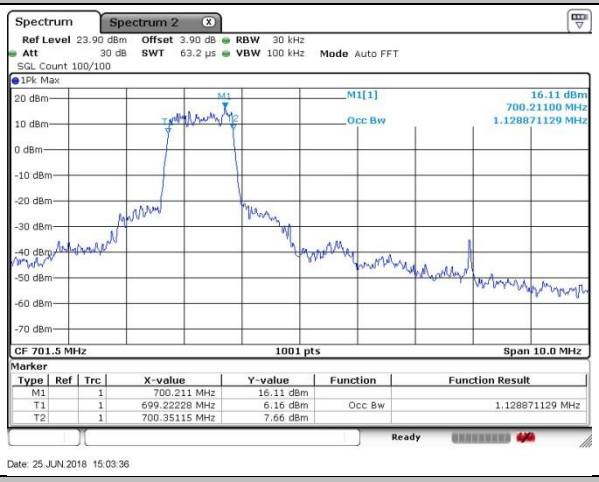
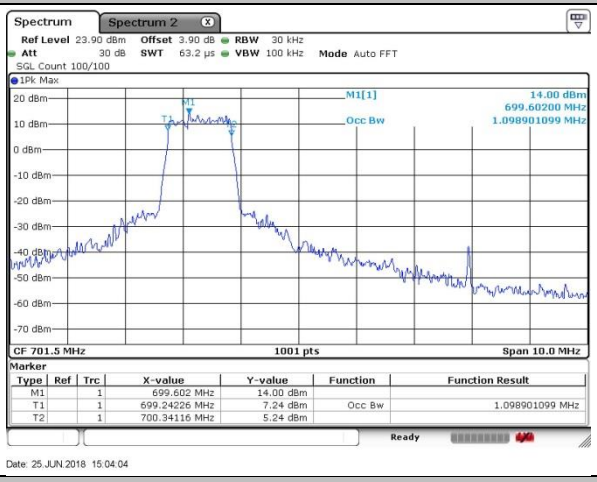
LTE Band 12

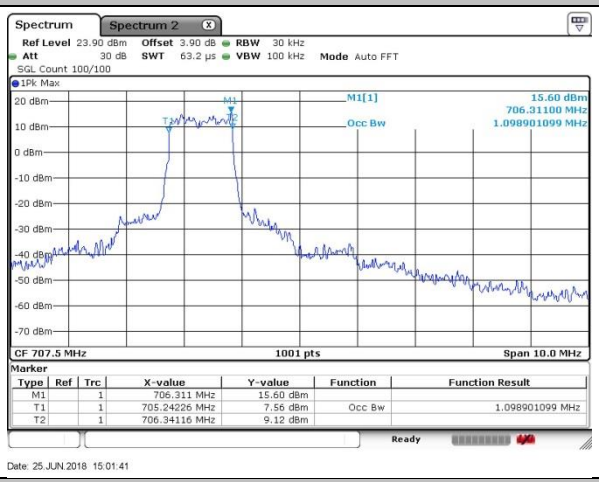
Lowest Channel / 5MHz / QPSK



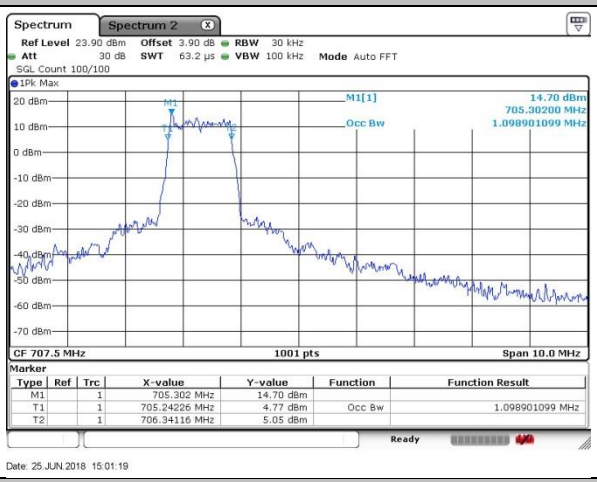
Lowest Channel / 5MHz / 16QAM



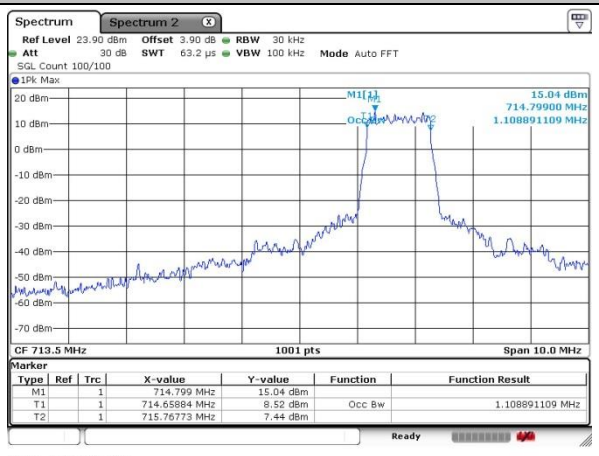
Middle Channel / 5MHz / QPSK



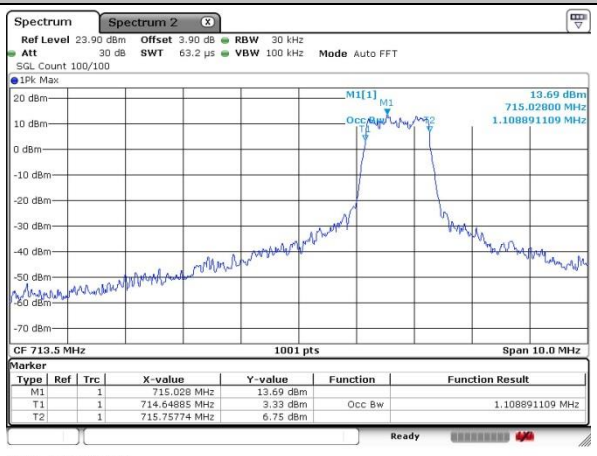
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK



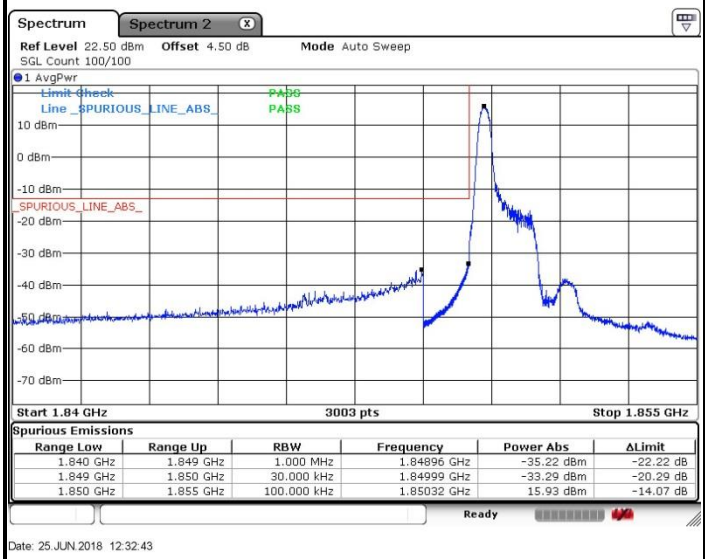
Highest Channel / 5MHz / 16QAM



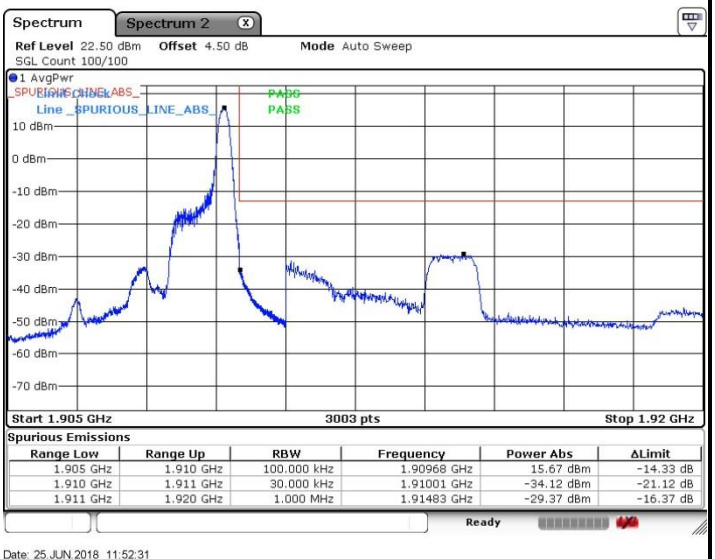
Conducted Band Edge

LTE Band 2 / 5MHz / QPSK

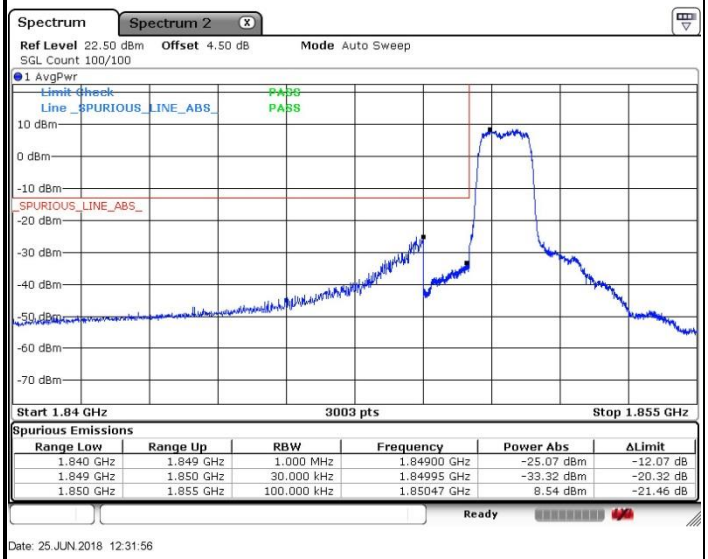
Lowest Band Edge / 1 RB



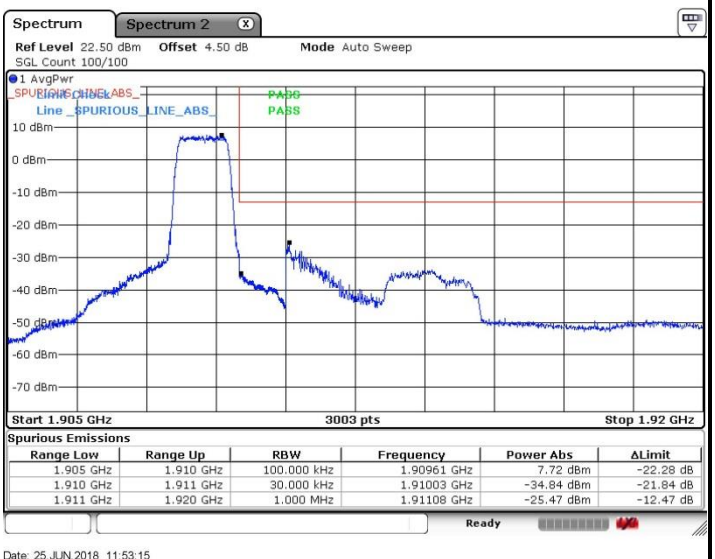
Highest Band Edge / 1 RB

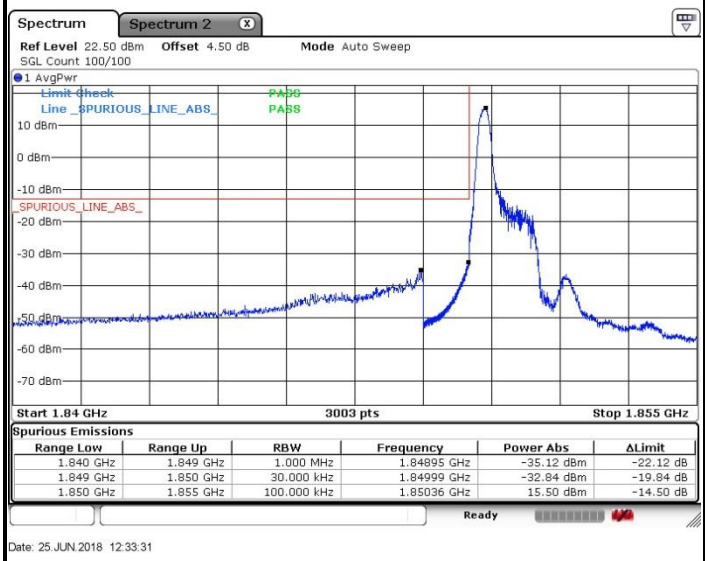
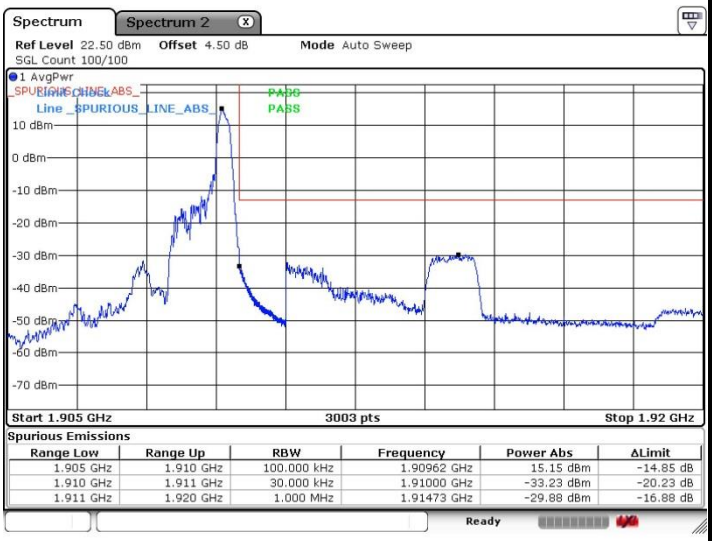
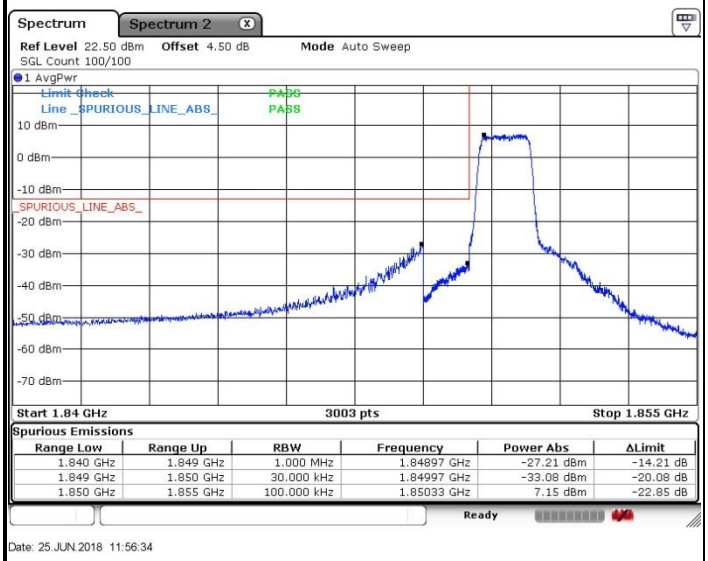
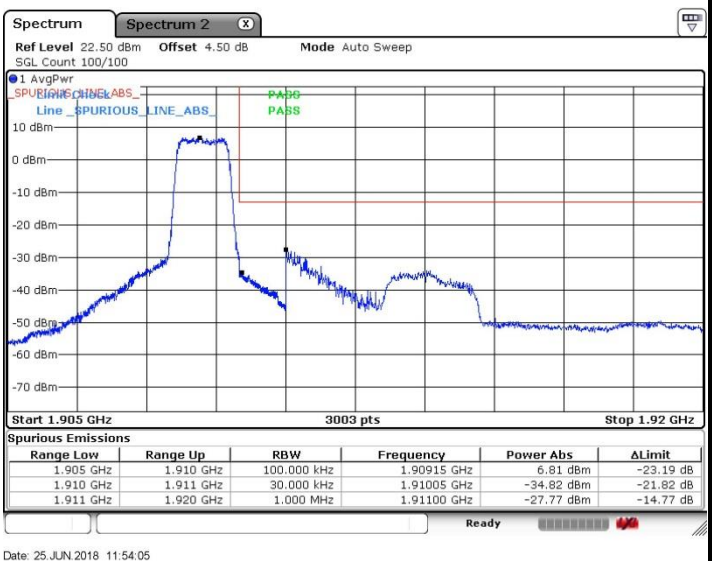


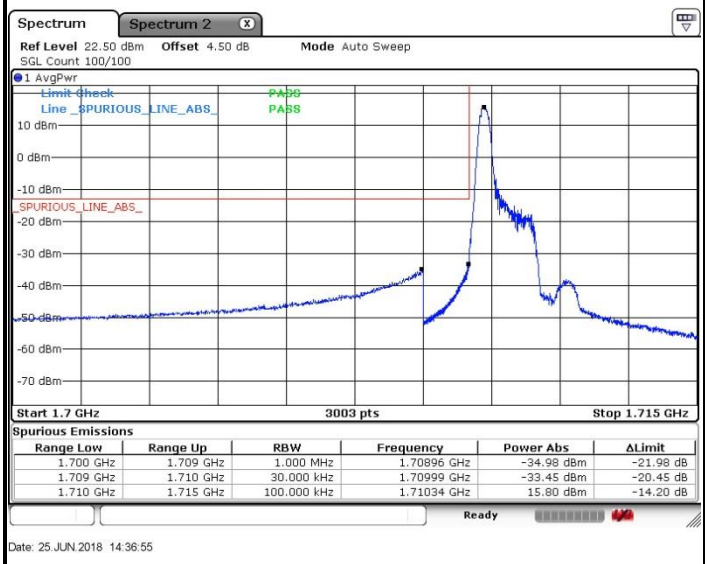
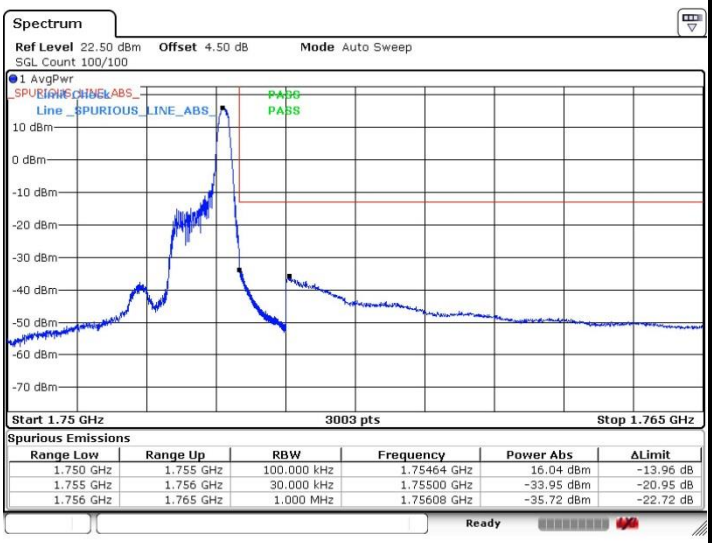
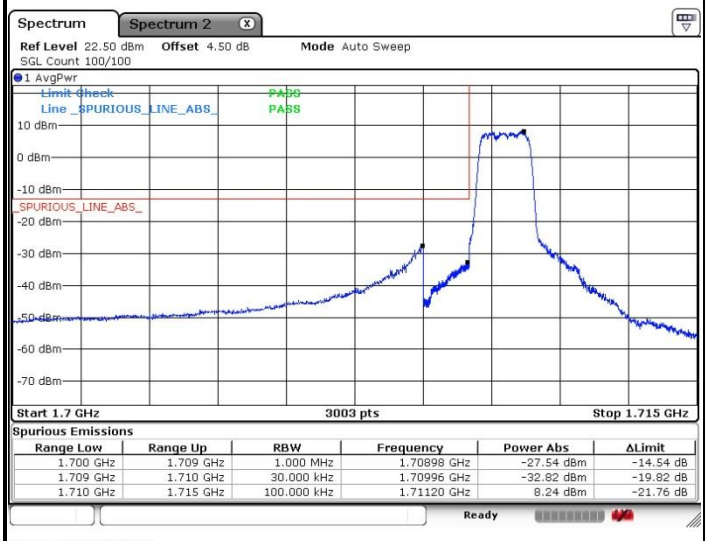
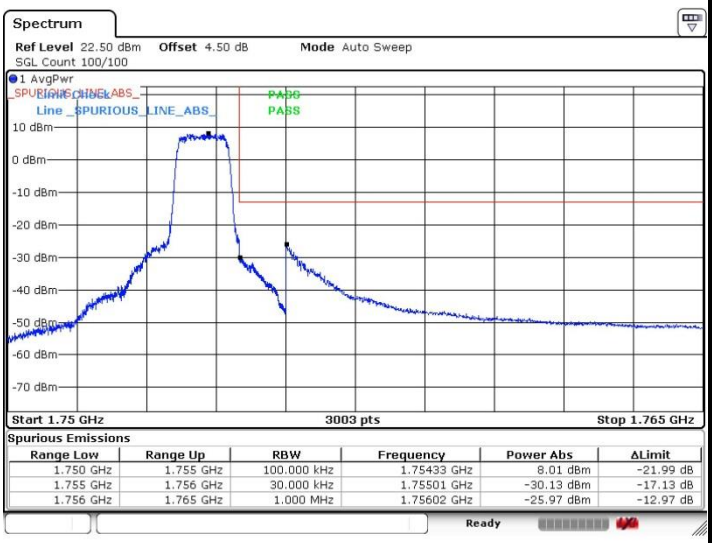
Lowest Band Edge / Full RB

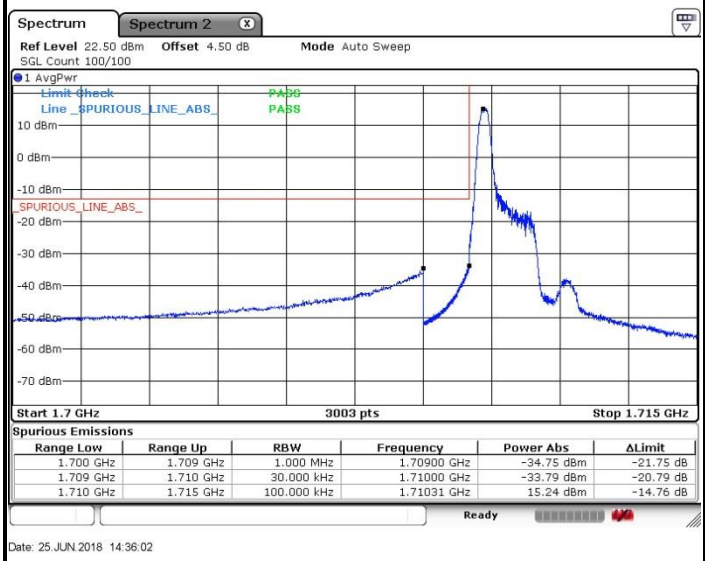
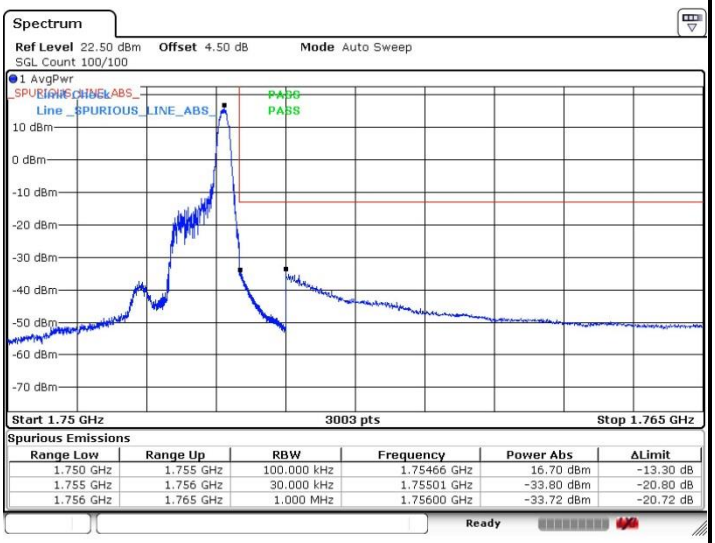
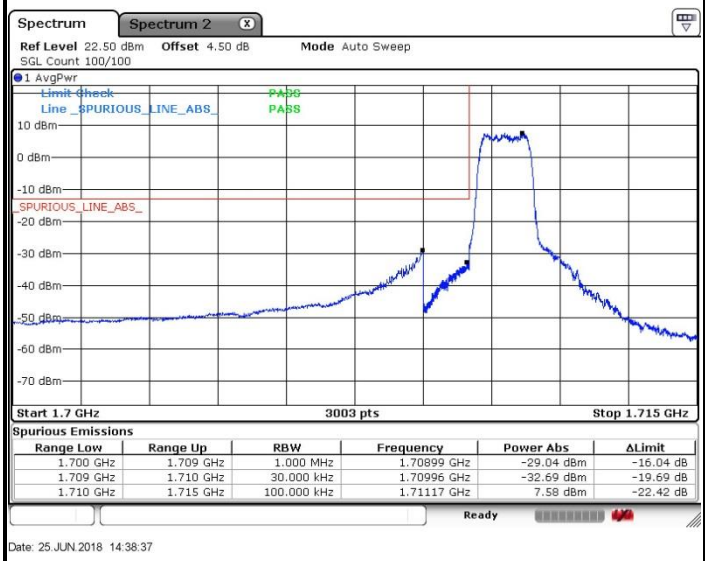
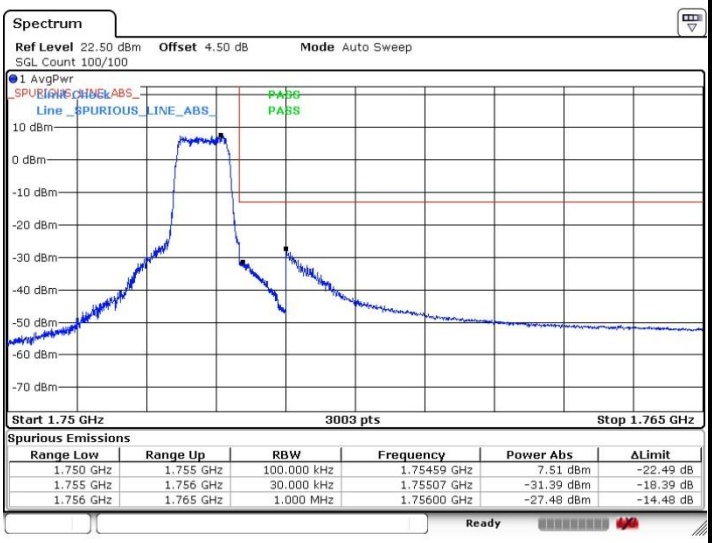


Highest Band Edge / Full RB



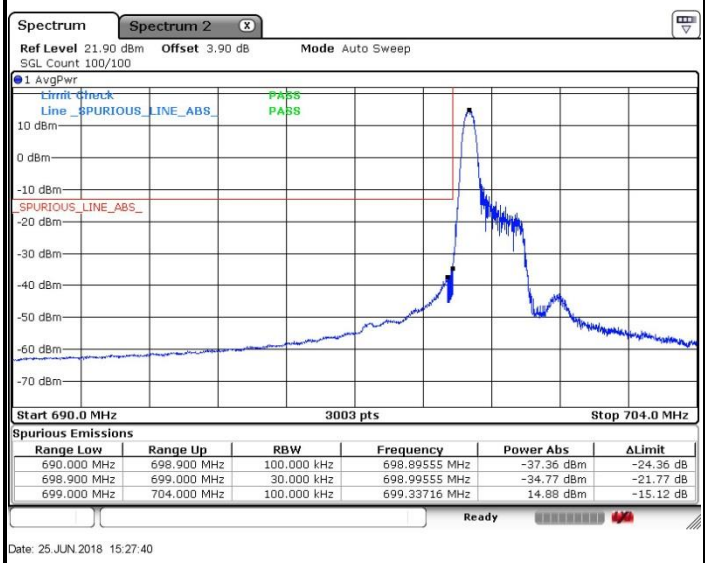
LTE Band 2 / 5MHz / 16QAM	
Lowest Band Edge / 1RB	**Highest Band Edge / 1 RB**
	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

LTE Band 4 / 5MHz / QPSK	
Lowest Band Edge / 1 RB	**Highest Band Edge / 1 RB**
	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

LTE Band 4 / 5MHz / 16QAM	
Lowest Band Edge / 1RB	**Highest Band Edge / 1 RB**
	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

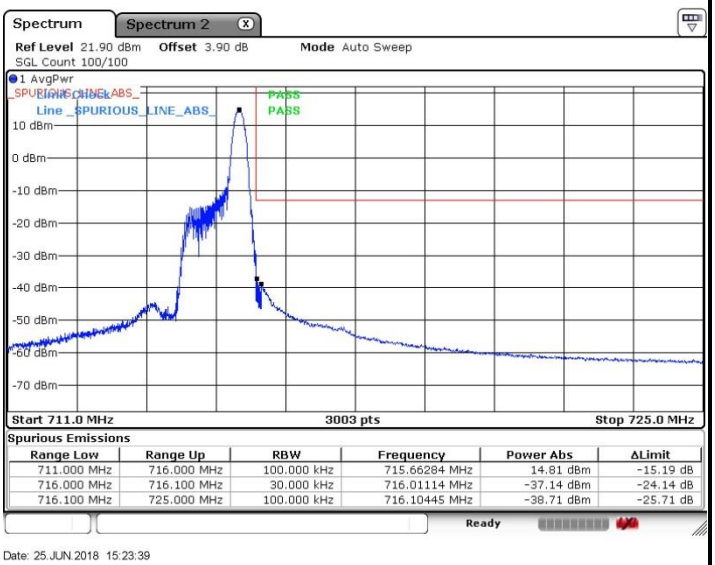
LTE Band 12 / 5MHz / QPSK

Lowest Band Edge / 1 RB



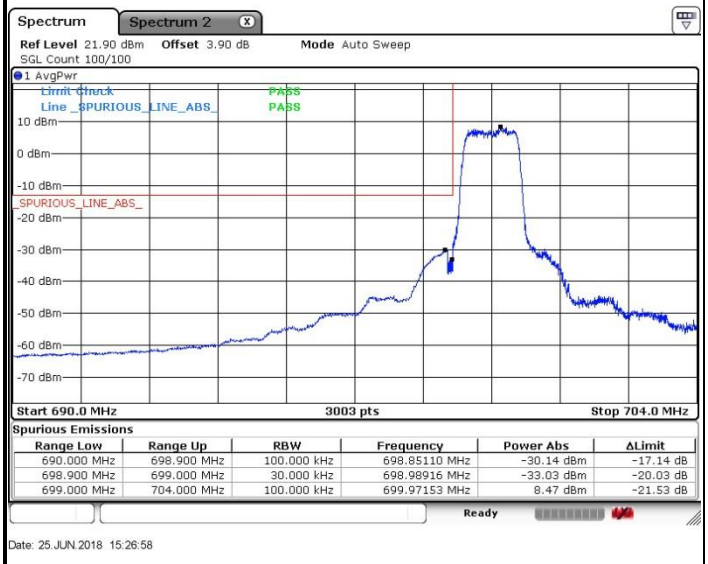
Date: 25.JUN.2018 15:27:40

Highest Band Edge / 1 RB



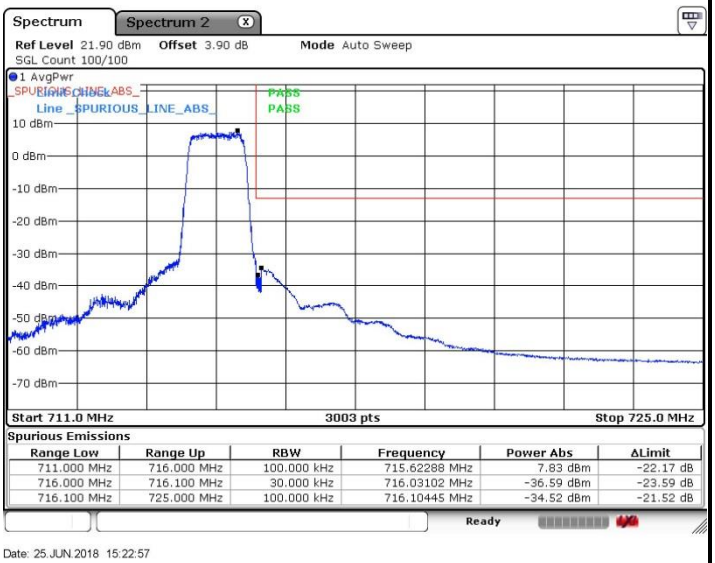
Date: 25.JUN.2018 15:23:39

Lowest Band Edge / Full RB

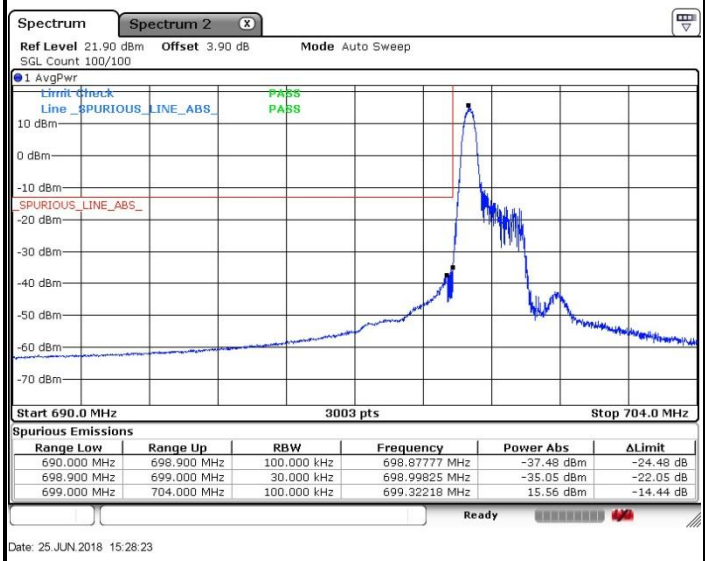
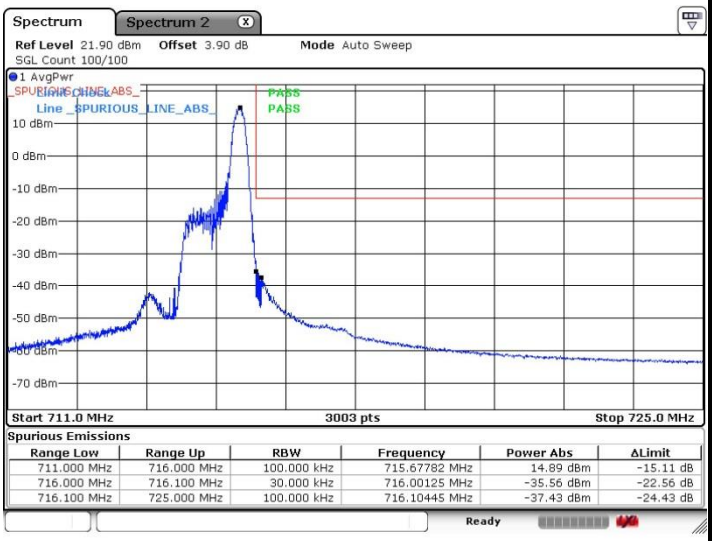
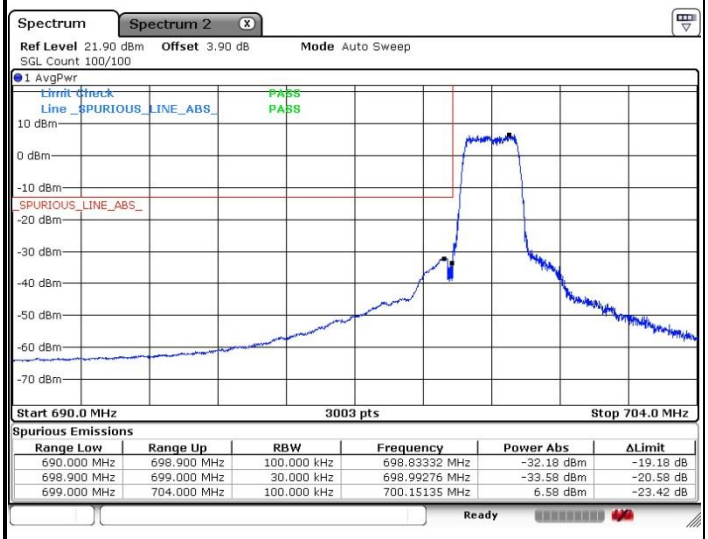
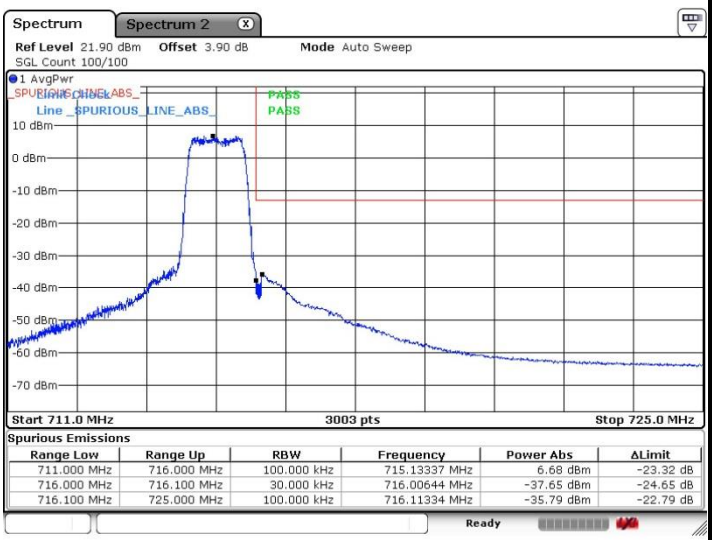


Date: 25.JUN.2018 15:26:58

Highest Band Edge / Full RB



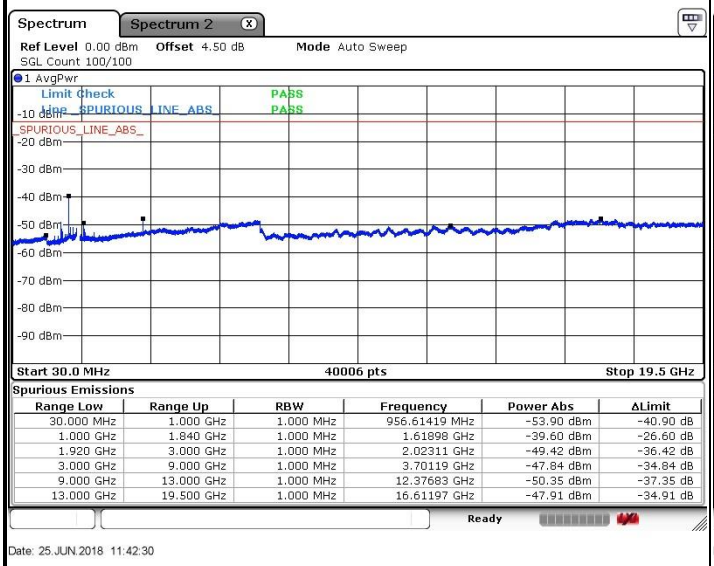
Date: 25.JUN.2018 15:22:57

LTE Band 12 / 5MHz / 16QAM	
Lowest Band Edge / 1RB	**Highest Band Edge / 1 RB**
	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

Conducted Spurious Emission

LTE Band 2 / 5MHz

Lowest Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	956.61419 MHz	-53.90 dBm	-40.90 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.61898 GHz	-39.60 dBm	-26.60 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.02311 GHz	-49.42 dBm	-36.42 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70119 GHz	-47.84 dBm	-34.84 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.37683 GHz	-50.35 dBm	-37.35 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.61197 GHz	-47.91 dBm	-34.91 dB

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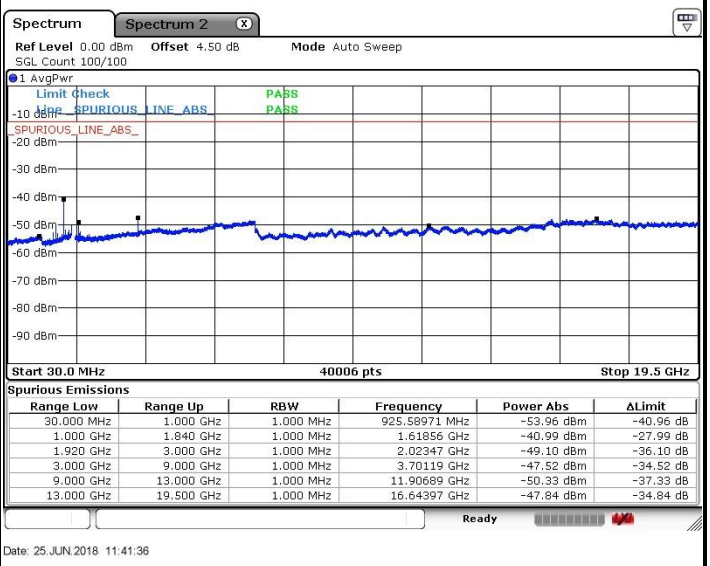
Lowest Channel / 16QAM



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	925.58971 MHz	-53.96 dBm	-40.96 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.61856 GHz	-40.99 dBm	-27.99 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.02347 GHz	-49.10 dBm	-36.10 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70119 GHz	-47.52 dBm	-34.52 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.90689 GHz	-50.33 dBm	-37.33 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.64397 GHz	-47.84 dBm	-34.84 dB

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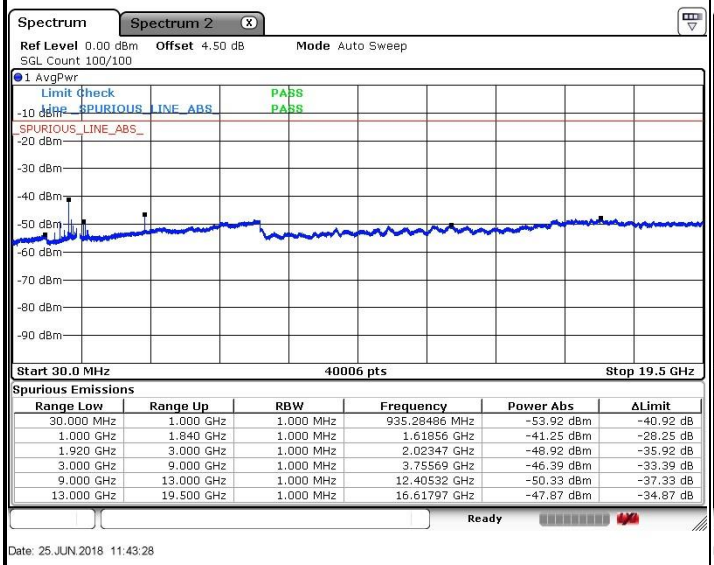
Middle Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	935.28486 MHz	-53.92 dBm	-40.92 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.61856 GHz	-41.25 dBm	-28.25 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.02347 GHz	-48.92 dBm	-35.92 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75569 GHz	-46.39 dBm	-33.39 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.40532 GHz	-50.33 dBm	-37.33 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.61797 GHz	-47.87 dBm	-34.87 dB

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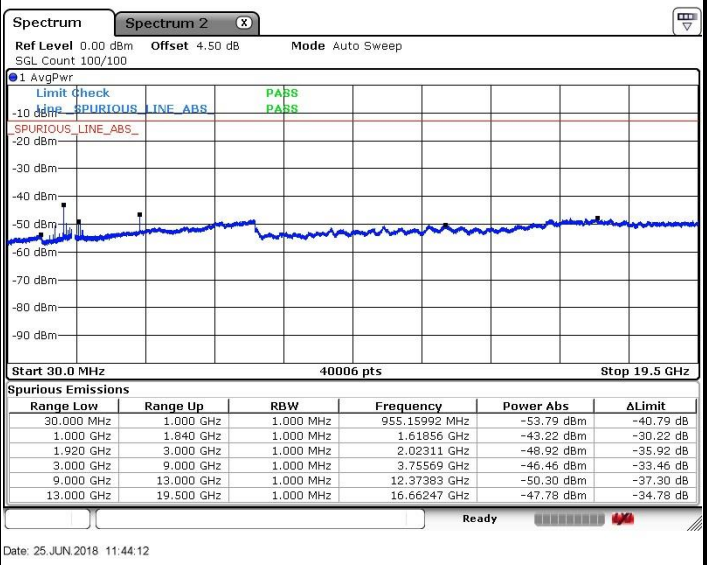
Middle Channel / 16QAM



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	955.15992 MHz	-53.79 dBm	-40.79 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.61856 GHz	-43.22 dBm	-30.22 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.02311 GHz	-48.92 dBm	-35.92 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75569 GHz	-46.46 dBm	-33.46 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.37383 GHz	-50.30 dBm	-37.30 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.66247 GHz	-47.78 dBm	-34.78 dB

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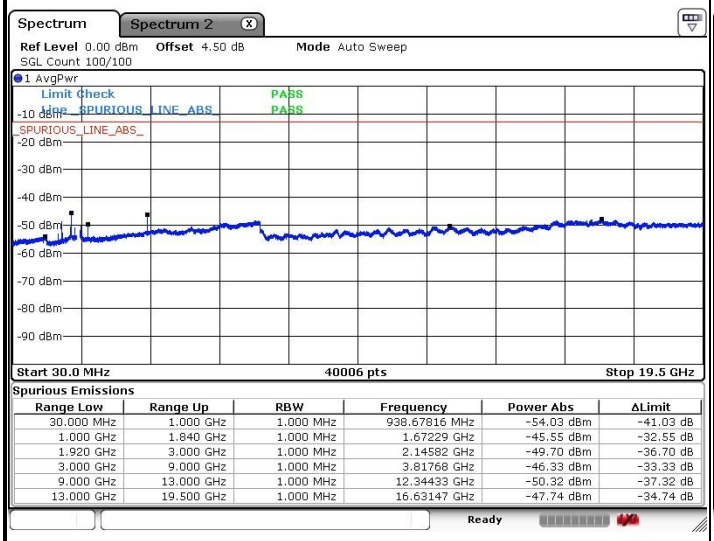
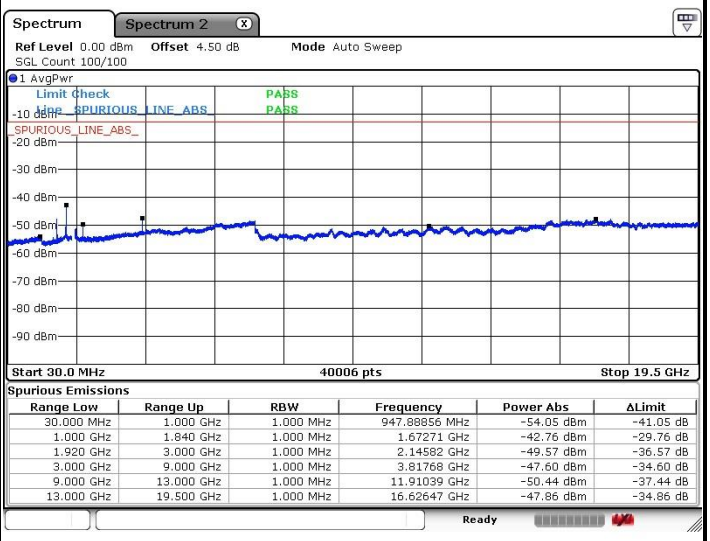
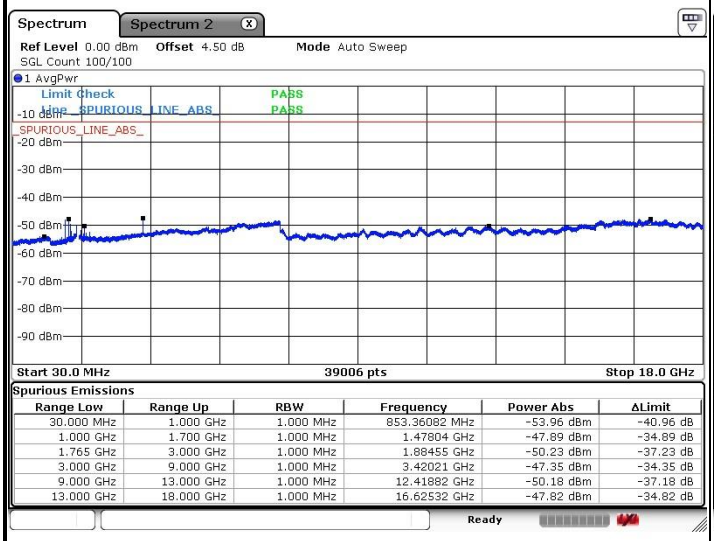
LTE Band 2 / 5MHz	
Highest Channel / QPSK	**Highest Channel / 16QAM**





LTE Band 4 / 5MHz

Lowest Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	853.36082 MHz	-53.96 dBm	-40.96 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.47804 GHz	-47.89 dBm	-34.89 dB
1.765 GHz	3.000 GHz	1.000 MHz	1.88455 GHz	-50.23 dBm	-37.23 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.42021 GHz	-47.35 dBm	-34.35 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.41882 GHz	-50.18 dBm	-37.18 dB
13.000 GHz	18.000 GHz	1.000 MHz	16.62532 GHz	-47.82 dBm	-34.82 dB

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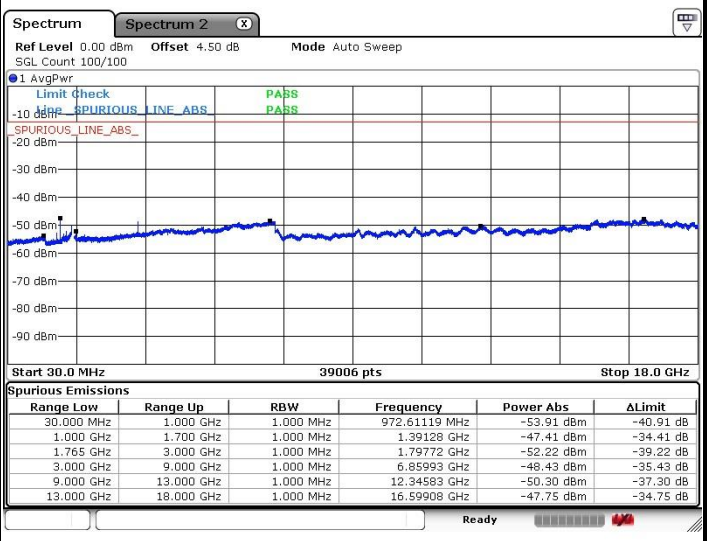
Lowest Channel / 16QAM



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	972.61119 MHz	-53.91 dBm	-40.91 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.39128 GHz	-47.41 dBm	-34.41 dB
1.765 GHz	3.000 GHz	1.000 MHz	1.79772 GHz	-52.22 dBm	-39.22 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.85993 GHz	-48.43 dBm	-35.43 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.34583 GHz	-50.30 dBm	-37.30 dB
13.000 GHz	18.000 GHz	1.000 MHz	16.59908 GHz	-47.75 dBm	-34.75 dB

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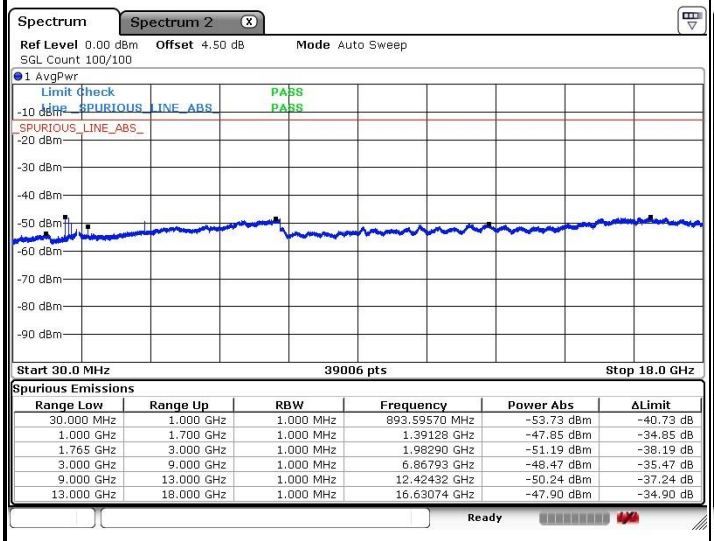
Middle Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	893.59570 MHz	-53.73 dBm	-40.73 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.39128 GHz	-47.85 dBm	-34.85 dB
1.765 GHz	3.000 GHz	1.000 MHz	1.98290 GHz	-51.19 dBm	-38.19 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.86793 GHz	-48.47 dBm	-35.47 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.42432 GHz	-50.24 dBm	-37.24 dB
13.000 GHz	18.000 GHz	1.000 MHz	16.63074 GHz	-47.90 dBm	-34.90 dB

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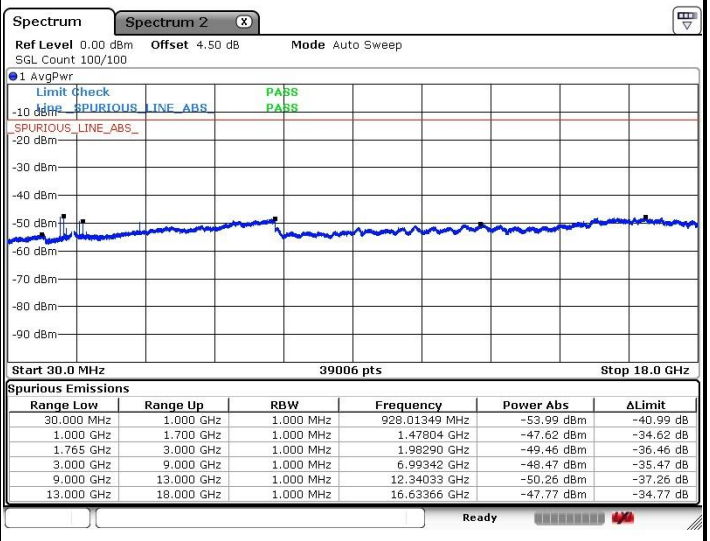
Middle Channel / 16QAM



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	928.01349 MHz	-53.99 dBm	-40.99 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.47804 GHz	-47.62 dBm	-34.62 dB
1.765 GHz	3.000 GHz	1.000 MHz	1.98290 GHz	-49.46 dBm	-36.46 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.99342 GHz	-48.47 dBm	-35.47 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.34033 GHz	-50.26 dBm	-37.26 dB
13.000 GHz	18.000 GHz	1.000 MHz	16.63366 GHz	-47.77 dBm	-34.77 dB

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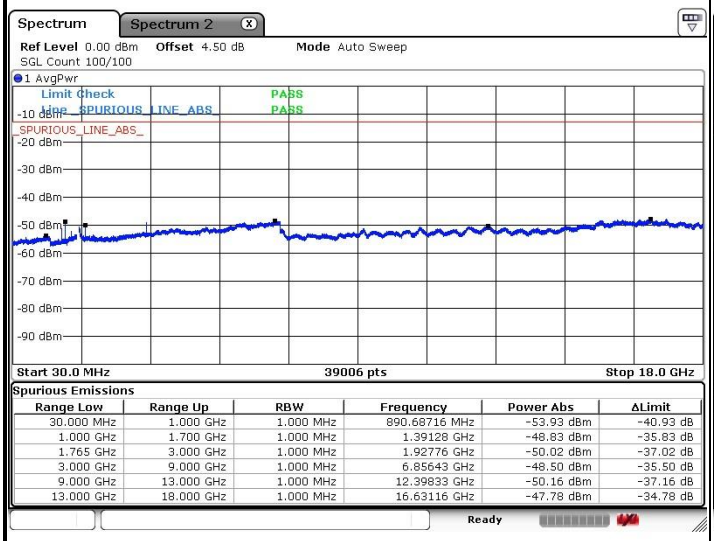
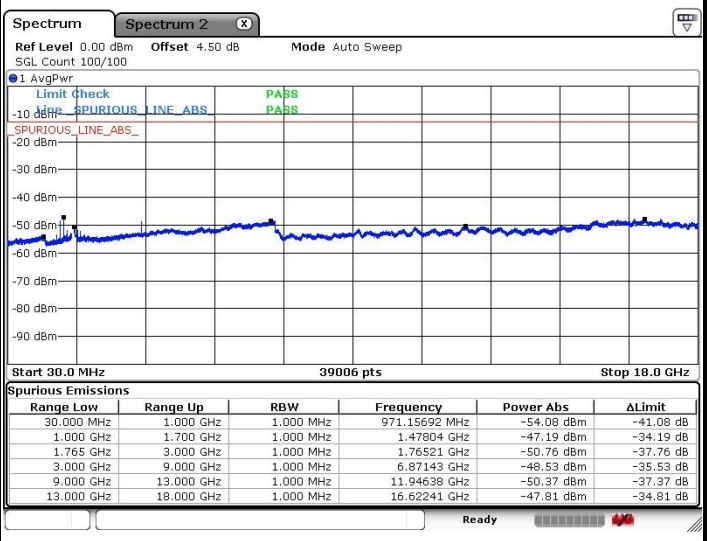
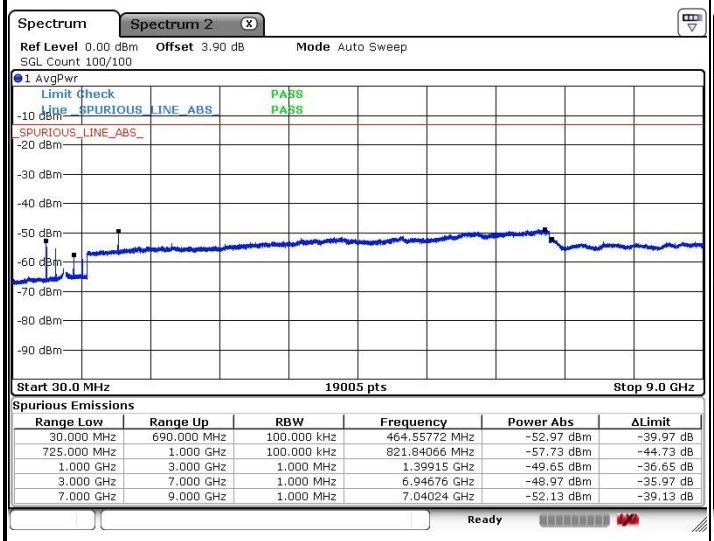
LTE Band 4 / 5MHz	
Highest Channel / QPSK	**Highest Channel / 16QAM**





LTE Band 12 / 5MHz

Lowest Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	464.55772 MHz	-52.97 dBm	-39.97 dB
725.000 MHz	1.000 GHz	100.000 kHz	821.84066 MHz	-57.73 dBm	-44.73 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.39915 GHz	-49.65 dBm	-36.65 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.94676 GHz	-48.97 dBm	-35.97 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.04024 GHz	-52.13 dBm	-39.13 dB

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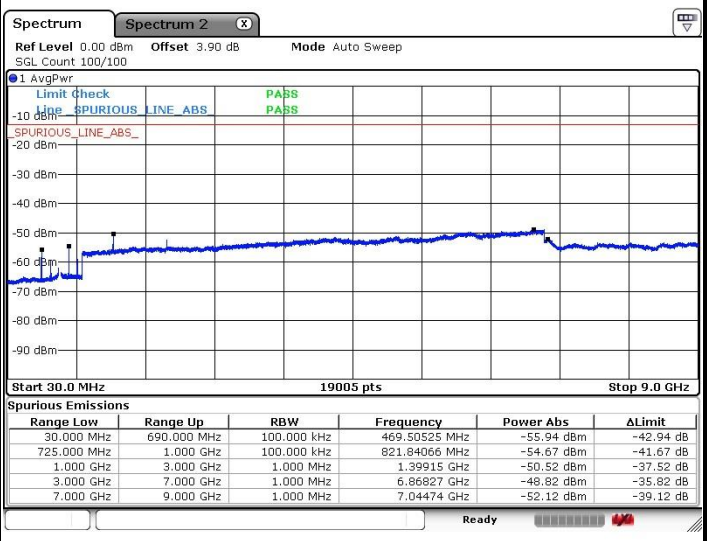
Lowest Channel / 16QAM



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	469.50525 MHz	-55.94 dBm	-42.94 dB
725.000 MHz	1.000 GHz	100.000 kHz	821.84066 MHz	-54.67 dBm	-41.67 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.39915 GHz	-50.52 dBm	-37.52 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.86827 GHz	-48.82 dBm	-35.82 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.04474 GHz	-52.12 dBm	-39.12 dB

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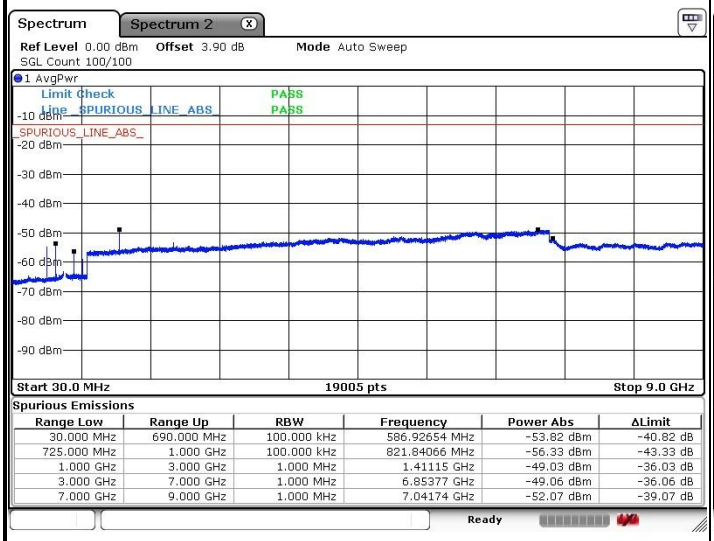
Middle Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	586.92654 MHz	-53.82 dBm	-40.82 dB
725.000 MHz	1.000 GHz	100.000 kHz	821.84066 MHz	-56.33 dBm	-43.33 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.41115 GHz	-49.03 dBm	-36.03 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.85377 GHz	-49.06 dBm	-36.06 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.04174 GHz	-52.07 dBm	-39.07 dB

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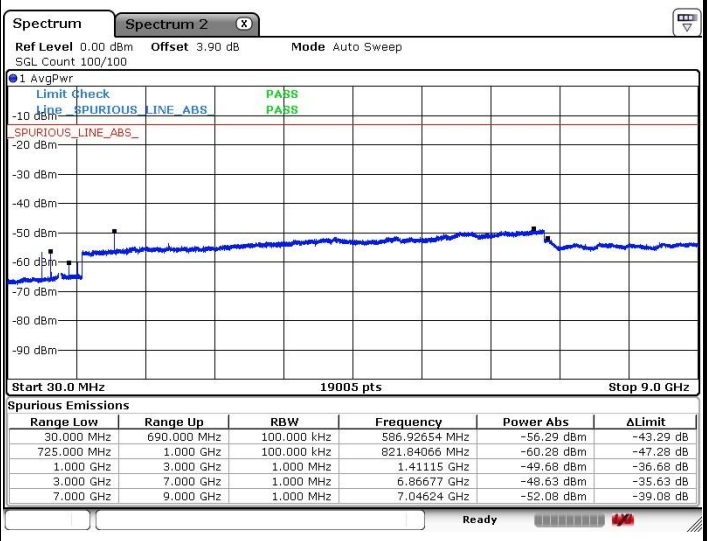
Middle Channel / 16QAM



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	586.92654 MHz	-56.29 dBm	-43.29 dB
725.000 MHz	1.000 GHz	100.000 kHz	821.84066 MHz	-60.28 dBm	-47.28 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.41115 GHz	-49.68 dBm	-36.68 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.86677 GHz	-48.63 dBm	-35.63 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.04624 GHz	-52.08 dBm	-39.08 dB

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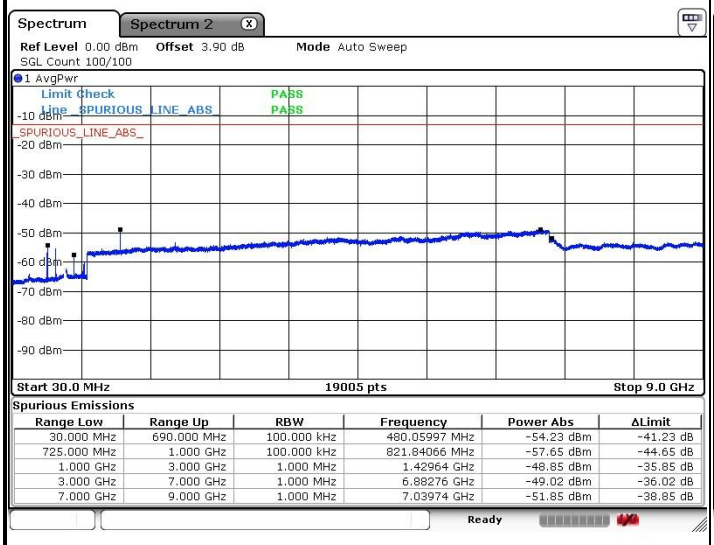
LTE Band 12 / 5MHz	
Highest Channel / QPSK	**Highest Channel / 16QAM**



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	480.05997 MHz	-54.23 dBm	-41.23 dB
725.000 MHz	1.000 GHz	100.000 kHz	821.84066 MHz	-57.65 dBm	-44.65 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.42964 GHz	-48.85 dBm	-35.85 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.88276 GHz	-49.02 dBm	-36.02 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.03974 GHz	-51.85 dBm	-38.85 dB

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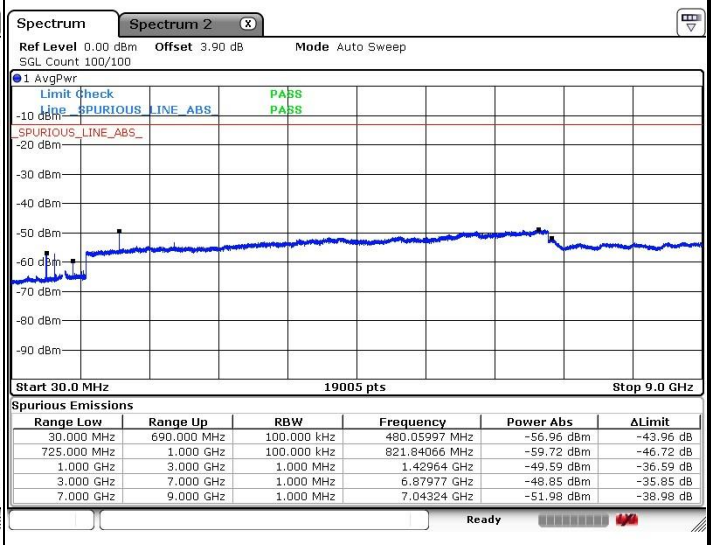

Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	480.05997 MHz	-56.96 dBm	-43.96 dB
725.000 MHz	1.000 GHz	100.000 kHz	821.84066 MHz	-59.72 dBm	-46.72 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.42964 GHz	-49.59 dBm	-36.59 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.87977 GHz	-48.85 dBm	-35.85 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.04324 GHz	-51.98 dBm	-38.98 dB

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Frequency Stability

Test Conditions		LTE Band 2 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 5MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0006	PASS
40	Normal Voltage	0.0045	
30	Normal Voltage	0.0036	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0020	
0	Normal Voltage	0.0054	
-10	Normal Voltage	0.0007	
-20	Normal Voltage	0.0020	
-30	Normal Voltage	0.0015	
20	Maximum Voltage	0.0033	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0041	

Note:

1. Normal Voltage =3.8 V.；Battery End Point (BEP) =3.3 V.；Maximum Voltage =4.2 V.

2. Note: The frequency fundamental emissions stay within the authorized frequency block.

Test Conditions		LTE Band 4 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 5MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0027	PASS
40	Normal Voltage	0.0008	
30	Normal Voltage	0.0143	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0109	
0	Normal Voltage	0.0151	
-10	Normal Voltage	0.0139	
-20	Normal Voltage	0.0149	
-30	Normal Voltage	0.0126	
20	Maximum Voltage	0.0016	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0122	

Note:

1. Normal Voltage =3.8 V.；Battery End Point (BEP) =3.3 V.；Maximum Voltage =4.2 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

Test Conditions		LTE Band 12 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 5MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0008	PASS
40	Normal Voltage	0.0010	
30	Normal Voltage	0.0001	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0007	
0	Normal Voltage	0.0045	
-10	Normal Voltage	0.0072	
-20	Normal Voltage	0.0004	
-30	Normal Voltage	0.0003	
20	Maximum Voltage	0.0048	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0003	

Note:

1. Normal Voltage =3.8 V.；Battery End Point (BEP) =3.3 V.；Maximum Voltage =4.2 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

LTE Band 2 / 10MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3702	-57.75	-13	-44.75	-61.25	3.60	7.10	H
	5553	-48.46	-13	-35.46	-54.44	4.42	10.40	H
	7404	-47.29	-13	-34.29	-54.10	5.13	11.94	H
	3702	-55.66	-13	-42.66	-59.16	3.60	7.10	V
	5553	-49.44	-13	-36.44	-55.42	4.42	10.40	V
	7404	-40.25	-13	-27.25	-47.06	5.13	11.94	V
Middle	3750	-58.57	-13	-45.57	-62.07	3.60	7.10	H
	5628	-46.77	-13	-33.77	-52.75	4.42	10.40	H
	7503	-40.85	-13	-27.85	-47.66	5.13	11.94	H
	3750	-58.87	-13	-45.87	-62.37	3.60	7.10	V
	5628	-46.89	-13	-33.89	-52.87	4.42	10.40	V
	7503	-43.69	-13	-30.69	-50.50	5.13	11.94	V
Highest	3801	-58.24	-13	-45.24	-61.74	3.60	7.10	H
	5703	-49.43	-13	-36.43	-55.41	4.42	10.40	H
	7602	-54.09	-13	-41.09	-60.90	5.13	11.94	H
	3801	-59.06	-13	-46.06	-62.56	3.60	7.10	V
	5703	-48.42	-13	-35.42	-54.40	4.42	10.40	V
	7602	-47.44	-13	-34.44	-54.25	5.13	11.94	V

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

LTE Band 4 / 20MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3423	-49.68	-13	-36.68	-53.90	3.37	7.59	H
	5133	-48.92	-13	-35.92	-54.11	4.20	9.39	H
	6846	-48.75	-13	-35.75	-55.50	4.92	11.67	H
	3423	-50.17	-13	-37.17	-54.39	3.37	7.59	V
	5133	-44.26	-13	-31.26	-49.45	4.20	9.39	V
	6846	-45.29	-13	-32.29	-52.04	4.92	11.67	V
Middle	3447	-49.65	-13	-36.65	-53.87	3.37	7.59	H
	5172	-49.17	-13	-36.17	-54.36	4.20	9.39	H
	6894	-47.59	-13	-34.59	-54.34	4.92	11.67	H
	3447	-50.92	-13	-37.92	-55.14	3.37	7.59	V
	5172	-42.80	-13	-29.80	-47.99	4.20	9.39	V
	6894	-42.36	-13	-29.36	-49.11	4.92	11.67	V
Highest	3474	-47.91	-13	-34.91	-52.13	3.37	7.59	H
	5211	-49.34	-13	-36.34	-54.53	4.20	9.39	H
	6948	-51.00	-13	-38.00	-57.75	4.92	11.67	H
	3474	-48.61	-13	-35.61	-52.83	3.37	7.59	V
	5211	-43.22	-13	-30.22	-48.41	4.20	9.39	V
	6948	-45.16	-13	-32.16	-51.91	4.92	11.67	V

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

LTE Band 12 / 5MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1398	-62.83	-13	-49.83	-63.18	2.08	4.58	H
	2098	-59.97	-13	-46.97	-61.36	2.57	6.10	H
	2797	-59.00	-13	-46.00	-60.90	2.98	7.03	H
	1400	-62.65	-13	-49.65	-63.00	2.08	4.58	V
	2098	-60.42	-13	-47.42	-61.81	2.57	6.10	V
	2796	-58.91	-13	-45.91	-60.81	2.98	7.03	V
Middle	1410	-61.48	-13	-48.48	-61.83	2.08	4.58	H
	2116	-58.92	-13	-45.92	-60.31	2.57	6.10	H
	2820	-59.65	-13	-46.65	-61.55	2.98	7.03	H
	1410	-62.71	-13	-49.71	-63.06	2.08	4.58	V
	2116	-60.04	-13	-47.04	-61.43	2.57	6.10	V
	2820	-59.46	-13	-46.46	-61.36	2.98	7.03	V
Highest	1423	-61.72	-13	-48.72	-62.07	2.08	4.58	H
	2134	-60.03	-13	-47.03	-61.42	2.57	6.10	H
	2845	-58.70	-13	-45.70	-60.60	2.98	7.03	H
	1424	-61.72	-13	-48.72	-62.07	2.08	4.58	V
	2134	-60.13	-13	-47.13	-61.52	2.57	6.10	V
	2845	-58.67	-13	-45.67	-60.57	2.98	7.03	V

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