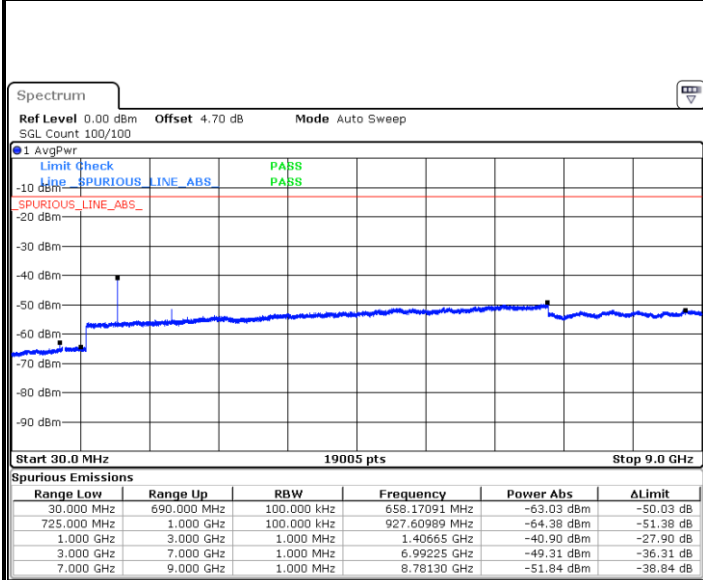




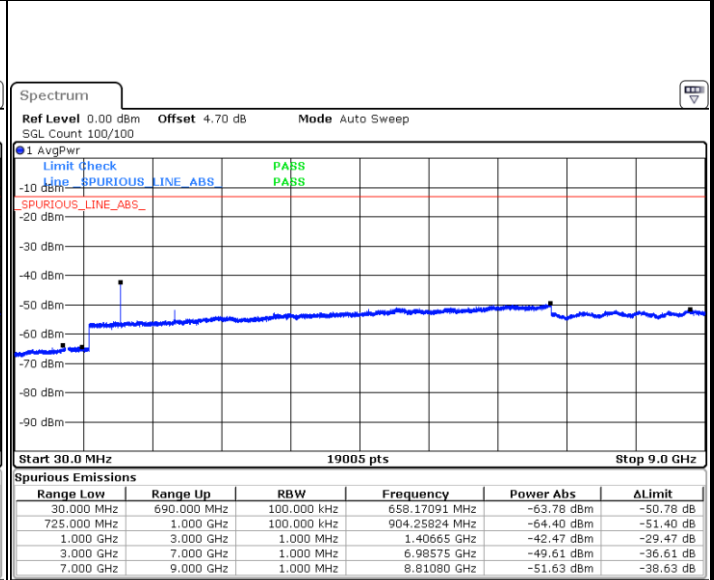
LTE Band 12 / 10MHz

Middle Channel / QPSK



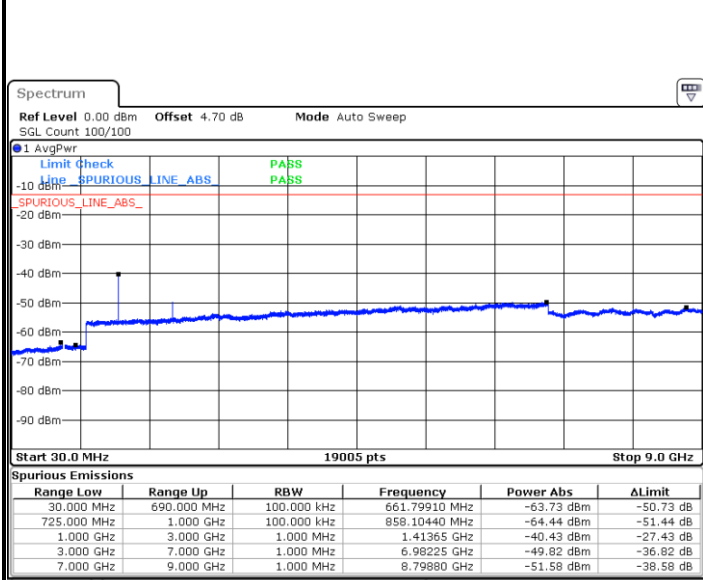
Date: 3 FEB 2020 18:39:33

Middle Channel / 16QAM



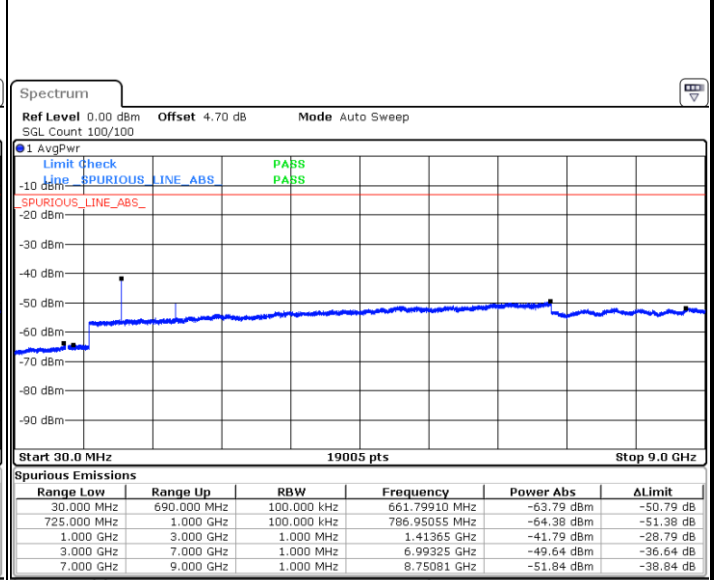
Date: 3 FEB 2020 18:38:39

Highest Channel / QPSK



Date: 3 FEB 2020 18:40:28

Highest Channel / 16QAM



Date: 3 FEB 2020 18:41:23



Frequency Stability

Test Conditions		LTE Band 12 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0019	PASS
40	Normal Voltage	0.0017	
30	Normal Voltage	0.0012	
20(Ref.)	Normal Voltage	0.0004	
10	Normal Voltage	0.0013	
0	Normal Voltage	0.0016	
-10	Normal Voltage	0.0008	
-20	Normal Voltage	0.0024	
-30	Normal Voltage	0.0021	
20	Maximum Voltage	0.0011	
20	Normal Voltage	0.0024	
20	Battery End Point	0.0002	

Note:

1. Normal Voltage =3.8 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.3 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



# LTE Band 13

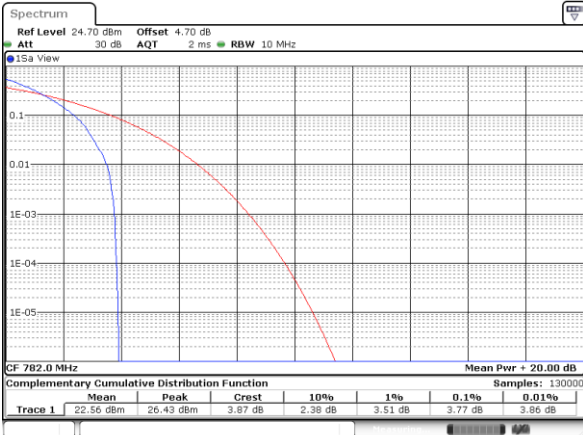
## Peak-to-Average Ratio

Mode	LTE Band 13 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH					<b>PASS</b>
Middle CH	3.77	4.99	4.70	5.77	
Highest CH					



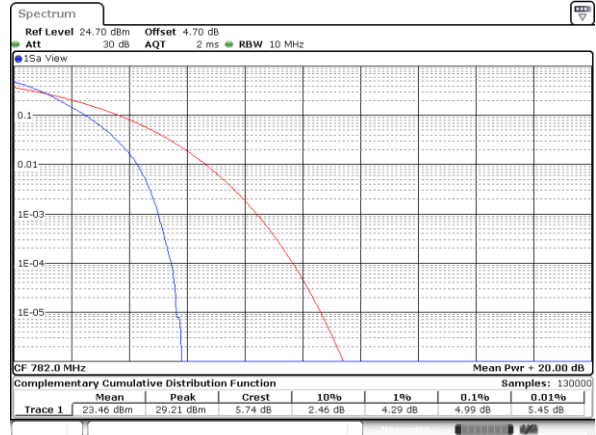
LTE Band 13 / 10MHz / QPSK

Middle Channel/ 1RB



Date: 4 FEB 2020 08:19:52

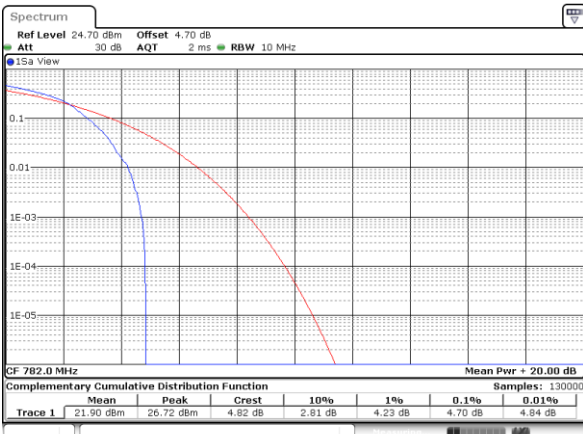
Middle Channel / Full RB



Date: 4 FEB 2020 08:20:20

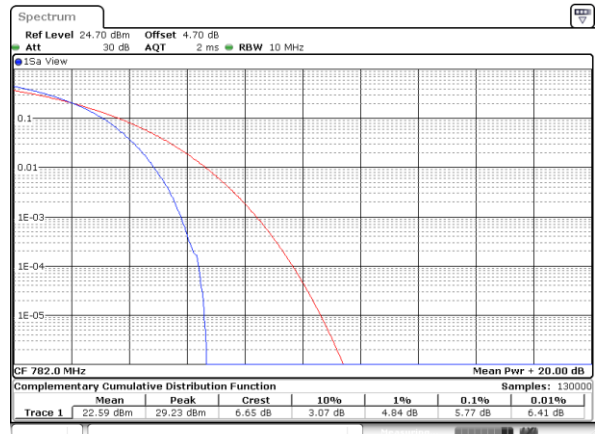
LTE Band 13 / 10MHz / 16QAM

Middle Channel/ 1RB



Date: 4 FEB 2020 08:20:02

Middle Channel / Full RB



Date: 4 FEB 2020 08:20:11



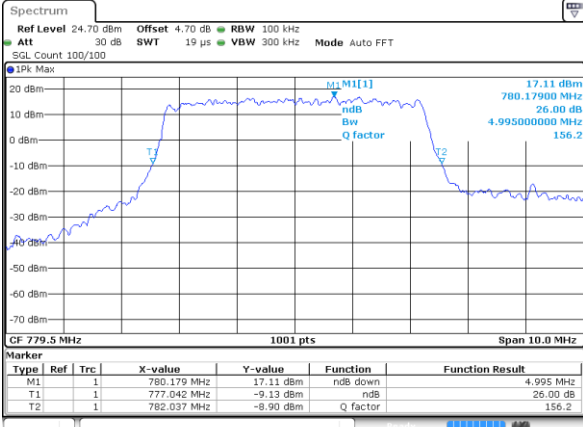
**26dB Bandwidth**

Mode	LTE Band 13 : 26dB BW(MHz)											
	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
BW												
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH					5.00	5.11						
Middle CH					5.12	5.02	10.03	10.01				
Highest CH					4.85	4.88						



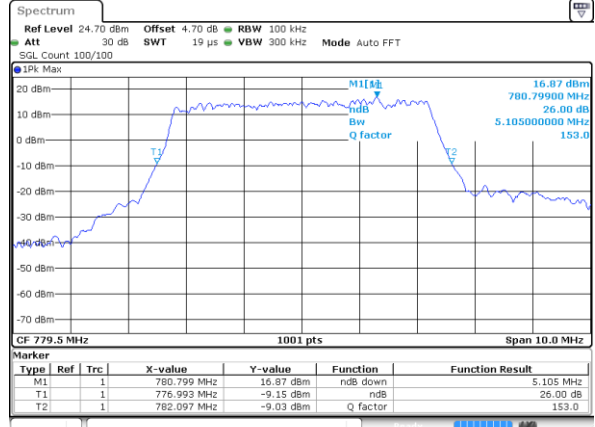
LTE Band 13

Lowest Channel / 5MHz / QPSK



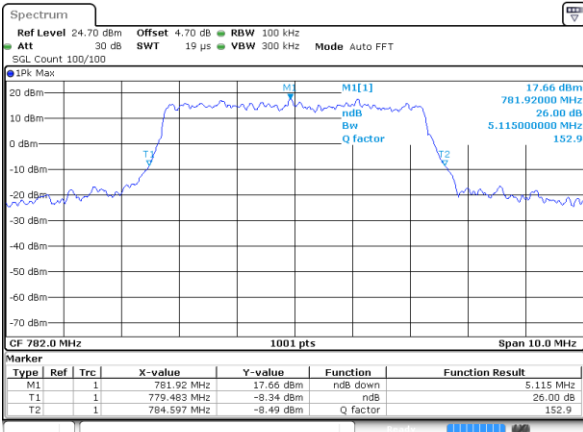
Date: 4 FEB 2020 07:46:50

Lowest Channel / 5MHz / 16QAM



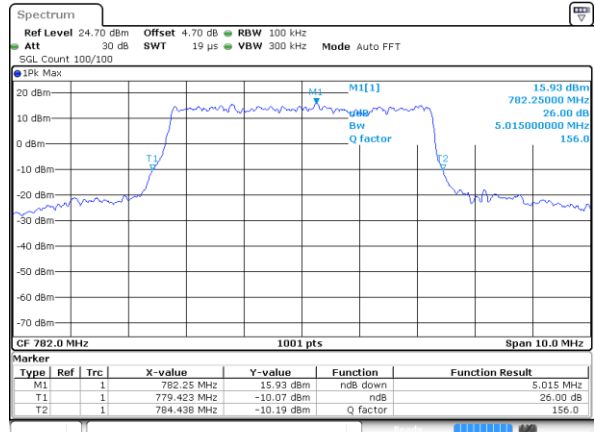
Date: 4 FEB 2020 07:47:00

Middle Channel / 5MHz / QPSK



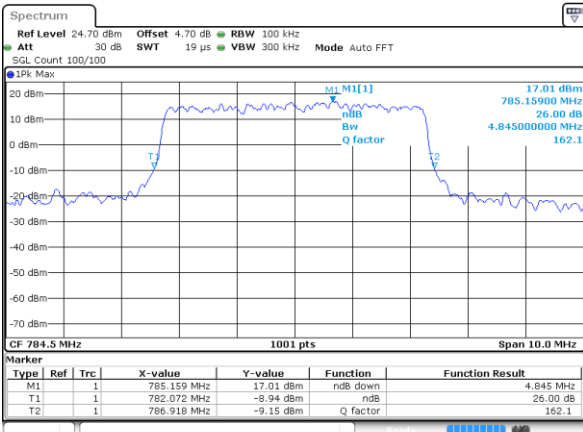
Date: 4 FEB 2020 07:55:51

Middle Channel / 5MHz / 16QAM



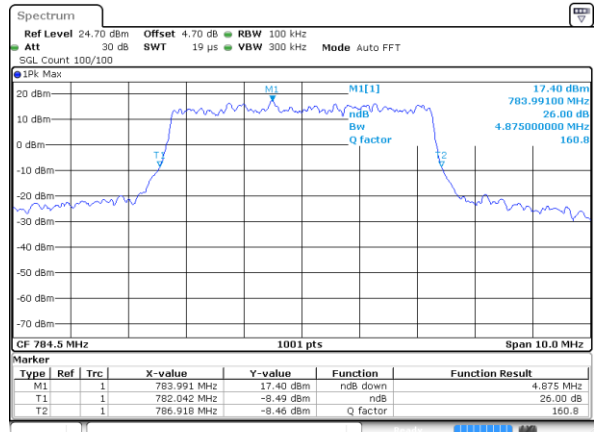
Date: 4 FEB 2020 07:56:01

Highest Channel / 5MHz / QPSK



Date: 4 FEB 2020 07:58:30

Highest Channel / 5MHz / 16QAM

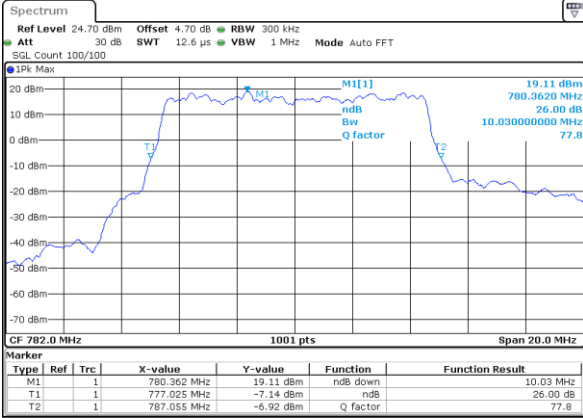


Date: 4 FEB 2020 07:58:20



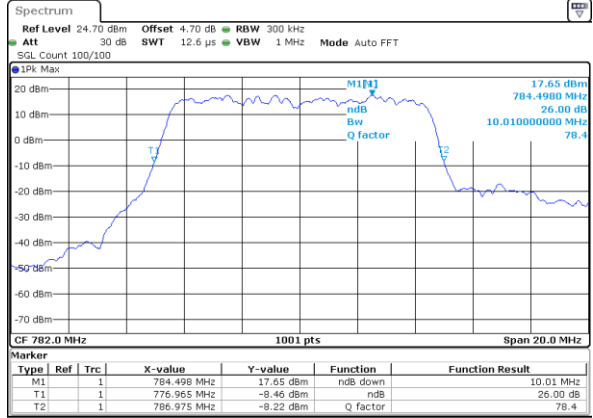
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 4 FEB 2020 08:09:19

Middle Channel / 10MHz / 16QAM



Date: 4 FEB 2020 08:09:09



### Occupied Bandwidth

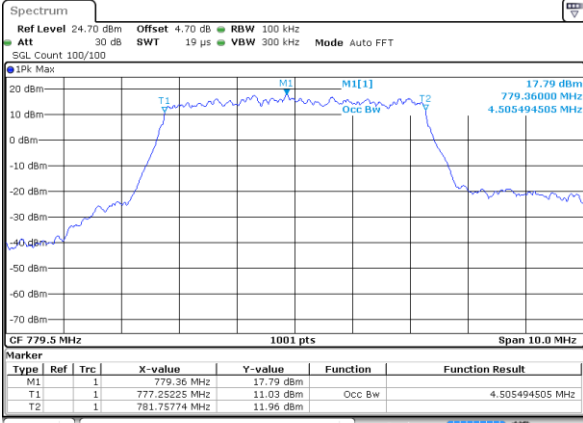
Mode	LTE Band 13 : 99%OBW(MHz)											
	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
BW	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH					4.51	4.49						
Middle CH					4.49	4.49	9.05	9.03				
Highest CH					4.51	4.50						





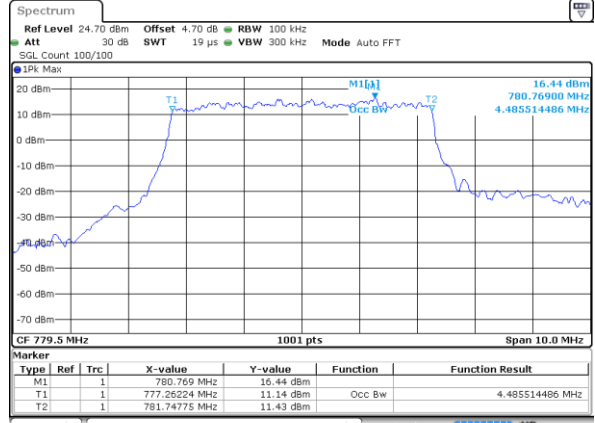
LTE Band 13

Lowest Channel / 5MHz / QPSK



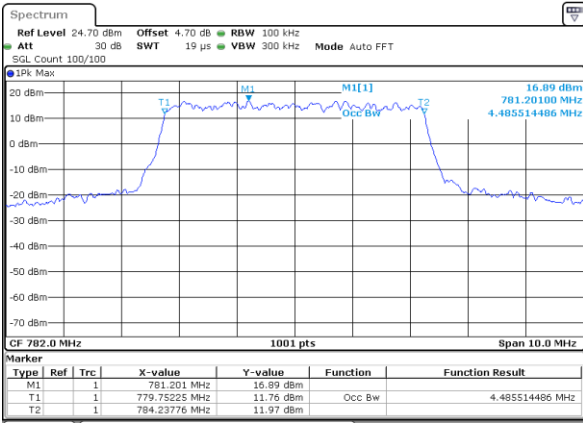
Date: 4 FEB 2020 07:47:20

Lowest Channel / 5MHz / 16QAM



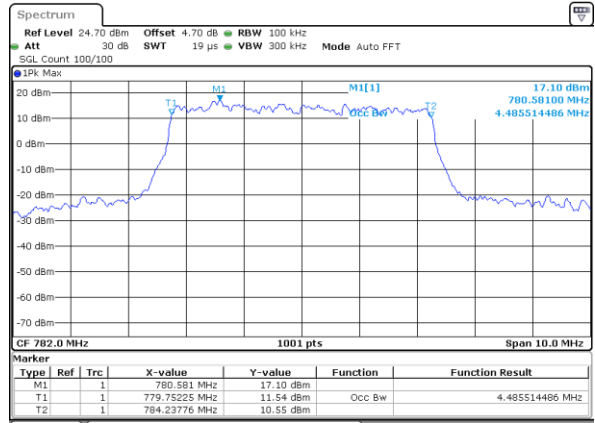
Date: 4 FEB 2020 07:47:10

Middle Channel / 5MHz / QPSK



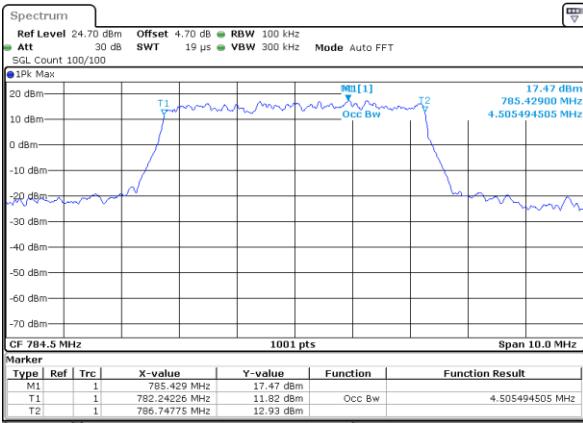
Date: 4 FEB 2020 07:56:11

Middle Channel / 5MHz / 16QAM



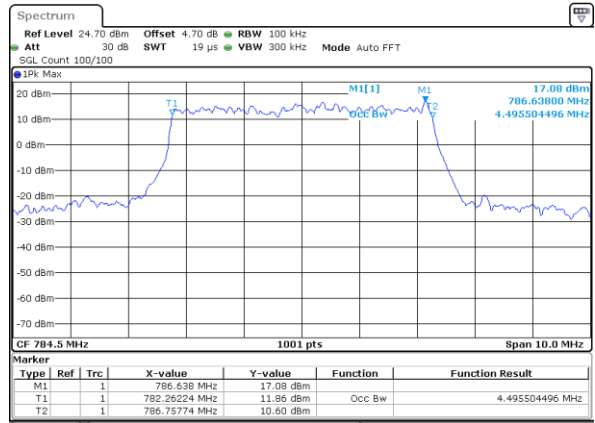
Date: 4 FEB 2020 07:56:21

Highest Channel / 5MHz / QPSK



Date: 4 FEB 2020 07:58:40

Highest Channel / 5MHz / 16QAM

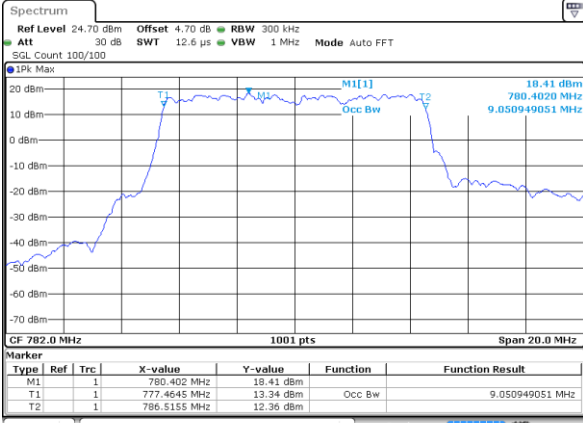


Date: 4 FEB 2020 07:58:50



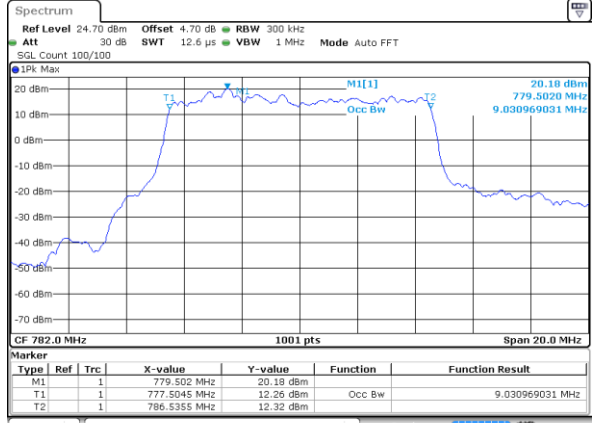
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 4 FEB 2020 08:09:29

Middle Channel / 10MHz / 16QAM



Date: 4 FEB 2020 08:09:40

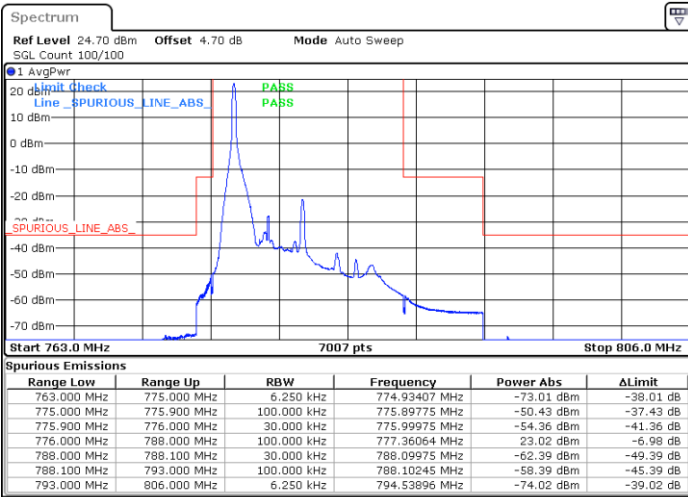


# Conducted Band Edge

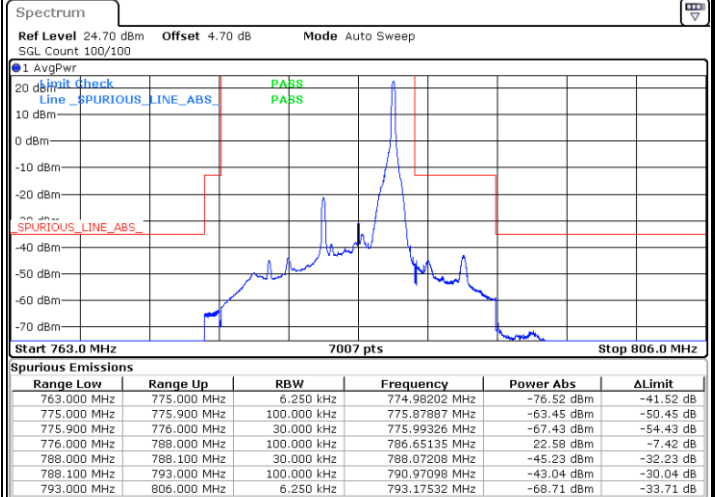
## LTE Band 13 / 5MHz / QPSK

### Lowest Band Edge / 1 RB

### Highest Band Edge / 1 RB



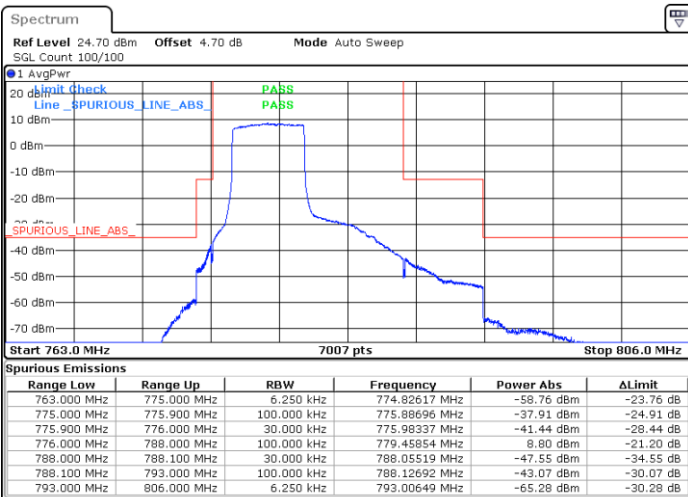
Date: 4 FEB 2020 07:52:14



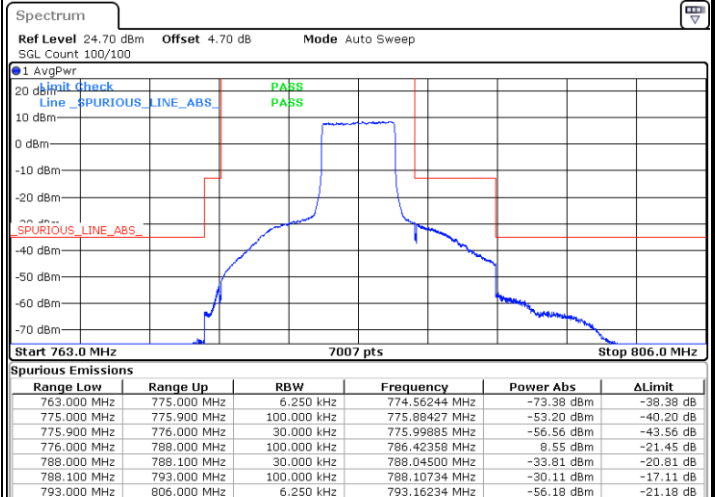
Date: 4 FEB 2020 08:03:44

### Lowest Band Edge / Full RB

### Highest Band Edge / Full RB



Date: 4 FEB 2020 07:50:36



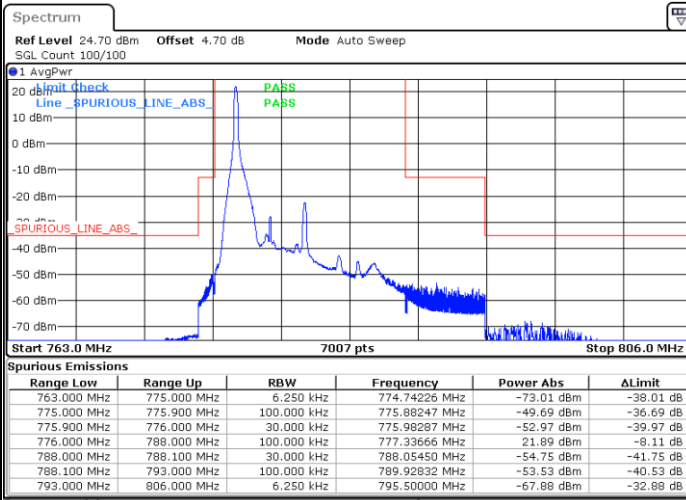
Date: 4 FEB 2020 08:02:06



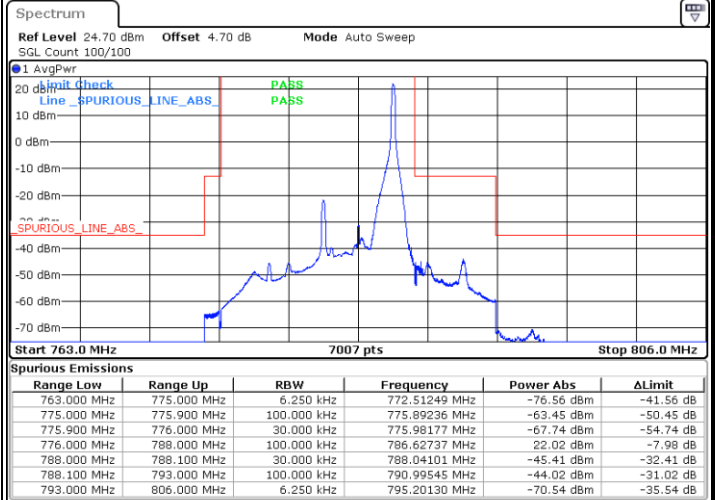
LTE Band 13 / 5MHz / 16QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB



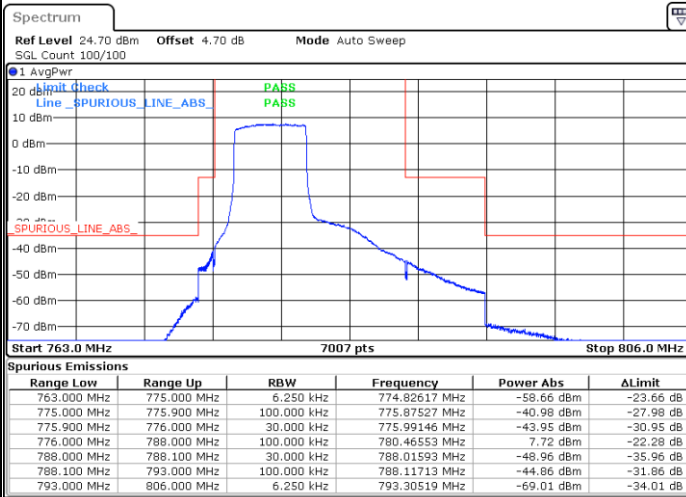
Date: 4 FEB 2020 07:53:52



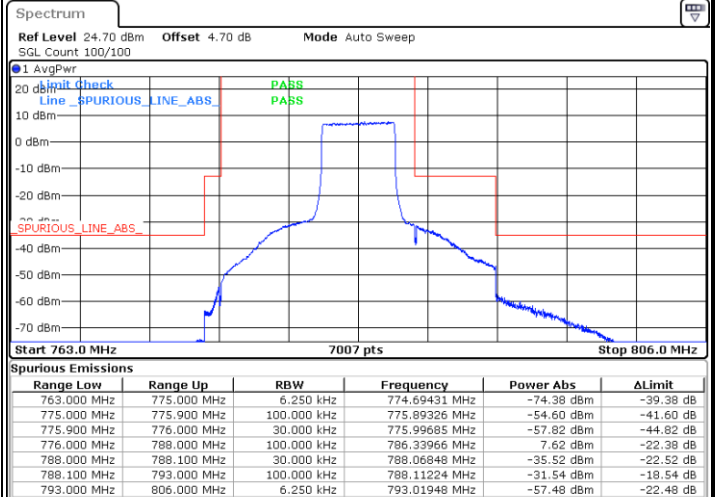
Date: 4 FEB 2020 08:05:22

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 4 FEB 2020 07:48:58

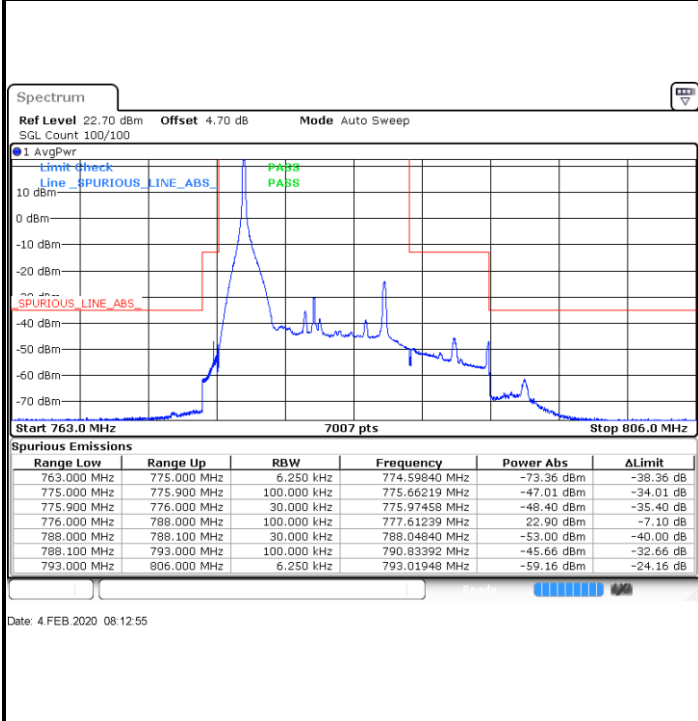


Date: 4 FEB 2020 08:00:28

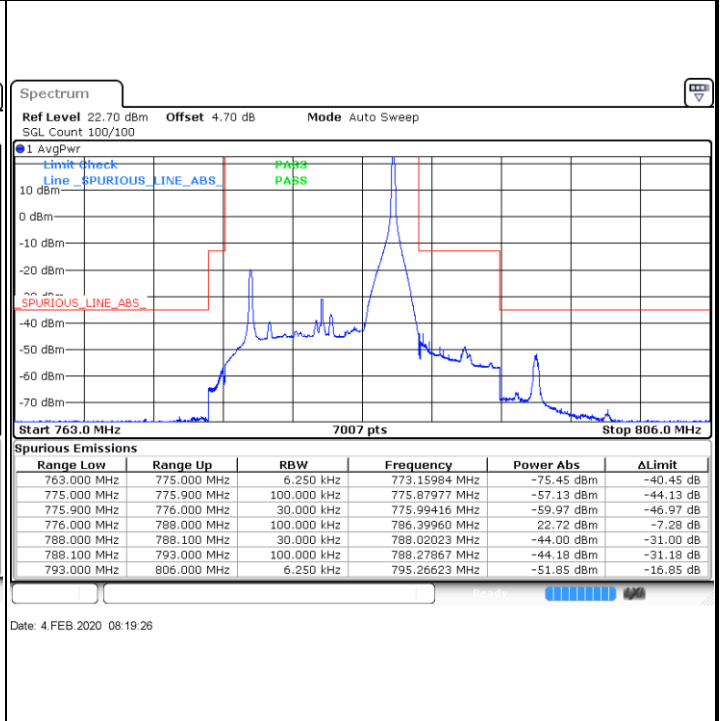


**LTE Band 13 / 10MHz / QPSK**

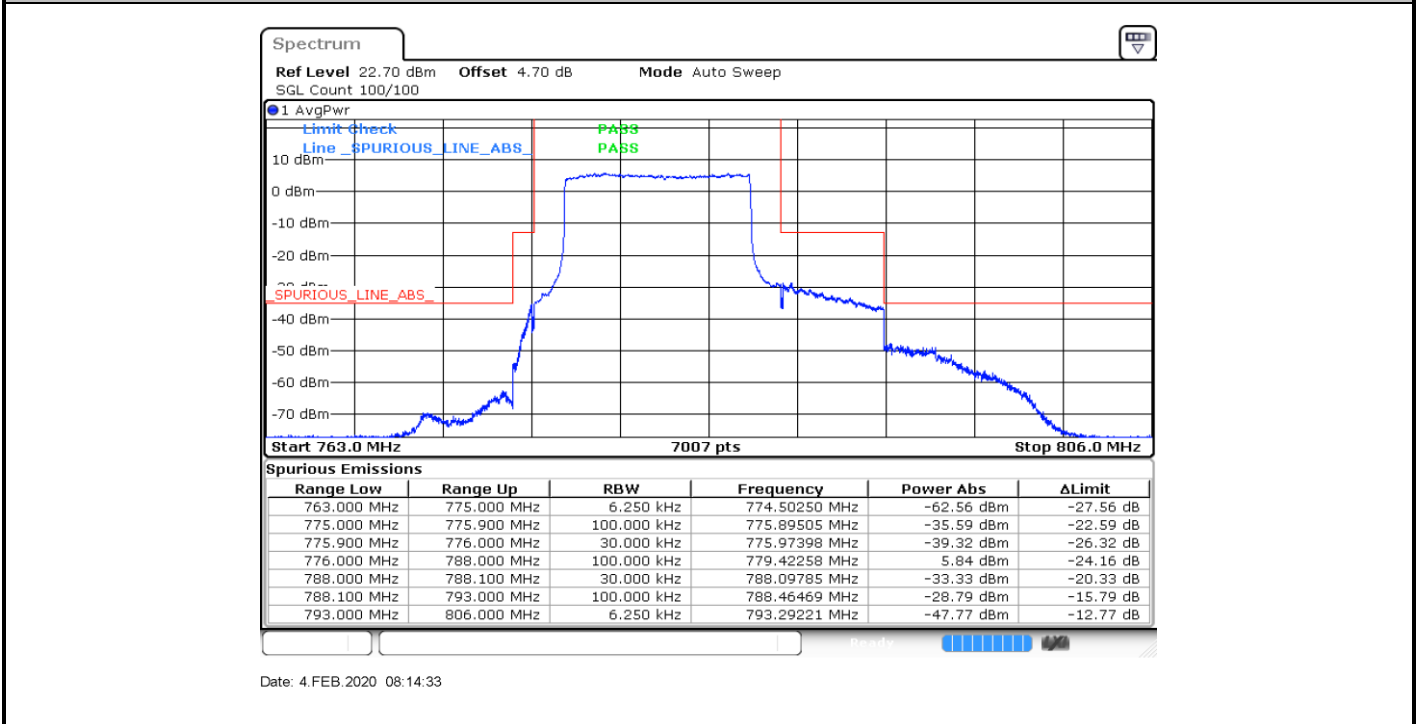
**Lowest Band Edge / 1 RB**



**Highest Band Edge / 1 RB**



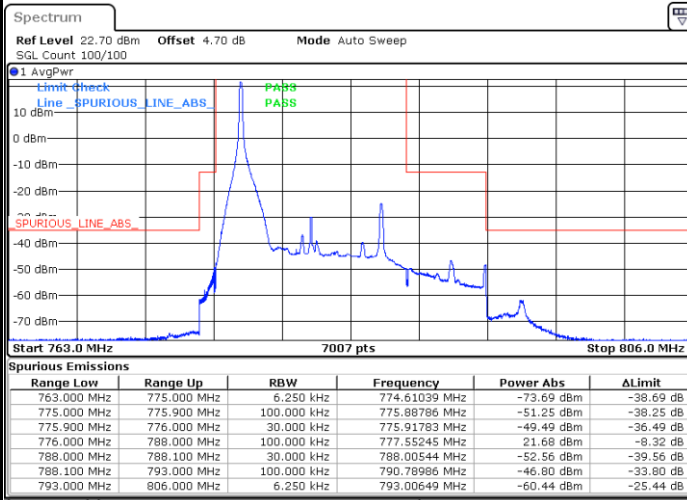
**Band Edge / Full RB**





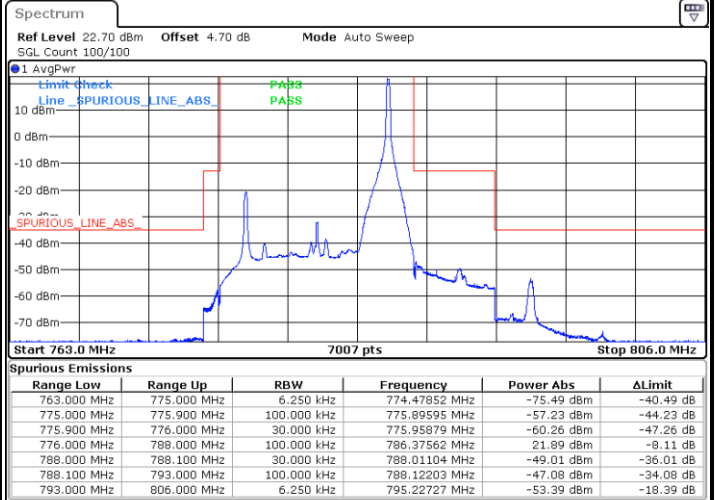
LTE Band 13 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



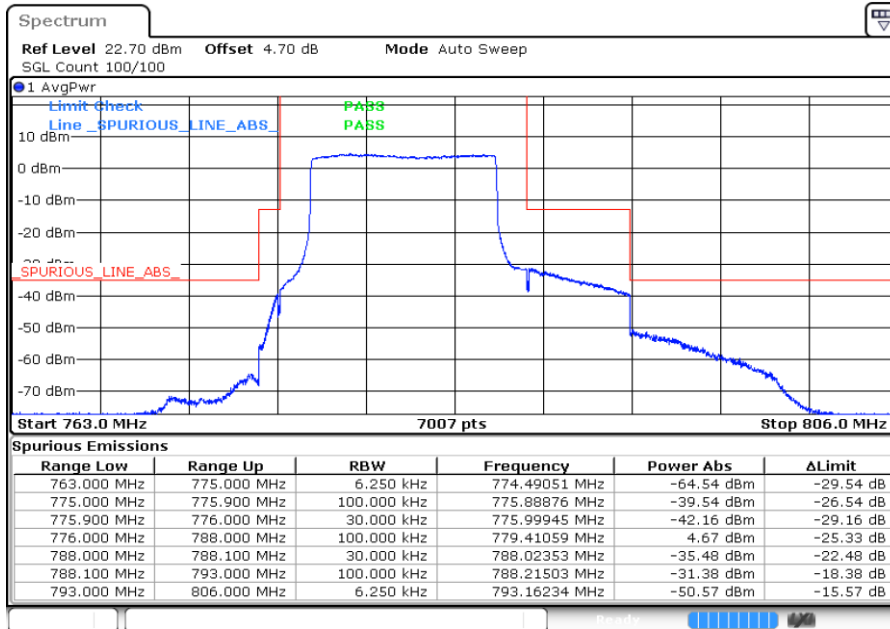
Date: 4.FEB.2020 08:11:18

Highest Band Edge / 1 RB



Date: 4.FEB.2020 08:17:49

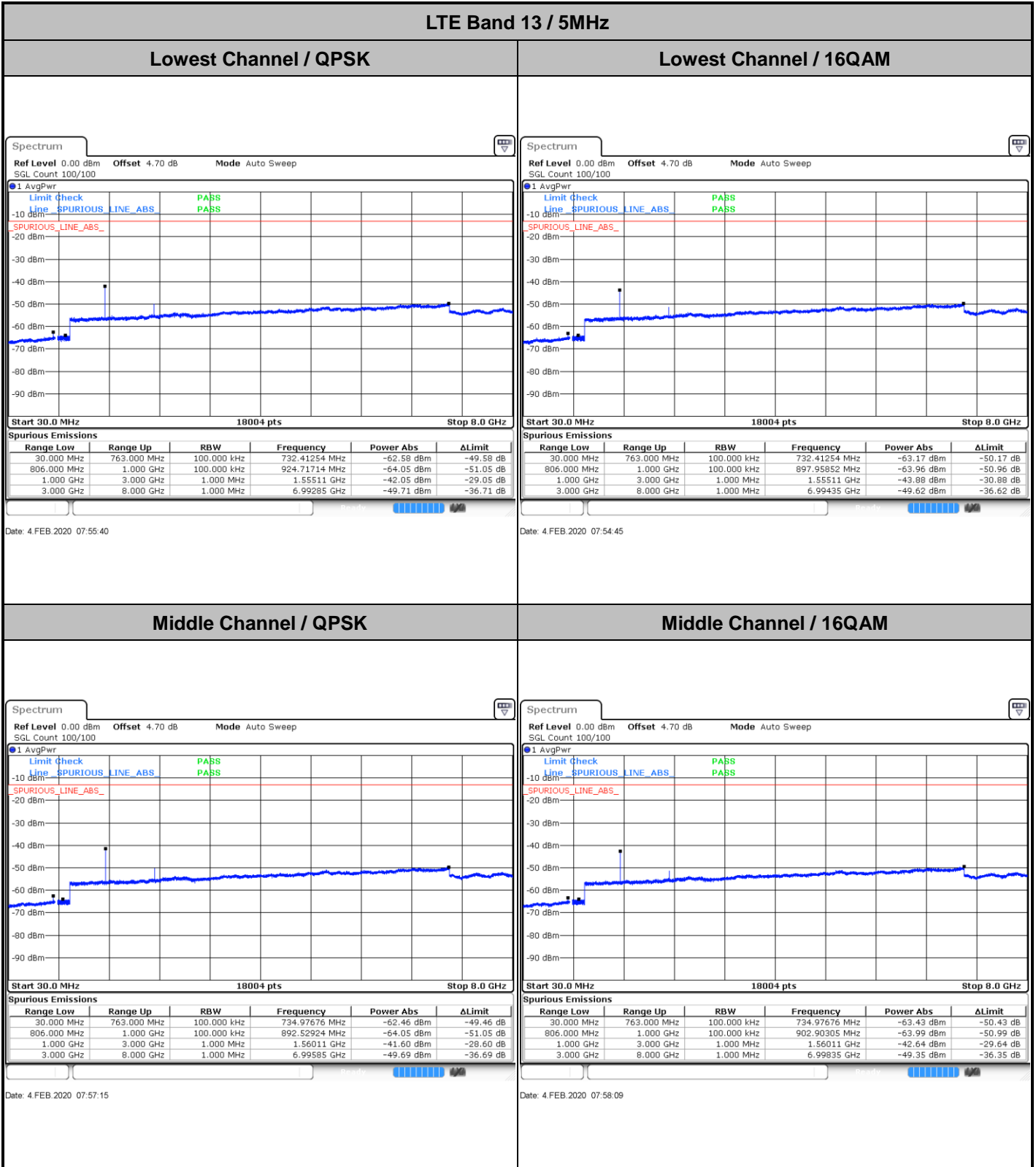
Band Edge / Full RB



Date: 4.FEB.2020 08:16:11



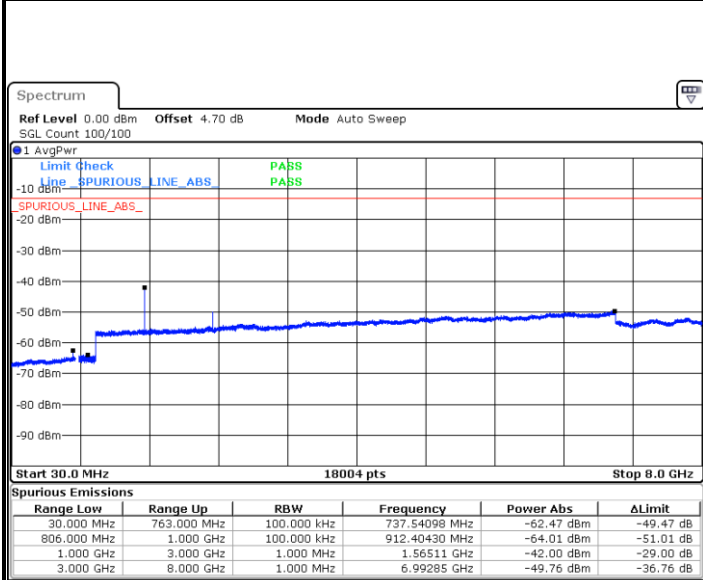
# Conducted Spurious Emission





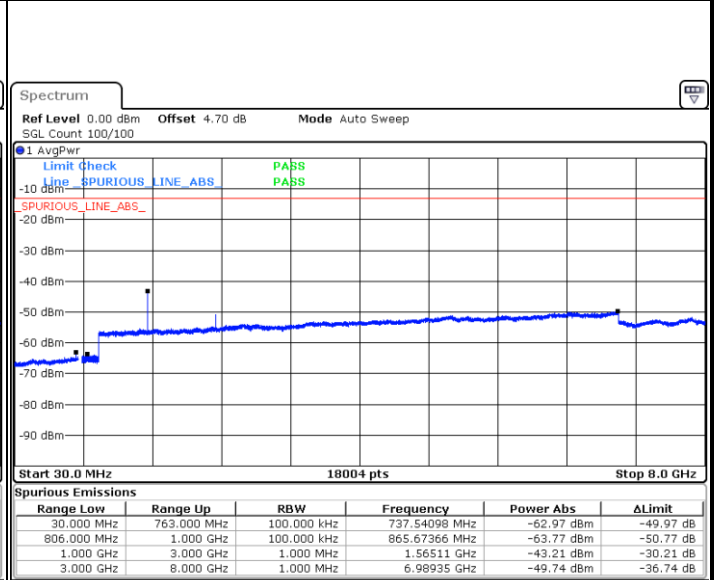
LTE Band 13 / 5MHz

Highest Channel / QPSK



Date: 4 FEB 2020 08:07:10

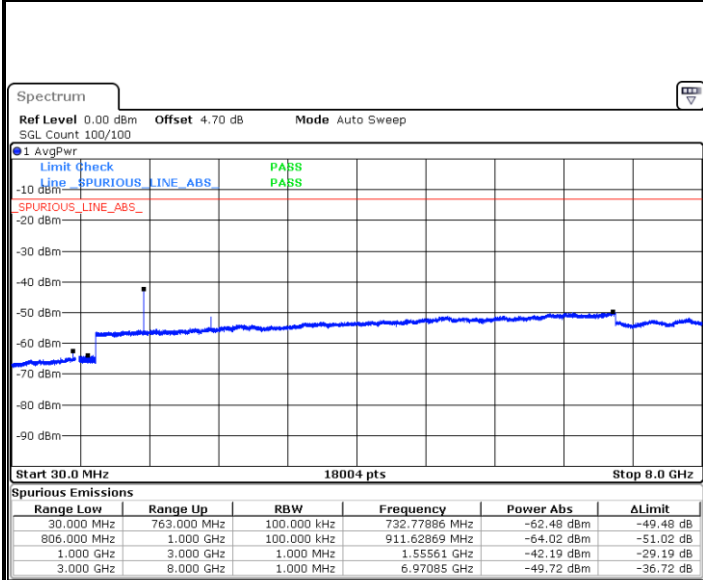
Highest Channel / 16QAM



Date: 4 FEB 2020 08:06:15

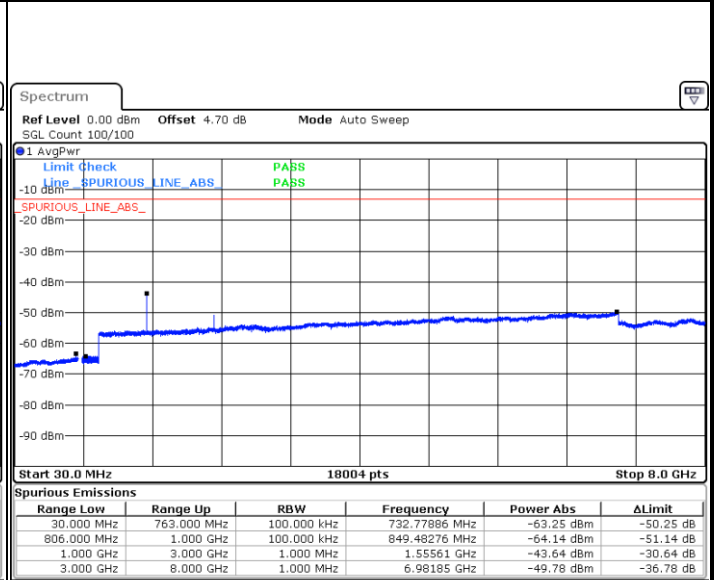
LTE Band 13 / 10MHz

Middle Channel / QPSK



Date: 4 FEB 2020 08:08:04

Middle Channel / 16QAM



Date: 4 FEB 2020 08:08:59





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	0.0019	PASS
40	Normal Voltage	0.0021	
30	Normal Voltage	0.0012	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0013	
0	Normal Voltage	0.0016	
-10	Normal Voltage	0.0007	
-20	Normal Voltage	0.0024	
-30	Normal Voltage	0.0021	
20	Maximum Voltage	0.0011	
20	Normal Voltage	0.0012	
20	Battery End Point	0.0009	

Note:

1. Normal Voltage =3.8 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.3 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 / 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	-53.44	-13	-40.44	-65.70	2.64	14.90	H
	5613	-47.81	-13	-34.81	-59.67	2.94	14.80	H
	7488	-50.29	-13	-37.29	-60.06	3.39	13.16	H
	9360	-37.33	-13	-24.33	-47.81	4.00	14.48	H
	3741	-56.93	-13	-43.93	-69.19	2.64	14.90	V
	5613	-50.60	-13	-37.60	-62.46	2.94	14.80	V
	7488	-49.48	-13	-36.48	-59.25	3.39	13.16	V
	9360	-40.50	-13	-27.50	-50.98	4.00	14.48	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	-54.24	-13	-41.24	-64.98	2.604	13.34	H
	5172	-46.88	-13	-33.88	-57.39	3.011	13.52	H
	6900	-53.19	-13	-40.19	-63.39	3.271	13.47	H
	8616	-33.66	-13	-20.66	-40.63	5.527	12.5	H
	10344	-41.23	-13	-28.23	-48.09	6.038	12.9	H
	3447	-57.26	-13	-44.26	-68.00	2.604	13.34	V
	5172	-51.96	-13	-38.96	-62.47	3.011	13.52	V
	6894.36	-52.97	-13	-39.97	-63.17	3.271	13.47	V
	8616	-31.95	-13	-18.95	-38.92	5.527	12.50	V
	10344	-44.19	-13	-31.19	-51.05	6.038	12.90	V

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

LTE Band 5 / 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)
Middle	1664	-67.72	-13	-54.72	-74.69	1.58	10.70	H
	2496	-61.64	-13	-48.64	-69.89	2.102	12.50	H
	3330	-63.36	-13	-50.36	-72.25	2.856	13.90	H
	1664	-67.33	-13	-54.33	-74.30	1.58	10.70	V
	2496	-57.79	-13	-44.79	-66.04	2.10	12.50	V
	3330	-62.86	-13	-49.86	-71.75	2.86	13.90	V

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



LTE Band 12 / 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)
Middle	1406	-67.42	-13	-54.42	-74.39	1.58	10.70	H
	2109.27	-65.61	-13	-52.61	-73.86	2.102	12.50	H
	2812	-62.82	-13	-49.82	-71.71	2.856	13.90	H
	1406	-67.65	-13	-54.65	-74.62	1.58	10.70	V
	2110	-65.31	-13	-52.31	-73.56	2.10	12.50	V
	2812	-62.94	-13	-49.94	-71.83	2.86	13.90	V

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

LTE Band 13 / 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)
Middle	1560	-67.53	-42.15	-25.38	-70.16	1.09	5.87	H
	2340	-59.79	-13	-46.79	-62.19	1.37	5.92	H
	3120	-62.89	-13	-49.89	-66.78	1.64	7.68	H
	1560	-67.66	-42.15	-25.51	-70.29	1.09	5.87	V
	2340	-57.07	-13	-44.07	-59.47	1.37	5.92	V
	3120	-62.21	-13	-49.21	-66.10	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 )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain ( dBi )	Polarization (H/V)
Middle	1556	-67.23	-42.15	-25.08	-69.86	1.09	5.87	H
	2332	-61.80	-13	-48.80	-64.20	1.37	5.92	H
	3108	-62.47	-13	-49.47	-66.36	1.64	7.68	H
	1556	-67.64	-42.15	-25.49	-70.27	1.09	5.87	V
	2332	-60.30	-13	-47.30	-62.70	1.37	5.92	V
	3108	-62.74	-13	-49.74	-66.63	1.64	7.68	V

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