

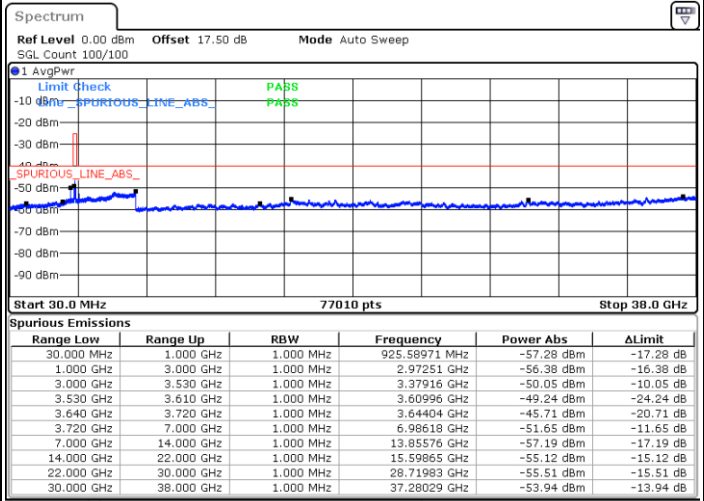
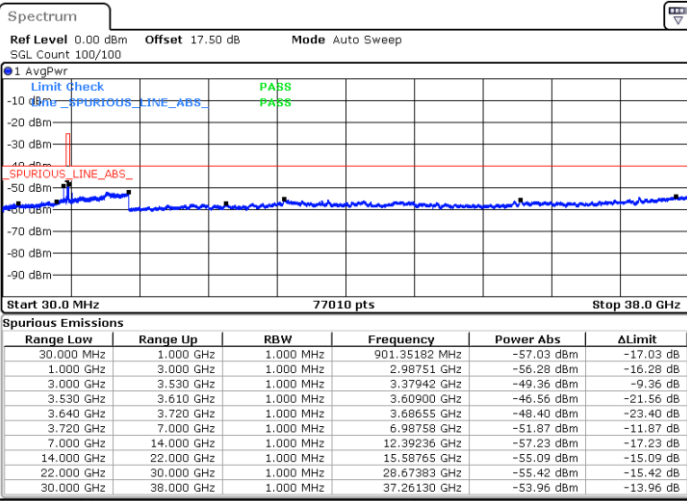


LTE Band 48 / 5MHz

64QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax

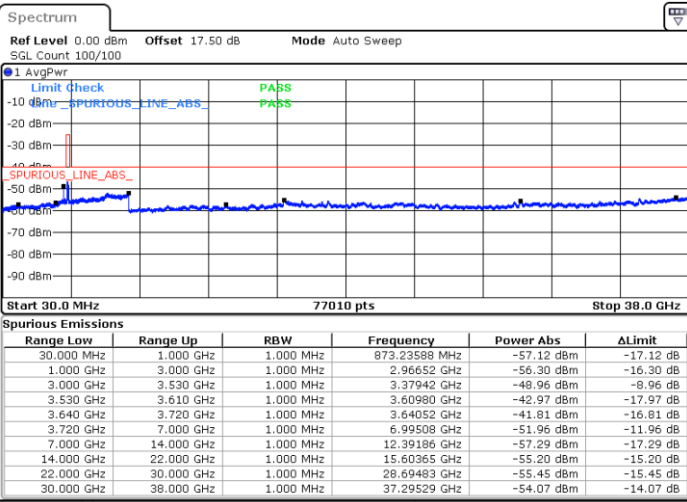


Date: 13.JAN.2020 20:08:35

Date: 13.JAN.2020 20:26:36

Middle Channel / FullIRB

N/A



Date: 13.JAN.2020 20:17:35

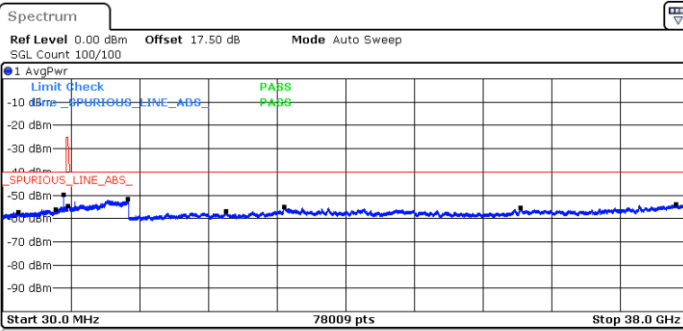


LTE Band 48 / 5MHz

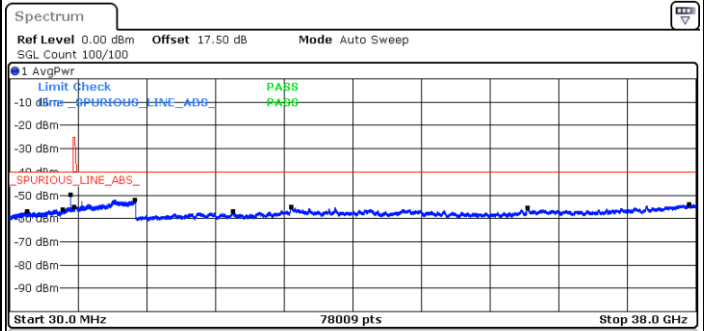
64QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax



Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	883.90055 MHz	-57.30 dBm	-17.30 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.95626 GHz	-56.02 dBm	-16.02 dB
3.000 GHz	3.530 GHz	1.000 MHz	3.37942 GHz	-49.97 dBm	-9.97 dB
3.530 GHz	3.640 GHz	1.000 MHz	3.63995 GHz	-54.86 dBm	-29.86 dB
3.750 GHz	7.000 GHz	1.000 MHz	6.96449 GHz	-51.85 dBm	-11.85 dB
7.000 GHz	14.000 GHz	1.000 MHz	12.40286 GHz	-57.00 dBm	-17.00 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.58315 GHz	-55.01 dBm	-15.01 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.66383 GHz	-55.41 dBm	-15.41 dB
30.000 GHz	38.000 GHz	1.000 MHz	37.25730 GHz	-53.94 dBm	-13.94 dB



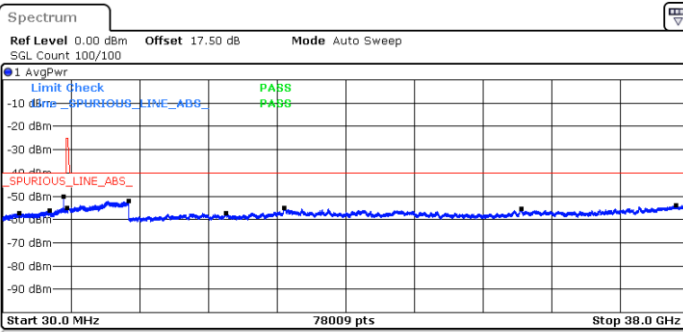
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	968.73313 MHz	-56.95 dBm	-16.95 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.95976 GHz	-56.27 dBm	-16.27 dB
3.000 GHz	3.530 GHz	1.000 MHz	3.37942 GHz	-49.81 dBm	-9.81 dB
3.530 GHz	3.640 GHz	1.000 MHz	3.57071 GHz	-55.19 dBm	-30.19 dB
3.750 GHz	7.000 GHz	1.000 MHz	6.95288 GHz	-52.10 dBm	-12.10 dB
7.000 GHz	14.000 GHz	1.000 MHz	12.40036 GHz	-57.06 dBm	-17.06 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.61115 GHz	-54.99 dBm	-14.99 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.69533 GHz	-55.56 dBm	-15.56 dB
30.000 GHz	38.000 GHz	1.000 MHz	37.60227 GHz	-53.91 dBm	-13.91 dB

Date: 13.JAN.2020 20:13:35

Date: 13.JAN.2020 20:31:35

Highest Channel / FullIRB

N/A



Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	950.31234 MHz	-57.22 dBm	-17.22 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.60385 GHz	-56.04 dBm	-16.04 dB
3.000 GHz	3.530 GHz	1.000 MHz	3.37942 GHz	-50.36 dBm	-10.36 dB
3.530 GHz	3.640 GHz	1.000 MHz	3.57137 GHz	-55.11 dBm	-30.11 dB
3.750 GHz	7.000 GHz	1.000 MHz	6.99877 GHz	-51.99 dBm	-11.99 dB
7.000 GHz	14.000 GHz	1.000 MHz	12.39836 GHz	-57.18 dBm	-17.18 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.59965 GHz	-55.10 dBm	-15.10 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.70533 GHz	-55.43 dBm	-15.43 dB
30.000 GHz	38.000 GHz	1.000 MHz	37.29179 GHz	-53.93 dBm	-13.93 dB

Date: 13.JAN.2020 20:22:35

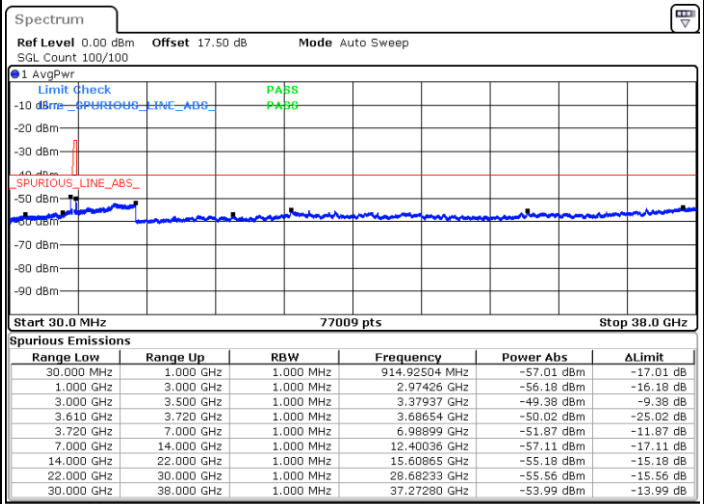
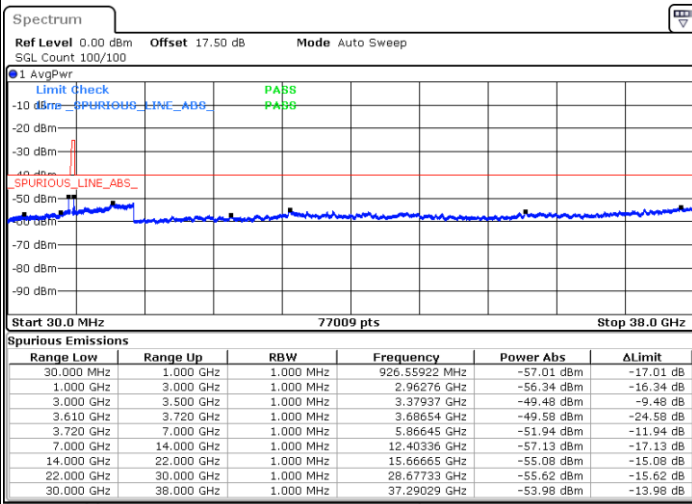


LTE Band 48 / 10MHz

64QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax

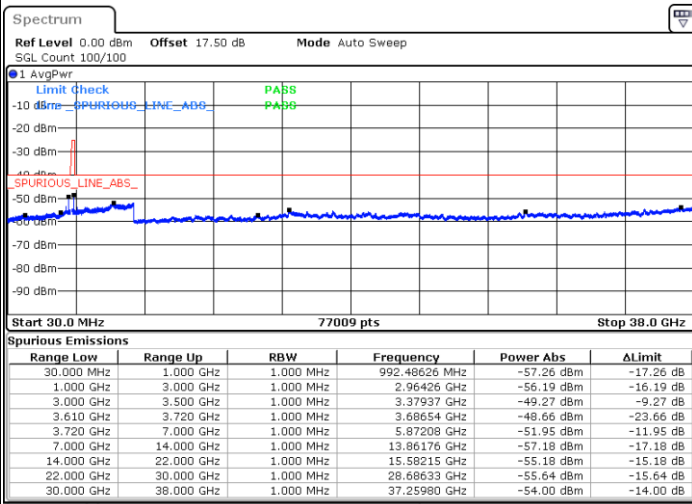


Date: 13.JAN.2020 20:32:36

Date: 13.JAN.2020 20:50:36

Lowest Channel / FullRB

N/A



Date: 13.JAN.2020 20:41:36

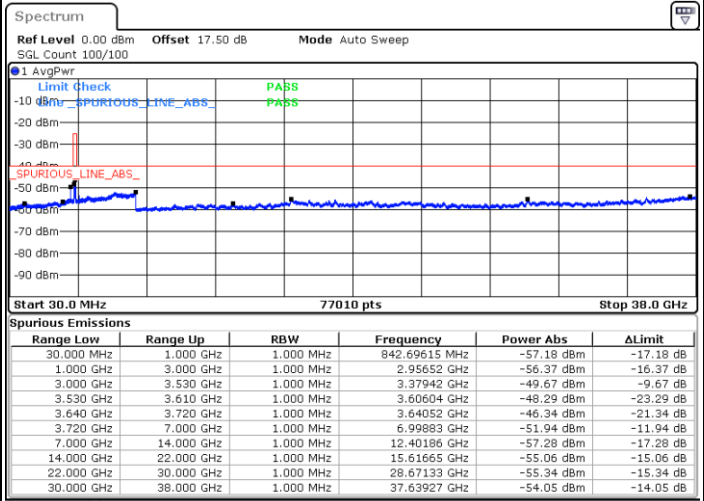
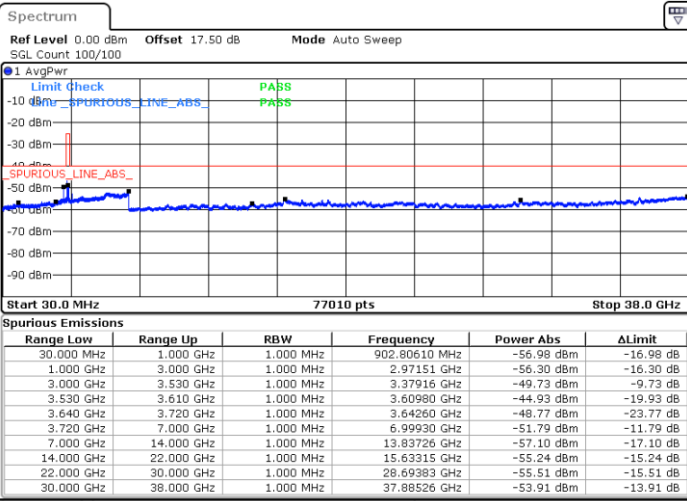


LTE Band 48 / 10MHz

64QAM

MiddleChannel / 1RB0

Middle Channel / 1RBmax

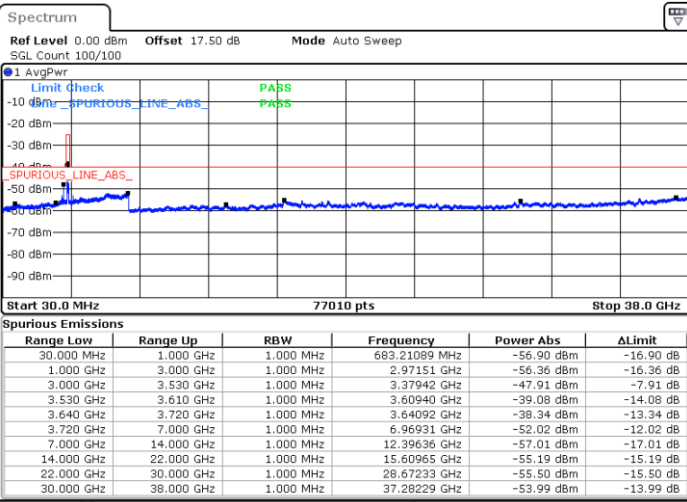


Date: 13.JAN.2020 20:37:35

Date: 13.JAN.2020 20:55:36

Middle Channel / FullIRB

N/A



Date: 13.JAN.2020 20:46:36

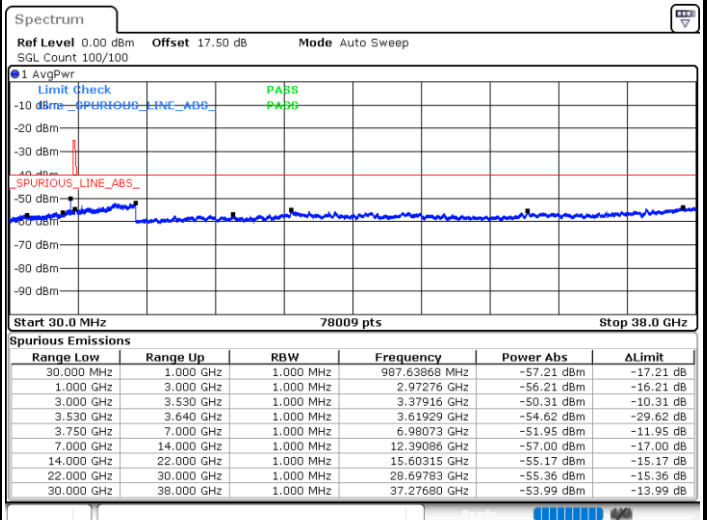
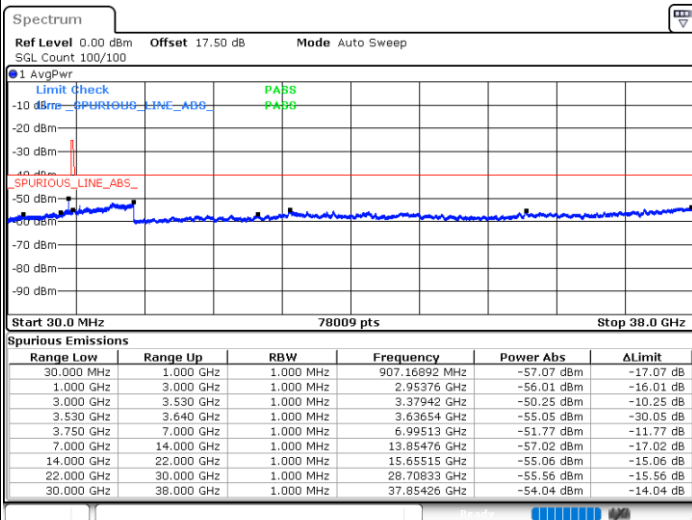


LTE Band 48 / 10MHz

64QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax

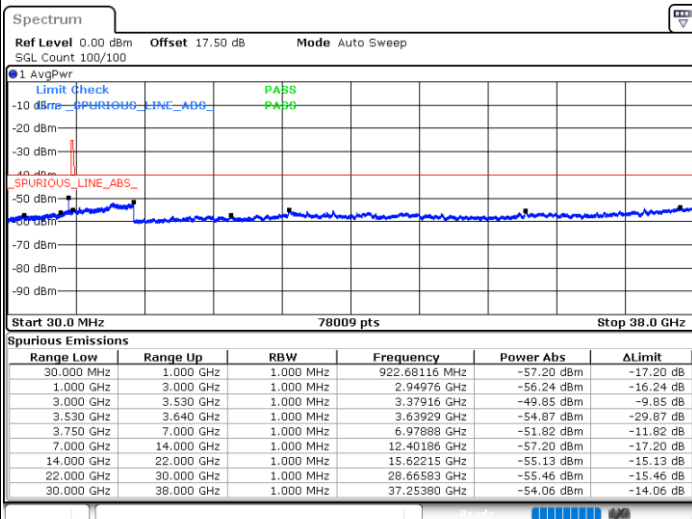


Date: 13.JAN.2020 20:38:35

Date: 13.JAN.2020 20:56:35

Highest Channel / FullIRB

N/A



Date: 13.JAN.2020 20:47:35

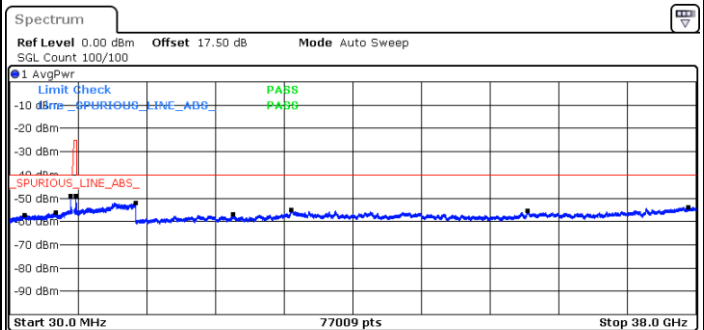
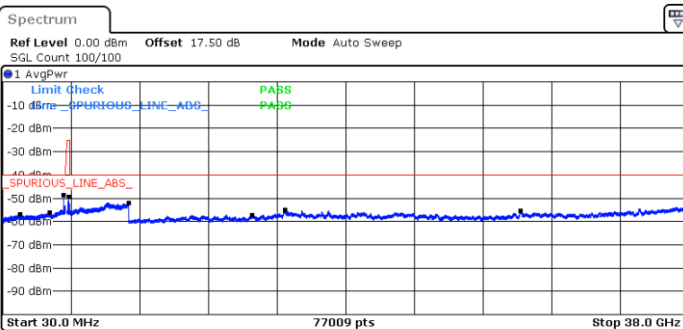


LTE Band 48 / 15MHz

64QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax

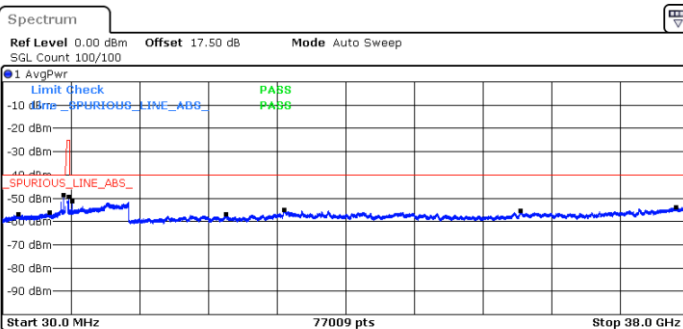


Date: 13.JAN.2020 21:01:37

Date: 13.JAN.2020 21:19:37

Lowest Channel / FullRB

N/A



Date: 13.JAN.2020 21:10:37

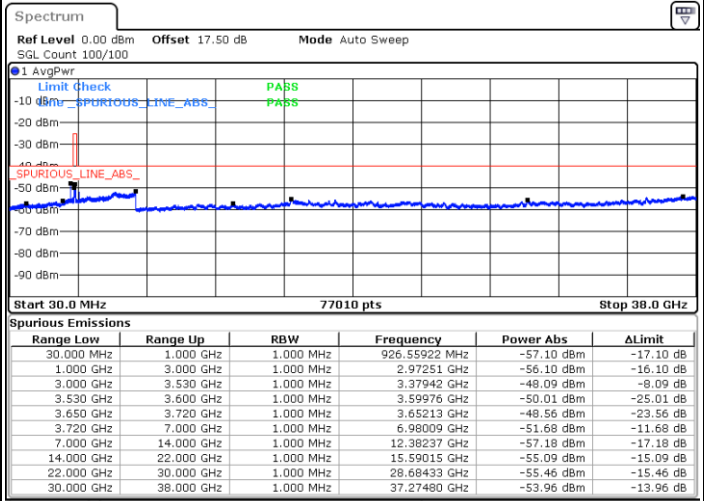
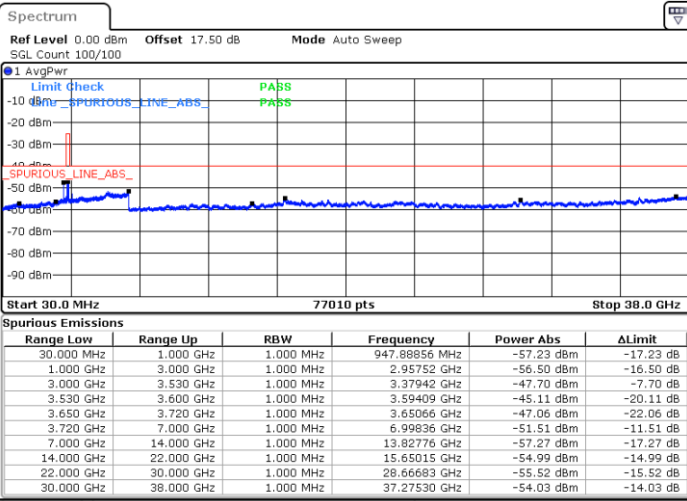


LTE Band 48 / 15MHz

64QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax

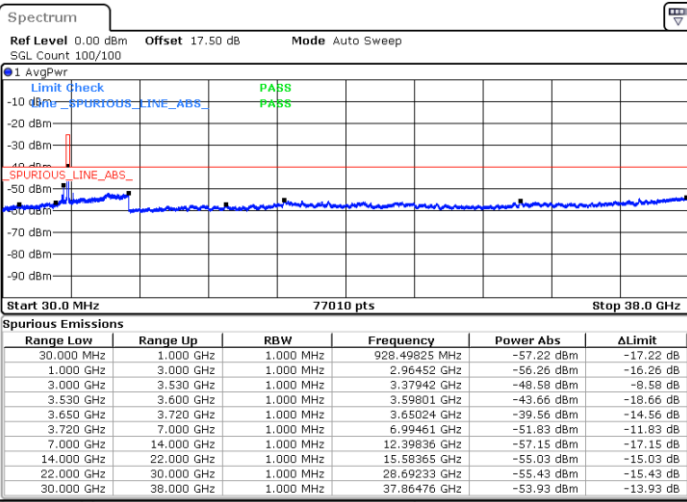


Date: 13.JAN.2020 21:02:37

Date: 13.JAN.2020 21:20:37

Middle Channel / FullIRB

N/A



Date: 13.JAN.2020 21:11:37

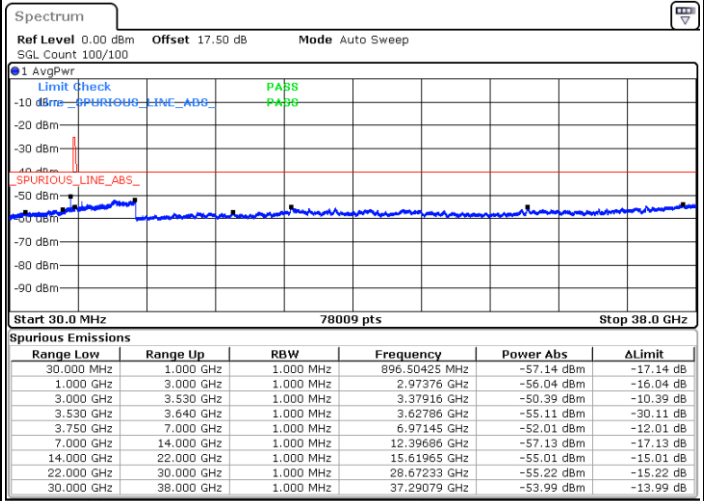
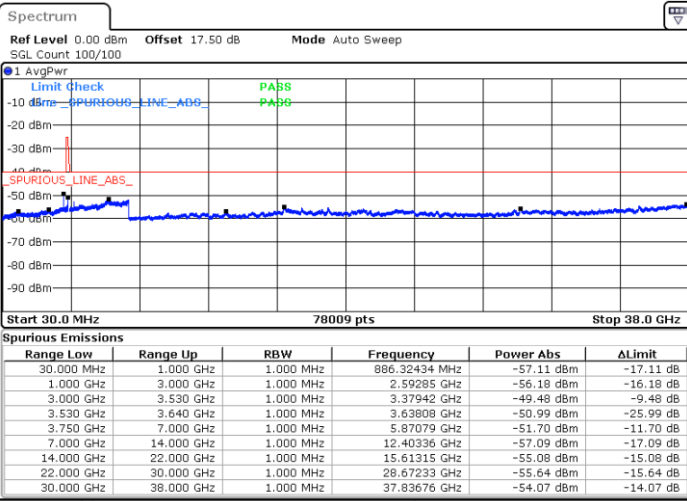


LTE Band 48 / 15MHz

64QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax

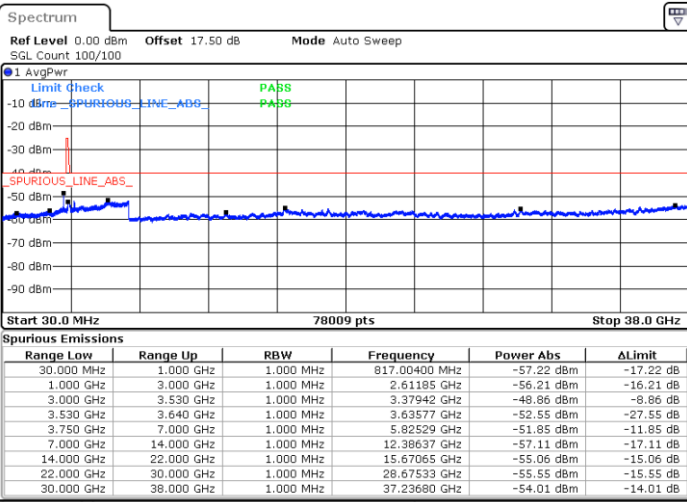


Date: 13.JAN.2020 21:07:36

Date: 13.JAN.2020 21:25:36

Highest Channel / FullIRB

N/A



Date: 13.JAN.2020 21:16:36

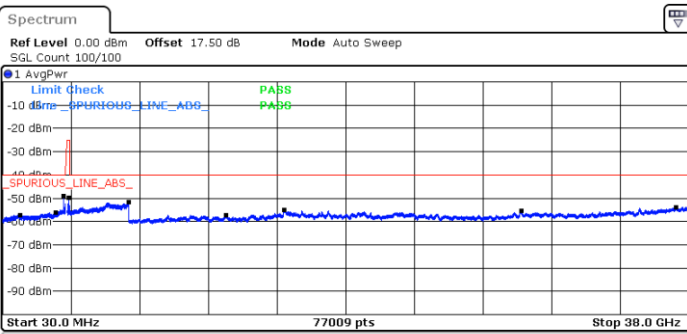


LTE Band 48 / 20MHz

64QAM

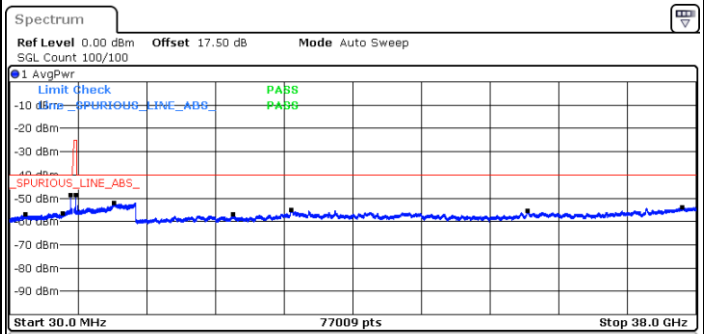
Lowest Channel / 1RB0

Lowest Channel / 1RBmax



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	988.12344 MHz	-57.23 dBm	-17.23 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.97026 GHz	-56.26 dBm	-16.26 dB
3.000 GHz	3.500 GHz	1.000 MHz	3.37937 GHz	-49.01 dBm	-9.01 dB
3.610 GHz	3.720 GHz	1.000 MHz	3.68643 GHz	-49.81 dBm	-24.81 dB
3.720 GHz	7.000 GHz	1.000 MHz	6.99930 GHz	-51.77 dBm	-11.77 dB
7.000 GHz	14.000 GHz	1.000 MHz	12.39986 GHz	-57.13 dBm	-17.13 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.58315 GHz	-55.04 dBm	-15.04 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.70033 GHz	-55.43 dBm	-15.43 dB
30.000 GHz	38.000 GHz	1.000 MHz	37.29479 GHz	-53.95 dBm	-13.95 dB



Spurious Emissions

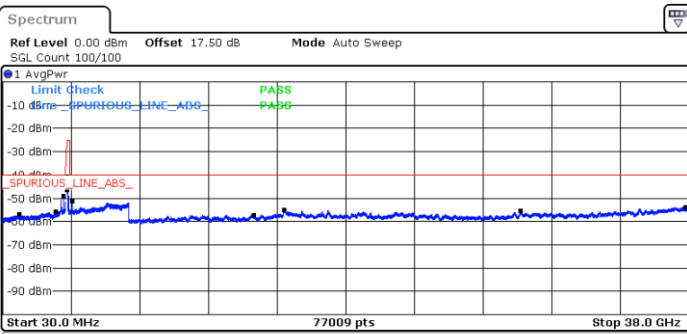
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	874.69015 MHz	-56.87 dBm	-16.87 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.96426 GHz	-56.40 dBm	-16.40 dB
3.000 GHz	3.500 GHz	1.000 MHz	3.37937 GHz	-48.71 dBm	-8.71 dB
3.610 GHz	3.720 GHz	1.000 MHz	3.68643 GHz	-48.56 dBm	-23.56 dB
3.720 GHz	7.000 GHz	1.000 MHz	5.81867 GHz	-51.88 dBm	-11.88 dB
7.000 GHz	14.000 GHz	1.000 MHz	12.40036 GHz	-57.09 dBm	-17.09 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.62515 GHz	-55.06 dBm	-15.06 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.69733 GHz	-55.45 dBm	-15.45 dB
30.000 GHz	38.000 GHz	1.000 MHz	37.25130 GHz	-53.91 dBm	-13.91 dB

Date: 13.JAN.2020 21:35:36

Date: 13.JAN.2020 21:44:35

Lowest Channel / FullRB

N/A



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	960.00750 MHz	-56.75 dBm	-16.75 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.96726 GHz	-55.98 dBm	-15.98 dB
3.000 GHz	3.500 GHz	1.000 MHz	3.37937 GHz	-48.94 dBm	-8.94 dB
3.610 GHz	3.720 GHz	1.000 MHz	3.61049 GHz	-46.36 dBm	-21.36 dB
3.720 GHz	7.000 GHz	1.000 MHz	3.95938 GHz	-51.47 dBm	-11.47 dB
7.000 GHz	14.000 GHz	1.000 MHz	13.90076 GHz	-57.20 dBm	-17.20 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.61665 GHz	-55.12 dBm	-15.12 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.69933 GHz	-55.44 dBm	-15.44 dB
30.000 GHz	38.000 GHz	1.000 MHz	37.83076 GHz	-54.08 dBm	-14.08 dB

Date: 13.JAN.2020 21:26:37

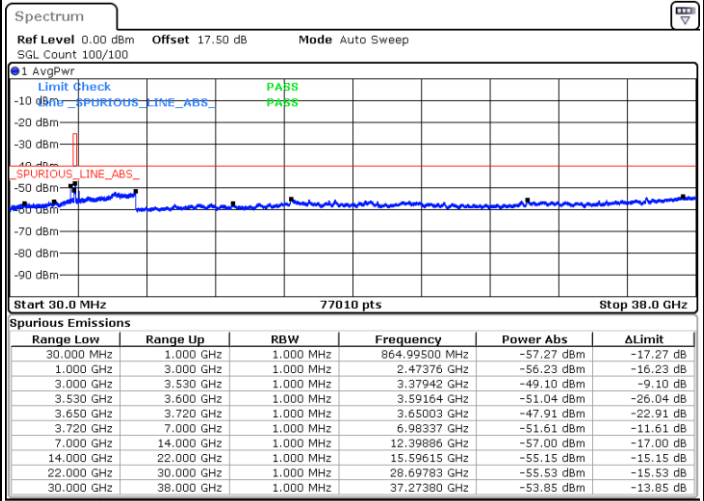
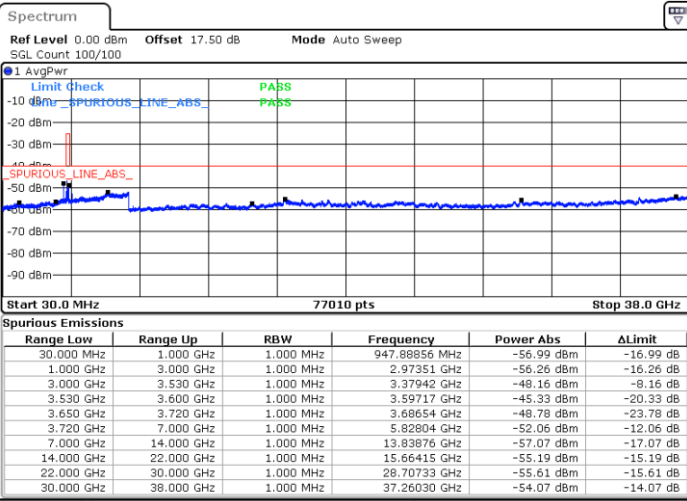


LTE Band 48 / 20MHz

64QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax

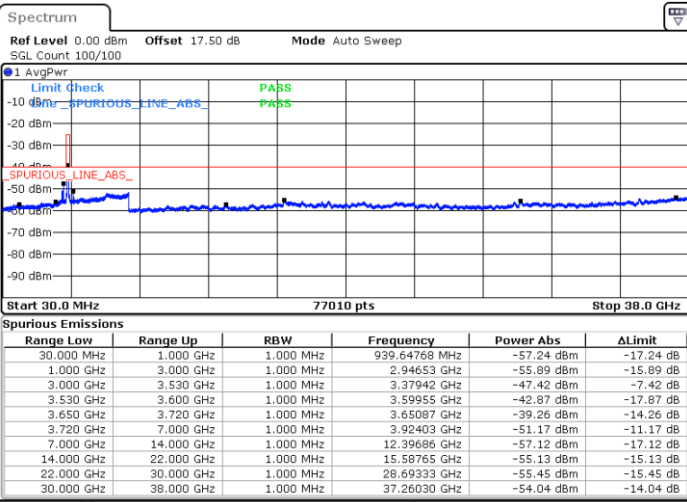


Date: 13.JAN.2020 21:40:35

Date: 13.JAN.2020 21:49:35

Middle Channel / FullRB

N/A



Date: 13.JAN.2020 21:31:36

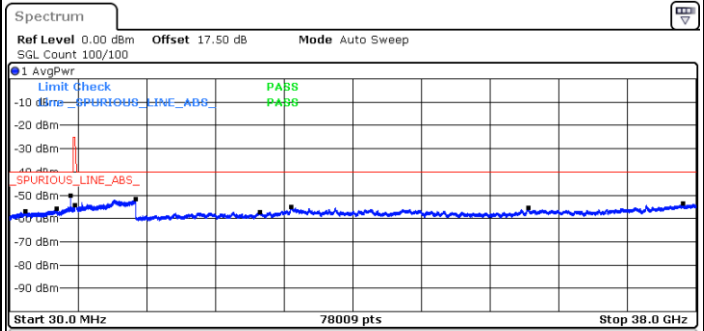
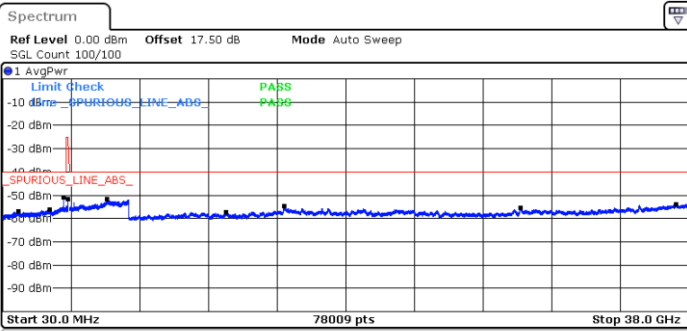


LTE Band 48 / 20MHz

64QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax

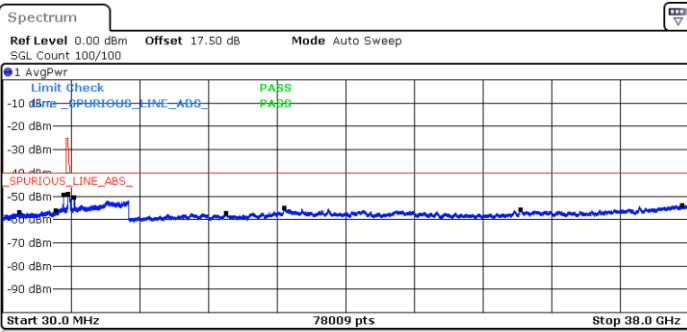


Date: 13.JAN.2020 21:41:35

Date: 13.JAN.2020 21:50:35

Highest Channel / FullIRB

N/A



Date: 13.JAN.2020 21:32:36



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

**Note:**

- 1. Normal Voltage =3.9 V. ; Battery End Point (BEP) =3.4 V. ; Maximum Voltage =4.35 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 = -2.2 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	22.98	0.1986	20.78	0.1197
Middle		1	0	22.90	0.1950	20.70	0.1175
Highest		1	0	22.70	0.1862	20.50	0.1122
Lowest	16QAM	1	0	22.09	0.1618	19.89	0.0975
Middle		1	0	22.10	0.1622	19.90	0.0977
Highest		1	0	21.82	0.1521	19.62	0.0916
Lowest	64QAM	1	0	20.84	0.1213	18.64	0.0731
Middle		1	0	20.65	0.1161	18.45	0.0700
Highest		1	0	20.63	0.1156	18.43	0.0697

LTE Band 48 / 10MHz (Average) (GT - LC = -2.2 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	22.97	0.1982	20.77	0.1194
Middle		1	0	22.82	0.1914	20.62	0.1153
Highest		1	0	22.77	0.1892	20.57	0.1140
Lowest	16QAM	1	0	22.07	0.1611	19.87	0.0971
Middle		1	0	21.99	0.1581	19.79	0.0953
Highest		1	0	21.83	0.1524	19.63	0.0918
Lowest	64QAM	1	0	20.86	0.1219	18.66	0.0735
Middle		1	0	20.68	0.1169	18.48	0.0705
Highest		1	0	20.60	0.1148	18.40	0.0692

LTE Band 48 / 15MHz (Average) (GT - LC = -2.2 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	22.94	0.1968	20.74	0.1186
Middle		1	0	22.97	0.1982	20.77	0.1194
Highest		1	0	22.68	0.1854	20.48	0.1117
Lowest	16QAM	1	0	22.15	0.1641	19.95	0.0989
Middle		1	0	22.00	0.1585	19.80	0.0955
Highest		1	0	21.86	0.1535	19.66	0.0925
Lowest	64QAM	1	0	20.85	0.1216	18.65	0.0733
Middle		1	0	20.59	0.1146	18.39	0.0690
Highest		1	0	20.64	0.1159	18.44	0.0698



LTE Band 48 / 20MHz (Average) (GT - LC = -2.2 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	23.03	0.2009	20.83	0.1211
Middle		1	0	22.96	0.1977	20.76	0.1191
Highest		1	0	22.77	0.1892	20.57	0.1140
Lowest	16QAM	1	0	22.16	0.1644	19.96	0.0991
Middle		1	0	22.02	0.1592	19.82	0.0959
Highest		1	0	21.88	0.1542	19.68	0.0929
Lowest	64QAM	1	0	20.92	0.1236	18.72	0.0745
Middle		1	0	20.68	0.1169	18.48	0.0705
Highest		1	0	20.64	0.1159	18.44	0.0698



**EIRP Power Density**

LTE Band 48 / Conducted Power Density (dBm/10MHz)									
BW	1.4MHz			3MHz			5MHz		
Mod.	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Lowest CH	-	-	-	-	-	-	22.98	22.09	20.84
Middle CH	-	-	-	-	-	-	22.90	22.10	20.65
Highest CH	-	-	-	-	-	-	22.70	21.82	20.63

LTE Band 48 / Conducted Power Density (dBm/10MHz)									
BW	10MHz			15MHz			20MHz		
Mod.	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Lowest CH	22.97	22.07	20.86	22.94	22.15	20.85	23.03	22.16	20.92
Middle CH	22.82	21.99	20.68	22.97	22.00	20.59	22.96	22.02	20.68
Highest CH	22.77	21.83	20.60	22.68	21.86	20.64	22.77	21.88	20.64

LTE Band 48 / EIRP Power Density (dBm/10MHz)									
BW	1.4MHz			3MHz			5MHz		
Mod.	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Lowest CH	-	-	-	-	-	-	20.78	19.89	18.64
Middle CH	-	-	-	-	-	-	20.70	19.90	18.45
Highest CH	-	-	-	-	-	-	20.50	19.62	18.43

LTE Band 48 / EIRP Power Density (dBm/10MHz)									
BW	10MHz			15MHz			20MHz		
Mod.	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Lowest CH	20.77	19.87	18.66	20.74	19.95	18.65	20.83	19.96	18.72
Middle CH	20.62	19.79	18.48	20.77	19.80	18.39	20.76	19.82	18.48
Highest CH	20.57	19.63	18.40	20.48	19.66	18.44	20.57	19.68	18.44
Antenna Gain	-2.2 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	7100	-56.23	-40	-16.23	-53.92	-66.20	1.77	11.74	H
	10655	-60.28	-40	-20.28	-61.41	-68.71	2.47	10.90	H
	14205	-58.51	-40	-18.51	-65.52	-67.35	2.87	11.71	H
	21307	-53.01	-40	-13.01	-74.73	-69.73	1.98	18.70	H
	24859	-49.55	-40	-9.55	-75.42	-65.56	2.07	18.07	H
	28411	-48.91	-40	-8.91	-76.25	-66.16	2.32	19.56	H
	7100	-55.68	-40	-15.68	-52.98	-65.65	1.77	11.74	V
	10655	-54.76	-40	-14.76	-55.63	-63.19	2.47	10.90	V
	14205	-58.60	-40	-18.60	-65.33	-67.44	2.87	11.71	V
	21307	-52.70	-40	-12.70	-74.55	-69.42	1.98	18.70	V
	24859	-50.80	-40	-10.80	-75.46	-66.81	2.07	18.07	V
	28411	-50.60	-40	-10.60	-76.12	-67.85	2.32	19.56	V
Middle	7230	-59.87	-40	-19.87	-57.85	-69.56	1.84	11.53	H
	10850	-61.14	-40	-21.14	-62.52	-69.47	2.57	10.90	H
	14462	-59.25	-40	-19.25	-65.9	-67.49	2.85	11.09	H
	18077	-54.95	-40	-14.95	-72.13	-71.18	1.76	17.98	H
	21696	-53.56	-40	-13.56	-75.07	-70.35	1.99	18.78	H
	25314	-47.71	-40	-7.71	-74.14	-64.31	2.14	18.74	H
	7230	-58.36	-40	-18.36	-56.08	-68.05	1.84	11.53	V
	10850	-59.68	-40	-19.68	-60.85	-68.01	2.57	10.90	V
	14462	-60.55	-40	-20.55	-66.38	-68.79	2.85	11.09	V
	18077	-53.12	-40	-13.12	-71.23	-69.35	1.76	17.98	V
	21696	-53.58	-40	-13.58	-75.1	-70.37	1.99	18.78	V
	25314	-50.46	-40	-10.46	-75.62	-67.06	2.14	18.74	V



Highest	7360	-59.37	-40	-19.37	-57.22	-68.78	1.91	11.32	H
	11045	-60.17	-40	-20.17	-61.81	-68.49	2.63	10.95	H
	14724	-58.33	-40	-18.33	-66.2	-67.13	2.91	11.72	H
	18410	-54.01	-40	-14.01	-71.45	-70.06	1.87	17.92	H
	22084	-51.98	-40	-11.98	-74.14	-68.77	2.08	18.87	H
	25770	-47.35	-40	-7.35	-74.53	-64.37	2.03	19.05	H
									H
	7360	-60.88	-40	-20.88	-58.54	-70.29	1.91	11.32	V
	11045	-60.27	-40	-20.27	-61.74	-68.59	2.63	10.95	V
	14724	-59.50	-40	-19.50	-65.7	-68.30	2.91	11.72	V
	18410	-53.66	-40	-13.66	-71.98	-69.71	1.87	17.92	V
	22084	-52.10	-40	-12.10	-74.26	-68.89	2.08	18.87	V
	25770	-49.76	-40	-9.76	-75.76	-66.78	2.03	19.05	V
									V

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



<WPC Mode>

**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)
Highest	7360	-54.30	-40	-14.30	-52.15	-63.71	1.91	11.32	H
	11045	-48.53	-40	-8.53	-50.17	-56.85	2.63	10.95	H
	14724	-57.53	-40	-17.53	-65.4	-66.33	2.91	11.72	H
	18405	-53.70	-40	-13.70	-72.02	-69.75	1.87	17.92	H
	22086	-52.05	-40	-12.05	-74.22	-68.84	2.08	18.87	H
	25767	-48.55	-40	-8.55	-74.54	-65.57	2.03	19.05	H
									H
	7360	-60.07	-40	-20.07	-57.73	-69.48	1.91	11.32	V
	11045	-56.34	-40	-16.34	-57.81	-64.66	2.63	10.95	V
	14724	-59.26	-40	-19.26	-65.46	-68.06	2.91	11.72	V
	18405	-53.74	-40	-13.74	-71.18	-69.79	1.87	17.92	V
	22086	-51.64	-40	-11.64	-73.81	-68.43	2.08	18.87	V
	25767	-47.29	-40	-7.29	-74.47	-64.31	2.03	19.05	V
									V

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

—————THE END—————