

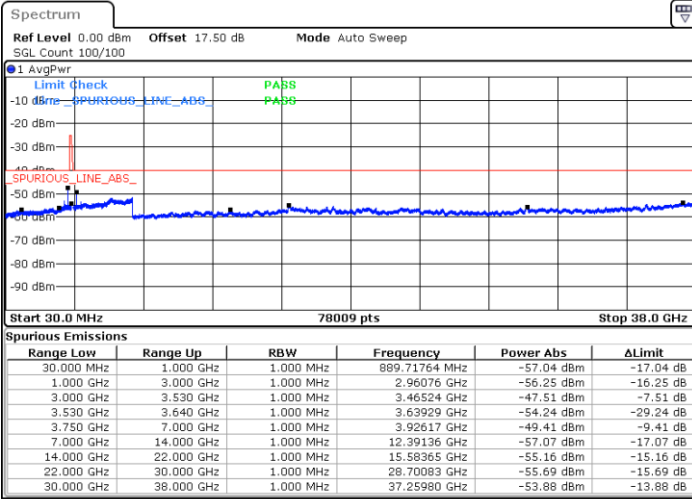


LTE Band 48 / 5MHz

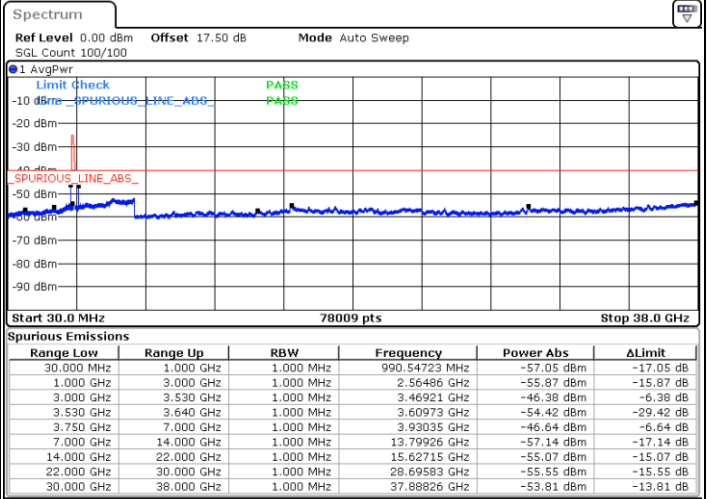
64QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax



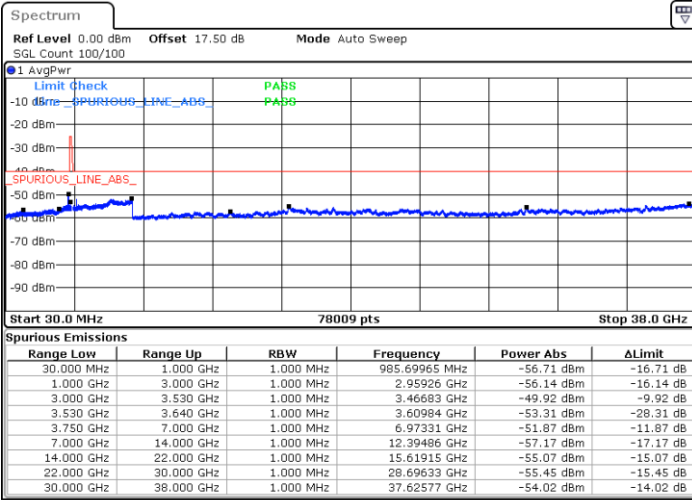
Date: 15.APR.2020 10:21:36



Date: 15.APR.2020 10:45:37

Highest Channel / FullIRB

N/A



Date: 15.APR.2020 10:33:37

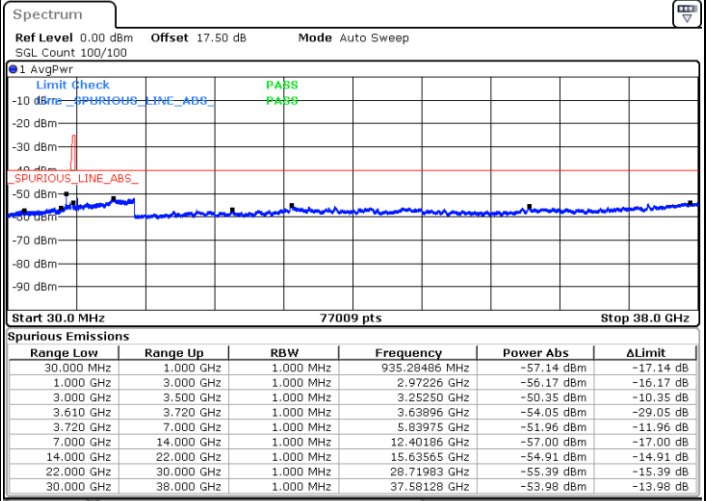
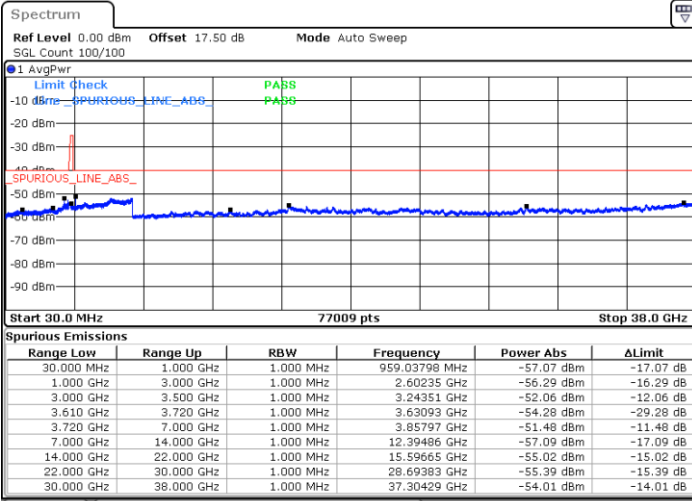


LTE Band 48 / 10MHz

64QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax

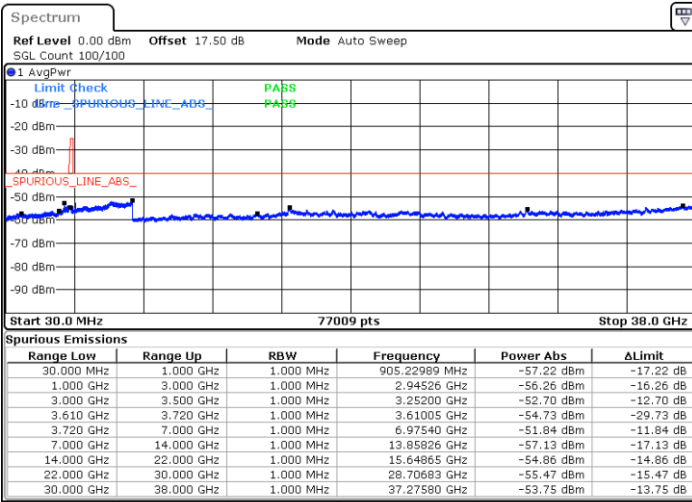


Date: 15.APR.2020 10:46:58

Date: 15.APR.2020 11:10:59

Lowest Channel / FullRB

N/A



Date: 15.APR.2020 10:58:59

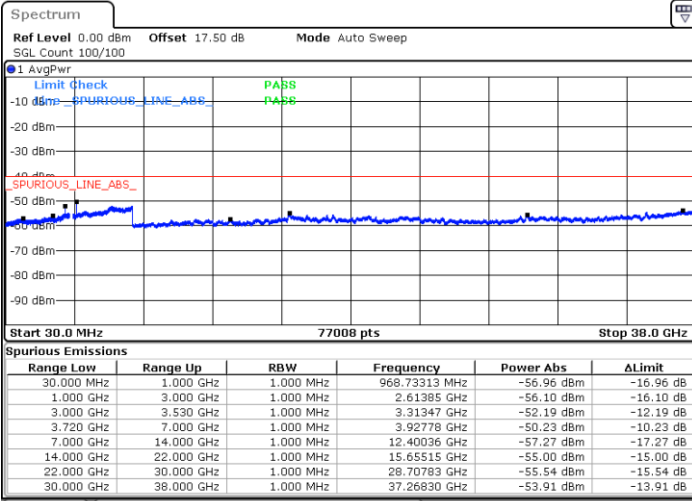


LTE Band 48 / 10MHz

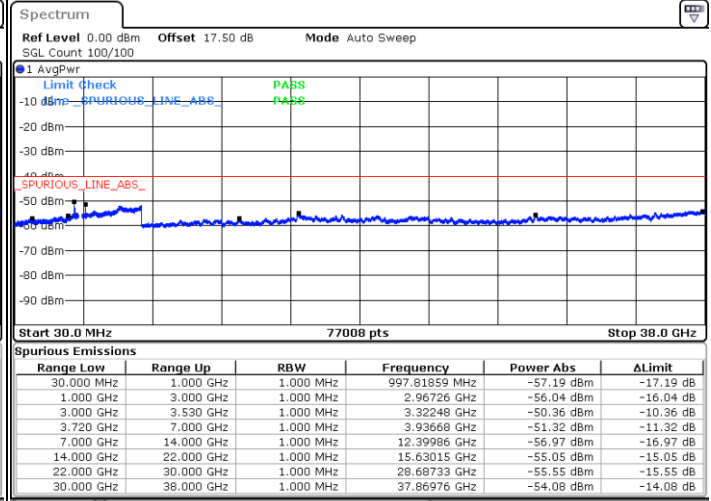
64QAM

MiddleChannel / 1RB0

Middle Channel / 1RBmax



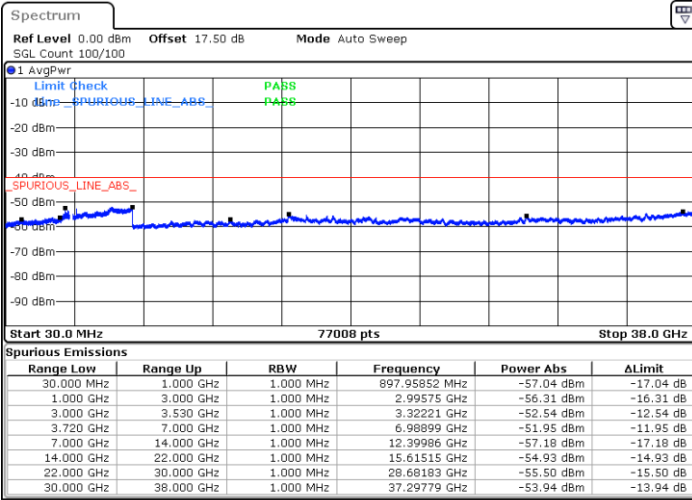
Date: 15.APR.2020 10:53:38



Date: 15.APR.2020 11:17:39

Middle Channel / FullIRB

N/A



Date: 15.APR.2020 11:05:38

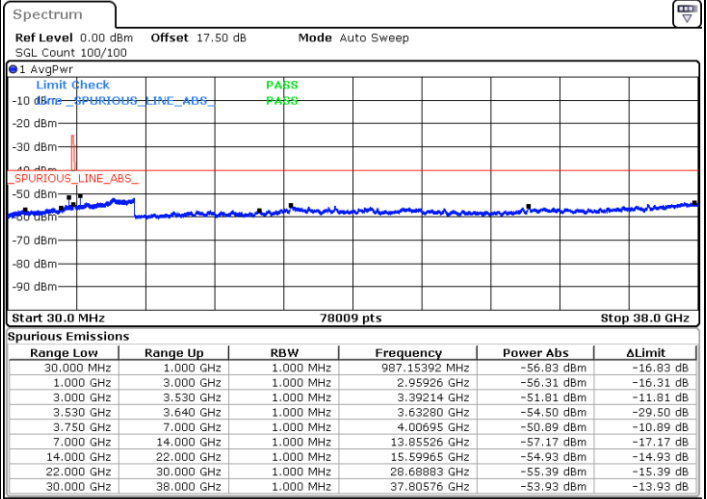
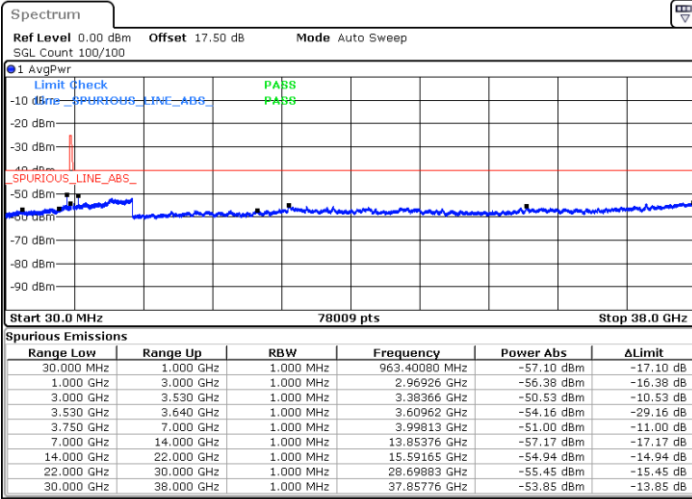


LTE Band 48 / 10MHz

64QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax

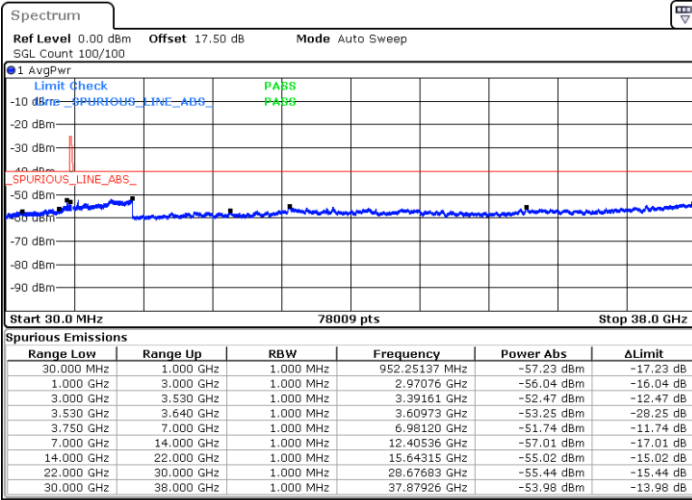


Date: 15.APR.2020 10:54:58

Date: 15.APR.2020 11:18:59

Highest Channel / FullIRB

N/A



Date: 15.APR.2020 11:06:58

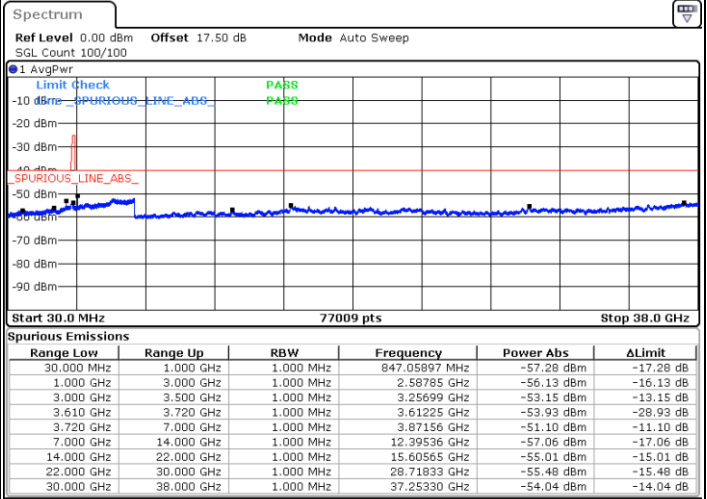
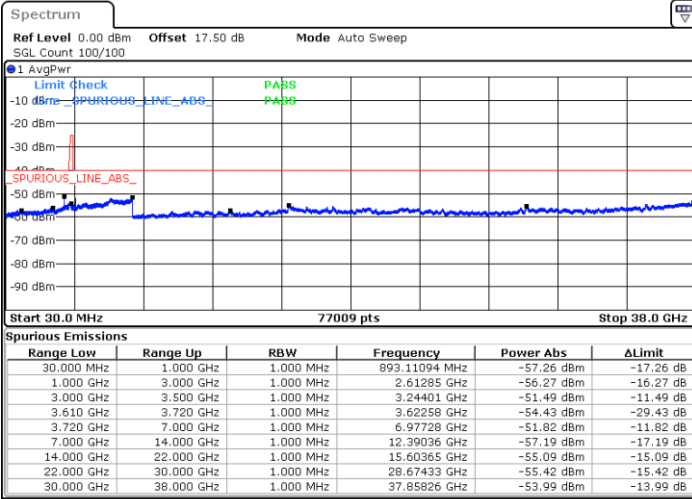


LTE Band 48 / 15MHz

64QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax

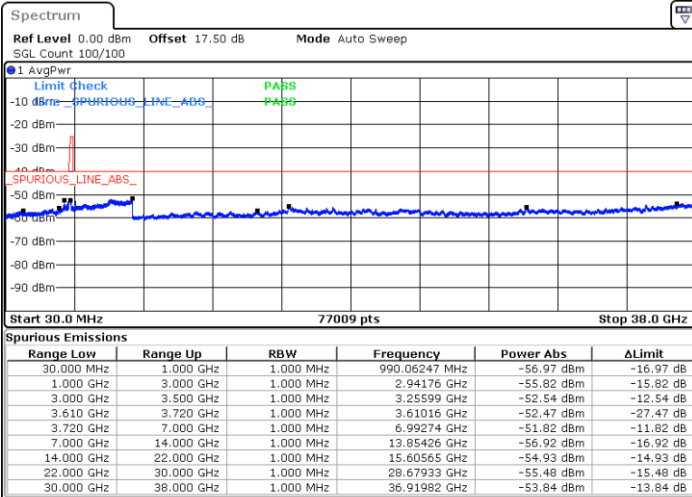


Date: 15.APR.2020 11:25:41

Date: 15.APR.2020 11:49:41

Lowest Channel / FullIRB

N/A



Date: 15.APR.2020 11:37:41

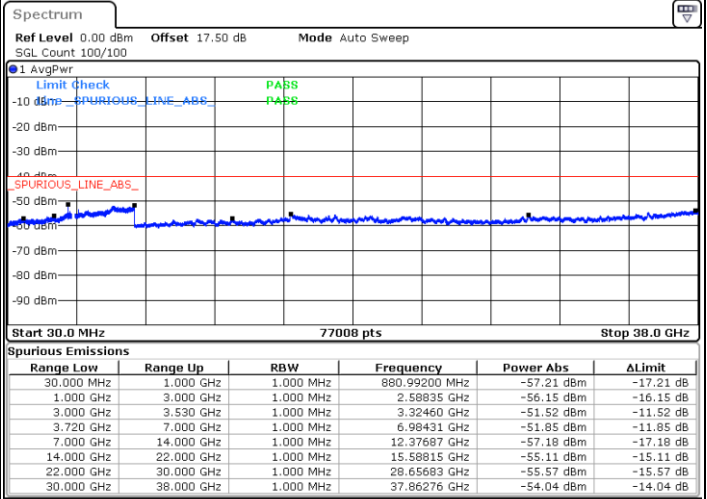
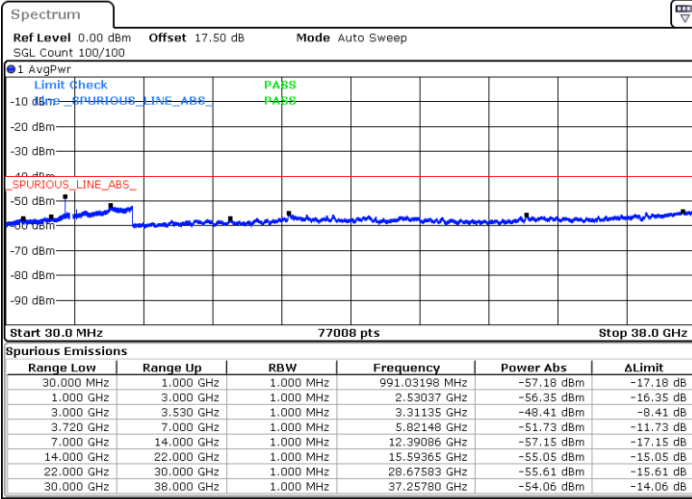


LTE Band 48 / 15MHz

64QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax

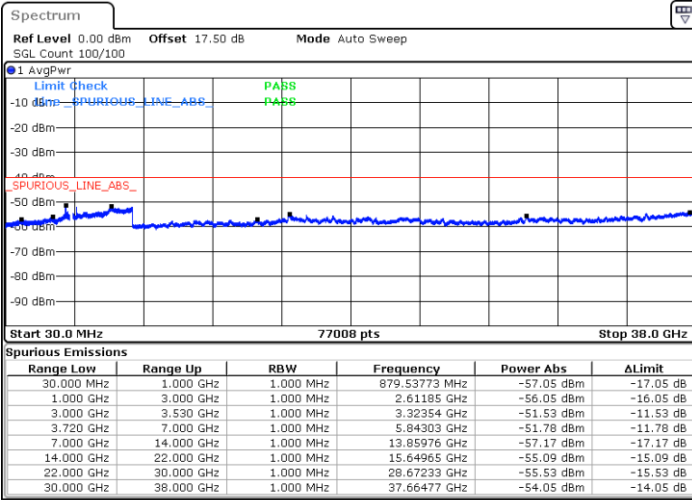


Date: 15.APR.2020 11:27:01

Date: 15.APR.2020 11:51:01

Middle Channel / FullRB

N/A



Date: 15.APR.2020 11:39:01

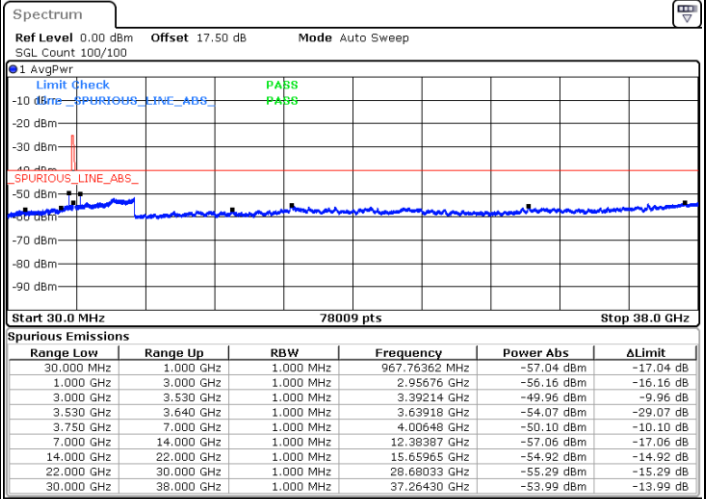
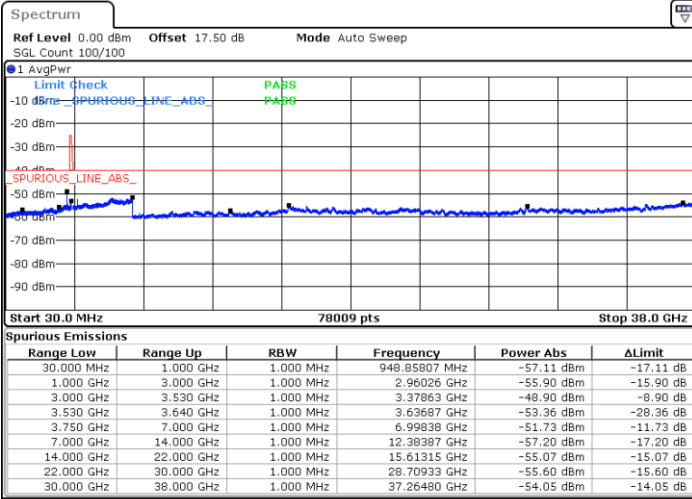


LTE Band 48 / 15MHz

64QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax

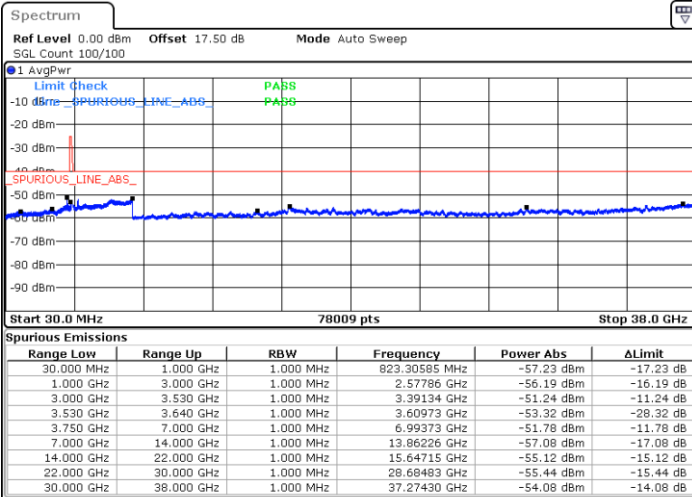


Date: 15.APR.2020 11:33:40

Date: 15.APR.2020 11:57:41

Highest Channel / FullIRB

N/A



Date: 15.APR.2020 11:45:40

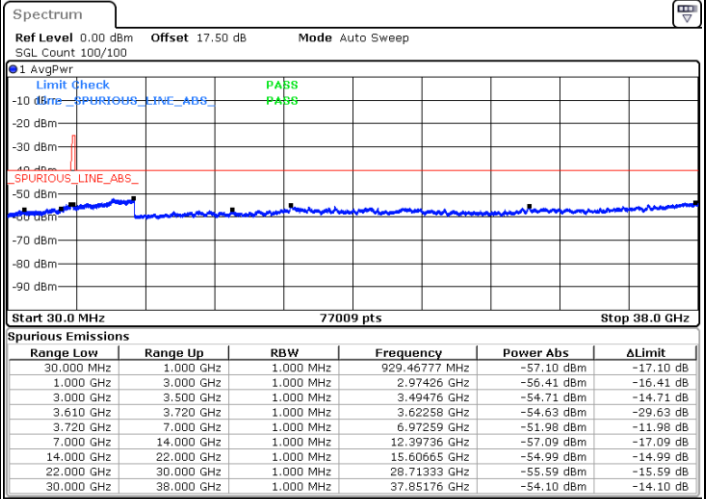
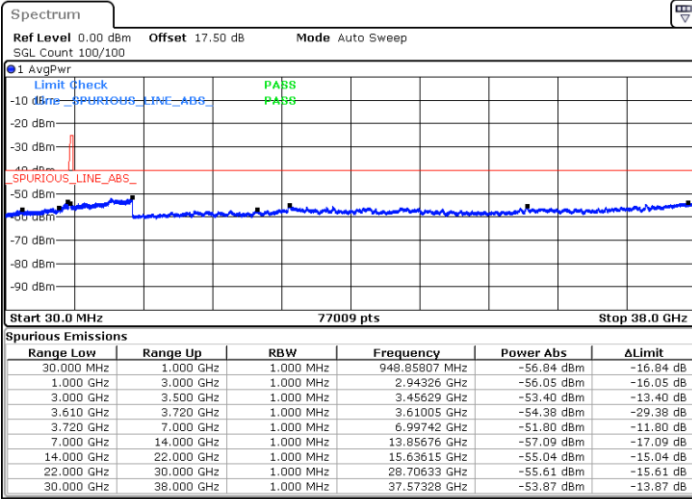


LTE Band 48 / 20MHz

64QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax

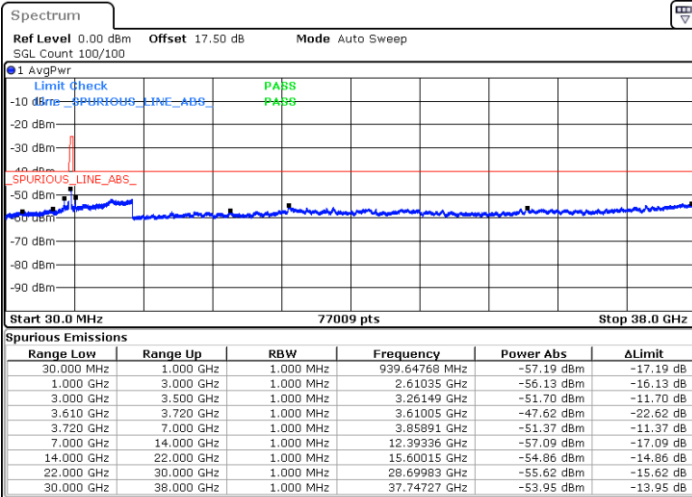


Date: 15.APR.2020 12:11:02

Date: 15.APR.2020 12:23:02

Lowest Channel / FullIRB

N/A



Date: 15.APR.2020 11:59:01

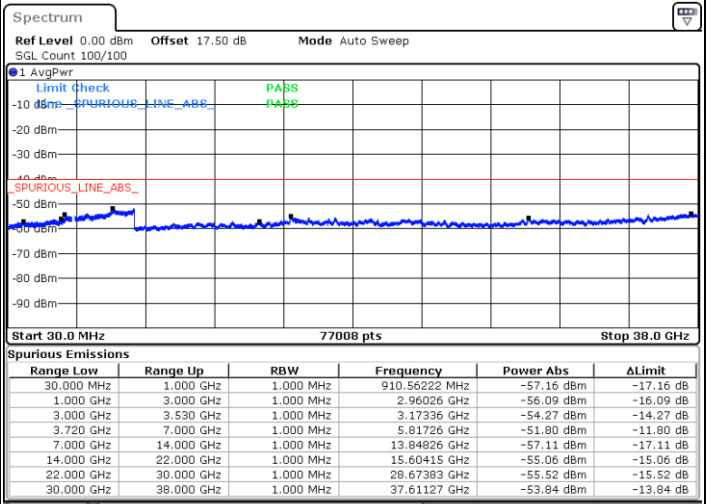
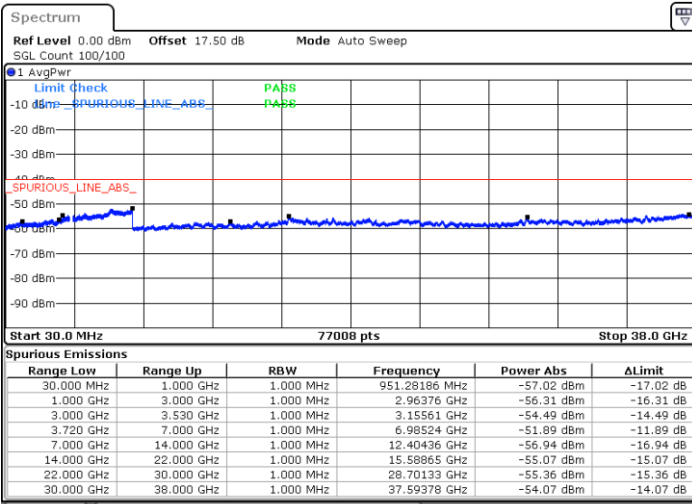


LTE Band 48 / 20MHz

64QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax

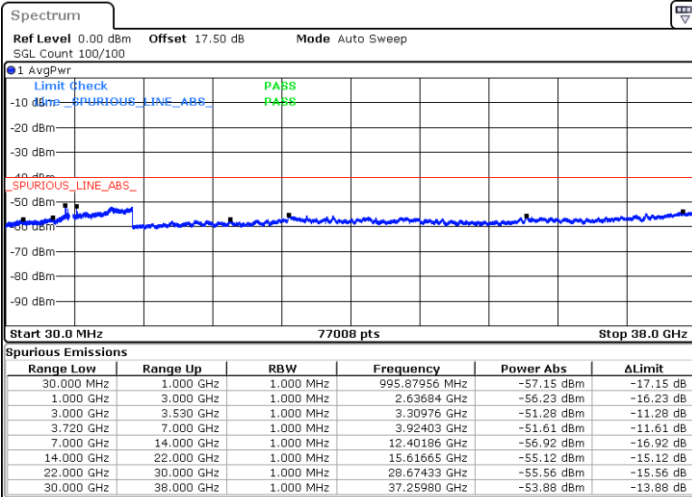


Date: 15.APR.2020 12:17:42

Date: 15.APR.2020 12:29:42

Middle Channel / FullRB

N/A



Date: 15.APR.2020 12:05:42

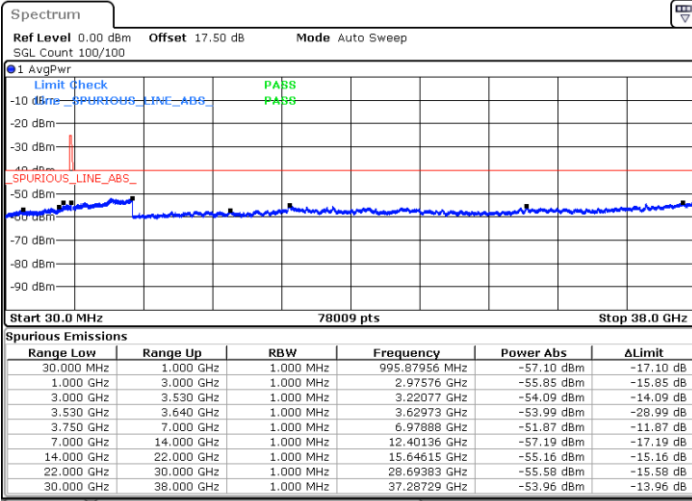


LTE Band 48 / 20MHz

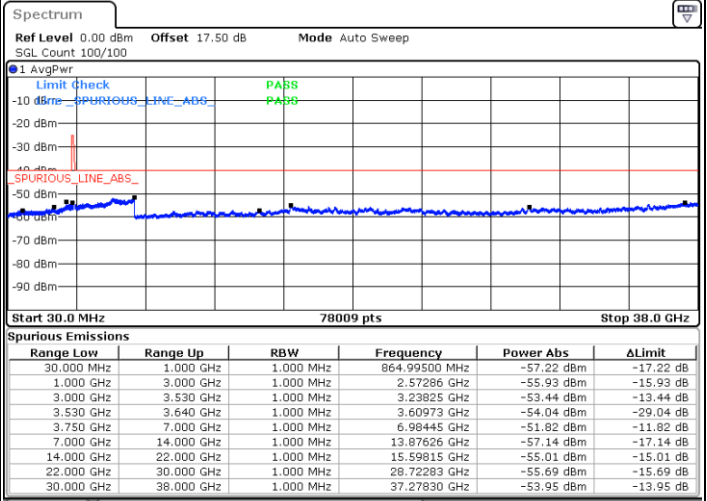
64QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax



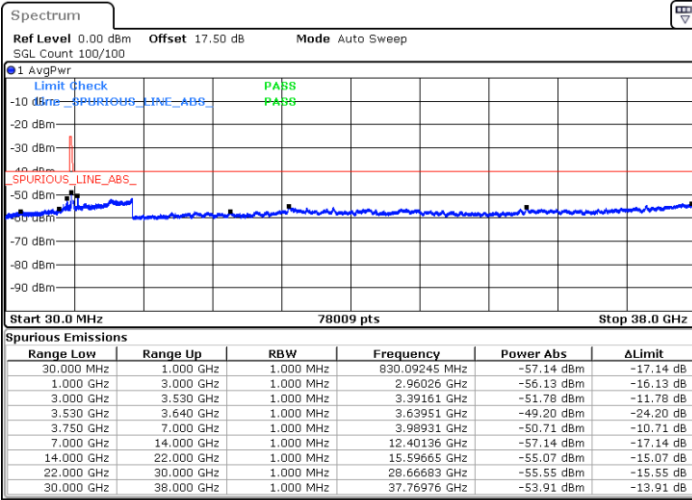
Date: 15.APR.2020 12:19:02



Date: 15.APR.2020 12:31:02

Highest Channel / FullIRB

N/A



Date: 15.APR.2020 12:07:01

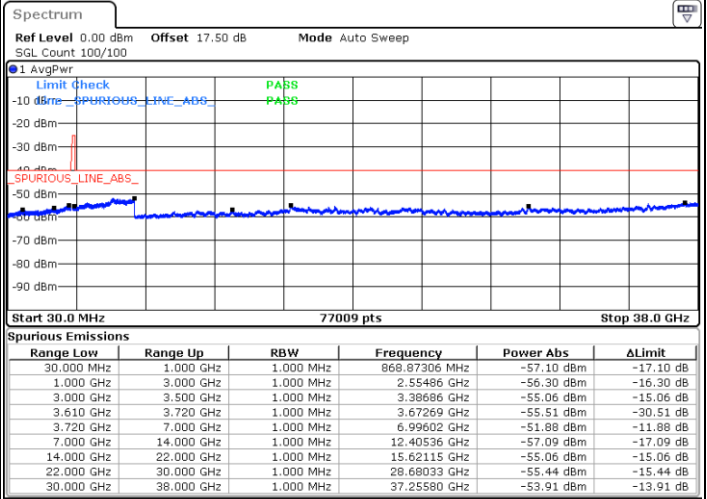
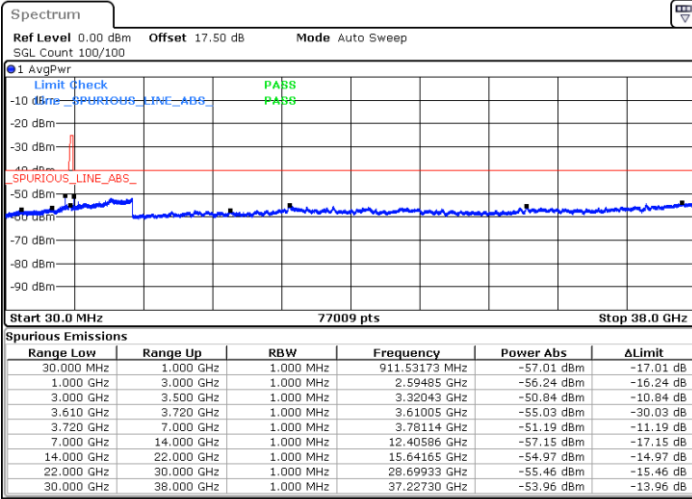


LTE Band 48 / 5MHz

256QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax

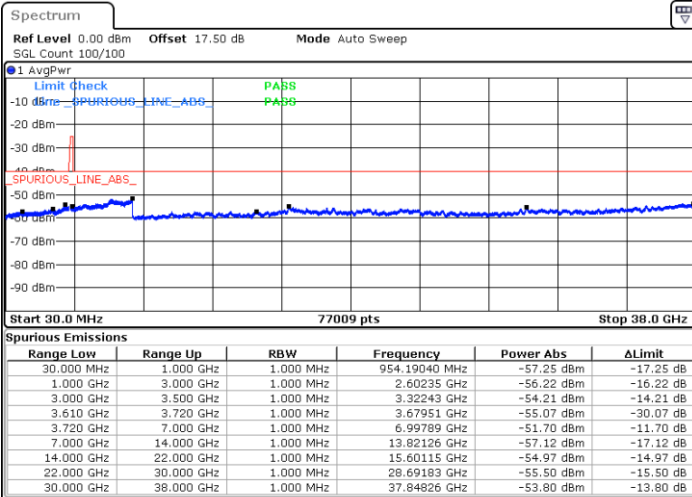


Date: 15.APR.2020 16:06:48

Date: 15.APR.2020 16:04:05

Lowest Channel / FullIRB

N/A



Date: 15.APR.2020 16:08:27

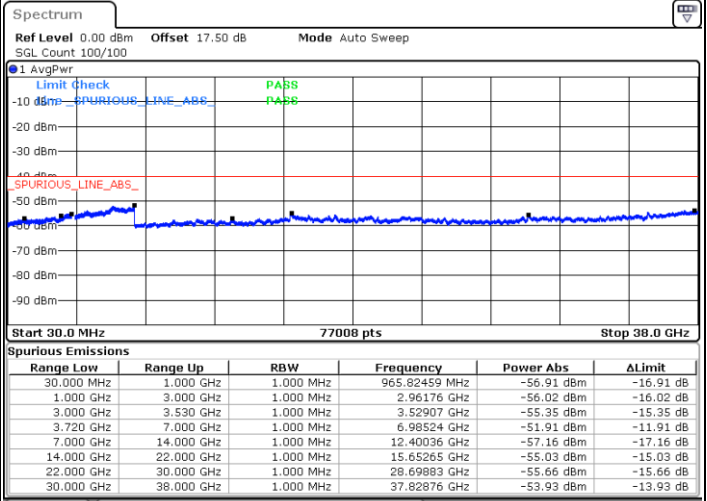
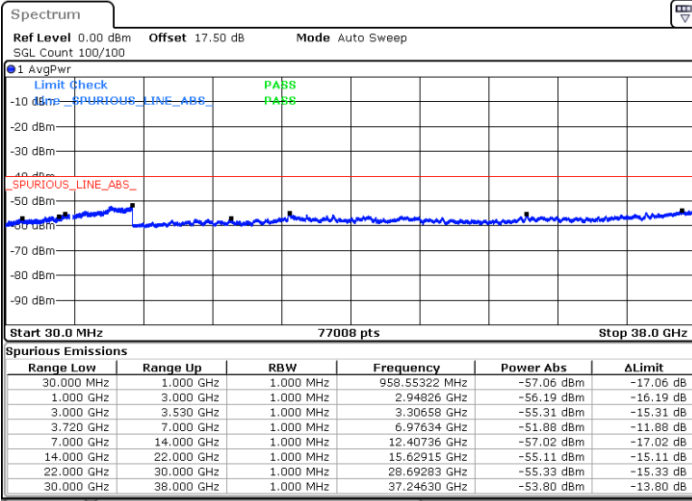


LTE Band 48 / 5MHz

256QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax

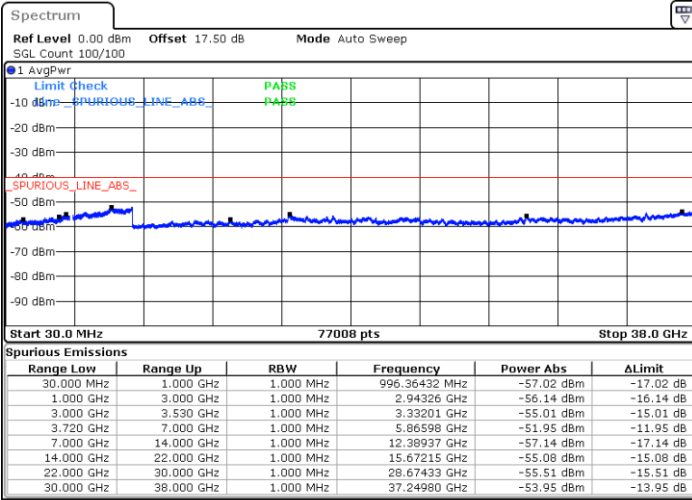


Date: 15.APR.2020 16:11:19

Date: 15.APR.2020 16:12:50

Middle Channel / FullRB

N/A



Date: 15.APR.2020 16:09:52

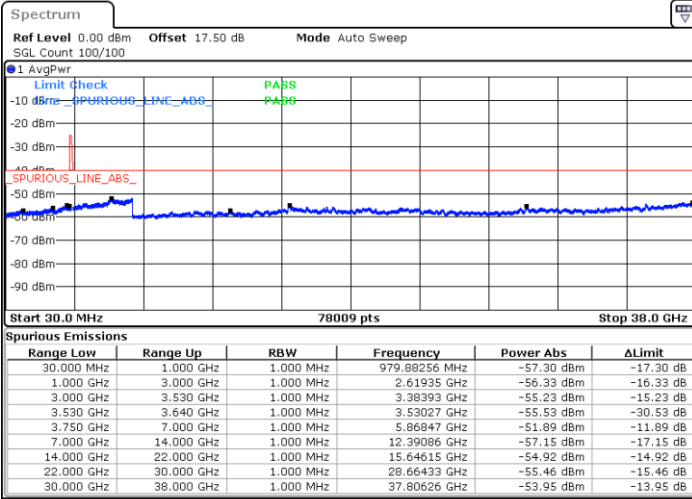


LTE Band 48 / 5MHz

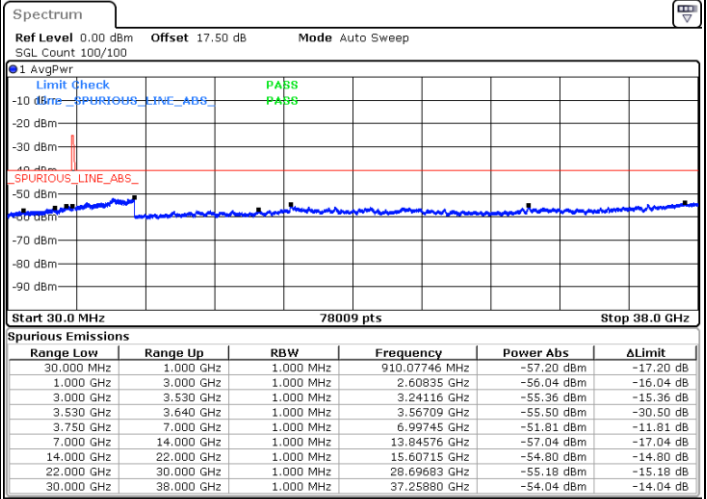
256QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax



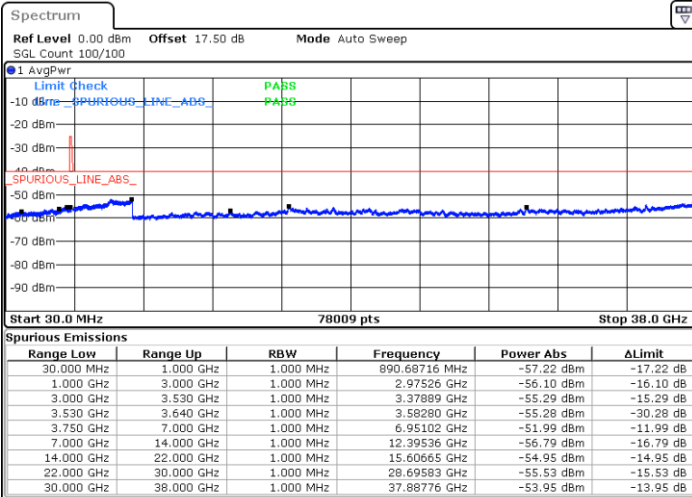
Date: 15.APR.2020 16:16:08



Date: 15.APR.2020 16:14:36

Highest Channel / FullIRB

N/A



Date: 15.APR.2020 16:17:37

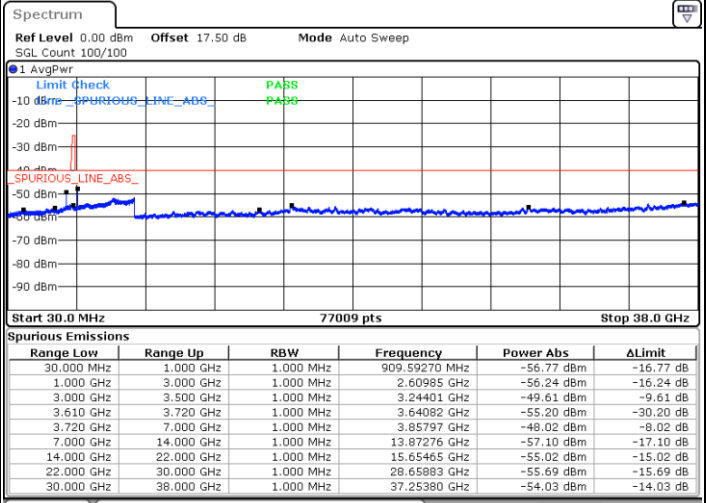
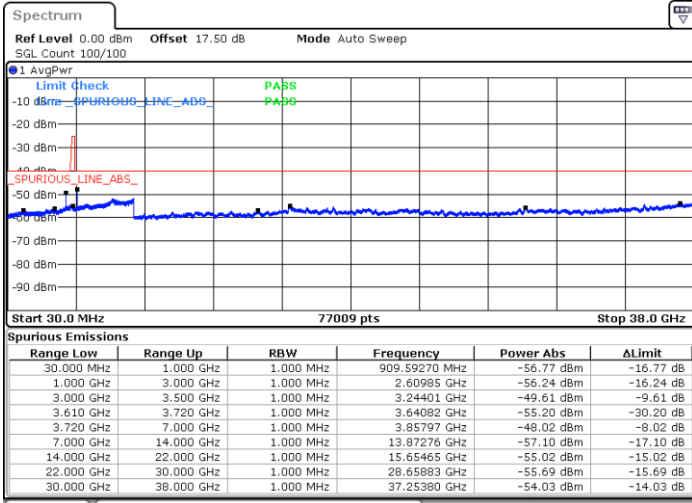


LTE Band 48 / 10MHz

256QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax

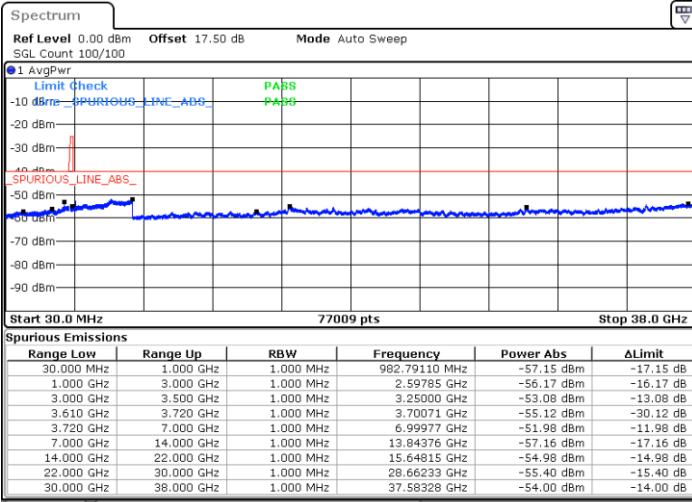


Date: 15.APR.2020 15:38:14

Date: 15.APR.2020 15:38:14

Lowest Channel / FullIRB

N/A



Date: 15.APR.2020 15:36:16

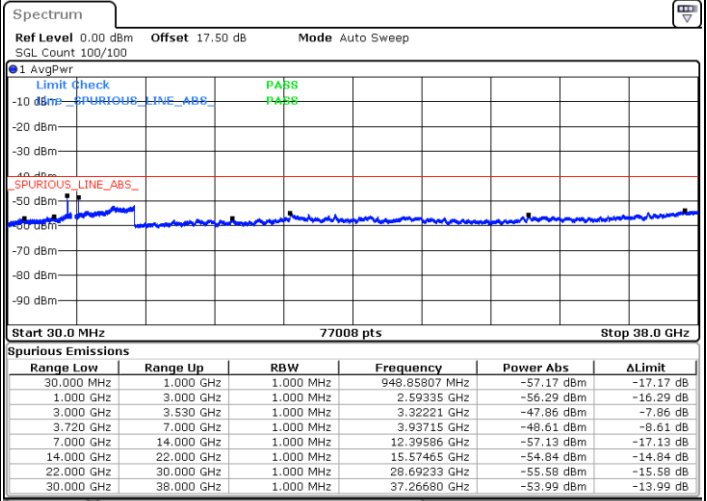
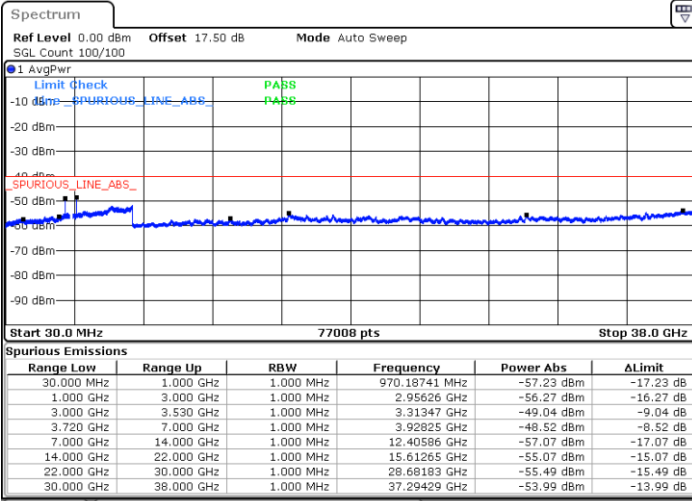


LTE Band 48 / 10MHz

256QAM

MiddleChannel / 1RB0

Middle Channel / 1RBmax

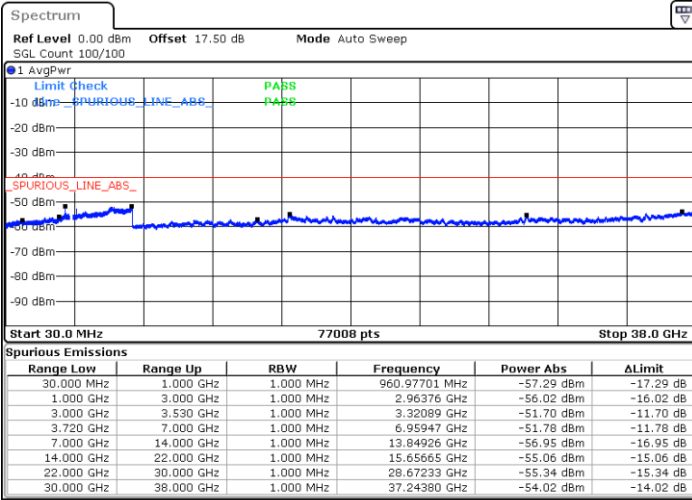


Date: 15.APR.2020 15:47:09

Date: 15.APR.2020 15:45:09

Middle Channel / FullIRB

N/A



Date: 15.APR.2020 15:48:44

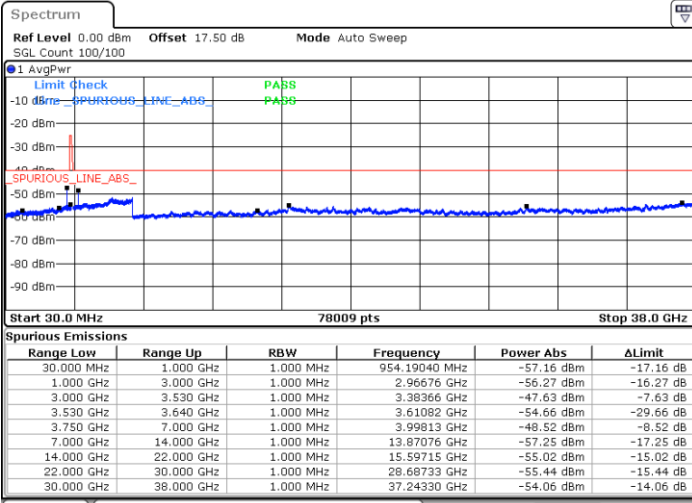


LTE Band 48 / 10MHz

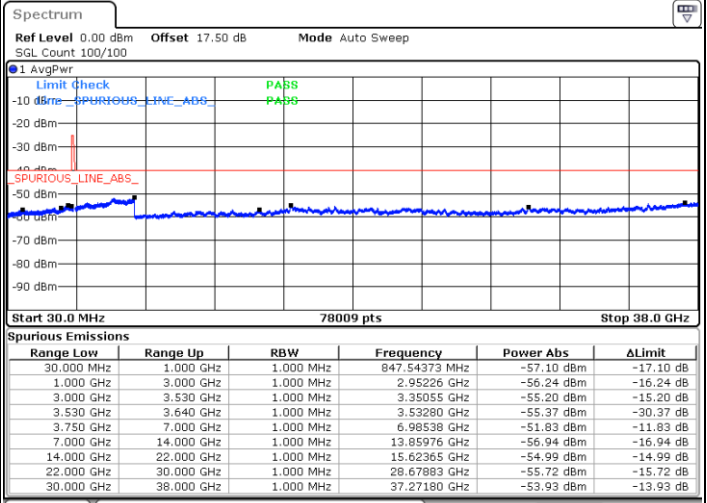
256QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax



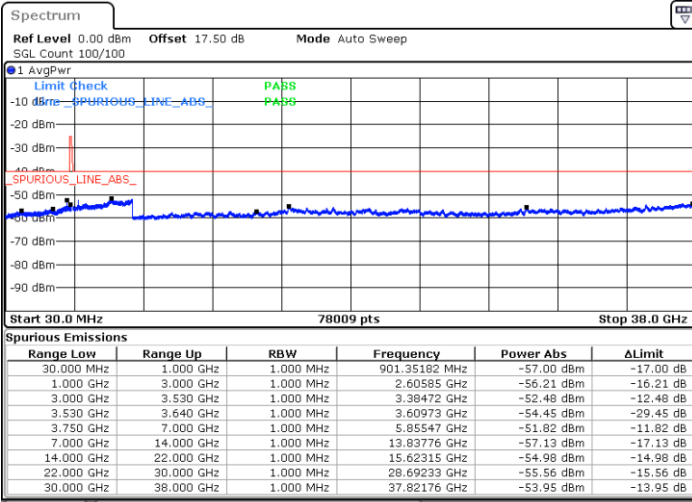
Date: 15.APR.2020 15:59:45



Date: 15.APR.2020 16:02:22

Highest Channel / FullIRB

N/A



Date: 15.APR.2020 15:53:17

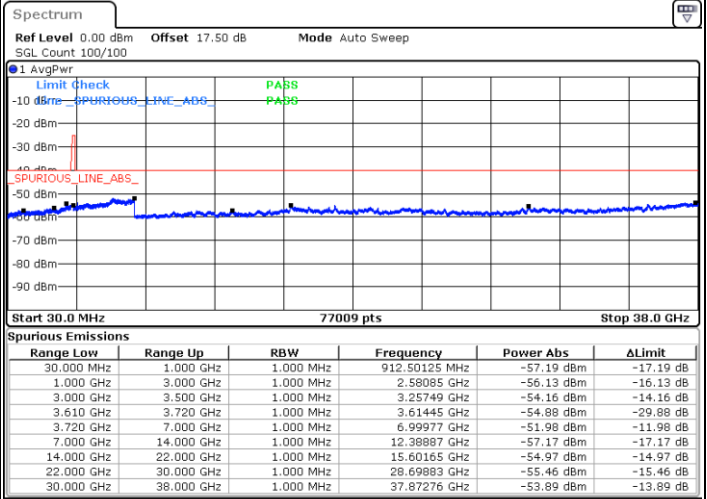
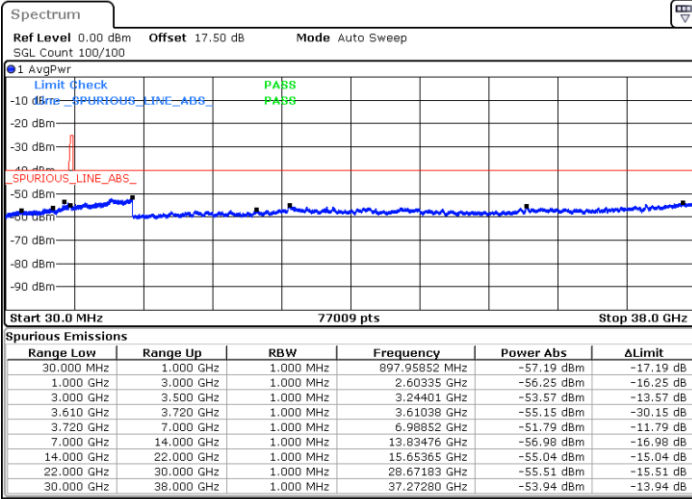


LTE Band 48 / 15MHz

256QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax

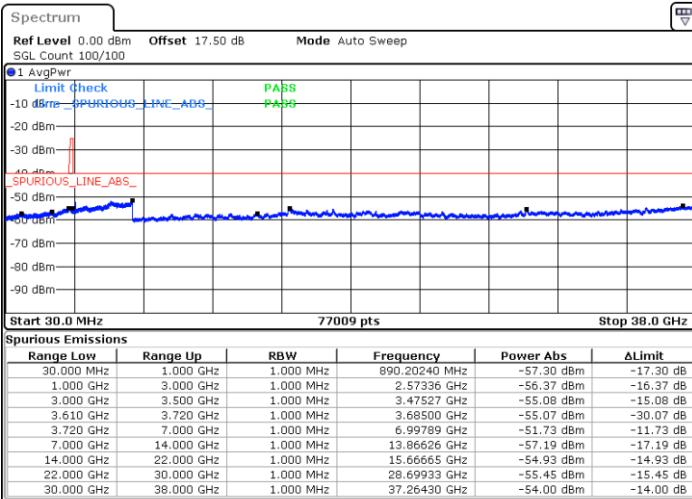


Date: 15.APR.2020 15:23:38

Date: 15.APR.2020 15:22:08

Lowest Channel / FullIRB

N/A



Date: 15.APR.2020 15:25:21

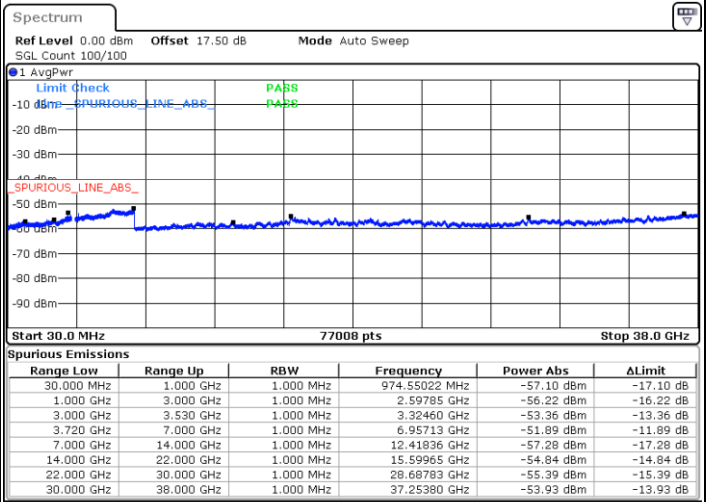
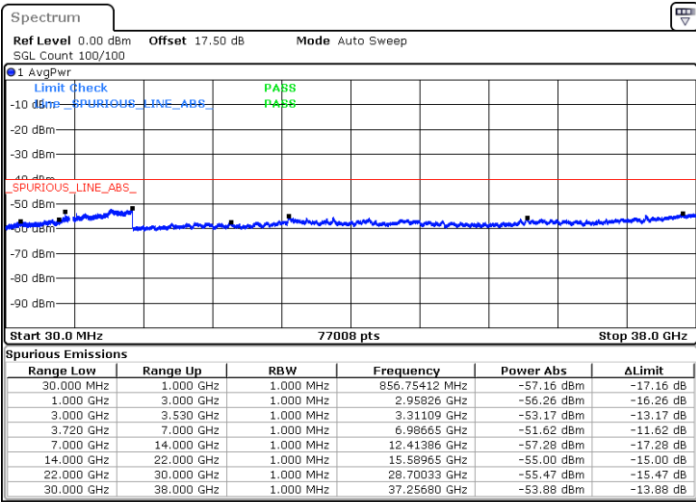


LTE Band 48 / 15MHz

256QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax

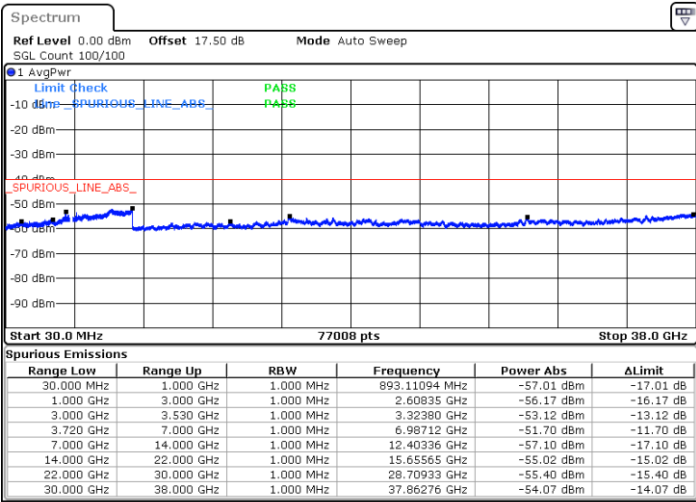


Date: 15.APR.2020 15:17:59

Date: 15.APR.2020 15:19:29

Middle Channel / FullRB

N/A



Date: 15.APR.2020 15:16:30

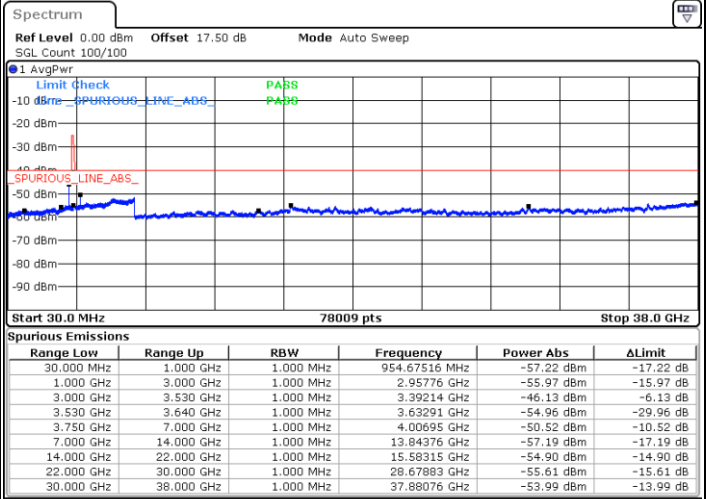
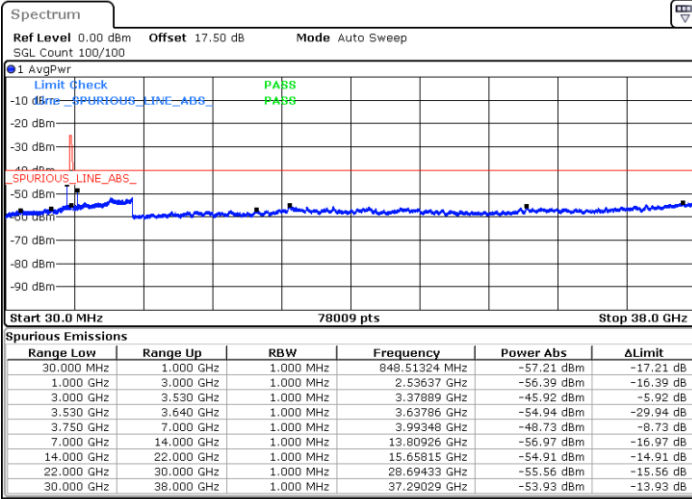


LTE Band 48 / 15MHz

256QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax

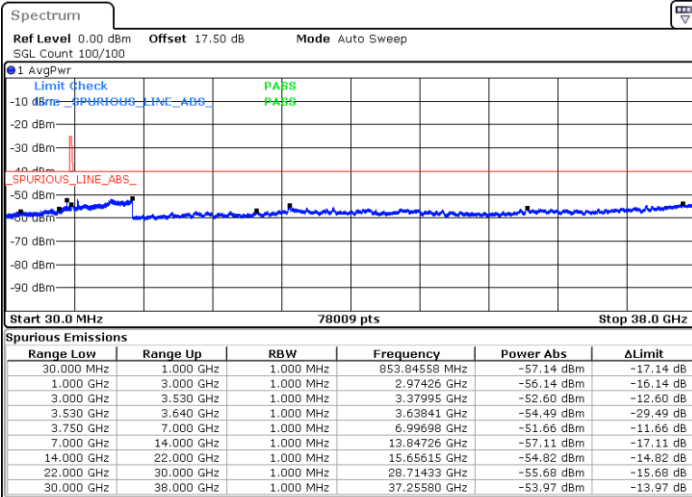


Date: 15.APR.2020 15:27:44

Date: 15.APR.2020 15:31:18

Highest Channel / FullIRB

N/A



Date: 15.APR.2020 15:32:54

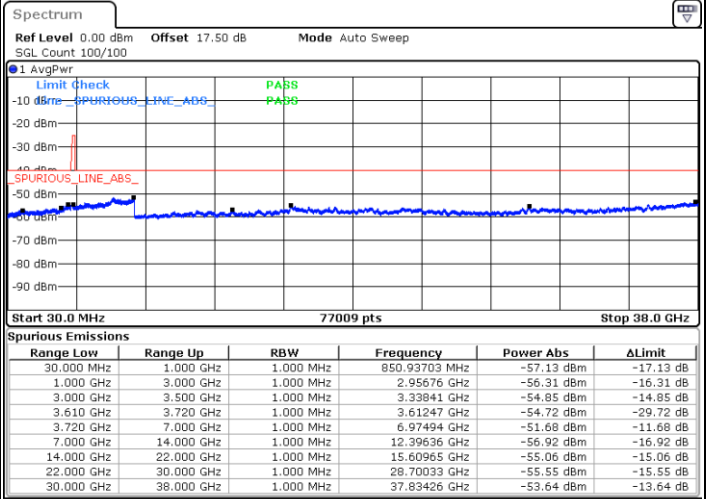
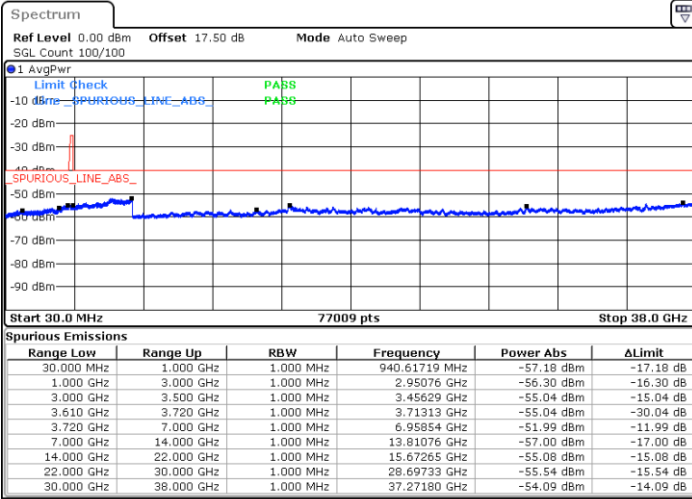


LTE Band 48 / 20MHz

256QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax

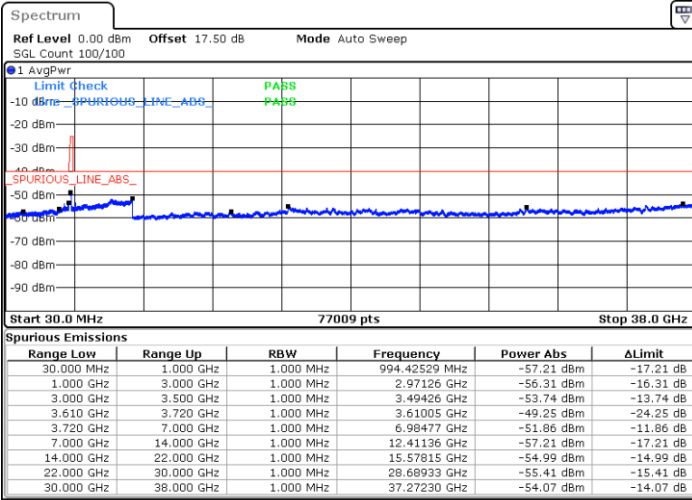


Date: 15.APR.2020 15:05:36

Date: 15.APR.2020 15:07:06

Lowest Channel / FullIRB

N/A



Date: 15.APR.2020 15:02:31

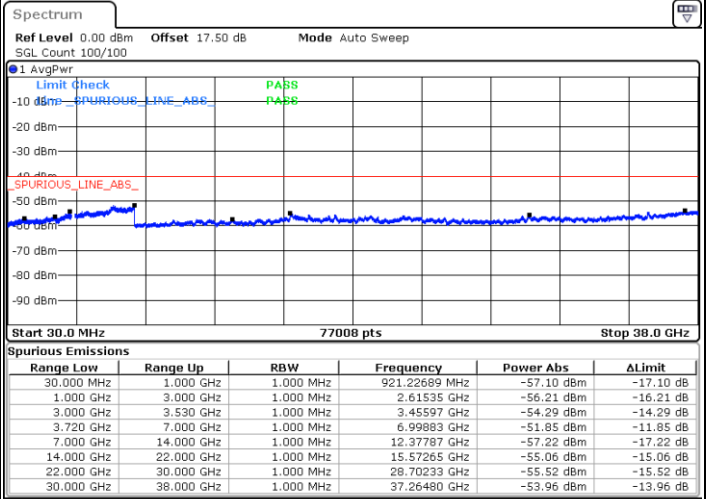
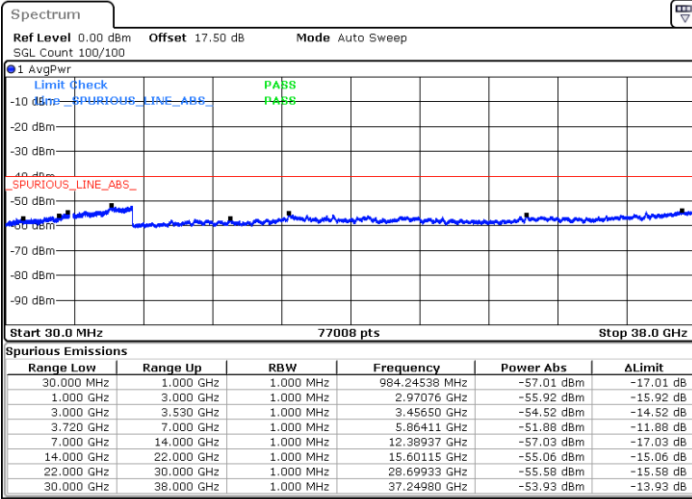


LTE Band 48 / 20MHz

256QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax

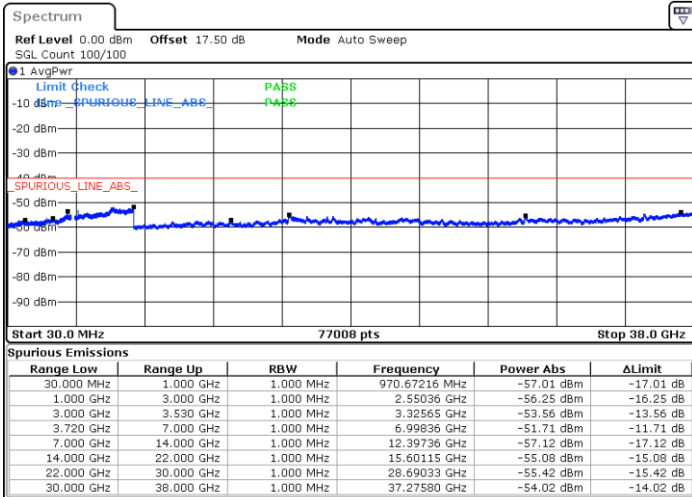


Date: 15.APR.2020 15:11:28

Date: 15.APR.2020 15:09:57

Middle Channel / FullRB

N/A



Date: 15.APR.2020 15:13:14

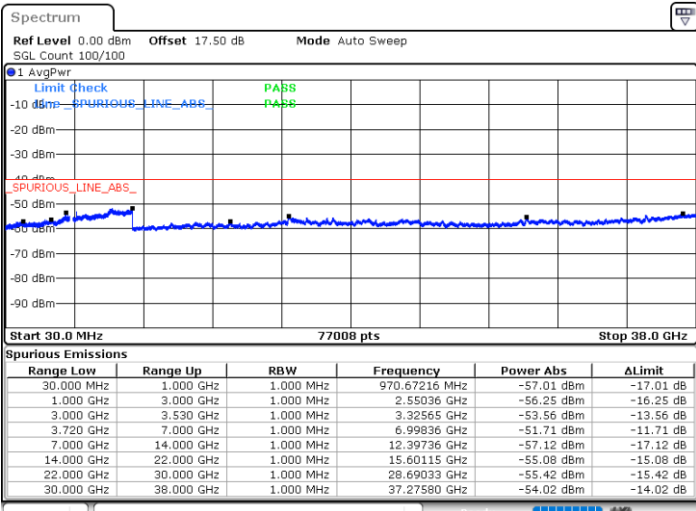


LTE Band 48 / 20MHz

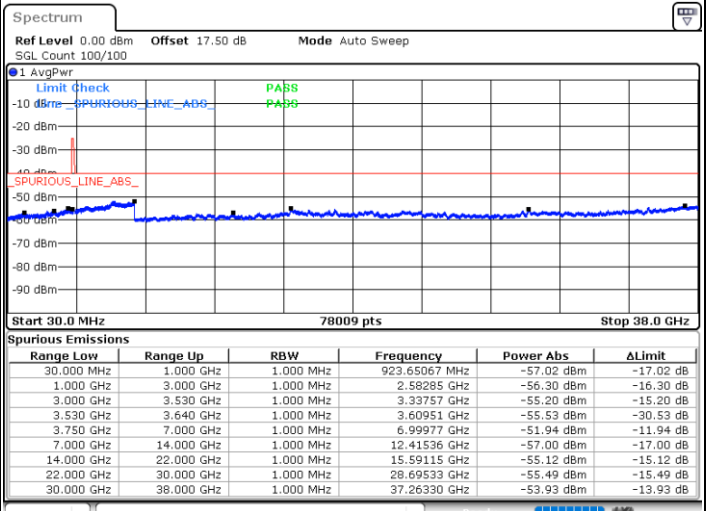
256QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax



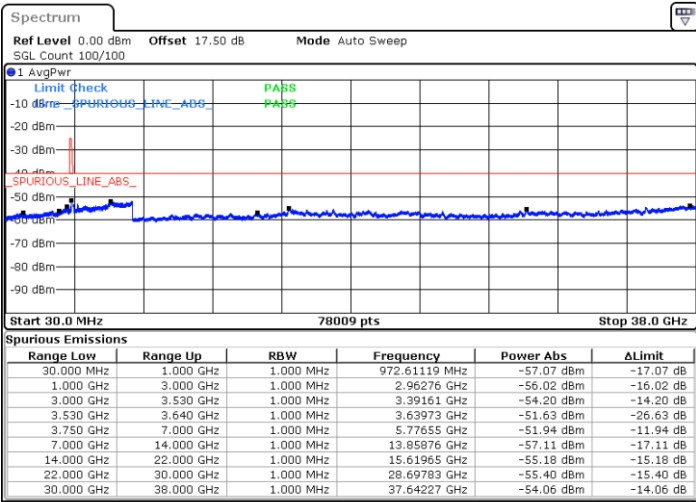
Date: 15.APR.2020 15:13:14



Date: 15.APR.2020 14:55:23

Highest Channel / FullIRB

N/A



Date: 15.APR.2020 14:58:31



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	0.0002	PASS
40	Normal Voltage	0.0015	
30	Normal Voltage	0.0016	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0036	
0	Normal Voltage	0.0026	
-10	Normal Voltage	0.0012	
-20	Normal Voltage	0.0007	
-30	Normal Voltage	0.0002	
20	Maximum Voltage	0.0005	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0001	

Note:

1. Normal Voltage =3.3 V. ; Battery End Point (BEP) =3.315 V. ; Maximum Voltage =4.4 V.
2. Note: 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 = -0.5 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	12	22.33	0.1710	21.83	0.1524
Middle		1	12	22.67	0.1849	22.17	0.1648
Highest		1	12	22.34	0.1714	21.84	0.1528
Lowest	16QAM	1	24	22.36	0.1722	21.86	0.1535
Middle		1	24	22.58	0.1811	22.08	0.1614
Highest		1	24	22.33	0.1710	21.83	0.1524
Lowest	64QAM	1	24	21.22	0.1324	20.72	0.1180
Middle		1	24	21.46	0.1400	20.96	0.1247
Highest		1	24	21.19	0.1315	20.69	0.1172
Lowest	256QAM	36	20	18.25	0.0668	17.75	0.0596
Middle		36	20	18.52	0.0711	18.02	0.0634
Highest		36	20	18.22	0.0664	17.72	0.0592

LTE Band 48 / 10MHz (Average) (GT - LC = -0.5 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	22.36	0.1722	21.86	0.1535
Middle		1	0	22.73	0.1875	22.23	0.1671
Highest		1	0	22.36	0.1722	21.86	0.1535
Lowest	16QAM	1	49	22.42	0.1746	21.92	0.1556
Middle		1	49	22.75	0.1884	22.25	0.1679
Highest		1	49	22.35	0.1718	21.85	0.1531
Lowest	64QAM	1	49	21.28	0.1343	20.78	0.1197
Middle		1	49	21.49	0.1409	20.99	0.1256
Highest		1	49	21.17	0.1309	20.67	0.1167
Lowest	256QAM	50	0	18.17	0.0656	17.67	0.0585
Middle		50	0	18.44	0.0698	17.94	0.0622
Highest		50	0	18.17	0.0656	17.67	0.0585



LTE Band 48 / 15MHz (Average) (GT - LC = -0.5 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	74	22.97	0.1982	22.47	0.1766
Middle		1	74	23.26	0.2118	22.76	0.1888
Highest		1	74	22.89	0.1945	22.39	0.1734
Lowest	16QAM	1	74	22.25	0.1679	21.75	0.1496
Middle		1	74	22.52	0.1786	22.02	0.1592
Highest		1	74	22.23	0.1671	21.73	0.1489
Lowest	64QAM	1	74	21.09	0.1285	20.59	0.1146
Middle		1	74	21.31	0.1352	20.81	0.1205
Highest		1	74	21.00	0.1259	20.50	0.1122
Lowest	256QAM	36	20	18.12	0.0649	17.62	0.0578
Middle		36	20	18.35	0.0684	17.85	0.0610
Highest		36	20	18.09	0.0644	17.59	0.0574

LTE Band 48 / 20MHz (Average) (GT - LC = -0.5 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	22.22	0.1667	21.72	0.1486
Middle		1	0	22.54	0.1795	22.04	0.1600
Highest		1	0	22.33	0.1710	21.83	0.1524
Lowest	16QAM	1	99	22.29	0.1694	21.79	0.1510
Middle		1	99	22.53	0.1791	22.03	0.1596
Highest		1	99	22.19	0.1656	21.69	0.1476
Lowest	64QAM	1	99	21.07	0.1279	20.57	0.1140
Middle		1	99	21.31	0.1352	20.81	0.1205
Highest		1	99	20.96	0.1247	20.46	0.1112
Lowest	256QAM	50	0	18.18	0.0658	17.68	0.0586
Middle		50	0	18.41	0.0693	17.91	0.0618
Highest		50	0	18.21	0.0662	17.71	0.0590



EIRP Power

LTE Band 48 / Conducted Power												
BW	1.4MHz				3MHz				5MHz			
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Lowest CH	-	-	-	-	-	-	-	-	22.33	22.36	21.22	18.25
Middle CH	-	-	-	-	-	-	-	-	22.67	22.58	21.46	18.52
Highest CH	-	-	-	-	-	-	-	-	22.34	22.33	21.19	18.22

LTE Band 48 / Conducted Power												
BW	10MHz				15MHz				20MHz			
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Lowest CH	22.36	22.42	21.28	18.17	22.97	22.25	21.09	18.12	22.22	22.29	21.07	18.18
Middle CH	22.73	22.75	21.49	18.44	23.26	22.52	21.31	18.35	22.54	22.53	21.31	18.41
Highest CH	22.36	22.35	21.17	18.17	22.89	22.23	21.00	18.09	22.33	22.19	20.96	18.21

LTE Band 48 / EIRP Power												
BW	1.4MHz				3MHz				5MHz			
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Lowest CH	-	-	-	-	-	-	-	-	21.83	21.86	20.72	17.75
Middle CH	-	-	-	-	-	-	-	-	22.17	22.08	20.96	18.02
Highest CH	-	-	-	-	-	-	-	-	21.84	21.83	20.69	17.72

LTE Band 48 / EIRP Power												
BW	10MHz				15MHz				20MHz			
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Lowest CH	21.86	21.92	20.78	17.67	22.47	21.75	20.59	17.62	21.72	21.79	20.57	17.68
Middle CH	22.23	22.25	20.99	17.94	22.76	22.02	20.81	17.85	22.04	22.03	20.81	17.91
Highest CH	21.86	21.85	20.67	17.67	22.39	21.73	20.50	17.59	21.83	21.69	20.46	17.71
Antenna Gain	-0.5 dBi											
Limit	23dBm / 10MHz											
Result	Pass											



Radiated Spurious Emission

LTE Band 48

LTE Band 48 / 15MHz / 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	7128	-48.27	-40	-8.27	-52.53	-58.18	1.79	11.70	H
	10692	-60.25	-40	-20.25	-68.26	-68.66	2.49	10.90	H
	14256	-57.03	-40	-17.03	-69.17	-65.75	2.86	11.59	H
	21385	-54.83	-40	-14.83	-76.47	-71.57	1.96	18.70	H
	24949	-52.60	-40	-12.60	-77.26	-68.74	2.07	18.22	H
	28513	-51.22	-40	-11.22	-76.73	-68.50	2.30	19.58	H
	7128	-44.04	-40	-4.04	-47.94	-53.95	1.79	11.70	V
	10692	-60.51	-40	-20.51	-68.28	-68.92	2.49	10.90	V
	14256	-57.18	-40	-17.18	-68.94	-65.90	2.86	11.59	V
	21385	-54.93	-40	-14.93	-76.49	-71.67	1.96	18.70	V
	24949	-51.76	-40	-11.76	-77.59	-67.90	2.07	18.22	V
	28513	-49.39	-40	-9.39	-76.8	-66.67	2.30	19.58	V
Middle	7265	-54.15	-40	-14.15	-58.43	-63.76	1.86	11.48	H
	10894	-59.82	-40	-19.82	-68.14	-68.13	2.59	10.90	H
	14256	-57.43	-40	-17.43	-69.67	-66.15	2.86	11.59	H
	18158	-53.41	-40	-13.41	-71.57	-69.59	1.78	17.97	H
	21790	-55.14	-40	-15.14	-76.75	-71.93	2.02	18.82	H
	25422	-52.04	-40	-12.04	-77.37	-68.77	2.16	18.89	H
	7265	-48.85	-40	-8.85	-52.89	-58.46	1.86	11.48	V
	10894	-60.13	-40	-20.13	-68.25	-68.44	2.59	10.90	V
	14256	-58.90	-40	-18.90	-70.15	-67.62	2.86	11.59	V
	18158	-54.26	-40	-14.26	-71.5	-70.44	1.78	17.97	V
	21790	-55.31	-40	-15.31	-76.91	-72.10	2.02	18.82	V
	25422	-50.45	-40	-10.45	-77.09	-67.18	2.16	18.89	V



LTE Band 48 / 20MHz / 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)
Highest	7400	-54.60	-40	-14.60	-58.6	-63.92	1.94	11.26	H
	11097	-59.59	-40	-19.59	-68.28	-68.00	2.61	11.02	H
	14796	-56.87	-40	-16.87	-70.59	-65.88	2.93	11.95	H
	18496	-55.54	-40	-15.54	-73.9	-71.54	1.90	17.90	H
	22195	-53.45	-40	-13.45	-76.07	-70.22	2.05	18.82	H
	25894	-50.63	-40	-10.63	-76.87	-67.74	1.97	19.08	H
	7400	-48.04	-40	-8.04	-51.88	-57.36	1.94	11.26	V
	11097	-59.90	-40	-19.90	-68.42	-68.31	2.61	11.02	V
	14796	-57.86	-40	-17.86	-69.68	-66.87	2.93	11.95	V
	18496	-56.12	-40	-16.12	-73.62	-72.12	1.90	17.90	V
	22195	-53.36	-40	-13.36	-76	-70.13	2.05	18.82	V
	25894	-49.74	-40	-9.74	-77.09	-66.85	1.97	19.08	V

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

————THE END————