



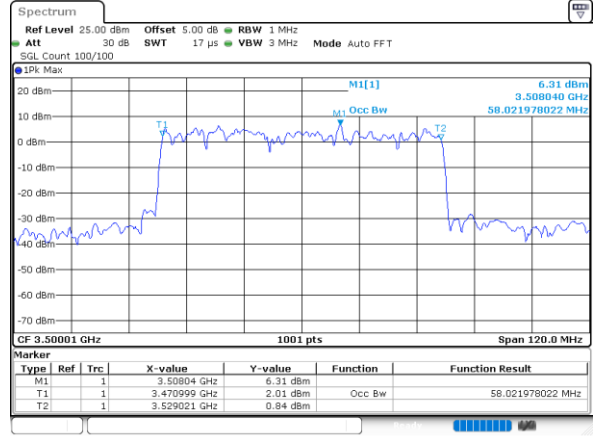
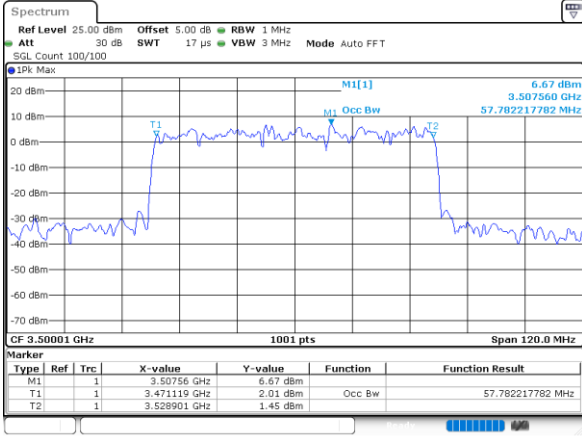
FR1 UL-MIMO n77 / 60MHz / CP-OFDM (Ant5)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 2..JUL.2021 15:17:20

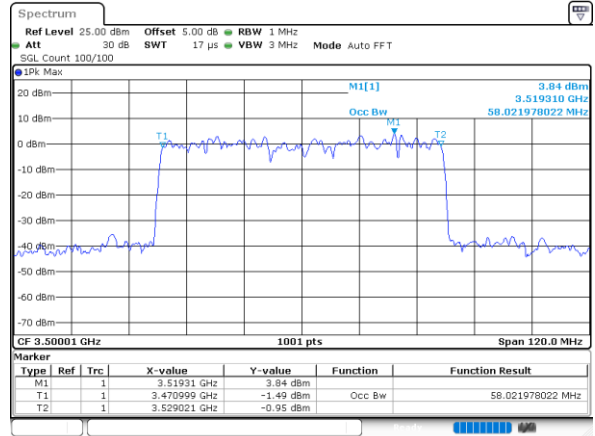
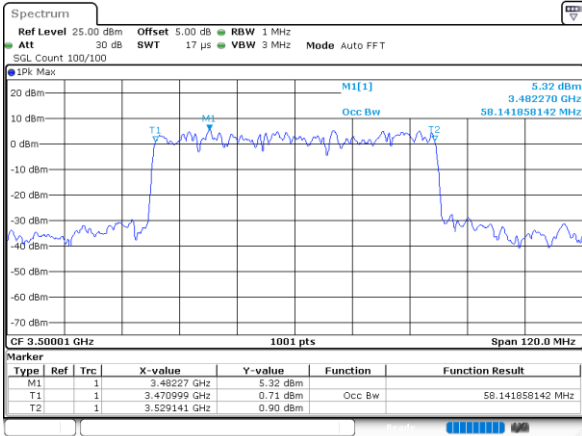
Date: 2..JUL.2021 15:17:37

64QAM

256QAM

Middle Channel

Middle Channel



Date: 2..JUL.2021 15:17:53

Date: 2..JUL.2021 15:18:09



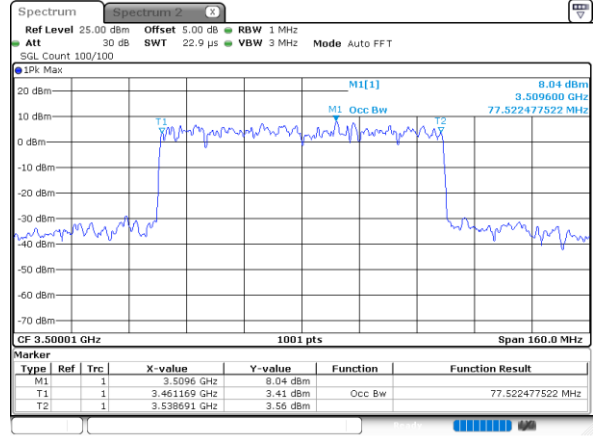
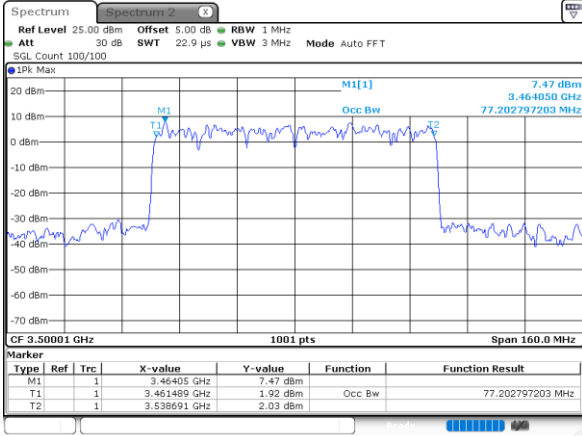
FR1 UL-MIMO n77 / 80MHz / CP-OFDM (ANT4)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 1.JUL.2021 17:05:01

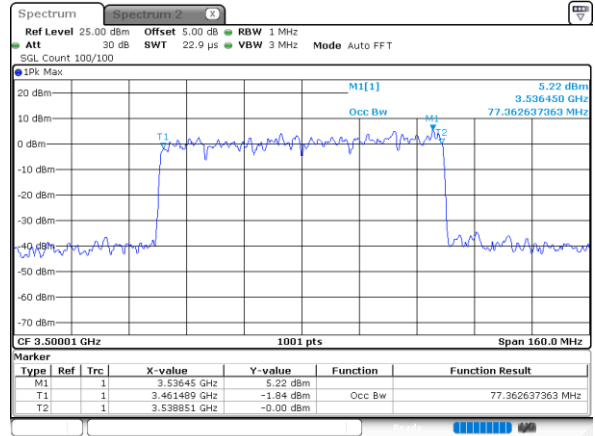
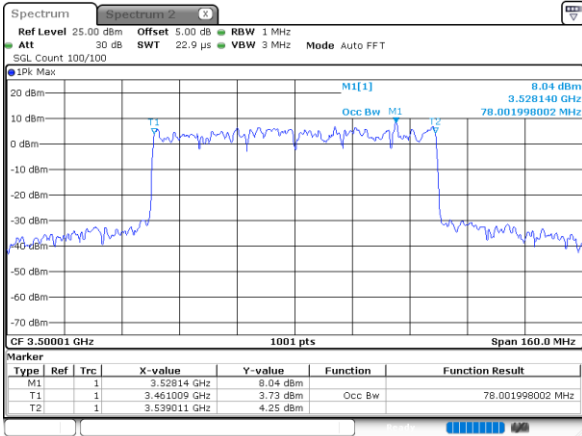
Date: 1.JUL.2021 17:05:21

64QAM

256QAM

Middle Channel

Middle Channel



Date: 1.JUL.2021 17:05:40

Date: 1.JUL.2021 17:05:58



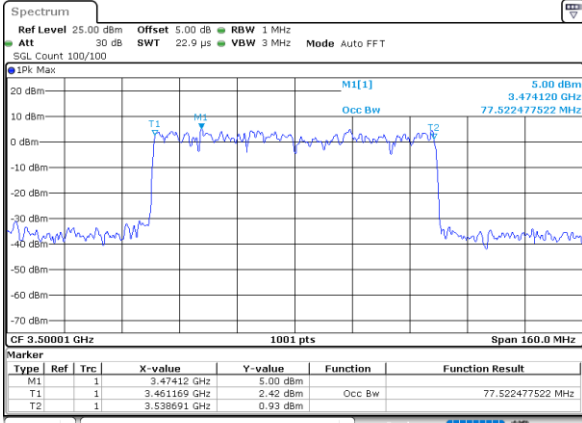
FR1 UL-MIMO n77 / 80MHz / CP-OFDM (Ant5)

QPSK

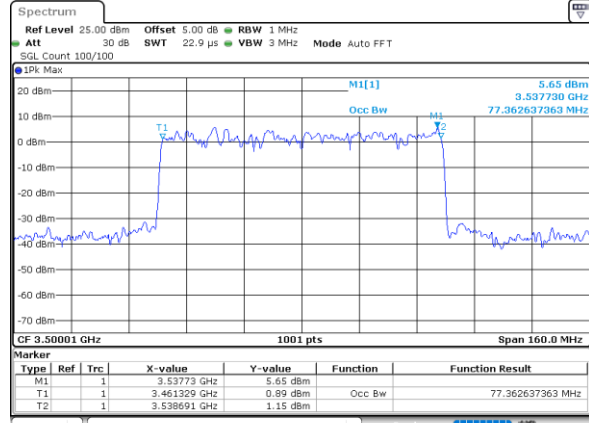
16QAM

Middle Channel

Middle Channel



Date: 2.JUL.2021 15:18:58



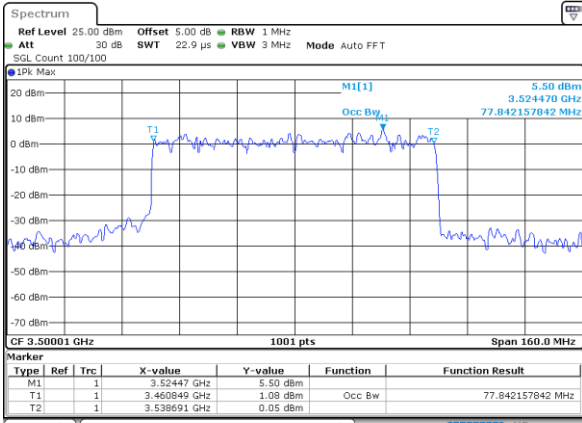
Date: 2.JUL.2021 15:19:14

64QAM

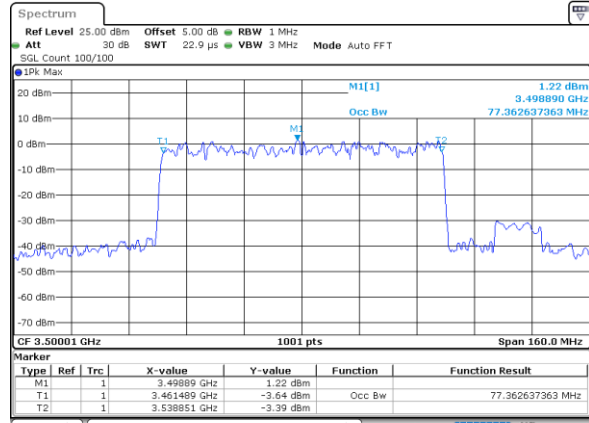
256QAM

Middle Channel

Middle Channel



Date: 2.JUL.2021 15:19:32



Date: 2.JUL.2021 15:19:53



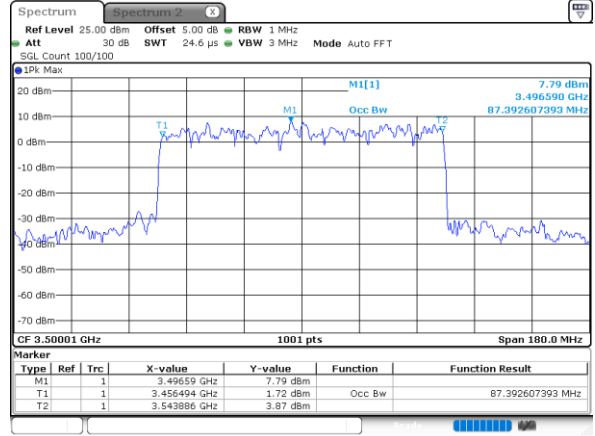
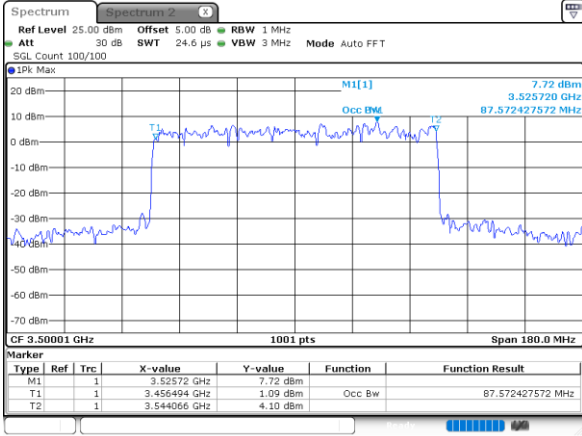
FR1 UL-MIMO n77 / 90MHz / CP-OFDM (Ant4)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 1.JUL.2021 17:07:13

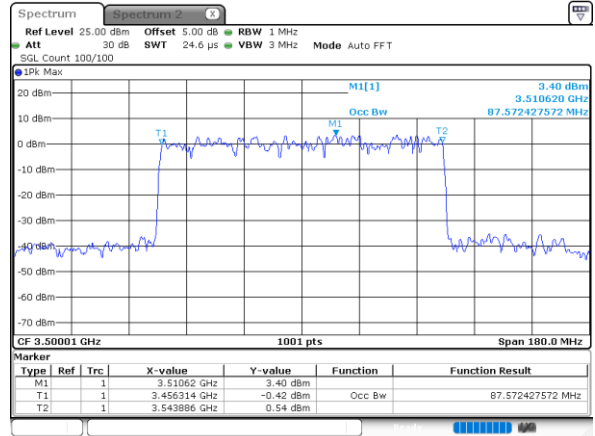
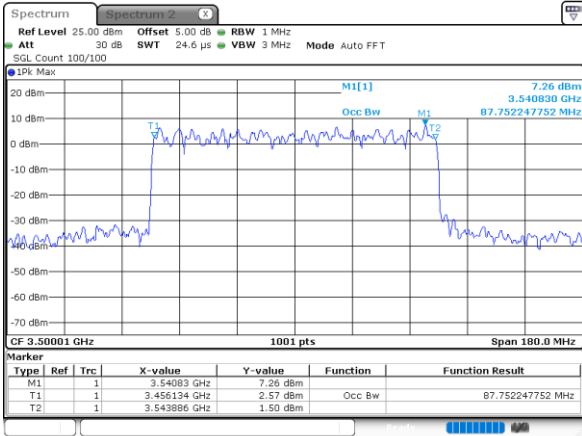
Date: 1.JUL.2021 17:07:31

64QAM

256QAM

Middle Channel

Middle Channel



Date: 1.JUL.2021 17:07:51

Date: 1.JUL.2021 17:08:17



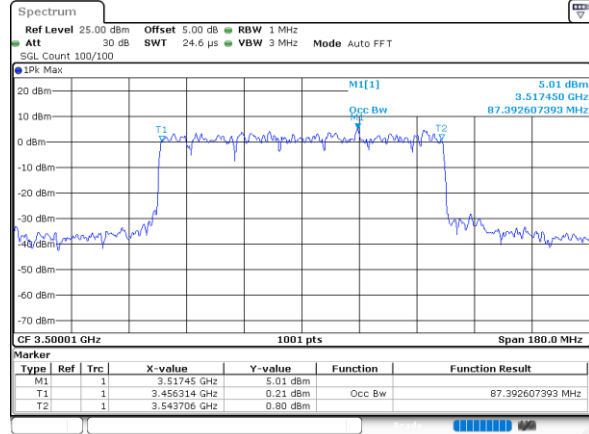
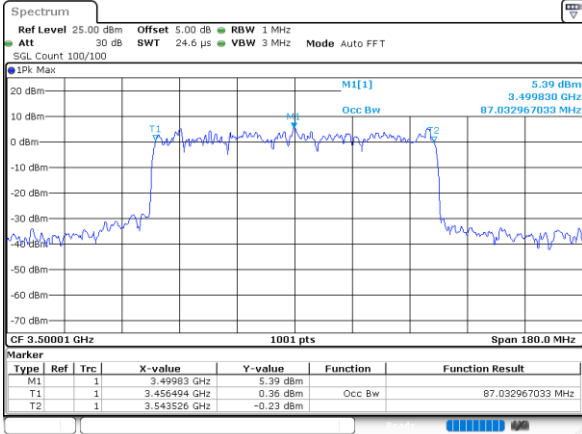
FR1 UL-MIMO n77 / 90MHz / CP-OFDM (Ant5)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 2..JUL.2021 15:20:136

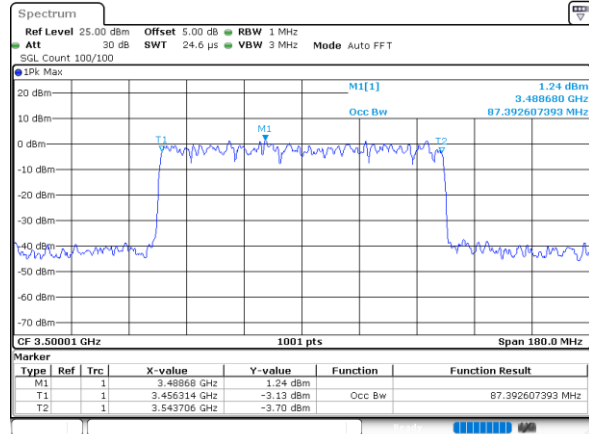
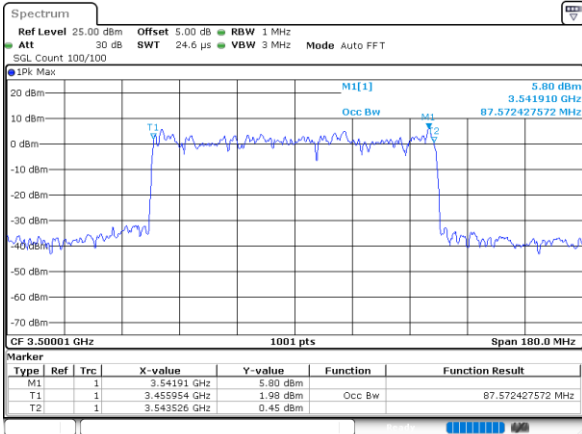
Date: 2..JUL.2021 15:20:152

64QAM

256QAM

Middle Channel

Middle Channel



Date: 2..JUL.2021 15:21:110

Date: 2..JUL.2021 15:21:27



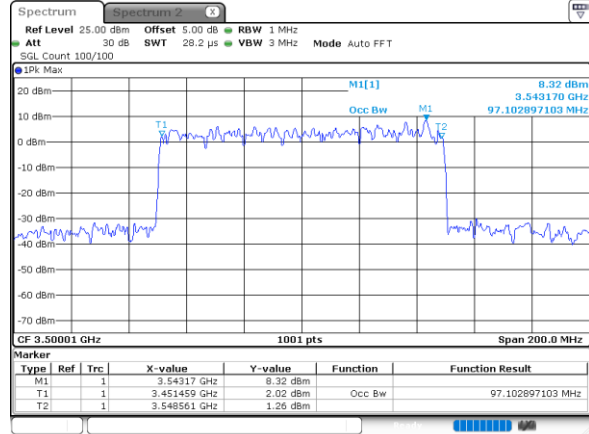
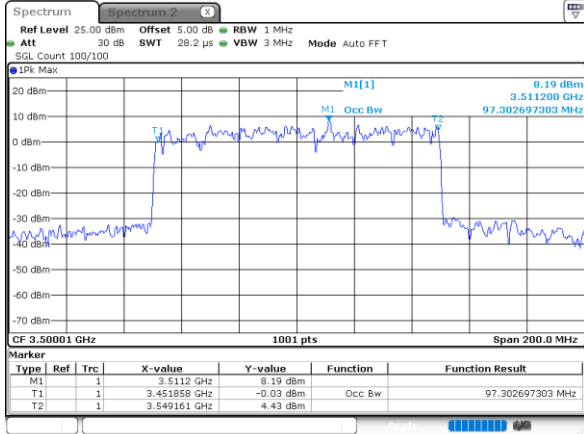
FR1 UL-MIMO n77 / 100MHz / CP-OFDM (ANT4)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 1.JUL.2021 15:11:24

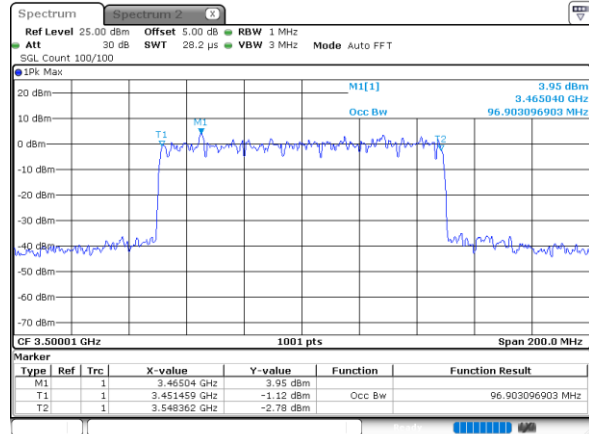
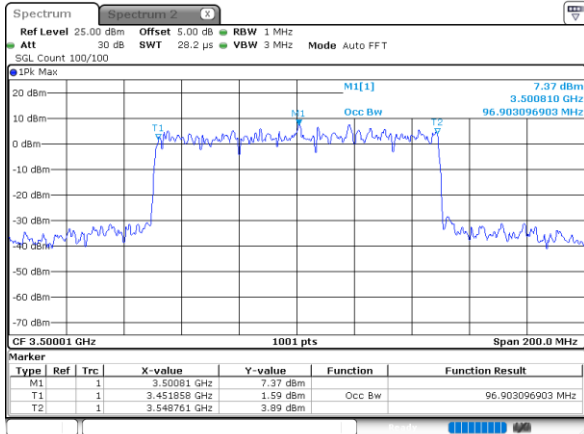
Date: 1.JUL.2021 15:16:58

64QAM

256QAM

Middle Channel

Middle Channel



Date: 1.JUL.2021 15:17:27

Date: 1.JUL.2021 15:17:52



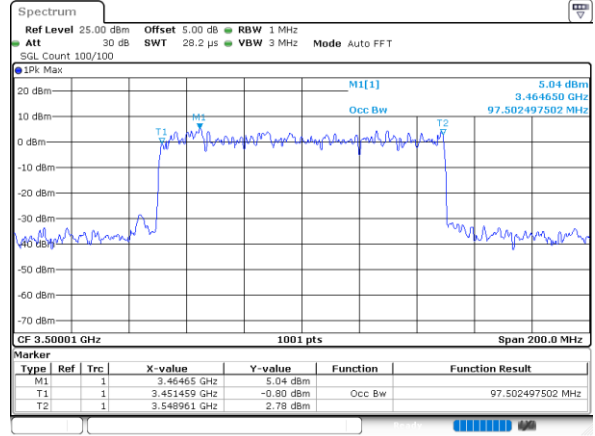
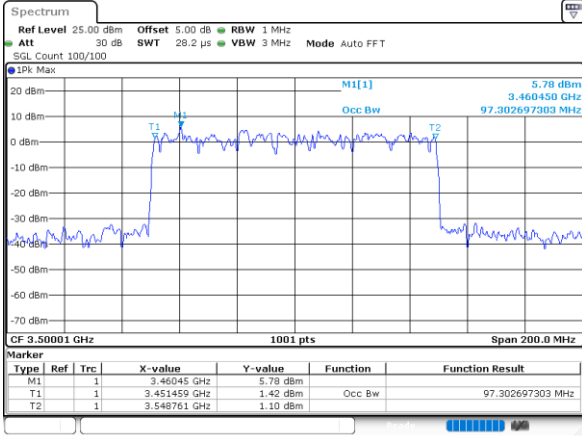
FR1 UL-MIMO n77 / 100MHz / CP-OFDM (Ant5)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 2..JUL.2021 15:22:11

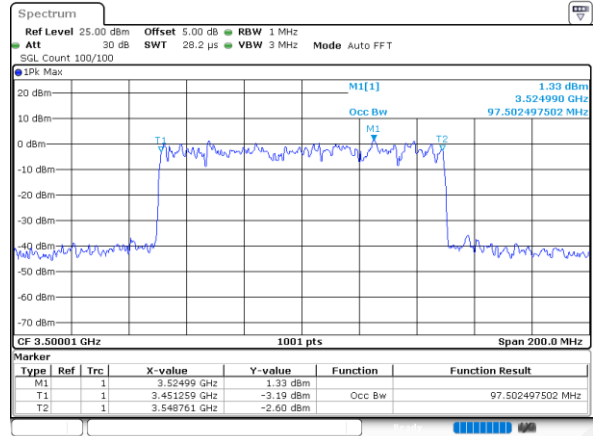
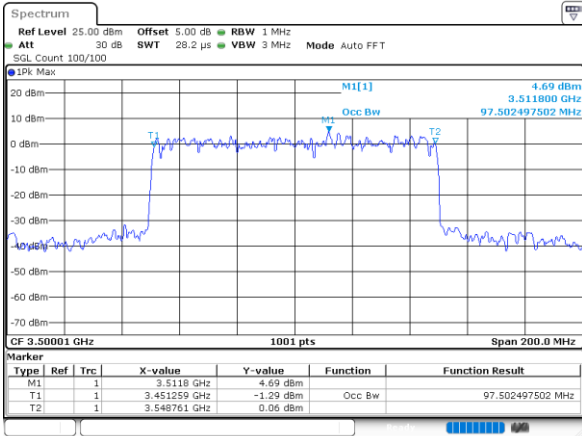
Date: 2..JUL.2021 15:23:05

64QAM

256QAM

Middle Channel

Middle Channel

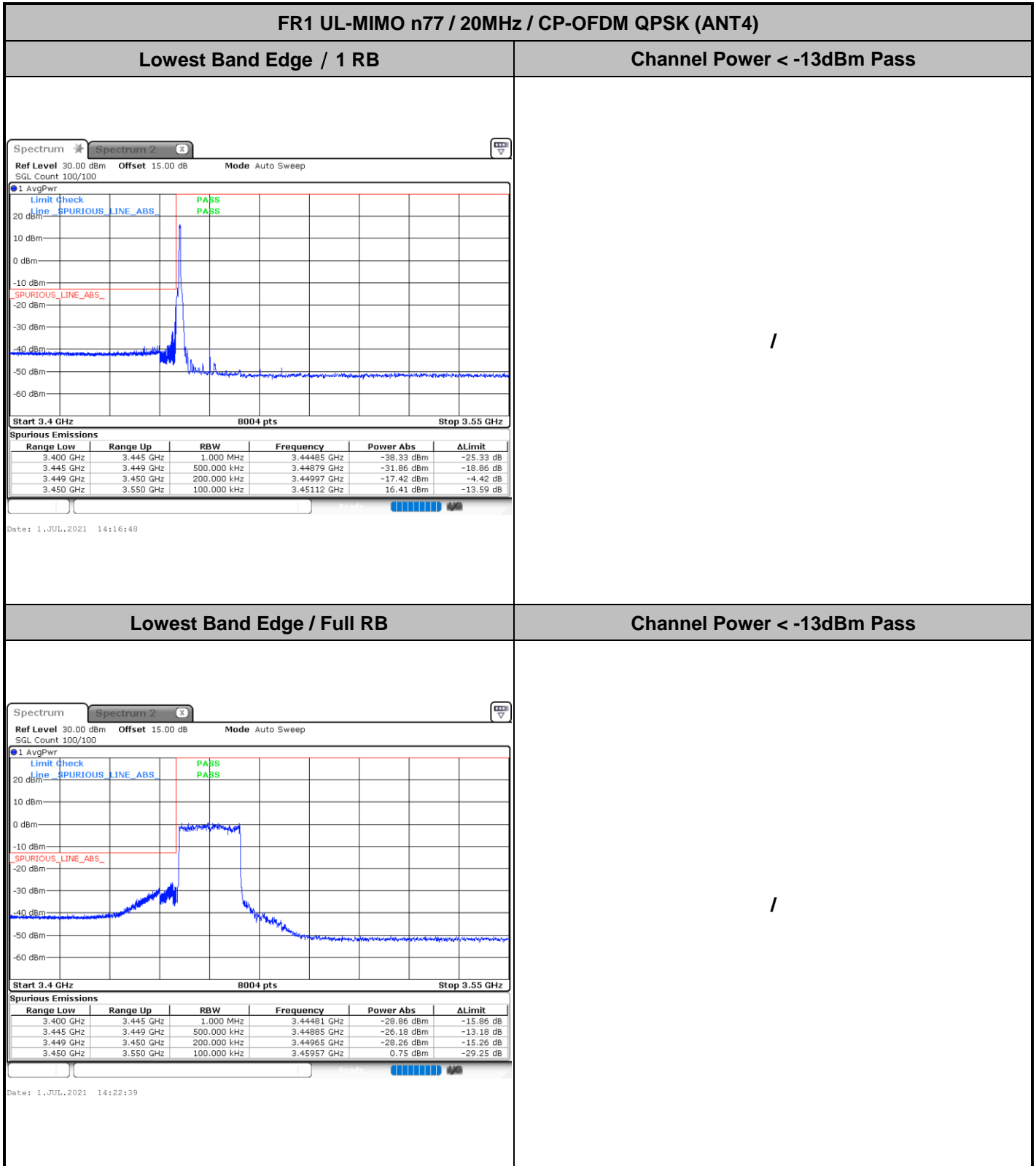


Date: 2..JUL.2021 15:23:42

Date: 2..JUL.2021 15:24:13



# Conducted Band Edge



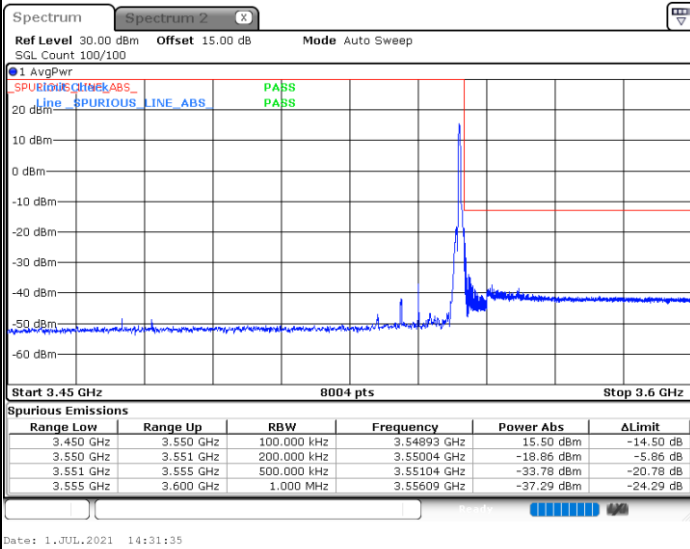




FR1 UL-MIMO n77 / 20MHz / CP-OFDM QPSK (ANT4)

Highest Band Edge / 1 RB

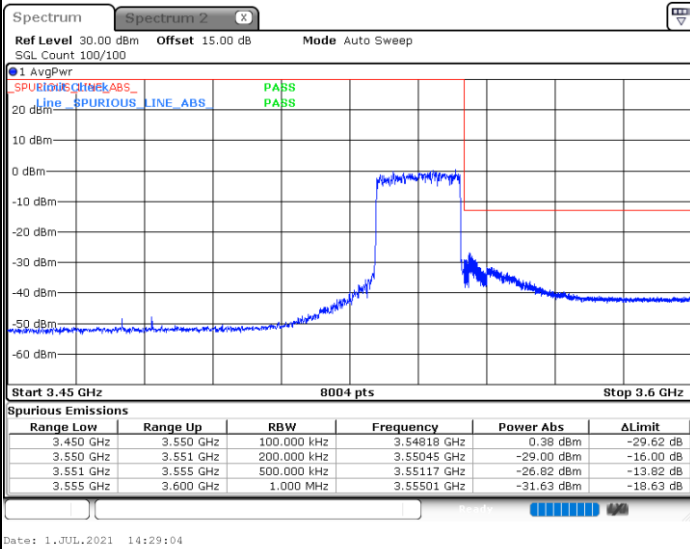
Channel Power < -13dBm Pass



/

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



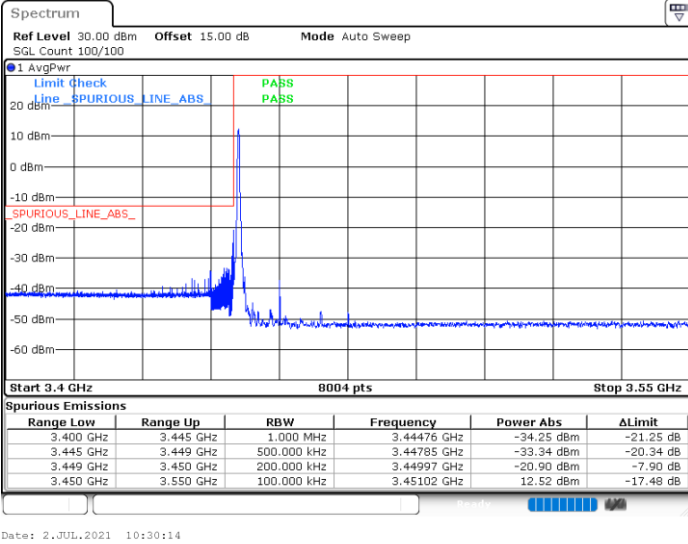
/



FR1 UL-MIMO n77 / 20MHz / CP-OFDM QPSK (Ant5)

Lowest Band Edge / 1 RB

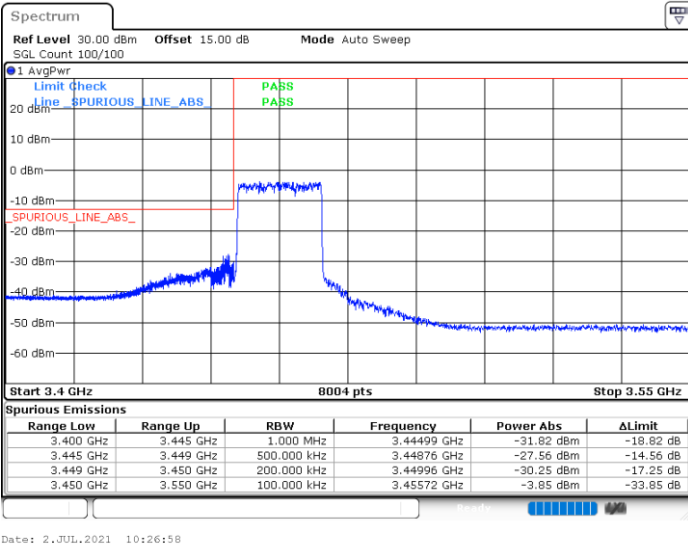
Channel Power < -13dBm Pass



/

Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



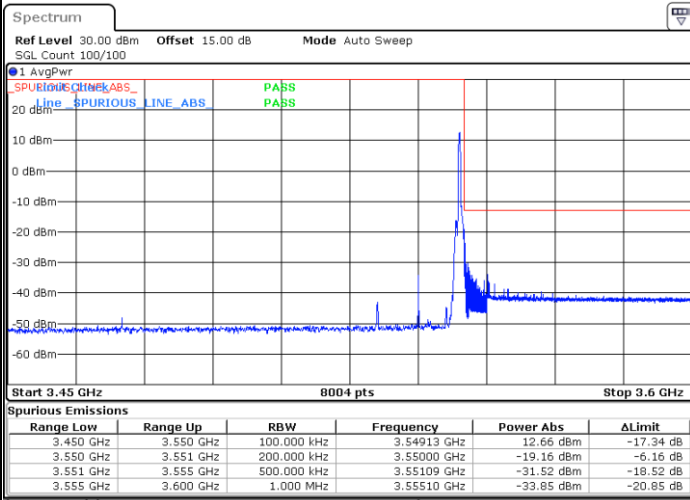
/



FR1 UL-MIMO n77 / 20MHz / CP-OFDM QPSK (Ant5)

Highest Band Edge / 1 RB

Channel Power < -13dBm Pass

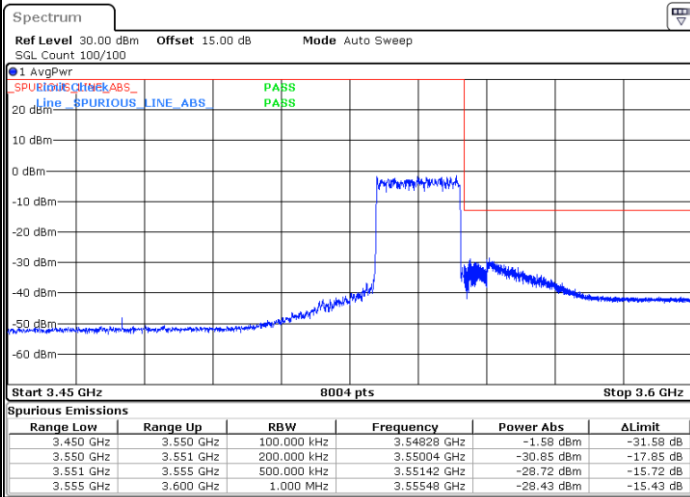


/

Date: 2.JUL.2021 10:42:40

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



/

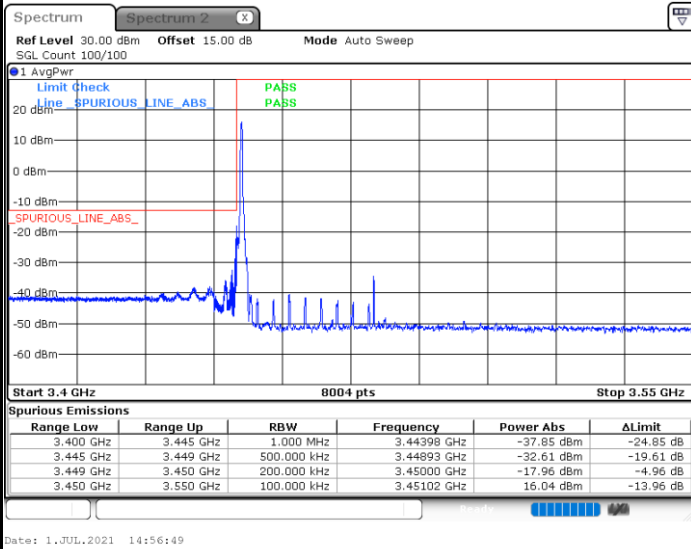
Date: 2.JUL.2021 10:43:38



FR1 UL-MIMO n77 / 60MHz / CP-OFDM QPSK (ANT4)

Lowest Band Edge / 1 RB

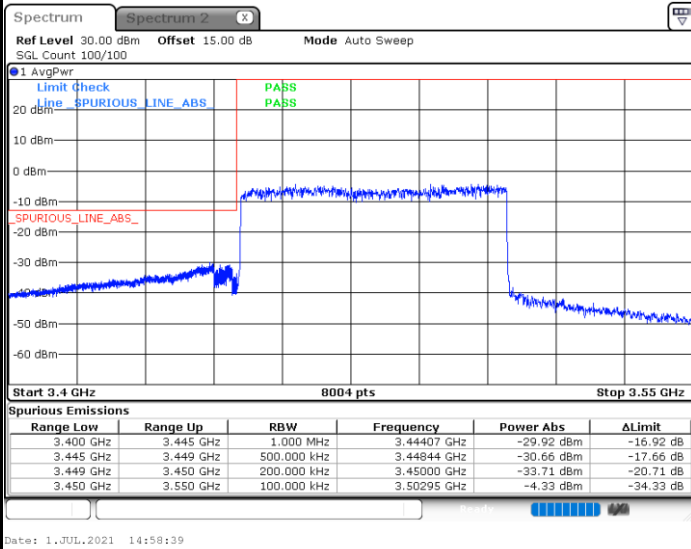
Channel Power < -13dBm Pass



/

Lowest Band Edge / Full RB

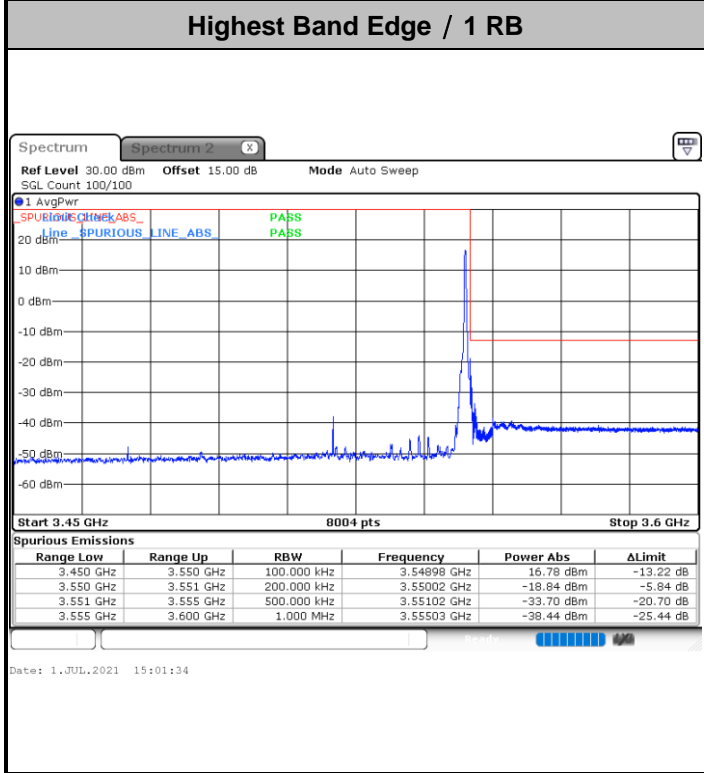
Channel Power < -13dBm Pass



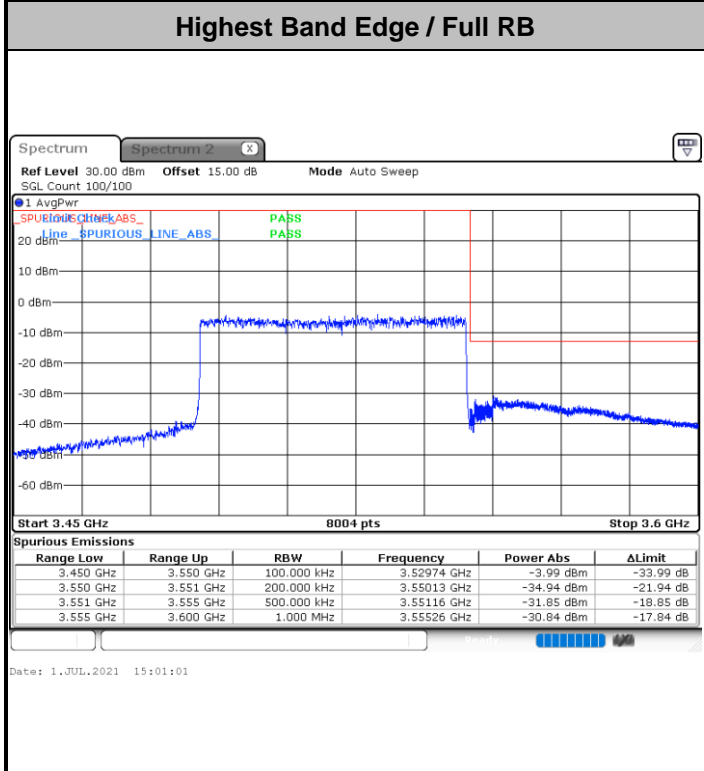
/



**FR1 UL-MIMO n77 / 60MHz / CP-OFDM QPSK (ANT4)**



**Channel Power < -13dBm Pass**



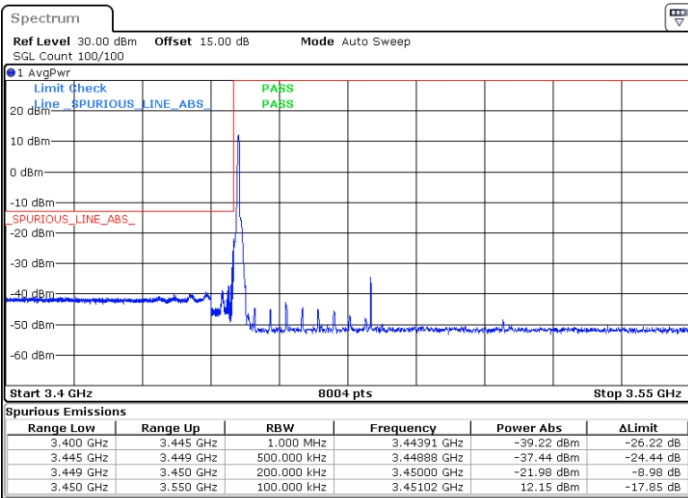
**Channel Power < -13dBm Pass**



FR1 UL-MIMO n77 / 60MHz / CP-OFDM QPSK (Ant5)

Lowest Band Edge / 1 RB

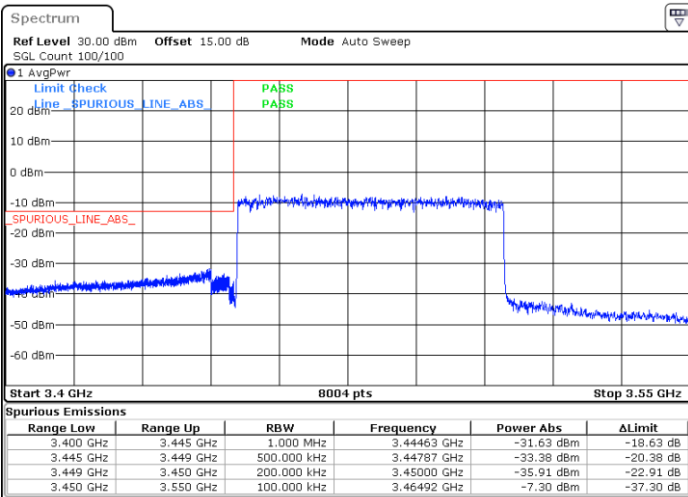
Channel Power < -13dBm Pass



Date: 2.JUL.2021 10:45:11

Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



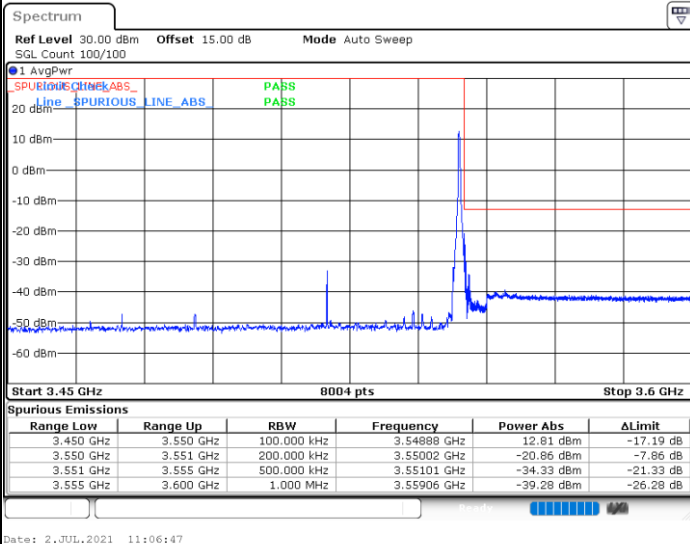
Date: 2.JUL.2021 10:59:31



FR1 UL-MIMO n77 / 60MHz / CP-OFDM QPSK (Ant5)

Highest Band Edge / 1 RB

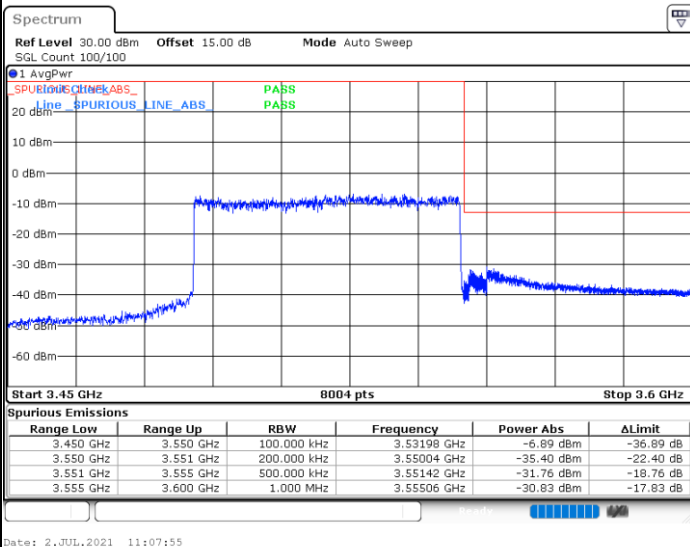
Channel Power < -13dBm Pass



/

Highest Band Edge / Full RB

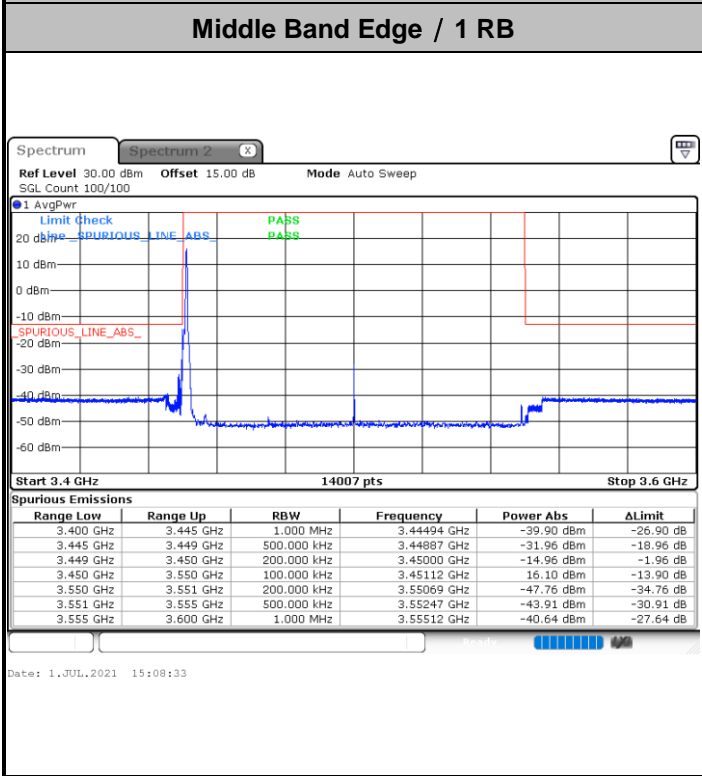
Channel Power < -13dBm Pass



/

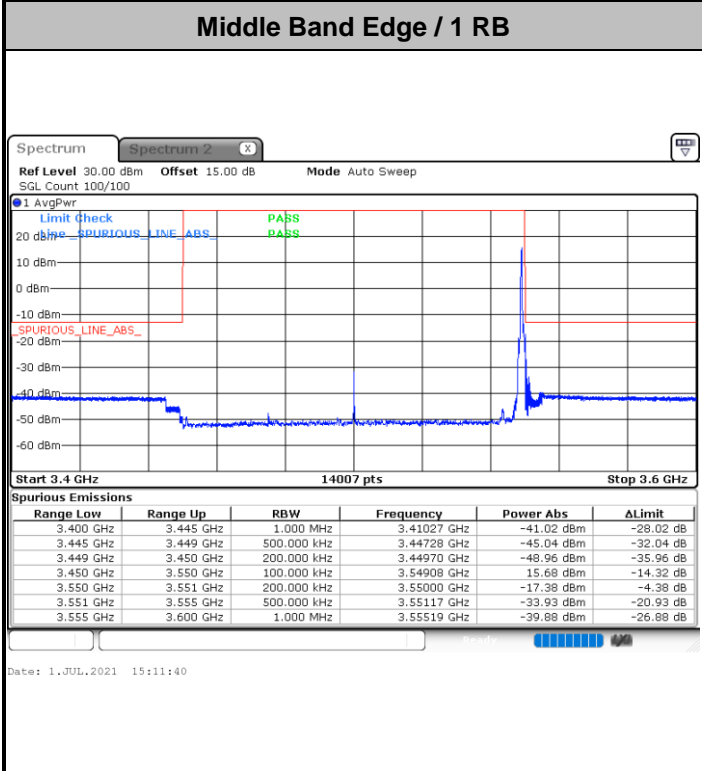


FR1 UL-MIMO n77 / 100MHz / CP-OFDM QPSK (ANT4)



**Channel Power < -13dBm Pass**

/



**Channel Power < -13dBm Pass**

/

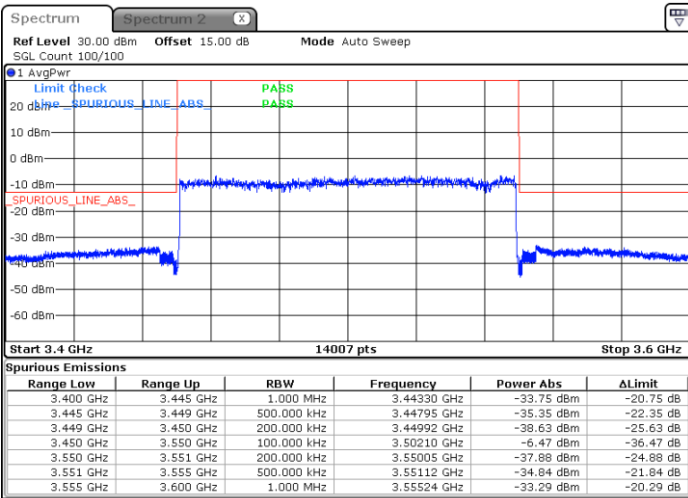




FR1 UL-MIMO n77 / 100MHz / CP-OFDM QPSK (ANT4)

Middle Band Edge / Full RB

Channel Power < -13dBm Pass



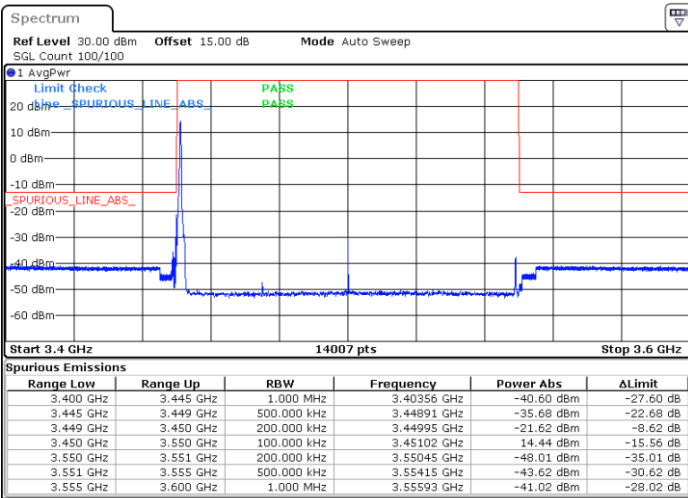
Date: 1.JUL.2021 15:12:01



FR1 UL-MIMO n77 / 100MHz / CP-OFDM QPSK (Ant5)

Middle Band Edge / 1 RB

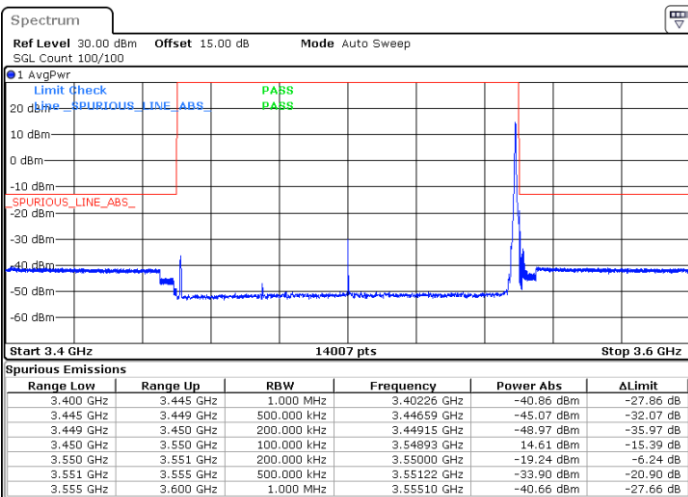
Channel Power < -13dBm Pass



Date: 2.JUL.2021 11:30:21

Middle Band Edge / 1 RB

Channel Power < -13dBm Pass



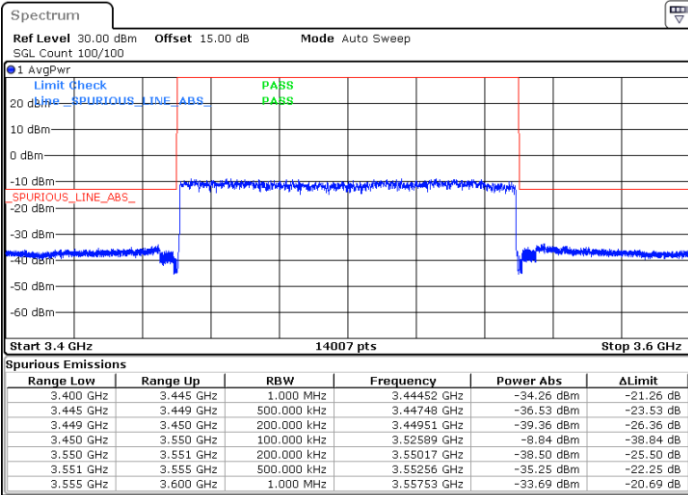
Date: 2.JUL.2021 13:52:39



FR1 UL-MIMO n77 / 100MHz / CP-OFDM QPSK (Ant5)

Middle Band Edge / Full RB

Channel Power < -13dBm Pass



Date: 2.JUL.2021 13:53:01

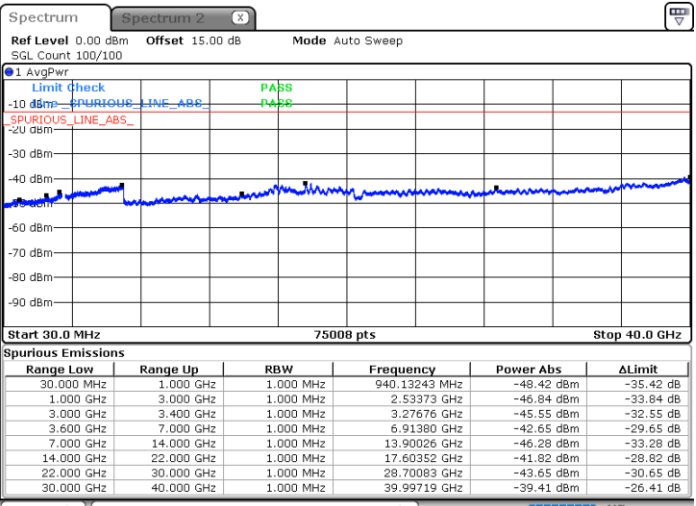
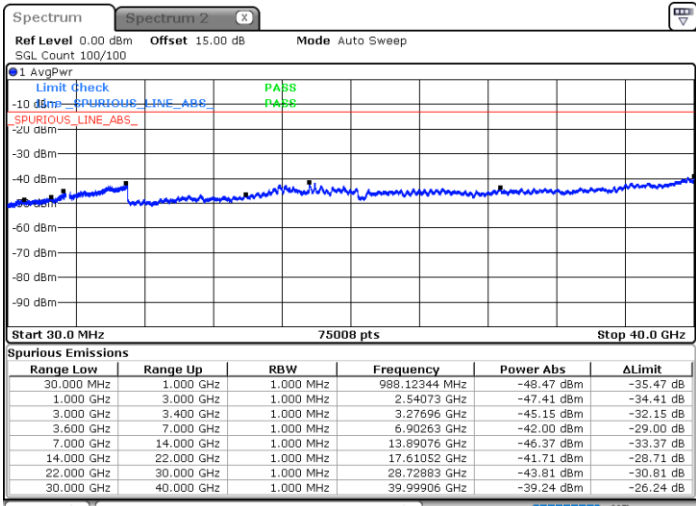


# Conducted Spurious Emission

## FR1 UL-MIMO n77 / 20MHz / CP-OFDM QPSK (ANT4)

### Lowest Channel / 1RB

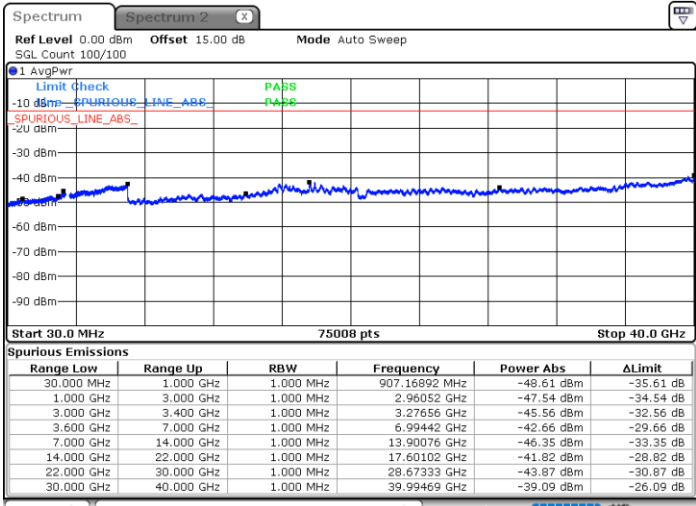
### Middle Channel / 1RB



Date: 1.JUL.2021 14:22:08

Date: 1.JUL.2021 14:37:56

### Highest Channel / 1RB



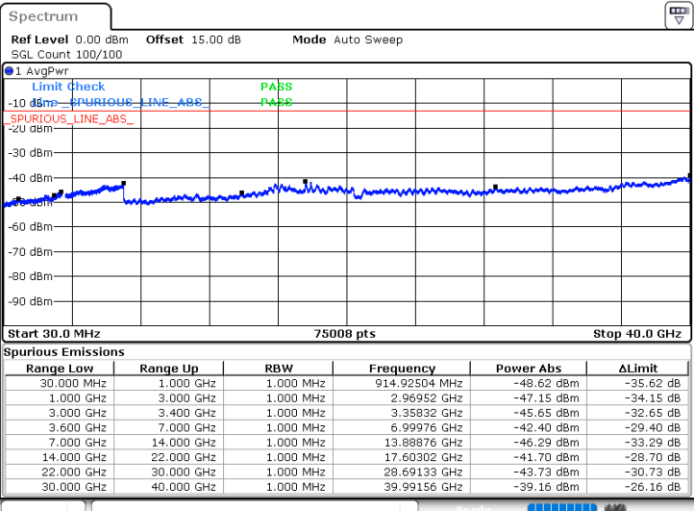
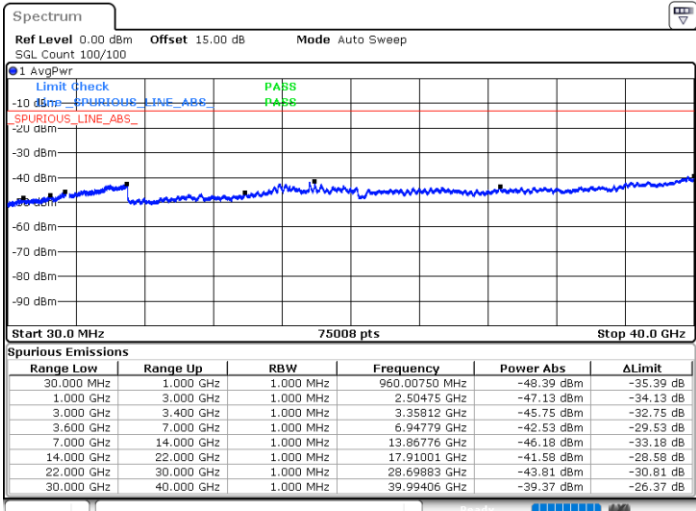
Date: 1.JUL.2021 14:34:36



FR1 UL-MIMO n77 / 20MHz / CP-OFDM QPSK (Ant5)

Lowest Channel / 1RB

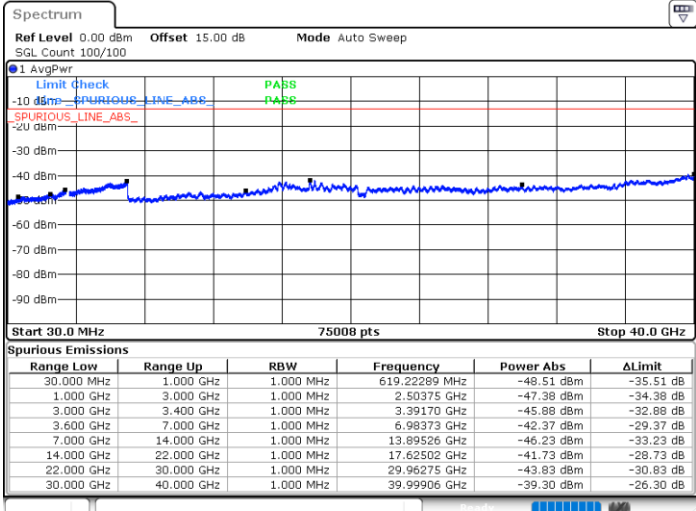
Middle Channel / 1RB



Date: 2.JUL.2021 10:32:13

Date: 2.JUL.2021 10:35:50

Highest Channel / 1RB



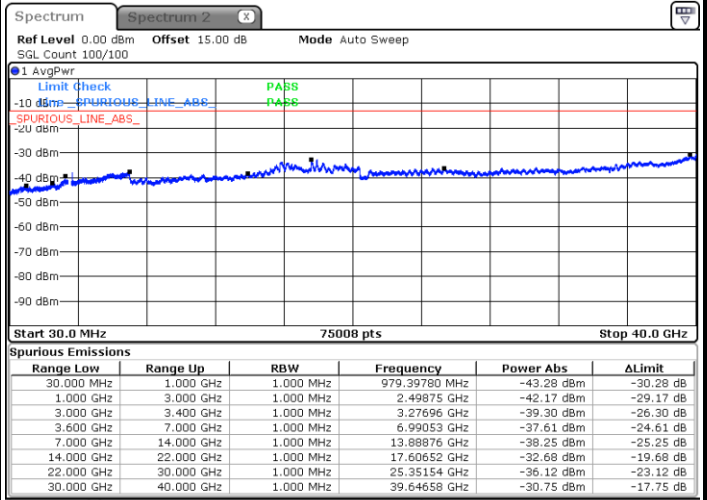
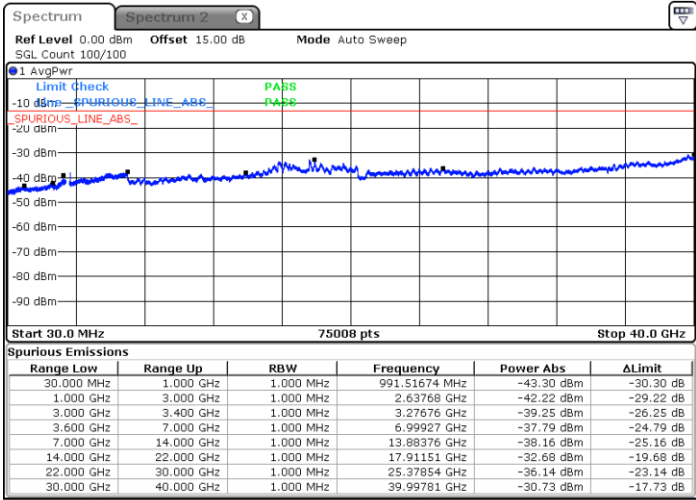
Date: 2.JUL.2021 10:41:36



FR1 UL-MIMO n77 / 60MHz / CP-OFDM QPSK (ANT4)

Lowest Channel / 1RB

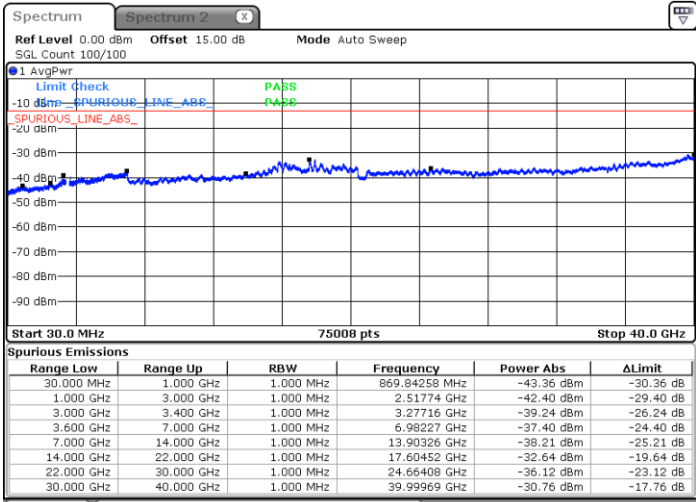
Middle Channel / 1RB



Date: 1.JUL.2021 14:58:09

Date: 1.JUL.2021 14:51:29

Highest Channel / 1RB



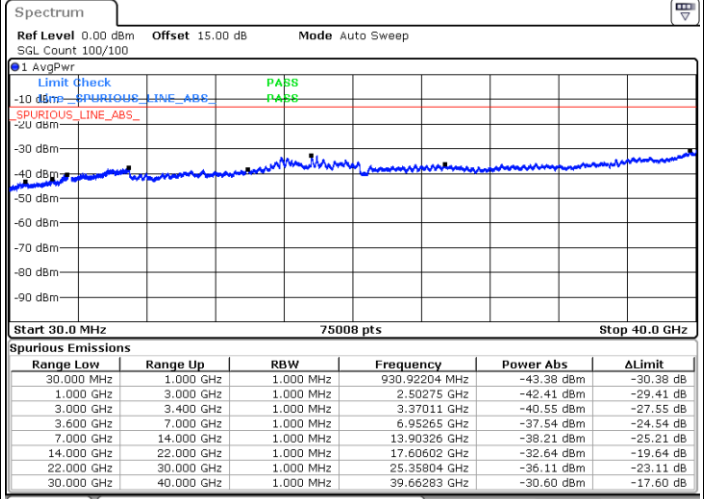
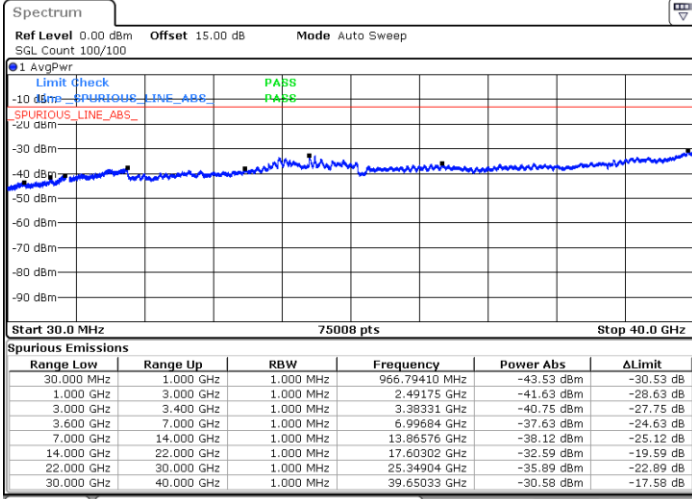
Date: 1.JUL.2021 15:05:43



FR1 UL-MIMO n77 / 60MHz / CP-OFDM QPSK (Ant5)

Lowest Channel / 1RB

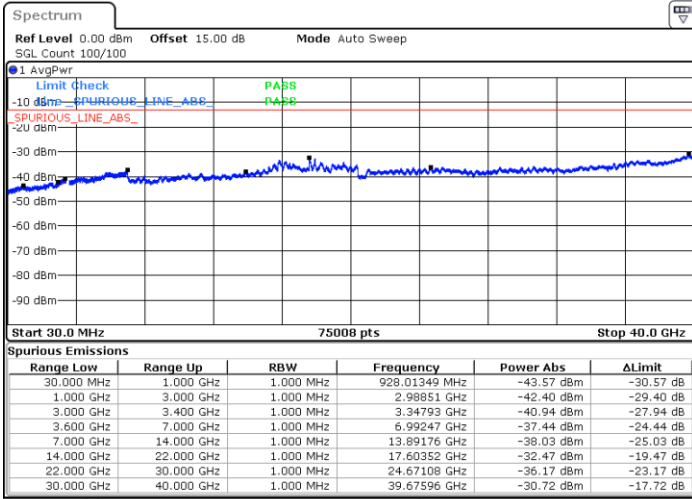
Middle Channel / 1RB



Date: 2.JUL.2021 10:46:33

Date: 2.JUL.2021 11:01:28

Highest Channel / 1RB

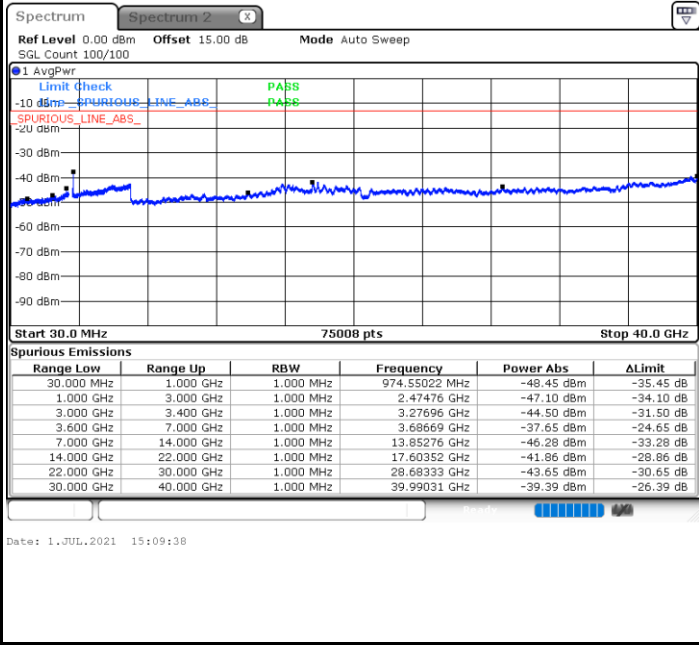


Date: 2.JUL.2021 11:06:17



FR1 UL-MIMO n77 / 100MHz / CP-OFDM QPSK (ANT4)

Middle Channel / 1RB

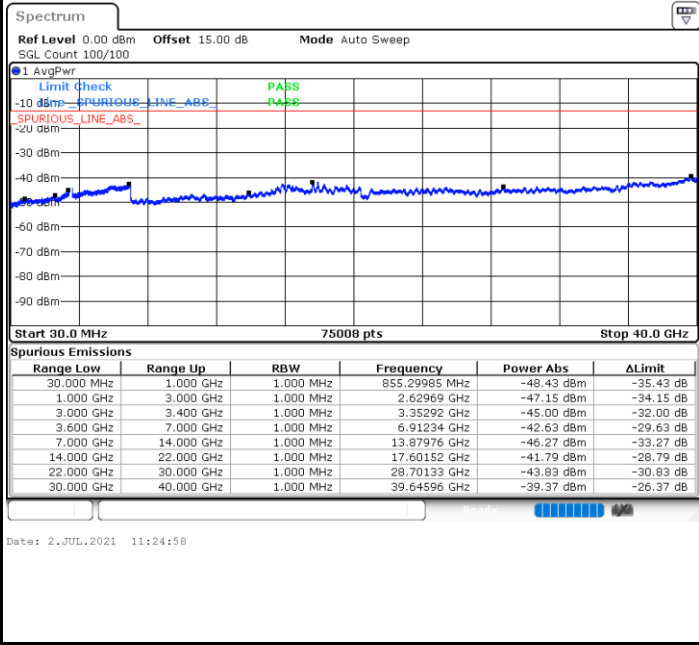






FR1 UL-MIMO n77 / 100MHz / CP-OFDM QPSK (Ant5)

Middle Channel / 1RB





### Frequency Stability

Test Conditions		NR UL-MIMO n77 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 20MHz	Within Band
		Deviation (ppm)	Result
50	Normal Voltage	0.0002	PASS
40	Normal Voltage	0.0004	
30	Normal Voltage	0.0001	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0004	
0	Normal Voltage	0.0002	
-10	Normal Voltage	0.0001	
-20	Normal Voltage	0.0002	
-30	Normal Voltage	0.0002	
20	Maximum Voltage	0.0001	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0002	

**Note:**

1. Normal Voltage =3.85 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

SA n77 UL MIMO / NR 100MHz / QPSK DFT-s-OFDM / ANT5+ANT4(NR)								
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	6900	-61.45	-13	-48.45	-71.93	2.76	13.24	H
	10356	-58.24	-13	-45.24	-67.83	3.42	13.01	H
	13818	-58.10	-13	-45.10	-67.71	3.83	13.44	H
	6900	-56.65	-13	-43.65	-67.09	2.80	13.24	V
	10356	-54.25	-13	-41.25	-63.80	3.46	13.01	V
	13824	-58.44	-13	-45.44	-68.00	3.88	13.44	V

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

SA n77 / NR 100MHz / QPSK DFT-s-OFDM / ANT4(NR)								
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	6900	-59.36	-13	-46.36	-69.84	2.76	13.24	H
	10356	-55.56	-13	-42.56	-65.15	3.42	13.01	H
	13818	-58.17	-13	-45.17	-67.78	3.83	13.44	H
	6900	-53.54	-13	-40.54	-63.98	2.80	13.24	V
	10356	-52.93	-13	-39.93	-62.48	3.46	13.01	V
	13818	-58.24	-13	-45.24	-67.80	3.88	13.44	V

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

EN-DC_13A_n77 / LTE 10MHz + NR 100MHz / QPSK / ANT0LTE) & ANT4(NR)								
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	6912	-62.80	-13	-49.80	-73.28	2.76	13.24	H
	10368	-59.76	-13	-46.76	-69.35	3.42	13.01	H
	13818	-58.06	-13	-45.06	-67.67	3.83	13.44	H
	6912	-62.52	-13	-49.52	-72.96	2.80	13.24	V
	10368	-59.53	-13	-46.53	-69.08	3.46	13.01	V
	13818	-58.04	-13	-45.04	-67.60	3.88	13.44	V

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



EN-DC_2A_n77 / LTE 10MHz + NR 100MHz / QPSK / ANT0LTE) & ANT4(NR)								
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	6900	-62.59	-13	-49.59	-73.07	2.76	13.24	H
	10356	-59.36	-13	-46.36	-68.95	3.42	13.01	H
	13818	-58.10	-13	-45.10	-67.71	3.83	13.44	H
	6900	-58.06	-13	-45.06	-68.50	2.80	13.24	V
	10356	-57.61	-13	-44.61	-67.16	3.46	13.01	V
	13818	-58.36	-13	-45.36	-67.92	3.88	13.44	V

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

EN-DC_66A_n77 / LTE 10MHz + NR 100MHz / QPSK / ANT0LTE) & ANT4(NR)								
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	6912	-62.43	-13	-49.43	-72.91	2.76	13.24	H
	10368	-59.68	-13	-46.68	-69.27	3.42	13.01	H
	13818	-58.34	-13	-45.34	-67.95	3.83	13.44	H
	6912	-62.32	-13	-49.32	-72.76	2.80	13.24	V
	10368	-59.86	-13	-46.86	-69.41	3.46	13.01	V
	13818	-58.24	-13	-45.24	-67.80	3.88	13.44	V

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