

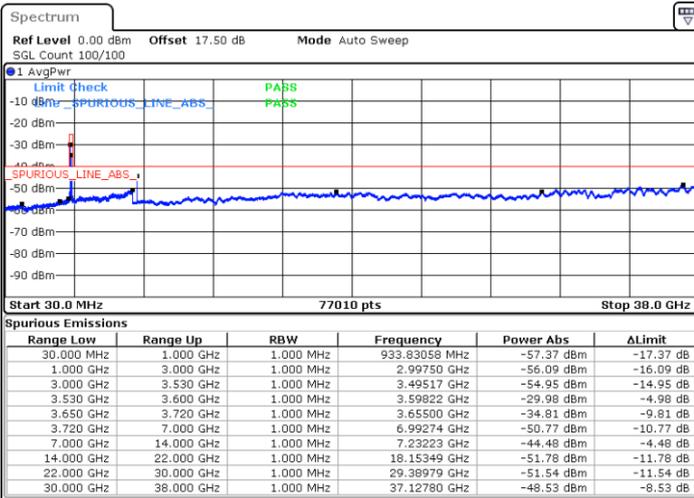


LTE Band 48 / 20MHz

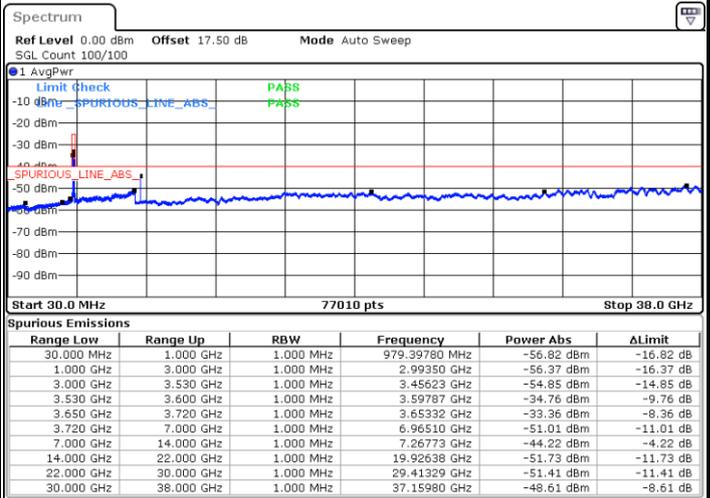
16QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax



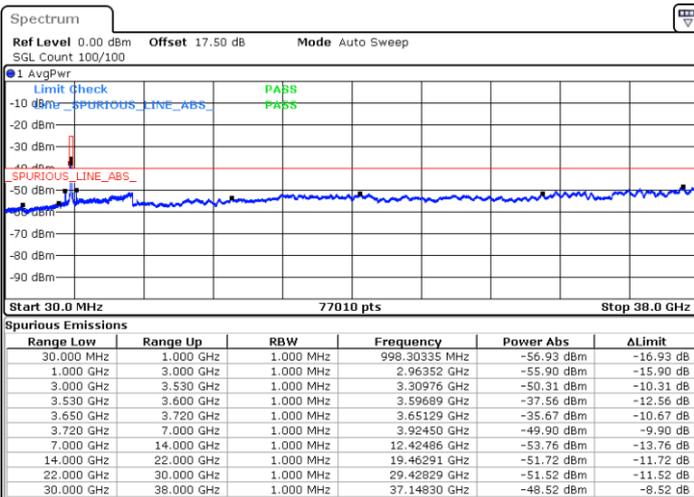
Date: 18.DEC.2019 15:55:18



Date: 18.DEC.2019 16:04:27

Middle Channel / FullIRB

N/A



Date: 18.DEC.2019 15:46:08

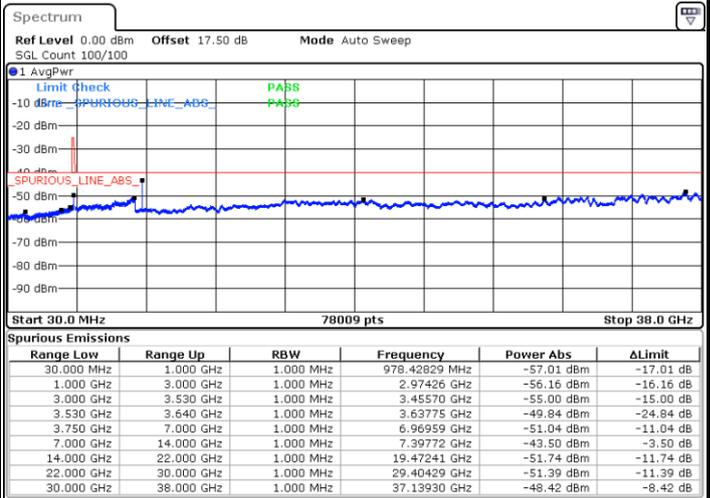
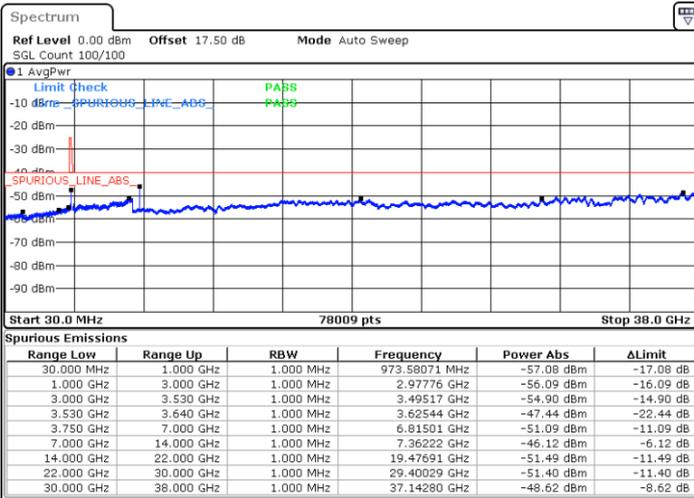


LTE Band 48 / 20MHz

16QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax

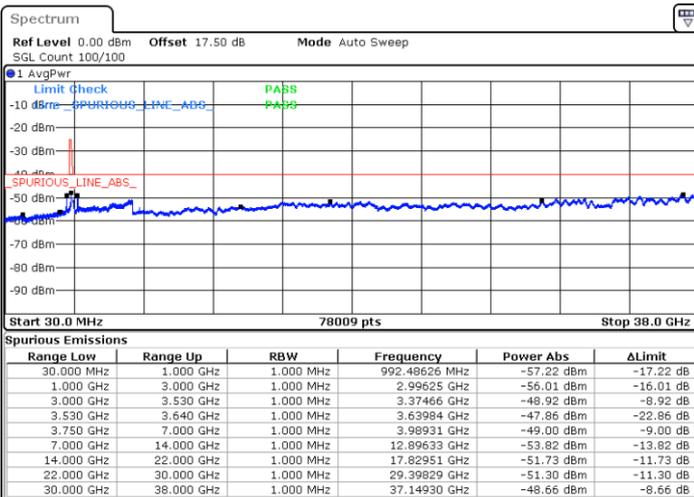


Date: 18.DEC.2019 15:58:20

Date: 18.DEC.2019 16:07:30

Highest Channel / FullIRB

N/A



Date: 18.DEC.2019 15:49:11

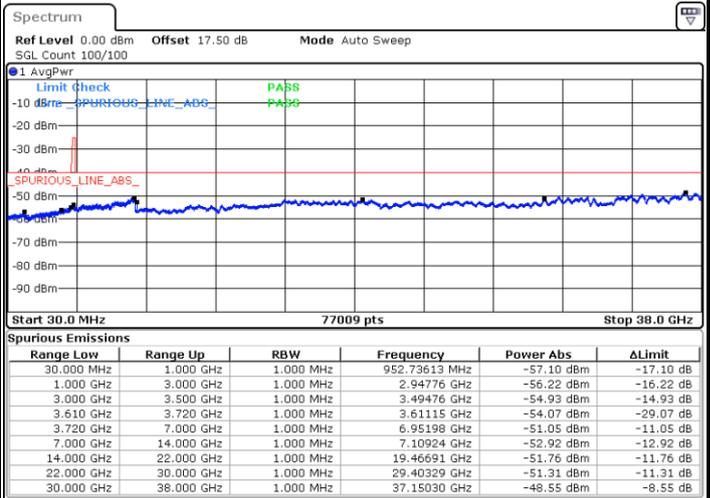
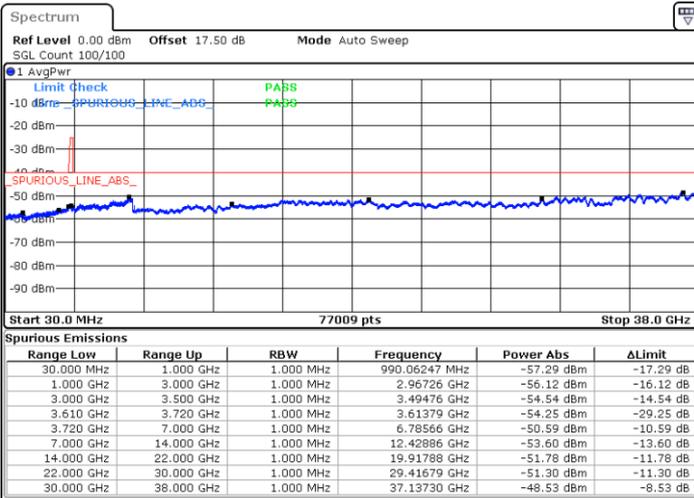


LTE Band 48 / 5MHz

64QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax

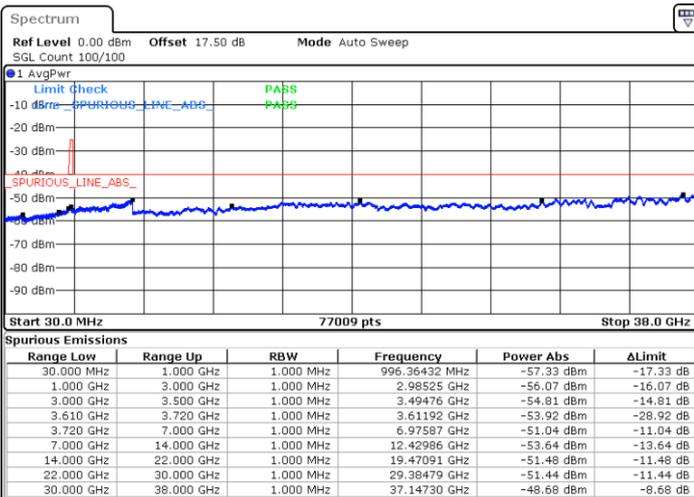


Date: 18.DEC.2019 14:21:35

Date: 18.DEC.2019 14:39:54

Lowest Channel / FullIRB

N/A



Date: 18.DEC.2019 14:30:45

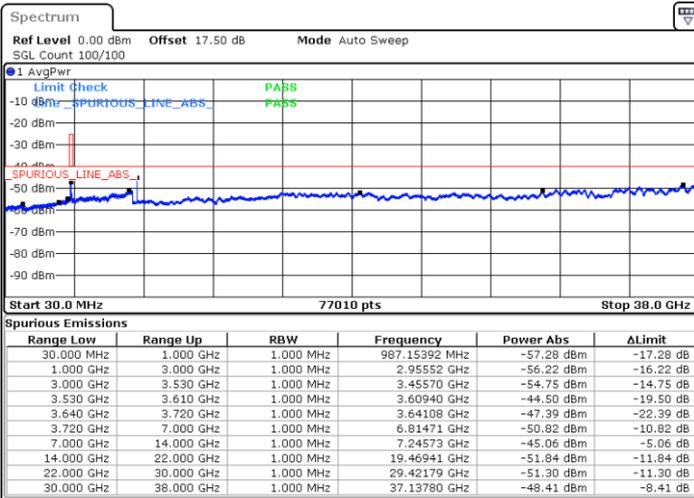


LTE Band 48 / 5MHz

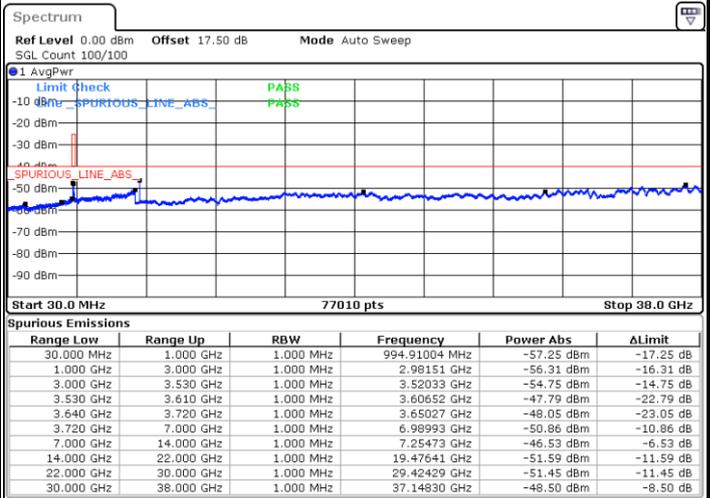
64QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax



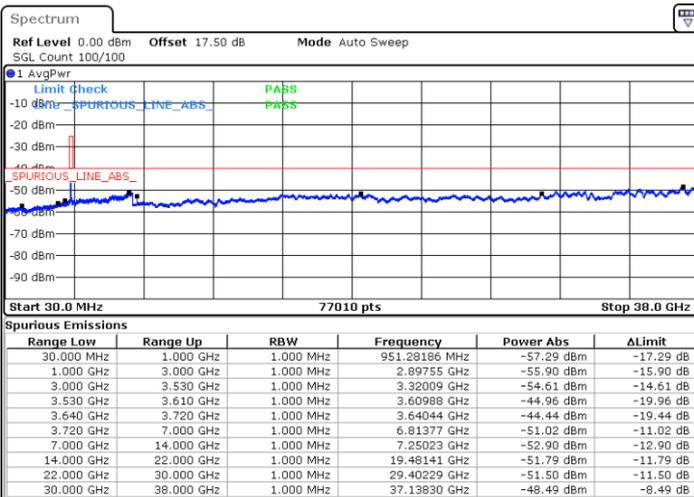
Date: 18 DEC 2019 14:22:36



Date: 18 DEC 2019 14:40:55

Middle Channel / FullIRB

N/A



Date: 18 DEC 2019 14:31:46

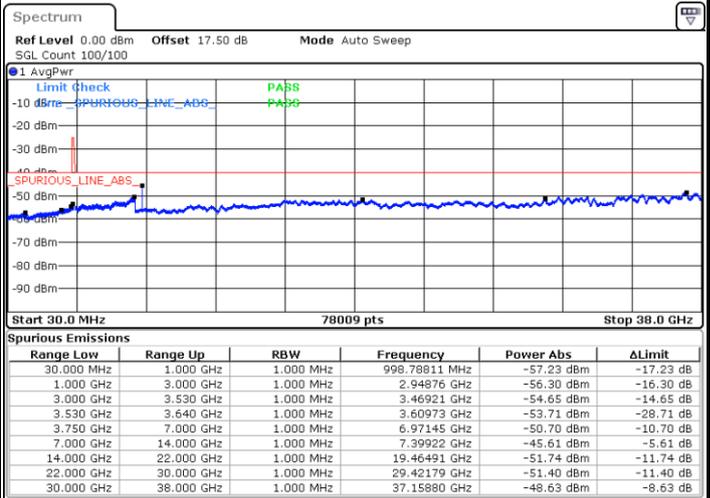
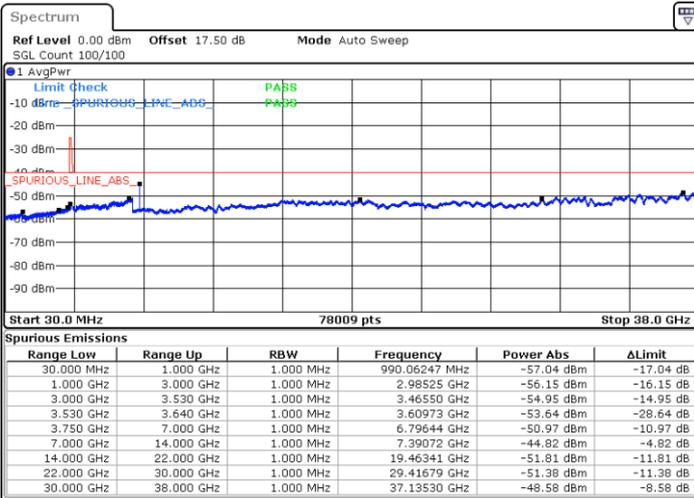


LTE Band 48 / 5MHz

64QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax

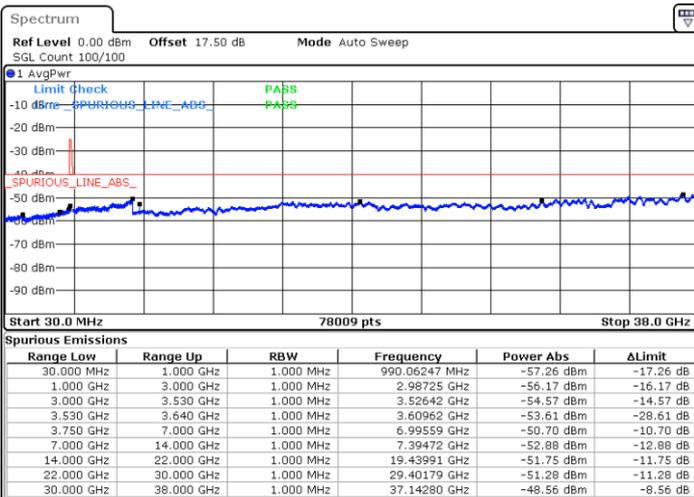


Date: 18.DEC.2019 14:27:41

Date: 18.DEC.2019 14:46:00

Highest Channel / FullIRB

N/A



Date: 18.DEC.2019 14:36:50

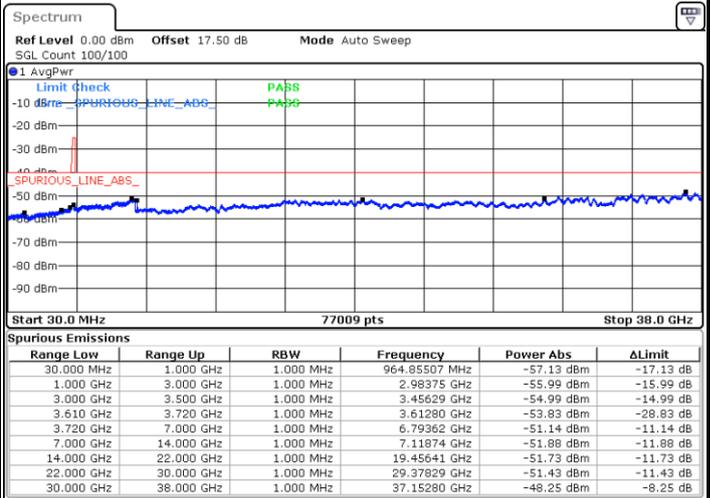
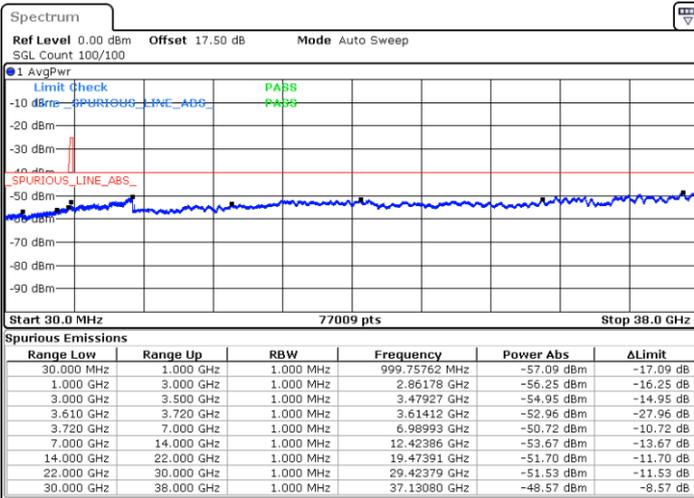


LTE Band 48 / 10MHz

64QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax

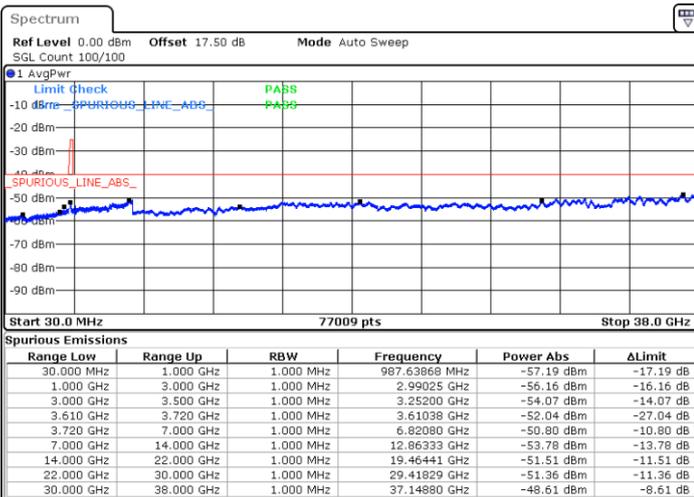


Date: 18.DEC.2019 14:47:03

Date: 18.DEC.2019 15:05:23

Lowest Channel / FullIRB

N/A



Date: 18.DEC.2019 14:56:13

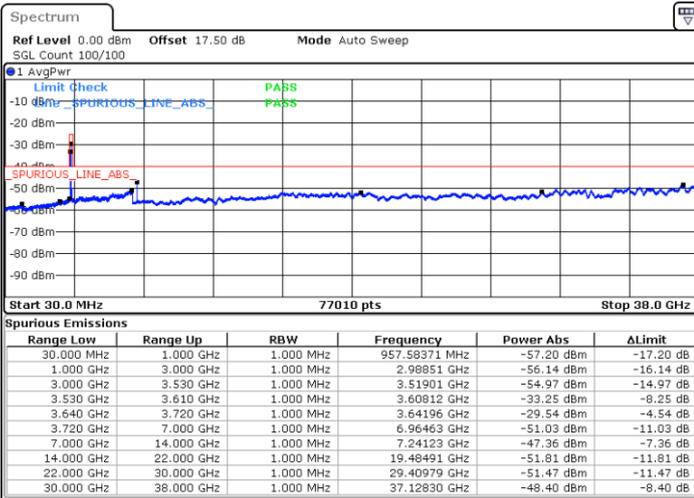


LTE Band 48 / 10MHz

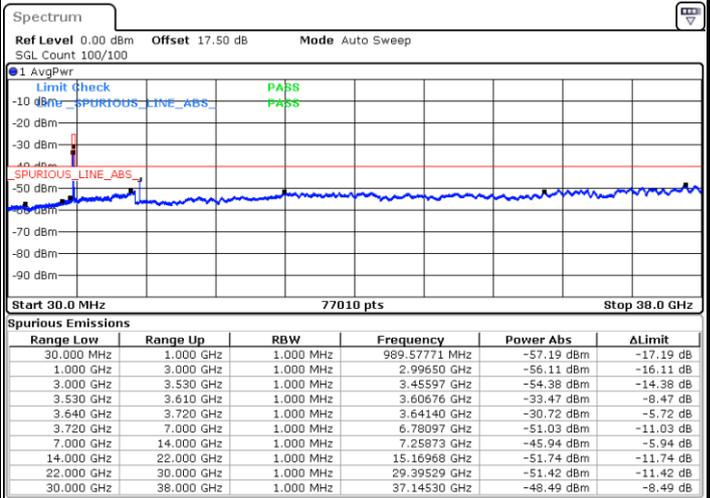
64QAM

MiddleChannel / 1RB0

Middle Channel / 1RBmax



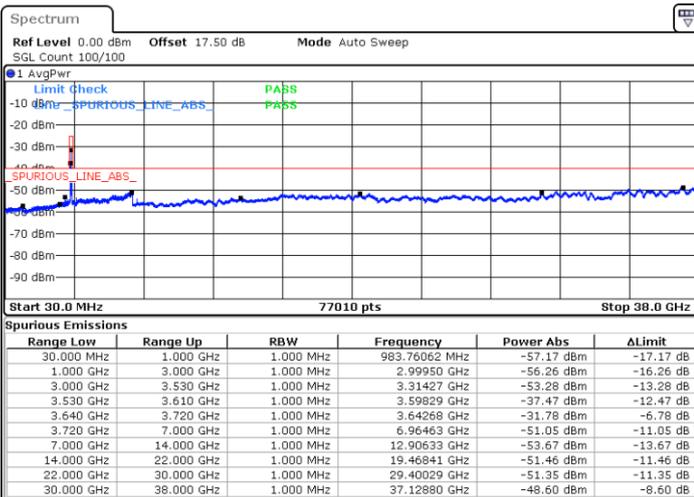
Date: 18.DEC.2019 14:52:08



Date: 18.DEC.2019 15:10:28

Middle Channel / FullIRB

N/A



Date: 18.DEC.2019 15:01:18

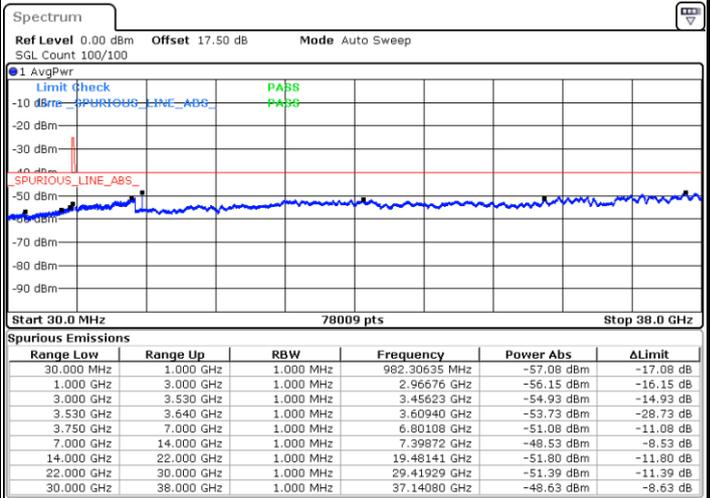
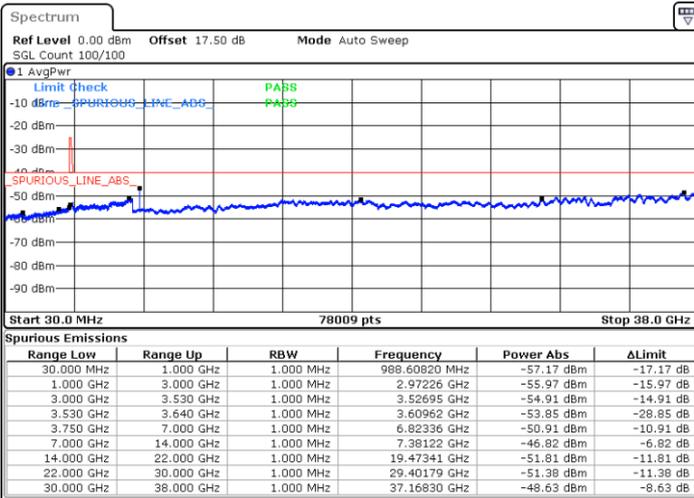


LTE Band 48 / 10MHz

64QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax

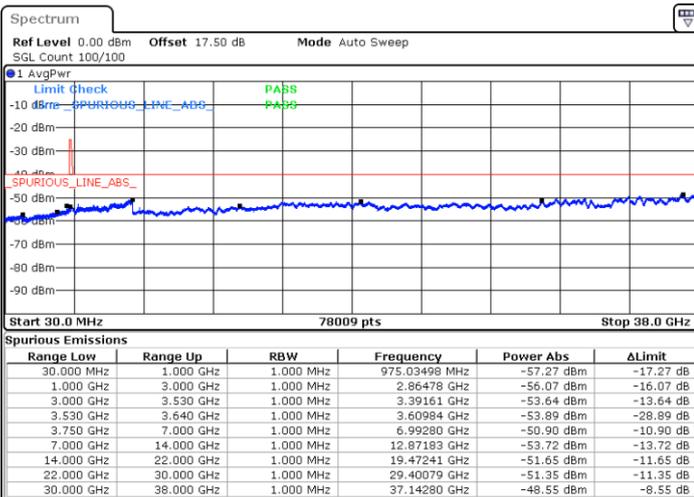


Date: 18.DEC.2019 14:53:09

Date: 18.DEC.2019 15:11:30

Highest Channel / FullIRB

N/A



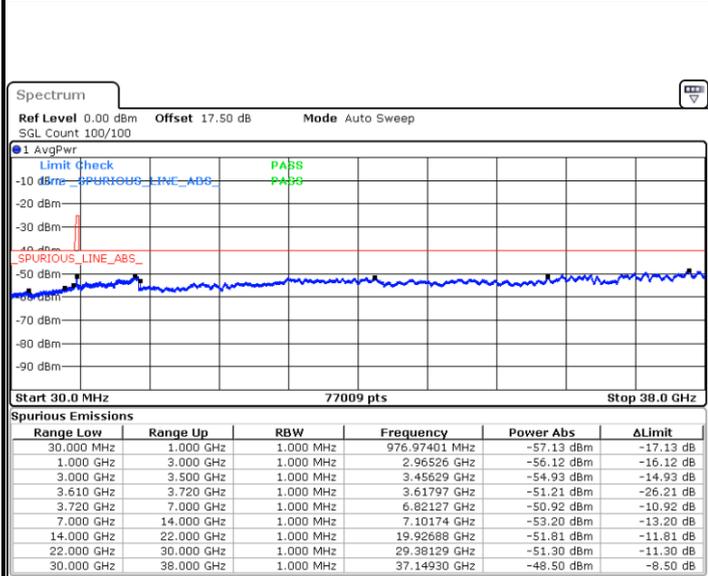
Date: 18.DEC.2019 15:02:19



LTE Band 48 / 15MHz

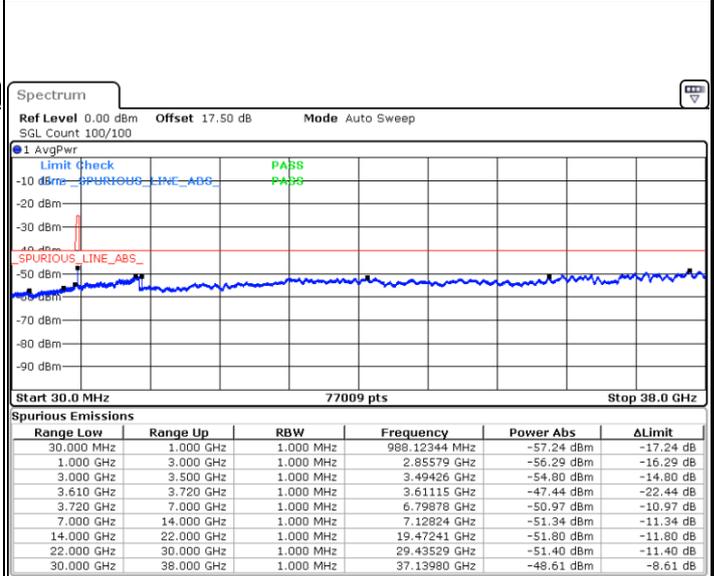
64QAM

Lowest Channel / 1RB0



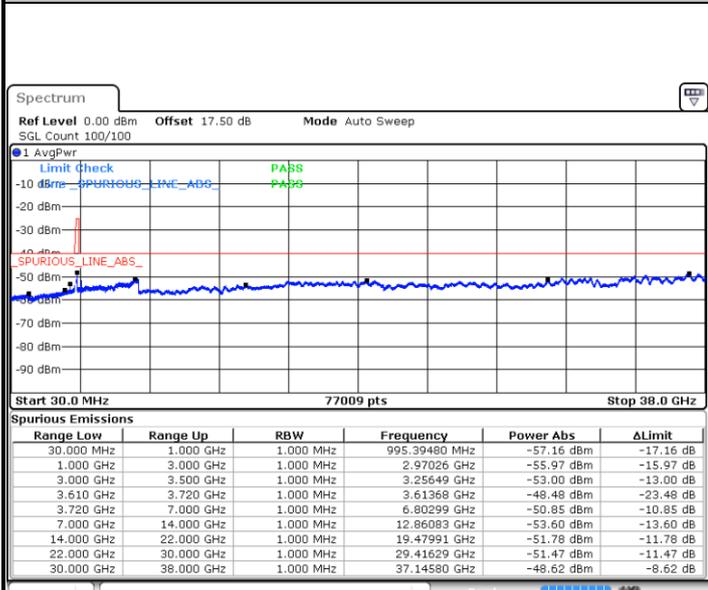
Date: 18.DEC.2019 15:16:36

Lowest Channel / 1RBmax



Date: 18.DEC.2019 15:34:56

Lowest Channel / FullIRB



Date: 18.DEC.2019 15:25:46

N/A

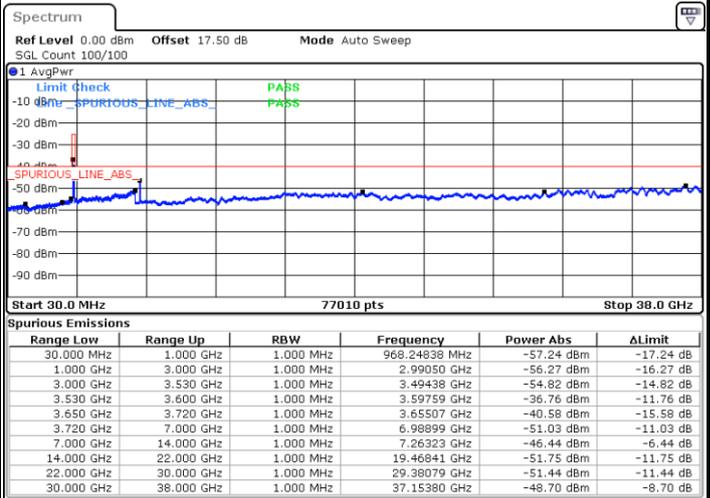
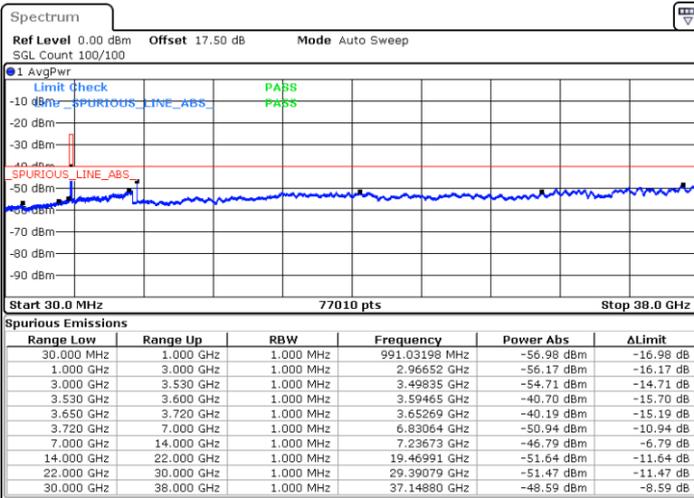


LTE Band 48 / 15MHz

64QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax

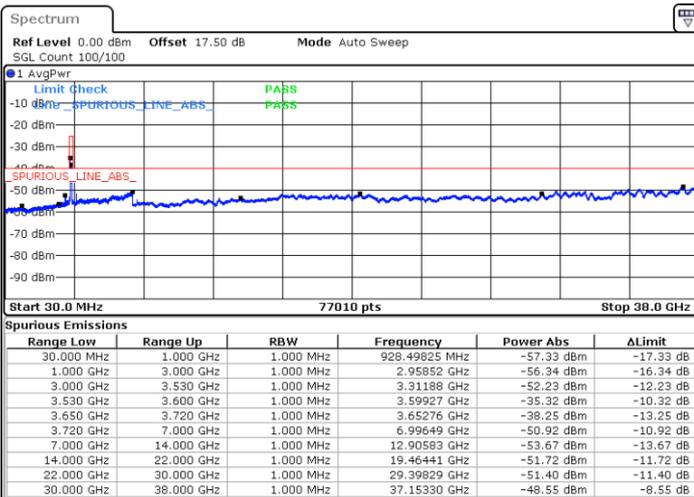


Date: 18.DEC.2019 15:17:37

Date: 18.DEC.2019 15:35:57

Middle Channel / FullIRB

N/A



Date: 18.DEC.2019 15:26:47

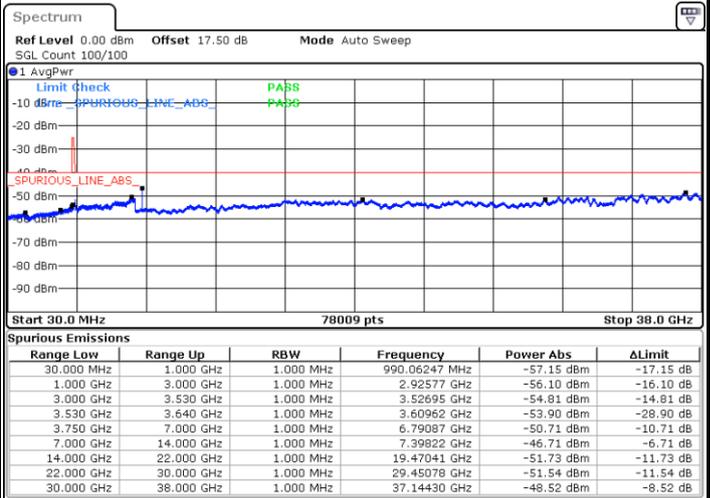
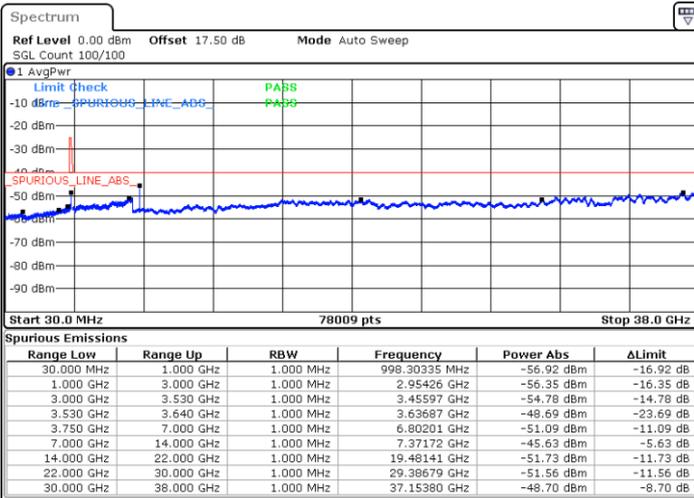


LTE Band 48 / 15MHz

64QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax

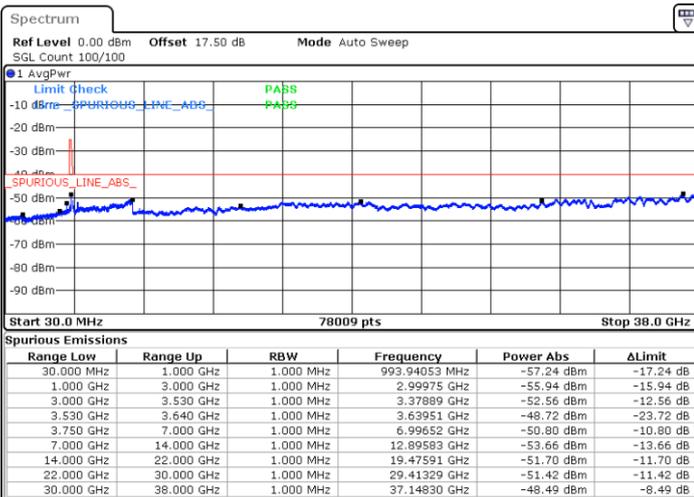


Date: 18.DEC.2019 15:22:42

Date: 18.DEC.2019 15:41:03

Highest Channel / FullIRB

N/A



Date: 18.DEC.2019 15:31:52

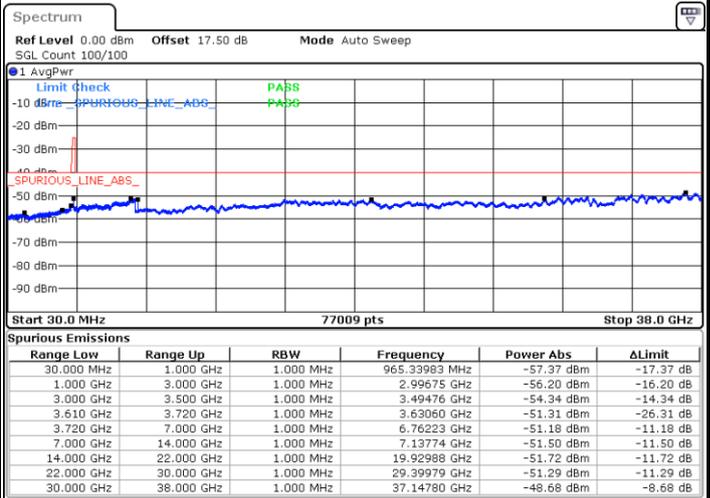
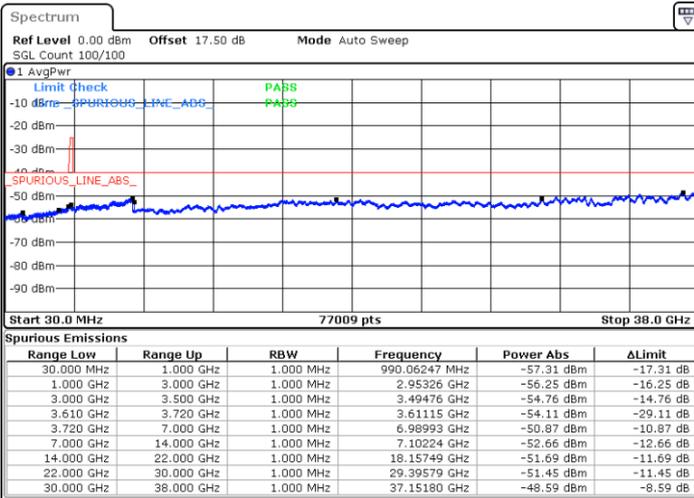


LTE Band 48 / 20MHz

64QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax

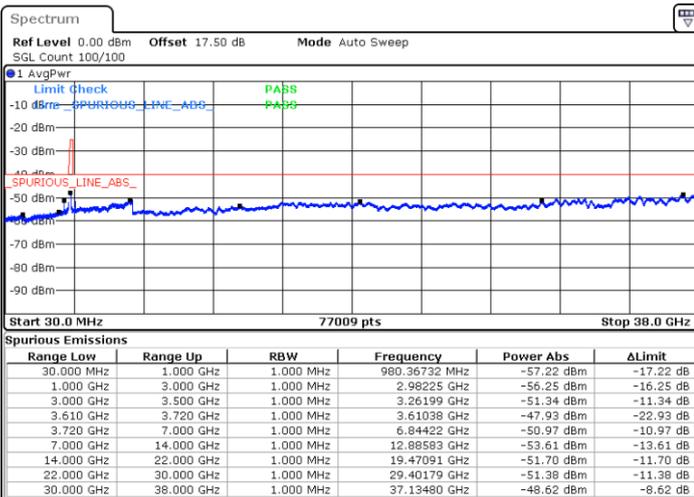


Date: 18.DEC.2019 15:51:13

Date: 18.DEC.2019 16:00:23

Lowest Channel / FullIRB

N/A



Date: 18.DEC.2019 15:42:04

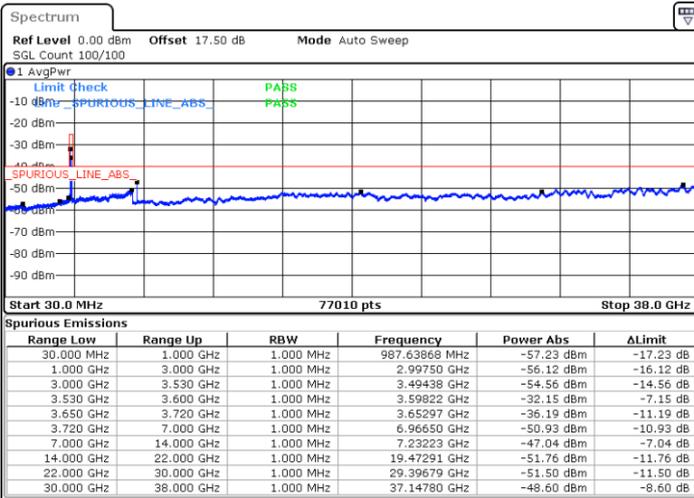


LTE Band 48 / 20MHz

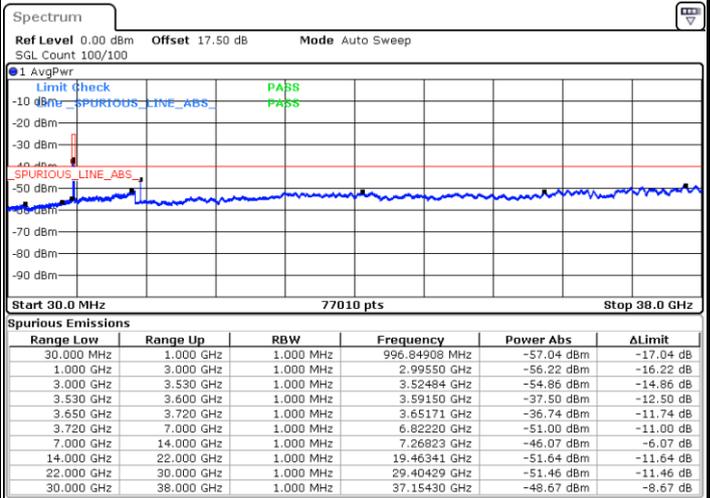
64QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax



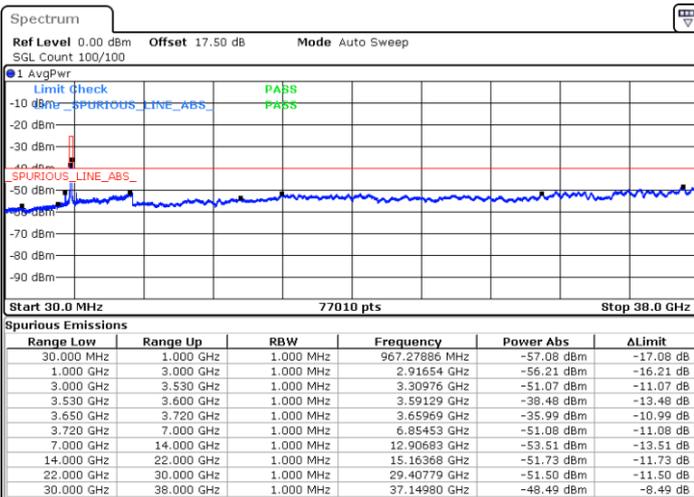
Date: 18.DEC.2019 15:56:18



Date: 18.DEC.2019 16:05:27

Middle Channel / FullIRB

N/A



Date: 18.DEC.2019 15:47:09

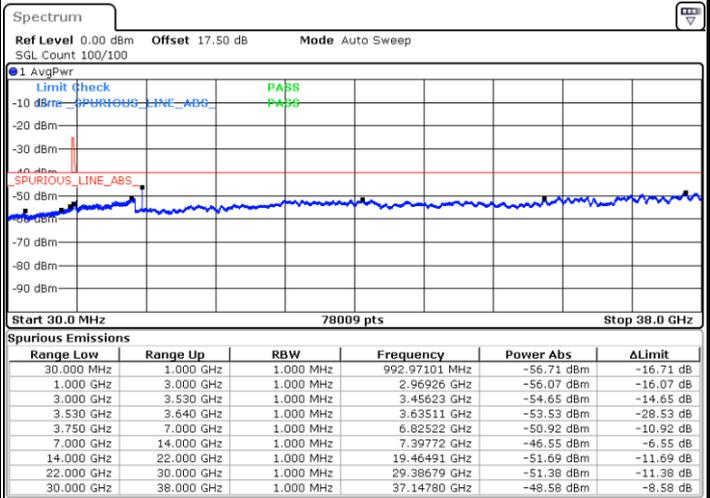
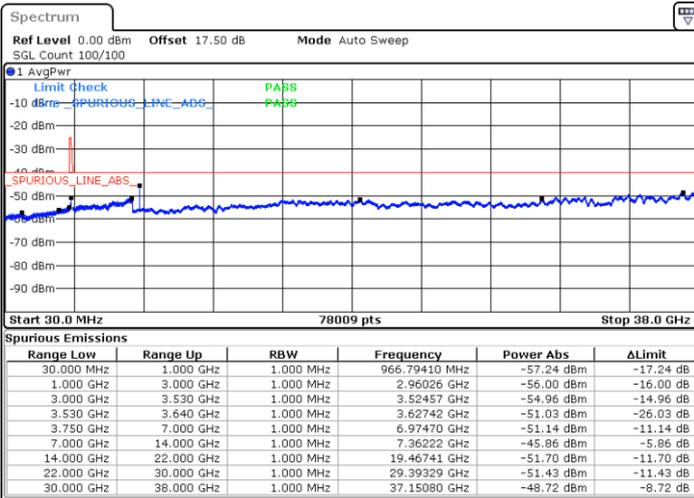


LTE Band 48 / 20MHz

64QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax

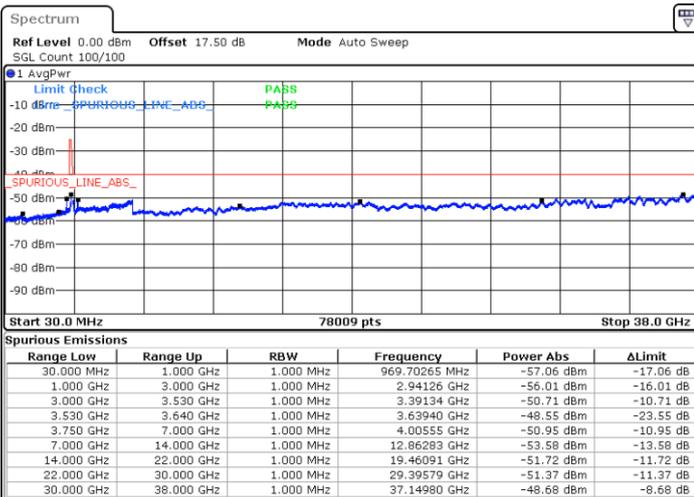


Date: 18.DEC.2019 15:57:19

Date: 18.DEC.2019 16:06:28

Highest Channel / FullIRB

N/A



Date: 18.DEC.2019 15:48:09



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	0.0019	
30	Normal Voltage	0.0020	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0002	
0	Normal Voltage	0.0003	
-10	Normal Voltage	0.0038	
-20	Normal Voltage	0.0034	
-30	Normal Voltage	0.0026	
20	Maximum Voltage	0.0042	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0003	

Note:

1. Normal Voltage =7.7 V. ; Battery End Point (BEP) =6.9 V. ; Maximum Voltage =8.5 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 = -1.09 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	23.65	0.2317	22.56	0.1803
Middle		1	0	23.92	0.2466	22.83	0.1919
Highest		1	0	23.87	0.2438	22.78	0.1897
Lowest	16QAM	1	0	23.14	0.2061	22.05	0.1603
Middle		1	0	23.19	0.2084	22.10	0.1622
Highest		1	0	23.21	0.2094	22.12	0.1629
Lowest	64QAM	1	0	22.04	0.1600	20.95	0.1245
Middle		1	0	21.86	0.1535	20.77	0.1194
Highest		1	0	21.68	0.1472	20.59	0.1146

LTE Band 48 / 10MHz (Average) (GT - LC = -1.09 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	23.71	0.2350	22.62	0.1828
Middle		1	0	23.86	0.2432	22.77	0.1892
Highest		1	0	23.85	0.2427	22.76	0.1888
Lowest	16QAM	1	0	23.14	0.2061	22.05	0.1603
Middle		1	0	23.23	0.2104	22.14	0.1637
Highest		1	0	23.29	0.2133	22.20	0.1660
Lowest	64QAM	1	0	22.00	0.1585	20.91	0.1233
Middle		1	0	21.86	0.1535	20.77	0.1194
Highest		1	0	21.73	0.1489	20.64	0.1159

LTE Band 48 / 15MHz (Average) (GT - LC = -1.09 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	23.67	0.2328	22.58	0.1811
Middle		1	0	23.84	0.2421	22.75	0.1884
Highest		1	0	23.86	0.2432	22.77	0.1892
Lowest	16QAM	1	0	23.07	0.2028	21.98	0.1578
Middle		1	0	23.24	0.2109	22.15	0.1641
Highest		1	0	23.24	0.2109	22.15	0.1641
Lowest	64QAM	1	0	22.05	0.1603	20.96	0.1247
Middle		1	0	21.77	0.1503	20.68	0.1169
Highest		1	0	21.73	0.1489	20.64	0.1159



LTE Band 48 / 20MHz (Average) (GT - LC = -1.09 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	23.75	0.2371	22.66	0.1845
Middle		1	0	23.92	0.2466	22.83	0.1919
Highest		1	0	23.91	0.2460	22.82	0.1914
Lowest	16QAM	1	0	23.16	0.2070	22.07	0.1611
Middle		1	0	23.26	0.2118	22.17	0.1648
Highest		1	0	23.30	0.2138	22.21	0.1663
Lowest	64QAM	1	0	22.05	0.1603	20.96	0.1247
Middle		1	0	21.86	0.1535	20.77	0.1194
Highest		1	0	21.78	0.1507	20.69	0.1172



**EIRP Power**

LTE Band 48 / Conducted Power (dBm/10MHz)									
BW	1.4MHz			3MHz			5MHz		
Mod.	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Lowest CH	-	-	-	-	-	-	23.65	23.14	22.04
Middle CH	-	-	-	-	-	-	23.92	23.19	21.86
Highest CH	-	-	-	-	-	-	23.87	23.21	21.68

LTE Band 48 / Conducted Power (dBm/10MHz)									
BW	10MHz			15MHz			20MHz		
Mod.	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Lowest CH	23.71	23.14	22.00	23.67	23.07	22.05	23.75	23.16	22.05
Middle CH	23.86	23.23	21.86	23.84	23.24	21.77	23.92	23.26	21.86
Highest CH	23.85	23.29	21.73	23.86	23.24	21.73	23.91	23.30	21.78

LTE Band 48 / EIRP Power (dBm/10MHz)									
BW	1.4MHz			3MHz			5MHz		
Mod.	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Lowest CH	-	-	-	-	-	-	22.56	22.05	20.95
Middle CH	-	-	-	-	-	-	22.83	22.10	20.77
Highest CH	-	-	-	-	-	-	22.78	22.12	20.59

LTE Band 48 / EIRP Power (dBm/10MHz)									
BW	10MHz			15MHz			20MHz		
Mod.	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Lowest CH	22.62	22.05	20.91	22.58	21.98	20.96	22.66	22.07	20.96
Middle CH	22.77	22.14	20.77	22.75	22.15	20.68	22.83	22.17	20.77
Highest CH	22.76	22.20	20.64	22.77	22.15	20.64	22.82	22.21	20.69
Antenna Gain	-1.09 dBi								
Limit	23dBm / 10MHz								
Result	PASS								



**Radiated Spurious Emission**

**LTE Band 48**

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)
Lowest	7100	-58.93	-40	-18.93	-56.62	-68.90	1.77	11.74	H
	10655	-59.76	-40	-19.76	-60.89	-68.19	2.47	10.90	H
	14205	-56.48	-40	-16.48	-63.49	-65.32	2.87	11.71	H
	21307	-52.27	-40	-12.27	-74.12	-68.99	1.98	18.70	H
	24859	-50.37	-40	-10.37	-75.03	-66.38	2.07	18.07	H
	28411	-50.05	-40	-10.05	-75.57	-67.30	2.32	19.56	H
	7100	-58.51	-40	-18.51	-55.81	-68.48	1.77	11.74	V
	10655	-60.14	-40	-20.14	-61.01	-68.57	2.47	10.90	V
	14205	-56.88	-40	-16.88	-63.61	-65.72	2.87	11.71	V
	21307	-52.04	-40	-12.04	-73.76	-68.76	1.98	18.70	V
	24859	-49.46	-40	-9.46	-75.33	-65.47	2.07	18.07	V
28411	-48.51	-40	-8.51	-75.85	-65.76	2.32	19.56	V	
Middle	7230	-51.70	-40	-11.70	-49.68	-61.39	1.84	11.53	H
	10850	-59.55	-40	-19.55	-60.93	-67.88	2.57	10.90	H
	14462	-57.61	-40	-17.61	-64.26	-65.85	2.85	11.09	H
	18077	-53.43	-40	-13.43	-71.54	-69.66	1.76	17.98	H
	21696	-52.02	-40	-12.02	-73.54	-68.81	1.99	18.78	H
	25314	-50.40	-40	-10.40	-75.56	-67.00	2.14	18.74	H
	7230	-54.86	-40	-14.86	-52.58	-64.55	1.84	11.53	V
	10850	-59.76	-40	-19.76	-60.93	-68.09	2.57	10.90	V
	14462	-58.55	-40	-18.55	-64.38	-66.79	2.85	11.09	V
	18077	-54.50	-40	-14.50	-71.68	-70.73	1.76	17.98	V
	21696	-52.52	-40	-12.52	-74.03	-69.31	1.99	18.78	V
25314	-49.14	-40	-9.14	-75.57	-65.74	2.14	18.74	V	
Highest	7360	-55.18	-40	-15.18	-53.03	-64.59	1.91	11.32	H
	11045	-59.84	-40	-19.84	-61.48	-68.16	2.63	10.95	H
	14724	-56.89	-40	-16.89	-64.76	-65.69	2.91	11.72	H
	18410	-53.02	-40	-13.02	-71.34	-69.07	1.87	17.92	H
	22086	-51.51	-40	-11.51	-73.68	-68.30	2.08	18.87	H
	25770	-48.70	-40	-8.70	-74.7	-65.72	2.03	19.05	H
	7360	-57.04	-40	-17.04	-54.7	-66.45	1.91	11.32	V
	11045	-60.01	-40	-20.01	-61.48	-68.33	2.63	10.95	V
	14724	-58.52	-40	-18.52	-64.72	-67.32	2.91	11.72	V
	18410	-54.48	-40	-14.48	-71.92	-70.53	1.87	17.92	V
	22086	-51.82	-40	-11.82	-73.99	-68.61	2.08	18.87	V
25770	-47.45	-40	-7.45	-74.63	-64.47	2.03	19.05	V	

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