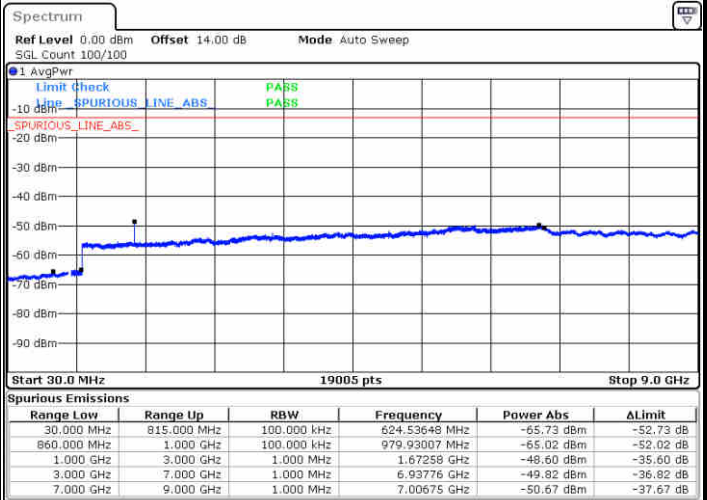
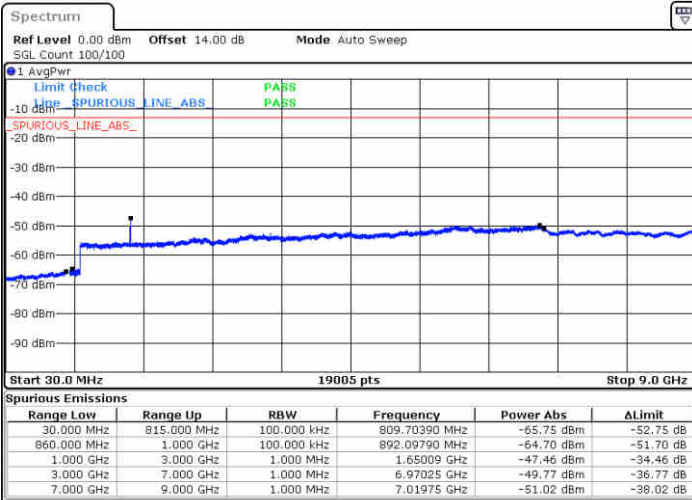




LTE Band 5 / 1.4MHz

Lowest Channel / 64QAM

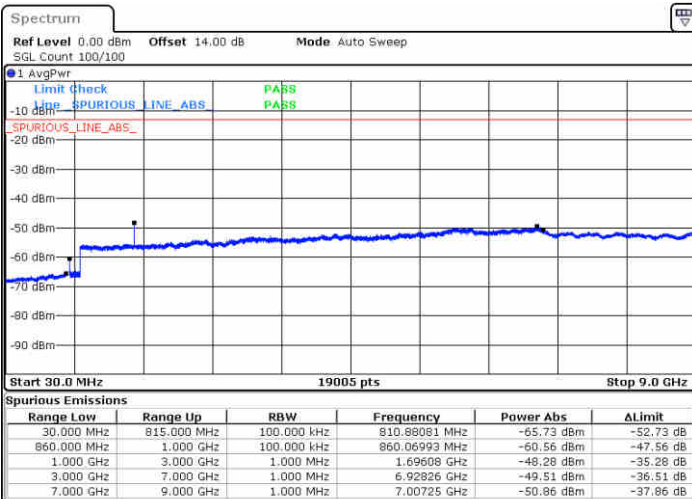
Middle Channel / 64QAM



Date: 26.AUG.2021 16:48:23

Date: 26.AUG.2021 16:49:59

Highest Channel / 64QAM

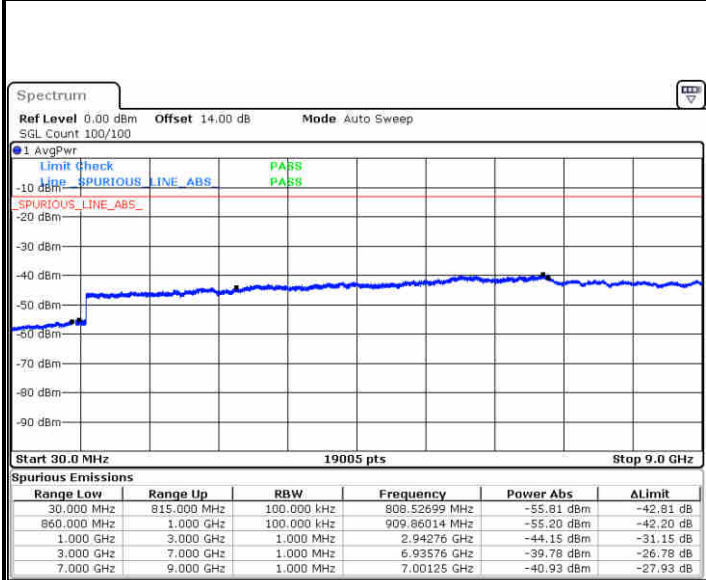


Date: 26.AUG.2021 16:55:12



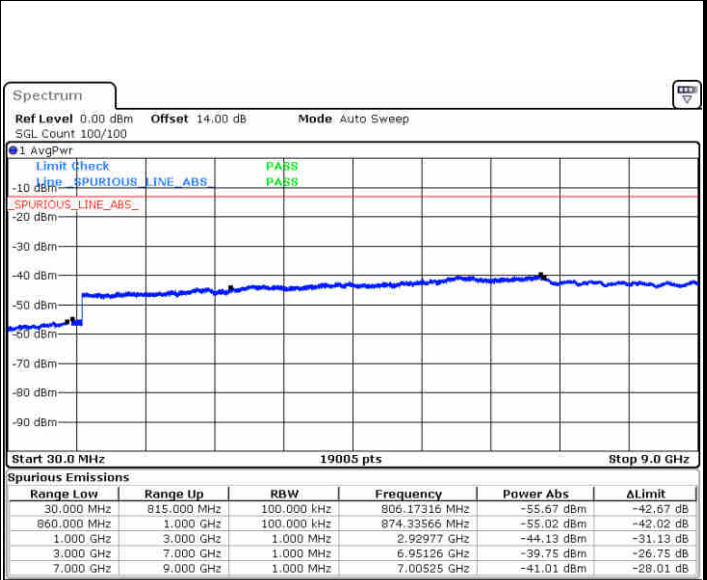
LTE Band 5 / 3MHz

Lowest Channel / 64QAM



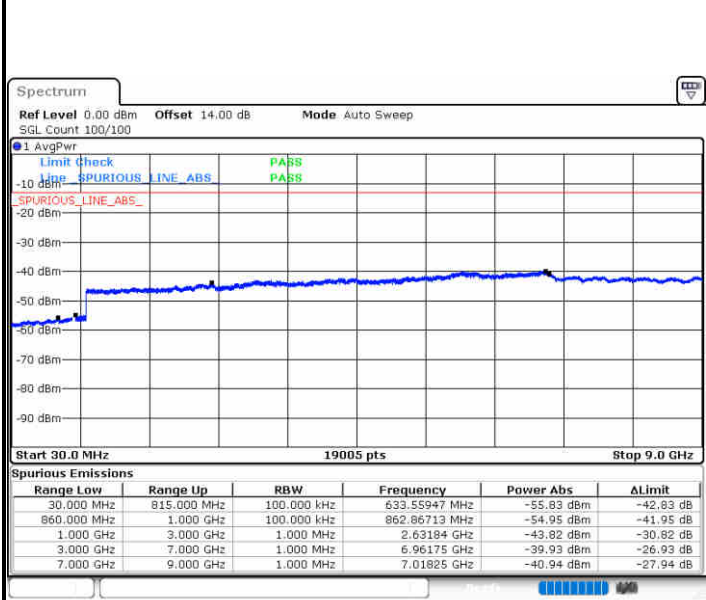
Date: 26.AUG.2021 17:26:07

Middle Channel / 64QAM

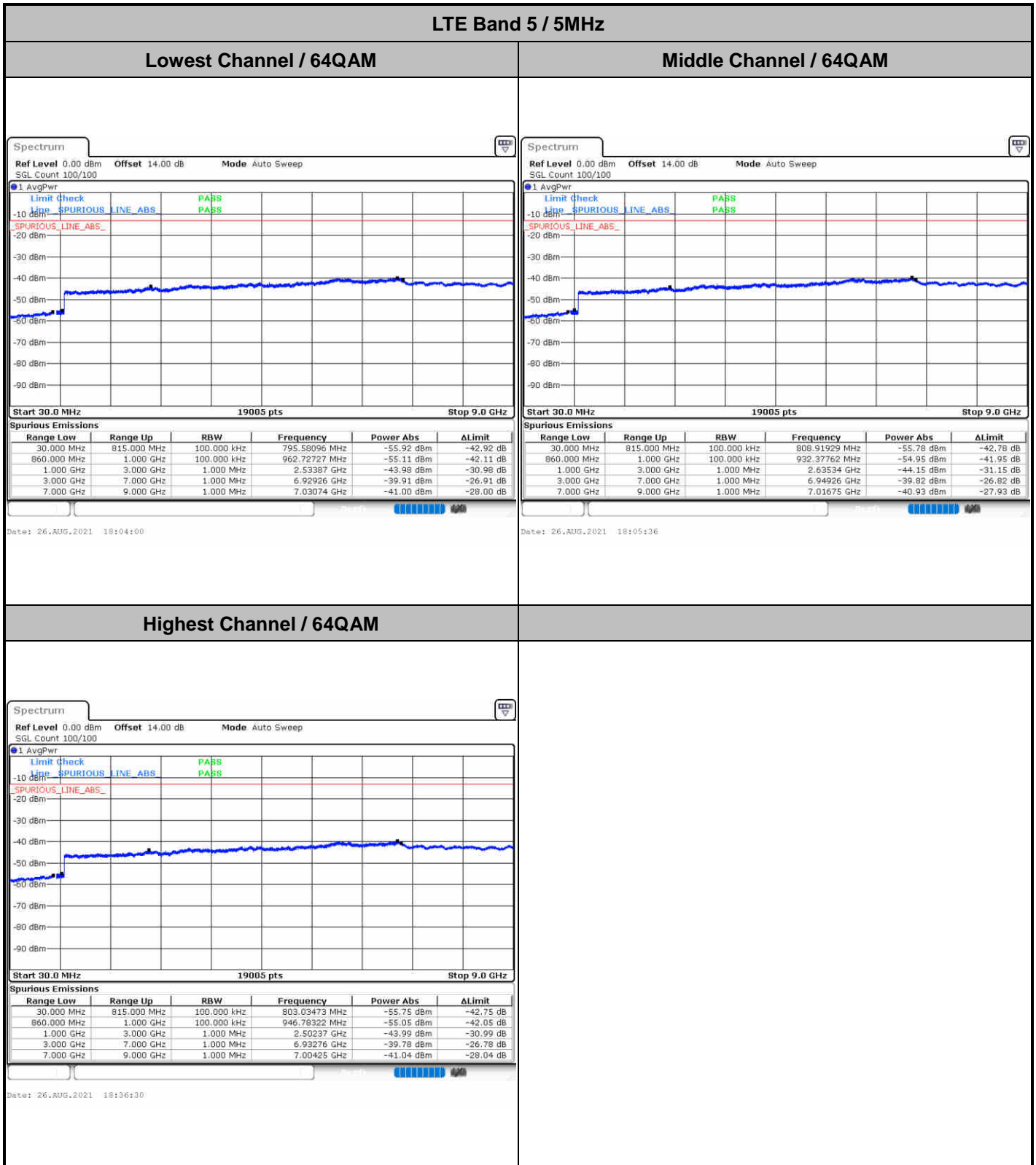


Date: 26.AUG.2021 17:27:43

Highest Channel / 64QAM

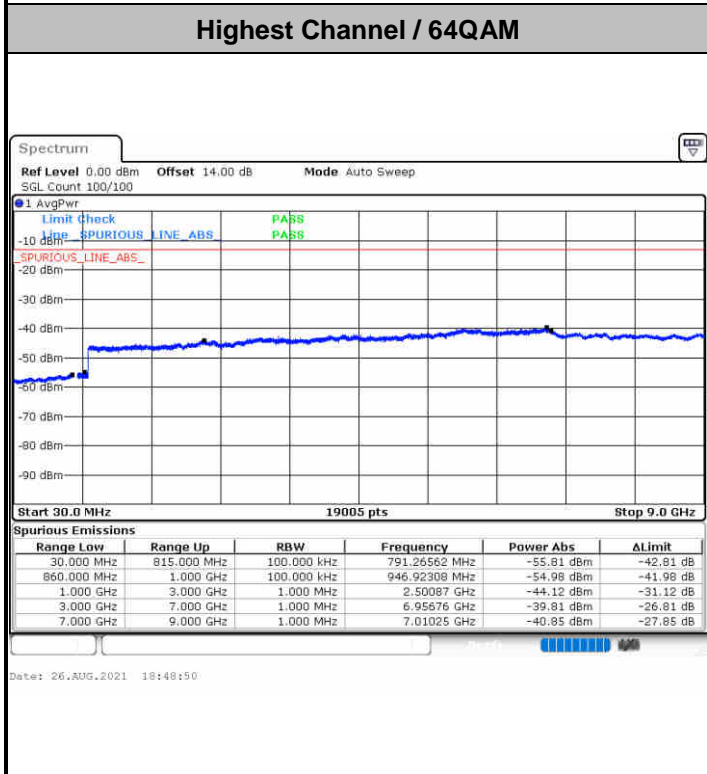
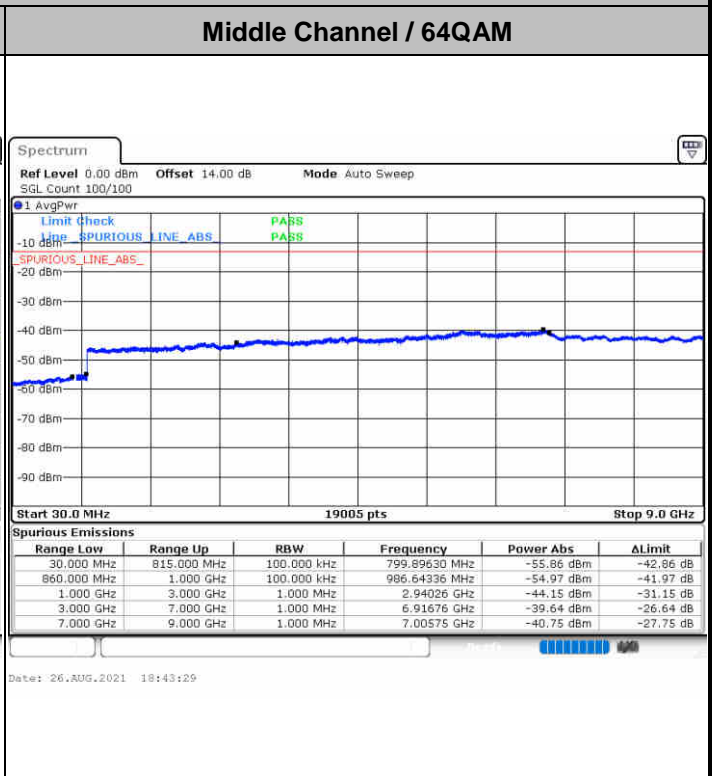
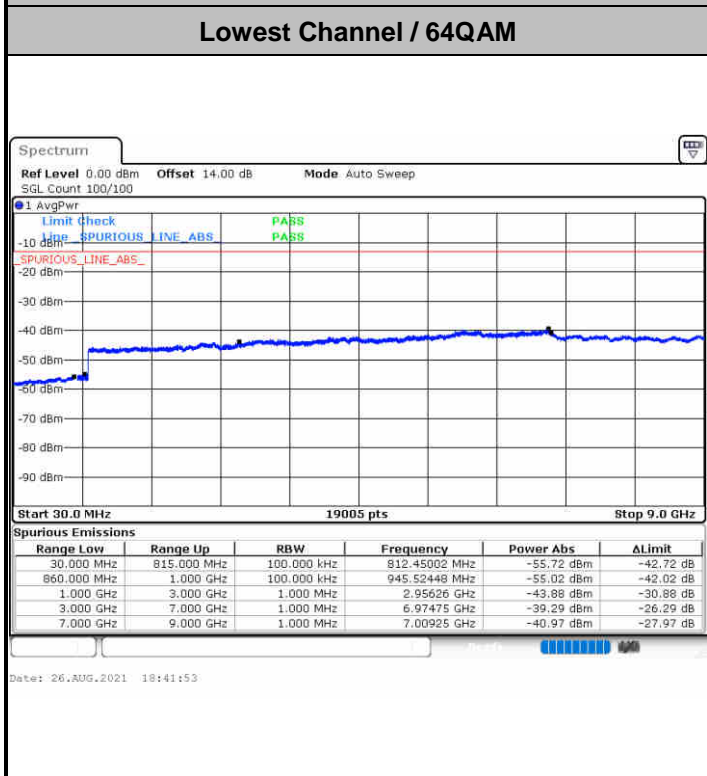


Date: 26.AUG.2021 17:33:05





LTE Band 5 / 10MHz





Frequency Stability

Test Conditions		LTE Band 5 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	2.5ppm
		Deviation (ppm)	Result
50	Normal Voltage	0.0007	PASS
40	Normal Voltage	0.0146	
30	Normal Voltage	0.0007	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0014	
0	Normal Voltage	0.0178	
-10	Normal Voltage	0.0002	
-20	Normal Voltage	0.0007	
-30	Normal Voltage	0.0160	
20	Maximum Voltage	0.0011	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0166	

Note: Normal Voltage =3.8 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.4 V.



LTE Band 13

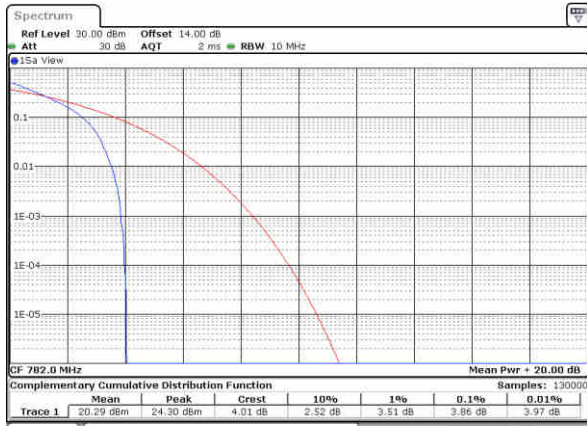
Peak-to-Average Ratio

Mode	LTE Band 13 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	-	-	-	-	PASS
Middle CH	3.86	4.70	4.96	5.68	
Highest CH	-	-	-	-	
Mode	LTE Band 13 / 10MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	-	-	-	-	PASS
Middle CH	5.33	6.03	-	-	
Highest CH	-	-	-	-	



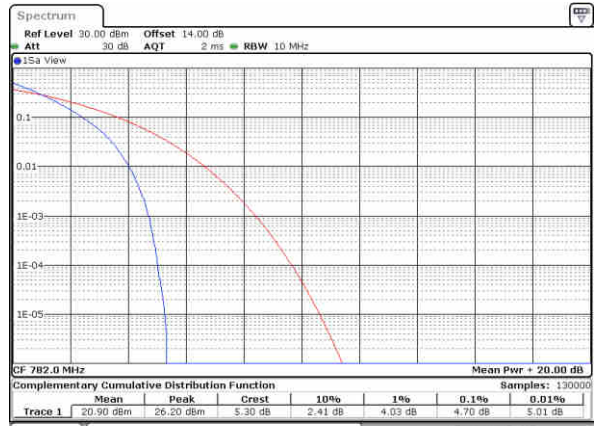
LTE Band 13 / 10MHz / QPSK

Middle Channel / 1RB



Date: 27_AUG_2021 15:38:00

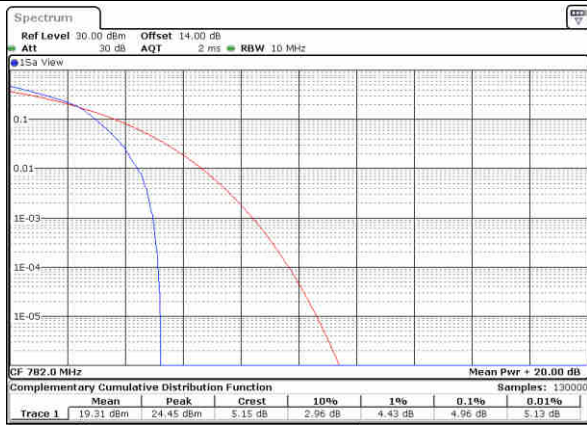
Middle Channel / Full RB



Date: 27_AUG_2021 15:38:05

LTE Band 13 / 10MHz / 16QAM

Middle Channel / 1RB



Date: 27_AUG_2021 15:38:09

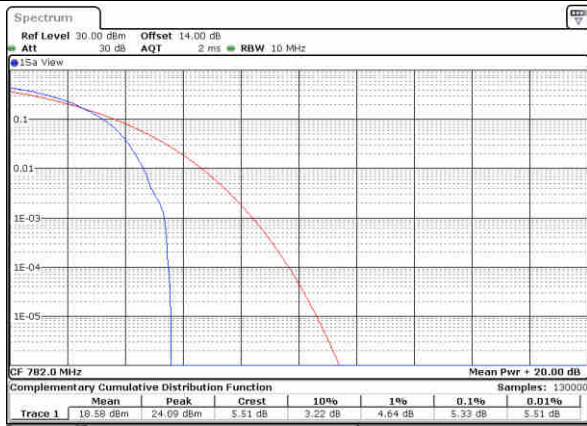
Middle Channel / Full RB



Date: 27_AUG_2021 15:38:14

LTE Band 13 / 10MHz / 64QAM

Middle Channel / 1RB



Date: 27_AUG_2021 15:37:19

Middle Channel / Full RB



Date: 27_AUG_2021 15:37:44



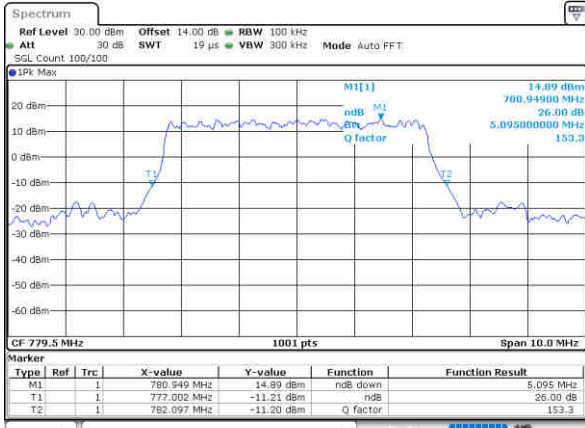
26dB Bandwidth

Mode	LTE Band 13 : 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	-	-	-	-	5.10	5.06	-	-	-	-	-	-
Middle CH	-	-	-	-	5.15	4.98	9.91	9.69	-	-	-	-
Highest CH	-	-	-	-	5.04	5.00	-	-	-	-	-	-
Mode	LTE Band 13 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	5.03	-	-	-	-	-	-	-
Middle CH	-	-	-	-	5.23	-	9.93	-	-	-	-	-
Highest CH	-	-	-	-	5.01	-	-	-	-	-	-	-



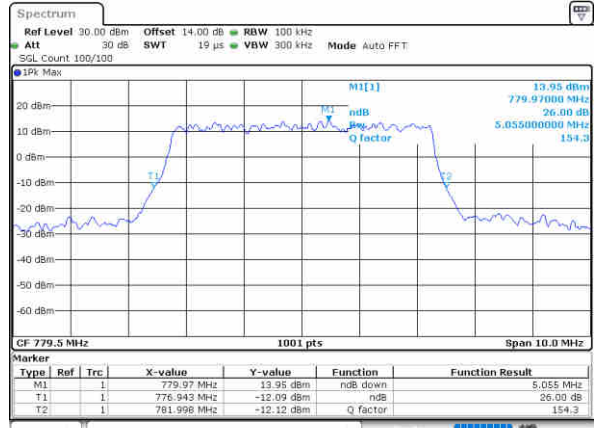
LTE Band 13

Lowest Channel / 5MHz / QPSK



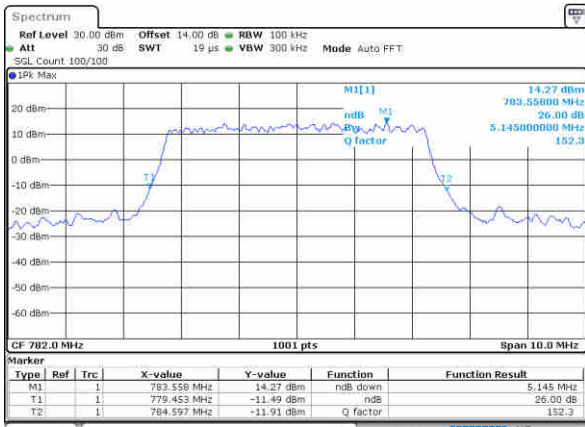
Date: 27-Aug-2021 14:40:42

Lowest Channel / 5MHz / 16QAM



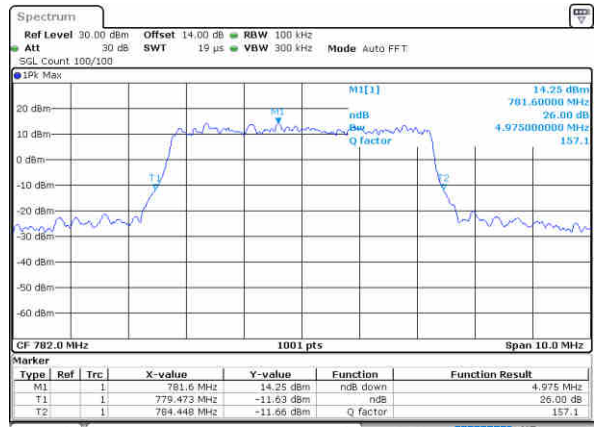
Date: 27-Aug-2021 14:40:19

Middle Channel / 5MHz / QPSK



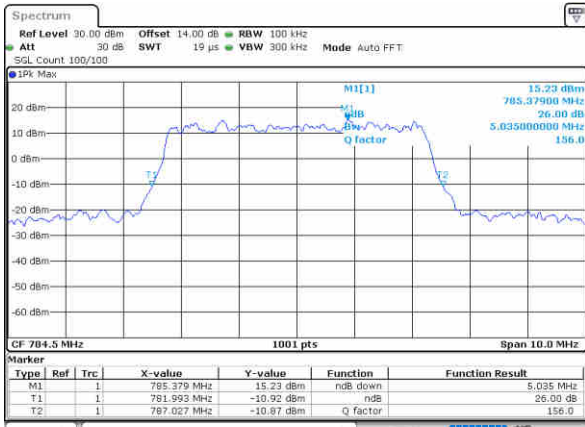
Date: 27-Aug-2021 14:52:05

Middle Channel / 5MHz / 16QAM



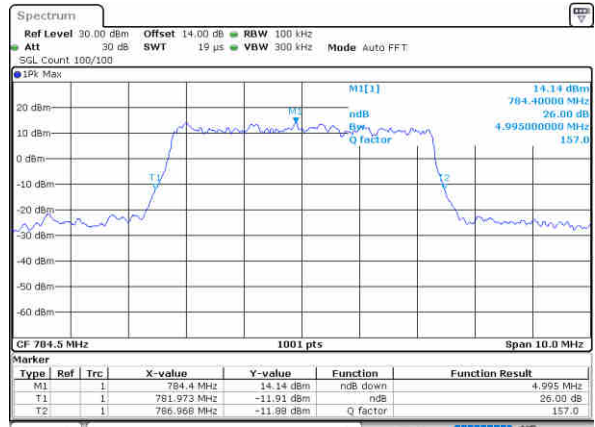
Date: 27-Aug-2021 14:52:28

Highest Channel / 5MHz / QPSK



Date: 27-Aug-2021 14:54:34

Highest Channel / 5MHz / 16QAM

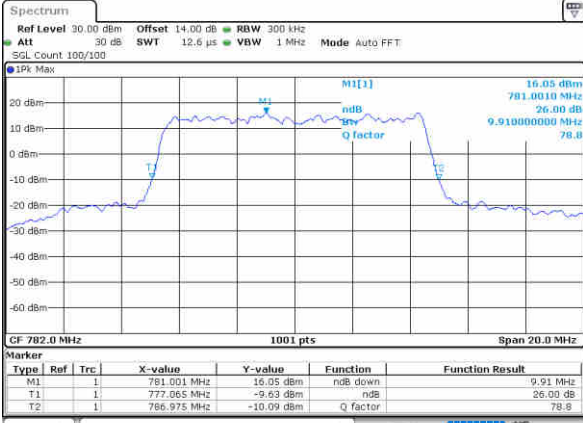


Date: 27-Aug-2021 14:54:09



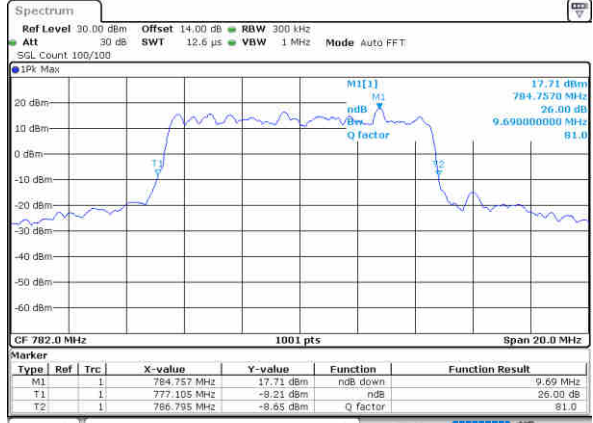
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 27, AUG, 2021 15:17:05

Middle Channel / 10MHz / 16QAM

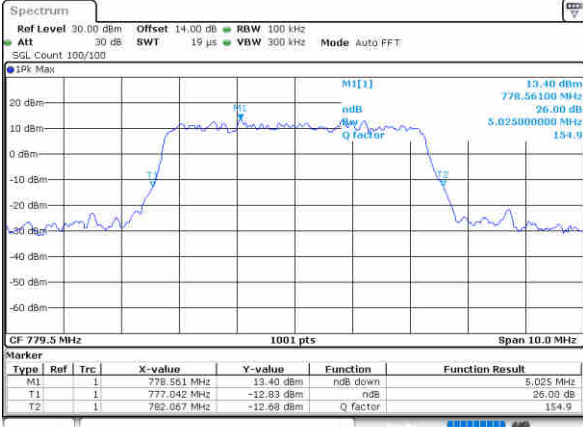


Date: 27, AUG, 2021 15:16:42



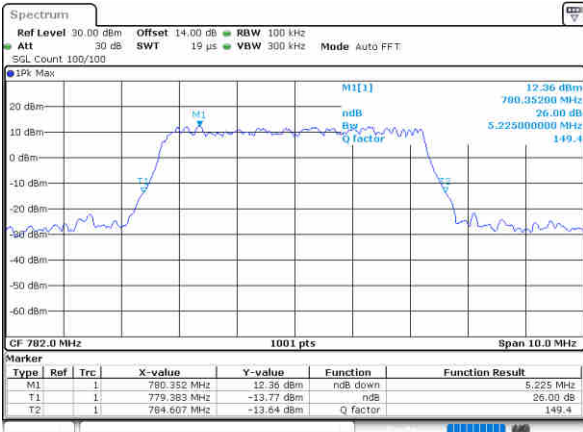
LTE Band 13

Lowest Channel / 5MHz / 64QAM



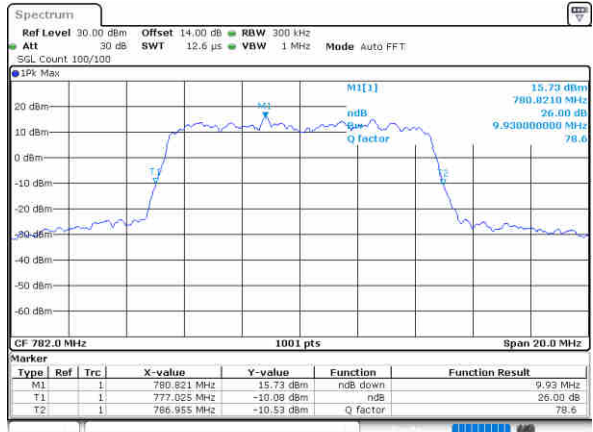
Date: 27-Aug-2021 15:10:28

Middle Channel / 5MHz / 64QAM



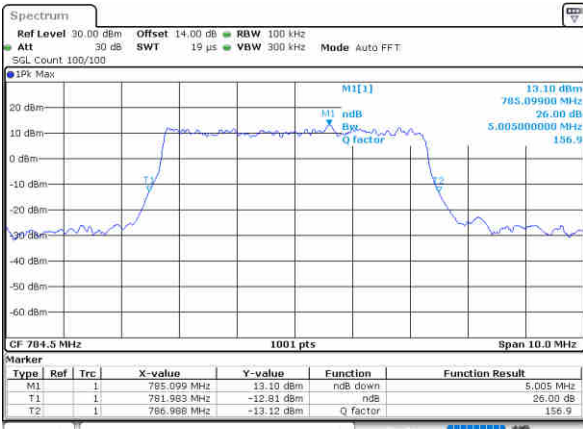
Date: 27-Aug-2021 15:10:12

Middle Channel / 10MHz / 64QAM



Date: 27-Aug-2021 15:20:40

Highest Channel / 5MHz / 64QAM



Date: 27-Aug-2021 15:11:06



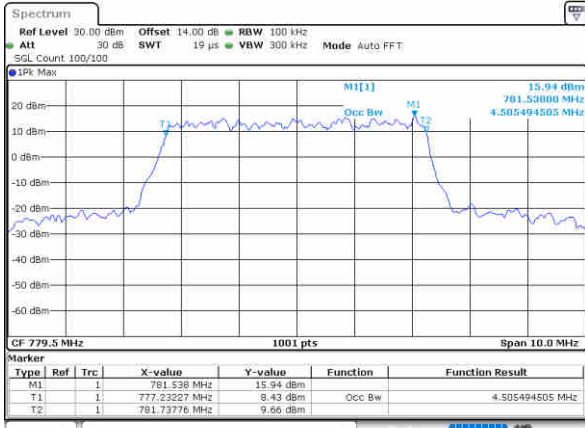
Occupied Bandwidth

Mode	LTE Band 13 : 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	4.50	-	-	-	-	-	-
Middle CH	-	-	-	-	4.51	4.49	9.03	9.03	-	-	-	-
Highest CH	-	-	-	-	4.48	4.49	-	-	-	-	-	-
Mode	LTE Band 13 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	4.51	-	-	-	-	-	-	-
Middle CH	-	-	-	-	4.47	-	9.05	-	-	-	-	-
Highest CH	-	-	-	-	4.51	-	-	-	-	-	-	-



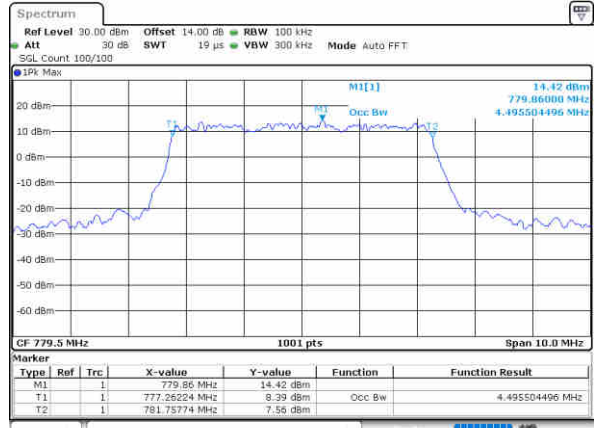
LTE Band 13

Lowest Channel / 5MHz / QPSK



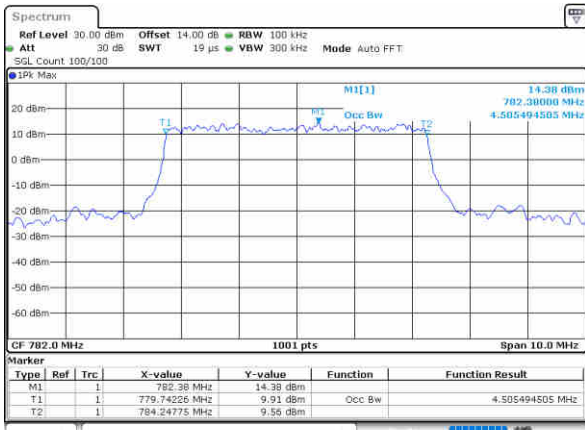
Date: 27-Aug-2021 14:39:39

Lowest Channel / 5MHz / 16QAM



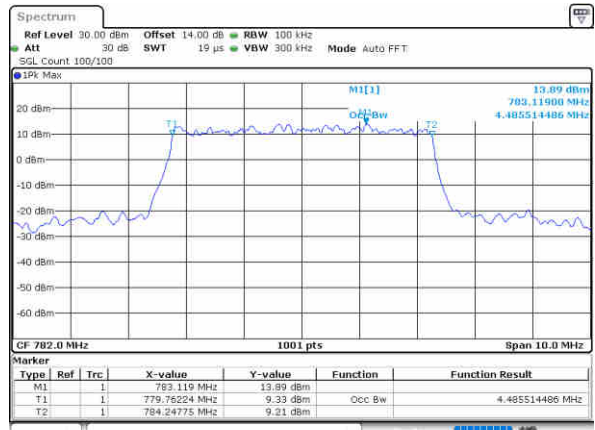
Date: 27-Aug-2021 14:40:03

Middle Channel / 5MHz / QPSK



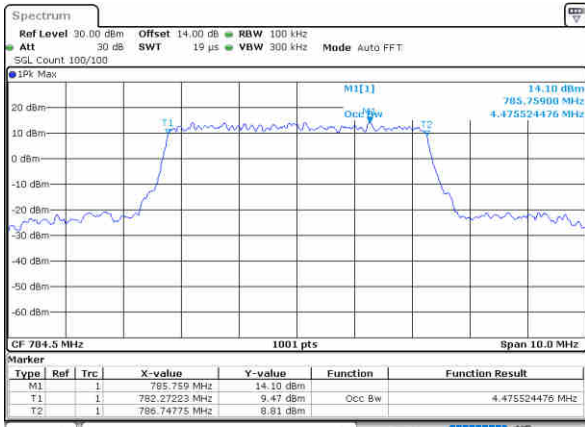
Date: 27-Aug-2021 14:53:07

Middle Channel / 5MHz / 16QAM



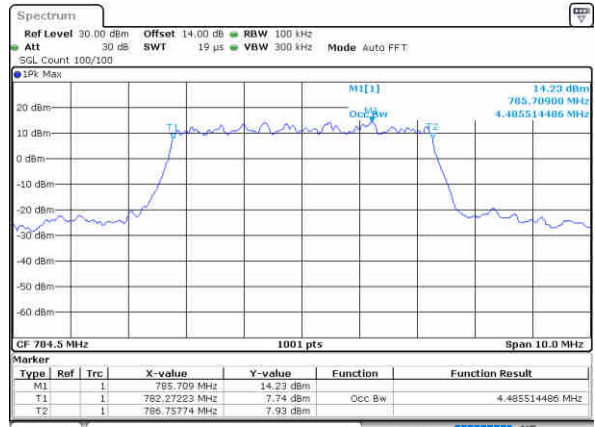
Date: 27-Aug-2021 14:53:43

Highest Channel / 5MHz / QPSK



Date: 27-Aug-2021 14:53:33

Highest Channel / 5MHz / 16QAM

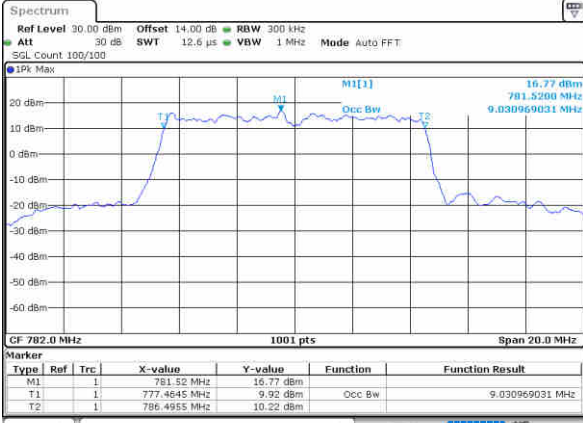


Date: 27-Aug-2021 14:53:55

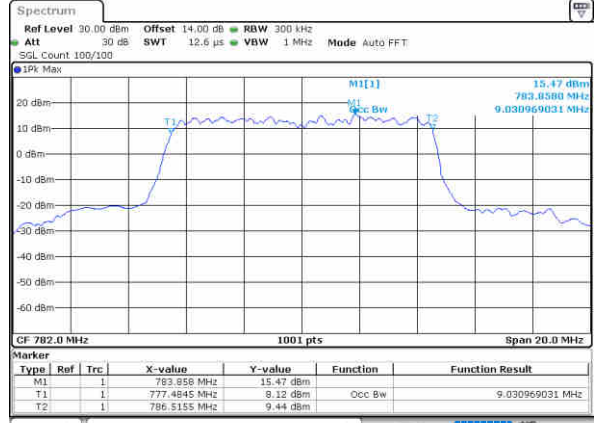


LTE Band 13

Middle Channel / 10MHz / QPSK



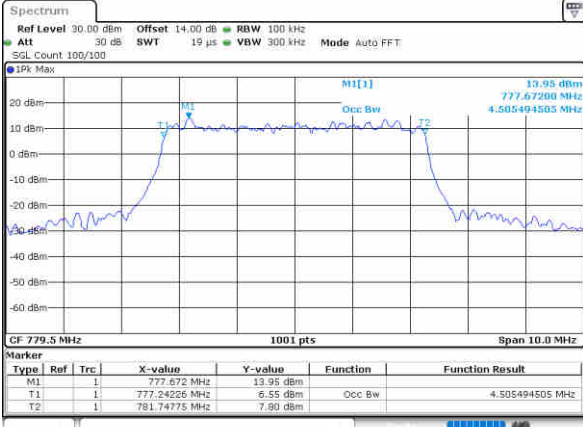
Middle Channel / 10MHz / 16QAM





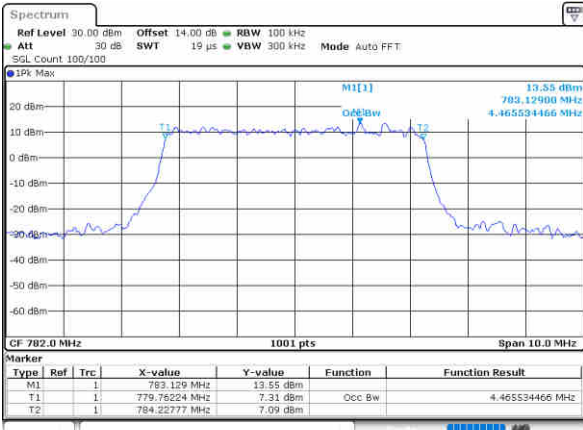
LTE Band 13

Lowest Channel / 5MHz / 64QAM



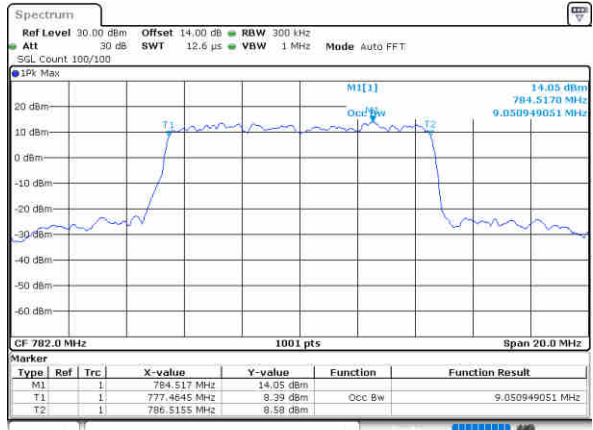
Date: 27-Aug-2021 15:10:13

Middle Channel / 5MHz / 64QAM



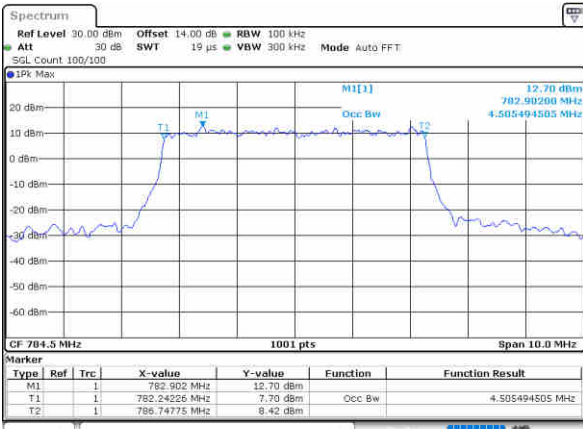
Date: 27-Aug-2021 15:10:28

Middle Channel / 10MHz / 64QAM



Date: 27-Aug-2021 15:10:25

Highest Channel / 5MHz / 64QAM



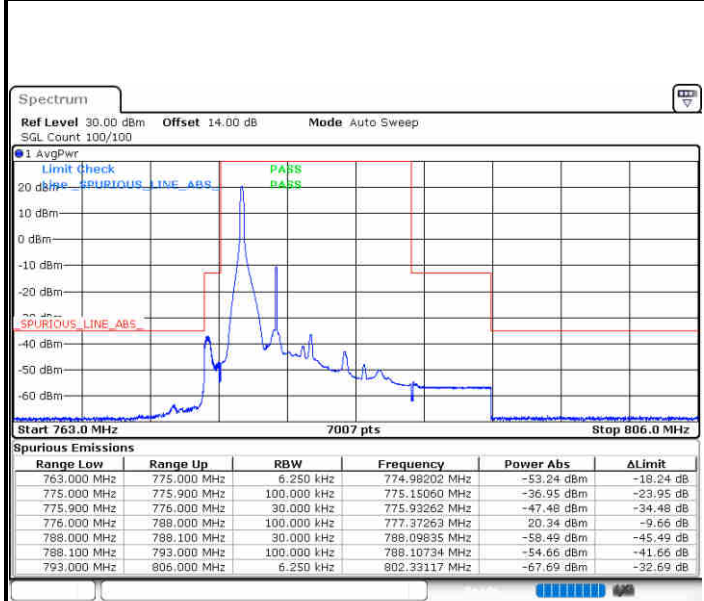
Date: 27-Aug-2021 15:10:51



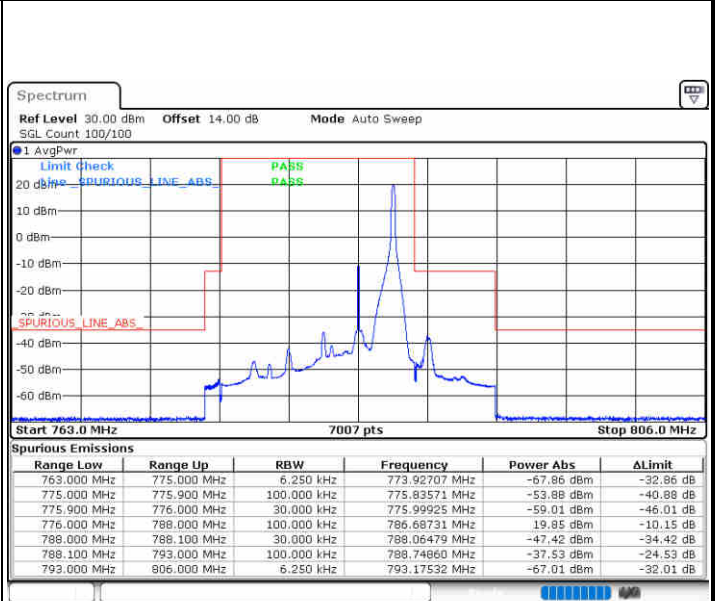
Conducted Band Edge

LTE Band 13 / 5MHz / QPSK

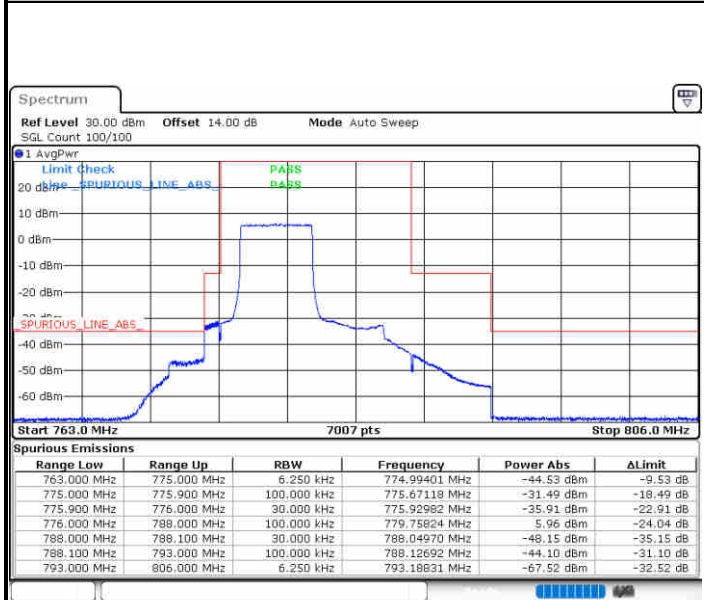
Lowest Band Edge / 1 RB



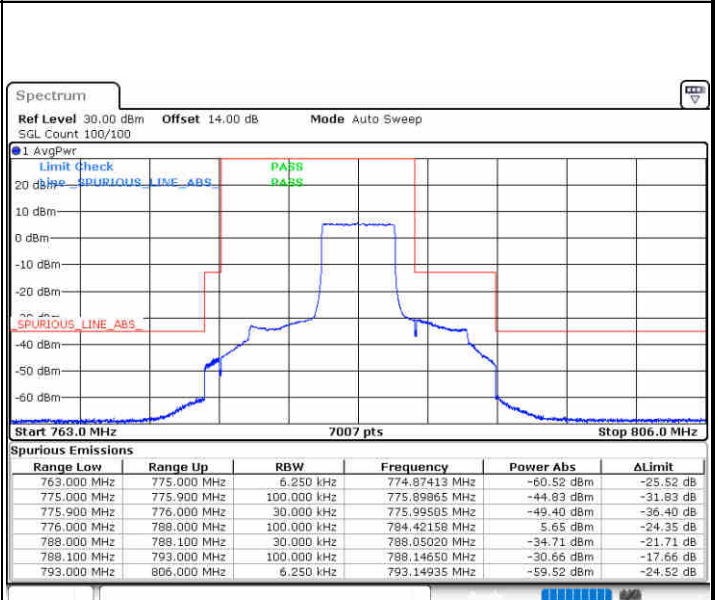
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



Highest Band Edge / Full RB

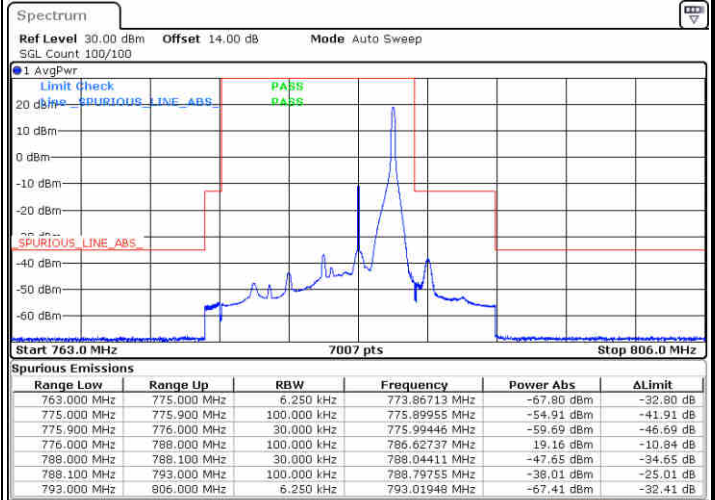
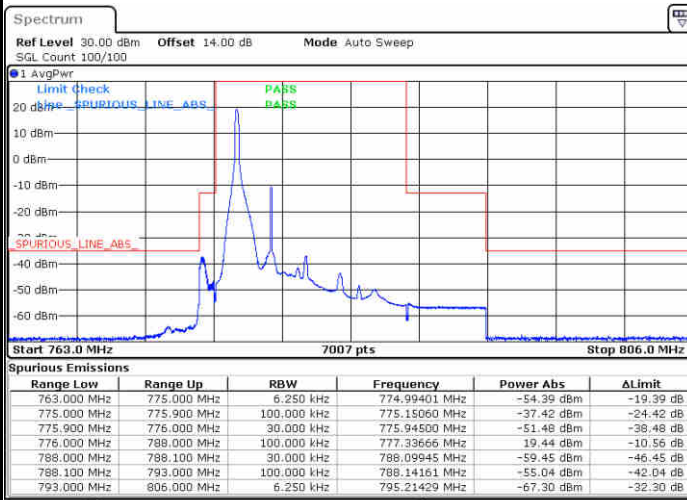




LTE Band 13 / 5MHz / 16QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

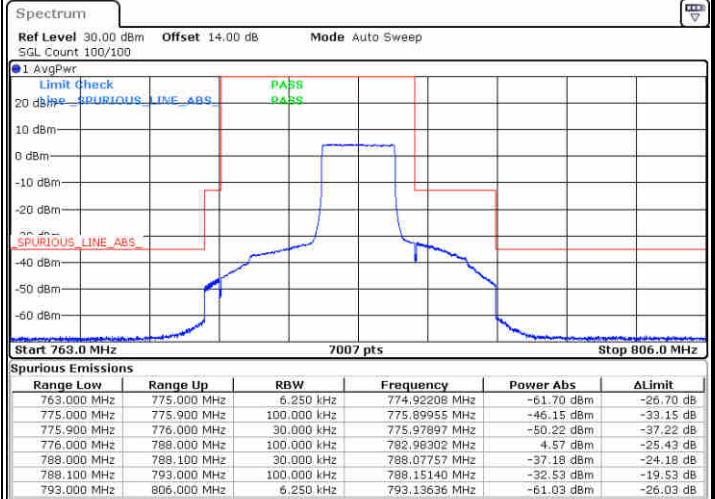
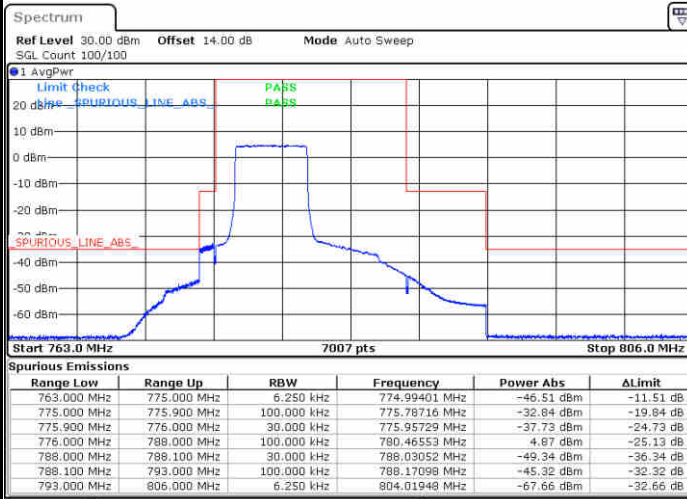


Date: 27.AUG.2021 14:46:10

Date: 27.AUG.2021 15:00:02

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 27.AUG.2021 14:44:18

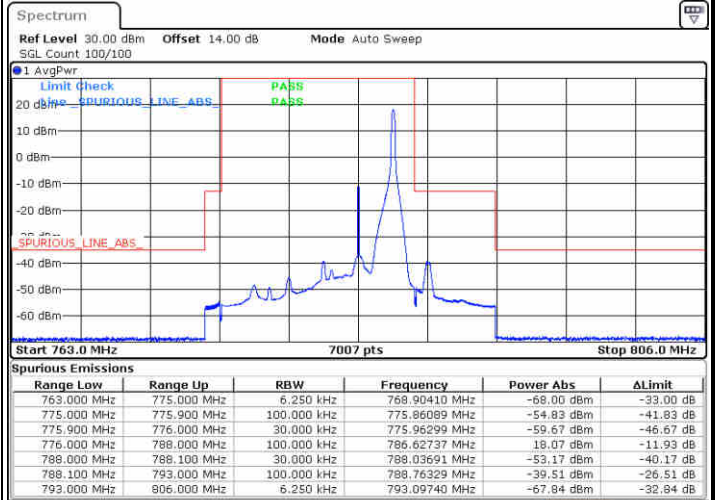
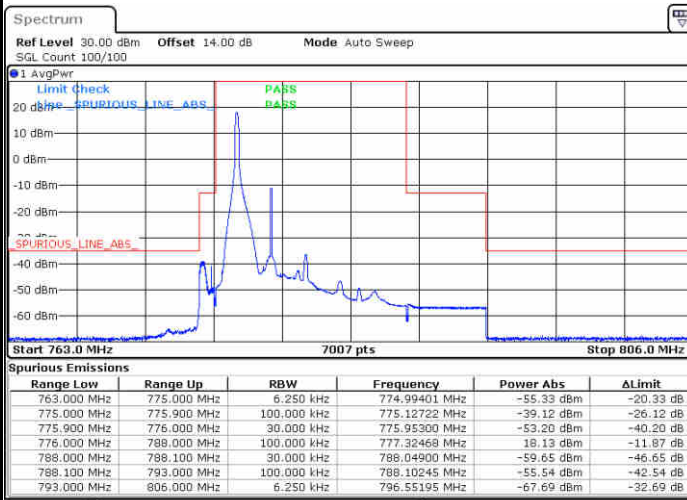
Date: 27.AUG.2021 14:58:10



LTE Band 13 / 5MHz / 64QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

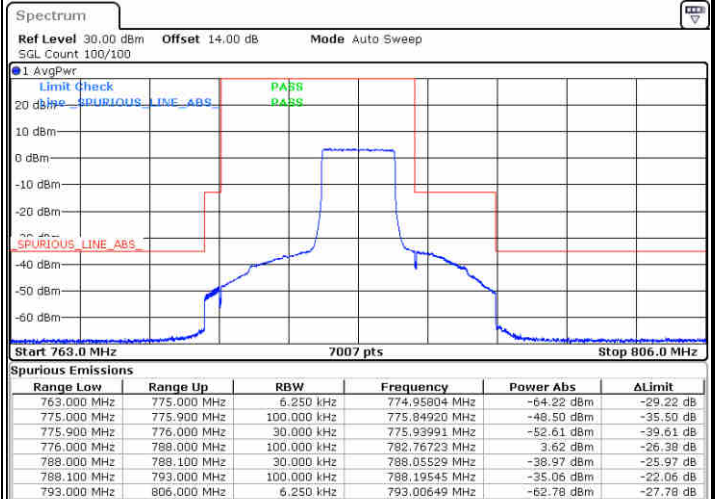
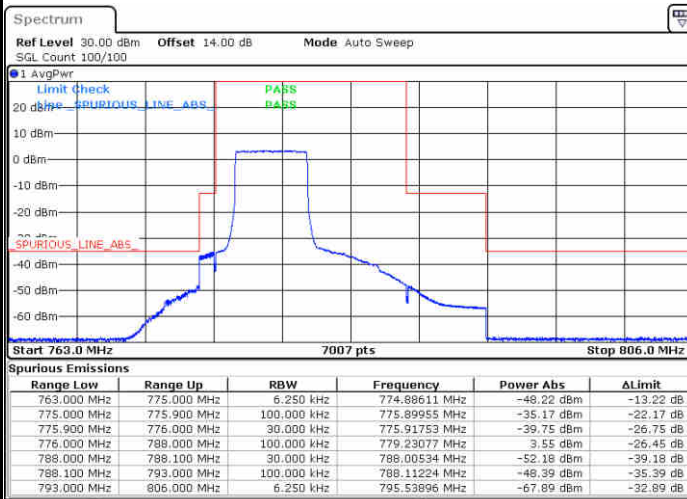


Date: 27.AUG.2021 15:08:04

Date: 27.AUG.2021 15:14:42

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 27.AUG.2021 15:06:11

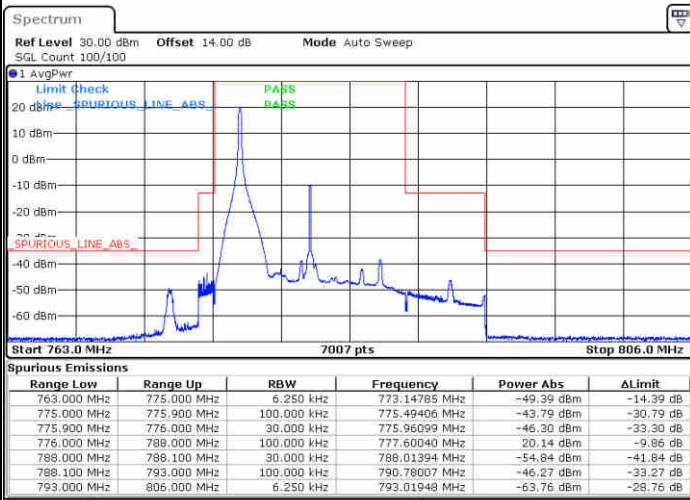
Date: 27.AUG.2021 15:12:49



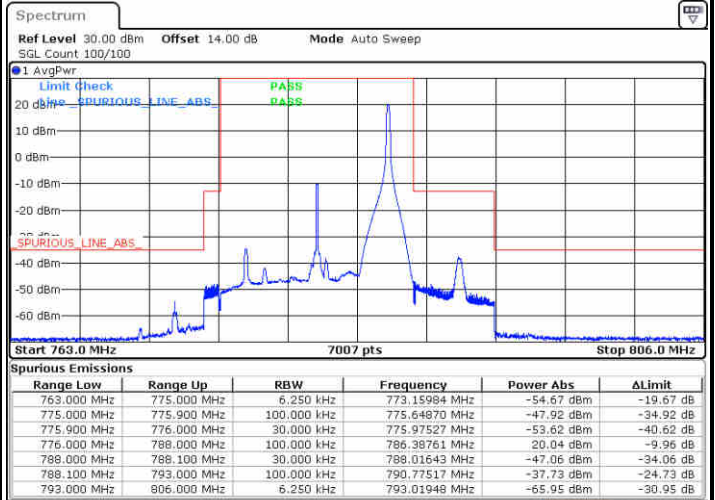
LTE Band 13 / 10MHz / QPSK

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

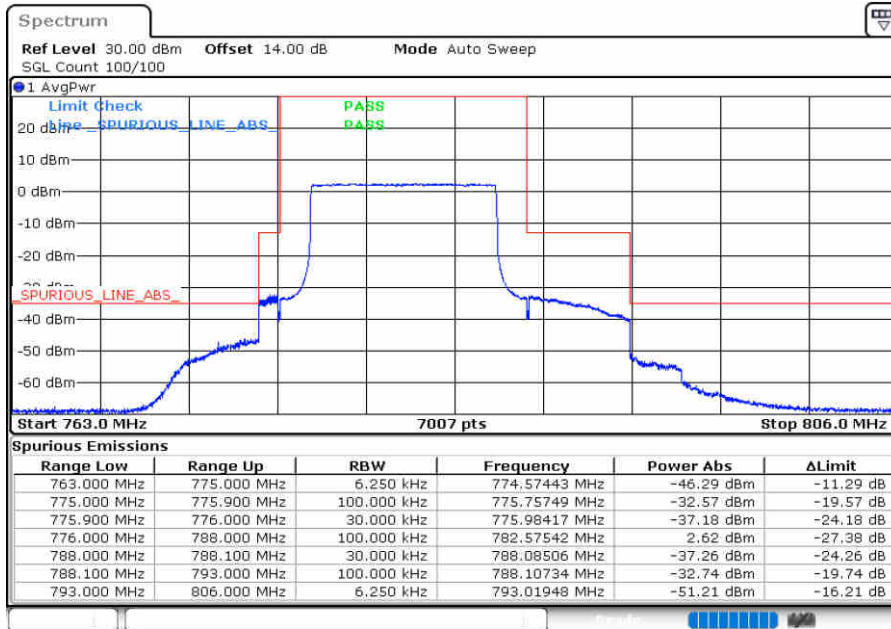


Date: 27.AUG.2021 15:24:24



Date: 27.AUG.2021 15:26:16

Band Edge / Full RB



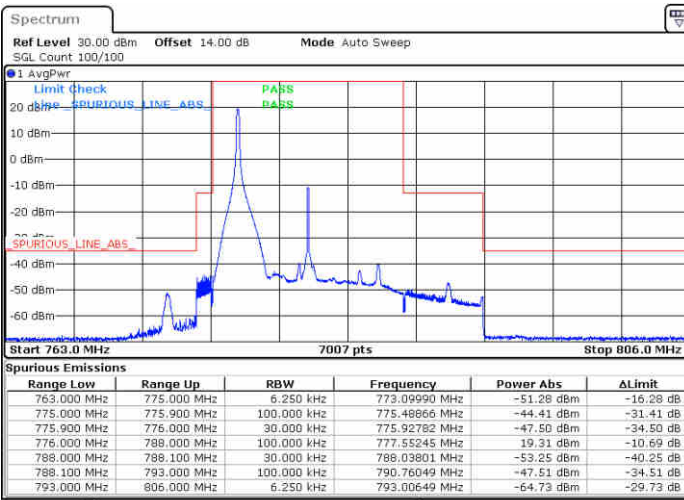
Date: 27.AUG.2021 15:18:49



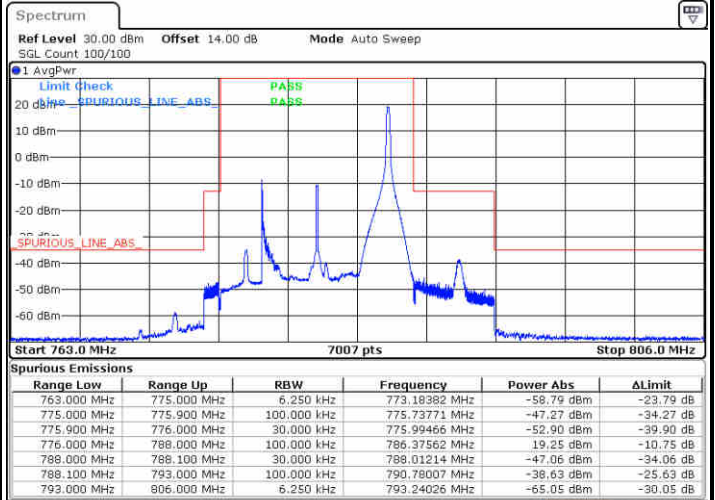
LTE Band 13 / 10MHz / 16QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

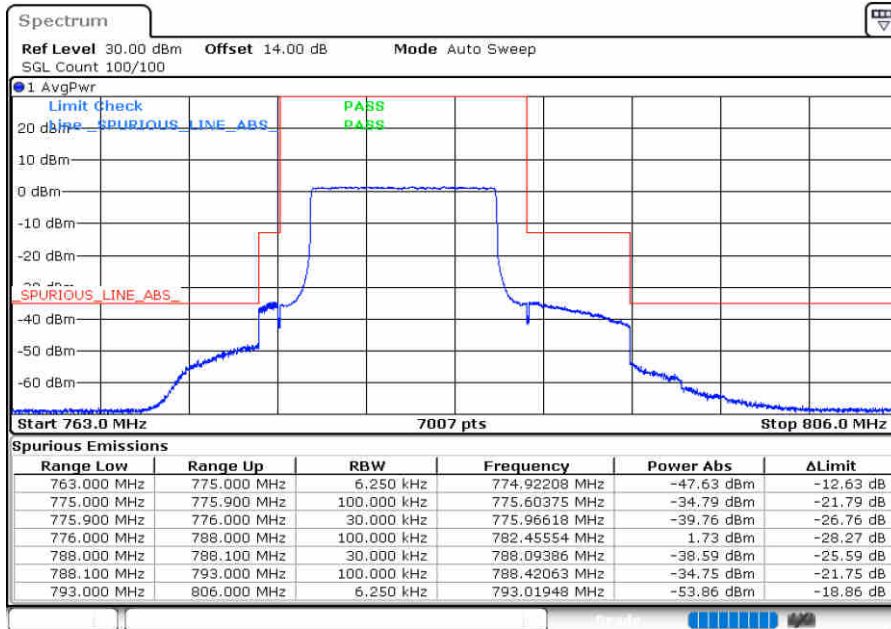


Date: 27.AUG.2021 15:22:32



Date: 27.AUG.2021 15:28:08

Band Edge / Full RB

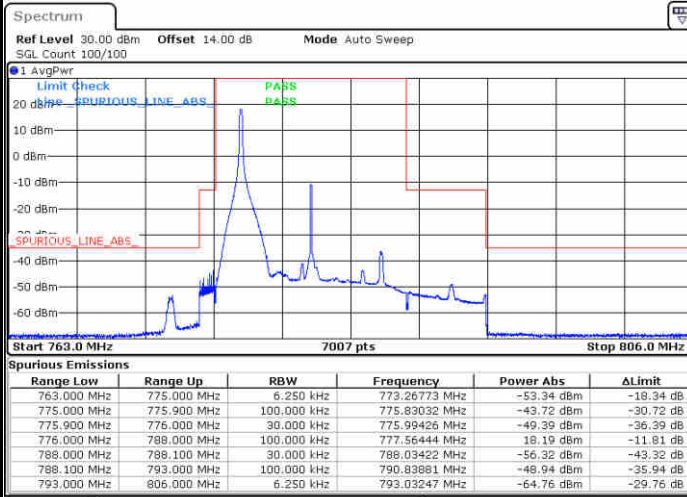


Date: 27.AUG.2021 15:20:40



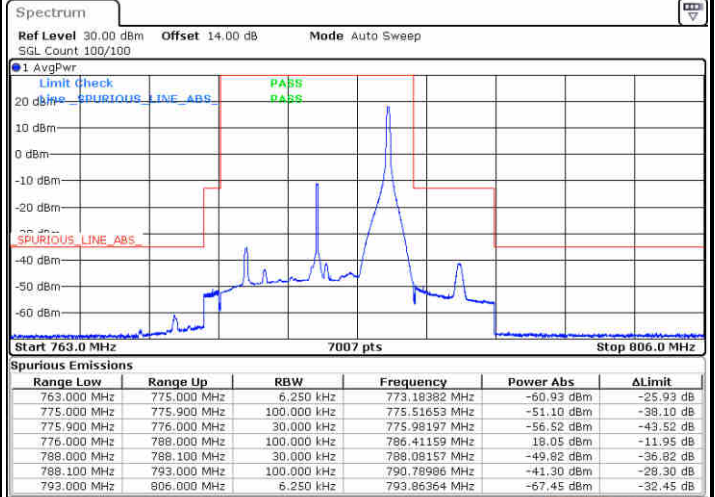
LTE Band 13 / 10MHz / 64QAM

Lowest Band Edge / 1 RB



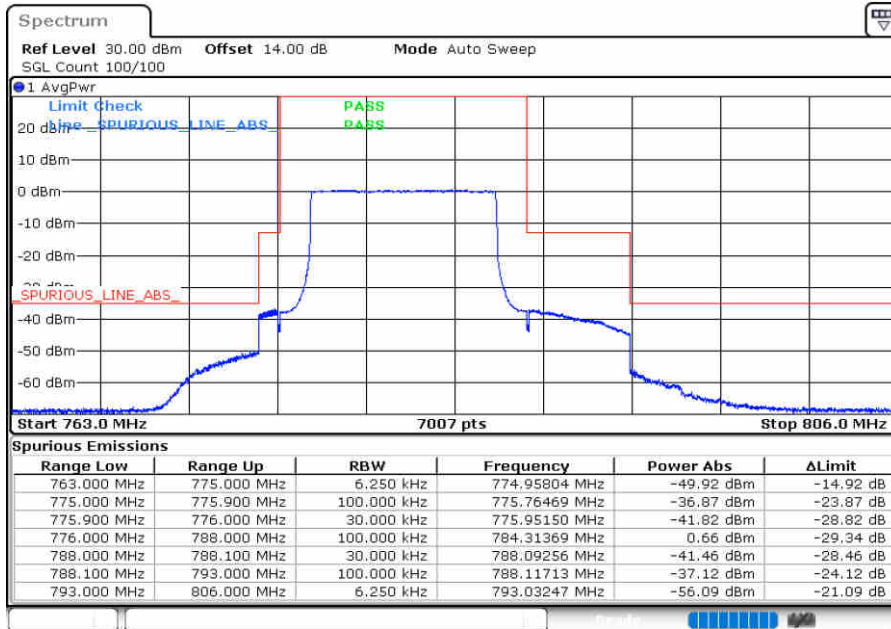
Date: 27.AUG.2021 15:34:15

Highest Band Edge / 1 RB



Date: 27.AUG.2021 15:36:07

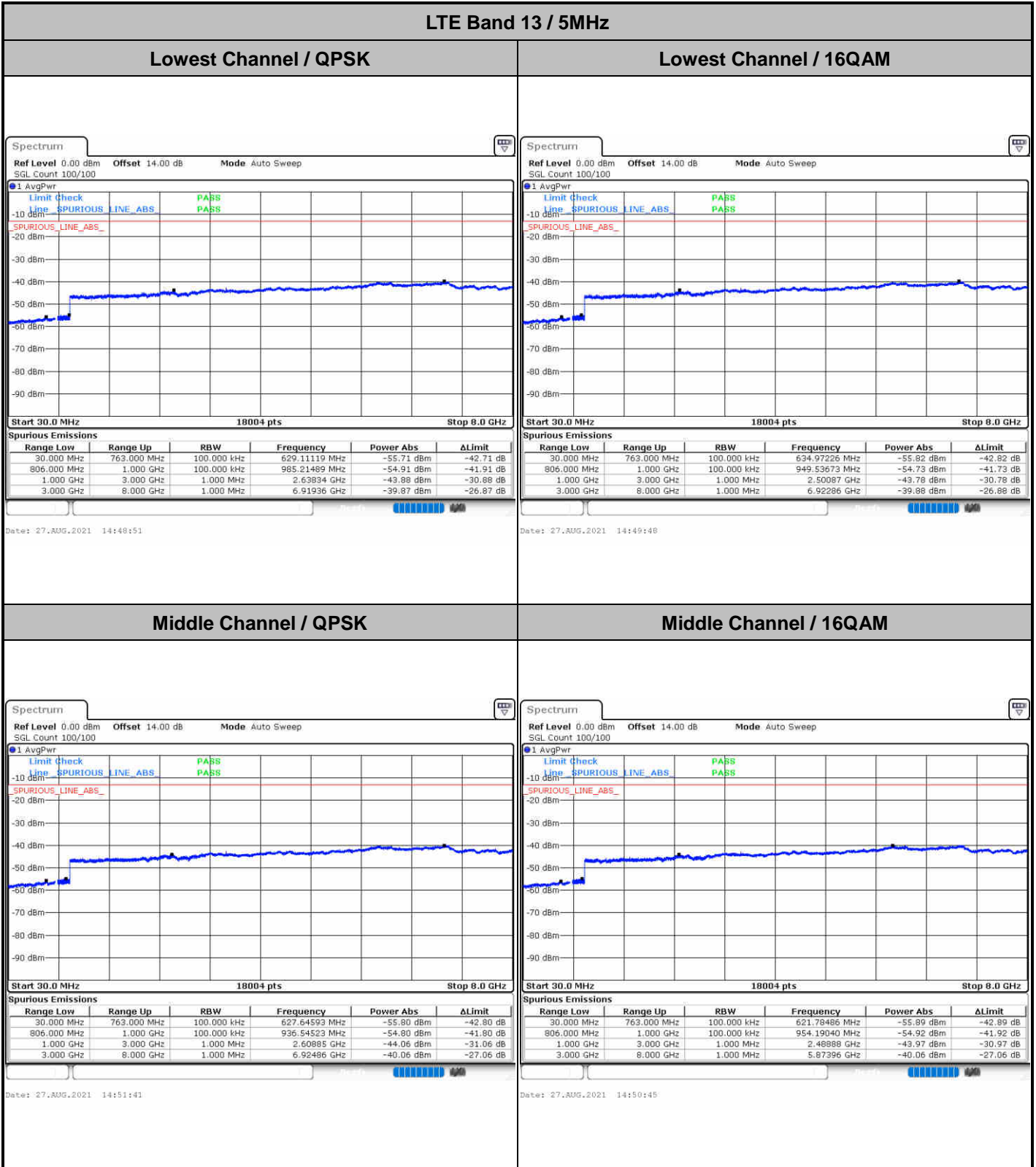
Band Edge / Full RB



Date: 27.AUG.2021 15:32:23



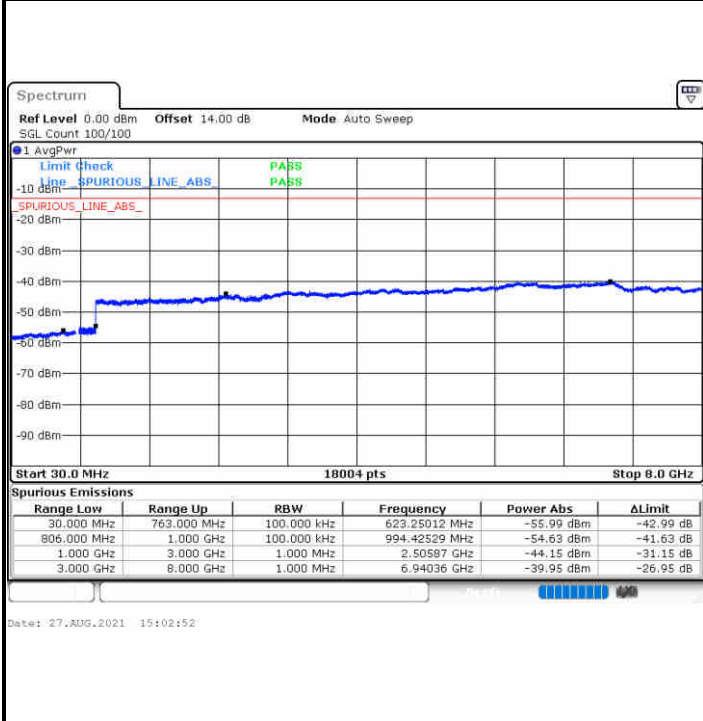
Conducted Spurious Emission



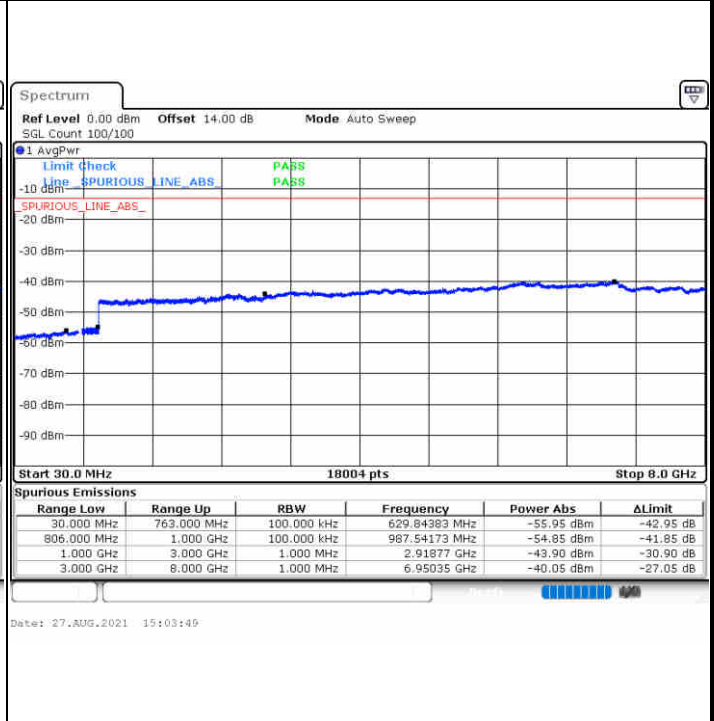


LTE Band 13 / 5MHz

Highest Channel / QPSK

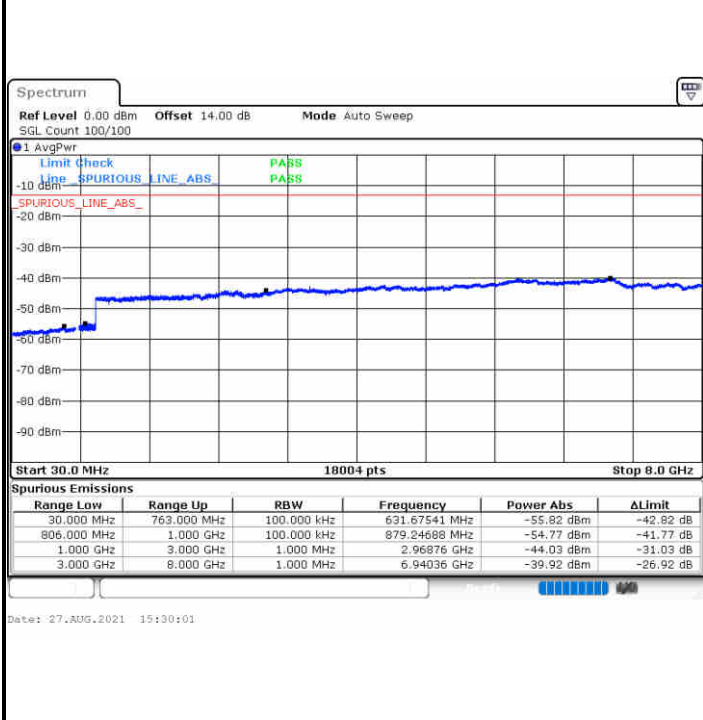


Highest Channel / 16QAM

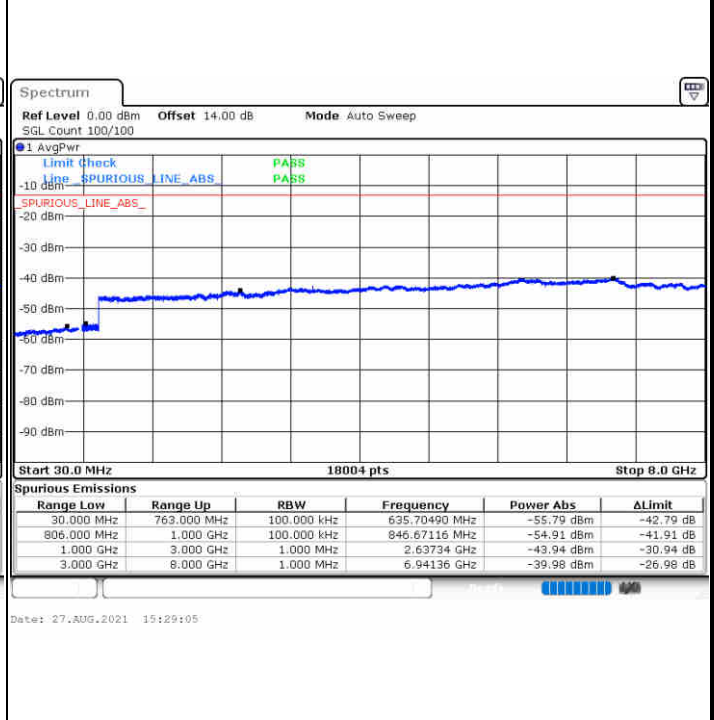


LTE Band 13 / 10MHz

Middle Channel / QPSK



Middle Channel / 16QAM

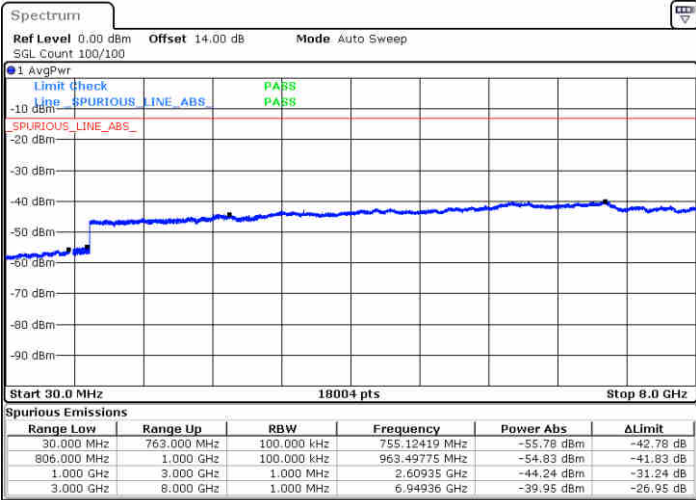




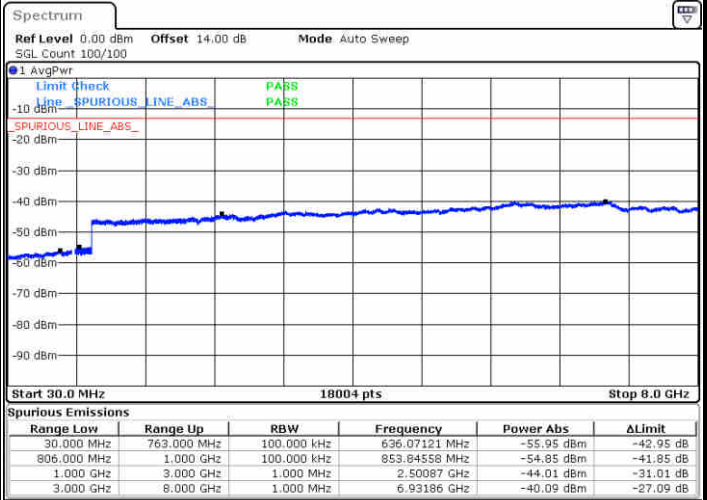
LTE Band 13 / 5MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

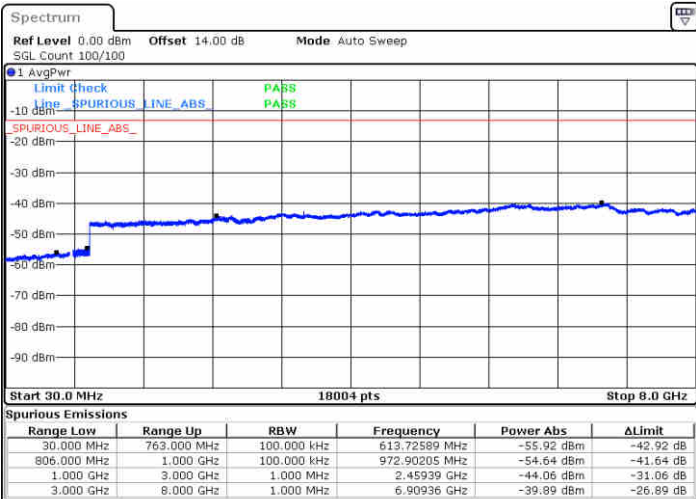


Date: 27.AUG.2021 15:08:52



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Highest Channel / 64QAM

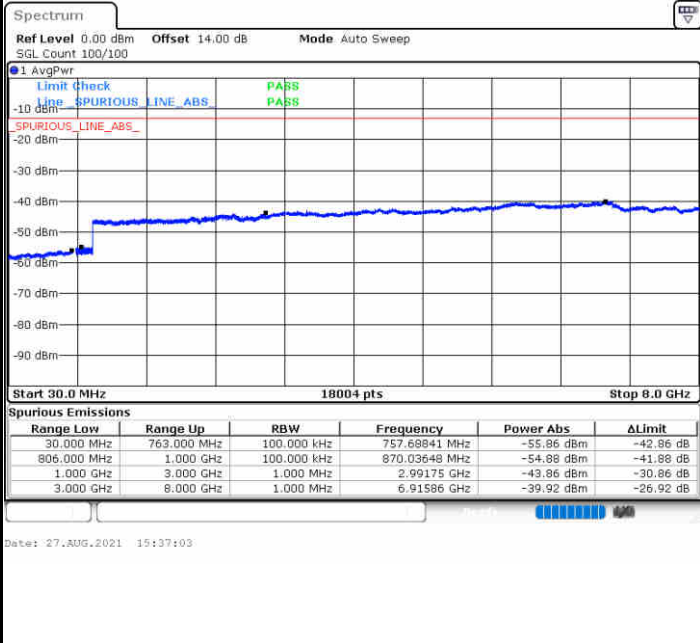


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LTE Band 13 / 10MHz

Middle Channel / 64QAM





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	0.0024	PASS
40	Normal Voltage	0.0188	
30	Normal Voltage	0.0003	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0010	
0	Normal Voltage	0.0017	
-10	Normal Voltage	0.0180	
-20	Normal Voltage	0.0010	
-30	Normal Voltage	0.0006	
20	Maximum Voltage	0.0017	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0201	

Note:

1. Normal Voltage =3.8 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.4 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

For Ant. 1:

LTE Band 2 / 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)
Middle	3742.18	-55.00	-13	-42.00	-77.89	-61.75	5.85	12.60	H
	5613.27	-54.51	-13	-41.51	-78.79	-60.31	7.30	13.10	H
	7484.36	-53.10	-13	-40.10	-79.56	-56.25	8.35	11.50	H
	3742.18	-51.47	-13	-38.47	-76.37	-58.22	5.85	12.60	V
	5613.27	-53.76	-13	-40.76	-78.89	-59.56	7.30	13.10	V
	7484.36	-53.14	-13	-40.14	-79.58	-56.29	8.35	11.50	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)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1664.18	-63.70	-13	-50.70	-75.35	-66.95	4.00	9.40	H
	2496.27	-57.55	-13	-44.55	-76.32	-61.12	4.88	10.60	H
	3328.36	-56.63	-13	-43.63	-77.60	-61.56	5.52	12.60	H
	1664.18	-62.36	-13	-49.36	-74.68	-65.61	4.00	9.40	V
	2496.27	-57.43	-13	-44.43	-76.46	-61.00	4.88	10.60	V
	3328.36	-56.15	-13	-43.15	-77.62	-61.08	5.52	12.60	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)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1559.5	-63.68	-42.15	-21.53	-74.97	-66.93	4.00	9.40	H
	2339.25	-58.06	-13	-45.06	-76.04	-61.63	4.88	10.60	H
	3119	-57.30	-13	-44.30	-77.39	-62.23	5.52	12.60	H
	1559.5	-50.18	-42.15	-8.03	-62.09	-53.43	4.00	9.40	V
	2339.25	-57.94	-13	-44.94	-76.29	-61.51	4.88	10.60	V
	3119	-55.56	-13	-42.56	-77.45	-60.49	5.52	12.60	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)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1555	-64.08	-13	-51.08	-75.37	-67.33	4.00	9.40	H
	2332.5	-58.02	-13	-45.02	-76.00	-61.59	4.88	10.60	H
	3110	-56.99	-13	-43.99	-77.05	-61.92	5.52	12.60	H
	1555	-62.82	-13	-49.82	-74.73	-66.07	4.00	9.40	V
	2332.5	-58.09	-13	-45.09	-76.35	-61.66	4.88	10.60	V
	3110	-55.15	-13	-42.15	-76.94	-60.08	5.52	12.60	V

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

For Ant. 2:

LTE Band 2 / 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)
Middle	3742.18	-55.10	-13	-42.10	-77.99	-61.85	5.85	12.60	H
	5613.27	-55.02	-13	-42.02	-79.30	-60.82	7.30	13.10	H
	7484.36	-53.25	-13	-40.25	-79.71	-56.40	8.35	11.50	H
	3742.18	-51.79	-13	-38.79	-76.69	-58.54	5.85	12.60	V
	5613.27	-54.42	-13	-41.42	-79.55	-60.22	7.30	13.10	V
	7484.36	-53.33	-13	-40.33	-79.77	-56.48	8.35	11.50	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)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1664.18	-63.44	-13	-50.44	-75.09	-66.69	4.00	9.40	H
	2496.27	-57.36	-13	-44.36	-76.13	-60.93	4.88	10.60	H
	3328.36	-56.37	-13	-43.37	-77.34	-61.30	5.52	12.60	H
	1664.18	-61.69	-13	-48.69	-74.01	-64.94	4.00	9.40	V
	2496.27	-57.02	-13	-44.02	-76.05	-60.59	4.88	10.60	V
	3328.36	-56.02	-13	-43.02	-77.49	-60.95	5.52	12.60	V

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



Appendix D. Reference Report

Please refer to Sporton report number FG170628B which is issued separately.