

5.5 Frequency Stability

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -30°C to +50°C in 10°C step size.

(1) With all power removed, the temperature was decreased to -10°C and permitted to stabilize for three hours.

(2) Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.

(3) Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

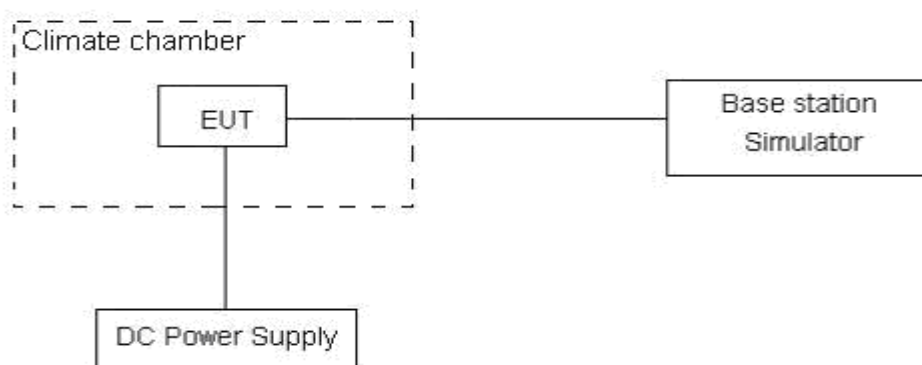
Frequency Stability (Voltage Variation)

The frequency stability shall be measured with variation of primary supply voltage as follows:

Primary Supply Voltage: The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

This transceiver is specified to operate with an input voltage of between 3.27V and 4.43V, with a nominal voltage of 3.85V.

Test setup



Limits

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 3, U = 0.01\text{ppm}$.



Test Result

WCDMA Band IV						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
Temperature	Voltage	QPSK	BPSK	QPSK	BPSK	
Normal (25℃)	Normal	11.72	15.13	0.00623	0.00805	PASS
Extreme (50℃)		17.02	11.67	0.00905	0.00621	PASS
Extreme (40℃)		9.04	12.13	0.00481	0.00645	PASS
Extreme (30℃)		11.75	14.53	0.00625	0.00773	PASS
Extreme (20℃)		3.42	17.60	0.00182	0.00936	PASS
Extreme (10℃)		3.60	2.45	0.00192	0.00130	PASS
Extreme (0℃)		16.94	2.89	0.00901	0.00154	PASS
Extreme (-10℃)		6.45	1.12	0.00343	0.00060	PASS
Extreme (-20℃)		6.97	3.94	0.00371	0.00209	PASS
Extreme (-30℃)		10.21	13.55	0.00543	0.00721	PASS
25℃	LV	3.50	13.14	0.00186	0.00699	PASS
	HV	13.68	2.63	0.00728	0.00140	PASS

LTE Band 4						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	1.4MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	3.07	12.52	0.00163	0.00666	PASS
Extreme (50℃)		13.22	9.77	0.00703	0.00520	PASS
Extreme (40℃)		4.35	13.24	0.00232	0.00704	PASS
Extreme (30℃)		17.63	15.17	0.00938	0.00807	PASS
Extreme (20℃)		7.76	13.51	0.00413	0.00718	PASS
Extreme (10℃)		5.81	14.83	0.00309	0.00789	PASS
Extreme (0℃)		11.15	9.96	0.00593	0.00530	PASS
Extreme (-10℃)		5.71	13.18	0.00304	0.00701	PASS
Extreme (-20℃)		17.76	15.70	0.00945	0.00835	PASS
Extreme (-30℃)		14.86	16.89	0.00790	0.00898	PASS
25℃	LV	1.54	5.03	0.00082	0.00268	PASS
	HV	4.49	12.27	0.00239	0.00653	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	3MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	



Normal (25℃)	Normal	3.78	1.54	0.00201	0.00082	PASS
Extreme (50℃)		17.09	4.44	0.00909	0.00236	PASS
Extreme (40℃)		17.18	1.58	0.00914	0.00084	PASS
Extreme (30℃)		17.92	17.65	0.00953	0.00939	PASS
Extreme (20℃)		10.16	14.73	0.00540	0.00784	PASS
Extreme (10℃)		17.74	9.30	0.00944	0.00495	PASS
Extreme (0℃)		16.32	2.95	0.00868	0.00157	PASS
Extreme (-10℃)		9.52	9.70	0.00506	0.00516	PASS
Extreme (-20℃)		10.47	16.39	0.00557	0.00872	PASS
Extreme (-30℃)		2.12	3.91	0.00113	0.00208	PASS
25℃	LV	9.41	2.26	0.00501	0.00120	PASS
	HV	14.70	3.29	0.00782	0.00175	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	11.80	1.18	0.00627	0.00063	PASS
Extreme (50℃)		3.01	1.82	0.00160	0.00097	PASS
Extreme (40℃)		10.86	13.42	0.00577	0.00714	PASS
Extreme (30℃)		9.19	12.48	0.00489	0.00664	PASS
Extreme (20℃)		8.49	16.59	0.00452	0.00882	PASS
Extreme (10℃)		10.76	9.90	0.00573	0.00527	PASS
Extreme (0℃)		17.88	12.66	0.00951	0.00673	PASS
Extreme (-10℃)		12.87	7.01	0.00685	0.00373	PASS
Extreme (-20℃)		2.07	17.02	0.00110	0.00905	PASS
Extreme (-30℃)		3.62	4.20	0.00192	0.00223	PASS
25℃	LV	8.99	3.75	0.00478	0.00199	PASS
	HV	13.41	15.83	0.00713	0.00842	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	14.93	13.30	0.00794	0.00707	PASS
Extreme (50℃)		17.65	11.01	0.00939	0.00586	PASS
Extreme (40℃)		2.97	11.36	0.00158	0.00604	PASS
Extreme (30℃)		16.32	1.34	0.00868	0.00071	PASS
Extreme (20℃)		1.37	9.60	0.00073	0.00511	PASS
Extreme (10℃)		13.42	17.60	0.00714	0.00936	PASS
Extreme (0℃)		12.87	6.45	0.00684	0.00343	PASS
Extreme (-10℃)		15.15	5.32	0.00806	0.00283	PASS
Extreme (-20℃)		9.88	15.16	0.00525	0.00806	PASS



Extreme (-30℃)		4.00	12.72	0.00213	0.00676	PASS
25℃	LV	5.94	3.61	0.00316	0.00192	PASS
	HV	3.62	15.92	0.00193	0.00847	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	10.45	4.99	0.00556	0.00265	PASS
Extreme (50℃)		16.81	1.81	0.00894	0.00096	PASS
Extreme (40℃)		8.19	17.81	0.00436	0.00948	PASS
Extreme (30℃)		16.23	8.58	0.00864	0.00456	PASS
Extreme (20℃)		12.64	4.33	0.00672	0.00230	PASS
Extreme (10℃)		14.87	11.55	0.00791	0.00614	PASS
Extreme (0℃)		8.84	13.35	0.00470	0.00710	PASS
Extreme (-10℃)		8.73	14.41	0.00464	0.00766	PASS
Extreme (-20℃)		1.13	9.98	0.00060	0.00531	PASS
Extreme (-30℃)		10.14	4.83	0.00539	0.00257	PASS
25℃	LV	17.58	5.49	0.00935	0.00292	PASS
	HV	13.08	6.31	0.00696	0.00336	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	8.30	9.94	0.00441	0.00529	PASS
Extreme (50℃)		2.37	7.17	0.00126	0.00381	PASS
Extreme (40℃)		17.40	16.89	0.00926	0.00898	PASS
Extreme (30℃)		12.49	10.90	0.00664	0.00580	PASS
Extreme (20℃)		3.72	16.42	0.00198	0.00873	PASS
Extreme (10℃)		12.92	6.65	0.00687	0.00354	PASS
Extreme (0℃)		2.75	13.41	0.00146	0.00713	PASS
Extreme (-10℃)		16.13	17.78	0.00858	0.00946	PASS
Extreme (-20℃)		11.37	10.62	0.00605	0.00565	PASS
Extreme (-30℃)		1.32	13.32	0.00070	0.00709	PASS
25℃	LV	8.58	14.60	0.00456	0.00776	PASS
	HV	2.25	7.23	0.00120	0.00385	PASS

LTE Band 7						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	16.09	2.23	0.00856	0.00119	PASS
Extreme (50℃)		10.34	12.14	0.00550	0.00646	PASS
Extreme (40℃)		6.70	16.55	0.00357	0.00880	PASS
Extreme (30℃)		11.07	1.61	0.00589	0.00086	PASS
Extreme (20℃)		2.43	10.43	0.00129	0.00555	PASS
Extreme (10℃)		4.62	10.86	0.00246	0.00578	PASS
Extreme (0℃)		15.84	14.27	0.00843	0.00759	PASS
Extreme (-10℃)		15.57	8.38	0.00828	0.00446	PASS
Extreme (-20℃)		5.77	8.17	0.00307	0.00435	PASS
Extreme (-30℃)		3.28	16.60	0.00174	0.00883	PASS
25℃	LV	12.99	15.15	0.00691	0.00806	PASS
	HV	15.95	12.95	0.00849	0.00689	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	1.97	13.27	0.00105	0.00706	PASS
Extreme (50℃)		3.45	16.44	0.00184	0.00874	PASS
Extreme (40℃)		16.17	10.92	0.00860	0.00581	PASS
Extreme (30℃)		3.86	3.16	0.00205	0.00168	PASS
Extreme (20℃)		16.35	12.48	0.00869	0.00664	PASS
Extreme (10℃)		15.44	7.38	0.00821	0.00393	PASS
Extreme (0℃)		12.66	16.59	0.00673	0.00882	PASS
Extreme (-10℃)		5.00	12.51	0.00266	0.00666	PASS
Extreme (-20℃)		15.05	6.93	0.00801	0.00369	PASS
Extreme (-30℃)		17.05	17.41	0.00907	0.00926	PASS
25℃	LV	5.29	7.81	0.00281	0.00416	PASS
	HV	4.55	2.10	0.00242	0.00112	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	12.95	14.06	0.00689	0.00748	PASS
Extreme (50℃)		10.64	3.51	0.00566	0.00187	PASS
Extreme (40℃)		16.14	4.91	0.00858	0.00261	PASS



Extreme (30℃)		17.25	2.97	0.00917	0.00158	PASS
Extreme (20℃)		11.13	3.97	0.00592	0.00211	PASS
Extreme (10℃)		10.13	16.17	0.00539	0.00860	PASS
Extreme (0℃)		17.21	13.92	0.00916	0.00740	PASS
Extreme (-10℃)		15.53	12.63	0.00826	0.00672	PASS
Extreme (-20℃)		16.19	2.47	0.00861	0.00132	PASS
Extreme (-30℃)		12.42	13.96	0.00661	0.00743	PASS
25℃	LV	6.40	12.87	0.00341	0.00684	PASS
	HV	4.59	8.99	0.00244	0.00478	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	8.26	13.07	0.00439	0.00695	PASS
Extreme (50℃)		13.75	2.55	0.00732	0.00136	PASS
Extreme (40℃)		10.33	7.22	0.00549	0.00384	PASS
Extreme (30℃)		5.87	1.75	0.00312	0.00093	PASS
Extreme (20℃)		2.21	10.63	0.00118	0.00565	PASS
Extreme (10℃)		14.51	4.78	0.00772	0.00254	PASS
Extreme (0℃)		5.55	4.53	0.00295	0.00241	PASS
Extreme (-10℃)		15.64	10.37	0.00832	0.00552	PASS
Extreme (-20℃)		2.39	11.45	0.00127	0.00609	PASS
Extreme (-30℃)		6.45	12.68	0.00343	0.00674	PASS
25℃	LV	14.92	3.13	0.00793	0.00167	PASS
	HV	12.38	14.34	0.00659	0.00763	PASS

LTE Band 38						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	13.34	7.42	0.00710	0.00394	PASS
Extreme (50℃)		3.70	17.73	0.00197	0.00943	PASS
Extreme (40℃)		4.51	15.16	0.00240	0.00806	PASS
Extreme (30℃)		5.81	15.15	0.00309	0.00806	PASS
Extreme (20℃)		13.94	11.31	0.00742	0.00601	PASS
Extreme (10℃)		14.60	2.41	0.00777	0.00128	PASS
Extreme (0℃)		15.33	10.26	0.00815	0.00545	PASS
Extreme (-10℃)		9.20	13.36	0.00490	0.00711	PASS
Extreme (-20℃)		1.67	10.88	0.00089	0.00579	PASS
Extreme (-30℃)		14.58	17.19	0.00776	0.00914	PASS



25℃	LV	9.76	3.60	0.00519	0.00191	PASS
	HV	12.85	13.33	0.00683	0.00709	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	8.40	3.73	0.00447	0.00198	
Extreme (50℃)		12.80	4.94	0.00681	0.00263	PASS
Extreme (40℃)		8.23	15.43	0.00438	0.00821	PASS
Extreme (30℃)		2.08	2.26	0.00110	0.00120	PASS
Extreme (20℃)		7.45	4.94	0.00396	0.00263	PASS
Extreme (10℃)		8.24	7.57	0.00438	0.00403	PASS
Extreme (0℃)		6.42	3.22	0.00341	0.00171	PASS
Extreme (-10℃)		15.54	13.06	0.00827	0.00695	PASS
Extreme (-20℃)		4.36	10.07	0.00232	0.00535	PASS
Extreme (-30℃)		9.91	13.55	0.00527	0.00721	PASS
25℃	LV	16.96	4.01	0.00902	0.00213	PASS
	HV	4.59	6.41	0.00244	0.00341	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	6.77	13.21	0.00360	0.00703	
Extreme (50℃)		11.90	12.49	0.00633	0.00664	PASS
Extreme (40℃)		13.23	6.54	0.00704	0.00348	PASS
Extreme (30℃)		13.38	16.41	0.00712	0.00873	PASS
Extreme (20℃)		9.67	13.62	0.00515	0.00724	PASS
Extreme (10℃)		14.87	13.11	0.00791	0.00697	PASS
Extreme (0℃)		4.63	17.38	0.00246	0.00925	PASS
Extreme (-10℃)		5.94	7.12	0.00316	0.00379	PASS
Extreme (-20℃)		15.55	16.77	0.00827	0.00892	PASS
Extreme (-30℃)		2.17	7.27	0.00116	0.00387	PASS
25℃	LV	15.01	13.56	0.00798	0.00721	PASS
	HV	4.97	2.99	0.00265	0.00159	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	17.36	9.55	0.00923	0.00508	
Extreme (50℃)		15.46	1.08	0.00822	0.00057	PASS
Extreme (40℃)		4.79	6.89	0.00255	0.00366	PASS



Extreme (30℃)		15.09	14.53	0.00803	0.00773	PASS
Extreme (20℃)		13.81	3.89	0.00735	0.00207	PASS
Extreme (10℃)		11.43	7.38	0.00608	0.00393	PASS
Extreme (0℃)		11.19	13.59	0.00595	0.00723	PASS
Extreme (-10℃)		5.92	12.40	0.00315	0.00660	PASS
Extreme (-20℃)		12.86	17.27	0.00684	0.00919	PASS
Extreme (-30℃)		5.70	12.35	0.00303	0.00657	PASS
25℃	LV	17.21	1.95	0.00915	0.00104	PASS
	HV	15.20	8.66	0.00809	0.00461	PASS

LTE Band 41						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	17.03	4.49	0.00906	0.00239	PASS
Extreme (50℃)		4.10	13.71	0.00218	0.00729	PASS
Extreme (40℃)		10.16	2.42	0.00540	0.00129	PASS
Extreme (30℃)		11.87	8.18	0.00632	0.00435	PASS
Extreme (20℃)		1.77	11.48	0.00094	0.00611	PASS
Extreme (10℃)		12.33	3.43	0.00656	0.00182	PASS
Extreme (0℃)		15.39	7.07	0.00819	0.00376	PASS
Extreme (-10℃)		12.20	1.40	0.00649	0.00074	PASS
Extreme (-20℃)		13.95	5.93	0.00742	0.00315	PASS
Extreme (-30℃)		8.48	17.62	0.00451	0.00937	PASS
25℃	LV	13.33	3.65	0.00709	0.00194	PASS
	HV	15.37	3.74	0.00817	0.00199	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	12.78	4.21	0.00680	0.00224	PASS
Extreme (50℃)		11.66	13.71	0.00620	0.00729	PASS
Extreme (40℃)		10.67	8.12	0.00568	0.00432	PASS
Extreme (30℃)		1.63	2.72	0.00087	0.00144	PASS
Extreme (20℃)		16.49	5.06	0.00877	0.00269	PASS
Extreme (10℃)		1.64	14.67	0.00087	0.00780	PASS
Extreme (0℃)		8.37	10.53	0.00445	0.00560	PASS
Extreme (-10℃)		14.77	10.75	0.00786	0.00572	PASS
Extreme (-20℃)		12.08	1.98	0.00642	0.00106	PASS
Extreme (-30℃)		16.28	15.12	0.00866	0.00804	PASS



25℃	LV	8.27	6.34	0.00440	0.00337	PASS
	HV	3.56	10.50	0.00189	0.00559	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	4.45	9.23	0.00237	0.00491	PASS
Extreme (50℃)		4.25	16.54	0.00226	0.00880	PASS
Extreme (40℃)		15.20	4.18	0.00809	0.00223	PASS
Extreme (30℃)		16.78	11.80	0.00893	0.00628	PASS
Extreme (20℃)		17.14	9.73	0.00912	0.00517	PASS
Extreme (10℃)		7.59	7.07	0.00404	0.00376	PASS
Extreme (0℃)		16.74	9.87	0.00891	0.00525	PASS
Extreme (-10℃)		9.81	1.05	0.00522	0.00056	PASS
Extreme (-20℃)		14.06	3.18	0.00748	0.00169	PASS
Extreme (-30℃)		13.36	13.40	0.00711	0.00713	PASS
25℃	LV	9.87	1.09	0.00525	0.00058	PASS
	HV	13.78	7.04	0.00733	0.00374	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	14.67	12.07	0.00780	0.00642	PASS
Extreme (50℃)		2.22	16.01	0.00118	0.00852	PASS
Extreme (40℃)		4.59	11.88	0.00244	0.00632	PASS
Extreme (30℃)		11.15	9.21	0.00593	0.00490	PASS
Extreme (20℃)		8.74	7.76	0.00465	0.00413	PASS
Extreme (10℃)		6.97	3.72	0.00371	0.00198	PASS
Extreme (0℃)		8.29	6.99	0.00441	0.00372	PASS
Extreme (-10℃)		17.97	3.94	0.00956	0.00210	PASS
Extreme (-20℃)		12.15	4.43	0.00647	0.00236	PASS
Extreme (-30℃)		12.35	5.59	0.00657	0.00297	PASS
25℃	LV	4.89	3.23	0.00260	0.00172	PASS
	HV	5.12	9.14	0.00272	0.00486	PASS

LTE Band 66						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	1.4MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	3.24	9.13	0.00172	0.00486	PASS
Extreme (50℃)		6.67	4.04	0.00355	0.00215	PASS
Extreme (40℃)		1.59	16.04	0.00085	0.00853	PASS
Extreme (30℃)		13.39	6.48	0.00712	0.00345	PASS
Extreme (20℃)		4.60	16.22	0.00244	0.00863	PASS
Extreme (10℃)		9.98	4.42	0.00531	0.00235	PASS
Extreme (0℃)		17.64	15.51	0.00938	0.00825	PASS
Extreme (-10℃)		17.03	6.48	0.00906	0.00345	PASS
Extreme (-20℃)		13.46	4.05	0.00716	0.00215	PASS
Extreme (-30℃)		16.76	9.79	0.00891	0.00521	PASS
25℃	LV	17.01	10.54	0.00905	0.00560	PASS
	HV	4.44	8.87	0.00236	0.00472	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	3MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	4.57	16.81	0.00243	0.00894	PASS
Extreme (50℃)		9.74	8.24	0.00518	0.00438	PASS
Extreme (40℃)		8.48	5.76	0.00451	0.00306	PASS
Extreme (30℃)		10.86	16.65	0.00578	0.00886	PASS
Extreme (20℃)		3.50	4.20	0.00186	0.00223	PASS
Extreme (10℃)		10.97	17.55	0.00584	0.00934	PASS
Extreme (0℃)		1.72	5.87	0.00091	0.00312	PASS
Extreme (-10℃)		10.73	6.17	0.00571	0.00328	PASS
Extreme (-20℃)		16.11	17.02	0.00857	0.00905	PASS
Extreme (-30℃)		11.32	10.55	0.00602	0.00561	PASS
25℃	LV	7.39	9.43	0.00393	0.00502	PASS
	HV	17.94	17.38	0.00954	0.00924	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	12.65	3.32	0.00673	0.00177	PASS
Extreme (50℃)		14.58	9.42	0.00775	0.00501	PASS
Extreme (40℃)		11.67	4.51	0.00621	0.00240	PASS



Extreme (30℃)		8.53	7.51	0.00454	0.00400	PASS
Extreme (20℃)		2.55	12.84	0.00136	0.00683	PASS
Extreme (10℃)		9.28	8.36	0.00494	0.00445	PASS
Extreme (0℃)		4.88	9.94	0.00260	0.00529	PASS
Extreme (-10℃)		17.67	17.56	0.00940	0.00934	PASS
Extreme (-20℃)		7.24	9.25	0.00385	0.00492	PASS
Extreme (-30℃)		8.30	10.87	0.00442	0.00578	PASS
25℃	LV	12.09	17.83	0.00643	0.00948	PASS
	HV	10.77	6.35	0.00573	0.00338	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	4.39	1.32	0.00234	0.00070	PASS
Extreme (50℃)		11.65	16.08	0.00620	0.00855	PASS
Extreme (40℃)		2.75	13.61	0.00147	0.00724	PASS
Extreme (30℃)		1.87	9.18	0.00099	0.00488	PASS
Extreme (20℃)		8.37	15.77	0.00445	0.00839	PASS
Extreme (10℃)		4.54	4.64	0.00242	0.00247	PASS
Extreme (0℃)		14.05	15.14	0.00747	0.00805	PASS
Extreme (-10℃)		17.20	12.86	0.00915	0.00684	PASS
Extreme (-20℃)		14.86	9.45	0.00790	0.00503	PASS
Extreme (-30℃)		8.47	2.28	0.00450	0.00121	PASS
25℃	LV	12.06	6.37	0.00641	0.00339	PASS
	HV	16.81	17.79	0.00894	0.00946	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	13.20	10.49	0.00702	0.00558	PASS
Extreme (50℃)		17.37	11.80	0.00924	0.00627	PASS
Extreme (40℃)		14.89	15.93	0.00792	0.00847	PASS
Extreme (30℃)		1.60	12.00	0.00085	0.00638	PASS
Extreme (20℃)		17.54	17.56	0.00933	0.00934	PASS
Extreme (10℃)		2.09	12.93	0.00111	0.00688	PASS
Extreme (0℃)		13.61	8.56	0.00724	0.00455	PASS
Extreme (-10℃)		7.90	6.08	0.00420	0.00324	PASS
Extreme (-20℃)		5.31	16.35	0.00283	0.00870	PASS
Extreme (-30℃)		7.86	6.17	0.00418	0.00328	PASS
25℃	LV	5.23	14.43	0.00278	0.00767	PASS
	HV	11.81	7.10	0.00628	0.00377	PASS



Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	9.81	10.30	0.00522	0.00548	
Extreme (50℃)		1.70	7.50	0.00090	0.00399	PASS
Extreme (40℃)		6.02	2.90	0.00320	0.00154	PASS
Extreme (30℃)		6.96	6.00	0.00370	0.00319	PASS
Extreme (20℃)		14.45	3.71	0.00768	0.00198	PASS
Extreme (10℃)		11.99	5.31	0.00638	0.00282	PASS
Extreme (0℃)		15.75	17.15	0.00838	0.00912	PASS
Extreme (-10℃)		10.65	14.51	0.00567	0.00772	PASS
Extreme (-20℃)		14.46	11.59	0.00769	0.00616	PASS
Extreme (-30℃)		1.76	5.97	0.00094	0.00318	PASS
25℃	LV	5.91	2.56	0.00314	0.00136	PASS
	HV	7.26	2.82	0.00386	0.00150	PASS

5.6 Spurious Emissions at Antenna Terminals

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 9kHz to the 10th harmonic of the carrier. The peak detector is used.

RBW is set to 1 kHz (0.009MHz~ 0.15 MHz),

RBW is set to 10 kHz (0.15 MHz~ 30 MHz),

RBW is set to 100 kHz (30MHz~1000 MHz),

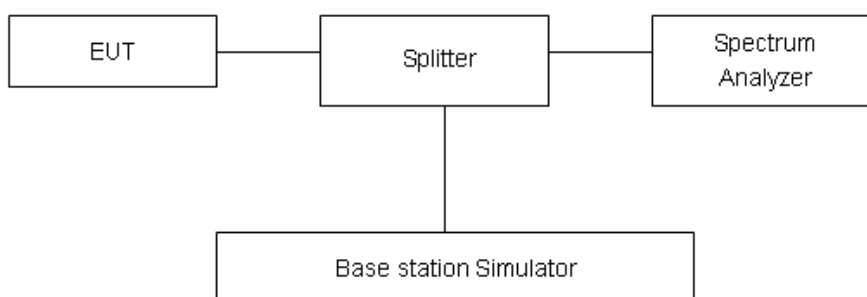
RBW is set to 1000 kHz (above 1000MHz),

Sweep is set to ATUO.

Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.

The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup



Limits

Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.”

Rule Part 27.53(m) $55 + 10 \log(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section.



Part 27.53 (h) Limit	-13 dBm
Part 27.53 (m) Limit	-25 dBm

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
9kHz-1GHz	0.684 dB
1GHz-27GHz	1.407 dB

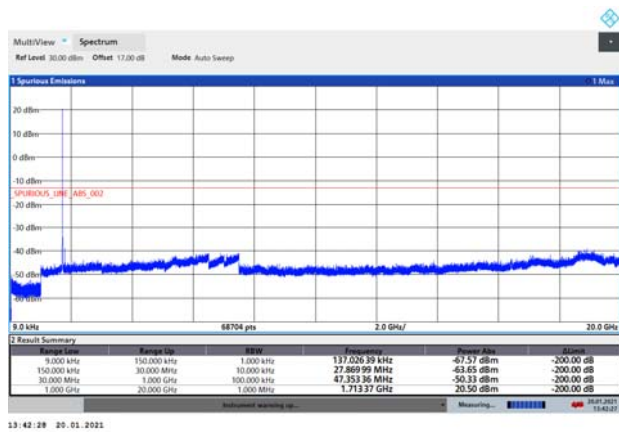


Test Result

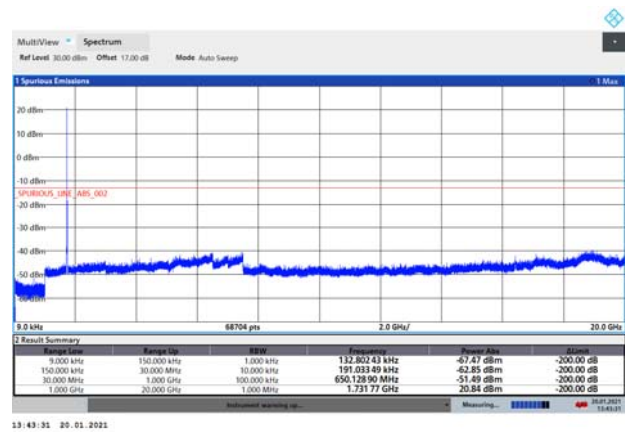
Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions more than 20 dB below the limit are not reported.

The signal beyond the limit is carrier.

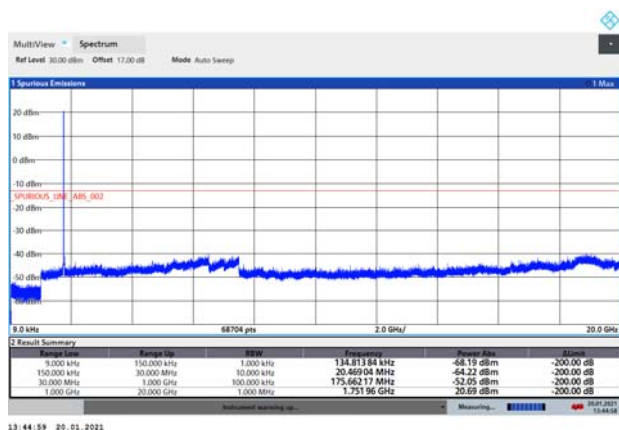
WCDMA Band IV CH-Low 9kHz~20GHz



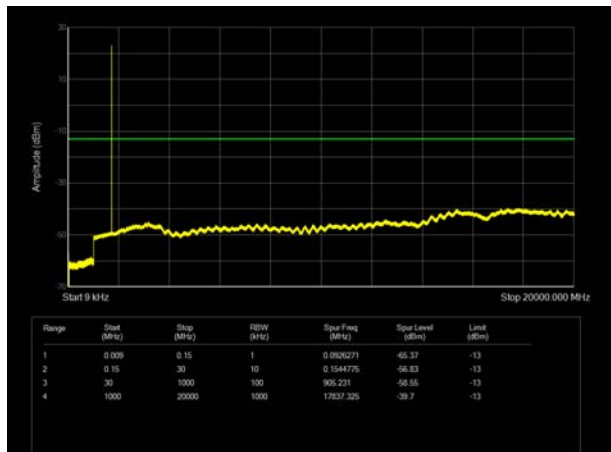
WCDMA Band IV CH- Middle 9kHz~20GHz



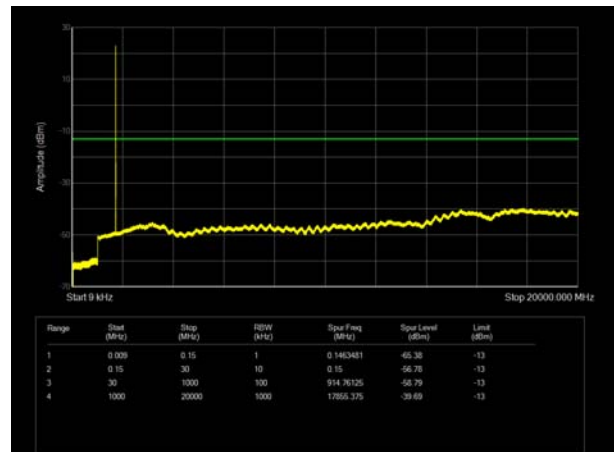
WCDMA Band IV CH- High 9kHz~20GHz



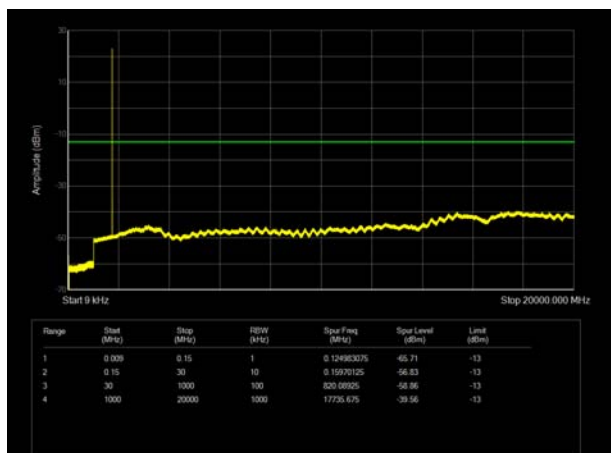
LTE Band 4 1.4MHz CH-Low 9kHz~20GHz



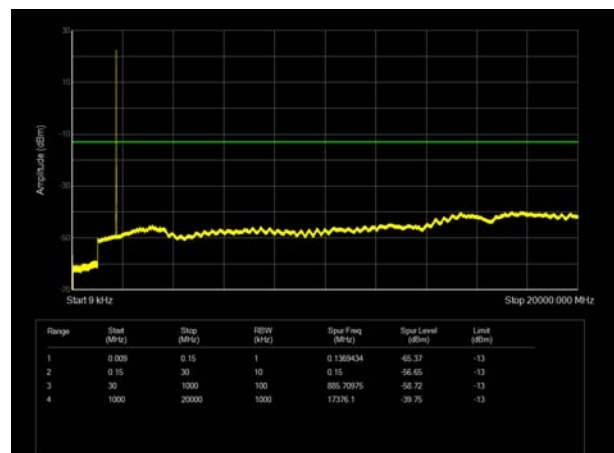
LTE Band 4 3MHz CH- Low 9kHz~20GHz



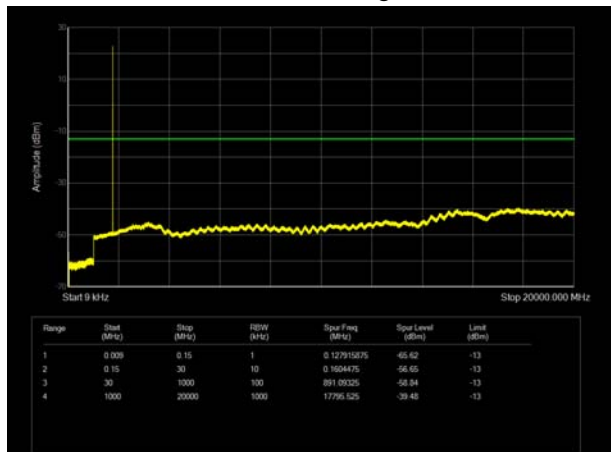
LTE Band 4 1.4MHz CH- Middle 9kHz~20GHz



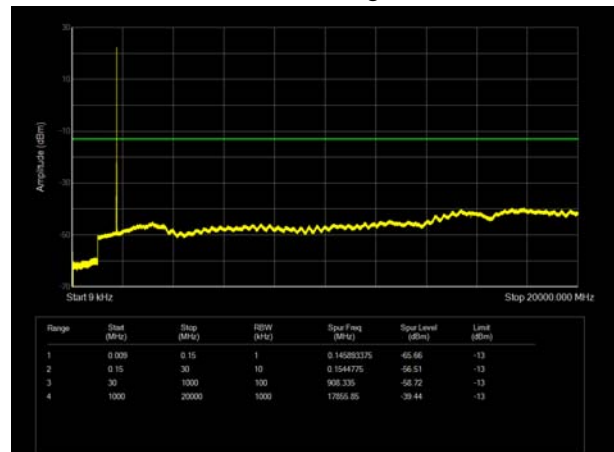
LTE Band 4 3MHz CH- Middle 9kHz~20GHz



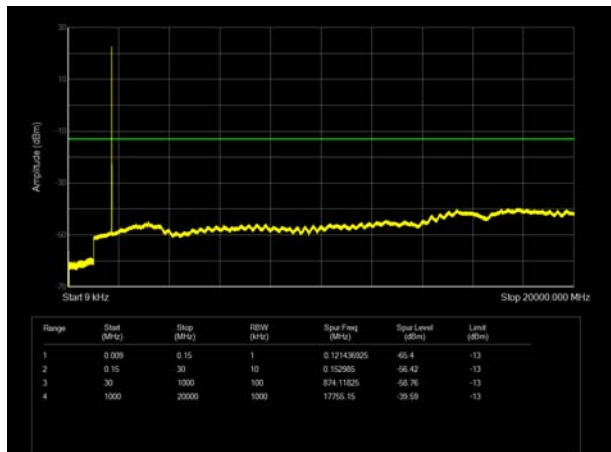
LTE Band 4 1.4MHz CH- High 9kHz~20GHz



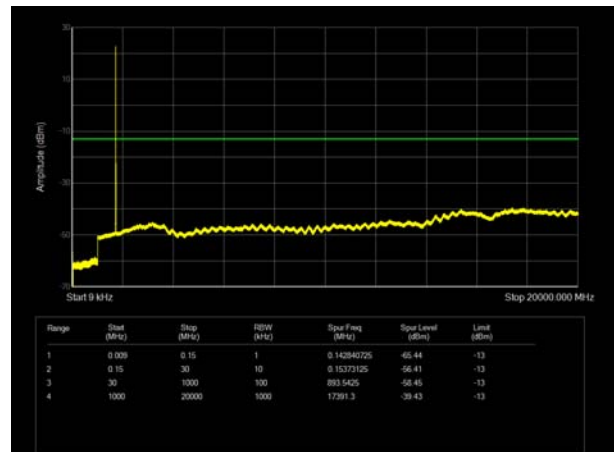
LTE Band 4 3MHz CH-High 9kHz~20GHz



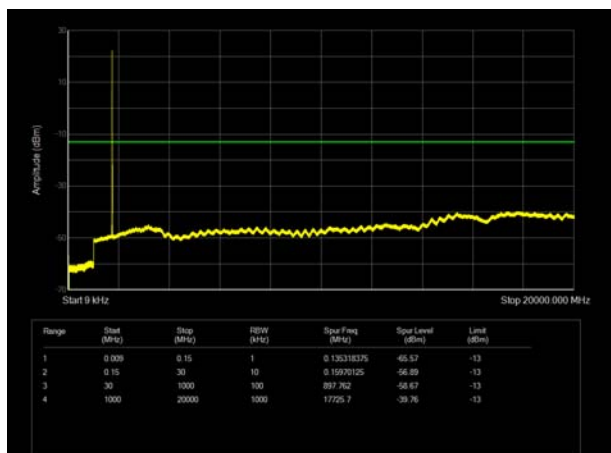
LTE Band 4 5MHz CH- Low 9kHz~20GHz



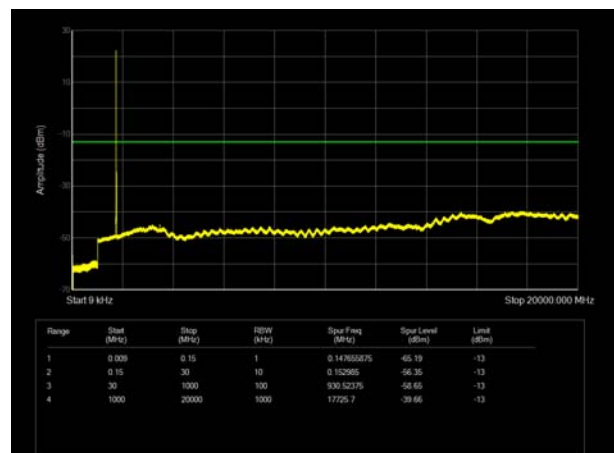
LTE Band 4 10MHz CH-Low 9kHz~20GHz



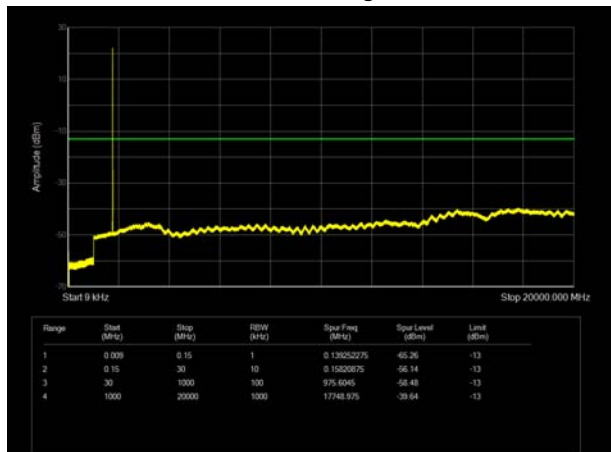
LTE Band 4 5MHz CH- Middle 9kHz~20GHz



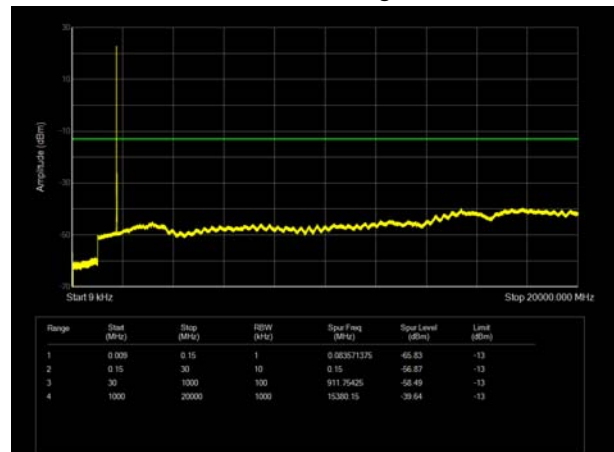
LTE Band 4 10MHz CH- Middle 9kHz~20GHz



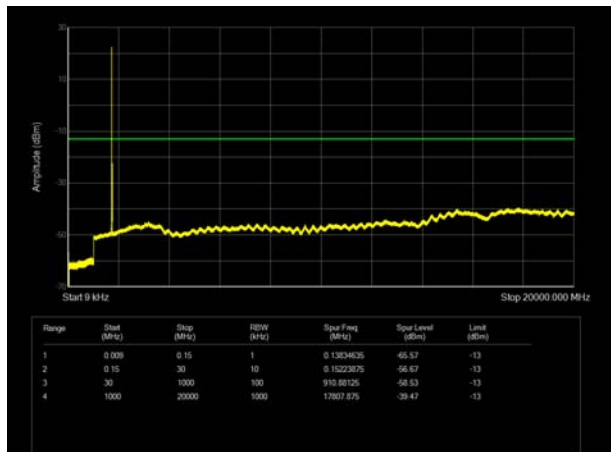
LTE Band 4 5MHz CH-High 9kHz~20GHz



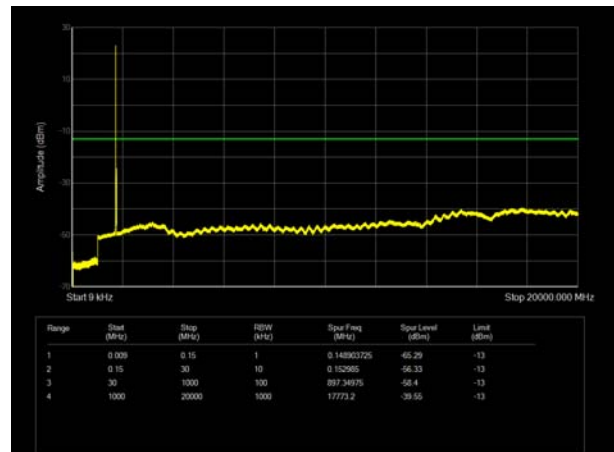
LTE Band 4 10MHz CH- High 9kHz~20GHz



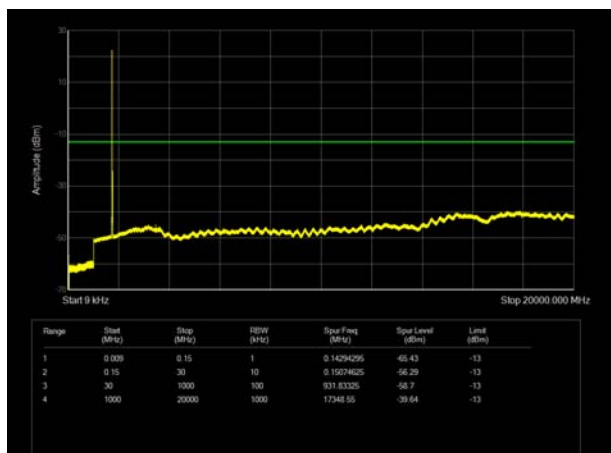
LTE Band 4 15MHz CH- Low 9kHz~20GHz



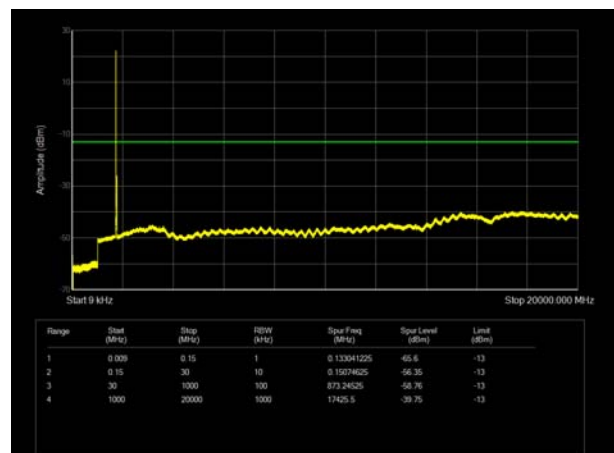
LTE Band 4 20MHz CH-Low 9kHz~20GHz



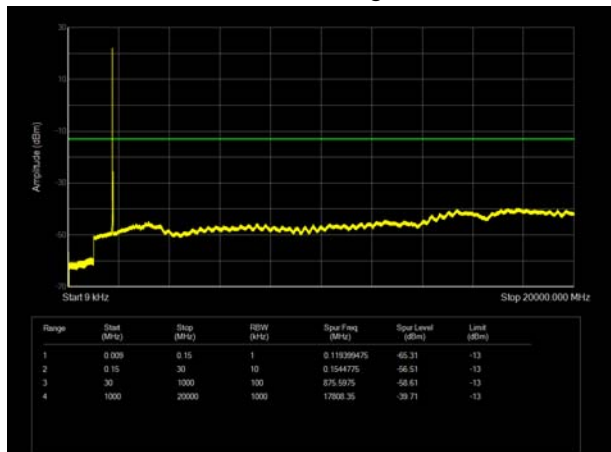
LTE Band 4 15MHz CH- Middle 9kHz~20GHz



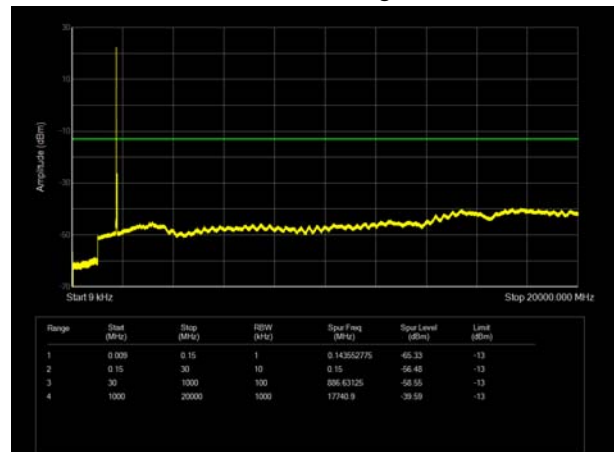
LTE Band 4 20MHz CH- Middle 9kHz~20GHz



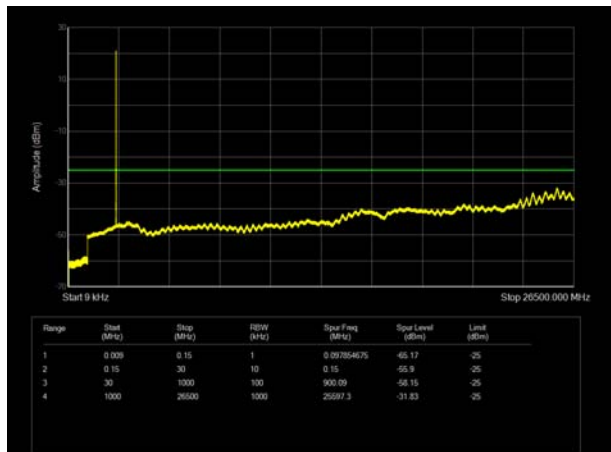
LTE Band 4 15MHz CH-High 9kHz~20GHz



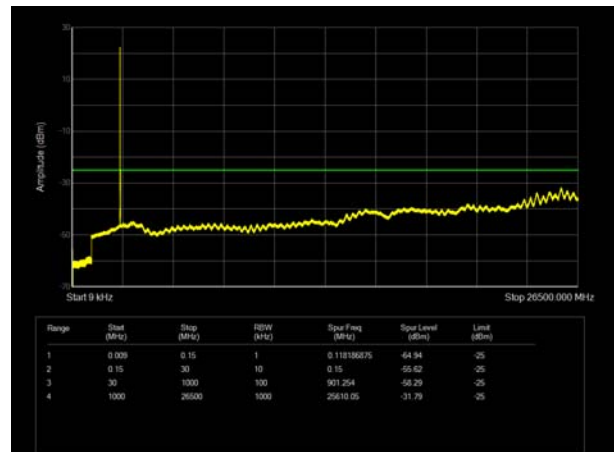
LTE Band 4 20MHz CH- High 9kHz~20GHz



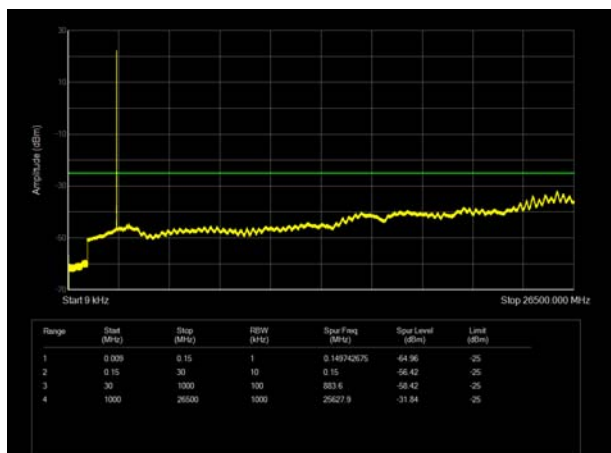
LTE Band 7 5MHz CH-Low 9kHz~26.5GHz



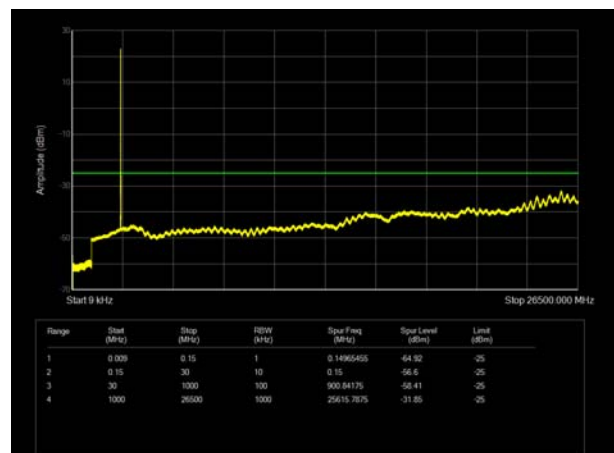
LTE Band 7 10MHz CH- Low 9kHz~26.5GHz



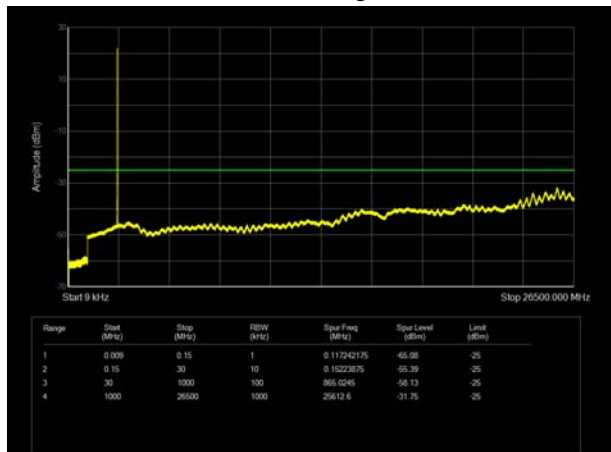
LTE Band 7 5MHz CH- Middle 9kHz~26.5GHz



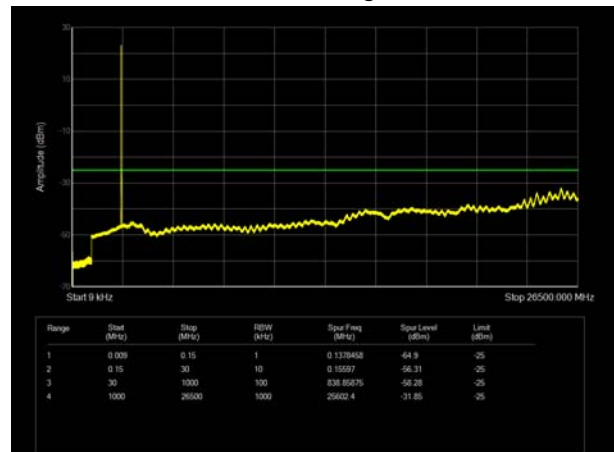
LTE Band 7 10MHz CH- Middle 9kHz~26.5GHz



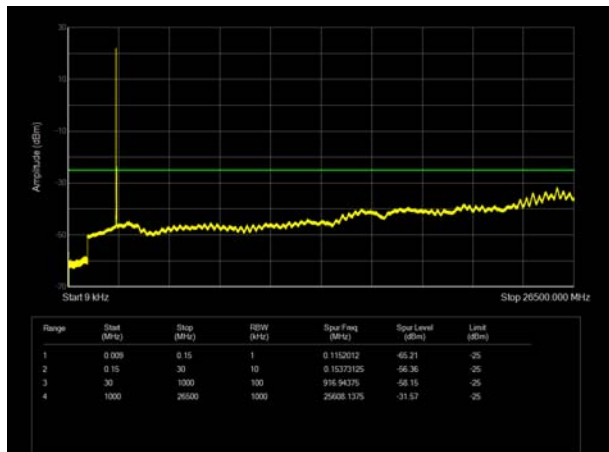
LTE Band 7 5MHz CH- High 9kHz~26.5GHz



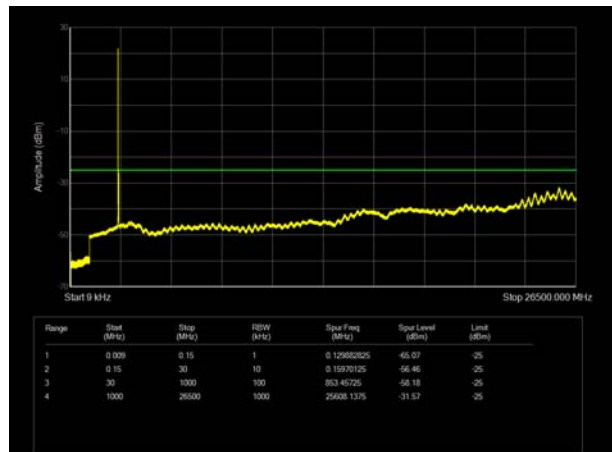
LTE Band 7 10MHz CH-High 9kHz~26.5GHz



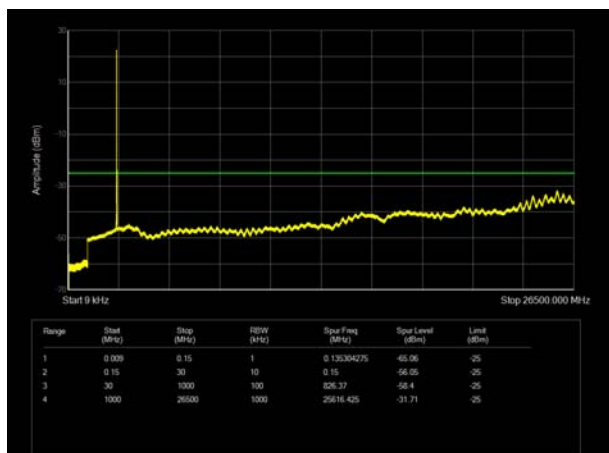
LTE Band 7 15MHz CH- Low 9kHz~26.5GHz



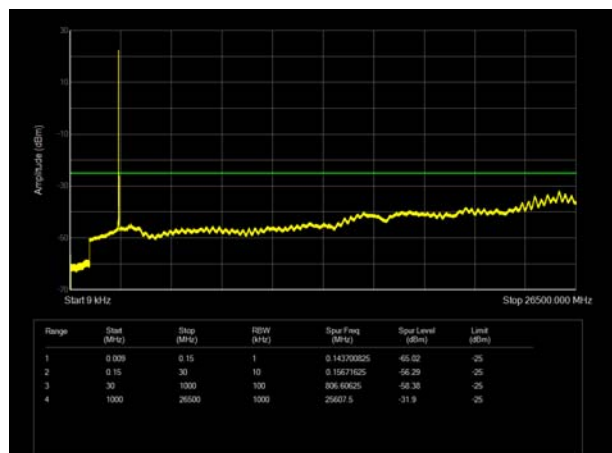
LTE Band 7 20MHz CH-Low 9kHz~26.5GHz



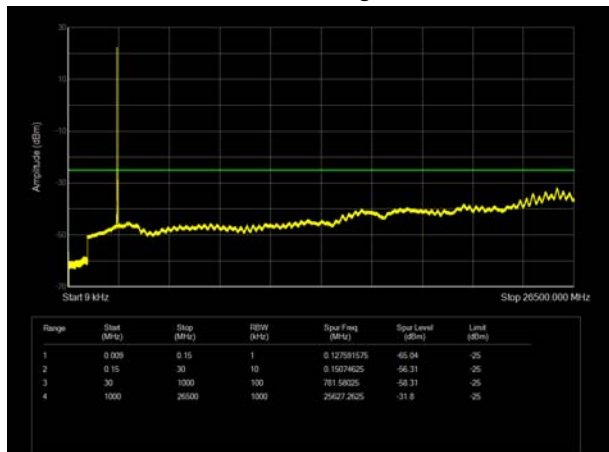
LTE Band 7 15MHz CH- Middle 9kHz~26.5GHz



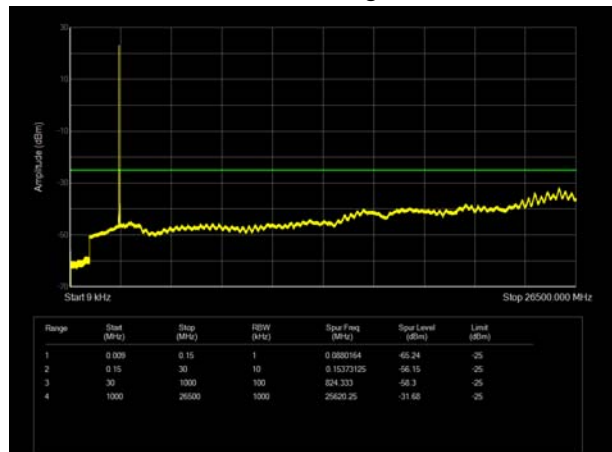
LTE Band 7 20MHz CH- Middle 9kHz~26.5GHz



LTE Band 7 15MHz CH-High 9kHz~26.5GHz

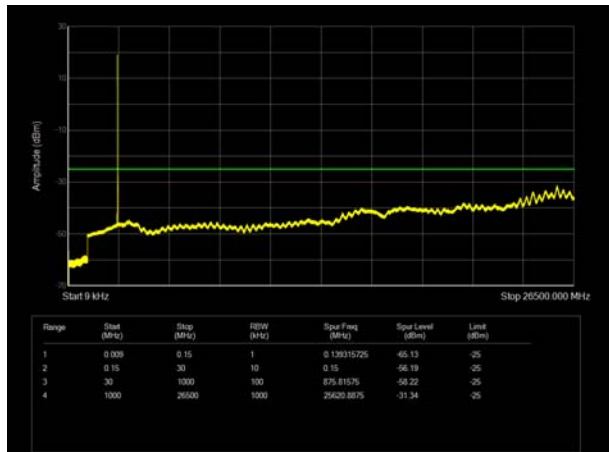


LTE Band 7 20MHz CH- High 9kHz~26.5GHz

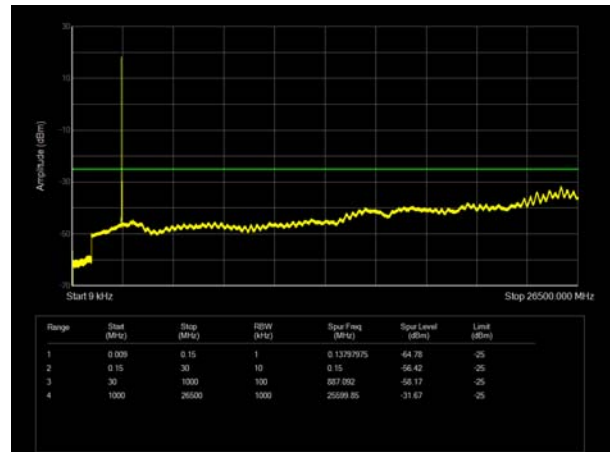




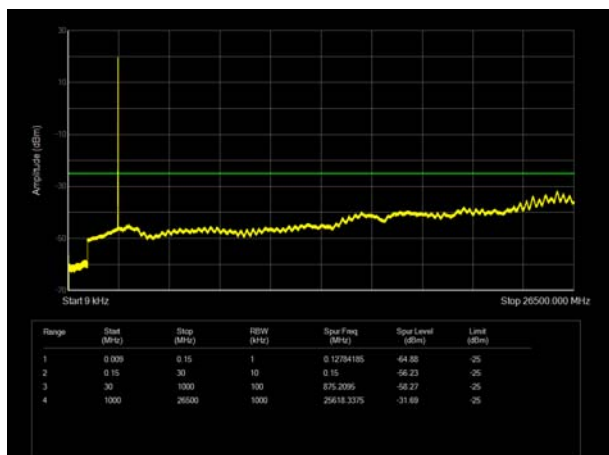
LTE Band 38 5MHz CH-Low 9kHz~26.5GHz



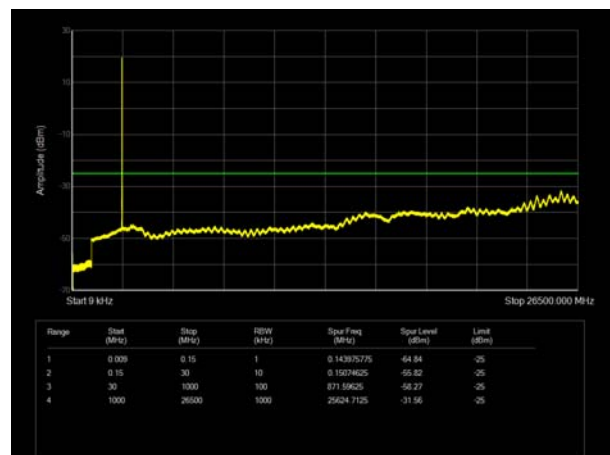
LTE Band 38 10MHz CH- Low 9kHz~26.5GHz



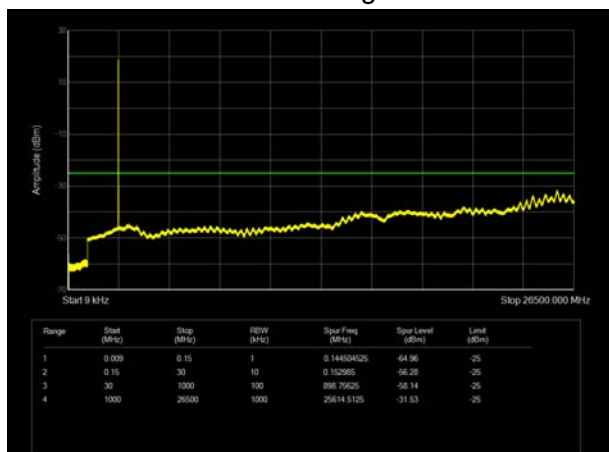
LTE Band 38 5MHz CH-Middle 9kHz~26.5GHz



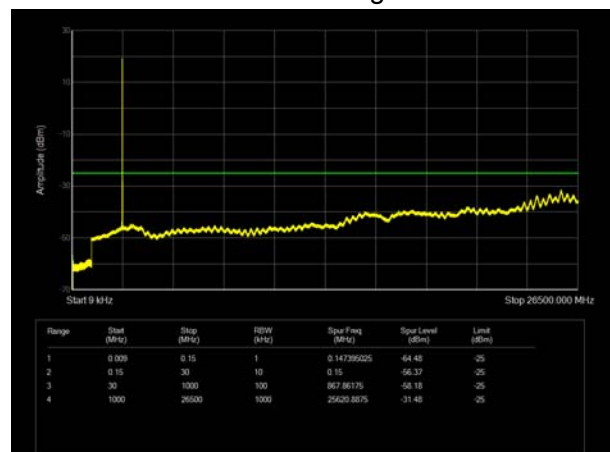
LTE Band 38 10MHz CH- Middle 9kHz~26.5GHz



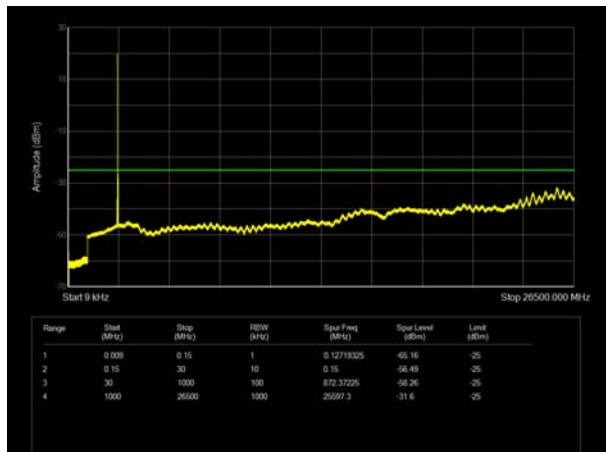
LTE Band 38 5MHz CH- High 9kHz~26.5GHz



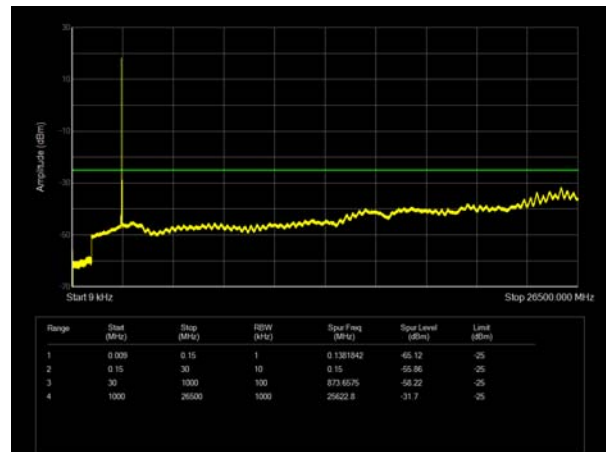
LTE Band 38 10MHz CH-High 9kHz~26.5GHz



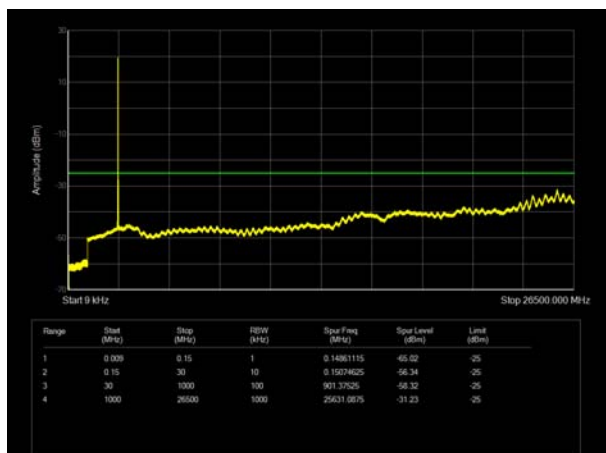
LTE Band 38 15MHz CH- Low 9kHz~26.5GHz



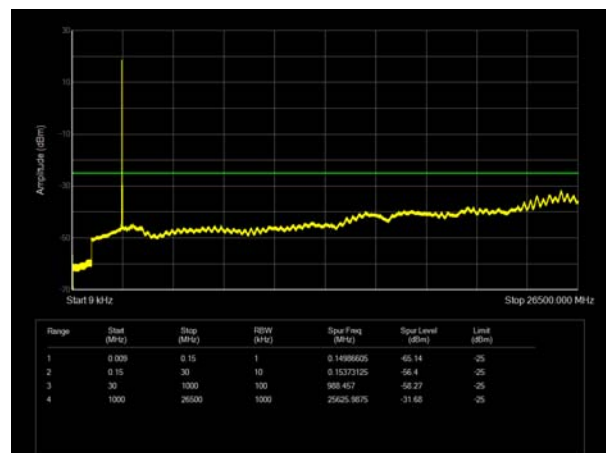
LTE Band 38 20MHz CH-Low 9kHz~26.5GHz



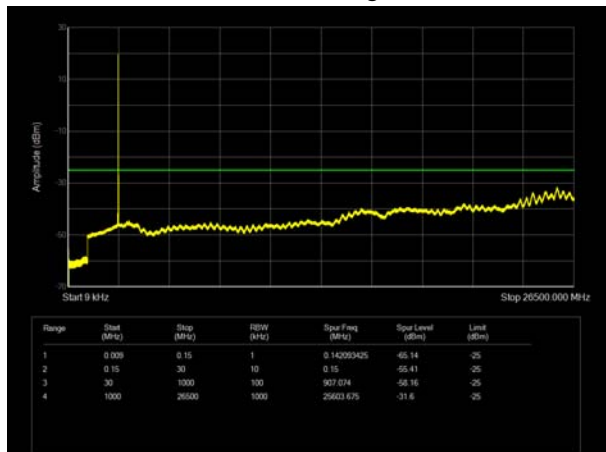
LTE Band 38 15MHz CH- Middle 9kHz~26.5GHz



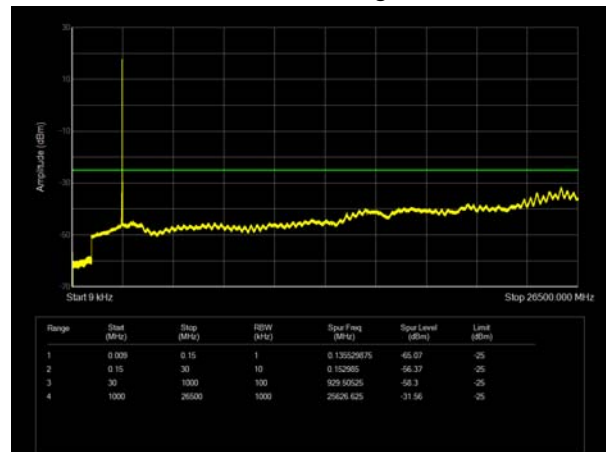
LTE Band 38 20MHz CH- Middle 9kHz~26.5GHz



LTE Band 38 15MHz CH-High 9kHz~26.5GHz

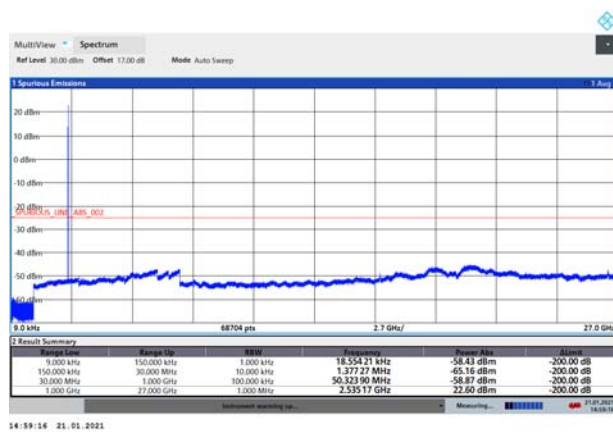


LTE Band 38 20MHz CH- High 9kHz~26.5GHz



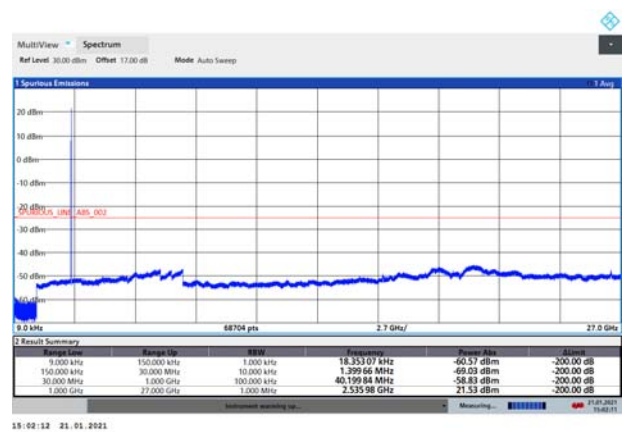


LTE Band 41 5MHz CH- Low 9kHz~27GHz



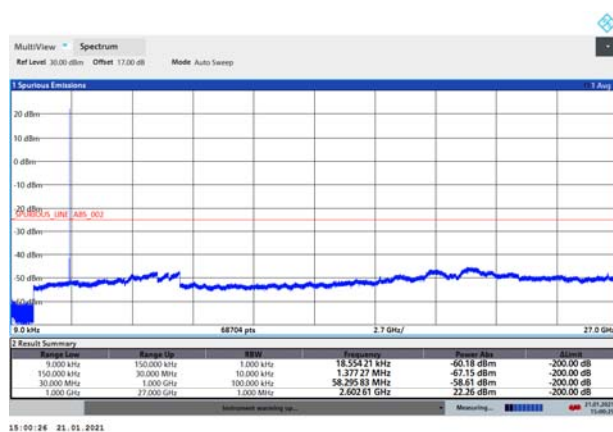
14:59:14 21.01.2021

LTE Band 41 10MHz CH- Low 9kHz~27GHz



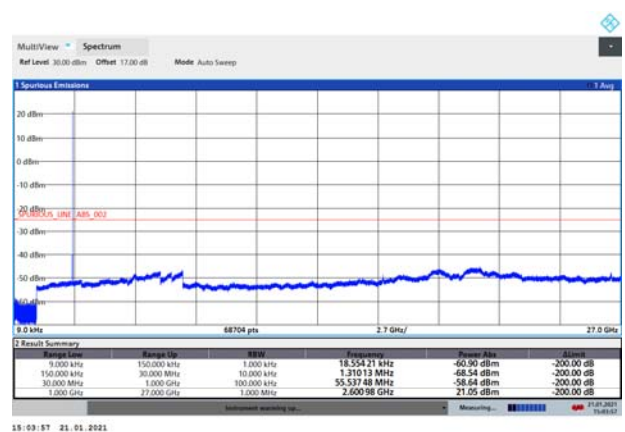
15:02:12 21.01.2021

LTE Band 41 5MHz CH- Middle 9kHz~27GHz



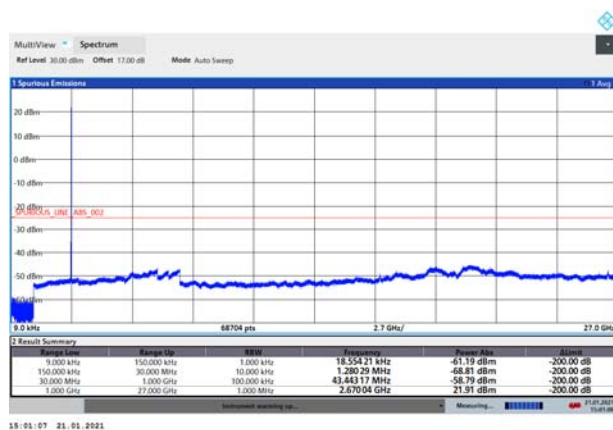
15:00:26 21.01.2021

LTE Band 41 10MHz CH- Middle 9kHz~27GHz



15:03:57 21.01.2021

LTE Band 41 5MHz CH-High 9kHz~27GHz



15:01:07 21.01.2021

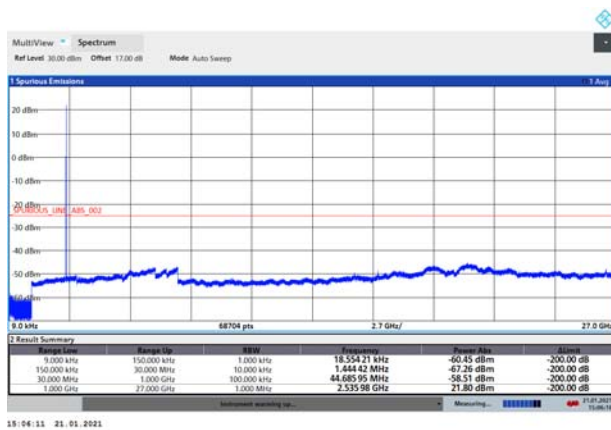
LTE Band 41 10MHz CH-High 9kHz~27GHz



15:04:47 21.01.2021

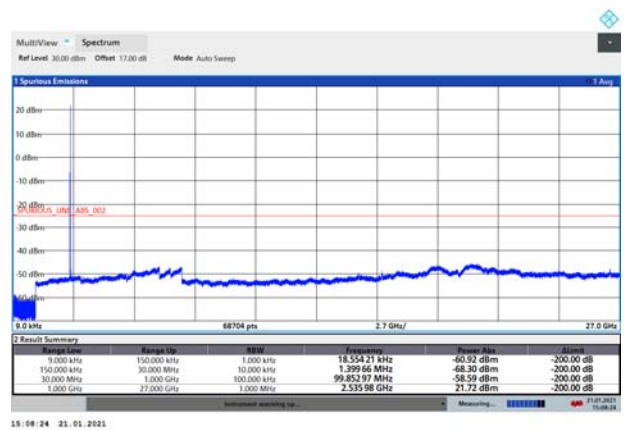


LTE Band 41 15MHz CH- Low 9kHz~27GHz



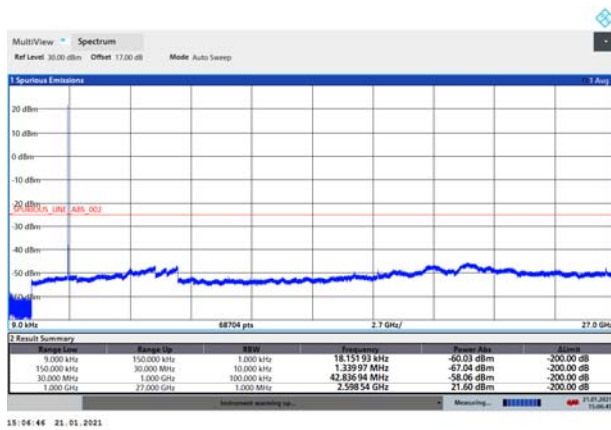
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LTE Band 41 20MHz CH-Low 9kHz~27GHz



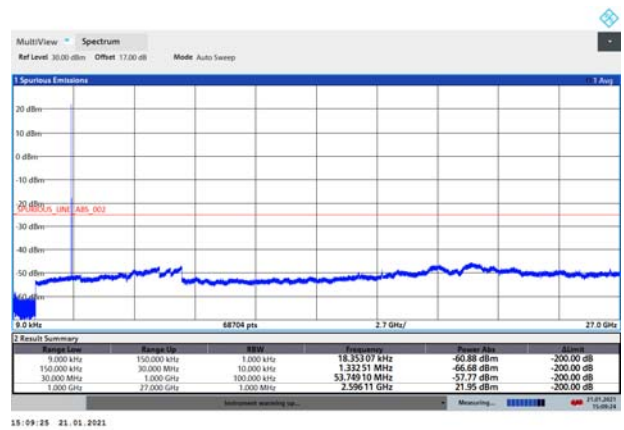
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LTE Band 41 15MHz CH- Middle 9kHz~27GHz



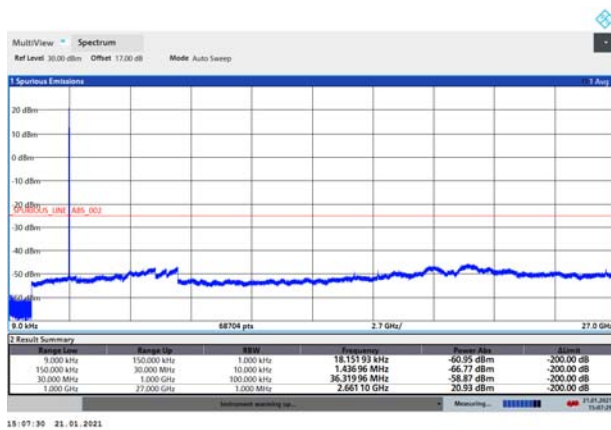
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LTE Band 41 20MHz CH- Middle 9kHz~27GHz



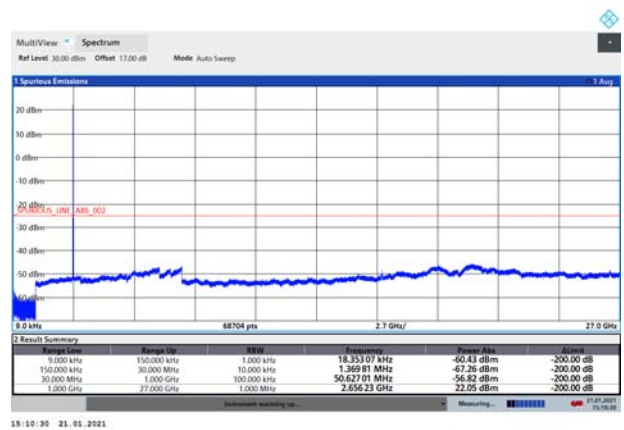
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LTE Band 41 15MHz CH-High 9kHz~27GHz



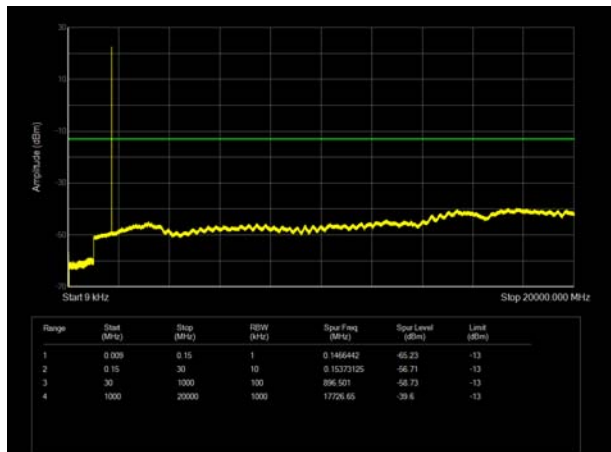
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LTE Band 41 20MHz CH- High 9kHz~27GHz

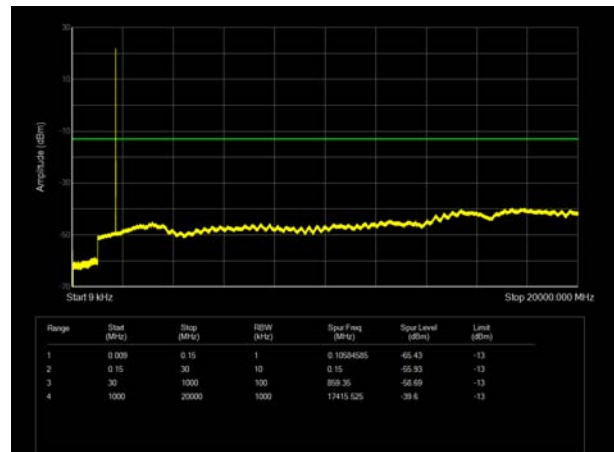


15:10:30 21.01.2021

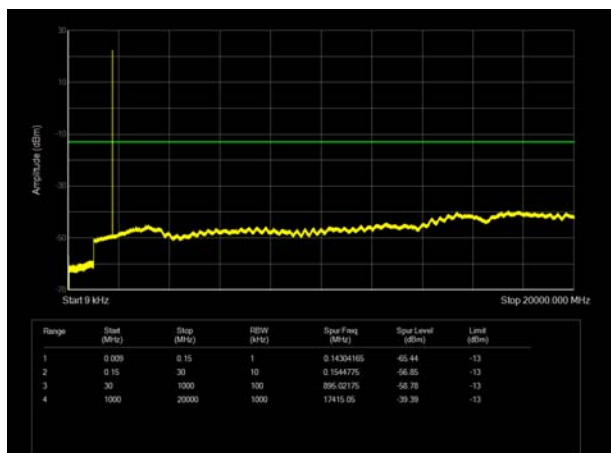
LTE Band 66 1.4MHz CH-Low 9kHz~20GHz



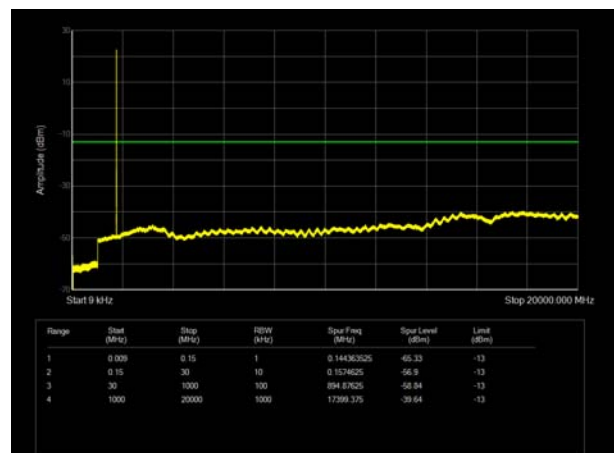
LTE Band 66 3MHz CH- Low 9kHz~20GHz



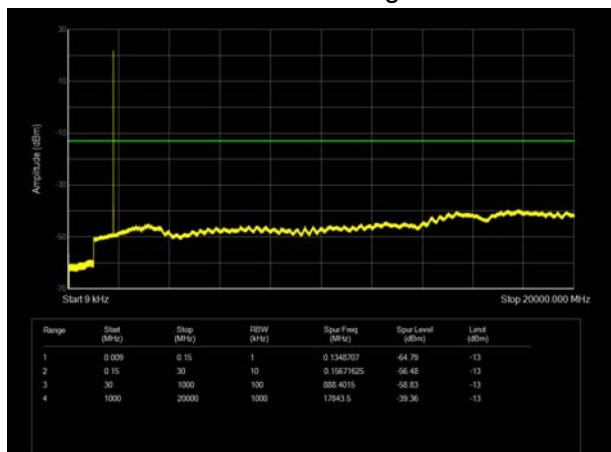
LTE Band 66 1.4MHz CH- Middle 9kHz~20GHz



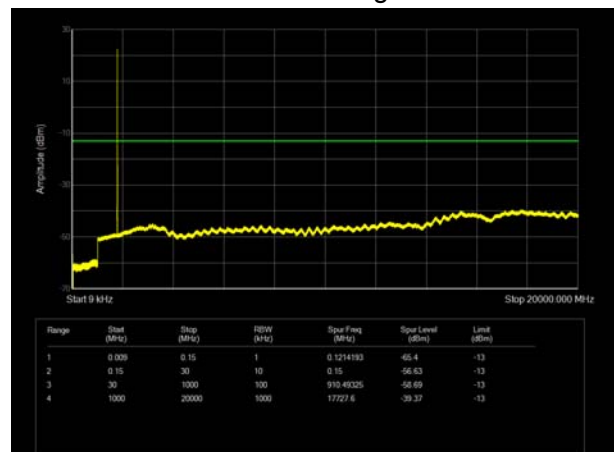
LTE Band 66 3MHz CH- Middle 9kHz~20GHz



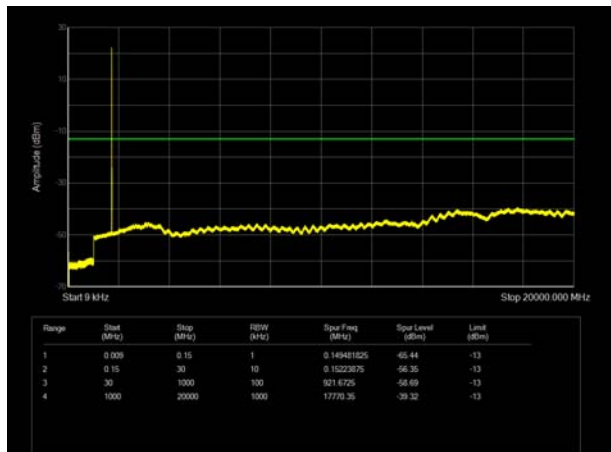
LTE Band 66 1.4MHz CH- High 9kHz~20GHz



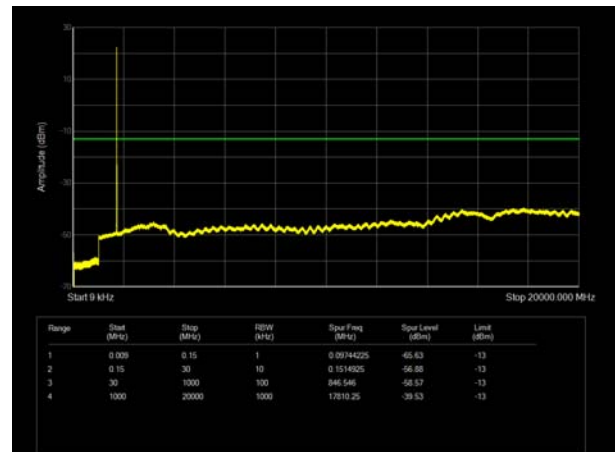
LTE Band 66 3MHz CH-High 9kHz~20GHz



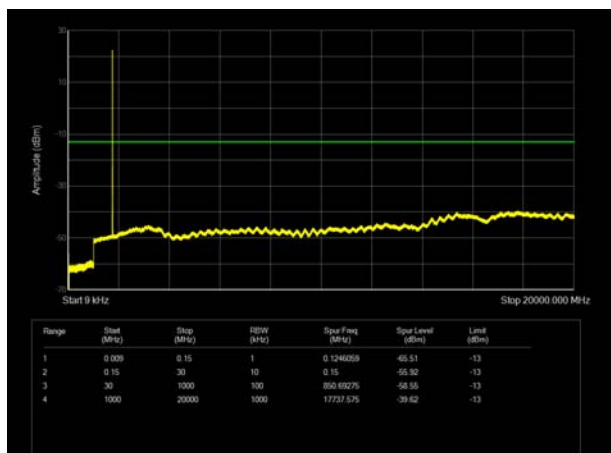
LTE Band 66 5MHz CH- Low 9kHz~20GHz



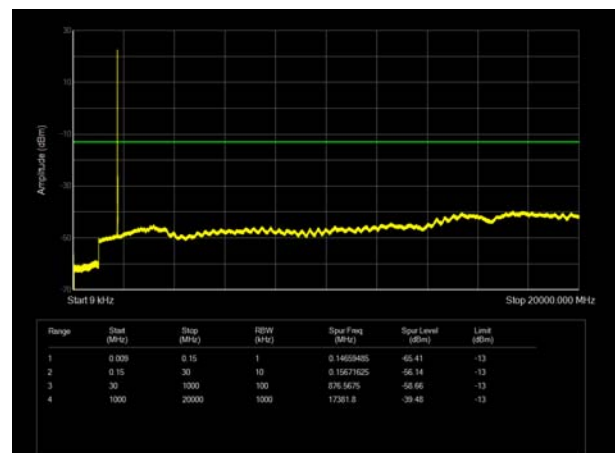
LTE Band 66 10MHz CH-Low 9kHz~20GHz



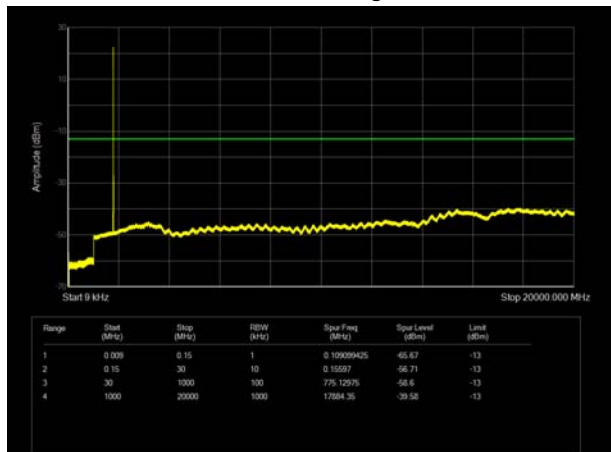
LTE Band 66 5MHz CH- Middle 9kHz~20GHz



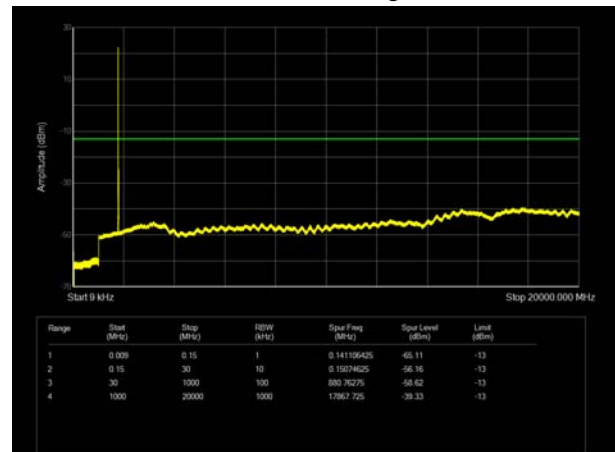
LTE Band 66 10MHz CH- Middle 9kHz~20GHz



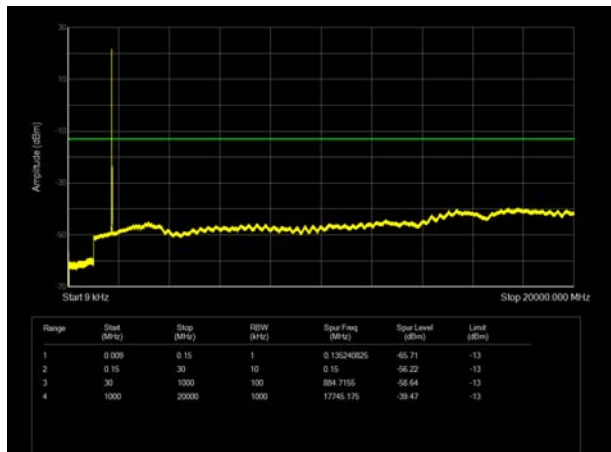
LTE Band 66 5MHz CH-High 9kHz~20GHz



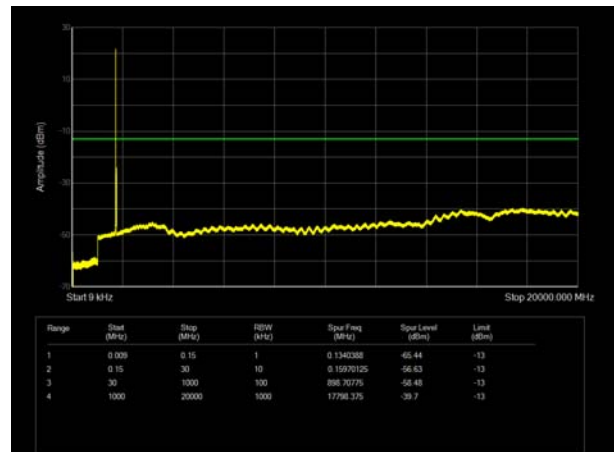
LTE Band 66 10MHz CH- High 9kHz~20GHz



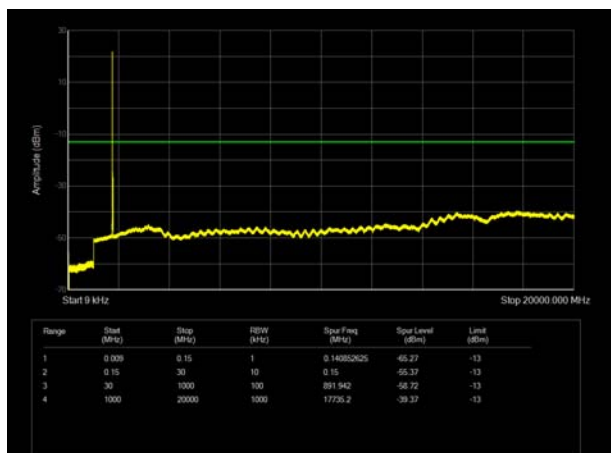
LTE Band 66 15MHz CH- Low 9kHz~20GHz



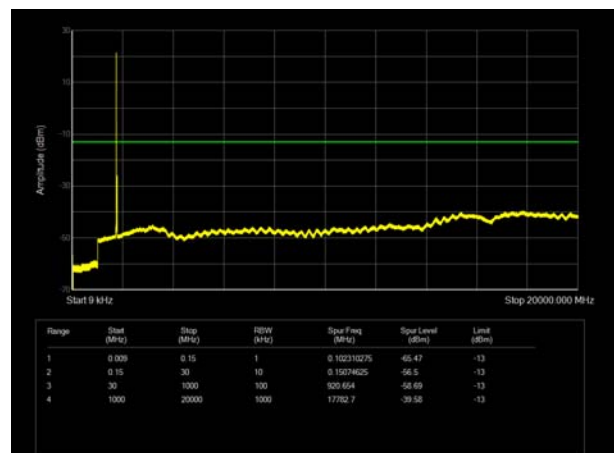
LTE Band 66 20MHz CH-Low 9kHz~20GHz



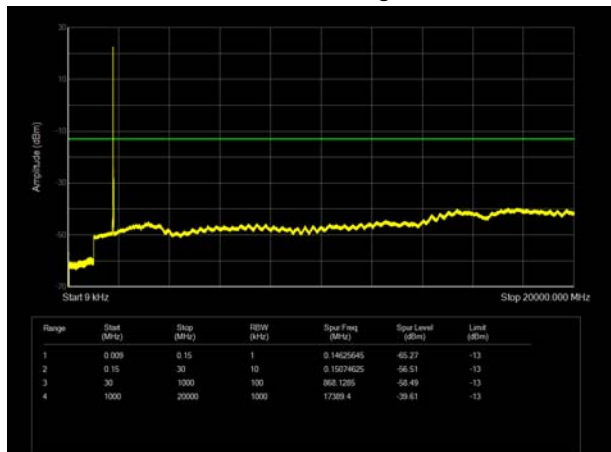
LTE Band 66 15MHz CH- Middle 9kHz~20GHz



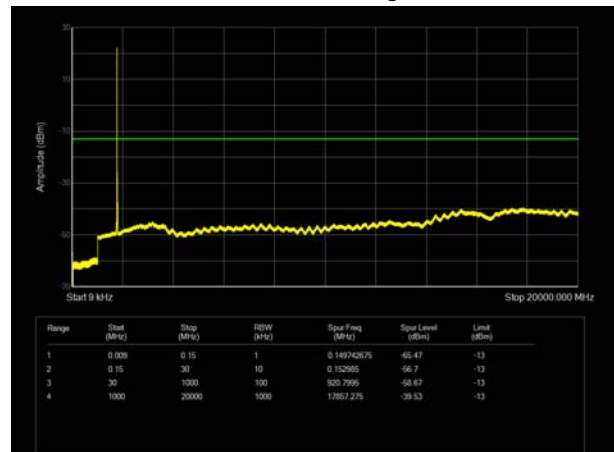
LTE Band 66 20MHz CH- Middle 9kHz~20GHz



LTE Band 66 15MHz CH-High 9kHz~20GHz



LTE Band 66 20MHz CH- High 9kHz~20GHz



5.7 Radiates Spurious Emission

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

1. The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI C63.26 (2015).
2. Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H). Above 1GHz: (Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.) The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).
3. A loop antenna, A log-periodic antenna or horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
4. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=200Hz,VBW=600Hz for 9kHz-150kHz , RBW=10kHz, VBW=30kHz 150kHz-30MHz ,RBW=100kHz,VBW=300kHz for 30MHz to 1GHz and RBW=1MHz, VBW=3MHz for above 1GHz And the maximum value of the receiver should be recorded as (Pr).
5. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
6. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
7. The measurement results are obtained as described below:

$$\text{Power(EIRP)} = \text{PMea} - \text{PAg} - \text{Pcl} + \text{Ga}$$
The measurement results are amend as described below:

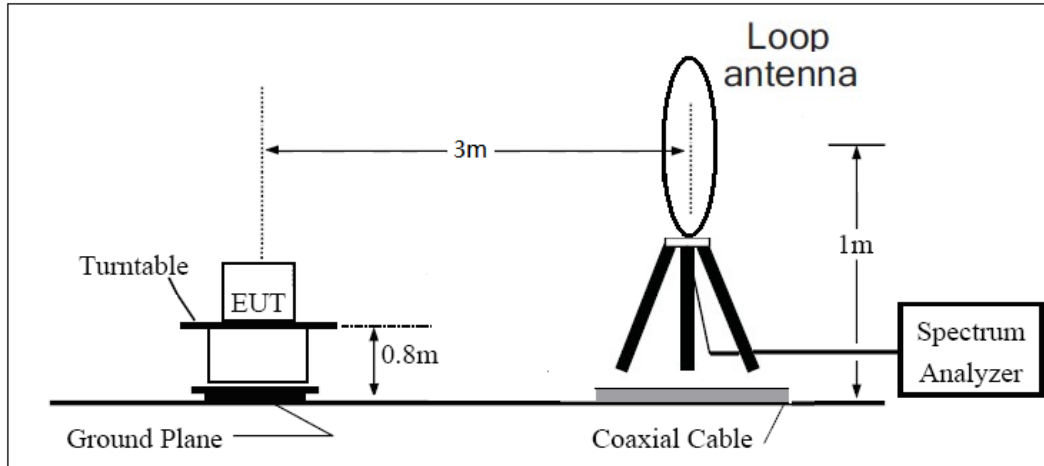
$$\text{Power(EIRP)} = \text{PMea} - \text{Pcl} + \text{Ga}$$
8. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP

= EIRP-2.15dBi.

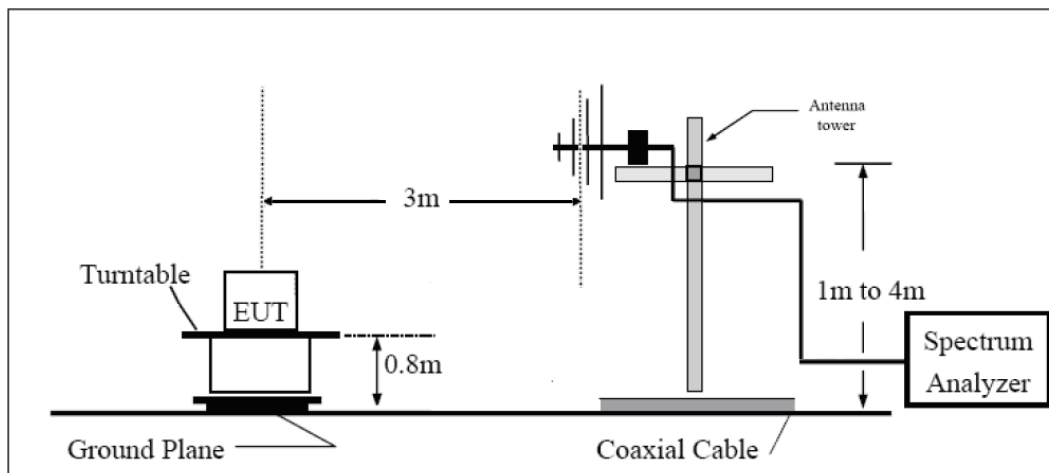
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

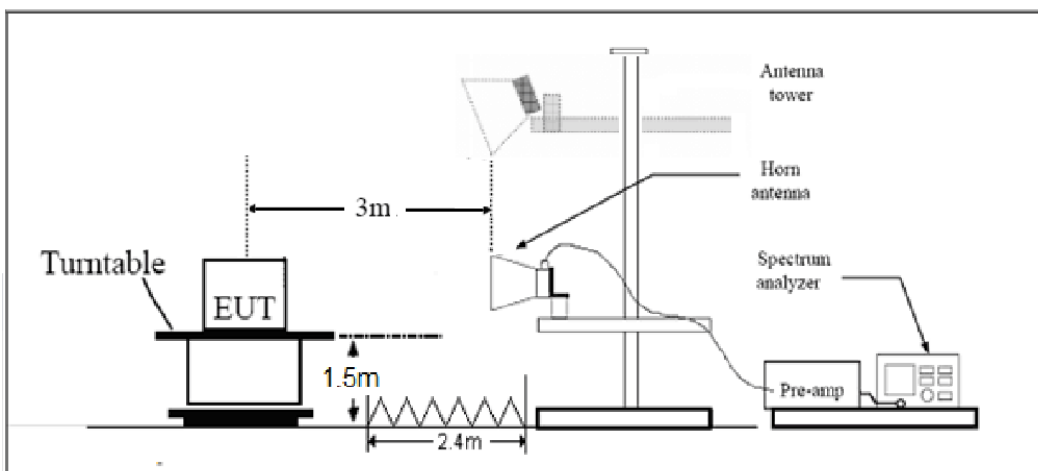
9KHz ~ 30MHz



30MHz ~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Limits

Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.”

Rule Part 27.53(m) $55 + 10 \log(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section.

adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

Part 27.53 (h) Limit	-13 dBm
Part 27.53 (m) Limit	-25 dBm

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = \pm 1.96$, $U = \pm 3.55$ dB.

**Test Result**

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions below the noise floor will not be recorded in the report.

Main Antenna:

WCDMA Band IV CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.20	-64.58	2.6	10.75	Horizontal	-56.43	-13.00	43.43	180
3	5197.80	-60.40	2.4	11.05	Horizontal	-51.75	-13.00	38.75	90
4	6930.40	-59.07	4.5	11.15	Horizontal	-52.42	-13.00	39.42	45
5	8663.00	-52.66	5.1	11.35	Horizontal	-46.41	-13.00	33.41	270
6	10395.60	-48.19	5.3	11.95	Horizontal	-41.54	-13.00	28.54	315
7	12128.20	-49.53	5.5	13.55	Horizontal	-41.48	-13.00	28.48	45
8	13860.80	-48.87	6.3	13.75	Horizontal	-41.42	-13.00	28.42	90
9	15593.40	-53.90	6.7	13.85	Horizontal	-46.75	-13.00	33.75	45
10	17326.00	-48.91	6.8	14.25	Horizontal	-41.46	-13.00	28.46	225

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 4 QPSK 1.4MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3464.25	-65.42	2.6	10.75	Horizontal	-57.27	-13.00	44.27	135
3	5197.50	-60.63	2.4	11.05	Horizontal	-51.98	-13.00	38.98	90
4	6930.00	-59.15	4.5	11.15	Horizontal	-52.50	-13.00	39.50	0
5	8662.50	-52.90	5.1	11.35	Horizontal	-46.65	-13.00	33.65	45
6	10395.00	-48.23	5.3	11.95	Horizontal	-41.58	-13.00	28.58	225
7	12127.50	-49.92	5.5	13.55	Horizontal	-41.87	-13.00	28.87	135
8	13860.00	-49.01	6.3	13.75	Horizontal	-41.56	-13.00	28.56	315
9	15592.50	-54.19	6.7	13.85	Horizontal	-47.04	-13.00	34.04	270
10	17325.00	-49.79	6.8	14.25	Horizontal	-42.34	-13.00	29.34	180

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 4 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3460.50	-63.14	2.6	10.75	Horizontal	-54.99	-13.00	41.99	45
3	5191.50	-61.09	2.4	11.05	Horizontal	-52.44	-13.00	39.44	225
4	6930.00	-59.23	4.5	11.15	Horizontal	-52.58	-13.00	39.58	315
5	8662.50	-53.42	5.1	11.35	Horizontal	-47.17	-13.00	34.17	90
6	10395.00	-49.16	5.3	11.95	Horizontal	-42.51	-13.00	29.51	135
7	12127.50	-49.34	5.5	13.55	Horizontal	-41.29	-13.00	28.29	180
8	13860.00	-49.59	6.3	13.75	Horizontal	-42.14	-13.00	29.14	0
9	15592.50	-54.90	6.7	13.85	Horizontal	-47.75	-13.00	34.75	45
10	17325.00	-48.38	6.8	14.25	Horizontal	-40.93	-13.00	27.93	90
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 4 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.00	-65.27	2.6	10.75	Horizontal	-57.12	-13.00	44.12	45
3	5170.88	-59.73	2.4	11.05	Horizontal	-51.08	-13.00	38.08	315
4	6930.00	-58.56	4.5	11.15	Horizontal	-51.91	-13.00	38.91	27
5	8662.50	-53.08	5.1	11.35	Horizontal	-46.83	-13.00	33.83	45
6	10395.00	-47.31	5.3	11.95	Horizontal	-40.66	-13.00	27.66	180
7	12127.50	-49.64	5.5	13.55	Horizontal	-41.59	-13.00	28.59	90
8	13860.00	-48.64	6.3	13.75	Horizontal	-41.19	-13.00	28.19	315
9	15592.50	-54.55	6.7	13.85	Horizontal	-47.40	-13.00	34.40	135
10	17325.00	-49.30	6.8	14.25	Horizontal	-41.85	-13.00	28.85	225
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									



LTE Band 7 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5065.80	-58.35	2.00	9.15	Horizontal	-51.20	-25.00	26.20	270
3	7598.60	-57.83	2.50	11.35	Horizontal	-48.98	-25.00	23.98	45
4	10130.63	-50.62	4.20	12.05	Horizontal	-42.77	-25.00	17.77	90
5	12675.00	-49.30	5.20	12.85	Horizontal	-41.65	-25.00	16.65	225
6	15210.00	-55.38	5.50	14.23	Horizontal	-46.65	-25.00	21.65	135
7	17745.00	-50.75	5.70	14.15	Horizontal	-42.30	-25.00	17.30	90
8	20280.00	--	--	--	--	--	--	--	--
9	22815.00	--	--	--	--	--	--	--	--
10	25350.00	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 7 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5052.20	-59.21	2.00	10.15	Horizontal	-51.06	-25.00	26.06	0
3	7578.30	-57.54	2.50	11.35	Horizontal	-48.69	-25.00	23.69	90
4	10104.40	-51.78	4.20	12.05	Horizontal	-43.93	-25.00	18.93	45
5	12630.50	-50.59	5.20	14.85	Horizontal	-40.94	-25.00	15.94	225
6	15156.60	-54.60	5.50	13.23	Horizontal	-46.87	-25.00	21.87	90
7	17682.70	-49.81	5.70	12.15	Horizontal	-43.36	-25.00	18.36	315
8	20208.80	--	--	--	--	--	--	--	--
9	22734.90	--	--	--	--	--	--	--	--
10	25261.00	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



LTE Band 38 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5190.00	-58.64	2.00	9.15	Horizontal	-51.49	-25.00	26.49	315
3	7785.00	-57.35	2.50	11.35	Horizontal	-48.50	-25.00	23.50	225
4	10380.00	-47.79	4.20	12.05	Horizontal	-39.94	-25.00	14.94	180
5	12975.00	-48.52	5.20	12.85	Horizontal	-40.87	-25.00	15.87	45
6	15570.00	-55.46	5.50	14.23	Horizontal	-46.73	-25.00	21.73	90
7	18165.00	--	--	--	--	--	--	--	--
8	20760.00	--	--	--	--	--	--	--	--
9	23355.00	--	--	--	--	--	--	--	--
10	25950.00	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 38 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5190.00	-58.95	2.00	10.15	Horizontal	-50.80	-25.00	25.80	45
3	7785.00	-56.12	2.50	11.35	Horizontal	-47.27	-25.00	22.27	225
4	10380.00	-48.75	4.20	12.05	Horizontal	-40.90	-25.00	15.90	315
5	12975.00	-50.48	5.20	14.85	Horizontal	-40.83	-25.00	15.83	180
6	15570.00	-54.83	5.50	13.23	Horizontal	-47.10	-25.00	22.10	90
7	18165.00	--	--	--	--	--	--	--	--
8	20760.00	--	--	--	--	--	--	--	--
9	23355.00	--	--	--	--	--	--	--	--
10	25950.00	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



LTE Band 41 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	4997.00	-59.46	2.00	9.15	Horizontal	-52.31	-25.00	27.31	0
3	7495.50	-56.40	2.50	11.35	Horizontal	-47.55	-25.00	22.55	180
4	9994.00	-52.45	4.20	12.05	Horizontal	-44.60	-25.00	19.60	315
5	12492.50	-50.81	5.20	12.85	Horizontal	-43.16	-25.00	18.16	225
6	14991.00	-53.49	5.50	14.23	Horizontal	-44.76	-25.00	19.76	45
7	17489.50	-50.51	5.70	14.15	Horizontal	-42.06	-25.00	17.06	180
8	19988.00	--	--	--	--	--	--	--	--
9	22486.50	--	--	--	--	--	--	--	--
10	24985.00	--	--	--	--	--	--	--	--
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 41 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5186.00	-58.71	2.00	10.15	Horizontal	-50.56	-25.00	25.56	90
3	7779.00	-57.03	2.50	11.35	Horizontal	-48.18	-25.00	23.18	270
4	10372.00	-50.21	4.20	12.05	Horizontal	-42.36	-25.00	17.36	225
5	12965.00	-50.22	5.20	14.85	Horizontal	-40.57	-25.00	15.57	45
6	15558.00	-54.42	5.50	13.23	Horizontal	-46.69	-25.00	21.69	315
7	18151.00	--	--	--	--	--	--	--	--
8	20744.00	--	--	--	--	--	--	--	--
9	23337.00	--	--	--	--	--	--	--	--
10	25930.00	--	--	--	--	--	--	--	--
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									



LTE Band 66 QPSK 1.4MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3464.30	-62.24	2.6	10.75	Horizontal	-54.09	-13.00	41.09	135
3	5233.50	-58.05	2.4	11.05	Horizontal	-49.40	-13.00	36.40	225
4	6930.00	-57.85	4.5	11.15	Horizontal	-51.20	-13.00	38.20	45
5	8722.50	-51.92	5.1	11.35	Horizontal	-45.67	-13.00	32.67	180
6	10395.00	-47.62	5.3	11.95	Horizontal	-40.97	-13.00	27.97	270
7	12211.50	-48.58	5.5	13.55	Horizontal	-40.53	-13.00	27.53	0
8	13860.00	-49.02	6.3	13.75	Horizontal	-41.57	-13.00	28.57	315
9	15701.25	-53.88	6.7	13.85	Horizontal	-46.73	-13.00	33.73	90
10	17325.00	-49.06	6.8	14.25	Horizontal	-41.61	-13.00	28.61	135

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 66 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3460.50	-64.48	2.6	10.75	Horizontal	-56.33	-13.00	43.33	225
3	5228.63	-60.54	2.4	11.05	Horizontal	-51.89	-13.00	38.89	315
4	6930.00	-58.95	4.5	11.15	Horizontal	-52.30	-13.00	39.30	180
5	8714.25	-52.47	5.1	11.35	Horizontal	-46.22	-13.00	33.22	315
6	10395.00	-47.39	5.3	11.95	Horizontal	-40.74	-13.00	27.74	45
7	12199.50	-48.21	5.5	13.55	Horizontal	-40.16	-13.00	27.16	90
8	13860.00	-49.47	6.3	13.75	Horizontal	-42.02	-13.00	29.02	270
9	15685.50	-54.06	6.7	13.85	Horizontal	-46.91	-13.00	33.91	315
10	17325.00	-48.95	6.8	14.25	Horizontal	-41.50	-13.00	28.50	45

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 66 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3447.00	-64.89	2.6	10.75	Horizontal	-56.74	-13.00	43.74	0
3	5208.00	-60.93	2.4	11.05	Horizontal	-52.28	-13.00	39.28	45
4	6930.00	-59.15	4.5	11.15	Horizontal	-52.50	-13.00	39.50	225
5	8680.50	-52.92	5.1	11.35	Horizontal	-46.67	-13.00	33.67	270
6	10395.00	-47.87	5.3	11.95	Horizontal	-41.22	-13.00	28.22	45
7	12151.50	-48.23	5.5	13.55	Horizontal	-40.18	-13.00	27.18	315
8	13860.00	-49.68	6.3	13.75	Horizontal	-42.23	-13.00	29.23	90
9	15592.50	-54.30	6.7	13.85	Horizontal	-47.15	-13.00	34.15	45
10	17325.00	-48.83	6.8	14.25	Horizontal	-41.38	-13.00	28.38	135
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

**Second Antenna:**

WCDMA Band IV CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.20	-65.78	2.6	10.75	Horizontal	-57.63	-13.00	44.63	45
3	5197.80	-63.40	2.4	11.05	Horizontal	-54.75	-13.00	41.75	135
4	6930.40	-57.86	4.5	11.15	Horizontal	-51.21	-13.00	38.21	135
5	8663.00	-54.08	5.1	11.35	Horizontal	-47.83	-13.00	34.83	180
6	10395.60	-50.87	5.3	11.95	Horizontal	-44.22	-13.00	31.22	315
7	12128.20	-51.17	5.5	13.55	Horizontal	-43.12	-13.00	30.12	180
8	13860.80	-49.20	6.3	13.75	Horizontal	-41.75	-13.00	28.75	90
9	15593.40	-54.82	6.7	13.85	Horizontal	-47.67	-13.00	34.67	180
10	17326.00	-51.32	6.8	14.25	Horizontal	-43.87	-13.00	30.87	45

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 4 QPSK 1.4MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3464.25	-66.56	2.6	10.75	Horizontal	-58.41	-13.00	45.41	180
3	5197.50	-61.83	2.4	11.05	Horizontal	-53.18	-13.00	40.18	45
4	6930.00	-58.36	4.5	11.15	Horizontal	-51.71	-13.00	38.71	90
5	8662.50	-55.03	5.1	11.35	Horizontal	-48.78	-13.00	35.78	180
6	10395.00	-52.82	5.3	11.95	Horizontal	-46.17	-13.00	33.17	225
7	12127.50	-53.53	5.5	13.55	Horizontal	-45.48	-13.00	32.48	0
8	13860.00	-51.01	6.3	13.75	Horizontal	-43.56	-13.00	30.56	45
9	15592.50	-54.44	6.7	13.85	Horizontal	-47.29	-13.00	34.29	315
10	17325.00	-50.26	6.8	14.25	Horizontal	-42.81	-13.00	29.81	90

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



LTE Band 4 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3460.50	-66.10	2.6	10.75	Horizontal	-57.95	-13.00	44.95	180
3	5191.50	-63.81	2.4	11.05	Horizontal	-55.16	-13.00	42.16	90
4	6930.00	-58.24	4.5	11.15	Horizontal	-51.59	-13.00	38.59	45
5	8662.50	-55.47	5.1	11.35	Horizontal	-49.22	-13.00	36.22	0
6	10395.00	-52.85	5.3	11.95	Horizontal	-46.20	-13.00	33.20	0
7	12127.50	-54.20	5.5	13.55	Horizontal	-46.15	-13.00	33.15	180
8	13860.00	-50.48	6.3	13.75	Horizontal	-43.03	-13.00	30.03	270
9	15592.50	-54.62	6.7	13.85	Horizontal	-47.47	-13.00	34.47	90
10	17325.00	-52.18	6.8	14.25	Horizontal	-44.73	-13.00	31.73	315
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 4 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.00	-67.05	2.6	10.75	Horizontal	-58.90	-13.00	45.90	180
3	5170.88	-62.30	2.4	11.05	Horizontal	-53.65	-13.00	40.65	90
4	6930.00	-57.55	4.5	11.15	Horizontal	-50.90	-13.00	37.90	0
5	8662.50	-55.10	5.1	11.35	Horizontal	-48.85	-13.00	35.85	0
6	10395.00	-53.29	5.3	11.95	Horizontal	-46.64	-13.00	33.64	45
7	12127.50	-54.48	5.5	13.55	Horizontal	-46.43	-13.00	33.43	315
8	13860.00	-49.94	6.3	13.75	Horizontal	-42.49	-13.00	29.49	90
9	15592.50	-54.38	6.7	13.85	Horizontal	-47.23	-13.00	34.23	45
10	17325.00	-52.47	6.8	14.25	Horizontal	-45.02	-13.00	32.02	225
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									



LTE Band 7 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5065.80	-60.91	2.00	9.15	Horizontal	-53.76	-25.00	28.76	180
3	7598.60	-58.76	2.50	11.35	Horizontal	-49.91	-25.00	24.91	90
4	10130.63	-54.69	4.20	12.05	Horizontal	-46.84	-25.00	21.84	0
5	12675.00	-53.15	5.20	12.85	Horizontal	-45.50	-25.00	20.50	45
6	15210.00	-56.08	5.50	14.23	Horizontal	-47.35	-25.00	22.35	315
7	17745.00	-53.81	5.70	14.15	Horizontal	-45.36	-25.00	20.36	90
8	20280.00	--	--	--	--	--	--	--	--
9	22815.00	--	--	--	--	--	--	--	--
10	25350.00	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 7 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5052.20	-62.08	2.00	10.15	Horizontal	-53.93	-25.00	28.93	0
3	7578.30	-56.43	2.50	11.35	Horizontal	-47.58	-25.00	22.58	45
4	10104.40	-54.37	4.20	12.05	Horizontal	-46.52	-25.00	21.52	315
5	12630.50	-55.60	5.20	14.85	Horizontal	-45.95	-25.00	20.95	90
6	15156.60	-55.16	5.50	13.23	Horizontal	-47.43	-25.00	22.43	135
7	17682.70	-50.88	5.70	12.15	Horizontal	-44.43	-25.00	19.43	225
8	20208.80	--	--	--	--	--	--	--	--
9	22734.90	--	--	--	--	--	--	--	--
10	25261.00	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



LTE Band 38 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5190.00	-61.97	2.00	9.15	Horizontal	-54.82	-25.00	29.82	135
3	7785.00	-57.36	2.50	11.35	Horizontal	-48.51	-25.00	23.51	90
4	10380.00	-54.20	4.20	12.05	Horizontal	-46.35	-25.00	21.35	315
5	12975.00	-51.32	5.20	12.85	Horizontal	-43.67	-25.00	18.67	225
6	15570.00	-56.02	5.50	14.23	Horizontal	-47.29	-25.00	22.29	270
7	18165.00	--	--	--	--	--	--	--	--
8	20760.00	--	--	--	--	--	--	--	--
9	23355.00	--	--	--	--	--	--	--	--
10	25950.00	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 38 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5190.00	-63.13	2.00	10.15	Horizontal	-54.98	-25.00	29.98	45
3	7785.00	-57.85	2.50	11.35	Horizontal	-49.00	-25.00	24.00	225
4	10380.00	-53.82	4.20	12.05	Horizontal	-45.97	-25.00	20.97	0
5	12975.00	-53.85	5.20	14.85	Horizontal	-44.20	-25.00	19.20	45
6	15570.00	-54.98	5.50	13.23	Horizontal	-47.25	-25.00	22.25	315
7	18165.00	--	--	--	--	--	--	--	--
8	20760.00	--	--	--	--	--	--	--	--
9	23355.00	--	--	--	--	--	--	--	--
10	25950.00	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



LTE Band 41 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	4997.00	-61.96	2.00	9.15	Horizontal	-54.81	-25.00	29.81	90
3	7495.50	-58.06	2.50	11.35	Horizontal	-49.21	-25.00	24.21	135
4	9994.00	-55.35	4.20	12.05	Horizontal	-47.50	-25.00	22.50	225
5	12492.50	-53.61	5.20	12.85	Horizontal	-45.96	-25.00	20.96	45
6	14991.00	-54.33	5.50	14.23	Horizontal	-45.60	-25.00	20.60	315
7	17489.50	-53.15	5.70	14.15	Horizontal	-44.70	-25.00	19.70	180
8	19988.00	--	--	--	--	--	--	--	--
9	22486.50	--	--	--	--	--	--	--	--
10	24985.00	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 41 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5186.00	-62.26	2.00	10.15	Horizontal	-54.11	-25.00	29.11	180
3	7779.00	-58.05	2.50	11.35	Horizontal	-49.20	-25.00	24.20	45
4	10372.00	-54.77	4.20	12.05	Horizontal	-46.92	-25.00	21.92	315
5	12965.00	-53.32	5.20	14.85	Horizontal	-43.67	-25.00	18.67	225
6	15558.00	-55.39	5.50	13.23	Horizontal	-47.66	-25.00	22.66	90
7	18151.00	--	--	--	--	--	--	--	--
8	20744.00	--	--	--	--	--	--	--	--
9	23337.00	--	--	--	--	--	--	--	--
10	25930.00	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



LTE Band 66 QPSK 1.4MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3464.30	-66.12	2.6	10.75	Horizontal	-57.97	-13.00	44.97	135
3	5233.50	-63.63	2.4	11.05	Horizontal	-54.98	-13.00	41.98	225
4	6930.00	-57.81	4.5	11.15	Horizontal	-51.16	-13.00	38.16	90
5	8722.50	-53.96	5.1	11.35	Horizontal	-47.71	-13.00	34.71	225
6	10395.00	-52.90	5.3	11.95	Horizontal	-46.25	-13.00	33.25	0
7	12211.50	-53.82	5.5	13.55	Horizontal	-45.77	-13.00	32.77	45
8	13860.00	-51.24	6.3	13.75	Horizontal	-43.79	-13.00	30.79	315
9	15701.25	-54.92	6.7	13.85	Horizontal	-47.77	-13.00	34.77	180
10	17325.00	-51.88	6.8	14.25	Horizontal	-44.43	-13.00	31.43	90

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 66 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3460.50	-66.73	2.6	10.75	Horizontal	-58.58	-13.00	45.58	315
3	5228.63	-63.66	2.4	11.05	Horizontal	-55.01	-13.00	42.01	0
4	6930.00	-58.33	4.5	11.15	Horizontal	-51.68	-13.00	38.68	54
5	8714.25	-54.62	5.1	11.35	Horizontal	-48.37	-13.00	35.37	270
6	10395.00	-53.42	5.3	11.95	Horizontal	-46.77	-13.00	33.77	225
7	12199.50	-53.53	5.5	13.55	Horizontal	-45.48	-13.00	32.48	315
8	13860.00	-51.20	6.3	13.75	Horizontal	-43.75	-13.00	30.75	135
9	15685.50	-54.24	6.7	13.85	Horizontal	-47.09	-13.00	34.09	225
10	17325.00	-51.34	6.8	14.25	Horizontal	-43.89	-13.00	30.89	90

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



LTE Band 66 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3447.00	-65.24	2.6	10.75	Horizontal	-57.09	-13.00	44.09	0
3	5208.00	-63.85	2.4	11.05	Horizontal	-55.20	-13.00	42.20	45
4	6930.00	-56.49	4.5	11.15	Horizontal	-49.84	-13.00	36.84	90
5	8680.50	-54.92	5.1	11.35	Horizontal	-48.67	-13.00	35.67	135
6	10395.00	-53.19	5.3	11.95	Horizontal	-46.54	-13.00	33.54	45
7	12151.50	-54.01	5.5	13.55	Horizontal	-45.96	-13.00	32.96	315
8	13860.00	-50.86	6.3	13.75	Horizontal	-43.41	-13.00	30.41	180
9	15592.50	-54.28	6.7	13.85	Horizontal	-47.13	-13.00	34.13	270
10	17325.00	-51.69	6.8	14.25	Horizontal	-44.24	-13.00	31.24	0

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



6 Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Base Station Simulator	R&S	CMW500	113824	2020-05-18	2021-05-17
Power Splitter	Hua Xiang	SHX-GF2-2-13	10120101	/	/
Spectrum Analyzer	Key sight	N9010A	MY50210259	2020-05-18	2021-05-17
Signal Analyzer	R&S	FSV30	100815	2020-12-13	2021-12-12
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2020-04-02	2023-04-01
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	391	2019-12-16	2021-12-15
Horn Antenna	R&S	HF907	102723	2018-08-11	2021-08-10
Horn Antenna	ETS-Lindgren	3160-09	00102643	2018-06-20	2021-06-19
Signal generator	R&S	SMB 100A	102594	2020-05-18	2021-05-17
Climatic Chamber	ESPEC	SU-242	93000506	2020-12-13	2021-12-12
Preamplifier	R&S	SCU18	102327	2020-05-18	2021-05-17
MOB COMMS DC SUPPLY	Keysight	66319D	MY43004105	2020-05-18	2021-05-17
RF Cable	Agilent	SMA 15cm	0001	2020-12-10	2021-06-09
Software	R&S	EMC32	9.26.0	/	/

*****END OF REPORT *****



ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.



ANNEX B: Test Setup Photos

The Test Setup Photos are submitted separately.