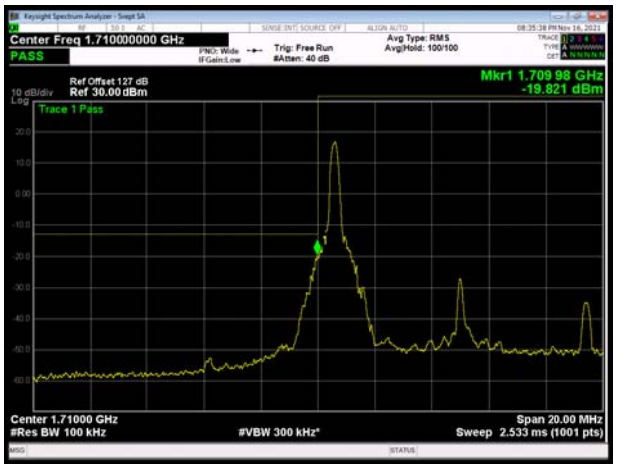
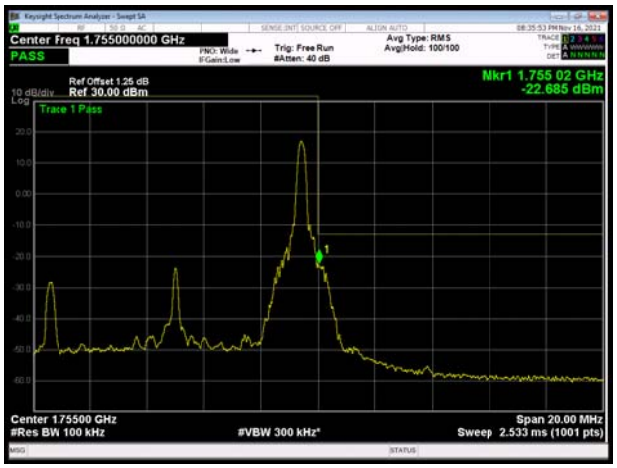
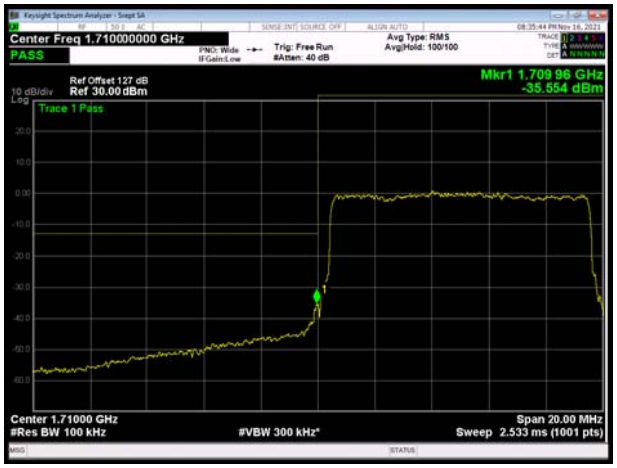
LTE Band 4 64QAM 10MHz CH-Low, 1 RB



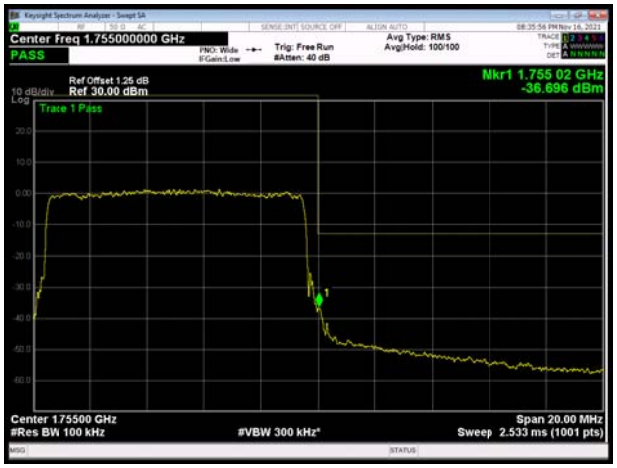
LTE Band 4 64QAM 10MHz CH-High, 1 RB



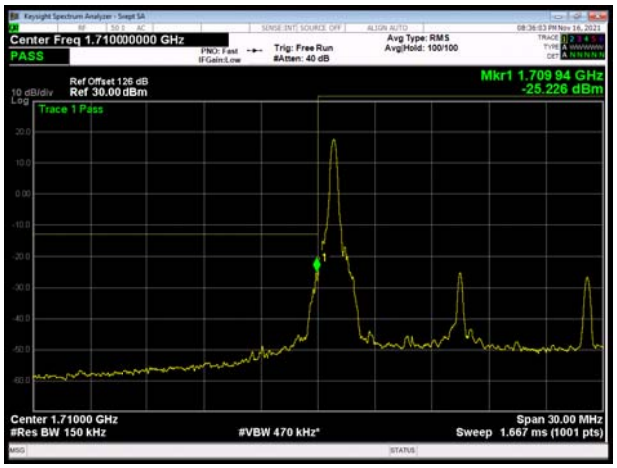
LTE Band 4 64QAM 10MHz CH-Low, 100%RB



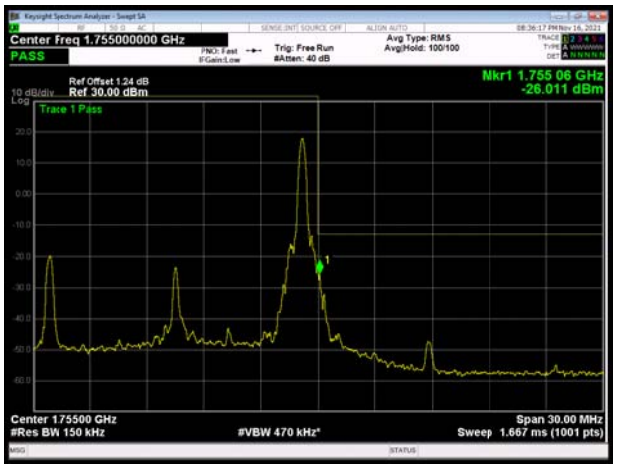
LTE Band 4 64QAM 10MHz CH-High, 100%RB



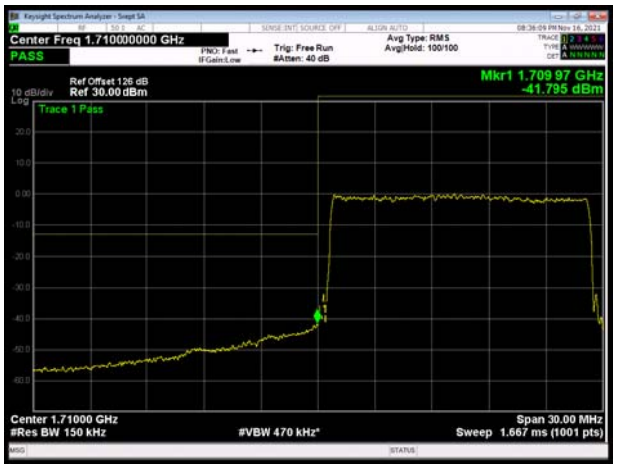
LTE Band 4 64QAM 15MHz CH-Low, 1 RB



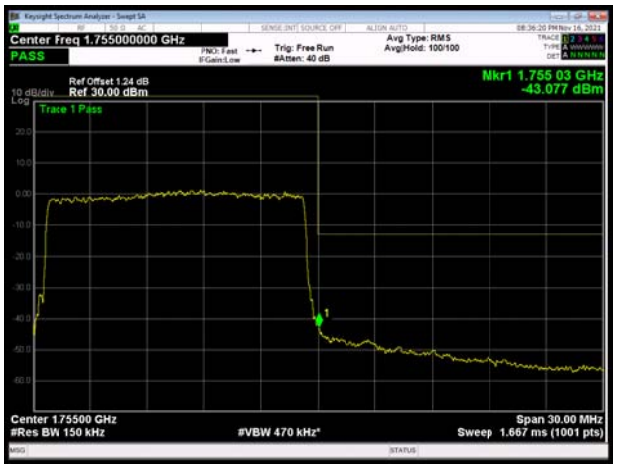
LTE Band 4 64QAM 15MHz CH-High, 1 RB



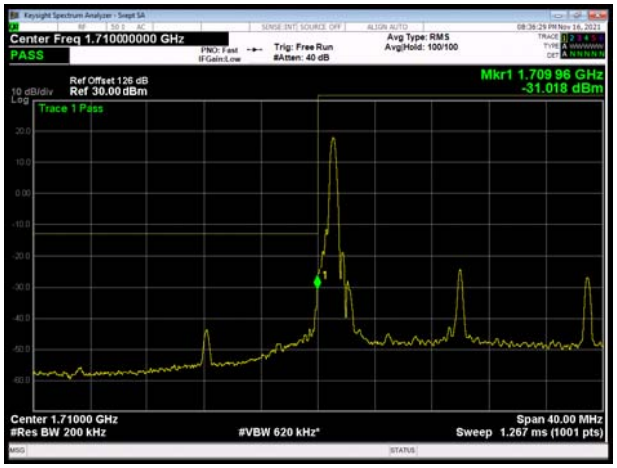
LTE Band 4 64QAM 15MHz CH-Low, 100%RB



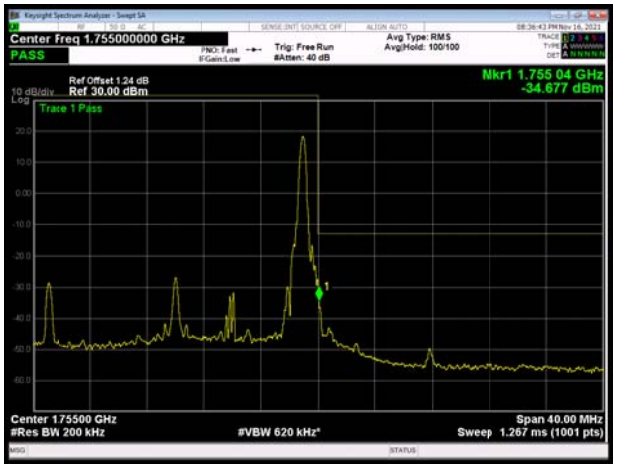
LTE Band 4 64QAM 15MHz CH-High, 100%RB



LTE Band 4 64QAM 20MHz CH-Low, 1 RB

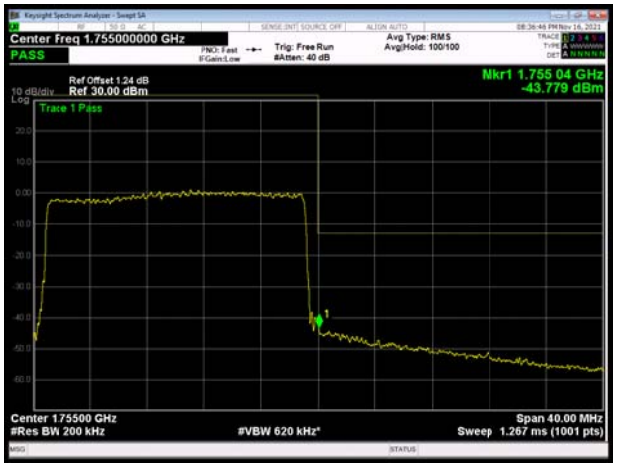


LTE Band 4 64QAM 20MHz CH-High, 1 RB



LTE Band 4 64QAM 20MHz CH-Low, 100%RB

LTE Band 4 64QAM 20MHz CH-High, 100%RB



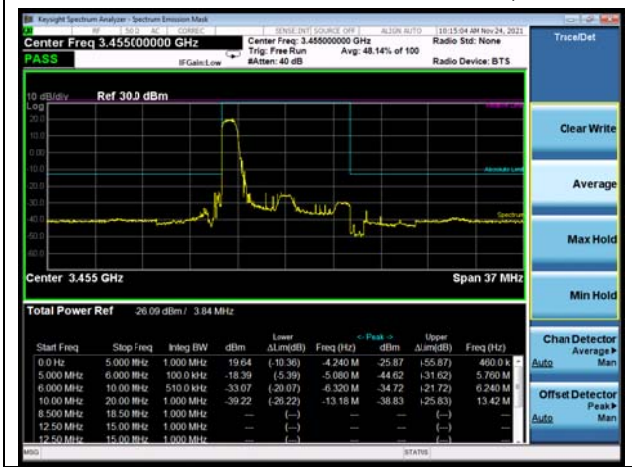
LTE Band 42 QPSK 5MHz CH-Low, 1 RB

LTE Band 42 QPSK 5MHz CH-High, 1 RB

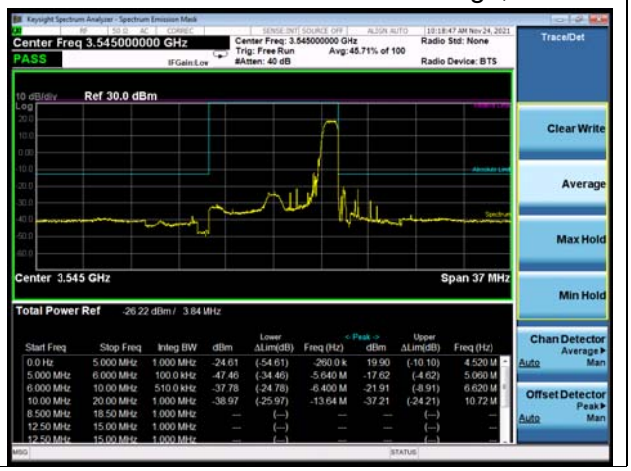
LTE Band 42 QPSK 5MHz CH-Low, 100%RB

LTE Band 42 QPSK 5MHz CH-High, 100%RB

LTE Band 42 QPSK 10MHz CH-Low, 1 RB



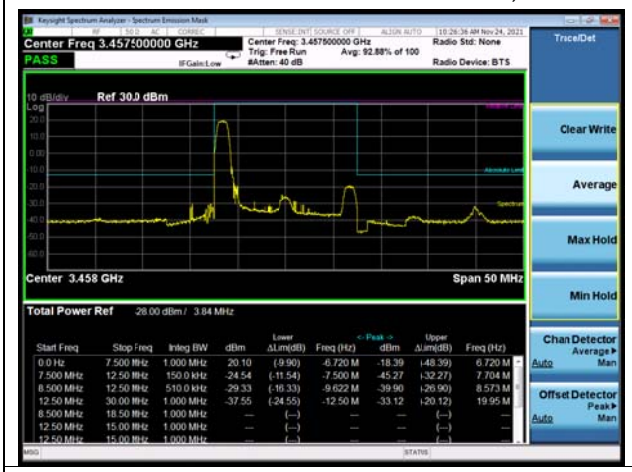
LTE Band 42 QPSK 10MHz CH-High, 1 RB



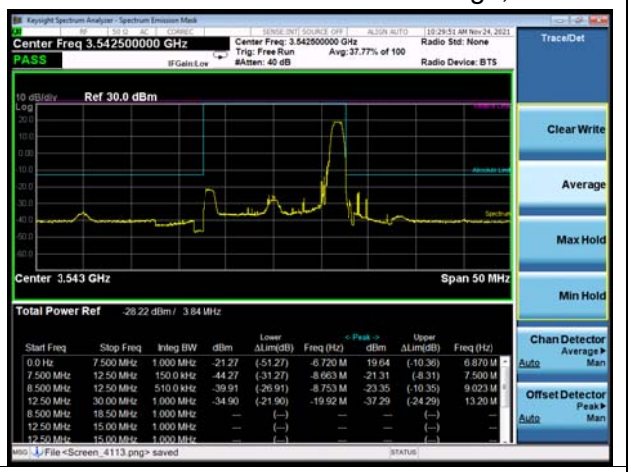
LTE Band 42 QPSK 10MHz CH-Low, 100%RB

LTE Band 42 QPSK 10MHz CH-High, 100%RB

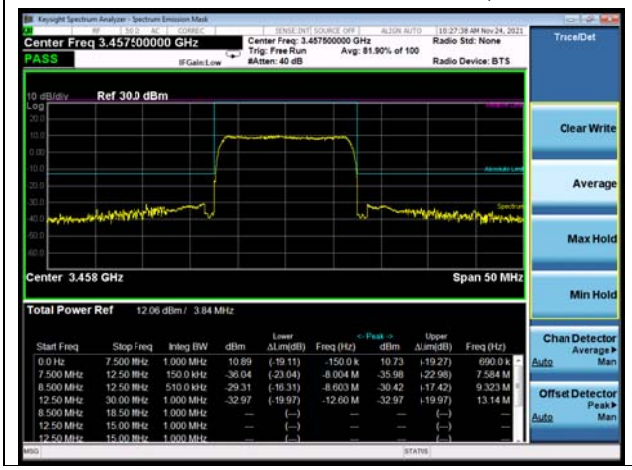
LTE Band 42 QPSK 15MHz CH-Low, 1 RB



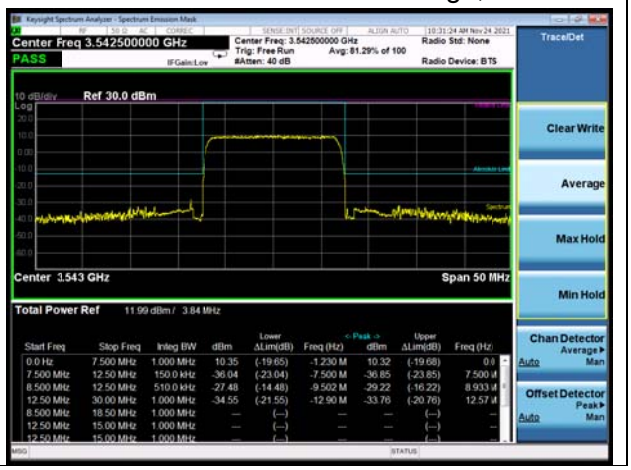
LTE Band 42 QPSK 15MHz CH-High, 1 RB



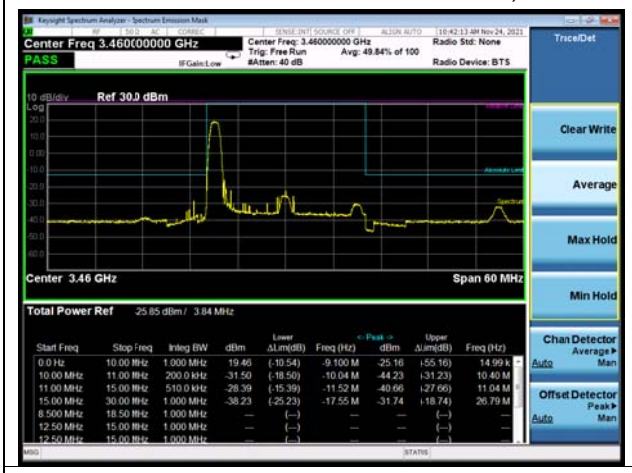
LTE Band 42 QPSK 15MHz CH-Low, 100%RB



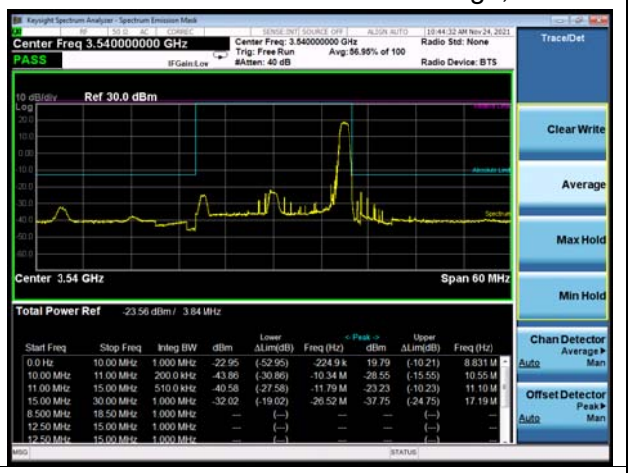
LTE Band 42 QPSK 15MHz CH-High, 100%RB



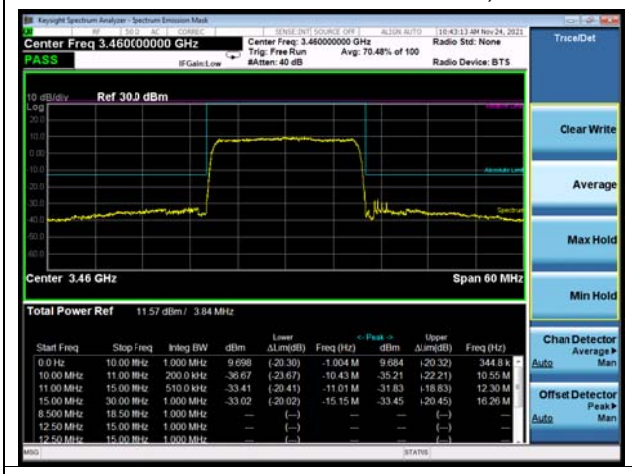
LTE Band 42 QPSK 20MHz CH-Low, 1 RB



LTE Band 42 QPSK 20MHz CH-High, 1 RB



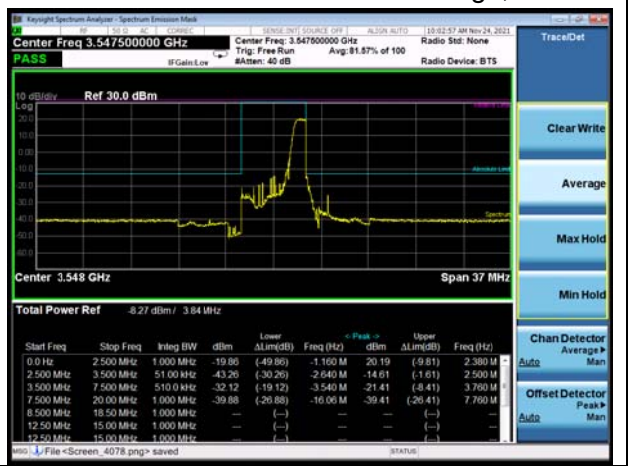
LTE Band 42 QPSK 20MHz CH-Low, 100%RB



LTE Band 42 QPSK 20MHz CH-High, 100%RB

LTE Band 42 16QAM 5MHz CH-Low, 1 RB

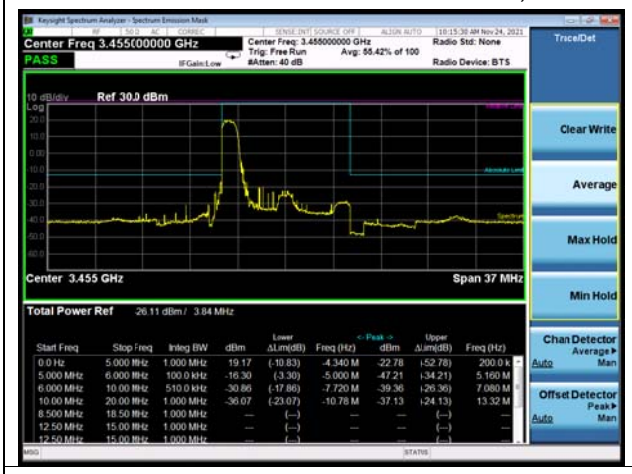
LTE Band 42 16QAM 5MHz CH-High, 1 RB



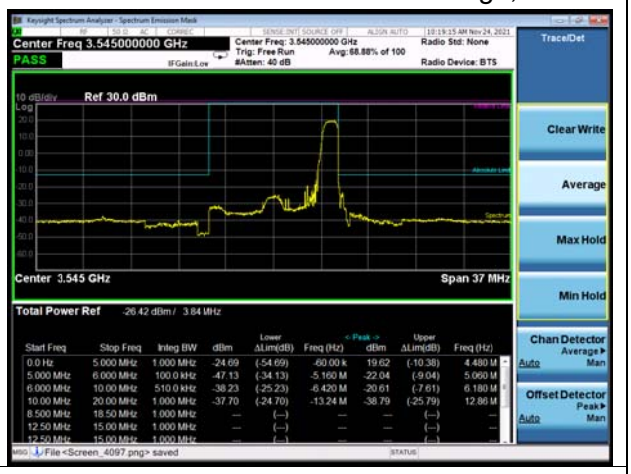
LTE Band 42 16QAM 5MHz CH-Low, 100%RB

LTE Band 42 16QAM 5MHz CH-High, 100%RB

LTE Band 42 16QAM 10MHz CH-Low, 1 RB

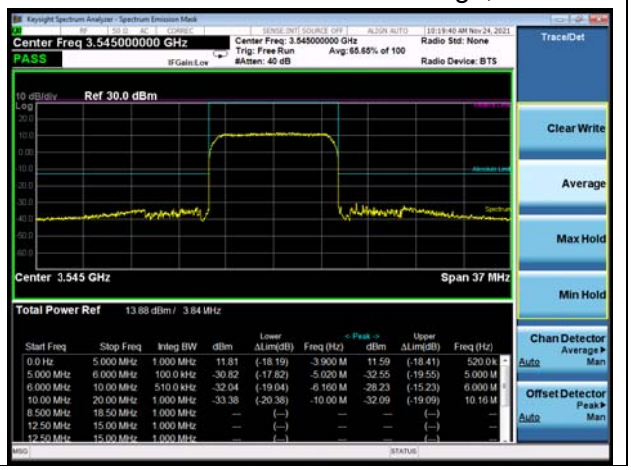


LTE Band 42 16QAM 10MHz CH-High, 1 RB

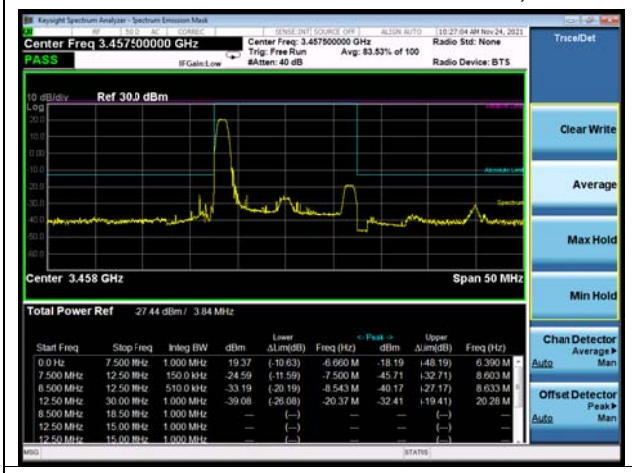


LTE Band 42 16QAM 10MHz CH-Low, 100%RB

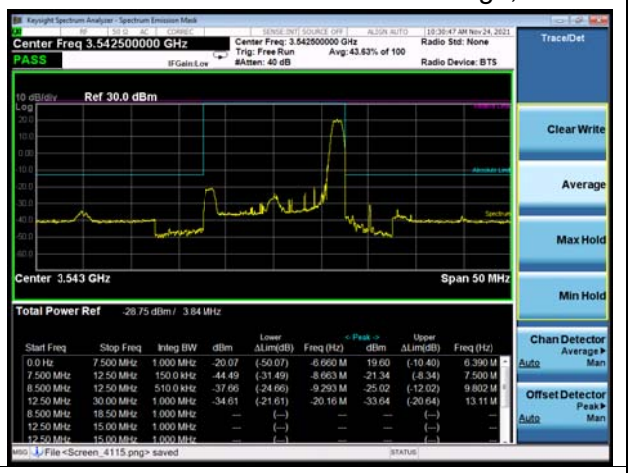
LTE Band 42 16QAM 10MHz CH-High, 100%RB



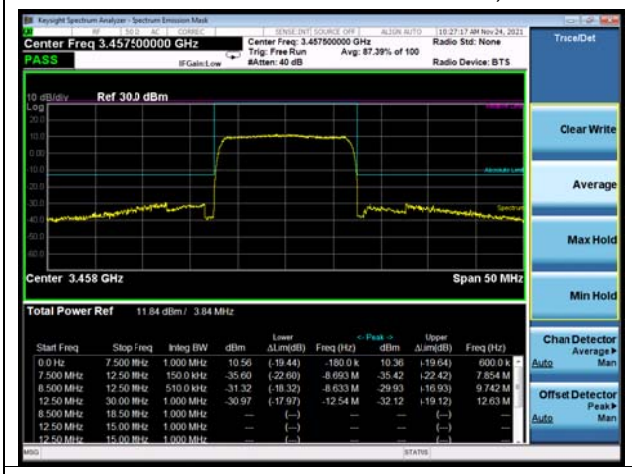
LTE Band 42 16QAM 15MHz CH-Low, 1 RB



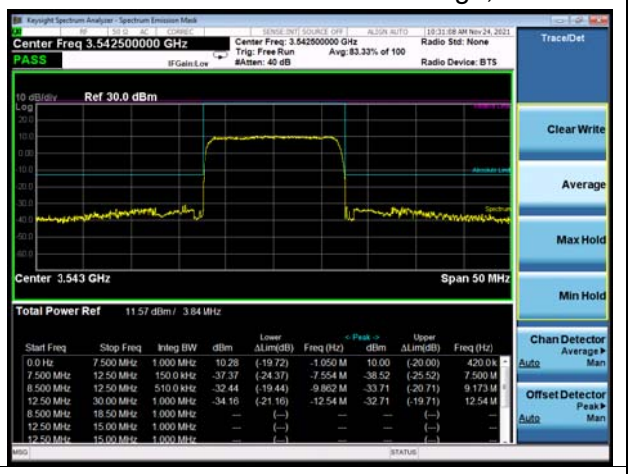
LTE Band 42 16QAM 15MHz CH-High, 1 RB



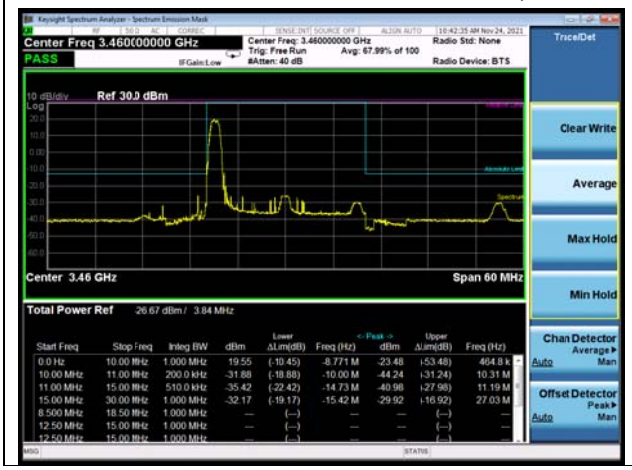
LTE Band 42 16QAM 15MHz CH-Low, 100%RB



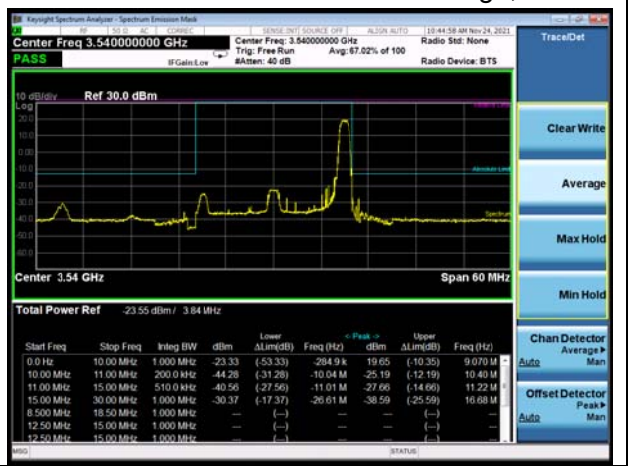
LTE Band 42 16QAM 15MHz CH-High, 100%RB



LTE Band 42 16QAM 20MHz CH-Low, RB 1



LTE Band 42 16QAM 20MHz CH-High, RB 1



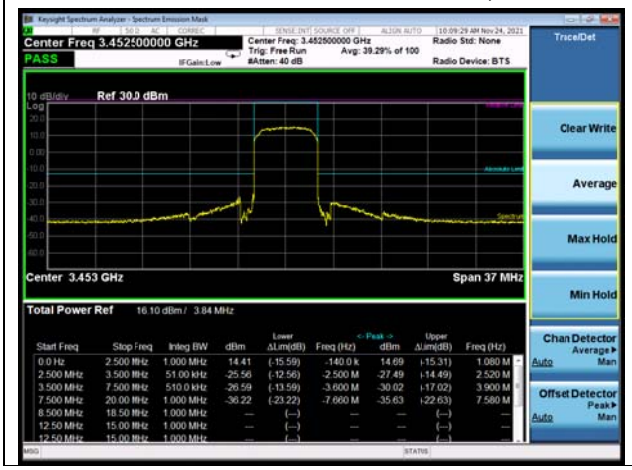
LTE Band 42 16QAM 20MHz CH-Low, 100%RB

LTE Band 42 16QAM 20MHz CH-High, 100%RB

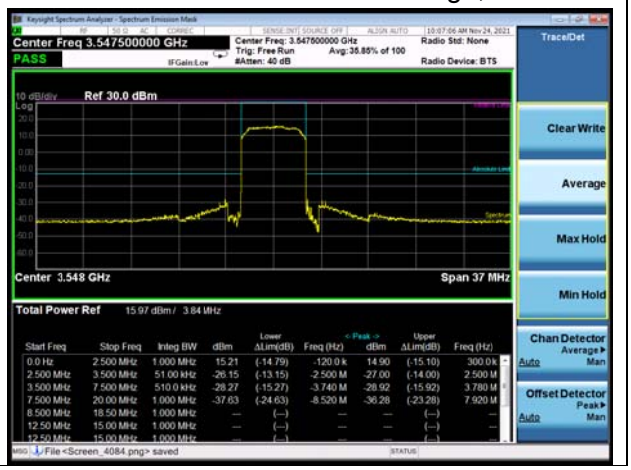
LTE Band 42 64QAM 5MHz CH-Low, 1 RB

LTE Band 42 64QAM 5MHz CH-High, 1 RB

LTE Band 42 64QAM 5MHz CH-Low, 100%RB

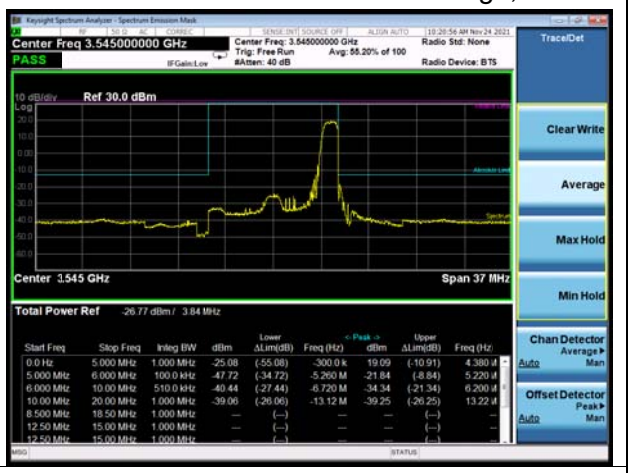


LTE Band 42 64QAM 5MHz CH-High, 100%RB

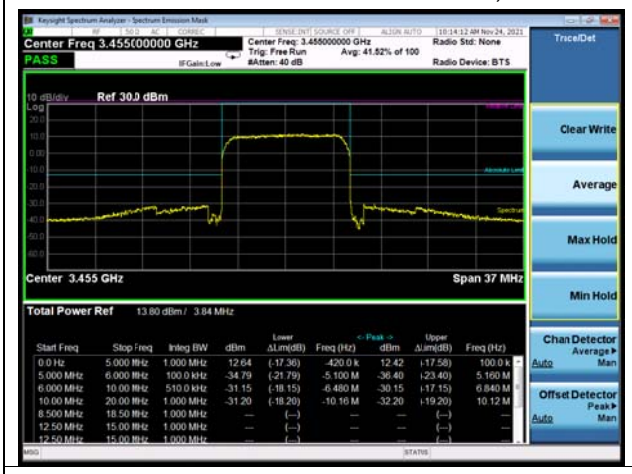


LTE Band 42 64QAM 10MHz CH-Low, 1 RB

LTE Band 42 64QAM 10MHz CH-High, 1 RB

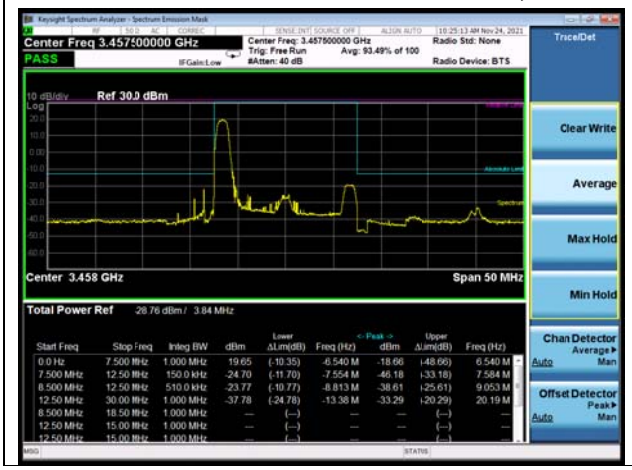


LTE Band 42 64QAM 10MHz CH-Low, 100%RB

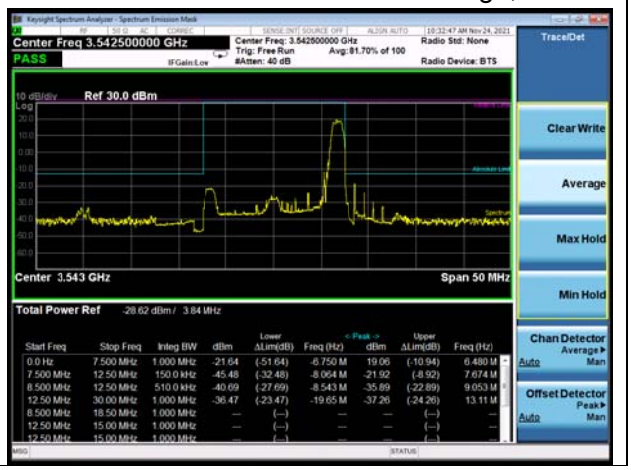


LTE Band 42 64QAM 10MHz CH-High, 100%RB

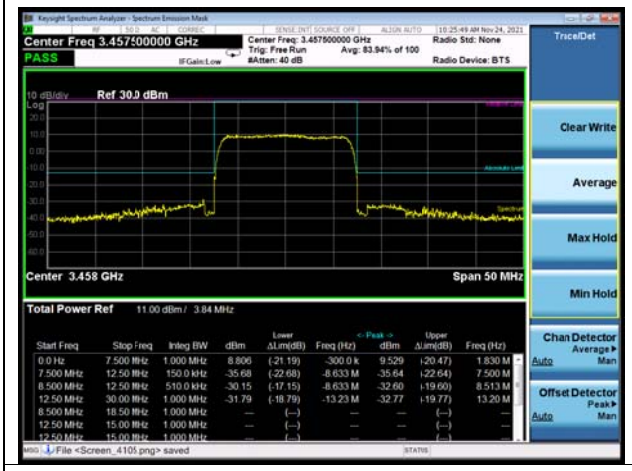
LTE Band 42 64QAM 15MHz CH-Low, 1 RB



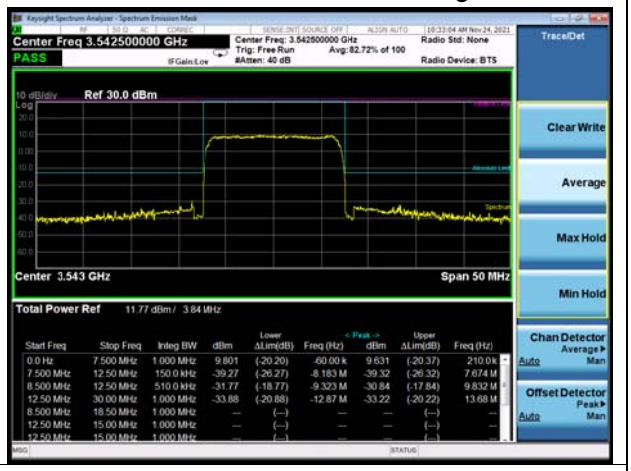
LTE Band 42 64QAM 15MHz CH-High, 1 RB



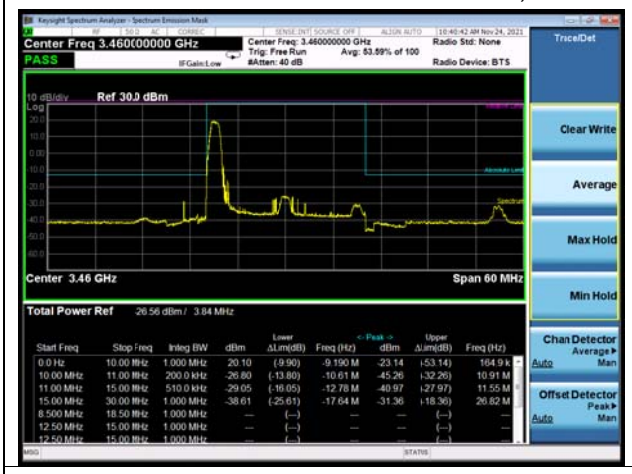
LTE Band 42 64QAM 15MHz CH-Low, 100%RB



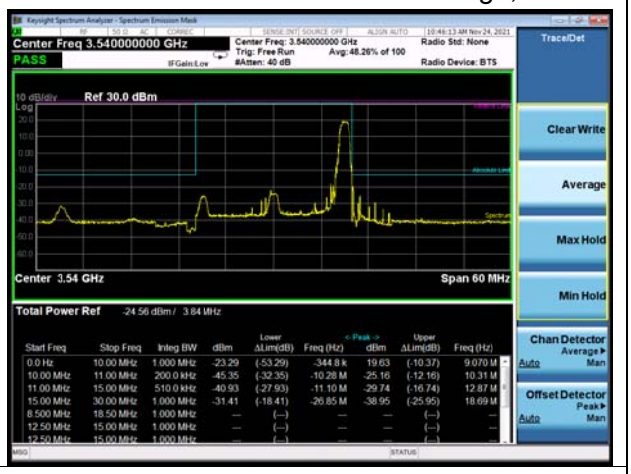
LTE Band 42 64QAM 15MHz CH-High, 100%RB



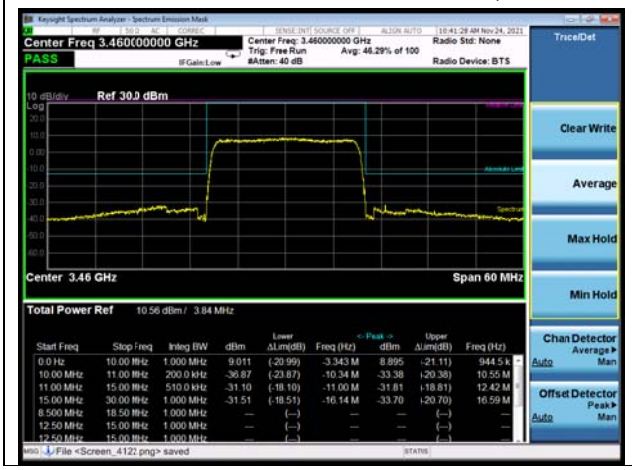
LTE Band 42 64QAM 20MHz CH-Low, 1 RB



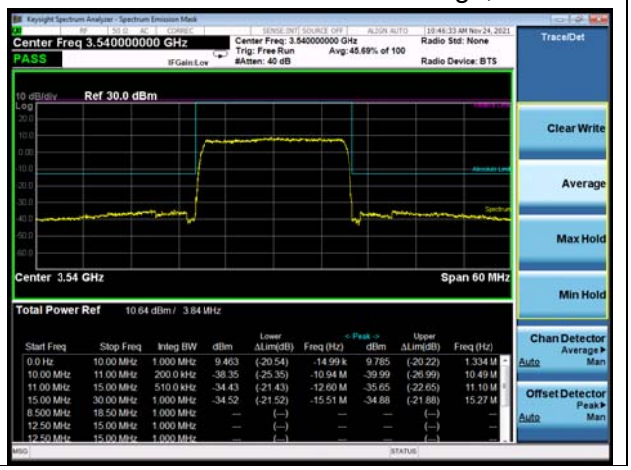
LTE Band 42 64QAM 20MHz CH-High, 1 RB



LTE Band 42 64QAM 20MHz CH-Low, 100%RB



LTE Band 42 64QAM 20MHz CH-High, 100%RB



5.4 Peak-to-Average Power Ratio (PAPR)

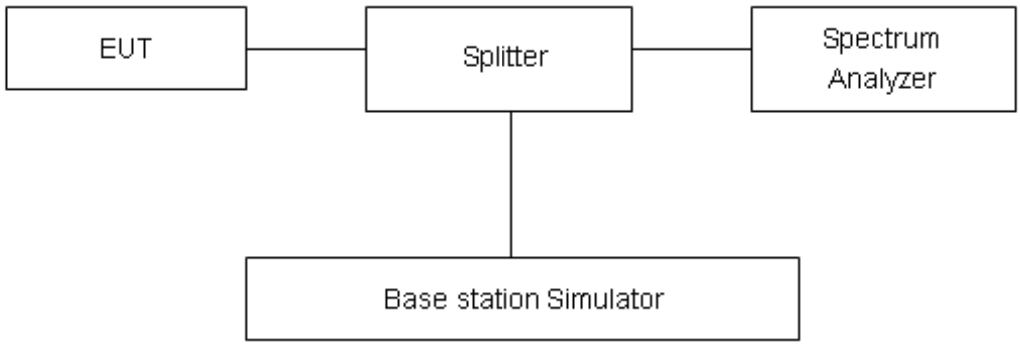
Ambient condition

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

Methods of Measurement

Measure the total peak power and record as PPk. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (*e.g.*, dBm). Determine the PAPR from:
PAPR (dB) = PPk (dBm) - PAvg (dBm).

Test Setup



Limits

Rule Part 27.50(d)(5) Equipment employed must be authorized in accordance with the provisions of 24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.
Rule Part 27.50(k)(4) Equipment employed must be authorized in accordance with the provisions of 24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for thenormal distribution is with the coverage factor k = 2, U= 0.4 dB.

Test Results

LTE Band 4								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	19957	1710.7	24.59	18.95	5.64	≤13	PASS
		20175	1732.5	21.94	16.21	5.73	≤13	PASS
		20393	1754.3	24.56	18.92	5.64	≤13	PASS
	3	19965	1711.5	24.42	18.70	5.72	≤13	PASS
		20175	1732.5	21.82	16.20	5.62	≤13	PASS
		20385	1753.5	24.79	19.12	5.67	≤13	PASS
	5	19975	1712.5	24.56	18.83	5.73	≤13	PASS
		20175	1732.5	22.23	16.38	5.85	≤13	PASS
		20375	1752.5	25.06	19.42	5.64	≤13	PASS
	10	20000	1715	24.19	18.59	5.60	≤13	PASS
		20175	1732.5	22.24	16.55	5.69	≤13	PASS
		20350	1750	24.87	19.36	5.51	≤13	PASS
	15	20025	1717.5	24.10	18.17	5.93	≤13	PASS
		20175	1732.5	22.66	16.63	6.03	≤13	PASS
		20325	1747.5	24.78	18.97	5.81	≤13	PASS
	20	20050	1720	23.70	18.15	5.55	≤13	PASS
		20175	1732.5	22.66	16.97	5.69	≤13	PASS
		20300	1745	24.21	18.65	5.56	≤13	PASS
16QAM	1.4	19957	1710.7	25.20	18.95	6.25	≤13	PASS
		20175	1732.5	22.75	16.25	6.50	≤13	PASS
		20393	1754.3	25.26	18.93	6.33	≤13	PASS
	3	19965	1711.5	25.12	18.68	6.44	≤13	PASS
		20175	1732.5	22.70	16.20	6.50	≤13	PASS
		20385	1753.5	25.55	19.14	6.41	≤13	PASS
	5	19975	1712.5	25.08	18.81	6.27	≤13	PASS
		20175	1732.5	22.83	16.37	6.46	≤13	PASS
		20375	1752.5	25.77	19.43	6.34	≤13	PASS
	10	20000	1715	24.83	18.56	6.27	≤13	PASS
		20175	1732.5	22.95	16.54	6.41	≤13	PASS
		20350	1750	25.62	19.36	6.26	≤13	PASS
	15	20025	1717.5	24.45	18.14	6.31	≤13	PASS
		20175	1732.5	23.04	16.62	6.42	≤13	PASS
		20325	1747.5	25.22	18.97	6.25	≤13	PASS
	20	20050	1720	24.39	18.11	6.28	≤13	PASS
		20175	1732.5	23.45	17.09	6.36	≤13	PASS
		20300	1745	24.92	18.66	6.26	≤13	PASS

64QAM	1.4	19957	1710.7	24.85	18.58	6.27	≤13	PASS
		20175	1732.5	22.30	15.89	6.41	≤13	PASS
		20393	1754.3	25.24	18.76	6.48	≤13	PASS
	3	19965	1711.5	24.74	18.32	6.42	≤13	PASS
		20175	1732.5	22.38	15.89	6.49	≤13	PASS
		20385	1753.5	25.19	18.81	6.38	≤13	PASS
	5	19975	1712.5	24.71	18.42	6.29	≤13	PASS
		20175	1732.5	22.49	16.08	6.41	≤13	PASS
		20375	1752.5	25.46	19.12	6.34	≤13	PASS
	10	20000	1715	24.56	18.31	6.25	≤13	PASS
		20175	1732.5	22.64	16.24	6.40	≤13	PASS
		20350	1750	25.36	19.15	6.21	≤13	PASS
	15	20025	1717.5	24.11	17.78	6.33	≤13	PASS
		20175	1732.5	22.72	16.30	6.42	≤13	PASS
		20325	1747.5	24.89	18.63	6.26	≤13	PASS
	20	20050	1720	24.10	17.80	6.30	≤13	PASS
		20175	1732.5	22.99	16.62	6.37	≤13	PASS
		20300	1745	24.59	18.30	6.29	≤13	PASS

LTE Band 42								
Modulation	**Bandwidth (MHz)**	**Channel**	**Frequency (MHz)**	**Peak (dBm)**	**Avg (dBm)**	**PAPR (dB)**	**Limit (dB)**	**Conclusion**
QPSK	5	42115	3452.5	26.98	17.00	9.98	≤13	PASS
		42590	3500	26.20	16.53	9.67	≤13	PASS
		43065	3547.5	26.78	17.40	9.38	≤13	PASS
	10	42140	3455	26.95	17.47	9.48	≤13	PASS
		42590	3500	26.08	16.64	9.44	≤13	PASS
		43040	3545	26.91	17.68	9.23	≤13	PASS
	15	42165	3457.5	26.83	16.12	10.71	≤13	PASS
		42590	3500	26.25	16.70	9.55	≤13	PASS
		43015	3542.5	26.87	17.40	9.47	≤13	PASS
	20	42190	3460	26.64	17.17	9.47	≤13	PASS
		42590	3500	26.03	16.50	9.53	≤13	PASS
		42990	3540	26.68	17.81	8.87	≤13	PASS
16QAM	5	42115	3452.5	27.44	17.02	10.42	≤13	PASS
		42590	3500	26.84	16.80	10.04	≤13	PASS
		43065	3547.5	27.41	17.89	9.52	≤13	PASS
	10	42140	3455	27.56	17.78	9.78	≤13	PASS

		42590	3500	26.72	16.37	10.35	≤13	PASS
		43040	3545	27.53	17.75	9.78	≤13	PASS
	15	42165	3457.5	27.35	16.77	10.58	≤13	PASS
		42590	3500	26.71	16.40	10.31	≤13	PASS
		43015	3542.5	27.27	16.73	10.54	≤13	PASS
	20	42190	3460	27.37	17.68	9.69	≤13	PASS
		42590	3500	26.71	16.54	10.17	≤13	PASS
		42990	3540	27.36	17.67	9.69	≤13	PASS
64QAM	5	42115	3452.5	27.01	17.10	9.91	≤13	PASS
		42590	3500	26.24	16.69	9.55	≤13	PASS
		43065	3547.5	26.90	17.08	9.82	≤13	PASS
	10	42140	3455	27.04	16.75	10.29	≤13	PASS
		42590	3500	26.36	16.47	9.89	≤13	PASS
		43040	3545	27.00	17.43	9.57	≤13	PASS
	15	42165	3457.5	27.11	17.41	9.70	≤13	PASS
		42590	3500	26.38	15.92	10.46	≤13	PASS
		43015	3542.5	26.95	17.20	9.75	≤13	PASS
	20	42190	3460	26.93	17.29	9.64	≤13	PASS
		42590	3500	26.18	15.91	10.27	≤13	PASS
		42990	3540	26.78	16.55	10.23	≤13	PASS

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.

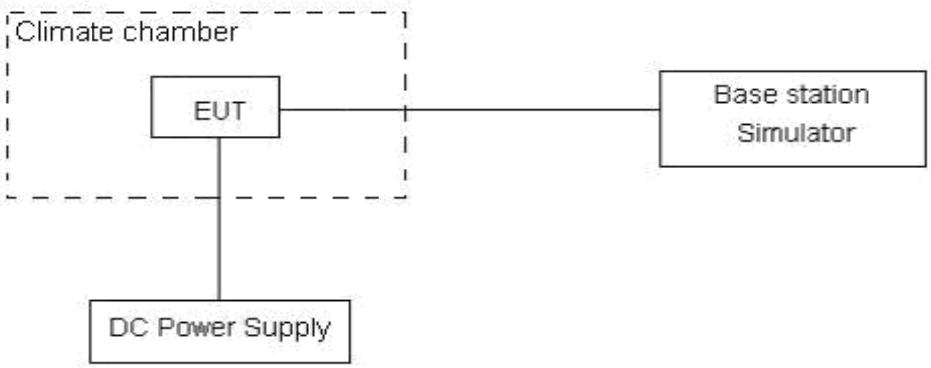
Frequency Stability (Voltage Variation)

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 9 V and 14V, with a nominal voltage of 12V.

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=0.01ppm.

Test Result

LTE band 4								
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	1.4MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	8.09	3.19	10.50	0.00467	0.00184	0.00606	PASS
Extreme（50℃）		2.94	3.82	3.99	0.00170	0.00220	0.00230	PASS
Extreme（40℃）		14.95	9.66	5.51	0.00863	0.00558	0.00318	PASS
Extreme（30℃）		11.30	15.75	10.33	0.00652	0.00909	0.00596	PASS
Extreme（20℃）		13.70	9.25	8.99	0.00791	0.00534	0.00519	PASS
Extreme（10℃）		8.34	11.43	11.77	0.00481	0.00660	0.00679	PASS
Extreme（0℃）		4.69	15.44	14.92	0.00271	0.00891	0.00861	PASS
Extreme（-10℃）		14.00	2.25	17.36	0.00808	0.00130	0.01002	PASS
Extreme（-20℃）		15.46	4.13	16.67	0.00893	0.00239	0.00962	PASS
Extreme（-30℃）		8.41	2.14	6.44	0.00485	0.00123	0.00372	PASS
25℃	LV	15.75	11.76	11.44	0.00909	0.00679	0.00660	PASS
	HV	17.88	10.52	17.95	0.01032	0.00607	0.01036	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	3MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	12.98	14.47	15.15	0.00749	0.00835	0.00875	PASS
Extreme（50℃）		8.17	6.46	7.52	0.00472	0.00373	0.00434	PASS
Extreme（40℃）		6.23	14.45	17.10	0.00360	0.00834	0.00987	PASS
Extreme（30℃）		7.32	8.15	11.12	0.00423	0.00471	0.00642	PASS
Extreme（20℃）		4.70	5.82	17.09	0.00271	0.00336	0.00987	PASS
Extreme（10℃）		7.93	17.17	8.01	0.00458	0.00991	0.00462	PASS
Extreme（0℃）		6.96	6.89	2.89	0.00402	0.00398	0.00167	PASS
Extreme（-10℃）		8.21	8.76	7.16	0.00474	0.00505	0.00413	PASS
Extreme（-20℃）		6.74	14.23	3.04	0.00389	0.00821	0.00176	PASS
Extreme（-30℃）		10.29	1.24	10.13	0.00594	0.00072	0.00584	PASS
25℃	LV	9.62	16.13	12.82	0.00555	0.00931	0.00740	PASS
	HV	12.87	8.16	12.66	0.00743	0.00471	0.00731	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	5MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	1.74	17.18	4.96	0.00100	0.00991	0.00286	PASS
Extreme（50℃）		5.24	16.80	6.39	0.00302	0.00970	0.00369	PASS
Extreme（40℃）		17.27	8.30	13.94	0.00997	0.00479	0.00804	PASS

Extreme（30℃）		11.66	5.21	9.99	0.00673	0.00301	0.00577	PASS
Extreme（20℃）		4.09	1.65	11.67	0.00236	0.00095	0.00674	PASS
Extreme（10℃）		14.89	11.95	5.88	0.00860	0.00690	0.00339	PASS
Extreme（0℃）		4.97	1.24	17.48	0.00287	0.00071	0.01009	PASS
Extreme（-10℃）		11.99	10.21	7.46	0.00692	0.00589	0.00430	PASS
Extreme（-20℃）		10.66	7.69	6.18	0.00616	0.00444	0.00357	PASS
Extreme（-30℃）		7.38	13.35	10.70	0.00426	0.00771	0.00617	PASS
25℃	LV	3.75	9.91	6.52	0.00216	0.00572	0.00377	PASS
	HV	15.94	8.44	3.45	0.00920	0.00487	0.00199	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	10MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）		11.87	6.12	12.94	0.00685	0.00353	0.00747	PASS
Extreme（50℃）		13.71	12.46	3.42	0.00792	0.00719	0.00197	PASS
Extreme（40℃）		12.98	5.17	11.49	0.00749	0.00298	0.00663	PASS
Extreme（30℃）		10.18	12.89	2.29	0.00588	0.00744	0.00132	PASS
Extreme（20℃）	Normal	1.60	4.21	15.28	0.00092	0.00243	0.00882	PASS
Extreme（10℃）		6.82	16.90	12.58	0.00393	0.00975	0.00726	PASS
Extreme（0℃）		2.91	16.24	10.95	0.00168	0.00937	0.00632	PASS
Extreme（-10℃）		11.01	9.78	3.99	0.00636	0.00565	0.00230	PASS
Extreme（-20℃）		10.91	17.75	17.25	0.00630	0.01024	0.00996	PASS
Extreme（-30℃）		17.93	1.91	15.75	0.01035	0.00110	0.00909	PASS
25℃	LV	3.30	5.62	6.08	0.00191	0.00325	0.00351	PASS
	HV	10.21	5.11	12.25	0.00590	0.00295	0.00707	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	15MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）		3.19	10.44	9.23	0.00184	0.00603	0.00533	PASS
Extreme（50℃）		17.14	8.14	1.09	0.00989	0.00470	0.00063	PASS
Extreme（40℃）		9.02	17.07	16.33	0.00520	0.00985	0.00942	PASS
Extreme（30℃）		11.57	14.84	14.56	0.00668	0.00857	0.00840	PASS
Extreme（20℃）	Normal	17.70	15.90	5.33	0.01022	0.00918	0.00308	PASS
Extreme（10℃）		17.13	6.55	1.24	0.00989	0.00378	0.00071	PASS
Extreme（0℃）		4.85	2.90	13.93	0.00280	0.00167	0.00804	PASS
Extreme（-10℃）		12.80	16.88	6.66	0.00739	0.00974	0.00384	PASS
Extreme（-20℃）		13.41	12.27	4.49	0.00774	0.00708	0.00259	PASS
Extreme（-30℃）		4.89	11.86	13.11	0.00282	0.00684	0.00757	PASS
25℃	LV	10.56	7.06	4.06	0.00610	0.00407	0.00234	PASS
	HV	14.83	3.13	17.54	0.00856	0.00181	0.01012	PASS

Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	20MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	3.62	3.14	4.65	0.00209	0.00181	0.00268	PASS
Extreme（50℃）		13.79	13.98	10.00	0.00796	0.00807	0.00577	PASS
Extreme（40℃）		14.45	14.05	5.90	0.00834	0.00811	0.00341	PASS
Extreme（30℃）		15.07	10.58	10.44	0.00870	0.00611	0.00603	PASS
Extreme（20℃）		12.20	12.04	6.47	0.00704	0.00695	0.00373	PASS
Extreme（10℃）		2.94	17.18	6.49	0.00170	0.00992	0.00374	PASS
Extreme（0℃）		3.38	5.60	15.87	0.00195	0.00323	0.00916	PASS
Extreme（-10℃）		14.64	1.76	11.28	0.00845	0.00101	0.00651	PASS
Extreme（-20℃）		15.31	9.65	7.07	0.00884	0.00557	0.00408	PASS
Extreme（-30℃）		15.47	5.46	2.65	0.00893	0.00315	0.00153	PASS
25℃	LV	10.44	2.95	9.69	0.00603	0.00171	0.00559	PASS
	HV	10.70	10.34	4.82	0.00617	0.00597	0.00278	PASS

LTE band 42								
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	5MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	5.00	13.00	10.00	0.00143	0.00371	0.00286	PASS
Extreme（50℃）		2.00	9.00	6.00	0.00057	0.00257	0.00171	PASS
Extreme（40℃）		6.00	12.00	13.00	0.00171	0.00343	0.00371	PASS
Extreme（30℃）		4.00	6.00	6.00	0.00114	0.00171	0.00171	PASS
Extreme（20℃）		17.00	12.00	5.00	0.00486	0.00343	0.00143	PASS
Extreme（10℃）		13.00	15.00	6.00	0.00371	0.00429	0.00171	PASS
Extreme（0℃）		10.00	14.00	7.00	0.00286	0.00400	0.00200	PASS
Extreme（-10℃）		11.00	3.00	15.00	0.00314	0.00086	0.00429	PASS
Extreme（-20℃）		15.00	2.00	10.00	0.00429	0.00057	0.00286	PASS
Extreme（-30℃）		3.00	8.00	14.00	0.00086	0.00229	0.00400	PASS
25℃	LV	8.00	1.00	2.00	0.00229	0.00029	0.00057	PASS
	HV	17.00	16.00	16.00	0.00486	0.00457	0.00457	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	10MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	4.00	1.00	17.00	0.00114	0.00029	0.00486	PASS
Extreme（50℃）		16.00	4.00	12.00	0.00457	0.00114	0.00343	PASS
Extreme（40℃）		10.00	9.00	3.00	0.00286	0.00257	0.00086	PASS

Extreme（30℃）		1.00	14.00	11.00	0.00029	0.00400	0.00314	PASS
Extreme（20℃）		9.00	8.00	10.00	0.00257	0.00229	0.00286	PASS
Extreme（10℃）		7.00	6.00	9.00	0.00200	0.00171	0.00257	PASS
Extreme（0℃）		14.00	2.00	16.00	0.00400	0.00057	0.00457	PASS
Extreme（-10℃）		16.00	14.00	12.00	0.00457	0.00400	0.00343	PASS
Extreme（-20℃）		7.00	17.00	6.00	0.00200	0.00486	0.00171	PASS
Extreme（-30℃）		7.00	2.00	2.00	0.00200	0.00057	0.00057	PASS
25℃	LV	7.00	17.00	17.00	0.00200	0.00486	0.00486	PASS
	HV	12.00	14.00	9.00	0.00343	0.00400	0.00257	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	15MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	17.00	12.00	5.00	0.00486	0.00343	0.00143	PASS
Extreme（50℃）		4.00	1.00	7.00	0.00114	0.00029	0.00200	PASS
Extreme（40℃）		3.00	2.00	5.00	0.00086	0.00057	0.00143	PASS
Extreme（30℃）		16.00	14.00	3.00	0.00457	0.00400	0.00086	PASS
Extreme（20℃）		2.00	7.00	11.00	0.00057	0.00200	0.00314	PASS
Extreme（10℃）		12.00	17.00	16.00	0.00343	0.00486	0.00457	PASS
Extreme（0℃）		17.00	12.00	8.00	0.00486	0.00343	0.00229	PASS
Extreme（-10℃）		2.00	4.00	12.00	0.00057	0.00114	0.00343	PASS
Extreme（-20℃）		6.00	1.00	12.00	0.00171	0.00029	0.00343	PASS
Extreme（-30℃）		2.00	4.00	12.00	0.00057	0.00114	0.00343	PASS
25℃	LV	6.00	6.00	11.00	0.00171	0.00171	0.00314	PASS
	HV	2.00	11.00	12.00	0.00057	0.00314	0.00343	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	20MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	6.00	2.00	7.00	0.00171	0.00057	0.00200	PASS
Extreme（50℃）		15.00	17.00	12.00	0.00429	0.00486	0.00343	PASS
Extreme（40℃）		13.00	13.00	14.00	0.00371	0.00371	0.00400	PASS
Extreme（30℃）		3.00	6.00	9.00	0.00086	0.00171	0.00257	PASS
Extreme（20℃）		14.00	1.00	5.00	0.00400	0.00029	0.00143	PASS
Extreme（10℃）		9.00	16.00	17.00	0.00257	0.00457	0.00486	PASS
Extreme（0℃）		12.00	2.00	3.00	0.00343	0.00057	0.00086	PASS
Extreme（-10℃）		16.00	11.00	11.00	0.00457	0.00314	0.00314	PASS
Extreme（-20℃）		1.00	13.00	16.00	0.00029	0.00371	0.00457	PASS
Extreme（-30℃）		4.00	9.00	7.00	0.00114	0.00257	0.00200	PASS
25℃	LV	16.00	17.00	6.00	0.00457	0.00486	0.00171	PASS
	HV	12.00	15.00	13.00	0.00343	0.00429	0.00371	PASS

5.6 Spurious Emissions at Antenna Terminals

Ambient condition

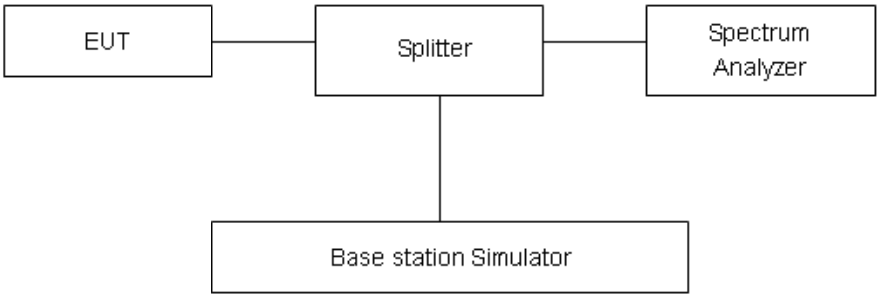
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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 100kHz, VBW is set to 300kHz for 30MHz~1GHz
RBW is set to 1MHz, VBW is set to 3MHz for above 1GHz, Sweep is set to ATUO.
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)

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 log10 (P) dB.”
Rule Part 27.53(n) For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz. Compliance with this paragraph (n)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but

limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

Part 27.53(n) Limit	-13 dBm
Part 27.53(a)/(h)/(g) Limit	-13 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.

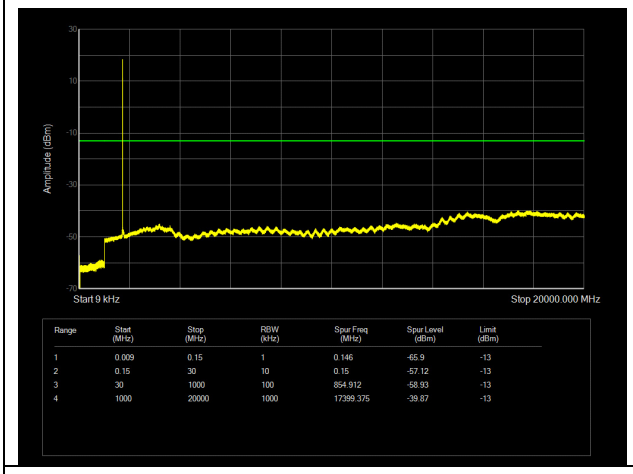
Frequency	Uncertainty
9kHz-1GHz	0.684 dB
1GHz-40GHz	1.407 dB

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.

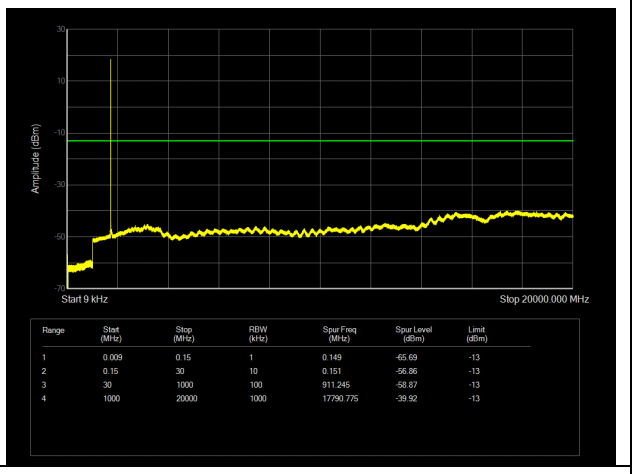
The signal beyond the limit is carrier.

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



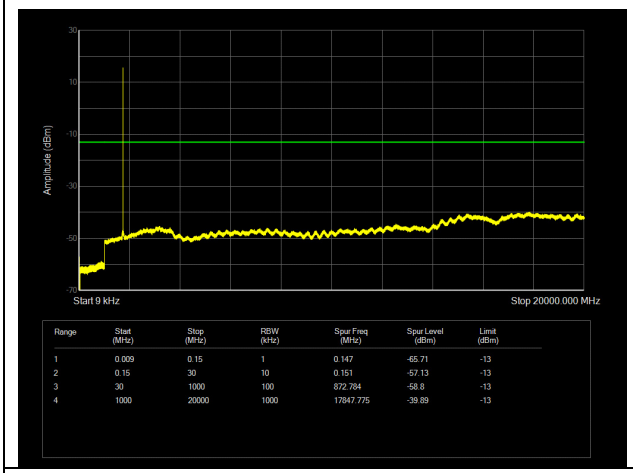
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.146	-65.9	-13
2	0.15	30	10	0.15	-57.12	-13
3	30	1000	100	854.912	-58.93	-13
4	1000	20000	1000	17399.375	-39.87	-13

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



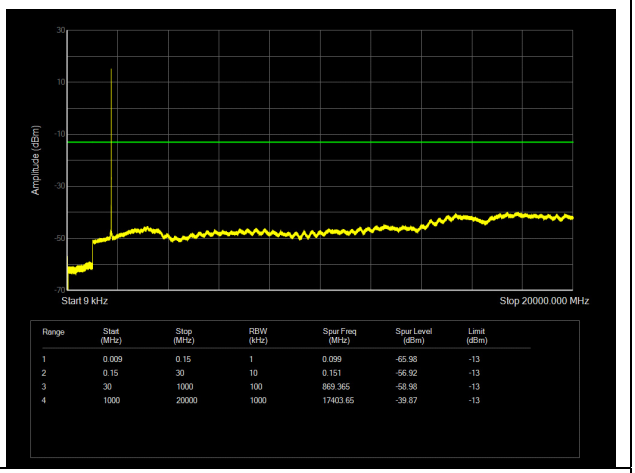
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.149	-65.69	-13
2	0.15	30	10	0.151	-56.86	-13
3	30	1000	100	911.245	-58.87	-13
4	1000	20000	1000	17790.775	-39.92	-13

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



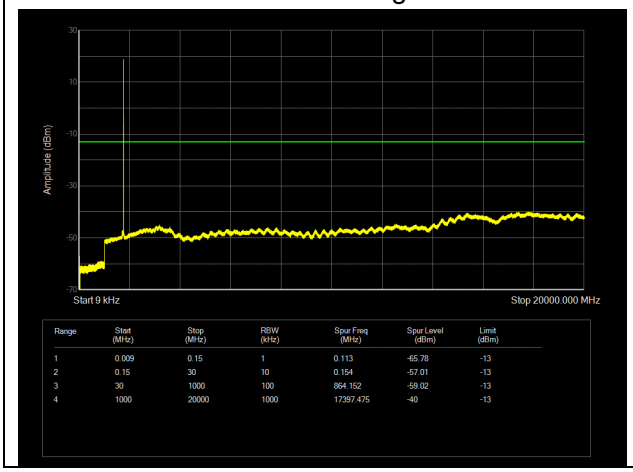
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.147	-65.71	-13
2	0.15	30	10	0.151	-57.13	-13
3	30	1000	100	872.784	-58.8	-13
4	1000	20000	1000	17847.775	-39.89	-13

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



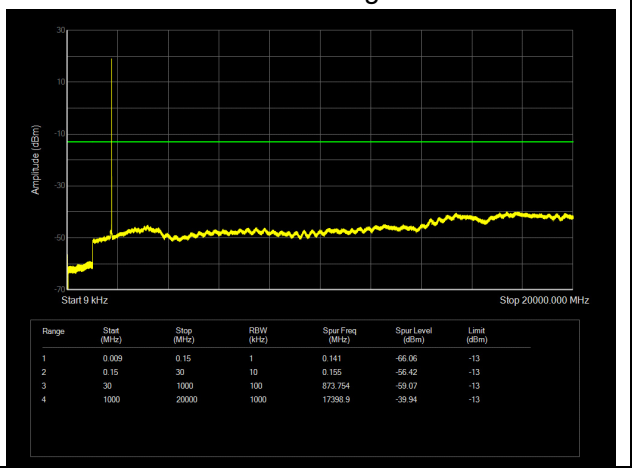
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.099	-65.98	-13
2	0.15	30	10	0.151	-56.92	-13
3	30	1000	100	869.365	-58.98	-13
4	1000	20000	1000	17403.65	-39.87	-13

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



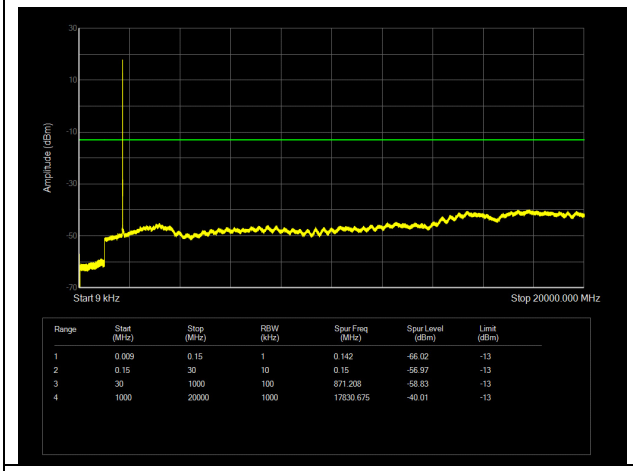
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.113	-65.78	-13
2	0.15	30	10	0.154	-57.01	-13
3	30	1000	100	864.152	-59.02	-13
4	1000	20000	1000	17397.475	-40	-13

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



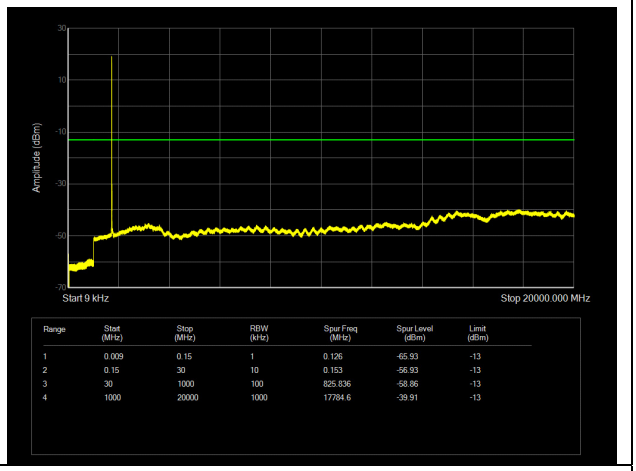
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.141	-66.06	-13
2	0.15	30	10	0.155	-56.42	-13
3	30	1000	100	873.754	-59.07	-13
4	1000	20000	1000	17398.9	-39.94	-13

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



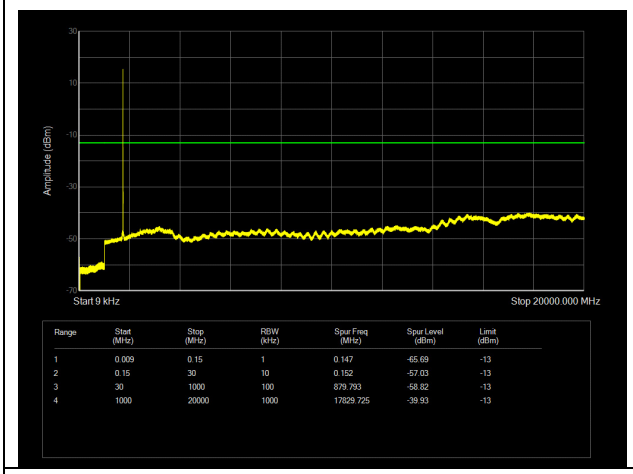
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.142	-66.02	-13
2	0.15	30	10	0.15	-56.97	-13
3	30	1000	100	871.208	-58.83	-13
4	1000	20000	1000	17830.675	-40.01	-13

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



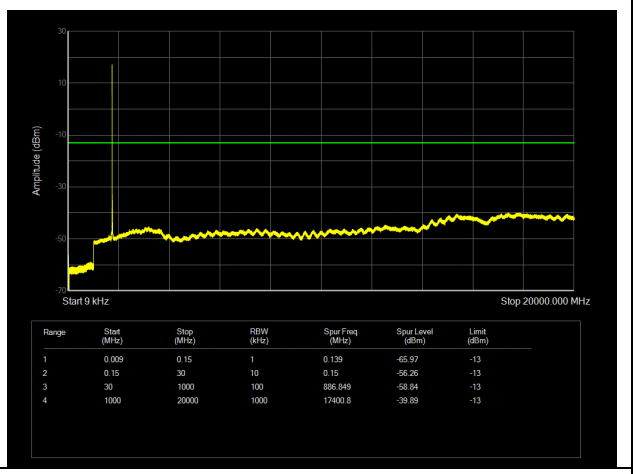
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.126	-65.93	-13
2	0.15	30	10	0.153	-56.93	-13
3	30	1000	100	825.836	-58.86	-13
4	1000	20000	1000	17784.6	-39.91	-13

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



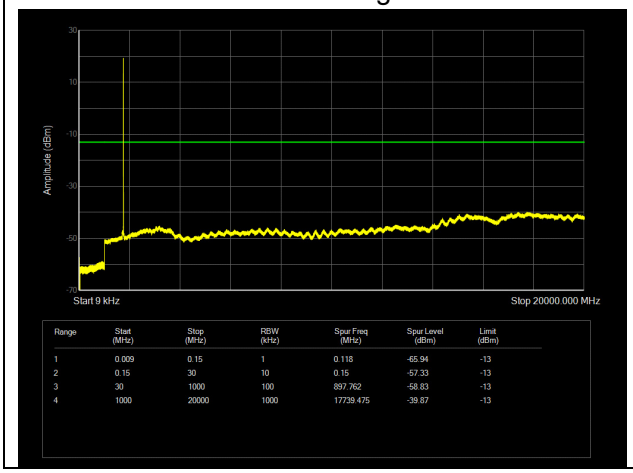
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.147	-65.69	-13
2	0.15	30	10	0.152	-57.03	-13
3	30	1000	100	879.793	-58.82	-13
4	1000	20000	1000	17829.725	-39.93	-13

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



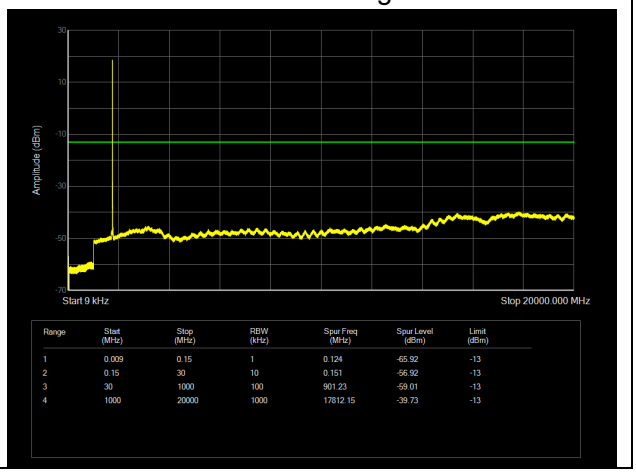
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.139	-65.97	-13
2	0.15	30	10	0.15	-56.26	-13
3	30	1000	100	886.849	-58.84	-13
4	1000	20000	1000	17400.8	-39.89	-13

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



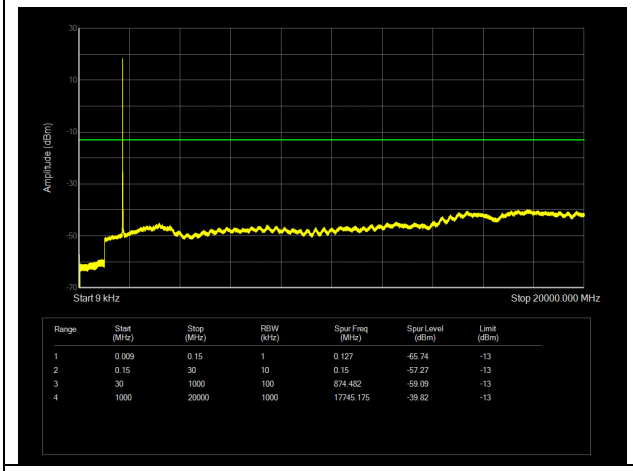
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.118	-65.94	-13
2	0.15	30	10	0.15	-57.33	-13
3	30	1000	100	897.762	-58.83	-13
4	1000	20000	1000	17739.475	-39.87	-13

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



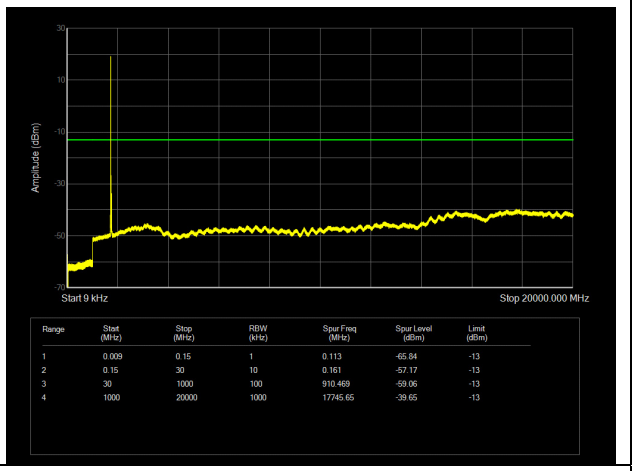
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.124	-65.92	-13
2	0.15	30	10	0.151	-56.92	-13
3	30	1000	100	901.23	-59.01	-13
4	1000	20000	1000	17812.15	-39.73	-13

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



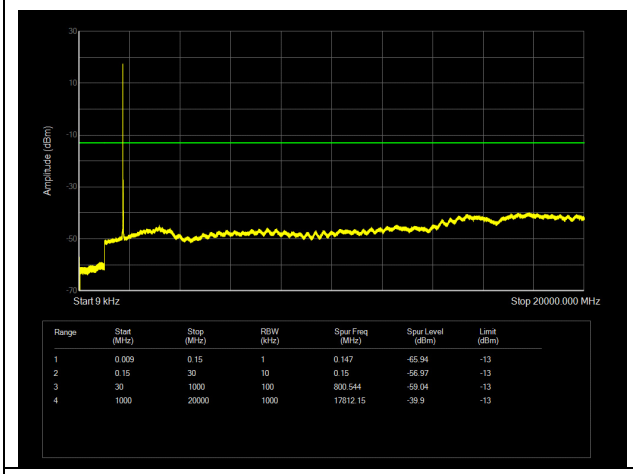
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.127	-65.74	-13
2	0.15	30	10	0.15	-57.27	-13
3	30	1000	100	874.482	-59.09	-13
4	1000	20000	1000	17745.175	-39.82	-13

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



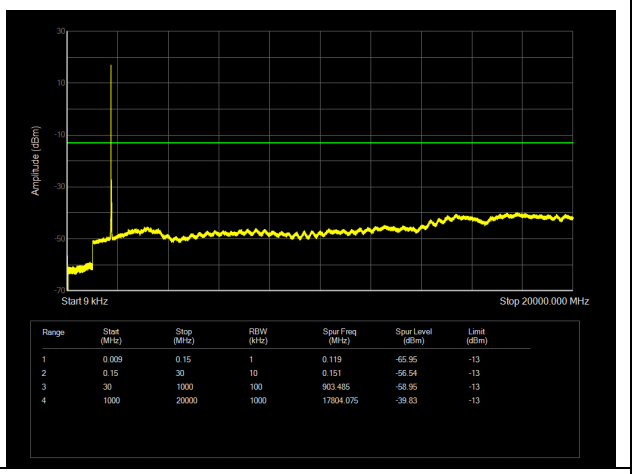
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.113	-65.84	-13
2	0.15	30	10	0.161	-57.17	-13
3	30	1000	100	910.469	-59.06	-13
4	1000	20000	1000	17745.65	-39.65	-13

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



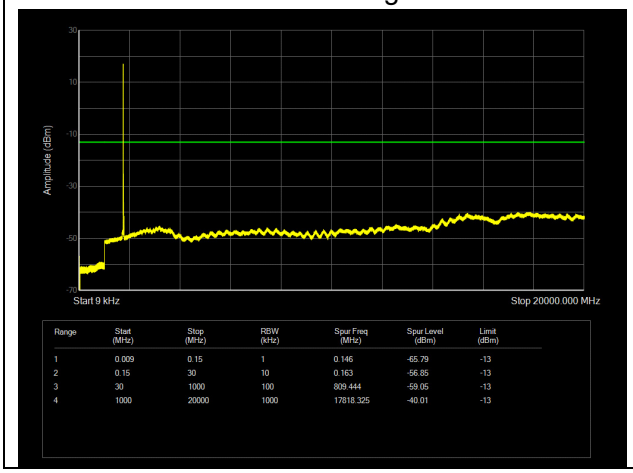
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.147	-65.94	-13
2	0.15	30	10	0.15	-56.97	-13
3	30	1000	100	800.544	-59.04	-13
4	1000	20000	1000	17812.15	-39.9	-13

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



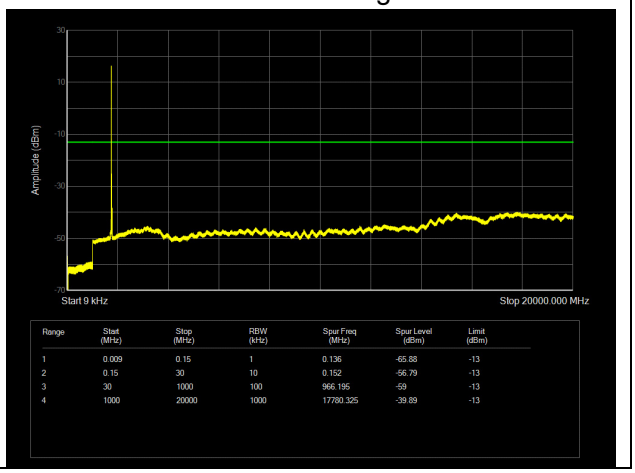
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.119	-65.95	-13
2	0.15	30	10	0.151	-56.54	-13
3	30	1000	100	903.485	-58.95	-13
4	1000	20000	1000	17804.075	-39.83	-13

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



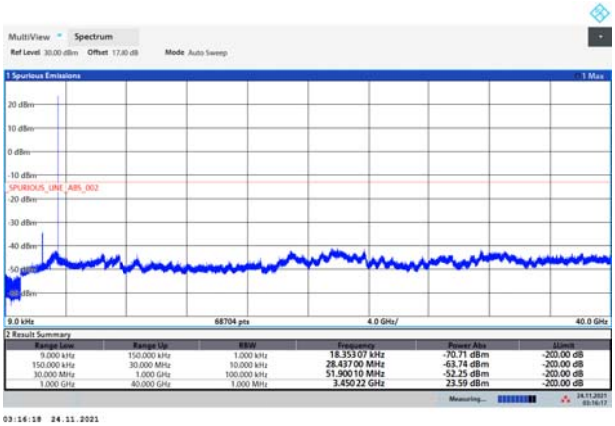
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.146	-65.79	-13
2	0.15	30	10	0.163	-56.85	-13
3	30	1000	100	809.444	-59.05	-13
4	1000	20000	1000	17818.325	-40.01	-13

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

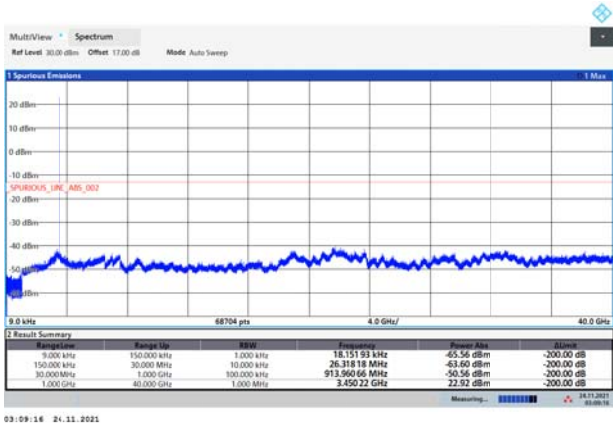


Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.136	-65.88	-13
2	0.15	30	10	0.152	-56.79	-13
3	30	1000	100	966.195	-59	-13
4	1000	20000	1000	17780.325	-39.89	-13

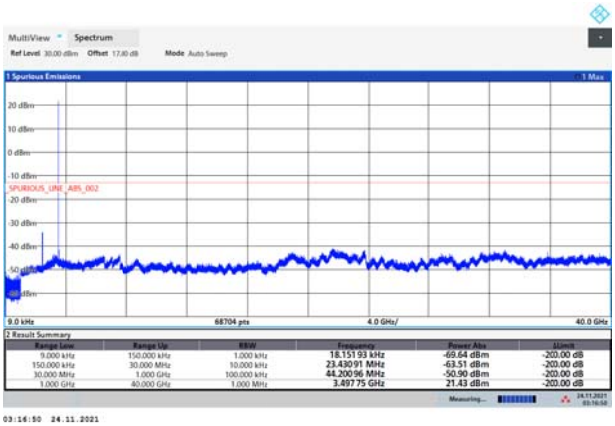
LTE Band 42 5MHz CH-Low 9kHz~40GHz



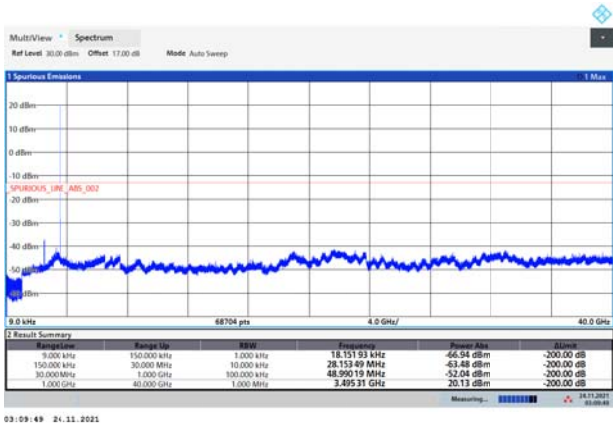
LTE Band 42 10MHz CH- Low 9kHz~40GHz



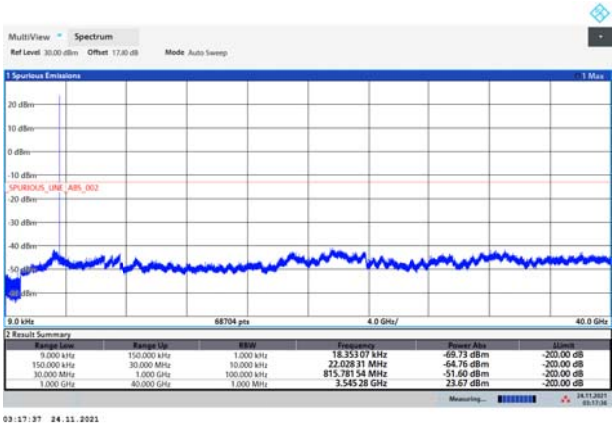
LTE Band 42 5MHz CH- Middle 9kHz~40GHz



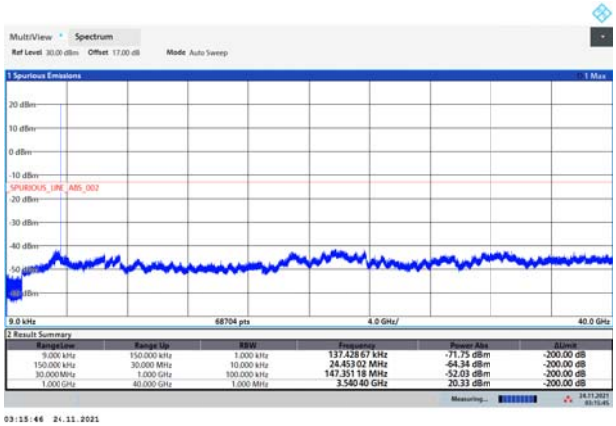
LTE Band 42 10MHz CH- Middle 9kHz~40GHz



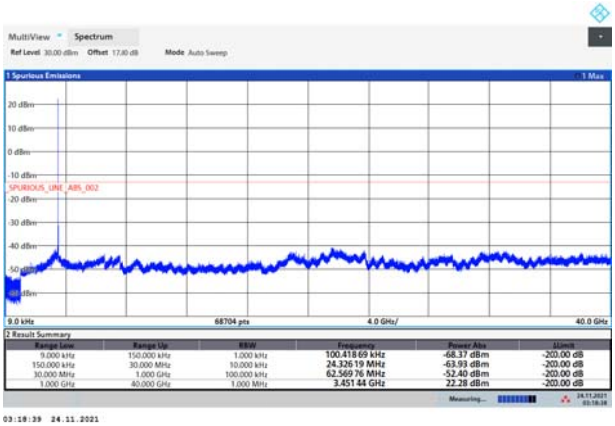
LTE Band 42 5MHz CH- High 9kHz~40GHz



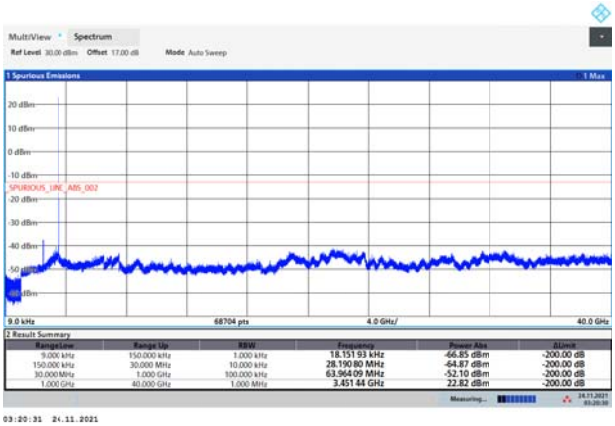
LTE Band 42 10MHz CH-High 9kHz~40GHz



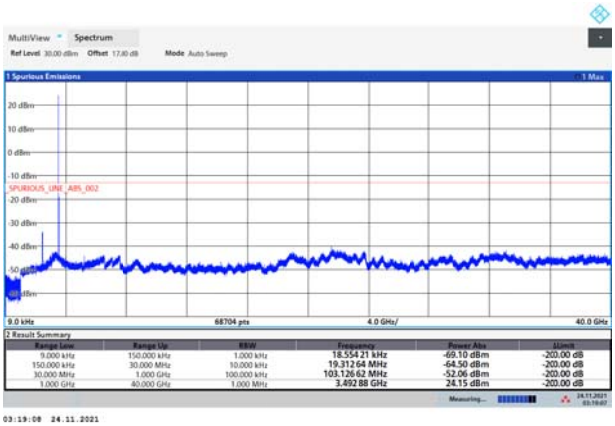
LTE Band 42 15MHz CH- Low 9kHz~40GHz



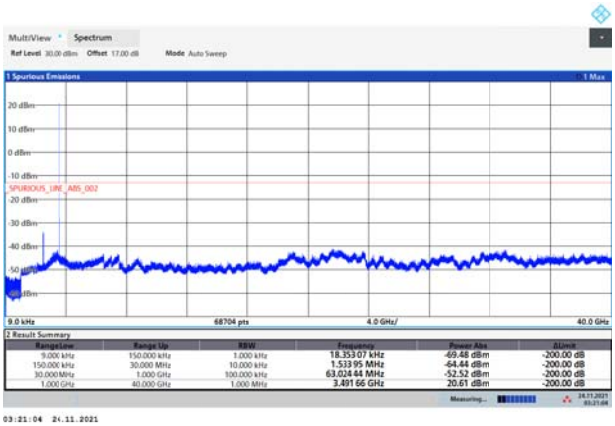
LTE Band 42 20MHz CH-Low 9kHz~40GHz



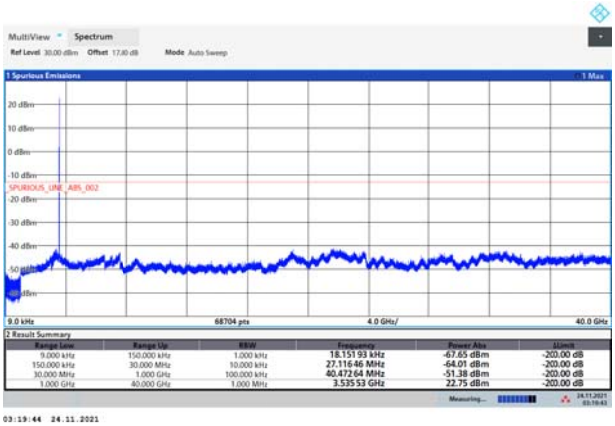
LTE Band 42 15MHz CH- Middle 9kHz~40GHz



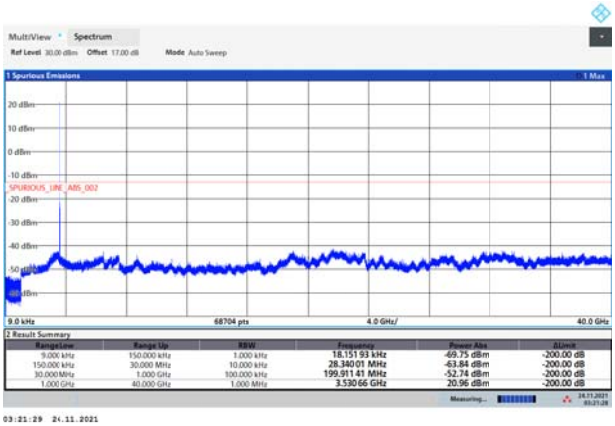
LTE Band 42 20MHz CH- Middle 9kHz~40GHz



LTE Band 42 15MHz CH-High 9kHz~40GHz



LTE Band 42 20MHz CH- High 9kHz~40GHz



5.7 Radiates Spurious Emission

Ambient condition

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

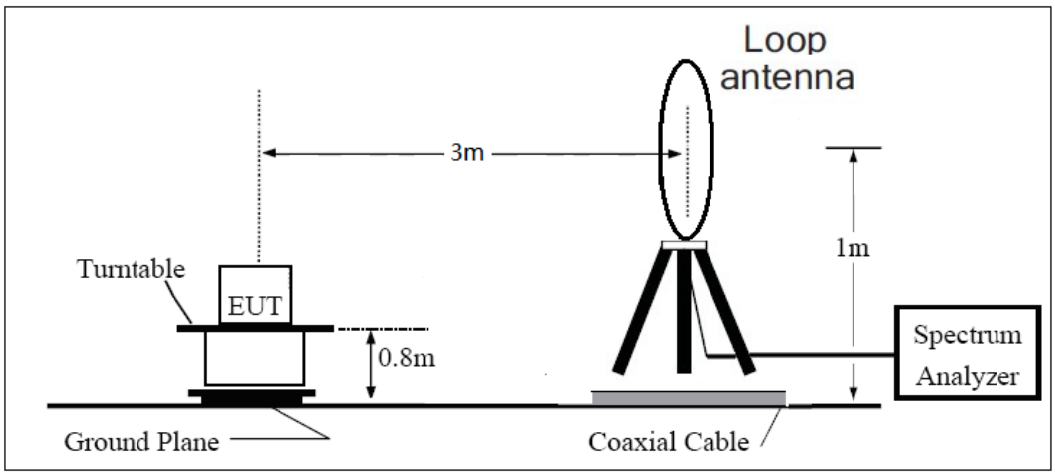
Method of Measurement

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=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:
Power(EIRP)=PMea- PAg - Pcl + Ga
The measurement results are amend as described below:
Power(EIRP)=PMea- Pcl + Ga
8. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dB) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dB.

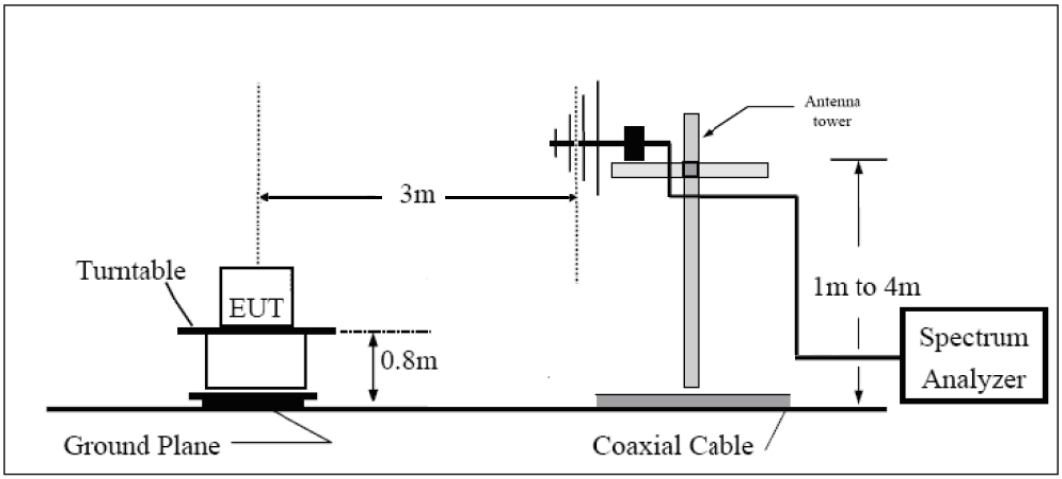
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

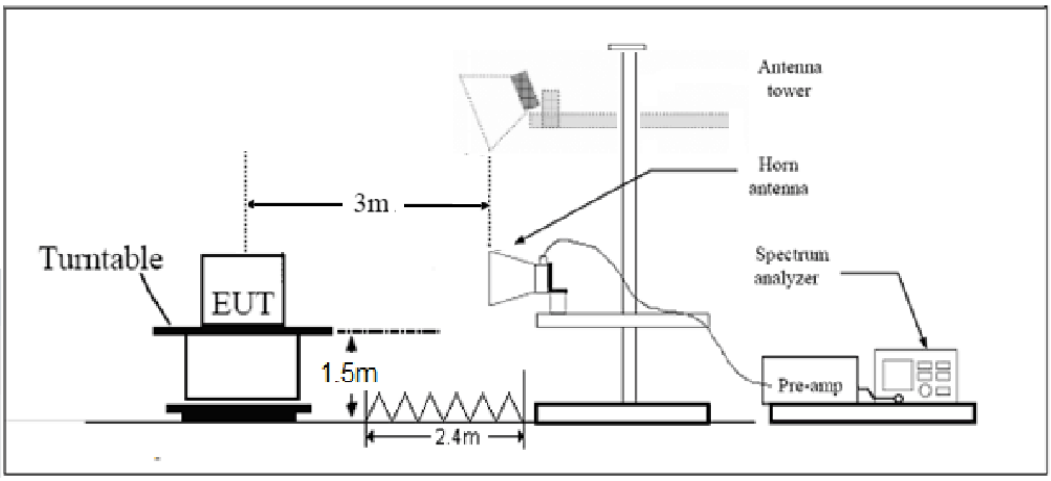
9KHz ~ 30MHz



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 log10 (P) dB.”
Rule Part 27.53(n) For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz. Compliance with this paragraph (n)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

Part 27.53(n) Limit	-13 dBm
Part 27.53(a)/(h)/(g) Limit	-13 dBm

Measurement Uncertainty

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

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	-58.86	2.70	12.70	Horizontal	-48.86	-13.00	35.86	315
3	5197.50	-46.48	3.20	12.50	Horizontal	-37.18	-13.00	24.18	45
4	6930.00	-46.30	4.20	11.80	Horizontal	-38.70	-13.00	25.70	135
5	8662.50	-53.19	4.40	12.50	Horizontal	-45.09	-13.00	32.09	0
6	10395.00	-52.13	4.70	11.30	Horizontal	-45.53	-13.00	32.53	225
7	12127.50	-49.54	5.20	13.80	Horizontal	-40.94	-13.00	27.94	180
8	13860.00	-48.26	5.70	11.30	Horizontal	-42.66	-13.00	29.66	45
9	15592.50	-57.69	6.10	16.80	Horizontal	-46.99	-13.00	33.99	90
10	17325.00	-48.91	6.10	14.20	Horizontal	-40.81	-13.00	27.81	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 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	-57.92	2.70	12.70	Horizontal	-47.92	-13.00	34.92	135
3	5190.00	-46.23	3.20	12.50	Horizontal	-36.93	-13.00	23.93	225
4	6920.00	-47.57	4.20	11.80	Horizontal	-39.97	-13.00	26.97	45
5	8650.00	-53.33	4.40	12.50	Horizontal	-45.23	-13.00	32.23	270
6	10380.00	-53.00	4.70	11.30	Horizontal	-46.40	-13.00	33.40	0
7	12110.00	-49.74	5.20	13.80	Horizontal	-41.14	-13.00	28.14	315
8	13840.00	-48.37	5.70	11.30	Horizontal	-42.77	-13.00	29.77	270
9	15570.00	-59.06	6.10	16.80	Horizontal	-48.36	-13.00	35.36	135
10	17300.00	-49.39	6.10	14.20	Horizontal	-41.29	-13.00	28.29	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 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	3447.75	-57.83	2.70	12.70	Horizontal	-47.83	-13.00	34.83	225
3	5170.88	-46.90	3.20	12.50	Horizontal	-37.60	-13.00	24.60	135
4	6890.00	-49.76	4.20	11.80	Horizontal	-42.16	-13.00	29.16	45
5	8612.00	-52.43	4.40	12.50	Horizontal	-44.33	-13.00	31.33	135
6	10335.00	-54.12	4.70	11.30	Horizontal	-47.52	-13.00	34.52	180
7	12057.00	-50.37	5.20	13.80	Horizontal	-41.77	-13.00	28.77	0
8	13780.00	-48.01	5.70	11.30	Horizontal	-42.41	-13.00	29.41	270
9	15502.00	-59.26	6.10	16.80	Horizontal	-48.56	-13.00	35.56	45
10	17225.00	-49.31	6.10	14.20	Horizontal	-41.21	-13.00	28.21	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 42 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	6995.00	-51.49	2.6	10.15	Horizontal	-43.94	-13.00	30.94	135
3	10492.50	-43.97	2.4	11.35	Horizontal	-35.02	-13.00	22.02	225
4	13990.00	-49.43	4.5	10.85	Horizontal	-43.08	-13.00	30.08	45
5	17487.50	-50.05	5.1	11.35	Horizontal	-43.80	-13.00	30.80	180
6	20985.00	-	-	-	-	-	-	-	-
7	24485.00	-	-	-	-	-	-	-	-
8	27980.00	-	-	-	-	-	-	-	-
9	31447.50	-	-	-	-	-	-	-	-
10	34975.00	-	-	-	-	-	-	-	-
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 42 QPSK 10MHz 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	6980.00	-50.08	2.6	10.15	Horizontal	-42.53	-13.00	32.53	315
3	10470.00	-39.80	2.4	11.35	Horizontal	-30.85	-13.00	17.85	90
4	13960.00	-50.71	4.5	10.85	Horizontal	-44.36	-13.00	31.36	270
5	17450.00	-49.18	5.1	11.35	Horizontal	-42.93	-13.00	29.93	480
6	20940.00	-	-	-	-	-	-	-	-
7	24430.00	-	-	-	-	-	-	-	-
8	27920.00	-	-	-	-	-	-	-	-
9	31410.00	-	-	-	-	-	-	-	-
10	34900.00	-	-	-	-	-	-	-	-

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.

6 Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Climate Chamber	Weiss	VT4002	58226119450010	2021-05-15	2022-05-14
Base Station Simulator	R&S	CMW500	113824	2021-05-15	2022-05-14
Spectrum Analyzer	Keysight	N9020A	MY52330084	2021-05-15	2022-05-14
Spectrum Analyzer	R&S	FSV3030	101411	2020-12-13	2021-12-12
Signal Analyzer	R&S	FSV30	104028	2021-05-15	2022-05-14
Horn Antenna	Schwarzbeck	BBHA 9120D	1594	2020-12-17	2021-12-16
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.