





























## Frequency Stability

Test Conditions		LTE Band 2 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0026	PASS
40	Normal Voltage	0.0009	
30	Normal Voltage	0.0004	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0031	
0	Normal Voltage	0.0027	
-10	Normal Voltage	0.0029	
-20	Normal Voltage	0.0017	
-30	Normal Voltage	0.0018	
20	Maximum Voltage	0.0012	
20	Normal Voltage	0.0002	
20	Battery End Point	0.0000	

**Note:**

1. Normal Voltage =3.85 V. ; Battery End Point (BEP) =3.65 V. ; Maximum Voltage =4.4 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



Test Conditions		LTE Band 4 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0032	PASS
40	Normal Voltage	0.0027	
30	Normal Voltage	0.0014	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0029	
0	Normal Voltage	0.0025	
-10	Normal Voltage	0.0006	
-20	Normal Voltage	0.0021	
-30	Normal Voltage	0.0009	
20	Maximum Voltage	0.0010	
20	Normal Voltage	0.0027	
20	Battery End Point	0.0005	

**Note:**

1. Normal Voltage =3.85 V. ; Battery End Point (BEP) =3.65 V. ; Maximum Voltage =4.4 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



Test Conditions		LTE Band 5 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	2.5ppm
		Deviation (ppm)	Result
50	Normal Voltage	0.0035	PASS
40	Normal Voltage	0.0056	
30	Normal Voltage	0.0010	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0030	
0	Normal Voltage	0.0025	
-10	Normal Voltage	0.0022	
-20	Normal Voltage	0.0041	
-30	Normal Voltage	0.0008	
20	Maximum Voltage	0.0017	
20	Normal Voltage	0.0056	
20	Battery End Point	0.0004	

**Note:** Normal Voltage =3.85 V. ; Battery End Point (BEP) =3.65 V. ; Maximum Voltage =4.4 V.



Test Conditions		LTE Band 7 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0007	PASS
40	Normal Voltage	0.0002	
30	Normal Voltage	0.0013	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0004	
0	Normal Voltage	0.0015	
-10	Normal Voltage	0.0021	
-20	Normal Voltage	0.0001	
-30	Normal Voltage	0.0024	
20	Maximum Voltage	0.0007	
20	Normal Voltage	0.0003	
20	Battery End Point	0.0017	

**Note:**

1. Normal Voltage =3.85 V. ; Battery End Point (BEP) =3.65 V. ; Maximum Voltage =4.4 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



Test Conditions		LTE Band 38 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0018	PASS
40	Normal Voltage	0.0015	
30	Normal Voltage	0.0001	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0011	
0	Normal Voltage	0.0014	
-10	Normal Voltage	0.0005	
-20	Normal Voltage	0.0017	
-30	Normal Voltage	0.0011	
20	Maximum Voltage	0.0018	
20	Normal Voltage	0.0009	
20	Battery End Point	0.0006	

**Note:**

1. Normal Voltage =3.85 V. ; Battery End Point (BEP) =3.65 V. ; Maximum Voltage =4.4 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



## Appendix B. Test Results of Radiated Test

### Radiated Spurious Emission

LTE Band 2 / 20MHz / QPSK for Bottom Antenna								
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3742	-63.49	-13	-50.49	-68.66	1.83	7.00	H
	5613	-59.63	-13	-46.63	-67.25	2.18	9.80	H
	7485	-53.48	-13	-40.48	-63.15	2.53	12.20	H
	3741	-63.39	-13	-50.39	-68.56	1.83	7.00	V
	5613	-60.02	-13	-47.02	-67.64	2.18	9.80	V
	7485	-54.11	-13	-41.11	-63.78	2.53	12.20	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 2 / 20MHz / QPSK for Top Antenna								
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3741	-58.99	-13	-45.99	-64.16	1.83	7.00	H
	5613	-57.81	-13	-44.81	-65.43	2.18	9.80	H
	7485	-53.27	-13	-40.27	-62.94	2.53	12.20	H
	3741	-58.58	-13	-45.58	-63.75	1.83	7.00	V
	5613	-59.00	-13	-46.00	-66.62	2.18	9.80	V
	7485	-54.31	-13	-41.31	-63.98	2.53	12.20	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 4 / 20MHz / QPSK for Bottom Antenna								
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3447	-61.29	-13	-48.29	-66.43	1.81	6.95	H
	5172	-59.96	-13	-46.96	-67.03	2.23	9.30	H
	6894	-56.25	-13	-43.25	-64.53	2.60	10.88	H
	3447	-63.55	-13	-50.55	-68.69	1.81	6.95	V
	5172	-60.60	-13	-47.60	-67.67	2.23	9.30	V
	6894	-57.14	-13	-44.14	-65.42	2.6	10.88	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



LTE Band 4 / 20MHz / QPSK for Top Antenna								
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3447	-61.28	-13	-48.28	-66.42	1.81	6.95	H
	5172	-58.82	-13	-45.82	-65.89	2.23	9.30	H
	6894	-56.02	-13	-43.02	-64.30	2.60	10.88	H
	3447	-63.78	-13	-50.78	-68.92	1.81	6.95	V
	5172	-58.29	-13	-45.29	-65.36	2.23	9.30	V
	6894	-56.51	-13	-43.51	-64.79	2.6	10.88	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 5 / 10MHz / QPSK for Bottom Antenna								
Channel	Frequency ( MHz )	ERP ( dBm )	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1664	-66.91	-13	-53.91	-68.82	1.14	5.20	H
	2496	-56.55	-13	-43.55	-59.18	1.12	5.90	H
	3327	-45.43	-13	-32.43	-48.64	1.34	6.70	H
	4161	-51.98	-13	-38.98	-55.44	1.59	7.20	H
	1664	-67.11	-13	-54.11	-69.02	1.14	5.20	V
	2496	-64.40	-13	-51.40	-67.03	1.12	5.90	V
	3327	-44.48	-13	-31.48	-47.69	1.34	6.70	V
	4161	-52.17	-13	-39.17	-55.63	1.59	7.20	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 5 / 10MHz / QPSK for Top Antenna								
Channel	Frequency ( MHz )	ERP ( dBm )	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1664	-67.57	-13	-54.57	-69.48	1.14	5.20	H
	2496	-63.00	-13	-50.00	-65.63	1.12	5.90	H
	3327	-45.43	-13	-32.43	-48.64	1.34	6.70	H
	4161	-54.04	-13	-41.04	-57.50	1.59	7.20	H
	1664	-66.07	-13	-53.07	-67.98	1.14	5.20	V
	2496	-63.90	-13	-50.90	-66.53	1.12	5.90	V
	3327	-48.76	-13	-35.76	-51.97	1.34	6.70	V
	4161	-53.77	-13	-40.77	-57.23	1.59	7.20	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



LTE Band 7 / 20MHz / QPSK for Bottom Antenna								
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5052	-66.57	-25	-41.57	-73.29	2.40	9.12	H
	7578	-61.51	-25	-36.51	-71.14	2.87	12.50	H
	10107	-57.32	-25	-32.32	-66.24	3.18	12.10	H
	5052	-66.40	-25	-41.40	-73.12	2.40	9.12	V
	7578	-61.17	-25	-36.17	-70.80	2.87	12.50	V
	10107	-58.72	-25	-33.72	-67.64	3.18	12.10	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 7 / 20MHz / QPSK for Top Antenna								
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5052	-62.22	-25	-37.22	-68.94	2.40	9.12	H
	7580	-61.05	-25	-36.05	-70.68	2.87	12.50	H
	10107	-51.04	-25	-26.04	-59.96	3.18	12.10	H
	5052	-60.81	-25	-35.81	-67.53	2.40	9.12	V
	7580	-61.49	-25	-36.49	-71.12	2.87	12.50	V
	10107	-53.58	-25	-28.58	-62.50	3.18	12.10	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 38 / 20MHz / QPSK for Bottom Antenna								
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5172	-66.19	-25	-41.19	-73.02	2.46	9.29	H
	7760	-61.17	-25	-36.17	-70.36	3.01	12.20	H
	10341	-57.66	-25	-32.66	-66.39	3.52	12.25	H
	5172	-65.77	-25	-40.77	-72.60	2.46	9.29	V
	7758	-60.89	-25	-35.89	-70.08	3.01	12.20	V
	10341	-56.43	-25	-31.43	-65.16	3.52	12.25	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



LTE Band 38 / 20MHz / QPSK for TopAntenna								
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5172	-61.65	-25	-36.65	-68.48	2.46	9.29	H
	7760	-60.37	-25	-35.37	-69.56	3.01	12.20	H
	10341	-43.83	-25	-18.83	-52.56	3.52	12.25	H
	5172	-57.97	-25	-32.97	-64.80	2.46	9.29	V
	7760	-61.14	-25	-36.14	-70.33	3.01	12.20	V
	10341	-45.12	-25	-20.12	-53.85	3.52	12.25	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

### For CA

LTE Band 7 CA / 20M+20M / QPSK for Bottom Antenna								
Channel	Frequency ( mz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5001	-63.66	-25	-38.66	-71.02	1.76	9.12	H
	7503	-61.59	-25	-36.59	-71.56	2.16	12.13	H
	10008	-60.68	-25	-35.68	-70.56	2.22	12.10	H
	5001	-63.62	-25	-38.62	-70.98	1.76	9.12	V
	7503	-61.66	-25	-36.66	-71.63	2.16	12.13	V
	10008	-60.76	-25	-35.76	-70.64	2.22	12.10	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 7 CA / 20M+20M / QPSK for Top Antenna								
Channel	Frequency ( mz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5001	-63.88	-25	-38.88	-71.24	1.76	9.12	H
	7503	-61.60	-25	-36.60	-71.57	2.16	12.13	H
	10008	-60.98	-25	-35.98	-70.86	2.22	12.10	H
	5001	-63.73	-25	-38.73	-71.09	1.76	9.12	V
	7503	-61.68	-25	-36.68	-71.65	2.16	12.13	V
	10008	-60.57	-25	-35.57	-70.45	2.22	12.10	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



LTE Band 38 CA / 20M+20M / QPSK for Bottom Antenna								
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5142	-61.22	-25	-36.22	-68.20	2.40	9.38	H
	7713	-50.86	-25	-25.86	-60.41	2.97	12.51	H
	10287	-60.51	-25	-35.51	-69.12	3.49	12.10	H
	5142	-62.74	-25	-37.74	-69.72	2.40	9.38	V
	7713	-49.51	-25	-24.51	-59.06	2.97	12.51	V
	10287	-58.61	-25	-33.61	-67.22	3.49	12.10	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 38 CA / 20M+20M / QPSK for Top Antenna								
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5142	-63.46	-25	-38.46	-70.44	2.40	9.38	H
	7713	-43.27	-25	-18.27	-52.82	2.97	12.51	H
	10287	-60.15	-25	-35.15	-68.76	3.49	12.10	H
	5142	-63.11	-25	-38.11	-70.09	2.40	9.38	V
	7713	-46.39	-25	-21.39	-55.94	2.97	12.51	V
	10287	-58.25	-25	-33.25	-66.86	3.49	12.10	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.