

RF Power Output and Effective Radiated Power

Band4	Channel/ Frequency(MHz)	Index	RB# RBstart QPSK	RB# RBstart 16QAM	Conducted Power (dBm)	
					QPSK	16QAM
1.4MHz	19957 1710.7	0	1#0	1#0	23.31	22.29
		0	6#0	5#0	20.95	21.22
	20175/1732.5	0	1#0	1#0	23.28	22.33
		0	6#0	5#0	21.03	20.99
	20393/1754.3	0	1#5	1#5	22.87	21.97
		0	6#0	5#0	20.91	21.10
3MHz	19965/1711.5	0	1#0	1#0	23.12	21.90
		0	6#0	5#0	20.80	2.89
	20175/1732.5	0	1#0	1#0	23.37	22.26
		0	6#0	5#0	21.06	21.24
	20385/1753.5	1	1#5	1#5	22.85	21.66
		1	6#0	5#0	20.97	20.97
5MHz	19975/1712.5	3	1#0	1#0	22.90	22.61
		0	6#0	5#0	21.79	21.01
	20175/1732.5	0	1#0	1#0	23.25	23.16
		0	6#0	5#0	21.98	21.04
	20375/1752.5	0	1#5	1#5	22.51	22.34
		3	6#0	5#0	21.89	21.02
10MHz	20000/1715	3	1#0	1#0	22.81	22.53
		0	4#0	4#0	22.75	21.27
	20175/1732.5	0	1#0	1#0	23.32	23.40
		0	4#0	4#0	23.05	21.98
	20350/1750	4	1#5	1#5	22.60	22.32
		7	4#2	4#2	22.65	21.13
15MHz	20025/1717.5	3	1#0	1#0	23.09	22.74
		0	6#0	5#0	22.87	23.12
	20175/1732.5	0	1#0	1#0	23.32	23.45
		0	6#0	5#0	23.06	23.07
	20325/1747.5	8	1#5	1#5	22.62	22.40
		11	6#0	5#0	22.91	23.07
20MHz	20050/1720	3	1#0	1#0	23.11	22.80
		0	6#0	5#0	23.07	23.29
	20175/1732.5	0	1#0	1#0	23.37	23.47
		0	6#0	5#0	23.02	23.03
	20300/1745	12	1#5	1#5	22.87	22.56
		15	6#0	5#0	23.05	23.24



Band12	Channel/ Frequency(MHz)	Index	RB# RBstart QPSK	RB# RBstart 16QAM	Conducted Power (dBm)	
					QPSK	16QAM
1.4MHz	23017/699.7	0	1#0	1#0	23.16	22.17
		0	6#0	5#0	20.78	20.90
	23095/707.5	0	1#0	1#0	23.27	22.26
		0	6#0	5#0	20.76	20.87
	23173/715.3	0	1#5	1#5	23.13	22.33
		0	6#0	5#0	20.86	20.99
3MHz	23025/700.5	0	1#0	1#0	23.34	22.34
		0	6#0	5#0	20.79	21.00
	23095/707.5	0	1#0	1#0	23.17	21.73
		0	6#0	5#0	20.76	20.75
	23165/714.5	1	1#5	1#5	23.13	22.32
		1	6#0	5#0	20.85	21.00
5MHz	23035/701.5	3	1#0	1#0	23.24	22.92
		0	6#0	5#0	21.92	20.93
	23095/707.5	0	1#0	1#0	23.19	23.34
		0	6#0	5#0	21.82	20.86
	23155/713.5	0	1#5	1#5	23.15	22.84
		3	6#0	5#0	21.96	20.98
10MHz	23060/704	3	1#0	1#0	23.12	22.90
		0	4#0	4#0	22.91	21.39
	23095/707.5	0	1#0	1#0	23.19	23.25
		0	4#0	4#0	22.98	21.88
	23130/711	4	1#5	1#5	23.26	22.74
		7	4#2	4#2	22.91	21.46

Band13	Channel/ Frequency(MHz)	Index	RB# RBstart QPSK	RB# RBstart 16QAM	Conducted Power (dBm)	
					QPSK	16QAM
5MHz	23205/779.5	3	1#0	1#0	23.15	22.73
		0	6#0	5#0	22.09	21.28
	23230/782	0	1#0	1#0	23.24	22.74
		0	6#0	5#0	22.03	21.22
	23255/784.5	0	1#5	1#5	23.05	22.80
		3	6#0	5#0	22.18	21.18
10MHz	23230/782	0	1#0	1#0	23.30	23.26
		0	4#0	4#0	23.14	22.11

Band66	Channel/ Frequency(MHz)	Index	RB# RBstart QPSK	RB# RBstart 16QAM	Conducted Power (dBm)	
					QPSK	16QAM
1.4MHz	131979/1710.7	0	1#0	1#0	23.86	22.72
		0	6#0	5#0	21.74	21.72
	132322/1745	0	1#0	1#0	23.77	22.58
		0	6#0	5#0	21.51	21.64
	132665/1779.3	0	1#5	1#5	23.87	2.55
		0	6#0	5#0	21.62	21.68
3MHz	131987/1711.5	0	1#0	1#0	2.84	22.70
		0	6#0	5#0	21.68	21.67
	132322/1745	0	1#0	1#0	23.86	22.91
		0	6#0	5#0	21.54	21.83
	132657/1778.5	1	1#5	1#5	23.78	22.78
		1	6#0	5#0	21.62	21.74
5MHz	131997/1712.5	3	1#0	1#0	23.80	23.39
		0	6#0	5#0	22.65	21.92
	132322/1745	0	1#0	1#0	23.84	23.78
		0	6#0	5#0	22.56	21.61
	132647/1777.5	0	1#5	1#5	23.65	23.21
		3	6#0	5#0	22.62	21.89
10MHz	132022/1715	3	1#0	1#0	23.70	23.58
		0	4#0	4#0	23.72	22.25
	132322/1745	0	1#0	1#0	23.88	23.83
		0	4#0	4#0	23.67	22.56
	132622/1775	4	1#5	1#5	23.79	23.02
		7	4#2	4#2	23.54	22.02
15MHz	132047/1717.5	3	1#0	1#0	23.85	23.51
		0	6#0	5#0	23.71	23.86
	132322/1745	0	1#0	1#0	23.84	23.87
		0	6#0	5#0	23.62	23.64
	132597/1772.5	8	1#5	1#5	23.63	23.29
		11	6#0	5#0	23.66	23.87
20MHz	132072/1720	3	1#0	1#0	23.73	23.51
		0	6#0	5#0	23.74	23.79
	132322/1745	0	1#0	1#0	23.82	23.79
		0	6#0	5#0	23.60	23.63
	132572/1770	12	1#5	1#5	23.15	22.82
		15	6#0	5#0	23.63	23.84



Band85	Channel/ Frequency(MHz)	Index	RB# RBstart QPSK	RB# RBstart 16QAM	Conducted Power (dBm)	
					QPSK	16QAM
5MHz	134027/700.5	3	1#0	1#0	23.01	23.02
		0	6#0	5#0	21.80	20.82
	134092/707	0	1#0	1#0	23.12	22.94
		0	6#0	5#0	21.78	20.70
	134157/713.5	0	1#5	1#5	22.97	22.83
		3	6#0	5#0	21.79	20.72
10MHz	134052/703	3	1#0	1#0	23.18	23.03
		0	4#0	4#0	22.79	21.28
	134092/707	0	1#0	1#0	23.09	22.97
		0	4#0	4#0	22.68	21.81
	134132/711	4	1#5	1#5	23.02	22.82
		7	4#2	4#2	22.67	21.25

Occupied Bandwidth

Mode	Bandwidth	Modulation	Channel/ Frequency(MHz)	RB	Index	Bandwidth(MHz)	
						99% Power	-26dBc
Band4	20MHz	QPSK	20175/1732.5	6#0	0	1.137	1.390
		16QAM	20175/1732.5	6#0	0	0.976	1.545

Mode	Bandwidth	Modulation	Channel/ Frequency(MHz)	RB	Index	Bandwidth(MHz)	
						99% Power	-26dBc
Band12	5MHz	QPSK	23095/707.5	6#0	0	1.120	1.335
		16QAM	23095/707.5	6#0	0	0.946	1.213

Mode	Bandwidth	Modulation	Channel/ Frequency(MHz)	RB	Index	Bandwidth(MHz)	
						99% Power	-26dBc
Band13	10MHz	QPSK	23230/782	6#0	0	1.129	1.358
		16QAM	23230/782	6#0	0	0.960	1.199

Mode	Bandwidth	Modulation	Channel/ Frequency(MHz)	RB	Index	Bandwidth(MHz)	
						99% Power	-26dBc
Band66	10MHz	QPSK	132322/1745	6#0	0	1.131	1.365
		16QAM	132322/1745	6#0	0	0.964	1.239

Mode	Bandwidth	Modulation	Channel/ Frequency(MHz)	RB	Index	Bandwidth(MHz)	
						99% Power	-26dBc
Band85	10MHz	QPSK	134092/707	6#0	0	1.117	1.344
		16QAM	134092/707	6#0	0	0.962	1.243



LTE Band 4 20MHz QPSK CH-Middle



LTE Band 4 20MHz 16QAM CH-Middle



LTE Band 12 5MHz QPSK CH-Middle



LTE Band 12 5MHz 16QAM CH-Middle



LTE Band 13 10MHz QPSK CH-Middle



LTE Band 13 10MHz 16QAM CH-Middle

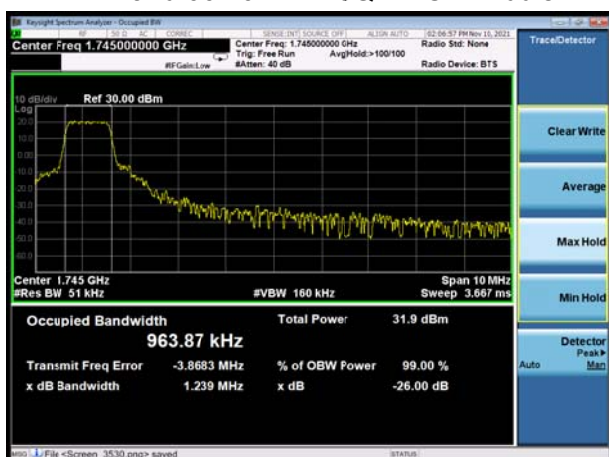




LTE Band 66 10MHz QPSK CH-Middle



LTE Band 66 10MHz 16QAM CH-Middle



LTE Band 85 10MHz QPSK CH-Middle

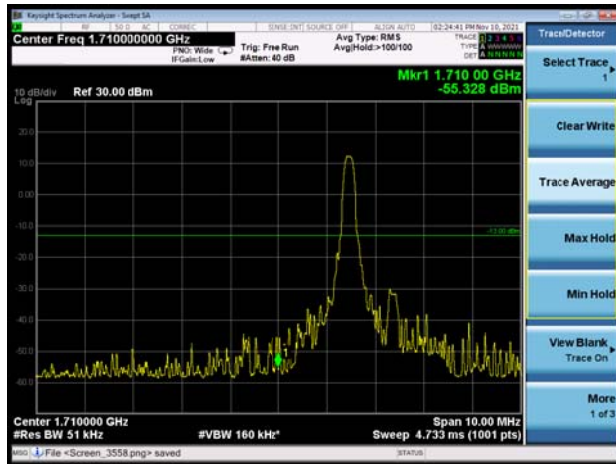


LTE Band 85 10MHz 16QAM CH-Middle

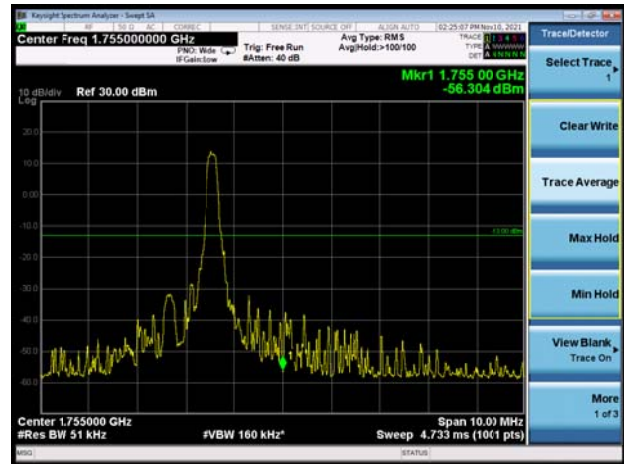


Band Edge Compliance

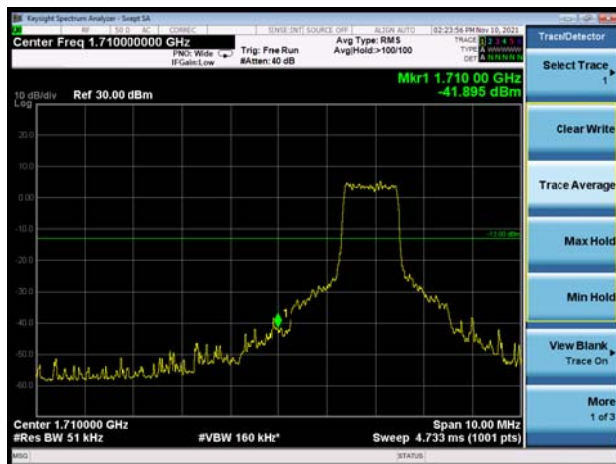
LTE Band 4 20MHz QPSK 1RB CH-Low



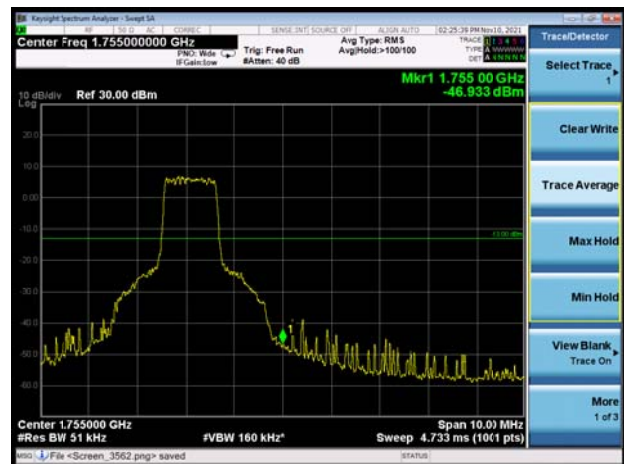
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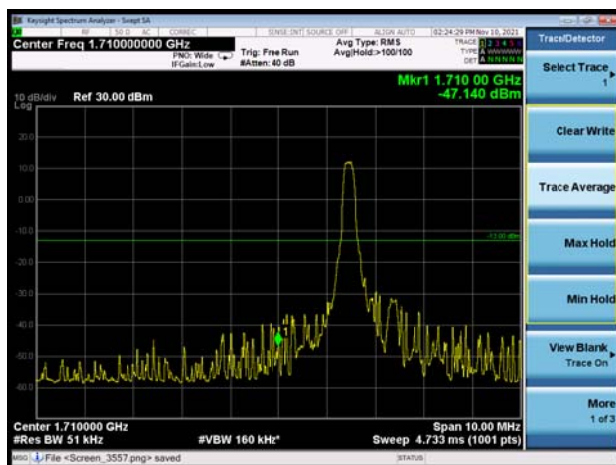
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LTE Band 4 20MHz QPSK 100%RB CH-High



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

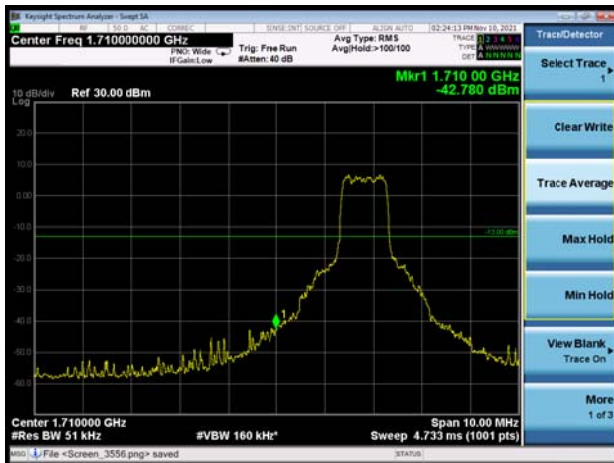


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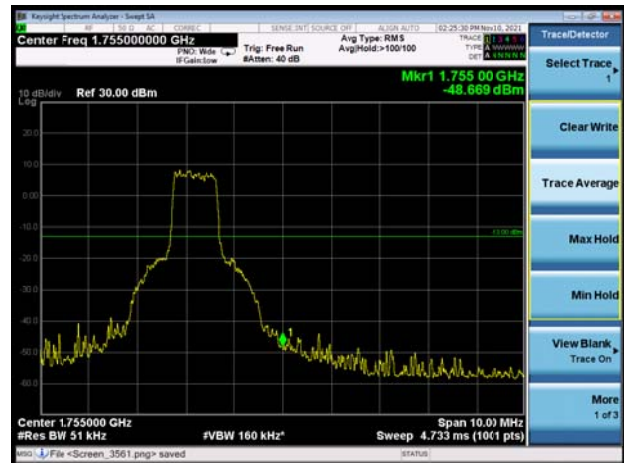




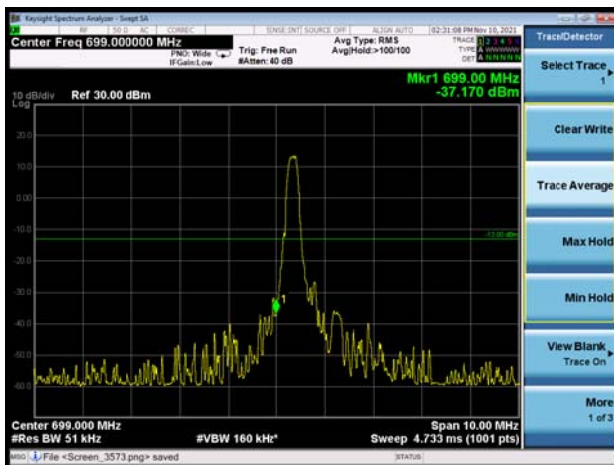
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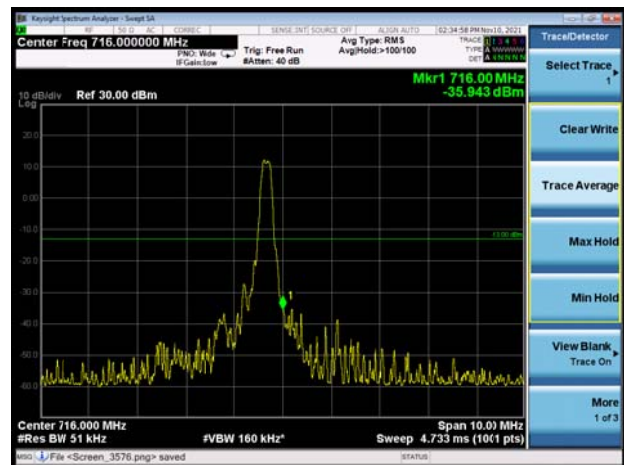
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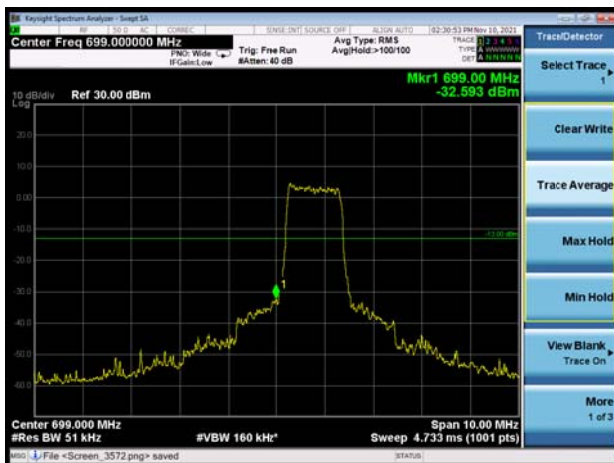
LTE Band 12 5MHz QPSK 1RB CH-Low



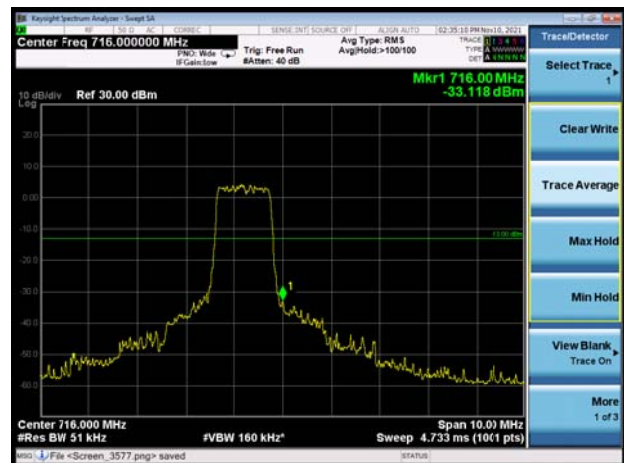
LTE Band 12 5MHz QPSK 1RB CH-High



LTE Band 12 5MHz QPSK 100%RB CH-Low

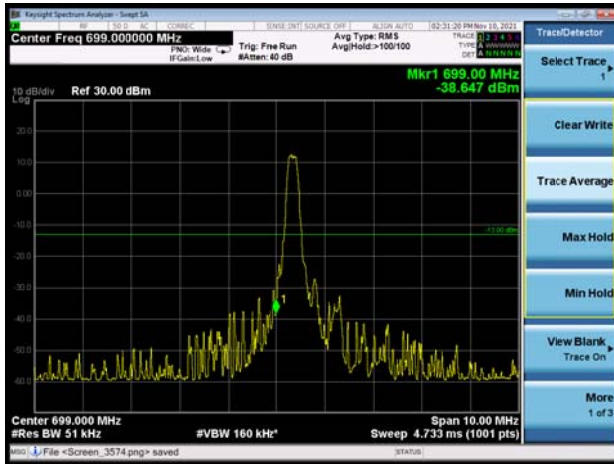


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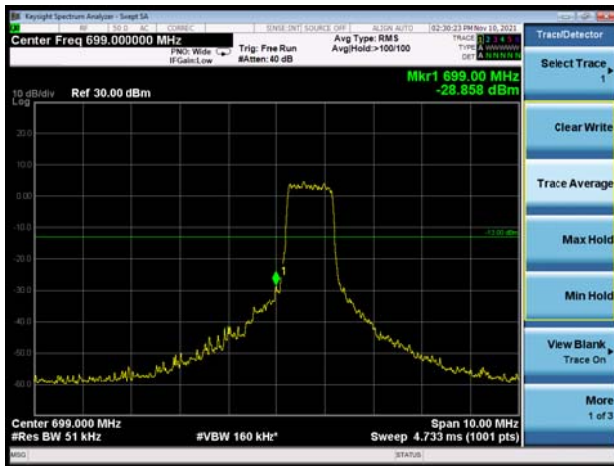
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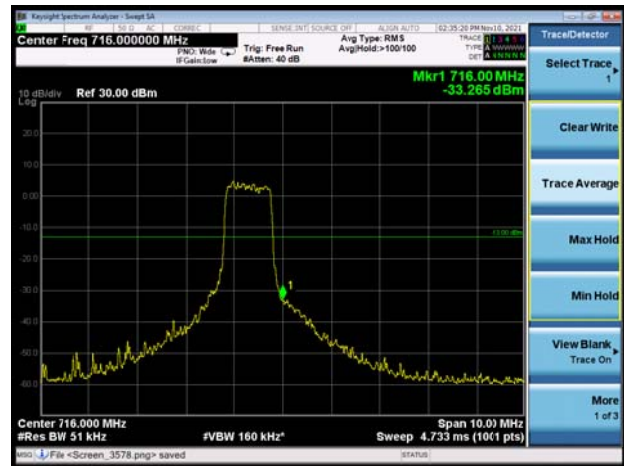
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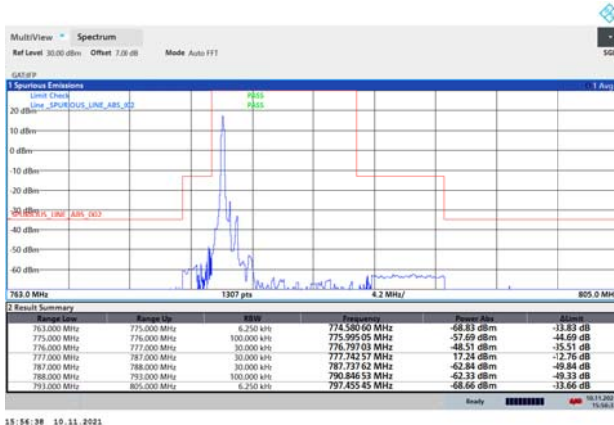
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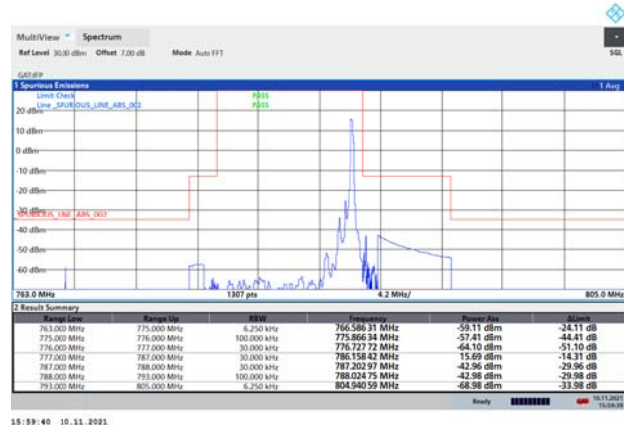
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LTE Band 13 10MHz QPSK 1RB CH-Low



LTE Band 13 10MHz QPSK 1RB CH-High





LTE Band 13 10MHz QPSK 100%RB CH-Low



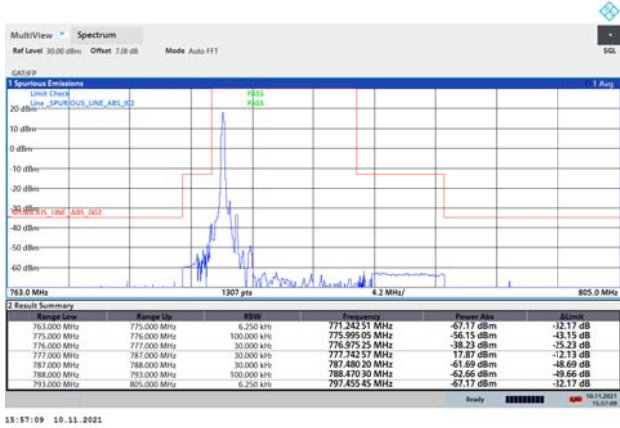
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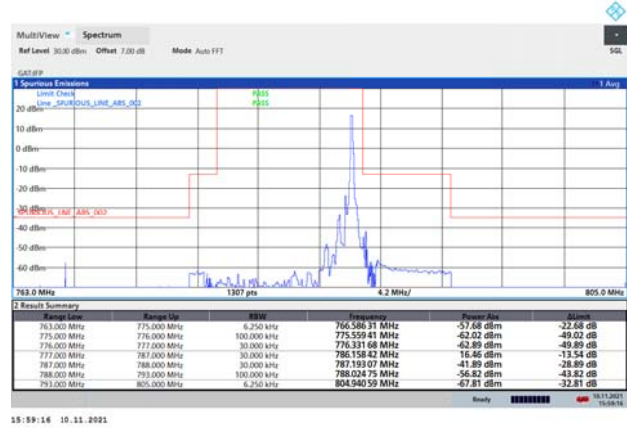
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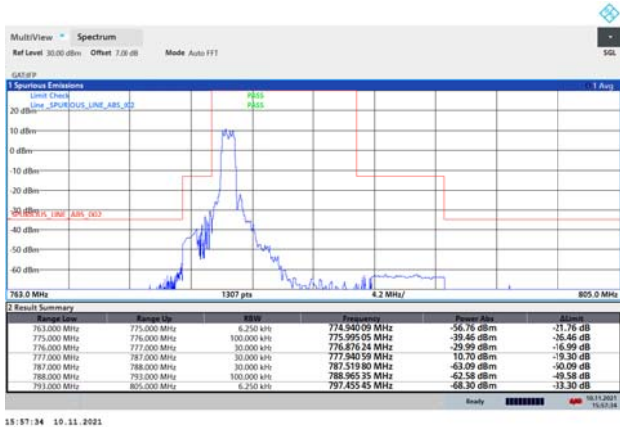
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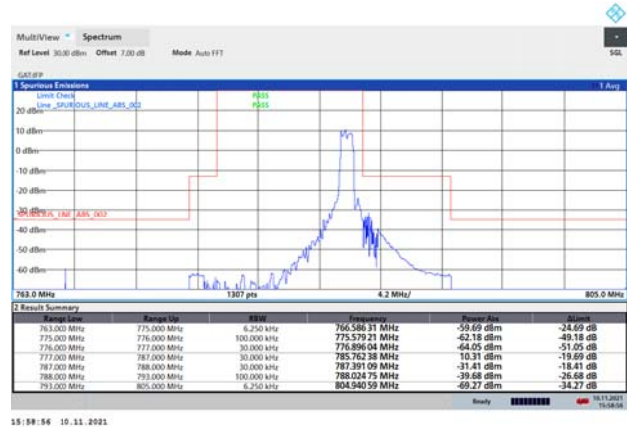
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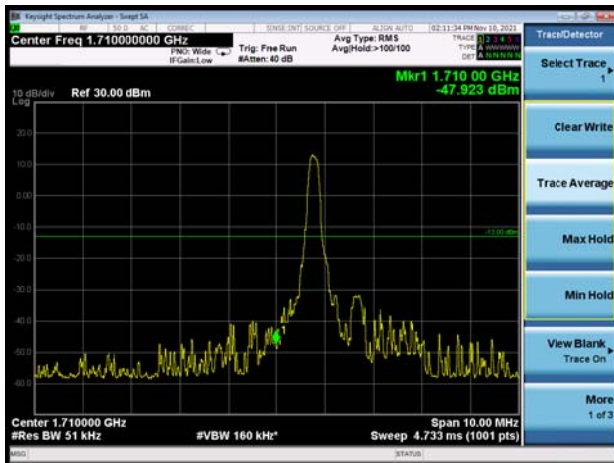
LTE Band 13 10MHz 16QAM 100%RB CH-High



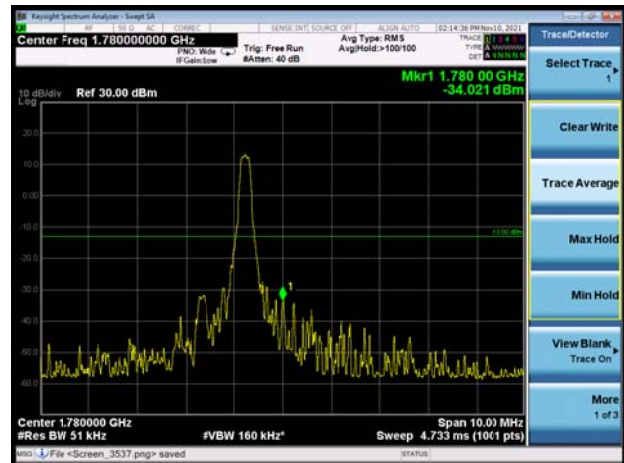
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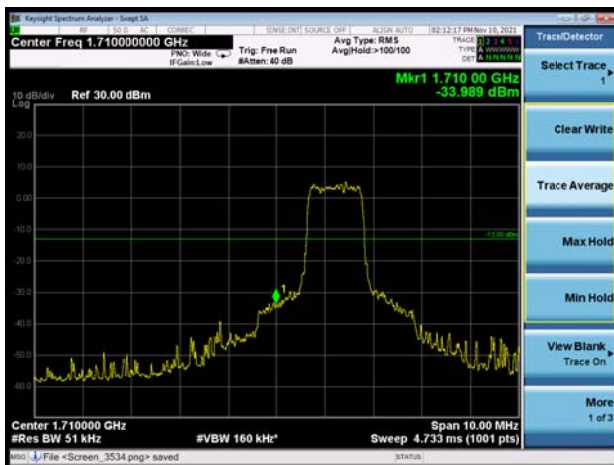
LTE Band 66 10MHz QPSK 1RB CH-Low



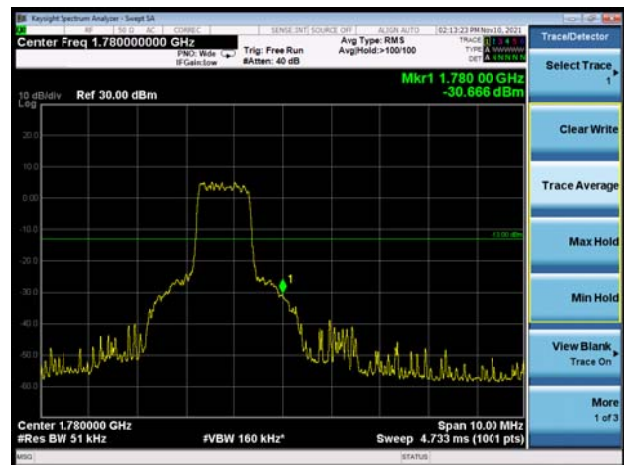
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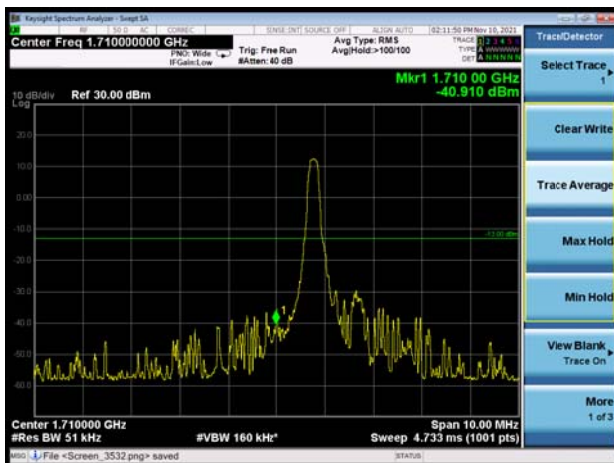
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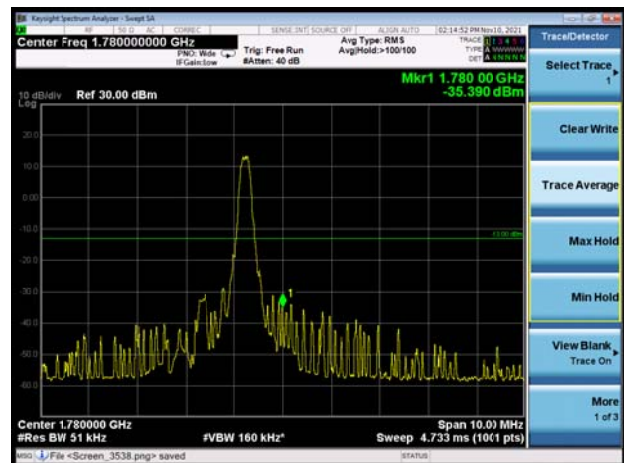
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LTE Band66 10MHz 16QAM 1RB CH-Low

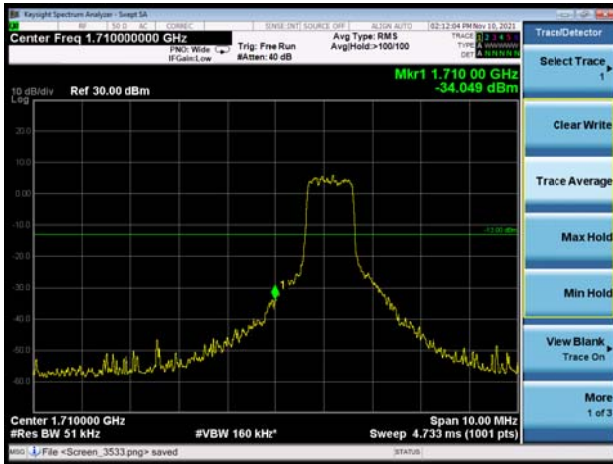


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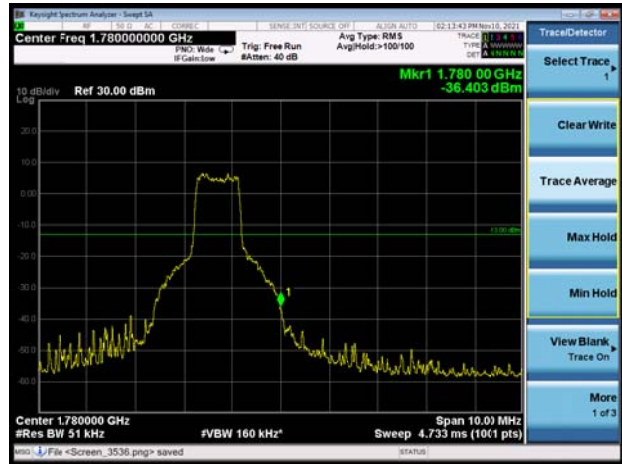




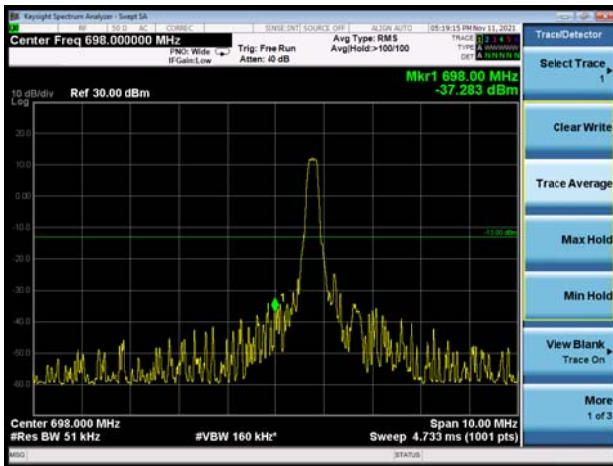
LTE Band 66 10MHz 16QAM 100%RB CH-Low



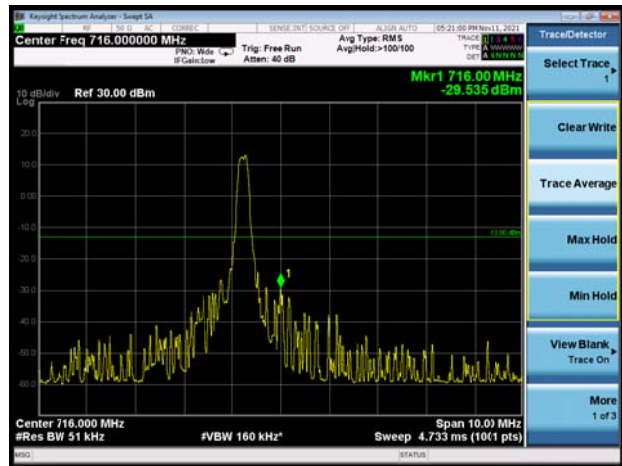
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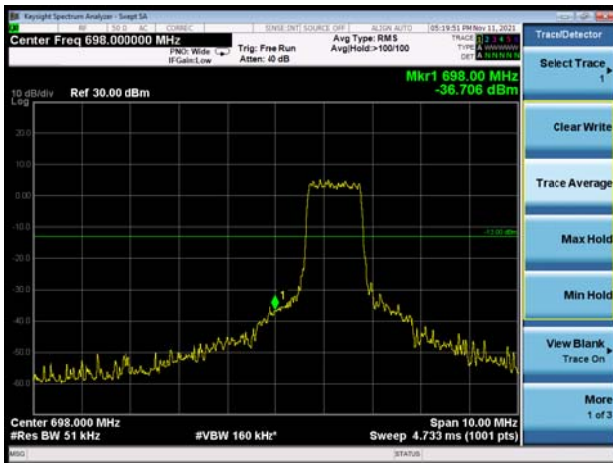
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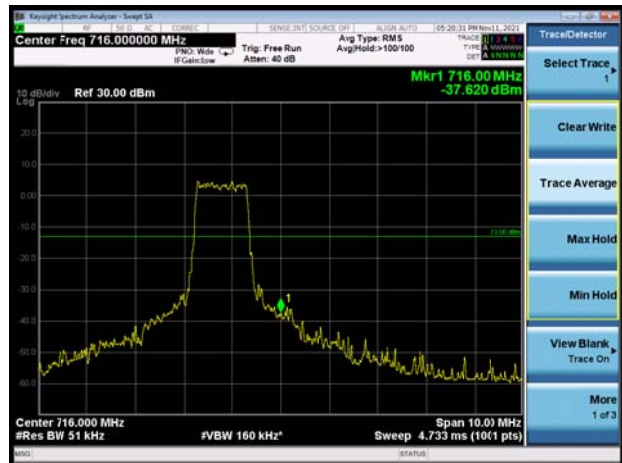
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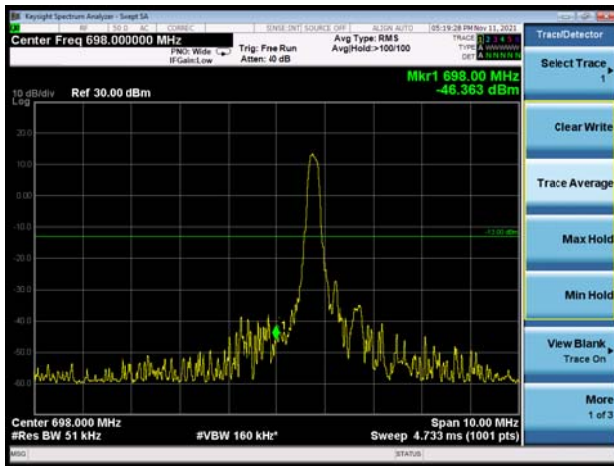


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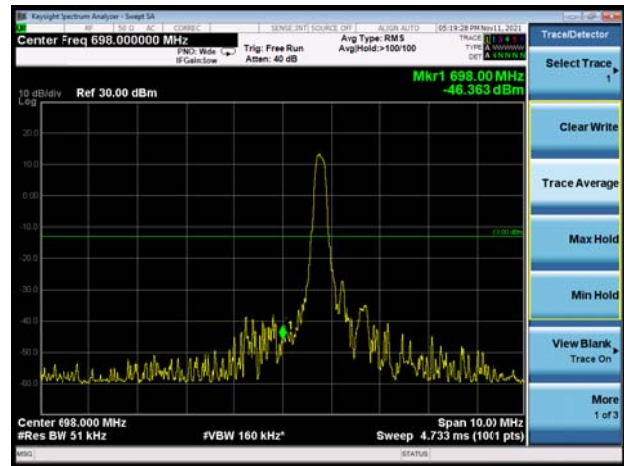




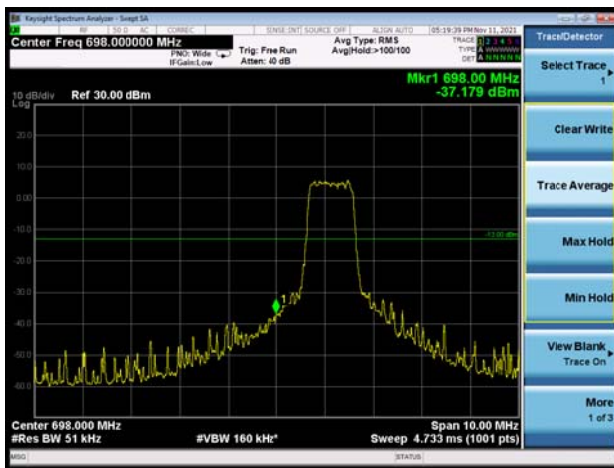
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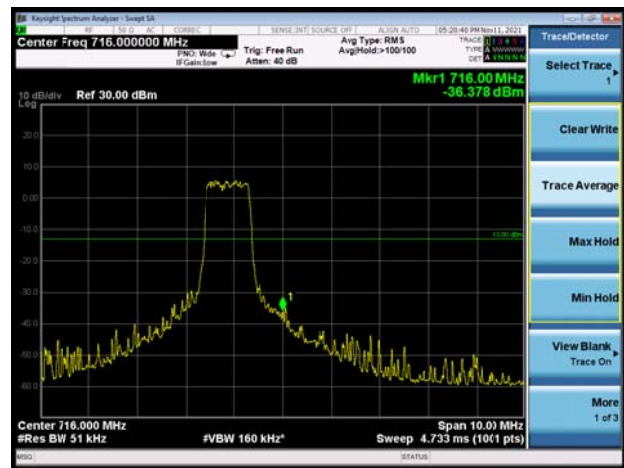
LTE Band 85 10MHz 16QAM 1RB CH-High



LTE Band 85 10MHz 16QAM 100%RB CH-Low



LTE Band 85 10MHz 16QAM 100%RB CH-High



Peak-to-Average Power Ratio (PAPR)

Mode	Bandwidth	Modulation	Channel/ Frequency(MHz)	Peak-to-Average Power Ratio (PAPR)			Limit(dB)	Conclusion
				Peak(dBm)	Avg(dBm)	PAPR(dB)		
LTE Band 4	1.4MHz	QPSK	20175/1732.5	25.61	13.96	11.65	≤13	PASS
		16QAM	20175/1732.5	26.20	14.05	12.15	≤13	PASS
	3MHz	QPSK	20175/1732.5	25.64	16.05	9.59	≤13	PASS
		16QAM	20175/1732.5	26.29	15.94	10.35	≤13	PASS
	5MHz	QPSK	20175/1732.5	26.31	17.23	9.08	≤13	PASS
		16QAM	20175/1732.5	26.23	16.28	9.95	≤13	PASS
	10MHz	QPSK	20175/1732.5	26.25	17.37	8.88	≤13	PASS
		16QAM	20175/1732.5	26.86	17.08	9.78	≤13	PASS
	15MHz	QPSK	20175/1732.5	26.83	17.88	8.95	≤13	PASS
		16QAM	20175/1732.5	27.26	18.24	9.02	≤13	PASS
	20MHz	QPSK	20175/1732.5	26.74	18.03	8.71	≤13	PASS
		16QAM	20175/1732.5	27.15	18.06	9.09	≤13	PASS

Mode	Bandwidth	Modulation	Channel/ Frequency(MHz)	Peak-to-Average Power Ratio (PAPR)			Limit(dB)	Conclusion
				Peak(dBm)	Avg(dBm)	PAPR(dB)		
LTE Band 12	1.4MHz	QPSK	23095/707.5	24.86	13.78	11.08	≤13	PASS
		16QAM	23095/707.5	25.41	13.00	12.41	≤13	PASS
	3MHz	QPSK	23095/707.5	24.89	14.86	10.03	≤13	PASS
		16QAM	23095/707.5	25.77	14.55	11.22	≤13	PASS
	5MHz	QPSK	23095/707.5	26.16	16.32	9.84	≤13	PASS
		16QAM	23095/707.5	25.81	15.32	10.49	≤13	PASS
	10MHz	QPSK	23095/707.5	26.29	16.29	10.00	≤13	PASS
		16QAM	23095/707.5	27.21	16.55	10.66	≤13	PASS

Mode	Bandwidth	Modulation	Channel/ Frequency(MHz)	Peak-to-Average Power Ratio (PAPR)			Limit(dB)	Conclusion
				Peak(dBm)	Avg(dBm)	PAPR(dB)		
LTE Band 13	5MHz	QPSK	23230/782	26.96	17.61	9.35	≤13	PASS
		16QAM	23230/782	26.86	16.28	10.58	≤13	PASS
	10MHz	QPSK	23230/782	26.82	17.08	9.74	≤13	PASS
		16QAM	23230/782	27.53	17.26	10.27	≤13	PASS

Mode	Bandwidth	Modulation	Channel/ Frequency(MHz)	Peak-to-Average Power Ratio (PAPR)			Limit(dB)	Conclusion
				Peak(dBm)	Avg(dBm)	PAPR(dB)		
LTE Band 66	1.4MHz	QPSK	132322/1745	26.28	16.98	9.30	≤13	PASS
		16QAM	132322/1745	27.08	16.89	10.19	≤13	PASS
	3MHz	QPSK	132322/1745	26.23	16.85	9.38	≤13	PASS
		16QAM	132322/1745	26.97	15.85	11.12	≤13	PASS
	5MHz	QPSK	132322/1745	27.01	17.96	9.05	≤13	PASS
		16QAM	132322/1745	26.84	17.10	9.74	≤13	PASS
	10MHz	QPSK	132322/1745	26.92	18.27	8.65	≤13	PASS
		16QAM	132322/1745	27.55	17.83	9.72	≤13	PASS
	15MHz	QPSK	132322/1745	27.61	19.13	8.48	≤13	PASS
		16QAM	132322/1745	27.95	18.37	9.58	≤13	PASS
	20MHz	QPSK	132322/1745	27.47	18.30	9.17	≤13	PASS
		16QAM	132322/1745	27.92	18.53	9.39	≤13	PASS

Mode	Bandwidth	Modulation	Channel/ Frequency(MHz)	Peak-to-Average Power Ratio (PAPR)			Limit(dB)	Conclusion
				Peak(dBm)	Avg(dBm)	PAPR(dB)		
LTE Band 85	5MHz	QPSK	20175/1732.5	26.46	16.42	10.04	≤13	PASS
		16QAM	20175/1732.5	26.43	15.94	10.49	≤13	PASS
	10MHz	QPSK	20175/1732.5	26.42	16.71	9.71	≤13	PASS
		16QAM	20175/1732.5	27.28	16.65	10.63	≤13	PASS

Frequency Stability

LTE Band 4						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	1.4MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	3.86	2.95	0.00223	0.00170	PASS
Extreme (85℃)		11.36	9.13	0.00656	0.00527	PASS
Extreme (80℃)		17.46	10.37	0.01008	0.00599	PASS
Extreme (70℃)		2.58	1.31	0.00149	0.00075	PASS
Extreme (60℃)		10.55	3.36	0.00609	0.00194	PASS
Extreme (55℃)		7.13	15.01	0.00412	0.00867	PASS
Extreme (50℃)		14.03	11.79	0.00810	0.00680	PASS
Extreme (40℃)		7.26	11.34	0.00419	0.00654	PASS
Extreme (30℃)		17.87	4.23	0.01031	0.00244	PASS
Extreme (20℃)		15.18	5.20	0.00876	0.00300	PASS
Extreme (10℃)		3.04	6.37	0.00175	0.00368	PASS
Extreme (0℃)		2.67	10.12	0.00154	0.00584	PASS
Extreme (-10℃)		17.28	11.62	0.00997	0.00671	PASS
Extreme (-20℃)		2.52	17.37	0.00145	0.01003	PASS
Extreme (-30℃)		11.02	13.65	0.00636	0.00788	PASS
Extreme (-40℃)		8.10	6.42	0.00468	0.00371	PASS
25℃	LV	15.09	2.14	0.00871	0.00123	PASS
	HV	14.31	10.84	0.00826	0.00626	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	3MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	6.46	1.99	0.00373	0.00115	PASS
Extreme (85℃)		3.06	15.12	0.00177	0.00872	PASS
Extreme (80℃)		15.30	8.73	0.00883	0.00504	PASS
Extreme (70℃)		10.33	16.46	0.00596	0.00950	PASS
Extreme (60℃)		8.00	6.00	0.00462	0.00346	PASS
Extreme (55℃)		10.00	1.00	0.00577	0.00058	PASS
Extreme (50℃)		14.00	17.00	0.00808	0.00981	PASS
Extreme (40℃)		13.00	6.00	0.00750	0.00346	PASS
Extreme (30℃)		14.00	8.00	0.00808	0.00462	PASS
Extreme (20℃)		4.56	8.40	0.00263	0.00485	PASS
Extreme (10℃)		5.20	8.63	0.00300	0.00498	PASS
Extreme (0℃)		9.59	17.50	0.00553	0.01010	PASS
Extreme (-10℃)		17.34	5.98	0.01001	0.00345	PASS



Extreme (-20℃)		16.31	2.44	0.00942	0.00141	PASS
Extreme (-30℃)		17.05	17.30	0.00984	0.00999	PASS
Extreme (-40℃)		10.26	16.90	0.00592	0.00976	PASS
25℃	LV	5.97	10.47	0.00344	0.00604	PASS
	HV	6.11	9.69	0.00353	0.00559	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage					
Normal (25℃)	Normal	16.37	13.88	0.00945	0.00801	PASS
Extreme (85℃)		7.45	17.66	0.00430	0.01019	PASS
Extreme (80℃)		13.26	14.91	0.00765	0.00861	PASS
Extreme (70℃)		8.01	9.46	0.00462	0.00546	PASS
Extreme (60℃)		10.00	8.00	0.00577	0.00462	PASS
Extreme (55℃)		12.00	11.00	0.00693	0.00635	PASS
Extreme (50℃)		11.00	17.00	0.00635	0.00981	PASS
Extreme (40℃)		16.00	10.00	0.00924	0.00577	PASS
Extreme (30℃)		1.00	14.00	0.00058	0.00808	PASS
Extreme (20℃)		7.96	10.10	0.00460	0.00583	PASS
Extreme (10℃)		2.57	9.65	0.00149	0.00557	PASS
Extreme (0℃)		2.46	14.68	0.00142	0.00847	PASS
Extreme (-10℃)		16.51	7.88	0.00953	0.00455	PASS
Extreme (-20℃)		13.48	5.26	0.00778	0.00304	PASS
Extreme (-30℃)		4.87	15.96	0.00281	0.00921	PASS
Extreme (-40℃)		10.41	4.96	0.00601	0.00286	PASS
25℃	LV	3.55	9.43	0.00205	0.00544	PASS
	HV	5.11	4.81	0.00295	0.00278	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage					
Normal (25℃)	Normal	1.59	4.54	0.00092	0.00262	PASS
Extreme (85℃)		3.10	3.87	0.00179	0.00223	PASS
Extreme (80℃)		13.22	10.74	0.00763	0.00620	PASS
Extreme (70℃)		12.56	2.63	0.00725	0.00152	PASS
Extreme (60℃)		14.00	1.00	0.00808	0.00058	PASS
Extreme (55℃)		12.00	14.00	0.00693	0.00808	PASS
Extreme (50℃)		1.00	4.00	0.00058	0.00231	PASS
Extreme (40℃)		12.00	6.00	0.00693	0.00346	PASS
Extreme (30℃)		4.00	3.00	0.00231	0.00173	PASS
Extreme (20℃)		12.99	9.74	0.00750	0.00562	PASS
Extreme (10℃)		8.80	15.06	0.00508	0.00869	PASS



Extreme (0℃)		11.82	10.32	0.00683	0.00596	PASS
Extreme (-10℃)		11.70	15.72	0.00676	0.00908	PASS
Extreme (-20℃)		3.09	7.96	0.00178	0.00459	PASS
Extreme (-30℃)		16.95	4.70	0.00978	0.00271	PASS
Extreme (-40℃)		11.32	1.75	0.00653	0.00101	PASS
25℃	LV	8.14	8.99	0.00470	0.00519	PASS
	HV	11.29	15.00	0.00651	0.00866	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	4.06	2.40	0.00235	0.00139	PASS
Extreme (85℃)		7.34	16.97	0.00423	0.00980	PASS
Extreme (80℃)		5.26	13.42	0.00304	0.00775	PASS
Extreme (70℃)		10.67	7.60	0.00616	0.00438	PASS
Extreme (60℃)		1.55	8.78	0.00089	0.00507	PASS
Extreme (55℃)		4.47	10.88	0.00258	0.00628	PASS
Extreme (50℃)		1.00	17.00	0.00058	0.00981	PASS
Extreme (40℃)		1.00	17.00	0.00058	0.00981	PASS
Extreme (30℃)		17.00	12.00	0.00981	0.00693	PASS
Extreme (20℃)		15.00	1.00	0.00866	0.00058	PASS
Extreme (10℃)		7.00	10.00	0.00404	0.00577	PASS
Extreme (0℃)		2.08	14.59	0.00120	0.00842	PASS
Extreme (-10℃)		9.79	17.41	0.00565	0.01005	PASS
Extreme (-20℃)		10.59	14.40	0.00611	0.00831	PASS
Extreme (-30℃)		7.11	4.16	0.00410	0.00240	PASS
Extreme (-40℃)		12.63	10.54	0.00729	0.00609	PASS
25℃	LV	13.41	4.63	0.00774	0.00267	PASS
	HV	6.77	10.12	0.00391	0.00584	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	16.64	13.50	0.00960	0.00779	PASS
Extreme (85℃)		7.04	17.62	0.00406	0.01017	PASS
Extreme (80℃)		8.95	17.45	0.00516	0.01007	PASS
Extreme (70℃)		17.11	3.45	0.00988	0.00199	PASS
Extreme (60℃)		1.19	5.71	0.00069	0.00329	PASS
Extreme (55℃)		11.00	2.00	0.00635	0.00115	PASS
Extreme (50℃)		14.00	7.00	0.00808	0.00404	PASS
Extreme (40℃)		3.00	5.00	0.00173	0.00289	PASS



Extreme (30℃)		14.00	8.00	0.00808	0.00462	PASS
Extreme (20℃)		8.00	15.00	0.00462	0.00866	PASS
Extreme (10℃)		11.55	4.85	0.00667	0.00280	PASS
Extreme (0℃)		1.23	12.29	0.00071	0.00709	PASS
Extreme (-10℃)		7.04	16.51	0.00406	0.00953	PASS
Extreme (-20℃)		12.52	9.81	0.00723	0.00566	PASS
Extreme (-30℃)		6.40	1.80	0.00369	0.00104	PASS
Extreme (-40℃)		1.62	3.78	0.00094	0.00218	PASS
25℃	LV	13.53	8.87	0.00781	0.00512	PASS
	HV	16.27	17.27	0.00939	0.00997	PASS

LTE Band 12						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	1.4MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	13.47	7.75	0.01903	0.01096	
Extreme (85℃)		5.21	8.37	0.00737	0.01184	
Extreme (80℃)		13.49	12.55	0.01907	0.01774	
Extreme (70℃)		4.15	7.59	0.00587	0.01073	
Extreme (60℃)		13.50	4.11	0.01907	0.00580	
Extreme (55℃)		12.11	6.30	0.01711	0.00890	
Extreme (50℃)		13.44	17.87	0.01900	0.02525	
Extreme (40℃)		9.45	6.46	0.01336	0.00913	
Extreme (30℃)		9.99	13.65	0.01413	0.01929	
Extreme (20℃)		17.26	11.91	0.02440	0.01683	
Extreme (10℃)		17.50	2.96	0.02473	0.00418	
Extreme (0℃)		2.11	5.14	0.00298	0.00726	
Extreme (-10℃)		4.40	9.16	0.00622	0.01294	
Extreme (-20℃)		2.62	1.56	0.00371	0.00221	
Extreme (-30℃)		1.20	3.49	0.00170	0.00493	
Extreme (-40℃)		14.09	15.60	0.01992	0.02205	
25℃	LV	1.60	17.35	0.00227	0.02452	PASS
	HV	14.68	13.68	0.02075	0.01934	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	3MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	6.55	4.46	0.00925	0.00631	
Extreme (85℃)		16.76	14.00	0.02369	0.01979	
Extreme (80℃)		12.64	11.55	0.01786	0.01632	



Extreme (70℃)		13.45	16.39	0.01901	0.02316	PASS
Extreme (60℃)		9.00	15.00	0.01272	0.02120	PASS
Extreme (55℃)		2.00	7.00	0.00283	0.00989	PASS
Extreme (50℃)		13.00	7.00	0.01837	0.00989	PASS
Extreme (40℃)		16.00	15.00	0.02261	0.02120	PASS
Extreme (30℃)		15.00	10.00	0.02120	0.01413	PASS
Extreme (20℃)		16.88	17.61	0.02386	0.02489	PASS
Extreme (10℃)		15.70	11.12	0.02219	0.01572	PASS
Extreme (0℃)		2.24	16.42	0.00317	0.02321	PASS
Extreme (-10℃)		2.42	16.03	0.00342	0.02266	PASS
Extreme (-20℃)		4.48	6.94	0.00633	0.00981	PASS
Extreme (-30℃)		9.85	4.32	0.01392	0.00611	PASS
Extreme (-40℃)		14.65	16.76	0.02071	0.02369	PASS
25℃	LV	6.53	15.33	0.00923	0.02167	PASS
	HV	10.10	9.54	0.01427	0.01349	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	17.00	8.72	0.02403	0.01233	PASS
Extreme (85℃)		4.69	13.33	0.00663	0.01884	PASS
Extreme (80℃)		2.67	3.39	0.00377	0.00479	PASS
Extreme (70℃)		9.64	3.89	0.01363	0.00550	PASS
Extreme (60℃)		7.00	8.00	0.00989	0.01131	PASS
Extreme (55℃)		10.00	7.00	0.01413	0.00989	PASS
Extreme (50℃)		9.00	6.00	0.01272	0.00848	PASS
Extreme (40℃)		2.00	9.00	0.00283	0.01272	PASS
Extreme (30℃)		3.00	17.00	0.00424	0.02403	PASS
Extreme (20℃)		11.57	1.81	0.01635	0.00256	PASS
Extreme (10℃)		7.98	17.89	0.01127	0.02529	PASS
Extreme (0℃)		9.41	13.84	0.01330	0.01956	PASS
Extreme (-10℃)		15.08	8.96	0.02132	0.01266	PASS
Extreme (-20℃)		1.45	6.86	0.00204	0.00970	PASS
Extreme (-30℃)		15.00	17.20	0.02121	0.02431	PASS
Extreme (-40℃)		10.14	6.85	0.01433	0.00969	PASS
25℃	LV	3.79	4.97	0.00536	0.00702	PASS
	HV	2.77	7.38	0.00392	0.01042	PASS



Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	2.81	10.01	0.00398	0.01415	
Extreme (85℃)		7.24	3.95	0.01024	0.00558	PASS
Extreme (80℃)		1.98	15.95	0.00280	0.02255	PASS
Extreme (70℃)		10.12	5.96	0.01430	0.00842	PASS
Extreme (60℃)		7.00	8.00	0.00989	0.01131	PASS
Extreme (55℃)		6.00	12.00	0.00848	0.01696	PASS
Extreme (50℃)		8.00	15.00	0.01131	0.02120	PASS
Extreme (40℃)		7.00	9.00	0.00989	0.01272	PASS
Extreme (30℃)		6.00	16.00	0.00848	0.02261	PASS
Extreme (20℃)		7.89	15.58	0.01116	0.02202	PASS
Extreme (10℃)		12.78	13.81	0.01807	0.01952	PASS
Extreme (0℃)		1.86	14.05	0.00262	0.01986	PASS
Extreme (-10℃)		12.46	16.73	0.01762	0.02365	PASS
Extreme (-20℃)		11.35	16.43	0.01604	0.02322	PASS
Extreme (-30℃)		11.37	12.63	0.01607	0.01785	PASS
Extreme (-40℃)		2.36	12.68	0.00333	0.01792	PASS
25℃	LV	15.61	5.55	0.02207	0.00785	PASS
	HV	11.53	9.42	0.01630	0.01331	PASS

LTE Band 13						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	11.72	14.95	0.01498	0.01911	
Extreme (85℃)		16.12	10.41	0.02062	0.01331	PASS
Extreme (80℃)		9.32	1.92	0.01192	0.00246	PASS
Extreme (70℃)		14.10	2.88	0.01804	0.00368	PASS
Extreme (60℃)		10.26	10.59	0.01312	0.01354	PASS
Extreme (55℃)		11.05	3.56	0.01413	0.00455	PASS
Extreme (50℃)		2.62	7.01	0.00335	0.00897	PASS
Extreme (40℃)		1.79	11.60	0.00229	0.01483	PASS
Extreme (30℃)		12.23	7.91	0.01564	0.01012	PASS
Extreme (20℃)		8.18	5.10	0.01047	0.00652	PASS
Extreme (10℃)		14.09	2.07	0.01801	0.00265	PASS
Extreme (0℃)		8.75	2.13	0.01119	0.00273	PASS
Extreme (-10℃)		3.26	9.80	0.00417	0.01253	PASS



Extreme (-20℃)		4.76	4.03	0.00608	0.00515	PASS
Extreme (-30℃)		3.36	15.67	0.00430	0.02004	PASS
Extreme (-40℃)		4.36	7.33	0.00558	0.00937	PASS
25℃	LV	16.78	12.25	0.02146	0.01567	PASS
	HV	13.64	6.11	0.01744	0.00782	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage					
Normal (25℃)	Normal	14.80	11.74	0.01893	0.01502	PASS
Extreme (85℃)		15.25	8.25	0.01950	0.01055	PASS
Extreme (80℃)		1.66	7.35	0.00212	0.00940	PASS
Extreme (70℃)		12.30	4.95	0.01573	0.00633	PASS
Extreme (60℃)		14.00	15.00	0.01790	0.01918	PASS
Extreme (55℃)		14.00	5.00	0.01790	0.00639	PASS
Extreme (50℃)		4.00	4.00	0.00512	0.00512	PASS
Extreme (40℃)		2.00	2.00	0.00256	0.00256	PASS
Extreme (30℃)		3.00	2.00	0.00384	0.00256	PASS
Extreme (20℃)		12.36	3.41	0.01580	0.00436	PASS
Extreme (10℃)		3.84	3.55	0.00492	0.00453	PASS
Extreme (0℃)		3.16	16.65	0.00404	0.02129	PASS
Extreme (-10℃)		4.53	15.24	0.00579	0.01948	PASS
Extreme (-20℃)		14.01	14.82	0.01792	0.01895	PASS
Extreme (-30℃)		11.66	6.42	0.01491	0.00821	PASS
Extreme (-40℃)		15.63	3.36	0.01999	0.00430	PASS
25℃	LV	16.26	4.72	0.02080	0.00604	PASS
	HV	17.15	9.69	0.02193	0.01239	PASS

LTE Band 66						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	1.4MHz					
Temperature	Voltage					
Normal (25℃)	Normal	10.01	10.66	0.00574	0.00611	PASS
Extreme (85℃)		15.31	3.68	0.00877	0.00211	PASS
Extreme (80℃)		7.51	15.96	0.00430	0.00915	PASS
Extreme (70℃)		3.98	12.98	0.00228	0.00744	PASS
Extreme (60℃)		11.63	2.82	0.00666	0.00162	PASS
Extreme (55℃)		8.58	10.18	0.00492	0.00583	PASS
Extreme (50℃)		1.16	10.15	0.00067	0.00582	PASS
Extreme (40℃)		17.84	6.49	0.01022	0.00372	PASS



Extreme (30℃)		4.65	17.89	0.00267	0.01025	PASS
Extreme (20℃)		17.21	14.16	0.00986	0.00812	PASS
Extreme (10℃)		17.54	12.96	0.01005	0.00743	PASS
Extreme (0℃)		15.51	10.38	0.00889	0.00595	PASS
Extreme (-10℃)		8.03	13.42	0.00460	0.00769	PASS
Extreme (-20℃)		1.72	5.54	0.00099	0.00318	PASS
Extreme (-30℃)		12.75	4.17	0.00730	0.00239	PASS
Extreme (-40℃)		16.13	16.52	0.00925	0.00947	PASS
25℃	LV	17.05	11.17	0.00977	0.00640	PASS
	HV	3.09	11.97	0.00177	0.00686	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	3MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	10.15	13.33	0.00582	0.00764	PASS
Extreme (85℃)		6.05	5.38	0.00347	0.00308	PASS
Extreme (80℃)		10.16	1.07	0.00582	0.00061	PASS
Extreme (70℃)		3.64	11.46	0.00208	0.00656	PASS
Extreme (60℃)		7.00	1.00	0.00401	0.00057	PASS
Extreme (55℃)		11.00	15.00	0.00630	0.00860	PASS
Extreme (50℃)		7.00	2.00	0.00401	0.00115	PASS
Extreme (40℃)		6.00	1.00	0.00344	0.00057	PASS
Extreme (30℃)		11.00	5.00	0.00630	0.00287	PASS
Extreme (20℃)		8.00	17.74	0.00459	0.01017	PASS
Extreme (10℃)		6.22	17.16	0.00357	0.00983	PASS
Extreme (0℃)		16.64	12.41	0.00954	0.00711	PASS
Extreme (-10℃)		11.59	11.75	0.00664	0.00673	PASS
Extreme (-20℃)		2.55	1.28	0.00146	0.00073	PASS
Extreme (-30℃)		8.45	5.30	0.00484	0.00304	PASS
Extreme (-40℃)		3.41	7.05	0.00195	0.00404	PASS
25℃	LV	1.51	3.41	0.00087	0.00195	PASS
	HV	11.49	14.96	0.00658	0.00857	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	8.78	4.96	0.00503	0.00284	PASS
Extreme (85℃)		15.82	17.18	0.00907	0.00984	PASS
Extreme (80℃)		7.15	12.51	0.00410	0.00717	PASS
Extreme (70℃)		16.67	15.28	0.00955	0.00876	PASS
Extreme (60℃)		14.00	16.00	0.00802	0.00917	PASS
Extreme (55℃)		17.00	12.00	0.00974	0.00688	PASS



Extreme (50℃)		10.00	7.00	0.00573	0.00401	PASS
Extreme (40℃)		10.00	4.00	0.00573	0.00229	PASS
Extreme (30℃)		15.00	14.00	0.00860	0.00802	PASS
Extreme (20℃)		1.78	7.50	0.00102	0.00430	PASS
Extreme (10℃)		5.16	15.17	0.00296	0.00869	PASS
Extreme (0℃)		6.44	2.08	0.00369	0.00119	PASS
Extreme (-10℃)		8.33	9.01	0.00477	0.00516	PASS
Extreme (-20℃)		9.20	15.04	0.00527	0.00862	PASS
Extreme (-30℃)		14.39	1.50	0.00825	0.00086	PASS
Extreme (-40℃)		2.93	13.71	0.00168	0.00786	PASS
25℃	LV	16.70	6.99	0.00957	0.00401	PASS
	HV	1.32	11.03	0.00076	0.00632	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	11.48	7.81	0.00658	0.00448	PASS
Extreme (85℃)		1.99	1.96	0.00114	0.00112	PASS
Extreme (80℃)		9.31	17.95	0.00534	0.01029	PASS
Extreme (70℃)		12.80	6.14	0.00733	0.00352	PASS
Extreme (60℃)		14.00	13.00	0.00802	0.00745	PASS
Extreme (55℃)		11.00	10.00	0.00630	0.00573	PASS
Extreme (50℃)		3.00	17.00	0.00172	0.00974	PASS
Extreme (40℃)		13.00	6.00	0.00745	0.00344	PASS
Extreme (30℃)		3.00	3.00	0.00172	0.00172	PASS
Extreme (20℃)		12.80	12.12	0.00734	0.00694	PASS
Extreme (10℃)		12.40	3.27	0.00711	0.00187	PASS
Extreme (0℃)		4.09	15.06	0.00234	0.00863	PASS
Extreme (-10℃)		5.31	2.44	0.00304	0.00140	PASS
Extreme (-20℃)		3.92	12.02	0.00224	0.00689	PASS
Extreme (-30℃)		2.00	13.76	0.00115	0.00789	PASS
Extreme (-40℃)		11.51	4.43	0.00659	0.00254	PASS
25℃	LV	13.61	17.25	0.00780	0.00988	PASS
	HV	4.90	3.51	0.00281	0.00201	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	3.43	17.43	0.00196	0.00999	PASS
Extreme (85℃)		16.91	11.62	0.00969	0.00666	PASS
Extreme (80℃)		11.15	1.93	0.00639	0.00111	PASS



Extreme (70℃)		5.81	7.07	0.00333	0.00405	PASS
Extreme (60℃)		5.46	7.02	0.00313	0.00402	PASS
Extreme (55℃)		13.70	16.06	0.00785	0.00920	PASS
Extreme (50℃)		16.00	7.00	0.00917	0.00401	PASS
Extreme (40℃)		2.00	17.00	0.00115	0.00974	PASS
Extreme (30℃)		5.00	2.00	0.00287	0.00115	PASS
Extreme (20℃)		7.00	9.00	0.00401	0.00516	PASS
Extreme (10℃)		16.00	5.00	0.00917	0.00287	PASS
Extreme (0℃)		7.39	13.41	0.00424	0.00769	PASS
Extreme (-10℃)		4.69	6.18	0.00269	0.00354	PASS
Extreme (-20℃)		17.84	15.90	0.01022	0.00911	PASS
Extreme (-30℃)		16.88	10.50	0.00968	0.00602	PASS
Extreme (-40℃)		16.89	17.16	0.00968	0.00984	PASS
25℃	LV	12.43	10.15	0.00712	0.00582	PASS
	HV	4.42	13.26	0.00253	0.00760	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	3.64	11.48	0.00209	0.00658	
Extreme (85℃)		15.23	15.51	0.00873	0.00889	
Extreme (80℃)		2.66	1.65	0.00153	0.00094	
Extreme (70℃)		8.39	14.45	0.00481	0.00828	
Extreme (60℃)		2.09	3.97	0.00120	0.00228	
Extreme (55℃)		7.00	11.00	0.00401	0.00630	
Extreme (50℃)		9.00	16.00	0.00516	0.00917	
Extreme (40℃)		5.00	11.00	0.00287	0.00630	
Extreme (30℃)		6.00	3.00	0.00344	0.00172	
Extreme (20℃)		2.00	9.00	0.00115	0.00516	
Extreme (10℃)		10.34	16.77	0.00593	0.00961	
Extreme (0℃)		11.66	17.44	0.00668	0.00999	
Extreme (-10℃)		2.67	5.31	0.00153	0.00304	
Extreme (-20℃)		14.50	5.70	0.00831	0.00327	
Extreme (-30℃)		3.25	4.73	0.00186	0.00271	
Extreme (-40℃)		15.48	10.80	0.00887	0.00619	
25℃	LV	17.87	2.13	0.01024	0.00122	PASS
	HV	3.76	3.05	0.00216	0.00175	PASS

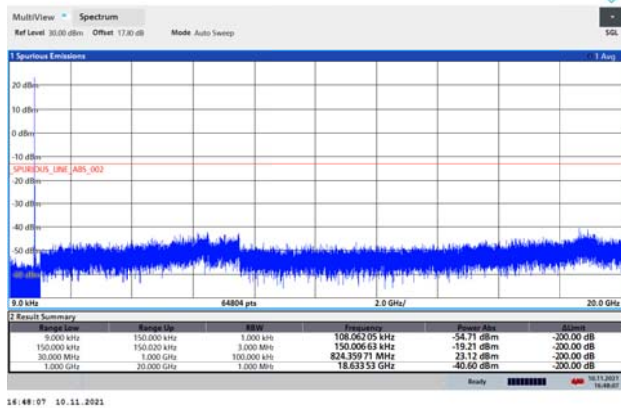
LTE Band 85						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	9.76	4.81	0.00563	0.00278	PASS
Extreme (85℃)		7.87	10.51	0.00454	0.00606	PASS
Extreme (80℃)		1.45	14.23	0.00084	0.00821	PASS
Extreme (70℃)		5.21	15.55	0.00301	0.00898	PASS
Extreme (60℃)		8.71	8.56	0.00502	0.00494	PASS
Extreme (55℃)		17.00	13.43	0.00981	0.00775	PASS
Extreme (50℃)		2.00	6.29	0.00115	0.00363	PASS
Extreme (40℃)		9.05	1.50	0.00522	0.00086	PASS
Extreme (30℃)		3.55	15.72	0.00205	0.00907	PASS
Extreme (20℃)		4.61	13.30	0.00266	0.00767	PASS
Extreme (10℃)		11.74	15.92	0.00677	0.00919	PASS
Extreme (0℃)		1.73	11.73	0.00100	0.00677	PASS
Extreme (-10℃)		4.99	8.29	0.00288	0.00479	PASS
Extreme (-20℃)		3.96	13.79	0.00229	0.00796	PASS
Extreme (-30℃)		2.30	10.95	0.00133	0.00632	PASS
Extreme (-40℃)	4.35	11.72	0.00251	0.00677	PASS	
25℃	LV	15.02	6.55	0.00867	0.00378	PASS
	HV	5.69	4.07	0.00328	0.00235	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25℃)	Normal	1.23	15.81	0.00071	0.00913	PASS
Extreme (85℃)		1.79	11.35	0.00103	0.00655	PASS
Extreme (80℃)		4.11	17.99	0.00237	0.01039	PASS
Extreme (70℃)		4.87	17.77	0.00281	0.01026	PASS
Extreme (60℃)		10.00	14.00	0.00577	0.00808	PASS
Extreme (55℃)		9.00	2.00	0.00519	0.00115	PASS
Extreme (50℃)		10.00	7.00	0.00577	0.00404	PASS
Extreme (40℃)		13.00	15.00	0.00750	0.00866	PASS
Extreme (30℃)		12.00	7.00	0.00693	0.00404	PASS
Extreme (20℃)		6.80	1.75	0.00393	0.00101	PASS
Extreme (10℃)		3.26	5.78	0.00188	0.00334	PASS
Extreme (0℃)		15.43	5.30	0.00891	0.00306	PASS
Extreme (-10℃)		3.49	10.17	0.00201	0.00587	PASS



Extreme (-20℃)		9.34	9.11	0.00539	0.00526	PASS
Extreme (-30℃)		9.98	9.60	0.00576	0.00554	PASS
Extreme (-40℃)		12.99	7.84	0.00750	0.00452	PASS
25℃	LV	8.20	14.20	0.00473	0.00820	PASS
	HV	15.64	7.22	0.00903	0.00417	PASS

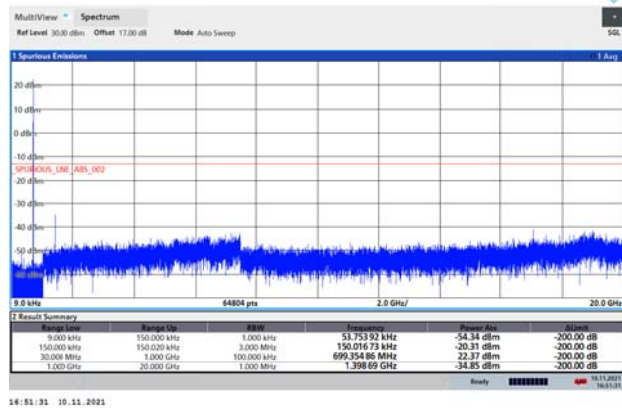
Spurious Emissions at Antenna Terminals

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



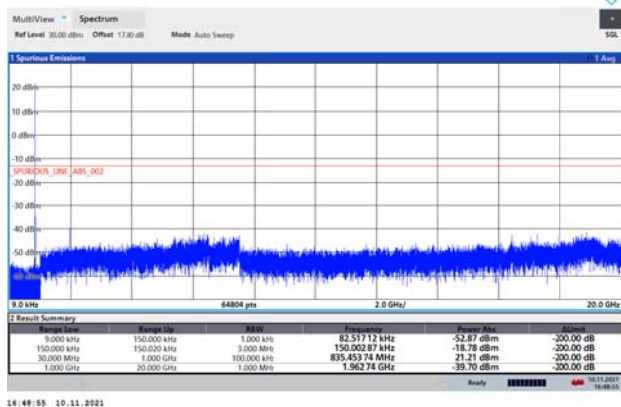
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LTE Band 12 5MHz CH-Low 9kHz~20GHz



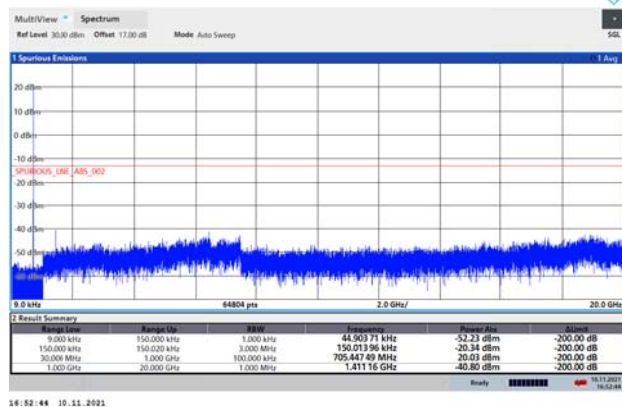
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LTE Band 4 5MHz CH-Middle 9kHz~20GHz



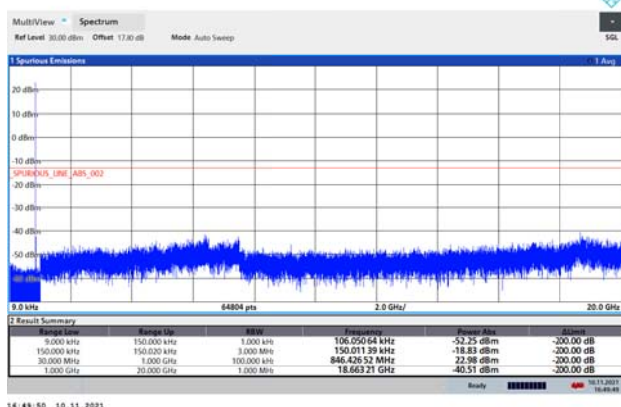
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LTE Band 12 5MHz CH-Middle 9kHz~20GHz



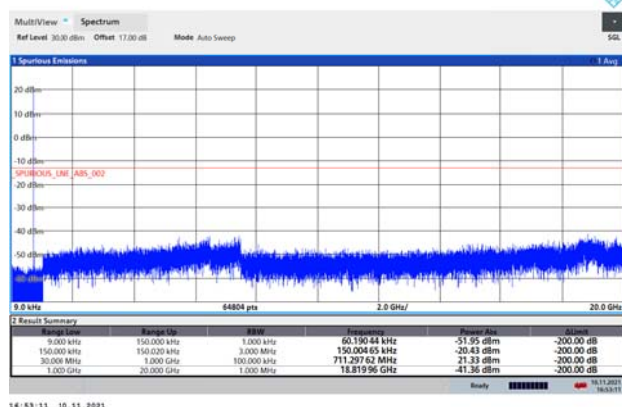
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LTE Band 4 5MHz CH-High 9kHz~20GHz



16:49:50 10.11.2021

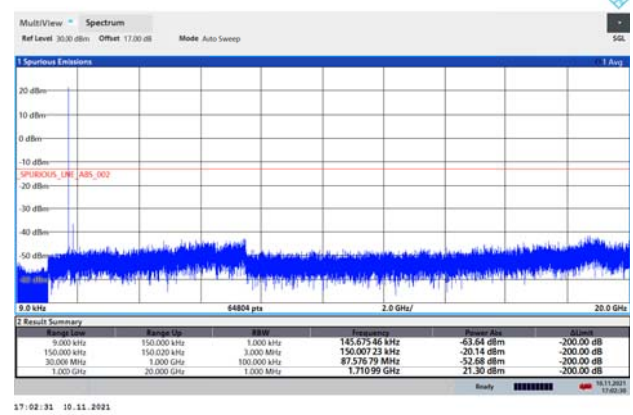
LTE Band 12 5MHz CH-High 9kHz~20GHz



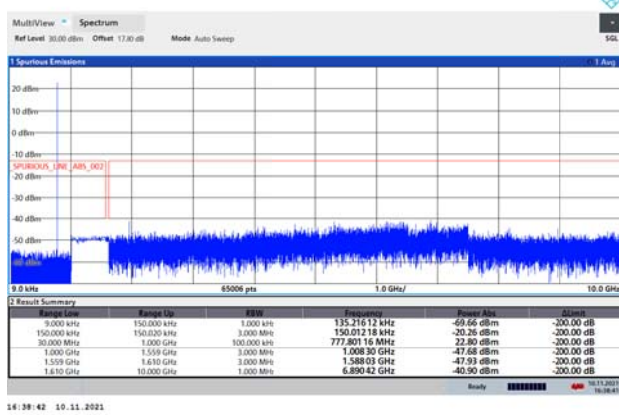
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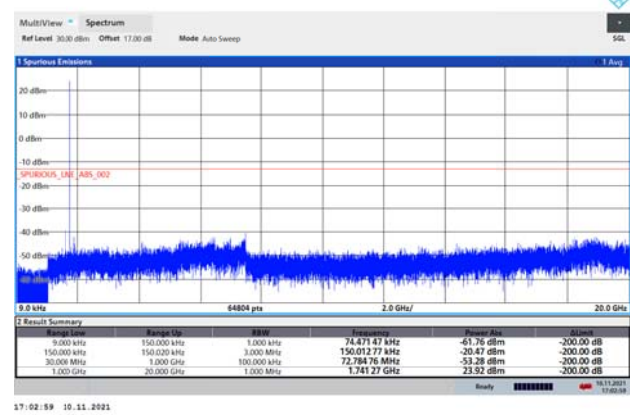
LTE Band 66 10MHz CH-Low 9kHz~20GHz



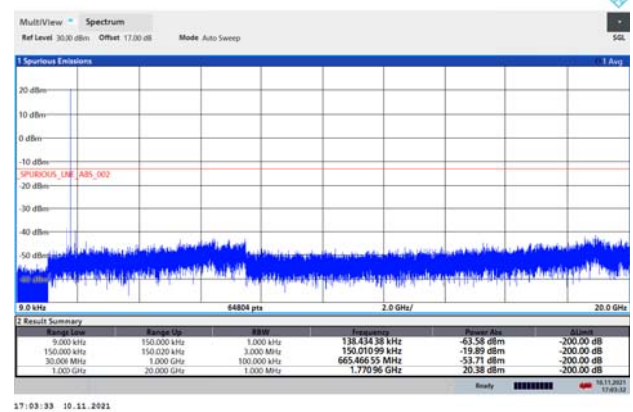
LTE Band 13 10MHz CH-Middle 9kHz~20GHz



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

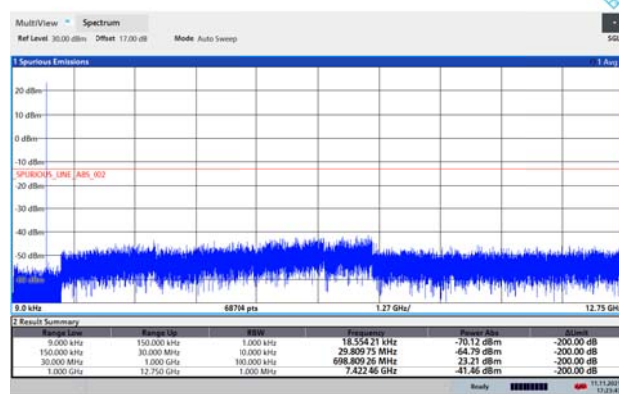


LTE Band 66 10MHz CH-High 9kHz~20GHz



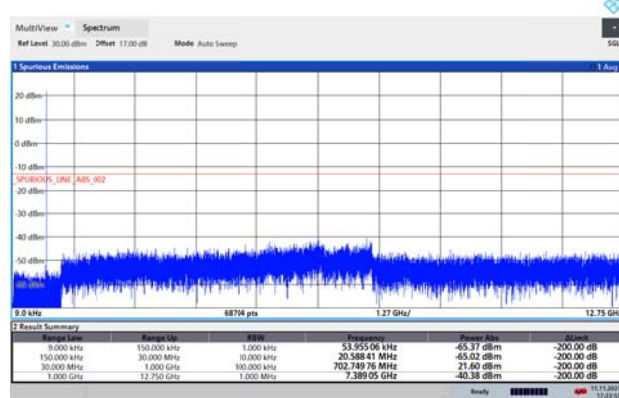


LTE Band 85 10MHz CH-Low 9kHz~20GHz



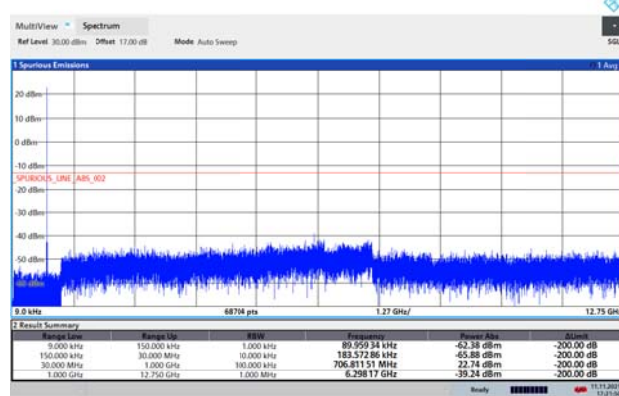
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LTE Band 85 10MHz CH-Middle 9kHz~20GHz



17:22:54 11.11.2021

LTE Band 85 10MHz CH-High 9kHz~20GHz



17:21:50 11.11.2021

Radiates Spurious Emission

LTE Band 4 QPSK 1.4MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3464.1	-49.44	2.6	10.75	Horizontal	-41.29	-13.00	28.29	180
3	5195.8	-54.57	2.4	11.05	Horizontal	-45.92	-13.00	32.92	0
4	6928.0	-49.84	4.5	11.15	Horizontal	-43.19	-13.00	30.19	180
5	8660.2	-49.02	5.1	11.35	Horizontal	-42.77	-13.00	29.77	315
6	10396.4	-48.96	5.3	11.95	Horizontal	-42.31	-13.00	29.31	90
7	12124.4	-47.14	5.5	13.55	Horizontal	-39.09	-13.00	26.09	135
8	13864.0	-50.47	6.3	13.75	Horizontal	-43.02	-13.00	30.02	45
9	15592.2	-48.21	6.7	13.85	Horizontal	-41.06	-13.00	28.06	180
10	17321.6	-46.81	6.8	14.25	Horizontal	-39.36	-13.00	26.36	0

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.

LTE Band 4 QPSK 5MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3460.5	-51.47	2.6	10.75	Horizontal	-43.32	-13.00	30.32	45
3	5191.5	-51.59	2.4	11.05	Horizontal	-42.94	-13.00	29.94	135
4	6930.0	-49.69	4.5	11.15	Horizontal	-43.04	-13.00	30.04	90
5	8662.5	-54.17	5.1	11.35	Horizontal	-47.92	-13.00	34.92	225
6	10395.0	-48.25	5.3	11.95	Horizontal	-41.60	-13.00	28.60	135
7	12127.5	-51.56	5.5	13.55	Horizontal	-43.51	-13.00	30.51	40
8	13860.0	-50.45	6.3	13.75	Horizontal	-43.00	-13.00	30.00	90
9	15592.5	-47.82	6.7	13.85	Horizontal	-40.67	-13.00	27.67	45
10	17325.0	-47.78	6.8	14.25	Horizontal	-40.33	-13.00	27.33	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 10MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3447.8	-49.98	2.6	10.75	Horizontal	-41.83	-13.00	28.83	180
3	5170.9	-56.04	2.4	11.05	Horizontal	-47.39	-13.00	34.39	90
4	6890.0	-49.31	4.5	11.15	Horizontal	-42.66	-13.00	29.66	225
5	8612.0	-50.63	5.1	11.35	Horizontal	-44.38	-13.00	31.38	0
6	10335.0	-48.93	5.3	11.95	Horizontal	-42.28	-13.00	29.28	180
7	12057.5	-50.53	5.5	13.55	Horizontal	-42.48	-13.00	29.48	90
8	13780.0	-51.24	6.3	13.75	Horizontal	-43.79	-13.00	30.79	135
9	15502.5	-48.94	6.7	13.85	Horizontal	-41.79	-13.00	28.79	315
10	17225.0	-47.66	6.8	14.25	Horizontal	-40.21	-13.00	27.21	90

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

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

LTE Band 12 QPSK 1.4MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1414.0	-59.37	2.00	10.75	Horizontal	-50.62	-13.00	37.62	315
3	2121.5	-59.12	2.51	11.05	Horizontal	-50.58	-13.00	37.58	315
4	2828.3	-57.77	4.20	11.15	Horizontal	-50.82	-13.00	37.82	225
5	3537.5	-61.74	5.20	11.15	Horizontal	-55.79	-13.00	42.79	315
6	4245.0	-61.76	5.50	11.95	Horizontal	-55.31	-13.00	42.31	45
7	4952.5	-61.05	5.70	13.55	Horizontal	-53.20	-13.00	40.20	180
8	5660.0	-59.35	6.30	13.75	Horizontal	-51.90	-13.00	38.90	315
9	6367.5	-58.78	6.80	13.85	Horizontal	-51.73	-13.00	38.73	180
10	7075.0	-56.42	6.90	14.25	Horizontal	-49.07	-13.00	36.07	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 Horizontal position.

LTE Band 12 QPSK 5MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1410.6	-57.25	2.00	10.75	Horizontal	-50.65	-13.00	37.65	135
3	2115.9	-56.73	2.51	11.05	Horizontal	-50.34	-13.00	37.34	90
4	2821.2	-60.05	4.20	11.15	Horizontal	-55.25	-13.00	42.25	270
5	3512.5	-59.51	5.20	11.15	Horizontal	-55.71	-13.00	42.71	315
6	4215.0	-58.71	5.50	11.95	Horizontal	-54.41	-13.00	41.41	315
7	4917.5	-58.08	5.70	13.55	Horizontal	-52.38	-13.00	39.38	45
8	5620.0	-56.16	6.30	13.75	Horizontal	-50.86	-13.00	37.86	270
9	6322.5	-56.22	6.80	13.85	Horizontal	-51.32	-13.00	38.32	45
10	7025.0	-55.32	6.90	14.25	Horizontal	-50.12	-13.00	37.12	180

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

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

LTE Band 12 QPSK 10MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1406.4	-56.27	2.00	10.75	Horizontal	-49.67	-13.00	36.67	45
3	2109.6	-59.07	2.51	11.05	Horizontal	-52.68	-13.00	39.68	135
4	2812.8	-56.93	4.20	11.15	Horizontal	-52.13	-13.00	39.13	90
5	3537.5	-60.34	5.20	11.15	Horizontal	-56.54	-13.00	43.54	225
6	4245.0	-59.29	5.50	11.95	Horizontal	-54.99	-13.00	41.99	45
7	4952.5	-59.28	5.70	13.55	Horizontal	-53.58	-13.00	40.58	135
8	5660.0	-57.88	6.30	13.75	Horizontal	-52.58	-13.00	39.58	90
9	6367.5	-56.69	6.80	13.85	Horizontal	-51.79	-13.00	38.79	225
10	7075.0	-54.36	6.90	14.25	Horizontal	-49.16	-13.00	36.16	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 13 QPSK 5MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1564.0	-63.00	2.51	11.05	Horizontal	-56.61	-40.00	16.61	45
3	2346.0	-58.56	2.51	11.05	Horizontal	-52.17	-13.00	39.17	135
4	3120.0	-53.50	4.20	11.15	Horizontal	-48.70	-13.00	35.70	45
5	3901.0	-58.56	5.20	11.15	Horizontal	-54.76	-13.00	41.76	90
6	4692.0	-56.64	5.50	11.95	Horizontal	-52.34	-13.00	39.34	135
7	5474.0	-57.99	5.70	13.55	Horizontal	-52.29	-13.00	39.29	45
8	6256.0	-57.55	6.30	13.75	Horizontal	-52.25	-13.00	39.25	0
9	7038.0	-55.16	6.80	13.85	Horizontal	-50.26	-13.00	37.26	45
10	7820.0	-54.93	6.90	14.25	Horizontal	-49.73	-13.00	36.73	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 13 QPSK 10MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1555.3	-53.58	2.51	11.05	Horizontal	-47.19	-13.00	34.19	0
3	2346.0	-57.37	2.51	11.05	Horizontal	-50.98	-13.00	37.98	315
4	3128.0	-53.62	4.20	11.15	Horizontal	-48.82	-13.00	35.82	135
5	3910.0	-57.18	5.20	11.15	Horizontal	-53.38	-13.00	40.38	225
6	4692.0	-57.54	5.50	11.95	Horizontal	-53.24	-13.00	40.24	315
7	5474.0	-56.14	5.70	13.55	Horizontal	-50.44	-13.00	37.44	135
8	6256.0	-57.23	6.30	13.75	Horizontal	-51.93	-13.00	38.93	315
9	7038.0	-54.22	6.80	13.85	Horizontal	-49.32	-13.00	36.32	45
10	7820.0	-53.52	6.90	14.25	Horizontal	-48.32	-13.00	35.32	45
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 66 QPSK 1.4MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3509.3	-51.41	2.6	10.75	Horizontal	-43.26	-13.00	30.26	315
3	5262.5	-56.49	2.4	11.05	Horizontal	-47.84	-13.00	34.84	0
4	7018.0	-48.07	4.5	11.15	Horizontal	-41.42	-13.00	28.42	135
5	8772.5	-49.59	5.1	11.35	Horizontal	-43.34	-13.00	30.34	270
6	10527.0	-50.22	5.3	11.95	Horizontal	-43.57	-13.00	30.57	180
7	12281.5	-50.25	5.5	13.55	Horizontal	-42.20	-13.00	29.20	225
8	14036.0	-50.97	6.3	13.75	Horizontal	-43.52	-13.00	30.52	0
9	15790.5	-50.17	6.7	13.85	Horizontal	-43.02	-13.00	30.02	180
10	17545.0	-49.02	6.8	14.25	Horizontal	-41.57	-13.00	28.57	225

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

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

LTE Band 66 QPSK 5MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3486.0	-51.22	2.6	10.75	Horizontal	-43.07	-13.00	30.07	225
3	5229.0	-57.07	2.4	11.05	Horizontal	-48.42	-13.00	35.42	90
4	6972.0	-47.08	4.5	11.15	Horizontal	-40.43	-13.00	27.43	315
5	8715.0	-49.50	5.1	11.35	Horizontal	-43.25	-13.00	30.25	225
6	10458.0	-49.18	5.3	11.95	Horizontal	-42.53	-13.00	29.53	135
7	12201.0	-48.45	5.5	13.55	Horizontal	-40.40	-13.00	27.40	270
8	13944.0	-50.75	6.3	13.75	Horizontal	-43.30	-13.00	30.30	225
9	15687.0	-48.78	6.7	13.85	Horizontal	-41.63	-13.00	28.63	315
10	17430.0	-50.77	6.8	14.25	Horizontal	-43.32	-13.00	30.32	0

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

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

LTE Band 66 QPSK 20MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3472.9	-44.30	2.6	10.75	Horizontal	-36.15	-13.00	23.15	0
3	5209.0	-53.73	2.4	11.05	Horizontal	-45.08	-13.00	32.08	45
4	6945.8	-48.97	4.5	11.15	Horizontal	-42.32	-13.00	29.32	135
5	8682.0	-49.90	5.1	11.35	Horizontal	-43.65	-13.00	30.65	90
6	10418.6	-46.53	5.3	11.95	Horizontal	-39.88	-13.00	26.88	45
7	12455.0	-51.31	5.5	13.55	Horizontal	-43.26	-13.00	30.26	0
8	13891.5	-51.42	6.3	13.75	Horizontal	-43.97	-13.00	30.97	135
9	15627.0	-48.30	6.7	13.85	Horizontal	-41.15	-13.00	28.15	225
10	17364.4	-47.41	6.8	14.25	Horizontal	-39.96	-13.00	26.96	45

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.

LTE Band 85 QPSK 5MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1409.7	-53.45	2.00	10.75	Horizontal	-46.85	-13.00	33.85	225
3	2114.5	-56.74	2.51	11.05	Horizontal	-50.35	-13.00	37.35	135
4	2820.6	-59.62	4.20	11.15	Horizontal	-54.82	-13.00	41.82	180
5	3526.5	-58.37	5.20	11.15	Horizontal	-54.57	-13.00	41.57	315
6	4231.8	-59.52	5.50	11.95	Horizontal	-55.22	-13.00	42.22	135
7	4937.1	-58.36	5.70	13.55	Horizontal	-52.66	-13.00	39.66	315
8	5642.4	-56.43	6.30	13.75	Horizontal	-51.13	-13.00	38.13	270
9	6347.7	-55.70	6.80	13.85	Horizontal	-50.80	-13.00	37.80	315
10	7053.0	-53.93	6.90	14.25	Horizontal	-48.73	-13.00	35.73	315

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.

LTE Band 85 QPSK 10MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1405.3	-53.89	2.00	10.75	Horizontal	-47.29	-13.00	34.29	0
3	2108.0	-58.13	2.51	11.05	Horizontal	-51.74	-13.00	38.74	225
4	2810.8	-57.60	4.20	11.15	Horizontal	-52.80	-13.00	39.80	180
5	3513.5	-59.12	5.20	11.15	Horizontal	-55.32	-13.00	42.32	225
6	4216.2	-59.86	5.50	11.95	Horizontal	-55.56	-13.00	42.56	45
7	4918.9	-58.16	5.70	13.55	Horizontal	-52.46	-13.00	39.46	225
8	5621.6	-56.39	6.30	13.75	Horizontal	-51.09	-13.00	38.09	180
9	6324.3	-56.18	6.80	13.85	Horizontal	-51.28	-13.00	38.28	180
10	7027.0	-53.19	6.90	14.25	Horizontal	-47.99	-13.00	34.99	0

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

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

Main Test Instruments

Date of Testing (variant): August 24, 2021 ~ November 25, 2021

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
Spectrum Analyzer	Key sight	N9020	MY52330084	2021-05-15	2022-05-14
Signal Analyzer	R&S	FSV3030	101411	2020-12-13	2021-12-12
Signal Analyzer	R&S	FSV30	100815	2020-12-13	2021-12-12
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	01111	2019--9-12	2022-09-11
Horn Antenna	Schwarzbeck	BBHA 9120D	1594	2020-12-17	2021-12-16
Software	R&S	EMC32	10.35.10	/	/