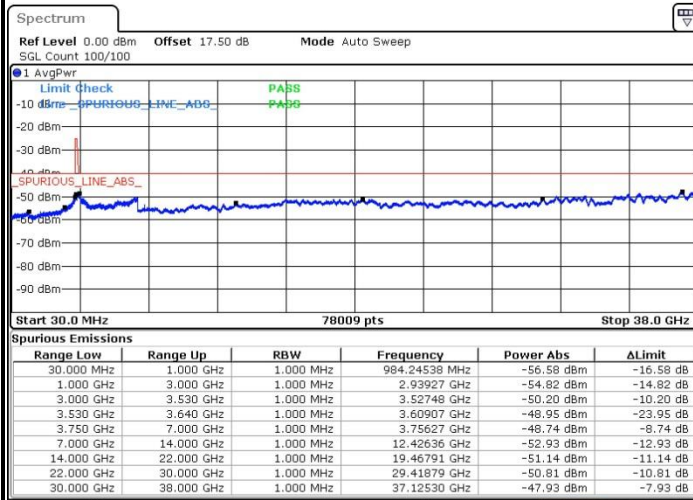




LTE Band 48 / 15MHz

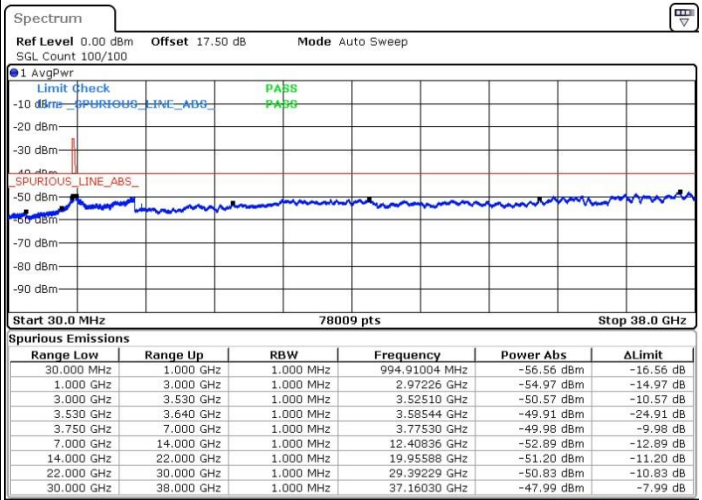
16QAM

Highest Channel / 1RB0



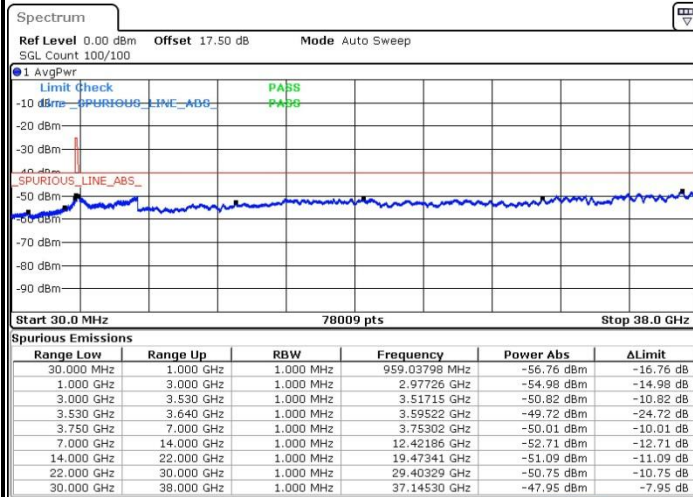
Date: 15 JUL 2019 21:07:15

Highest Channel / 1RBmax



Date: 15 JUL 2019 21:20:32

Highest Channel / FullRB



Date: 15 JUL 2019 21:13:53

N/A

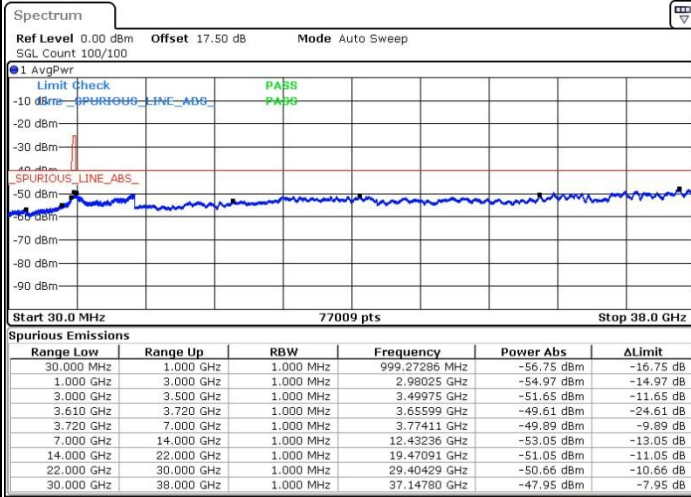


LTE Band 48 / 20MHz

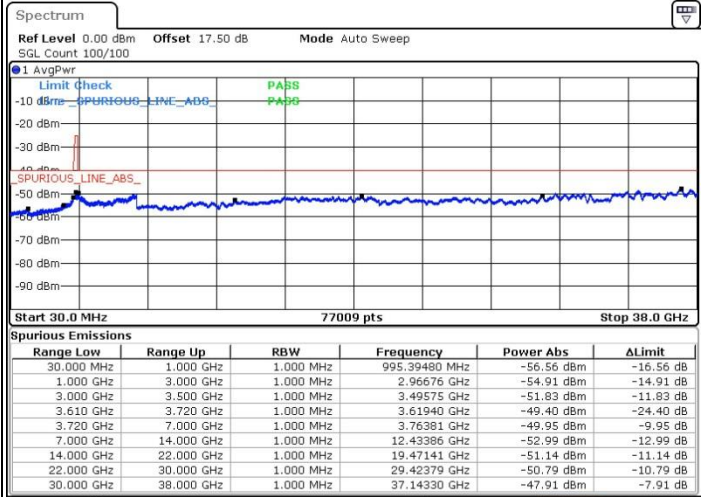
16QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax



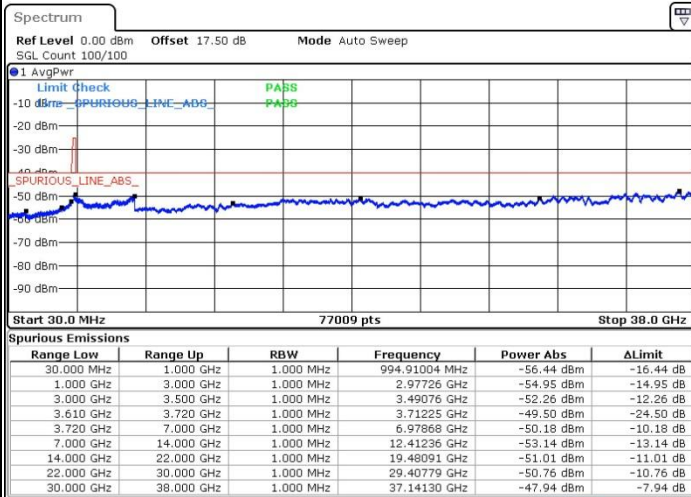
Date: 15 JUL 2019 21:28:18



Date: 15 JUL 2019 21:34:57

Lowest Channel / FullRB

N/A



Date: 15 JUL 2019 21:21:40

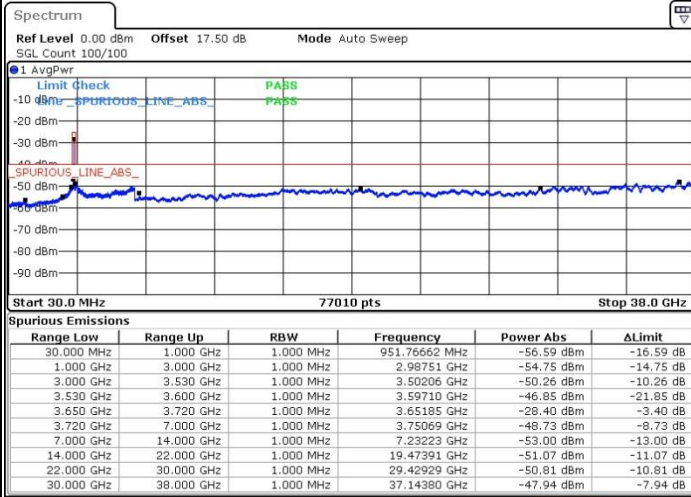


LTE Band 48 / 20MHz

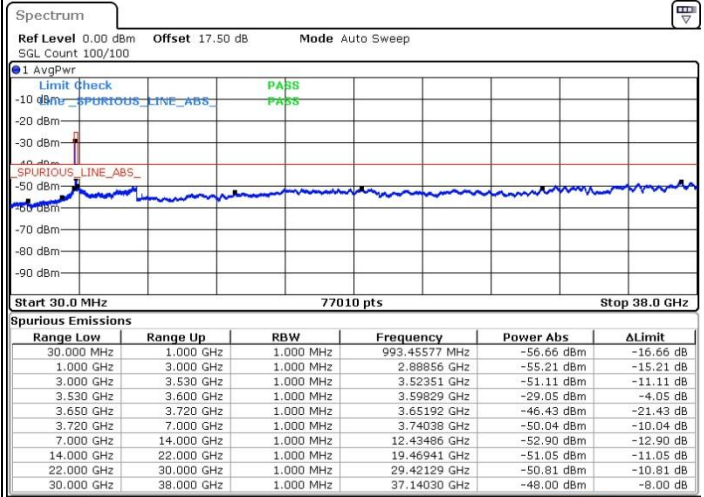
16QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax



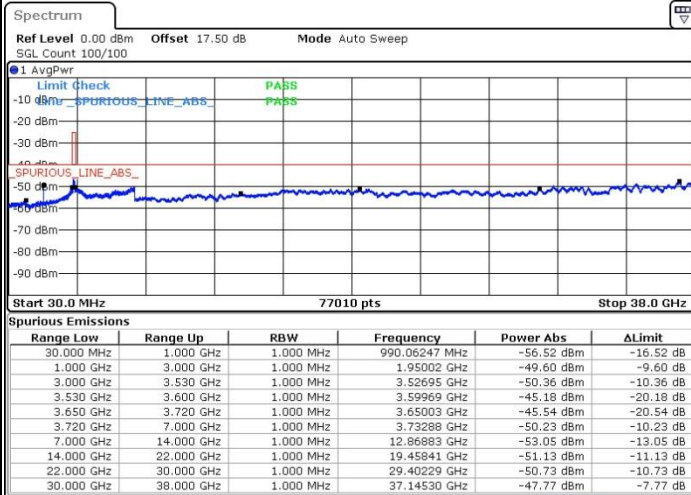
Date: 15 JUL 2019 21:31:37



Date: 15 JUL 2019 21:38:16

Middle Channel / FullIRB

N/A



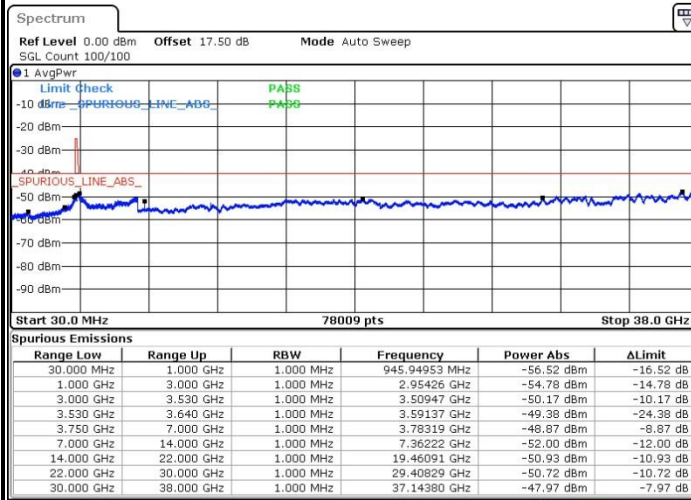
Date: 15 JUL 2019 21:24:59



LTE Band 48 / 20MHz

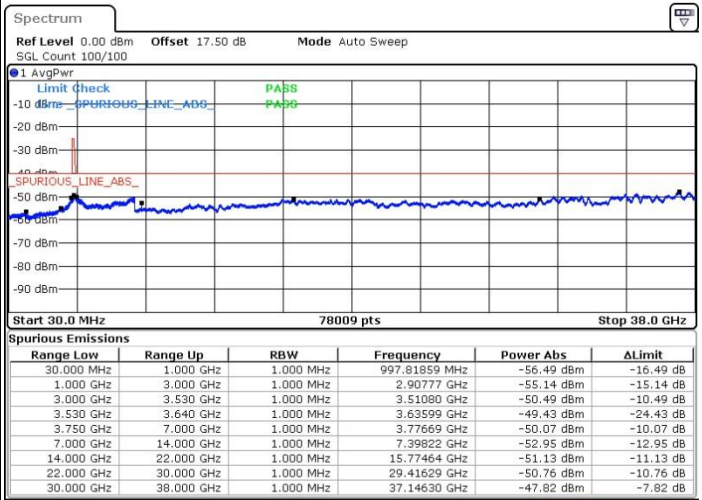
16QAM

Highest Channel / 1RB0



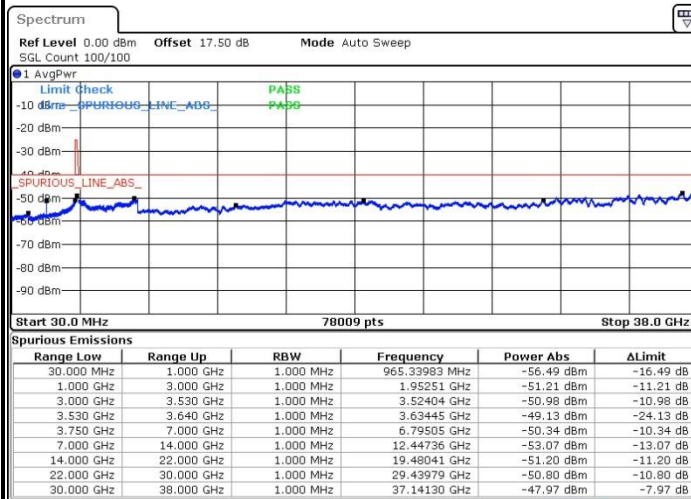
Date: 15 JUL 2019 21:32:44

Highest Channel / 1RBmax



Date: 15 JUL 2019 21:39:23

Highest Channel / FullIRB



Date: 15 JUL 2019 21:26:05

N/A

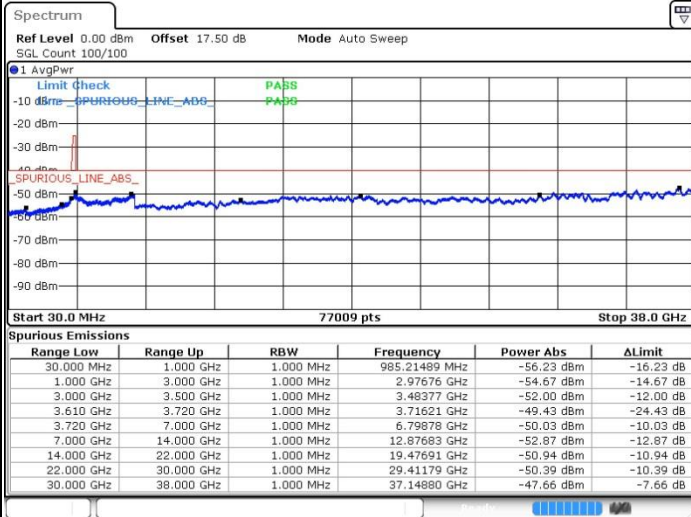


LTE Band 48 / 5MHz

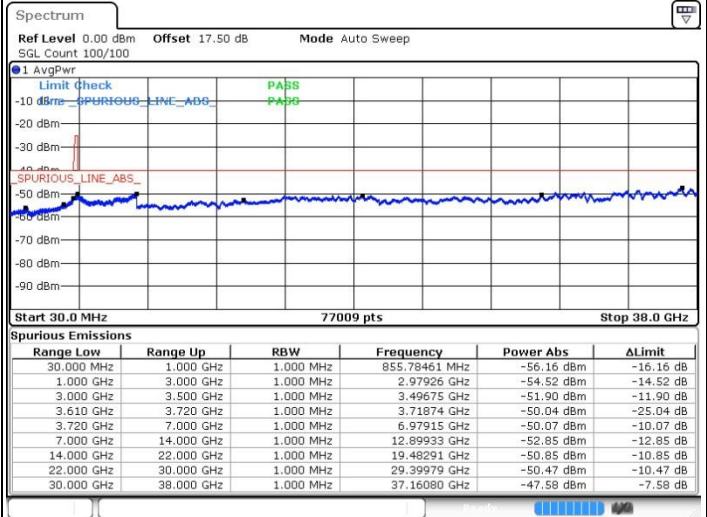
64QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax



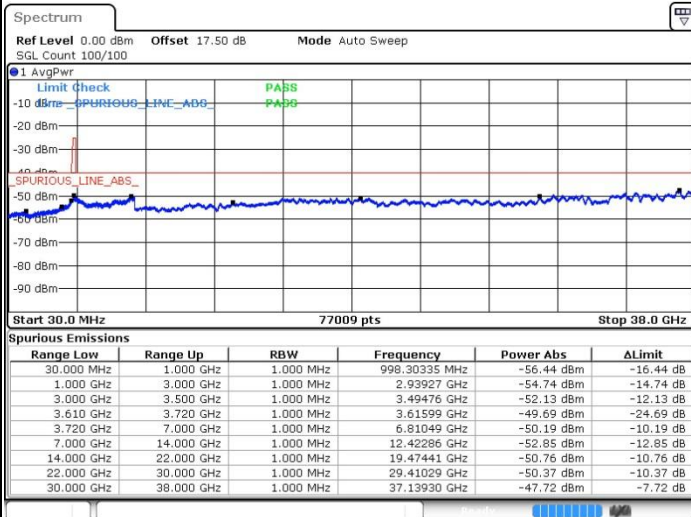
Date: 16 JUL 2019 18:53:45



Date: 16 JUL 2019 19:00:23

Lowest Channel / FullRB

N/A



Date: 16 JUL 2019 18:57:04

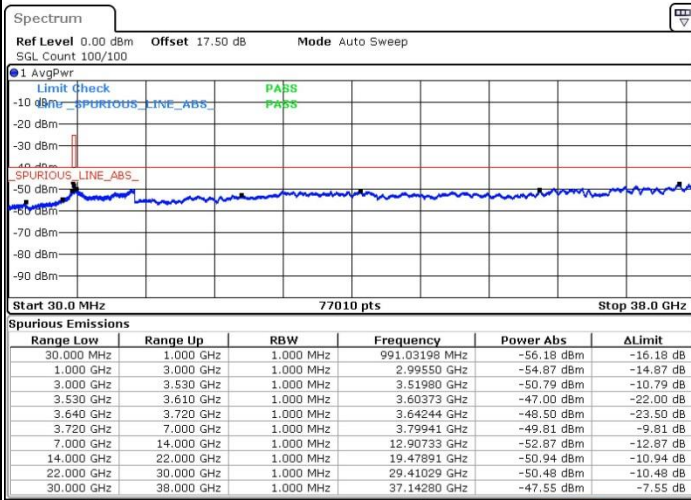


LTE Band 48 / 5MHz

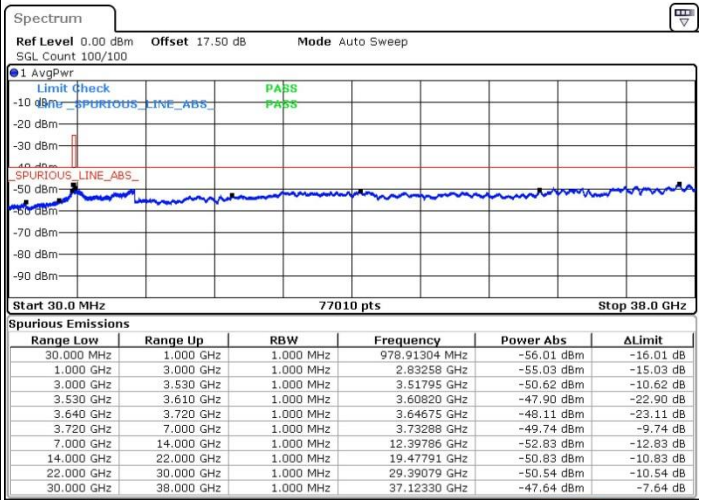
64QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax



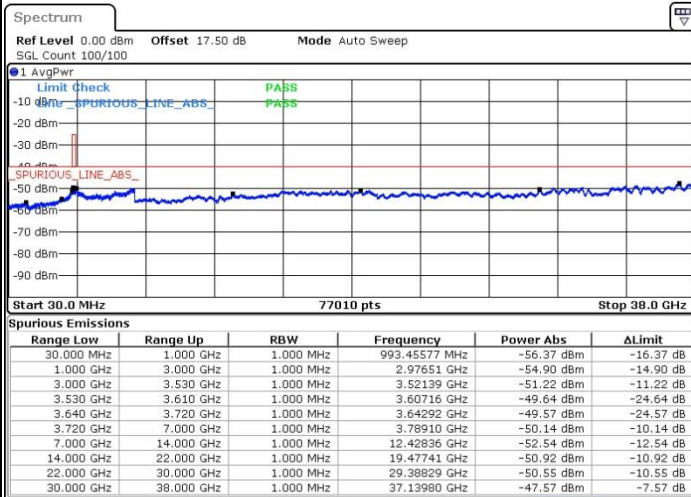
Date: 16 JUL 2019 18:54:51



Date: 16 JUL 2019 19:01:30

Middle Channel / FullIRB

N/A



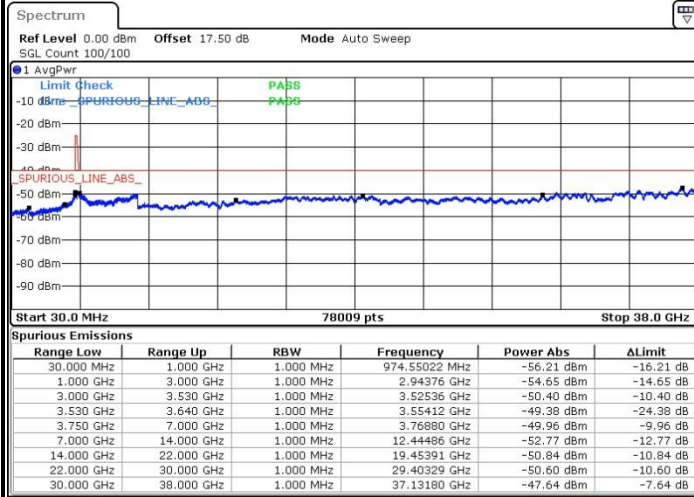
Date: 16 JUL 2019 18:58:10



LTE Band 48 / 5MHz

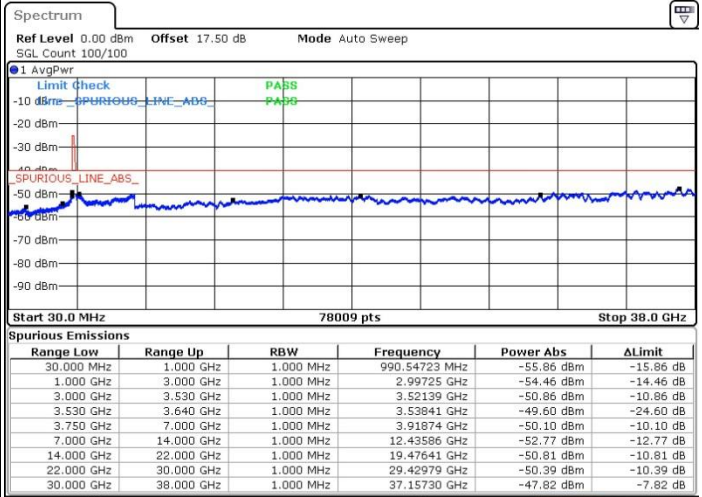
64QAM

Highest Channel / 1RB0



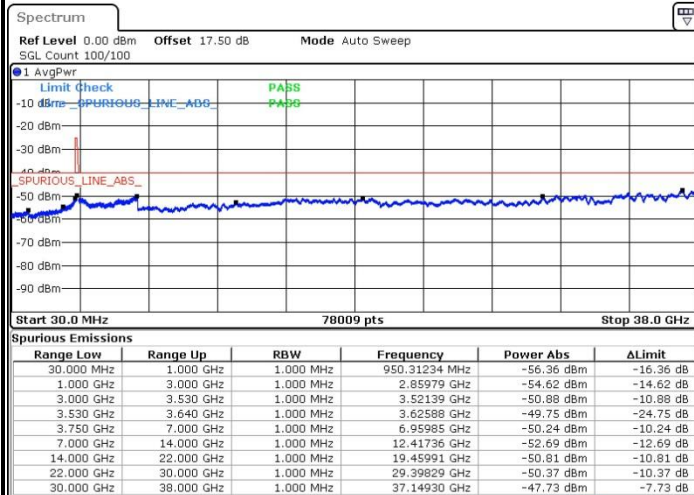
Date: 16 JUL 2019 18:55:57

Highest Channel / 1RBmax



Date: 16 JUL 2019 19:02:36

Highest Channel / FullRB



Date: 16 JUL 2019 18:59:17

N/A

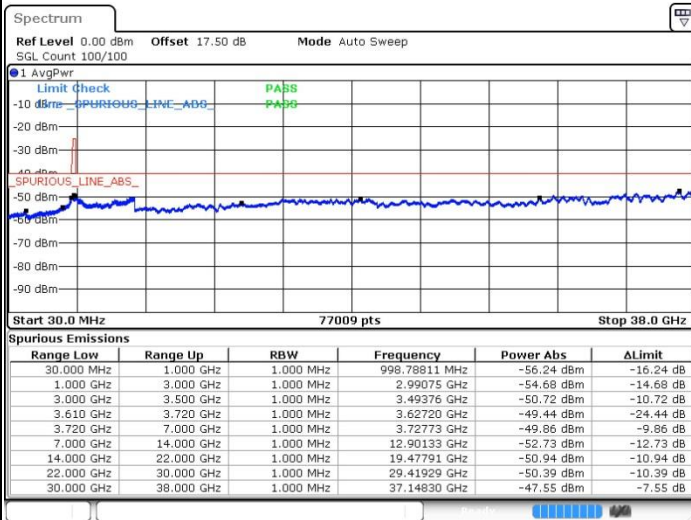


LTE Band 48 / 10MHz

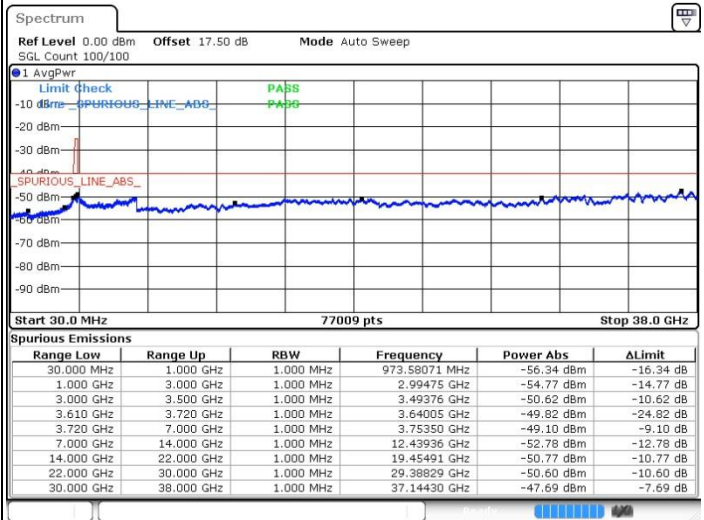
64QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax



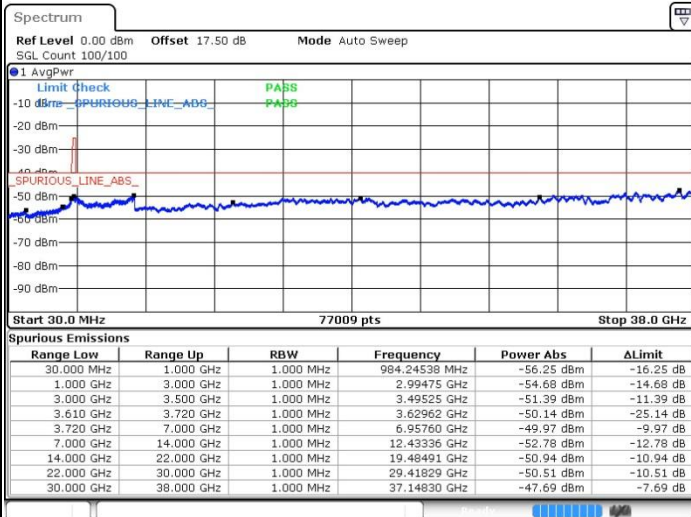
Date: 16 JUL 2019 19:03:43



Date: 16 JUL 2019 19:10:21

Lowest Channel / FullRB

N/A



Date: 16 JUL 2019 19:07:02

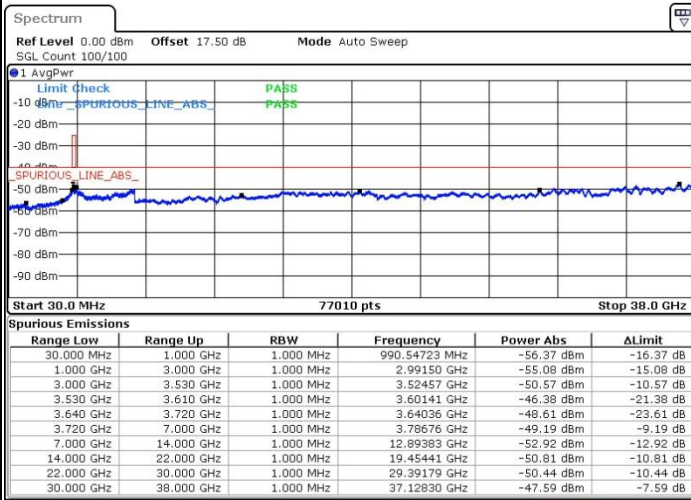


LTE Band 48 / 10MHz

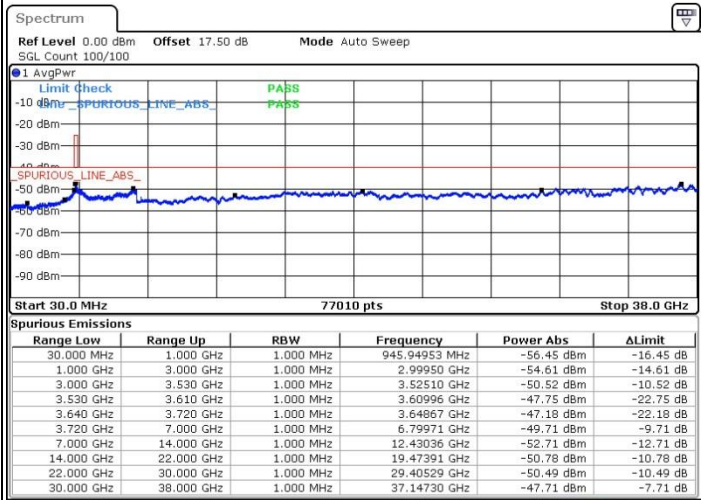
64QAM

MiddleChannel / 1RB0

Middle Channel / 1RBmax



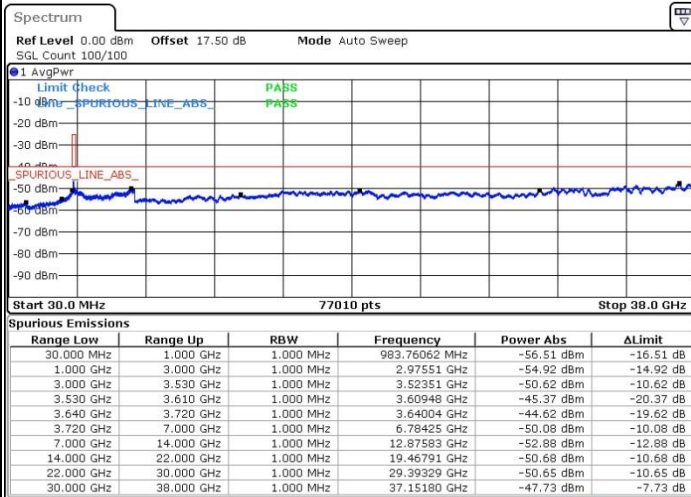
Date: 16 JUL 2019 19:04:50



Date: 16 JUL 2019 19:11:28

Middle Channel / FullIRB

N/A



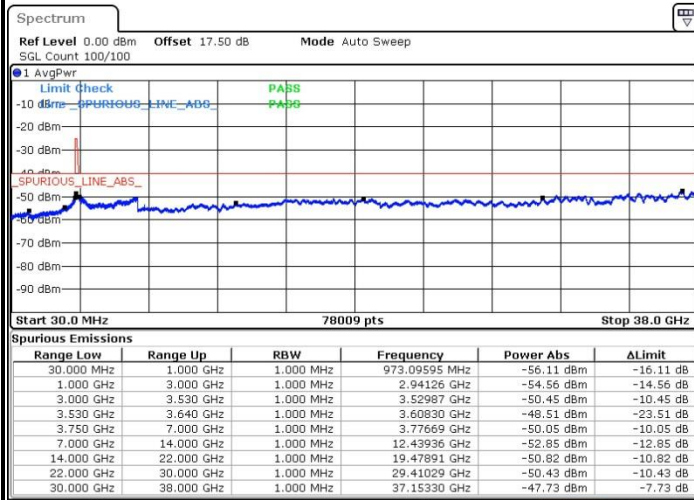
Date: 16 JUL 2019 19:08:09



LTE Band 48 / 10MHz

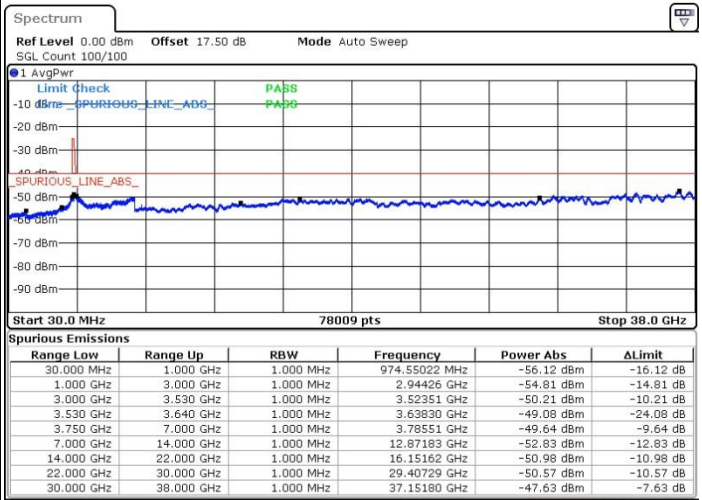
64QAM

Highest Channel / 1RB0



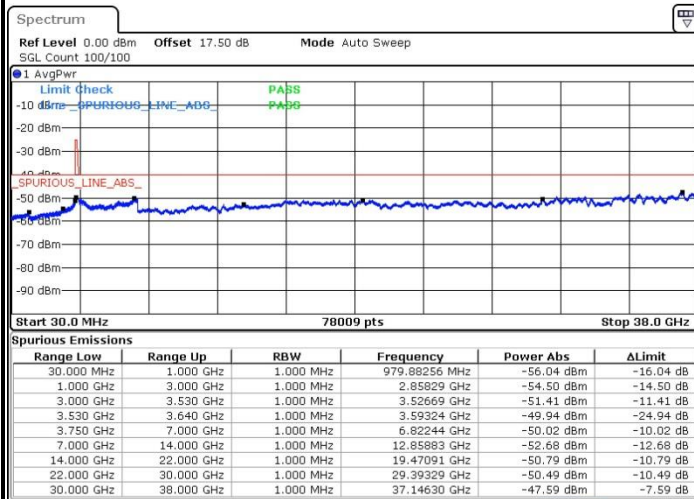
Date: 16 JUL 2019 19:05:56

Highest Channel / 1RBmax



Date: 16 JUL 2019 19:12:34

Highest Channel / FullRB



Date: 16 JUL 2019 19:09:15

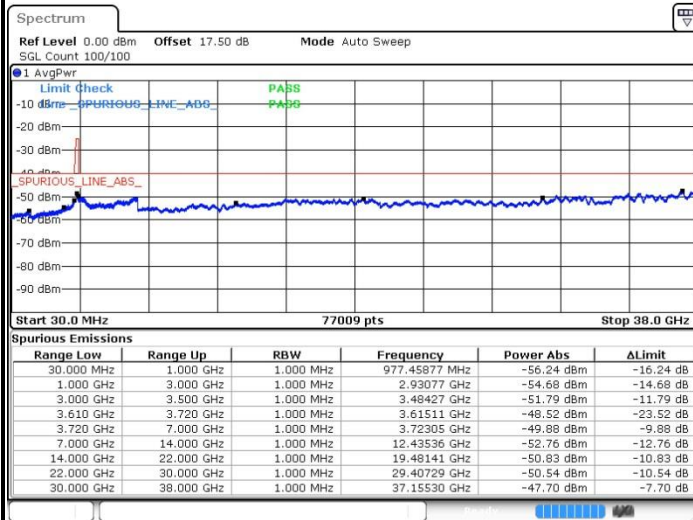
N/A



LTE Band 48 / 15MHz

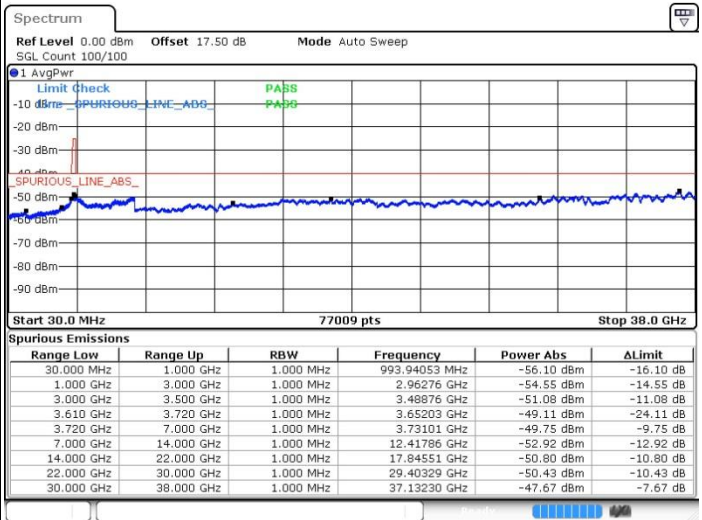
64QAM

Lowest Channel / 1RB0



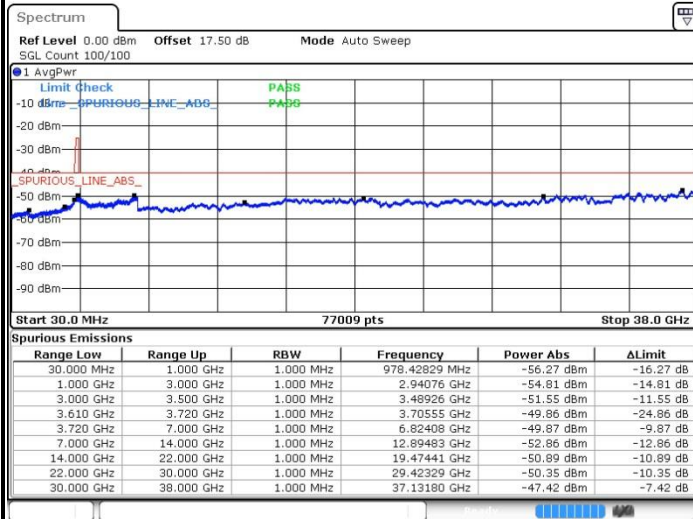
Date: 16 JUL 2019 19:13:41

Lowest Channel / 1RBmax



Date: 16 JUL 2019 19:20:20

Lowest Channel / FullRB



Date: 16 JUL 2019 19:17:01

N/A

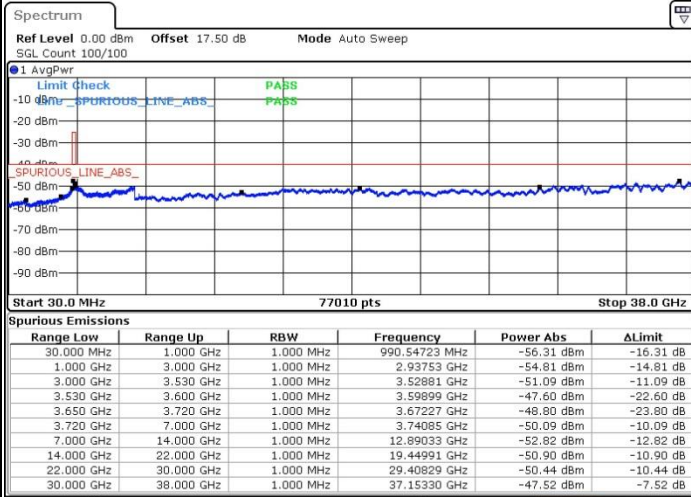


LTE Band 48 / 15MHz

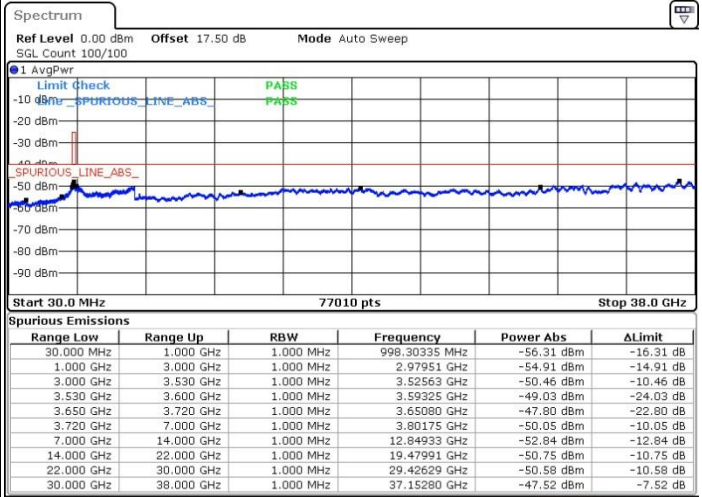
64QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax



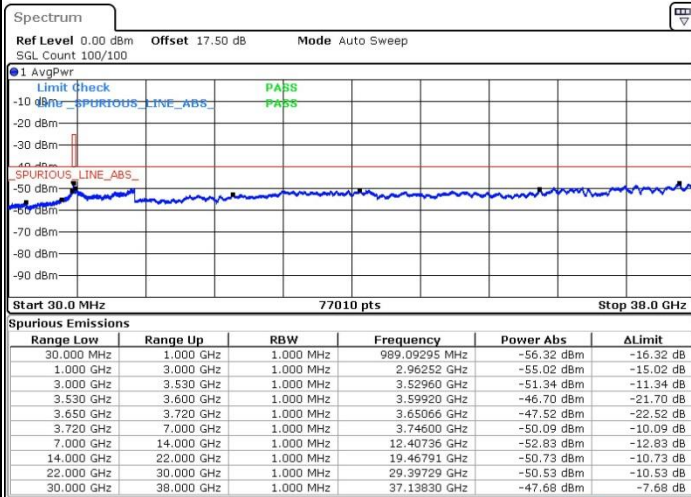
Date: 16 JUL 2019 19:14:48



Date: 16 JUL 2019 19:21:26

Middle Channel / FullIRB

N/A



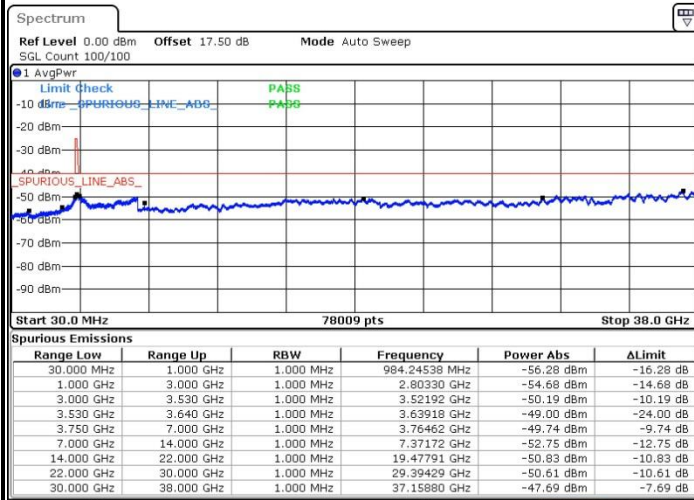
Date: 16 JUL 2019 19:18:07



LTE Band 48 / 15MHz

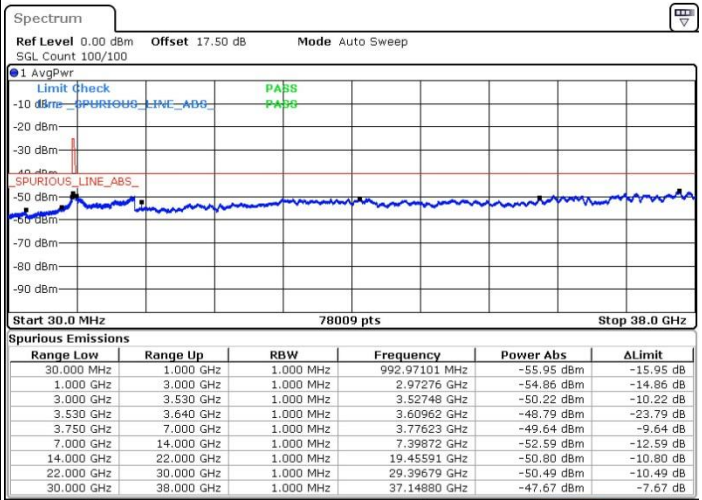
64QAM

Highest Channel / 1RB0



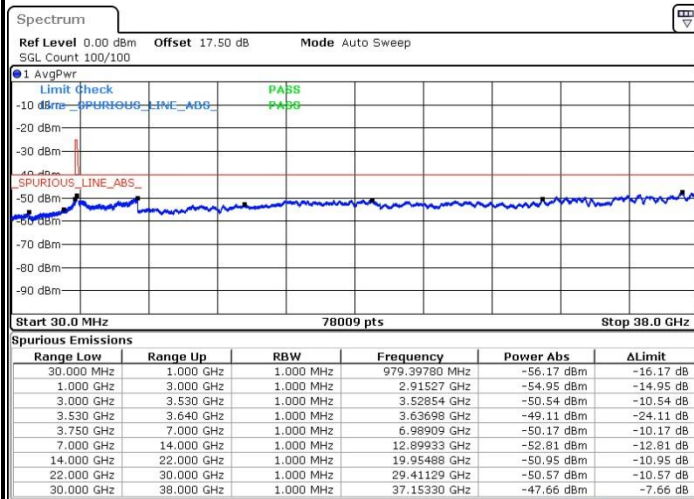
Date: 16 JUL 2019 19:15:54

Highest Channel / 1RBmax



Date: 16 JUL 2019 19:22:33

Highest Channel / FullRB



Date: 16 JUL 2019 19:19:13

N/A

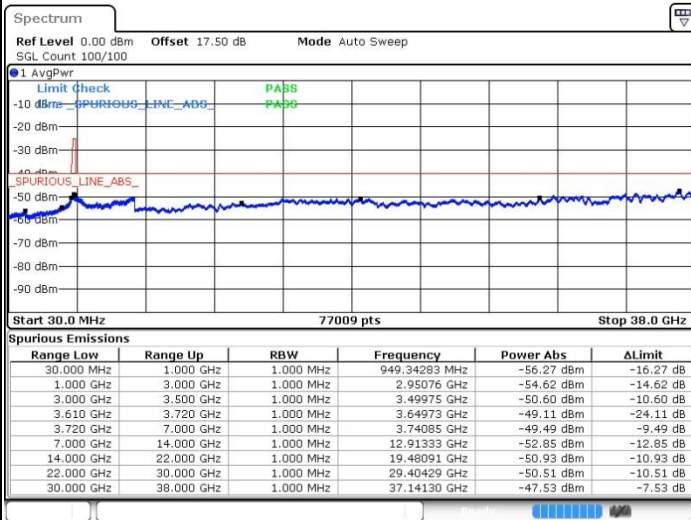


LTE Band 48 / 20MHz

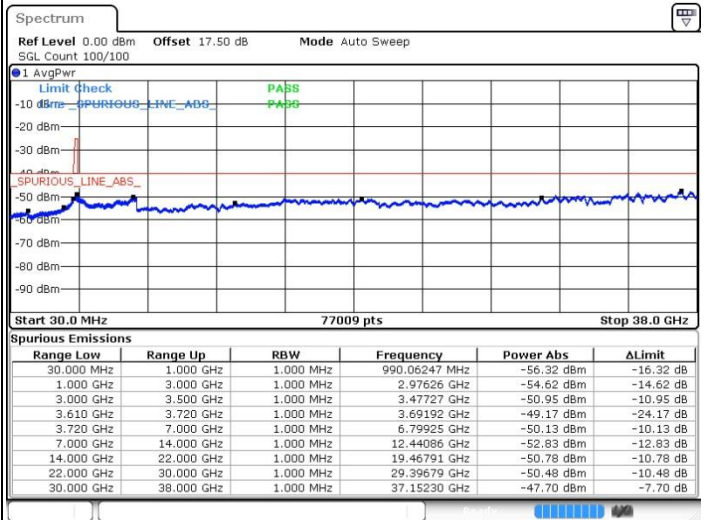
64QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax



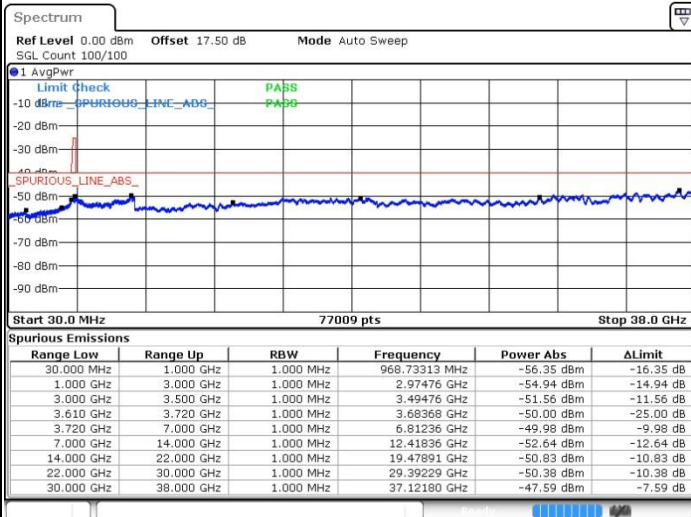
Date: 16 JUL 2019 19:26:59



Date: 16 JUL 2019 19:30:18

Lowest Channel / FullRB

N/A



Date: 16 JUL 2019 19:23:40

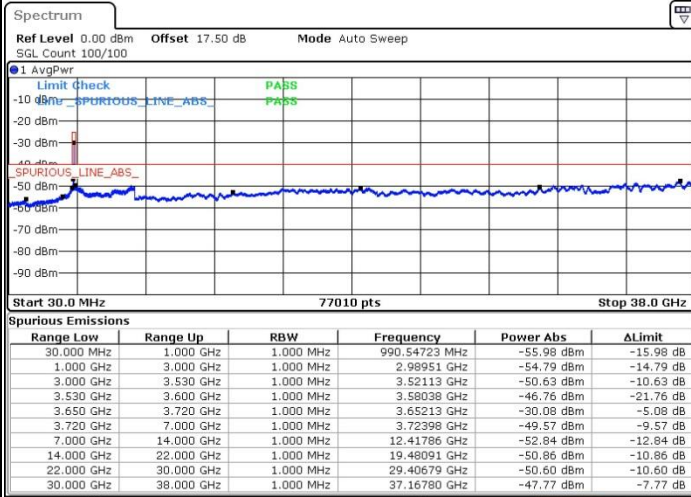


LTE Band 48 / 20MHz

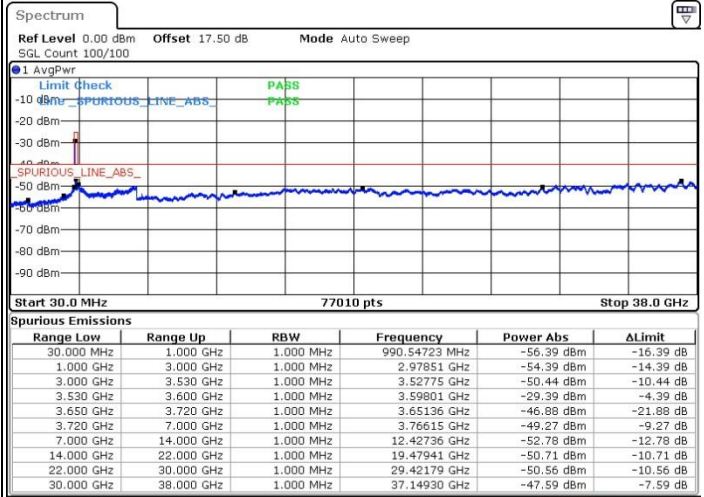
64QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax



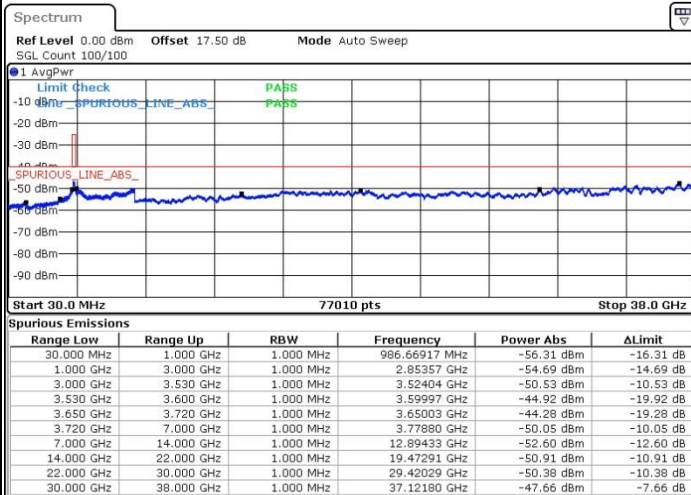
Date: 16 JUL 2019 19:28:05



Date: 16 JUL 2019 19:31:24

Middle Channel / FullIRB

N/A



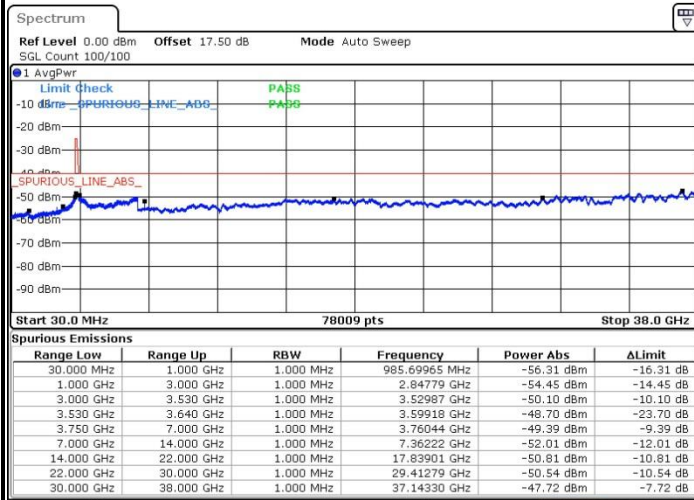
Date: 16 JUL 2019 19:24:46



LTE Band 48 / 20MHz

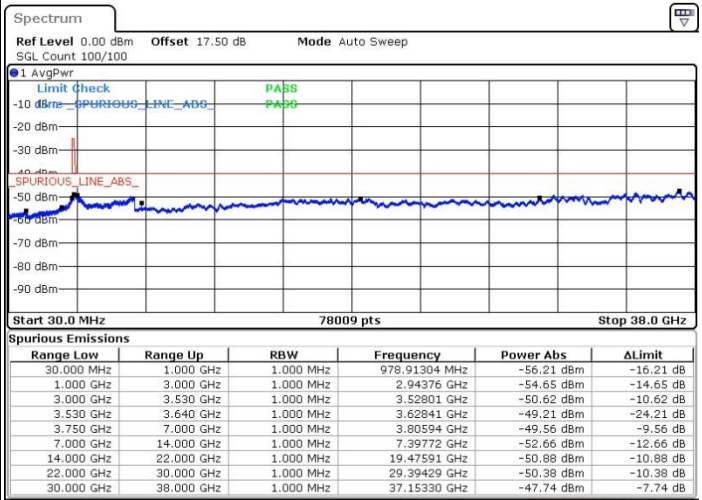
64QAM

Highest Channel / 1RB0



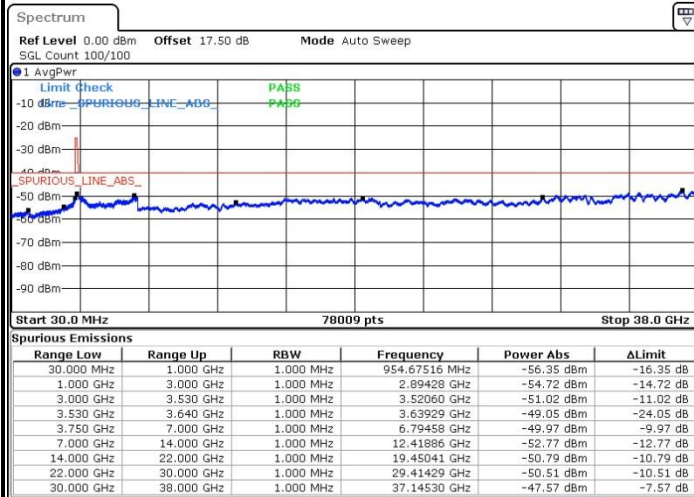
Date: 16 JUL 2019 19:29:11

Highest Channel / 1RBmax



Date: 16 JUL 2019 19:32:31

Highest Channel / FullRB



Date: 16 JUL 2019 19:25:52

N/A

Frequency Stability

Test Conditions		LTE Band 48 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0004	PASS
40	Normal Voltage	0.0005	
30	Normal Voltage	0.0003	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0011	
0	Normal Voltage	0.0008	
-10	Normal Voltage	0.0004	
-20	Normal Voltage	0.0006	
-30	Normal Voltage	0.0001	
20	Maximum Voltage	0.0004	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0005	

Note:

1. Normal Voltage =3.3 V. ; Battery End Point (BEP) =3 V. ; Maximum Voltage =3.6 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



Appendix B. Test Results of EIRP and Radiated Test

EIRP

<Reporting Only>

LTE Band 48 / 5MHz (Average) (GT - LC = 2.5 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	12	18.54	0.0714	21.04	0.1271
Middle		1	12	19.17	0.0826	21.67	0.1469
Highest		1	12	19.39	0.0869	21.89	0.1545
Lowest	16QAM	1	12	17.57	0.0571	20.07	0.1016
Middle		1	12	18.26	0.0670	20.76	0.1191
Highest		1	12	18.48	0.0705	20.98	0.1253
Lowest	64QAM	1	12	16.53	0.0450	19.03	0.0800
Middle		1	12	17.25	0.0531	19.75	0.0944
Highest		1	12	17.68	0.0586	20.18	0.1042

LTE Band 48 / 10MHz (Average) (GT - LC = 2.5 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	18.57	0.0719	21.07	0.1279
Middle		1	0	19.42	0.0875	21.92	0.1556
Highest		1	0	19.81	0.0957	22.31	0.1702
Lowest	16QAM	1	0	17.60	0.0575	20.10	0.1023
Middle		1	0	18.36	0.0685	20.86	0.1219
Highest		1	0	18.76	0.0752	21.26	0.1337
Lowest	64QAM	1	0	16.57	0.0454	19.07	0.0807
Middle		1	0	17.38	0.0547	19.88	0.0973
Highest		1	0	17.91	0.0618	20.41	0.1099

LTE Band 48 / 15MHz (Average) (GT - LC = 2.5 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	18.67	0.0736	21.17	0.1309
Middle		1	0	20.08	0.1019	22.58	0.1811
Highest		1	0	20.39	0.1094	22.89	0.1945
Lowest	16QAM	1	0	17.57	0.0571	20.07	0.1016
Middle		1	0	19.16	0.0824	21.66	0.1466
Highest		1	0	19.36	0.0863	21.86	0.1535
Lowest	64QAM	1	0	16.84	0.0483	19.34	0.0859
Middle		1	0	17.85	0.0610	20.35	0.1084
Highest		1	0	18.46	0.0701	20.96	0.1247



LTE Band 48 / 20MHz (Average) (GT - LC = 2.5 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	18.77	0.0753	21.27	0.1340
Middle		1	0	20.24	0.1057	22.74	0.1879
Highest		1	0	20.49	0.1119	22.99	0.1991
Lowest	16QAM	1	0	17.51	0.0564	20.01	0.1002
Middle		1	0	19.18	0.0828	21.68	0.1472
Highest		1	0	19.45	0.0881	21.95	0.1567
Lowest	64QAM	1	0	17.25	0.0531	19.75	0.0944
Middle		1	0	18.19	0.0659	20.69	0.1172
Highest		1	0	18.44	0.0698	20.94	0.1242



EIRP Power

LTE Band 48 / Conducted Power									
BW	1.4MHz			3MHz			5MHz		
Mod.	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Lowest CH	-	-	-	-	-	-	18.54	17.57	16.53
Middle CH	-	-	-	-	-	-	19.17	18.26	17.25
Highest CH	-	-	-	-	-	-	19.39	18.48	17.68
LTE Band 48 / Conducted Power									
BW	10MHz			15MHz			20MHz		
Mod.	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Lowest CH	18.57	17.6	16.57	18.67	17.57	16.84	18.77	17.51	17.25
Middle CH	19.42	18.36	17.38	20.08	19.16	17.85	20.24	19.18	18.19
Highest CH	19.81	18.76	17.91	20.39	19.36	18.46	20.49	19.45	18.44

LTE Band 48 / EIRP Power									
BW	1.4MHz			3MHz			5MHz		
Mod.	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Lowest CH	-	-	-	-	-	-	21.04	20.07	19.03
Middle CH	-	-	-	-	-	-	21.67	20.76	19.75
Highest CH	-	-	-	-	-	-	21.89	20.98	20.18
LTE Band 48 / EIRP Power									
BW	10MHz			15MHz			20MHz		
Mod.	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Lowest CH	21.07	20.1	19.07	21.17	20.07	19.34	21.27	20.01	19.75
Middle CH	21.92	20.86	19.88	22.58	21.66	20.35	22.74	21.68	20.69
Highest CH	22.31	21.26	20.41	22.89	21.86	20.96	22.99	21.95	20.94
Antenna Gain	2.5 dBi								
Limit	23dBm / 10MHz								
Result	Pass								

**Radiated Spurious Emission****LTE Band 48**

LTE Band 48 / 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	7120	-49.03	-40	-9.03	-53.12	-58.95	1.78	11.71	H
	10655	-58.97	-40	-18.97	-66.75	-67.40	2.47	10.90	H
	14205	-56.92	-40	-16.92	-69.12	-65.76	2.87	11.71	H
	21307	-48.09	-40	-8.09	-73.99	-64.81	1.98	18.70	H
	24859	-48.98	-40	-8.98	-75.33	-64.99	2.07	18.07	H
	28411	-47.67	-40	-7.67	-76.18	-64.92	2.32	19.56	H
	7120	-54.47	-40	-14.47	-58.19	-64.39	1.78	11.71	V
	10655	-58.25	-40	-18.25	-65.77	-66.68	2.47	10.90	V
	14205	-57.03	-40	-17.03	-68.95	-65.87	2.87	11.71	V
	21307	-55.41	-40	-15.41	-74.2	-72.13	1.98	18.70	V
	24859	-52.70	-40	-12.70	-75.36	-68.71	2.07	18.07	V
	28411	-51.21	-40	-11.21	-76.51	-68.46	2.32	19.56	V
Middle	7250	-49.20	-40	-9.20	-53.29	-58.85	1.86	11.50	H
	10850	-59.41	-40	-19.41	-67.48	-67.74	2.57	10.90	H
	14462	-56.83	-40	-16.83	-68.98	-65.07	2.85	11.09	H
	18077	-52.20	-40	-12.20	-71.6	-68.43	1.76	17.98	H
	21696	-48.97	-40	-8.97	-74.6	-65.76	1.99	18.78	H
	25314	-47.06	-40	-7.06	-75.13	-63.66	2.14	18.74	H
	7250	-52.64	-40	-12.64	-56.48	-62.29	1.86	11.50	V
	10850	-57.63	-40	-17.63	-65.49	-65.96	2.57	10.90	V
	14462	-57.58	-40	-17.58	-68.91	-65.82	2.85	11.09	V
	18077	-58.44	-40	-18.44	-71.57	-74.67	1.76	17.98	V
	21696	-55.51	-40	-15.51	-74.38	-72.30	1.99	18.78	V
	25314	-50.75	-40	-10.75	-75.11	-67.35	2.14	18.74	V
Highest	7380	-48.84	-40	-8.84	-52.77	-58.21	1.93	11.29	H
	11045	-55.75	-40	-15.75	-64.14	-64.07	2.63	10.95	H
	14724	-55.46	-40	-15.46	-68.84	-64.26	2.91	11.72	H
	18410	-52.01	-40	-12.01	-71.81	-68.06	1.87	17.92	H
	22084	-49.88	-40	-9.88	-74.25	-66.67	2.08	18.87	H
	25770	-46.27	-40	-6.27	-75	-63.29	2.03	19.05	H
	7380	-49.08	-40	-9.08	-52.84	-58.45	1.93	11.29	V
	11045	-54.76	-40	-14.76	-62.98	-63.08	2.63	10.95	V
	14724	-57.51	-40	-17.51	-69.22	-66.31	2.91	11.72	V
	18410	-59.75	-40	-19.75	-72.12	-75.80	1.87	17.92	V
	22084	-56.22	-40	-16.22	-74.33	-73.01	2.08	18.87	V
	25770	-50.60	-40	-10.60	-75.73	-67.62	2.03	19.05	V

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

————THE END————