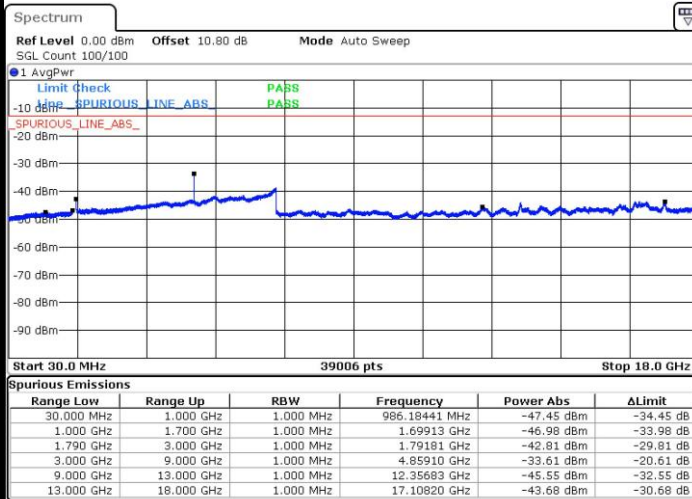




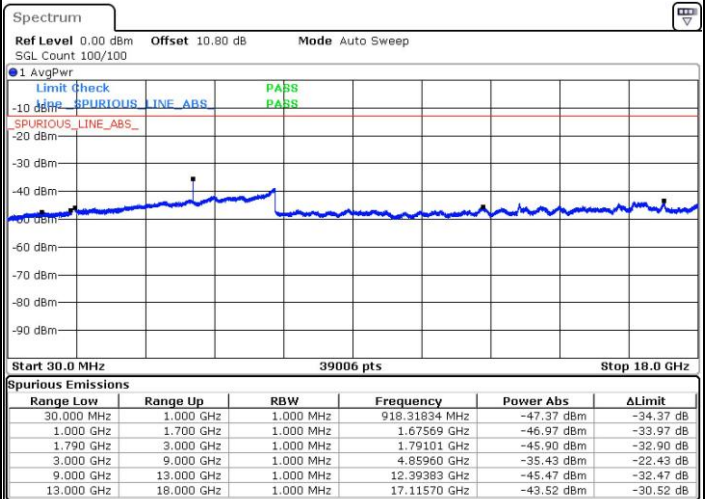
LTE Band 66 / 5MHz

Highest Channel / QPSK



Date: 31.JUL.2019 12:07:49

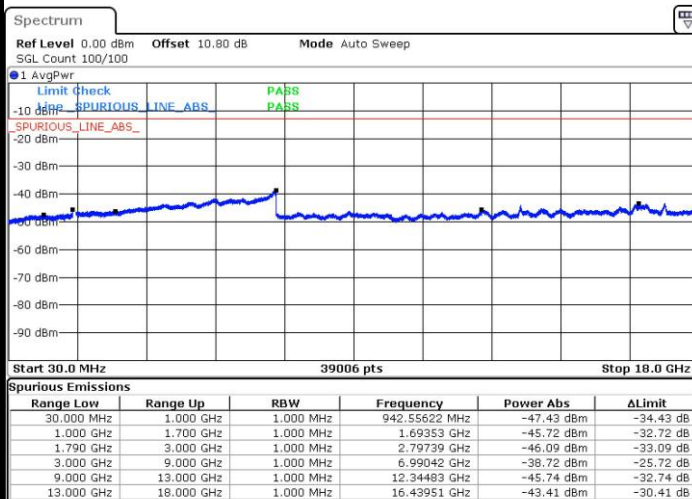
Highest Channel / 16QAM



Date: 31.JUL.2019 12:08:41

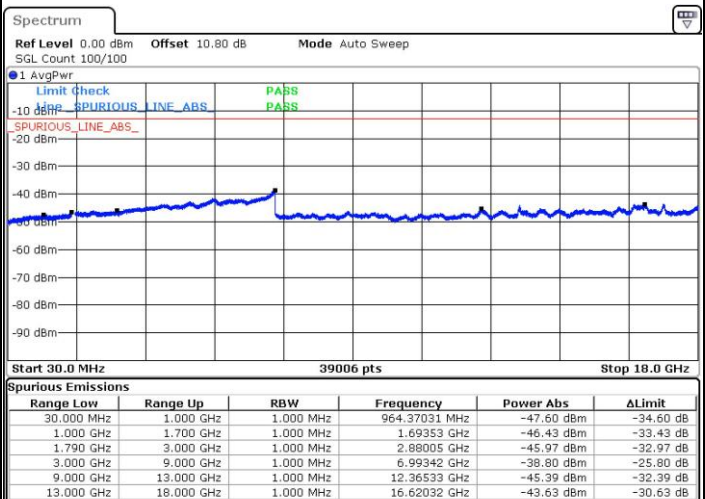
LTE Band 66 / 10MHz

Lowest Channel / QPSK



Date: 31.JUL.2019 12:14:16

Lowest Channel / 16QAM

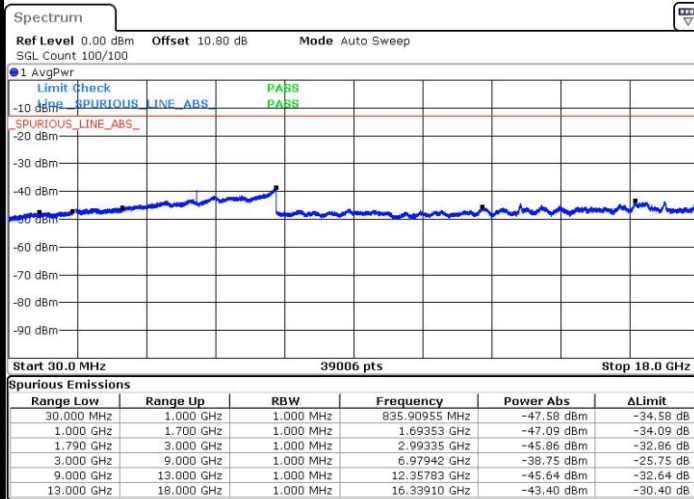


Date: 31.JUL.2019 12:15:08



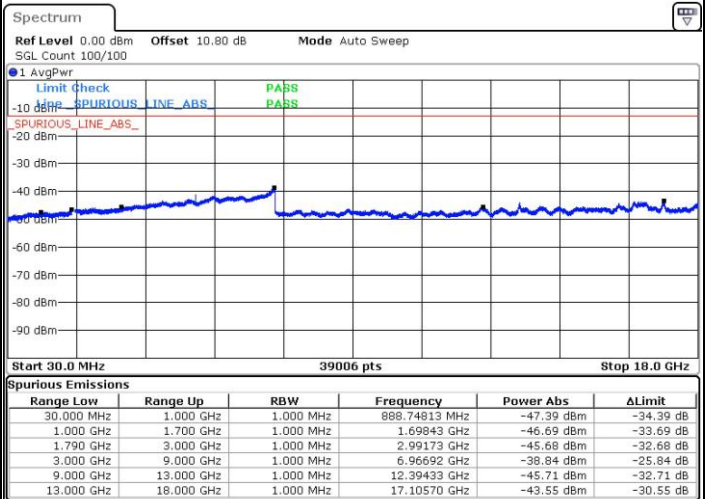
LTE Band 66 / 10MHz

Middle Channel / QPSK



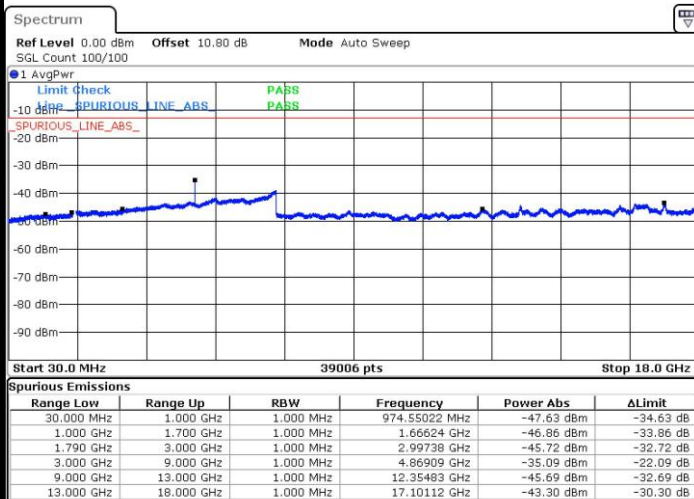
Date: 31.JUL.2019 12:16:46

Middle Channel / 16QAM



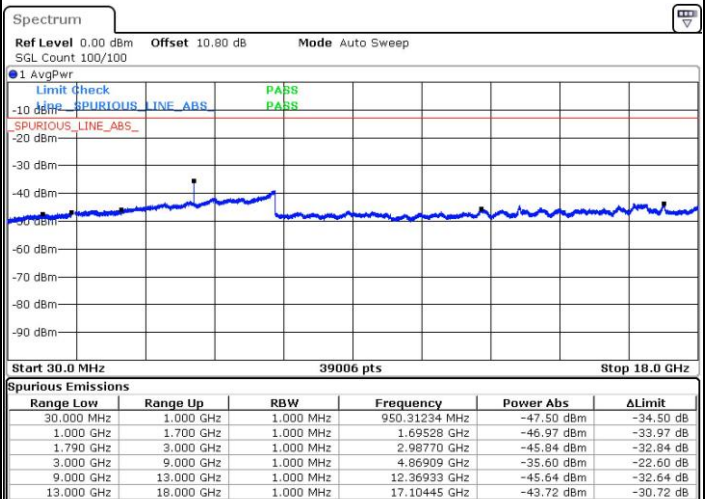
Date: 31.JUL.2019 12:17:38

Highest Channel / QPSK



Date: 31.JUL.2019 12:23:13

Highest Channel / 16QAM

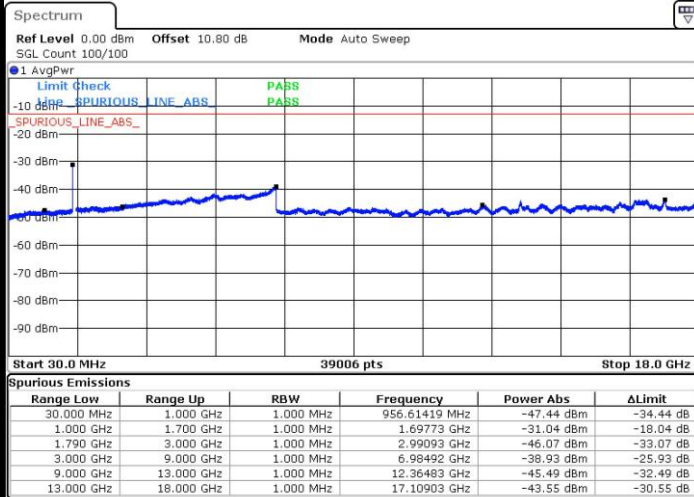


Date: 31.JUL.2019 12:24:05



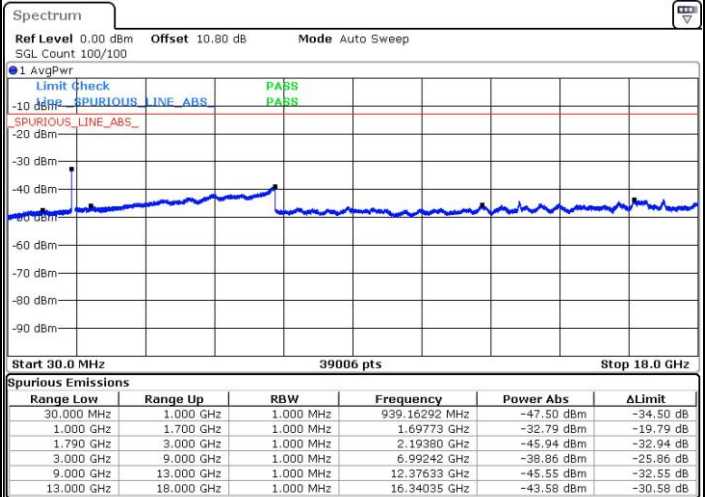
LTE Band 66 / 15MHz

Lowest Channel / QPSK



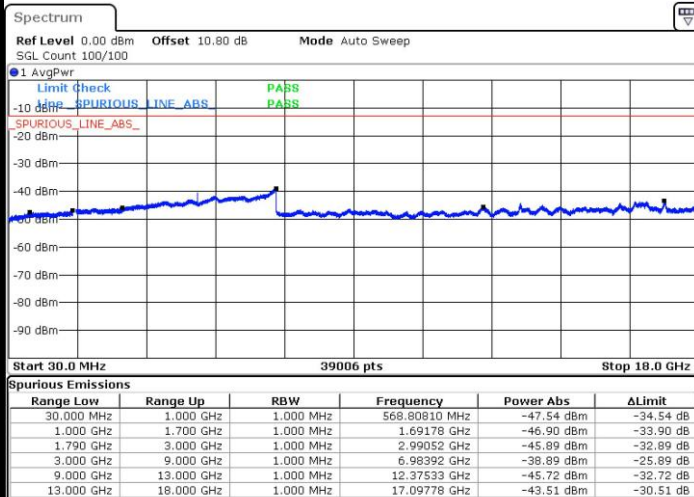
Date: 31.JUL.2019 12:31:28

Lowest Channel / 16QAM



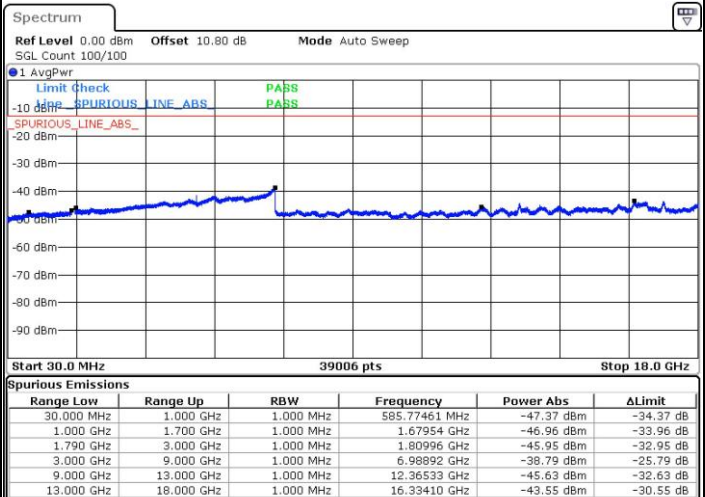
Date: 31.JUL.2019 12:32:20

Middle Channel / QPSK



Date: 31.JUL.2019 12:33:58

Middle Channel / 16QAM

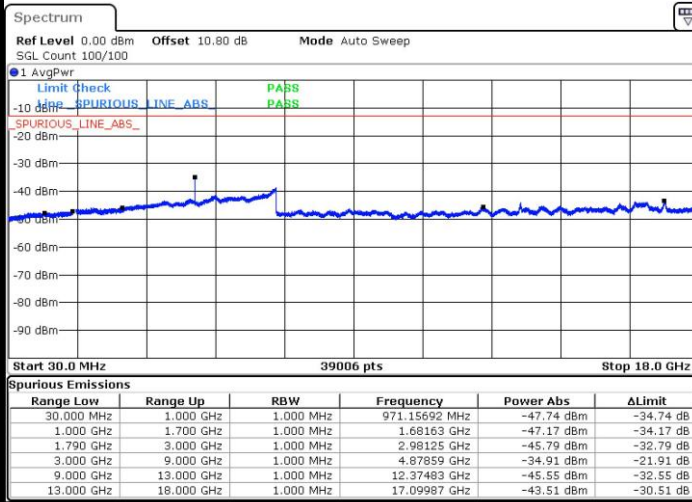


Date: 31.JUL.2019 12:34:50



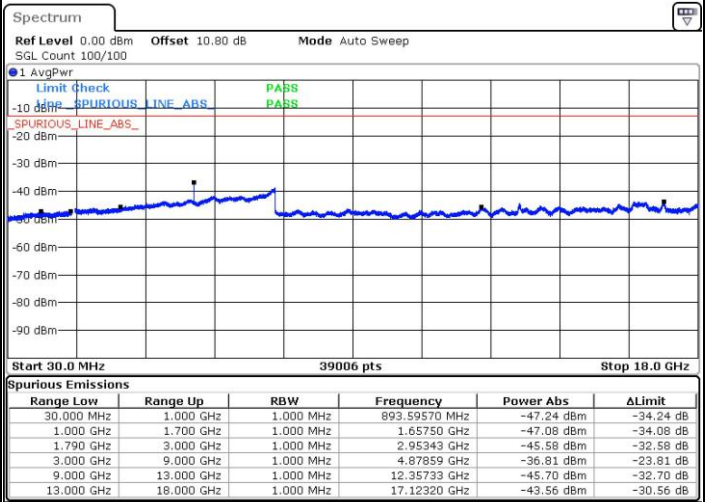
LTE Band 66 / 15MHz

Highest Channel / QPSK



Date: 31.JUL.2019 12:40:26

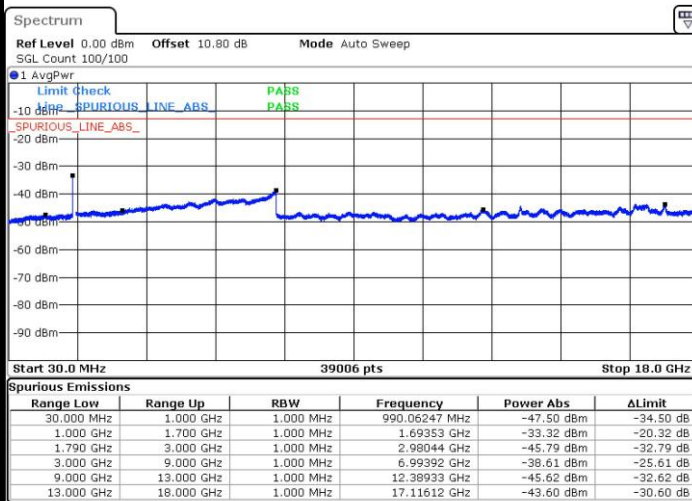
Highest Channel / 16QAM



Date: 31.JUL.2019 12:41:18

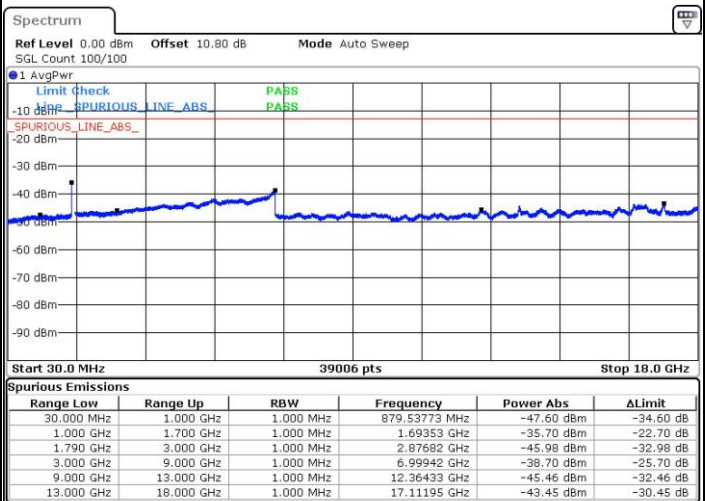
LTE Band 66 / 20MHz

Lowest Channel / QPSK



Date: 31.JUL.2019 12:46:52

Lowest Channel / 16QAM

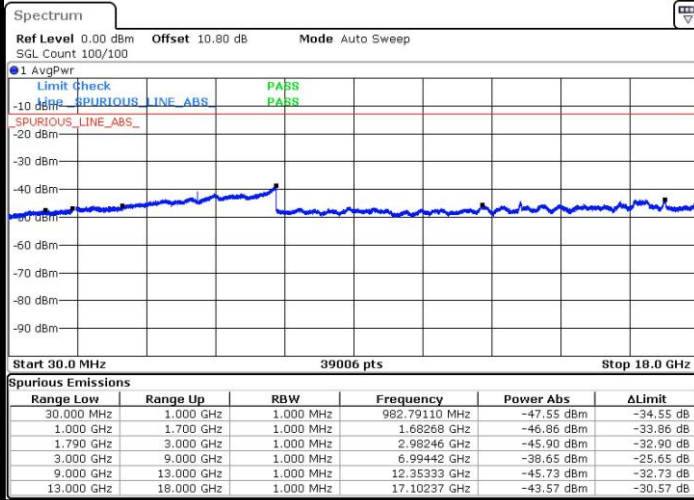


Date: 31.JUL.2019 12:47:44



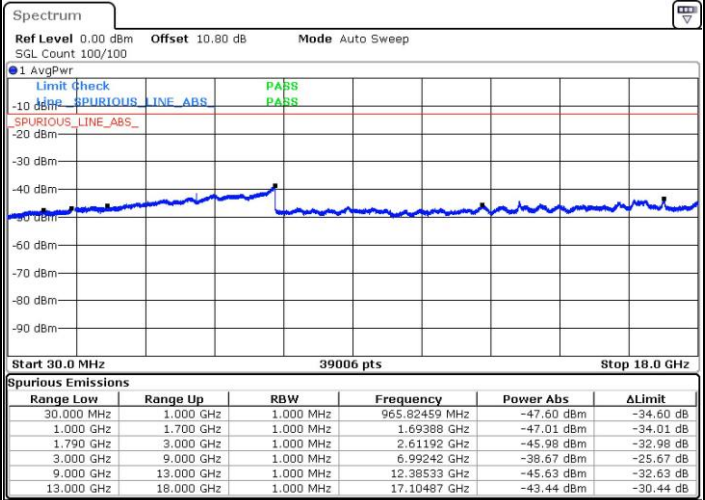
LTE Band 66 / 20MHz

Middle Channel / QPSK



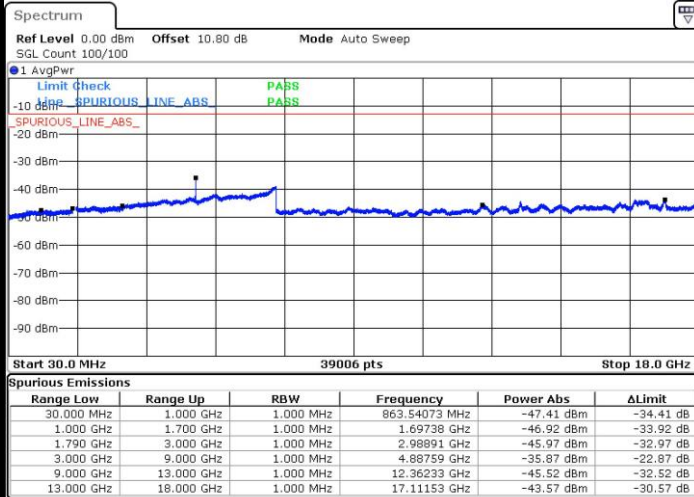
Date: 31.JUL.2019 12:49:22

Middle Channel / 16QAM



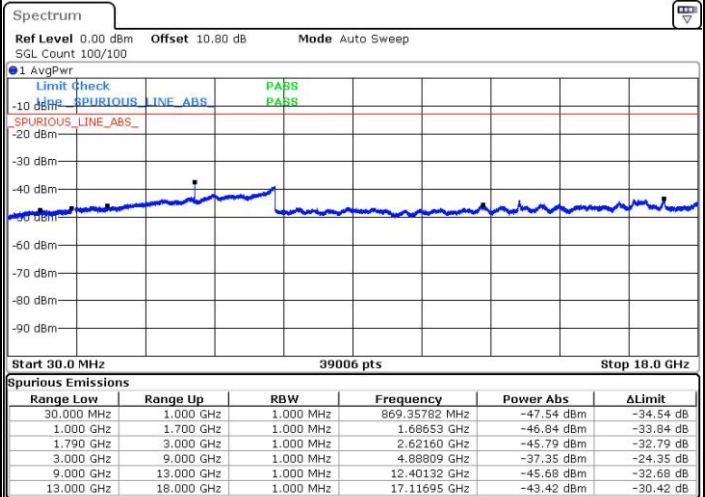
Date: 31.JUL.2019 12:50:14

Highest Channel / QPSK



Date: 31.JUL.2019 12:55:48

Highest Channel / 16QAM

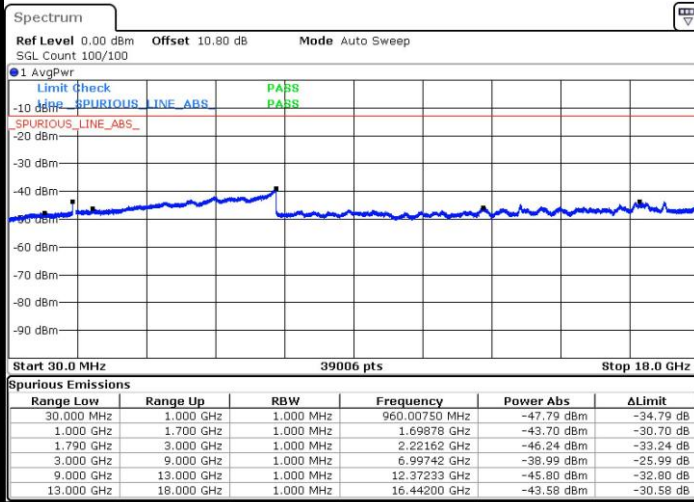


Date: 31.JUL.2019 12:56:40



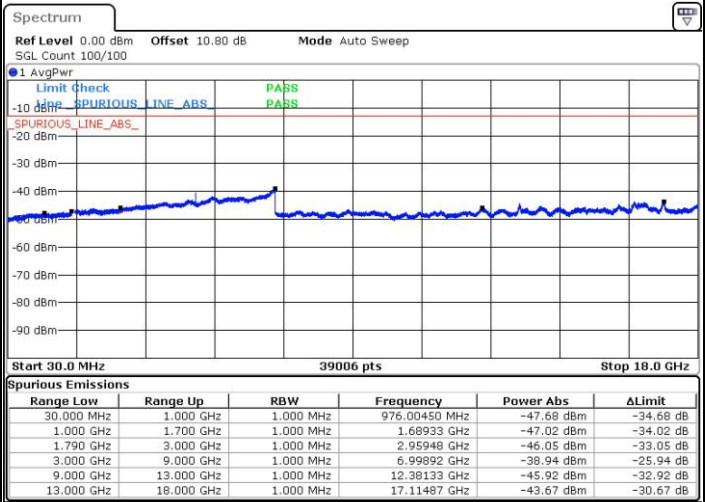
LTE Band 66 / 1.4MHz

Lowest Channel / 64QAM



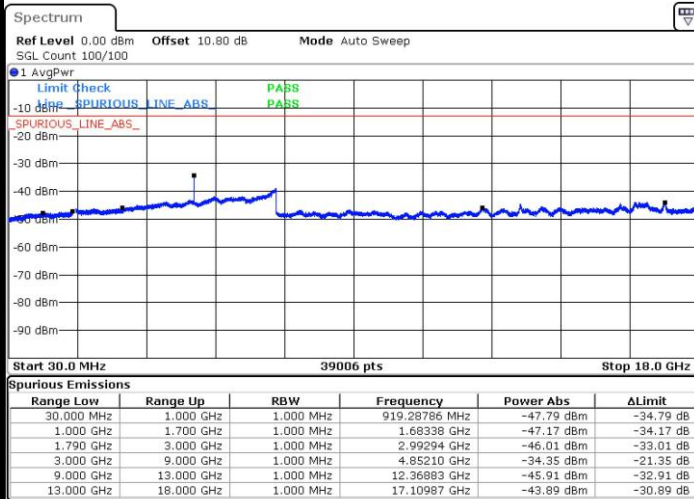
Date: 1.AUG.2019 06:52:21

Middle Channel / 64QAM



Date: 1.AUG.2019 06:53:35

Highest Channel / 64QAM

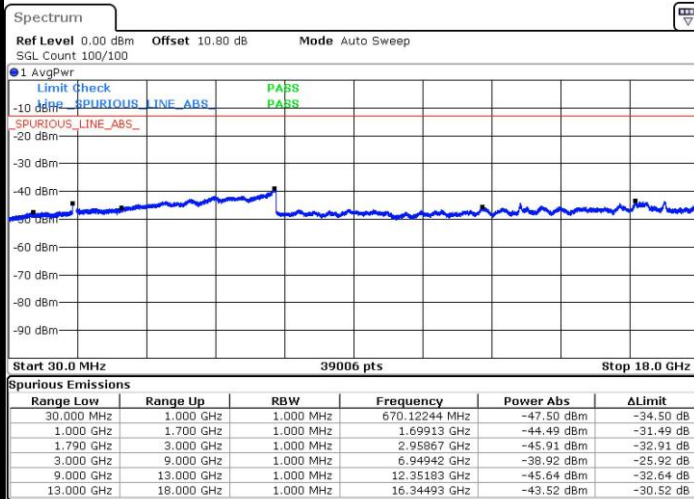


Date: 1.AUG.2019 06:56:57



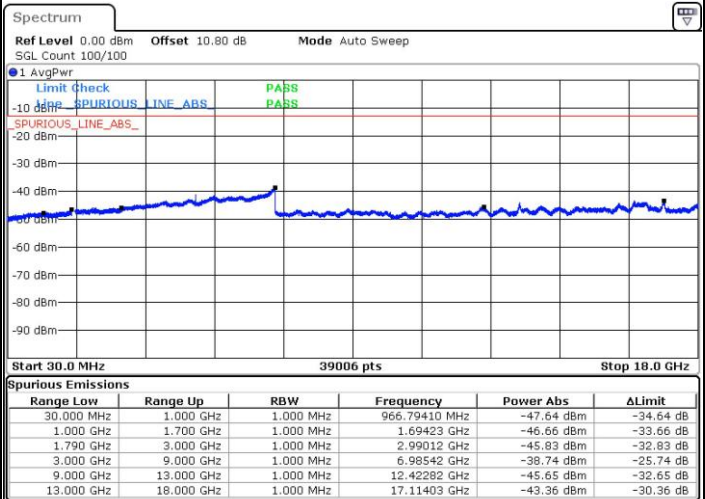
LTE Band 66 / 3MHz

Lowest Channel / 64QAM



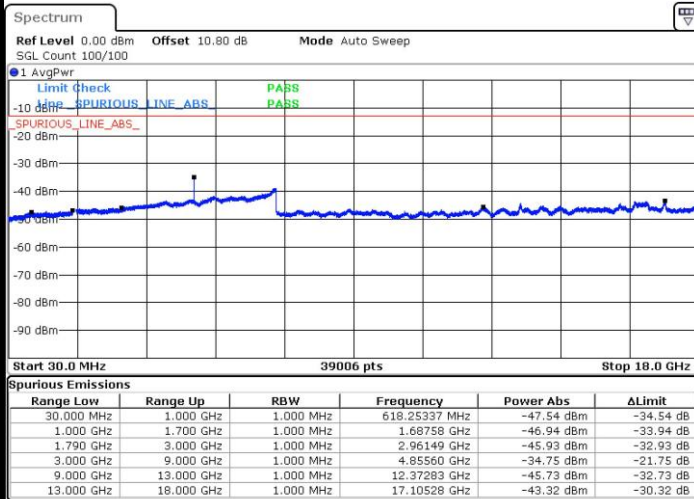
Date: 31.JUL.2019 13:28:56

Middle Channel / 64QAM



Date: 31.JUL.2019 13:30:11

Highest Channel / 64QAM

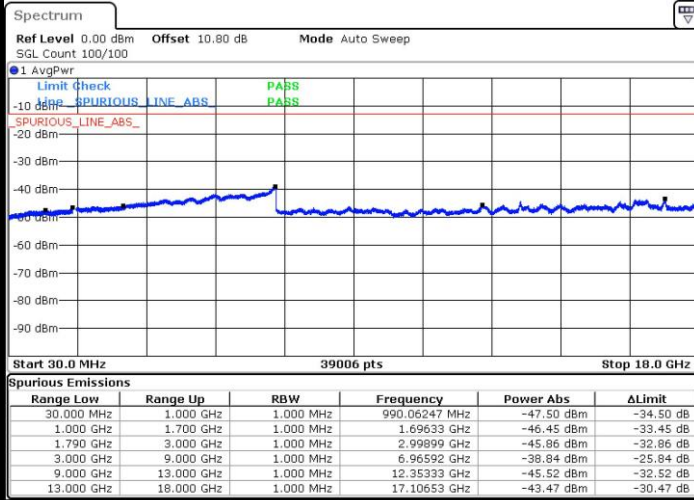


Date: 31.JUL.2019 13:33:24



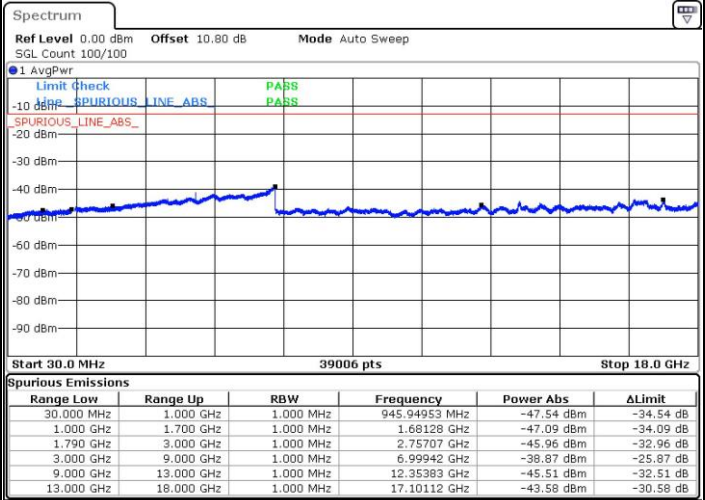
LTE Band 66 / 5MHz

Lowest Channel / 64QAM



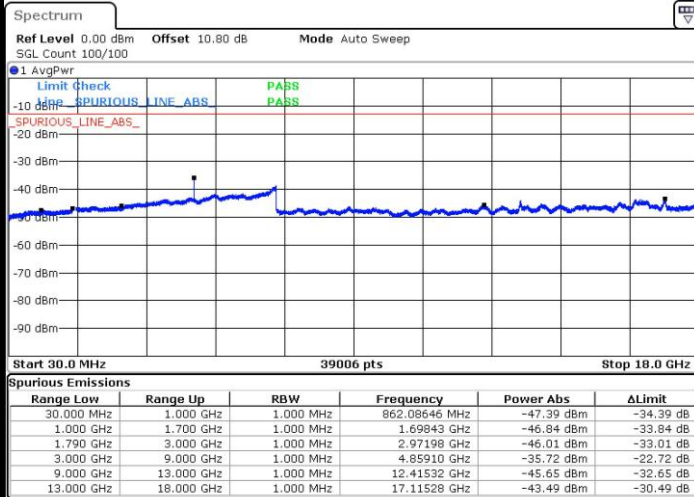
Date: 31.JUL.2019 13:36:38

Middle Channel / 64QAM



Date: 31.JUL.2019 13:37:53

Highest Channel / 64QAM

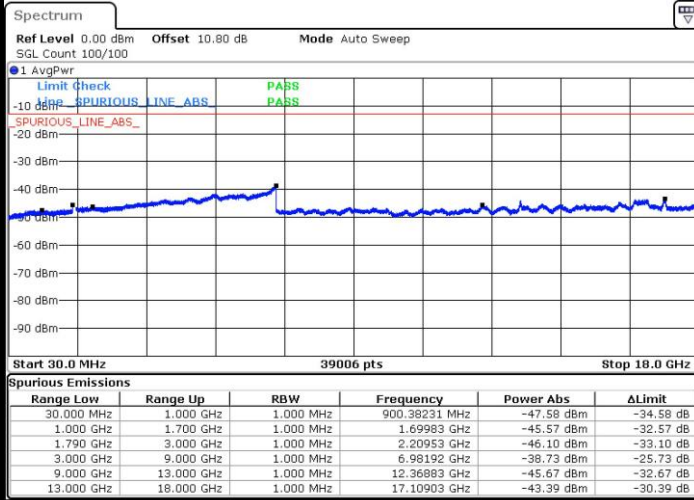


Date: 31.JUL.2019 13:41:06



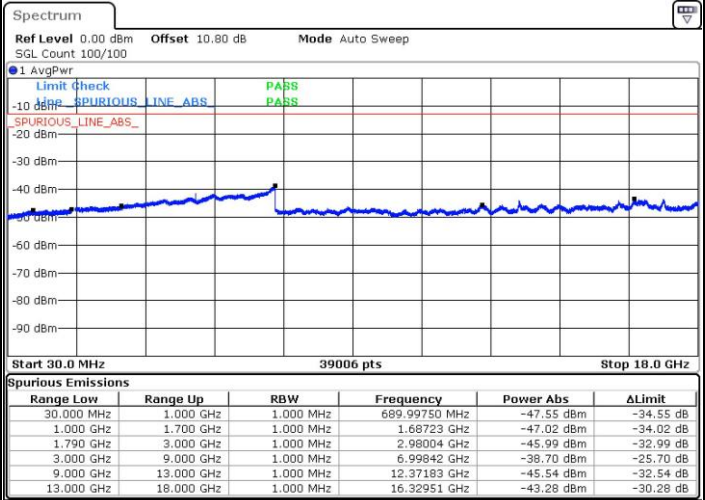
LTE Band 66 / 10MHz

Lowest Channel / 64QAM



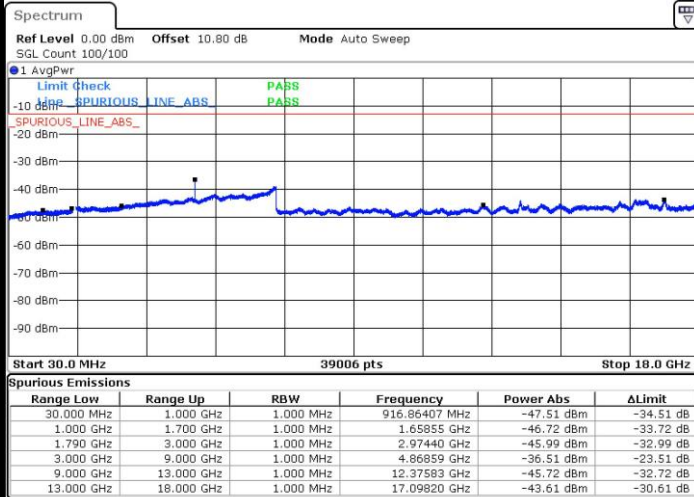
Date: 31.JUL.2019 13:44:19

Middle Channel / 64QAM



Date: 31.JUL.2019 13:45:34

Highest Channel / 64QAM

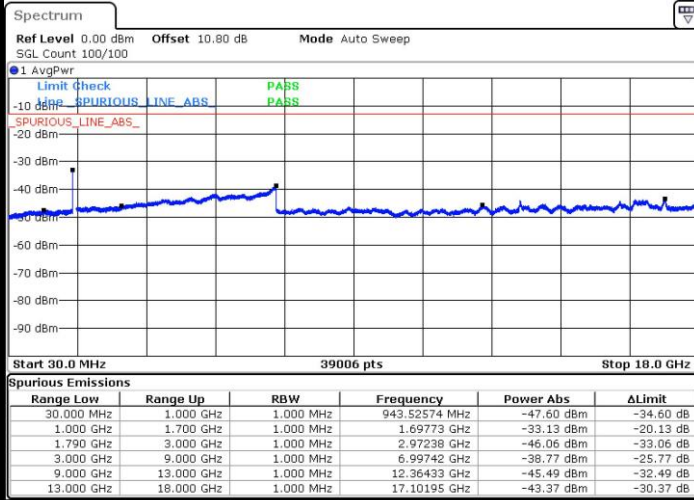


Date: 31.JUL.2019 13:48:47



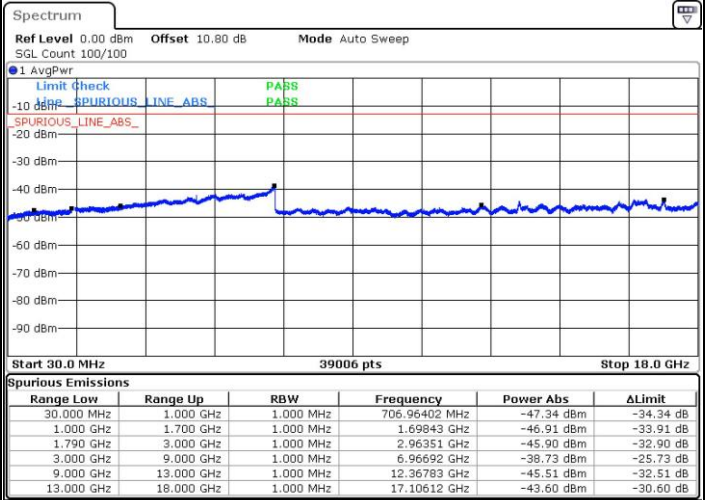
LTE Band 66 / 15MHz

Lowest Channel / 64QAM



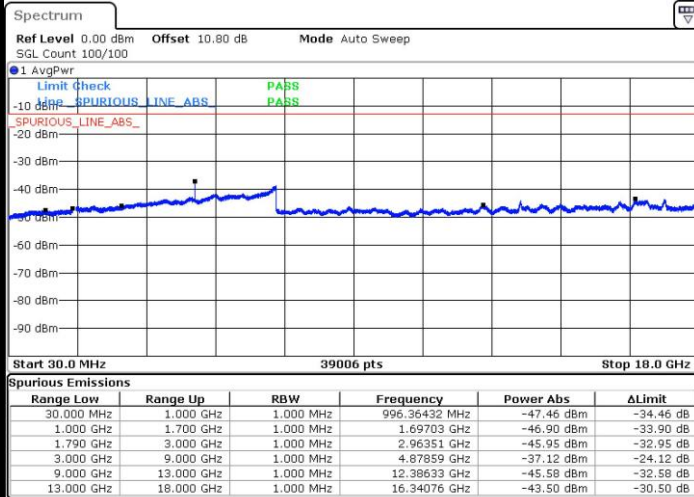
Date: 31.JUL.2019 13:52:01

Middle Channel / 64QAM



Date: 31.JUL.2019 13:53:16

Highest Channel / 64QAM

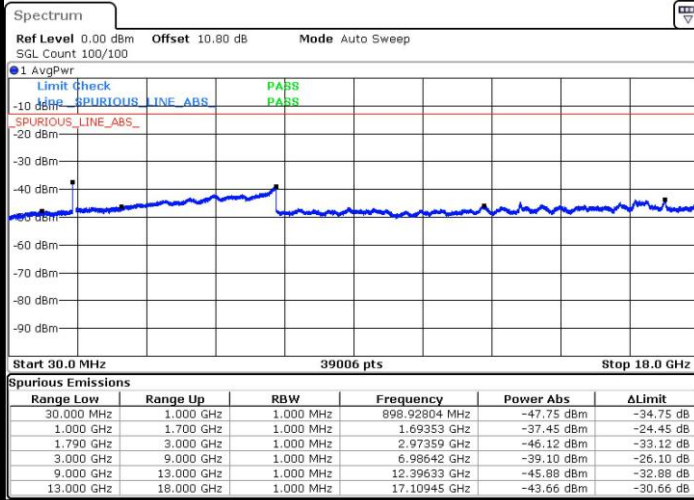


Date: 31.JUL.2019 13:56:29



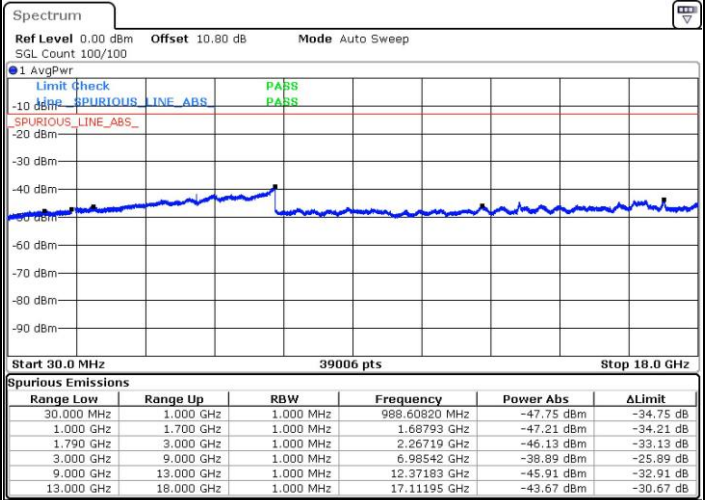
LTE Band 66 / 20MHz

Lowest Channel / 64QAM



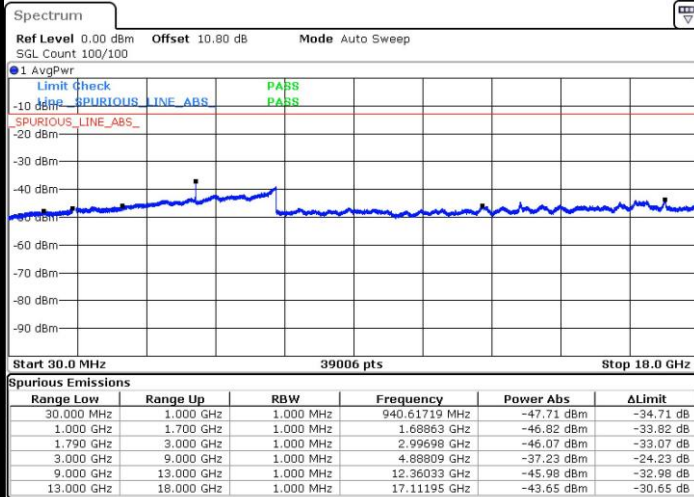
Date: 1.AUG.2019 06:44:29

Middle Channel / 64QAM



Date: 1.AUG.2019 06:45:44

Highest Channel / 64QAM



Date: 1.AUG.2019 06:48:58

Frequency Stability

Test Conditions		LTE Band 66 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0019	PASS
40	Normal Voltage	0.0033	
30	Normal Voltage	0.0019	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0017	
0	Normal Voltage	0.0021	
-10	Normal Voltage	0.0025	
-20	Normal Voltage	0.0004	
-30	Normal Voltage	0.0018	
20	Maximum Voltage	0.0014	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0013	

Note:

1. Normal Voltage =3.85 V. ; Battery End Point (BEP) =3.65 V. ; Maximum Voltage =4.25 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



Appendix B. Test Results of ERP/EIRP and Radiated Test

ERP/EIRP

LTE Band 25 / 1.4MHz (Average) (GT - LC = -2.3 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	3	1	24.37	0.2735	22.07	0.1611
Middle		3	1	24.50	0.2818	22.20	0.1660
Highest		3	1	24.47	0.2799	22.17	0.1648
Lowest	16QAM	1	3	23.18	0.2080	20.88	0.1225
Middle		1	3	23.28	0.2128	20.98	0.1253
Highest		1	3	23.24	0.2109	20.94	0.1242
Lowest	64QAM	1	3	22.11	0.1626	19.81	0.0957
Middle		1	3	22.24	0.1675	19.94	0.0986
Highest		1	3	22.23	0.1671	19.93	0.0984
Limit	EIRP < 2W			Result		PASS	

LTE Band 25 / 3MHz (Average) (GT - LC = -2.3 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	8	24.44	0.2780	22.14	0.1637
Middle		1	8	24.53	0.2838	22.23	0.1671
Highest		1	8	24.47	0.2799	22.17	0.1648
Lowest	16QAM	1	8	23.15	0.2065	20.85	0.1216
Middle		1	8	23.25	0.2113	20.95	0.1245
Highest		1	8	23.21	0.2094	20.91	0.1233
Lowest	64QAM	1	8	22.13	0.1633	19.83	0.0962
Middle		1	8	22.22	0.1667	19.92	0.0982
Highest		1	8	22.22	0.1667	19.92	0.0982
Limit	EIRP < 2W			Result		PASS	

LTE Band 25 / 5MHz (Average) (GT - LC = -2.3 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	24	24.38	0.2742	22.08	0.1614
Middle		1	24	24.52	0.2831	22.22	0.1667
Highest		1	24	24.46	0.2793	22.16	0.1644
Lowest	16QAM	1	24	23.19	0.2084	20.89	0.1227
Middle		1	24	23.31	0.2143	21.01	0.1262
Highest		1	24	23.18	0.2080	20.88	0.1225
Lowest	64QAM	1	24	22.11	0.1626	19.81	0.0957
Middle		1	24	22.24	0.1675	19.94	0.0986
Highest		1	24	22.18	0.1652	19.88	0.0973
Limit	EIRP < 2W			Result		PASS	



LTE Band 25 / 10MHz (Average) (GT - LC = -2.3 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	24.41	0.2761	22.11	0.1626
Middle		1	0	24.45	0.2786	22.15	0.1641
Highest		1	0	24.38	0.2742	22.08	0.1614
Lowest	16QAM	1	0	23.13	0.2056	20.83	0.1211
Middle		1	0	23.21	0.2094	20.91	0.1233
Highest		1	0	23.15	0.2065	20.85	0.1216
Lowest	64QAM	1	0	22.11	0.1626	19.81	0.0957
Middle		1	0	22.21	0.1663	19.91	0.0979
Highest		1	0	22.12	0.1629	19.82	0.0959
Limit	EIRP < 2W			Result		PASS	

LTE Band 25 / 15MHz (Average) (GT - LC = -2.3 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	24.57	0.2864	22.27	0.1687
Middle		1	0	24.74	0.2979	22.44	0.1754
Highest		1	0	24.70	0.2951	22.40	0.1738
Lowest	16QAM	1	0	23.36	0.2168	21.06	0.1276
Middle		1	0	23.50	0.2239	21.20	0.1318
Highest		1	0	23.49	0.2234	21.19	0.1315
Lowest	64QAM	1	0	22.32	0.1706	20.02	0.1005
Middle		1	0	22.47	0.1766	20.17	0.1040
Highest		1	0	22.43	0.1750	20.13	0.1030
Limit	EIRP < 2W			Result		PASS	

LTE Band 25 / 20MHz (Average) (GT - LC = -2.3 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	24.73	0.2972	22.43	0.1750
Middle		1	0	24.75	0.2985	22.45	0.1758
Highest		1	0	24.73	0.2972	22.43	0.1750
Lowest	16QAM	1	0	23.50	0.2239	21.20	0.1318
Middle		1	0	23.51	0.2244	21.21	0.1321
Highest		1	0	23.51	0.2244	21.21	0.1321
Lowest	64QAM	1	0	22.45	0.1758	20.15	0.1035
Middle		1	0	22.48	0.1770	20.18	0.1042
Highest		1	0	22.45	0.1758	20.15	0.1035
Limit	EIRP < 2W			Result		PASS	



LTE Band 13 / 5MHz (Average) (GT - LC = -2.8 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	24	24.43	0.2773	19.48	0.0887
Middle		1	24	24.44	0.2780	19.49	0.0889
Highest		1	24	24.40	0.2754	19.45	0.0881
Lowest	16QAM	1	12	23.09	0.2037	18.14	0.0652
Middle		1	12	23.17	0.2075	18.22	0.0664
Highest		1	12	23.21	0.2094	18.26	0.0670
Lowest	64QAM	1	24	22.13	0.1633	17.18	0.0522
Middle		1	24	22.18	0.1652	17.23	0.0528
Highest		1	24	22.08	0.1614	17.13	0.0516
Limit	ERP < 3W			Result		PASS	

LTE Band 13 / 10MHz (Average) (GT - LC = -2.8 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	-	-	-	-	-	-
Middle		1	25	24.45	0.2786	19.50	0.0891
Highest		-	-	-	-	-	-
Lowest	16QAM	-	-	-	-	-	-
Middle		1	49	23.21	0.2094	18.26	0.0670
Highest		-	-	-	-	-	-
Lowest	64QAM	-	-	-	-	-	-
Middle		1	49	22.17	0.1648	17.22	0.0527
Highest		-	-	-	-	-	-
Limit	ERP < 3W			Result		PASS	



LTE Band 26 / 1.4MHz (Average) (GT - LC = -3.5 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	3	24.92	0.3105	19.27	0.0845
Middle		1	3	24.94	0.3119	19.29	0.0849
Highest		1	3	23.67	0.2328	18.02	0.0634
Lowest	16QAM	1	3	23.80	0.2399	18.15	0.0653
Middle		1	3	23.78	0.2388	18.13	0.0650
Highest		1	3	23.10	0.2042	17.45	0.0556
Lowest	64QAM	1	3	22.74	0.1879	17.09	0.0512
Middle		1	3	22.76	0.1888	17.11	0.0514
Highest		1	3	22.18	0.1652	16.53	0.0450
Limit	ERP < 7W			Result		PASS	

LTE Band 26 / 3MHz (Average) (GT - LC = -3.5 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	8	24.90	0.3090	19.25	0.0841
Middle		1	8	24.90	0.3090	19.25	0.0841
Highest		1	8	24.16	0.2606	18.51	0.0710
Lowest	16QAM	1	8	23.75	0.2371	18.10	0.0646
Middle		1	8	23.73	0.2360	18.08	0.0643
Highest		1	8	23.55	0.2265	17.90	0.0617
Lowest	64QAM	1	8	22.76	0.1888	17.11	0.0514
Middle		1	8	22.79	0.1901	17.14	0.0518
Highest		1	8	22.52	0.1786	16.87	0.0486
Limit	ERP < 7W			Result		PASS	

LTE Band 26 / 5MHz (Average) (GT - LC = -3.5 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	24	24.89	0.3083	19.24	0.0839
Middle		1	24	24.79	0.3013	19.14	0.0820
Highest		1	24	23.37	0.2173	17.72	0.0592
Lowest	16QAM	1	12	23.79	0.2393	18.14	0.0652
Middle		1	12	23.77	0.2382	18.12	0.0649
Highest		1	12	23.55	0.2265	17.90	0.0617
Lowest	64QAM	1	12	22.76	0.1888	17.11	0.0514
Middle		1	12	22.72	0.1871	17.07	0.0509
Highest		1	12	22.53	0.1791	16.88	0.0488
Limit	ERP < 7W			Result		PASS	



LTE Band 26 / 10MHz (Average) (GT - LC = -3.5 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	24.95	0.3126	19.30	0.0851
Middle		1	0	24.62	0.2897	18.97	0.0789
Highest		1	0	24.24	0.2655	18.59	0.0723
Lowest	16QAM	1	0	23.81	0.2404	18.16	0.0655
Middle		1	0	23.76	0.2377	18.11	0.0647
Highest		1	0	23.47	0.2223	17.82	0.0605
Lowest	64QAM	1	0	22.80	0.1905	17.15	0.0519
Middle		1	0	22.71	0.1866	17.06	0.0508
Highest		1	0	22.46	0.1762	16.81	0.0480
Limit	ERP < 7W			Result		PASS	

LTE Band 26 / 15MHz (Average) (GT - LC = -3.5 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	24.99	0.3155	19.34	0.0859
Middle		1	0	24.96	0.3133	19.31	0.0853
Highest		1	0	24.73	0.2972	19.08	0.0809
Lowest	16QAM	1	74	23.88	0.2443	18.23	0.0665
Middle		1	74	23.87	0.2438	18.22	0.0664
Highest		1	74	23.56	0.2270	17.91	0.0618
Lowest	64QAM	1	0	22.78	0.1897	17.13	0.0516
Middle		1	0	22.79	0.1901	17.14	0.0518
Highest		1	0	22.52	0.1786	16.87	0.0486
Limit	ERP < 7W			Result		PASS	



LTE Band 66 / 1.4MHz (Average) (GT - LC = -1.5 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	3	1	24.87	0.3069	23.37	0.2173
Middle		3	1	24.80	0.3020	23.30	0.2138
Highest		3	1	23.95	0.2483	22.45	0.1758
Lowest	16QAM	1	3	23.59	0.2286	22.09	0.1618
Middle		1	3	23.56	0.2270	22.06	0.1607
Highest		1	3	23.17	0.2075	21.67	0.1469
Lowest	64QAM	1	3	22.56	0.1803	21.06	0.1276
Middle		1	3	22.53	0.1791	21.03	0.1268
Highest		1	3	22.08	0.1614	20.58	0.1143
Limit	EIRP < 1W			Result		PASS	

LTE Band 66 / 3MHz (Average) (GT - LC = -1.5 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	8	24.82	0.3034	23.32	0.2148
Middle		1	8	24.79	0.3013	23.29	0.2133
Highest		1	8	24.00	0.2512	22.50	0.1778
Lowest	16QAM	1	8	23.55	0.2265	22.05	0.1603
Middle		1	8	23.56	0.2270	22.06	0.1607
Highest		1	8	23.21	0.2094	21.71	0.1483
Lowest	64QAM	1	8	22.54	0.1795	21.04	0.1271
Middle		1	8	22.49	0.1774	20.99	0.1256
Highest		1	8	22.21	0.1663	20.71	0.1178
Limit	EIRP < 1W			Result		PASS	

LTE Band 66 / 5MHz (Average) (GT - LC = -1.5 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	24	24.88	0.3076	23.38	0.2178
Middle		1	24	24.82	0.3034	23.32	0.2148
Highest		1	24	23.80	0.2399	22.30	0.1698
Lowest	16QAM	1	24	23.62	0.2301	22.12	0.1629
Middle		1	24	23.56	0.2270	22.06	0.1607
Highest		1	24	23.07	0.2028	21.57	0.1435
Lowest	64QAM	1	24	22.57	0.1807	21.07	0.1279
Middle		1	24	22.57	0.1807	21.07	0.1279
Highest		1	24	22.02	0.1592	20.52	0.1127
Limit	EIRP < 1W			Result		PASS	



LTE Band 66 / 10MHz (Average) (GT - LC = -1.5 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	24.80	0.3020	23.30	0.2138
Middle		1	0	24.76	0.2992	23.26	0.2118
Highest		1	0	24.42	0.2767	22.92	0.1959
Lowest	16QAM	1	0	23.57	0.2275	22.07	0.1611
Middle		1	0	23.54	0.2259	22.04	0.1600
Highest		1	0	23.18	0.2080	21.68	0.1472
Lowest	64QAM	1	0	22.56	0.1803	21.06	0.1276
Middle		1	0	22.48	0.1770	20.98	0.1253
Highest		1	0	22.17	0.1648	20.67	0.1167
Limit	EIRP < 1W			Result		PASS	

LTE Band 66 / 15MHz (Average) (GT - LC = -1.5 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	24.96	0.3133	23.46	0.2218
Middle		1	0	24.95	0.3126	23.45	0.2213
Highest		1	0	24.58	0.2871	23.08	0.2032
Lowest	16QAM	1	0	23.87	0.2438	22.37	0.1726
Middle		1	0	23.88	0.2443	22.38	0.1730
Highest		1	0	23.44	0.2208	21.94	0.1563
Lowest	64QAM	1	0	22.73	0.1875	21.23	0.1327
Middle		1	0	22.74	0.1879	21.24	0.1330
Highest		1	0	22.40	0.1738	20.90	0.1230
Limit	EIRP < 1W			Result		PASS	

LTE Band 66 / 20MHz (Average) (GT - LC = -1.5 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	24.93	0.3112	23.43	0.2203
Middle		1	0	24.97	0.3141	23.47	0.2223
Highest		1	0	24.57	0.2864	23.07	0.2028
Lowest	16QAM	1	0	23.84	0.2421	22.34	0.1714
Middle		1	0	23.79	0.2393	22.29	0.1694
Highest		1	0	23.50	0.2239	22.00	0.1585
Lowest	64QAM	1	0	22.83	0.1919	21.33	0.1358
Middle		1	0	22.77	0.1892	21.27	0.1340
Highest		1	0	22.45	0.1758	20.95	0.1245
Limit	EIRP < 1W			Result		PASS	

**Radiated Spurious Emission****LTE Band 13**

LTE Band 13 / 5MHz / QPSK									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1560	-63.31	-42.15	-21.16	-74.36	-68.40	1.19	8.43	H
	2344	-60.51	-13	-47.51	-75.64	-67.32	1.42	10.38	H
	3126	-59.57	-13	-46.57	-75.92	-67.13	1.56	11.28	H
									H
									H
									H
	1560	-63.61	-42.15	-21.46	-74.44	-68.70	1.19	8.43	V
	2344	-60.27	-13	-47.27	-75.93	-67.08	1.42	10.38	V
	3126	-59.85	-13	-46.85	-76.46	-67.41	1.56	11.28	V
									V
									V
									V
Middle	1568	-63.28	-42.15	-21.13	-74.24	-68.39	1.20	8.46	H
	2352	-60.62	-13	-47.62	-75.68	-67.44	1.42	10.38	H
	3136	-59.97	-13	-46.97	-76.35	-67.56	1.57	11.31	H
									H
									H
									H
									H
	1568	-63.44	-42.15	-21.29	-74.19	-68.55	1.20	8.46	V
	2352	-60.51	-13	-47.51	-76.11	-67.33	1.42	10.38	V
	3136	-59.45	-13	-46.45	-76.07	-67.04	1.57	11.31	V
									V
									V
									V
									V



Highest	1573	-64.21	-42.15	-22.06	-75.12	-69.34	1.20	8.48	H
	2359	-60.68	-13	-47.68	-75.69	-67.50	1.42	10.39	H
	3146	-60.14	-13	-47.14	-76.57	-67.75	1.58	11.34	H
									H
									H
									H
									H
	1573	-64.22	-42.15	-22.07	-74.93	-69.35	1.20	8.48	V
	2359	-60.57	-13	-47.57	-76.12	-67.39	1.42	10.39	V
	3146	-59.78	-13	-46.78	-76.43	-67.39	1.58	11.34	V
									V
									V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



LTE Band 13 / 10MHz / QPSK									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1560	-63.56	-42.15	-21.41	-74.61	-68.65	1.19	8.43	H
	2344	-60.89	-13	-47.89	-76.02	-67.70	1.42	10.38	H
	3128	-59.79	-13	-46.79	-76.15	-67.36	1.56	11.28	H
									H
									H
									H
									H
	1560	-63.65	-42.15	-21.50	-74.48	-68.74	1.19	8.43	V
	2344	-60.44	-13	-47.44	-76.1	-67.25	1.42	10.38	V
	3128	-59.63	-13	-46.63	-76.24	-67.20	1.56	11.28	V
									V
									V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

**LTE Band 25**

LTE Band 25 / 20MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3700	-58.77	-13	-45.77	-76.86	-69.08	1.97	12.28	H
	5555	-56.67	-13	-43.67	-77.46	-66.80	2.14	12.28	H
	7403	-51.58	-13	-38.58	-77.18	-59.58	2.17	10.17	H
									H
									H
									H
									H
	3700	-57.80	-13	-44.80	-76.41	-68.11	1.97	12.28	V
	5555	-55.89	-13	-42.89	-77.3	-66.02	2.14	12.28	V
	7403	-50.99	-13	-37.99	-76.55	-58.99	2.17	10.17	V
									V
									V
									V
									V
Middle	3742	-58.33	-13	-45.33	-76.5	-68.59	2.00	12.25	H
	5611	-56.38	-13	-43.38	-77.15	-66.61	2.13	12.36	H
	7487	-51.57	-13	-38.57	-77.03	-59.47	2.12	10.02	H
									H
									H
									H
									H
	3742	-57.54	-13	-44.54	-76.22	-67.80	2.00	12.25	V
	5611	-55.65	-13	-42.65	-77.07	-65.88	2.13	12.36	V
	7487	-51.45	-13	-38.45	-76.78	-59.35	2.12	10.02	V
									V
									V
									V
									V



Highest	3812	-57.52	-13	-44.52	-75.8	-67.70	2.03	12.21	H
	5712	-55.00	-13	-42.00	-76.36	-65.39	2.11	12.50	H
	7620	-50.59	-13	-37.59	-75.4	-58.91	2.11	10.43	H
									H
									H
									H
									H
	3812	-57.13	-13	-44.13	-75.89	-67.31	2.03	12.21	V
	5712	-54.40	-13	-41.40	-76.32	-64.79	2.11	12.50	V
	7620	-50.48	-13	-37.48	-75.33	-58.80	2.11	10.43	V
									V
									V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

**LTE Band 26**

LTE Band 26 / 15MHz / QPSK									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1648	-64.50	-13	-51.50	-75.22	-69.89	1.23	8.76	H
	2472	-61.45	-13	-48.45	-75.98	-68.34	1.44	10.48	H
	3296	-60.50	-13	-47.50	-76.55	-68.44	1.70	11.79	H
									H
									H
									H
									H
	1648	-62.38	-13	-49.38	-72.98	-67.77	1.23	8.76	V
	2472	-61.40	-13	-48.40	-76.22	-68.29	1.44	10.48	V
	3296	-60.29	-13	-47.29	-76.74	-68.23	1.70	11.79	V
									V
									V
									V
									V
Middle	1656	-64.38	-13	-51.38	-75.11	-69.79	1.23	8.79	H
	2488	-61.44	-13	-48.44	-75.93	-68.34	1.44	10.49	H
	3320	-60.73	-13	-47.73	-76.64	-68.72	1.72	11.86	H
									H
									H
									H
									H
	1656	-61.64	-13	-48.64	-72.24	-67.05	1.23	8.79	V
	2488	-61.02	-13	-48.02	-75.75	-67.92	1.44	10.49	V
	3320	-60.28	-13	-47.28	-76.65	-68.27	1.72	11.86	V
									V
									V
									V
									V



Highest	1672	-63.43	-13	-50.43	-74.19	-68.90	1.24	8.85	H
	2504	-61.75	-13	-48.75	-76.21	-68.66	1.44	10.50	H
	3339	-60.59	-13	-47.59	-76.37	-68.62	1.74	11.92	H
									H
									H
									H
									H
	1672	-63.31	-13	-50.31	-73.96	-68.78	1.24	8.85	V
	2504	-61.51	-13	-48.51	-76.16	-68.42	1.44	10.50	V
	3339	-59.98	-13	-46.98	-76.28	-68.01	1.74	11.92	V
									V
									V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

**LTE Band 66**

LTE Band 66 / 20MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3420	-59.91	-13	-46.91	-76.24	-70.27	1.80	12.16	H
	5135	-56.59	-13	-43.59	-77.24	-66.41	2.30	12.13	H
	6843	-53.14	-13	-40.14	-76.79	-61.83	2.37	11.06	H
									H
									H
									H
									H
	3420	-59.35	-13	-46.35	-76.31	-69.71	1.80	12.16	V
	5135	-55.66	-13	-42.66	-76.88	-65.48	2.30	12.13	V
	6843	-52.15	-13	-39.15	-76.35	-60.84	2.37	11.06	V
									V
									V
									V
									V
Middle	3469	-59.19	-13	-46.19	-76.05	-69.65	1.84	12.31	H
	5205	-57.06	-13	-44.06	-77.76	-66.93	2.28	12.14	H
	6941	-52.75	-13	-39.75	-76.69	-61.31	2.40	10.96	H
									H
									H
									H
									H
	3469	-59.06	-13	-46.06	-76.44	-69.52	1.84	12.31	V
	5205	-56.24	-13	-43.24	-77.48	-66.11	2.28	12.14	V
	6941	-52.39	-13	-39.39	-76.95	-60.95	2.40	10.96	V
									V
									V
									V
									V



Highest	3525	-58.98	-13	-45.98	-76.35	-69.48	1.88	12.39	H
	5282	-56.49	-13	-43.49	-77.27	-66.40	2.24	12.16	H
	7046	-51.97	-13	-38.97	-76.32	-60.40	2.39	10.82	H
									H
									H
									H
									H
	3525	-58.64	-13	-45.64	-76.49	-69.14	1.88	12.39	V
	5282	-56.09	-13	-43.09	-77.4	-66.00	2.24	12.16	V
	7046	-51.52	-13	-38.52	-76.47	-59.95	2.39	10.82	V
									V
									V
									V
									V

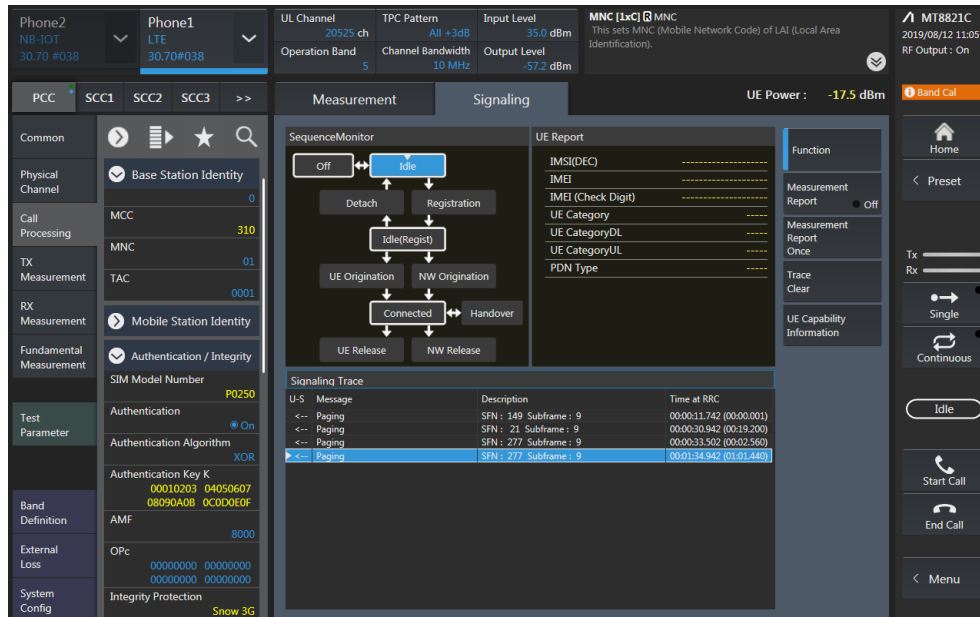
Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

1. For this product when the Mobile Country Code (=MCC) is set to US MCC, the below bands will be disabled.

- LTE B19
- LTE B38
- LTE B40
- LTE B46

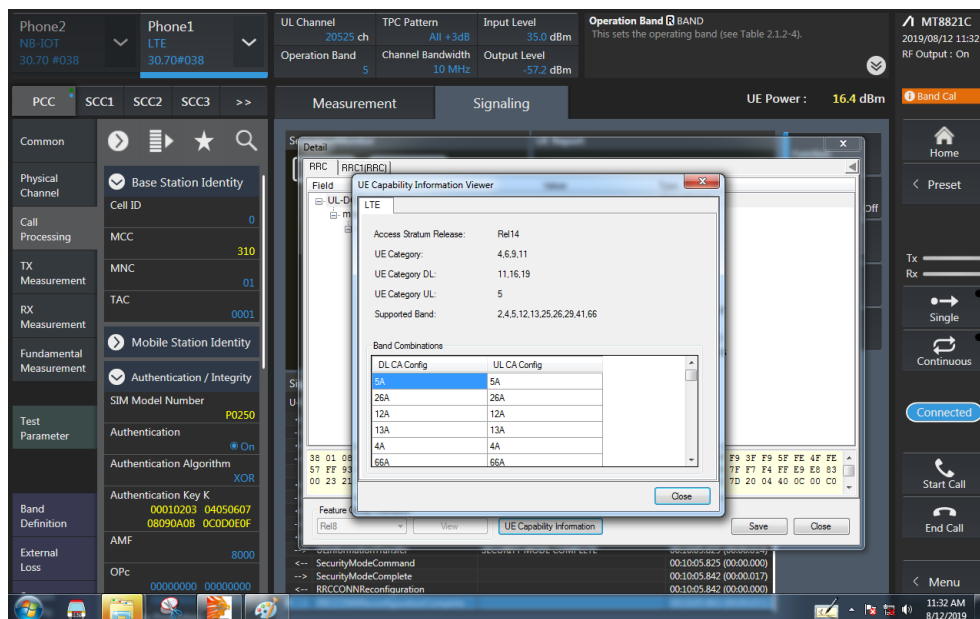
The following pages show that when US MCC is connected on the base station, LTE B19/38/40/46 cannot be registered and no capability (i.e. disabled). On the other hand, when non-US MCC is connected, the above bands are able to register and have capability.

➤ UE don't show B19, B38, B40, B46 with US MCC (310)



Signaling Trace

U-S	Message	Description	Time at RRC
<-	Paging	SFN : 149 Subframe : 9	00:00:11.742 (00:00:001)
<-	Paging	SFN : 21 Subframe : 9	00:00:30.942 (00:19:200)
<-	Paging	SFN : 277 Subframe : 9	00:00:33.502 (00:02:560)
<-	Paging	SFN : 277 Subframe : 9	00:01:34.942 (01:01:440)



UE Capability Information Viewer

Access Stratum Release: Rel14

UE Category: 4,6,8,11

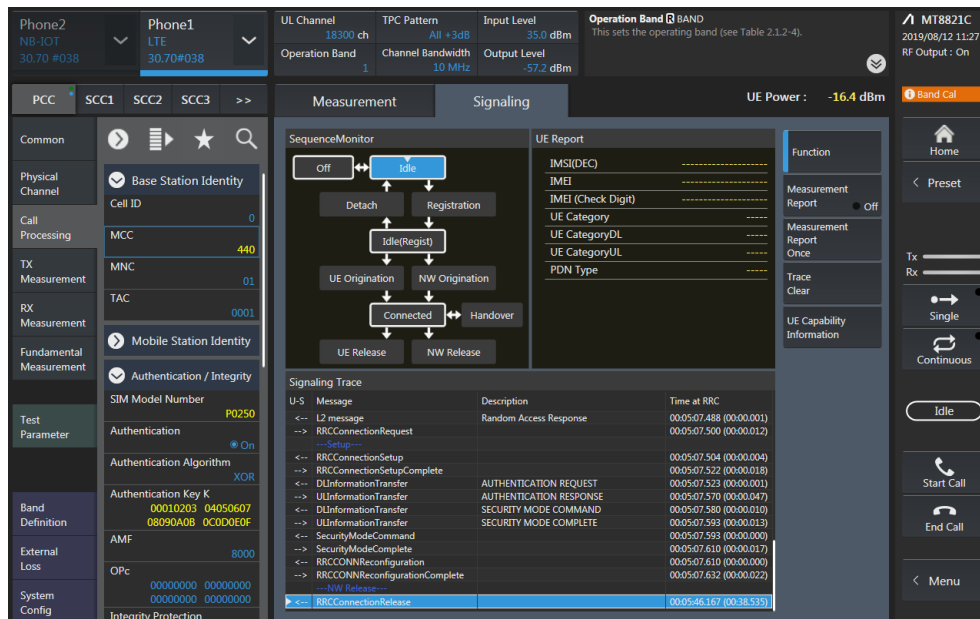
UE Category DL: 11,16,19

UE Category UL: 5

Supported Band: 2,4,5,12,13,25,26,29,41,66

DL CA Config	UL CA Config
5A	5A
26A	26A
12A	12A
13A	13A
4A	4A
56A	56A

➤ UE Shows B19, B38, B40, B46 with Non-US MCC (440)



Phone2 NB-IOT 30.70#038
Phone1 LTE 30.70#038

UL Channel 18300 ch TPC Pattern All +3dB Input Level 35.0 dBm
Operation Band 1 Channel Bandwidth 10 MHz Output Level -57.2 dBm

Operation Band BAND
This sets the operating band (see Table 2.1.2-4).

MT8821C 2019/08/12 11:27
RF Output : On

UE Power : -16.4 dBm

Signaling

SequenceMonitor

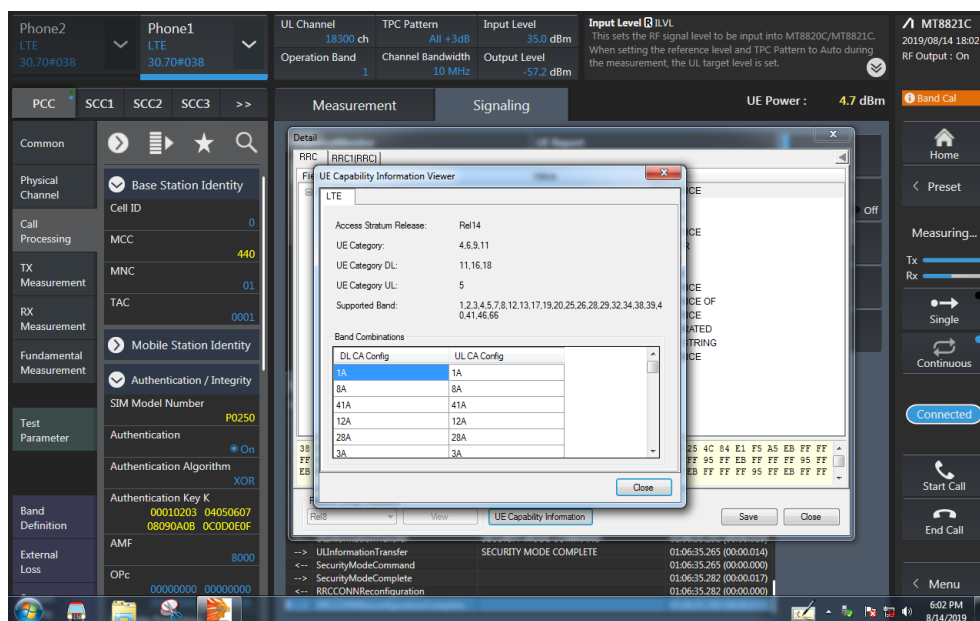
Off → Idle → Detach → Registration → Idle(Regist) → UE Origination → NW Origination → Connected → Handover → UE Release → NW Release

UE Report

Parameter	Value
IMSI(DEC)	0000000000000000
IMEI	0000000000000000
IMEI (Check Digit)	0000000000000000
UE Category	4
UE CategoryDL	4
UE CategoryUL	4
PDN Type	0

Signaling Trace

U-S	Message	Description	Time at RRC
<-	L2 message	Random Access Response	00:05:07.488 (00:00:001)
->	RRCConnectionRequest		00:05:07.500 (00:00:012)
---	Setup---		
<-	RRCConnectionSetup		00:05:07.504 (00:00:004)
->	RRCConnectionSetupComplete		00:05:07.522 (00:00:018)
<-	DLInformationTransfer	AUTHENTICATION REQUEST	00:05:07.523 (00:00:001)
->	ULInformationTransfer	AUTHENTICATION RESPONSE	00:05:07.570 (00:00:047)
<-	DLInformationTransfer	SECURITY MODE COMMAND	00:05:07.580 (00:00:010)
->	ULInformationTransfer	SECURITY MODE COMPLETE	00:05:07.593 (00:00:013)
<-	SecurityModeCommand		00:05:07.593 (00:00:000)
->	SecurityModeComplete		00:05:07.610 (00:00:017)
<-	RRCConnReconfiguration		00:05:07.610 (00:00:000)
->	RRCConnReconfigurationComplete		00:05:07.632 (00:00:022)
---	NW Release---		
<-	RRCConnectionRelease		00:05:46.167 (00:38:535)



Phone2 LTE 30.70#038
Phone1 LTE 30.70#038

UL Channel 18300 ch TPC Pattern All +3dB Input Level 35.0 dBm
Operation Band 1 Channel Bandwidth 10 MHz Output Level -57.2 dBm

Input Level 35.0 dBm
This sets the RF signal level to be input into MT8820C/MT8821C. When setting the reference level and TPC Pattern to Auto during the measurement, the UL target level is set.

MT8821C 2019/08/14 18:02
RF Output : On

UE Power : 4.7 dBm

Signaling

UE Capability Information Viewer

Access Stratum Release: Rel14
UE Category: 4,6,9,11
UE Category DL: 11,16,18
UE Category UL: 5
Supported Band: 1,2,3,4,5,7,8,12,13,17,19,20,25,26,28,29,32,34,38,39,40,41,46,66

Band Combinations

DL CA Config	UL CA Config
1A	1A
8A	8A
41A	41A
12A	12A
28A	28A
3A	3A

Signaling Trace

U-S	Message	Description	Time at RRC
<-	ULInformationTransfer	SECURITY MODE COMPLETE	01:06:35.265 (00:00:014)
<-	SecurityModeCommand		01:06:35.265 (00:00:000)
<-	SecurityModeComplete		01:06:35.282 (00:00:017)
<-	RRCConnReconfiguration		01:06:35.282 (00:00:000)