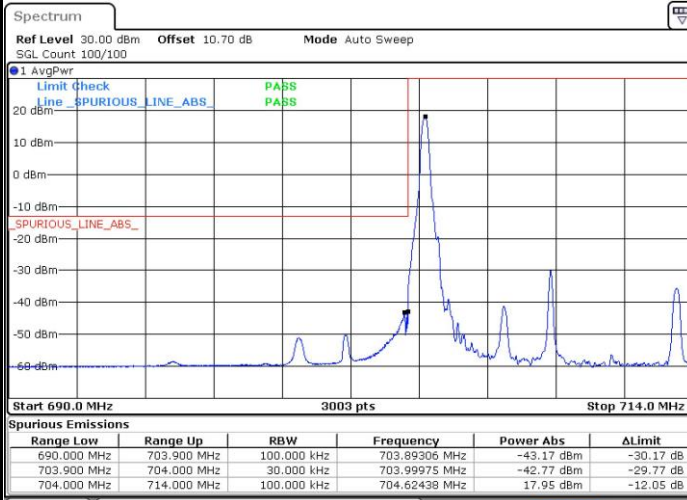




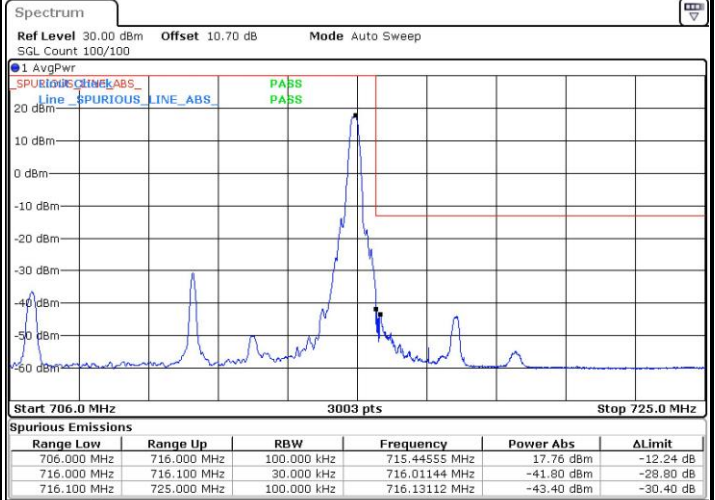
LTE Band 17 / 10MHz / 64QAM

Lowest Band Edge / 1 RB



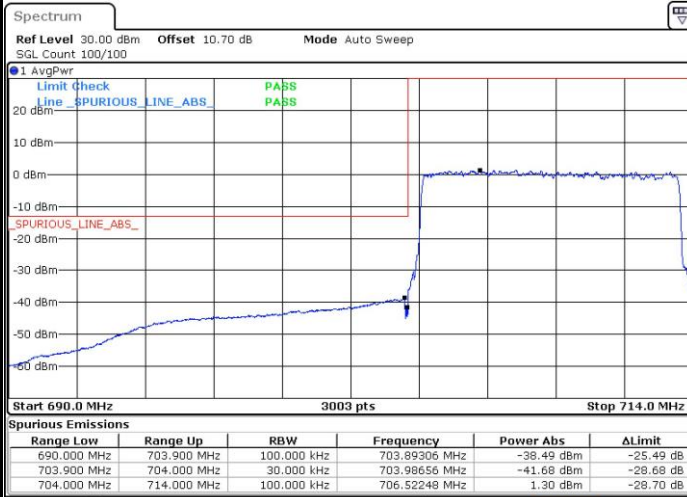
Date: 2 AUG 2019 16:11:16

Highest Band Edge / 1 RB



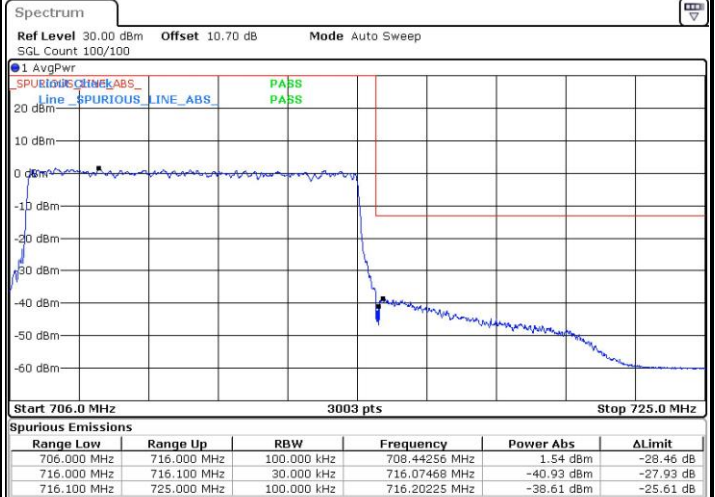
Date: 2 AUG 2019 16:15:31

Lowest Band Edge / Full RB



Date: 2 AUG 2019 16:12:01

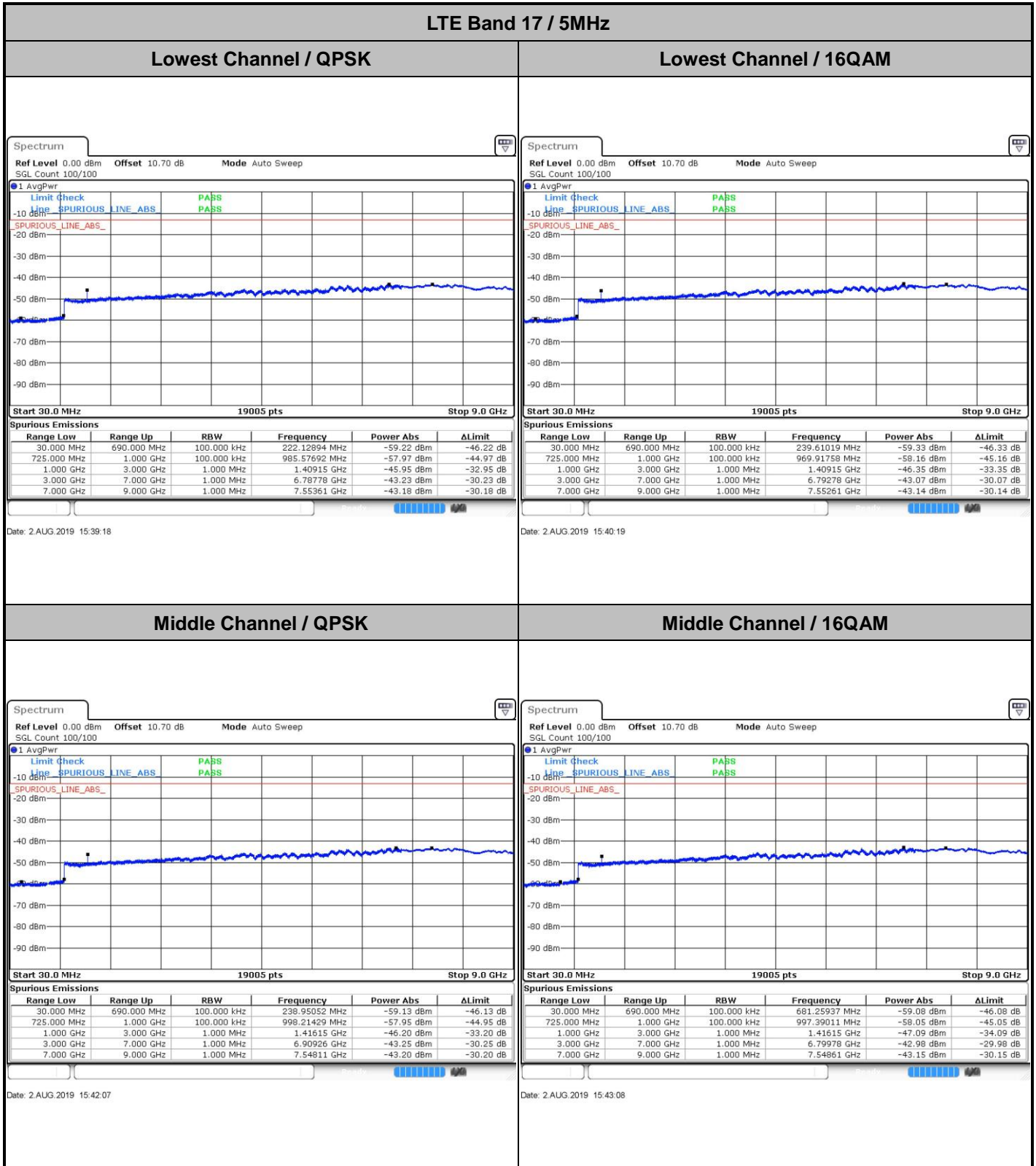
Highest Band Edge / Full RB



Date: 2 AUG 2019 16:16:12



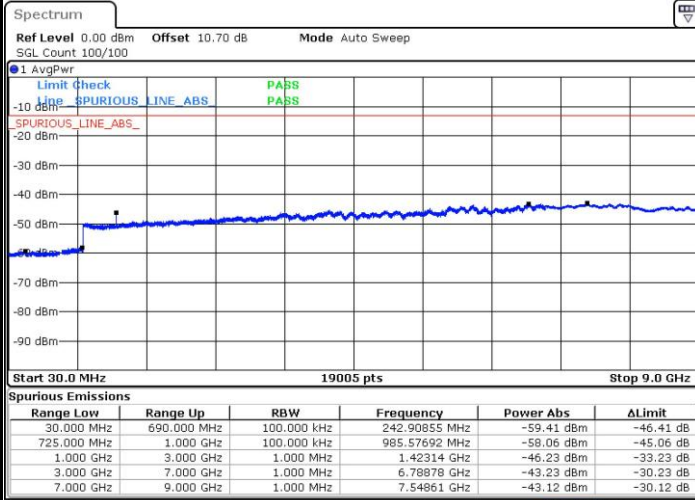
Conducted Spurious Emission





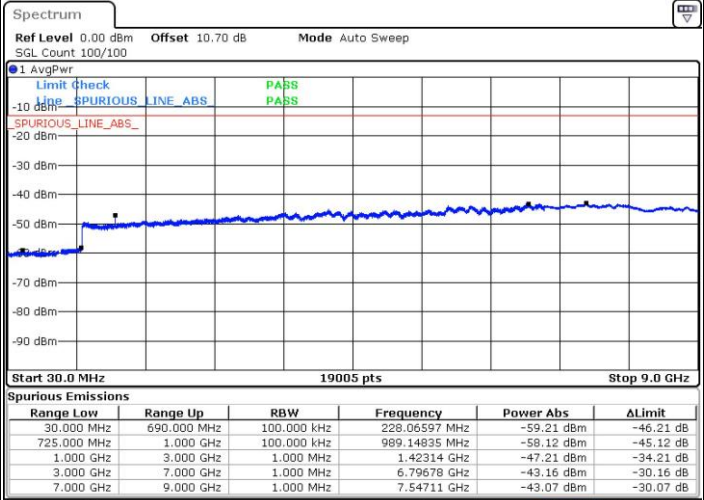
LTE Band 17 / 5MHz

Highest Channel / QPSK



Date: 2.AUG.2019 15:47:43

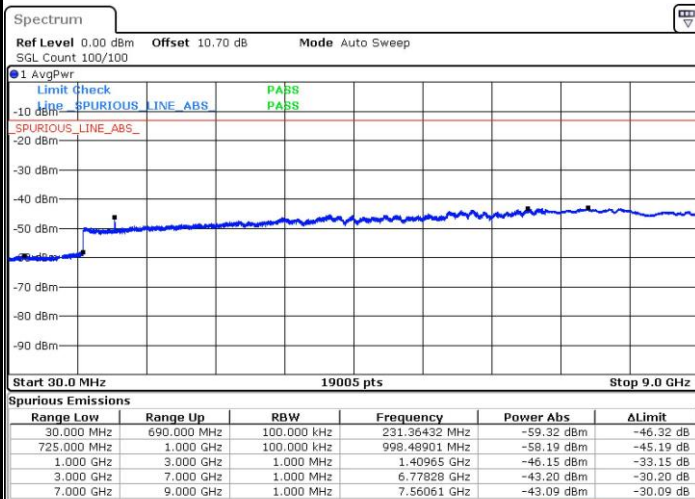
Highest Channel / 16QAM



Date: 2.AUG.2019 15:48:44

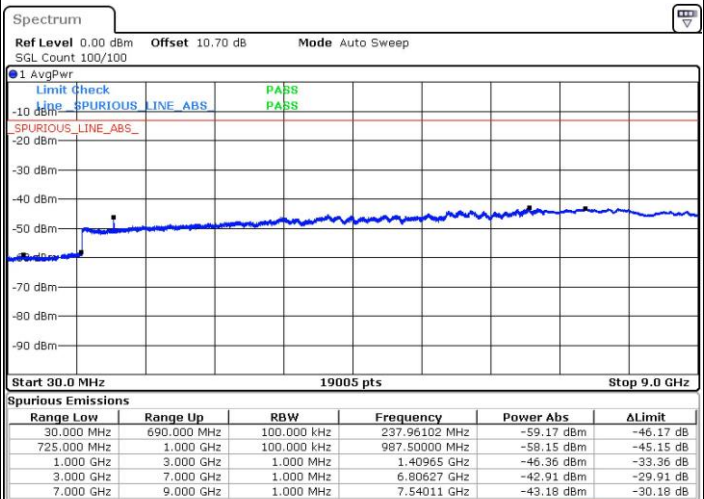
LTE Band 17 / 10MHz

Lowest Channel / QPSK



Date: 2.AUG.2019 15:53:34

Lowest Channel / 16QAM



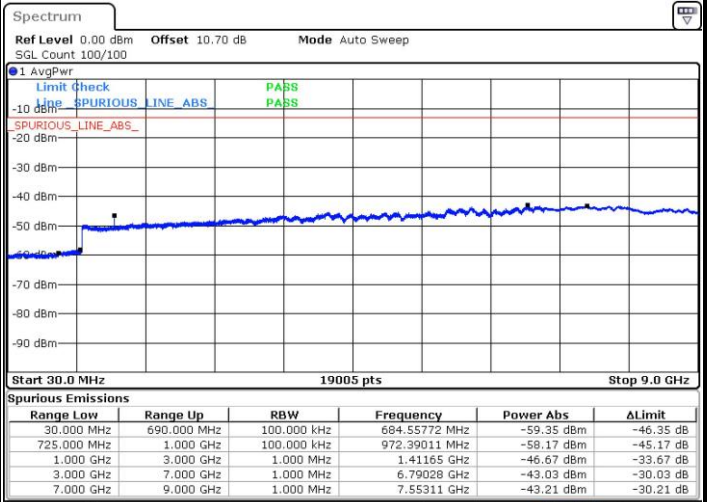
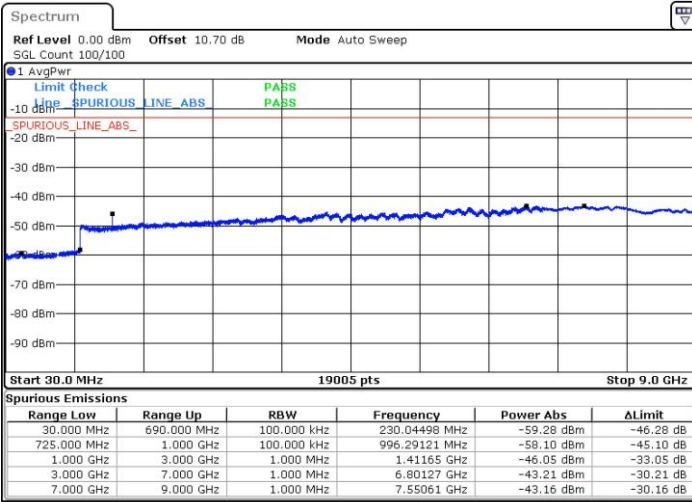
Date: 2.AUG.2019 15:54:35



LTE Band 17 / 10MHz

Middle Channel / QPSK

Middle Channel / 16QAM

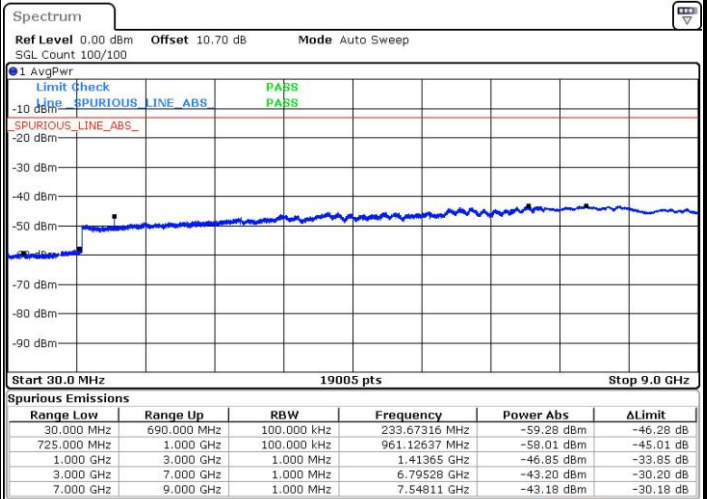
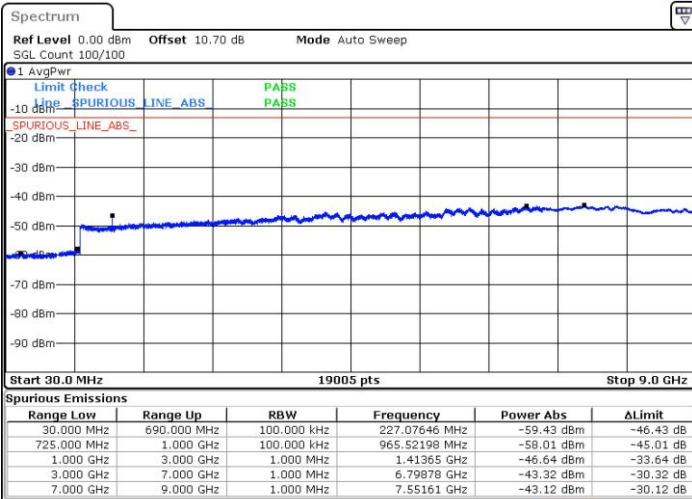


Date: 2.AUG.2019 15:56:23

Date: 2.AUG.2019 15:57:24

Highest Channel / QPSK

Highest Channel / 16QAM



Date: 2.AUG.2019 16:01:58

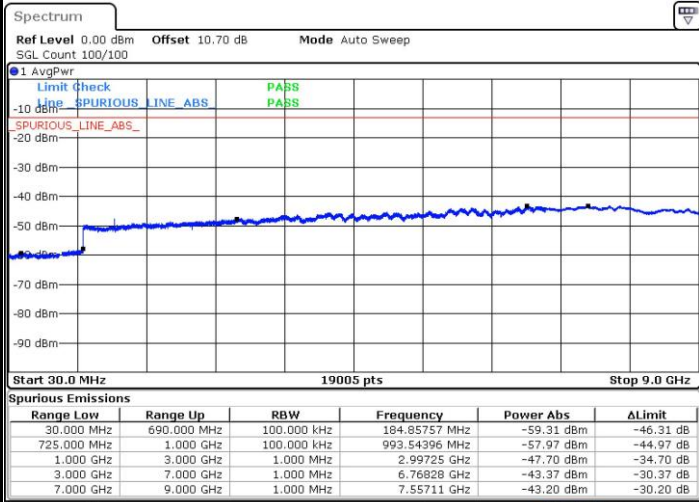
Date: 2.AUG.2019 16:02:59



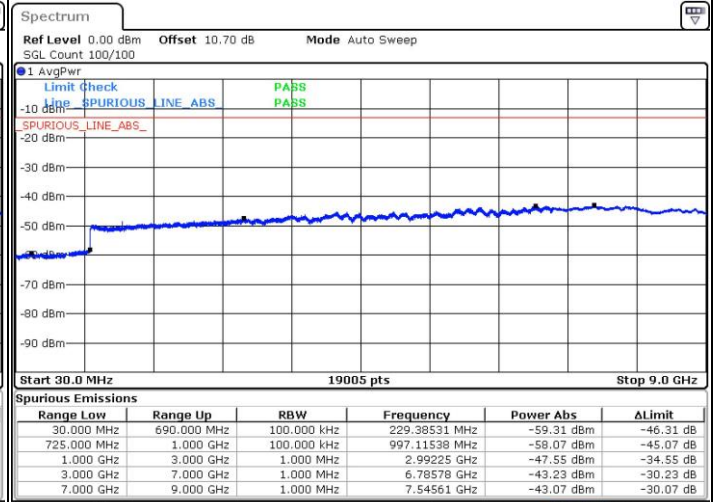
LTE Band 17 / 5MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

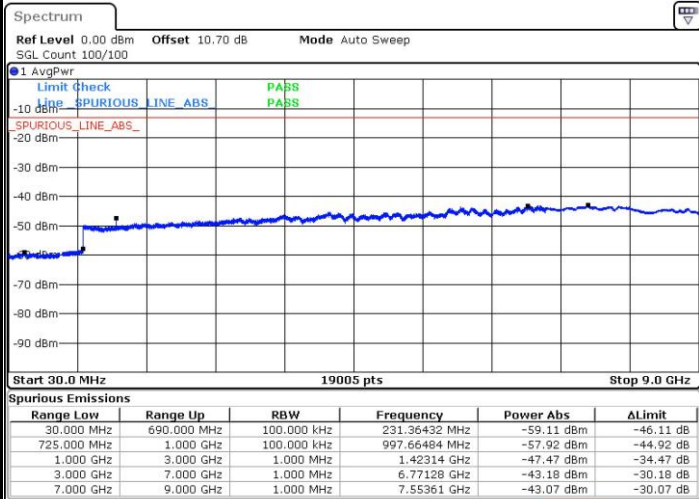


Date: 2.AUG.2019 16:05:55



Date: 2.AUG.2019 16:07:19

Highest Channel / 64QAM



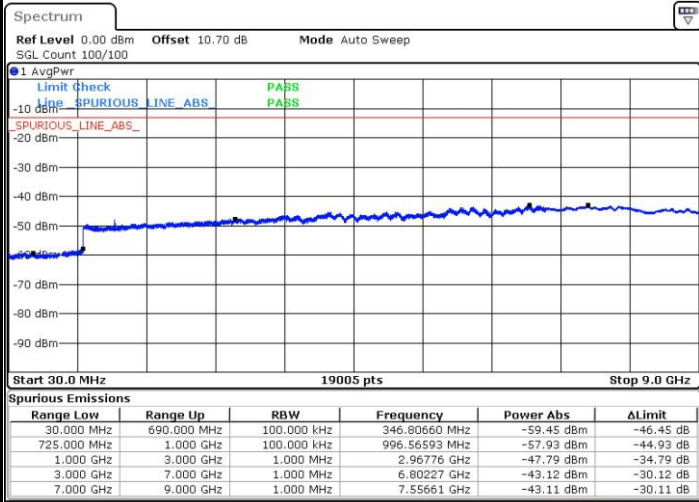
Date: 2.AUG.2019 16:10:07



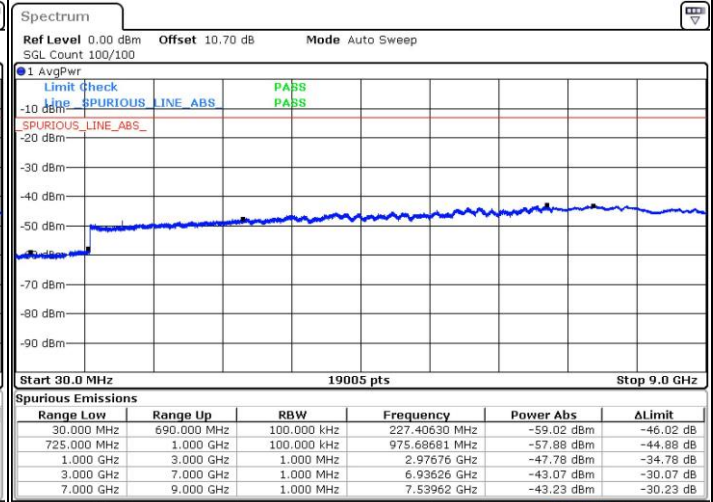
LTE Band 17 / 10MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

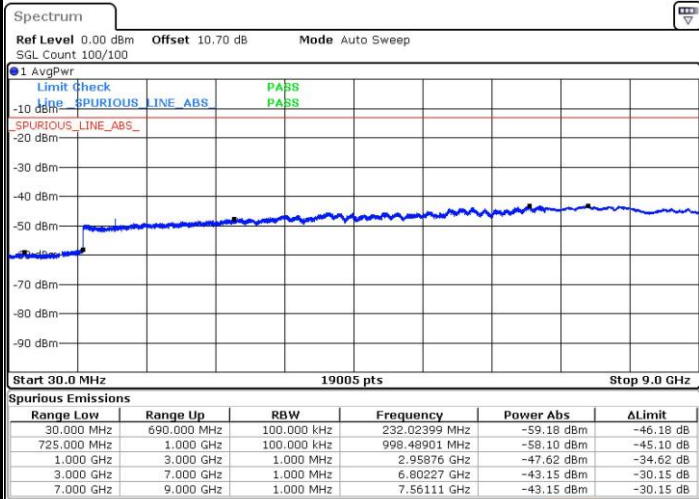


Date: 2.AUG.2019 16:13:02



Date: 2.AUG.2019 16:14:27

Highest Channel / 64QAM



Date: 2.AUG.2019 16:17:14



Frequency Stability

Test Conditions		LTE Band 17 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0003	PASS
40	Normal Voltage	0.0014	
30	Normal Voltage	0.0018	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0080	
0	Normal Voltage	0.0131	
-10	Normal Voltage	0.0001	
-20	Normal Voltage	0.0108	
-30	Normal Voltage	0.0055	
20	Maximum Voltage	0.0004	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0001	

Note:

1. Normal Voltage =4 V. ; Battery End Point (BEP) =3.7 V. ; Maximum Voltage =4 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



Appendix B. Test Results of ERP and Radiated Test

ERP

LTE Band 5 / 1.4MHz (Average) (GT - LC = -6 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	3	23.17	0.2075	15.02	0.0318
Middle		1	3	23.19	0.2084	15.04	0.0319
Highest		1	3	23.21	0.2094	15.06	0.0321
Lowest	16QAM	1	3	22.41	0.1742	14.26	0.0267
Middle		1	3	22.51	0.1782	14.36	0.0273
Highest		1	3	22.54	0.1795	14.39	0.0275
Lowest	64QAM	1	3	21.38	0.1374	13.23	0.0210
Middle		1	3	21.40	0.1380	13.25	0.0211
Highest		1	3	21.52	0.1419	13.37	0.0217
Limit	ERP < 7W			Result		PASS	

LTE Band 5 / 3MHz (Average) (GT - LC = -6 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	8	23.14	0.2061	14.99	0.0316
Middle		1	8	23.20	0.2089	15.05	0.0320
Highest		1	8	23.24	0.2109	15.09	0.0323
Lowest	16QAM	1	8	22.46	0.1762	14.31	0.0270
Middle		1	8	22.50	0.1778	14.35	0.0272
Highest		1	8	22.57	0.1807	14.42	0.0277
Lowest	64QAM	1	0	21.46	0.1400	13.31	0.0214
Middle		1	0	21.49	0.1409	13.34	0.0216
Highest		1	0	21.54	0.1426	13.39	0.0218
Limit	ERP < 7W			Result		PASS	

LTE Band 5 / 5MHz (Average) (GT - LC = -6 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	23.20	0.2089	15.05	0.0320
Middle		1	0	23.24	0.2109	15.09	0.0323
Highest		1	0	23.20	0.2089	15.05	0.0320
Lowest	16QAM	1	0	22.52	0.1786	14.37	0.0274
Middle		1	0	22.59	0.1816	14.44	0.0278
Highest		1	0	22.60	0.1820	14.45	0.0279
Lowest	64QAM	1	0	21.43	0.1390	13.28	0.0213
Middle		1	0	21.56	0.1432	13.41	0.0219
Highest		1	0	21.54	0.1426	13.39	0.0218
Limit	ERP < 7W			Result		PASS	



LTE Band 5 / 10MHz (Average) (GT - LC = -6 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	25	23.22	0.2099	15.07	0.0321
Middle		1	25	23.25	0.2113	15.10	0.0324
Highest		1	25	23.21	0.2094	15.06	0.0321
Lowest	16QAM	1	25	22.47	0.1766	14.32	0.0270
Middle		1	25	22.54	0.1795	14.39	0.0275
Highest		1	25	22.60	0.1820	14.45	0.0279
Lowest	64QAM	1	25	21.45	0.1396	13.30	0.0214
Middle		1	25	21.49	0.1409	13.34	0.0216
Highest		1	25	21.50	0.1413	13.35	0.0216
Limit	ERP < 7W			Result		PASS	



LTE Band 12 / 1.4MHz (Average) (GT - LC = -4.6 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	3	22.98	0.1986	16.23	0.0420
Middle		1	3	23.10	0.2042	16.35	0.0432
Highest		1	3	23.01	0.2000	16.26	0.0423
Lowest	16QAM	1	3	22.39	0.1734	15.64	0.0366
Middle		1	3	22.40	0.1738	15.65	0.0367
Highest		1	3	22.28	0.1690	15.53	0.0357
Lowest	64QAM	1	3	21.29	0.1346	14.54	0.0284
Middle		1	3	21.35	0.1365	14.60	0.0288
Highest		1	3	21.24	0.1330	14.49	0.0281
Limit	ERP < 3W			Result		PASS	

LTE Band 12 / 3MHz (Average) (GT - LC = -4.6 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	14	23.10	0.2042	16.35	0.0432
Middle		1	14	23.00	0.1995	16.25	0.0422
Highest		1	14	23.00	0.1995	16.25	0.0422
Lowest	16QAM	1	14	22.46	0.1762	15.71	0.0372
Middle		1	14	22.35	0.1718	15.60	0.0363
Highest		1	14	22.24	0.1675	15.49	0.0354
Lowest	64QAM	1	0	21.28	0.1343	14.53	0.0284
Middle		1	0	21.42	0.1387	14.67	0.0293
Highest		1	0	21.34	0.1361	14.59	0.0288
Limit	ERP < 3W			Result		PASS	

LTE Band 12 / 5MHz (Average) (GT - LC = -4.6 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	12	23.11	0.2046	16.36	0.0433
Middle		1	12	23.06	0.2023	16.31	0.0428
Highest		1	12	22.99	0.1991	16.24	0.0421
Lowest	16QAM	1	12	22.42	0.1746	15.67	0.0369
Middle		1	12	22.34	0.1714	15.59	0.0362
Highest		1	12	22.33	0.1710	15.58	0.0361
Lowest	64QAM	1	12	21.43	0.1390	14.68	0.0294
Middle		1	12	21.33	0.1358	14.58	0.0287
Highest		1	12	21.34	0.1361	14.59	0.0288
Limit	ERP < 3W			Result		PASS	



LTE Band 12 / 10MHz (Average) (GT - LC = -4.6 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	22.99	0.1991	16.24	0.0421
Middle		1	0	23.10	0.2042	16.35	0.0432
Highest		1	0	23.15	0.2065	16.40	0.0437
Lowest	16QAM	1	25	22.41	0.1742	15.66	0.0368
Middle		1	25	22.46	0.1762	15.71	0.0372
Highest		1	25	22.43	0.1750	15.68	0.0370
Lowest	64QAM	1	0	21.26	0.1337	14.51	0.0282
Middle		1	0	21.37	0.1371	14.62	0.0290
Highest		1	0	21.44	0.1393	14.69	0.0294
Limit	ERP < 3W			Result		PASS	

LTE Band 17 / 5MHz (Average) (GT - LC = -4.6 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	23.01	0.2000	16.26	0.0423
Middle		1	0	23.07	0.2028	16.32	0.0429
Highest		1	0	23.13	0.2056	16.38	0.0435
Lowest	16QAM	1	0	22.33	0.1710	15.58	0.0361
Middle		1	0	22.36	0.1722	15.61	0.0364
Highest		1	0	22.50	0.1778	15.75	0.0376
Lowest	64QAM	1	0	21.33	0.1358	14.58	0.0287
Middle		1	0	21.38	0.1374	14.63	0.0290
Highest		1	0	21.42	0.1387	14.67	0.0293
Limit	ERP < 3W			Result		PASS	

LTE Band 17 / 10MHz (Average) (GT - LC = -4.6 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	23.08	0.2032	16.33	0.0430
Middle		1	0	23.07	0.2028	16.32	0.0429
Highest		1	0	23.15	0.2065	16.40	0.0437
Lowest	16QAM	1	0	22.43	0.1750	15.68	0.0370
Middle		1	0	22.42	0.1746	15.67	0.0369
Highest		1	0	22.47	0.1766	15.72	0.0373
Lowest	64QAM	1	0	21.36	0.1368	14.61	0.0289
Middle		1	0	21.33	0.1358	14.58	0.0287
Highest		1	0	21.39	0.1377	14.64	0.0291
Limit	ERP < 3W			Result		PASS	



Radiated Spurious Emission

Part 22H LTE Band 5

LTE Band 5 / 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)
Lowest	1656	-57.70	-13	-44.70	-68.43	-63.11	1.23	8.79	H
	2487	-61.46	-13	-48.46	-75.95	-68.36	1.44	10.49	H
	3320	-60.54	-13	-47.54	-76.45	-68.53	1.72	11.86	H
									H
									H
									H
	1656	-61.27	-13	-48.27	-71.87	-66.68	1.23	8.79	V
	2487	-60.74	-13	-47.74	-75.46	-67.64	1.44	10.49	V
	3320	-60.03	-13	-47.03	-76.4	-68.02	1.72	11.86	V
									V
Middle	1672	-58.54	-13	-45.54	-69.3	-64.01	1.24	8.85	H
	2509	-61.05	-13	-48.05	-75.52	-67.97	1.44	10.51	H
	3346	-60.55	-13	-47.55	-76.29	-68.59	1.74	11.94	H
									H
									H
									H
	1672	-61.25	-13	-48.25	-71.9	-66.72	1.24	8.85	V
	2509	-61.33	-13	-48.33	-75.99	-68.25	1.44	10.51	V
	3346	-59.84	-13	-46.84	-76.11	-67.88	1.74	11.94	V
									V
Highest	1688	-55.67	-13	-42.67	-66.46	-61.19	1.24	8.91	H
	2532	-61.50	-13	-48.50	-75.99	-68.43	1.44	10.53	H
	3376	-60.88	-13	-47.88	-76.43	-68.99	1.77	12.03	H
									H
									H
									H
	1688	-58.59	-13	-45.59	-69.28	-64.11	1.24	8.91	V
	2532	-61.24	-13	-48.24	-75.94	-68.17	1.44	10.53	V
	3376	-60.14	-13	-47.14	-76.3	-68.25	1.77	12.03	V
									V

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



Part 27H LTE Band 12

LTE Band 12 / 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)
Lowest	1400	-62.15	-13	-49.15	-74.20	-66.59	1.15	7.74	H
	2096	-61.58	-13	-48.58	-76.05	-68.23	1.38	10.18	H
	2798	-60.80	-13	-47.80	-76.17	-67.94	1.45	10.74	H
									H
									H
									H
	1400	-62.28	-13	-49.28	-73.76	-66.72	1.15	7.74	V
	2096	-60.91	-13	-47.91	-75.63	-67.56	1.38	10.18	V
	2798	-60.33	-13	-47.33	-76.11	-67.47	1.45	10.74	V
									V
									V
Middle	1408	-62.35	-13	-49.35	-74.36	-66.83	1.15	7.78	H
	2109	-61.34	-13	-48.34	-76.03	-68.00	1.38	10.19	H
	2808	-60.28	-13	-47.28	-75.67	-67.42	1.45	10.75	H
									H
									H
									H
	1408	-62.64	-13	-49.64	-74.11	-67.12	1.15	7.78	V
	2109	-61.23	-13	-48.23	-76.20	-67.89	1.38	10.19	V
	2808	-60.19	-13	-47.19	-75.99	-67.33	1.45	10.75	V
									V
									V
Highest	1413	-62.01	-13	-49.01	-74.00	-66.51	1.15	7.80	H
	2119	-61.18	-13	-48.18	-76.04	-67.85	1.38	10.20	H
	2824	-60.66	-13	-47.66	-76.08	-67.82	1.45	10.76	H
									H
									H
									H
	1413	-62.91	-13	-49.91	-74.37	-67.41	1.15	7.80	V
	2119	-60.74	-13	-47.74	-75.90	-67.41	1.38	10.20	V
	2824	-60.12	-13	-47.12	-75.96	-67.28	1.45	10.76	V
									V
									V

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



Part 27H LTE Band 17

LTE Band 17 / 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)
Lowest	1408	-61.85	-13	-48.85	-73.86	-66.33	1.15	7.78	H
	2113	-61.53	-13	-48.53	-76.29	-68.19	1.38	10.19	H
	2818	-60.09	-13	-47.09	-75.51	-67.24	1.45	10.75	H
									H
									H
									H
	1408	-62.89	-13	-49.89	-74.36	-67.37	1.15	7.78	V
	2113	-61.13	-13	-48.13	-76.17	-67.79	1.38	10.19	V
	2818	-60.42	-13	-47.42	-76.25	-67.57	1.45	10.75	V
									V
									V
									V
Middle	1408	-61.66	-13	-48.66	-73.67	-66.14	1.15	7.78	H
	2116	-60.99	-13	-47.99	-75.80	-67.65	1.38	10.19	H
	2824	-60.78	-13	-47.78	-76.20	-67.94	1.45	10.76	H
									H
									H
									H
	1408	-62.89	-13	-49.89	-74.36	-67.37	1.15	7.78	V
	2116	-60.89	-13	-47.89	-75.99	-67.55	1.38	10.19	V
	2824	-60.35	-13	-47.35	-76.19	-67.51	1.45	10.76	V
									V
									V
									V
Highest	1416	-62.17	-13	-49.17	-74.16	-66.68	1.15	7.81	H
	2119	-60.94	-13	-47.94	-75.80	-67.61	1.38	10.20	H
	2824	-60.51	-13	-47.51	-75.93	-67.67	1.45	10.76	H
									H
									H
									H
	1416	-62.83	-13	-49.83	-74.29	-67.34	1.15	7.81	V
	2119	-60.89	-13	-47.89	-76.05	-67.56	1.38	10.20	V
	2824	-60.56	-13	-47.56	-76.40	-67.72	1.45	10.76	V
									V
									V
									V

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