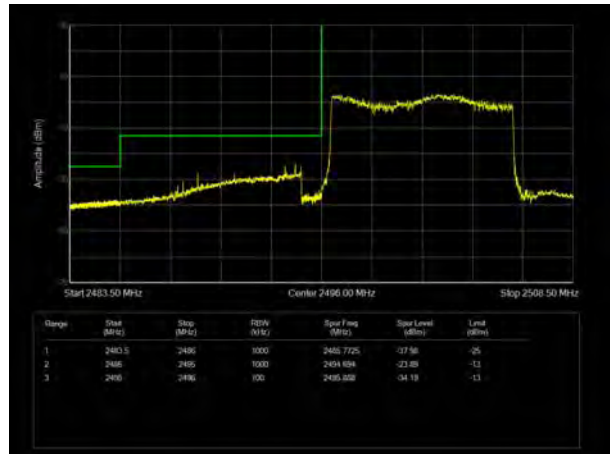
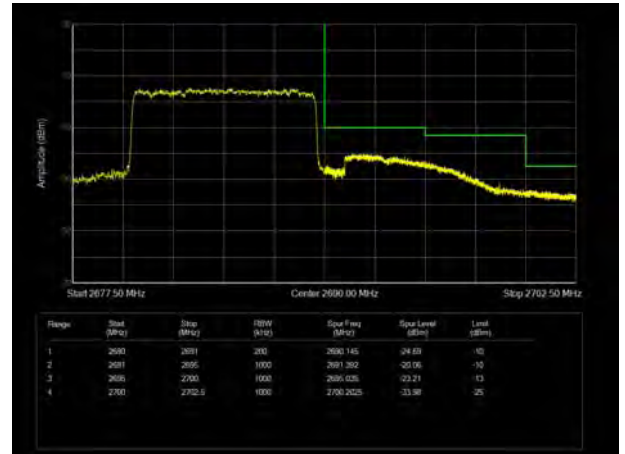




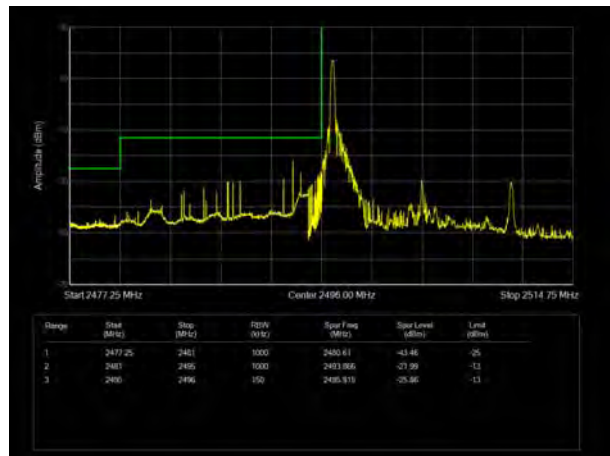
LTE Band 41 16QAM 10MHz CH-Low, 100%RB



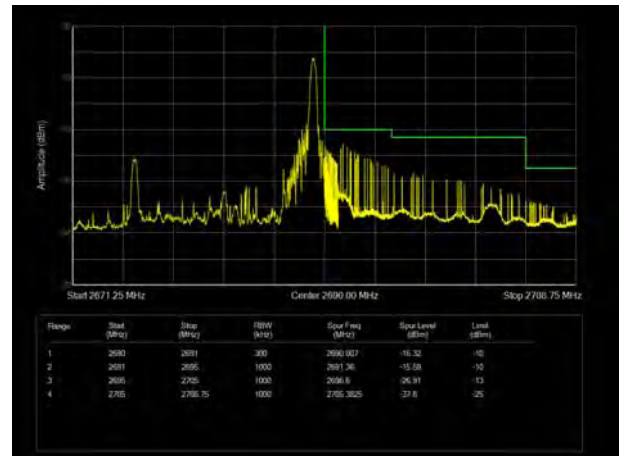
LTE Band 41 16QAM 10MHz CH-High, 100%RB



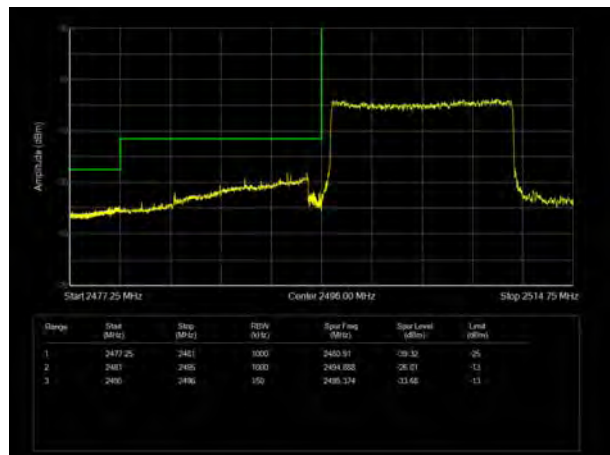
LTE Band 41 16QAM 15MHz CH-Low, 1 RB



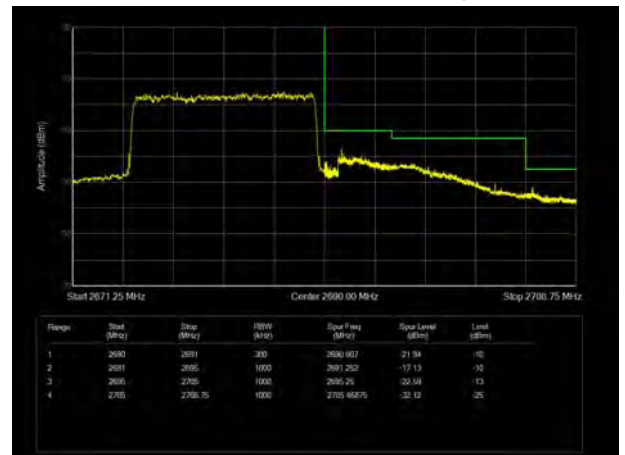
LTE Band 41 16QAM 15MHz CH-High, 1 RB



LTE Band 41 16QAM 15MHz CH-Low, 100%RB

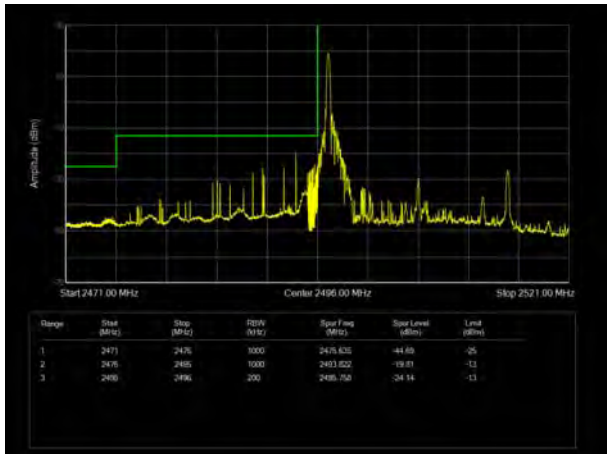


LTE Band 41 16QAM 15MHz CH-High, 100%RB

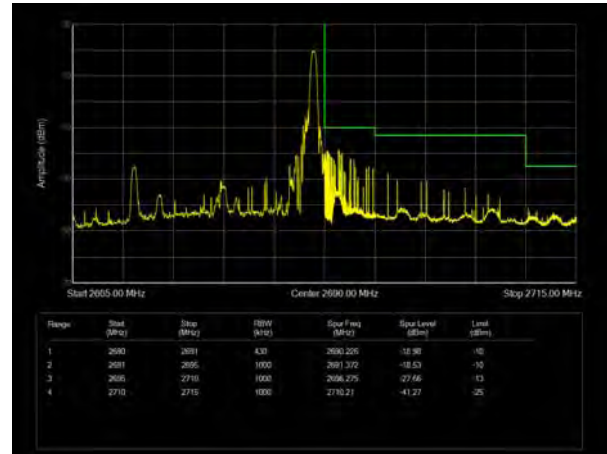




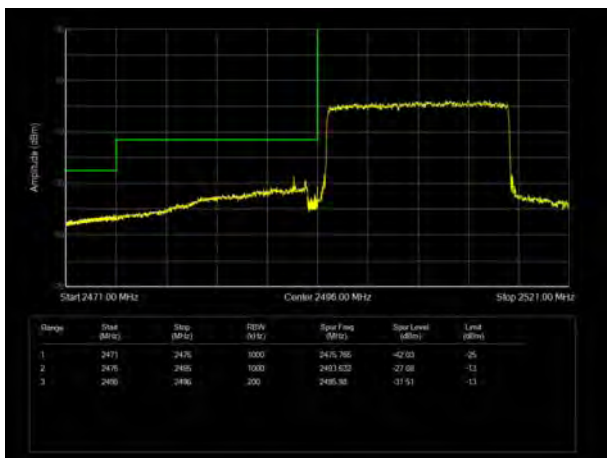
LTE Band 41 16QAM 20MHz CH-Low, RB 1



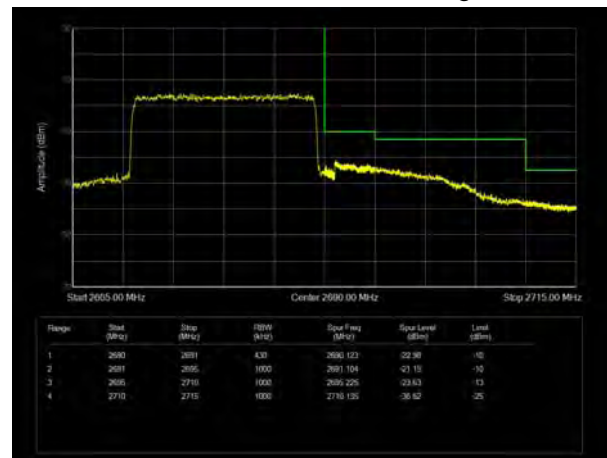
LTE Band 41 16QAM 20MHz CH-High, RB 1



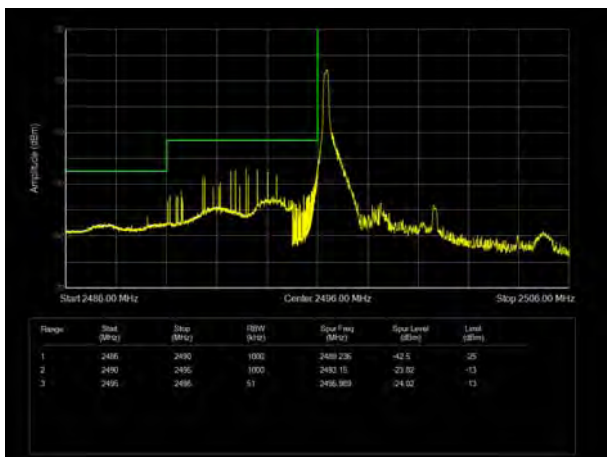
LTE Band 41 16QAM 20MHz CH-Low, 100%RB



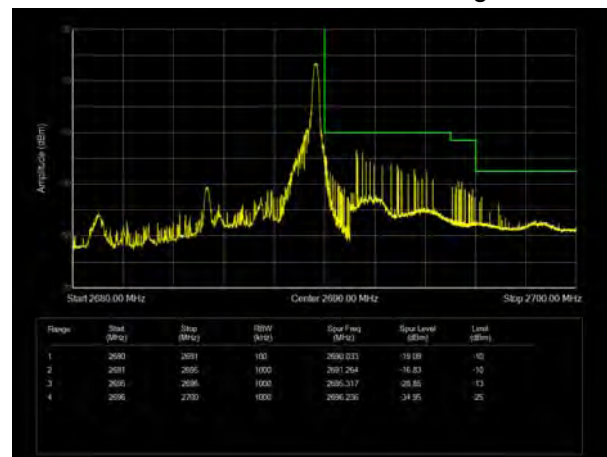
LTE Band 41 16QAM 20MHz CH-High, 100%RB



LTE Band 41 64QAM 5MHz CH-Low, 1 RB

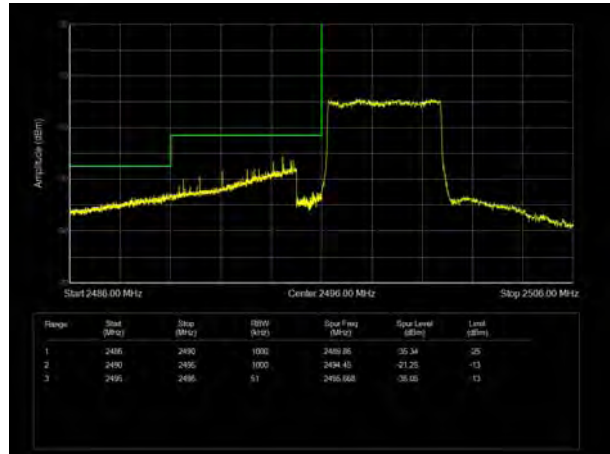


LTE Band 41 64QAM 5MHz CH-High, 1 RB

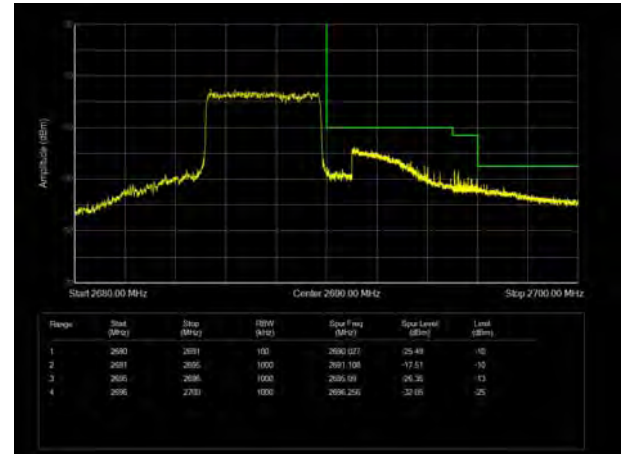




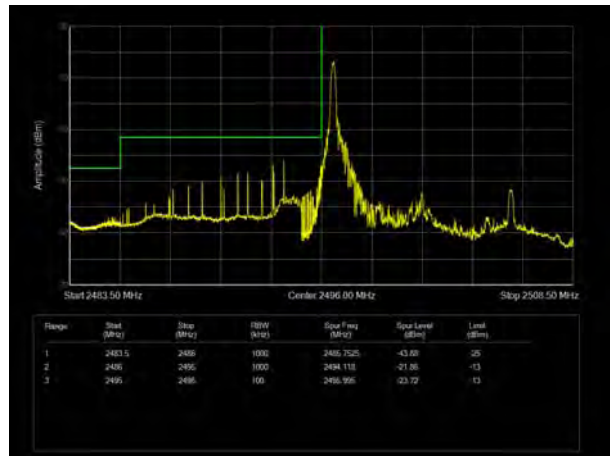
LTE Band 41 64QAM 5MHz CH-Low, 100%RB



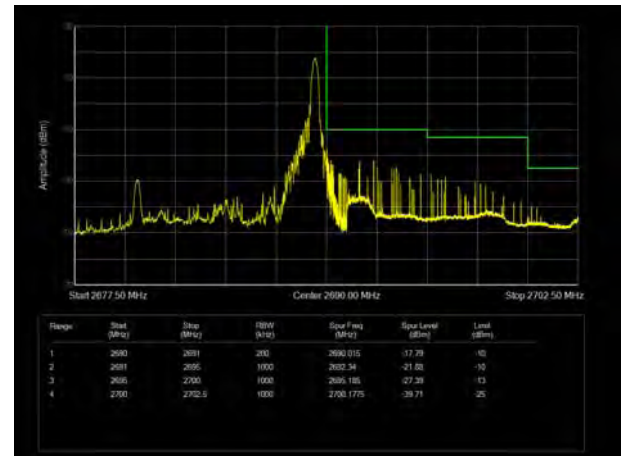
LTE Band 41 64QAM 5MHz CH-High, 100%RB



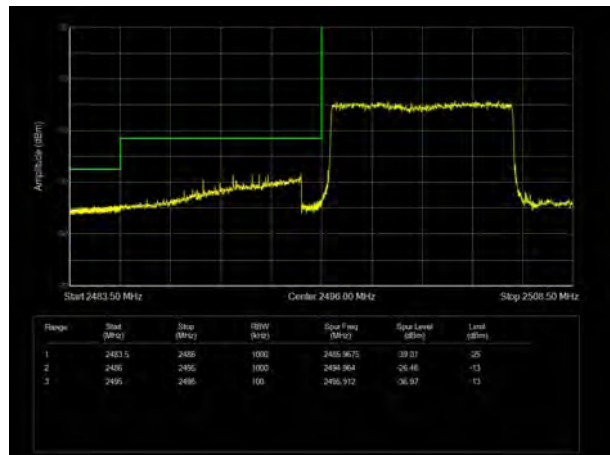
LTE Band 41 64QAM 10MHz CH-Low, 1 RB



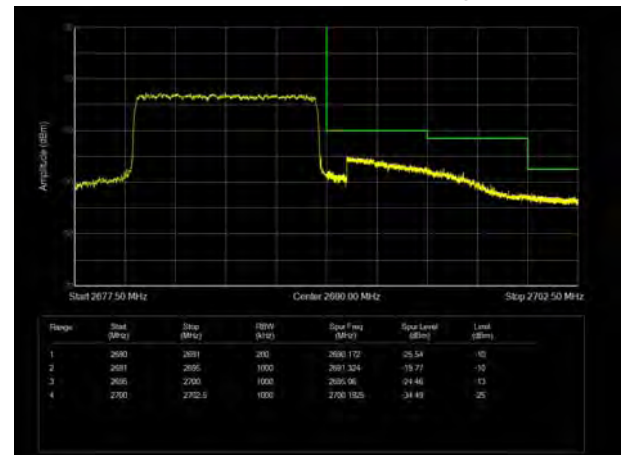
LTE Band 41 64QAM 10MHz CH-High, 1 RB



LTE Band 41 64QAM 10MHz CH-Low, 100%RB

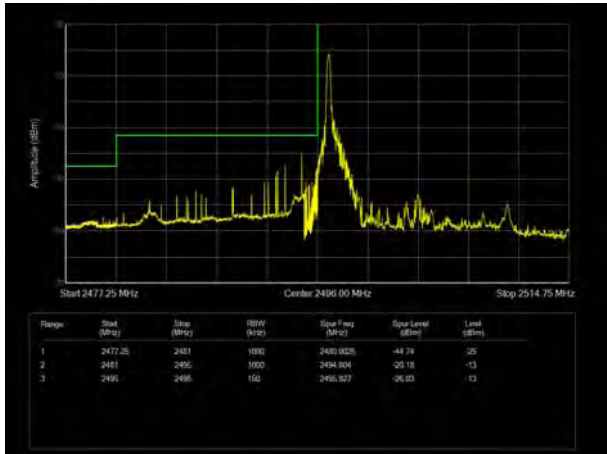


LTE Band 41 64QAM 10MHz CH-High, 100%RB

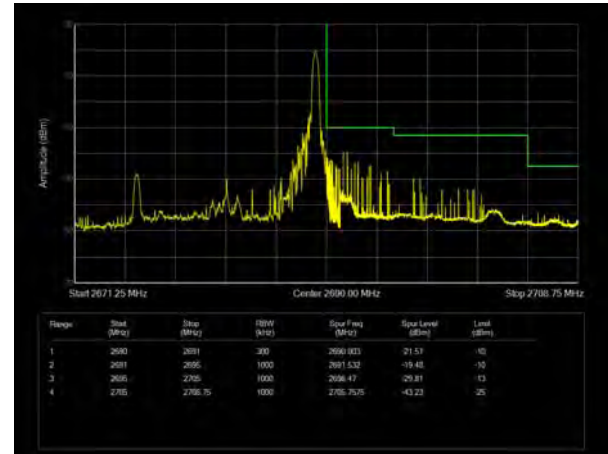




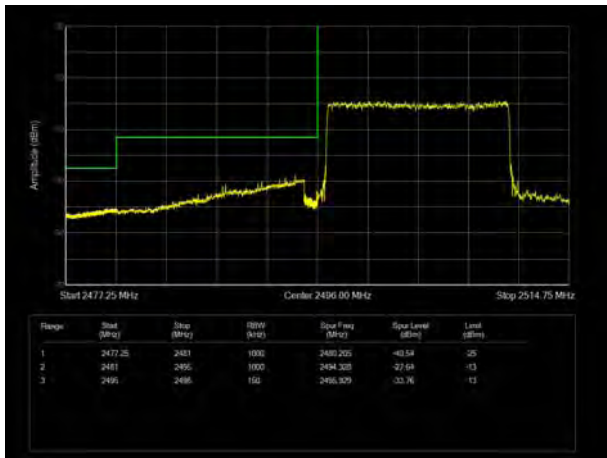
LTE Band 41 64QAM 15MHz CH-Low, 1 RB



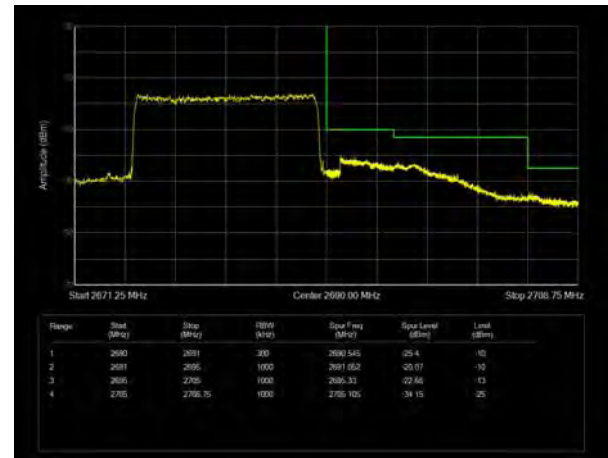
LTE Band 41 64QAM 15MHz CH-High, 1 RB



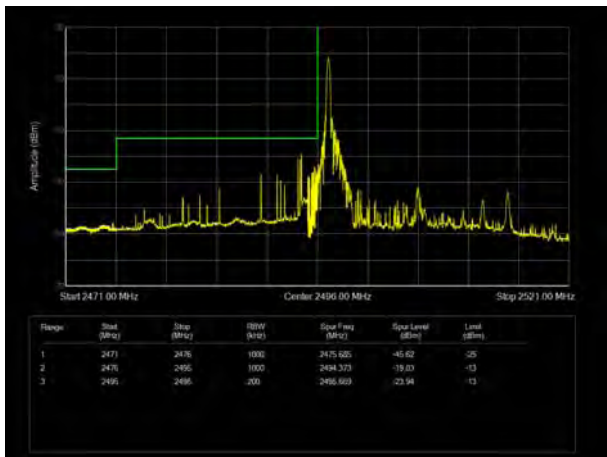
LTE Band 41 64QAM 15MHz CH-Low, 100%RB



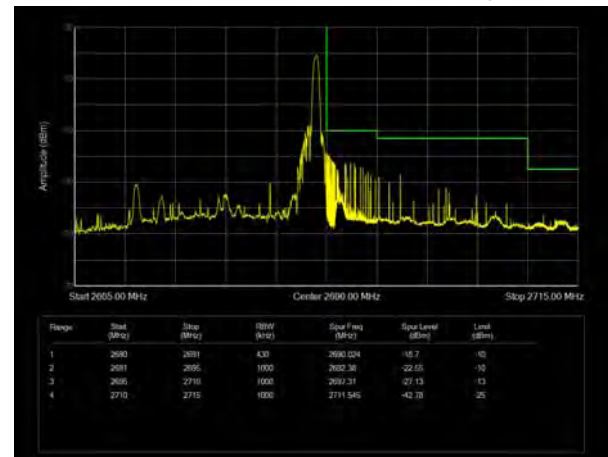
LTE Band 41 64QAM 15MHz CH-High, 100%RB



LTE Band 41 64QAM 20MHz CH-Low, 1 RB

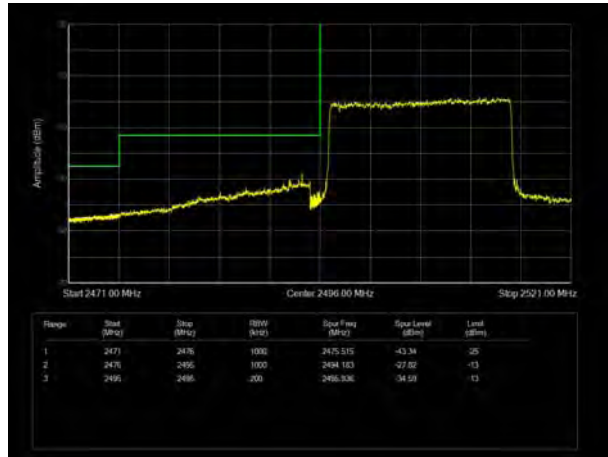


LTE Band 41 64QAM 20MHz CH-High, 1 RB

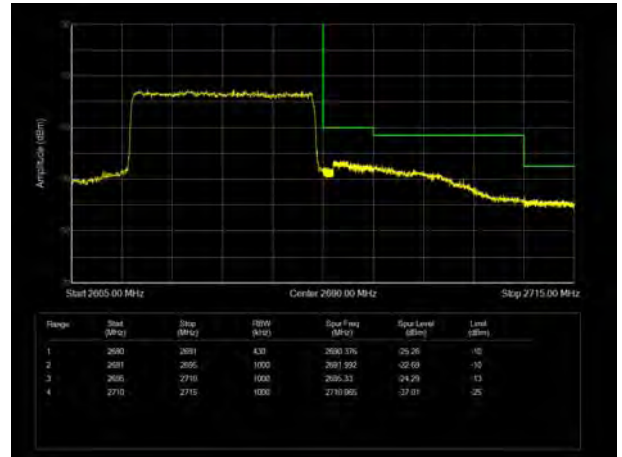




LTE Band 41 64QAM 20MHz CH-Low, 100%RB



LTE Band 41 64QAM 20MHz CH-High, 100%RB



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

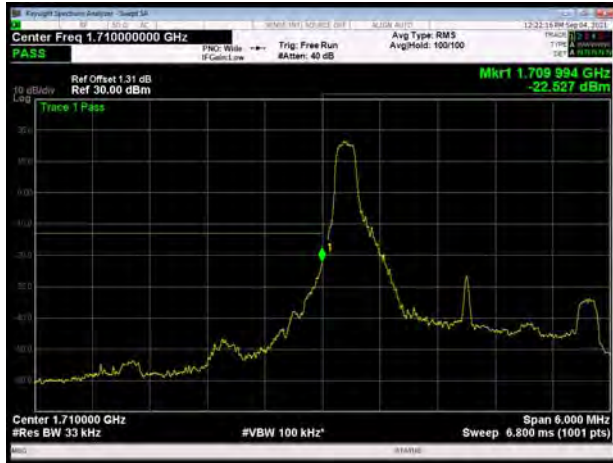


LTE Band 66 QPSK 1.4MHz CH-High, 100%RB

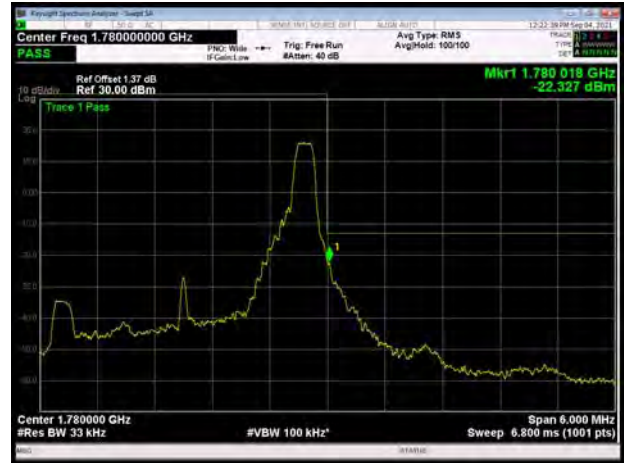




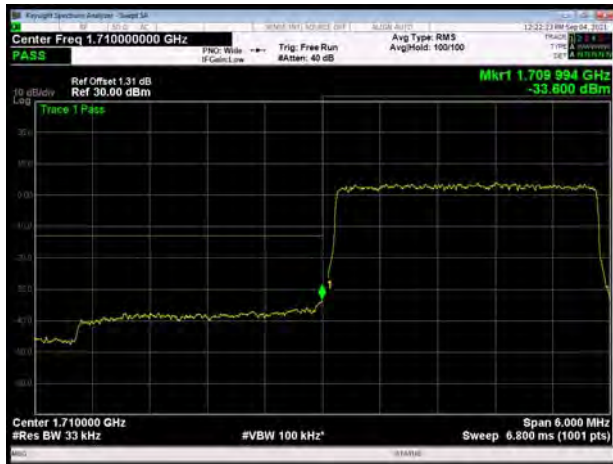
LTE Band 66 QPSK 3MHz CH-Low, 1 RB



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



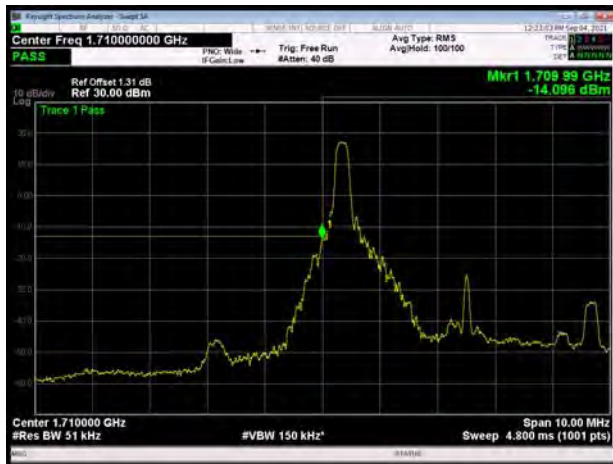
LTE Band 66 QPSK 3MHz CH-Low, 100%RB



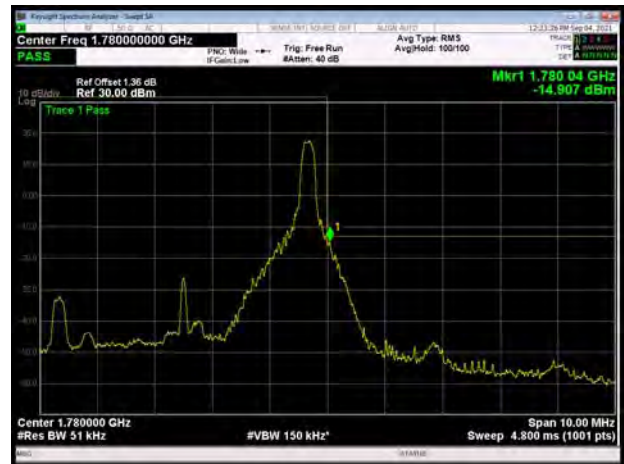
LTE Band 66 QPSK 3MHz CH-High, 100%RB



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

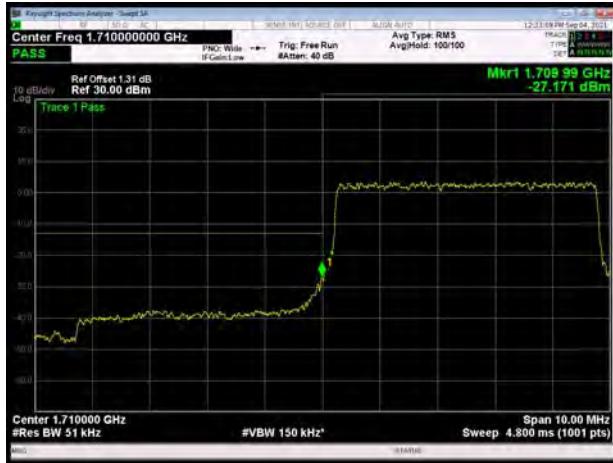


LTE Band 66 QPSK 5MHz CH-High, 1 RB





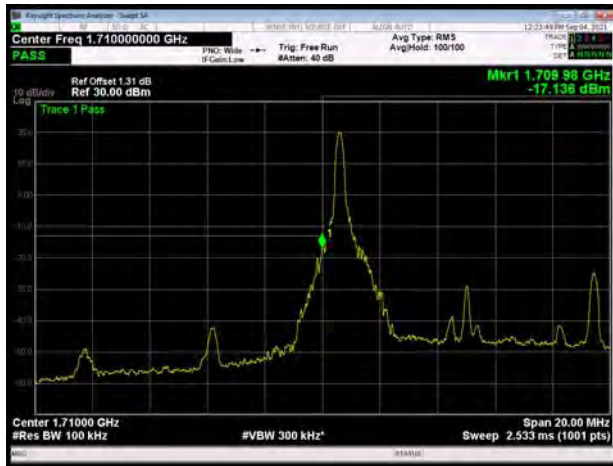
LTE Band 66 QPSK 5MHz CH-Low, 100%RB



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



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



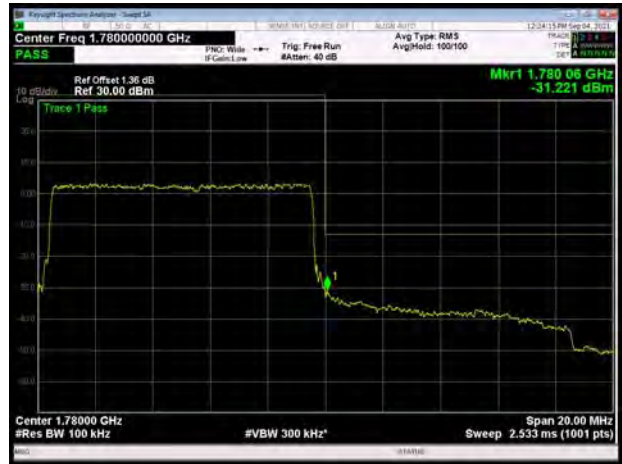
LTE Band 66 QPSK 10MHz CH-High, 1 RB



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

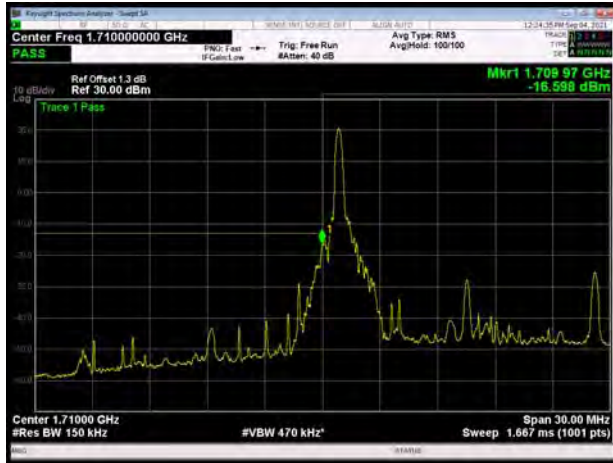


LTE Band 66 QPSK 10MHz CH-High, 100%RB

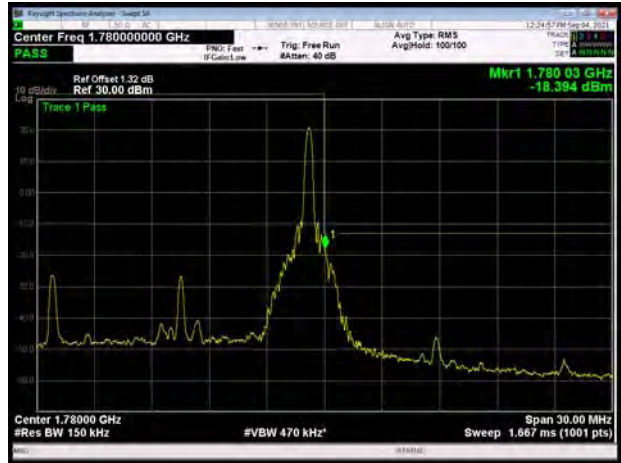




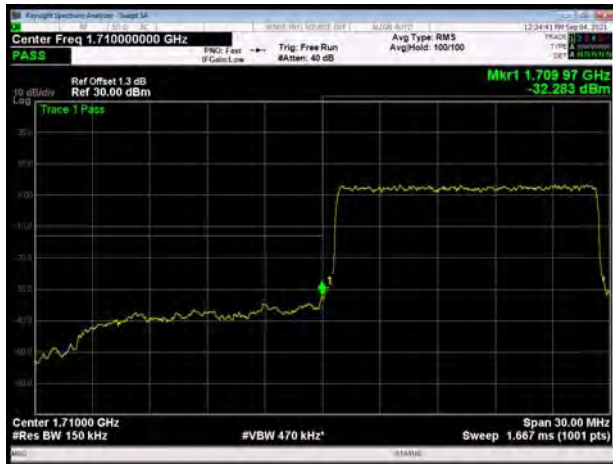
LTE Band 66 QPSK 15MHz CH-Low, 1 RB



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



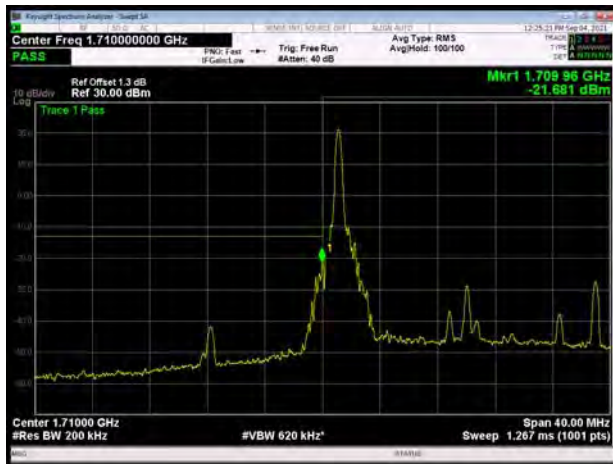
LTE Band 66 QPSK 15MHz CH-Low, 100%RB



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



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

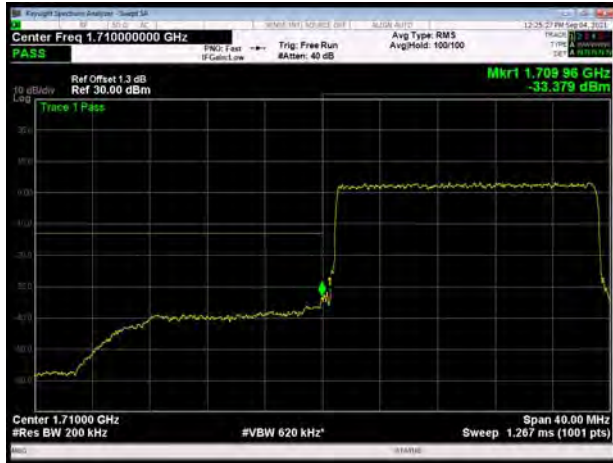


LTE Band 66 QPSK 20MHz CH-High, 1 RB





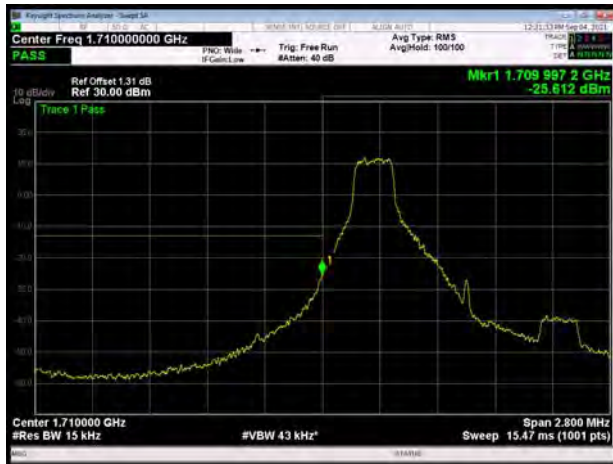
LTE Band 66 QPSK 20MHz CH-Low, 100%RB



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



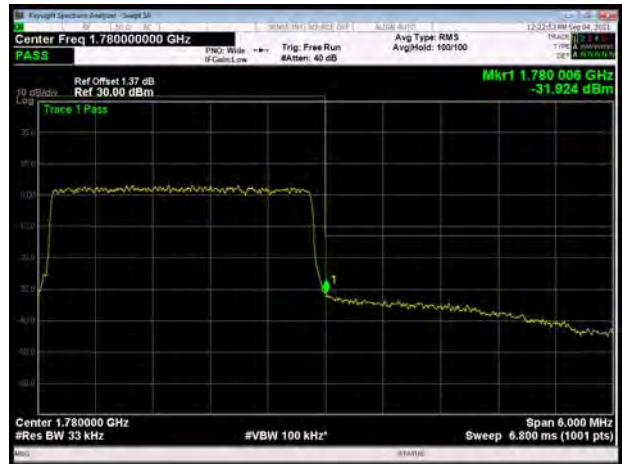
LTE Band 66 16QAM 3MHz CH-High, 1 RB



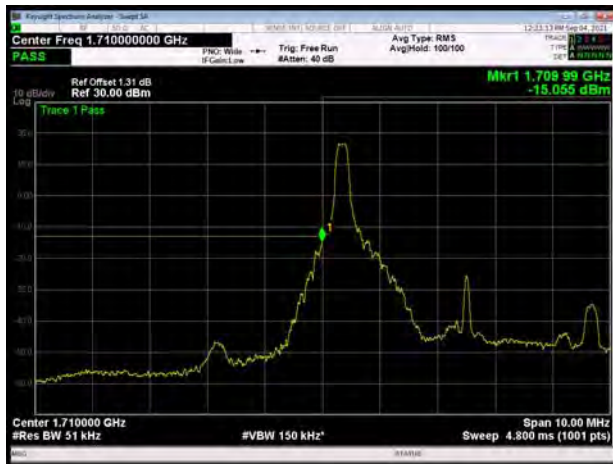
LTE Band 66 16QAM 3MHz CH-Low, 100%RB



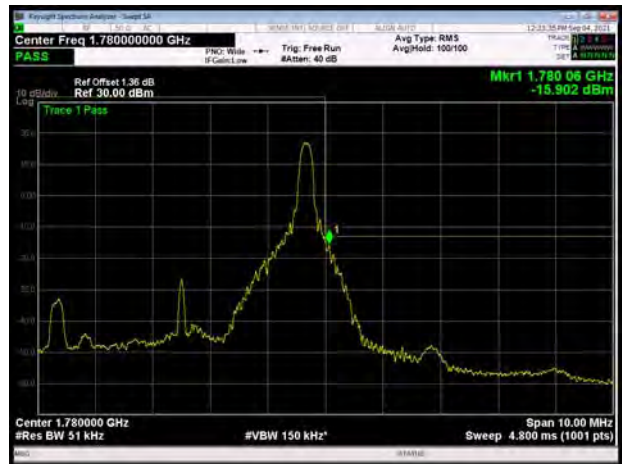
LTE Band 66 16QAM 3MHz CH-High, 100%RB



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



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





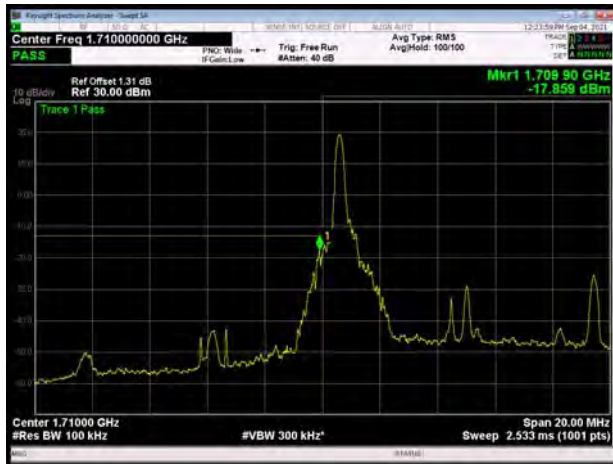
LTE Band 66 16QAM 5MHz CH-Low, 100%RB



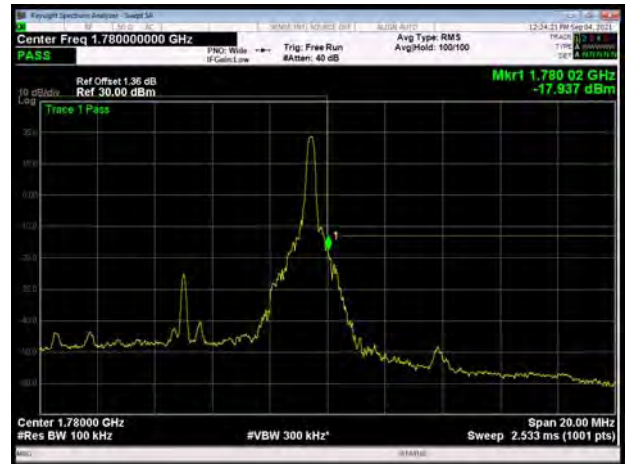
LTE Band 66 16QAM 5MHz CH-High, 100%RB



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

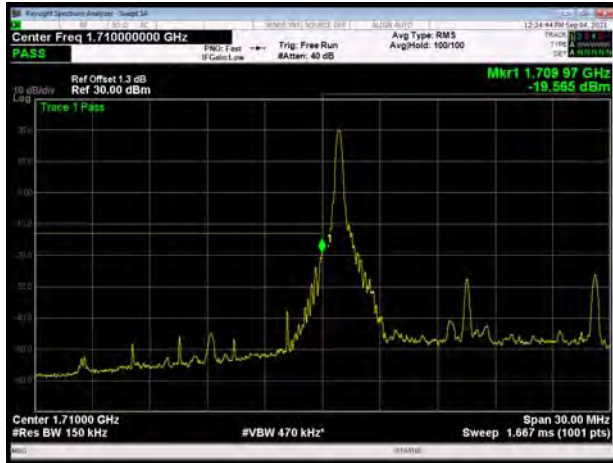


LTE Band 66 16QAM 10MHz CH-High, 100%RB

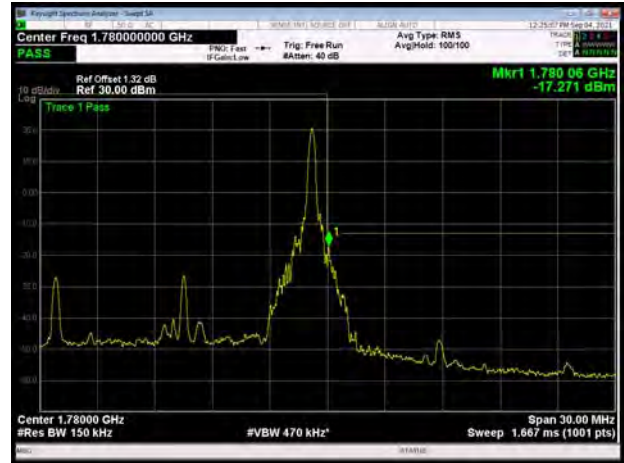




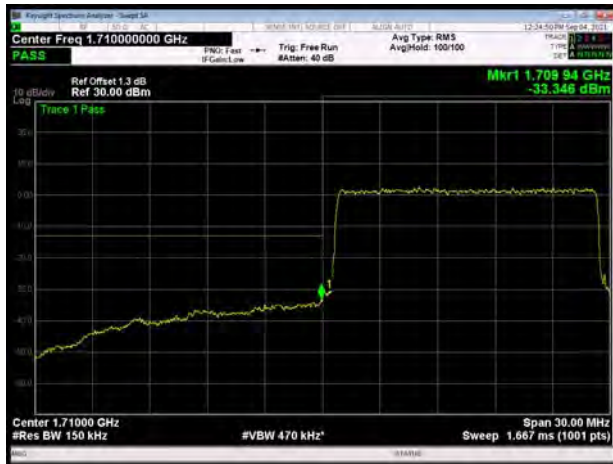
LTE Band 66 16QAM 15MHz CH-Low, 1 RB



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

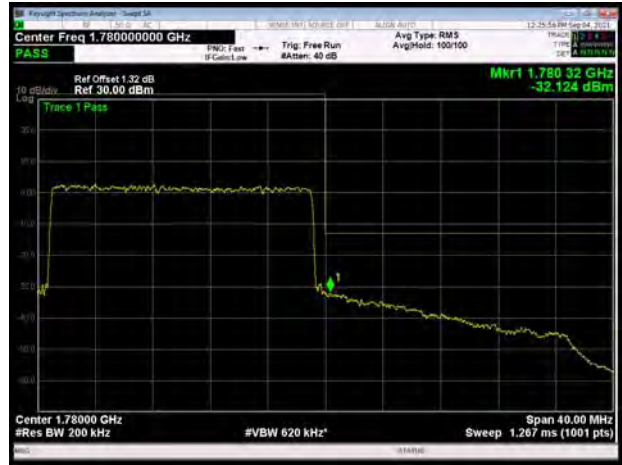




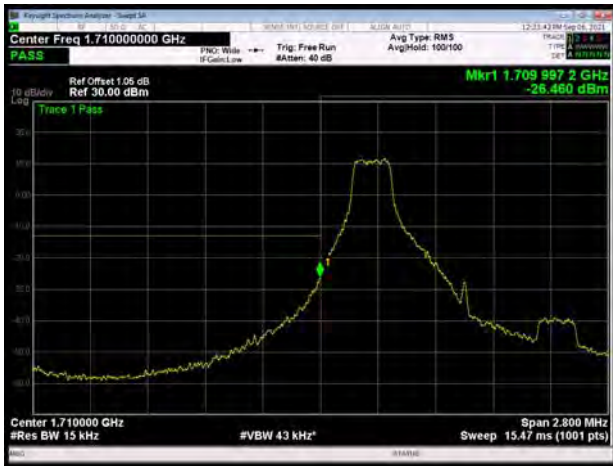
LTE Band 66 16QAM 20MHz CH-Low, 100%RB



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



LTE Band 66 64QAM 1.4MHz CH-Low, 1 RB



LTE Band 66 64QAM 1.4MHz CH-High, 1 RB



LTE Band 66 64QAM 1.4MHz CH-Low, 100%RB



LTE Band 66 64QAM 1.4MHz CH-High, 100%RB

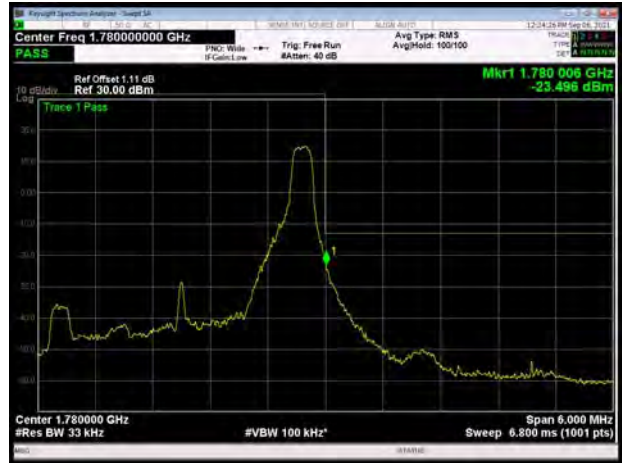




LTE Band 66 64QAM 3MHz CH-Low, 1 RB



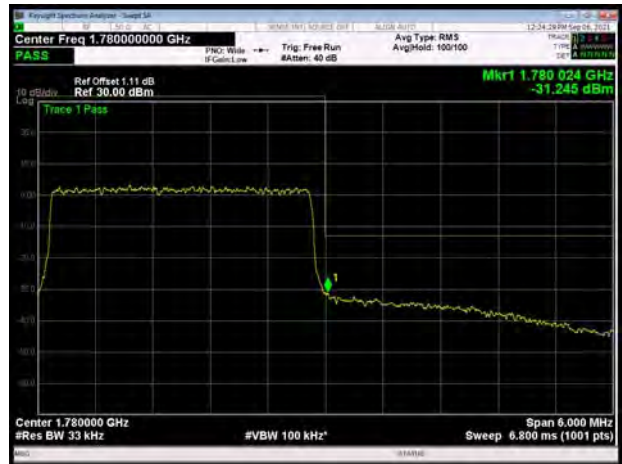
LTE Band 66 64QAM 3MHz CH-High, 1 RB



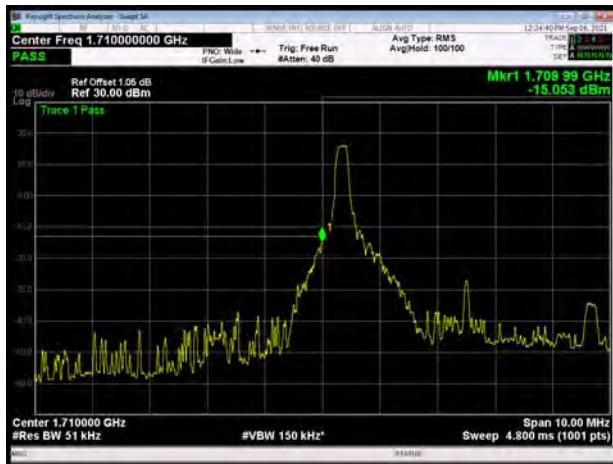
LTE Band 66 64QAM 3MHz CH-Low, 100%RB



LTE Band 66 64QAM 3MHz CH-High, 100%RB



LTE Band 66 64QAM 5MHz CH-Low, 1 RB

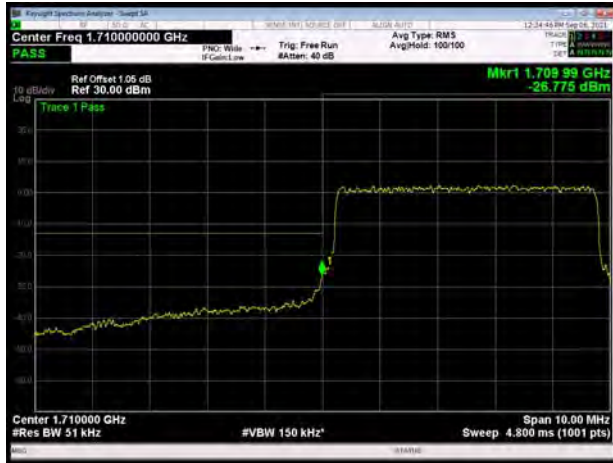


LTE Band 66 64QAM 5MHz CH-High, 1 RB





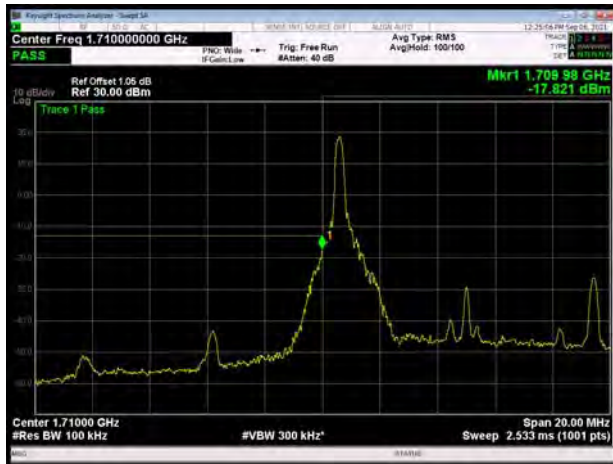
LTE Band 66 64QAM 5MHz CH-Low, 100%RB



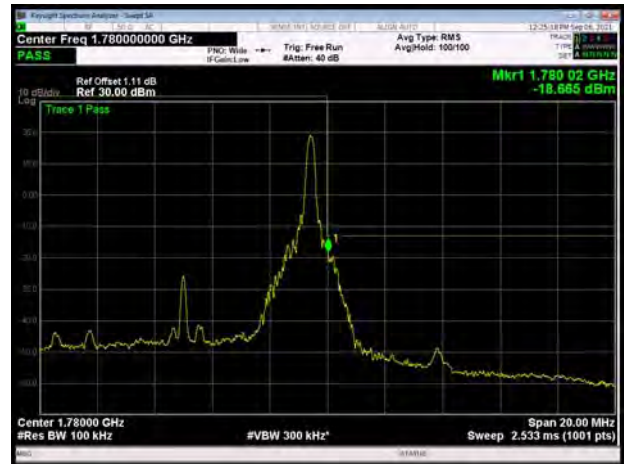
LTE Band 66 64QAM 5MHz CH-High, 100%RB



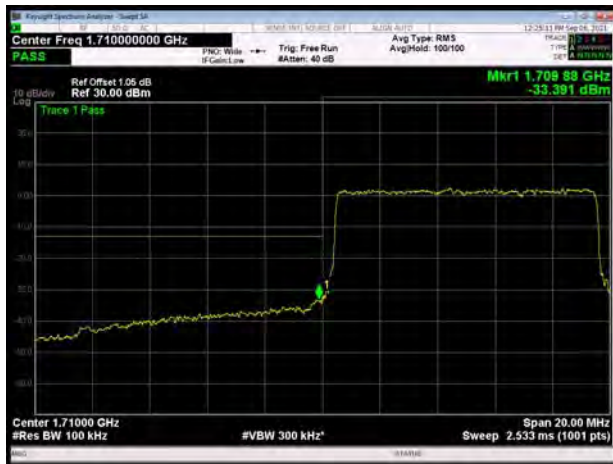
LTE Band 66 64QAM 10MHz CH-Low, 1 RB



LTE Band 66 64QAM 10MHz CH-High, 1 RB



LTE Band 66 64QAM 10MHz CH-Low, 100%RB

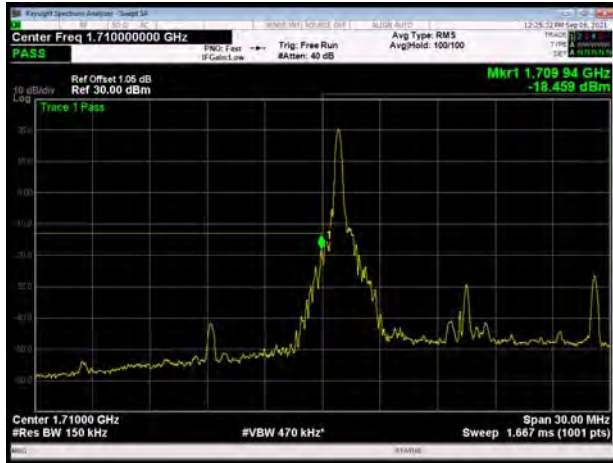


LTE Band 66 64QAM 10MHz CH-High, 100%RB





LTE Band 66 64QAM 15MHz CH-Low, 1 RB



LTE Band 66 64QAM 15MHz CH-High, 1 RB



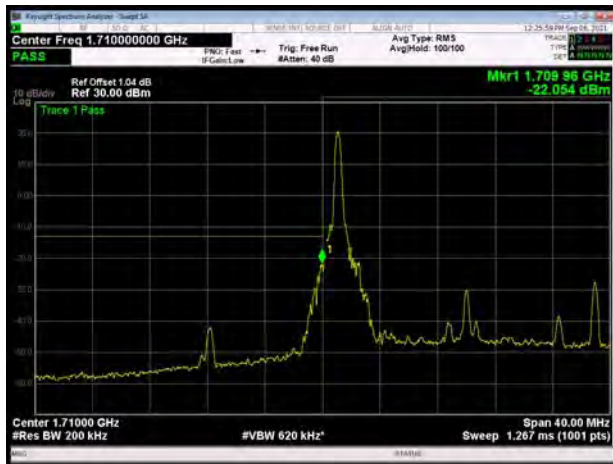
LTE Band 66 64QAM 15MHz CH-Low, 100%RB



LTE Band 66 64QAM 15MHz CH-High, 100%RB



LTE Band 66 64QAM 20MHz CH-Low, 1 RB



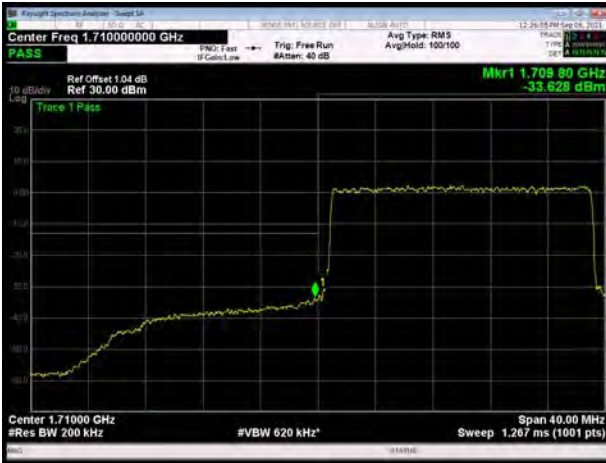
LTE Band 66 64QAM 20MHz CH-High, 1 RB





LTE Band 66 64QAM 20MHz CH-Low, 100%RB

LTE Band 66 64QAM 20MHz CH-High, 100%RB



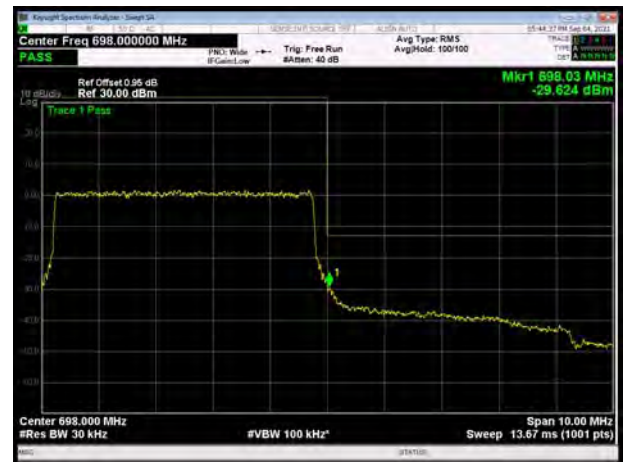
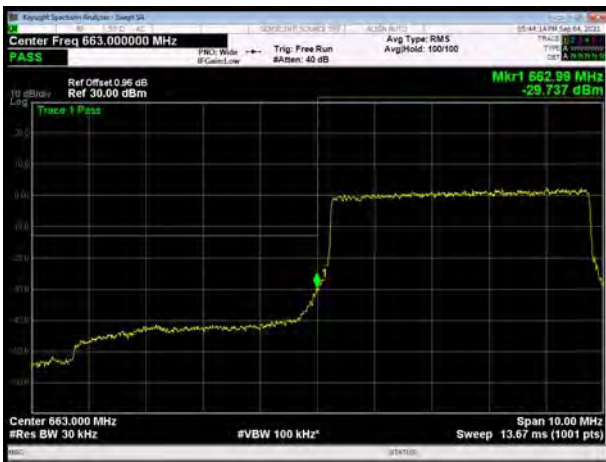
LTE Band 71 QPSK 5MHz CH-Low, 1 RB

LTE Band 71 QPSK 5MHz CH-High, 1 RB



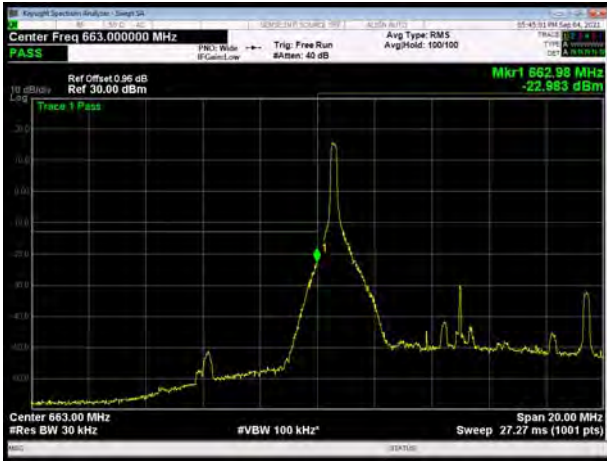
LTE Band 71 QPSK 5MHz CH-Low, 100%RB

LTE Band 71 QPSK 5MHz CH-High, 100%RB





LTE Band 71 QPSK 10MHz CH-Low, 1 RB



LTE Band 71 QPSK 10MHz CH-High, 1 RB



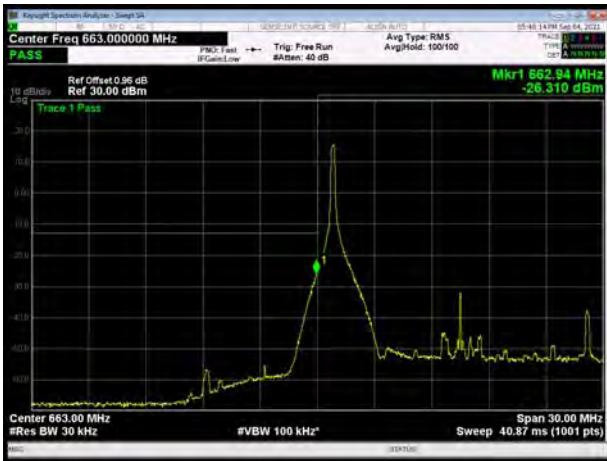
LTE Band 71 QPSK 10MHz CH-Low, 100%RB



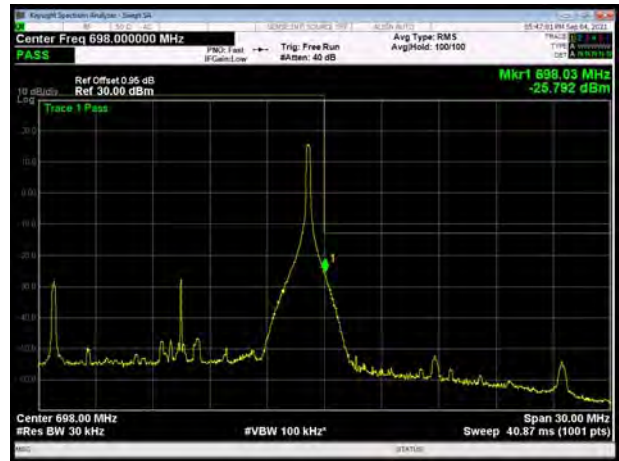
LTE Band 71 QPSK 10MHz CH-High, 100%RB



LTE Band 71 QPSK 15MHz CH-Low, 1 RB



LTE Band 71 QPSK 15MHz CH-High, 1 RB





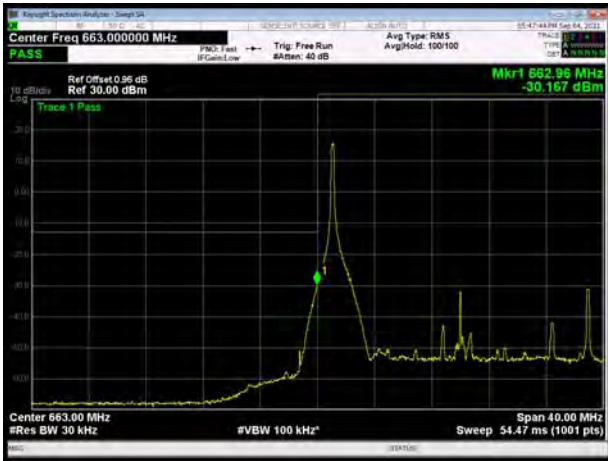
LTE Band 71 QPSK 15MHz CH-Low, 100%RB



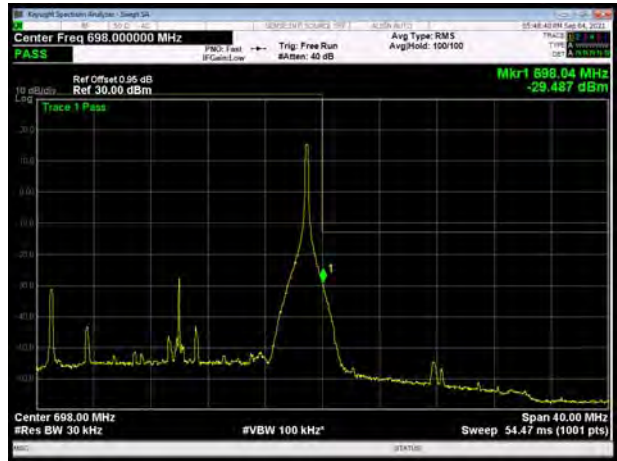
LTE Band 71 QPSK 15MHz CH-High, 100%RB



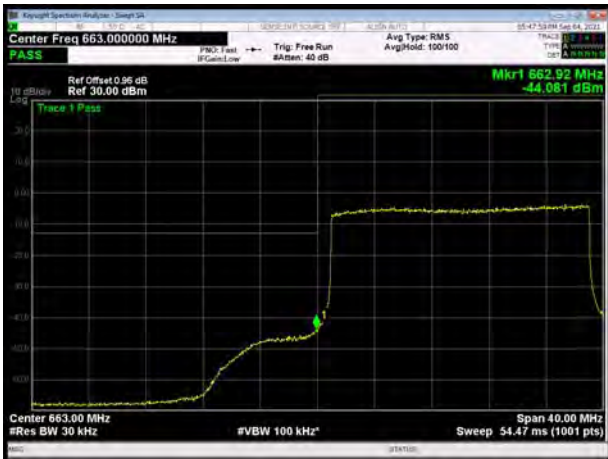
LTE Band 71 QPSK 20MHz CH-Low, 1 RB



LTE Band 71 QPSK 20MHz CH-High, 1 RB



LTE Band 71 QPSK 20MHz CH-Low, 100%RB

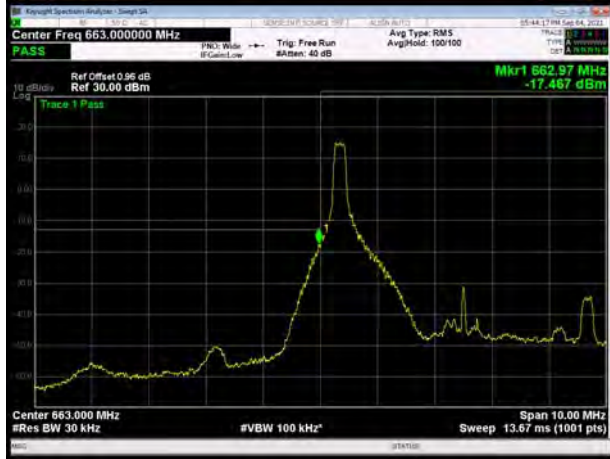


LTE Band 71 QPSK 20MHz CH-High, 100%RB

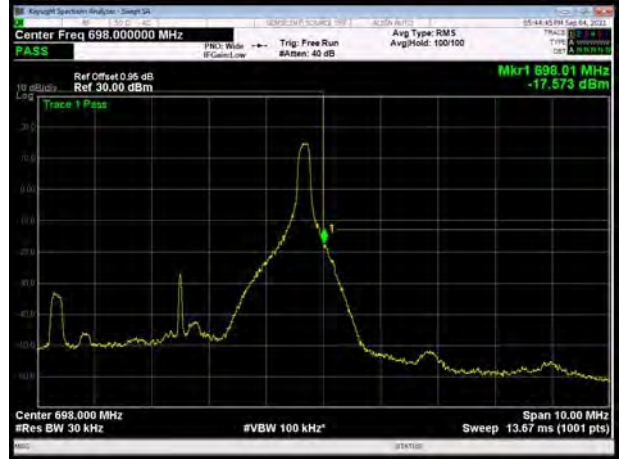




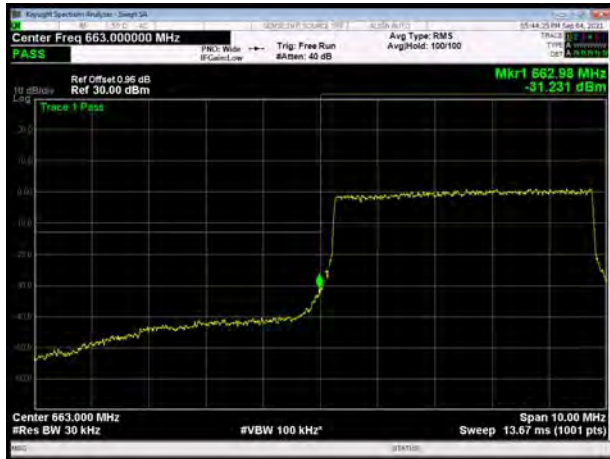
LTE Band 71 16QAM 5MHz CH-Low, 1 RB



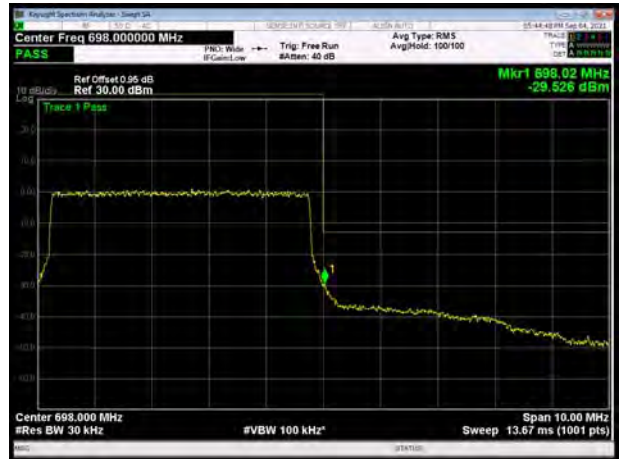
LTE Band 71 16QAM 5MHz CH-High, 1 RB



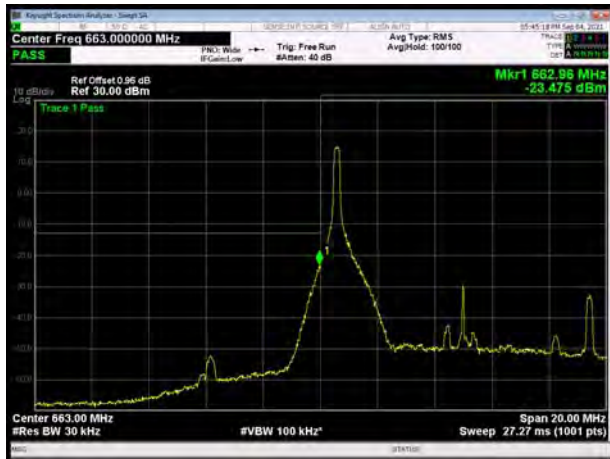
LTE Band 71 16QAM 5MHz CH-Low, 100%RB



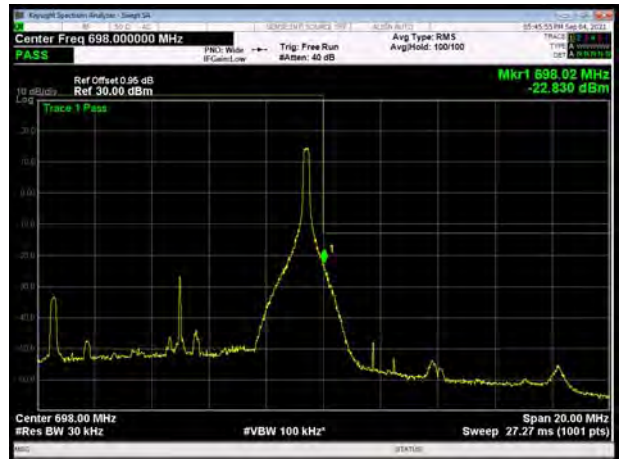
LTE Band 71 16QAM 5MHz CH-High, 100%RB



LTE Band 71 16QAM 10MHz CH-Low, 1 RB



LTE Band 71 16QAM 10MHz CH-High, 1 RB





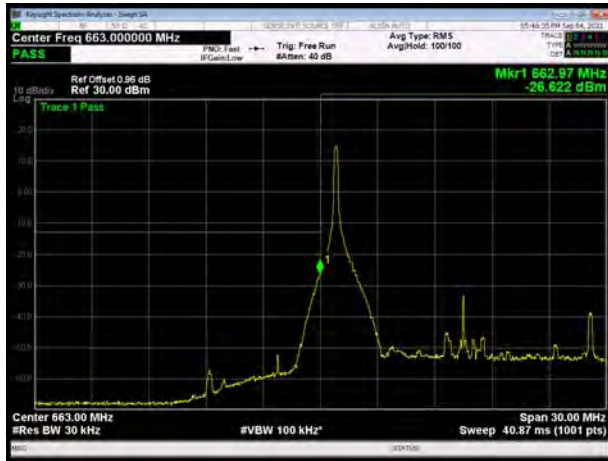
LTE Band 71 16QAM 10MHz CH-Low, 100%RB



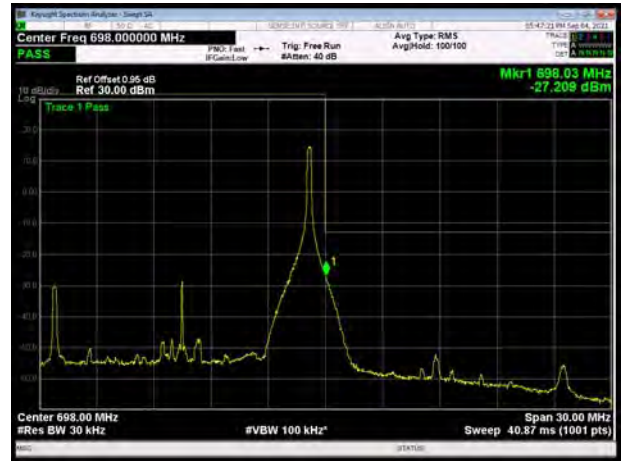
LTE Band 71 16QAM 10MHz CH-High, 100%RB



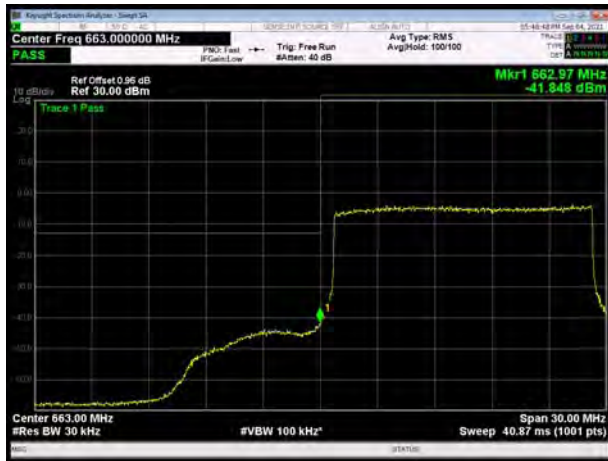
LTE Band 71 16QAM 15MHz CH-Low, 1 RB



LTE Band 71 16QAM 15MHz CH-High, 1 RB



LTE Band 71 16QAM 15MHz CH-Low, 100%RB

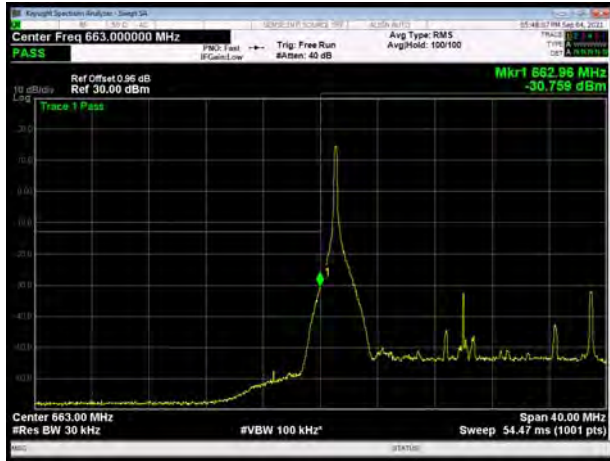


LTE Band 71 16QAM 15MHz CH-High, 100%RB

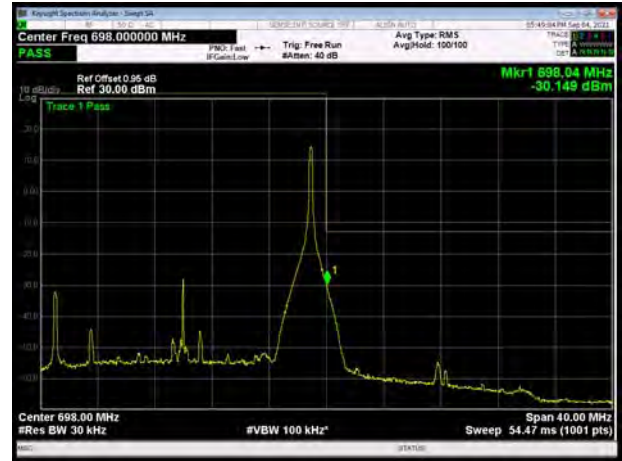




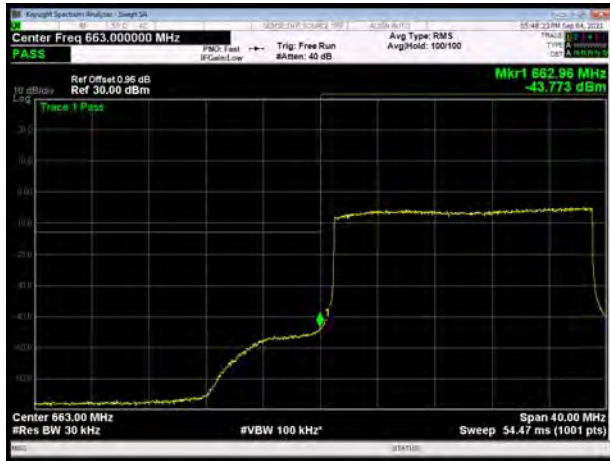
LTE Band 71 16QAM 20MHz CH-Low, 1 RB



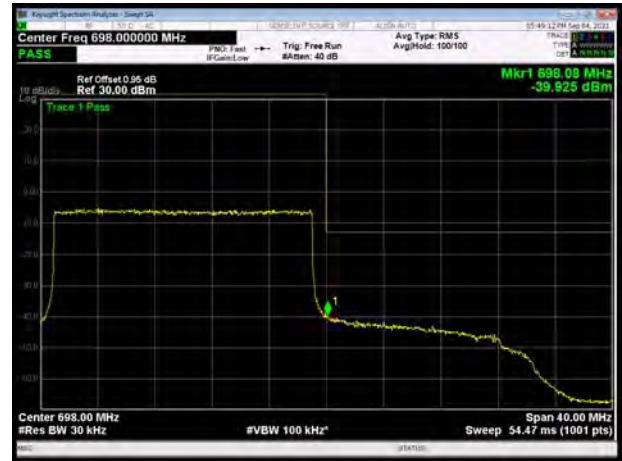
LTE Band 71 16QAM 20MHz CH-High, 1 RB



LTE Band 71 16QAM 20MHz CH-Low, 100%RB



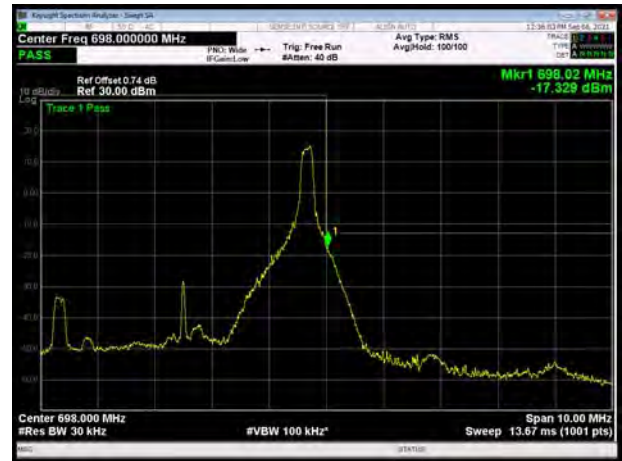
LTE Band 71 16QAM 20MHz CH-High, 100%RB



LTE Band 71 64QAM 5MHz CH-Low, 1 RB

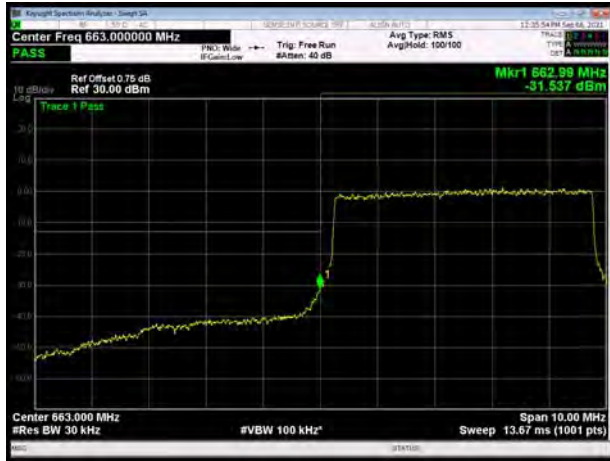


LTE Band 71 64QAM 5MHz CH-High, 1 RB





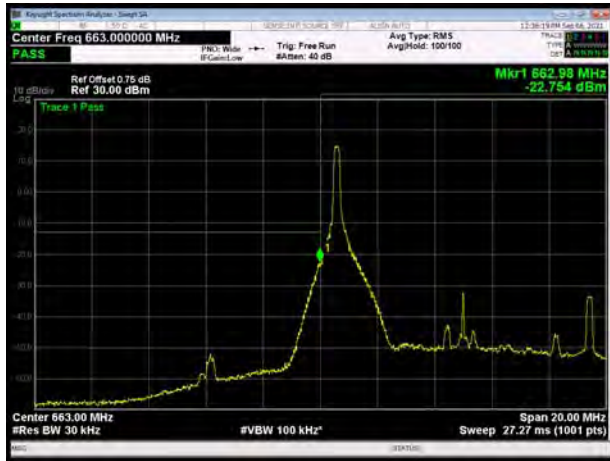
LTE Band 71 64QAM 5MHz CH-Low, 100%RB



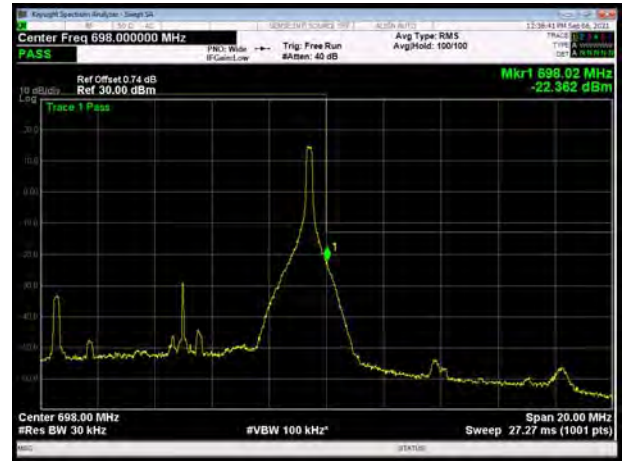
LTE Band 71 64QAM 5MHz CH-High, 100%RB



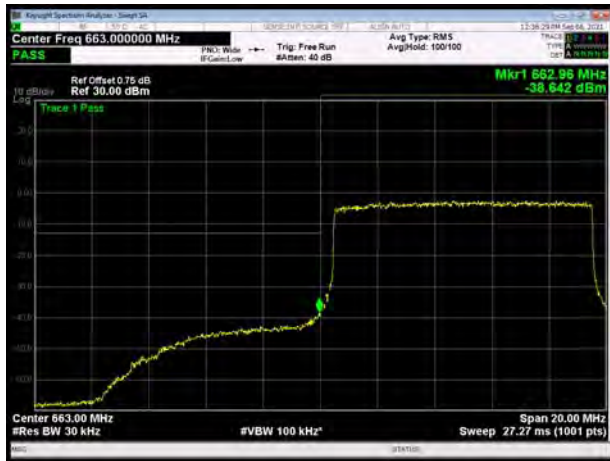
LTE Band 71 64QAM 10MHz CH-Low, 1 RB



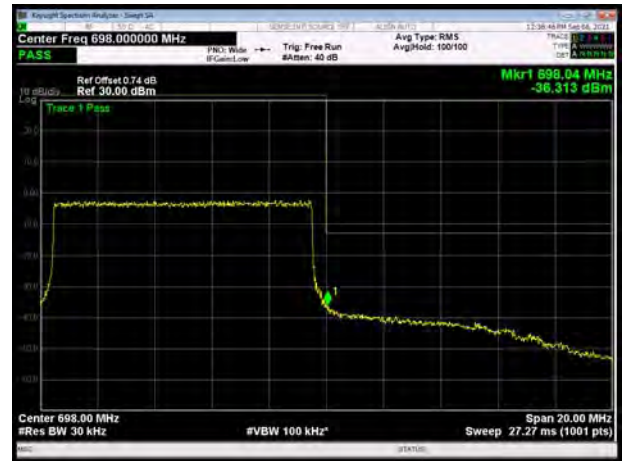
LTE Band 71 64QAM 10MHz CH-High, 1 RB



LTE Band 71 64QAM 10MHz CH-Low, 100%RB

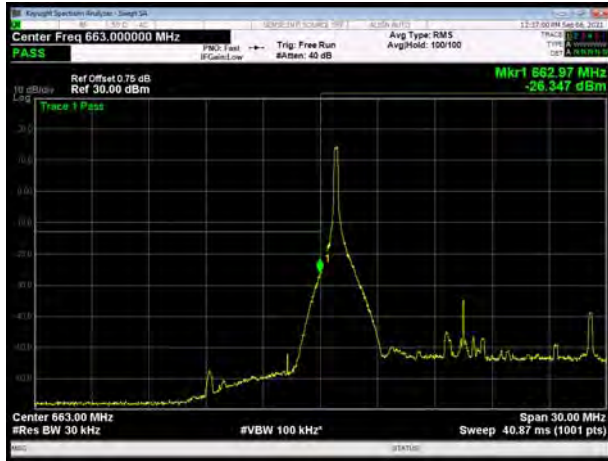


LTE Band 71 64QAM 10MHz CH-High, 100%RB

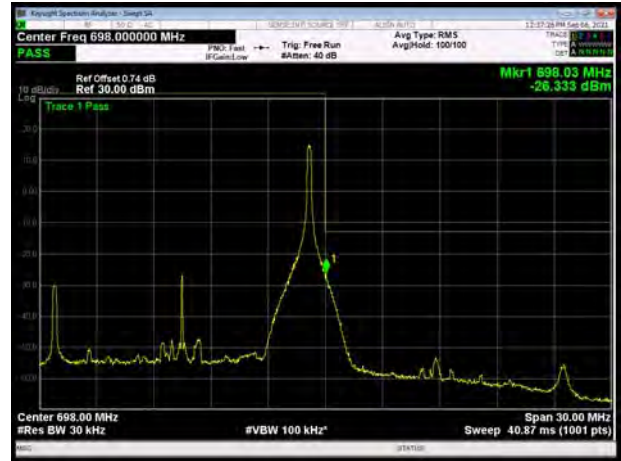




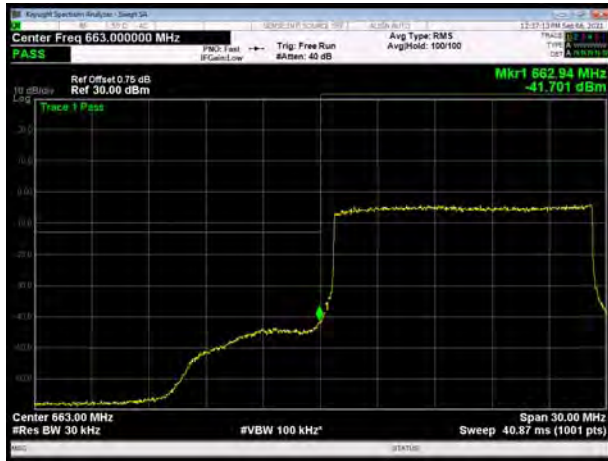
LTE Band 71 64QAM 15MHz CH-Low, 1 RB



LTE Band 71 64QAM 15MHz CH-High, 1 RB



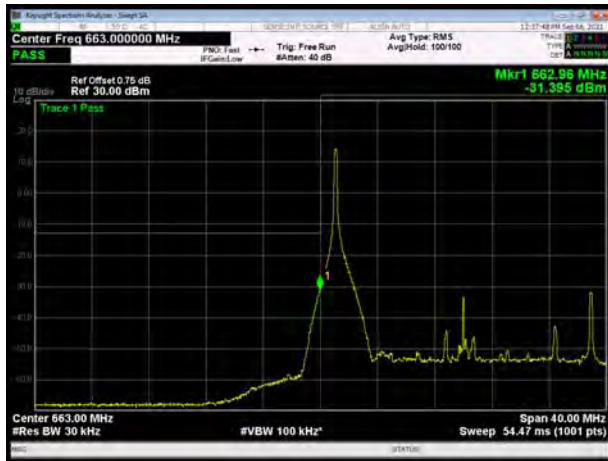
LTE Band 71 64QAM 15MHz CH-Low, 100%RB



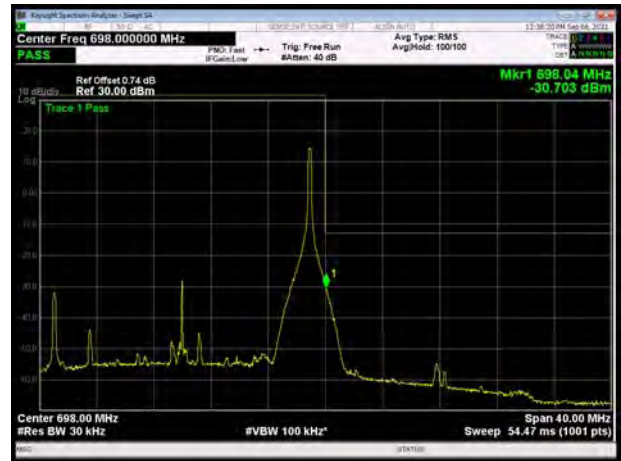
LTE Band 71 64QAM 15MHz CH-High, 100%RB



LTE Band 71 64QAM 20MHz CH-Low, 1 RB



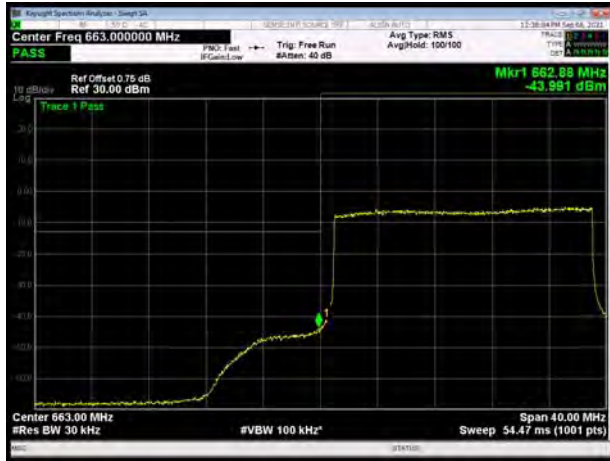
LTE Band 71 64QAM 20MHz CH-High, 1 RB





LTE Band 71 64QAM 20MHz CH-Low, 100%RB

LTE Band 71 64QAM 20MHz CH-High, 100%RB



5.4 Peak-to-Average Power Ratio (PAPR)

Ambient condition

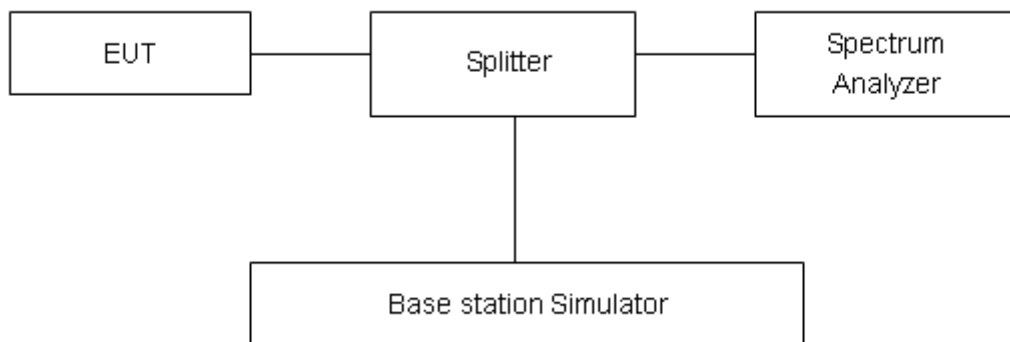
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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.

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	26.16	23.20	2.96	≤13	PASS
	1413	1732.6	27.10	24.12	2.98	≤13	PASS
	1513	1752.6	27.17	24.27	2.90	≤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	2.39	22.03	5.15	≤13	PASS
		20175	1732.5	2.38	22.07	5.27	≤13	PASS
		20393	1754.3	2.40	22.06	5.16	≤13	PASS
	3	19965	1711.5	5.63	21.92	5.22	≤13	PASS
		20175	1732.5	5.62	21.97	5.26	≤13	PASS
		20385	1753.5	5.62	21.92	5.27	≤13	PASS
	5	19975	1712.5	9.40	21.95	5.34	≤13	PASS
		20175	1732.5	9.40	21.95	5.40	≤13	PASS
		20375	1752.5	9.40	21.97	5.35	≤13	PASS
	10	20000	1715	18.70	21.97	5.35	≤13	PASS
		20175	1732.5	18.66	21.99	5.34	≤13	PASS
		20350	1750	18.77	22.03	5.28	≤13	PASS
	15	20025	1717.5	28.14	21.98	5.70	≤13	PASS
		20175	1732.5	28.05	21.96	5.69	≤13	PASS
		20325	1747.5	27.95	22.01	5.67	≤13	PASS
	20	20050	1720	37.30	21.92	5.55	≤13	PASS
		20175	1732.5	37.17	21.93	5.44	≤13	PASS
		20300	1745	37.27	21.97	5.46	≤13	PASS
16QAM	1.4	19957	1710.7	2.39	21.12	5.91	≤13	PASS
		20175	1732.5	2.37	21.09	6.05	≤13	PASS
		20393	1754.3	2.37	21.15	6.02	≤13	PASS
	3	19965	1711.5	5.60	20.97	6.02	≤13	PASS
		20175	1732.5	5.63	20.98	6.11	≤13	PASS
		20385	1753.5	5.62	21.03	6.07	≤13	PASS
	5	19975	1712.5	9.44	21.03	6.08	≤13	PASS
		20175	1732.5	9.43	21.00	6.06	≤13	PASS
		20375	1752.5	9.39	21.02	6.02	≤13	PASS
	10	20000	1715	18.69	20.99	6.04	≤13	PASS
		20175	1732.5	18.71	21.05	6.06	≤13	PASS
		20350	1750	18.69	21.07	6.06	≤13	PASS



	15	20025	1717.5	27.97	20.98	6.21	≤13	PASS
		20175	1732.5	27.91	21.00	6.20	≤13	PASS
		20325	1747.5	27.87	21.04	6.14	≤13	PASS
	20	20050	1720	37.23	20.97	6.16	≤13	PASS
		20175	1732.5	37.34	20.97	6.15	≤13	PASS
		20300	1745	37.12	21.02	6.15	≤13	PASS
64QAM	1.4	19957	1710.7	26.48	20.52	5.96	≤13	PASS
		20175	1732.5	26.56	20.58	5.98	≤13	PASS
		20393	1754.3	26.43	20.50	5.93	≤13	PASS
	3	19965	1711.5	26.49	20.41	6.08	≤13	PASS
		20175	1732.5	26.54	20.46	6.08	≤13	PASS
		20385	1753.5	26.48	20.45	6.03	≤13	PASS
	5	19975	1712.5	26.53	20.43	6.10	≤13	PASS
		20175	1732.5	26.57	20.47	6.10	≤13	PASS
		20375	1752.5	26.53	20.47	6.06	≤13	PASS
	10	20000	1715	26.54	20.44	6.10	≤13	PASS
		20175	1732.5	26.57	20.48	6.09	≤13	PASS
		20350	1750	26.58	20.49	6.09	≤13	PASS
	15	20025	1717.5	26.64	20.44	6.20	≤13	PASS
		20175	1732.5	26.65	20.46	6.19	≤13	PASS
		20325	1747.5	26.62	20.46	6.16	≤13	PASS
	20	20050	1720	26.57	20.39	6.18	≤13	PASS
		20175	1732.5	26.56	20.41	6.15	≤13	PASS
		20300	1745	26.63	20.45	6.18	≤13	PASS

LTE Band 12								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	23017	699.7	2.39	22.06	5.06	≤13	PASS
		23095	707.5	2.38	22.01	4.93	≤13	PASS
		23173	715.3	2.39	21.98	4.92	≤13	PASS
	3	23025	700.5	5.61	22.01	5.14	≤13	PASS
		23095	707.5	5.60	21.98	4.95	≤13	PASS
		23165	714.5	5.61	21.95	5.05	≤13	PASS
	5	23035	701.5	9.75	22.02	5.18	≤13	PASS
		23095	707.5	9.57	21.97	5.06	≤13	PASS
		23155	713.5	9.66	21.95	5.18	≤13	PASS
	10	23060	704	18.93	21.97	5.11	≤13	PASS
		23095	707.5	18.99	21.94	5.16	≤13	PASS
		23130	711	18.91	22.05	5.20	≤13	PASS



16QAM	1.4	23017	699.7	2.39	21.03	5.92	≤13	PASS
		23095	707.5	2.38	20.98	5.72	≤13	PASS
		23173	715.3	2.38	21.03	5.79	≤13	PASS
	3	23025	700.5	5.62	20.98	5.95	≤13	PASS
		23095	707.5	5.60	20.96	5.81	≤13	PASS
		23165	714.5	5.61	20.96	5.88	≤13	PASS
	5	23035	701.5	9.64	21.02	5.93	≤13	PASS
		23095	707.5	9.68	20.95	5.79	≤13	PASS
		23155	713.5	9.60	20.94	5.96	≤13	PASS
	10	23060	704	18.93	20.90	5.92	≤13	PASS
		23095	707.5	18.95	20.93	5.95	≤13	PASS
		23130	711	19.00	21.01	5.99	≤13	PASS
64QAM	1.4	23017	699.7	26.74	20.85	5.89	≤13	PASS
		23095	707.5	26.69	20.86	5.83	≤13	PASS
		23173	715.3	26.63	20.85	5.78	≤13	PASS
	3	23025	700.5	26.77	20.81	5.96	≤13	PASS
		23095	707.5	26.60	20.77	5.83	≤13	PASS
		23165	714.5	26.64	20.79	5.85	≤13	PASS
	5	23035	701.5	26.77	20.83	5.94	≤13	PASS
		23095	707.5	26.62	20.80	5.82	≤13	PASS
		23155	713.5	26.71	20.75	5.96	≤13	PASS
	10	23060	704	26.70	20.79	5.91	≤13	PASS
		23095	707.5	26.69	20.74	5.95	≤13	PASS
		23130	711	26.82	20.84	5.98	≤13	PASS

LTE Band 41								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	39675	2498.5	9.34	19.75	9.27	≤13	PASS
		40620	2593	9.35	19.27	9.58	≤13	PASS
		41565	2687.5	9.38	20.02	9.03	≤13	PASS
	10	39700	2501	18.80	18.61	10.30	≤13	PASS
		40620	2593	18.76	19.90	8.94	≤13	PASS
		41540	2685	19.28	20.28	8.88	≤13	PASS
	15	39725	2503.5	28.18	19.83	9.54	≤13	PASS
		40620	2593	28.59	19.79	9.42	≤13	PASS
		41515	2682.5	28.38	20.08	9.39	≤13	PASS
	20	39750	2506	37.01	20.28	8.73	≤13	PASS



16QAM		40620	2593	36.99	20.05	8.76	≤13	PASS	
		41490	2680	36.98	20.34	8.78	≤13	PASS	
	5		39675	2498.5	9.37	20.23	9.33	≤13	PASS
			40620	2593	9.39	20.26	9.28	≤13	PASS
			41565	2687.5	9.38	20.71	9.00	≤13	PASS
	10		39700	2501	18.57	20.72	9.04	≤13	PASS
			40620	2593	19.90	20.46	9.15	≤13	PASS
			41540	2685	18.84	20.59	9.20	≤13	PASS
	15		39725	2503.5	27.88	19.52	10.21	≤13	PASS
			40620	2593	27.87	17.89	11.52	≤13	PASS
			41515	2682.5	28.00	20.30	9.53	≤13	PASS
	20		39750	2506	37.66	19.27	10.25	≤13	PASS
40620			2593	37.11	17.79	11.36	≤13	PASS	
41490			2680	37.11	20.85	8.92	≤13	PASS	
64QAM	5	39675	2498.5	28.65	18.18	10.47	≤13	PASS	
		40620	2593	28.75	19.21	9.54	≤13	PASS	
		41565	2687.5	28.92	19.55	9.37	≤13	PASS	
	10		39700	2501	28.81	19.28	9.53	≤13	PASS
			40620	2593	28.63	18.34	10.29	≤13	PASS
			41540	2685	29.00	19.78	9.22	≤13	PASS
	15		39725	2503.5	28.68	16.82	11.86	≤13	PASS
			40620	2593	28.91	19.66	9.25	≤13	PASS
			41515	2682.5	29.05	19.32	9.73	≤13	PASS
	20		39750	2506	28.85	19.79	9.06	≤13	PASS
			40620	2593	28.58	18.74	9.84	≤13	PASS
			41490	2680	28.81	18.99	9.82	≤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	2.38	21.63	5.17	≤13	PASS
		132322	1745	2.37	21.62	5.28	≤13	PASS
		132665	1779.3	2.39	21.64	5.15	≤13	PASS
	3	131987	1711.5	5.63	21.53	5.21	≤13	PASS
		132322	1745	5.62	21.53	5.39	≤13	PASS
		132657	1778.5	5.61	21.57	5.22	≤13	PASS



	5	131997	1712.5	9.68	21.55	5.38	≤13	PASS
		132322	1745	9.60	21.56	5.31	≤13	PASS
		132647	1777.5	9.62	21.55	5.33	≤13	PASS
	10	132022	1715	18.85	21.58	5.32	≤13	PASS
		132322	1745	19.07	21.65	5.28	≤13	PASS
		132622	1775	18.93	21.66	5.34	≤13	PASS
	15	132047	1717.5	28.27	21.55	5.70	≤13	PASS
		132322	1745	28.43	21.61	5.67	≤13	PASS
		132597	1772.5	28.40	21.60	5.66	≤13	PASS
	20	132072	1720	37.45	21.50	5.50	≤13	PASS
		132322	1745	37.64	21.55	5.52	≤13	PASS
		132572	1770	37.52	21.55	5.42	≤13	PASS
16QAM	1.4	131979	1710.7	2.36	20.65	5.97	≤13	PASS
		132322	1745	2.38	20.66	6.00	≤13	PASS
		132665	1779.3	2.36	20.69	5.94	≤13	PASS
	3	131987	1711.5	5.62	20.60	6.01	≤13	PASS
		132322	1745	5.59	20.57	6.15	≤13	PASS
		132657	1778.5	5.60	20.58	5.98	≤13	PASS
	5	131997	1712.5	9.65	20.59	6.06	≤13	PASS
		132322	1745	9.65	20.59	6.04	≤13	PASS
		132647	1777.5	9.64	20.57	6.04	≤13	PASS
	10	132022	1715	18.93	20.61	6.04	≤13	PASS
		132322	1745	19.04	20.66	6.07	≤13	PASS
		132622	1775	19.07	20.63	6.08	≤13	PASS
	15	132047	1717.5	28.37	20.59	6.19	≤13	PASS
		132322	1745	28.45	20.63	6.20	≤13	PASS
		132597	1772.5	28.39	20.57	6.14	≤13	PASS
	20	132072	1720	37.55	20.57	6.17	≤13	PASS
		132322	1745	37.57	20.63	6.15	≤13	PASS
		132572	1770	37.57	20.59	6.15	≤13	PASS
64QAM	1.4	131979	1710.7	26.54	20.61	5.93	≤13	PASS
		132322	1745	26.57	20.61	5.96	≤13	PASS
		132665	1779.3	26.58	20.67	5.91	≤13	PASS
	3	131987	1711.5	26.52	20.52	6.00	≤13	PASS
		132322	1745	26.59	20.53	6.06	≤13	PASS
		132657	1778.5	26.50	20.52	5.98	≤13	PASS
	5	131997	1712.5	26.58	20.52	6.06	≤13	PASS
		132322	1745	26.52	20.51	6.01	≤13	PASS
		132647	1777.5	26.53	20.51	6.02	≤13	PASS
	10	132022	1715	26.59	20.53	6.06	≤13	PASS



		132322	1745	26.65	20.58	6.07	≤13	PASS
		132622	1775	26.64	20.56	6.08	≤13	PASS
		132047	1717.5	26.69	20.49	6.20	≤13	PASS
15		132322	1745	26.69	20.55	6.14	≤13	PASS
		132597	1772.5	26.64	20.50	6.14	≤13	PASS
		132072	1720	26.67	20.48	6.19	≤13	PASS
20		132322	1745	26.70	20.53	6.17	≤13	PASS
		132572	1770	26.62	20.49	6.13	≤13	PASS

LTE Band 71									
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion	
QPSK	5	133147	665.5	9.56	21.92	5.21	≤13	PASS	
		133297	680.5	9.62	21.96	5.20	≤13	PASS	
		133447	695.5	9.65	21.99	5.07	≤13	PASS	
	10		133172	668	18.86	21.86	5.25	≤13	PASS
			133297	680.5	19.12	21.98	5.22	≤13	PASS
			133422	693	19.15	22.02	5.16	≤13	PASS
	15		133197	670.5	28.37	21.99	5.66	≤13	PASS
			133297	680.5	28.20	22.00	5.54	≤13	PASS
			133397	690.5	28.73	22.07	5.46	≤13	PASS
	20		133222	673	37.44	21.98	5.48	≤13	PASS
			133322	683	37.28	21.82	5.40	≤13	PASS
			133372	688	37.38	21.99	5.35	≤13	PASS
16QAM	5	133147	665.5	9.66	20.91	5.97	≤13	PASS	
		133297	680.5	9.64	20.94	5.93	≤13	PASS	
		133447	695.5	9.72	20.99	5.86	≤13	PASS	
	10		133172	668	18.92	20.86	6.04	≤13	PASS
			133297	680.5	19.12	20.98	5.97	≤13	PASS
			133422	693	19.01	21.02	5.92	≤13	PASS
	15		133197	670.5	28.34	20.89	6.18	≤13	PASS
			133297	680.5	28.29	20.93	6.10	≤13	PASS
			133397	690.5	28.40	21.05	6.04	≤13	PASS
	20		133222	673	37.45	21.00	6.20	≤13	PASS
			133322	683	37.33	20.82	6.09	≤13	PASS
			133372	688	37.63	20.98	6.10	≤13	PASS
64QAM	5	133147	665.5	26.78	20.82	5.96	≤13	PASS	
		133297	680.5	26.79	20.85	5.94	≤13	PASS	
		133447	695.5	26.64	20.91	5.73	≤13	PASS	
	10		133172	668	26.73	20.72	6.01	≤13	PASS



		133297	680.5	26.78	20.83	5.95	≤13	PASS
		133422	693	26.85	20.89	5.96	≤13	PASS
	15	133197	670.5	26.98	20.81	6.17	≤13	PASS
		133297	680.5	26.94	20.85	6.09	≤13	PASS
		133397	690.5	26.98	20.92	6.06	≤13	PASS
	20	133222	673	27.07	20.89	6.18	≤13	PASS
		133322	683	26.80	20.72	6.08	≤13	PASS
		133372	688	26.92	20.87	6.05	≤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.

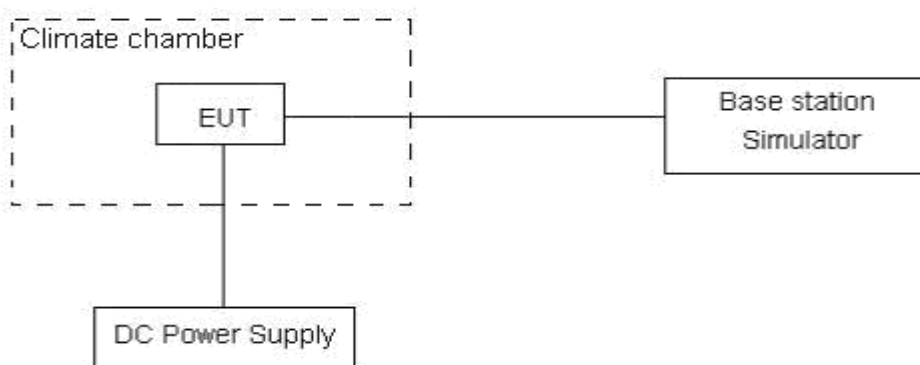
Frequency Stability (Voltage Variation)

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 3.5V and 4.43V, with a nominal voltage of 3.85V.

Test setup



Limits

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

Measurement Uncertainty

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



Test Result

WCDMA Band IV						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
Temperature	Voltage	QPSK	BPSK	QPSK	BPSK	
Normal (25°C)	Normal	13.56	11.36	0.00782	0.00656	PASS
Extreme (50°C)		17.94	7.80	0.01035	0.00450	PASS
Extreme (40°C)		14.93	9.16	0.00861	0.00529	PASS
Extreme (30°C)		10.56	13.17	0.00610	0.00760	PASS
Extreme (20°C)		3.96	13.69	0.00229	0.00790	PASS
Extreme (10°C)		13.79	3.10	0.00796	0.00179	PASS
Extreme (0°C)		7.12	8.38	0.00411	0.00484	PASS
Extreme (-10°C)		6.07	11.66	0.00350	0.00673	PASS
Extreme (-20°C)		15.10	13.78	0.00871	0.00795	PASS
Extreme (-30°C)		14.81	14.27	0.00855	0.00824	PASS
25°C	LV	1.45	3.19	0.00084	0.00184	PASS
	HV	3.80	7.28	0.00219	0.00420	PASS

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	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25°C)	Normal	14.54	2.04	6.16	0.00839	0.00118	0.00356	PASS
Extreme (50°C)		17.70	1.55	13.91	0.01022	0.00089	0.00803	PASS
Extreme (40°C)		13.00	12.71	9.87	0.00751	0.00734	0.00569	PASS
Extreme (30°C)		5.66	1.80	12.81	0.00326	0.00104	0.00740	PASS
Extreme (20°C)		7.75	16.40	10.79	0.00447	0.00947	0.00623	PASS
Extreme (10°C)		7.63	7.16	16.68	0.00440	0.00414	0.00963	PASS
Extreme (0°C)		6.17	10.94	14.15	0.00356	0.00631	0.00817	PASS
Extreme (-10°C)		4.96	12.38	5.89	0.00286	0.00715	0.00340	PASS
Extreme (-20°C)		9.20	7.03	16.55	0.00531	0.00406	0.00955	PASS
Extreme (-30°C)		10.28	11.30	17.32	0.00593	0.00652	0.00999	PASS
25°C	LV	10.67	7.75	5.19	0.00616	0.00447	0.00300	PASS
	HV	3.82	7.16	1.95	0.00221	0.00413	0.00112	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	3MHz	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	



Normal (25°C)	Normal	8.18	14.00	4.74	0.00472	0.00808	0.00274	PASS
Extreme (50°C)		10.28	7.08	8.26	0.00593	0.00409	0.00477	PASS
Extreme (40°C)		4.88	10.25	13.56	0.00282	0.00592	0.00783	PASS
Extreme (30°C)		12.92	1.41	17.75	0.00746	0.00081	0.01025	PASS
Extreme (20°C)		14.61	14.61	17.23	0.00843	0.00843	0.00995	PASS
Extreme (10°C)		1.54	13.61	1.95	0.00089	0.00785	0.00113	PASS
Extreme (0°C)		13.20	3.01	14.08	0.00762	0.00174	0.00813	PASS
Extreme (-10°C)		9.32	2.53	3.81	0.00538	0.00146	0.00220	PASS
Extreme (-20°C)		12.07	8.96	12.85	0.00697	0.00517	0.00741	PASS
Extreme (-30°C)		2.42	4.39	4.14	0.00140	0.00253	0.00239	PASS
25°C		LV	7.48	8.88	4.49	0.00432	0.00513	0.00259
	HV	11.10	13.64	2.54	0.00641	0.00787	0.00146	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°C)	Normal	11.40	7.44	2.58	0.00658	0.00430	0.00149	PASS
Extreme (50°C)		9.24	5.92	7.23	0.00533	0.00342	0.00417	PASS
Extreme (40°C)		13.84	6.50	7.08	0.00799	0.00375	0.00409	PASS
Extreme (30°C)		1.65	1.29	13.78	0.00095	0.00075	0.00796	PASS
Extreme (20°C)		9.00	13.18	7.49	0.00519	0.00761	0.00432	PASS
Extreme (10°C)		4.04	2.97	10.76	0.00233	0.00171	0.00621	PASS
Extreme (0°C)		8.23	4.20	14.39	0.00475	0.00243	0.00831	PASS
Extreme (-10°C)		7.49	5.29	16.08	0.00432	0.00305	0.00928	PASS
Extreme (-20°C)		8.67	7.26	4.70	0.00500	0.00419	0.00271	PASS
Extreme (-30°C)		14.46	4.00	2.49	0.00835	0.00231	0.00143	PASS
25°C		LV	3.31	11.82	9.06	0.00191	0.00682	0.00523
	HV	16.82	4.92	9.30	0.00971	0.00284	0.00537	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°C)	Normal	1.96	7.60	14.25	0.00113	0.00439	0.00822	PASS
Extreme (50°C)		7.41	3.43	12.17	0.00428	0.00198	0.00702	PASS
Extreme (40°C)		5.14	3.93	7.25	0.00297	0.00227	0.00418	PASS
Extreme (30°C)		1.28	2.22	13.42	0.00074	0.00128	0.00775	PASS
Extreme (20°C)		1.56	2.98	17.70	0.00090	0.00172	0.01021	PASS
Extreme (10°C)		16.05	8.89	6.73	0.00926	0.00513	0.00388	PASS
Extreme (0°C)		7.78	16.17	5.01	0.00449	0.00934	0.00289	PASS
Extreme (-10°C)		3.93	4.00	6.15	0.00227	0.00231	0.00355	PASS
Extreme (-20°C)		14.84	1.11	11.42	0.00857	0.00064	0.00659	PASS



Extreme (-30°C)		17.56	13.58	13.61	0.01014	0.00784	0.00786	PASS
25°C	LV	4.41	6.82	4.73	0.00255	0.00394	0.00273	PASS
	HV	2.64	6.25	10.37	0.00152	0.00361	0.00598	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°C)	Normal	3.73	13.88	13.03	0.00215	0.00801	0.00752	
Extreme (50°C)		2.90	10.86	14.24	0.00167	0.00627	0.00822	PASS
Extreme (40°C)		4.24	17.17	16.93	0.00245	0.00991	0.00977	PASS
Extreme (30°C)		1.91	4.88	1.05	0.00110	0.00281	0.00060	PASS
Extreme (20°C)		3.96	3.91	10.14	0.00229	0.00226	0.00585	PASS
Extreme (10°C)		1.44	16.60	3.68	0.00083	0.00958	0.00212	PASS
Extreme (0°C)		7.85	7.50	6.97	0.00453	0.00433	0.00403	PASS
Extreme (-10°C)		2.08	11.58	7.16	0.00120	0.00668	0.00413	PASS
Extreme (-20°C)		13.46	2.87	6.80	0.00777	0.00166	0.00393	PASS
Extreme (-30°C)		12.83	9.34	1.71	0.00740	0.00539	0.00099	PASS
25°C		LV	11.37	2.78	5.77	0.00656	0.00160	0.00333
	HV	3.83	7.13	8.91	0.00221	0.00411	0.00515	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°C)	Normal	14.33	1.82	10.40	0.00827	0.00105	0.00600	
Extreme (50°C)		2.78	17.88	7.42	0.00160	0.01032	0.00428	PASS
Extreme (40°C)		9.39	9.43	11.43	0.00542	0.00544	0.00660	PASS
Extreme (30°C)		16.76	9.11	9.47	0.00967	0.00526	0.00547	PASS
Extreme (20°C)		3.21	11.35	3.30	0.00185	0.00655	0.00190	PASS
Extreme (10°C)		6.04	17.71	1.05	0.00348	0.01022	0.00060	PASS
Extreme (0°C)		11.98	16.67	2.74	0.00692	0.00962	0.00158	PASS
Extreme (-10°C)		3.12	7.42	16.07	0.00180	0.00429	0.00928	PASS
Extreme (-20°C)		2.17	12.08	12.37	0.00125	0.00697	0.00714	PASS
Extreme (-30°C)		1.28	5.89	8.25	0.00074	0.00340	0.00476	PASS
25°C		LV	2.48	5.22	15.03	0.00143	0.00301	0.00868
	HV	12.45	1.09	9.91	0.00719	0.00063	0.00572	PASS



LTE Band 12								
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°C)	Normal	3.08	3.85	6.10	0.00436	0.00544	0.00862	PASS
Extreme (50°C)		3.10	6.57	8.08	0.00438	0.00928	0.01143	PASS
Extreme (40°C)		12.78	9.11	4.61	0.01806	0.01288	0.00651	PASS
Extreme (30°C)		8.33	15.44	10.76	0.01177	0.02182	0.01521	PASS
Extreme (20°C)		5.80	6.97	15.21	0.00820	0.00986	0.02150	PASS
Extreme (10°C)		12.54	12.48	3.13	0.01773	0.01764	0.00442	PASS
Extreme (0°C)		17.72	8.80	3.09	0.02505	0.01244	0.00436	PASS
Extreme (-10°C)		7.18	6.36	17.25	0.01014	0.00899	0.02438	PASS
Extreme (-20°C)		4.82	17.11	17.71	0.00681	0.02418	0.02503	PASS
Extreme (-30°C)		1.75	6.16	4.61	0.00248	0.00870	0.00651	PASS
25°C		LV	7.40	13.77	10.51	0.01045	0.01946	0.01485
	HV	15.71	15.02	2.50	0.02220	0.02123	0.00353	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°C)	Normal	8.62	2.80	2.43	0.01218	0.00396	0.00343	PASS
Extreme (50°C)		17.29	13.55	2.04	0.02444	0.01916	0.00288	PASS
Extreme (40°C)		11.16	13.44	10.55	0.01577	0.01900	0.01491	PASS
Extreme (30°C)		16.61	1.23	3.53	0.02347	0.00174	0.00499	PASS
Extreme (20°C)		17.38	6.93	13.27	0.02457	0.00980	0.01875	PASS
Extreme (10°C)		3.26	17.77	9.98	0.00461	0.02512	0.01411	PASS
Extreme (0°C)		4.61	10.67	14.57	0.00651	0.01508	0.02060	PASS
Extreme (-10°C)		10.63	13.02	8.16	0.01502	0.01841	0.01153	PASS
Extreme (-20°C)		15.71	17.82	5.53	0.02220	0.02519	0.00781	PASS
Extreme (-30°C)		17.54	12.49	4.55	0.02479	0.01766	0.00642	PASS
25°C		LV	12.08	4.99	2.63	0.01707	0.00705	0.00371
	HV	16.05	4.17	13.74	0.02269	0.00589	0.01942	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°C)	Normal	17.55	17.68	10.61	0.02481	0.02498	0.01500	PASS
Extreme (50°C)		3.57	17.34	15.01	0.00504	0.02450	0.02122	PASS
Extreme (40°C)		5.07	15.46	2.15	0.00717	0.02185	0.00304	PASS



Extreme (30°C)		3.67	13.38	15.83	0.00519	0.01891	0.02238	PASS
Extreme (20°C)		17.68	12.81	15.94	0.02499	0.01810	0.02253	PASS
Extreme (10°C)		12.76	12.11	5.25	0.01803	0.01711	0.00743	PASS
Extreme (0°C)		11.82	3.25	15.47	0.01671	0.00459	0.02186	PASS
Extreme (-10°C)		11.71	3.98	16.17	0.01655	0.00562	0.02285	PASS
Extreme (-20°C)		12.76	17.81	11.03	0.01804	0.02517	0.01559	PASS
Extreme (-30°C)		10.81	4.81	5.06	0.01528	0.00680	0.00715	PASS
25°C	LV	3.70	6.69	7.18	0.00522	0.00946	0.01015	PASS
	HV	8.35	3.24	13.65	0.01181	0.00458	0.01929	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°C)	Normal	3.00	6.92	12.21	0.00424	0.00979	0.01726	
Extreme (50°C)		11.98	5.07	14.16	0.01693	0.00717	0.02002	PASS
Extreme (40°C)		14.36	14.51	4.31	0.02029	0.02051	0.00609	PASS
Extreme (30°C)		7.43	15.69	8.90	0.01051	0.02217	0.01258	PASS
Extreme (20°C)		13.04	16.46	2.43	0.01843	0.02327	0.00344	PASS
Extreme (10°C)		14.18	14.49	7.88	0.02005	0.02048	0.01114	PASS
Extreme (0°C)		6.89	14.92	15.47	0.00974	0.02108	0.02187	PASS
Extreme (-10°C)		17.25	11.17	6.95	0.02438	0.01579	0.00982	PASS
Extreme (-20°C)		15.64	8.49	3.28	0.02211	0.01199	0.00463	PASS
Extreme (-30°C)		6.70	12.81	4.17	0.00947	0.01811	0.00589	PASS
25°C		LV	7.74	3.33	12.37	0.01094	0.00470	0.01749
	HV	13.95	14.43	13.79	0.01971	0.02040	0.01950	PASS

LTE Band 41								
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°C)	Normal	2.00	8.00	16.00	0.00077	0.00309	0.00617	
Extreme (50°C)		16.00	9.00	12.00	0.00617	0.00347	0.00463	PASS
Extreme (40°C)		12.00	3.00	9.00	0.00463	0.00116	0.00347	PASS
Extreme (30°C)		13.00	5.00	4.00	0.00501	0.00193	0.00154	PASS
Extreme (20°C)		11.00	1.00	3.00	0.00424	0.00039	0.00116	PASS
Extreme (10°C)		13.00	11.00	11.00	0.00501	0.00424	0.00424	PASS
Extreme (0°C)		3.00	10.00	3.00	0.00116	0.00386	0.00116	PASS
Extreme (-10°C)		16.00	5.00	9.00	0.00617	0.00193	0.00347	PASS
Extreme (-20°C)		10.00	13.00	14.00	0.00386	0.00501	0.00540	PASS
Extreme (-30°C)		12.00	12.00	17.00	0.00463	0.00463	0.00656	PASS



25°C	LV	17.00	4.00	9.00	0.00656	0.00154	0.00347	PASS
	HV	9.00	17.00	11.00	0.00347	0.00656	0.00424	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°C)	Normal	16.00	4.00	17.00	0.00617	0.00154	0.00656	PASS
Extreme (50°C)		17.00	11.00	13.00	0.00656	0.00424	0.00501	PASS
Extreme (40°C)		14.00	1.00	9.00	0.00540	0.00039	0.00347	PASS
Extreme (30°C)		11.00	16.00	5.00	0.00424	0.00617	0.00193	PASS
Extreme (20°C)		11.00	7.00	17.00	0.00424	0.00270	0.00656	PASS
Extreme (10°C)		1.00	1.00	7.00	0.00039	0.00039	0.00270	PASS
Extreme (0°C)		15.00	10.00	16.00	0.00578	0.00386	0.00617	PASS
Extreme (-10°C)		14.00	4.00	10.00	0.00540	0.00154	0.00386	PASS
Extreme (-20°C)		4.00	14.00	14.00	0.00154	0.00540	0.00540	PASS
Extreme (-30°C)		2.00	7.00	9.00	0.00077	0.00270	0.00347	PASS
25°C	LV	17.00	1.00	12.00	0.00656	0.00039	0.00463	PASS
	HV	11.00	6.00	15.00	0.00424	0.00231	0.00578	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°C)	Normal	17.00	5.00	2.00	0.00656	0.00193	0.00077	PASS
Extreme (50°C)		17.00	3.00	5.00	0.00656	0.00116	0.00193	PASS
Extreme (40°C)		6.00	13.00	3.00	0.00231	0.00501	0.00116	PASS
Extreme (30°C)		11.00	8.00	6.00	0.00424	0.00309	0.00231	PASS
Extreme (20°C)		9.00	14.00	12.00	0.00347	0.00540	0.00463	PASS
Extreme (10°C)		2.00	5.00	2.00	0.00077	0.00193	0.00077	PASS
Extreme (0°C)		3.00	4.00	1.00	0.00116	0.00154	0.00039	PASS
Extreme (-10°C)		10.00	9.00	3.00	0.00386	0.00347	0.00116	PASS
Extreme (-20°C)		13.00	6.00	6.00	0.00501	0.00231	0.00231	PASS
Extreme (-30°C)		5.00	15.00	4.00	0.00193	0.00578	0.00154	PASS
25°C	LV	12.00	9.00	2.00	0.00463	0.00347	0.00077	PASS
	HV	4.00	17.00	4.00	0.00154	0.00656	0.00154	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°C)	Normal	2.00	4.00	1.00	0.00077	0.00154	0.00039	PASS
Extreme (50°C)		13.00	7.00	6.00	0.00501	0.00270	0.00231	PASS
Extreme (40°C)		6.00	12.00	11.00	0.00231	0.00463	0.00424	PASS



Extreme (30°C)		6.00	16.00	4.00	0.00231	0.00617	0.00154	PASS
Extreme (20°C)		4.00	17.00	15.00	0.00154	0.00656	0.00578	PASS
Extreme (10°C)		11.00	5.00	5.00	0.00424	0.00193	0.00193	PASS
Extreme (0°C)		10.00	17.00	11.00	0.00386	0.00656	0.00424	PASS
Extreme (-10°C)		6.00	5.00	4.00	0.00231	0.00193	0.00154	PASS
Extreme (-20°C)		2.00	13.00	9.00	0.00077	0.00501	0.00347	PASS
Extreme (-30°C)		10.00	17.00	14.00	0.00386	0.00656	0.00540	PASS
25°C	LV	15.00	10.00	16.00	0.00578	0.00386	0.00617	PASS
	HV	6.00	14.00	4.00	0.00231	0.00540	0.00154	PASS

LTE Band 66								
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°C)	Normal	11.00	3.00	3.00	0.00630	0.00172	0.00172	PASS
Extreme (50°C)		2.00	2.00	5.00	0.00115	0.00115	0.00287	PASS
Extreme (40°C)		17.00	15.00	17.00	0.00974	0.00860	0.00974	PASS
Extreme (30°C)		5.00	10.00	14.00	0.00287	0.00573	0.00802	PASS
Extreme (20°C)		6.00	1.00	14.00	0.00344	0.00057	0.00802	PASS
Extreme (10°C)		10.00	13.00	15.00	0.00573	0.00745	0.00860	PASS
Extreme (0°C)		14.00	2.00	14.00	0.00802	0.00115	0.00802	PASS
Extreme (-10°C)		12.00	1.00	8.00	0.00688	0.00057	0.00458	PASS
Extreme (-20°C)		7.00	3.00	17.00	0.00401	0.00172	0.00974	PASS
Extreme (-30°C)		15.00	12.00	16.00	0.00860	0.00688	0.00917	PASS
25°C	LV	17.00	8.00	16.00	0.00974	0.00458	0.00917	PASS
	HV	16.00	5.00	12.00	0.00917	0.00287	0.00688	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°C)	Normal	16.00	2.00	1.00	0.00917	0.00115	0.00057	PASS
Extreme (50°C)		10.00	13.00	11.00	0.00573	0.00745	0.00630	PASS
Extreme (40°C)		10.00	14.00	6.00	0.00573	0.00802	0.00344	PASS
Extreme (30°C)		1.00	4.00	4.00	0.00057	0.00229	0.00229	PASS
Extreme (20°C)		16.00	9.00	11.00	0.00917	0.00516	0.00630	PASS
Extreme (10°C)		7.00	5.00	8.00	0.00401	0.00287	0.00458	PASS
Extreme (0°C)		17.00	11.00	14.00	0.00974	0.00630	0.00802	PASS
Extreme (-10°C)		16.00	16.00	10.00	0.00917	0.00917	0.00573	PASS
Extreme (-20°C)		10.00	8.00	17.00	0.00573	0.00458	0.00974	PASS
Extreme (-30°C)		1.00	17.00	15.00	0.00057	0.00974	0.00860	PASS



25°C	LV	11.00	12.00	15.00	0.00630	0.00688	0.00860	PASS
	HV	14.00	2.00	5.00	0.00802	0.00115	0.00287	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°C)	Normal	11.00	4.00	4.00	0.00630	0.00229	0.00229	PASS
Extreme (50°C)		2.00	14.00	9.00	0.00115	0.00802	0.00516	PASS
Extreme (40°C)		8.00	17.00	8.00	0.00458	0.00974	0.00458	PASS
Extreme (30°C)		17.00	16.00	12.00	0.00974	0.00917	0.00688	PASS
Extreme (20°C)		16.00	15.00	6.00	0.00917	0.00860	0.00344	PASS
Extreme (10°C)		12.00	17.00	16.00	0.00688	0.00974	0.00917	PASS
Extreme (0°C)		16.00	8.00	14.00	0.00917	0.00458	0.00802	PASS
Extreme (-10°C)		2.00	6.00	16.00	0.00115	0.00344	0.00917	PASS
Extreme (-20°C)		14.00	8.00	2.00	0.00802	0.00458	0.00115	PASS
Extreme (-30°C)		12.00	6.00	14.00	0.00688	0.00344	0.00802	PASS
25°C	LV	11.00	2.00	7.00	0.00630	0.00115	0.00401	PASS
	HV	11.00	10.00	1.00	0.00630	0.00573	0.00057	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°C)	Normal	11.00	16.00	11.00	0.00630	0.00917	0.00630	PASS
Extreme (50°C)		4.00	10.00	7.00	0.00229	0.00573	0.00401	PASS
Extreme (40°C)		3.00	8.00	3.00	0.00172	0.00458	0.00172	PASS
Extreme (30°C)		14.00	10.00	4.00	0.00802	0.00573	0.00229	PASS
Extreme (20°C)		11.00	17.00	14.00	0.00630	0.00974	0.00802	PASS
Extreme (10°C)		1.00	14.00	1.00	0.00057	0.00802	0.00057	PASS
Extreme (0°C)		9.00	3.00	6.00	0.00516	0.00172	0.00344	PASS
Extreme (-10°C)		13.00	10.00	11.00	0.00745	0.00573	0.00630	PASS
Extreme (-20°C)		8.00	17.00	3.00	0.00458	0.00974	0.00172	PASS
Extreme (-30°C)		12.00	13.00	4.00	0.00688	0.00745	0.00229	PASS
25°C	LV	7.00	9.00	10.00	0.00401	0.00516	0.00573	PASS
	HV	8.00	16.00	3.00	0.00458	0.00917	0.00172	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°C)	Normal	7.00	2.00	14.00	0.00401	0.00115	0.00802	PASS
Extreme (50°C)		11.00	8.00	7.00	0.00630	0.00458	0.00401	PASS
Extreme (40°C)		14.00	13.00	7.00	0.00802	0.00745	0.00401	PASS



Extreme (30°C)		9.00	14.00	3.00	0.00516	0.00802	0.00172	PASS
Extreme (20°C)		6.00	15.00	1.00	0.00344	0.00860	0.00057	PASS
Extreme (10°C)		12.00	1.00	3.00	0.00688	0.00057	0.00172	PASS
Extreme (0°C)		10.00	17.00	5.00	0.00573	0.00974	0.00287	PASS
Extreme (-10°C)		16.00	5.00	15.00	0.00917	0.00287	0.00860	PASS
Extreme (-20°C)		17.00	13.00	2.00	0.00974	0.00745	0.00115	PASS
Extreme (-30°C)		7.00	10.00	7.00	0.00401	0.00573	0.00401	PASS
25°C	LV	8.00	13.00	14.00	0.00458	0.00745	0.00802	PASS
	HV	13.00	5.00	2.00	0.00745	0.00287	0.00115	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°C)	Normal	4.00	8.00	16.00	0.00229	0.00458	0.00917	
Extreme (50°C)		17.00	12.00	13.00	0.00974	0.00688	0.00745	PASS
Extreme (40°C)		16.00	15.00	3.00	0.00917	0.00860	0.00172	PASS
Extreme (30°C)		2.00	14.00	13.00	0.00115	0.00802	0.00745	PASS
Extreme (20°C)		11.00	12.00	3.00	0.00630	0.00688	0.00172	PASS
Extreme (10°C)		4.00	5.00	14.00	0.00229	0.00287	0.00802	PASS
Extreme (0°C)		8.00	13.00	3.00	0.00458	0.00745	0.00172	PASS
Extreme (-10°C)		4.00	5.00	13.00	0.00229	0.00287	0.00745	PASS
Extreme (-20°C)		15.00	7.00	15.00	0.00860	0.00401	0.00860	PASS
Extreme (-30°C)		3.00	5.00	13.00	0.00172	0.00287	0.00745	PASS
25°C		LV	7.00	16.00	8.00	0.00401	0.00917	0.00458
	HV	1.00	6.00	1.00	0.00057	0.00344	0.00057	PASS

LTE Band 71								
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°C)	Normal	12.00	1.00	7.00	0.01763	0.00147	0.01029	
Extreme (50°C)		4.00	8.00	10.00	0.00588	0.01176	0.01470	PASS
Extreme (40°C)		17.00	11.00	16.00	0.02498	0.01616	0.02351	PASS
Extreme (30°C)		7.00	1.00	17.00	0.01029	0.00147	0.02498	PASS
Extreme (20°C)		4.00	6.00	2.00	0.00588	0.00882	0.00294	PASS
Extreme (10°C)		10.00	5.00	10.00	0.01470	0.00735	0.01470	PASS
Extreme (0°C)		17.00	13.00	15.00	0.02498	0.01910	0.02204	PASS
Extreme (-10°C)		5.00	9.00	7.00	0.00735	0.01323	0.01029	PASS
Extreme (-20°C)		12.00	16.00	5.00	0.01763	0.02351	0.00735	PASS
Extreme (-30°C)		7.00	7.00	11.00	0.01029	0.01029	0.01616	PASS



25°C	LV	12.00	4.00	2.00	0.01763	0.00588	0.00294	PASS
	HV	3.00	7.00	13.00	0.00441	0.01029	0.01910	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°C)	Normal	17.00	2.00	3.00	0.02498	0.00294	0.00441	PASS
Extreme (50°C)		14.00	1.00	13.00	0.02057	0.00147	0.01910	PASS
Extreme (40°C)		11.00	3.00	3.00	0.01616	0.00441	0.00441	PASS
Extreme (30°C)		17.00	13.00	16.00	0.02498	0.01910	0.02351	PASS
Extreme (20°C)		11.00	13.00	1.00	0.01616	0.01910	0.00147	PASS
Extreme (10°C)		3.00	14.00	3.00	0.00441	0.02057	0.00441	PASS
Extreme (0°C)		12.00	6.00	17.00	0.01763	0.00882	0.02498	PASS
Extreme (-10°C)		15.00	7.00	10.00	0.02204	0.01029	0.01470	PASS
Extreme (-20°C)		8.00	15.00	9.00	0.01176	0.02204	0.01323	PASS
Extreme (-30°C)		7.00	16.00	4.00	0.01029	0.02351	0.00588	PASS
25°C	LV	7.00	13.00	10.00	0.01029	0.01910	0.01470	PASS
	HV	5.00	7.00	10.00	0.00735	0.01029	0.01470	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°C)	Normal	8.00	17.00	1.00	0.01176	0.02498	0.00147	PASS
Extreme (50°C)		13.00	8.00	2.00	0.01910	0.01176	0.00294	PASS
Extreme (40°C)		14.00	13.00	8.00	0.02057	0.01910	0.01176	PASS
Extreme (30°C)		13.00	8.00	13.00	0.01910	0.01176	0.01910	PASS
Extreme (20°C)		16.00	5.00	11.00	0.02351	0.00735	0.01616	PASS
Extreme (10°C)		7.00	14.00	13.00	0.01029	0.02057	0.01910	PASS
Extreme (0°C)		9.00	4.00	4.00	0.01323	0.00588	0.00588	PASS
Extreme (-10°C)		3.00	14.00	7.00	0.00441	0.02057	0.01029	PASS
Extreme (-20°C)		6.00	11.00	1.00	0.00882	0.01616	0.00147	PASS
Extreme (-30°C)		11.00	13.00	7.00	0.01616	0.01910	0.01029	PASS
25°C	LV	14.00	7.00	5.00	0.02057	0.01029	0.00735	PASS
	HV	5.00	2.00	15.00	0.00735	0.00294	0.02204	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°C)	Normal	3.00	10.00	1.00	0.00441	0.01470	0.00147	PASS
Extreme (50°C)		8.00	17.00	11.00	0.01176	0.02498	0.01616	PASS
Extreme (40°C)		14.00	11.00	9.00	0.02057	0.01616	0.01323	PASS



Extreme (30°C)		15.00	16.00	7.00	0.02204	0.02351	0.01029	PASS
Extreme (20°C)		7.00	9.00	2.00	0.01029	0.01323	0.00294	PASS
Extreme (10°C)		11.00	10.00	11.00	0.01616	0.01470	0.01616	PASS
Extreme (0°C)		12.00	12.00	14.00	0.01763	0.01763	0.02057	PASS
Extreme (-10°C)		5.00	13.00	2.00	0.00735	0.01910	0.00294	PASS
Extreme (-20°C)		1.00	5.00	5.00	0.00147	0.00735	0.00735	PASS
Extreme (-30°C)		3.00	6.00	13.00	0.00441	0.00882	0.01910	PASS
25°C	LV	17.00	4.00	8.00	0.02498	0.00588	0.01176	PASS
	HV	6.00	13.00	7.00	0.00882	0.01910	0.01029	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)

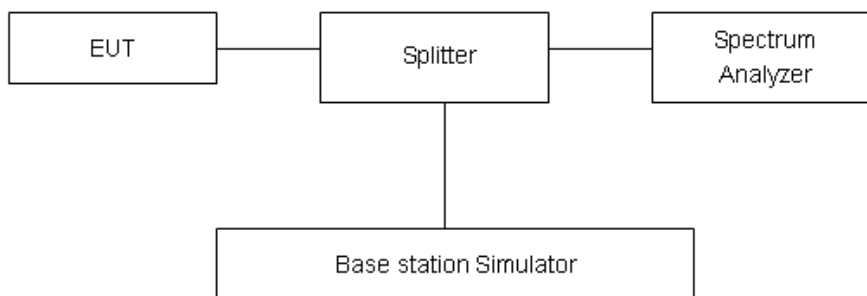
RBW is set to 100 kHz (30MHz~1000 MHz)

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 (g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least



30 kHz may be employed.

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(a)/(h)/(g) Limit	-13 dBm
Part 27.53(m) Limit	-25 dBm

Measurement Uncertainty

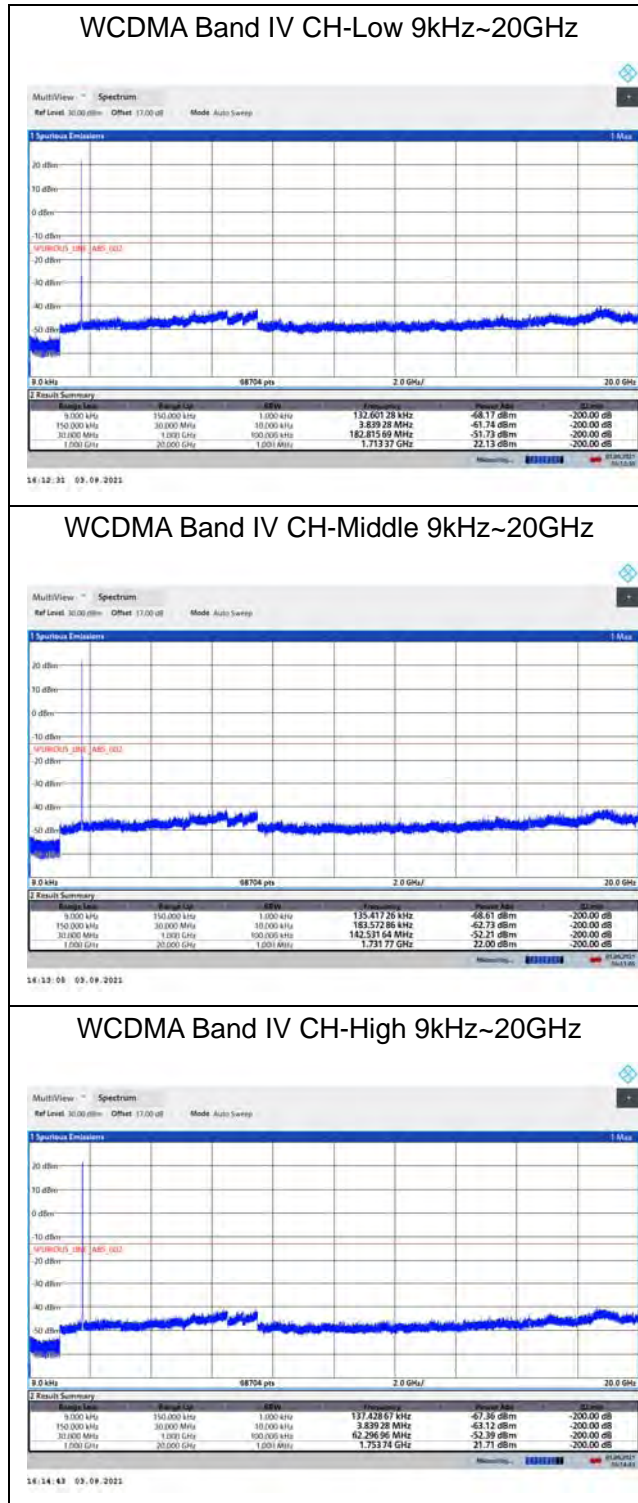
The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

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

Test Result

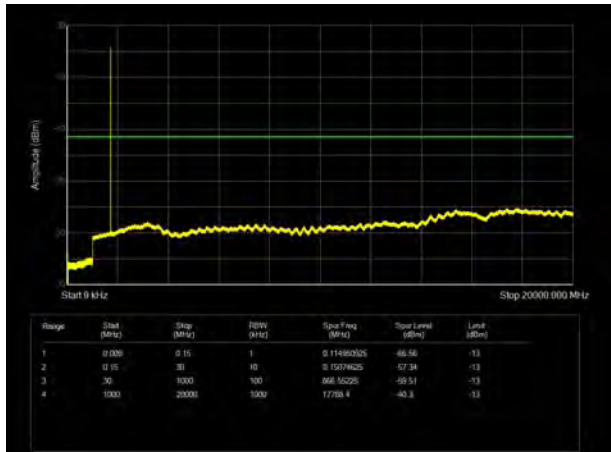
Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions more than 20 dB below the limit are not reported.

The signal beyond the limit is carrier.

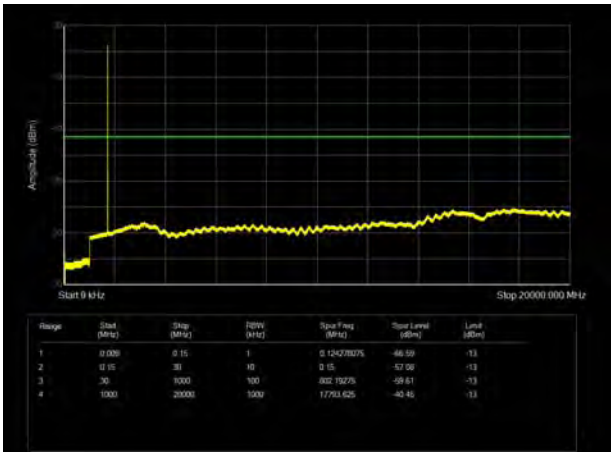




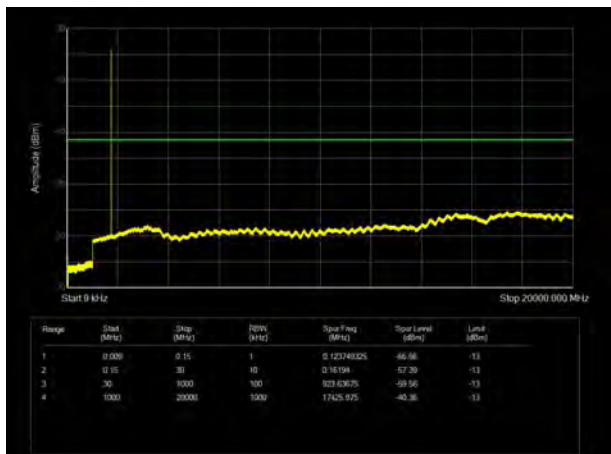
LTE Band 4 1.4MHz CH-Low 9kHz~20GHz



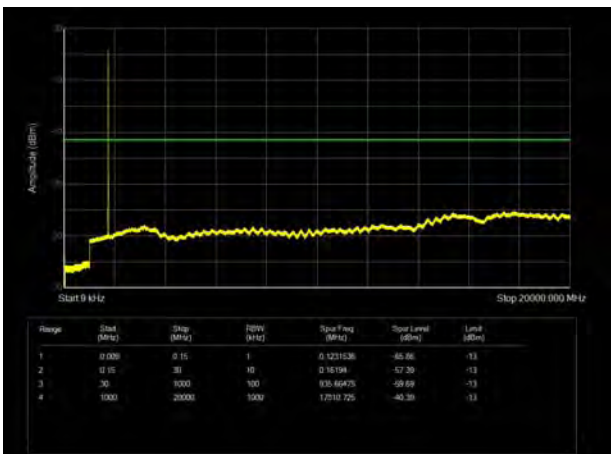
LTE Band 4 3MHz CH- Low 9kHz~20GHz



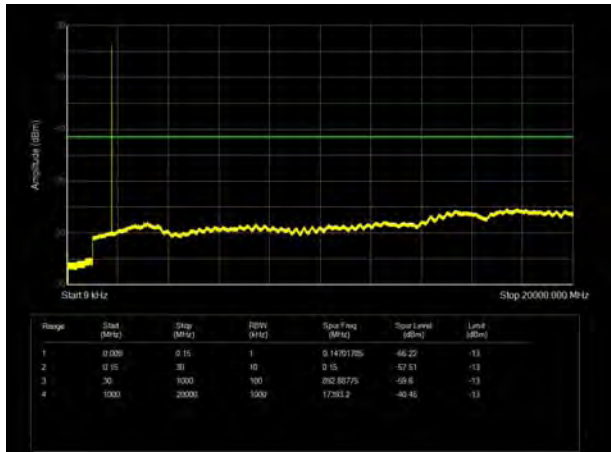
LTE Band 4 1.4MHz CH- Middle 9kHz~20GHz



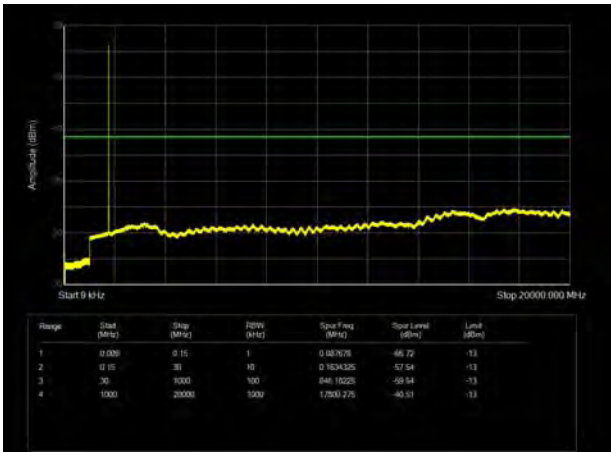
LTE Band 4 3MHz CH- Middle 9kHz~20GHz



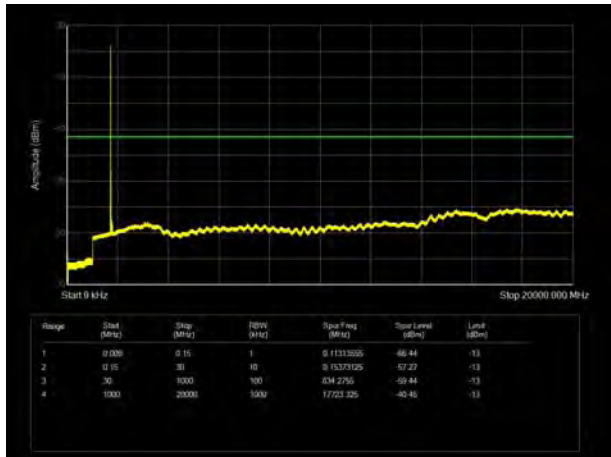
LTE Band 4 1.4MHz CH- High 9kHz~20GHz



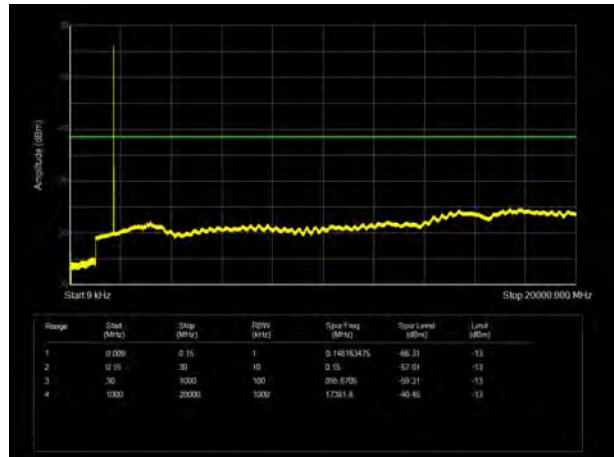
LTE Band 4 3MHz CH-High 9kHz~20GHz



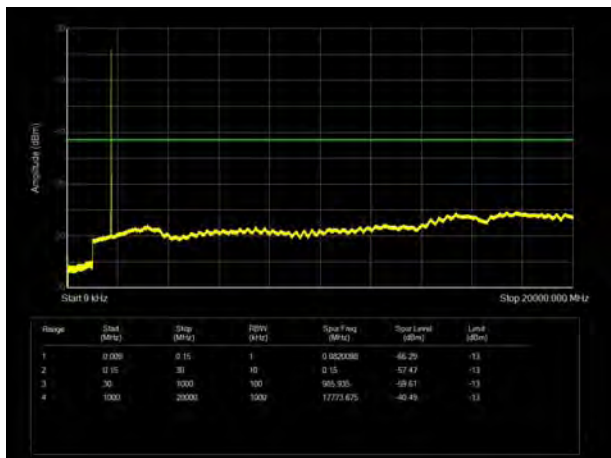
LTE Band 4 5MHz CH- Low 9kHz~20GHz



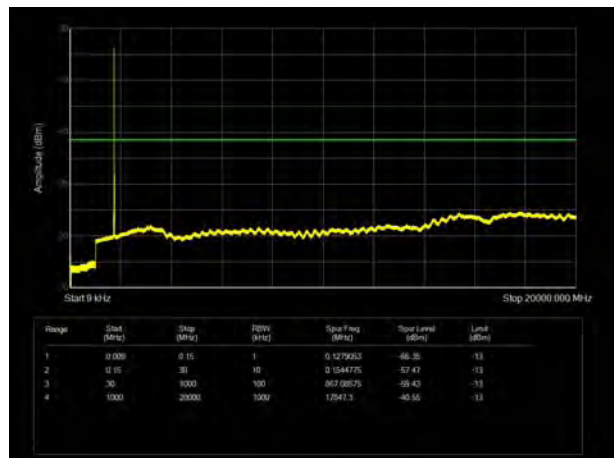
LTE Band 4 10MHz CH-Low 9kHz~20GHz



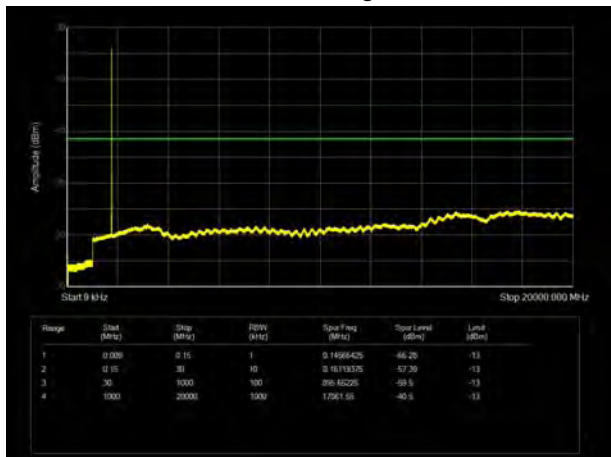
LTE Band 4 5MHz CH- Middle 9kHz~20GHz



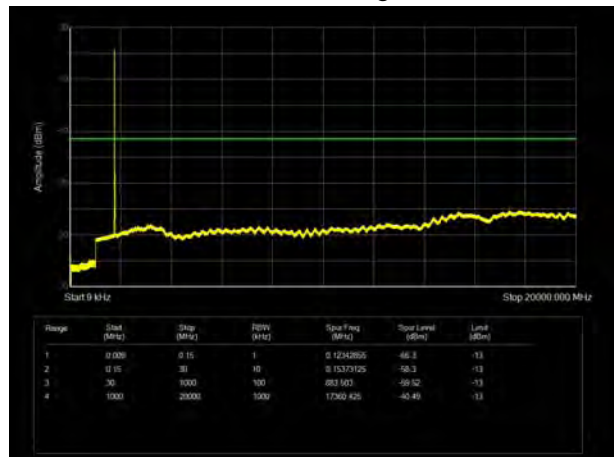
LTE Band 4 10MHz CH- Middle 9kHz~20GHz



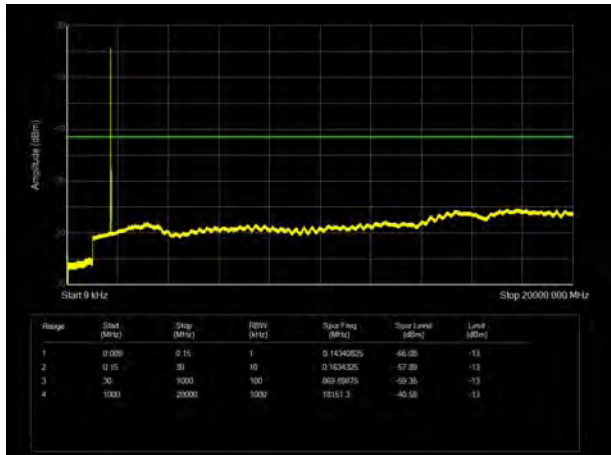
LTE Band 4 5MHz CH-High 9kHz~20GHz



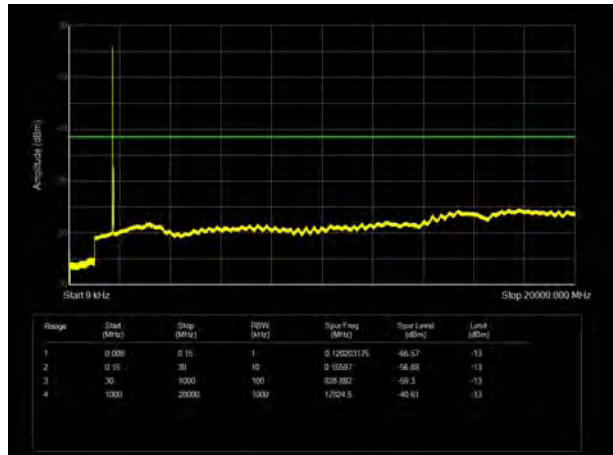
LTE Band 4 10MHz CH- High 9kHz~20GHz



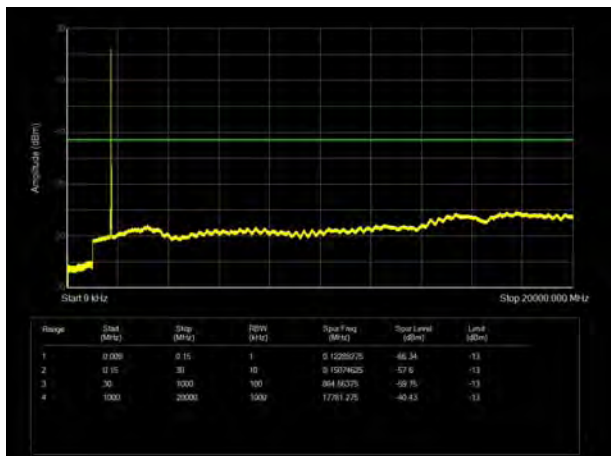
LTE Band 4 15MHz CH- Low 9kHz~20GHz



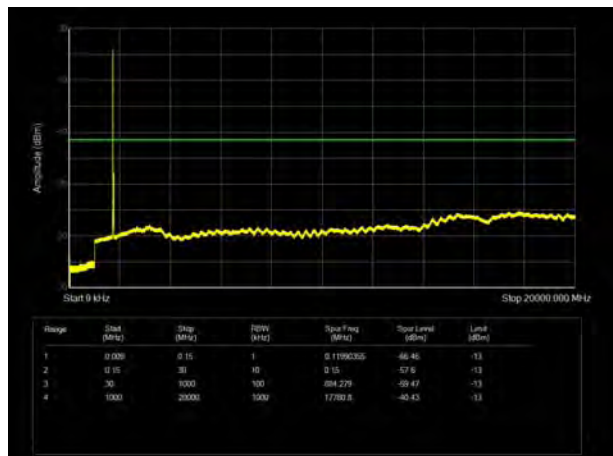
LTE Band 4 20MHz CH-Low 9kHz~20GHz



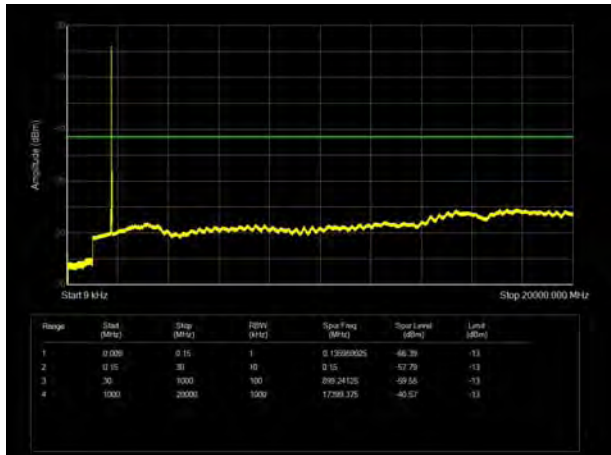
LTE Band 4 15MHz CH- Middle 9kHz~20GHz



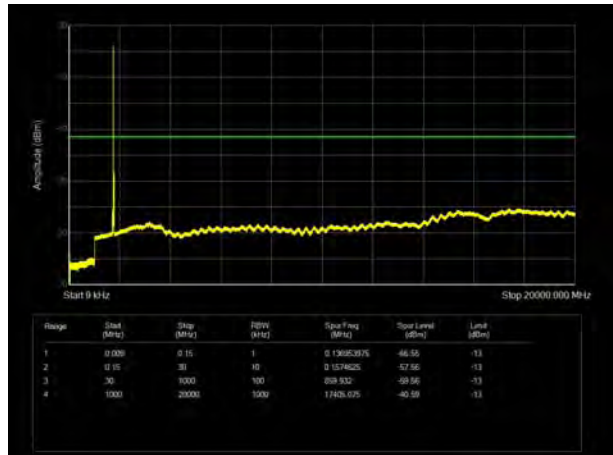
LTE Band 4 20MHz CH- Middle 9kHz~20GHz



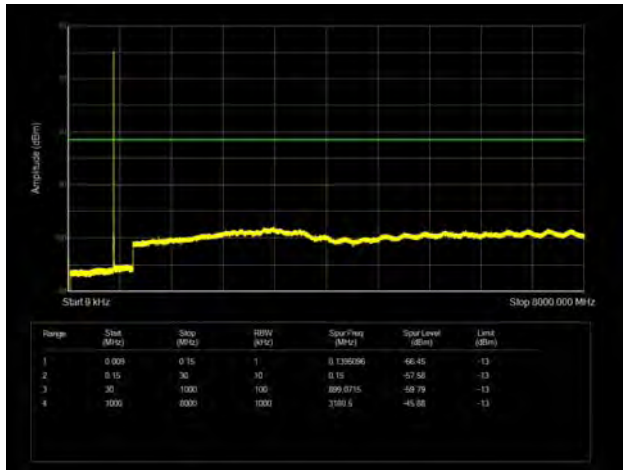
LTE Band 4 15MHz CH-High 9kHz~20GHz



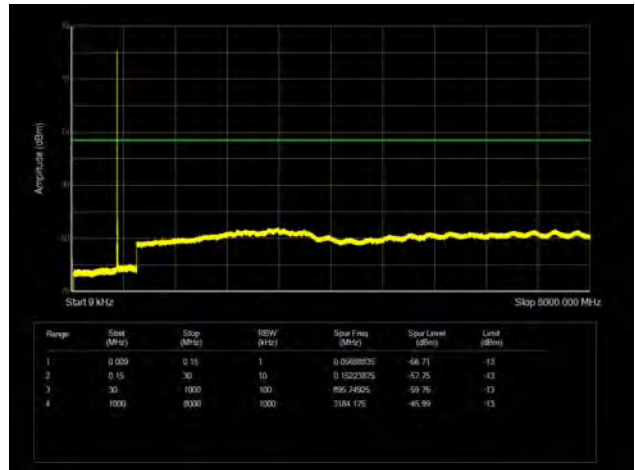
LTE Band 4 20MHz CH- High 9kHz~20GHz



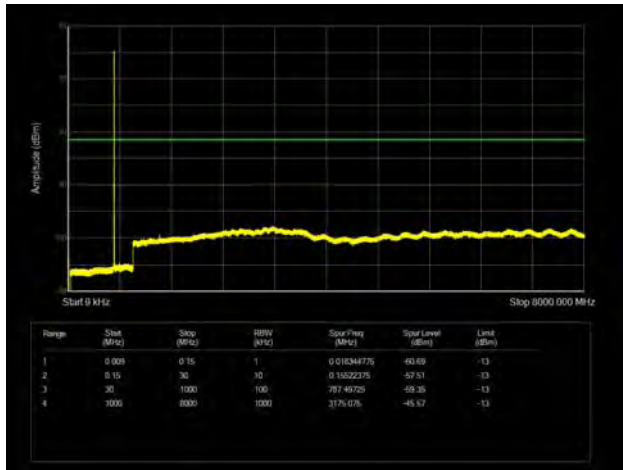
LTE Band 12 1.4MHz CH-Low 9kHz ~8GHz



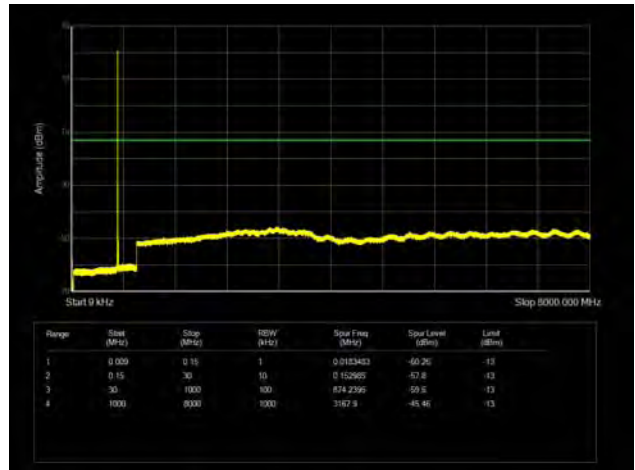
LTE Band 12 3MHz CH-Low 9kHz ~8GHz



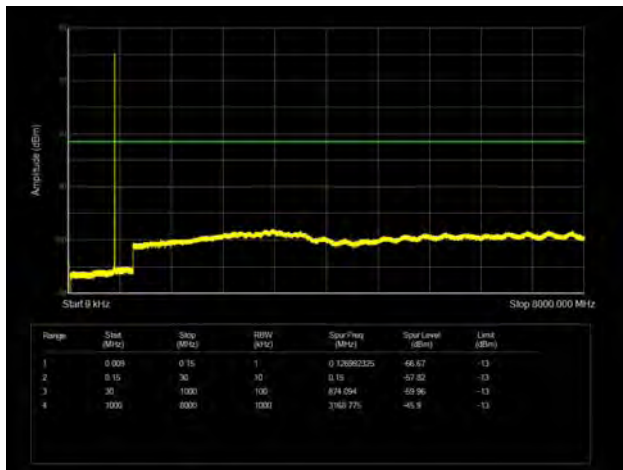
LTE Band 12 1.4MHz CH- Middle 9kHz ~8GHz



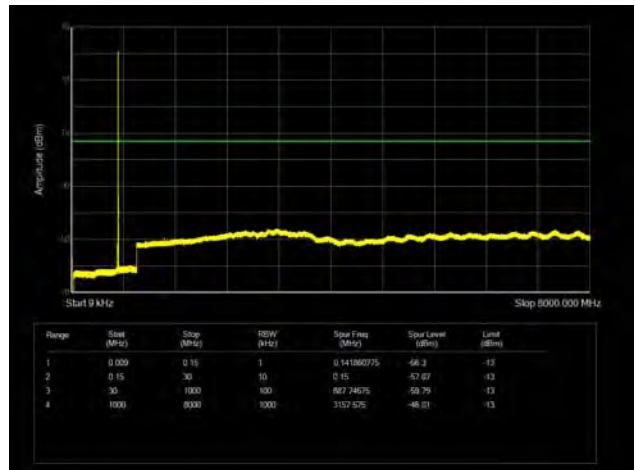
LTE Band 12 3MHz CH- Middle 9kHz ~8GHz



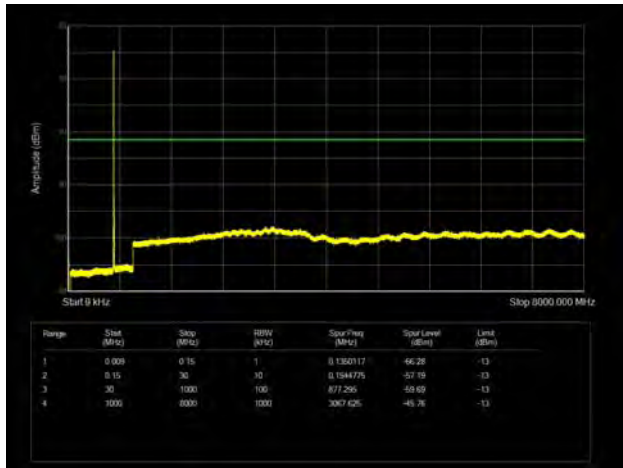
LTE Band 12 1.4MHz CH-High 9kHz ~8GHz



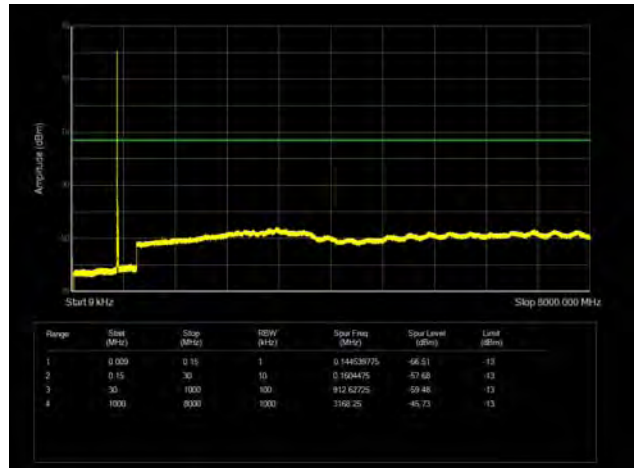
LTE Band 12 3MHz CH-High 9kHz ~8GHz



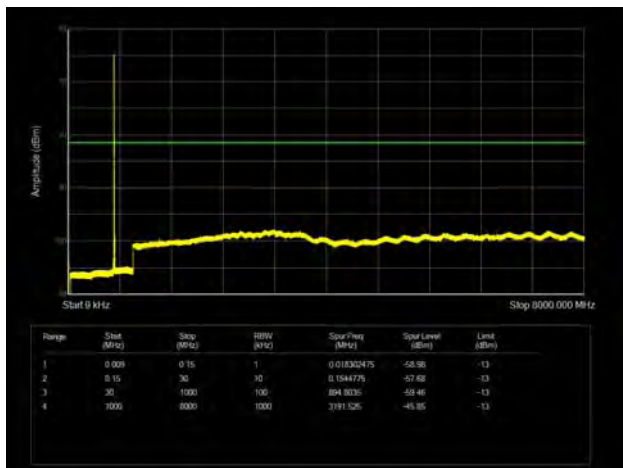
LTE Band 12 5MHz CH-Low 9kHz ~8GHz



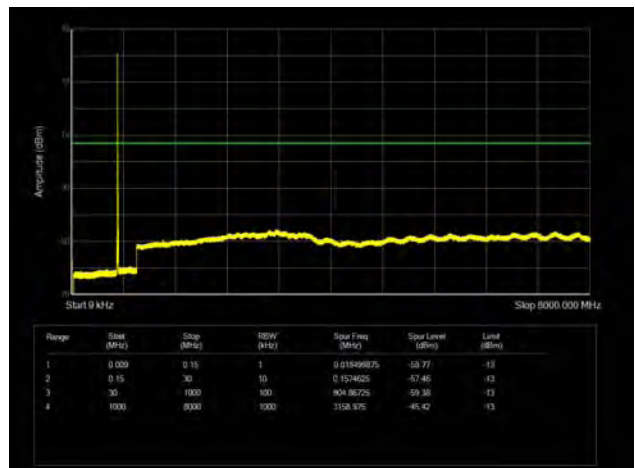
LTE Band 12 10MHz CH-Low 9kHz ~8GHz



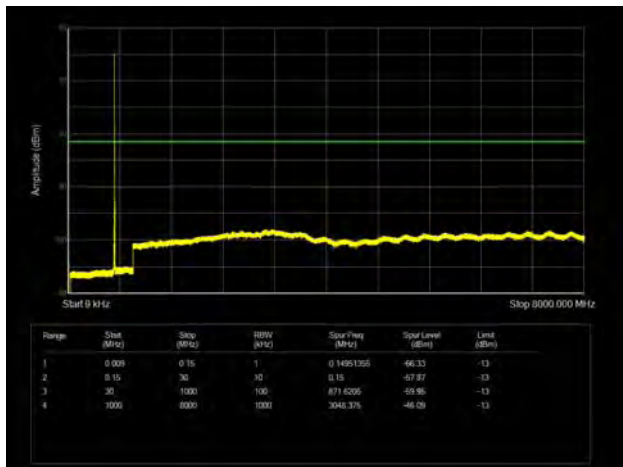
LTE Band 12 5MHz CH- Middle 9kHz ~8GHz



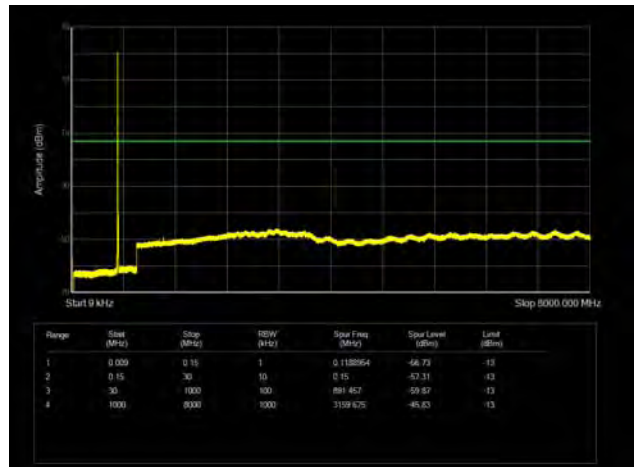
LTE Band 12 10MHz CH- Middle 9kHz ~8GHz



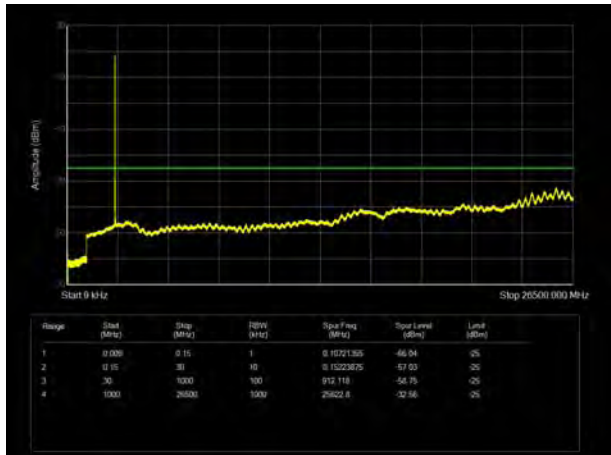
LTE Band 12 5MHz CH-High 9kHz ~8GHz



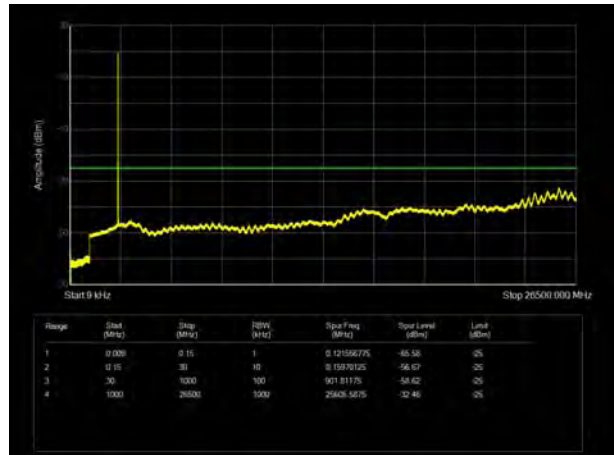
LTE Band 12 10MHz CH-High 9kHz ~8GHz



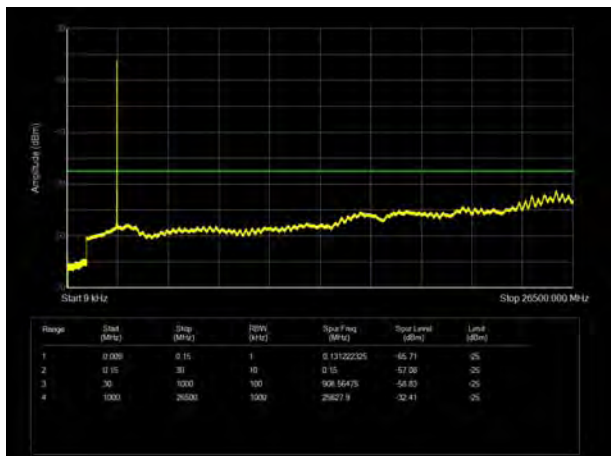
LTE Band 41 5MHz CH- Low 9kHz~26.5GHz



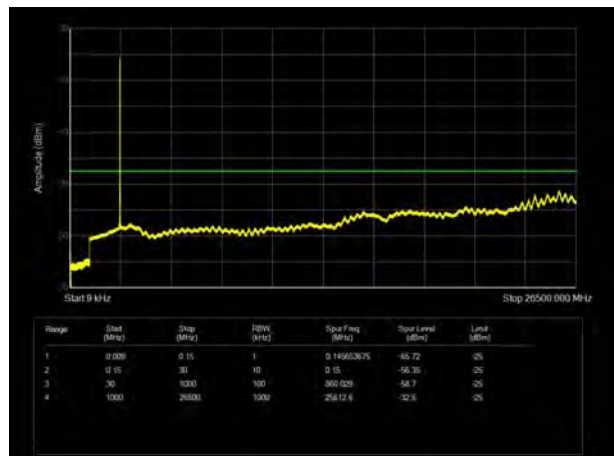
LTE Band 41 10MHz CH- Low 9kHz~26.5GHz



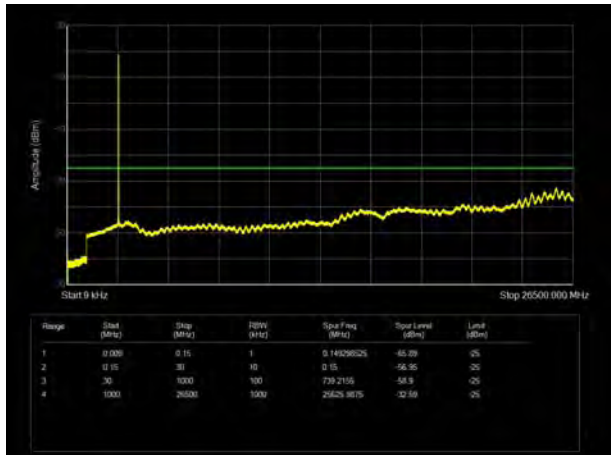
LTE Band 41 5MHz CH- Middle 9kHz~26.5GHz



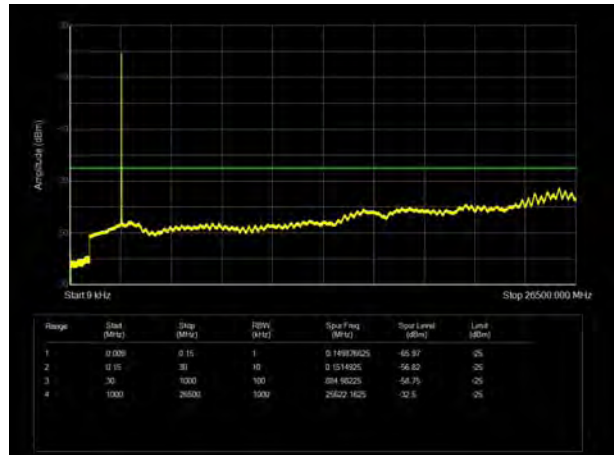
LTE Band 41 10MHz CH- Middle 9kHz~26.5GHz



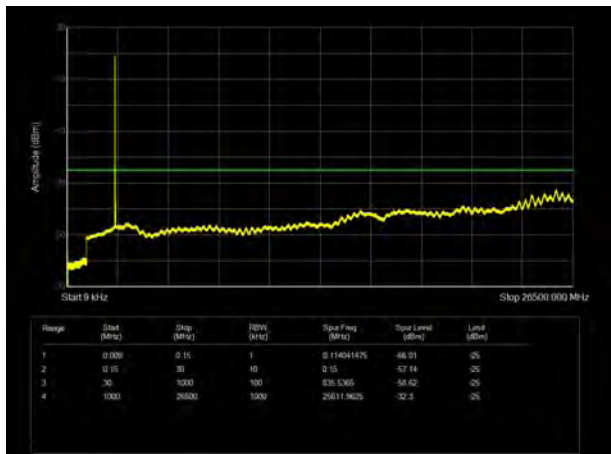
LTE Band 41 5MHz CH-High 9kHz~26.5GHz



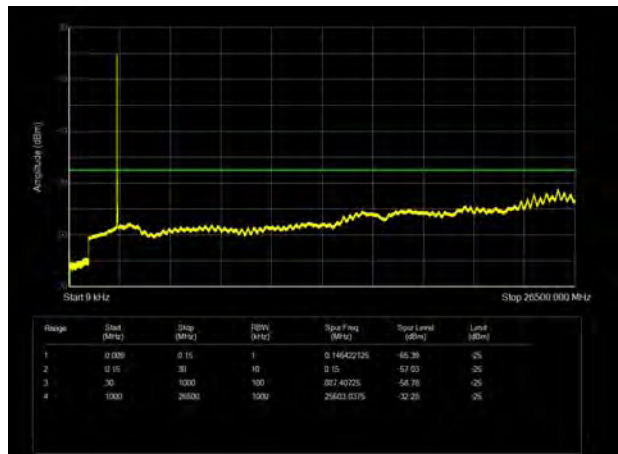
LTE Band 41 10MHz CH-High 9kHz~26.5GHz



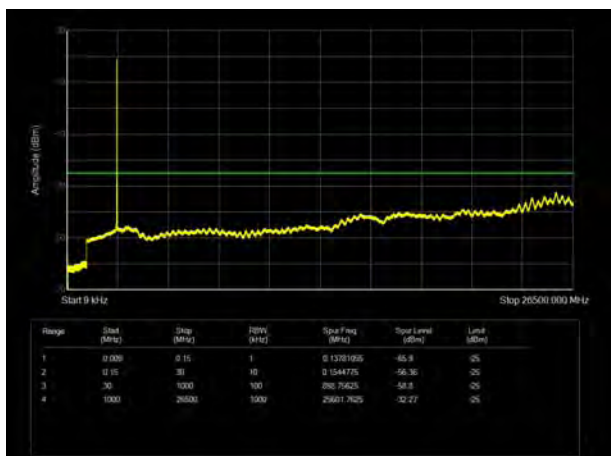
LTE Band 41 15MHz CH- Low 9kHz~26.5GHz



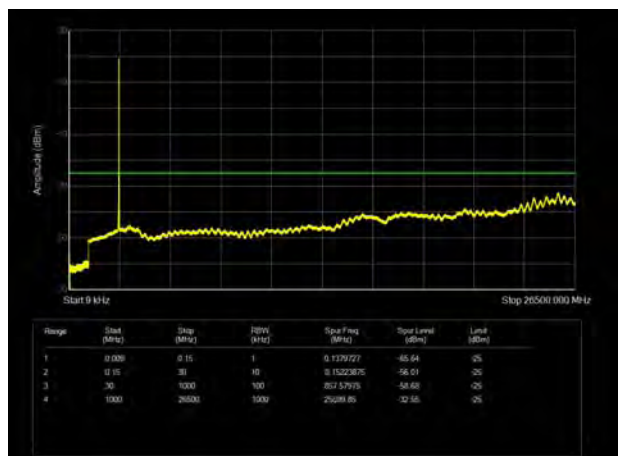
LTE Band 41 20MHz CH-Low 9kHz~26.5GHz



LTE Band 41 15MHz CH- Middle 9kHz~26.5GHz



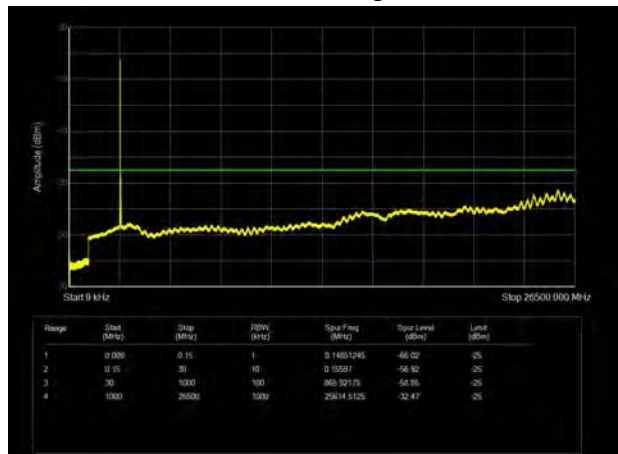
LTE Band 41 20MHz CH- Middle 9kHz~26.5GHz



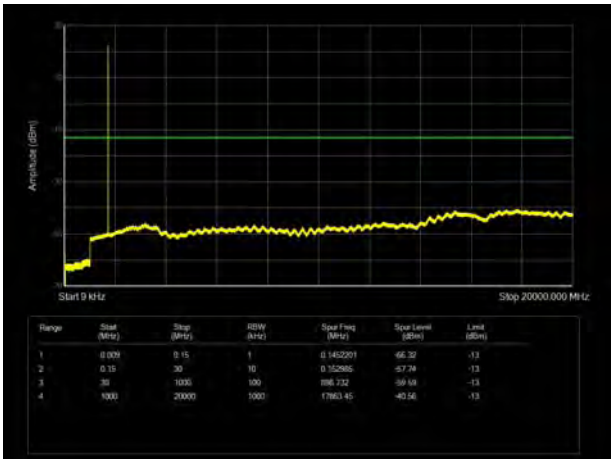
LTE Band 41 15MHz CH-High 9kHz~26.5GHz



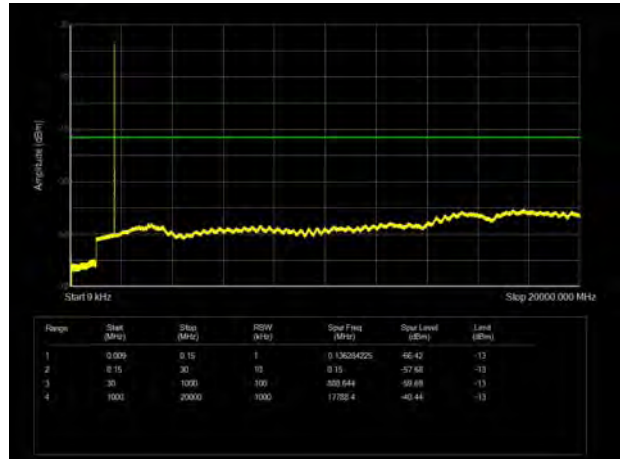
LTE Band 41 20MHz CH- High 9kHz~26.5GHz



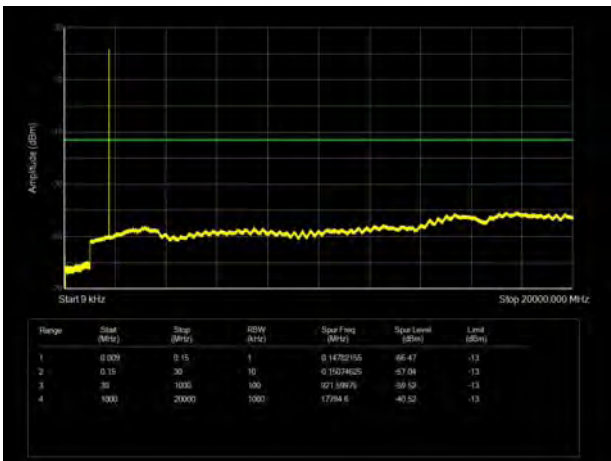
LTE Band 66 1.4MHz CH-Low 9kHz ~20GHz



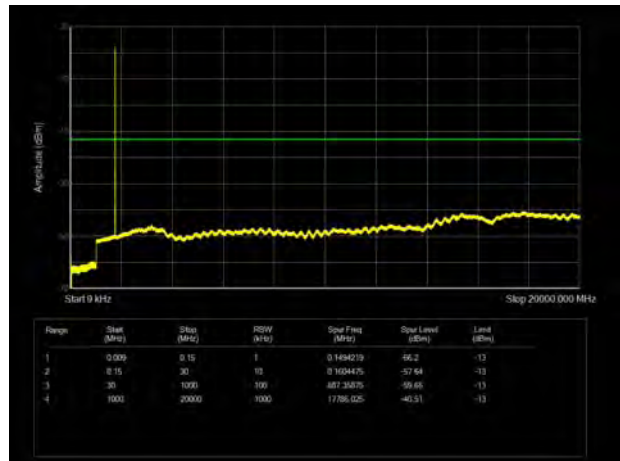
LTE Band 66 3MHz CH-Low 9kHz ~20GHz



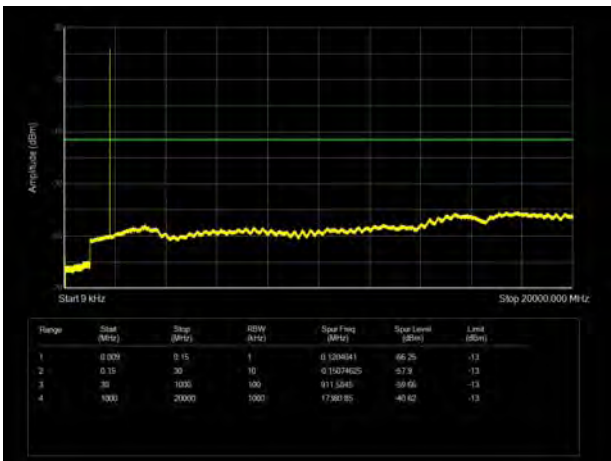
LTE Band 66 1.4MHz CH-Middle 9kHz ~20GHz



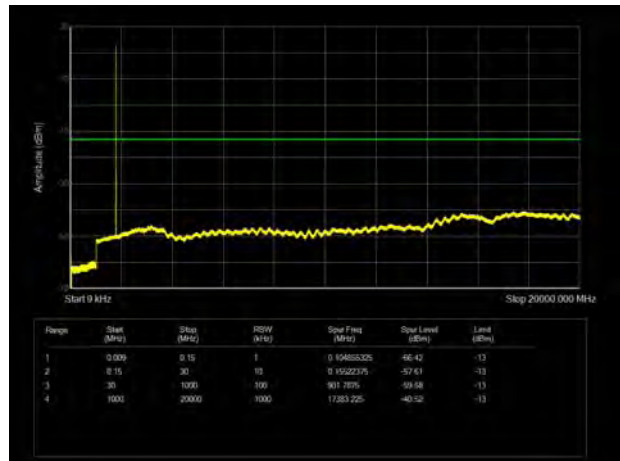
LTE Band 66 3MHz CH-Middle 9kHz ~20GHz



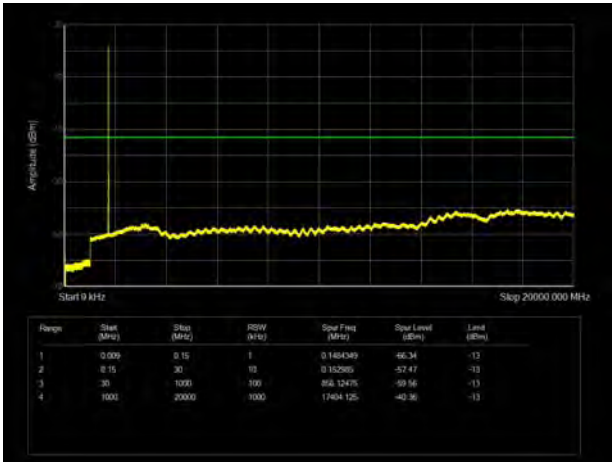
LTE Band 66 1.4MHz CH-High 9kHz ~20GHz



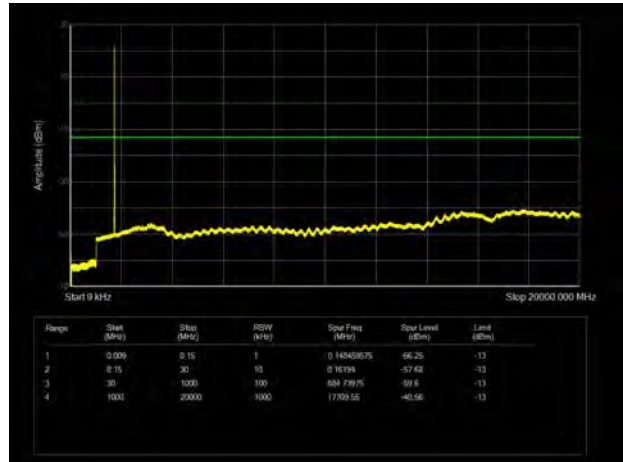
LTE Band 66 3MHz CH-High 9kHz ~20GHz



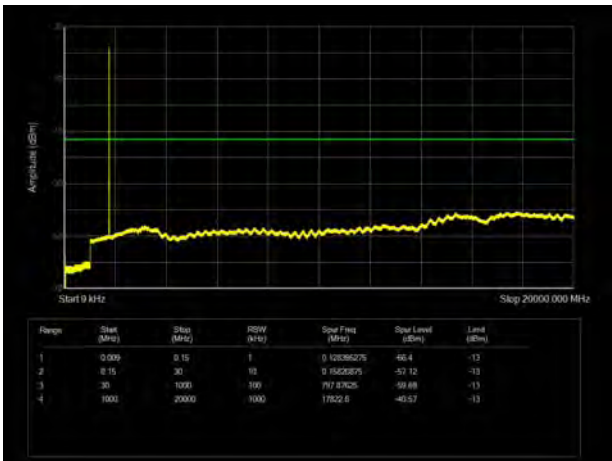
LTE Band 66 5MHz CH-Low 9kHz ~20GHz



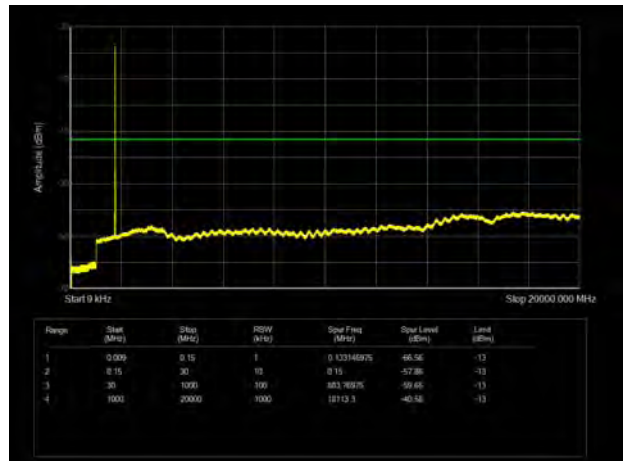
LTE Band 66 10MHz CH-Low 9kHz ~20GHz



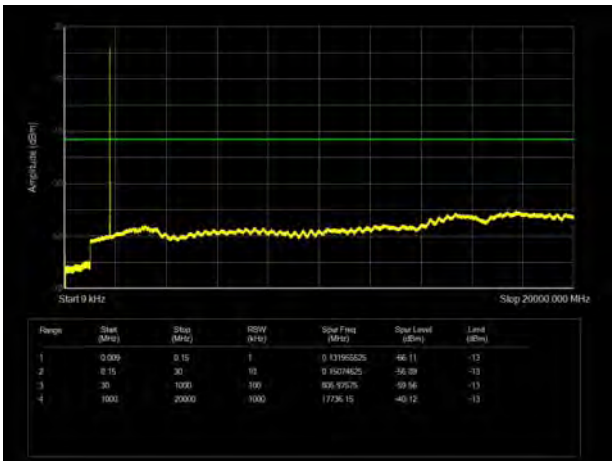
LTE Band 66 5MHz CH-Middle 9kHz ~20GHz



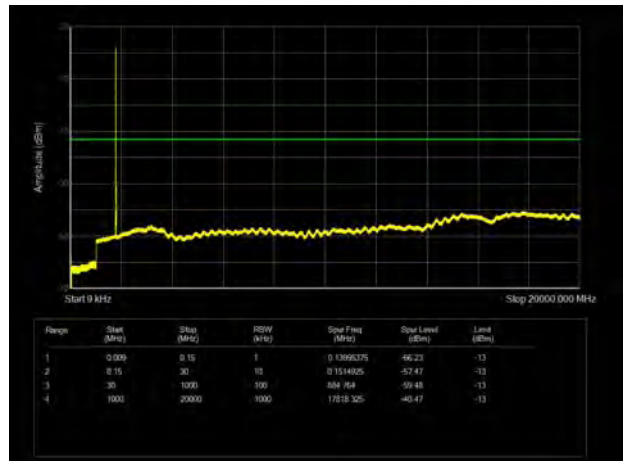
LTE Band 66 10MHz CH-Middle 9kHz ~20GHz



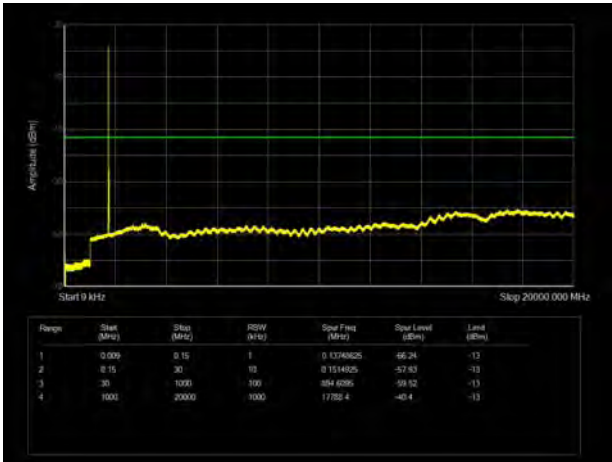
LTE Band 66 5MHz CH-High 9kHz ~20GHz



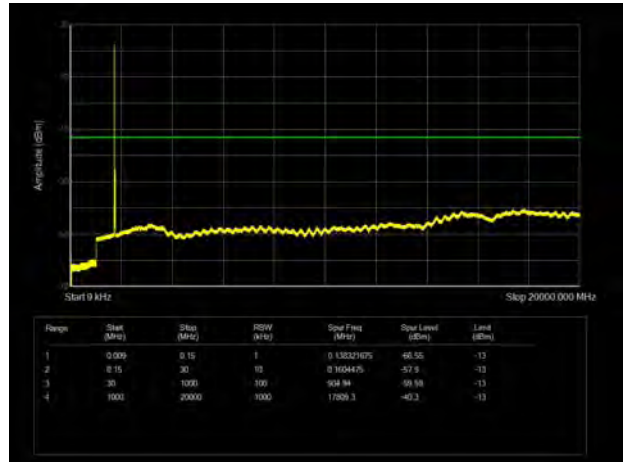
LTE Band 66 10MHz CH-High 9kHz ~20GHz



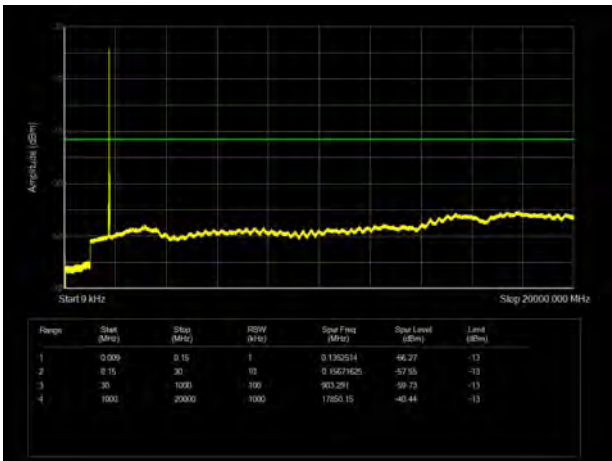
LTE Band 66 15MHz CH-Low 9kHz ~20GHz



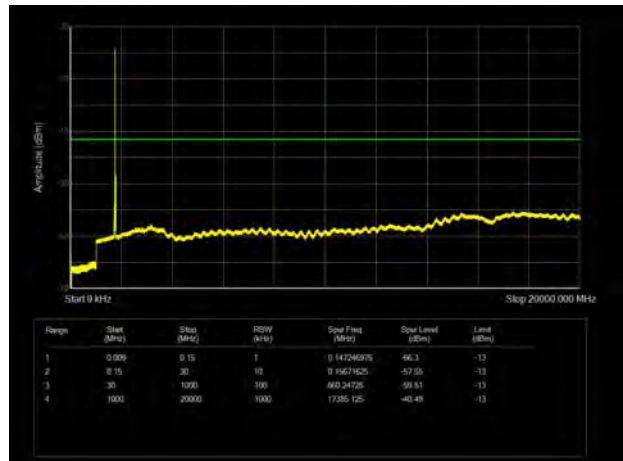
LTE Band 66 20MHz CH-Low 9kHz ~20GHz



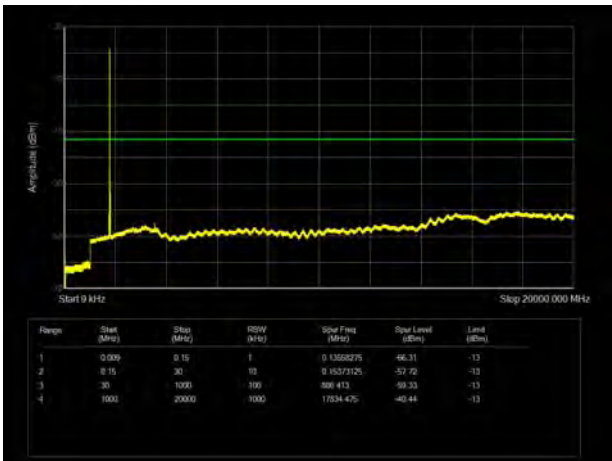
LTE Band 66 15MHz CH-Middle 9kHz ~20GHz



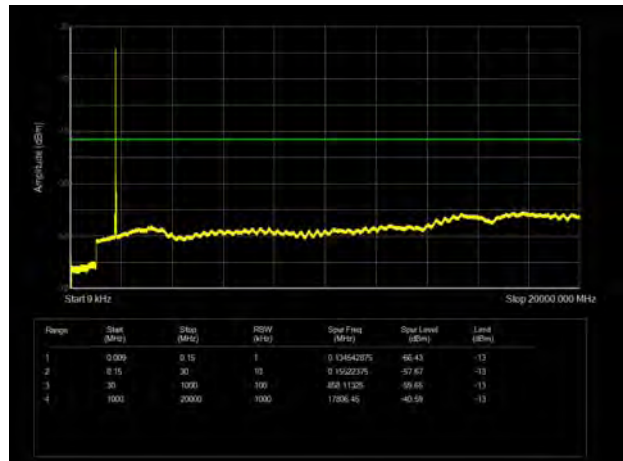
LTE Band 66 20MHz CH-Middle 9kHz ~20GHz



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

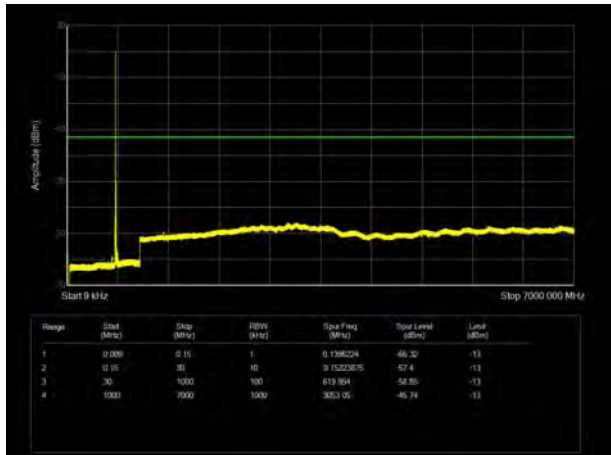


LTE Band 66 20MHz CH-High 9kHz ~20GHz

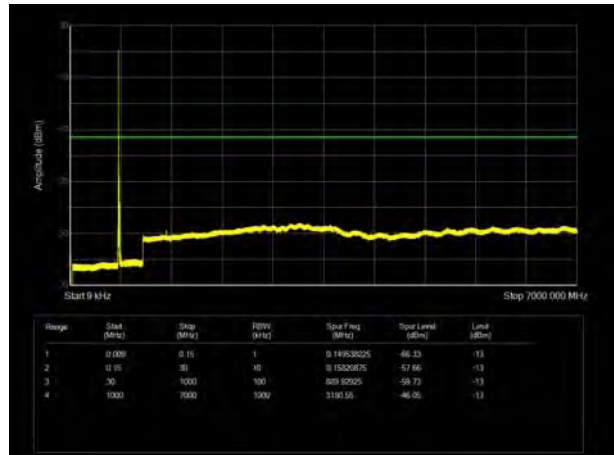




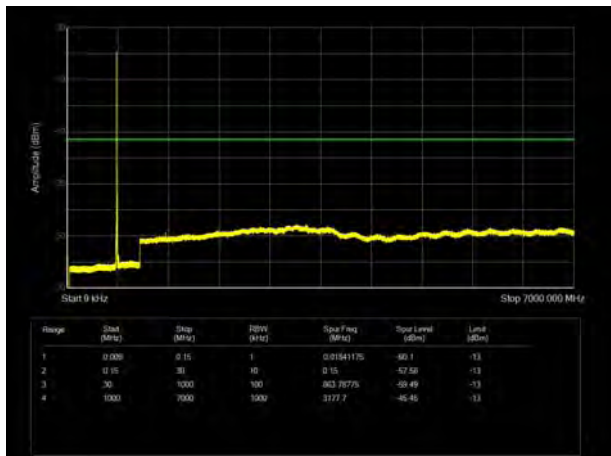
LTE Band 71 5MHz CH-Low 9kHz ~7GHz



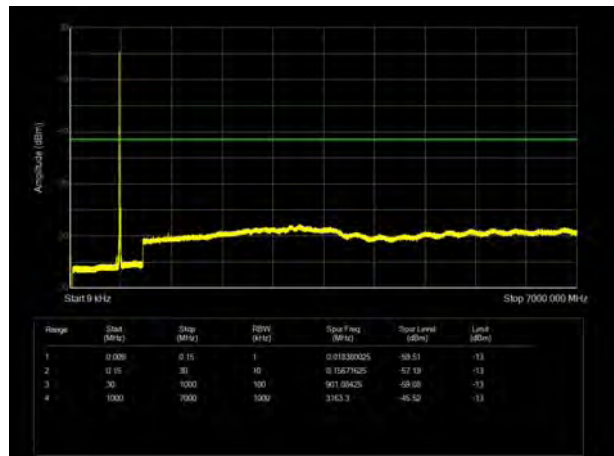
LTE Band 71 10MHz CH-Low 9kHz ~7GHz



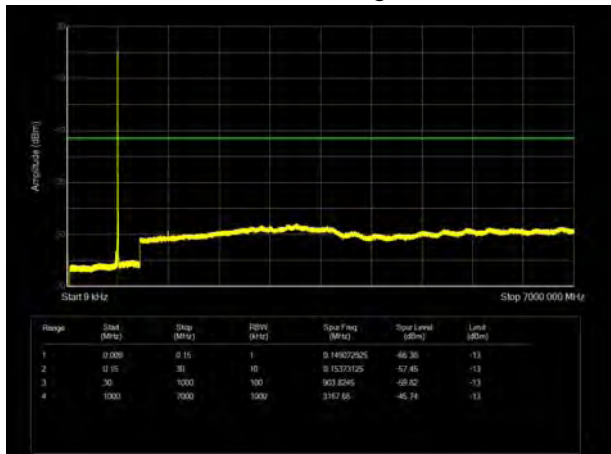
LTE Band 71 5MHz CH-Middle 9kHz ~7GHz



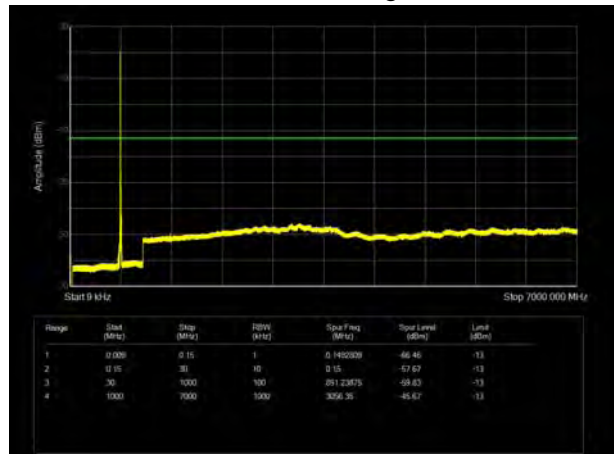
LTE Band 71 10MHz CH-Middle 9kHz ~7GHz



LTE Band 71 5MHz CH-High 9kHz ~7GHz

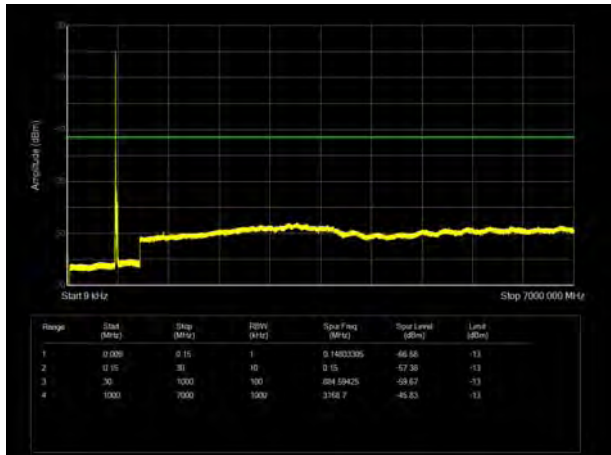


LTE Band 71 10MHz CH-High 9kHz ~7GHz

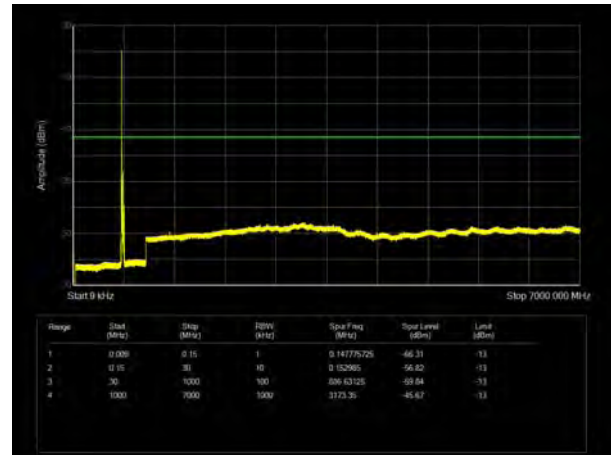




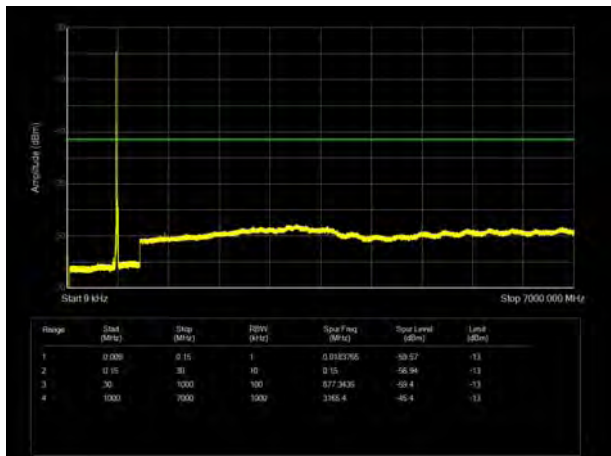
LTE Band 71 15MHz CH-Low 9kHz ~7GHz



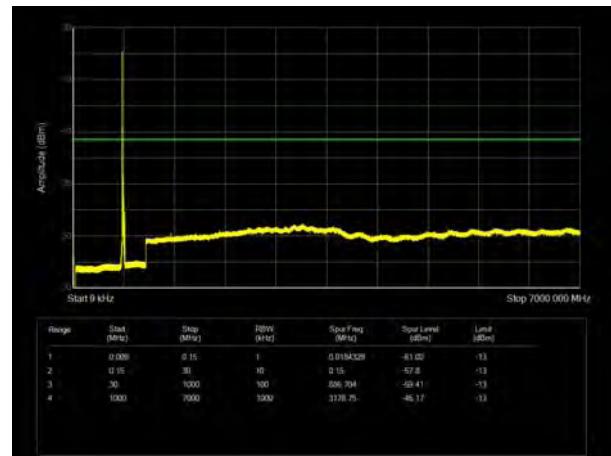
LTE Band 71 20MHz CH-Low 9kHz ~7GHz



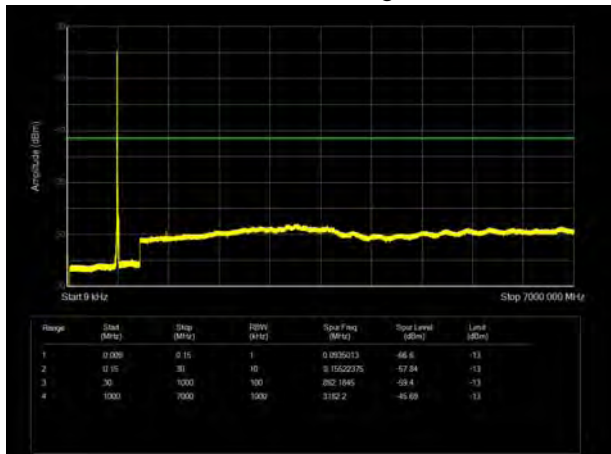
LTE Band 71 15MHz CH-Middle 9kHz ~7GHz



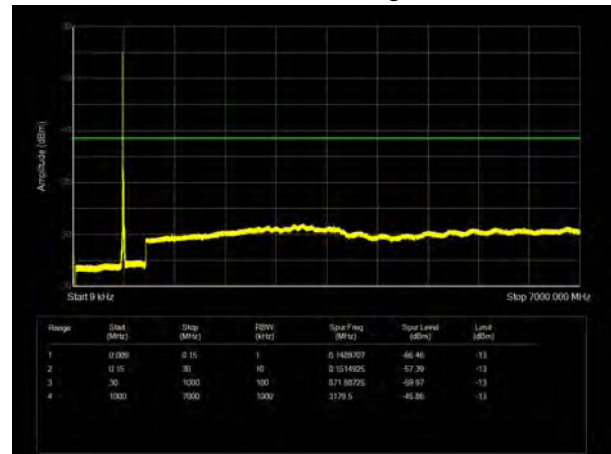
LTE Band 71 20MHz CH-Middle 9kHz ~7GHz



LTE Band 71 15MHz CH-High 9kHz ~7GHz



LTE Band 71 20MHz CH-High 9kHz ~7GHz



5.7 Radiates Spurious Emission

Ambient condition

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

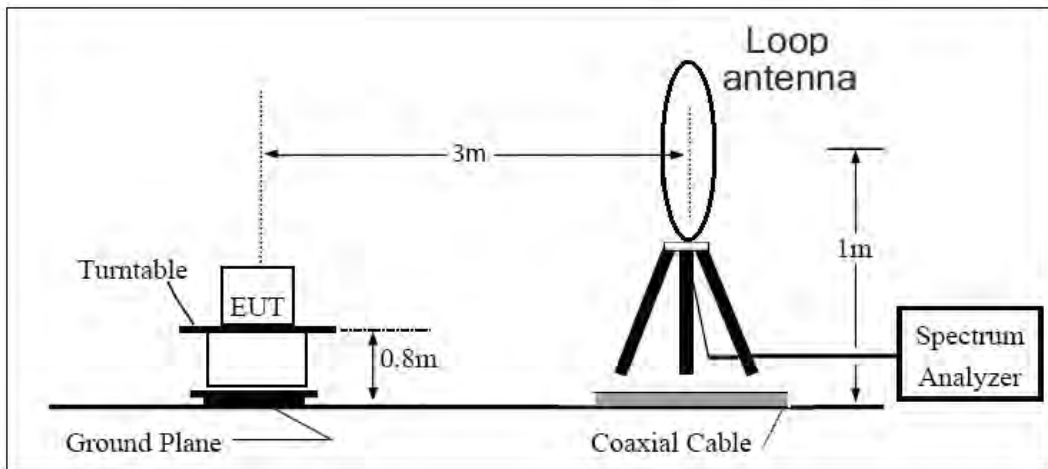
Method of Measurement

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, $ERP = EIRP-2.15dB$.

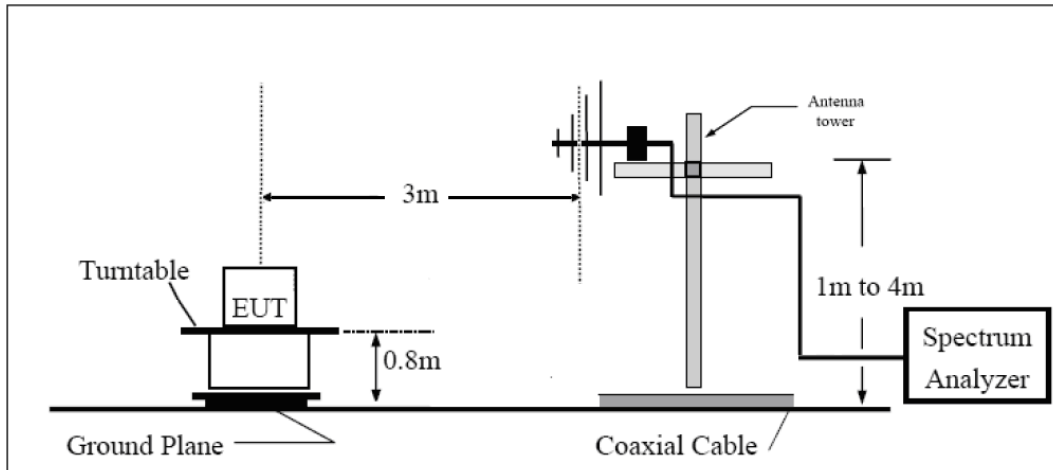
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

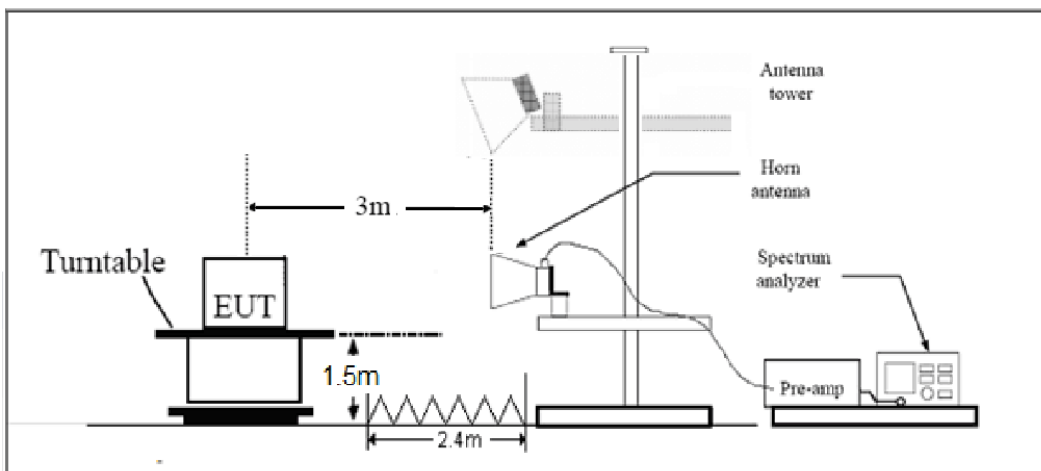
9KHz ~ 30MHz



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 $43 + 10 \log_{10}(P)$ dB.”

Rule Part 27.53 (g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

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(a)/(h)/(g) 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.

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	-66.92	2.70	12.70	Horizontal	-56.92	-13.00	43.92	0
3	5197.80	-64.22	3.20	12.50	Horizontal	-54.92	-13.00	41.92	0
4	6930.40	-59.77	4.20	11.80	Horizontal	-52.17	-13.00	39.17	45
5	8663.00	-57.25	4.40	12.50	Horizontal	-49.15	-13.00	36.15	135
6	10395.60	-52.83	4.70	11.30	Horizontal	-46.23	-13.00	33.23	270
7	12128.20	-53.87	5.20	13.80	Horizontal	-45.27	-13.00	32.27	90
8	13860.80	-47.96	5.70	11.30	Horizontal	-42.36	-13.00	29.36	45
9	15593.40	-56.95	6.10	16.80	Horizontal	-46.25	-13.00	33.25	315
10	17326.00	-50.43	6.10	14.20	Horizontal	-42.33	-13.00	29.33	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	-67.39	2.70	12.70	Vertical	-57.39	-13.00	44.39	45
3	5197.50	-63.85	3.20	12.50	Vertical	-54.55	-13.00	41.55	225
4	6930.00	-59.05	4.20	11.80	Vertical	-51.45	-13.00	38.45	90
5	8662.50	-56.66	4.40	12.50	Vertical	-48.56	-13.00	35.56	45
6	10395.00	-53.86	4.70	11.30	Vertical	-47.26	-13.00	34.26	180
7	12127.50	-52.87	5.20	13.80	Vertical	-44.27	-13.00	31.27	45
8	13860.00	-48.56	5.70	11.30	Vertical	-42.96	-13.00	29.96	315
9	15592.50	-57.07	6.10	16.80	Vertical	-46.37	-13.00	33.37	270
10	17325.00	-51.47	6.10	14.20	Vertical	-43.37	-13.00	30.37	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 Vertical 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	-67.17	2.70	12.70	Vertical	-57.17	-13.00	44.17	45
3	5191.50	-63.96	3.20	12.50	Vertical	-54.66	-13.00	41.66	90
4	6930.00	-59.49	4.20	11.80	Vertical	-51.89	-13.00	38.89	45
5	8662.50	-56.35	4.40	12.50	Vertical	-48.25	-13.00	35.25	135
6	10395.00	-52.83	4.70	11.30	Vertical	-46.23	-13.00	33.23	270
7	12127.50	-53.87	5.20	13.80	Vertical	-45.27	-13.00	32.27	90
8	13860.00	-48.12	5.70	11.30	Vertical	-42.52	-13.00	29.52	45
9	15592.50	-57.58	6.10	16.80	Vertical	-46.88	-13.00	33.88	315
10	17325.00	-51.33	6.10	14.20	Vertical	-43.23	-13.00	30.23	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 Vertical 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	-68.24	2.70	12.70	Vertical	-58.24	-13.00	45.24	45
3	5170.88	-63.78	3.20	12.50	Vertical	-54.48	-13.00	41.48	270
4	6930.00	-60.28	4.20	11.80	Vertical	-52.68	-13.00	39.68	90
5	8662.50	-56.63	4.40	12.50	Vertical	-48.53	-13.00	35.53	45
6	10395.00	-52.28	4.70	11.30	Vertical	-45.68	-13.00	32.68	315
7	12127.50	-55.87	5.20	13.80	Vertical	-47.27	-13.00	34.27	180
8	13860.00	-48.85	5.70	11.30	Vertical	-43.25	-13.00	30.25	0
9	15592.50	-56.77	6.10	16.80	Vertical	-46.07	-13.00	33.07	45
10	17325.00	-50.75	6.10	14.20	Vertical	-42.65	-13.00	29.65	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 Vertical position.



LTE Band 12 QPSK 1.4MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1410.63	-53.72	1.70	8.70	Vertical	-48.87	-13.00	35.87	225
3	2115.90	-57.24	2.10	11.10	Vertical	-50.39	-13.00	37.39	0
4	2830.00	-66.04	2.30	13.10	Vertical	-57.39	-13.00	44.39	90
5	3537.50	-64.30	2.60	12.70	Vertical	-56.35	-13.00	43.35	180
6	4245.00	-62.38	3.30	12.50	Vertical	-55.33	-13.00	42.33	45
7	4952.50	-62.21	3.40	12.50	Vertical	-55.26	-13.00	42.26	315
8	5660.00	-62.48	3.30	12.50	Vertical	-55.43	-13.00	42.43	90
9	6367.50	-57.91	3.80	11.50	Vertical	-52.36	-13.00	39.36	45
10	7075.00	-54.97	4.20	11.80	Vertical	-49.52	-13.00	36.52	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 Vertical position.

LTE Band 12 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1410.63	-54.79	1.70	8.70	Vertical	-49.94	-13.00	36.94	45
3	2115.90	-59.56	2.10	11.10	Vertical	-52.71	-13.00	39.71	270
4	2830.00	-65.67	2.30	13.10	Vertical	-57.02	-13.00	44.02	225
5	3525.00	-64.20	2.60	12.70	Vertical	-56.25	-13.00	43.25	135
6	4230.00	-62.31	3.30	12.50	Vertical	-55.26	-13.00	42.26	0
7	4935.00	-62.08	3.40	12.50	Vertical	-55.13	-13.00	42.13	315
8	5640.00	-62.08	3.30	12.50	Vertical	-55.03	-13.00	42.03	90
9	6345.00	-57.82	3.80	11.50	Vertical	-52.27	-13.00	39.27	270
10	7050.00	-54.58	4.20	11.80	Vertical	-49.13	-13.00	36.13	270

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 Vertical position.



LTE Band 12 QPSK 10MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1405.92	-53.29	1.70	8.70	Vertical	-48.44	-13.00	35.44	315
3	2109.30	-56.85	2.10	11.10	Vertical	-50.00	-13.00	37.00	90
4	2829.75	-65.62	2.30	13.10	Vertical	-56.97	-13.00	43.97	180
5	3537.50	-65.23	2.60	12.70	Vertical	-57.28	-13.00	44.28	45
6	4245.00	-64.61	3.30	12.50	Vertical	-57.56	-13.00	44.56	180
7	4952.50	-62.73	3.40	12.50	Vertical	-55.78	-13.00	42.78	135
8	5660.00	-62.80	3.30	12.50	Vertical	-55.75	-13.00	42.75	315
9	6367.50	-58.57	3.80	11.50	Vertical	-53.02	-13.00	40.02	90
10	7075.00	-55.64	4.20	11.80	Vertical	-50.19	-13.00	37.19	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 Vertical position.

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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5186.00	-53.66	3.20	12.50	Vertical	-44.36	-25.00	19.36	135
3	7779.00	-55.53	4.40	12.30	Vertical	-47.63	-25.00	22.63	180
4	10372.00	-54.77	4.70	11.80	Vertical	-47.67	-25.00	22.67	45
5	12965.00	-54.73	5.40	14.00	Vertical	-46.13	-25.00	21.13	225
6	15558.00	-56.55	6.10	16.80	Vertical	-45.85	-25.00	20.85	90
7	18151.00	--	--	--	--	--	--	--	--
8	20744.00	--	--	--	--	--	--	--	--
9	23337.00	--	--	--	--	--	--	--	--
10	25930.00	--	--	--	--	--	--	--	--

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

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



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

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5186.00	-54.54	3.20	12.50	Vertical	-45.24	-25.00	20.24	270
3	7779.00	-52.58	4.40	12.30	Vertical	-44.68	-25.00	19.68	315
4	10372.00	-55.42	4.70	11.80	Vertical	-48.32	-25.00	23.32	90
5	12965.00	-54.01	5.40	14.00	Vertical	-45.41	-25.00	20.41	45
6	15558.00	-58.07	6.10	16.80	Vertical	-47.37	-25.00	22.37	225
7	18151.00	--	--	--	--	--	--	--	--
8	20744.00	--	--	--	--	--	--	--	--
9	23337.00	--	--	--	--	--	--	--	--
10	25930.00	--	--	--	--	--	--	--	--

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

2. The worst emission was found in the antenna is Vertical 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	5265.00	-66.44	2.70	12.70	Vertical	-56.44	-13.00	43.44	45
3	7020.00	-60.54	3.20	12.50	Vertical	-51.24	-13.00	38.24	225
4	8775.00	-55.94	4.20	11.80	Vertical	-48.34	-13.00	35.34	90
5	10530.00	-53.15	4.40	12.50	Vertical	-45.05	-13.00	32.05	45
6	12285.00	-51.42	4.70	11.80	Vertical	-44.32	-13.00	31.32	180
7	14040.00	-51.75	5.20	13.80	Vertical	-43.15	-13.00	30.15	45
8	15795.00	-53.79	5.70	13.20	Vertical	-46.29	-13.00	33.29	315
9	17550.00	-55.15	6.10	16.80	Vertical	-44.45	-13.00	31.45	270
10	--	--	--	--	--	--	--	--	--

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 Vertical 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	5265.00	-67.70	2.70	12.70	Vertical	-57.70	-13.00	44.70	45
3	7020.00	-60.92	3.20	12.50	Vertical	-51.62	-13.00	38.62	90
4	8775.00	-56.96	4.20	11.80	Vertical	-49.36	-13.00	36.36	45
5	10530.00	-54.56	4.40	12.50	Vertical	-46.46	-13.00	33.46	135
6	12285.00	-53.71	4.70	11.80	Vertical	-46.61	-13.00	33.61	270
7	14040.00	-52.40	5.20	13.80	Vertical	-43.80	-13.00	30.80	90
8	15795.00	-54.97	5.70	13.20	Vertical	-47.47	-13.00	34.47	45
9	17550.00	-55.95	6.10	16.80	Vertical	-45.25	-13.00	32.25	315
10	--	--	--	--	--	--	--	--	--

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 Vertical 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	5265.00	-67.49	2.70	12.70	Vertical	-57.49	-13.00	44.49	45
3	7020.00	-61.52	3.20	12.50	Vertical	-52.22	-13.00	39.22	270
4	8775.00	-57.53	4.20	11.80	Vertical	-49.93	-13.00	36.93	90
5	10530.00	-55.98	4.40	12.50	Vertical	-47.88	-13.00	34.88	45
6	12285.00	-53.36	4.70	11.80	Vertical	-46.26	-13.00	33.26	315
7	14040.00	-53.79	5.20	13.80	Vertical	-45.19	-13.00	32.19	180
8	15795.00	-55.49	5.70	13.20	Vertical	-47.99	-13.00	34.99	0
9	17550.00	-56.07	6.10	16.80	Vertical	-45.37	-13.00	32.37	45
10	--	--	--	--	--	--	--	--	--

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 Vertical position.



LTE Band 71QPSK 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	1356.53	-50.18	1.5	8.7	Vertical	-45.13	-13.00	32.13	135
3	2034.73	-59.69	1.8	11.1	Vertical	-52.54	-13.00	39.54	45
4	2720.46	-64.00	2.3	12.0	Vertical	-56.45	-13.00	43.45	225
5	3402.50	-65.40	2.7	12.7	Vertical	-57.55	-13.00	44.55	0
6	4083.00	-64.04	2.9	12.5	Vertical	-56.59	-13.00	43.59	180
7	4763.50	-63.12	3.1	12.5	Vertical	-55.87	-13.00	42.87	90
8	5444.00	-61.52	3.3	12.5	Vertical	-54.47	-13.00	41.47	180
9	6124.50	-63.51	3.5	12.8	Vertical	-56.36	-13.00	43.36	45
10	6805.00	-59.47	4.1	11.8	Vertical	-53.92	-13.00	40.92	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 Vertical position.

LTE Band 71QPSK 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	1347.93	-46.32	1.5	8.7	Vertical	-41.27	-13.00	28.27	135
3	2022.26	-54.71	1.8	11.1	Vertical	-47.56	-13.00	34.56	90
4	2732.00	-64.65	2.3	12.0	Vertical	-57.10	-13.00	44.10	225
5	3415.00	-65.79	2.7	12.7	Vertical	-57.94	-13.00	44.94	45
6	4098.00	-63.82	2.9	12.5	Vertical	-56.37	-13.00	43.37	225
7	4781.00	-63.80	3.1	12.5	Vertical	-56.55	-13.00	43.55	135
8	5464.00	-62.60	3.3	12.5	Vertical	-55.55	-13.00	42.55	315
9	6147.00	-62.19	3.5	12.8	Vertical	-55.04	-13.00	42.04	0
10	6830.00	-57.11	4.1	11.8	Vertical	-51.56	-13.00	38.56	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 Vertical position.



6 Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Base Station Simulator	R&S	CMW500	113824	2021-05-15	2022-05-14
Climate Chamber	Weiss	VT4002	582261194500 10	2021-05-15	2022-05-14
Power Splitter	Hua Xiang	SHX-GF2-2-13	10120101	/	/
Spectrum Analyzer	Key sight	N9010A	MY50210259	2021-05-15	2022-05-14
Signal Analyzer	R&S	FSV3030	101411	2020-12-13	2021-12-12
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2020-04-02	2023-04-01
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	391	2019-12-16	2022-12-15
Horn Antenna	R&S	HF907	102723	2020-08-11	2023-08-10
Horn Antenna	ETS-Lindgren	3160-09	00102643	2021-10-10	2024-10-09
Signal generator	R&S	SMB 100A	102594	2021-05-15	2022-05-14
Climatic Chamber	ESPEC	SU-242	93000506	2020-12-13	2021-12-12
MOB COMMS DC SUPPLY	Keysight	66319D	MY43004105	2021-06-09	2021-12-08
RF Cable	Agilent	SMA 15cm	0001	2021-06-09	2021-12-08
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.