results:	Pass
Remark:	<ol style="list-style-type: none"> <li>1. Manufacturer specified the battery operating end point voltage is 3.32VDC, max voltage is 4.37VDC.</li> <li>2. If all frequencies stability are comply with the lower limit, then all results can be considered qualified</li> </ol>



## 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	6.12	57	0.0303	within authorized band	Pass
	7.20	23	0.0122		
	8.28	66	0.0350		
Reference Frequency: LTE Band 4 Middle channel=20175 channel=1732.5MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	6.12	31	0.0179	2.5	Pass
	7.20	33	0.0188		
	8.28	25	0.0142		
Reference Frequency: LTE Band 5 Middle channel=20175 channel=836.5MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	6.12	24	0.0285	2.5	Pass
	7.20	31	0.0374		
	8.28	29	0.0352		
Reference Frequency: LTE Band 7 Middle channel=21100 channel=2535MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	6.12	33	0.0129	within authorized band	Pass
	7.20	22	0.0085		
	8.28	17	0.0069		

<b>Reference Frequency: LTE Band 12 Middle channel=18900 channel=1880MHz</b>					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	6.12	32	0.0172	within authorized band	Pass
	7.20	21	0.0110		
	8.28	31	0.0168		
<b>Reference Frequency: LTE Band 41 Middle channel=20175 channel=1732.5MHz</b>					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	6.12	16	0.0094	2.5	Pass
	7.20	23	0.0133		
	8.28	19	0.0111		

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