

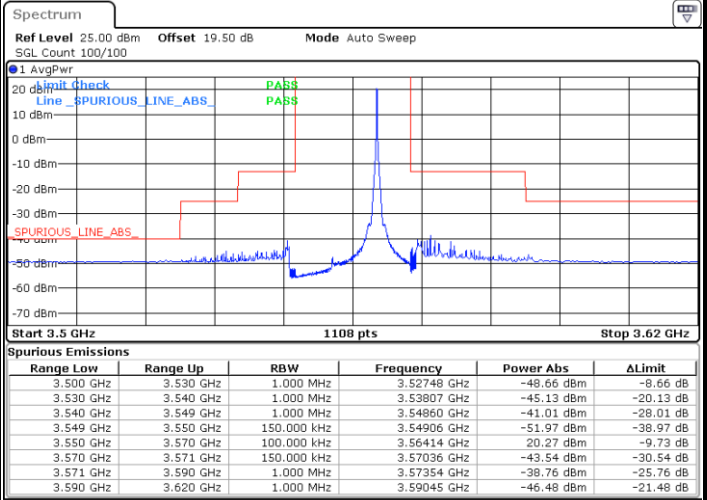
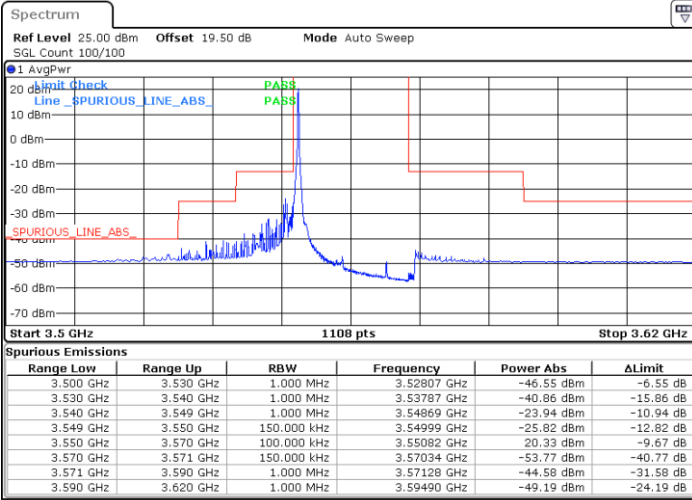


LTE Band 48 / 15MHz

16QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax

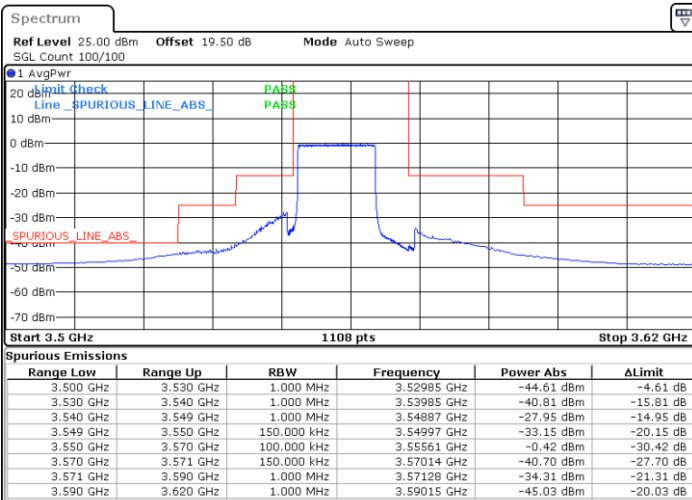


Date: 7 SEP 2023 18:12:34

Date: 7 SEP 2023 18:20:07

Lowest Channel / FullRB

N/A



Date: 16 SEP 2023 09:28:58

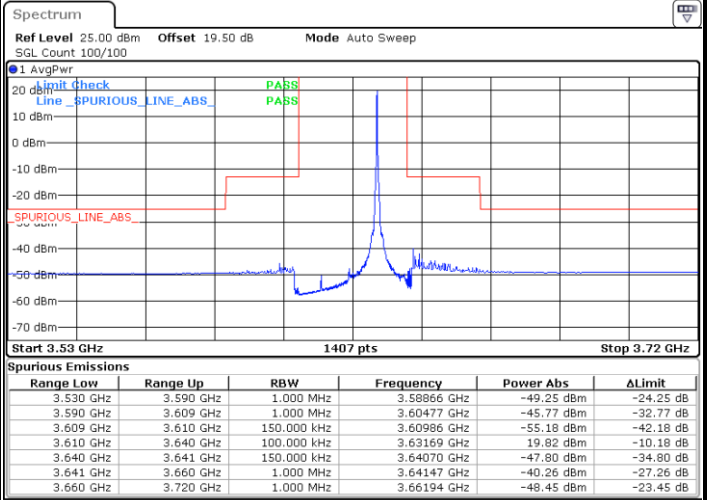
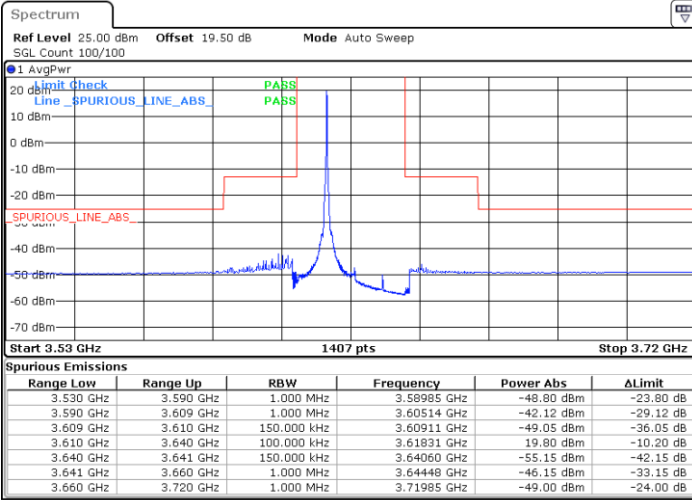


LTE Band 48 / 15MHz

16QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax

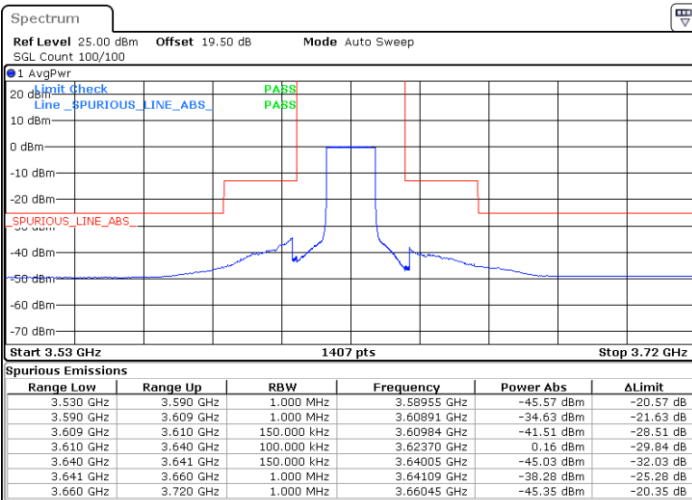


Date: 8 SEP 2023 13:09:45

Date: 8 SEP 2023 13:15:40

Middle Channel / FullRB

N/A



Date: 8 SEP 2023 13:20:45

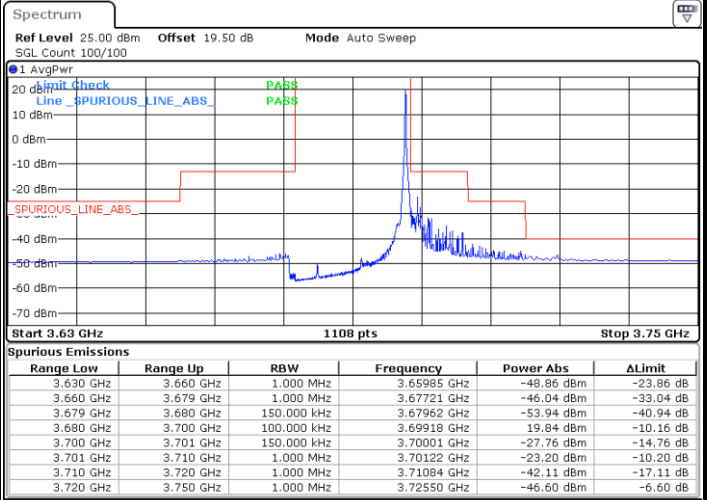
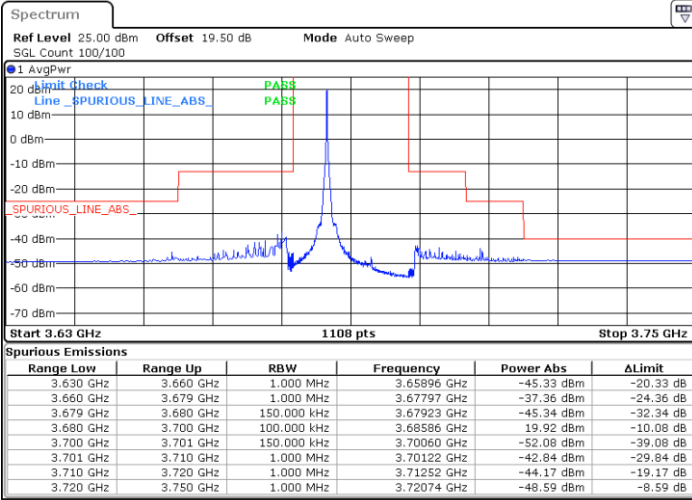


LTE Band 48 / 15MHz

16QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax

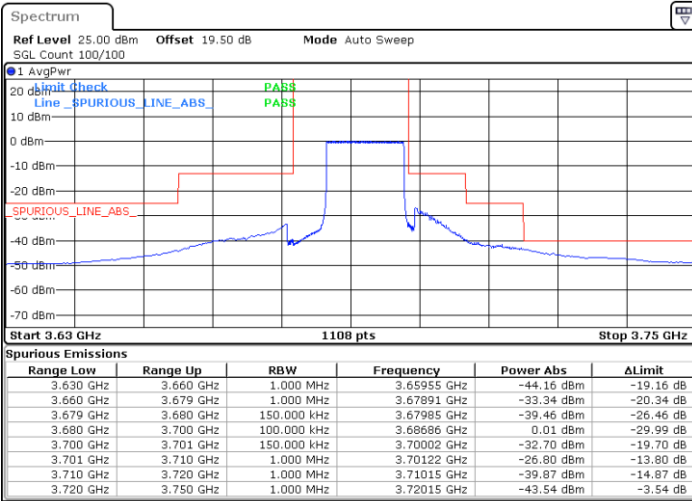


Date: 8 SEP 2023 13:27:38

Date: 8 SEP 2023 13:30:47

Highest Channel / FullRB

N/A



Date: 8 SEP 2023 13:37:02

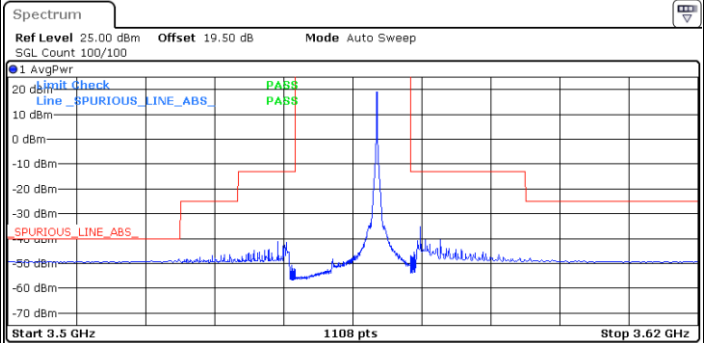
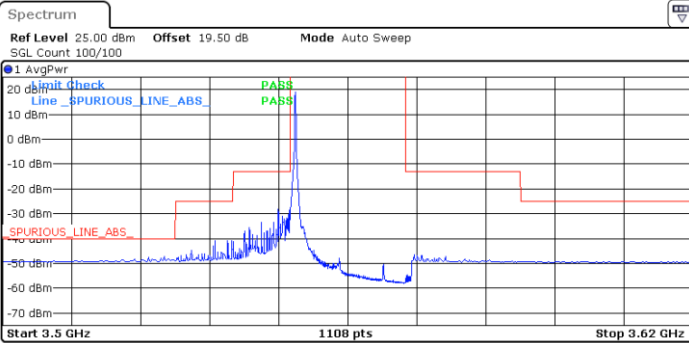


LTE Band 48 / 15MHz

64QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.500 GHz	3.530 GHz	1.000 MHz	3.52807 GHz	-47.32 dBm	-7.32 dB
3.530 GHz	3.540 GHz	1.000 MHz	3.53906 GHz	-40.74 dBm	-15.74 dB
3.540 GHz	3.549 GHz	1.000 MHz	3.54780 GHz	-28.26 dBm	-15.26 dB
3.549 GHz	3.550 GHz	150.000 kHz	3.54999 GHz	-27.57 dBm	-14.57 dB
3.550 GHz	3.570 GHz	100.000 kHz	3.55082 GHz	19.07 dBm	-10.93 dB
3.570 GHz	3.571 GHz	150.000 kHz	3.57025 GHz	-54.71 dBm	-41.71 dB
3.571 GHz	3.590 GHz	1.000 MHz	3.57147 GHz	-46.41 dBm	-33.41 dB
3.590 GHz	3.620 GHz	1.000 MHz	3.59223 GHz	-49.19 dBm	-24.19 dB

Spurious Emissions

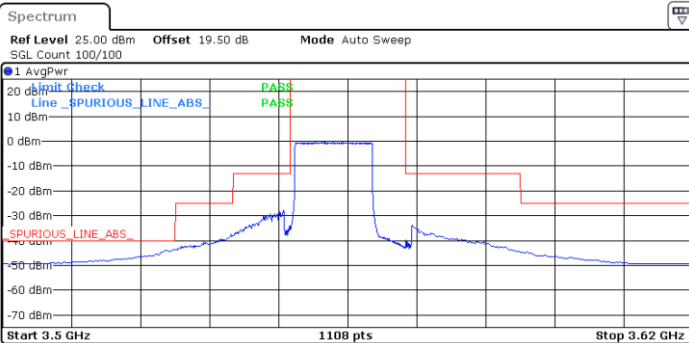
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.500 GHz	3.530 GHz	1.000 MHz	3.52985 GHz	-48.40 dBm	-8.40 dB
3.530 GHz	3.540 GHz	1.000 MHz	3.53866 GHz	-46.41 dBm	-21.41 dB
3.540 GHz	3.549 GHz	1.000 MHz	3.54691 GHz	-41.27 dBm	-28.27 dB
3.549 GHz	3.550 GHz	150.000 kHz	3.54944 GHz	-50.86 dBm	-37.86 dB
3.550 GHz	3.570 GHz	100.000 kHz	3.56419 GHz	19.06 dBm	-10.94 dB
3.570 GHz	3.571 GHz	150.000 kHz	3.57055 GHz	-45.49 dBm	-32.49 dB
3.571 GHz	3.590 GHz	1.000 MHz	3.57166 GHz	-35.22 dBm	-22.22 dB
3.590 GHz	3.620 GHz	1.000 MHz	3.59074 GHz	-47.88 dBm	-22.88 dB

Date: 7 SEP 2023 18:11:18

Date: 7 SEP 2023 18:23:17

Lowest Channel / FullRB

N/A



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.500 GHz	3.530 GHz	1.000 MHz	3.52985 GHz	-43.83 dBm	-3.83 dB
3.530 GHz	3.540 GHz	1.000 MHz	3.53965 GHz	-37.20 dBm	-12.20 dB
3.540 GHz	3.549 GHz	1.000 MHz	3.54878 GHz	-27.95 dBm	-14.95 dB
3.549 GHz	3.550 GHz	150.000 kHz	3.54998 GHz	-34.07 dBm	-21.07 dB
3.550 GHz	3.570 GHz	100.000 kHz	3.55746 GHz	-0.46 dBm	-30.46 dB
3.570 GHz	3.571 GHz	150.000 kHz	3.57005 GHz	-39.63 dBm	-26.63 dB
3.571 GHz	3.590 GHz	1.000 MHz	3.57128 GHz	-33.68 dBm	-20.68 dB
3.590 GHz	3.620 GHz	1.000 MHz	3.59104 GHz	-44.44 dBm	-19.44 dB

Date: 7 SEP 2023 18:26:27

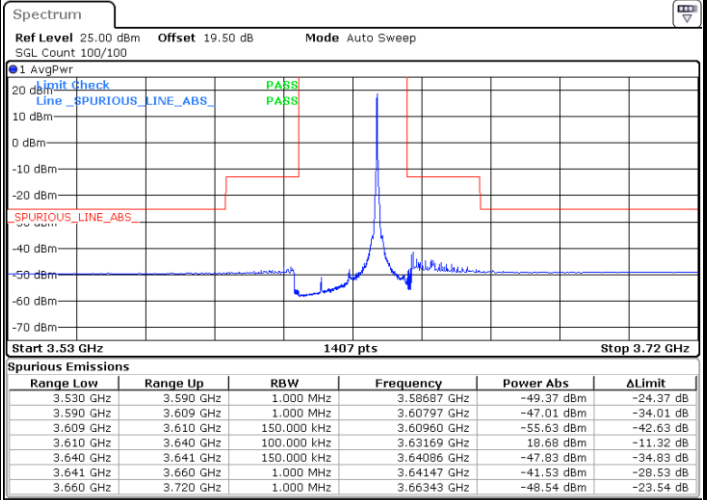
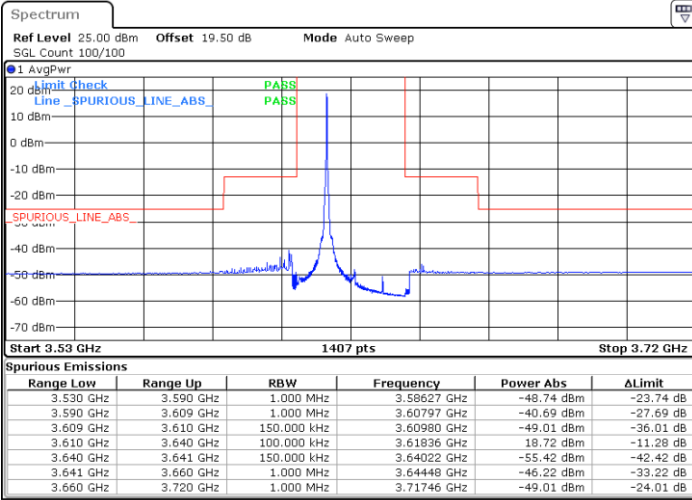


LTE Band 48 / 15MHz

64QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax

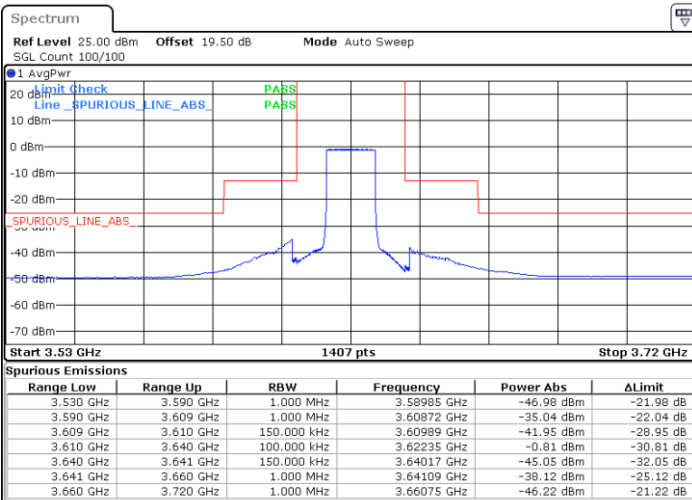


Date: 8 SEP 2023 13:11:22

Date: 8 SEP 2023 13:17:17

Middle Channel / FullRB

N/A



Date: 8 SEP 2023 13:22:58

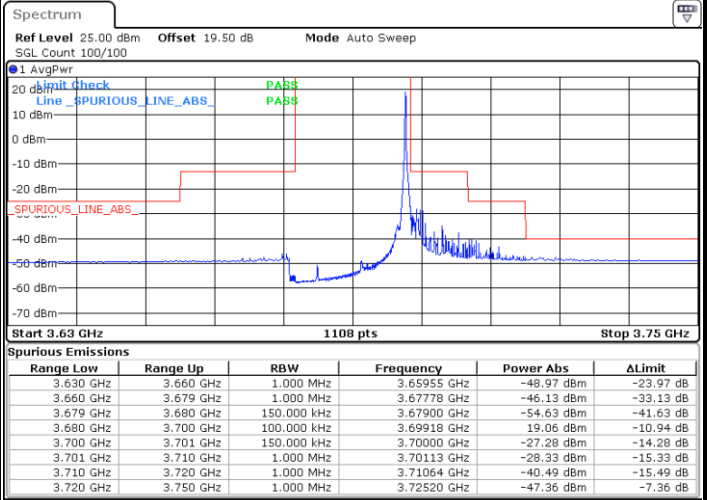
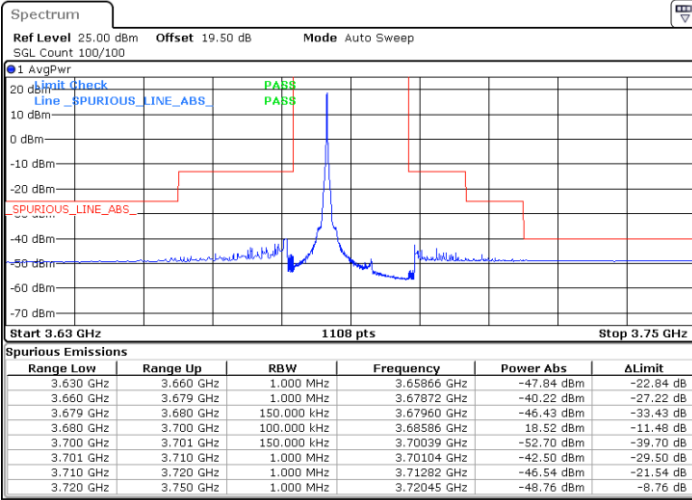


LTE Band 48 / 15MHz

64QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax

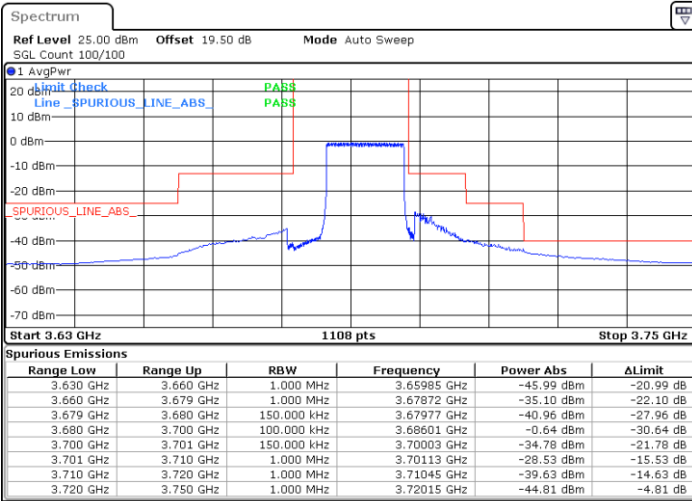


Date: 8 SEP 2023 13:24:58

Date: 8 SEP 2023 13:32:27

Highest Channel / FullRB

N/A



Date: 8 SEP 2023 13:38:20

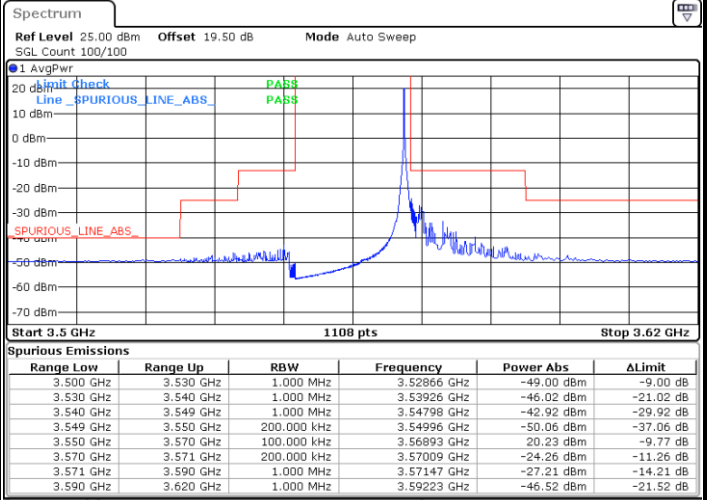
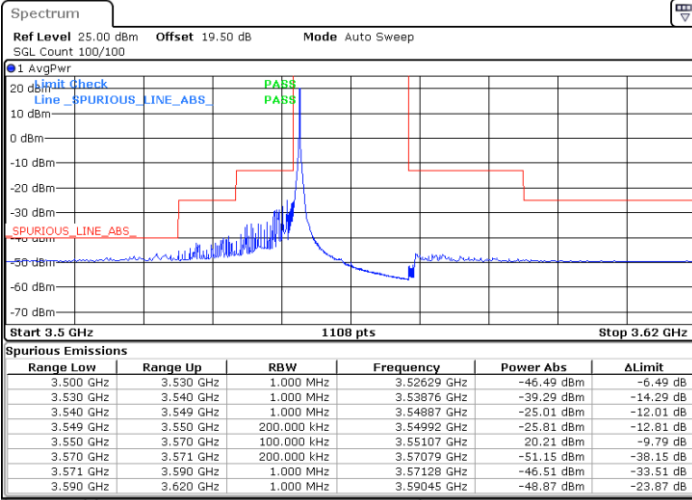


LTE Band 48 / 20MHz

QPSK

Lowest Channel / 1RB0

Lowest Channel / 1RBmax

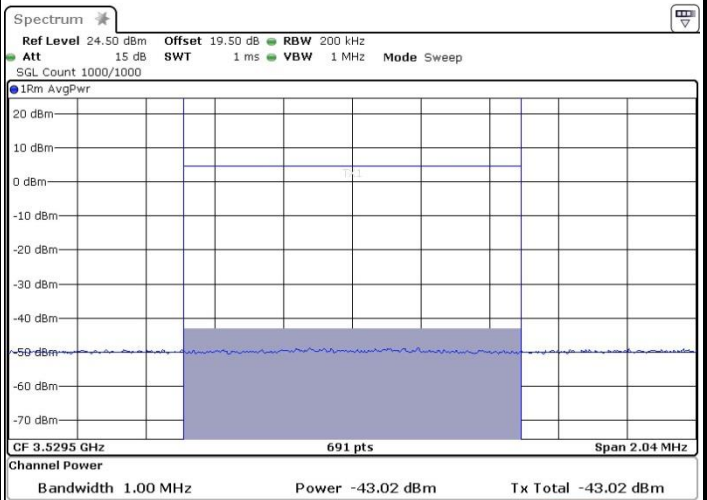
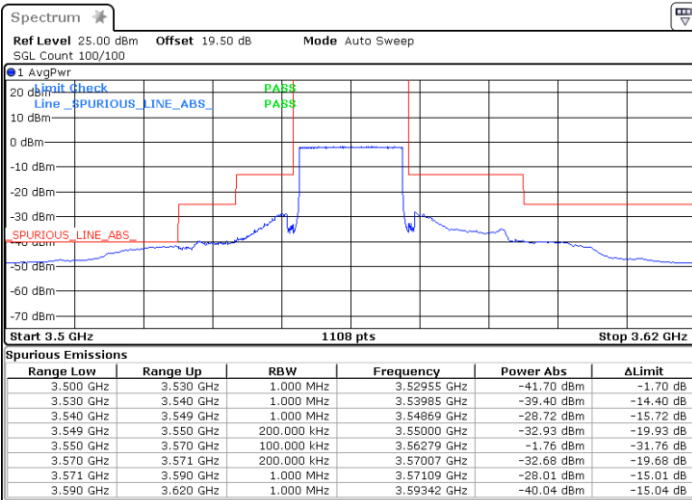


Date: 8 SEP 2023 09:44:09

Date: 8 SEP 2023 09:50:36

Lowest Channel / FullIRB

Lowest Channel / FullIRB-CH



Date: 16.SEP.2023 09:31:35

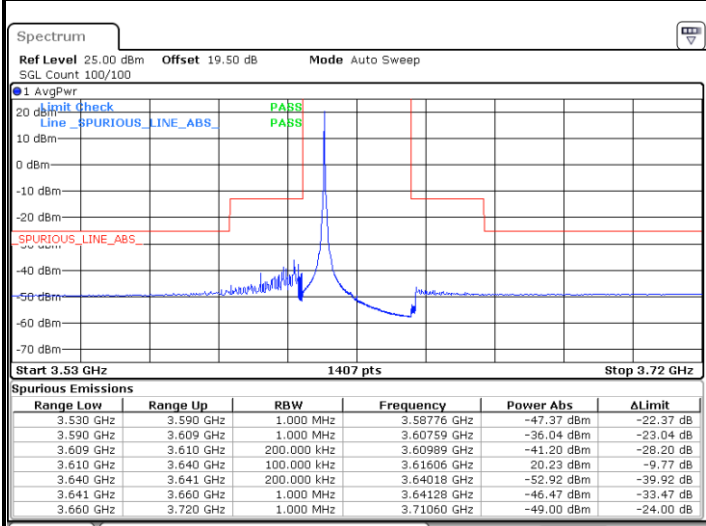
Date: 16.SEP.2023 09:36:14



**LTE Band 48 / 20MHz**

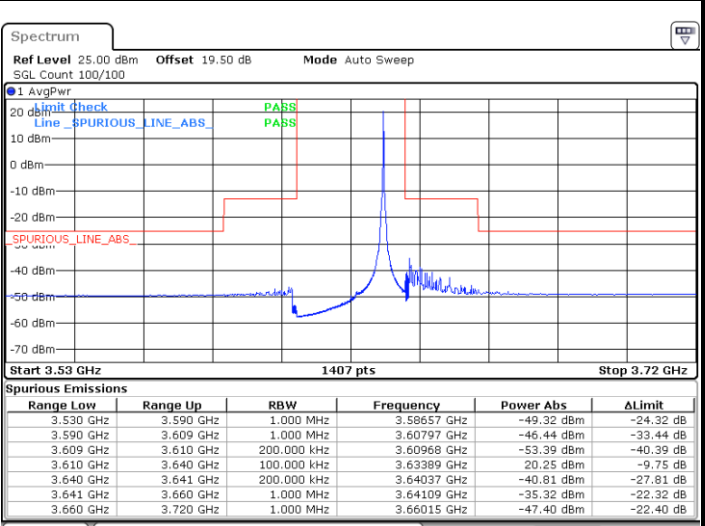
**QPSK**

**Middle Channel / 1RB0**



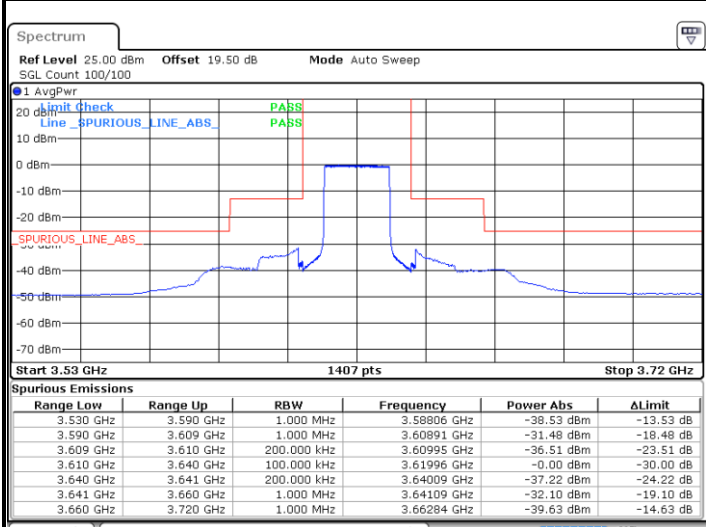
Date: 8 SEP 2023 10:45:04

**Middle Channel / 1RBmax**



Date: 8 SEP 2023 10:38:40

**Middle Channel / FullRB**



Date: 8 SEP 2023 10:26:28

**N/A**



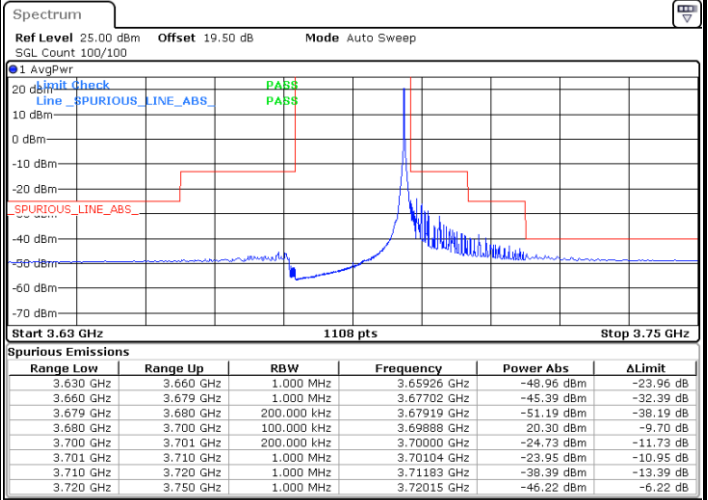
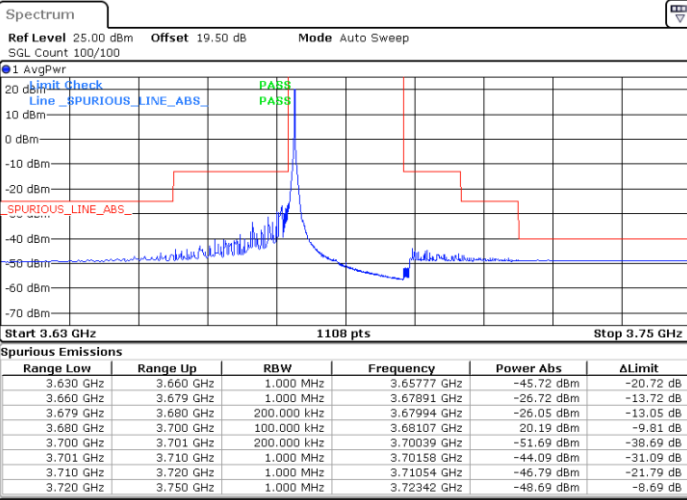


LTE Band 48 / 20MHz

QPSK

Highest Channel / 1RB0

Highest Channel / 1RBmax

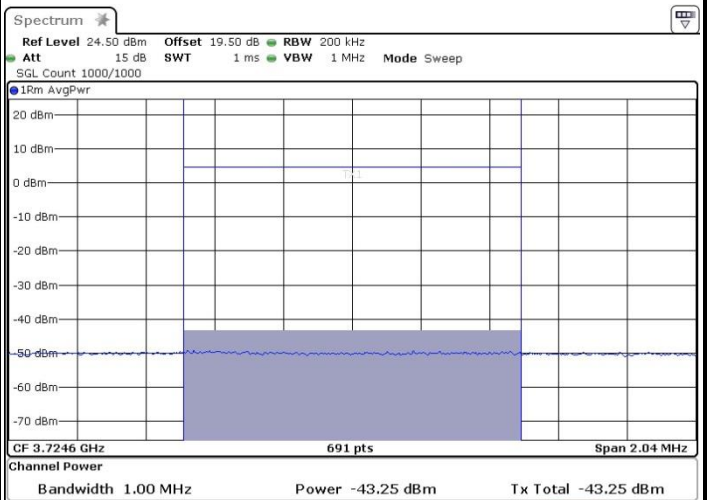
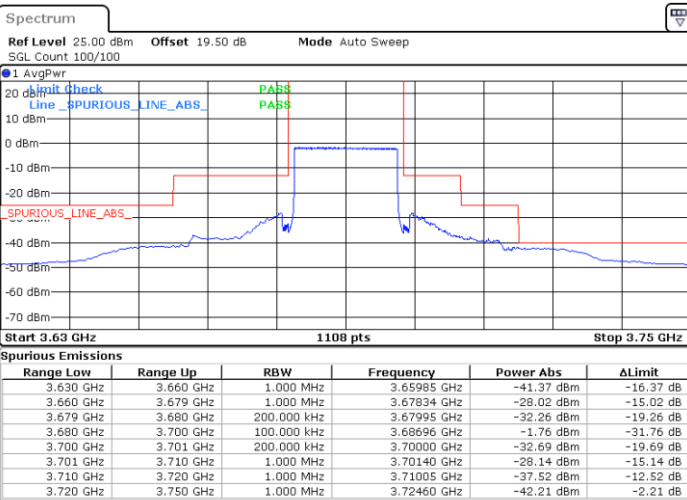


Date: 8 SEP 2023 11:12:19

Date: 8 SEP 2023 11:16:19

Highest Channel / Full RB

Highest Channel / Full RB



Date: 16.SEP.2023 09:45:30

Date: 16.SEP.2023 09:47:34

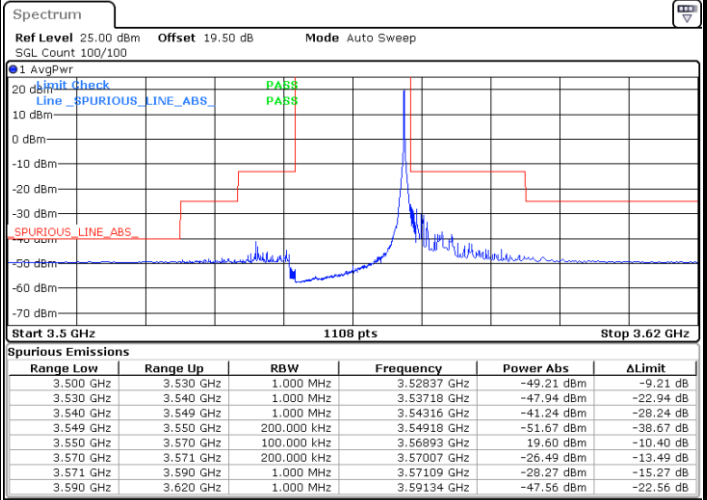
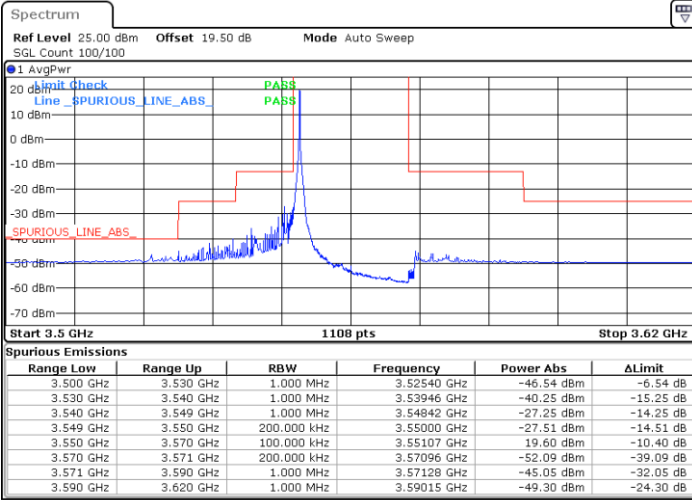


LTE Band 48 / 20MHz

16QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax

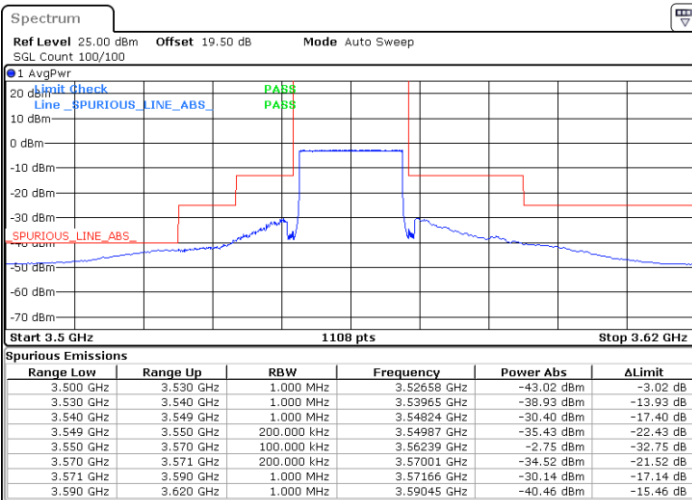


Date: 8 SEP 2023 09:45:27

Date: 8 SEP 2023 09:49:21

Lowest Channel / FullRB

N/A



Date: 16 SEP 2023 09:37:54

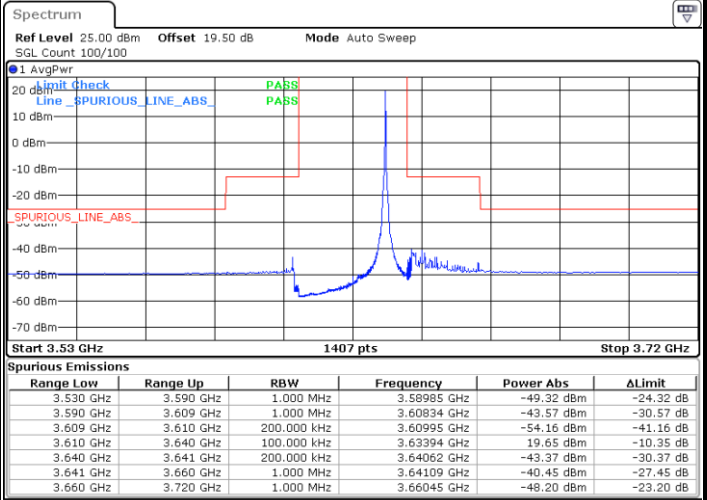
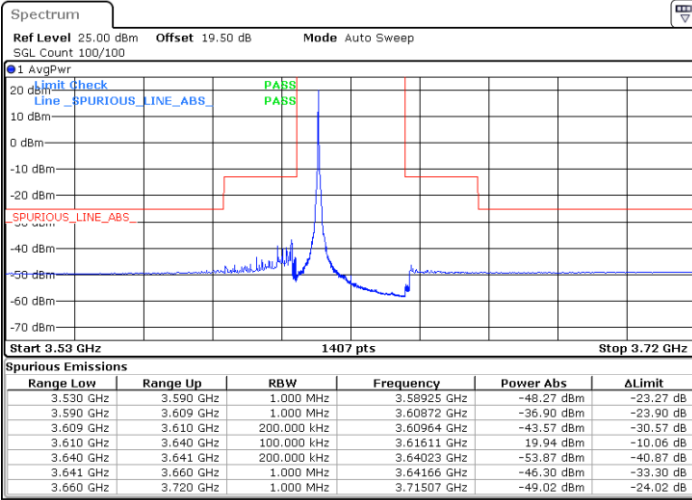


LTE Band 48 / 20MHz

16QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax

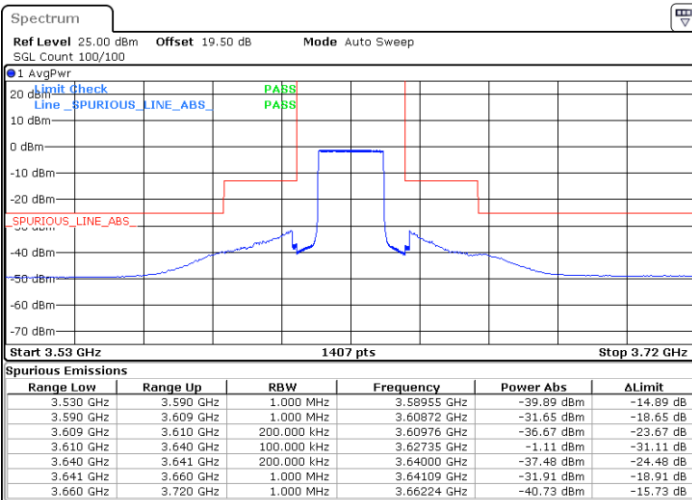


Date: 8 SEP 2023 10:46:53

Date: 8 SEP 2023 10:37:01

Middle Channel / FullRB

N/A



Date: 8 SEP 2023 10:21:48

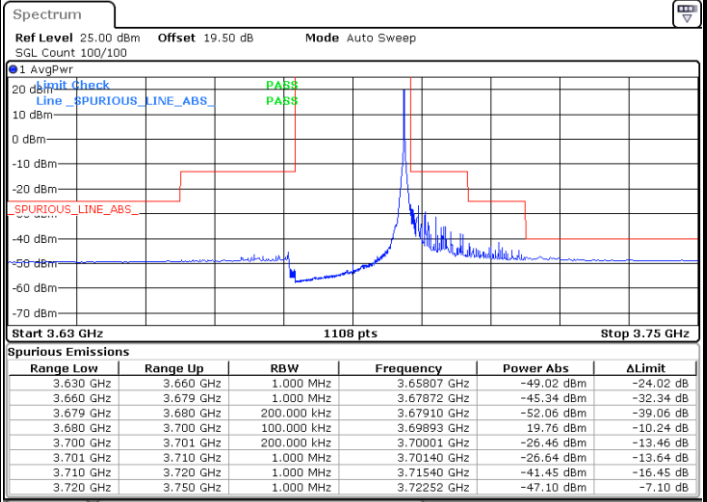
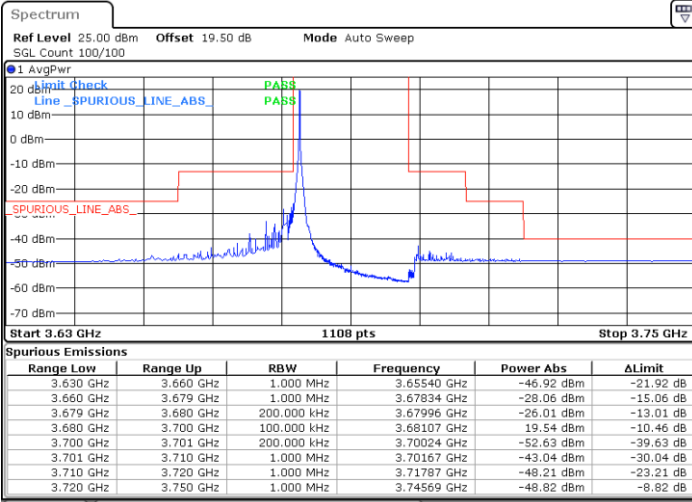


LTE Band 48 / 20MHz

16QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax

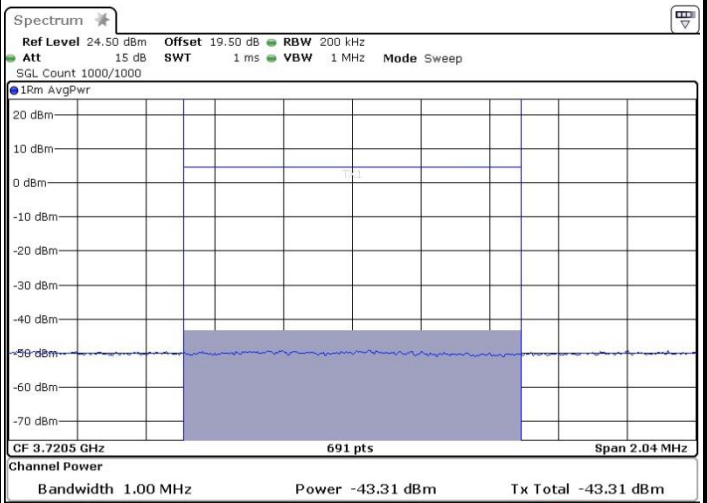
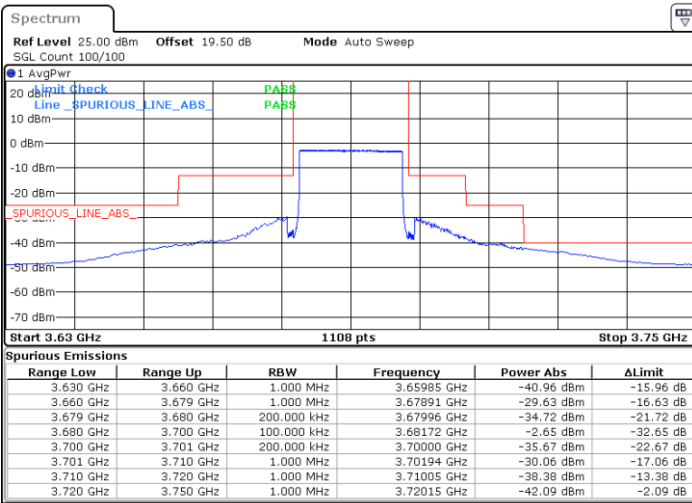


Date: 8 SEP 2023 11:13:36

Date: 8 SEP 2023 11:17:35

Highest Channel / FullRB

Highest Channel / FullRB



Date: 16.SEP.2023 09:49:13

Date: 16.SEP.2023 09:50:40

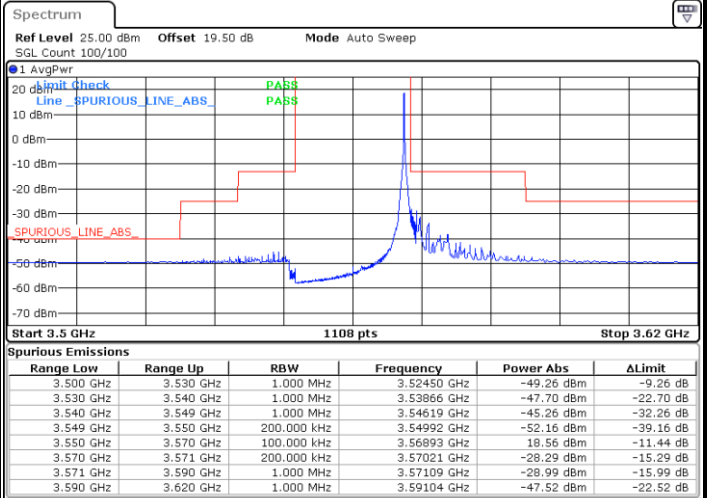
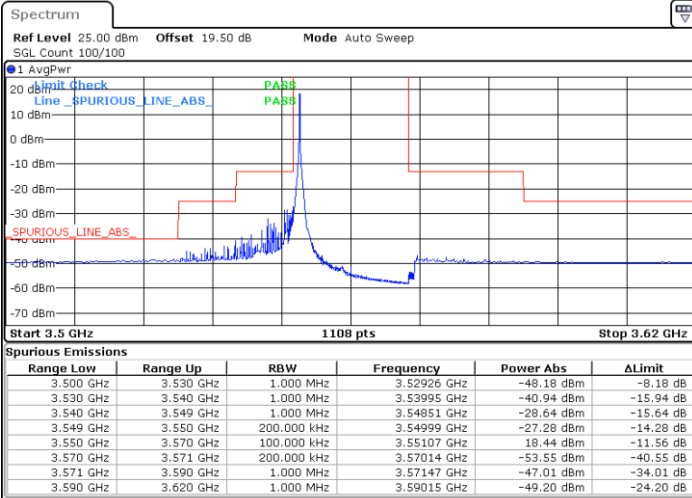


LTE Band 48 / 20MHz

64QAM

Lowest Channel / 1RB0

Lowest Channel / 1RBmax

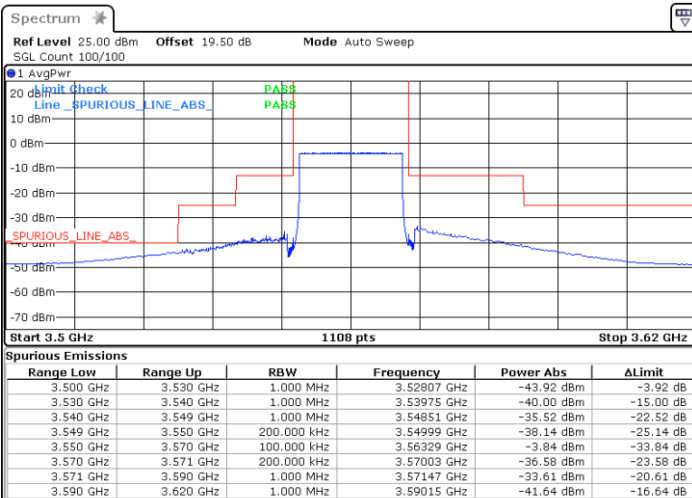


Date: 8 SEP 2023 09:46:42

Date: 8 SEP 2023 09:48:01

Lowest Channel / FullRB

N/A



Date: 16 SEP 2023 09:40:43

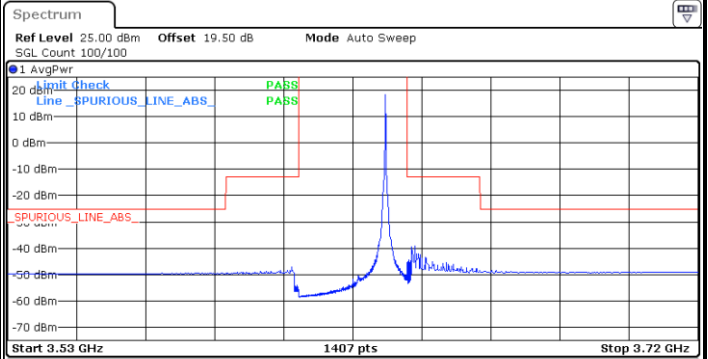
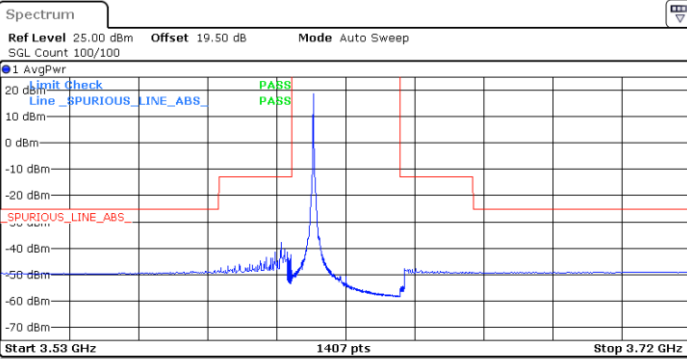


LTE Band 48 / 20MHz

64QAM

Middle Channel / 1RB0

Middle Channel / 1RBmax



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.530 GHz	3.590 GHz	1.000 MHz	3.58985 GHz	-48.31 dBm	-23.31 dB
3.590 GHz	3.609 GHz	1.000 MHz	3.60721 GHz	-37.79 dBm	-24.79 dB
3.609 GHz	3.610 GHz	200.000 kHz	3.60977 GHz	-42.53 dBm	-29.53 dB
3.610 GHz	3.640 GHz	100.000 kHz	3.61606 GHz	18.73 dBm	-11.27 dB
3.640 GHz	3.641 GHz	200.000 kHz	3.64068 GHz	-54.44 dBm	-41.44 dB
3.641 GHz	3.660 GHz	1.000 MHz	3.64109 GHz	-47.88 dBm	-34.88 dB
3.660 GHz	3.720 GHz	1.000 MHz	3.71806 GHz	-49.03 dBm	-24.03 dB

Spurious Emissions

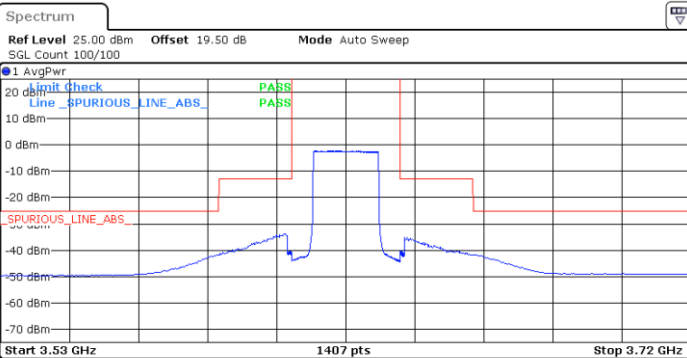
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.530 GHz	3.590 GHz	1.000 MHz	3.58776 GHz	-49.42 dBm	-24.42 dB
3.590 GHz	3.609 GHz	1.000 MHz	3.60815 GHz	-47.14 dBm	-34.14 dB
3.609 GHz	3.610 GHz	200.000 kHz	3.60965 GHz	-53.91 dBm	-40.91 dB
3.610 GHz	3.640 GHz	100.000 kHz	3.63389 GHz	18.19 dBm	-11.81 dB
3.640 GHz	3.641 GHz	200.000 kHz	3.64039 GHz	-44.48 dBm	-31.48 dB
3.641 GHz	3.660 GHz	1.000 MHz	3.64203 GHz	-39.25 dBm	-26.25 dB
3.660 GHz	3.720 GHz	1.000 MHz	3.66433 GHz	-48.48 dBm	-23.48 dB

Date: 8 SEP 2023 10:48:37

Date: 8 SEP 2023 10:35:14

Middle Channel / FullIRB

N/A



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.530 GHz	3.590 GHz	1.000 MHz	3.58985 GHz	-41.62 dBm	-16.62 dB
3.590 GHz	3.609 GHz	1.000 MHz	3.60815 GHz	-33.66 dBm	-20.66 dB
3.609 GHz	3.610 GHz	200.000 kHz	3.60988 GHz	-40.28 dBm	-27.28 dB
3.610 GHz	3.640 GHz	100.000 kHz	3.62844 GHz	-2.26 dBm	-32.26 dB
3.640 GHz	3.641 GHz	200.000 kHz	3.64015 GHz	-40.25 dBm	-27.25 dB
3.641 GHz	3.660 GHz	1.000 MHz	3.64185 GHz	-35.04 dBm	-22.04 dB
3.660 GHz	3.720 GHz	1.000 MHz	3.66075 GHz	-41.63 dBm	-16.63 dB

Date: 8 SEP 2023 10:32:00

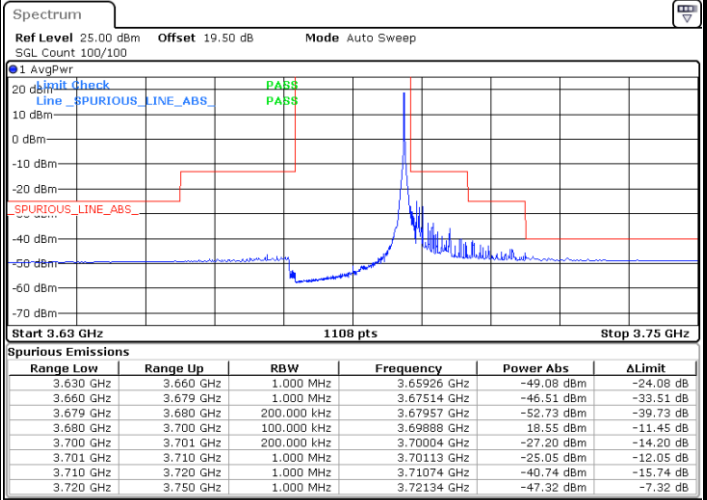
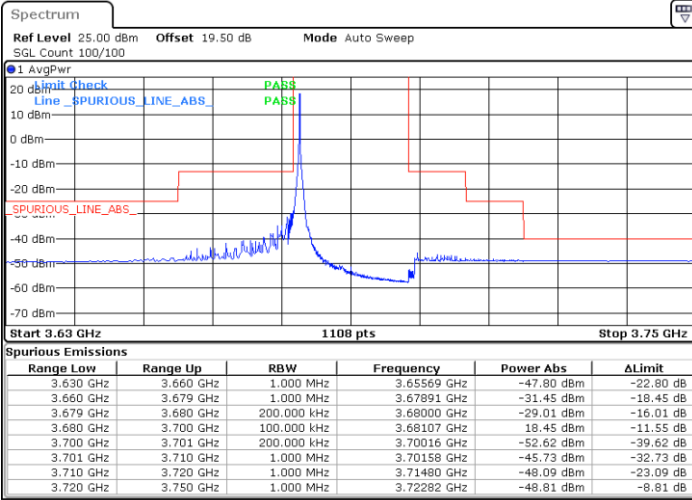


LTE Band 48 / 20MHz

64QAM

Highest Channel / 1RB0

Highest Channel / 1RBmax

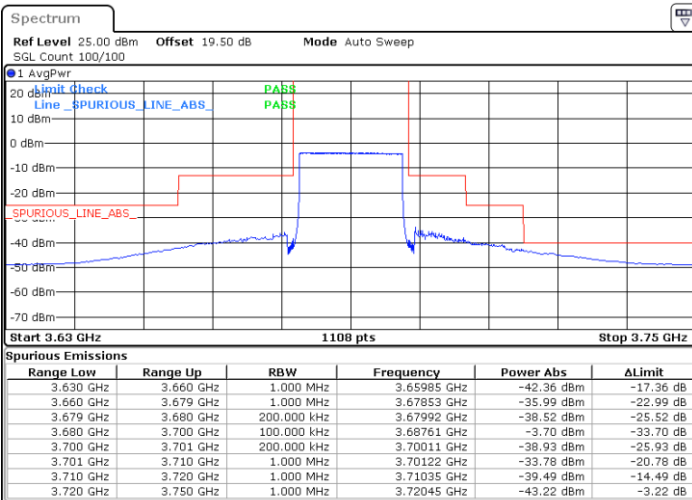


Date: 8 SEP 2023 11:14:52

Date: 8 SEP 2023 11:18:53

Highest Channel / FullRB

N/A



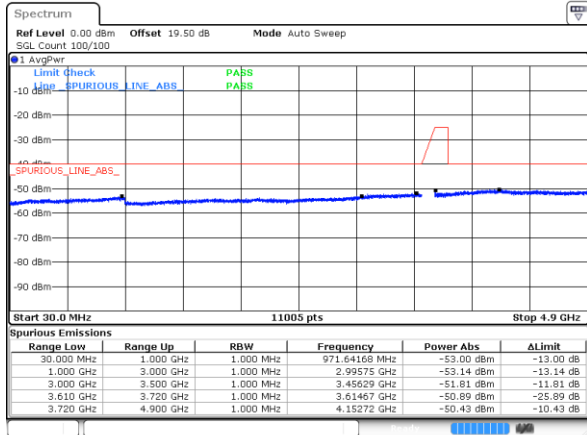
Date: 16 SEP 2023 09:52:05



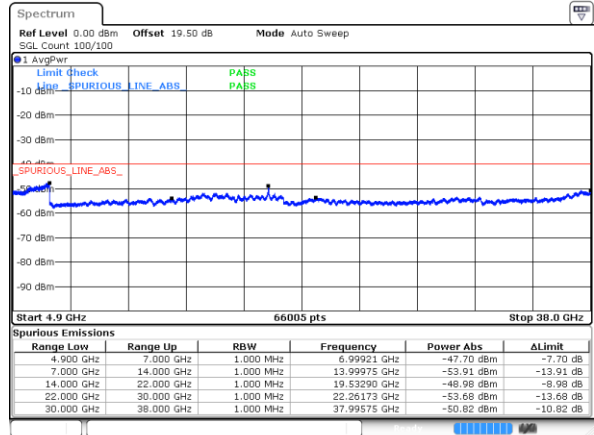
# Conducted Spurious Emission

## LTE Band 48 / 5MHz

### Lowest Channel / QPSK

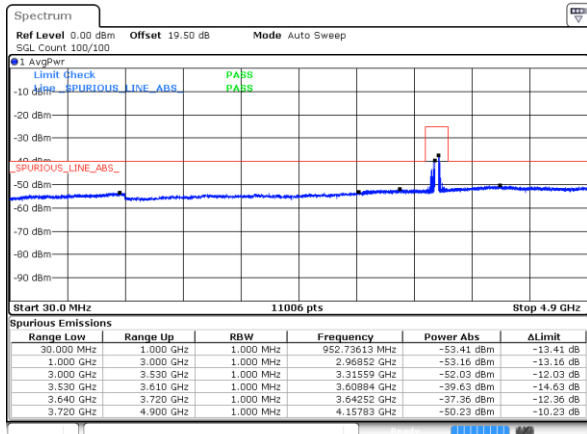


Date: 7.SEP.2023 11:48:41

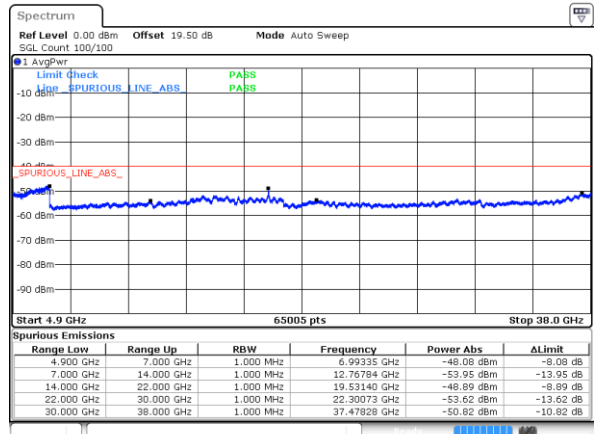


Date: 7.SEP.2023 11:49:44

### Middle Channel / QPSK

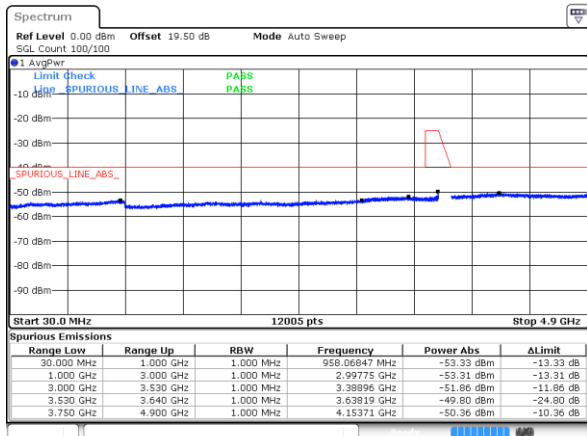


Date: 7.SEP.2023 12:14:49

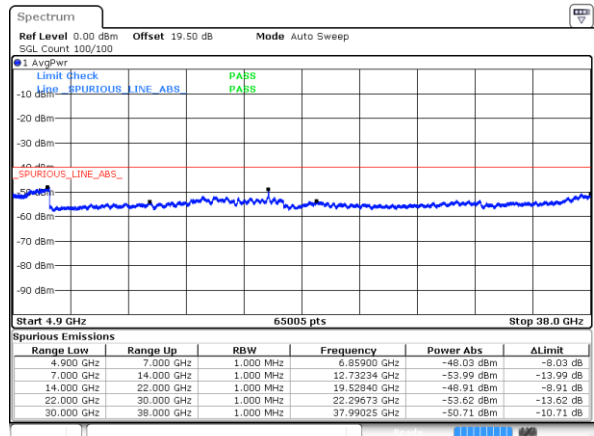


Date: 7.SEP.2023 12:15:52

### Highest Channel / QPSK



Date: 7.SEP.2023 12:39:33



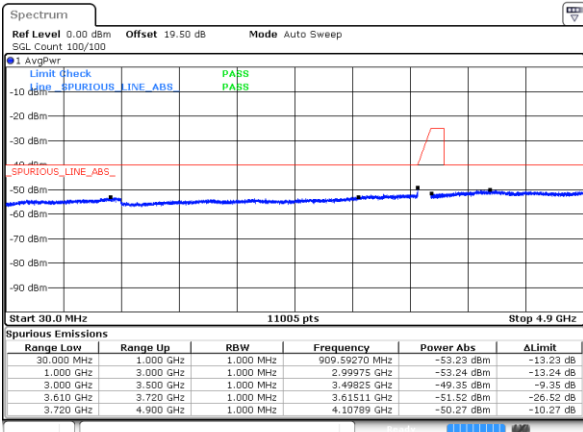
Date: 7.SEP.2023 12:40:36



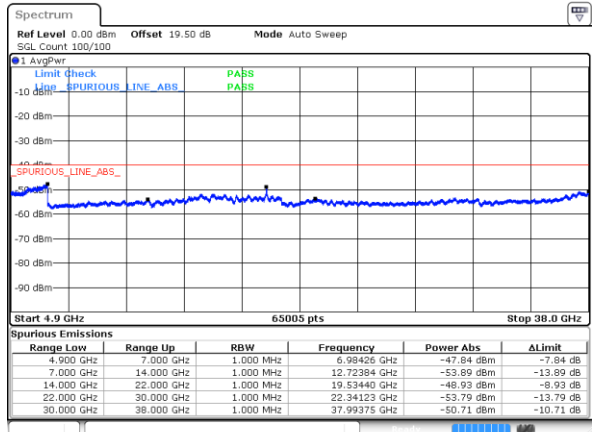


LTE Band 48 / 10MHz

Lowest Channel / QPSK

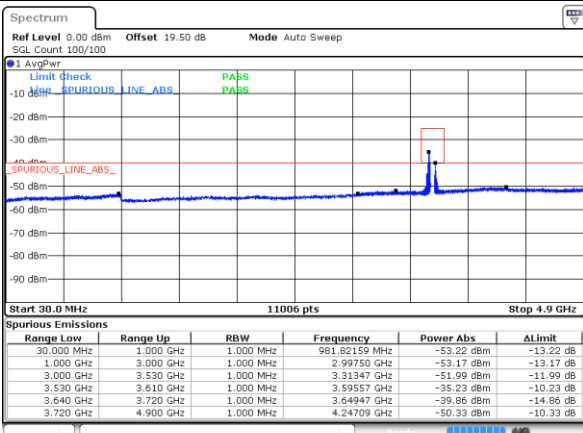


Date: 7.SEP.2023 13:03:44

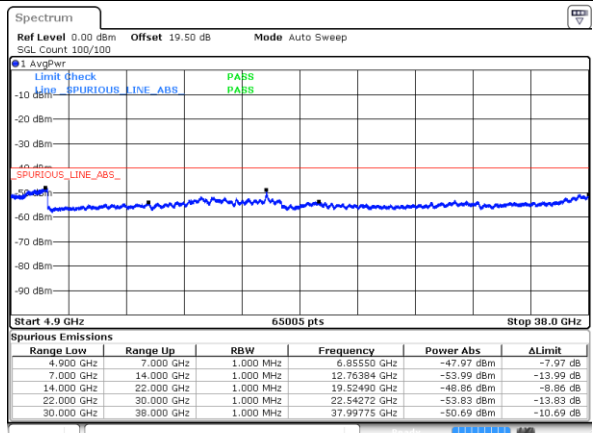


Date: 7.SEP.2023 13:04:47

Middle Channel / QPSK

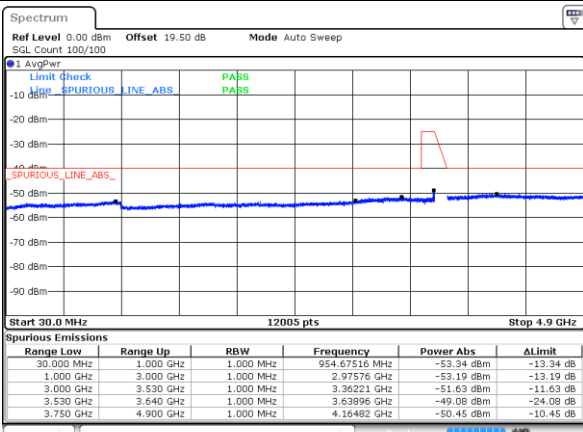


Date: 7.SEP.2023 16:57:29

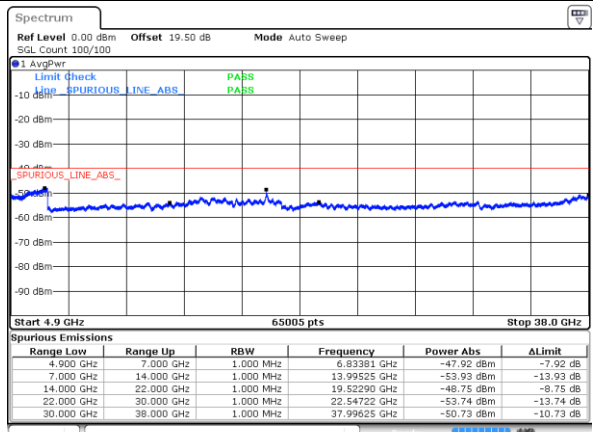


Date: 7.SEP.2023 17:01:18

Highest Channel / QPSK



Date: 7.SEP.2023 17:44:20

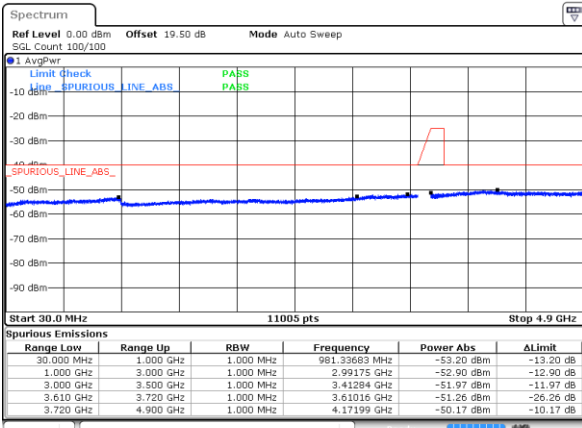


Date: 7.SEP.2023 17:48:10

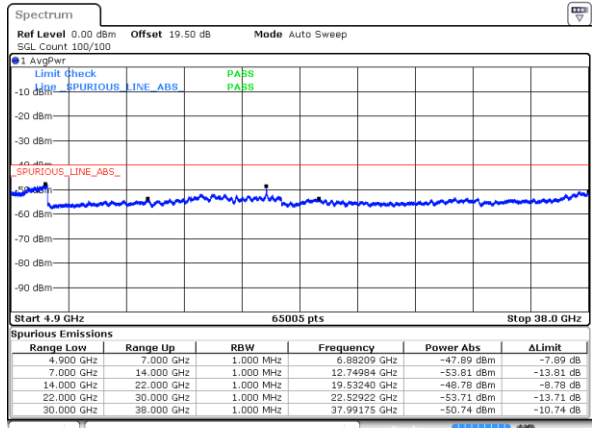


LTE Band 48 / 15MHz

Lowest Channel / QPSK

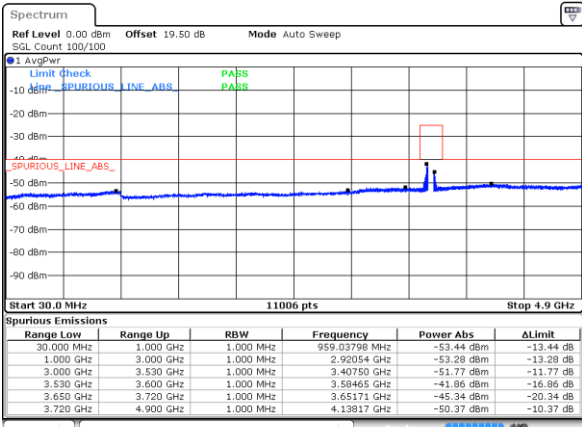


Date: 7.SEP.2023 18:34:05

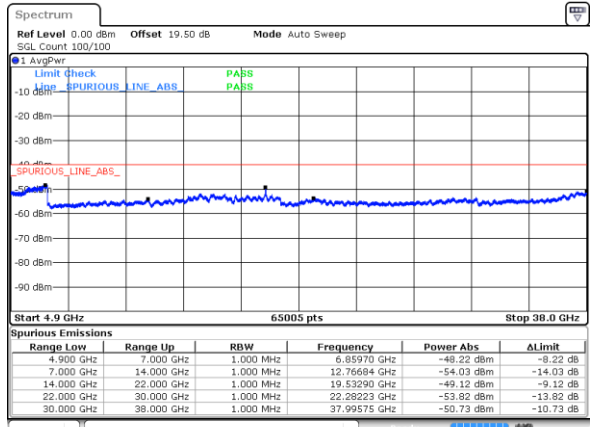


Date: 7.SEP.2023 18:35:08

Middle Channel / QPSK

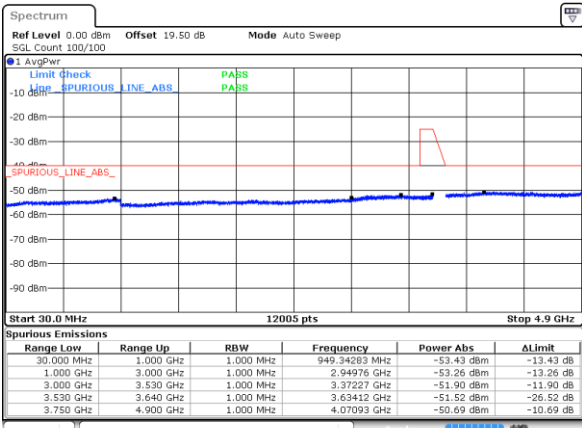


Date: 8.SEP.2023 13:54:56

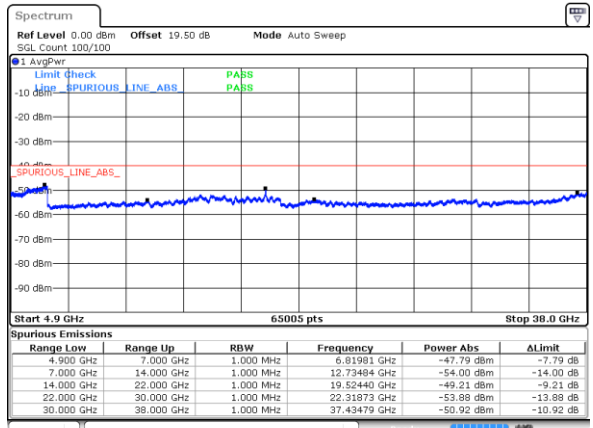


Date: 8.SEP.2023 13:56:36

Highest Channel / QPSK



Date: 8.SEP.2023 13:58:42

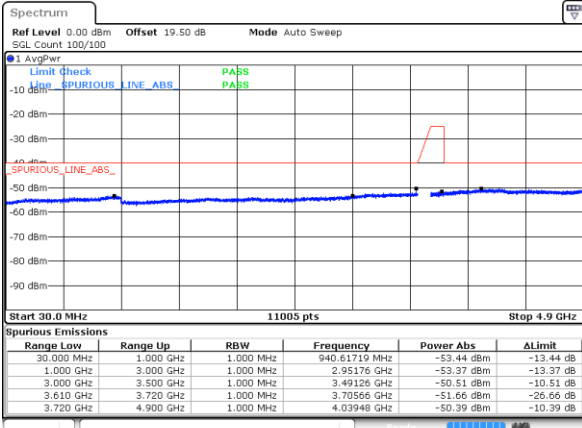


Date: 8.SEP.2023 14:00:14

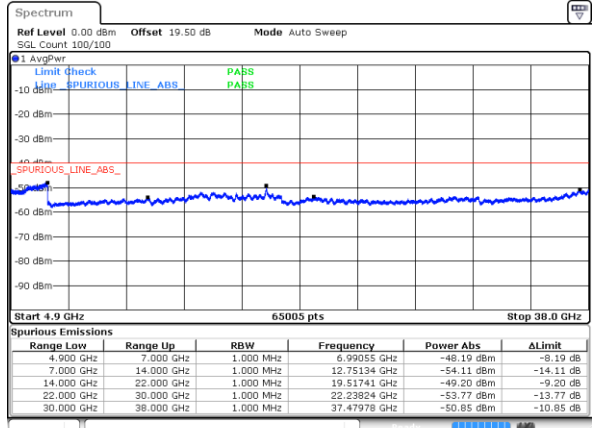


LTE Band 48 / 20MHz

Lowest Channel / QPSK

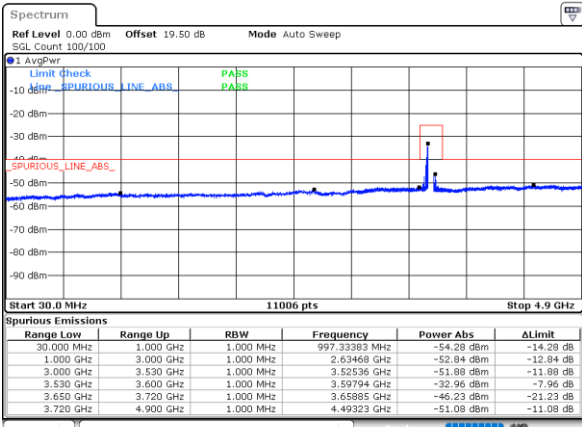


Date: 8 SEP.2023 09:55:51

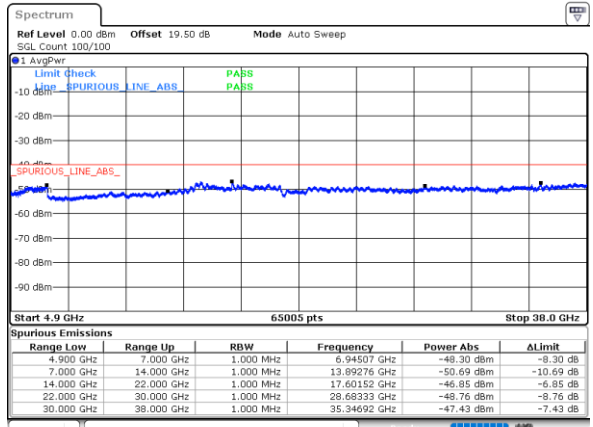


Date: 8 SEP.2023 09:59:46

Middle Channel / QPSK

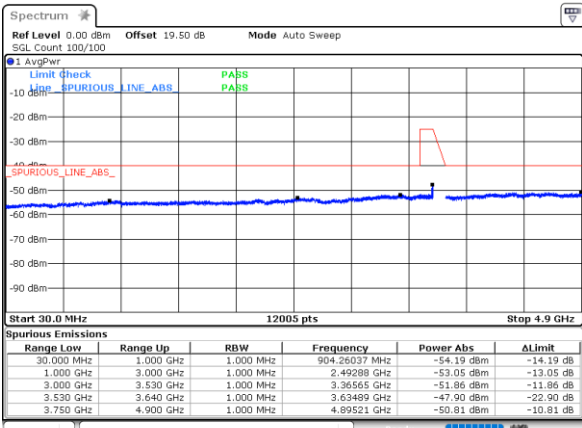


Date: 16 SEP.2023 11:37:10

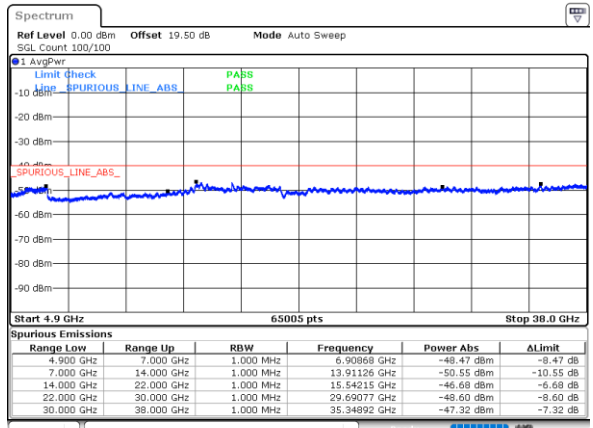


Date: 16 SEP.2023 11:43:53

Highest Channel / QPSK



Date: 16 SEP.2023 11:40:07



Date: 16 SEP.2023 11:42:10



### Frequency Stability

Test Conditions		LTE Band 48 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0006	PASS
40	Normal Voltage	0.0003	
30	Normal Voltage	0.0002	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0005	
0	Normal Voltage	0.0003	
-10	Normal Voltage	0.0007	
-20	Normal Voltage	0.0005	
-30	Normal Voltage	0.0009	
20	Maximum Voltage	0.0002	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0003	

**Note:**

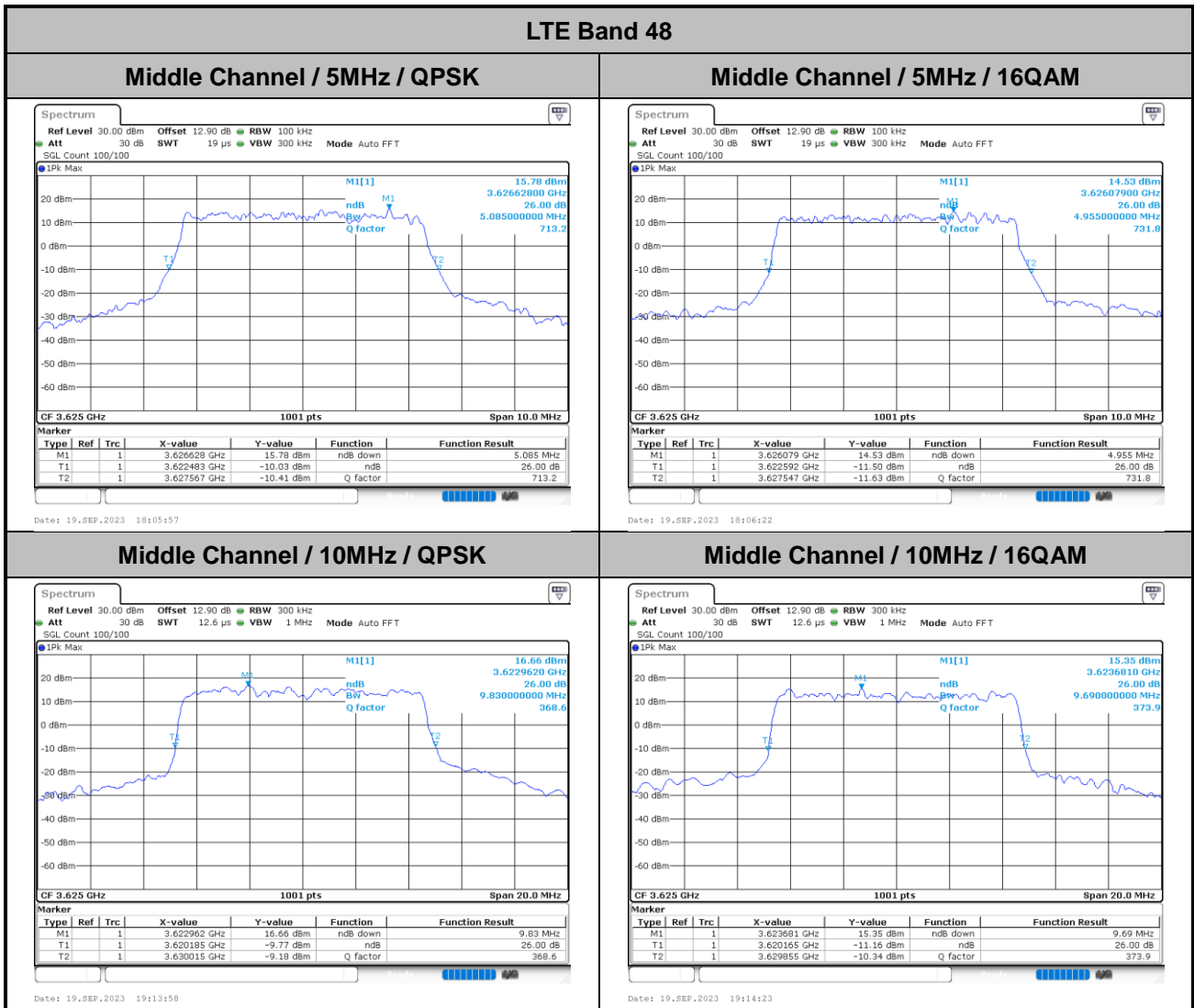
- 1. Normal Voltage = 7.82 V. ; Battery End Point = 6.8 V. ; Maximum Voltage = 9 V.
- 2. The frequency fundamental emissions stay within the authorized frequency block.



# LTE Band 48\_Other PA

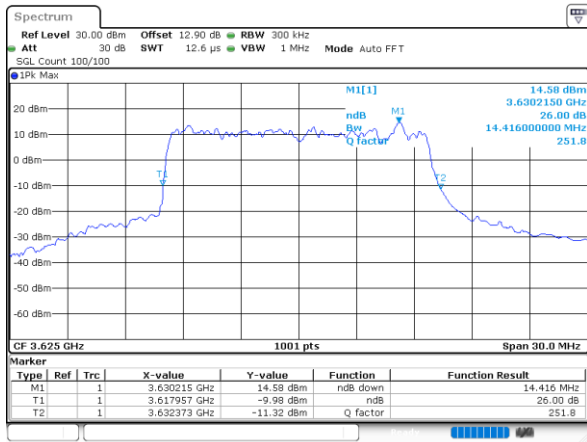
## 26dB Bandwidth

Mode	LTE Band 48 : 26dB BW(MHz)							
	5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	5.09	4.96	9.83	9.69	14.42	14.36	18.74	18.90



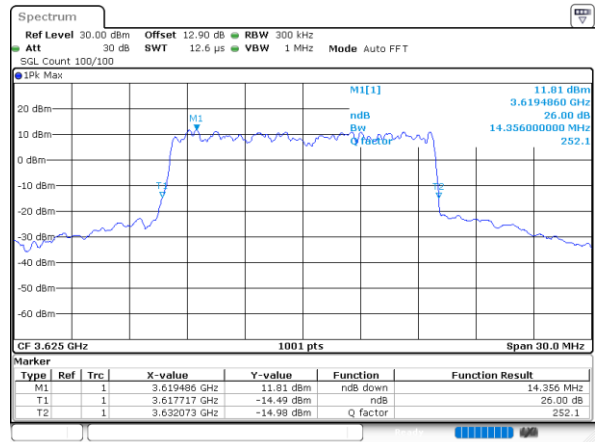


Middle Channel / 15MHz / QPSK



Date: 19\_SEP.2023 19:39:00

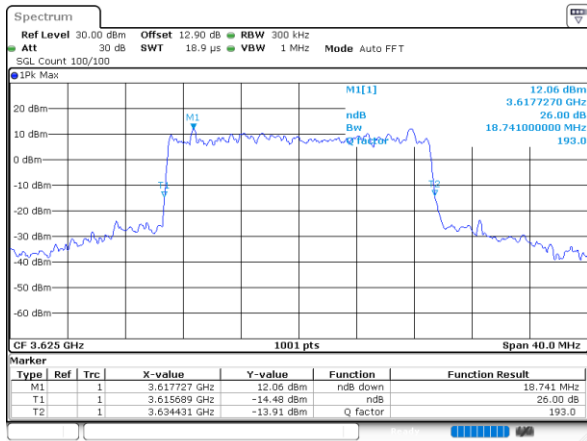
Middle Channel / 15MHz / 16QAM



Date: 19\_SEP.2023 19:39:26

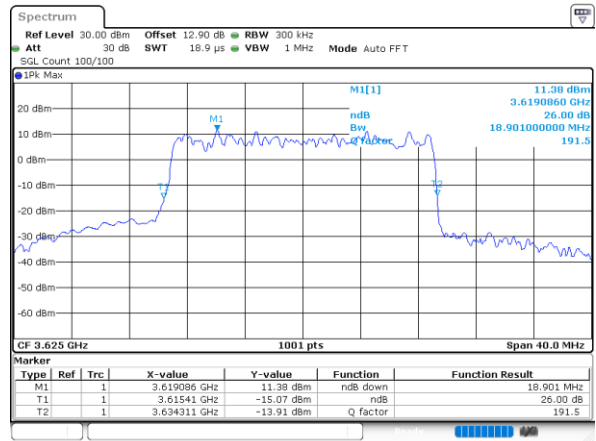
LTE Band 48

Middle Channel / 20MHz / QPSK



Date: 19\_SEP.2023 20:06:10

Middle Channel / 20MHz / 16QAM

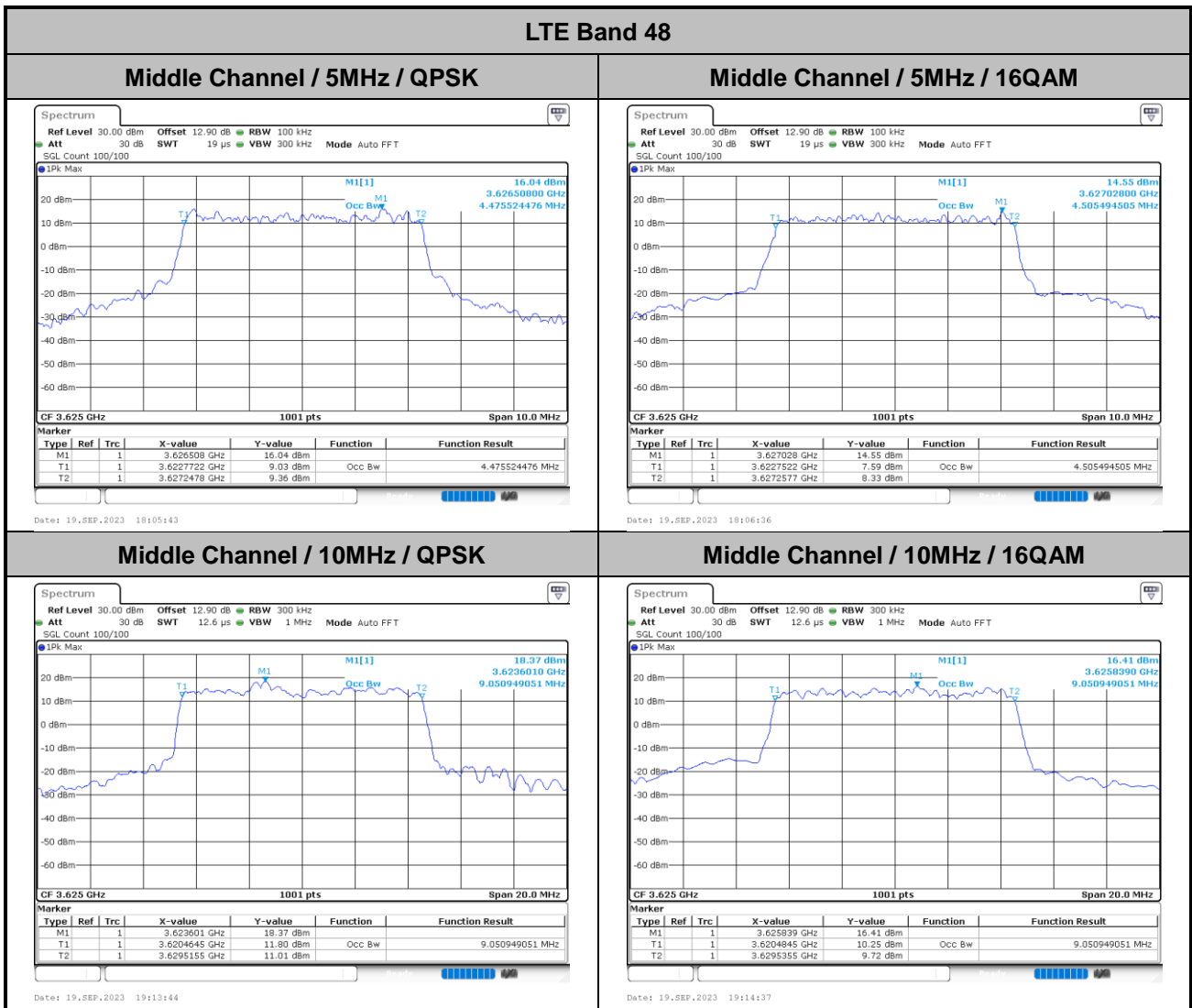


Date: 19\_SEP.2023 20:05:45



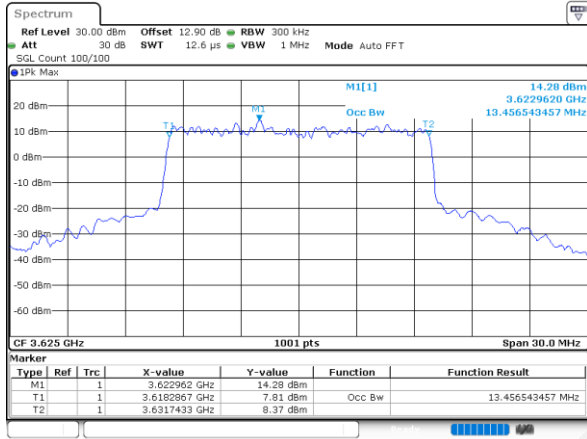
# Occupied Bandwidth

Mode	LTE Band 48 : 99%OBW(MHz)							
	5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	4.48	4.51	9.05	9.05	13.46	13.40	17.94	17.94



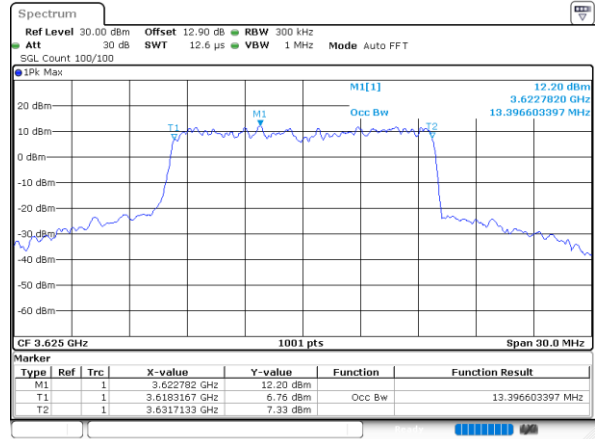


Middle Channel / 15MHz / QPSK



Date: 19\_SEP.2023 19:38:46

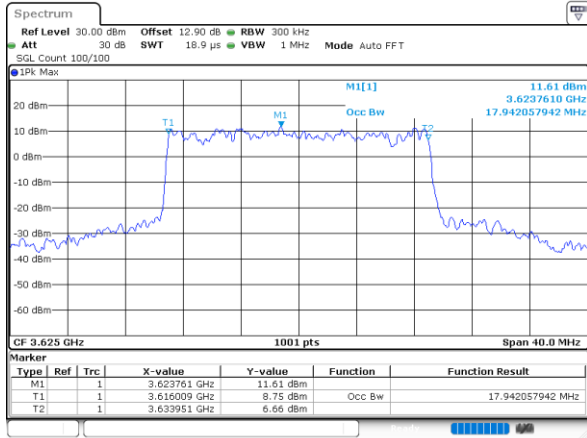
Middle Channel / 15MHz / 16QAM



Date: 19\_SEP.2023 19:39:40

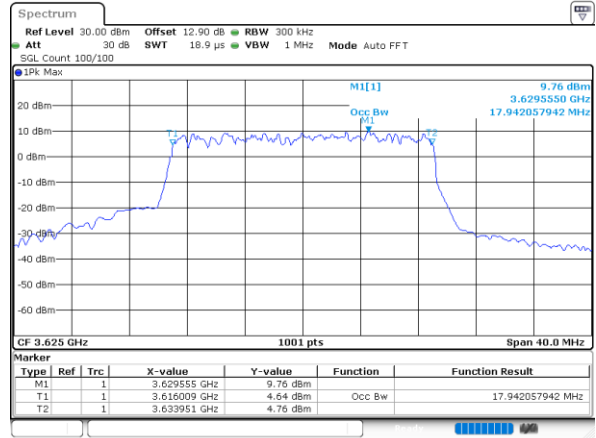
LTE Band 48

Middle Channel / 20MHz / QPSK



Date: 19\_SEP.2023 20:06:25

Middle Channel / 20MHz / 16QAM

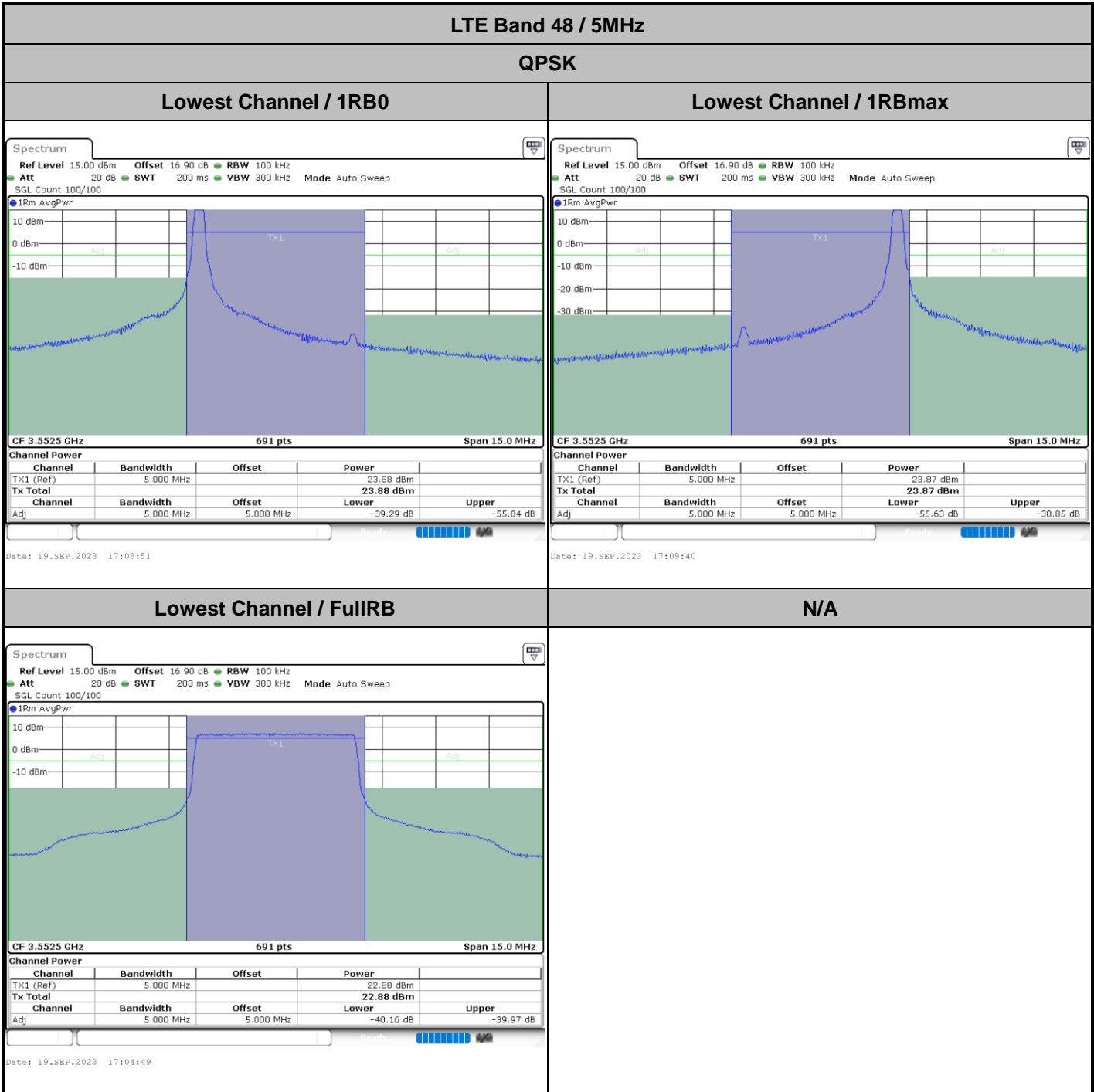


Date: 19\_SEP.2023 20:05:31





**ACLR**



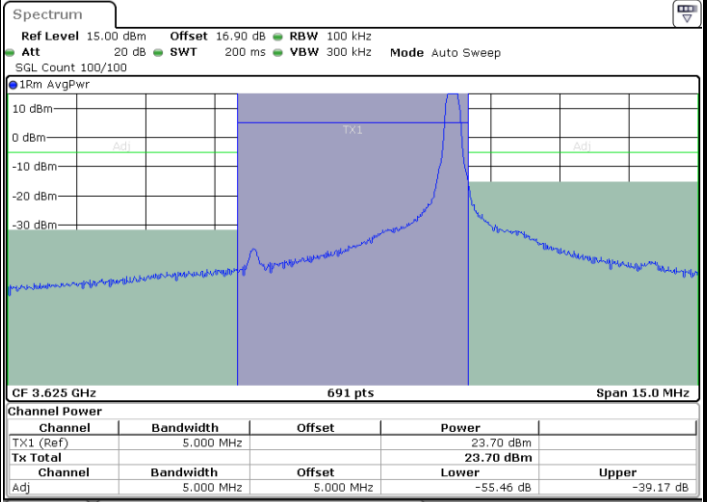
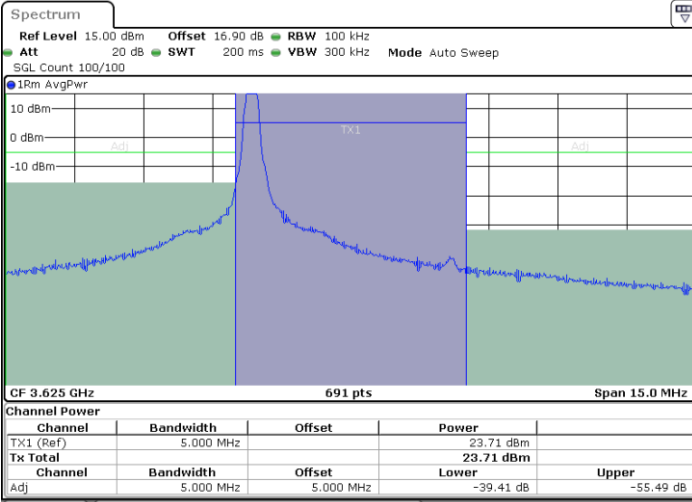


LTE Band 48 / 5MHz

QPSK

Middle Channel / 1RB0

Middle Channel / 1RBmax

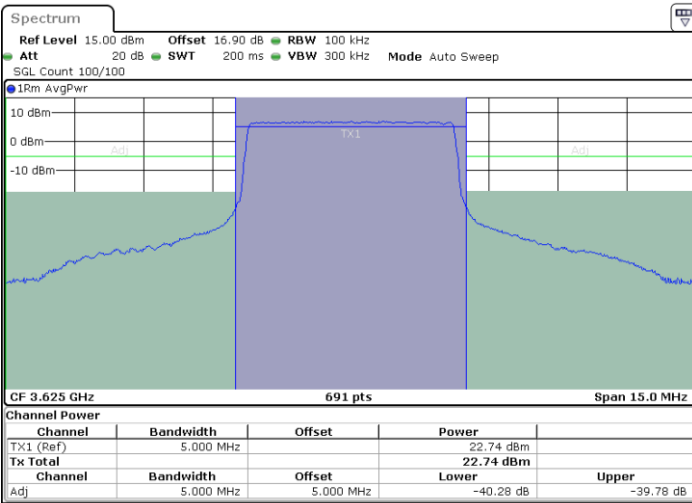


Date: 19.SEP.2023 17:28:13

Date: 19.SEP.2023 17:27:26

Middle Channel / FullRB

N/A



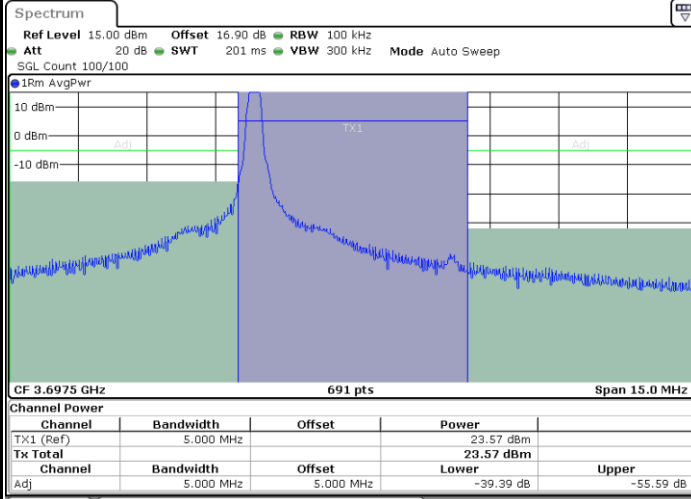
Date: 19.SEP.2023 17:32:10



LTE Band 48 / 5MHz

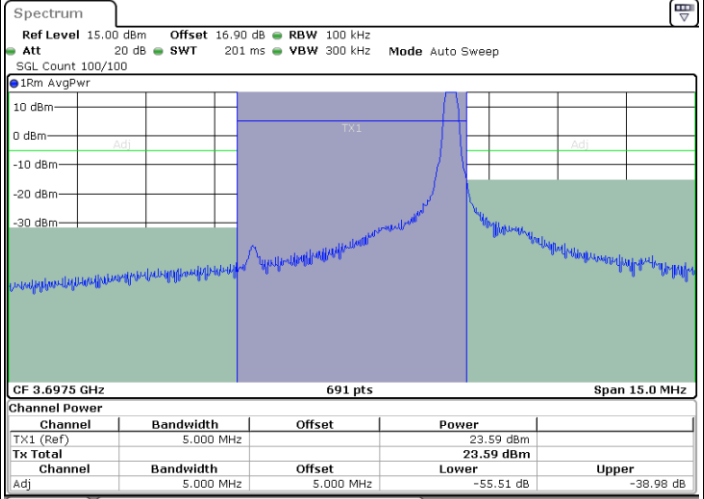
QPSK

Highest Channel / 1RB0



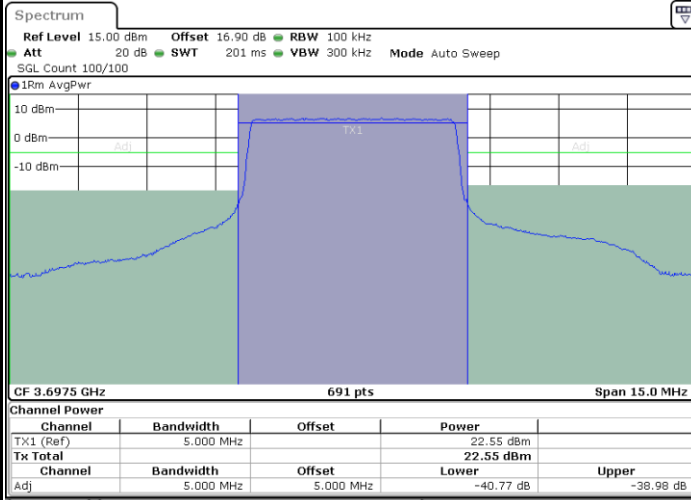
Date: 20.SEP.2023 09:11:20

Highest Channel / 1RBmax



Date: 20.SEP.2023 09:21:31

Highest Channel / FullRB



Date: 20.SEP.2023 09:22:31

N/A

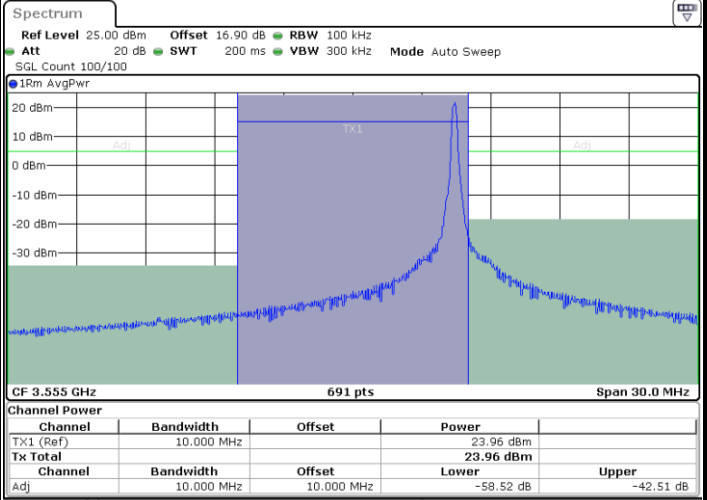
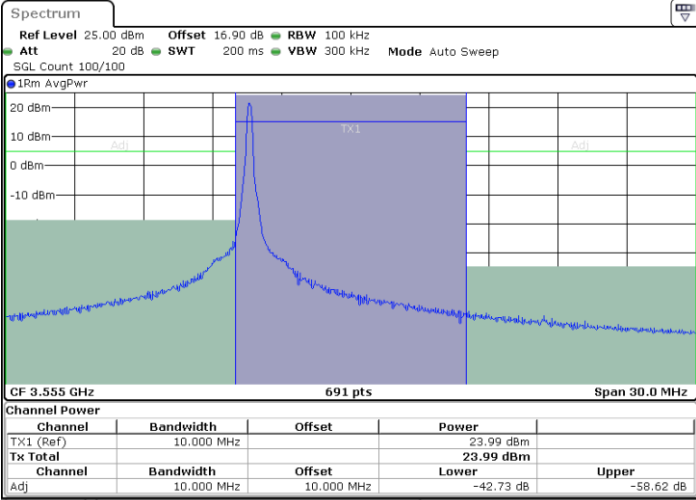


LTE Band 48 / 10MHz

QPSK

Lowest Channel / 1RB0

Lowest Channel / 1RBmax

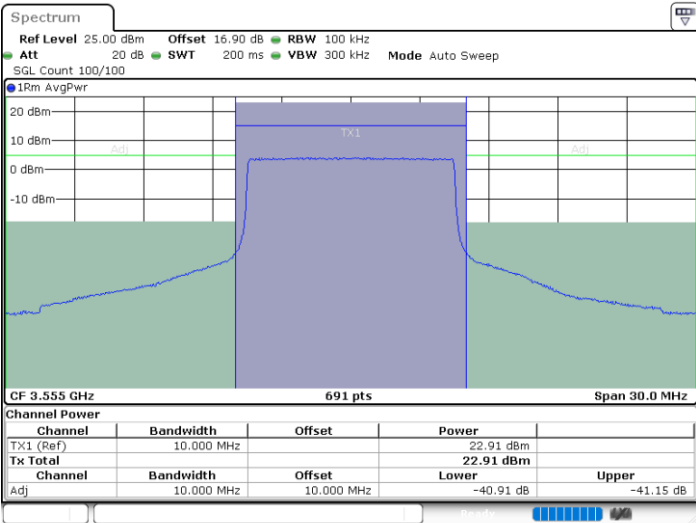


Date: 19\_SEP.2023 19:05:08

Date: 19\_SEP.2023 18:18:51

Lowest Channel / FullIRB

N/A



Date: 19\_SEP.2023 18:15:02