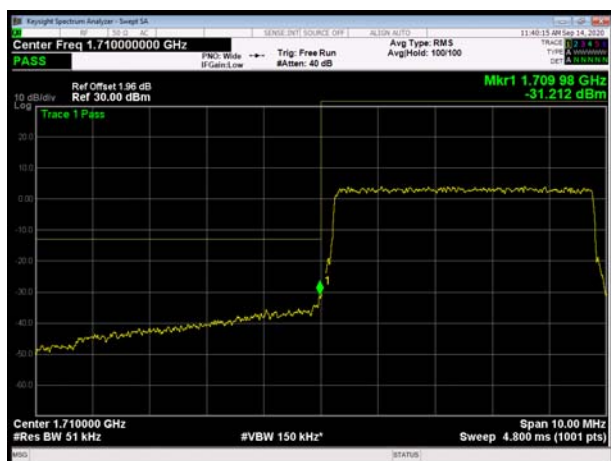
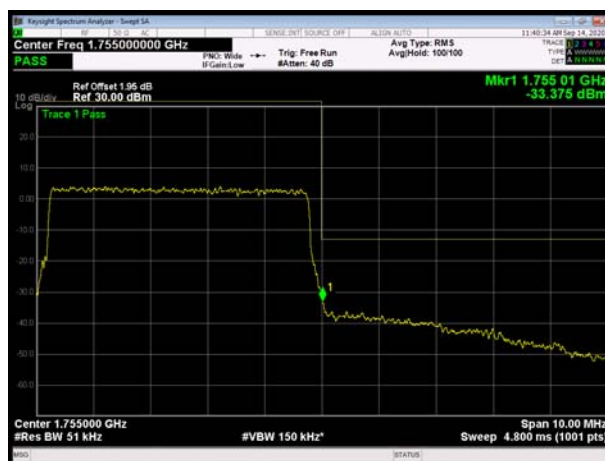




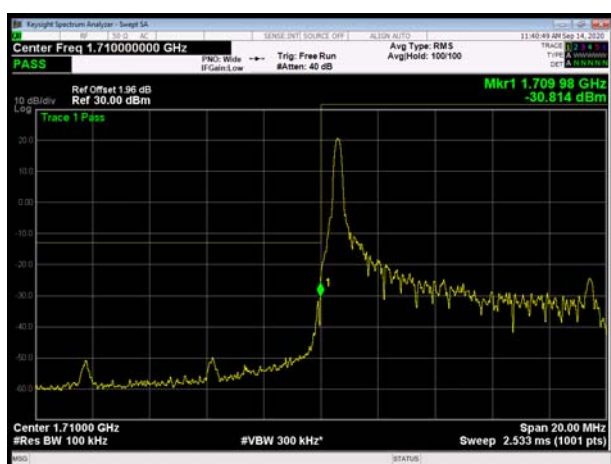
LTE Band 4 16QAM 5MHz CH-Low, 100%RB



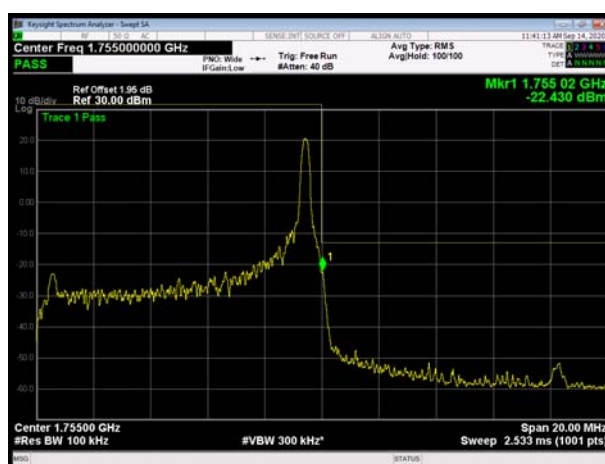
LTE Band 4 16QAM 5MHz CH-High, 100%RB



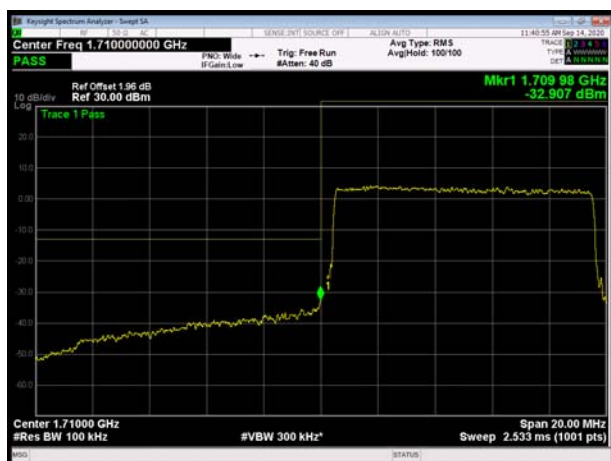
LTE Band 4 16QAM 10MHz CH-Low, 1 RB



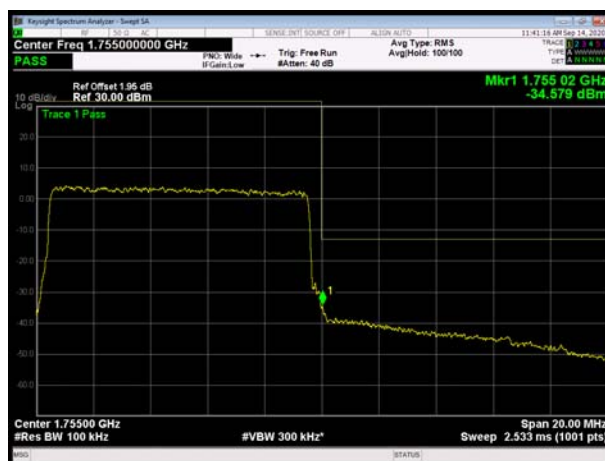
LTE Band 4 16QAM 10MHz CH-High, 1 RB



LTE Band 4 16QAM 10MHz CH-Low, 100%RB

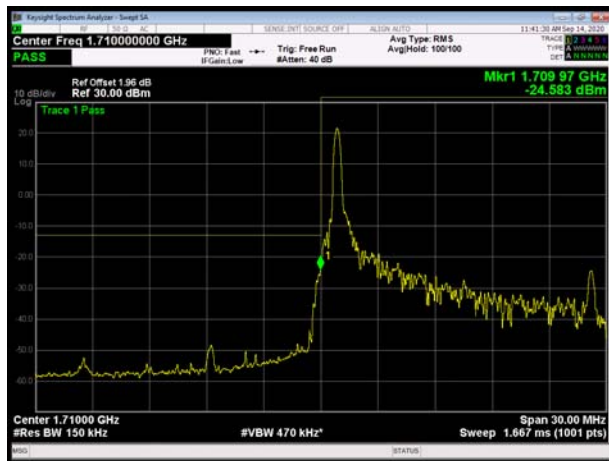


LTE Band 4 16QAM 10MHz CH-High, 100%RB

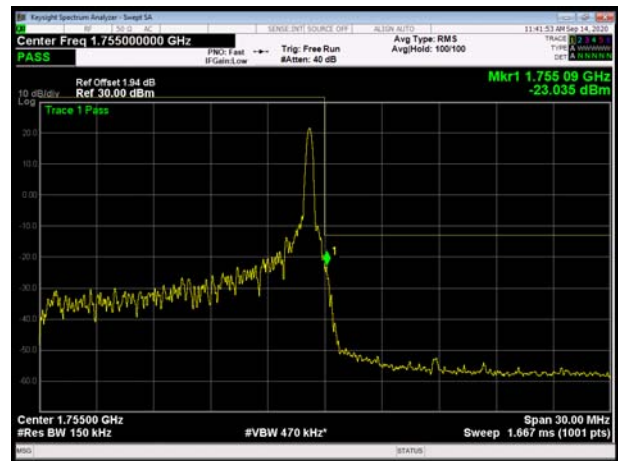




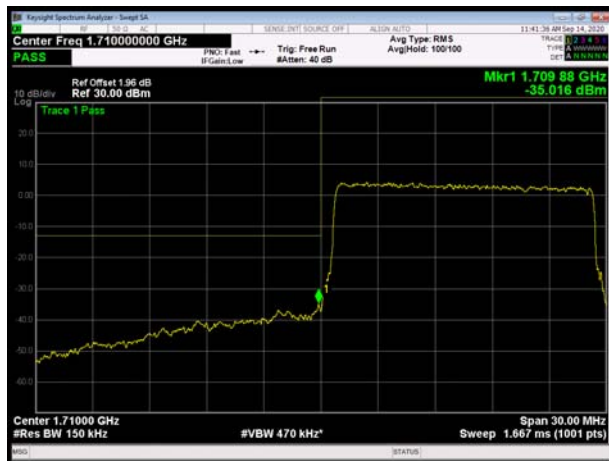
LTE Band 4 16QAM 15MHz CH-Low, 1 RB



LTE Band 4 16QAM 15MHz CH-High, 1 RB



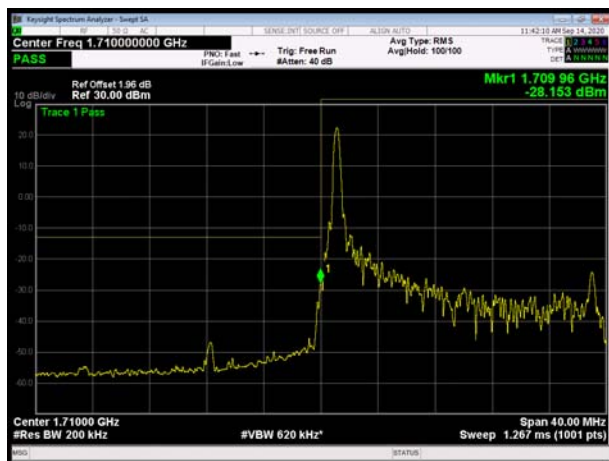
LTE Band 4 16QAM 15MHz CH-Low, 100%RB



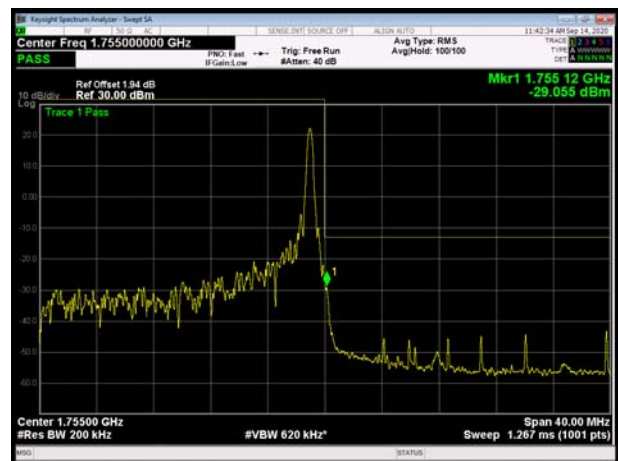
LTE Band 4 16QAM 15MHz CH-High, 100%RB



LTE Band 4 16QAM 20MHz CH-Low, 1 RB

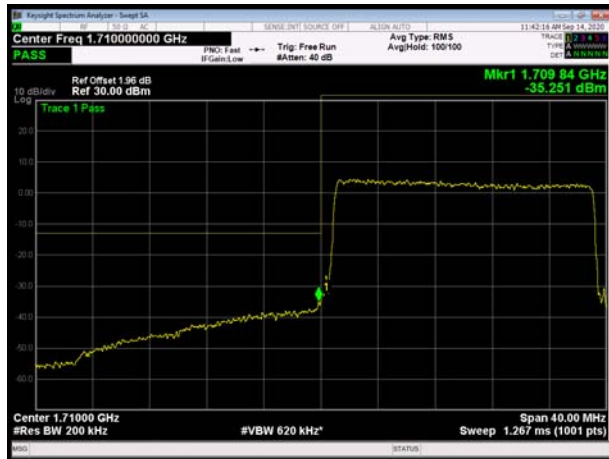


LTE Band 4 16QAM 20MHz CH-High, 1 RB





LTE Band 4 16QAM 20MHz CH-Low, 100%RB

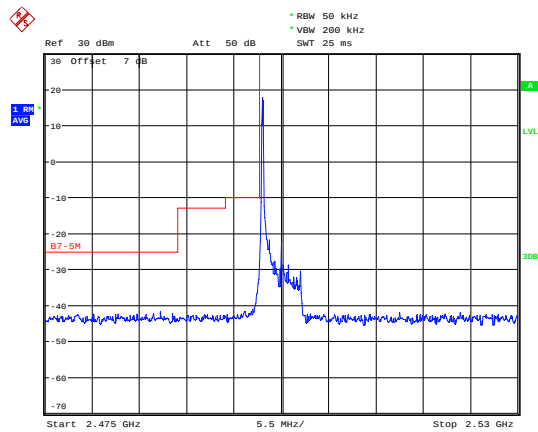


LTE Band 4 16QAM 20MHz CH-High, 100%RB



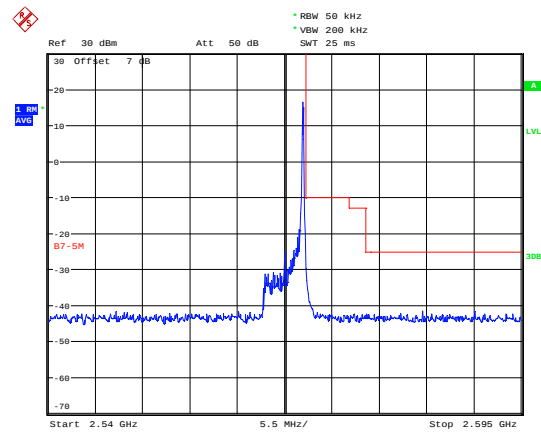


LTE Band 7 QPSK 5MHz CH-Low, 1 RB



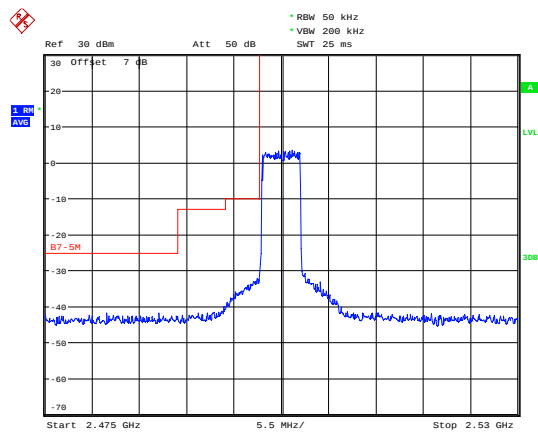
Date: 15.SEP.2020 21:43:58

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



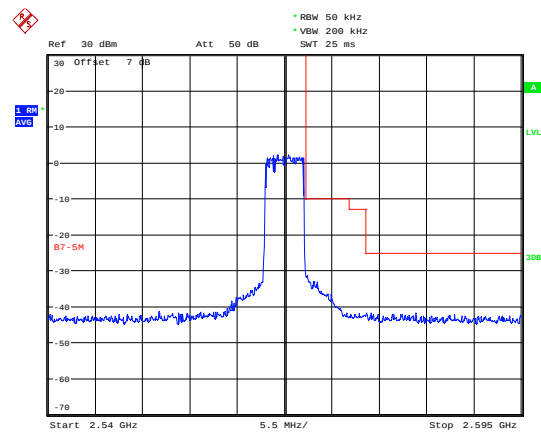
Date: 15.SEP.2020 21:49:36

LTE Band 7 QPSK 5MHz CH-Low, 100%RB



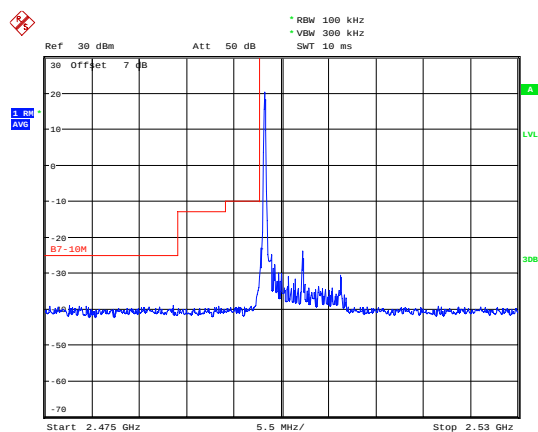
Date: 15.SEP.2020 21:44:09

LTE Band 7 QPSK 5MHz CH-High, 100%RB



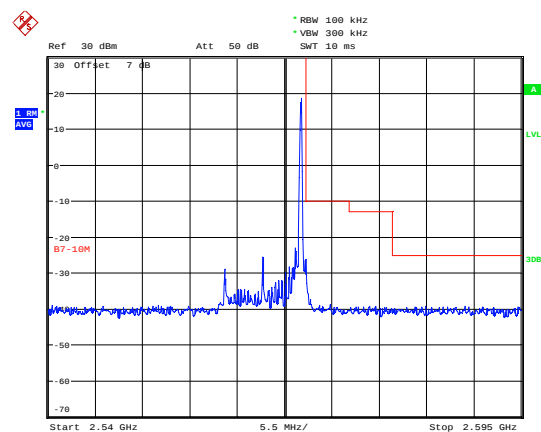
Date: 15.SEP.2020 21:49:46

LTE Band 7 QPSK 10MHz CH-Low, 1 RB



Date: 15.SEP.2020 21:45:30

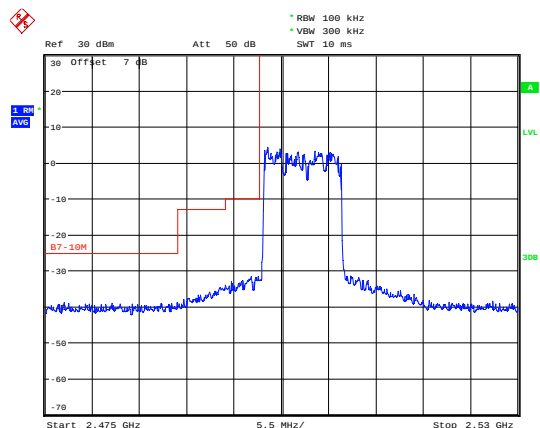
LTE Band 7 QPSK 10MHz CH-High, 1 RB



Date: 15.SEP.2020 21:50:55

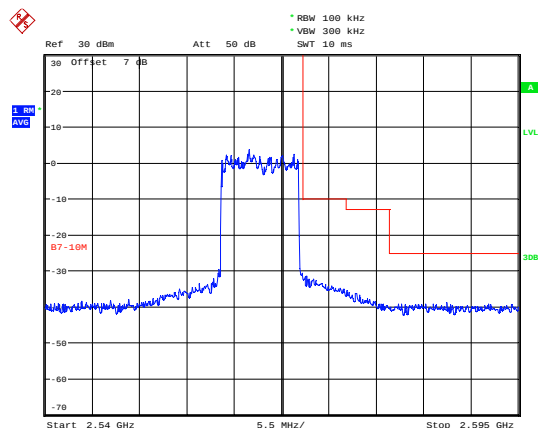


LTE Band 7 QPSK 10MHz CH-Low, 100%RB



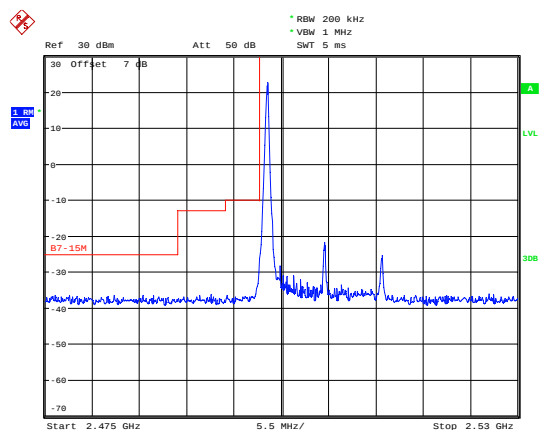
Date: 15.SEP.2020 21:45:41

LTE Band 7 QPSK 10MHz CH-High, 100%RB



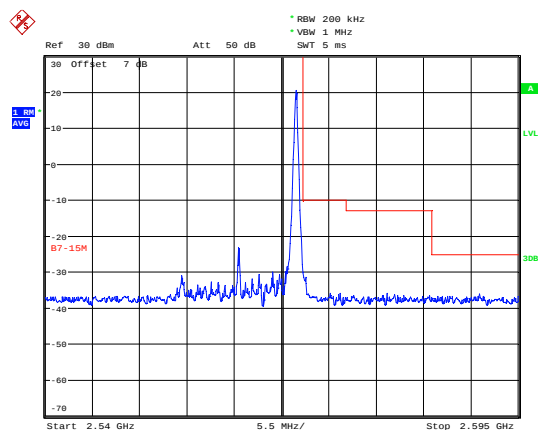
Date: 15.SEP.2020 21:51:06

LTE Band 7 QPSK 15MHz CH-Low, 1 RB



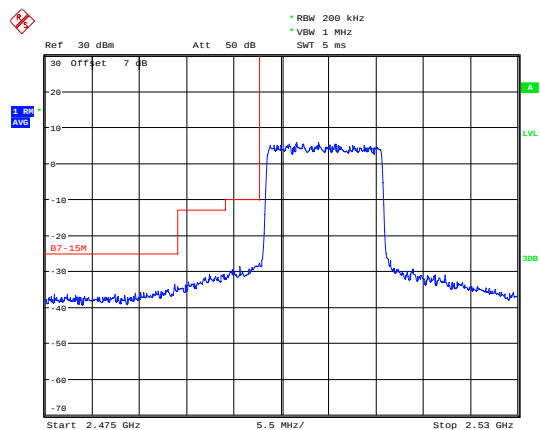
Date: 15.SEP.2020 21:46:39

LTE Band 7 QPSK 15MHz CH-High, 1 RB



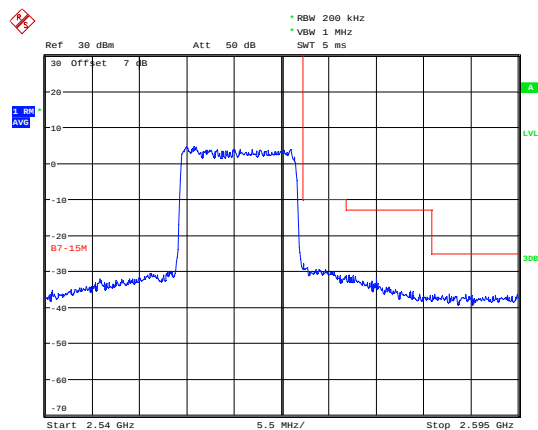
Date: 15.SEP.2020 21:52:08

LTE Band 7 QPSK 15MHz CH-Low, 100%RB



Date: 15.SEP.2020 21:46:51

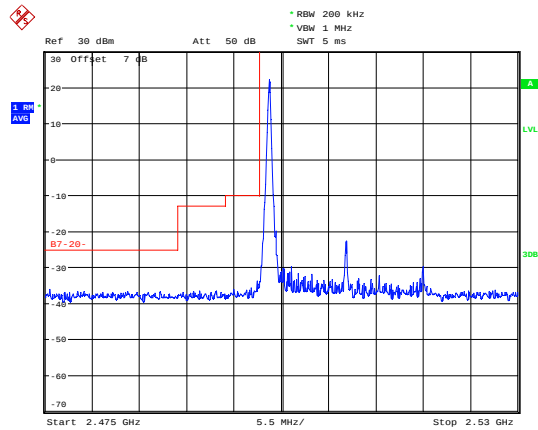
LTE Band 7 QPSK 15MHz CH-High, 100%RB



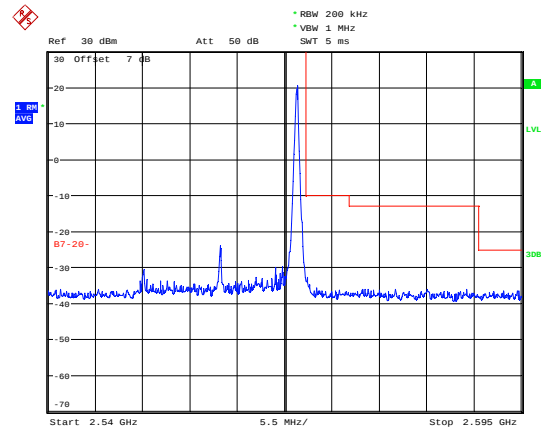
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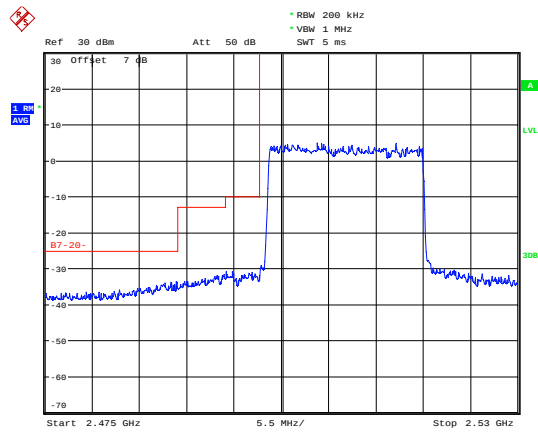
LTE Band 7 QPSK 20MHz CH-Low, 1 RB



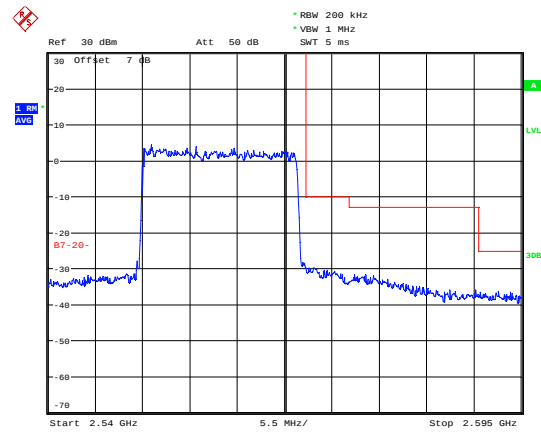
LTE Band 7 QPSK 20MHz CH-High, 1 RB



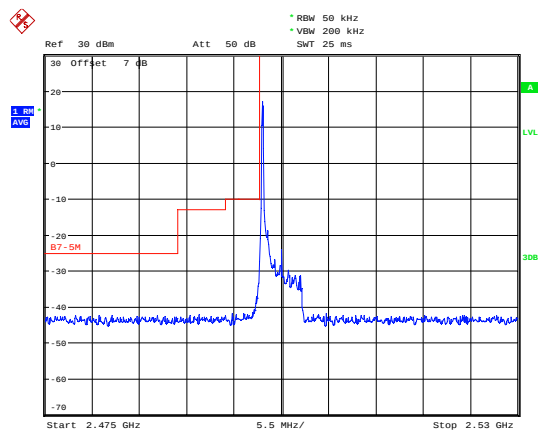
LTE Band 7 QPSK 20MHz CH-Low, 100%RB



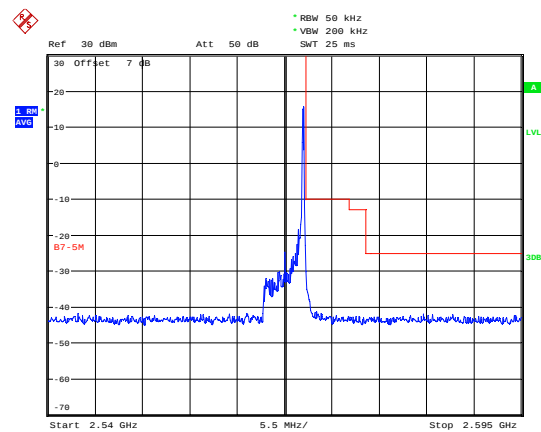
LTE Band 7 QPSK 20MHz CH-High, 100%RB



LTE Band 7 16QAM 5MHz CH-Low, 1 RB

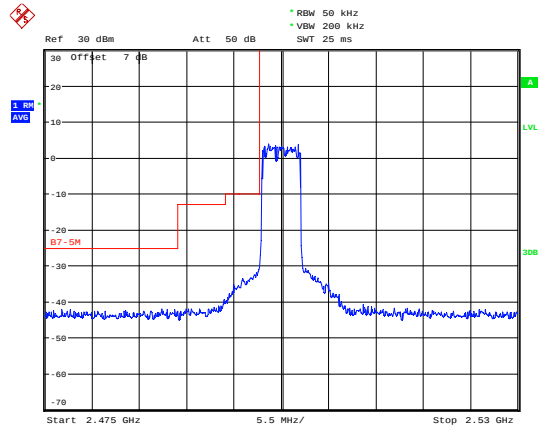


LTE Band 7 16QAM 5MHz CH-High, 1 RB



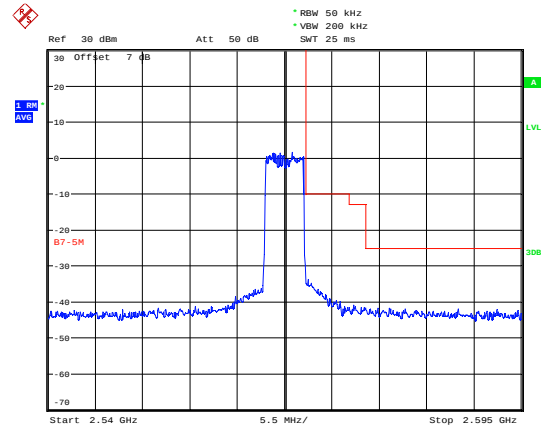


LTE Band 7 16QAM 5MHz CH-Low, 100%RB



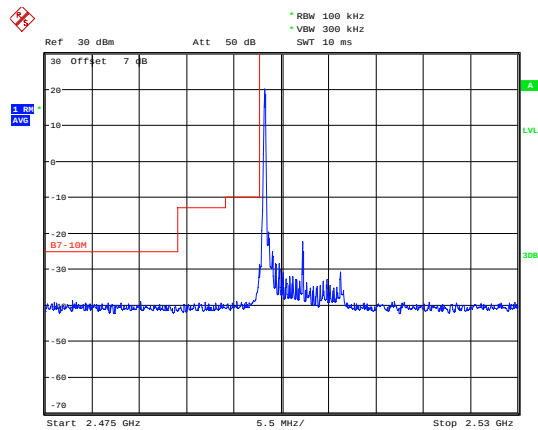
Date: 15.SEP.2020 21:44:29

LTE Band 7 16QAM 5MHz CH-High, 100%RB



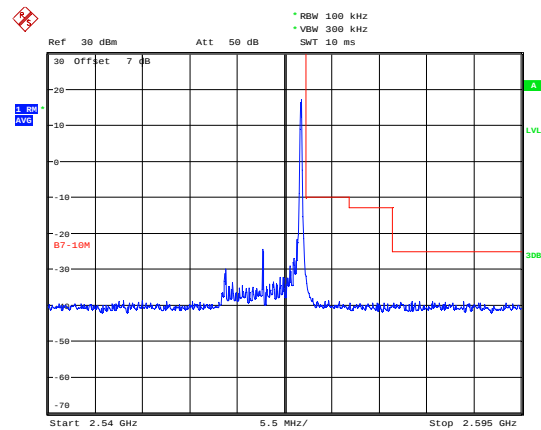
Date: 15.SEP.2020 21:50:08

LTE Band 7 16QAM 10MHz CH-Low, 1 RB



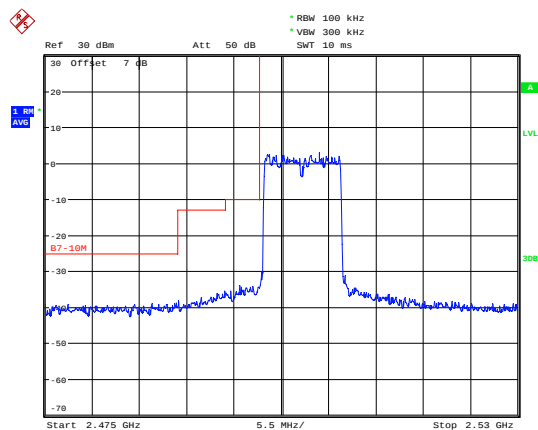
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LTE Band 7 16QAM 10MHz CH-High, 1 RB



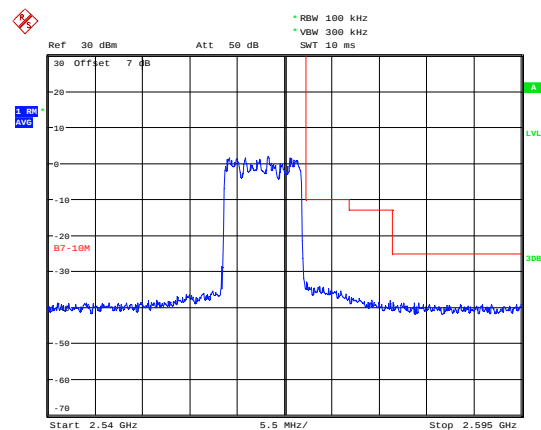
Date: 15.SEP.2020 21:51:17

LTE Band 7 16QAM 10MHz CH-Low, 100%RB



Date: 15.SEP.2020 21:46:02

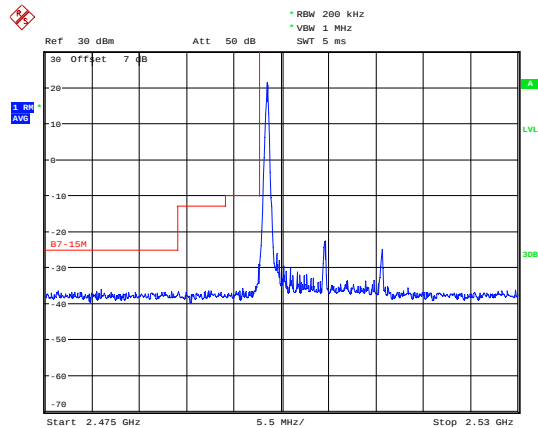
LTE Band 7 16QAM 10MHz CH-High, 100%RB



Date: 15.SEP.2020 21:51:29

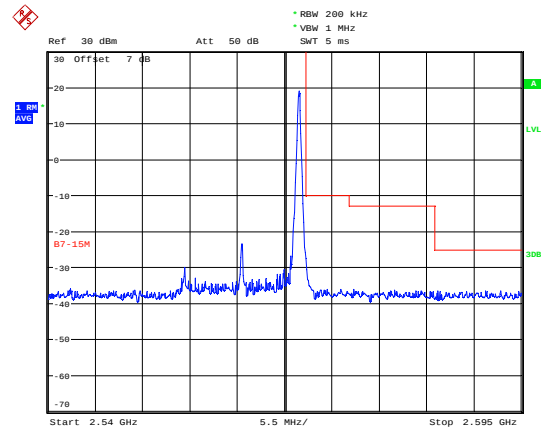


LTE Band 7 16QAM 15MHz CH-Low, 1 RB



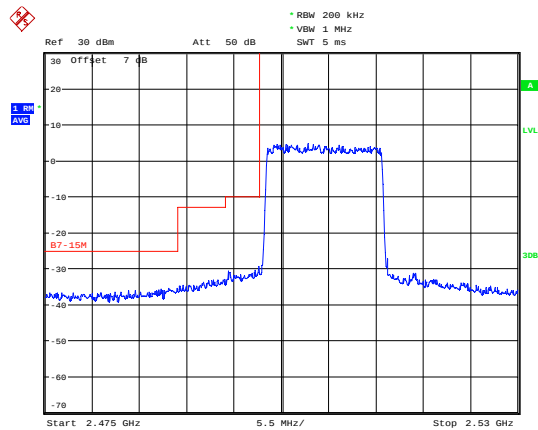
Date: 15.SEP.2020 21:47:03

LTE Band 7 16QAM 15MHz CH-High, 1 RB



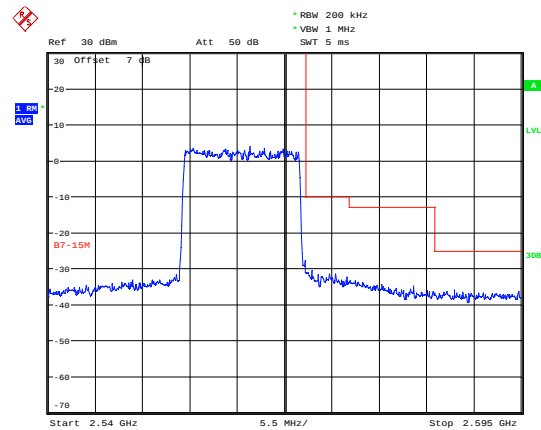
Date: 15.SEP.2020 21:52:29

LTE Band 7 16QAM 15MHz CH-Low, 100%RB



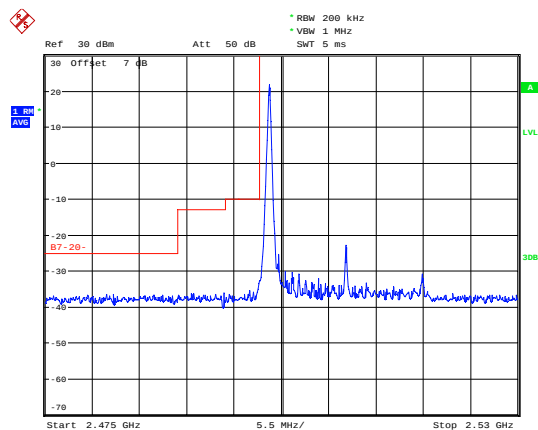
Date: 15.SEP.2020 21:47:13

LTE Band 7 16QAM 15MHz CH-High, 100%RB



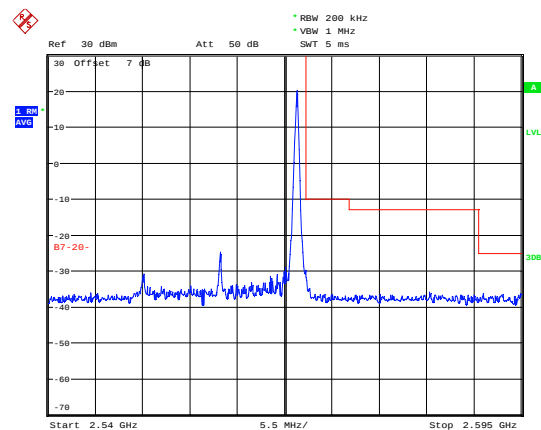
Date: 15.SEP.2020 21:52:38

LTE Band 7 16QAM 20MHz CH-Low, 1 RB



Date: 15.SEP.2020 21:48:13

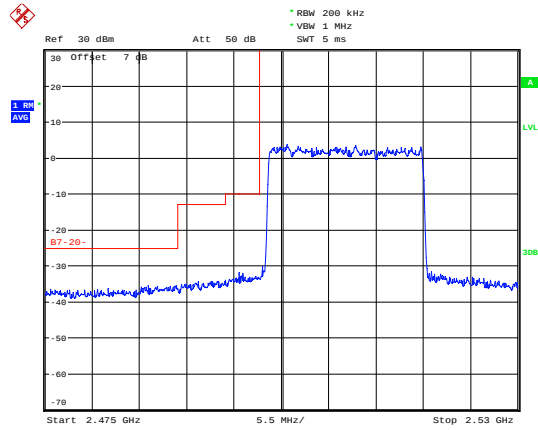
LTE Band 7 16QAM 20MHz CH-High, 1 RB



Date: 15.SEP.2020 21:53:33

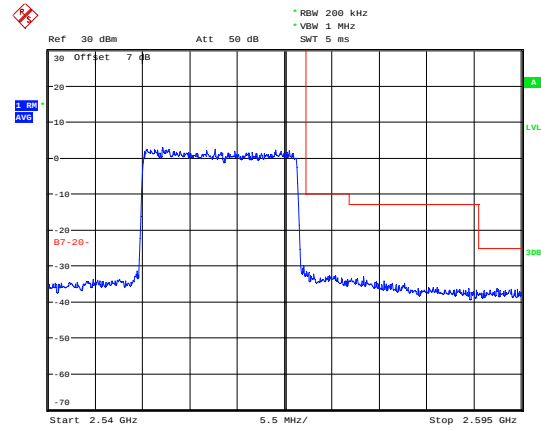


LTE Band 7 16QAM 20MHz CH-Low, 100%RB



Date: 15.SEP.2020 21:48:23

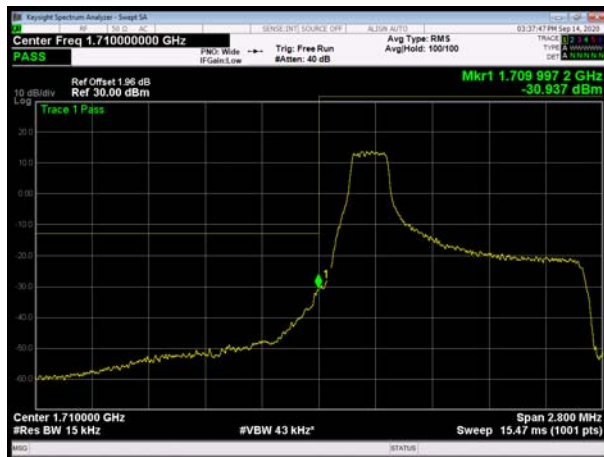
LTE Band 7 16QAM 20MHz CH-High, 100%RB



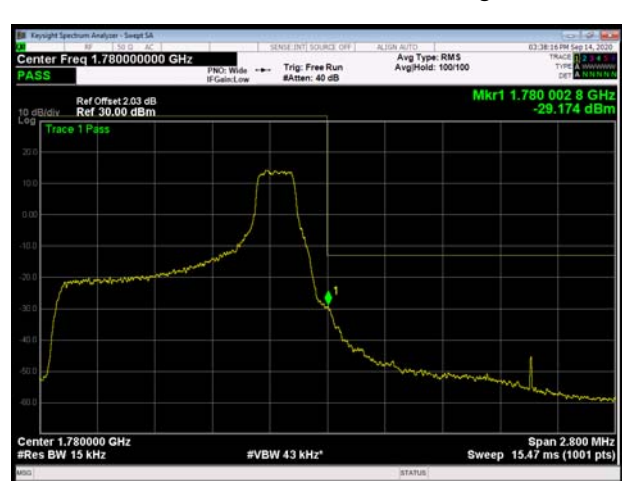
Date: 15.SEP.2020 21:53:43



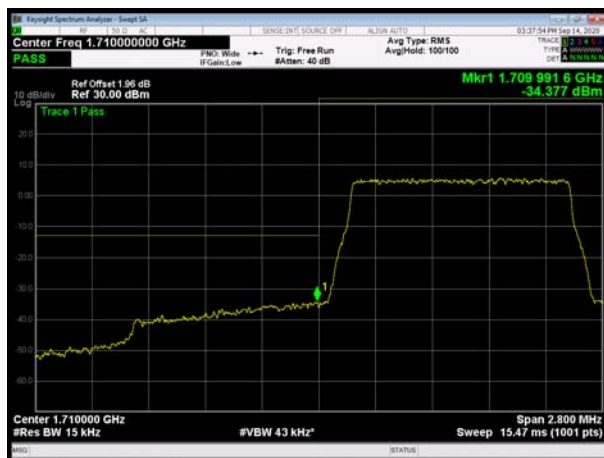
LTE Band 66 QPSK 1.4MHz CH-Low, 1 RB



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



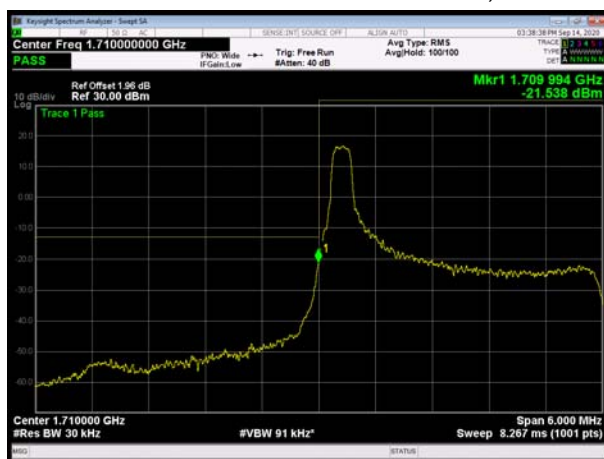
LTE Band 66 QPSK 1.4MHz CH-Low, 100%RB



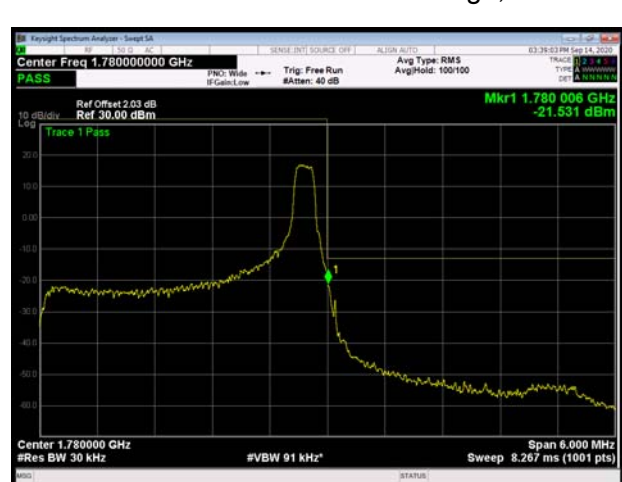
LTE Band 66 QPSK 1.4MHz CH-High, 100%RB



LTE Band 66 QPSK 3MHz CH-Low, 1 RB

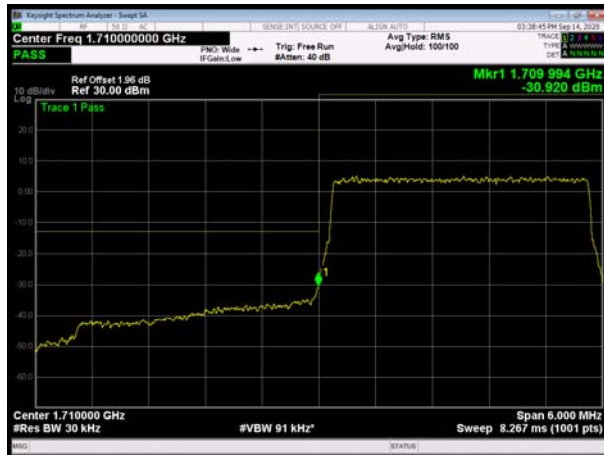


LTE Band 66 QPSK 3MHz CH-High, 1 RB

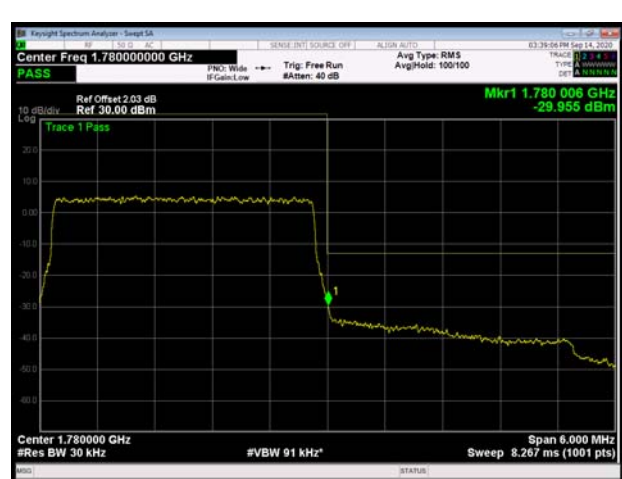




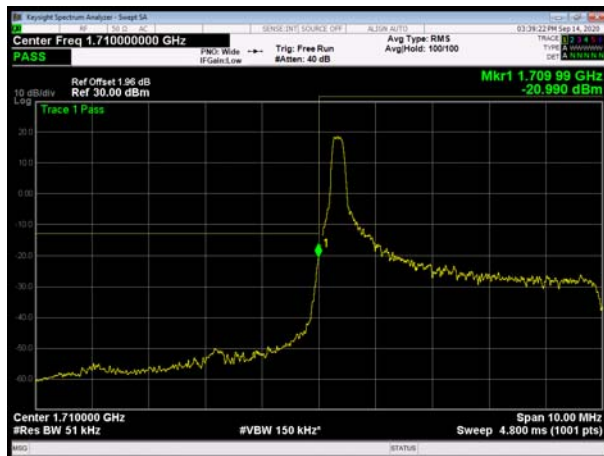
LTE Band 66 QPSK 3MHz CH-Low, 100%RB



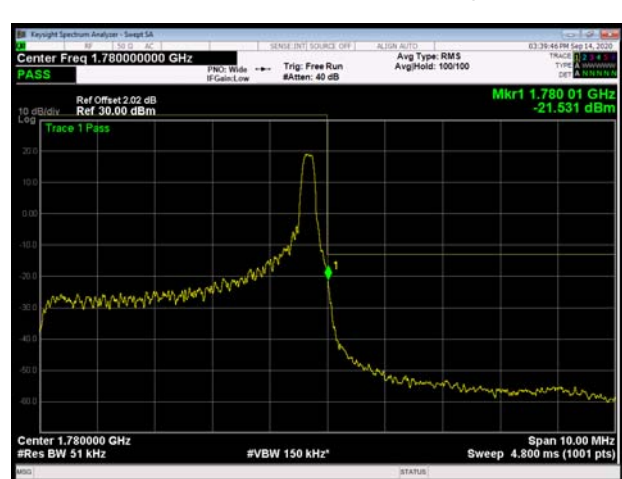
LTE Band 66 QPSK 3MHz CH-High, 100%RB



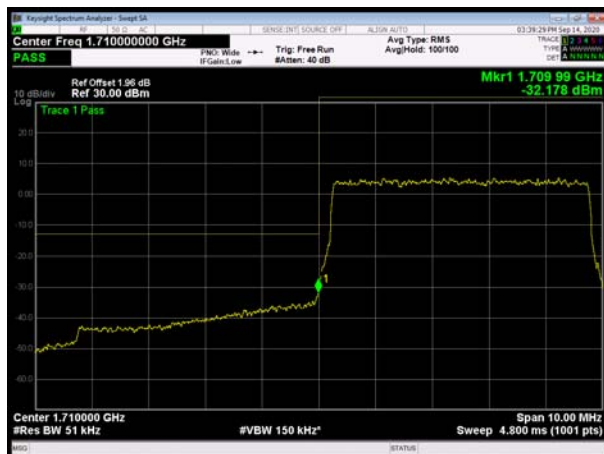
LTE Band 66 QPSK 5MHz CH-Low, 1 RB



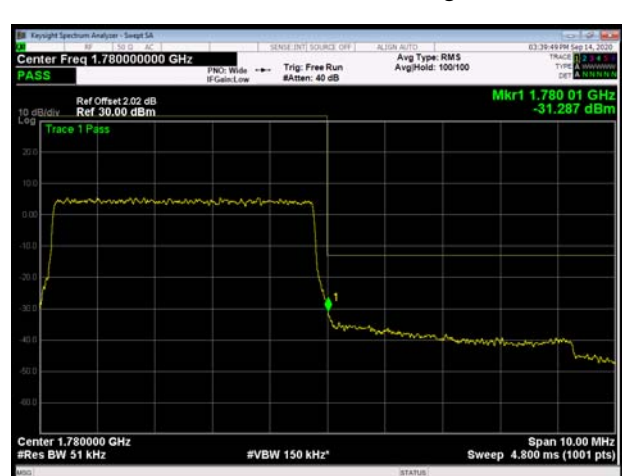
LTE Band 66 QPSK 5MHz CH-High, 1 RB



LTE Band 66 QPSK 5MHz CH-Low, 100%RB

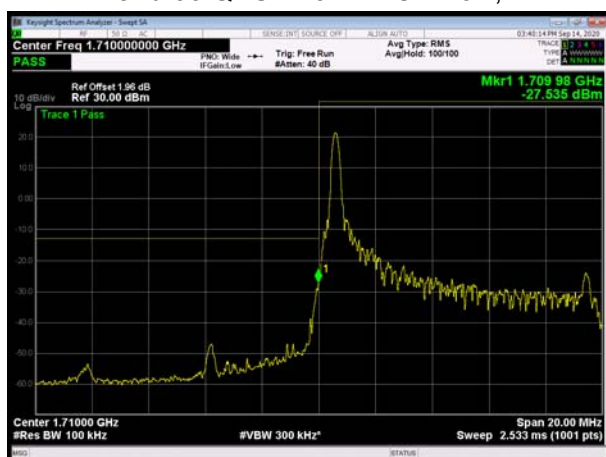


LTE Band 66 QPSK 5MHz CH-High, 100%RB

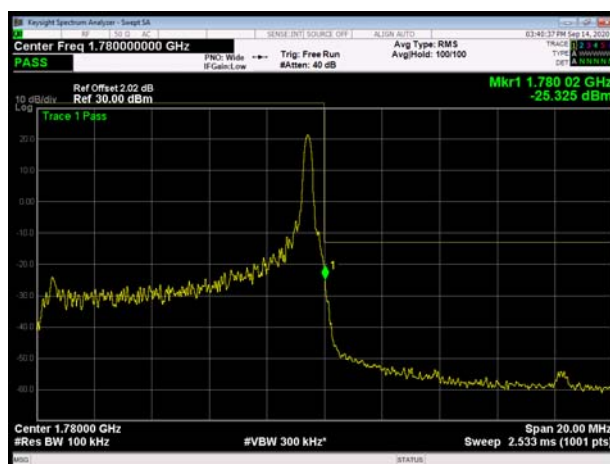




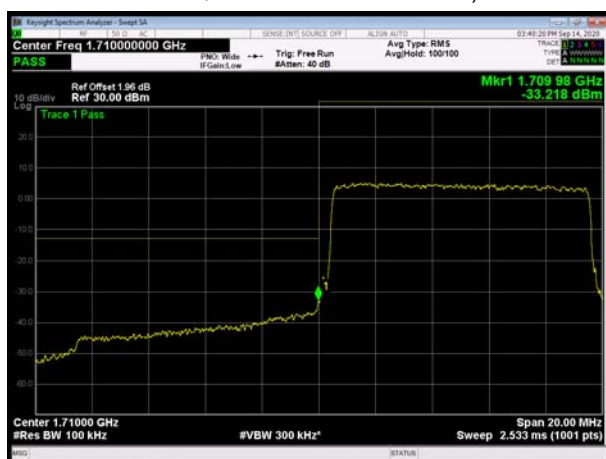
LTE Band 66 QPSK 10MHz CH-Low, 1 RB



LTE Band 66 QPSK 10MHz CH-High, 1 RB



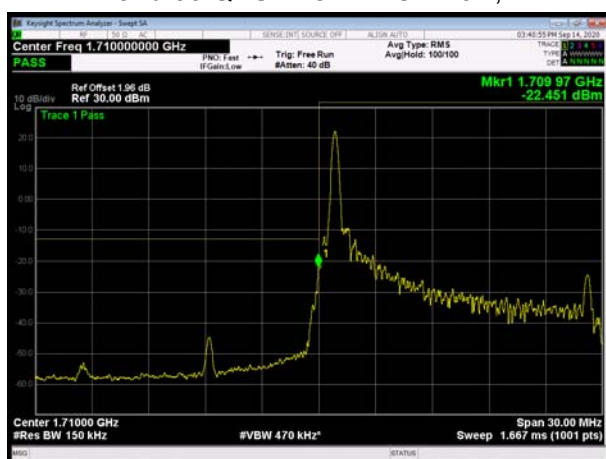
LTE Band 66 QPSK 10MHz CH-Low, 100%RB



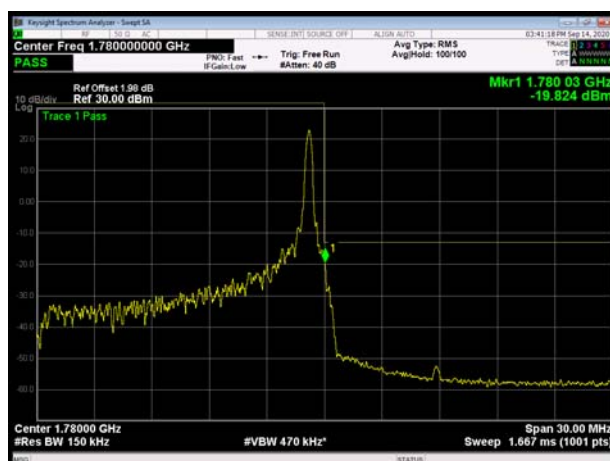
LTE Band 66 QPSK 10MHz CH-High, 100%RB



LTE Band 66 QPSK 15MHz CH-Low, 1 RB



LTE Band 66 QPSK 15MHz CH-High, 1 RB





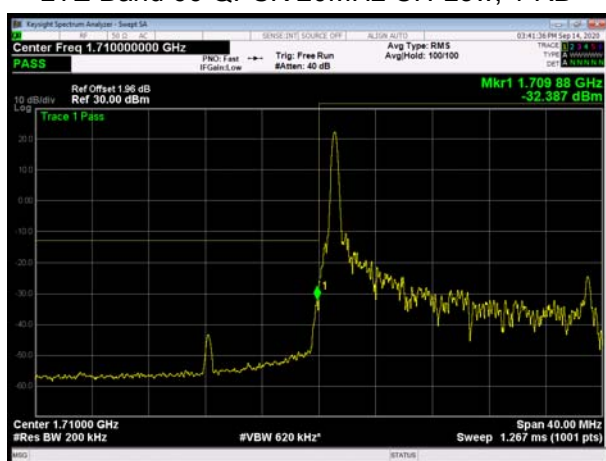
LTE Band 66 QPSK 15MHz CH-Low, 100%RB



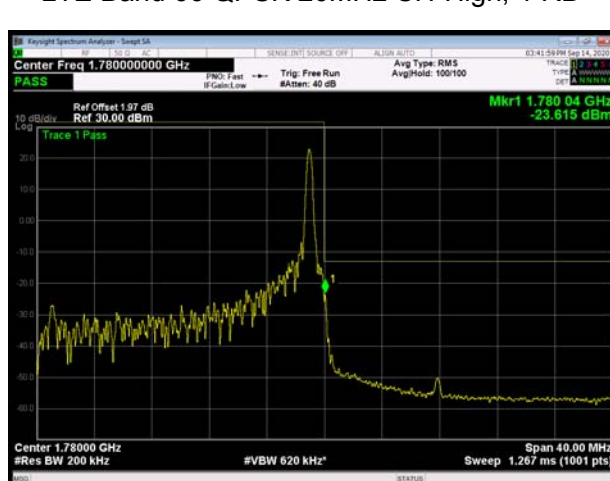
LTE Band 66 QPSK 15MHz CH-High, 100%RB



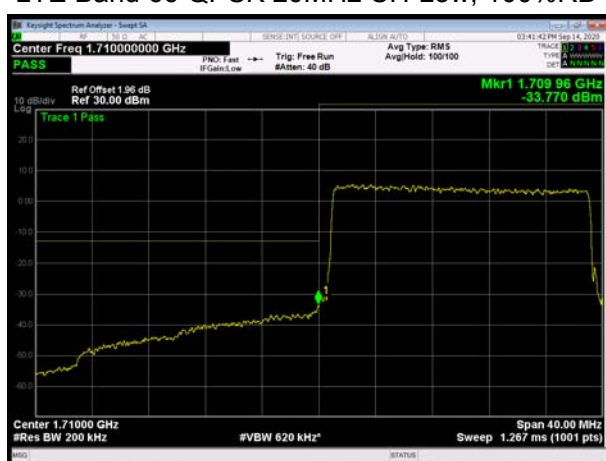
LTE Band 66 QPSK 20MHz CH-Low, 1 RB



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



LTE Band 66 QPSK 20MHz CH-Low, 100%RB

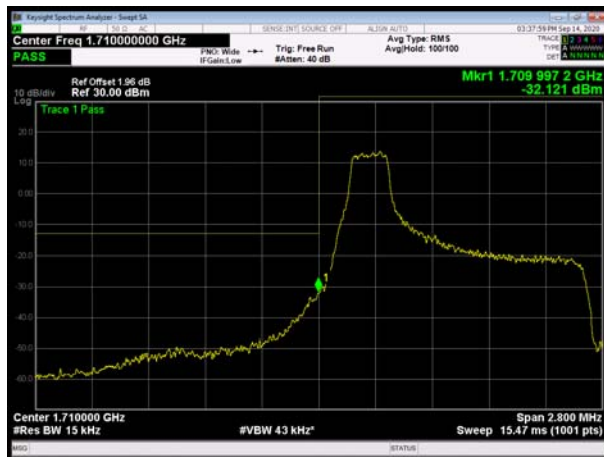


LTE Band 66 QPSK 20MHz CH-High, 100%RB

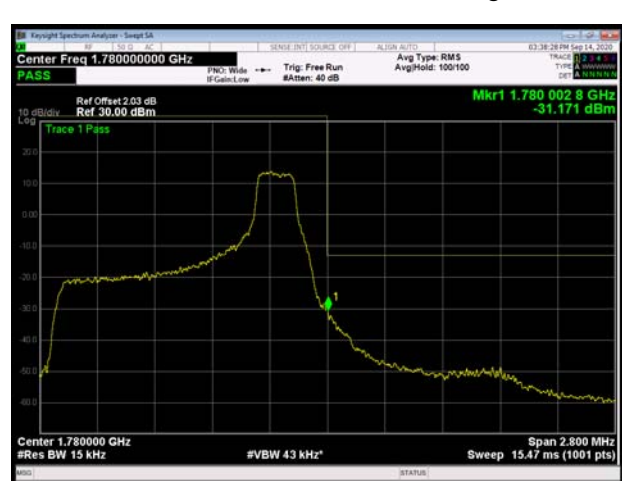




LTE Band 66 16QAM 1.4MHz CH-Low, 1 RB



LTE Band 66 16QAM 1.4MHz CH-High, 1 RB



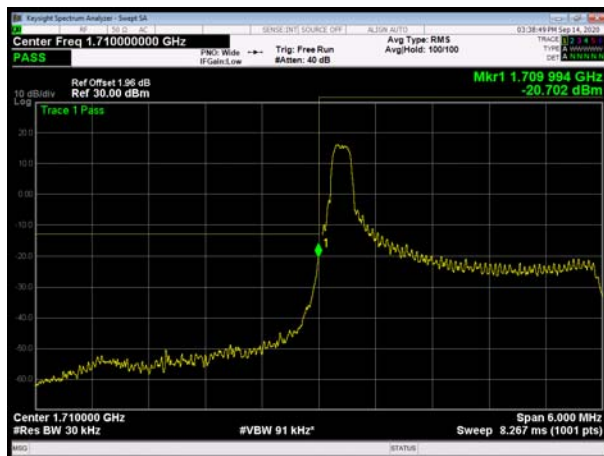
LTE Band 66 16QAM 1.4MHz CH-Low, 100%RB



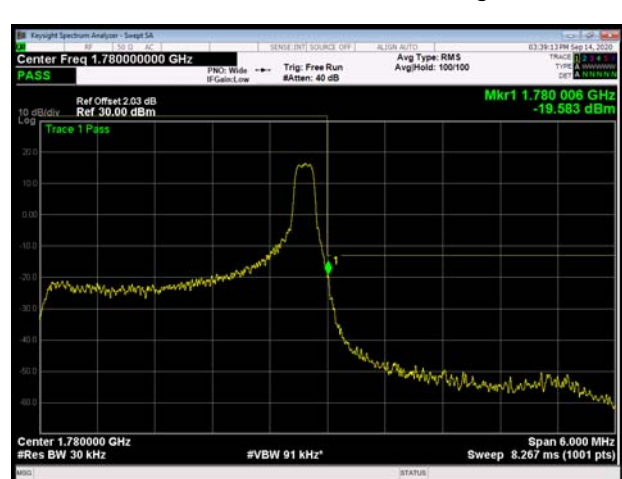
LTE Band 66 16QAM 1.4MHz CH-High, 100%RB



LTE Band 66 16QAM 3MHz CH-Low, 1 RB

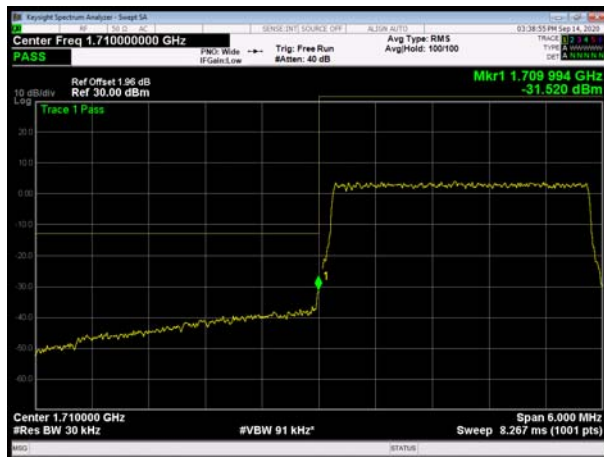


LTE Band 66 16QAM 3MHz CH-High, 1 RB

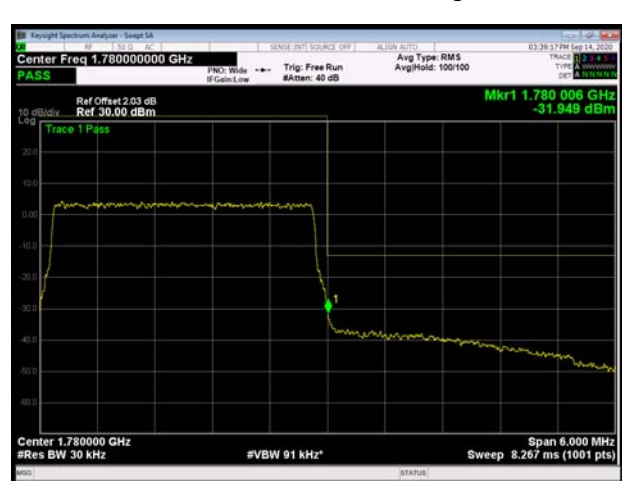




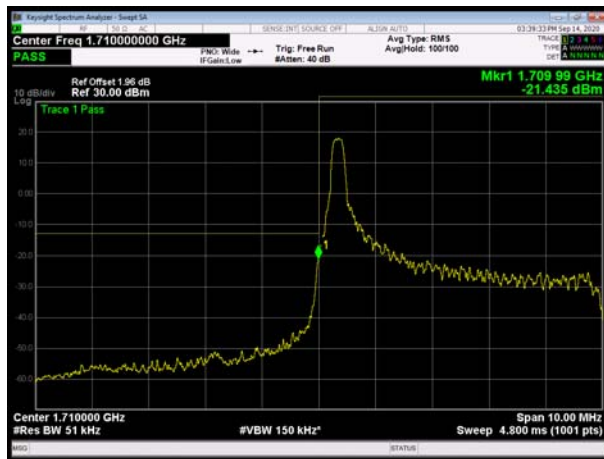
LTE Band 66 16QAM 3MHz CH-Low, 100%RB



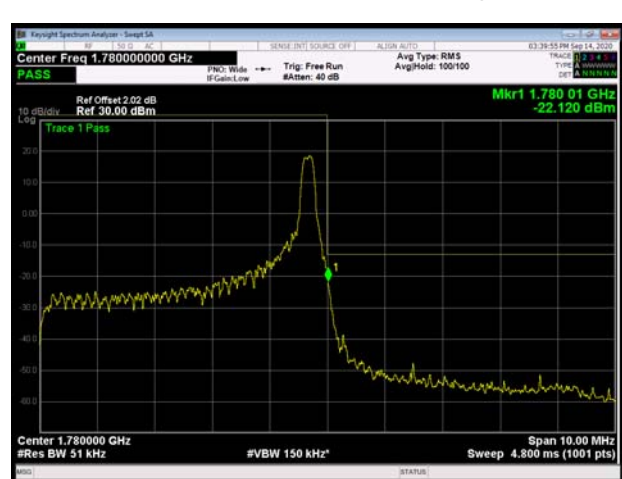
LTE Band 66 16QAM 3MHz CH-High, 100%RB



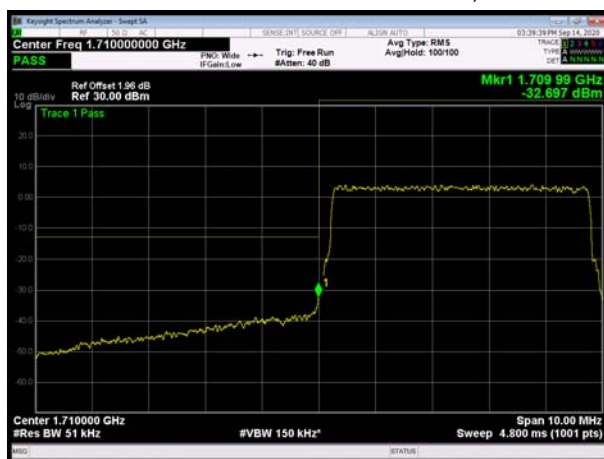
LTE Band 66 16QAM 5MHz CH-Low, 1 RB



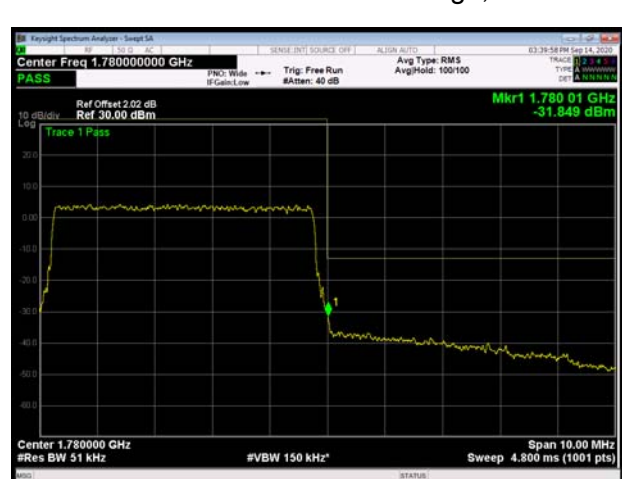
LTE Band 66 16QAM 5MHz CH-High, 1 RB



LTE Band 66 16QAM 5MHz CH-Low, 100%RB

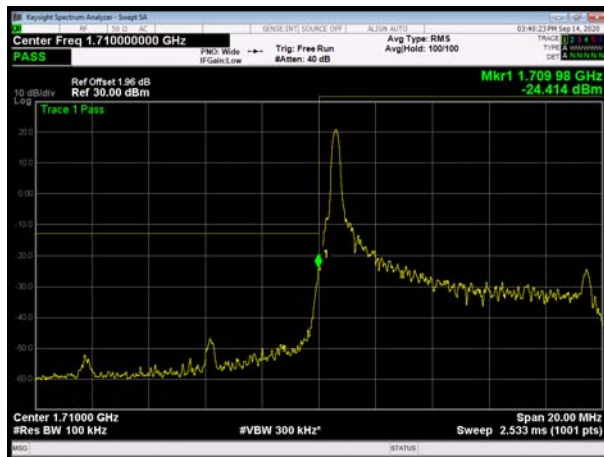


LTE Band 66 16QAM 5MHz CH-High, 100%RB

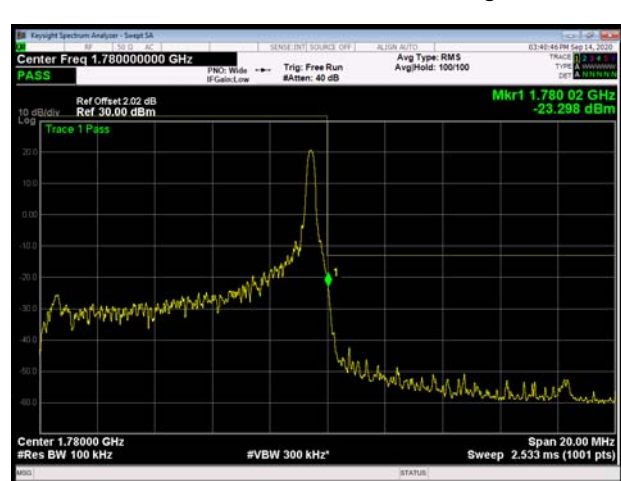




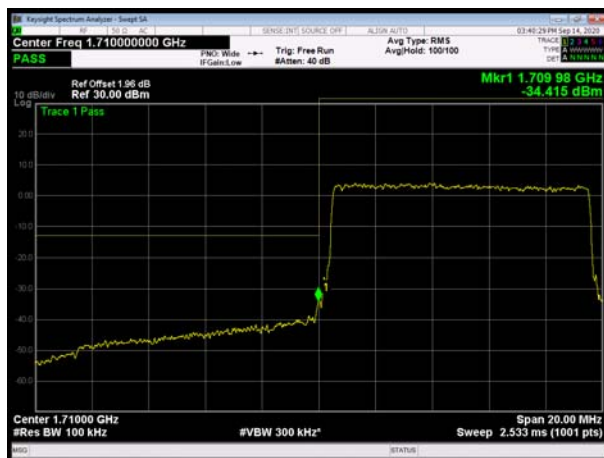
LTE Band 66 16QAM 10MHz CH-Low, 1 RB



LTE Band 66 16QAM 10MHz CH-High, 1 RB



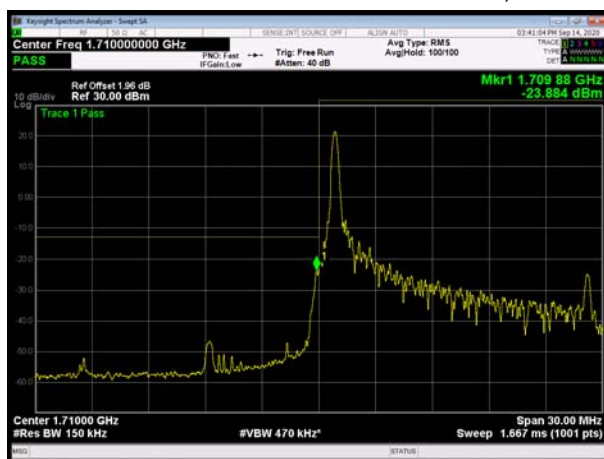
LTE Band 66 16QAM 10MHz CH-Low, 100%RB



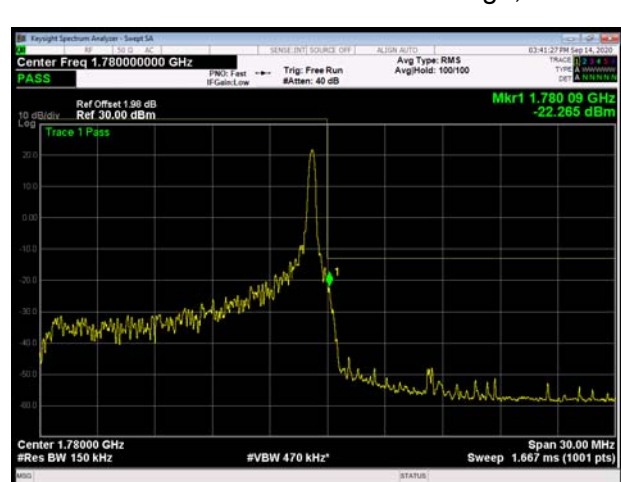
LTE Band 66 16QAM 10MHz CH-High, 100%RB



LTE Band 66 16QAM 15MHz CH-Low, 1 RB

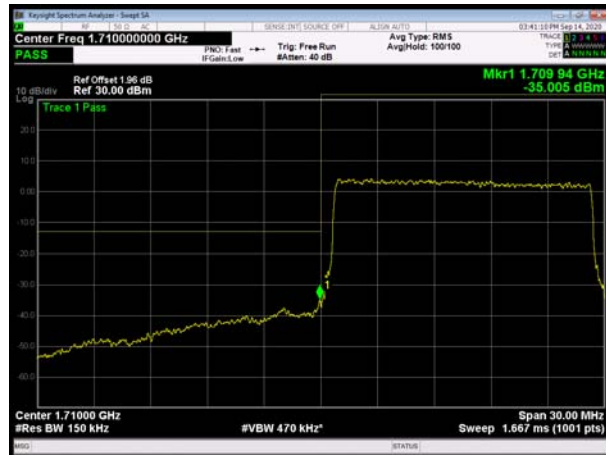


LTE Band 66 16QAM 15MHz CH-High, 1 RB

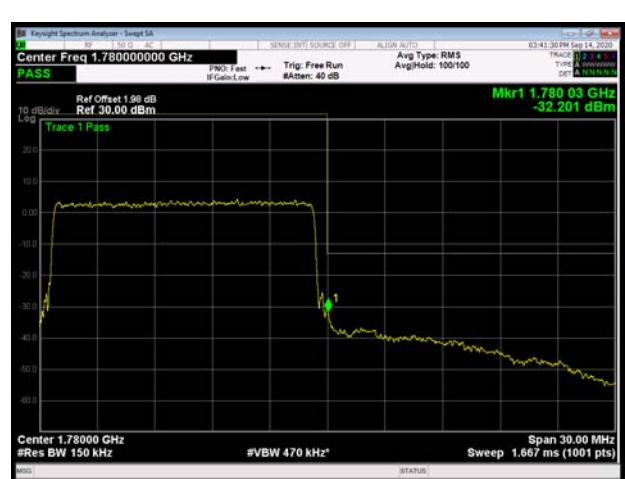




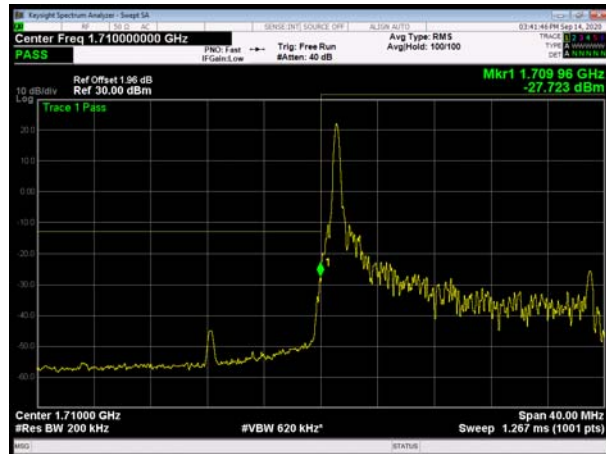
LTE Band 66 16QAM 15MHz CH-Low, 100%RB



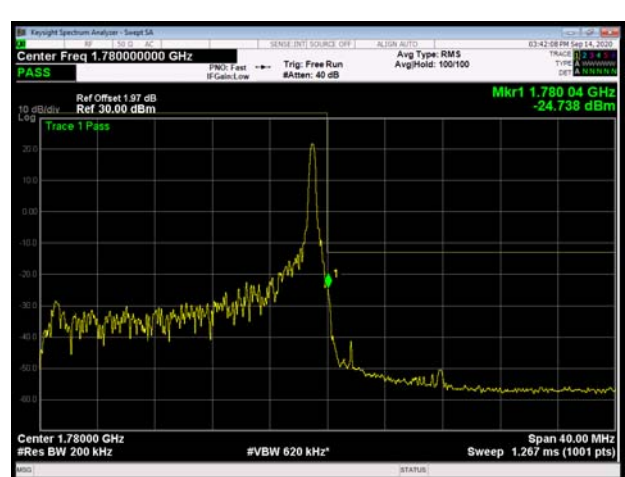
LTE Band 66 16QAM 15MHz CH-High, 100%RB



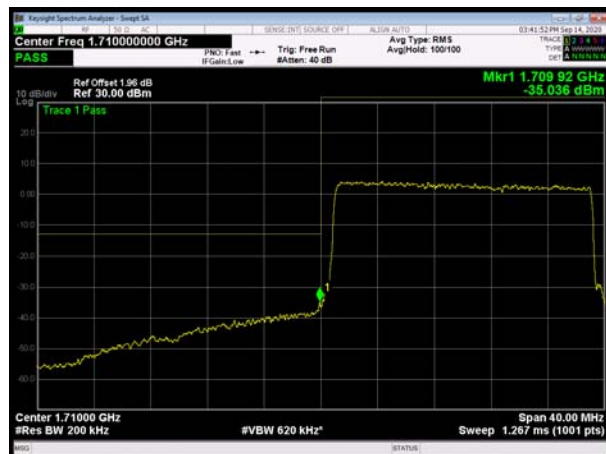
LTE Band 66 16QAM 20MHz CH-Low, 1 RB



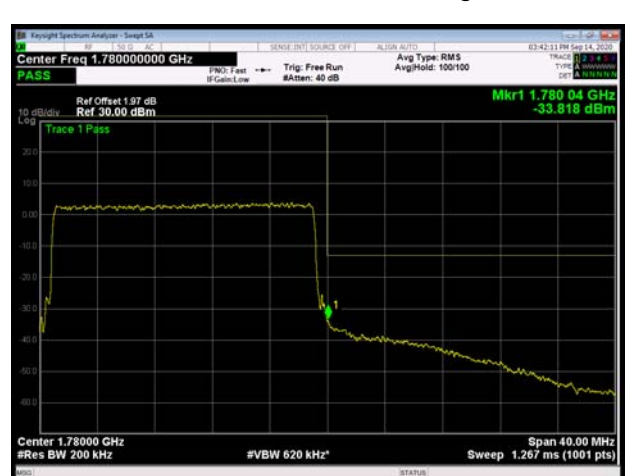
LTE Band 66 16QAM 20MHz CH-High, 1 RB



LTE Band 66 16QAM 20MHz CH-Low, 100%RB



LTE Band 66 16QAM 20MHz CH-High, 100%RB



5.4 Peak-to-Average Power Ratio (PAPR)

Ambient condition

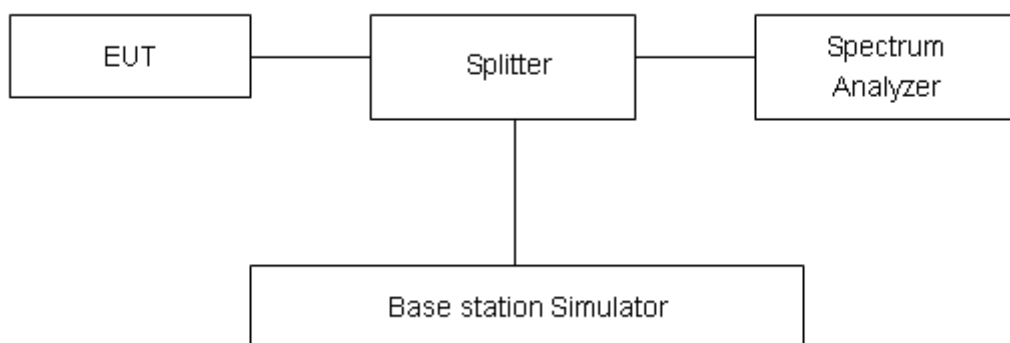
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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:

$$\text{PAPR (dB)} = \text{PPk (dBm)} - \text{PAvg (dBm)}.$$

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.

Measurement Uncertainty

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



Test Results

WCDMA Band IV	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
RMC	1312	1712.4	24.13	21.20	2.93	≤13	PASS
	1413	1732.6	23.84	20.89	2.95	≤13	PASS
	1513	1752.6	23.69	20.65	3.04	≤13	PASS

LTE Band 4								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	19957	1710.7	28.15	23.10	5.05	≤13	PASS
		20175	1732.5	28.33	23.19	5.14	≤13	PASS
		20393	1754.3	28.11	22.98	5.13	≤13	PASS
	3	19965	1711.5	28.21	23.19	5.02	≤13	PASS
		20175	1732.5	28.33	23.24	5.09	≤13	PASS
		20385	1753.5	28.27	23.01	5.26	≤13	PASS
	5	19975	1712.5	28.24	23.15	5.09	≤13	PASS
		20175	1732.5	28.45	23.27	5.18	≤13	PASS
		20375	1752.5	28.37	23.06	5.31	≤13	PASS
	10	20000	1715	28.36	23.20	5.16	≤13	PASS
		20175	1732.5	28.45	23.22	5.23	≤13	PASS
		20350	1750	28.45	23.13	5.32	≤13	PASS
	15	20025	1717.5	28.71	23.18	5.53	≤13	PASS
		20175	1732.5	28.77	23.18	5.59	≤13	PASS
		20325	1747.5	28.73	23.13	5.60	≤13	PASS
	20	20050	1720	28.62	23.17	5.45	≤13	PASS
		20175	1732.5	28.66	23.16	5.50	≤13	PASS
		20300	1745	28.53	23.15	5.38	≤13	PASS
16QAM	1.4	19957	1710.7	27.60	22.03	5.57	≤13	PASS
		20175	1732.5	28.07	22.12	5.95	≤13	PASS
		20393	1754.3	28.04	21.95	6.09	≤13	PASS
	3	19965	1711.5	27.64	22.16	5.48	≤13	PASS
		20175	1732.5	28.24	22.16	6.08	≤13	PASS
		20385	1753.5	28.06	21.97	6.09	≤13	PASS
	5	19975	1712.5	27.73	22.12	5.61	≤13	PASS
		20175	1732.5	28.19	22.20	5.99	≤13	PASS
		20375	1752.5	28.12	22.01	6.11	≤13	PASS
	10	20000	1715	27.83	22.14	5.69	≤13	PASS
		20175	1732.5	28.17	22.13	6.04	≤13	PASS
		20350	1750	28.18	22.06	6.12	≤13	PASS



	15	20025	1717.5	28.24	22.10	6.14	≤13	PASS
		20175	1732.5	28.30	22.11	6.19	≤13	PASS
		20325	1747.5	28.25	22.07	6.18	≤13	PASS
	20	20050	1720	28.32	22.16	6.16	≤13	PASS
		20175	1732.5	28.31	22.10	6.21	≤13	PASS
		20300	1745	28.21	22.09	6.12	≤13	PASS

LTE Band 7								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	20775	2502.5	27.98	23.38	4.60	≤13	PASS
		21100	2535	28.48	23.43	5.05	≤13	PASS
		21425	2567.5	27.83	22.99	4.84	≤13	PASS
	10	20800	2505	28.14	23.38	4.76	≤13	PASS
		21100	2535	28.54	23.46	5.08	≤13	PASS
		21400	2565	27.90	23.03	4.87	≤13	PASS
	15	20825	2507.5	28.46	23.31	5.15	≤13	PASS
		21100	2535	28.85	23.43	5.42	≤13	PASS
		21375	2562.5	28.25	23.00	5.25	≤13	PASS
	20	20850	2510	28.47	23.37	5.10	≤13	PASS
		21100	2535	28.68	23.39	5.29	≤13	PASS
		21350	2560	28.32	23.09	5.23	≤13	PASS
16QAM	5	20775	2502.5	27.88	22.35	5.53	≤13	PASS
		21100	2535	28.27	22.41	5.86	≤13	PASS
		21425	2567.5	27.67	21.99	5.68	≤13	PASS
	10	20800	2505	27.93	22.31	5.62	≤13	PASS
		21100	2535	28.29	22.33	5.96	≤13	PASS
		21400	2565	27.66	21.93	5.73	≤13	PASS
	15	20825	2507.5	28.09	22.31	5.78	≤13	PASS
		21100	2535	28.40	22.34	6.06	≤13	PASS
		21375	2562.5	27.86	21.94	5.92	≤13	PASS
	20	20850	2510	28.11	22.28	5.83	≤13	PASS
		21100	2535	28.35	22.31	6.04	≤13	PASS
		21350	2560	28.01	22.03	5.98	≤13	PASS



LTE Band 66								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	131979	1710.7	28.06	23.00	5.06	≤13	PASS
		132322	1745	28.15	23.05	5.10	≤13	PASS
		132665	1779.3	28.46	23.40	5.06	≤13	PASS
	3	131987	1711.5	28.11	23.16	4.95	≤13	PASS
		132322	1745	28.24	23.16	5.08	≤13	PASS
		132657	1778.5	28.49	23.43	5.06	≤13	PASS
	5	131997	1712.5	28.15	23.12	5.03	≤13	PASS
		132322	1745	28.29	23.16	5.13	≤13	PASS
		132647	1777.5	28.50	23.42	5.08	≤13	PASS
	10	132022	1715	28.25	23.13	5.12	≤13	PASS
		132322	1745	28.31	23.16	5.15	≤13	PASS
		132622	1775	28.46	23.27	5.19	≤13	PASS
	15	132047	1717.5	28.69	23.12	5.57	≤13	PASS
		132322	1745	28.63	23.14	5.49	≤13	PASS
		132597	1772.5	28.80	23.23	5.57	≤13	PASS
	20	132072	1720	28.67	23.20	5.47	≤13	PASS
		132322	1745	28.42	23.10	5.32	≤13	PASS
		132572	1770	28.64	23.14	5.50	≤13	PASS
16QAM	1.4	131979	1710.7	27.80	21.98	5.82	≤13	PASS
		132322	1745	27.93	21.99	5.94	≤13	PASS
		132665	1779.3	28.19	22.36	5.83	≤13	PASS
	3	131987	1711.5	27.87	22.08	5.79	≤13	PASS
		132322	1745	27.95	22.06	5.89	≤13	PASS
		132657	1778.5	28.19	22.35	5.84	≤13	PASS
	5	131997	1712.5	27.86	22.04	5.82	≤13	PASS
		132322	1745	27.98	22.05	5.93	≤13	PASS
		132647	1777.5	28.30	22.36	5.94	≤13	PASS
	10	132022	1715	27.94	22.05	5.89	≤13	PASS
		132322	1745	27.98	22.03	5.95	≤13	PASS
		132622	1775	28.20	22.20	6.00	≤13	PASS
	15	132047	1717.5	28.22	22.03	6.19	≤13	PASS
		132322	1745	28.11	21.99	6.12	≤13	PASS
		132597	1772.5	28.30	22.15	6.15	≤13	PASS
	20	132072	1720	28.29	22.06	6.23	≤13	PASS
		132322	1745	28.09	22.02	6.07	≤13	PASS
		132572	1770	28.29	22.04	6.25	≤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 +55°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 +55°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

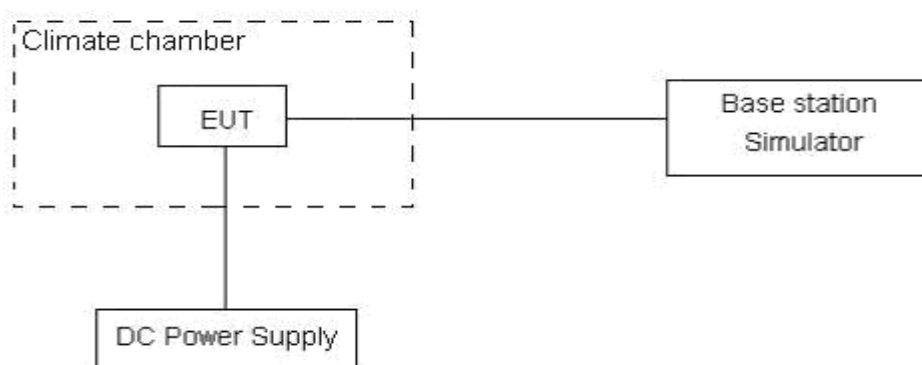
Frequency Stability (Voltage Variation)

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 3.6 V and 4.43 V, 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	10.79	9.52	0.00574	0.00507	PASS
Extreme (55℃)		1.34	12.27	0.00071	0.00653	PASS
Extreme (50℃)		4.85	8.97	0.00258	0.00477	PASS
Extreme (40℃)		7.74	13.36	0.00412	0.00711	PASS
Extreme (30℃)		4.28	16.97	0.00227	0.00903	PASS
Extreme (20℃)		12.81	1.79	0.00681	0.00095	PASS
Extreme (10℃)		11.77	2.43	0.00626	0.00129	PASS
Extreme (0℃)		13.06	4.96	0.00695	0.00264	PASS
Extreme (-10℃)		11.61	14.52	0.00617	0.00773	PASS
Extreme (-20℃)		11.86	10.83	0.00631	0.00576	PASS
Extreme (-30℃)		16.62	9.97	0.00884	0.00530	PASS
25℃	LV	10.35	8.68	0.00551	0.00462	PASS
	HV	16.97	14.70	0.00903	0.00782	PASS

LTE Band 4						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	1.4MHz	16QAM	QPSK	16QAM	QPSK	
Temperature	Voltage					
Normal (25℃)	Normal	4.12	14.07	0.00219	0.00749	PASS
Extreme (55℃)		3.45	6.48	0.00184	0.00345	PASS
Extreme (50℃)		5.40	13.35	0.00287	0.00710	PASS
Extreme (40℃)		4.84	13.15	0.00258	0.00700	PASS
Extreme (30℃)		8.29	7.66	0.00441	0.00408	PASS
Extreme (20℃)		6.29	16.46	0.00334	0.00875	PASS
Extreme (10℃)		16.40	11.38	0.00872	0.00606	PASS
Extreme (0℃)		9.90	6.70	0.00526	0.00356	PASS
Extreme (-10℃)		15.72	14.60	0.00836	0.00777	PASS
Extreme (-20℃)		1.57	14.33	0.00084	0.00762	PASS
Extreme (-30℃)		12.93	1.98	0.00688	0.00105	PASS
25℃	LV	9.32	5.08	0.00496	0.00270	PASS
	HV	14.42	8.10	0.00767	0.00431	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability	Frequency Stability	Verdict



BANDWIDTH	3MHz			(ppm)	(ppm)	
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	3.80	4.49	0.00202	0.00239	PASS
Extreme (55℃)		13.43	15.34	0.00714	0.00816	PASS
Extreme (50℃)		11.26	11.30	0.00599	0.00601	PASS
Extreme (40℃)		5.18	1.36	0.00276	0.00072	PASS
Extreme (30℃)		6.26	4.57	0.00333	0.00243	PASS
Extreme (20℃)		9.89	7.08	0.00526	0.00376	PASS
Extreme (10℃)		12.15	17.30	0.00646	0.00920	PASS
Extreme (0℃)		13.89	5.03	0.00739	0.00267	PASS
Extreme (-10℃)		13.50	11.67	0.00718	0.00621	PASS
Extreme (-20℃)		16.21	17.75	0.00862	0.00944	PASS
Extreme (-30℃)		14.21	15.14	0.00756	0.00805	PASS
25℃	LV	3.83	12.68	0.00204	0.00674	PASS
	HV	10.19	5.87	0.00542	0.00312	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	16.23	4.64	0.00864	0.00247	PASS
Extreme (55℃)		17.72	1.01	0.00942	0.00054	PASS
Extreme (50℃)		8.51	10.89	0.00453	0.00579	PASS
Extreme (40℃)		6.94	8.85	0.00369	0.00471	PASS
Extreme (30℃)		9.38	10.22	0.00499	0.00544	PASS
Extreme (20℃)		15.83	12.15	0.00842	0.00646	PASS
Extreme (10℃)		4.19	6.81	0.00223	0.00362	PASS
Extreme (0℃)		1.28	15.89	0.00068	0.00845	PASS
Extreme (-10℃)		10.88	14.24	0.00579	0.00758	PASS
Extreme (-20℃)		6.94	5.42	0.00369	0.00288	PASS
Extreme (-30℃)		8.84	14.71	0.00470	0.00782	PASS
25℃	LV	2.01	7.95	0.00107	0.00423	PASS
	HV	14.06	2.37	0.00748	0.00126	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	13.18	2.90	0.00701	0.00154	PASS
Extreme (55℃)		5.35	2.89	0.00285	0.00154	PASS
Extreme (50℃)		3.22	2.18	0.00171	0.00116	PASS
Extreme (40℃)		14.58	7.60	0.00775	0.00404	PASS
Extreme (30℃)		13.02	7.80	0.00692	0.00415	PASS
Extreme (20℃)		14.11	2.41	0.00751	0.00128	PASS



Extreme (10℃)		7.51	9.96	0.00399	0.00530	PASS
Extreme (0℃)		5.41	2.61	0.00288	0.00139	PASS
Extreme (-10℃)		3.28	8.10	0.00174	0.00431	PASS
Extreme (-20℃)		11.79	5.35	0.00627	0.00285	PASS
Extreme (-30℃)		14.27	10.85	0.00759	0.00577	PASS
25℃	LV	6.99	7.76	0.00372	0.00413	PASS
	HV	8.69	14.85	0.00462	0.00790	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz					
Temperature	Voltage					
Normal (25℃)	Normal	13.03	16.79	0.00693	0.00893	PASS
Extreme (55℃)		6.22	1.62	0.00331	0.00086	PASS
Extreme (50℃)		2.67	1.45	0.00142	0.00077	PASS
Extreme (40℃)		11.93	15.83	0.00634	0.00842	PASS
Extreme (30℃)		1.57	13.41	0.00084	0.00713	PASS
Extreme (20℃)		7.00	16.50	0.00373	0.00878	PASS
Extreme (10℃)		7.32	15.05	0.00390	0.00800	PASS
Extreme (0℃)		10.06	1.00	0.00535	0.00053	PASS
Extreme (-10℃)		8.34	15.16	0.00444	0.00807	PASS
Extreme (-20℃)		2.63	7.24	0.00140	0.00385	PASS
Extreme (-30℃)		5.36	5.13	0.00285	0.00273	PASS
25℃	LV	15.85	14.71	0.00843	0.00782	PASS
	HV	2.79	14.75	0.00148	0.00784	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz					
Temperature	Voltage					
Normal (25℃)	Normal	6.02	14.78	0.00320	0.00786	PASS
Extreme (55℃)		3.77	5.67	0.00201	0.00302	PASS
Extreme (50℃)		7.57	15.08	0.00402	0.00802	PASS
Extreme (40℃)		6.61	3.25	0.00351	0.00173	PASS
Extreme (30℃)		5.91	13.19	0.00314	0.00702	PASS
Extreme (20℃)		11.56	7.73	0.00615	0.00411	PASS
Extreme (10℃)		5.47	7.96	0.00291	0.00424	PASS
Extreme (0℃)		8.09	17.07	0.00430	0.00908	PASS
Extreme (-10℃)		15.90	6.24	0.00846	0.00332	PASS
Extreme (-20℃)		2.22	13.74	0.00118	0.00731	PASS
Extreme (-30℃)		13.69	3.45	0.00728	0.00184	PASS
25℃	LV	11.64	10.79	0.00619	0.00574	PASS
	HV	15.31	4.36	0.00815	0.00232	PASS



LTE Band 7						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz	16QAM	QPSK	16QAM	QPSK	
Temperature	Voltage					
Normal (25℃)	Normal	7.32	11.91	0.00389	0.00634	PASS
Extreme (55℃)		11.70	11.69	0.00622	0.00622	PASS
Extreme (50℃)		5.29	11.52	0.00282	0.00613	PASS
Extreme (40℃)		12.96	5.89	0.00690	0.00313	PASS
Extreme (30℃)		17.14	4.53	0.00912	0.00241	PASS
Extreme (20℃)		10.34	16.92	0.00550	0.00900	PASS
Extreme (10℃)		6.20	10.15	0.00330	0.00540	PASS
Extreme (0℃)		1.69	14.39	0.00090	0.00765	PASS
Extreme (-10℃)		10.05	7.73	0.00535	0.00411	PASS
Extreme (-20℃)		1.48	2.47	0.00079	0.00131	PASS
Extreme (-30℃)		11.85	5.45	0.00630	0.00290	PASS
25℃	LV	13.07	12.94	0.00695	0.00688	PASS
	HV	2.07	12.12	0.00110	0.00645	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz	16QAM	QPSK	16QAM	QPSK	
Temperature	Voltage					
Normal (25℃)	Normal	14.00	6.35	0.00745	0.00338	PASS
Extreme (55℃)		6.88	13.81	0.00366	0.00734	PASS
Extreme (50℃)		9.49	6.05	0.00505	0.00322	PASS
Extreme (40℃)		13.30	3.38	0.00707	0.00180	PASS
Extreme (30℃)		3.19	14.12	0.00169	0.00751	PASS
Extreme (20℃)		1.29	1.19	0.00069	0.00063	PASS
Extreme (10℃)		1.09	1.08	0.00058	0.00058	PASS
Extreme (0℃)		7.10	2.32	0.00378	0.00123	PASS
Extreme (-10℃)		12.34	15.26	0.00656	0.00812	PASS
Extreme (-20℃)		4.03	1.64	0.00214	0.00087	PASS
Extreme (-30℃)		8.21	15.37	0.00437	0.00818	PASS
25℃	LV	1.62	12.28	0.00086	0.00653	PASS
	HV	4.84	7.67	0.00257	0.00408	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz	16QAM	QPSK	16QAM	QPSK	
Temperature	Voltage					
Normal (25℃)	Normal	9.47	3.31	0.00504	0.00176	PASS
Extreme (55℃)		10.58	12.09	0.00563	0.00643	PASS



Extreme (50℃)		3.98	15.86	0.00212	0.00843	PASS
Extreme (40℃)		5.82	7.06	0.00310	0.00375	PASS
Extreme (30℃)		17.51	17.28	0.00932	0.00919	PASS
Extreme (20℃)		7.75	11.94	0.00412	0.00635	PASS
Extreme (10℃)		6.46	16.97	0.00344	0.00903	PASS
Extreme (0℃)		4.08	7.68	0.00217	0.00409	PASS
Extreme (-10℃)		8.80	5.76	0.00468	0.00306	PASS
Extreme (-20℃)		7.22	13.65	0.00384	0.00726	PASS
Extreme (-30℃)		6.29	11.44	0.00334	0.00608	PASS
25℃	LV	9.80	7.14	0.00521	0.00380	PASS
	HV	15.93	13.45	0.00847	0.00715	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	2.51	17.59	0.00134	0.00936	PASS
Extreme (55℃)		5.06	4.26	0.00269	0.00226	PASS
Extreme (50℃)		13.87	16.26	0.00738	0.00865	PASS
Extreme (40℃)		15.71	8.94	0.00836	0.00475	PASS
Extreme (30℃)		8.96	10.46	0.00476	0.00556	PASS
Extreme (20℃)		7.26	10.55	0.00386	0.00561	PASS
Extreme (10℃)		6.25	16.11	0.00332	0.00857	PASS
Extreme (0℃)		14.43	2.30	0.00767	0.00122	PASS
Extreme (-10℃)		17.16	6.13	0.00913	0.00326	PASS
Extreme (-20℃)		3.23	2.47	0.00172	0.00131	PASS
Extreme (-30℃)		3.08	9.92	0.00164	0.00528	PASS
25℃	LV	4.98	13.99	0.00265	0.00744	PASS
	HV	8.61	3.38	0.00458	0.00180	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	3.09	3.33	0.00164	0.00177	PASS
Extreme (55℃)		5.73	16.89	0.00305	0.00898	PASS
Extreme (50℃)		15.54	14.47	0.00827	0.00770	PASS
Extreme (40℃)		10.94	9.17	0.00582	0.00488	PASS
Extreme (30℃)		9.05	14.77	0.00481	0.00785	PASS
Extreme (20℃)		9.13	8.44	0.00486	0.00449	PASS
Extreme (10℃)		7.65	17.57	0.00407	0.00934	PASS



Extreme (0℃)		15.67	15.56	0.00834	0.00828	PASS
Extreme (-10℃)		6.75	14.71	0.00359	0.00782	PASS
Extreme (-20℃)		16.56	6.31	0.00881	0.00336	PASS
Extreme (-30℃)		10.78	2.71	0.00573	0.00144	PASS
25℃	LV	1.20	8.42	0.00064	0.00448	PASS
	HV	13.07	15.95	0.00695	0.00848	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	15.96	10.42	0.00849	0.00554	PASS
Extreme (55℃)		9.44	3.59	0.00502	0.00191	PASS
Extreme (50℃)		13.62	12.05	0.00724	0.00641	PASS
Extreme (40℃)		12.88	5.81	0.00685	0.00309	PASS
Extreme (30℃)		7.83	11.88	0.00416	0.00632	PASS
Extreme (20℃)		14.78	7.65	0.00786	0.00407	PASS
Extreme (10℃)		11.70	7.32	0.00622	0.00389	PASS
Extreme (0℃)		10.18	4.91	0.00541	0.00261	PASS
Extreme (-10℃)		2.90	8.34	0.00155	0.00444	PASS
Extreme (-20℃)		2.52	5.14	0.00134	0.00273	PASS
Extreme (-30℃)		17.23	6.76	0.00916	0.00359	PASS
25℃	LV	18.00	5.53	0.00957	0.00294	PASS
	HV	4.39	12.69	0.00233	0.00675	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	8.14	3.62	0.00433	0.00193	PASS
Extreme (55℃)		3.81	14.87	0.00202	0.00791	PASS
Extreme (50℃)		1.43	15.68	0.00076	0.00834	PASS
Extreme (40℃)		13.70	9.08	0.00729	0.00483	PASS
Extreme (30℃)		11.04	14.38	0.00587	0.00765	PASS
Extreme (20℃)		14.13	4.71	0.00752	0.00250	PASS
Extreme (10℃)		10.63	11.20	0.00565	0.00596	PASS
Extreme (0℃)		14.70	11.31	0.00782	0.00602	PASS
Extreme (-10℃)		3.20	13.80	0.00170	0.00734	PASS
Extreme (-20℃)		3.70	17.59	0.00197	0.00935	PASS
Extreme (-30℃)		3.31	5.74	0.00176	0.00305	PASS
25℃	LV	11.61	4.44	0.00617	0.00236	PASS
	HV	6.28	6.16	0.00334	0.00328	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability	Frequency Stability	Verdict



BANDWIDTH	10MHz			(ppm)	(ppm)	
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	4.38	11.80	0.00233	0.00627	PASS
Extreme (55℃)		16.31	10.35	0.00868	0.00550	PASS
Extreme (50℃)		14.30	7.54	0.00761	0.00401	PASS
Extreme (40℃)		2.50	14.08	0.00133	0.00749	PASS
Extreme (30℃)		3.17	12.80	0.00168	0.00681	PASS
Extreme (20℃)		3.68	6.39	0.00196	0.00340	PASS
Extreme (10℃)		10.94	10.37	0.00582	0.00552	PASS
Extreme (0℃)		7.43	10.46	0.00395	0.00557	PASS
Extreme (-10℃)		4.35	1.52	0.00232	0.00081	PASS
Extreme (-20℃)		15.03	8.69	0.00799	0.00462	PASS
Extreme (-30℃)		4.23	13.08	0.00225	0.00696	PASS
25℃	LV	12.48	5.21	0.00664	0.00277	PASS
	HV	9.85	13.34	0.00524	0.00710	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	4.49	11.95	0.00239	0.00636	PASS
Extreme (55℃)		17.74	16.32	0.00943	0.00868	PASS
Extreme (50℃)		13.08	1.27	0.00696	0.00068	PASS
Extreme (40℃)		5.94	15.72	0.00316	0.00836	PASS
Extreme (30℃)		2.75	13.45	0.00146	0.00716	PASS
Extreme (20℃)		7.93	10.55	0.00422	0.00561	PASS
Extreme (10℃)		7.58	9.89	0.00403	0.00526	PASS
Extreme (0℃)		8.39	16.18	0.00446	0.00861	PASS
Extreme (-10℃)		14.72	3.29	0.00783	0.00175	PASS
Extreme (-20℃)		11.94	9.49	0.00635	0.00505	PASS
Extreme (-30℃)		12.48	6.78	0.00664	0.00361	PASS
25℃	LV	3.37	12.06	0.00179	0.00641	PASS
	HV	12.45	16.04	0.00662	0.00853	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	1.75	17.95	0.00093	0.00955	PASS
Extreme (55℃)		16.11	15.25	0.00857	0.00811	PASS
Extreme (50℃)		14.59	1.83	0.00776	0.00097	PASS
Extreme (40℃)		17.61	9.33	0.00936	0.00496	PASS
Extreme (30℃)		9.12	12.53	0.00485	0.00666	PASS
Extreme (20℃)		15.28	3.88	0.00813	0.00206	PASS



Extreme (10℃)		15.14	16.37	0.00805	0.00871	PASS
Extreme (0℃)		10.22	4.16	0.00544	0.00221	PASS
Extreme (-10℃)		5.47	16.92	0.00291	0.00900	PASS
Extreme (-20℃)		13.99	13.30	0.00744	0.00708	PASS
Extreme (-30℃)		12.99	2.09	0.00691	0.00111	PASS
25℃	LV	8.87	4.64	0.00472	0.00247	PASS
	HV	1.53	11.38	0.00081	0.00605	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)

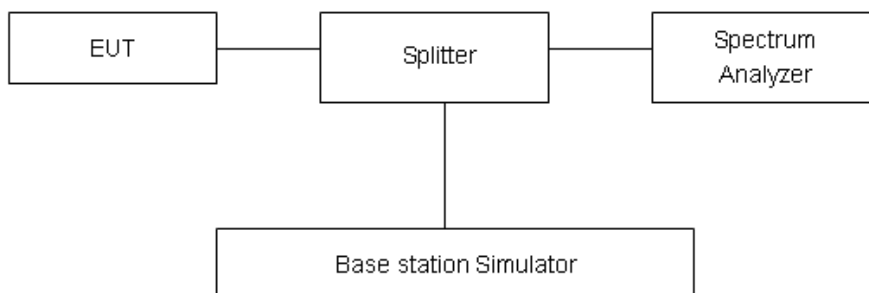
RBW is set to 100 kHz (30MHz~1000 MHz)

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 $43 + 10 \log_{10} (P)$ 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 $k = 1.96$.

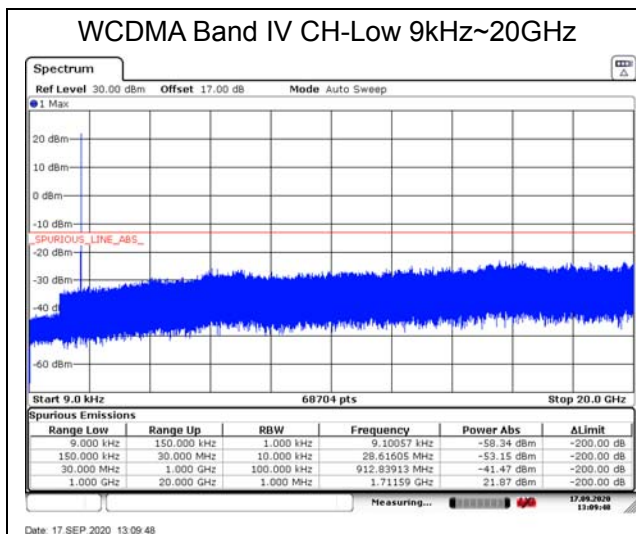
Frequency	Uncertainty
9kHz-1GHz	0.684 dB
1GHz-27GHz	1.407 dB

Test Result

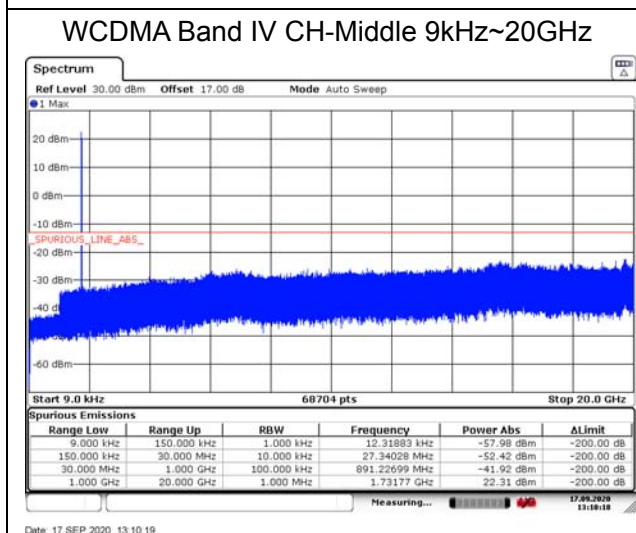
Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions more than 20 dB below the limit are not reported.

The signal beyond the limit is carrier.

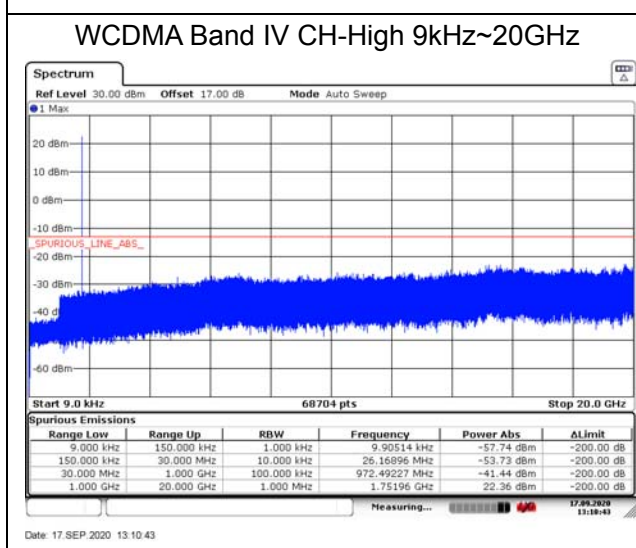
WCDMA Band IV CH-Low 9kHz~20GHz



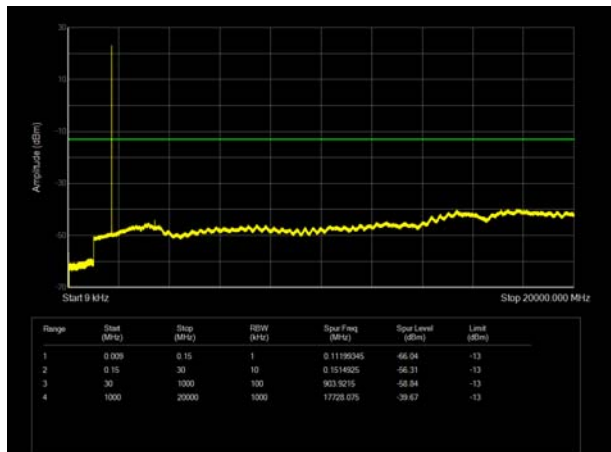
WCDMA Band IV CH-Middle 9kHz~20GHz



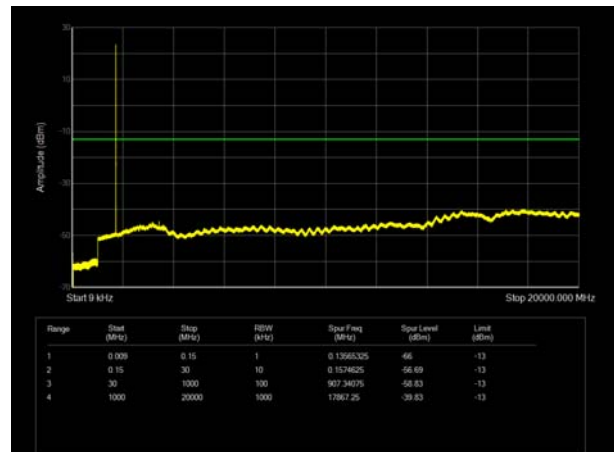
WCDMA Band IV CH-High 9kHz~20GHz



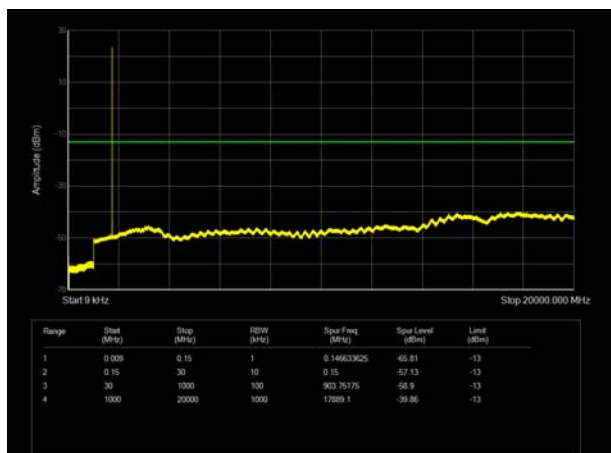
LTE Band 4 1.4MHz CH-Low 9kHz~20GHz



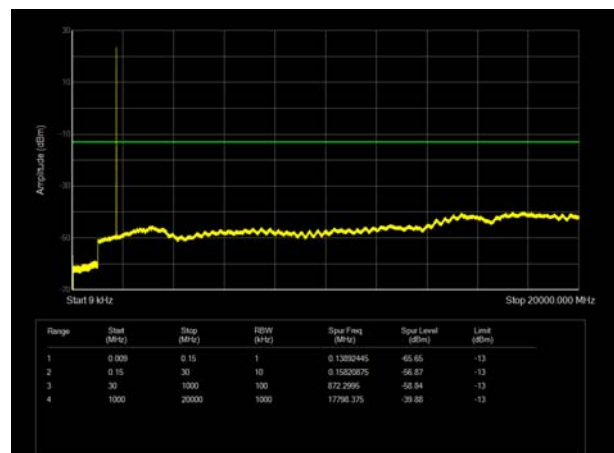
LTE Band 4 3MHz CH- Low 9kHz~20GHz



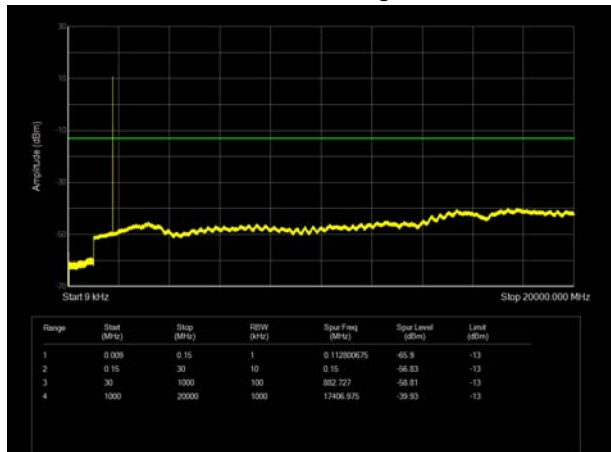
LTE Band 4 1.4MHz CH- Middle 9kHz~20GHz



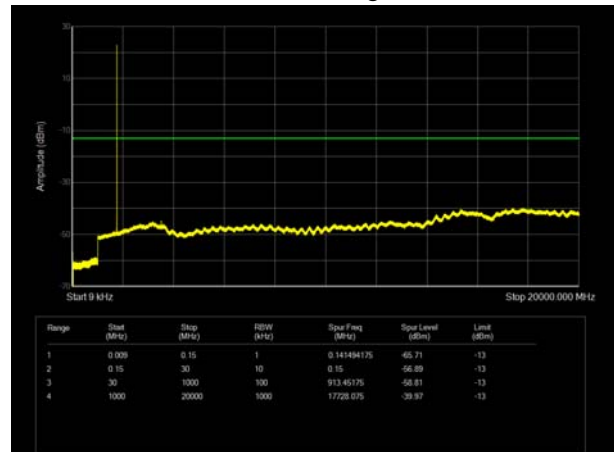
LTE Band 4 3MHz CH- Middle 9kHz~20GHz



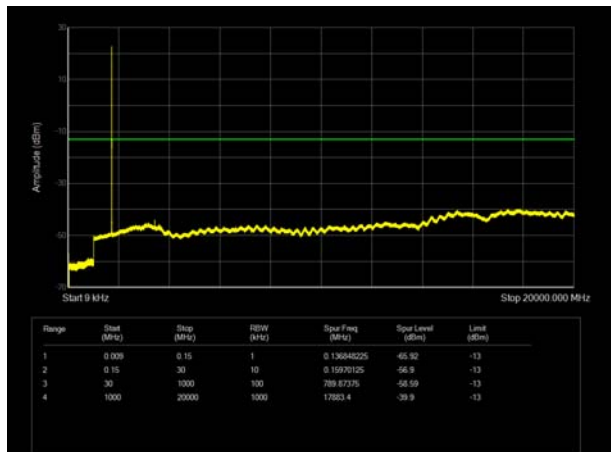
LTE Band 4 1.4MHz CH- High 9kHz~20GHz



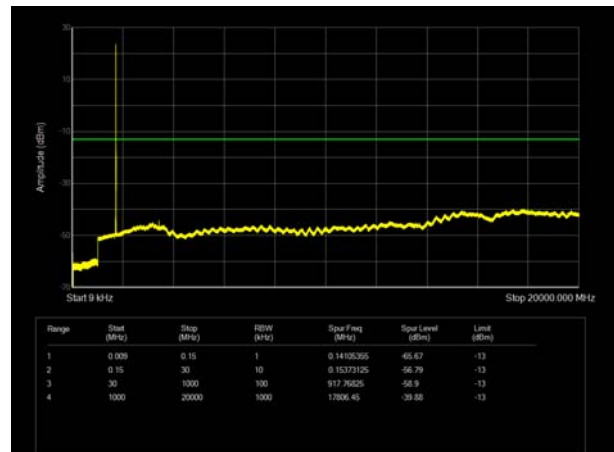
LTE Band 4 3MHz CH-High 9kHz~20GHz



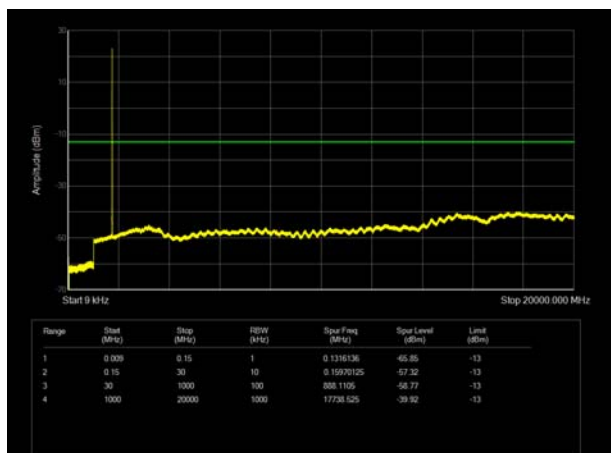
LTE Band 4 5MHz CH- Low 9kHz~20GHz



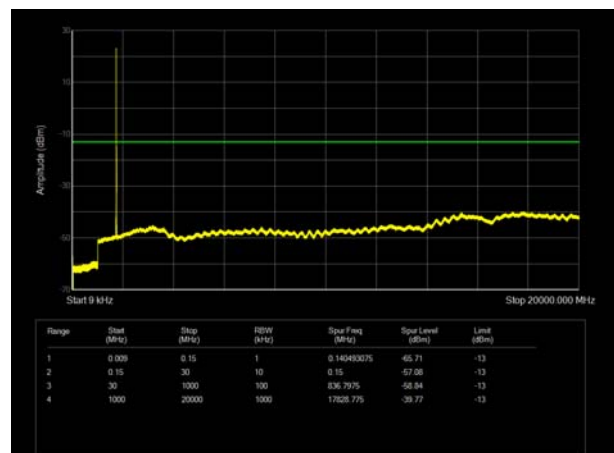
LTE Band 4 10MHz CH-Low 9kHz~20GHz



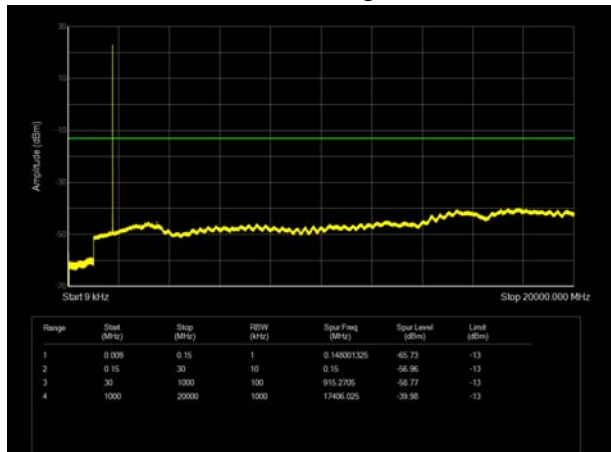
LTE Band 4 5MHz CH- Middle 9kHz~20GHz



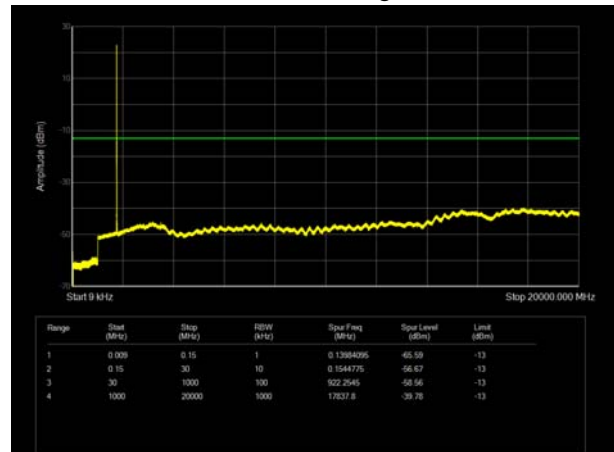
LTE Band 4 10MHz CH- Middle 9kHz~20GHz



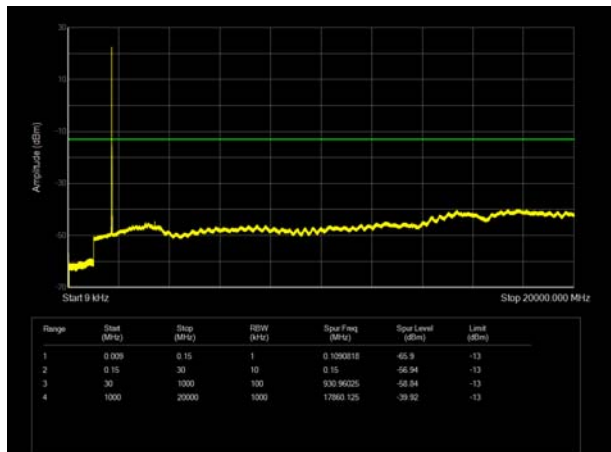
LTE Band 4 5MHz CH-High 9kHz~20GHz



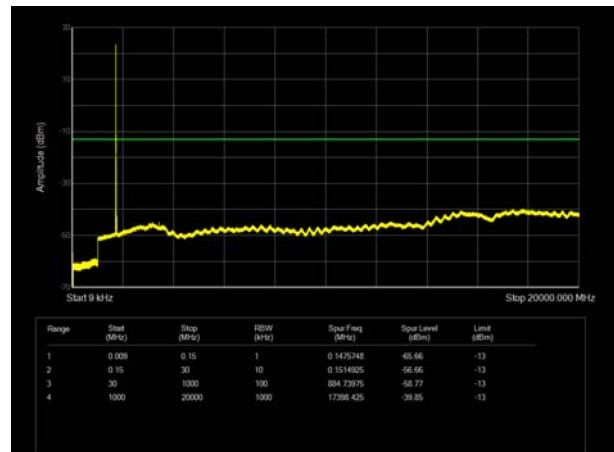
LTE Band 4 10MHz CH- High 9kHz~20GHz



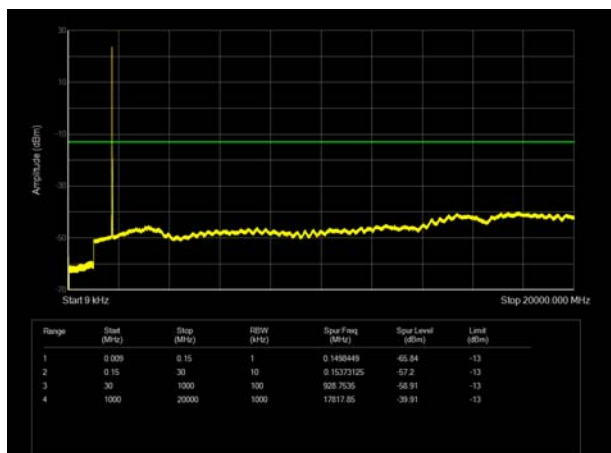
LTE Band 4 15MHz CH- Low 9kHz~20GHz



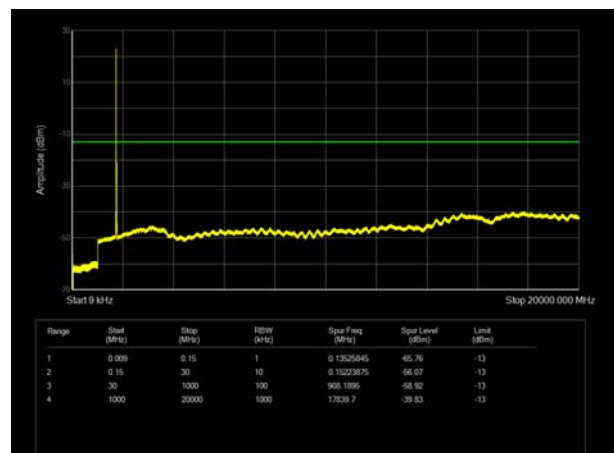
LTE Band 4 20MHz CH-Low 9kHz~20GHz



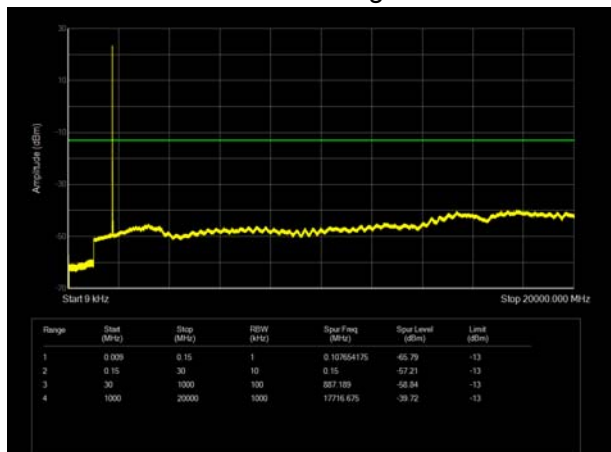
LTE Band 4 15MHz CH- Middle 9kHz~20GHz



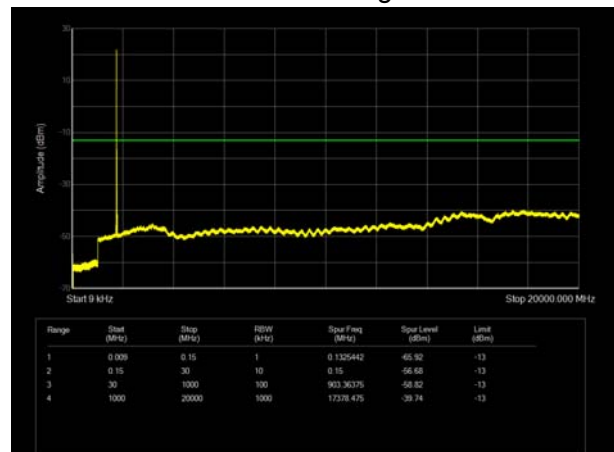
LTE Band 4 20MHz CH- Middle 9kHz~20GHz



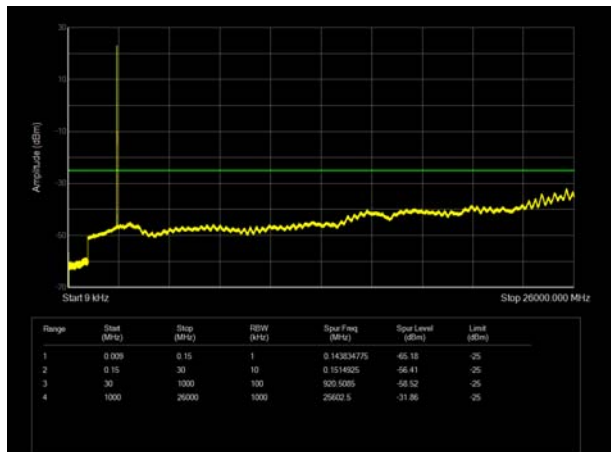
LTE Band 4 15MHz CH-High 9kHz~20GHz



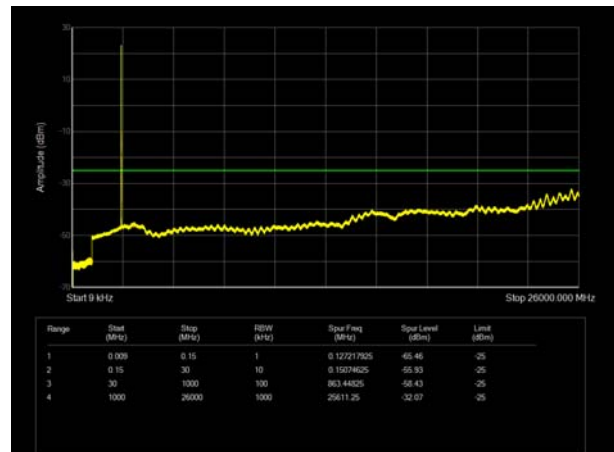
LTE Band 4 20MHz CH- High 9kHz~20GHz



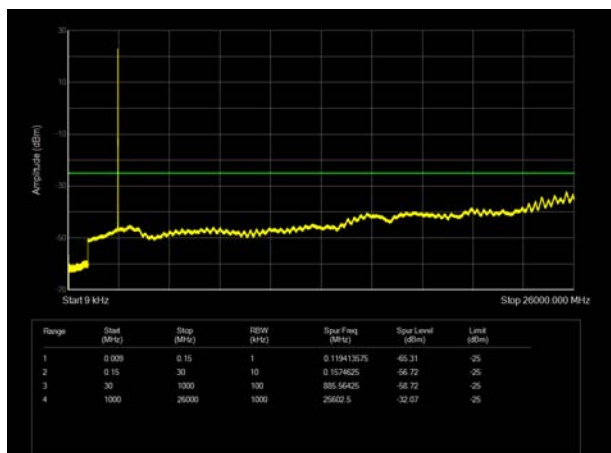
LTE Band 7 5MHz CH-Low 9kHz~26GHz



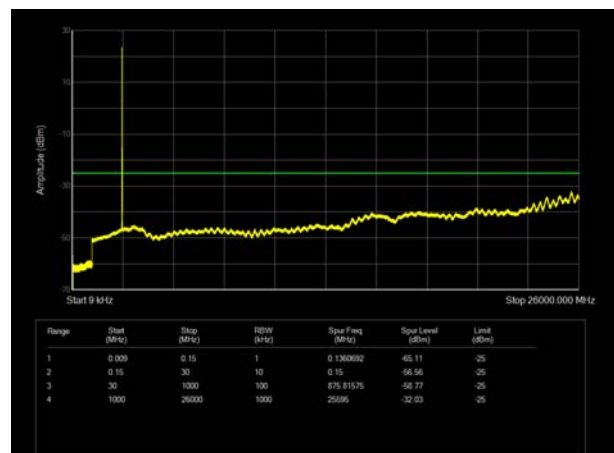
LTE Band 7 10MHz CH- Low 9kHz~26GHz



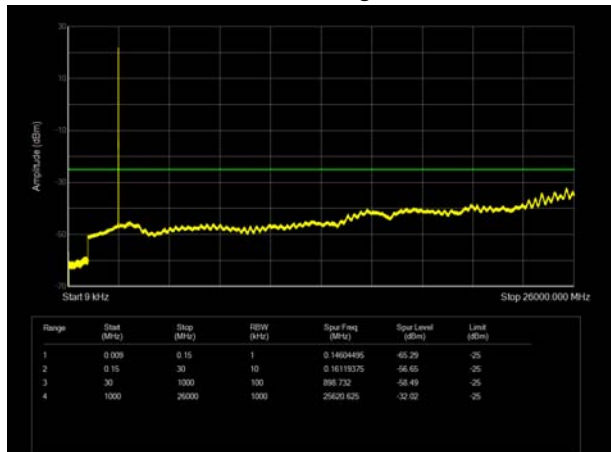
LTE Band 7 5MHz CH- Middle 9kHz~26GHz



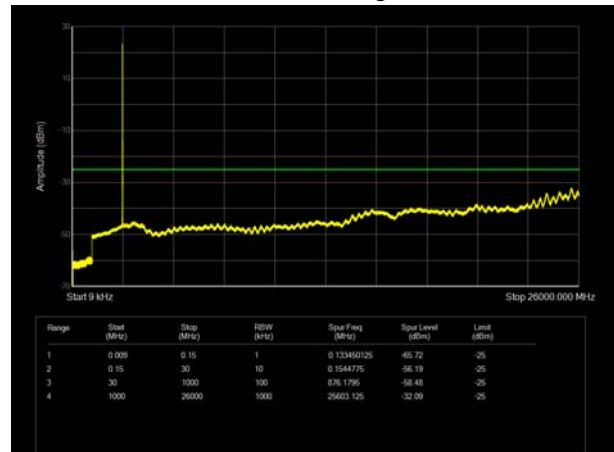
LTE Band 7 10MHz CH- Middle 9kHz~26GHz



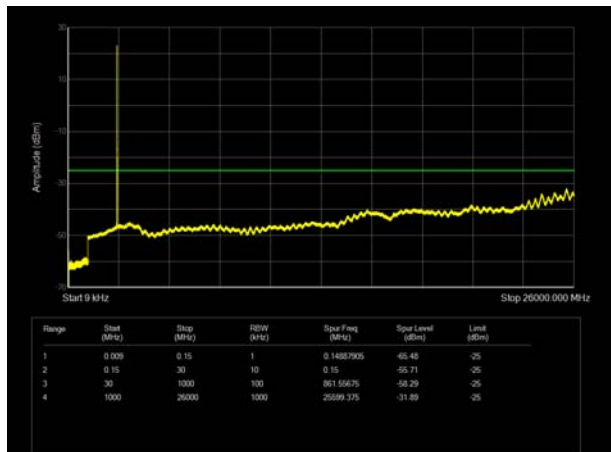
LTE Band 7 5MHz CH- High 9kHz~26GHz



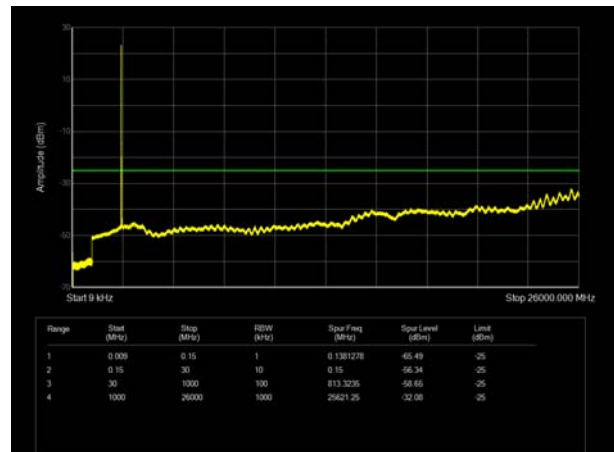
LTE Band 7 10MHz CH-High 9kHz~26GHz



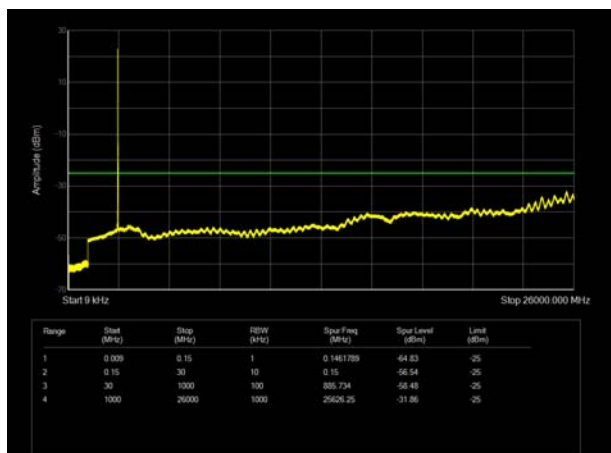
LTE Band 7 15MHz CH- Low 9kHz~26GHz



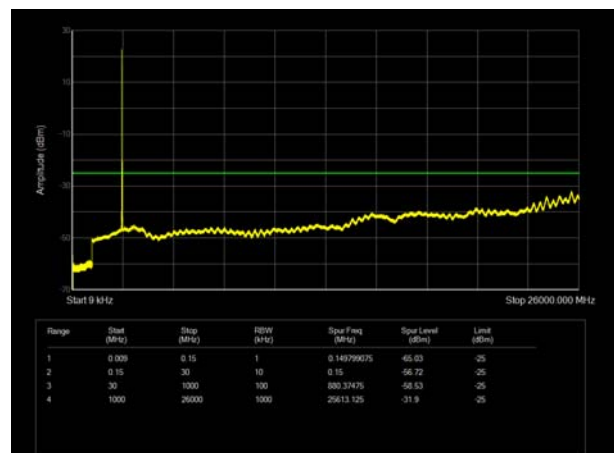
LTE Band 7 20MHz CH-Low 9kHz~26GHz



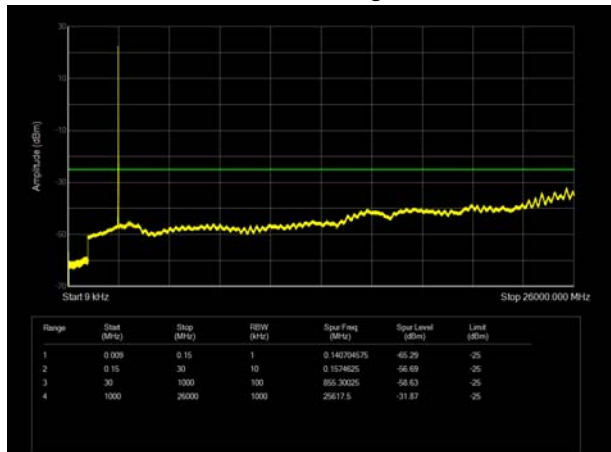
LTE Band 7 15MHz CH- Middle 9kHz~26GHz



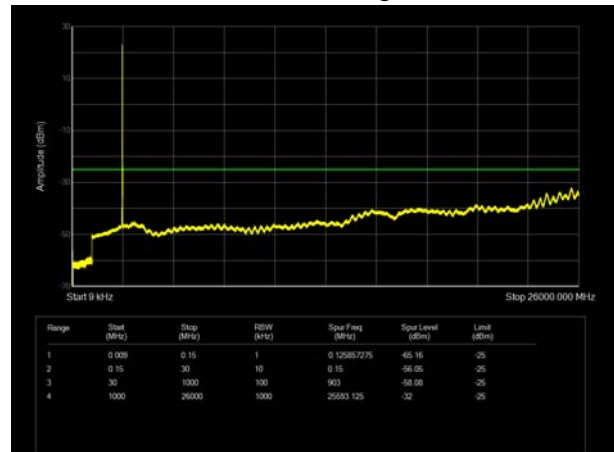
LTE Band 7 20MHz CH- Middle 9kHz~26GHz



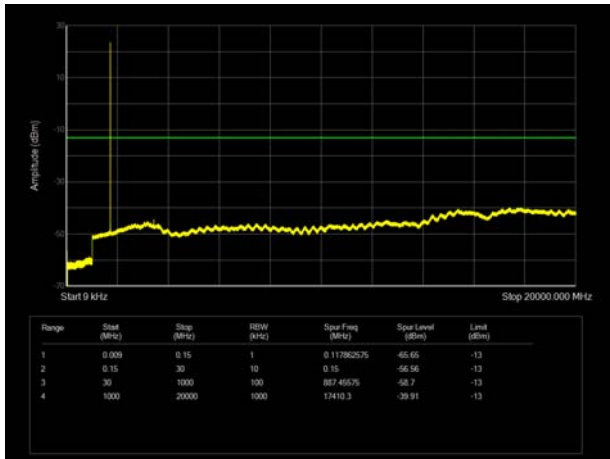
LTE Band 7 15MHz CH-High 9kHz~26GHz



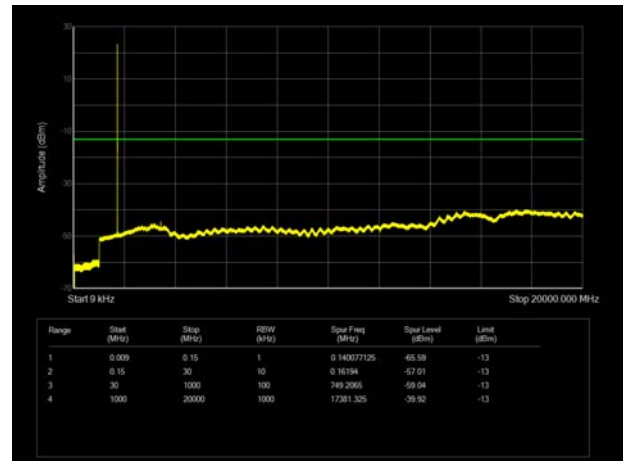
LTE Band 7 20MHz CH- High 9kHz~26GHz



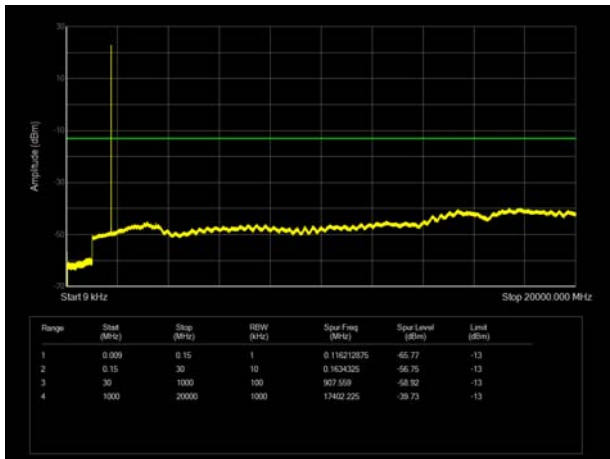
LTE Band 66 1.4MHz CH-Low 9kHz~20GHz



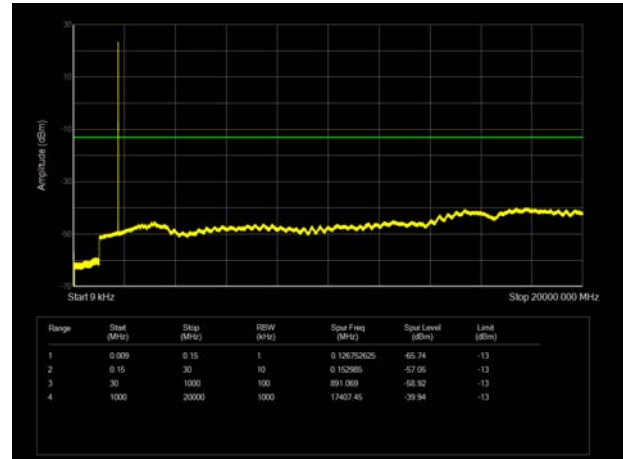
LTE Band 66 3MHz CH-Low 9kHz~20GHz



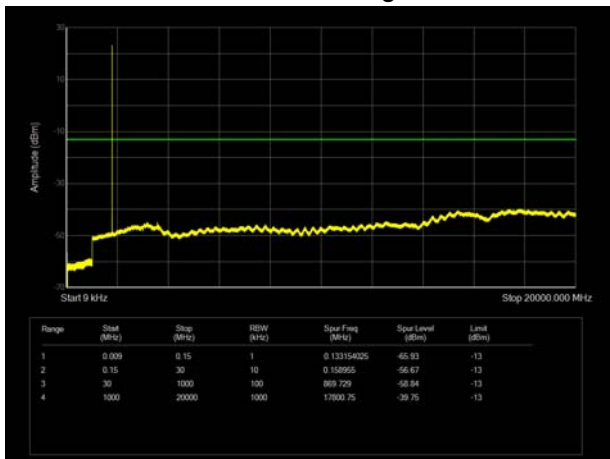
LTE Band 66 1.4MHz CH-Middle 9kHz~20GHz



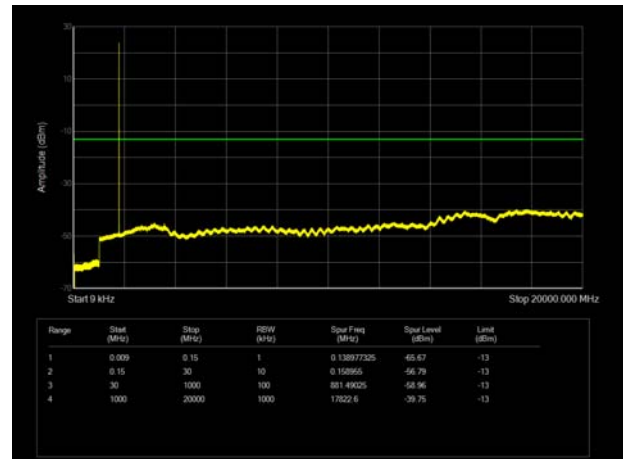
LTE Band 66 3MHz CH-Middle 9kHz~20GHz



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

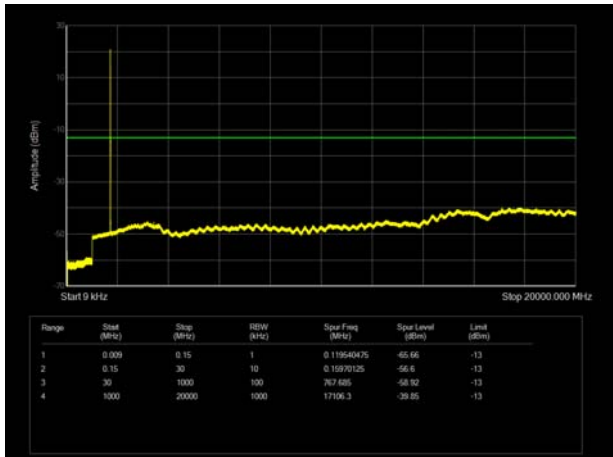


LTE Band 66 3MHz CH-High 9kHz~20GHz

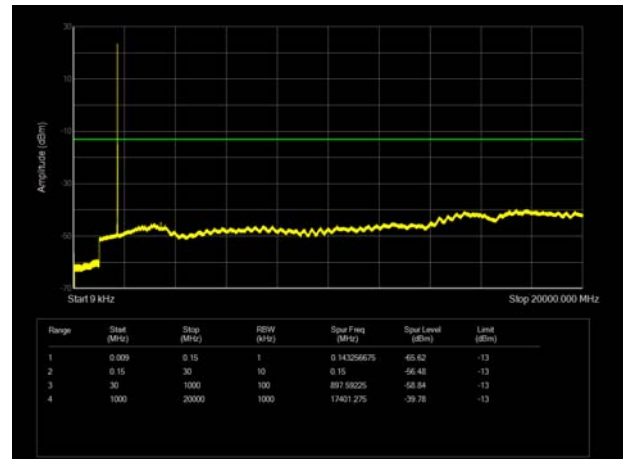




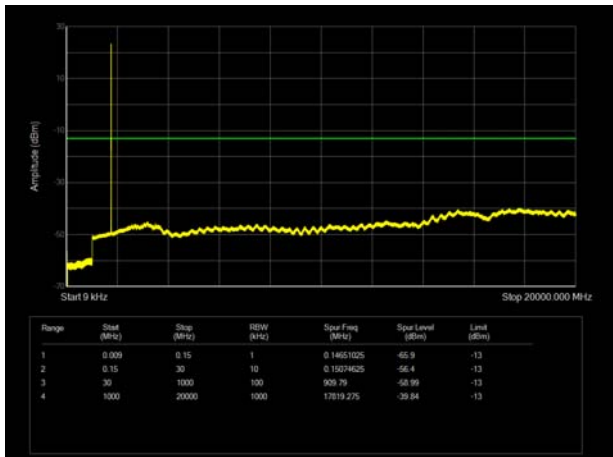
LTE Band 66 5MHz CH-Low 9kHz~20GHz



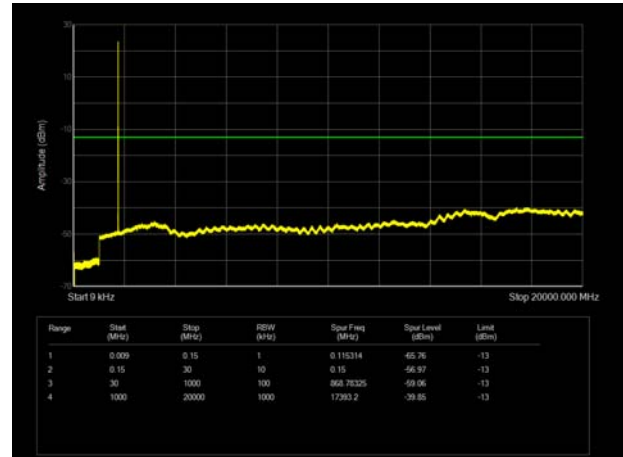
LTE Band 66 10MHz CH-Low 9kHz~20GHz



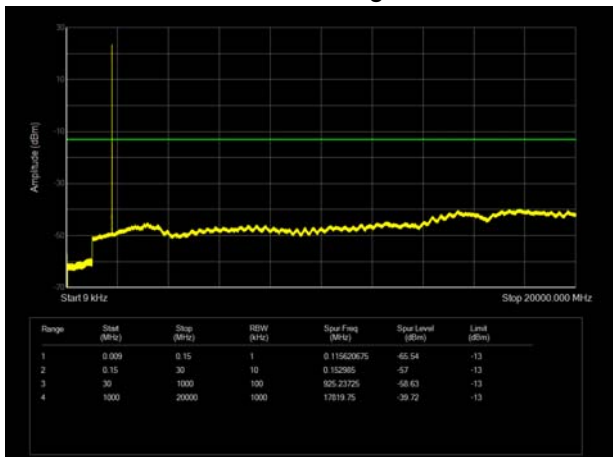
LTE Band 66 5MHz CH-Middle 9kHz~20GHz



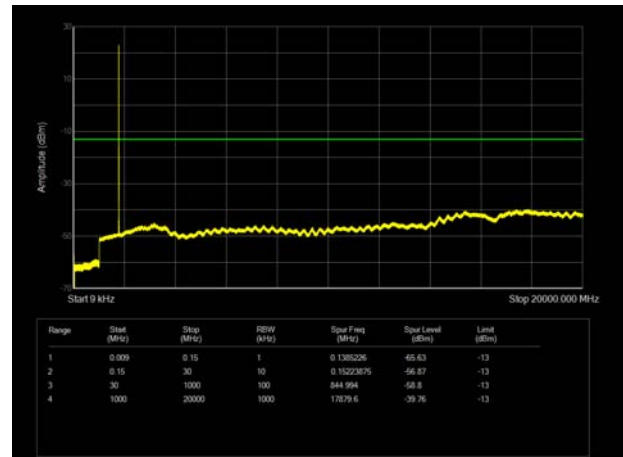
LTE Band 66 10MHz CH-Middle 9kHz~20GHz



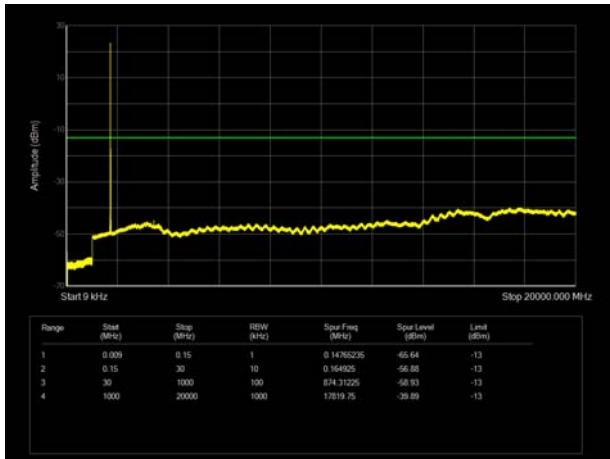
LTE Band 66 5MHz CH-High 9kHz~20GHz



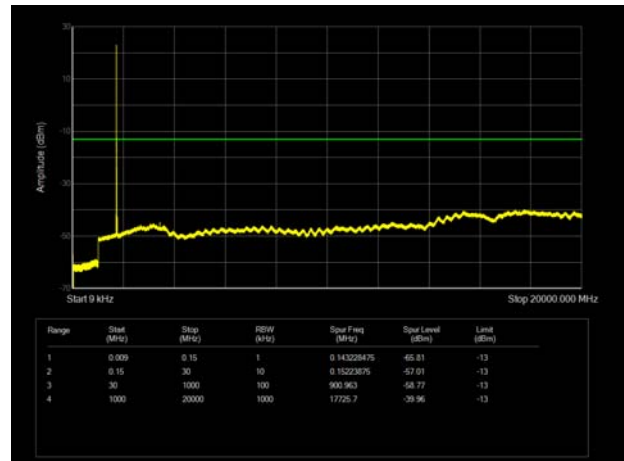
LTE Band 66 10MHz CH-High 9kHz~20GHz



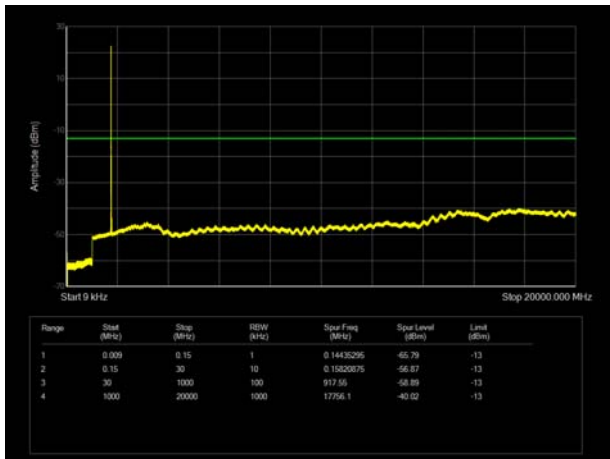
LTE Band 66 15MHz CH-Low 9kHz~20GHz



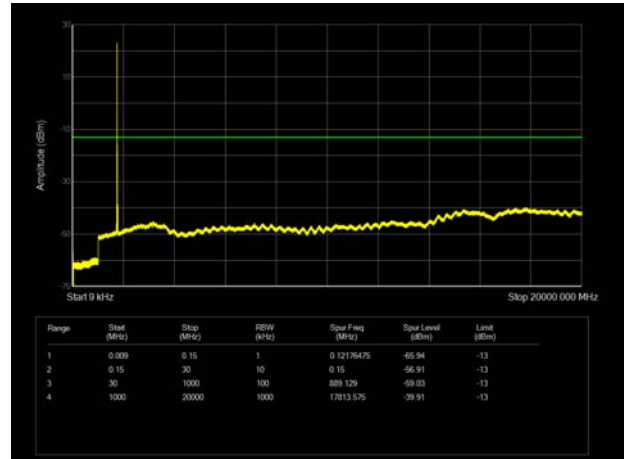
LTE Band 66 20MHz CH-Low 9kHz~20GHz



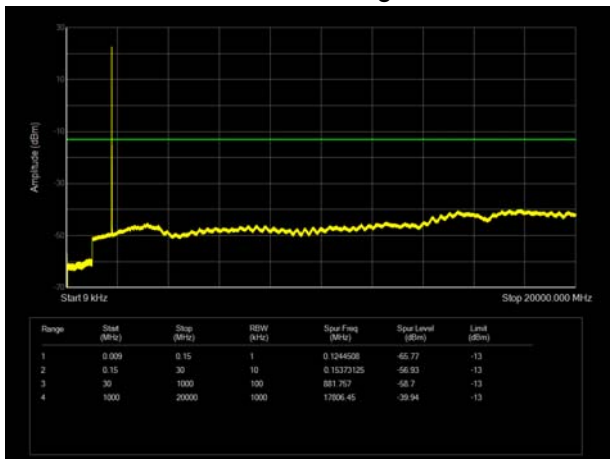
LTE Band 66 15MHz CH-Middle 9kHz~20GHz



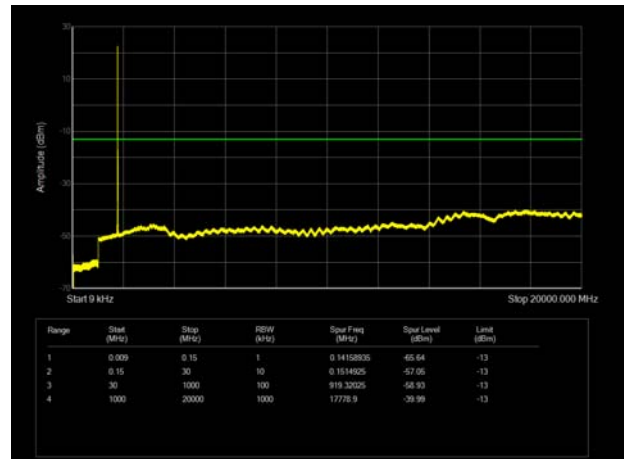
LTE Band 66 20MHz CH-Middle 9kHz~20GHz



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:

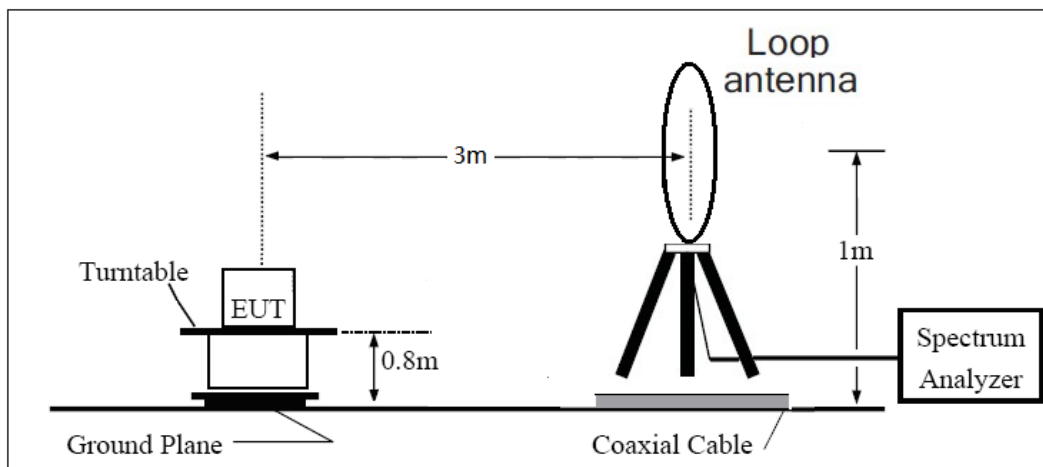
$$\text{Power(EIRP)} = \text{PMea} - \text{Pcl} + \text{Ga}$$
8. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP

= EIRP-2.15dBi.

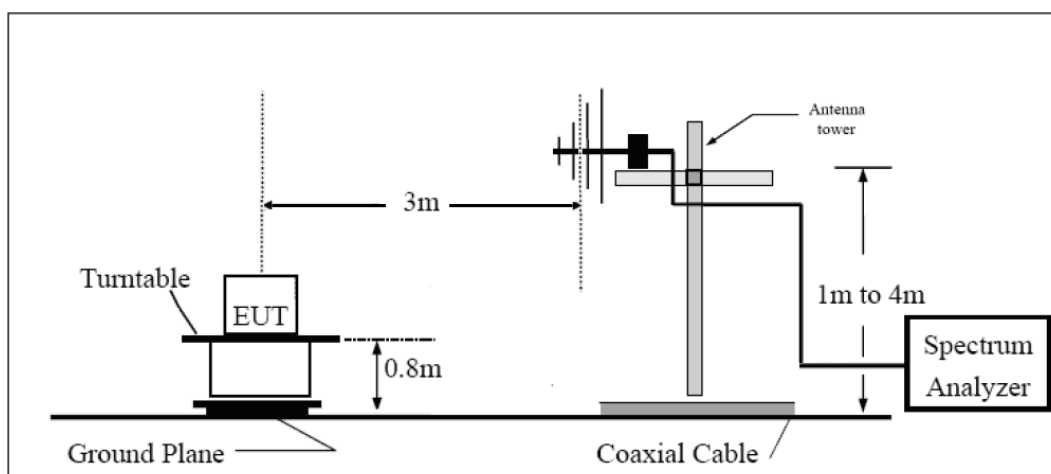
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

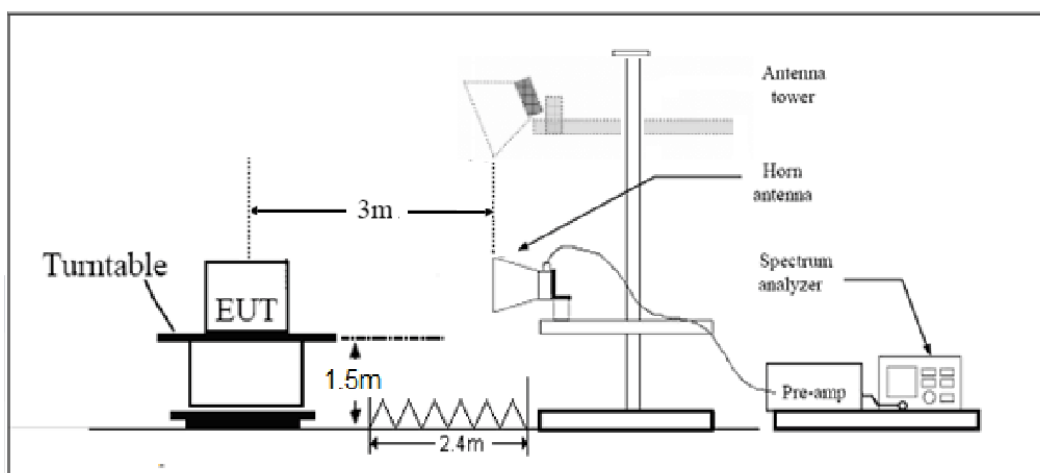
9KHz ~ 30MHz



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.

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	-63.86	2.6	10.75	Horizontal	-55.71	-13.00	42.71	135
3	5197.80	-61.90	2.4	11.05	Horizontal	-53.25	-13.00	40.25	45
4	6930.40	-57.34	4.5	11.15	Horizontal	-50.69	-13.00	37.69	225
5	8663.00	-54.54	5.1	11.35	Horizontal	-48.29	-13.00	35.29	0
6	10395.60	-51.87	5.3	11.95	Horizontal	-45.22	-13.00	32.22	45
7	12128.20	-52.97	5.5	13.55	Horizontal	-44.92	-13.00	31.92	90
8	13860.80	-49.89	6.3	13.75	Horizontal	-42.44	-13.00	29.44	270
9	15593.40	-53.20	6.7	13.85	Horizontal	-46.05	-13.00	33.05	135
10	17326.00	-49.50	6.8	14.25	Horizontal	-42.05	-13.00	29.05	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	-64.31	2.6	10.75	Horizontal	-56.16	-13.00	43.16	135
3	5197.50	-61.38	2.4	11.05	Horizontal	-52.73	-13.00	39.73	225
4	6930.00	-57.90	4.5	11.15	Horizontal	-51.25	-13.00	38.25	90
5	8662.50	-56.14	5.1	11.35	Horizontal	-49.89	-13.00	36.89	180
6	10395.00	-52.29	5.3	11.95	Horizontal	-45.64	-13.00	32.64	45
7	12127.50	-53.52	5.5	13.55	Horizontal	-45.47	-13.00	32.47	0
8	13860.00	-50.58	6.3	13.75	Horizontal	-43.13	-13.00	30.13	315
9	15592.50	-52.62	6.7	13.85	Horizontal	-45.47	-13.00	32.47	180
10	17325.00	-48.54	6.8	14.25	Horizontal	-41.09	-13.00	28.09	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 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	-63.10	2.6	10.75	Horizontal	-54.95	-13.00	41.95	180
3	5191.50	-62.55	2.4	11.05	Horizontal	-53.90	-13.00	40.90	90
4	6930.00	-58.14	4.5	11.15	Horizontal	-51.49	-13.00	38.49	225
5	8662.50	-54.75	5.1	11.35	Horizontal	-48.50	-13.00	35.50	270
6	10395.00	-51.70	5.3	11.95	Horizontal	-45.05	-13.00	32.05	135
7	12127.50	-51.88	5.5	13.55	Horizontal	-43.83	-13.00	30.83	0
8	13860.00	-50.37	6.3	13.75	Horizontal	-42.92	-13.00	29.92	90
9	15592.50	-53.71	6.7	13.85	Horizontal	-46.56	-13.00	33.56	180
10	17325.00	-49.83	6.8	14.25	Horizontal	-42.38	-13.00	29.38	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	3465.00	-65.07	2.6	10.75	Horizontal	-56.92	-13.00	43.92	0
3	5170.88	-62.98	2.4	11.05	Horizontal	-54.33	-13.00	41.33	225
4	6930.00	-58.09	4.5	11.15	Horizontal	-51.44	-13.00	38.44	0
5	8662.50	-54.57	5.1	11.35	Horizontal	-48.32	-13.00	35.32	45
6	10395.00	-52.38	5.3	11.95	Horizontal	-45.73	-13.00	32.73	315
7	12127.50	-54.31	5.5	13.55	Horizontal	-46.26	-13.00	33.26	0
8	13860.00	-49.88	6.3	13.75	Horizontal	-42.43	-13.00	29.43	180
9	15592.50	-52.99	6.7	13.85	Horizontal	-45.84	-13.00	32.84	225
10	17325.00	-49.45	6.8	14.25	Horizontal	-42.00	-13.00	29.00	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 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	-60.85	2.00	9.15	Horizontal	-53.70	-25.00	28.70	180
3	7598.60	-57.68	2.50	11.35	Horizontal	-48.83	-25.00	23.83	225
4	10130.63	-53.46	4.20	12.05	Horizontal	-45.61	-25.00	20.61	315
5	12675.00	-52.20	5.20	12.85	Horizontal	-44.55	-25.00	19.55	0
6	15210.00	-53.65	5.50	14.23	Horizontal	-44.92	-25.00	19.92	45
7	17745.00	-50.56	5.70	14.15	Horizontal	-42.11	-25.00	17.11	315
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	-61.50	2.00	10.15	Horizontal	-53.35	-25.00	28.35	315
3	7578.30	-56.73	2.50	11.35	Horizontal	-47.88	-25.00	22.88	0
4	10104.40	-52.68	4.20	12.05	Horizontal	-44.83	-25.00	19.83	45
5	12630.50	-55.44	5.20	14.85	Horizontal	-45.79	-25.00	20.79	225
6	15156.60	-52.84	5.50	13.23	Horizontal	-45.11	-25.00	20.11	135
7	17682.70	-48.59	5.70	12.15	Horizontal	-42.14	-25.00	17.14	270
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 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	-64.36	2.6	10.75	Horizontal	-56.21	-13.00	43.21	0
3	5233.50	-32.86	2.4	11.05	Horizontal	-24.21	-13.00	11.21	225
4	6930.00	-58.29	4.5	11.15	Horizontal	-51.64	-13.00	38.64	45
5	8722.50	-27.09	5.1	11.35	Horizontal	-20.84	-13.00	7.84	180
6	10395.00	-52.30	5.3	11.95	Horizontal	-45.65	-13.00	32.65	315
7	12211.50	-48.33	5.5	13.55	Horizontal	-40.28	-13.00	27.28	90
8	13860.00	-51.23	6.3	13.75	Horizontal	-43.78	-13.00	30.78	270
9	15701.25	-45.19	6.7	13.85	Horizontal	-38.04	-13.00	25.04	315
10	17325.00	-49.92	6.8	14.25	Horizontal	-42.47	-13.00	29.47	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.

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	-65.73	2.6	10.75	Horizontal	-57.58	-13.00	44.58	225
3	5228.63	-33.95	2.4	11.05	Horizontal	-25.30	-13.00	12.30	0
4	6930.00	-56.99	4.5	11.15	Horizontal	-50.34	-13.00	37.34	180
5	8714.25	-27.09	5.1	11.35	Horizontal	-20.84	-13.00	7.84	90
6	10395.00	-51.29	5.3	11.95	Horizontal	-44.64	-13.00	31.64	225
7	12199.50	-48.94	5.5	13.55	Horizontal	-40.89	-13.00	27.89	45
8	13860.00	-50.43	6.3	13.75	Horizontal	-42.98	-13.00	29.98	0
9	15685.50	-45.81	6.7	13.85	Horizontal	-38.66	-13.00	25.66	315
10	17325.00	-49.67	6.8	14.25	Horizontal	-42.22	-13.00	29.22	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.



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	-62.27	2.6	10.75	Horizontal	-54.12	-13.00	41.12	180
3	5208.00	-33.23	2.4	11.05	Horizontal	-24.58	-13.00	11.58	45
4	6930.00	-57.40	4.5	11.15	Horizontal	-50.75	-13.00	37.75	90
5	8680.50	-26.04	5.1	11.35	Horizontal	-19.79	-13.00	6.79	270
6	10395.00	-50.85	5.3	11.95	Horizontal	-44.20	-13.00	31.20	0
7	12151.50	-51.94	5.5	13.55	Horizontal	-43.89	-13.00	30.89	45
8	13860.00	-50.32	6.3	13.75	Horizontal	-42.87	-13.00	29.87	180
9	15592.50	-43.60	6.7	13.85	Horizontal	-36.45	-13.00	23.45	225
10	17325.00	-49.33	6.8	14.25	Horizontal	-41.88	-13.00	28.88	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.

**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	-64.23	2.6	10.75	Horizontal	-56.08	-13.00	43.08	45
3	5197.80	-61.85	2.4	11.05	Horizontal	-53.20	-13.00	40.20	90
4	6930.40	-57.02	4.5	11.15	Horizontal	-50.37	-13.00	37.37	270
5	8663.00	-55.59	5.1	11.35	Horizontal	-49.34	-13.00	36.34	135
6	10395.60	-51.41	5.3	11.95	Horizontal	-44.76	-13.00	31.76	0
7	12128.20	-52.07	5.5	13.55	Horizontal	-44.02	-13.00	31.02	270
8	13860.80	-50.12	6.3	13.75	Horizontal	-42.67	-13.00	29.67	135
9	15593.40	-52.47	6.7	13.85	Horizontal	-45.32	-13.00	32.32	45
10	17326.00	-50.17	6.8	14.25	Horizontal	-42.72	-13.00	29.72	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 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	-64.39	2.6	10.75	Horizontal	-56.24	-13.00	43.24	180
3	5197.50	-62.94	2.4	11.05	Horizontal	-54.29	-13.00	41.29	135
4	6930.00	-57.69	4.5	11.15	Horizontal	-51.04	-13.00	38.04	0
5	8662.50	-56.15	5.1	11.35	Horizontal	-49.90	-13.00	36.90	45
6	10395.00	-52.64	5.3	11.95	Horizontal	-45.99	-13.00	32.99	315
7	12127.50	-53.34	5.5	13.55	Horizontal	-45.29	-13.00	32.29	90
8	13860.00	-50.73	6.3	13.75	Horizontal	-43.28	-13.00	30.28	45
9	15592.50	-53.29	6.7	13.85	Horizontal	-46.14	-13.00	33.14	315
10	17325.00	-49.87	6.8	14.25	Horizontal	-42.42	-13.00	29.42	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 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	-64.57	2.6	10.75	Horizontal	-56.42	-13.00	43.42	90
3	5191.50	-63.19	2.4	11.05	Horizontal	-54.54	-13.00	41.54	180
4	6930.00	-58.51	4.5	11.15	Horizontal	-51.86	-13.00	38.86	45
5	8662.50	-56.22	5.1	11.35	Horizontal	-49.97	-13.00	36.97	315
6	10395.00	-52.76	5.3	11.95	Horizontal	-46.11	-13.00	33.11	90
7	12127.50	-53.35	5.5	13.55	Horizontal	-45.30	-13.00	32.30	0
8	13860.00	-50.85	6.3	13.75	Horizontal	-43.40	-13.00	30.40	45
9	15592.50	-53.15	6.7	13.85	Horizontal	-46.00	-13.00	33.00	225
10	17325.00	-50.39	6.8	14.25	Horizontal	-42.94	-13.00	29.94	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 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	-65.12	2.6	10.75	Horizontal	-56.97	-13.00	43.97	45
3	5170.88	-62.98	2.4	11.05	Horizontal	-54.33	-13.00	41.33	225
4	6930.00	-58.99	4.5	11.15	Horizontal	-52.34	-13.00	39.34	180
5	8662.50	-55.93	5.1	11.35	Horizontal	-49.68	-13.00	36.68	90
6	10395.00	-53.03	5.3	11.95	Horizontal	-46.38	-13.00	33.38	45
7	12127.50	-53.40	5.5	13.55	Horizontal	-45.35	-13.00	32.35	180
8	13860.00	-50.39	6.3	13.75	Horizontal	-42.94	-13.00	29.94	315
9	15592.50	-52.65	6.7	13.85	Horizontal	-45.50	-13.00	32.50	90
10	17325.00	-49.49	6.8	14.25	Horizontal	-42.04	-13.00	29.04	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	-61.16	2.00	9.15	Horizontal	-54.01	-25.00	29.01	0
3	7598.60	-58.40	2.50	11.35	Horizontal	-49.55	-25.00	24.55	0
4	10130.63	-53.20	4.20	12.05	Horizontal	-45.35	-25.00	20.35	90
5	12675.00	-52.69	5.20	12.85	Horizontal	-45.04	-25.00	20.04	45
6	15210.00	-53.99	5.50	14.23	Horizontal	-45.26	-25.00	20.26	315
7	17745.00	-51.47	5.70	14.15	Horizontal	-43.02	-25.00	18.02	180
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	-62.03	2.00	10.15	Horizontal	-53.88	-25.00	28.88	0
3	7578.30	-58.50	2.50	11.35	Horizontal	-49.65	-25.00	24.65	45
4	10104.40	-53.44	4.20	12.05	Horizontal	-45.59	-25.00	20.59	135
5	12630.50	-54.47	5.20	14.85	Horizontal	-44.82	-25.00	19.82	225
6	15156.60	-52.50	5.50	13.23	Horizontal	-44.77	-25.00	19.77	315
7	17682.70	-49.41	5.70	12.15	Horizontal	-42.96	-25.00	17.96	90
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 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	-63.55	2.6	10.75	Horizontal	-55.40	-13.00	42.40	315
3	5233.50	-54.80	2.4	11.05	Horizontal	-46.15	-13.00	33.15	90
4	6930.00	-58.18	4.5	11.15	Horizontal	-51.53	-13.00	38.53	270
5	8722.50	-55.36	5.1	11.35	Horizontal	-49.11	-13.00	36.11	0
6	10395.00	-52.05	5.3	11.95	Horizontal	-45.40	-13.00	32.40	0
7	12211.50	-53.53	5.5	13.55	Horizontal	-45.48	-13.00	32.48	90
8	13860.00	-49.95	6.3	13.75	Horizontal	-42.50	-13.00	29.50	45
9	15701.25	-53.20	6.7	13.85	Horizontal	-46.05	-13.00	33.05	135
10	17325.00	-49.13	6.8	14.25	Horizontal	-41.68	-13.00	28.68	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 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	-63.18	2.6	10.75	Horizontal	-55.03	-13.00	42.03	45
3	5228.63	-61.09	2.4	11.05	Horizontal	-52.44	-13.00	39.44	180
4	6930.00	-57.89	4.5	11.15	Horizontal	-51.24	-13.00	38.24	90
5	8714.25	-53.45	5.1	11.35	Horizontal	-47.20	-13.00	34.20	225
6	10395.00	-52.55	5.3	11.95	Horizontal	-45.90	-13.00	32.90	45
7	12199.50	-50.35	5.5	13.55	Horizontal	-42.30	-13.00	29.30	315
8	13860.00	-50.93	6.3	13.75	Horizontal	-43.48	-13.00	30.48	90
9	15685.50	-53.00	6.7	13.85	Horizontal	-45.85	-13.00	32.85	45
10	17325.00	-49.13	6.8	14.25	Horizontal	-41.68	-13.00	28.68	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 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	-61.74	2.6	10.75	Horizontal	-53.59	-13.00	40.59	45
3	5208.00	-58.40	2.4	11.05	Horizontal	-49.75	-13.00	36.75	270
4	6930.00	-56.82	4.5	11.15	Horizontal	-50.17	-13.00	37.17	180
5	8680.50	-55.83	5.1	11.35	Horizontal	-49.58	-13.00	36.58	225
6	10395.00	-52.18	5.3	11.95	Horizontal	-45.53	-13.00	32.53	0
7	12151.50	-54.47	5.5	13.55	Horizontal	-46.42	-13.00	33.42	0
8	13860.00	-51.51	6.3	13.75	Horizontal	-44.06	-13.00	31.06	45
9	15592.50	-53.15	6.7	13.85	Horizontal	-46.00	-13.00	33.00	90
10	17325.00	-48.55	6.8	14.25	Horizontal	-41.10	-13.00	28.10	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.									



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	2019-12-15	2020-12-14
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2020-04-02	2023-04-01
Trilog Antenna	SCHWARZBECK	VUBL 9163	9163-201	2017-11-18	2020-11-17
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	2017-12-17	2020-12-16
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	2020-06-12	2020-12-11
Software	R&S	EMC32	9.26.0	/	/

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