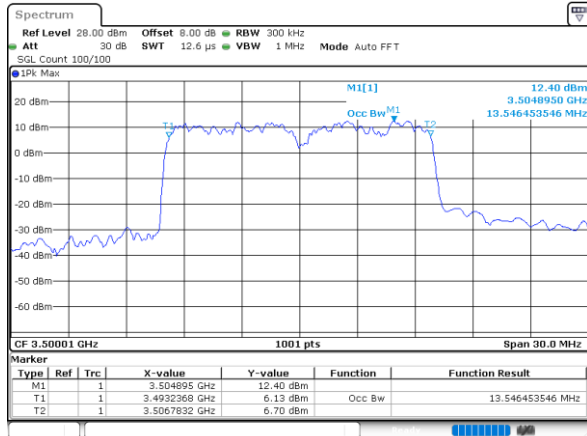
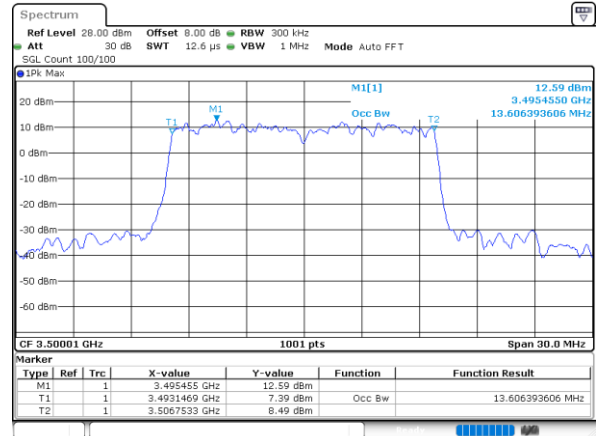
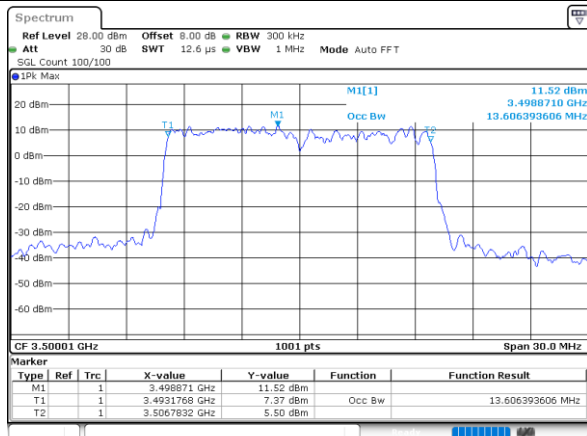


FR1 UL-MIMO n77 / 15MHz / CP-OFDM (Port 1)
QPSK
Middle Channel


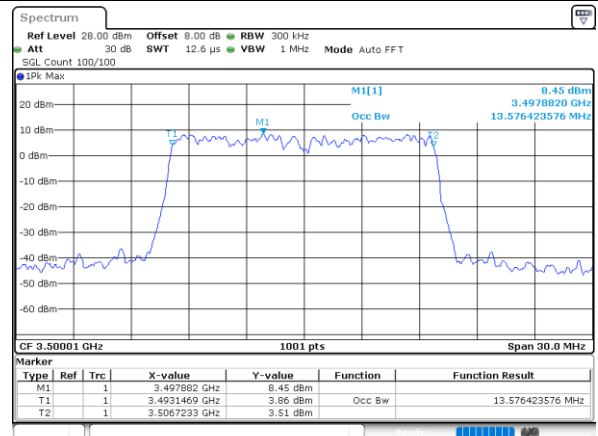
Date: 29.AUG.2021 00:08:12

16QAM
Middle Channel


Date: 29.AUG.2021 00:08:19

64QAM
Middle Channel


Date: 29.AUG.2021 00:08:06

256QAM
Middle Channel


Date: 29.AUG.2021 00:07:51

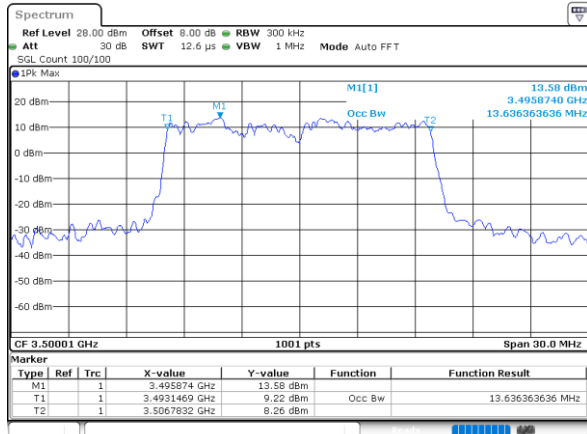
FR1 UL-MIMO n77 / 15MHz / CP-OFDM (Port 2)

QPSK

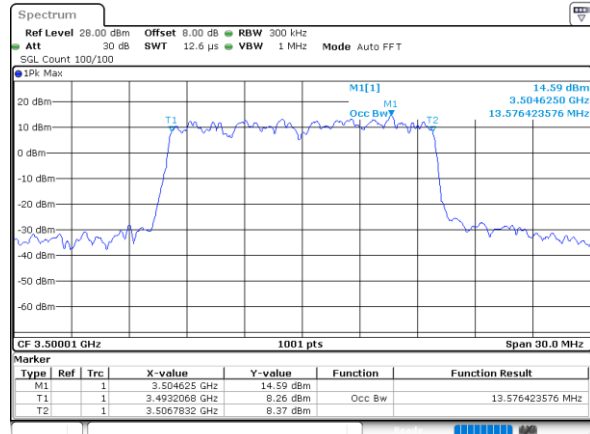
16QAM

Middle Channel

Middle Channel



Date: 29.AUG.2021 01:05:12



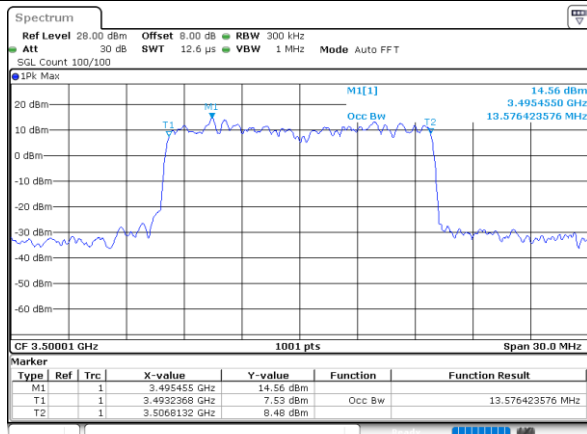
Date: 29.AUG.2021 01:05:07

64QAM

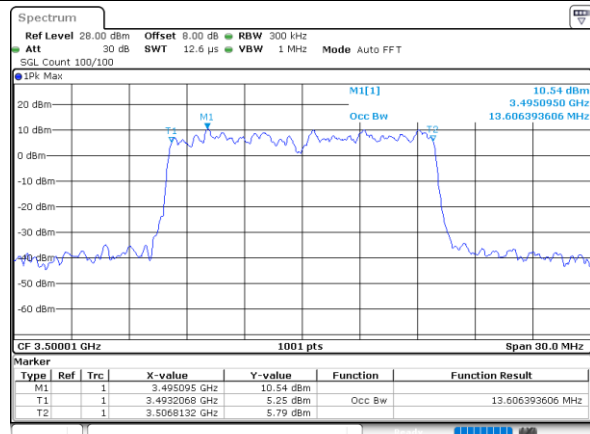
256QAM

Middle Channel

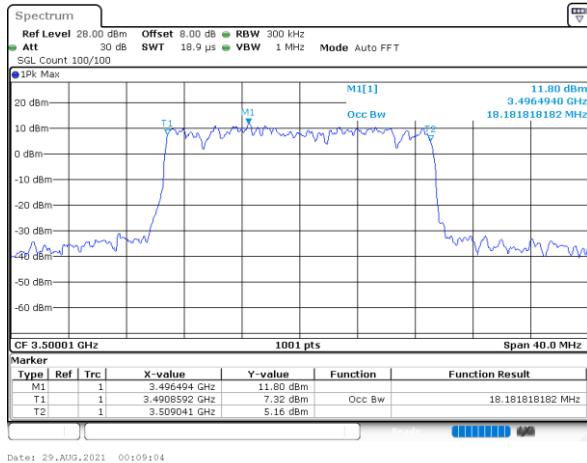
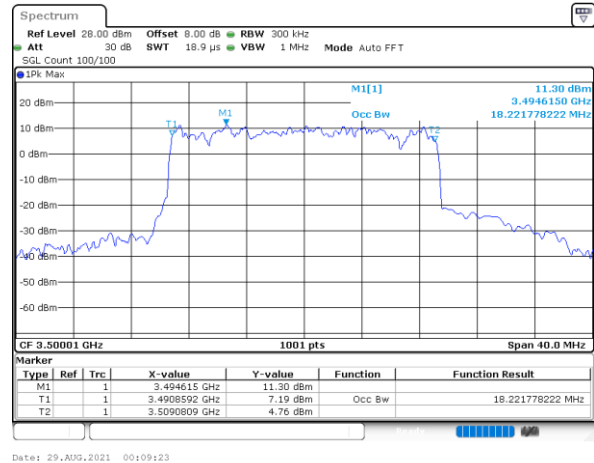
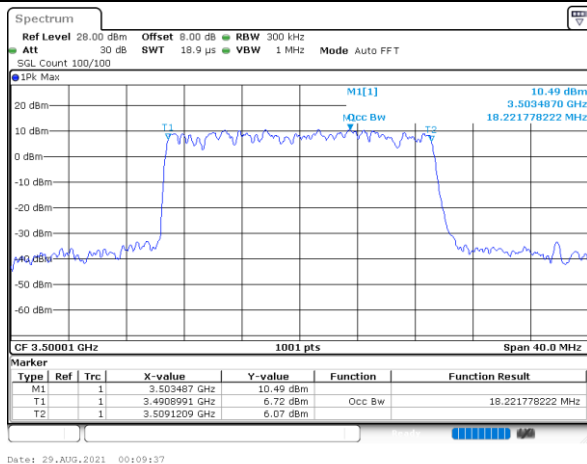
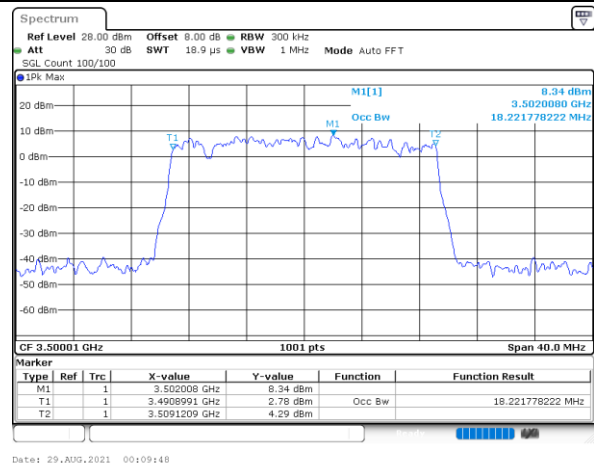
Middle Channel



Date: 29.AUG.2021 01:04:49



Date: 29.AUG.2021 01:04:35

FR1 UL-MIMO n77 / 20MHz / CP-OFDM (Port 1)
QPSK
Middle Channel

16QAM
Middle Channel

64QAM
Middle Channel

256QAM
Middle Channel


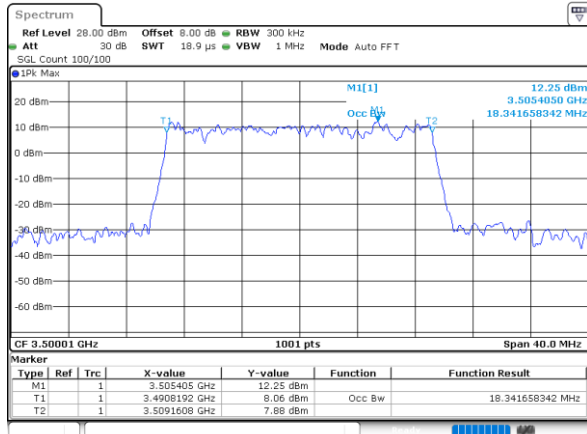
FR1 UL-MIMO n77 / 20MHz / CP-OFDM (Port 2)

QPSK

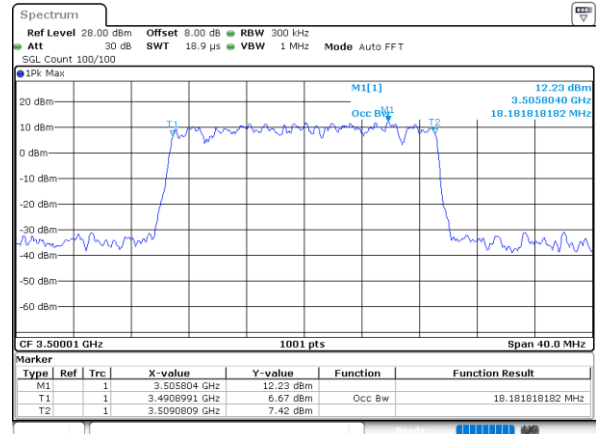
16QAM

Middle Channel

Middle Channel



Date: 29.AUG.2021 01:05:10



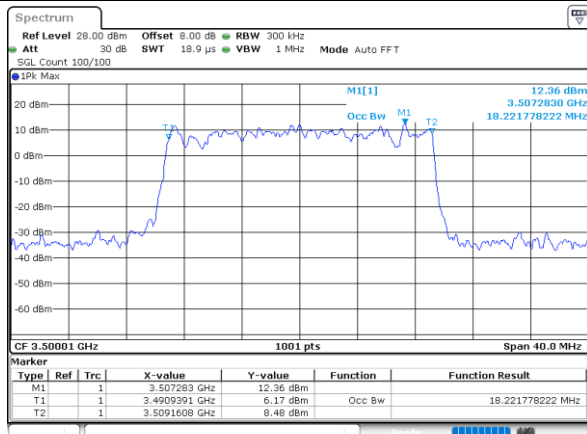
Date: 29.AUG.2021 01:05:12

64QAM

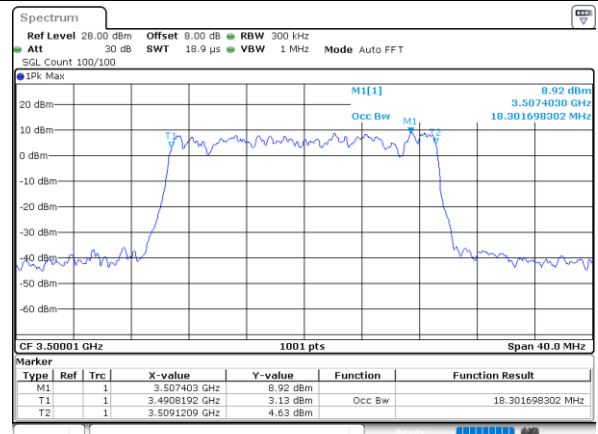
256QAM

Middle Channel

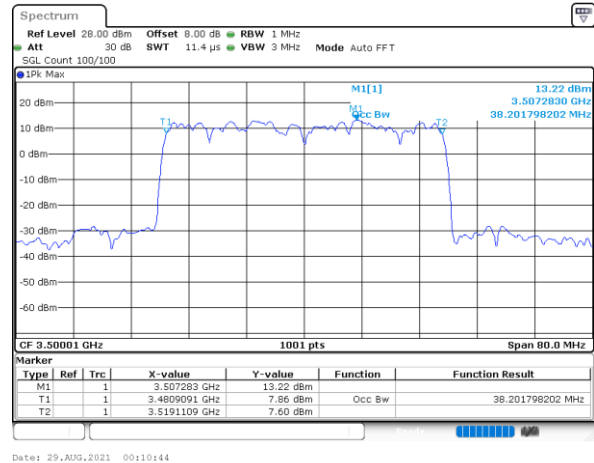
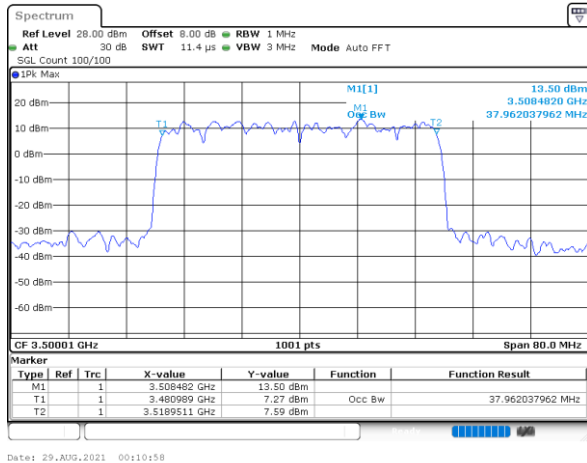
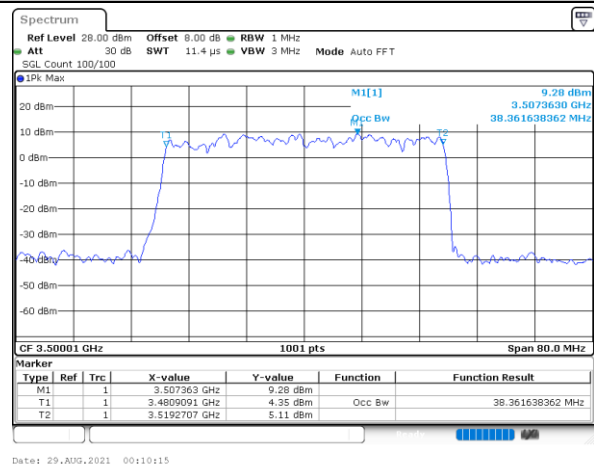
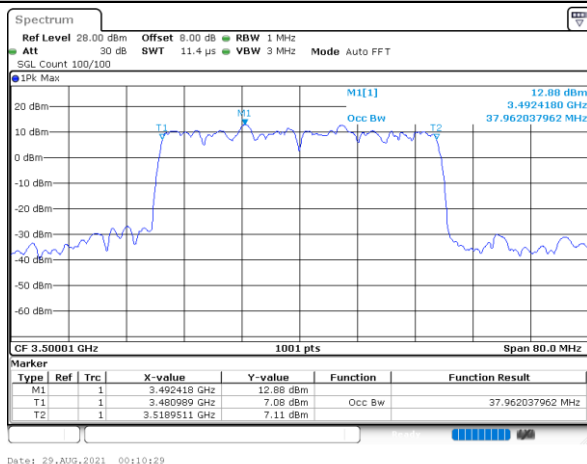
Middle Channel

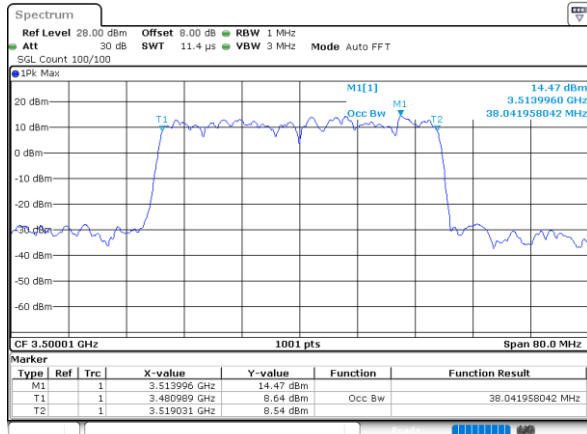


Date: 29.AUG.2021 01:06:06

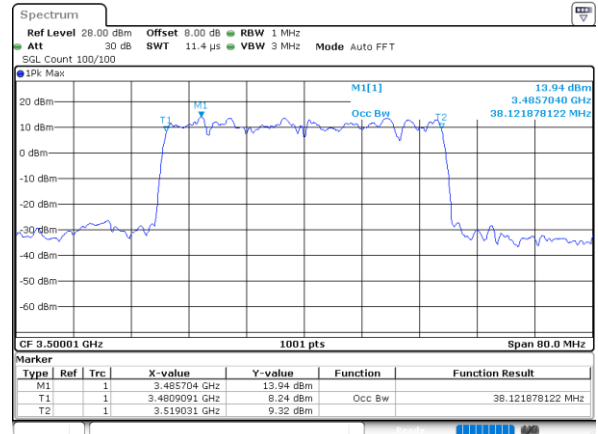


Date: 29.AUG.2021 01:06:19

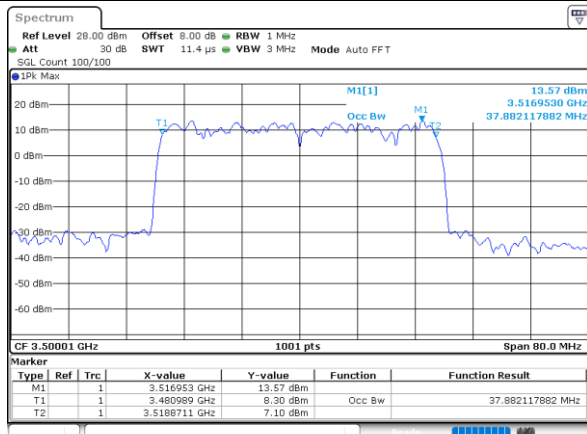
FR1 UL-MIMO n77 / 40MHz / CP-OFDM (Port 1)
QPSK
16QAM
Middle Channel
Middle Channel

64QAM
256QAM
Middle Channel
Middle Channel


FR1 UL-MIMO n77 / 40MHz / CP-OFDM (Port 2)
QPSK
Middle Channel


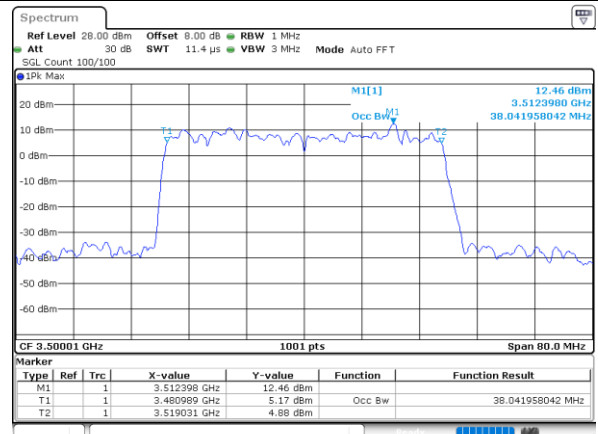
Date: 29.AUG.2021 01:08:10

16QAM
Middle Channel


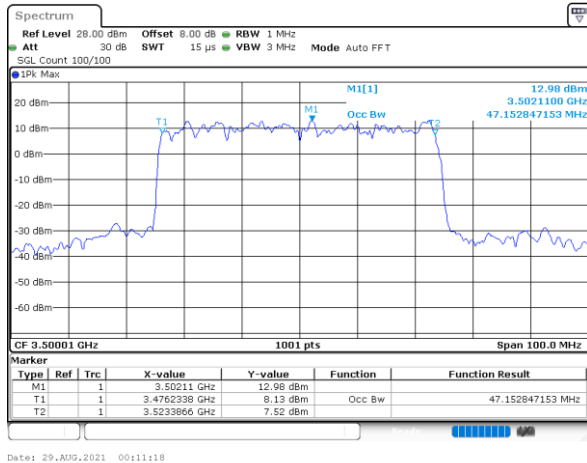
Date: 29.AUG.2021 01:07:57

64QAM
Middle Channel


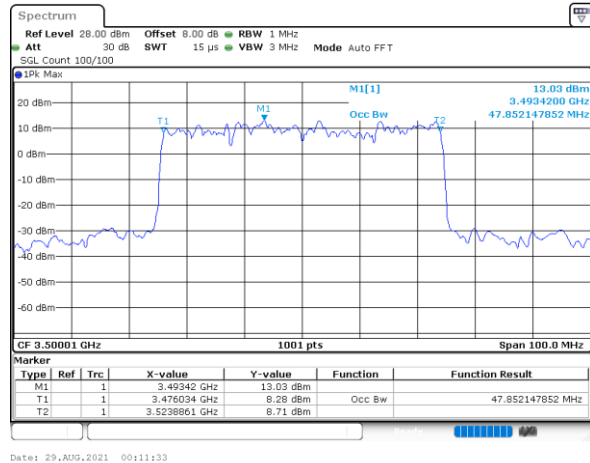
Date: 29.AUG.2021 01:07:38

256QAM
Middle Channel


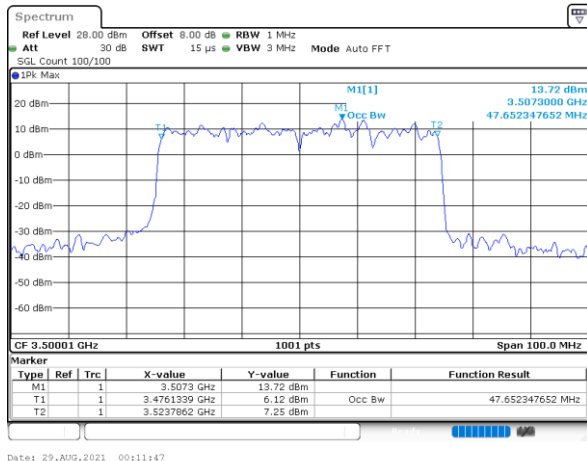
Date: 29.AUG.2021 01:07:25

FR1 UL-MIMO n77 / 50MHz / CP-OFDM (Port 1)
QPSK
Middle Channel


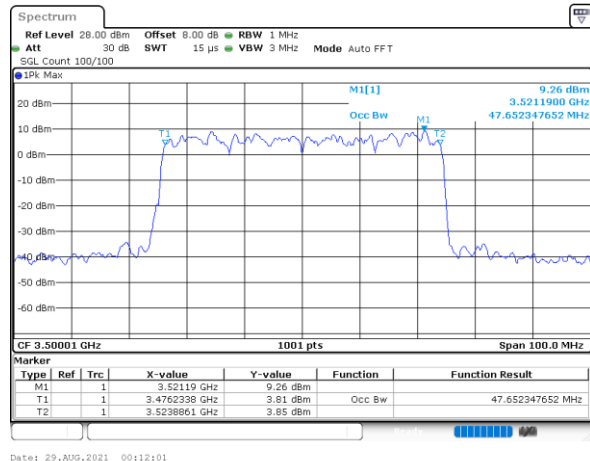
Date: 29.AUG.2021 00:11:18

16QAM
Middle Channel


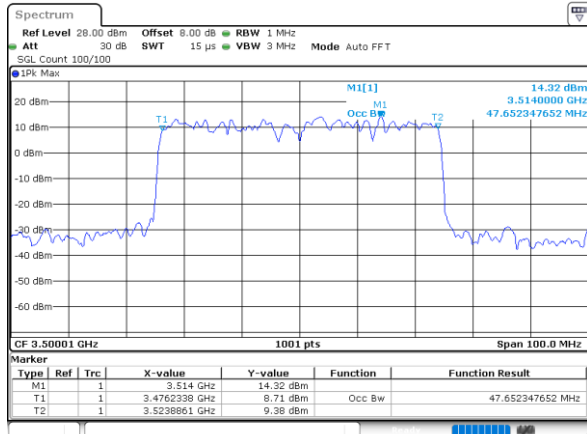
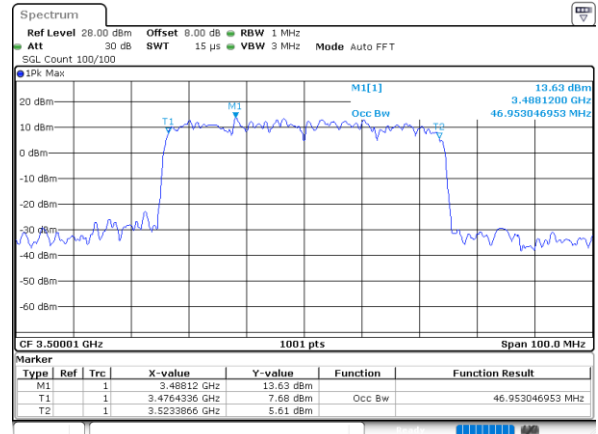
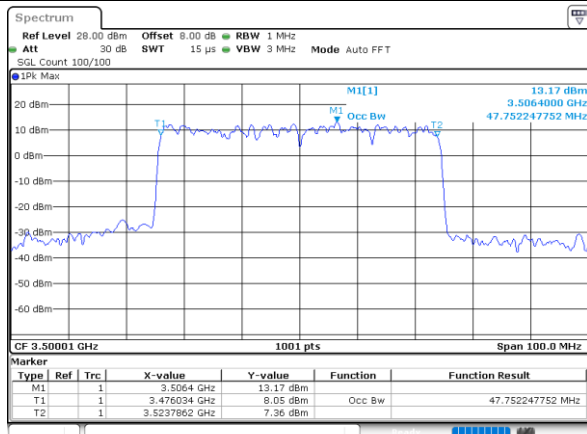
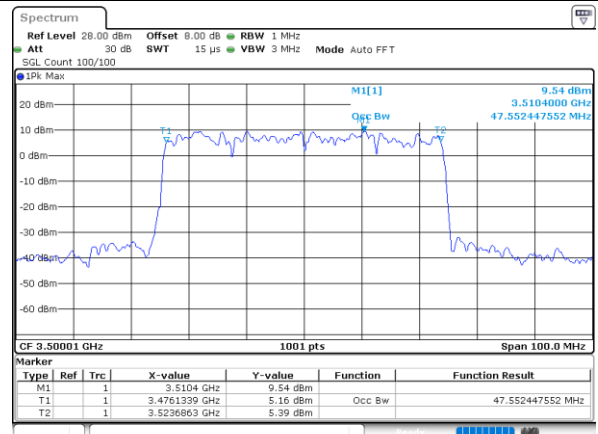
Date: 29.AUG.2021 00:11:33

64QAM
Middle Channel


Date: 29.AUG.2021 00:11:47

256QAM
Middle Channel


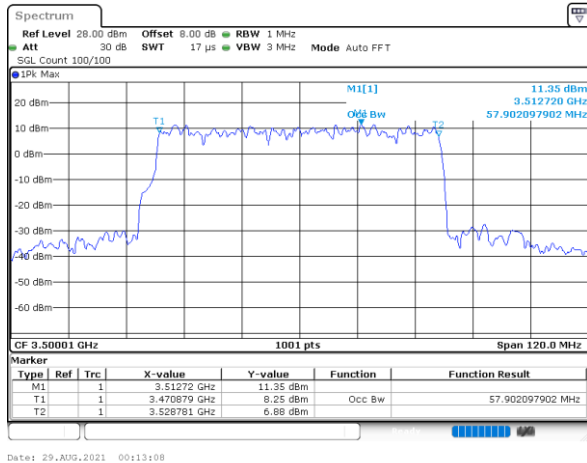
Date: 29.AUG.2021 00:12:01

**FR1 UL-MIMO n77 / 50MHz / CP-OFDM (Port 2)****QPSK****Middle Channel****16QAM****Middle Channel****64QAM****Middle Channel****256QAM****Middle Channel**

FR1 UL-MIMO n77 / 60MHz / CP-OFDM (Port 1)

QPSK

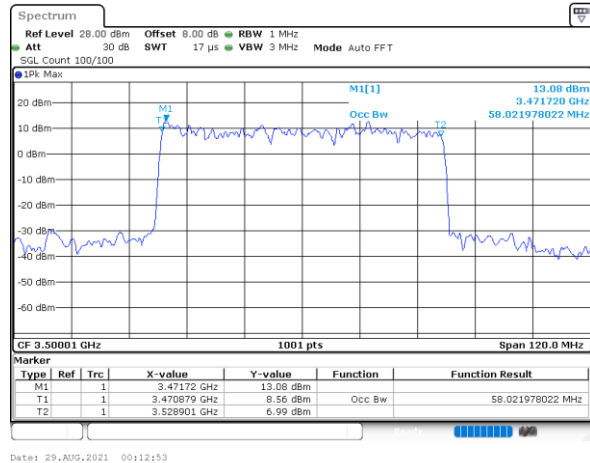
Middle Channel



Date: 29.AUG.2021 00:13:08

16QAM

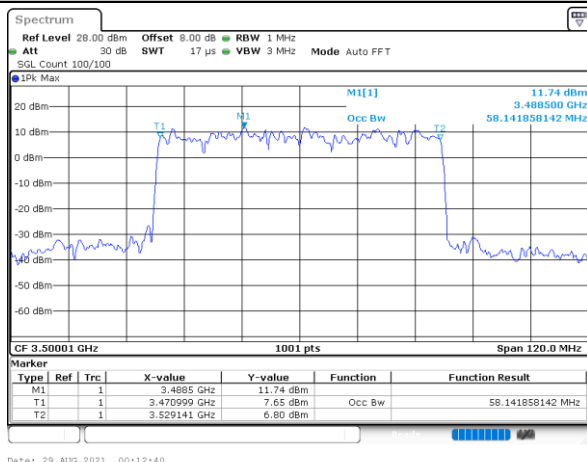
Middle Channel



Date: 29.AUG.2021 00:12:53

64QAM

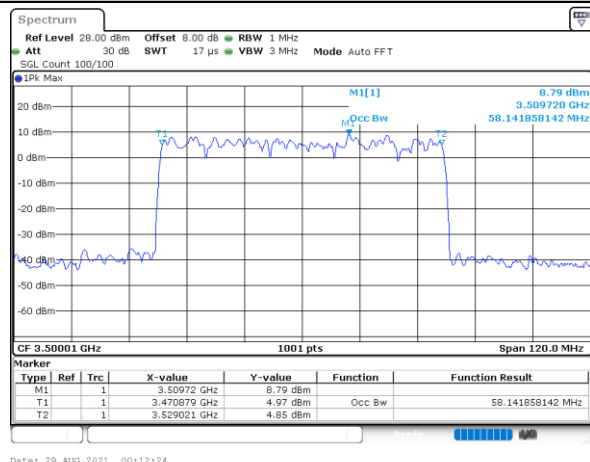
Middle Channel



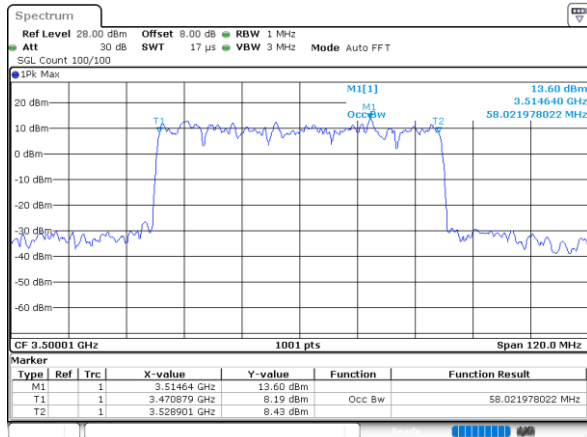
Date: 29.AUG.2021 00:12:40

256QAM

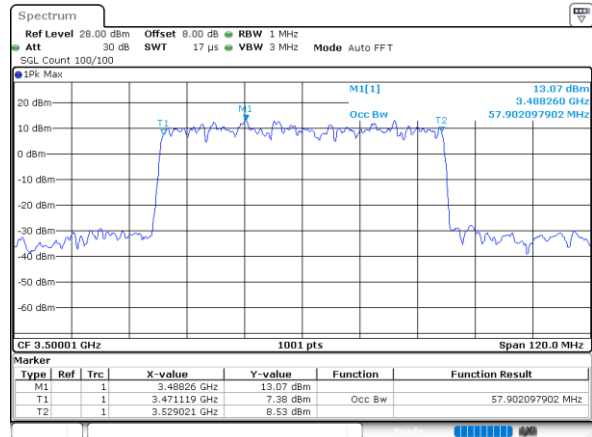
Middle Channel



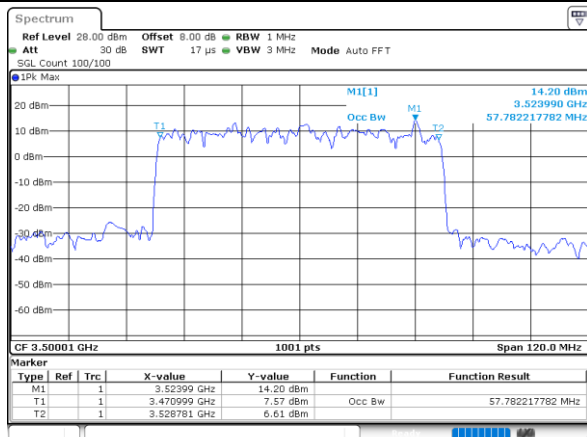
Date: 29.AUG.2021 00:12:24

FR1 UL-MIMO n77 / 60MHz / CP-OFDM (Port 2)
QPSK
Middle Channel


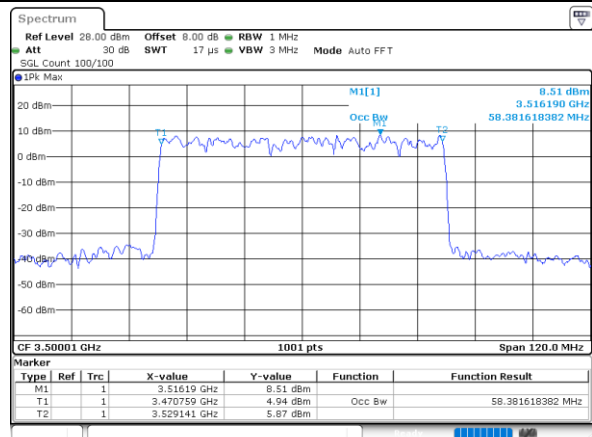
Date: 29.AUG.2021 01:26:02

16QAM
Middle Channel


Date: 29.AUG.2021 01:25:19

64QAM
Middle Channel


Date: 29.AUG.2021 01:25:36

256QAM
Middle Channel


Date: 29.AUG.2021 01:25:21

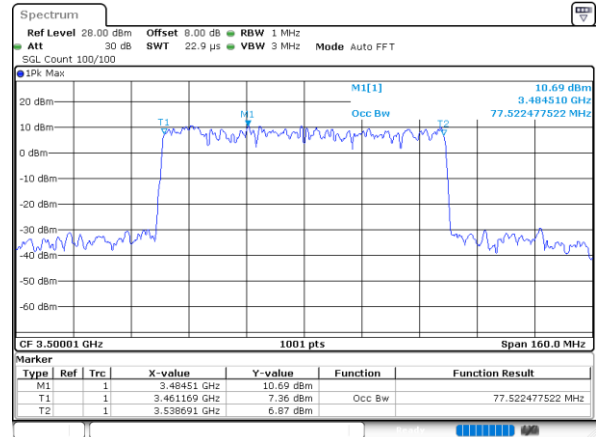
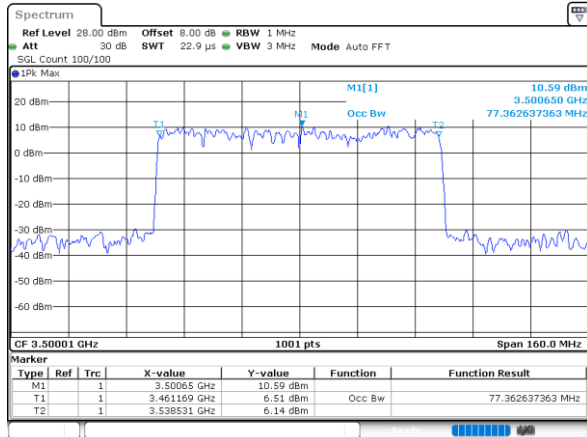
FR1 UL-MIMO n77 / 80MHz / CP-OFDM (Port 1)

QPSK

16QAM

Middle Channel

Middle Channel

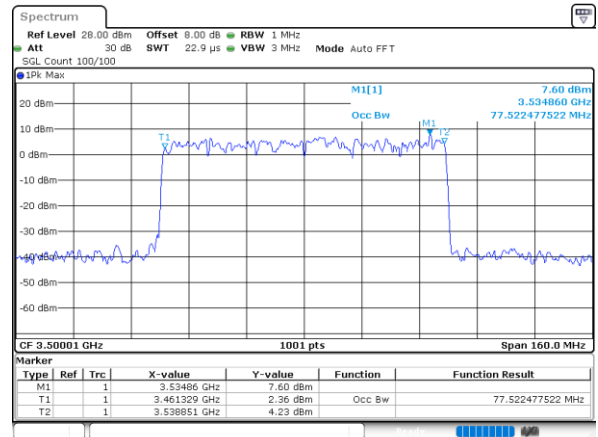
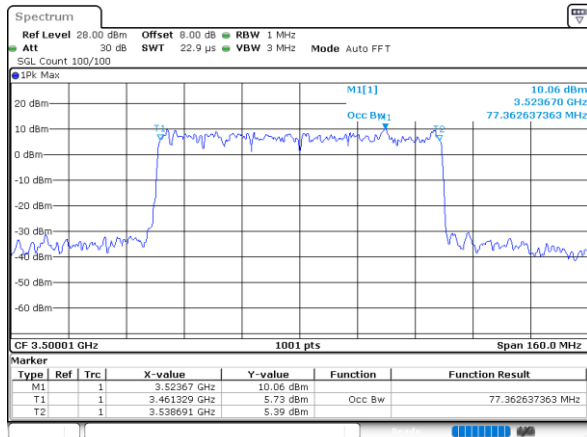


64QAM

256QAM

Middle Channel

Middle Channel



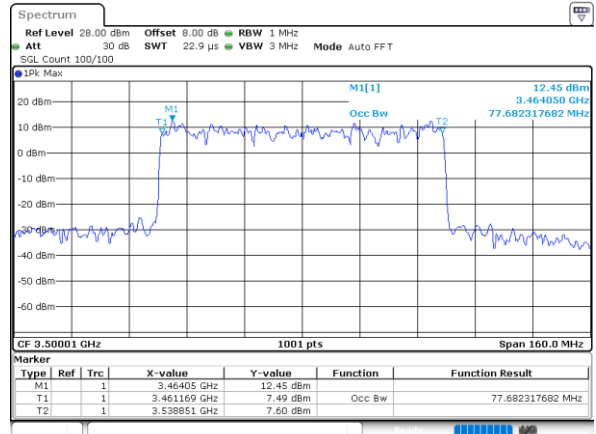
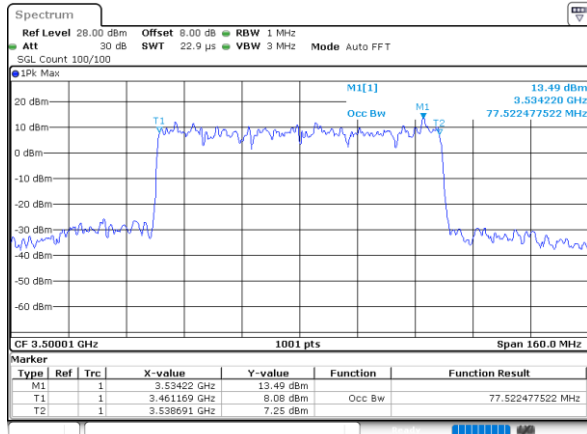
FR1 UL-MIMO n77 / 80MHz / CP-OFDM (Port 2)

QPSK

16QAM

Middle Channel

Middle Channel

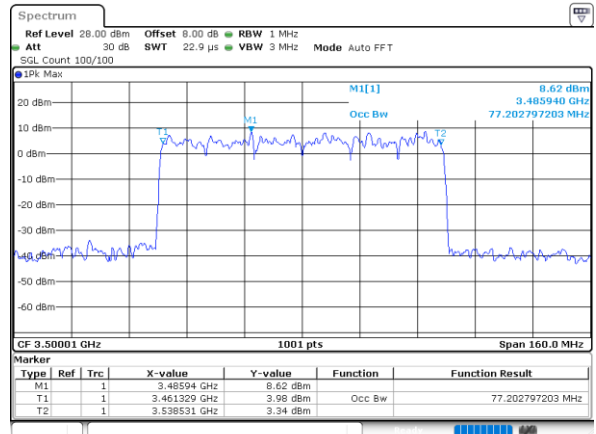
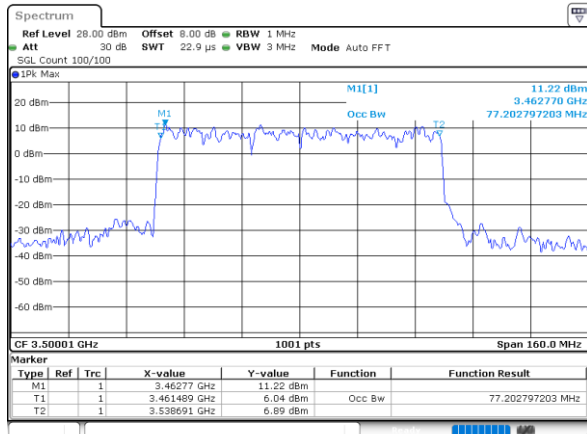


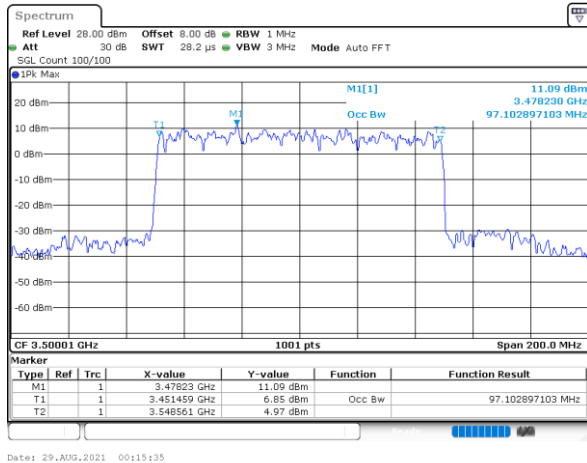
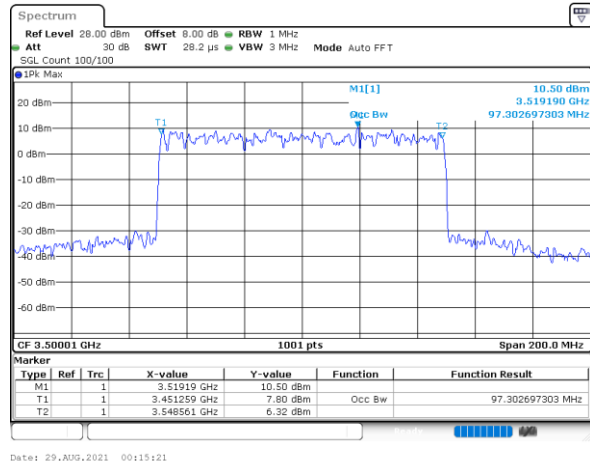
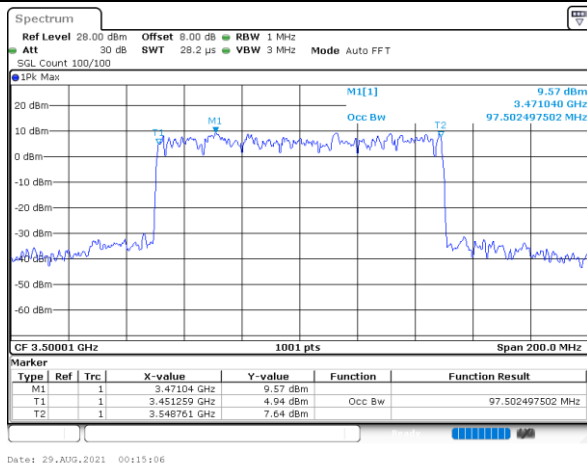
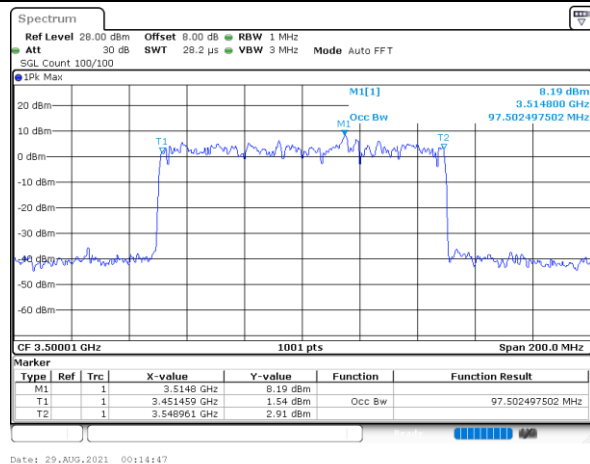
64QAM

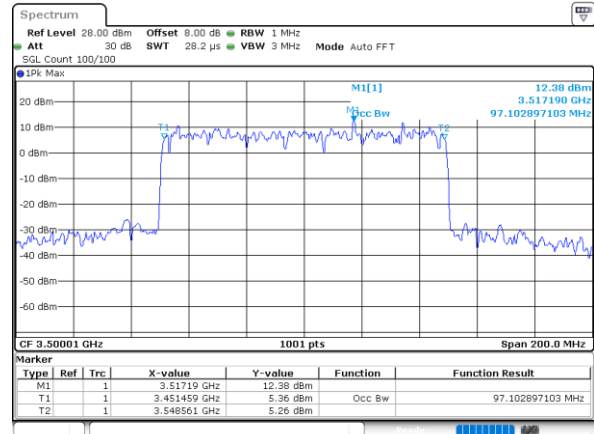
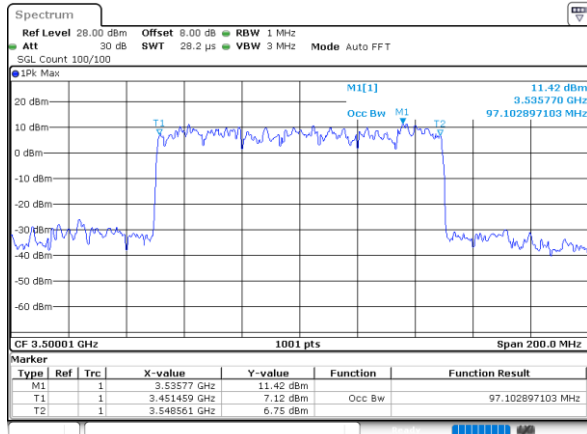
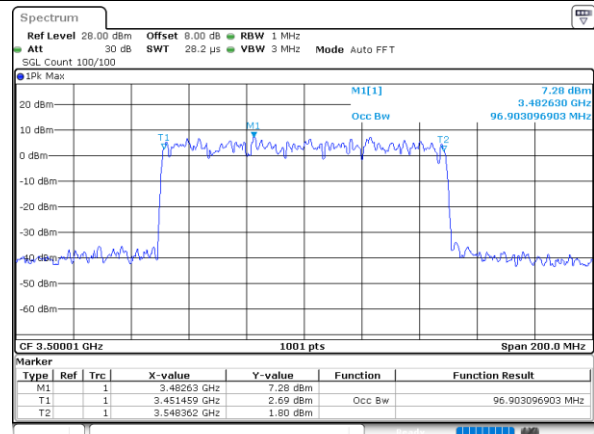
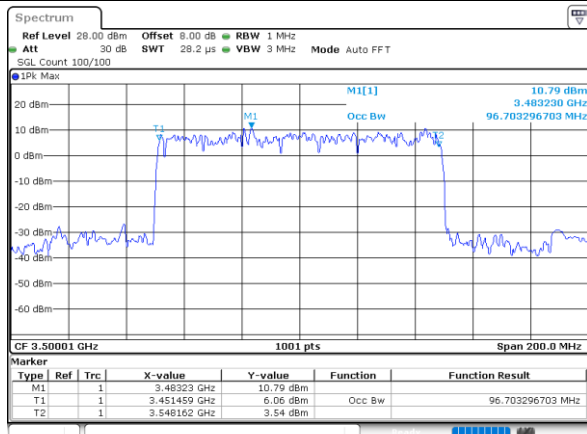
256QAM

Middle Channel

Middle Channel



FR1 UL-MIMO n77 / 100MHz / CP-OFDM (Port 1)
QPSK
Middle Channel

16QAM
Middle Channel

64QAM
Middle Channel

256QAM
Middle Channel


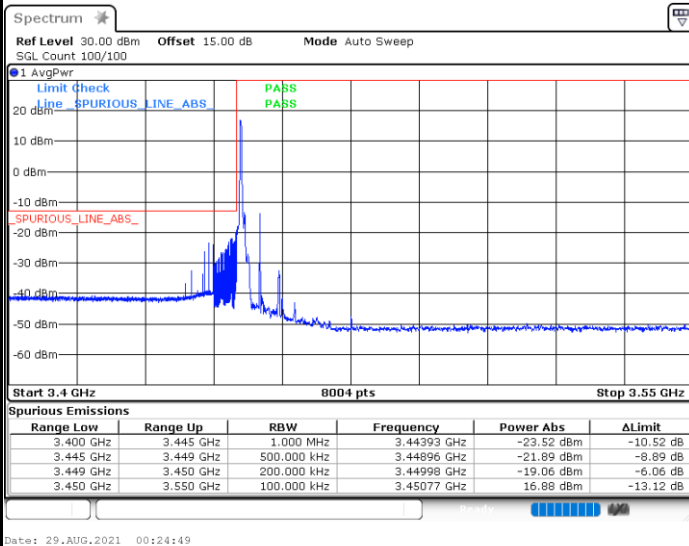
FR1 UL-MIMO n77 / 100MHz / CP-OFDM (Port 2)
QPSK
16QAM
Middle Channel
Middle Channel

64QAM
256QAM
Middle Channel
Middle Channel


Conducted Band Edge

FR1 UL-MIMO n77 / 10MHz / CP-OFDM QPSK (Port 1)

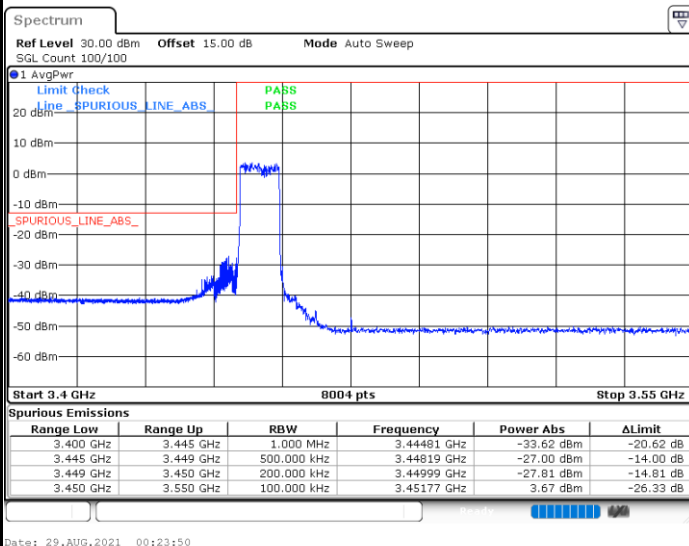
Lowest Band Edge / 1 RB

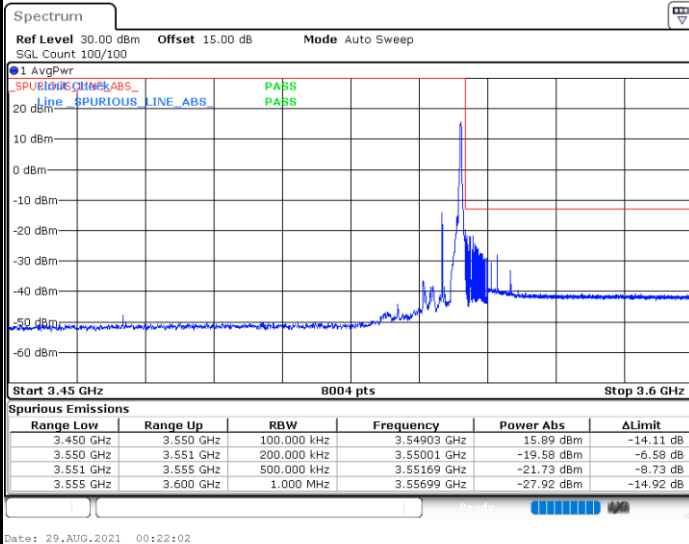
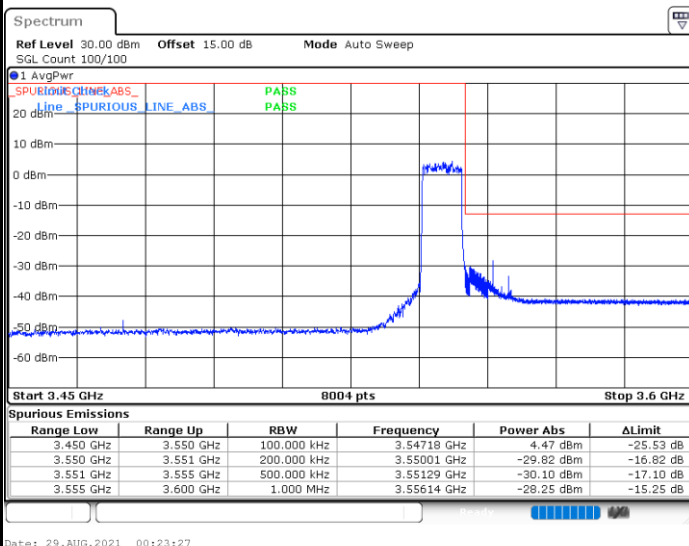
Channel Power < -13dBm Pass



Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



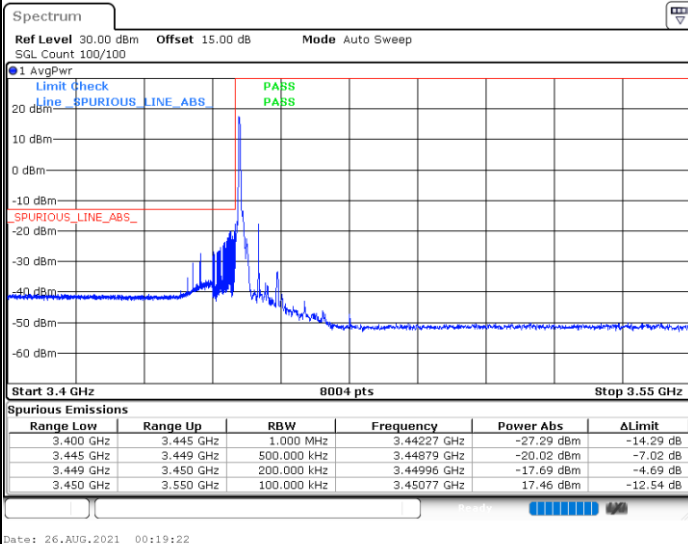
FR1 UL-MIMO n77 / 10MHz / CP-OFDM QPSK (Port 1)
Highest Band Edge / 1 RB
Channel Power < -13dBm Pass

Highest Band Edge / Full RB
Channel Power < -13dBm Pass




FR1 UL-MIMO n77 / 10MHz / CP-OFDM QPSK (Port 2)

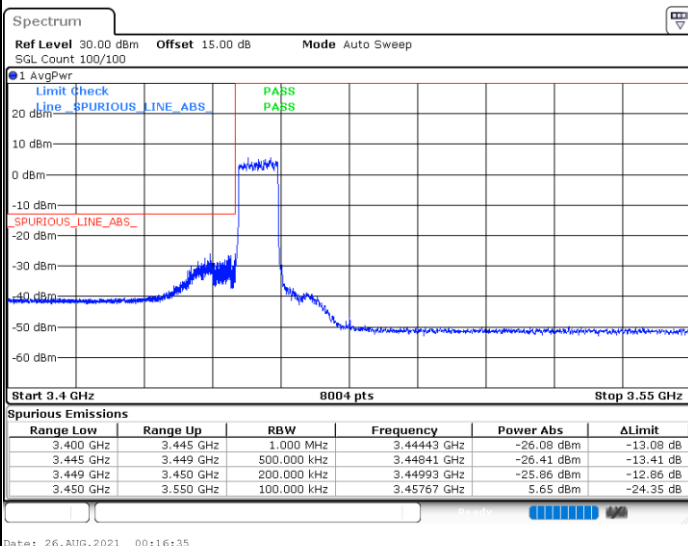
Lowest Band Edge / 1 RB

Channel Power < -13dBm Pass



Lowest Band Edge / Full RB

Channel Power < -13dBm Pass

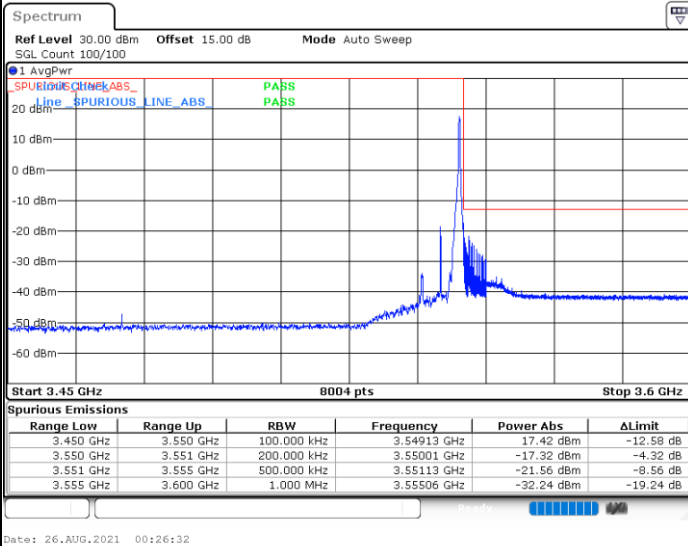




FR1 UL-MIMO n77 / 10MHz / CP-OFDM QPSK (Port 2)

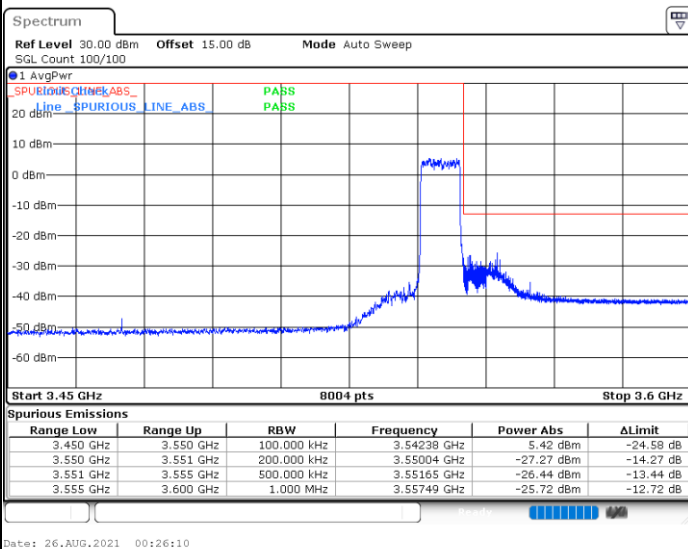
Highest Band Edge / 1 RB

Channel Power < -13dBm Pass



Highest Band Edge / Full RB

Channel Power < -13dBm Pass

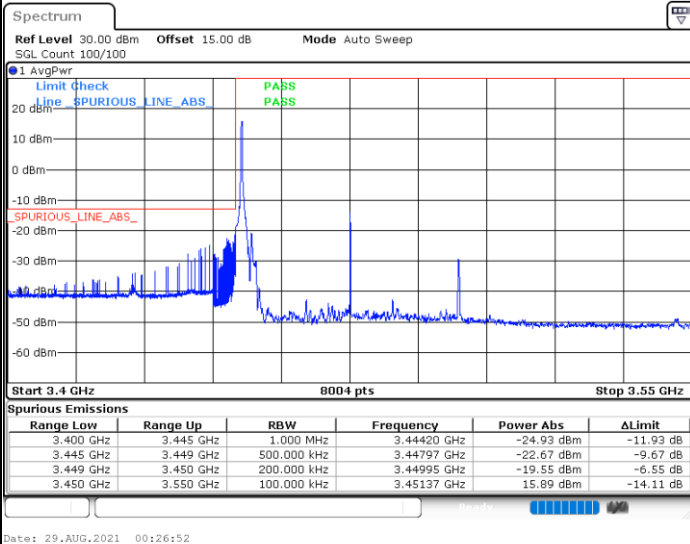




FR1 UL-MIMO n77 / 50MHz / CP-OFDM QPSK (Port 1)

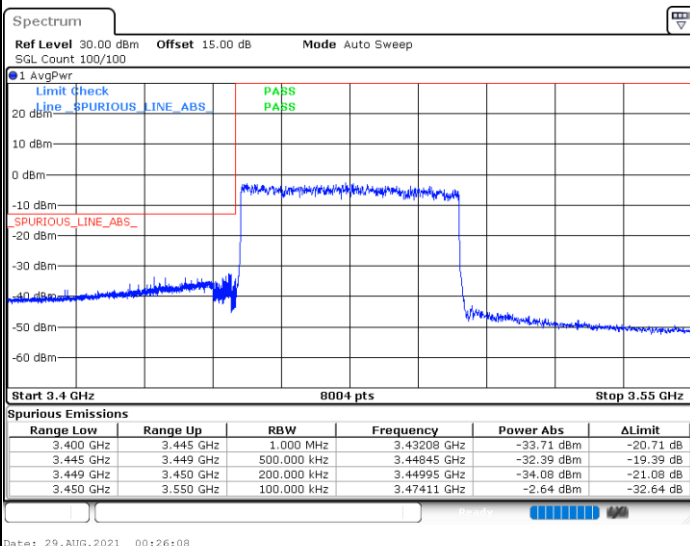
Lowest Band Edge / 1 RB

Channel Power < -13dBm Pass



Lowest Band Edge / Full RB

Channel Power < -13dBm Pass

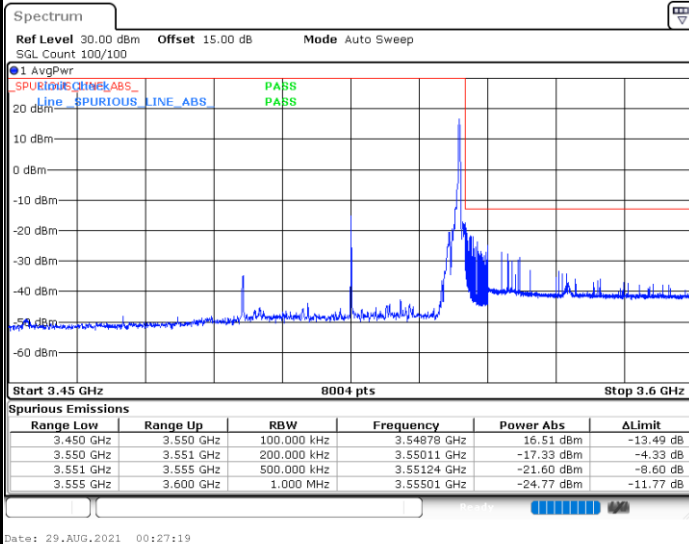




FR1 UL-MIMO n77 / 50MHz / CP-OFDM QPSK (Port 1)

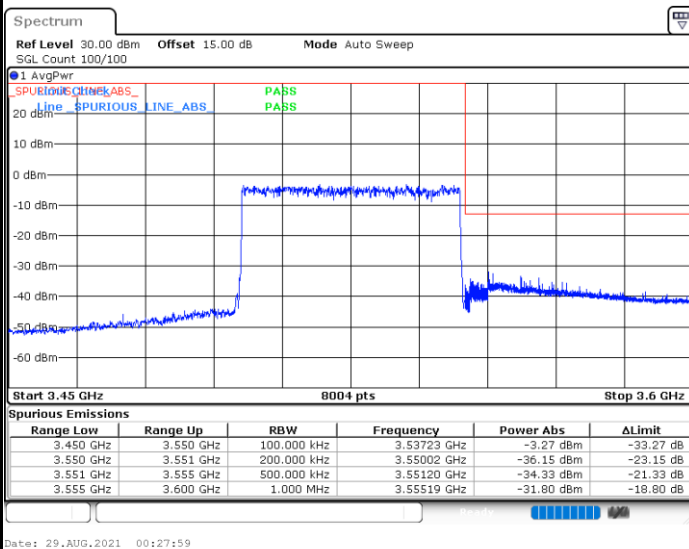
Highest Band Edge / 1 RB

Channel Power < -13dBm Pass



Highest Band Edge / Full RB

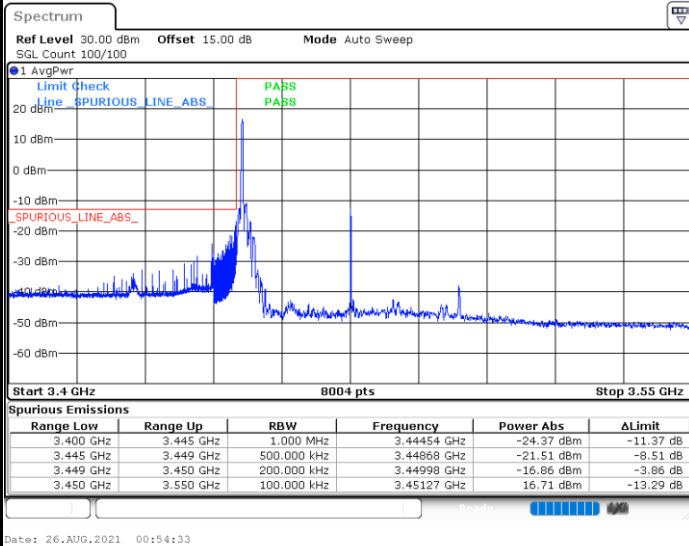
Channel Power < -13dBm Pass



FR1 UL-MIMO n77 / 50MHz / CP-OFDM QPSK (Port 2)

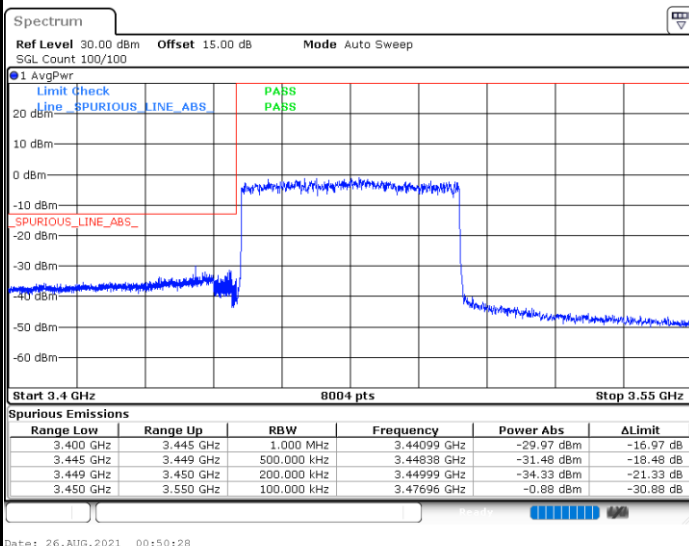
Middle Band Edge / 1 RB

Channel Power < -13dBm Pass



Middle Band Edge / Full RB

Channel Power < -13dBm Pass

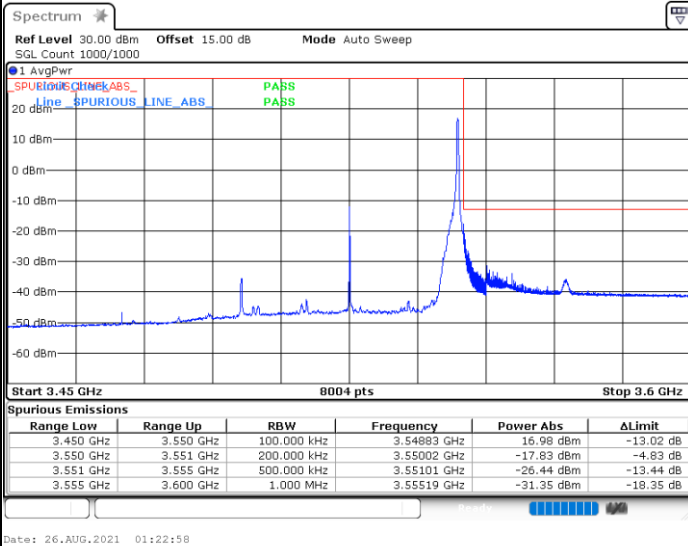




FR1 UL-MIMO n77 / 50MHz / CP-OFDM QPSK (Port 2)

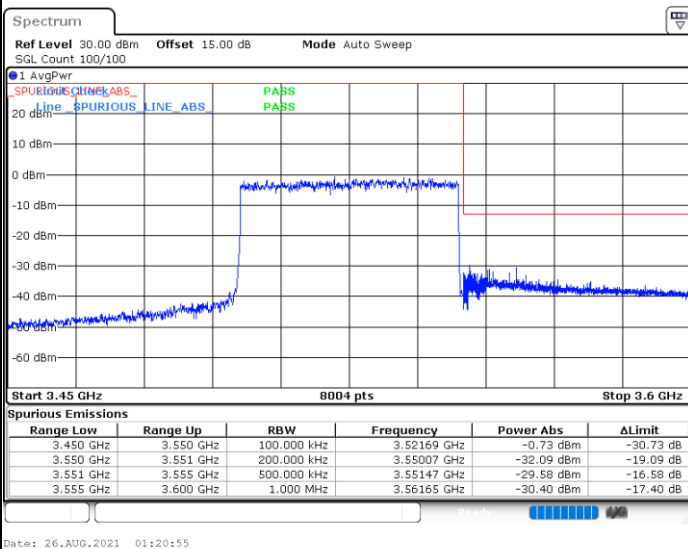
Middle Band Edge / 1 RB

Channel Power < -13dBm Pass



Highest Band Edge / Full RB

Channel Power < -13dBm Pass

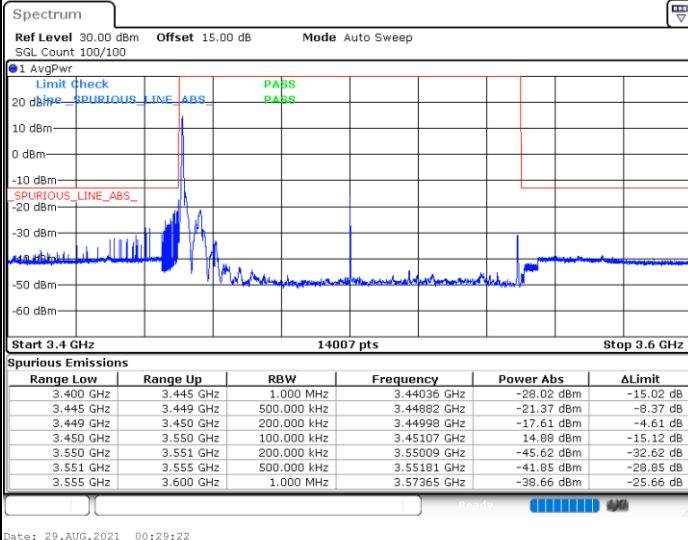




FR1 UL-MIMO n77 / 100MHz / CP-OFDM QPSK (Port 1)

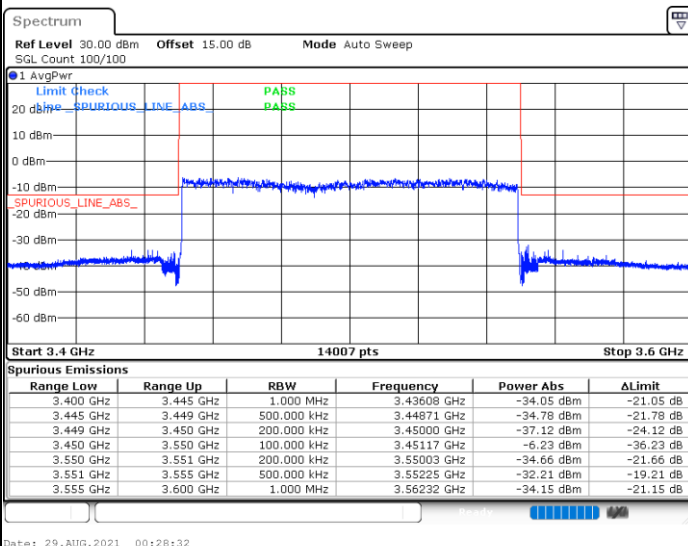
Middle Band Edge / 1 RB

Channel Power < -13dBm Pass



Middle Band Edge / Full RB

Channel Power < -13dBm Pass

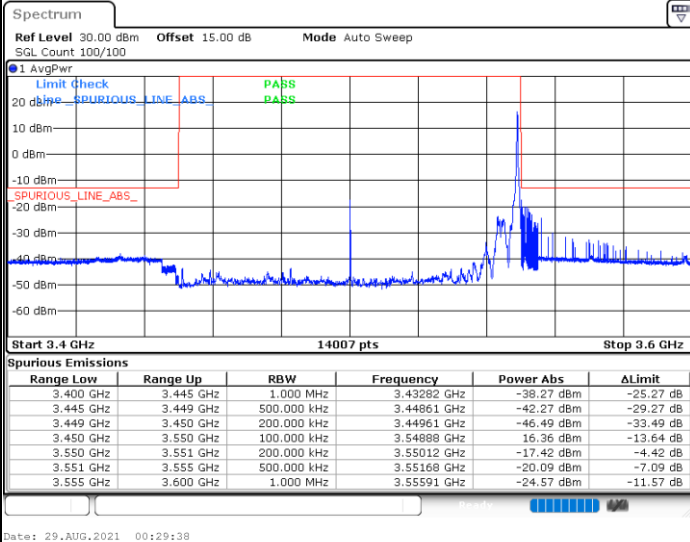




FR1 UL-MIMO n77 / 100MHz / CP-OFDM QPSK (Port 1)

Middle Band Edge / 1 RB

Channel Power < -13dBm Pass

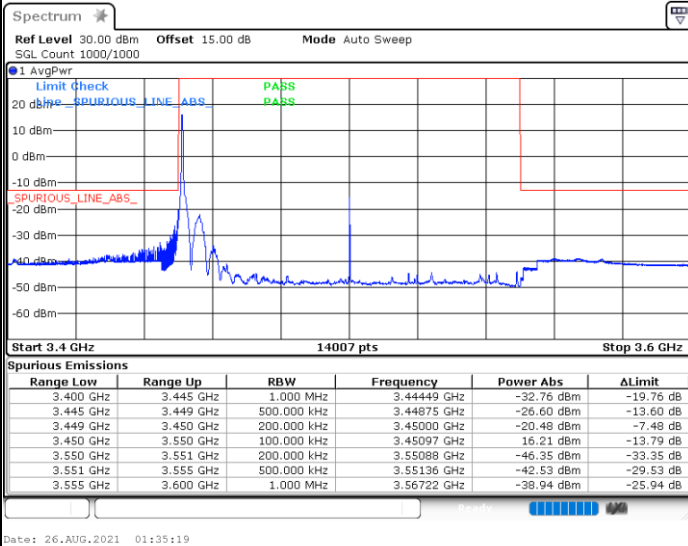




FR1 UL-MIMO n77 / 100MHz / CP-OFDM QPSK (Port 2)

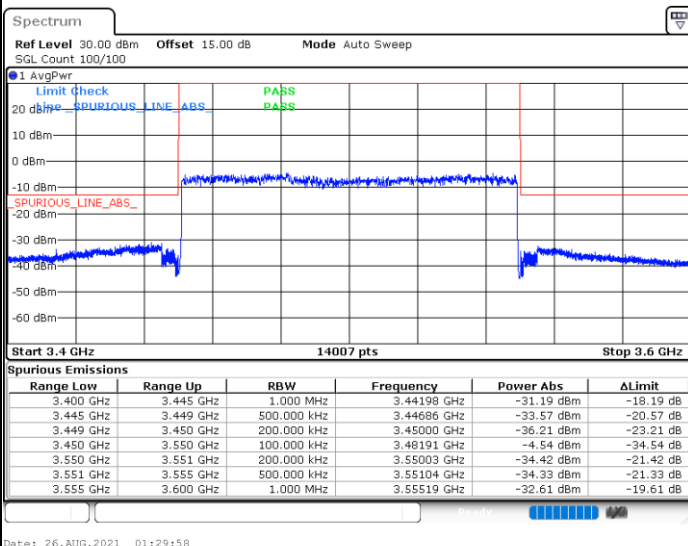
Middle Band Edge / 1 RB

Channel Power < -13dBm Pass



Middle Band Edge / Full RB

Channel Power < -13dBm Pass

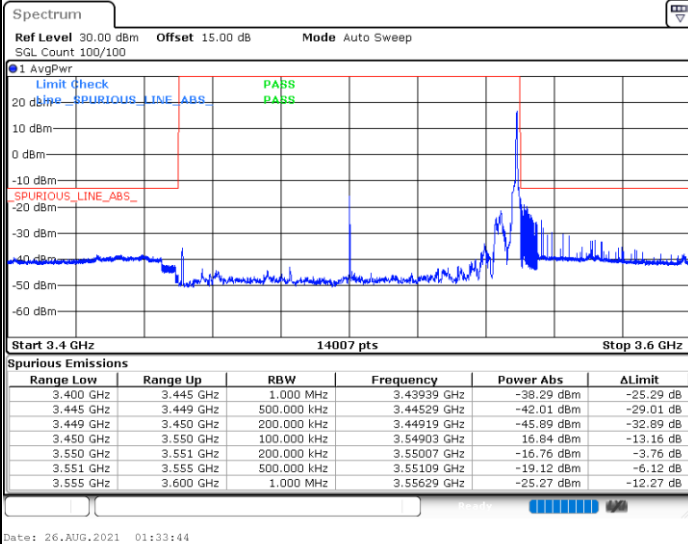




FR1 UL-MIMO n77 / 100MHz / CP-OFDM QPSK (Port 2)

Middle Band Edge / 1 RB

Channel Power < -13dBm Pass

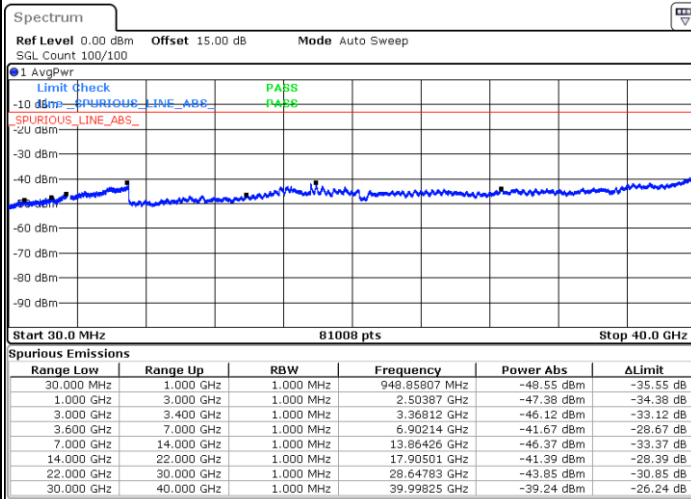




Conducted Spurious Emission

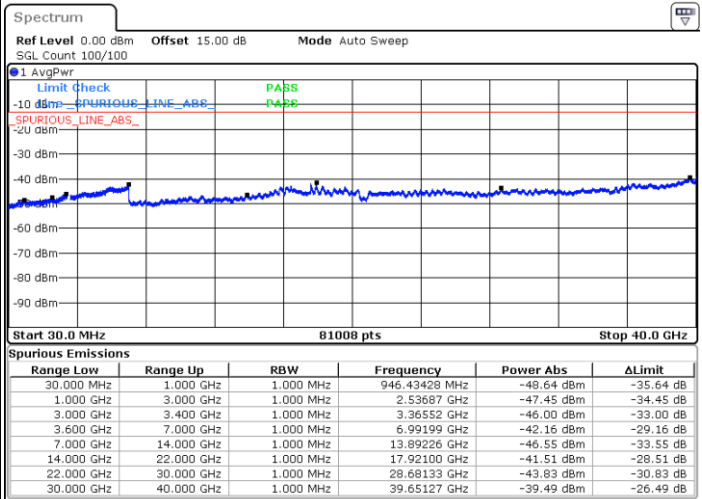
FR1 UL-MIMO n77 / 10MHz / CP-OFDM QPSK (Port 1)

Lowest Channel / 1RB



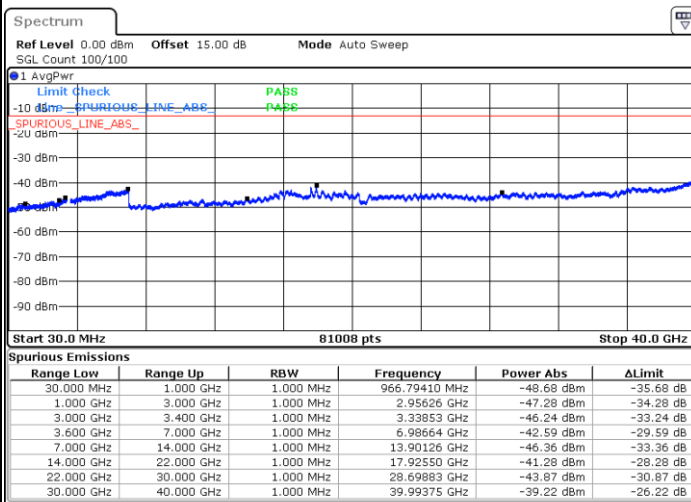
Date: 27.SEP.2021 16:01:38

Middle Channel / 1RB

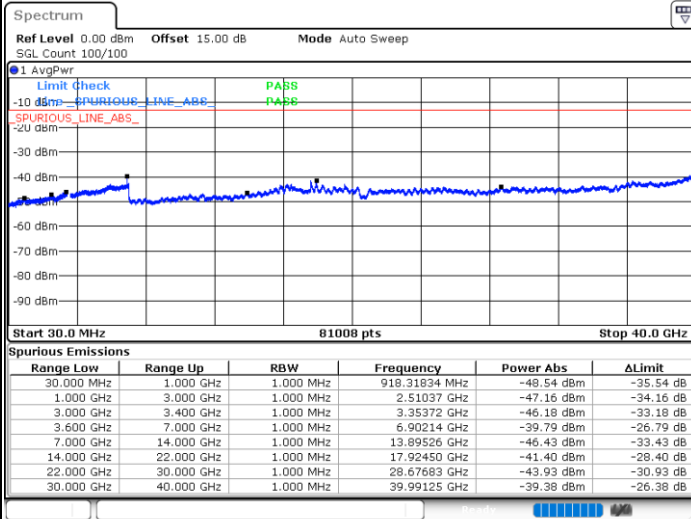


Date: 27.SEP.2021 16:11:45

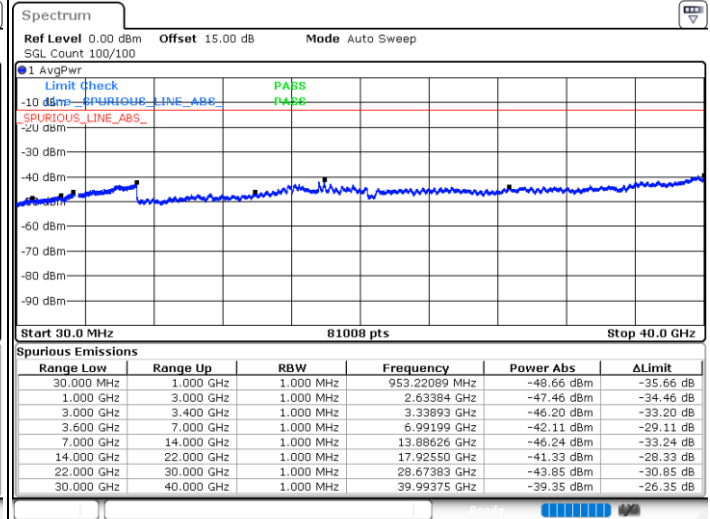
Highest Channel / 1RB



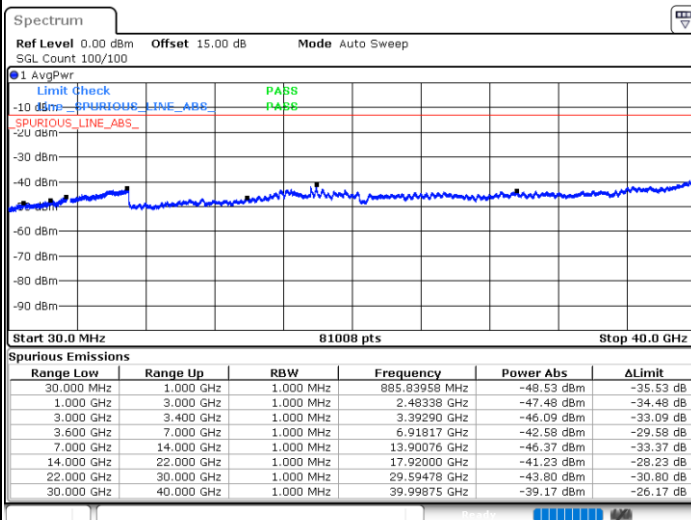
Date: 27.SEP.2021 16:13:08

FR1 UL-MIMO n77 / 10MHz / CP-OFDM QPSK (Port 2)
Lowest Channel / 1RB
Middle Channel / 1RB


Date: 27.SEP.2021 16:02:45



Date: 27.SEP.2021 16:10:39

Highest Channel / 1RB


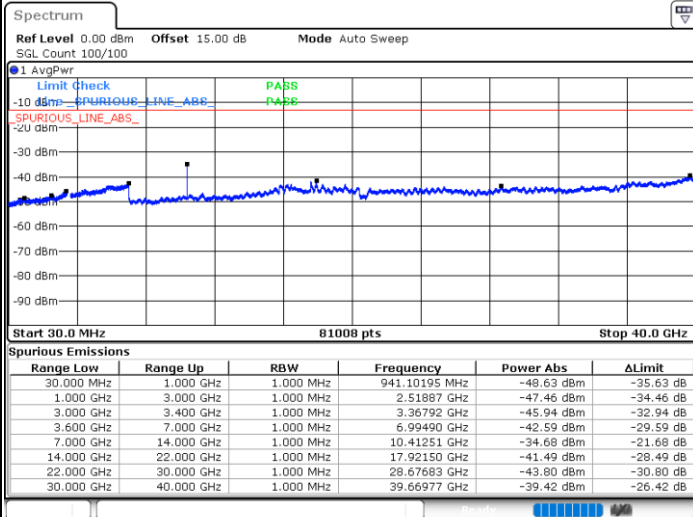
Date: 27.SEP.2021 16:14:16



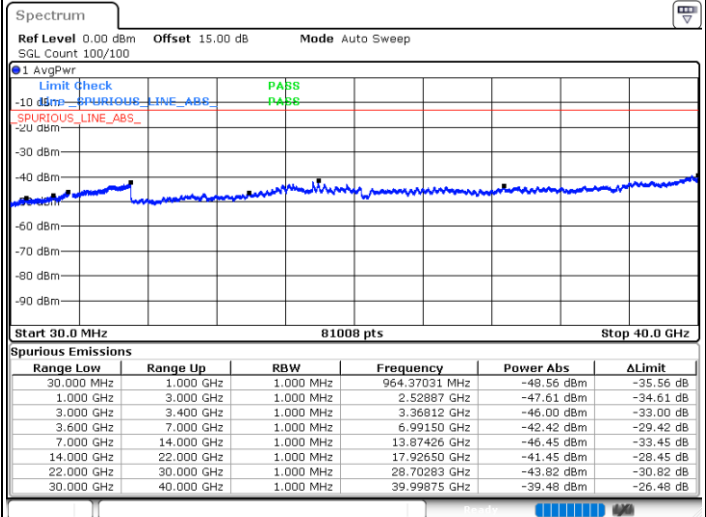
FR1 UL-MIMO n77 / 50MHz / CP-OFDM QPSK (Port 1)

Lowest Channel / 1RB

Middle Channel / 1RB

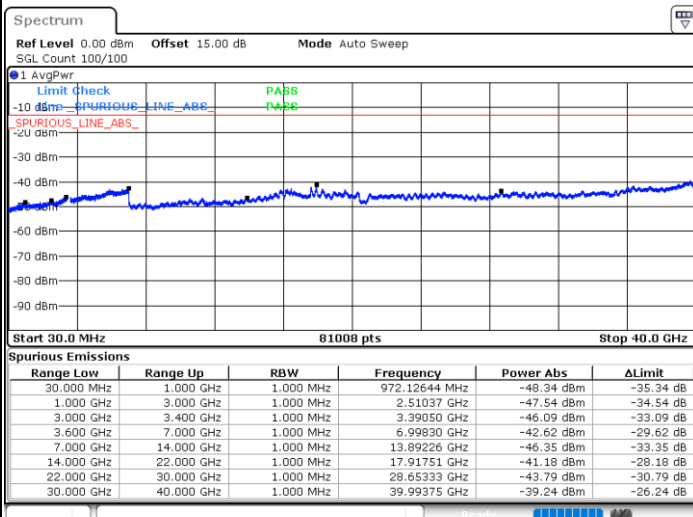


Date: 27.SEP.2021 16:17:12



Date: 27.SEP.2021 16:21:47

Highest Channel / 1RB

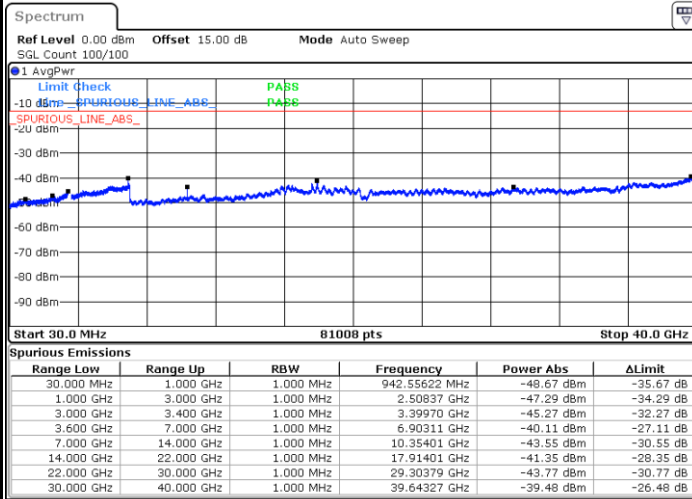


Date: 27.SEP.2021 16:23:04



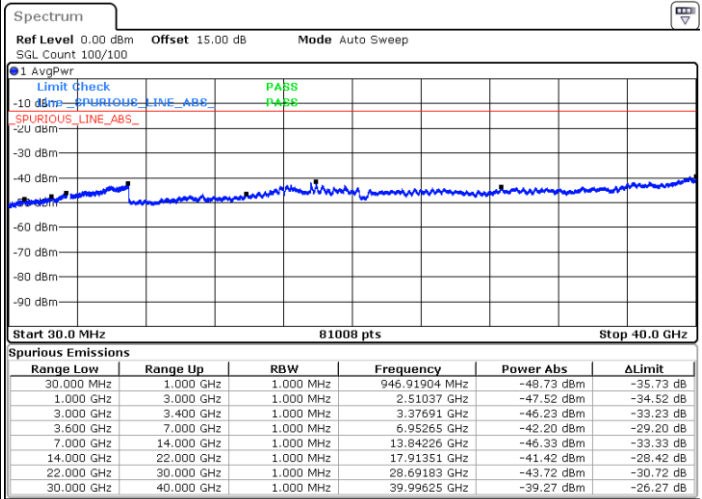
FR1 UL-MIMO n77 / 50MHz / CP-OFDM QPSK (Port 2)

Lowest Channel / 1RB



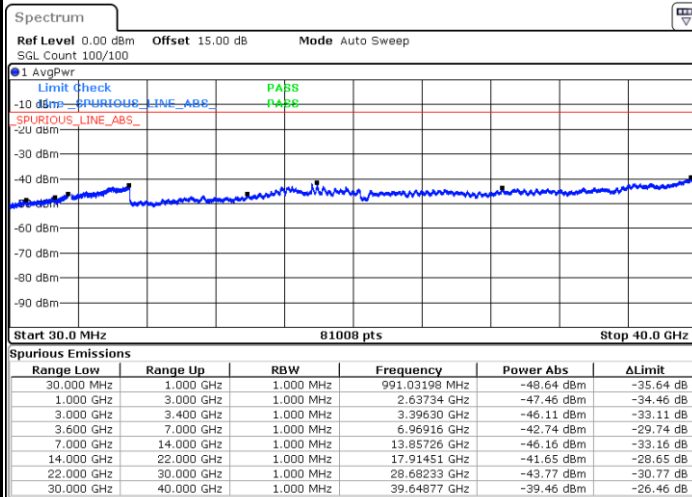
Date: 27.SEP.2021 16:19:19

Middle Channel / 1RB



Date: 27.SEP.2021 16:20:35

Highest Channel / 1RB

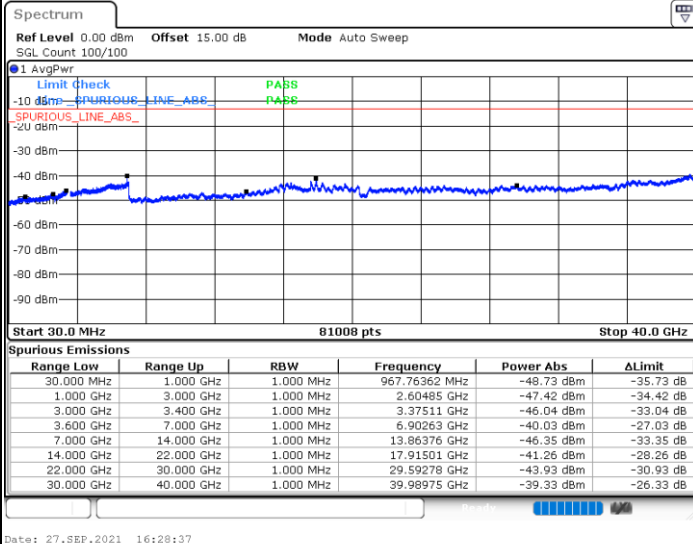


Date: 27.SEP.2021 16:24:16



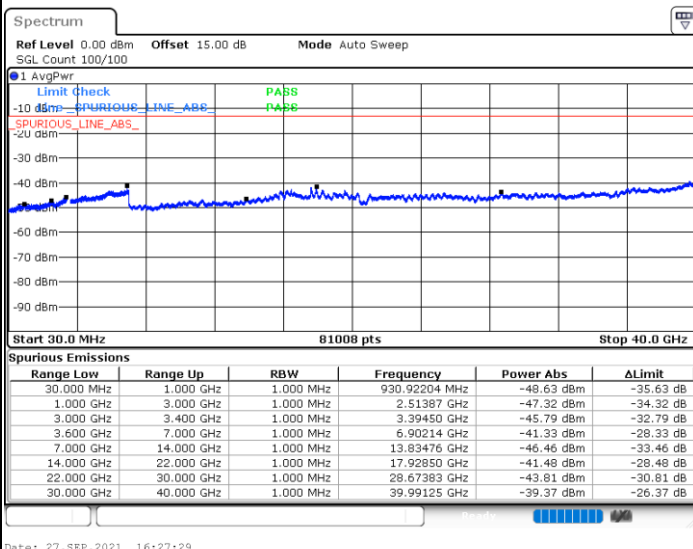
FR1 UL-MIMO n77 / 100MHz / CP-OFDM QPSK (Port 1)

Middle Channel / 1RB



FR1 UL-MIMO n77 / 100MHz / CP-OFDM QPSK (Port 2)

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	0.0010	PASS
40	Normal Voltage	0.0021	
30	Normal Voltage	0.0005	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0018	
0	Normal Voltage	0.0025	
-10	Normal Voltage	0.0003	
-20	Normal Voltage	0.0008	
-30	Normal Voltage	0.0012	
20	Maximum Voltage	0.0009	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0004	

Note:

1. Normal Voltage =3.3 V. ; Battery End Point (BEP) =3.14 V. ; Maximum Voltage =4.4 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

FR1 N78 (15kHz)

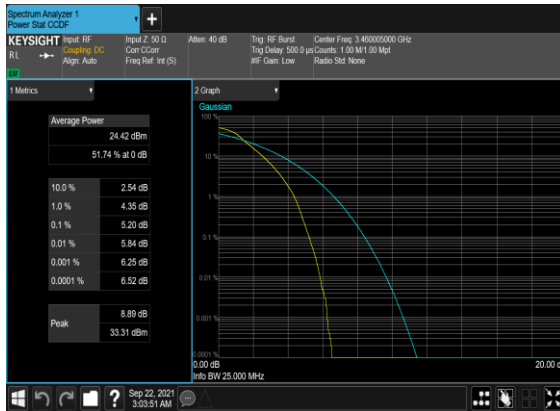
Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
78	15	20	633334	3500.01	DFT-s-OFDM QPSK	100@0	-0.00334	PASS	NV
78	15	20	633334	3500.01	DFT-s-OFDM QPSK	100@0	-0.00356	PASS	LV
78	15	20	633334	3500.01	DFT-s-OFDM QPSK	100@0	-0.00213	PASS	HV
78	15	20	633334	3500.01	DFT-s-OFDM QPSK	100@0	-0.00218	PASS	-30°C
78	15	20	633334	3500.01	DFT-s-OFDM QPSK	100@0	-0.00624	PASS	-20°C
78	15	20	633334	3500.01	DFT-s-OFDM QPSK	100@0	-0.00128	PASS	-10°C
78	15	20	633334	3500.01	DFT-s-OFDM QPSK	100@0	-0.00665	PASS	0°C
78	15	20	633334	3500.01	DFT-s-OFDM QPSK	100@0	-0.00153	PASS	10°C
78	15	20	633334	3500.01	DFT-s-OFDM QPSK	100@0	-0.00341	PASS	20°C
78	15	20	633334	3500.01	DFT-s-OFDM QPSK	100@0	-0.00548	PASS	30°C
78	15	20	633334	3500.01	DFT-s-OFDM QPSK	100@0	-0.00887	PASS	40°C
78	15	20	633334	3500.01	DFT-s-OFDM QPSK	100@0	-0.00134	PASS	50°C

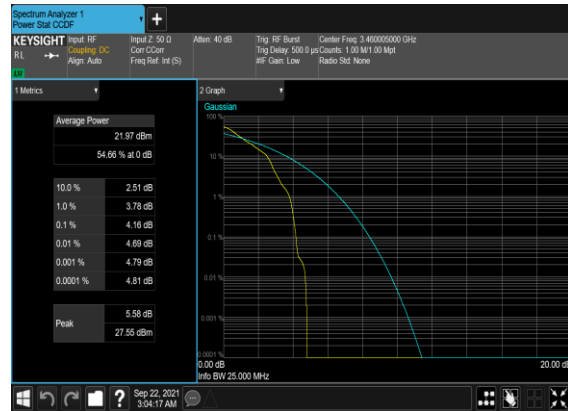
Peak to Average Ratio

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
78	15	20	630667	3460.005	DFT-s-OFDM PI/2 BPSK	100@0	5.2	13	PASS
78	15	20	630667	3460.005	DFT-s-OFDM PI/2 BPSK	1@0	4.16	13	PASS
78	15	20	630667	3460.005	DFT-s-OFDM QPSK	100@0	6.5	13	PASS
78	15	20	630667	3460.005	DFT-s-OFDM QPSK	1@0	6.04	13	PASS
78	15	20	633334	3500.01	DFT-s-OFDM PI/2 BPSK	100@0	5.97	13	PASS
78	15	20	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@0	4.33	13	PASS
78	15	20	633334	3500.01	DFT-s-OFDM QPSK	100@0	7.2	13	PASS
78	15	20	633334	3500.01	DFT-s-OFDM QPSK	1@0	6.06	13	PASS
78	15	20	636000	3540.0	DFT-s-OFDM PI/2 BPSK	100@0	5.56	13	PASS
78	15	20	636000	3540.0	DFT-s-OFDM PI/2 BPSK	1@0	4.72	13	PASS
78	15	20	636000	3540.0	DFT-s-OFDM QPSK	100@0	6.34	13	PASS
78	15	20	636000	3540.0	DFT-s-OFDM QPSK	1@0	5.7	13	PASS

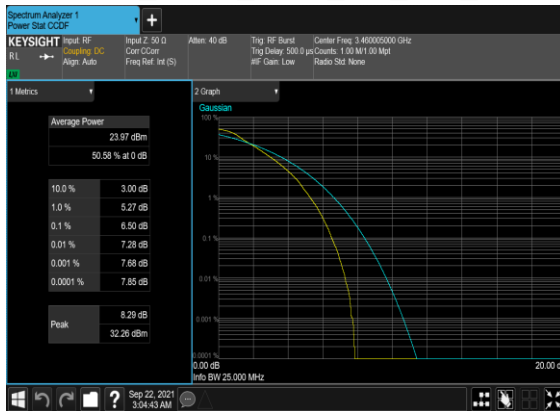
N78(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Low_CH



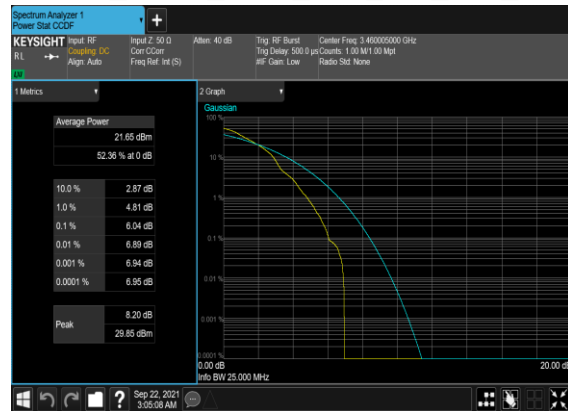
N78(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Low_CH



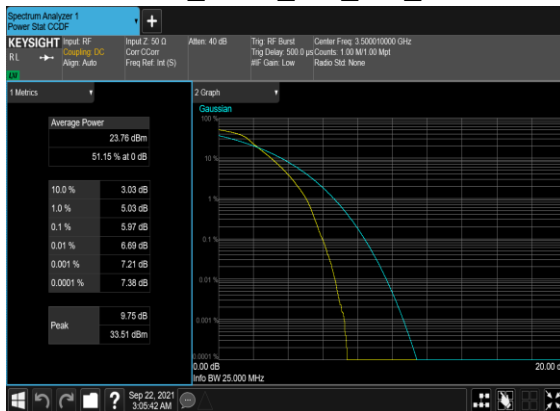
N78(20M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



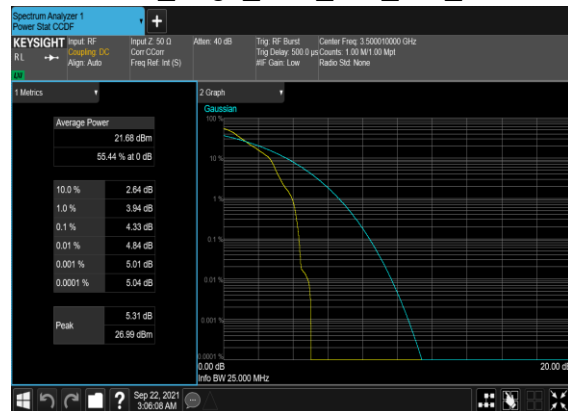
N78(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



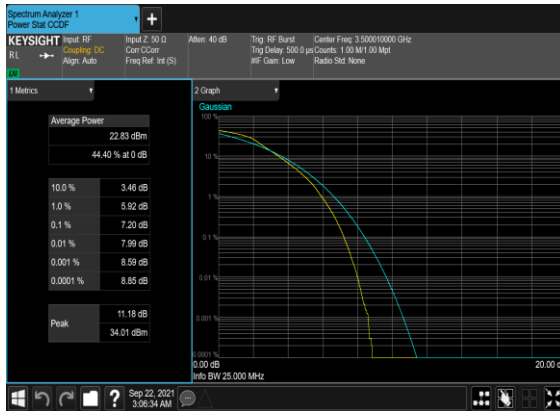
N78(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



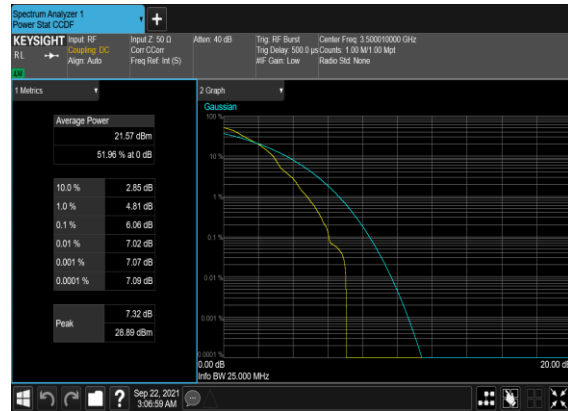
N78(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Mid_CH



N78(20M)_DFT-s-
OFDM_QPSK_Outer_Full_Mid_CH



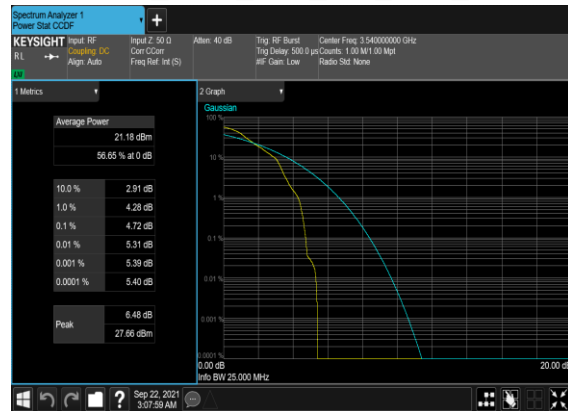
N78(20M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_Mid_CH



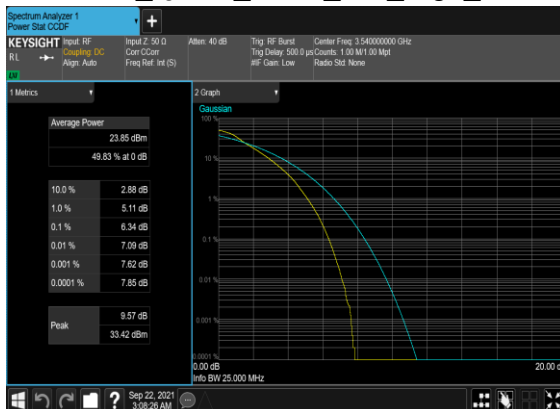
N78(20M)_DFT-s-OFDM_PI_2-
BPSK_Outer_Full_High_CH



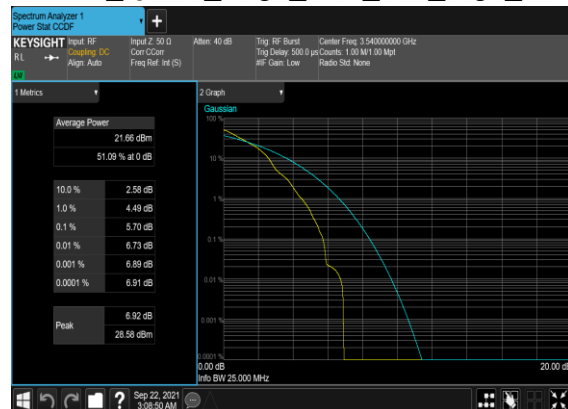
N78(20M)_DFT-s-OFDM_PI_2-
BPSK_Edge_1RB_Left_High_CH



N78(20M)_DFT-s-
OFDM_QPSK_Outer_Full_High_CH



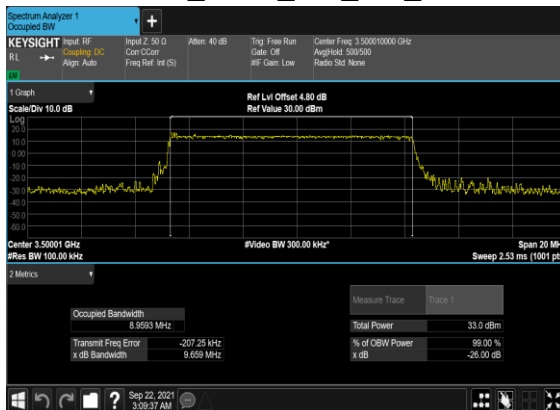
N78(20M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_High_CH



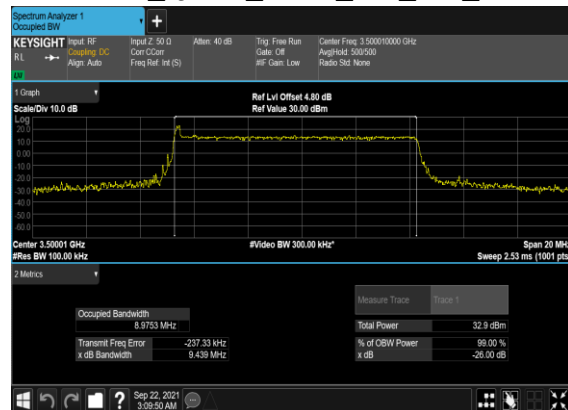
Occupied Bandwidth

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB OBW (MHz)
78	15	10	633334	3500.01	DFT-s-OFDM PI/2 BPSK	50@0	8.9593	9.659
78	15	10	633334	3500.01	DFT-s-OFDM QPSK	50@0	8.9753	9.439
78	15	10	633334	3500.01	CP-OFDM QPSK	52@0	9.3544	9.738
78	15	10	633334	3500.01	CP-OFDM 16 QAM	52@0	9.3858	9.805
78	15	10	633334	3500.01	CP-OFDM 64 QAM	52@0	9.3616	9.595
78	15	10	633334	3500.01	CP-OFDM 256 QAM	52@0	9.3668	9.707
78	15	15	633334	3500.01	DFT-s-OFDM PI/2 BPSK	75@0	13.54	13.91
78	15	15	633334	3500.01	DFT-s-OFDM QPSK	75@0	13.455	13.86
78	15	15	633334	3500.01	CP-OFDM QPSK	79@0	14.085	14.62
78	15	15	633334	3500.01	CP-OFDM 16 QAM	79@0	14.206	14.54
78	15	15	633334	3500.01	CP-OFDM 64 QAM	79@0	14.259	14.58
78	15	15	633334	3500.01	CP-OFDM 256 QAM	79@0	14.179	14.49
78	15	20	633334	3500.01	DFT-s-OFDM PI/2 BPSK	100@0	17.988	18.82
78	15	20	633334	3500.01	DFT-s-OFDM QPSK	100@0	18.087	18.55
78	15	20	633334	3500.01	CP-OFDM QPSK	106@0	19.109	19.58
78	15	20	633334	3500.01	CP-OFDM 16 QAM	106@0	19.128	19.6
78	15	20	633334	3500.01	CP-OFDM 64 QAM	106@0	19.108	19.49
78	15	20	633334	3500.01	CP-OFDM 256 QAM	106@0	19.072	19.43

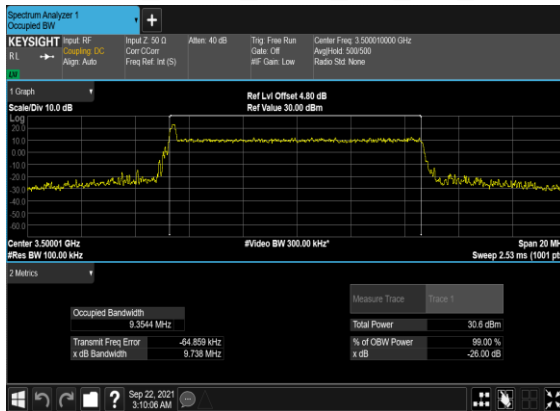
N78(10M)_DFT-s-OFDM_PI_2-
BPSK_Outer_Full_Mid_CH



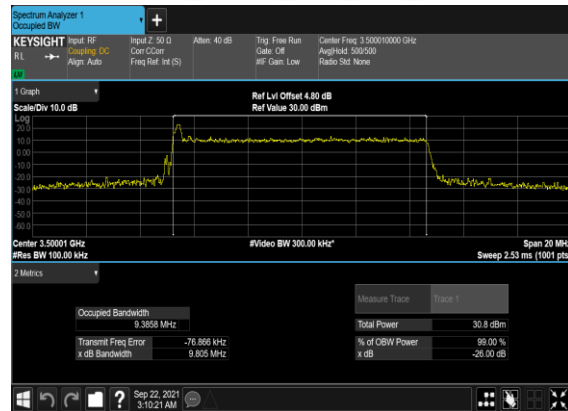
N78(10M)_DFT-s-
OFDM_QPSK_Outer_Full_Mid_CH



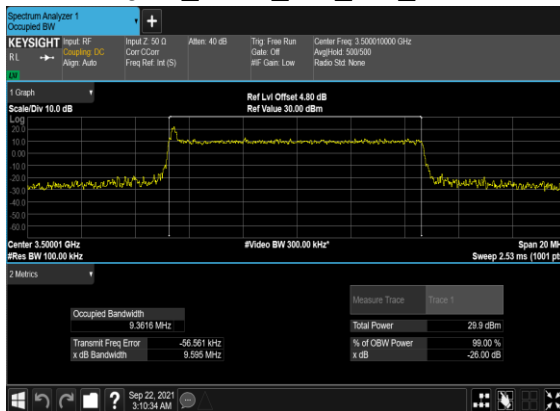
N78(10M)_CP-
OFDM_QPSK_Outer_Full_Mid_CH



N78(10M)_CP-OFDM_16
QAM_Outer_Full_Mid_CH



N78(10M)_CP-OFDM_64
QAM_Outer_Full_Mid_CH



N78(10M)_CP-OFDM_256
QAM_Outer_Full_Mid_CH

