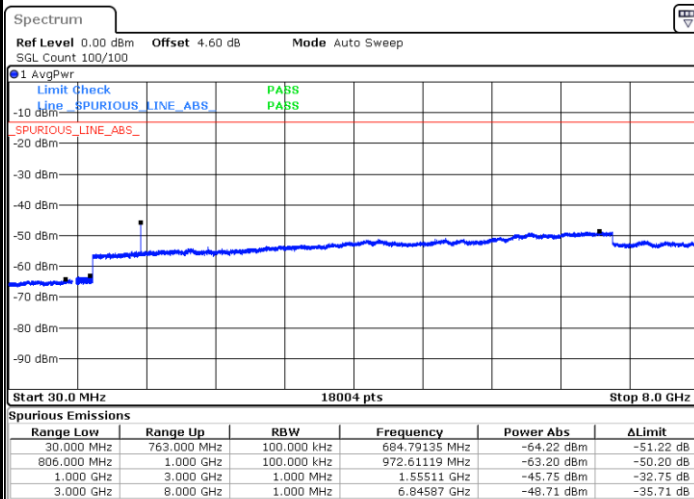




Conducted Spurious Emission

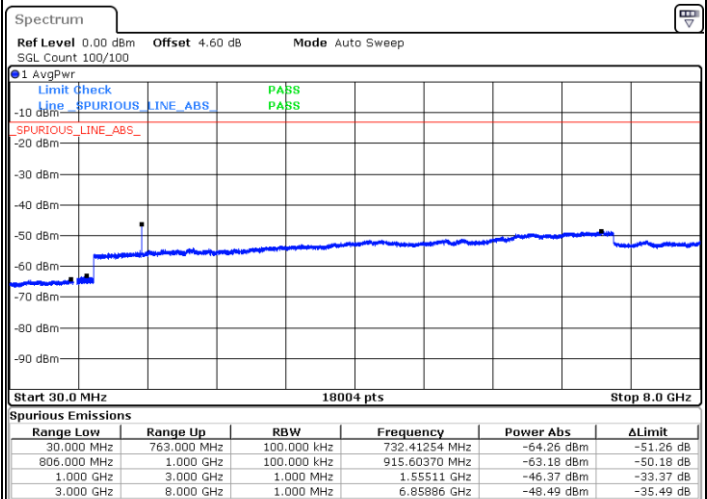
LTE Band 13 / 5MHz

Lowest Channel / QPSK



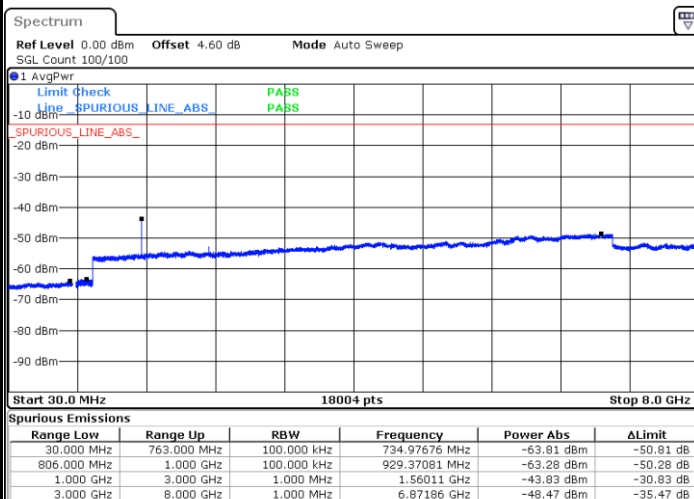
Date: 3 JAN 2020 00:19:48

Lowest Channel / 16QAM



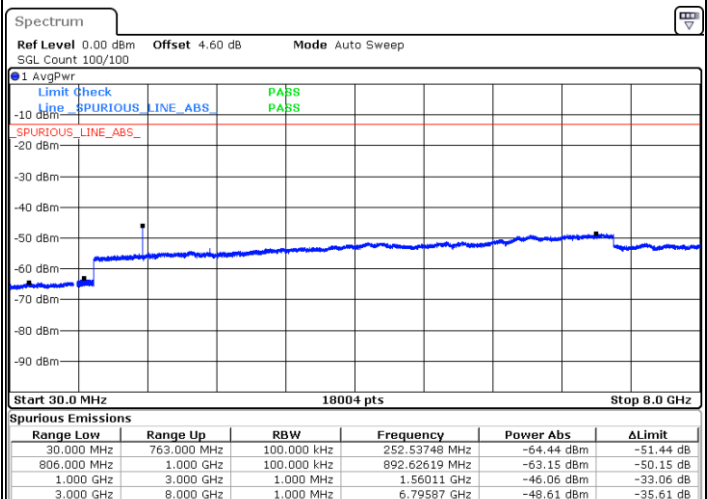
Date: 3 JAN 2020 00:18:54

Middle Channel / QPSK



Date: 3 JAN 2020 00:21:22

Middle Channel / 16QAM

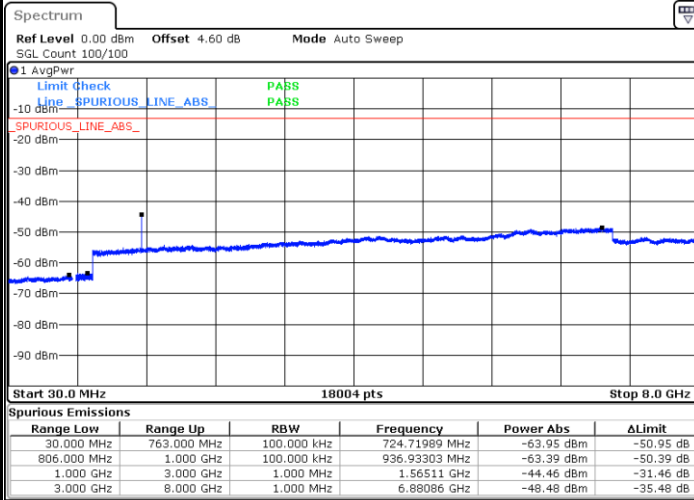


Date: 3 JAN 2020 00:22:16



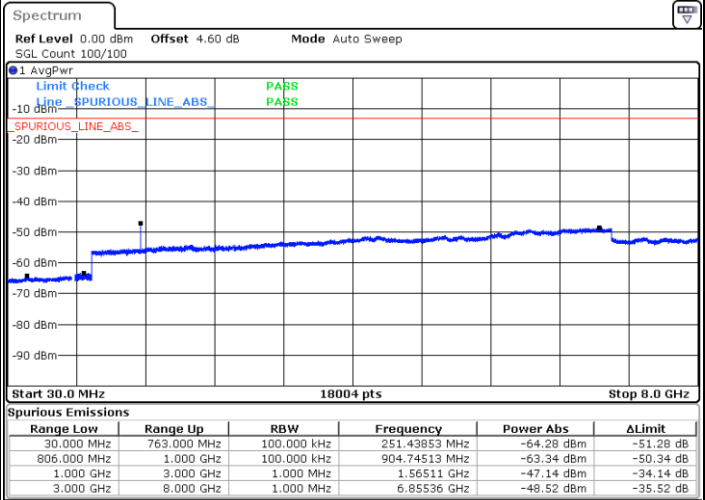
LTE Band 13 / 5MHz

Highest Channel / QPSK



Date: 3 JAN 2020 00:31:15

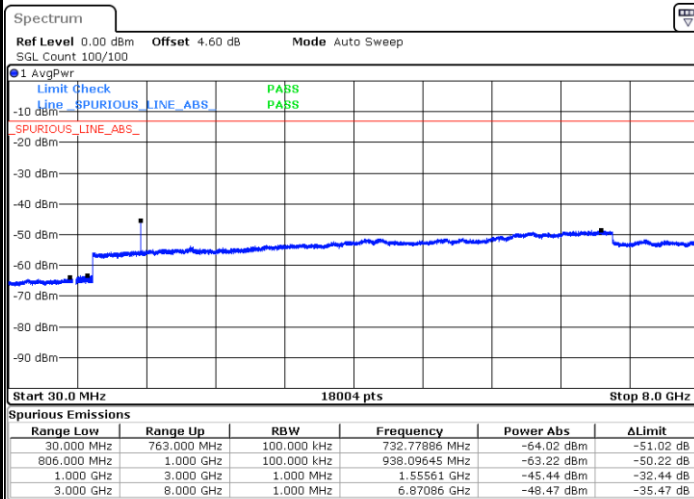
Highest Channel / 16QAM



Date: 3 JAN 2020 00:30:21

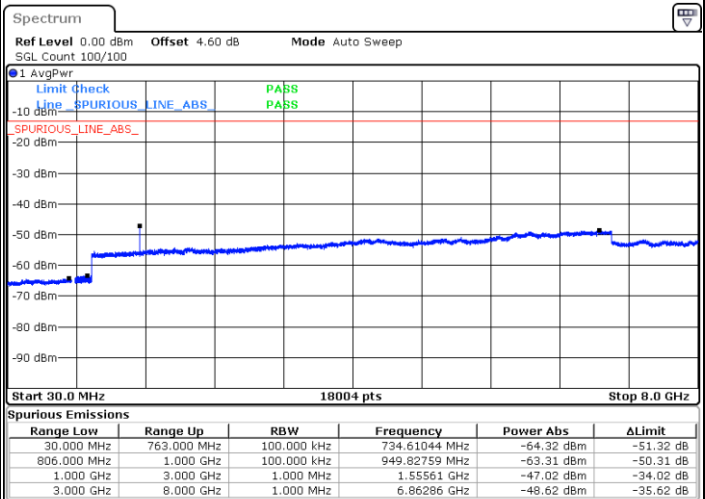
LTE Band 13 / 10MHz

Middle Channel / QPSK



Date: 3 JAN 2020 00:32:09

Middle Channel / 16QAM



Date: 3 JAN 2020 00:33:03

Frequency Stability

Test Conditions		LTE Band 13 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0016	PASS
40	Normal Voltage	0.0012	
30	Normal Voltage	0.0005	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0026	
0	Normal Voltage	0.0022	
-10	Normal Voltage	0.0011	
-20	Normal Voltage	0.0017	
-30	Normal Voltage	0.0006	
20	Maximum Voltage	0.0018	
20	Normal Voltage	0.0006	
20	Battery End Point	0.0013	

Note:

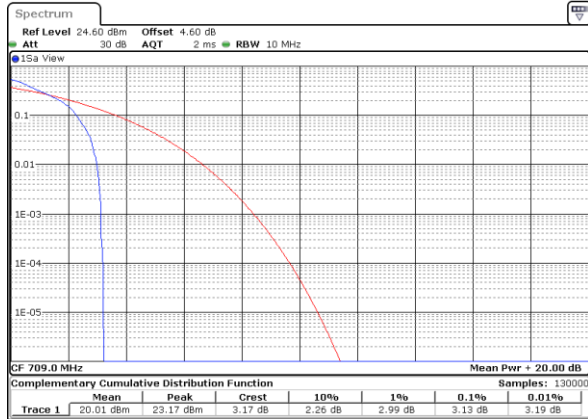
1. Normal Voltage =13.2 V. ; Battery End Point (BEP) =10.5 V. ; Maximum Voltage =33.1 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



LTE Band 17

Peak-to-Average Ratio

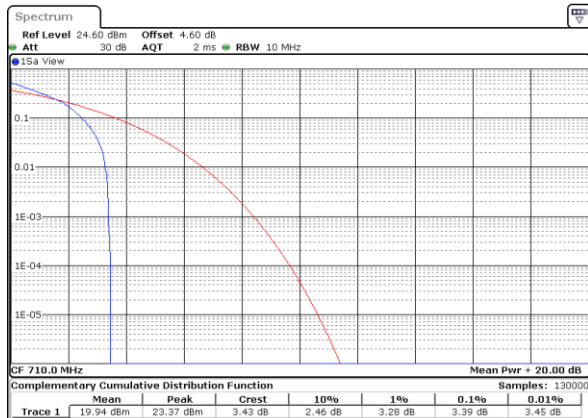
Mode	LTE Band 17 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.13	4.75	4.09	6.00	PASS
Middle CH	3.39	4.64	4.29	6.20	
Highest CH	3.54	4.49	5.07	6.23	

LTE Band 17 / 10MHz / QPSK
Lowest Channel / 1RB


Date: 3 JAN 2020 01:30:36

Lowest Channel / Full RB

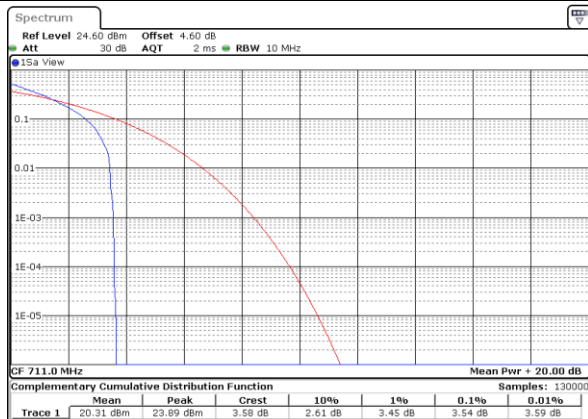

Date: 3 JAN 2020 01:34:18

Middle Channel/ 1RB


Date: 3 JAN 2020 01:30:50

Middle Channel / Full RB


Date: 3 JAN 2020 01:34:34

Highest Channel/ 1RB


Date: 3 JAN 2020 01:31:04

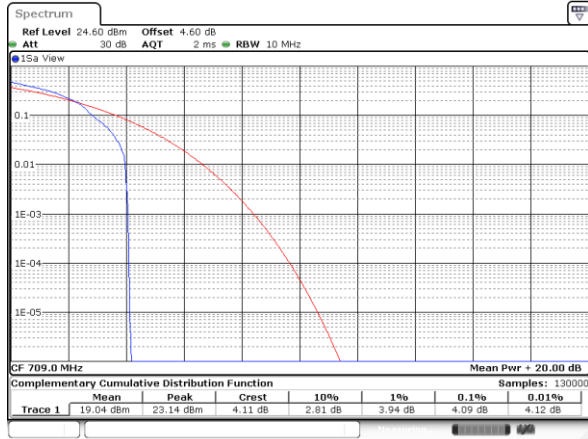
Highest Channel / Full RB


Date: 3 JAN 2020 01:34:59

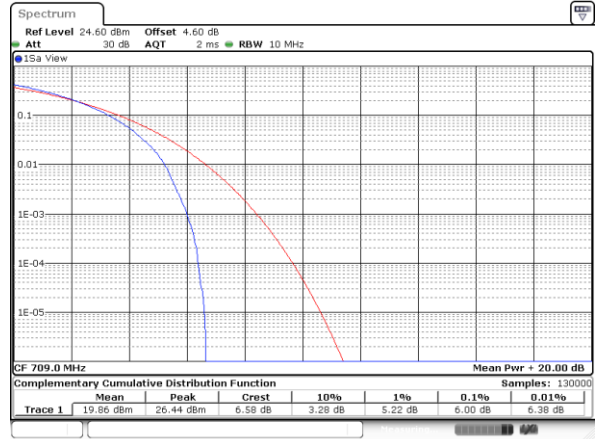


LTE Band 17 / 10MHz / 16QAM

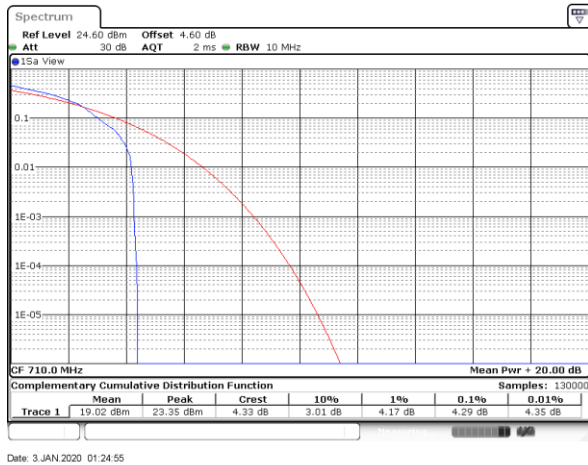
Lowest Channel / 1RB



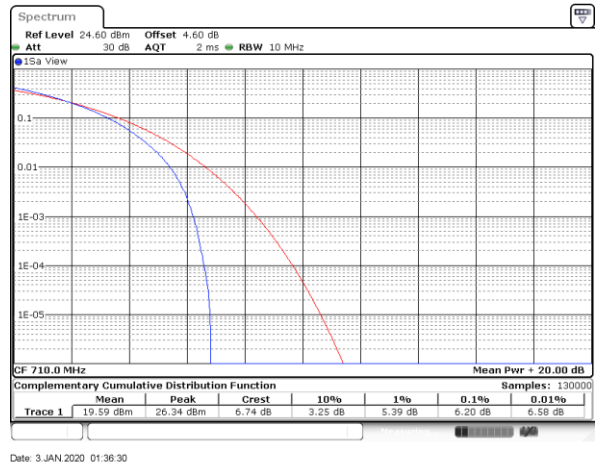
Lowest Channel / Full RB



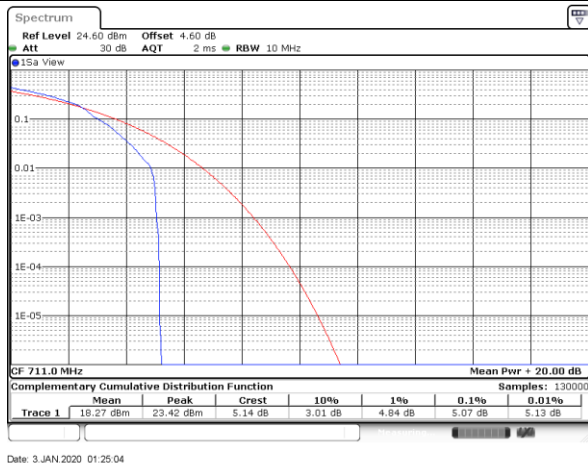
Middle Channel/ 1RB



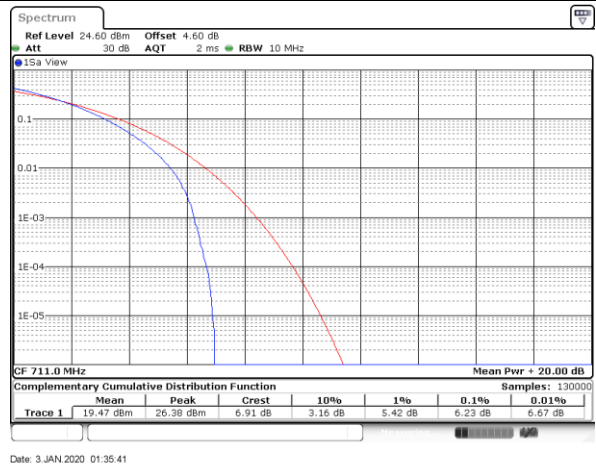
Middle Channel / Full RB



Highest Channel/ 1RB



Highest Channel / Full RB





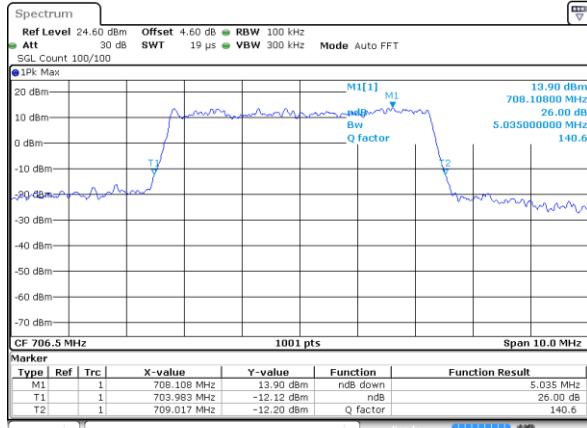
26dB Bandwidth

Mode	LTE Band 17 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH					5.035	4.915	9.75	5.874				
Middle CH					4.845	4.865	9.57	5.634				
Highest CH					4.945	4.945	9.67	5.654				

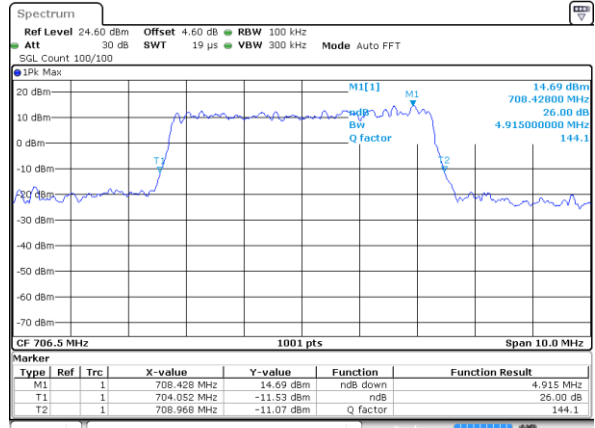


LTE Band 17

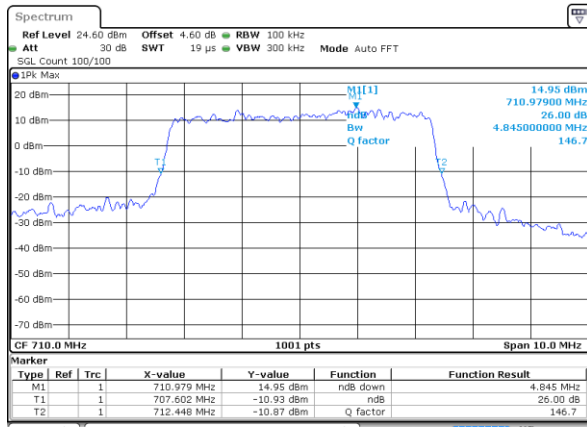
Lowest Channel / 5MHz / QPSK



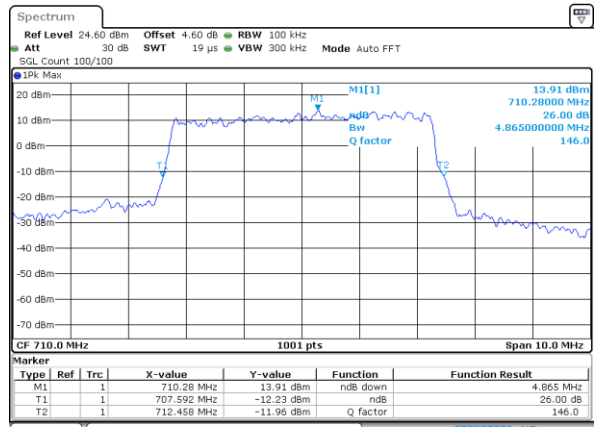
Lowest Channel / 5MHz / 16QAM



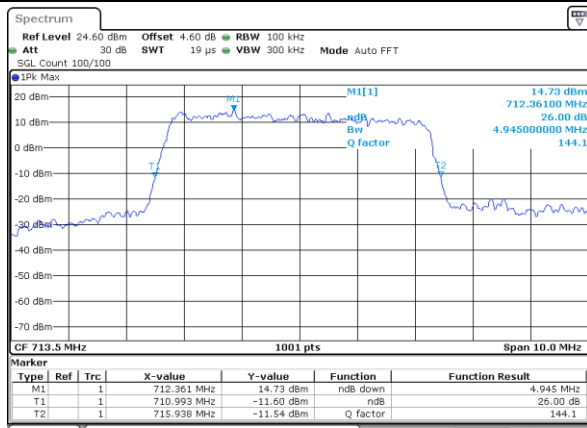
Middle Channel / 5MHz / QPSK



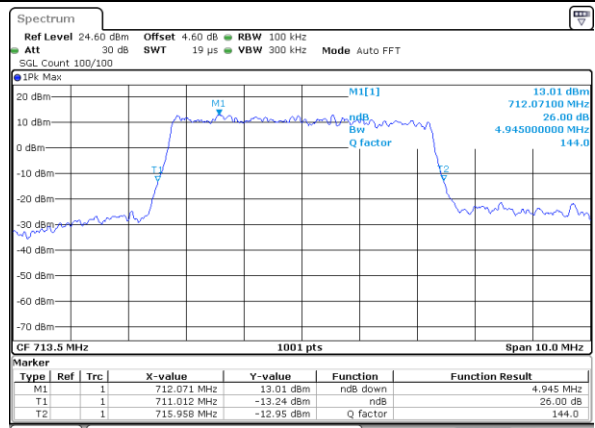
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK



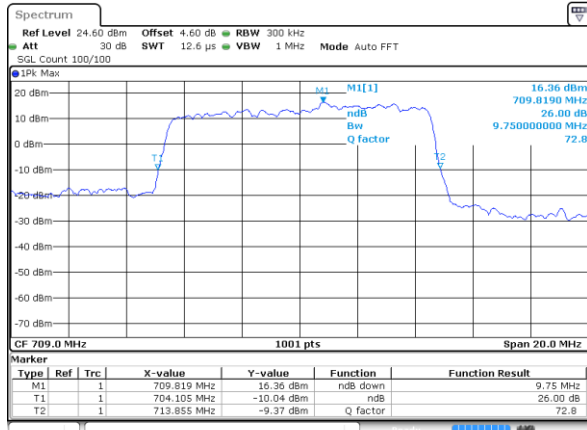
Highest Channel / 5MHz / 16QAM





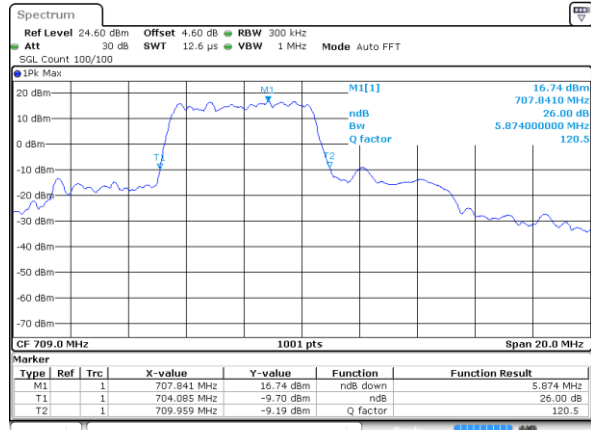
LTE Band 17

Lowest Channel / 10MHz / QPSK



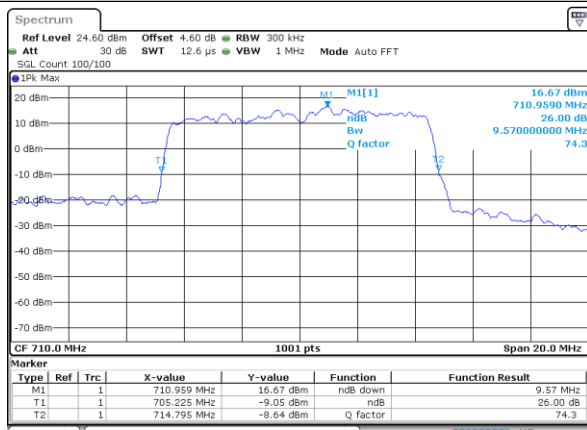
Date: 3 JAN 2020 01:11:45

Lowest Channel / 10MHz / 16QAM



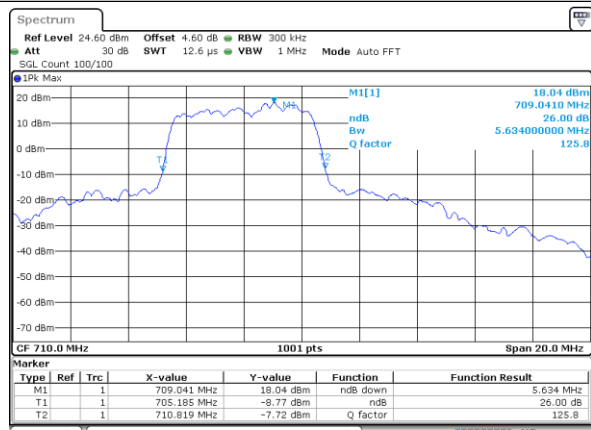
Date: 3 JAN 2020 01:26:47

Middle Channel / 10MHz / QPSK



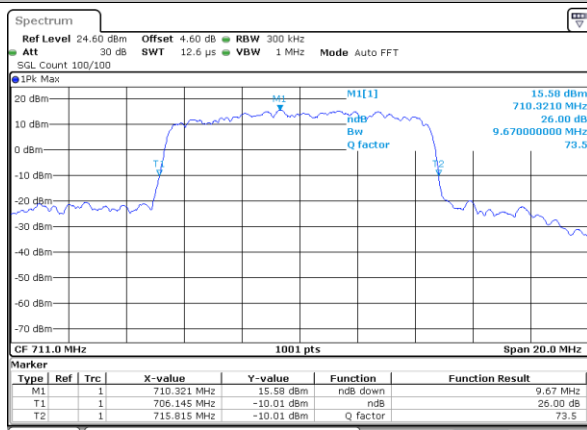
Date: 3 JAN 2020 01:17:15

Middle Channel / 10MHz / 16QAM



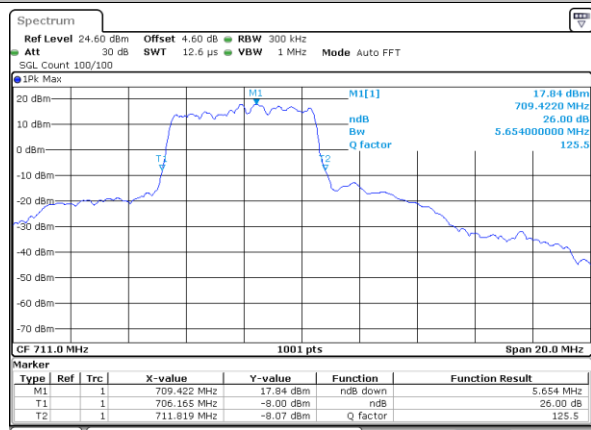
Date: 3 JAN 2020 01:29:02

Highest Channel / 10MHz / QPSK



Date: 3 JAN 2020 01:19:24

Highest Channel / 10MHz / 16QAM



Date: 3 JAN 2020 01:29:24



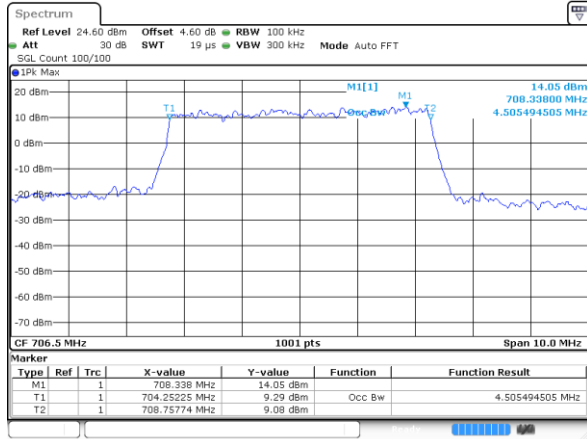
Occupied Bandwidth

Mode	LTE Band 17 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH					4.51	4.52	9.01	5.06				
Middle CH					4.48	4.47	8.97	5.06				
Highest CH					4.52	4.49	8.95	5.02				

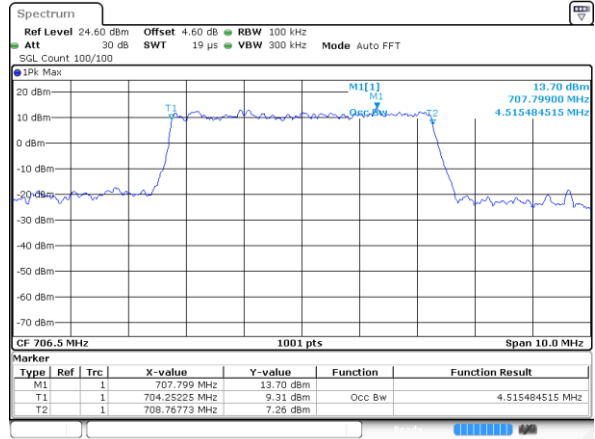


LTE Band 17

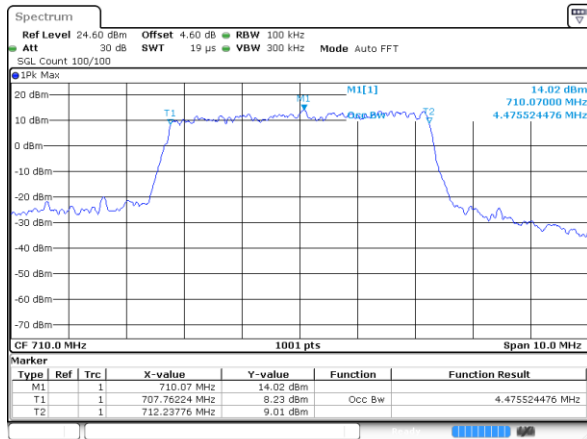
Lowest Channel / 5MHz / QPSK



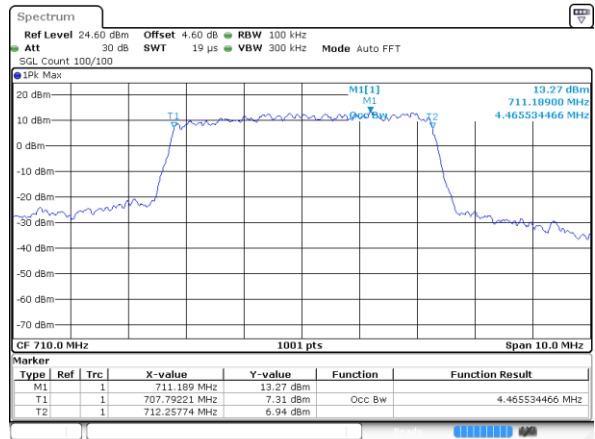
Lowest Channel / 5MHz / 16QAM



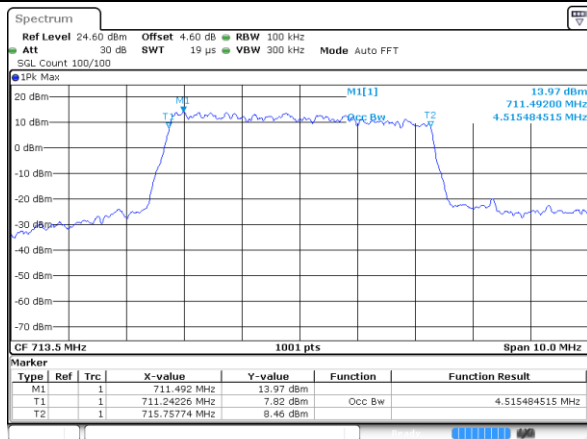
Middle Channel / 5MHz / QPSK



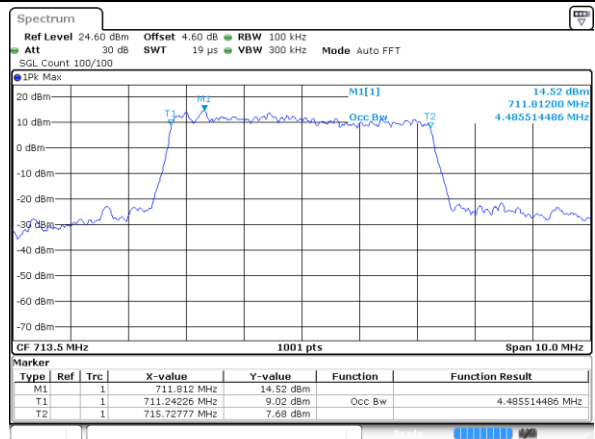
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK



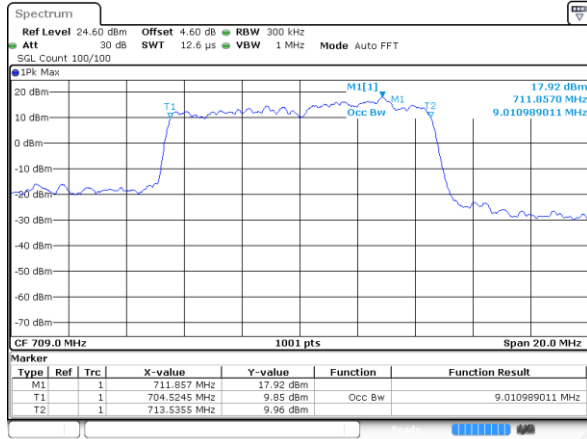
Highest Channel / 5MHz / 16QAM



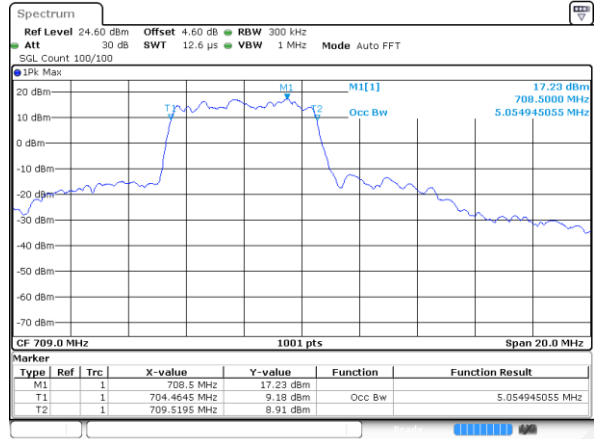


LTE Band 17

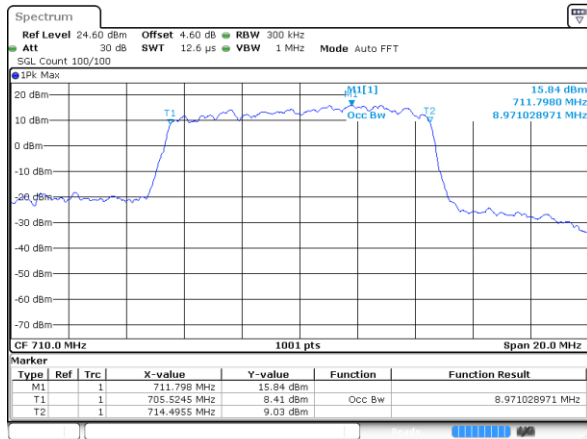
Lowest Channel / 10MHz / QPSK



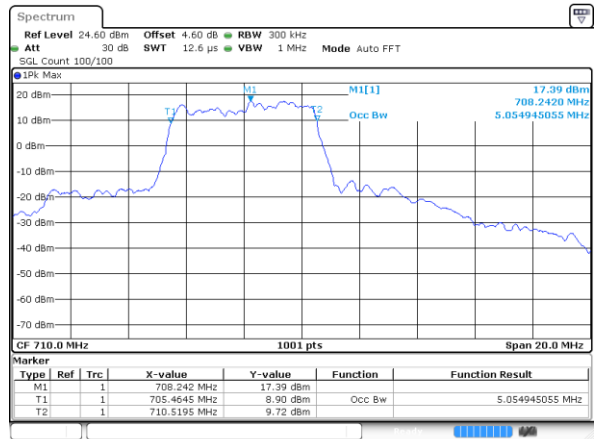
Lowest Channel / 10MHz / 16QAM



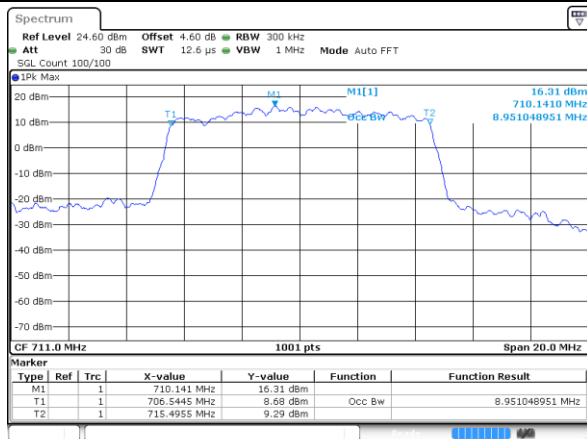
Middle Channel / 10MHz / QPSK



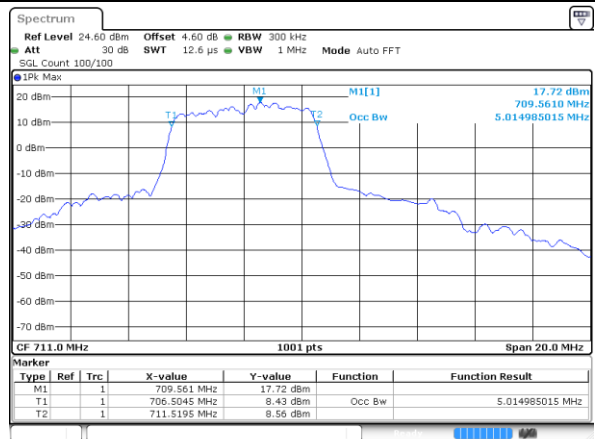
Middle Channel / 10MHz / 16QAM

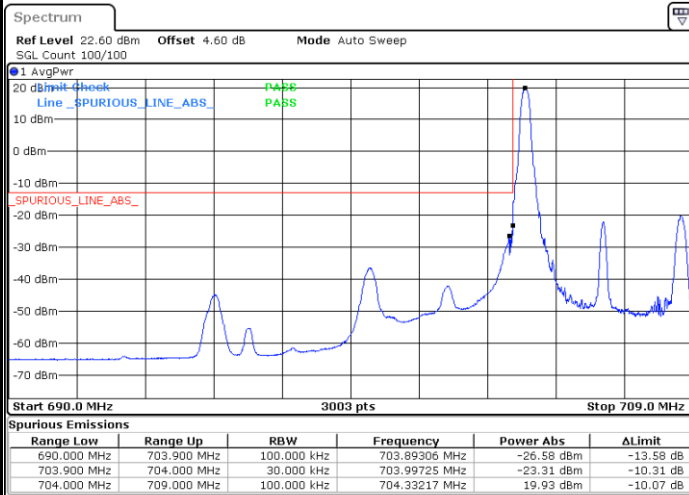
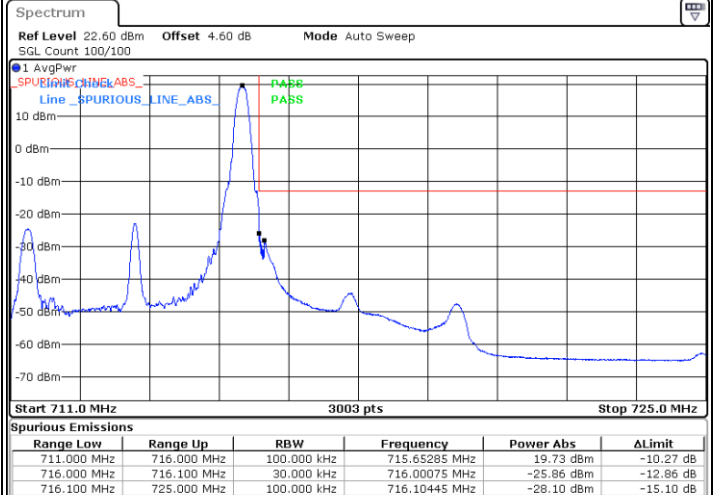
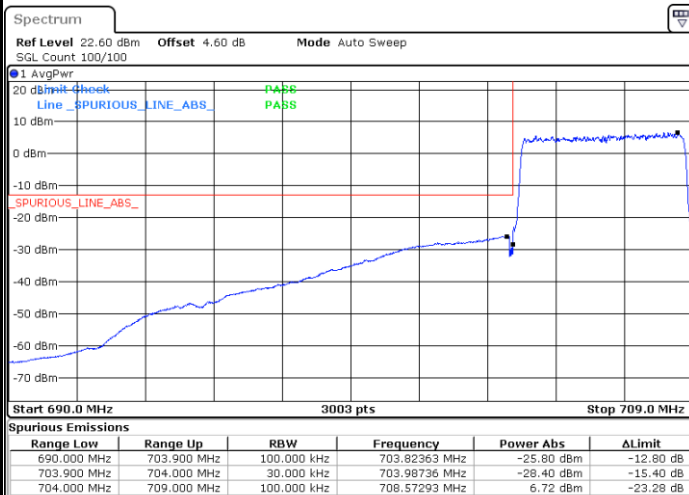
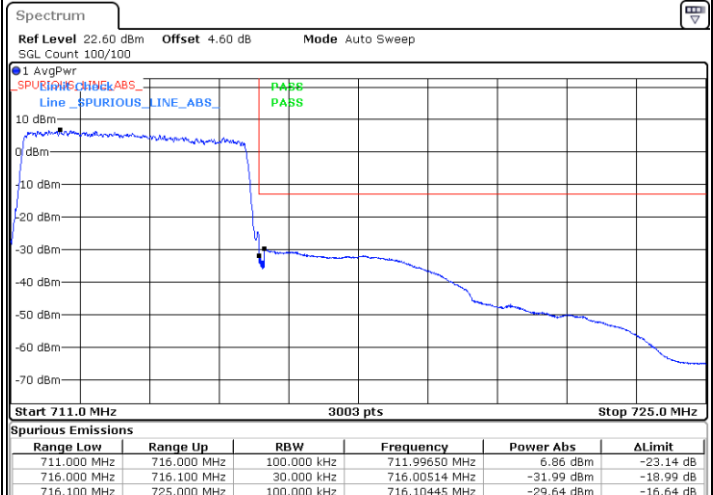


Highest Channel / 10MHz / QPSK



Highest Channel / 10MHz / 16QAM

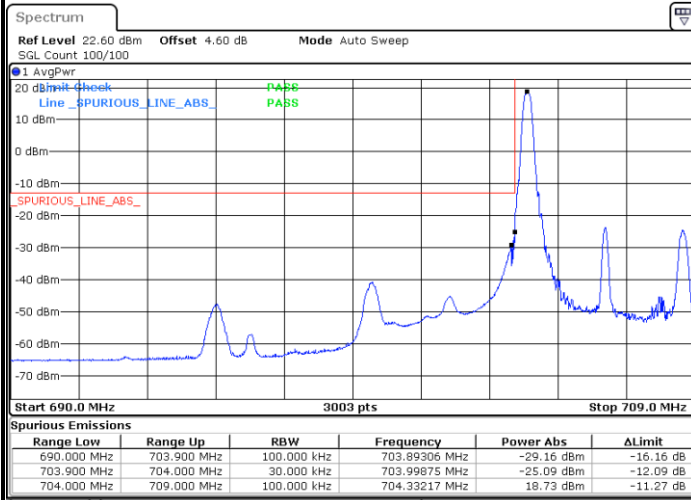


**Conducted Band Edge****LTE Band 17 / 5MHz / QPSK****Lowest Band Edge / 1 RB****Highest Band Edge / 1 RB****Lowest Band Edge / Full RB****Highest Band Edge / Full RB**

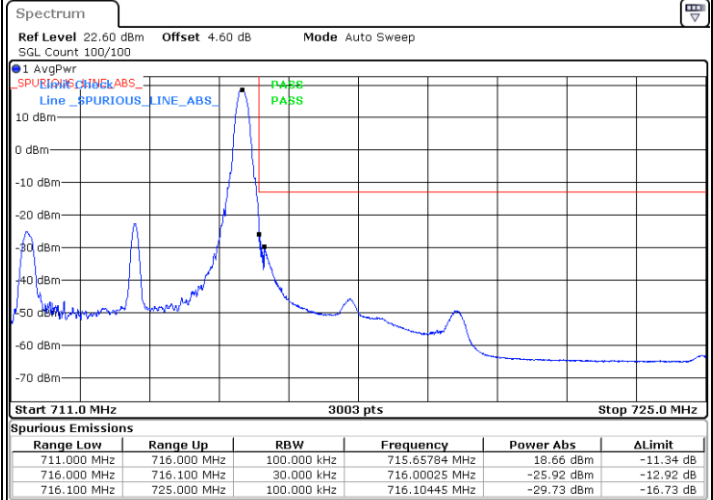


LTE Band 17 / 5MHz / 16QAM

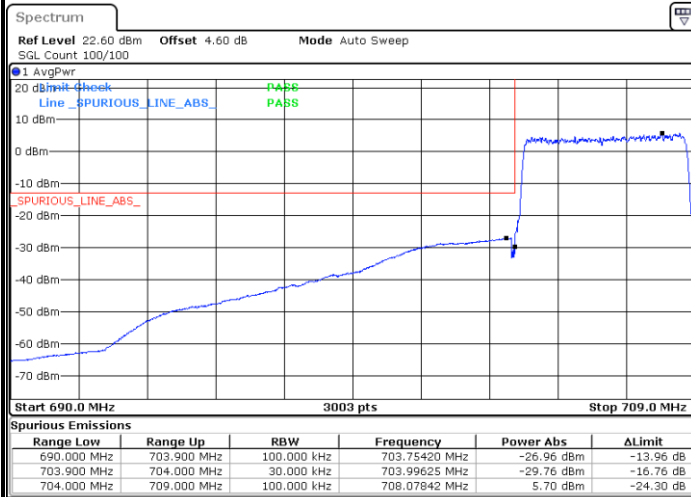
Lowest Band Edge / 1 RB



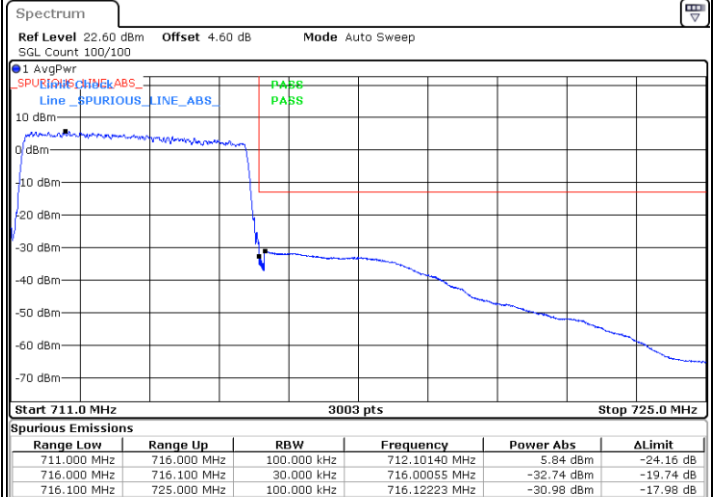
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



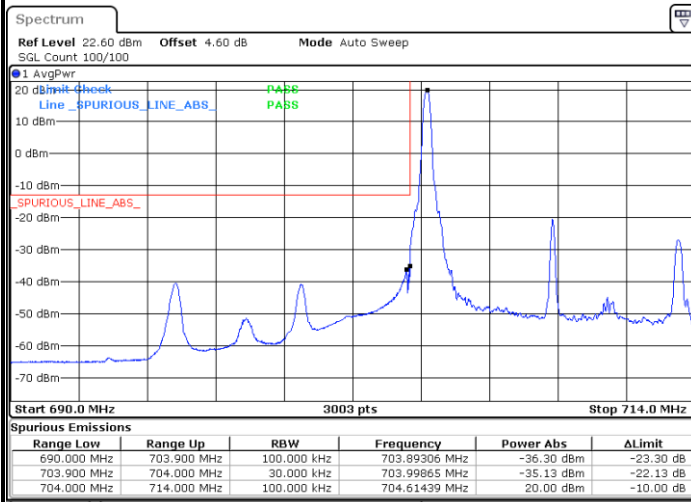
Highest Band Edge / Full RB



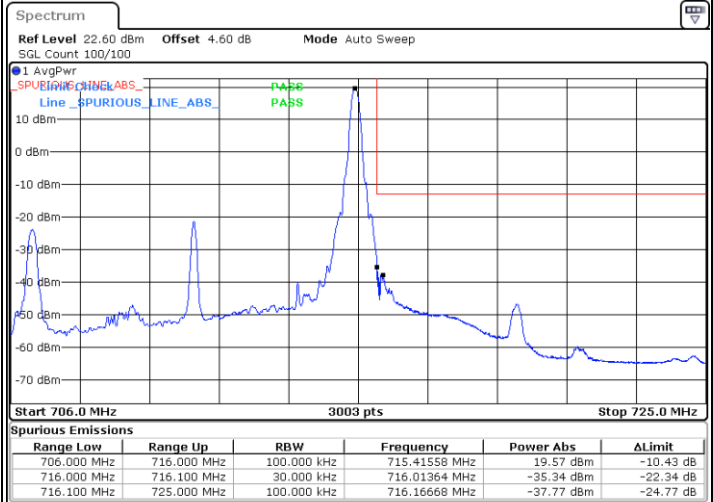


LTE Band 17 / 10MHz / QPSK

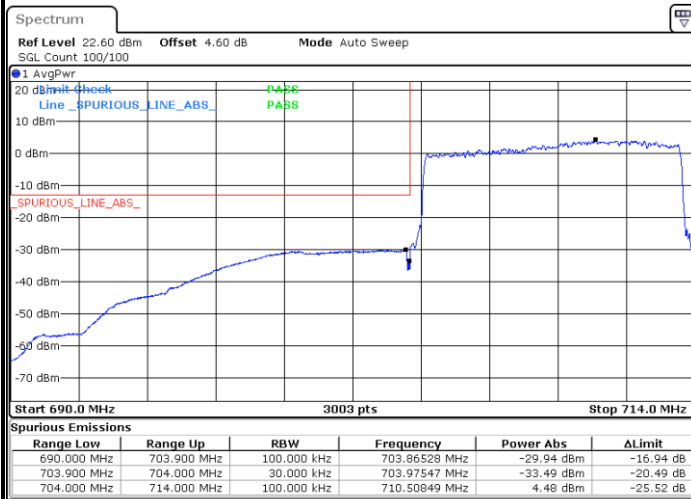
Lowest Band Edge / 1 RB



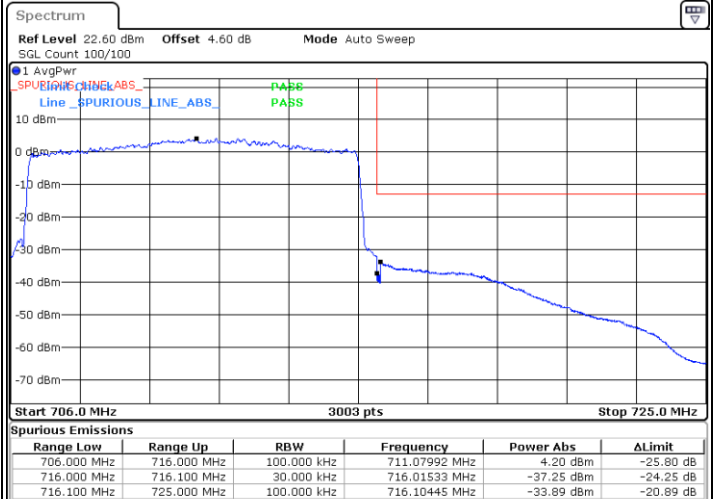
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



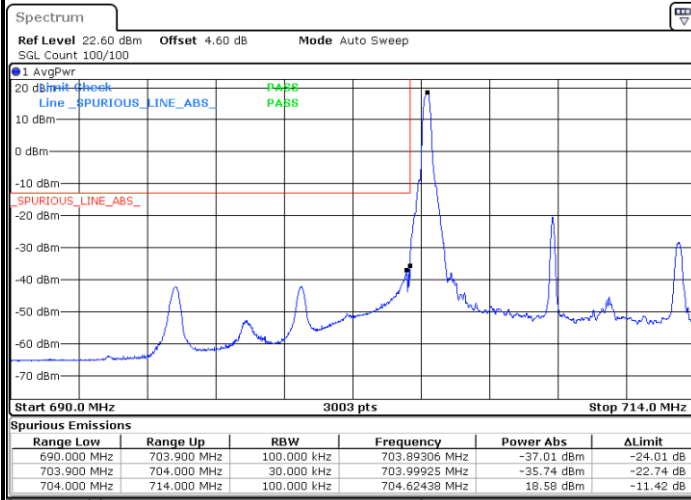
Highest Band Edge / Full RB



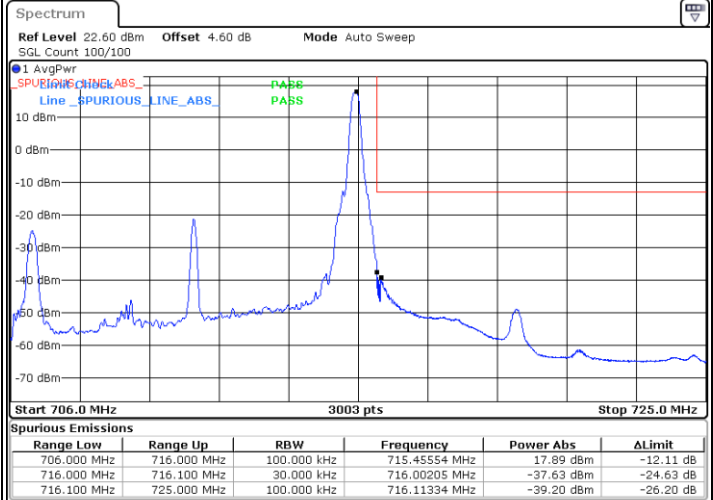


LTE Band 17 / 10MHz / 16QAM

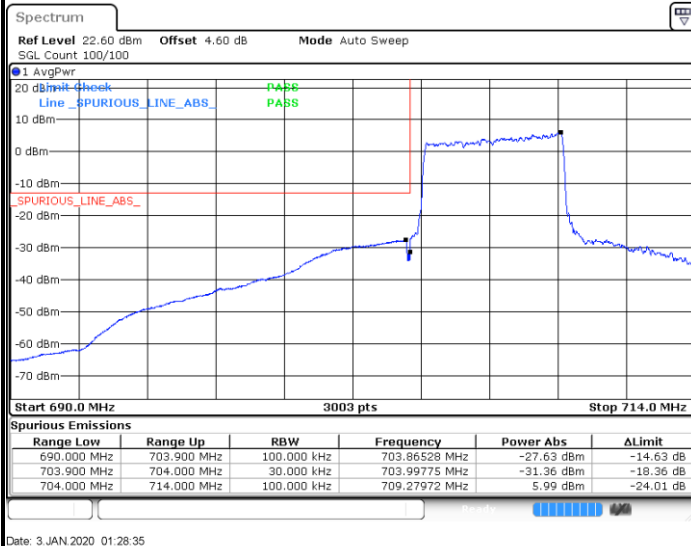
Lowest Band Edge / 1 RB



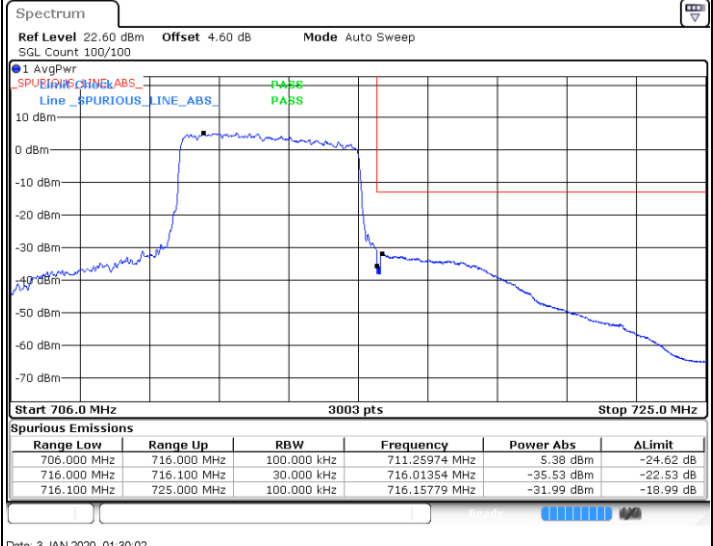
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



Highest Band Edge / Full RB

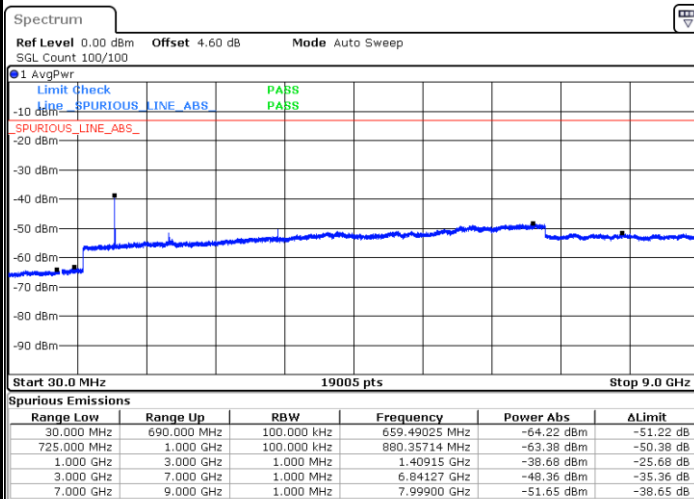




Conducted Spurious Emission

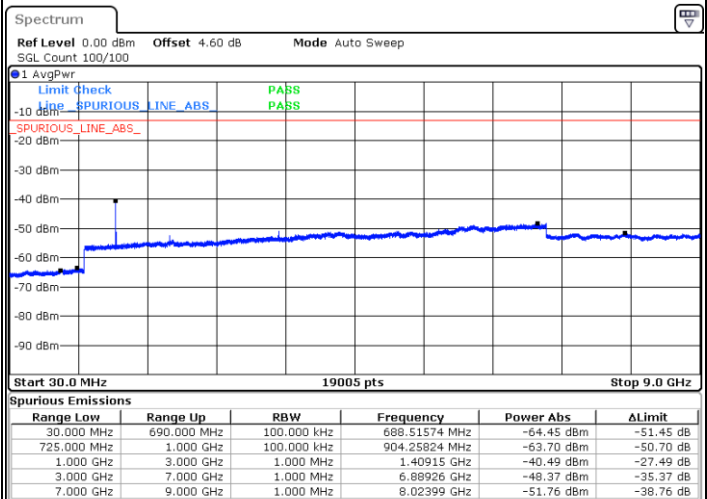
LTE Band 17 / 5MHz

Lowest Channel / QPSK



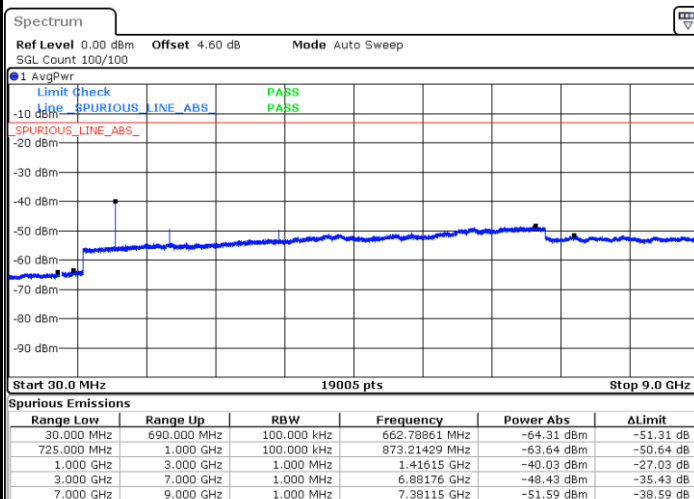
Date: 3 JAN 2020 01:01:05

Lowest Channel / 16QAM



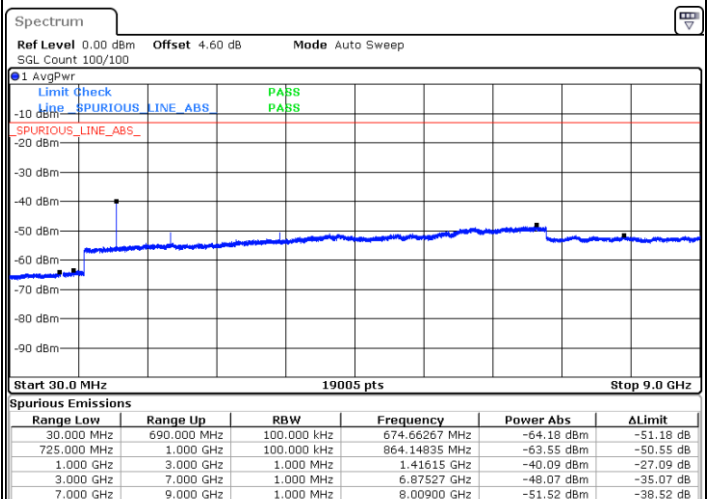
Date: 3 JAN 2020 01:01:59

Middle Channel / QPSK



Date: 3 JAN 2020 01:03:33

Middle Channel / 16QAM

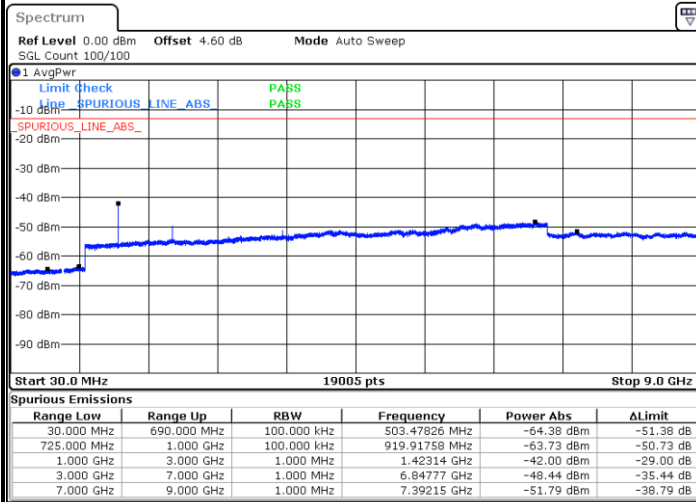


Date: 3 JAN 2020 01:04:27



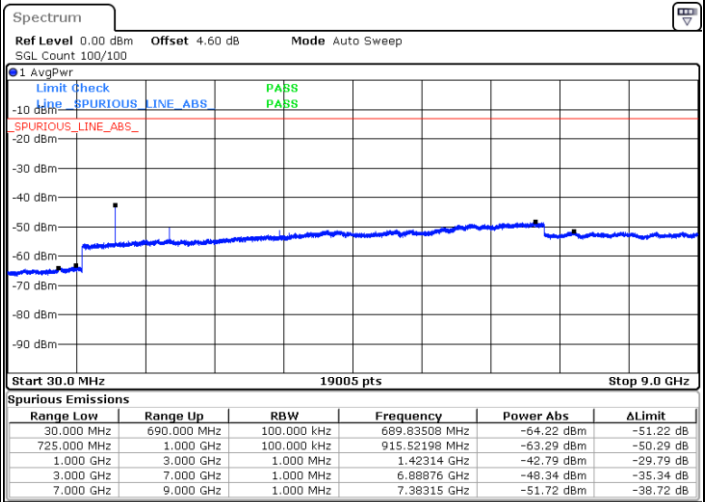
LTE Band 17 / 5MHz

Highest Channel / QPSK



Date: 3.JAN.2020 01:10:31

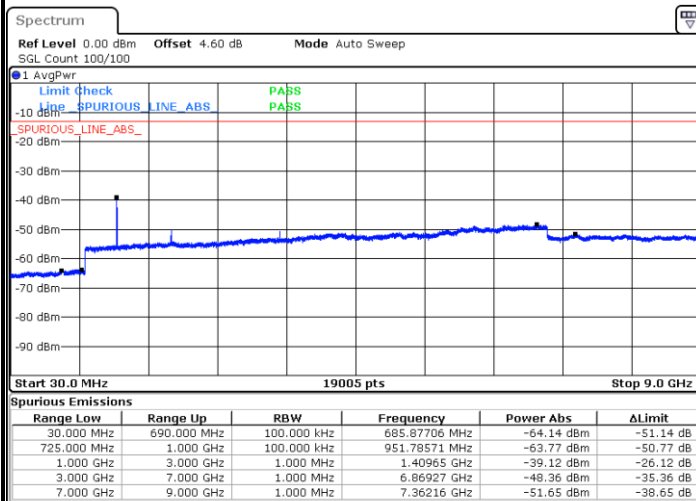
Highest Channel / 16QAM



Date: 3.JAN.2020 01:11:25

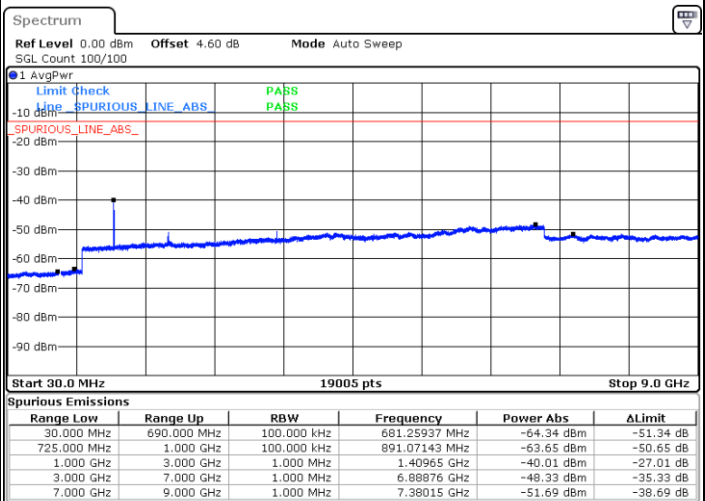
LTE Band 17 / 10MHz

Lowest Channel / QPSK



Date: 3.JAN.2020 01:16:01

Lowest Channel / 16QAM

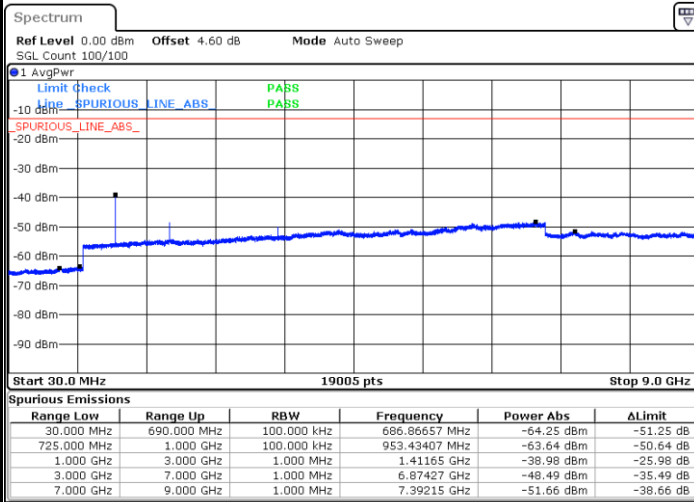


Date: 3.JAN.2020 01:16:55



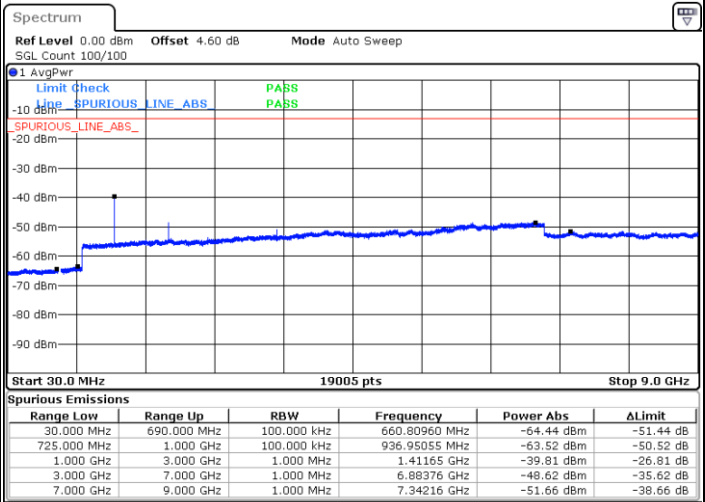
LTE Band 17 / 10MHz

Middle Channel / QPSK



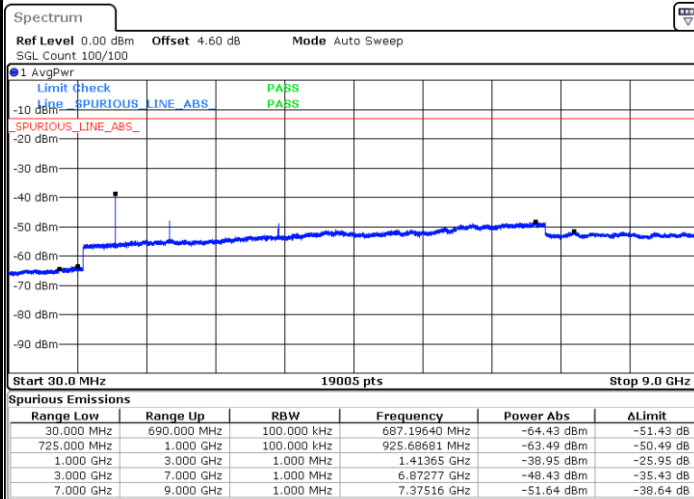
Date: 3.JAN.2020 01:18:09

Middle Channel / 16QAM



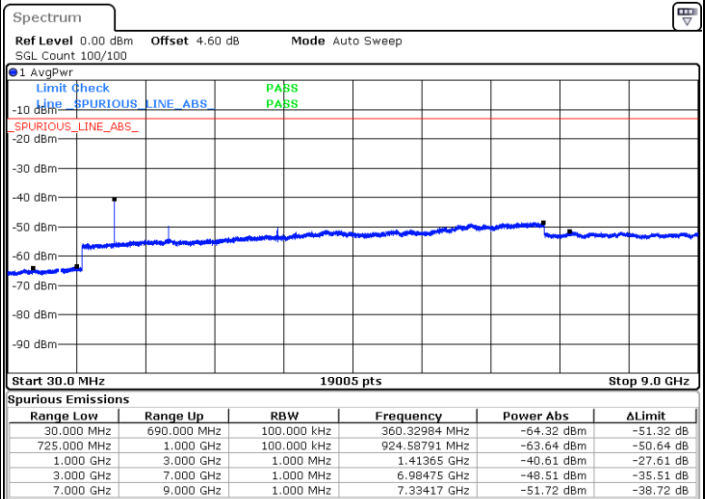
Date: 3.JAN.2020 01:19:03

Highest Channel / QPSK



Date: 3.JAN.2020 01:23:39

Highest Channel / 16QAM



Date: 3.JAN.2020 01:24:33

Frequency Stability

Test Conditions		LTE Band 17 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0014	PASS
40	Normal Voltage	0.0013	
30	Normal Voltage	0.0012	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0008	
0	Normal Voltage	0.0016	
-10	Normal Voltage	0.0009	
-20	Normal Voltage	0.0018	
-30	Normal Voltage	0.0014	
20	Maximum Voltage	0.0011	
20	Normal Voltage	0.0008	
20	Battery End Point	0.0010	

Note:

1. Normal Voltage =13.2 V. ; Battery End Point (BEP) =10.5 V. ; Maximum Voltage =33.1V.
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 / 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)
Middle	3741	-56.55	-13	-43.55	-68.81	2.641	14.90	H
	5613	-55.18	-13	-42.18	-67.04	2.94	14.80	H
	7488	-50.29	-13	-37.29	-60.06	3.39	13.16	H
	3741	-56.72	-13	-43.72	-68.98	2.64	14.90	V
	5613	-54.15	-13	-41.15	-66.01	2.94	14.80	V
	7488	-49.70	-13	-36.70	-59.47	3.39	13.16	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)
Middle	3447	-52.10	-13	-39.10	-62.84	2.604	13.34	H
	5170.77	-56.05	-13	-43.05	-66.56	3.011	13.52	H
	6900	-52.92	-13	-39.92	-63.12	3.271	13.47	H
	3447	-55.47	-13	-42.47	-66.21	2.604	13.34	V
	5172	-56.50	-13	-43.50	-67.01	3.011	13.52	V
	6900	-52.67	-13	-39.67	-62.87	3.271	13.47	V

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

LTE Band 5 / 10MHz / QPSK								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1664	-67.13	-13	-54.13	-74.10	1.58	10.70	H
	2496	-63.32	-13	-50.32	-71.57	2.102	12.50	H
	3330	-63.80	-13	-50.80	-72.69	2.856	13.90	H
	1664	-66.09	-13	-53.09	-73.06	1.58	10.70	V
	2496.27	-63.26	-13	-50.26	-71.51	2.10	12.50	V
	3330	-63.08	-13	-50.08	-71.97	2.86	13.90	V

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



LTE Band 7 / 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)
Middle	5052	-65.70	-25	-40.70	-75.91	3.03	13.24	H
	7580	-47.72	-25	-22.72	-57.17	3.56	13.01	H
	10100	-58.16	-25	-33.16	-67.68	3.92	13.44	H
	5052	-64.05	-25	-39.05	-74.26	3.03	13.24	V
	7580	-46.37	-25	-21.37	-55.82	3.56	13.01	V
	10100	-58.76	-25	-33.76	-68.28	3.92	13.44	V

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

LTE Band 13 / 5MHz / QPSK								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1560	-67.15	-42.15	-25.00	-69.78	1.09	5.87	H
	2340	-65.01	-13	-52.01	-67.41	1.37	5.92	H
	3120	-62.51	-13	-49.51	-66.40	1.64	7.68	H
	1560	-67.53	-42.15	-25.38	-70.16	1.09	5.87	V
	2340	-64.74	-13	-51.74	-67.14	1.37	5.92	V
	3120	-63.22	-13	-50.22	-67.11	1.64	7.68	V

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

LTE Band 13 / 10MHz / QPSK								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1556	-67.65	-13	-54.65	-70.28	1.09	5.87	H
	2332	-64.77	-13	-51.77	-67.17	1.37	5.92	H
	3108	-62.79	-13	-49.79	-66.68	1.64	7.68	H
	1556	-67.41	-13	-54.41	-70.04	1.09	5.87	V
	2332	-64.16	-13	-51.16	-66.56	1.37	5.92	V
	3108	-62.54	-13	-49.54	-66.43	1.64	7.68	V

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



LTE Band 17 / 10MHz / QPSK								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1412	-57.34	-13	-44.34	-64.31	1.58	10.70	H
	2116	-64.99	-13	-51.99	-73.24	2.102	12.50	H
	2822	-62.80	-13	-49.80	-71.69	2.856	13.90	H
	3528	-52.33	-13	-39.33	-60.79	2.689	13.30	H
	1412	-51.32	-13	-38.32	-58.29	1.58	10.70	V
	2116	-62.33	-13	-49.33	-70.58	2.10	12.50	V
	2822	-63.03	-13	-50.03	-71.92	2.86	13.90	V
	3528	-58.15	-13	-45.15	-66.61	2.69	13.30	V

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