



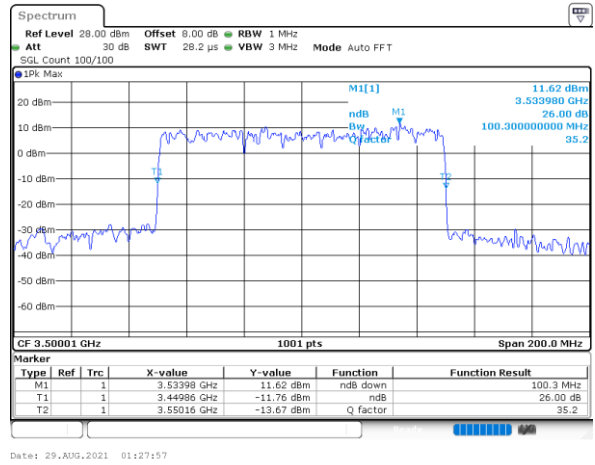
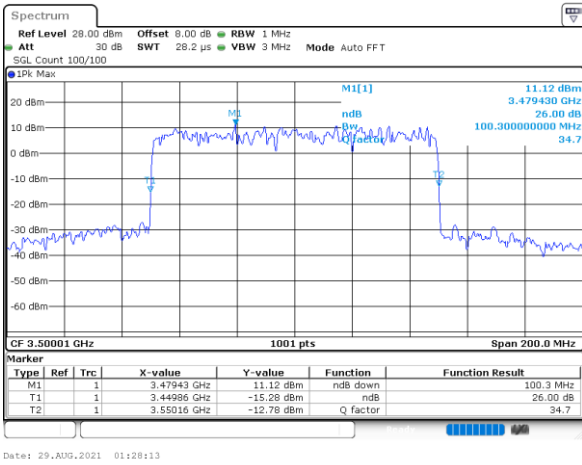
FR1 UL-MIMO n77 / 100MHz / CP-OFDM (Port 2)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 29_AUG.2021 01:28:13

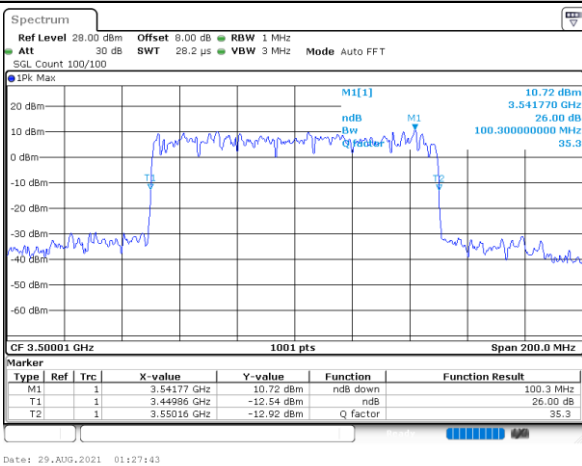
Date: 29_AUG.2021 01:27:57

64QAM

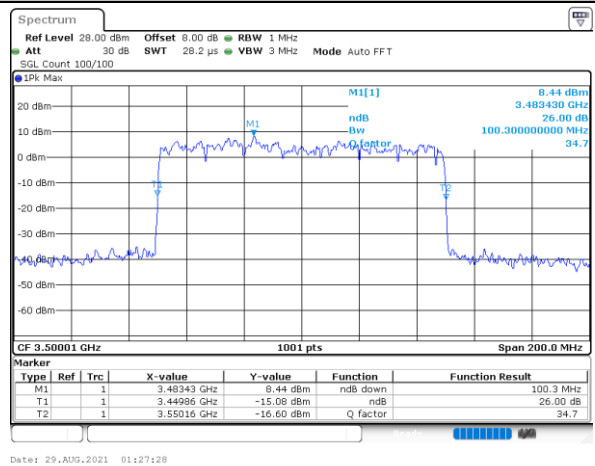
256QAM

Middle Channel

Middle Channel



Date: 29_AUG.2021 01:27:43



Date: 29_AUG.2021 01:27:28



Occupied Bandwidth

Mode	FR1 UL-MIMO n77 : OBW(MHz) / CP-OFDM							
	Port 1				Port 2			
BW	10MHz	10MHz	10MHz	10MHz	10MHz	10MHz	10MHz	10MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	8.57	8.59	8.57	8.57	8.57	8.57	8.59	8.59

Mode	FR1 UL-MIMO n77 : OBW(MHz) / CP-OFDM							
	Port 1				Port 2			
BW	15MHz	15MHz	15MHz	15MHz	15MHz	15MHz	15MHz	15MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	13.55	13.61	13.61	13.58	13.37	13.58	13.58	13.61

Mode	FR1 UL-MIMO n77 : OBW(MHz) / CP-OFDM							
	Port 1				Port 2			
BW	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	18.18	18.22	18.22	18.22	18.34	18.18	18.22	18.30

Mode	FR1 UL-MIMO n77 : OBW(MHz) / CP-OFDM							
	Port 1				Port 2			
BW	40MHz	40MHz	40MHz	40MHz	40MHz	40MHz	40MHz	40MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	37.96	38.20	37.96	38.36	38.04	38.12	37.88	38.04

Mode	FR1 UL-MIMO n77 : OBW(MHz) / CP-OFDM							
	Port 1				Port 2			
BW	50MHz	50MHz	50MHz	50MHz	50MHz	50MHz	50MHz	50MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	47.15	47.85	47.65	47.65	47.65	46.95	47.75	47.55

Mode	FR1 UL-MIMO n77 : OBW(MHz) / CP-OFDM							
	Port 1				Port 2			
BW	60MHz	60MHz	60MHz	60MHz	60MHz	60MHz	60MHz	60MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	57.90	58.02	58.14	58.14	58.02	57.90	57.78	58.38



Mode	FR1 UL-MIMO n77 : OBW(MHz) / CP-OFDM							
	Port 1				Port 2			
BW	80MHz	80MHz	80MHz	80MHz	80MHz	80MHz	80MHz	80MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	77.36	77.52	77.36	77.52	77.52	77.68	77.20	77.20

Mode	FR1 UL-MIMO n77 : OBW(MHz) / CP-OFDM							
	Port 1				Port 2			
BW	100MHz	100MHz	100MHz	100MHz	100MHz	100MHz	100MHz	100MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	97.10	97.30	97.50	97.50	97.10	97.10	96.70	96.90



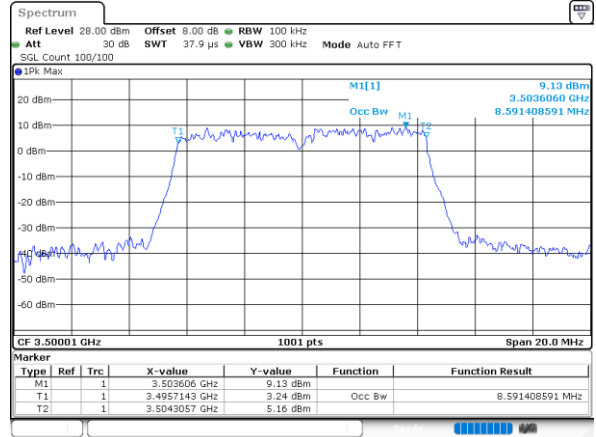
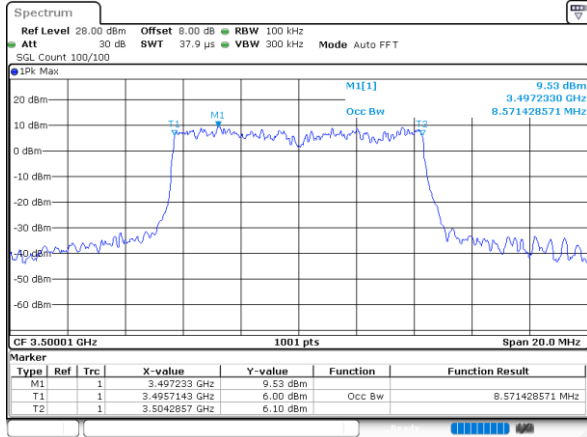
FR1 UL-MIMO n77 / 10MHz / CP-OFDM (Port 1)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 29.AUG.2021 00:06:22

Date: 29.AUG.2021 00:06:38

64QAM

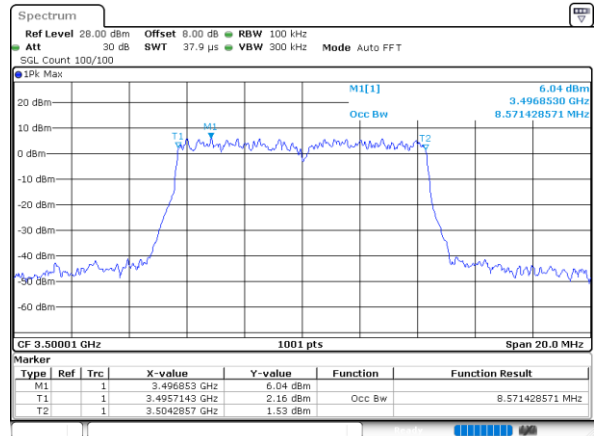
256QAM

Middle Channel

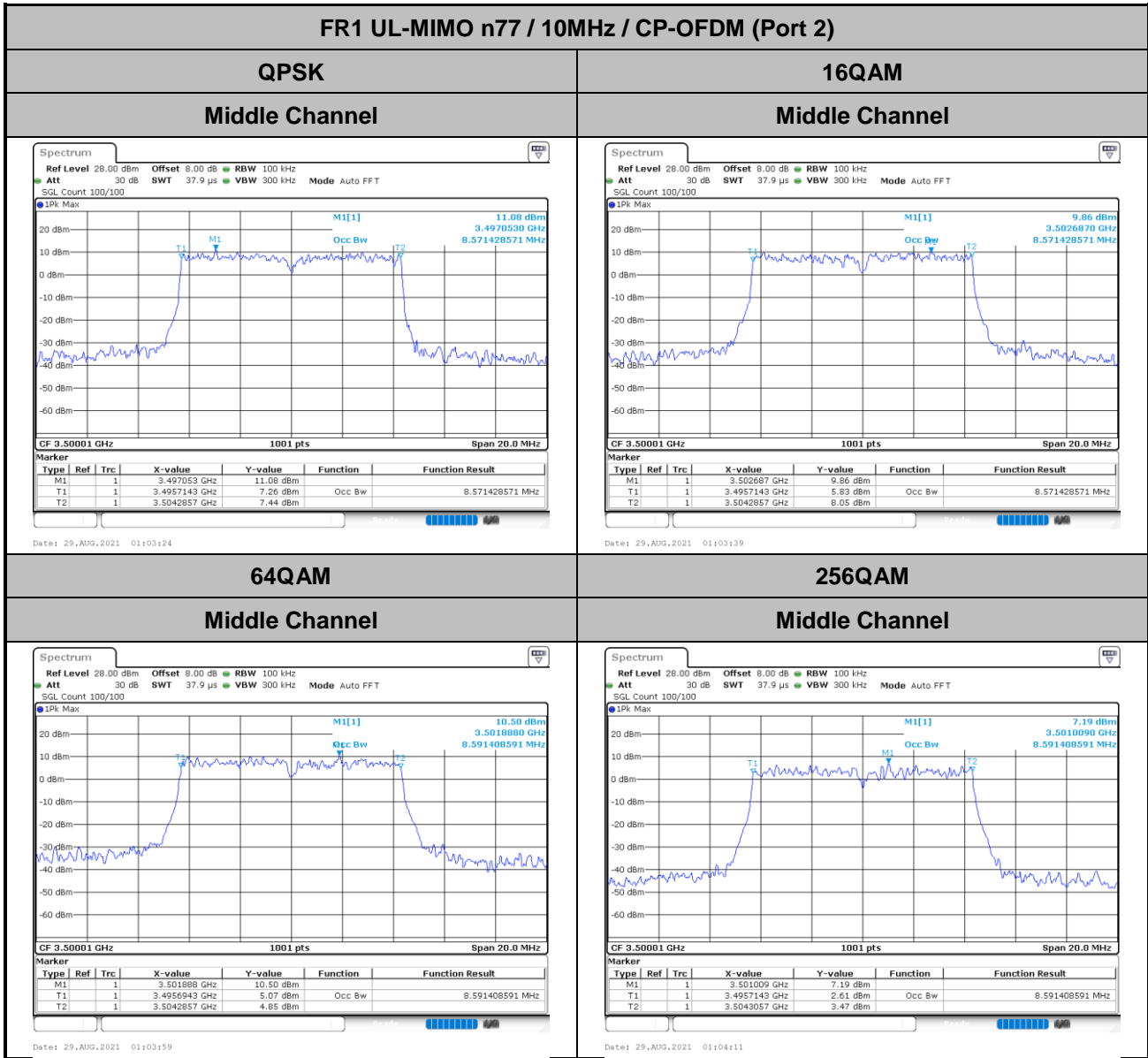
Middle Channel

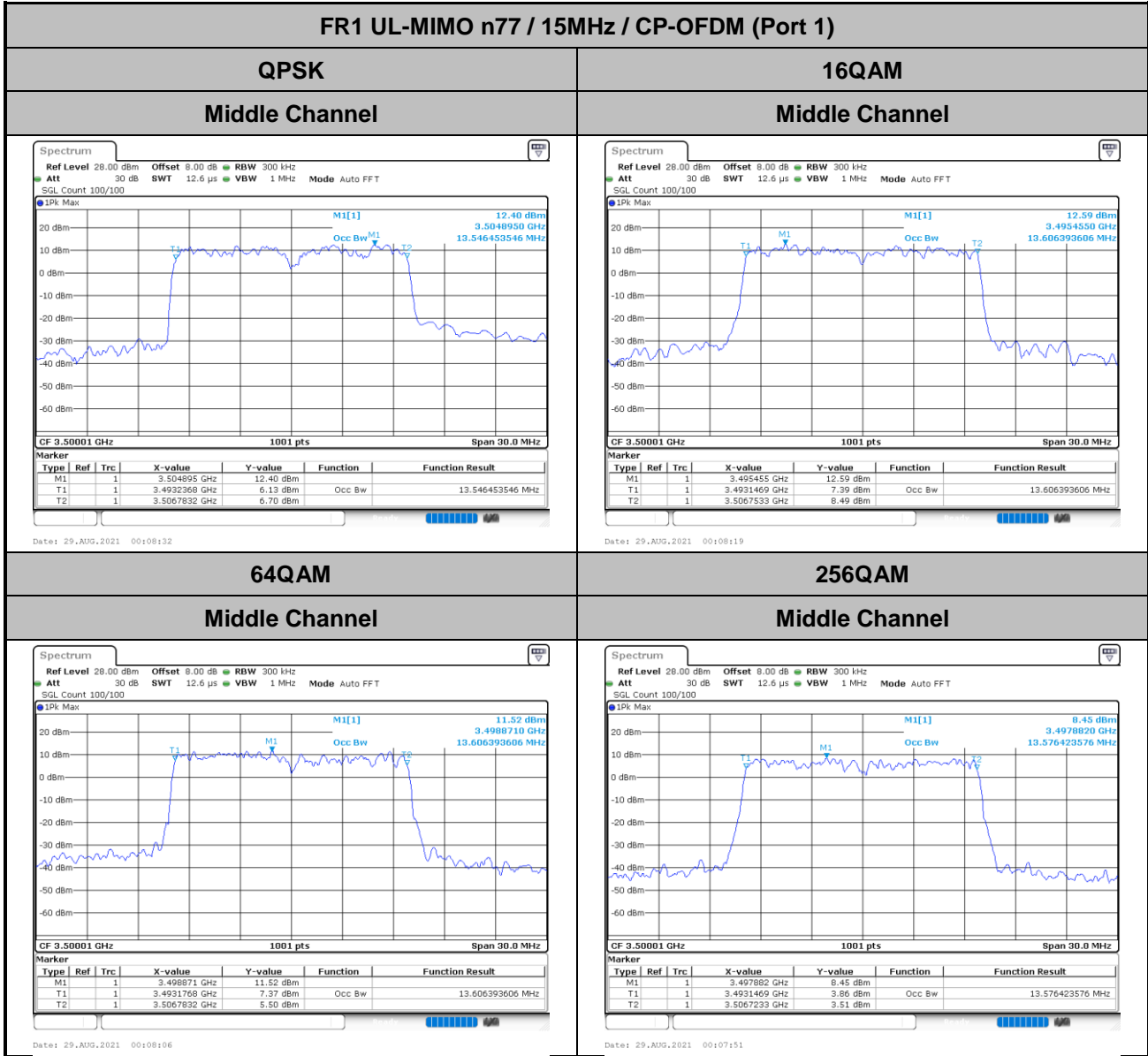


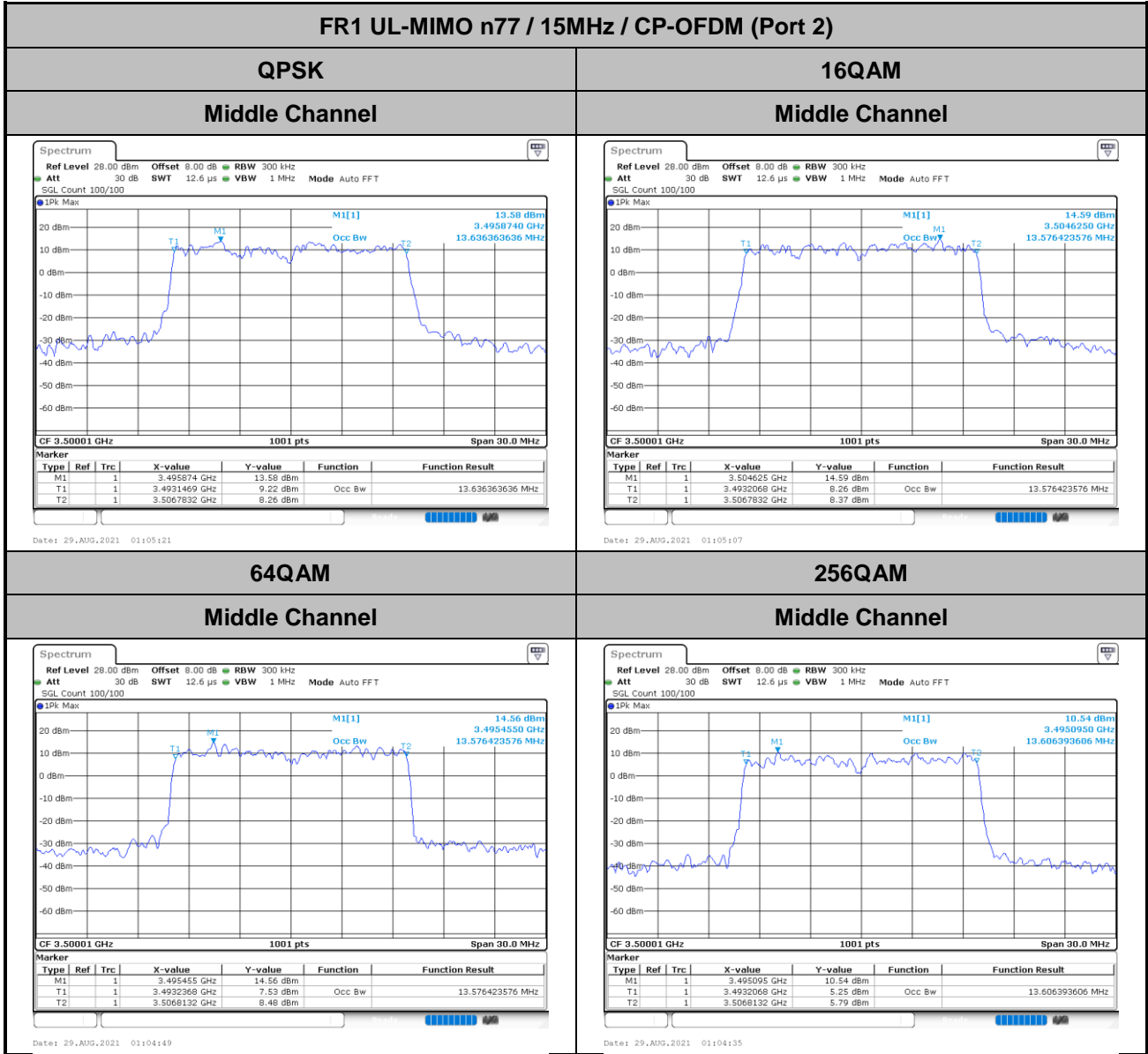
Date: 29.AUG.2021 00:07:05



Date: 29.AUG.2021 00:07:18









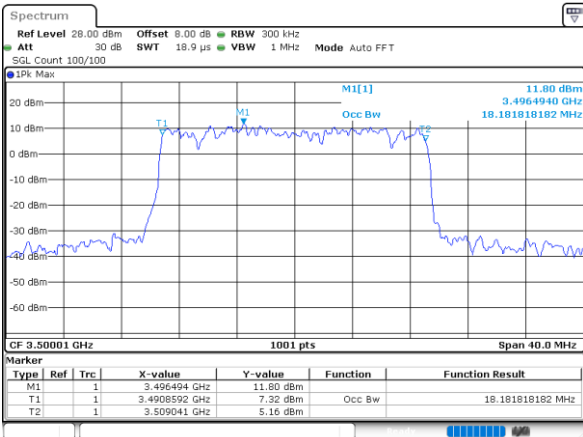
FR1 UL-MIMO n77 / 20MHz / CP-OFDM (Port 1)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 29_AUG.2021 00:09:04

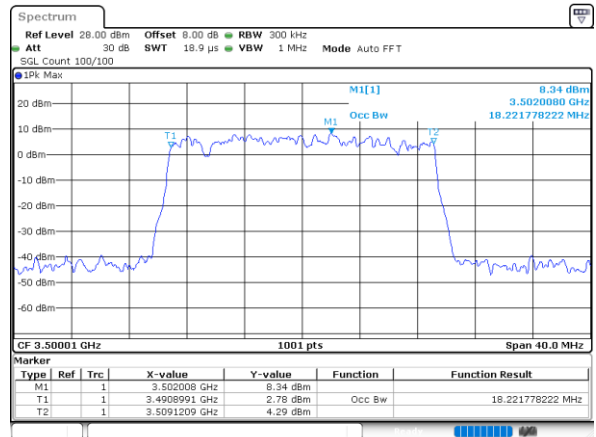
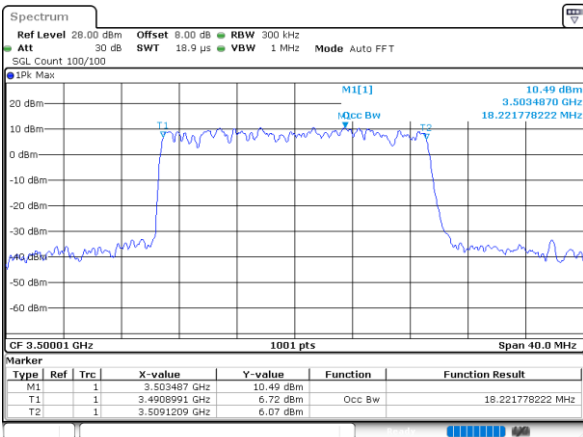
Date: 29_AUG.2021 00:09:23

64QAM

256QAM

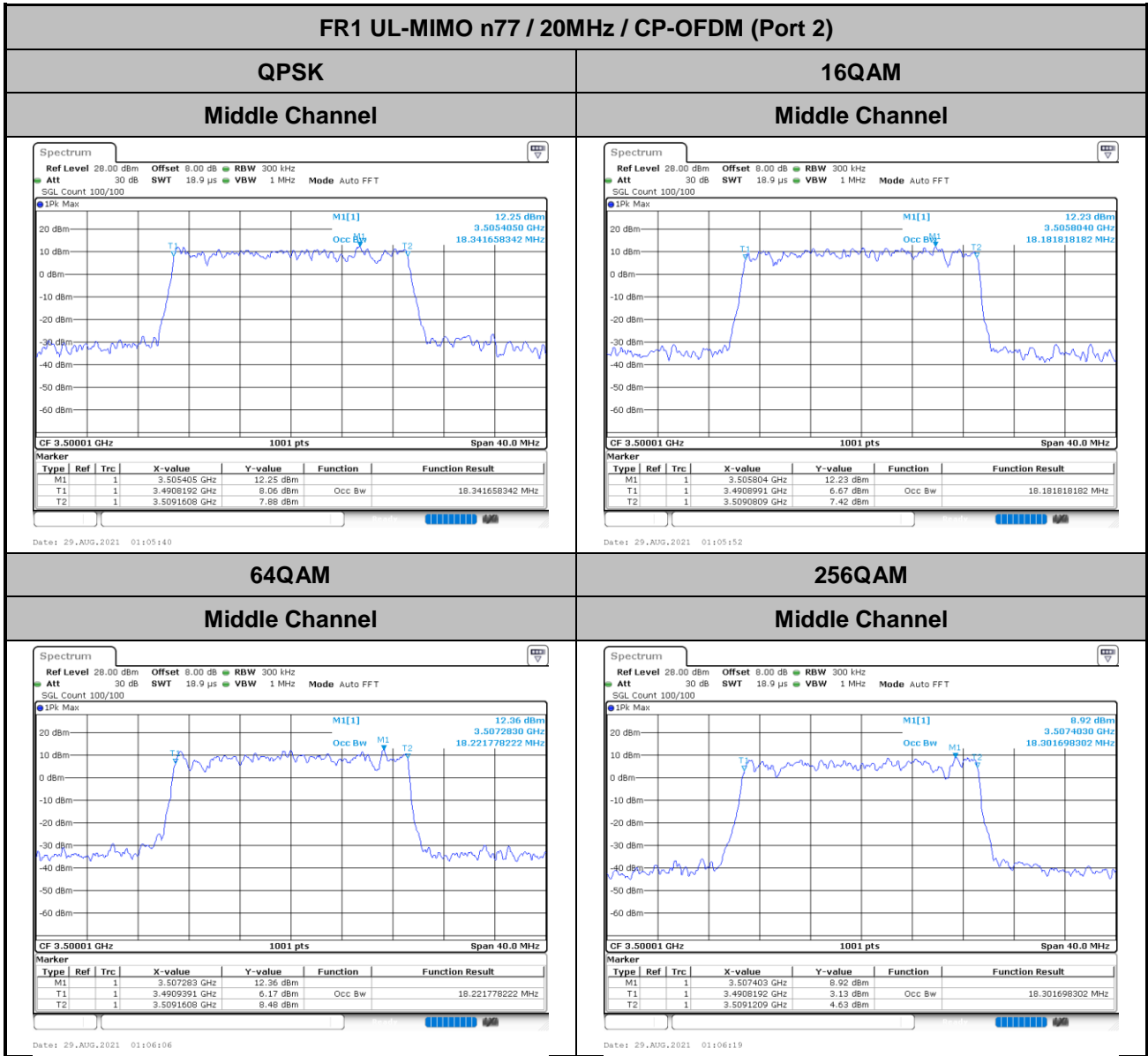
Middle Channel

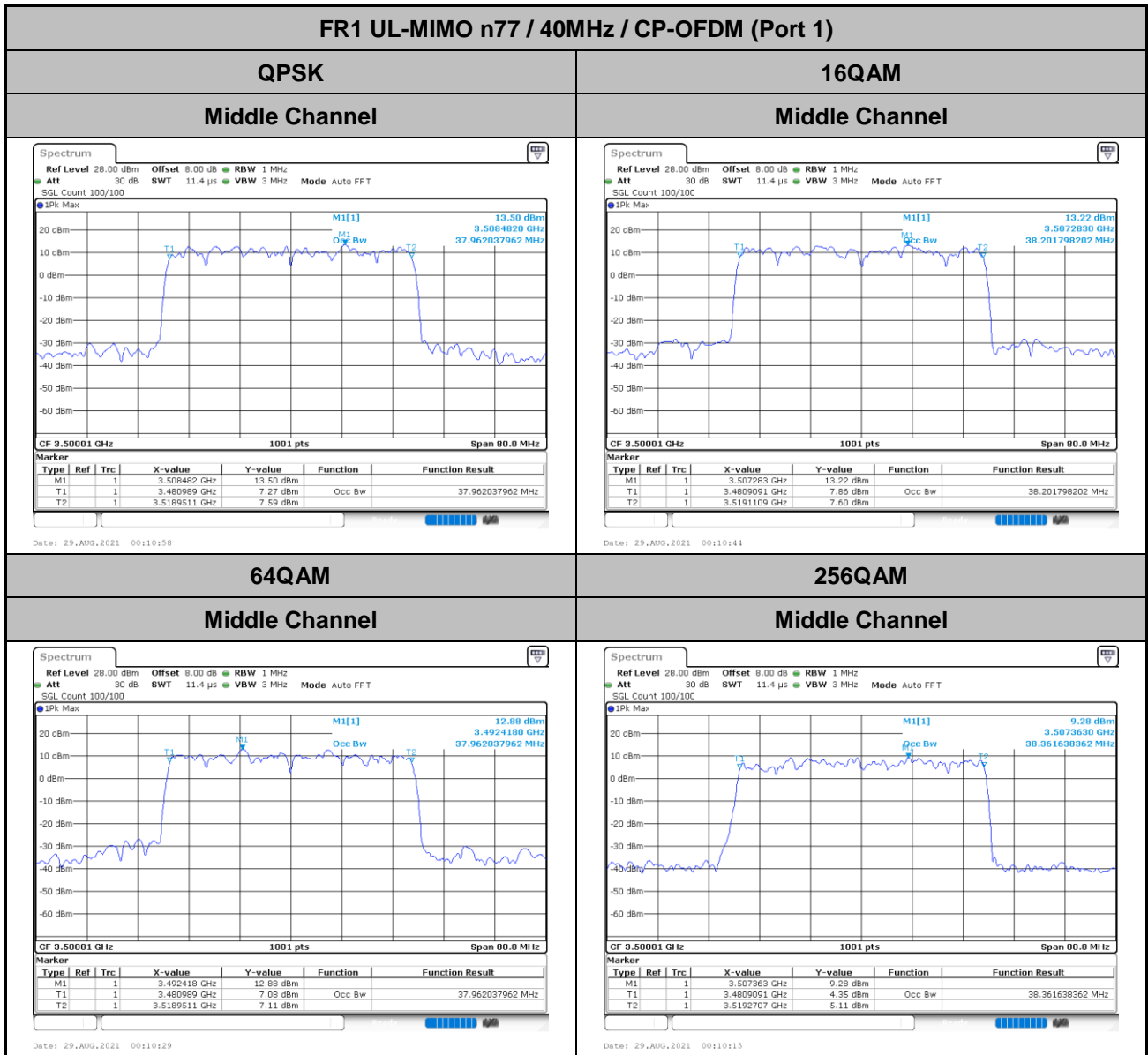
Middle Channel

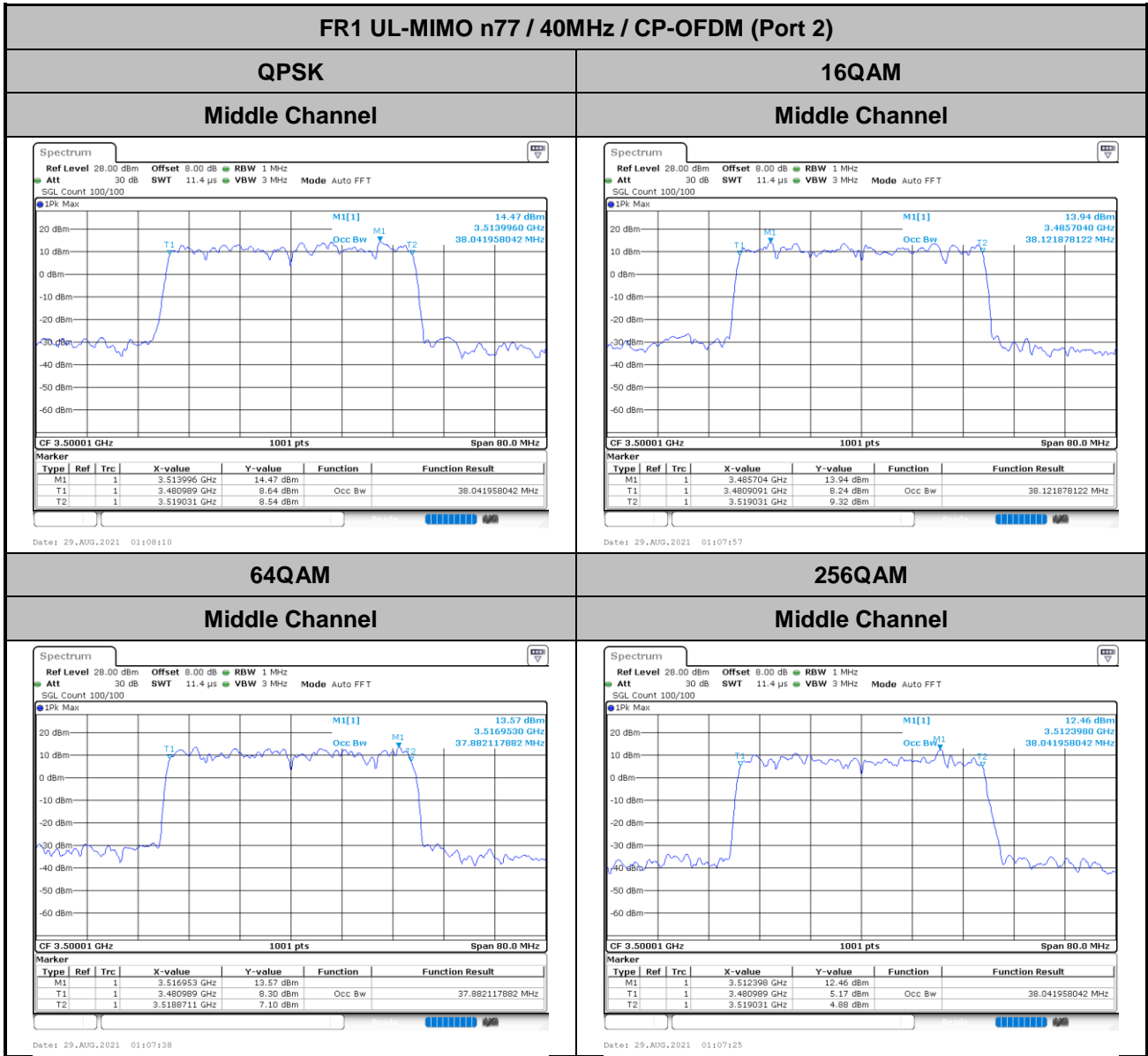


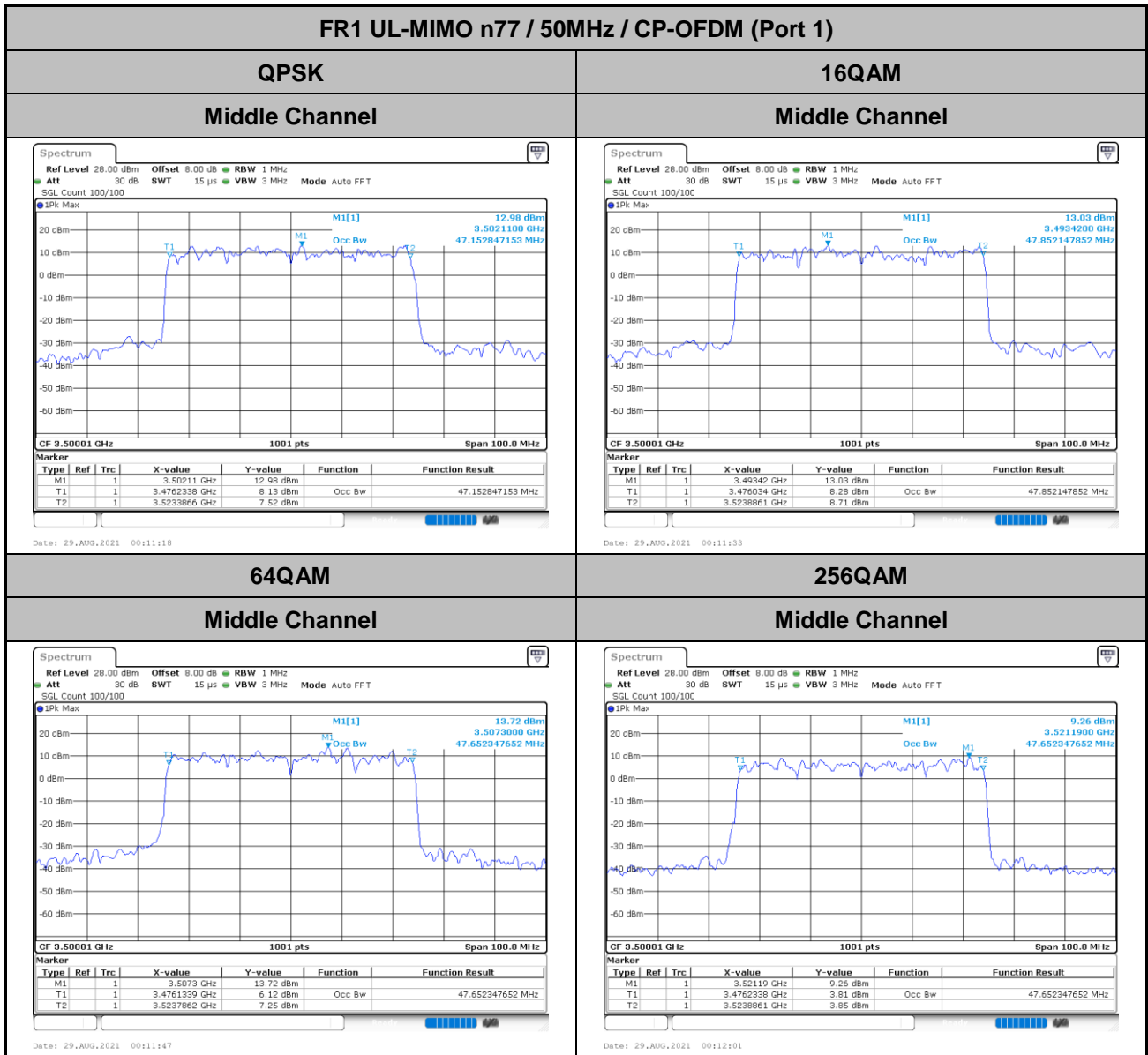
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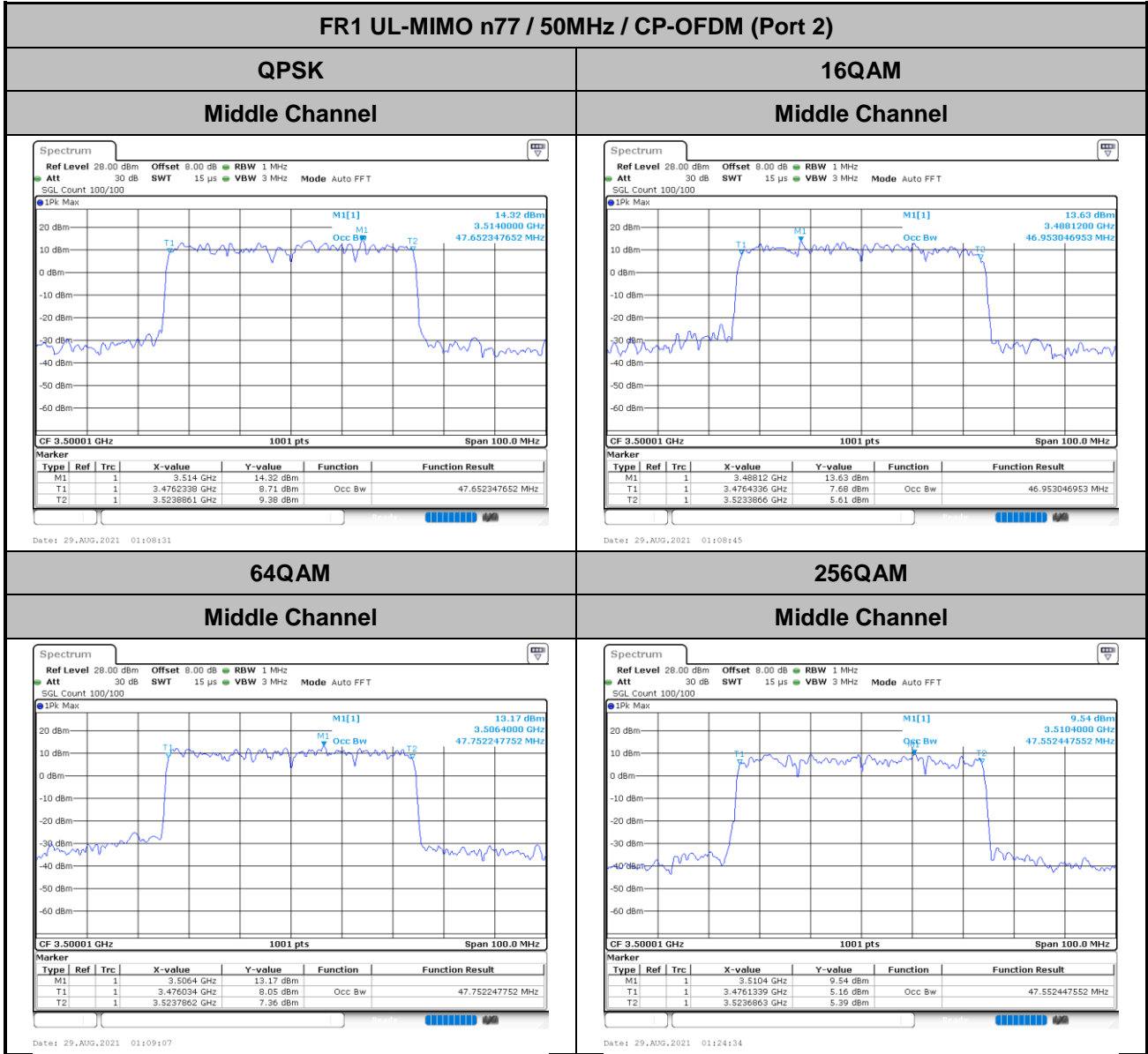
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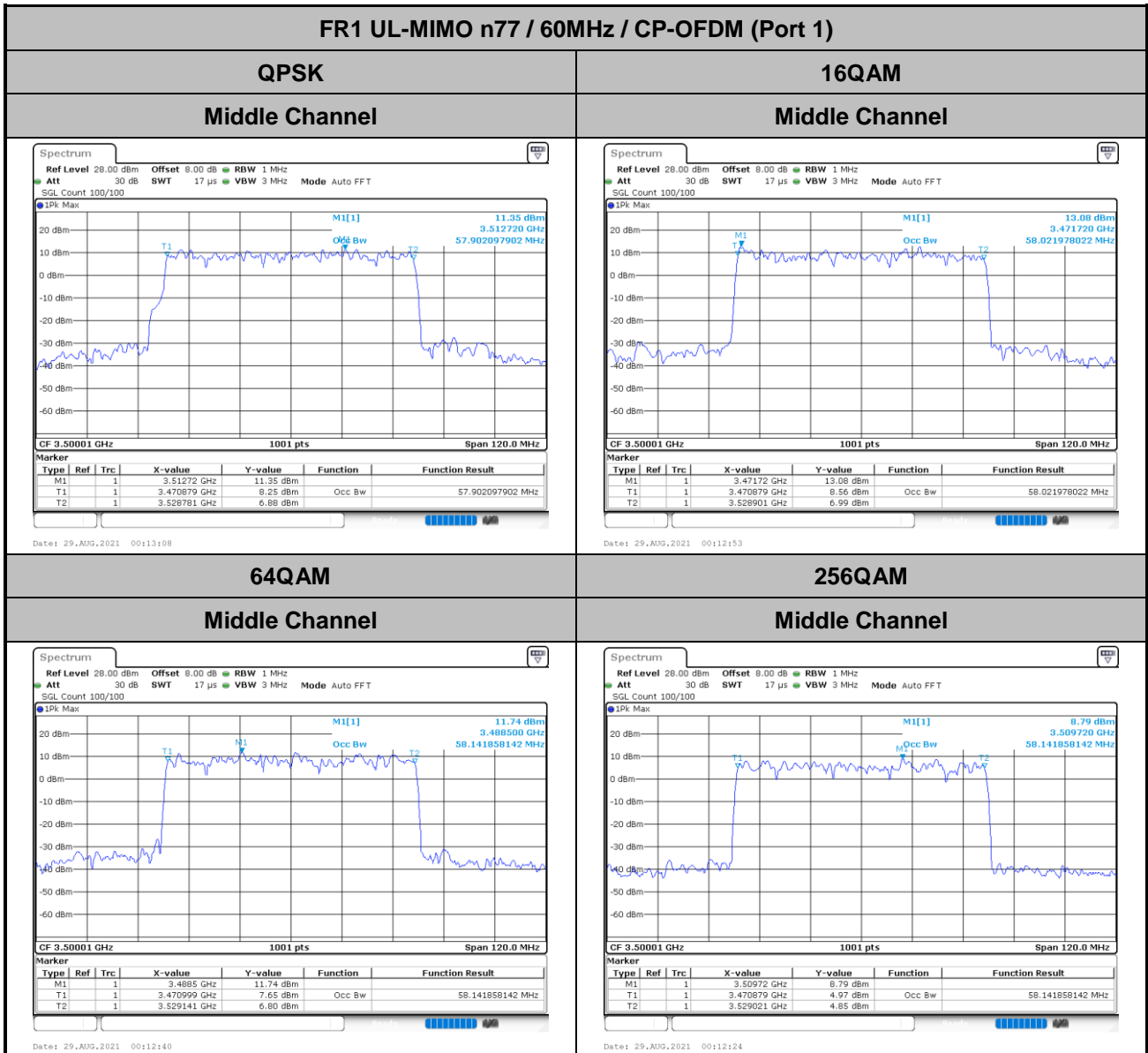


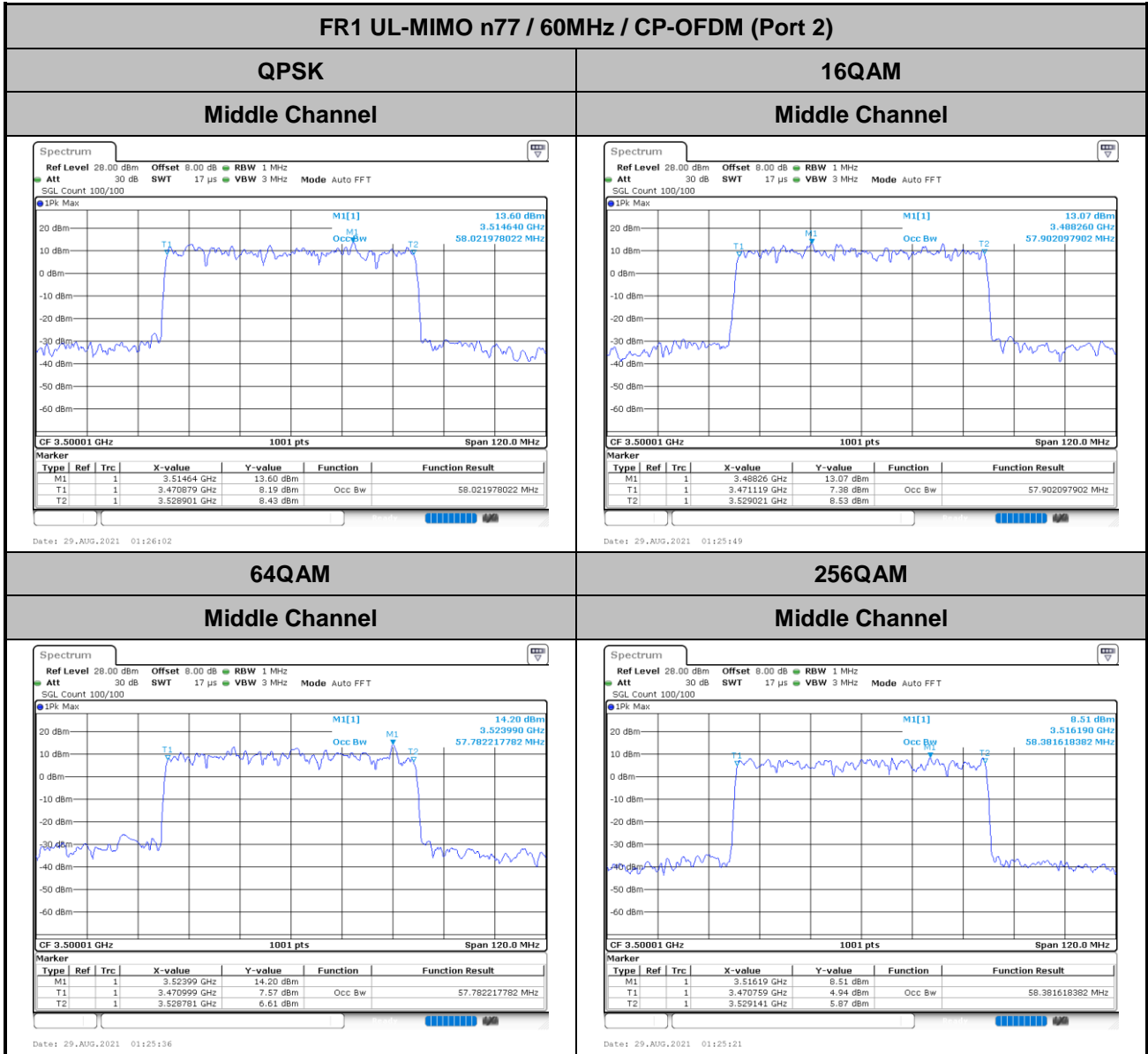


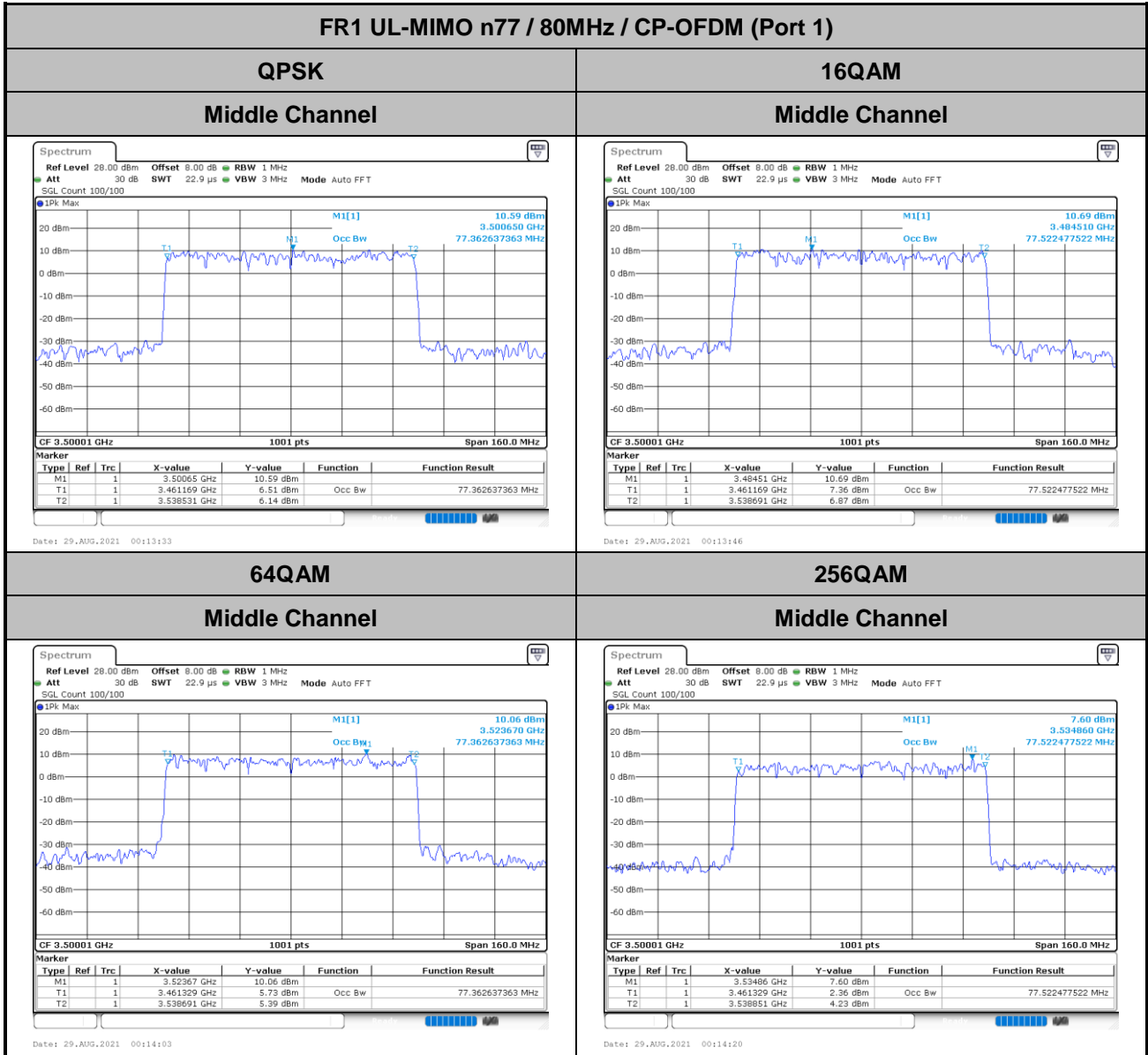


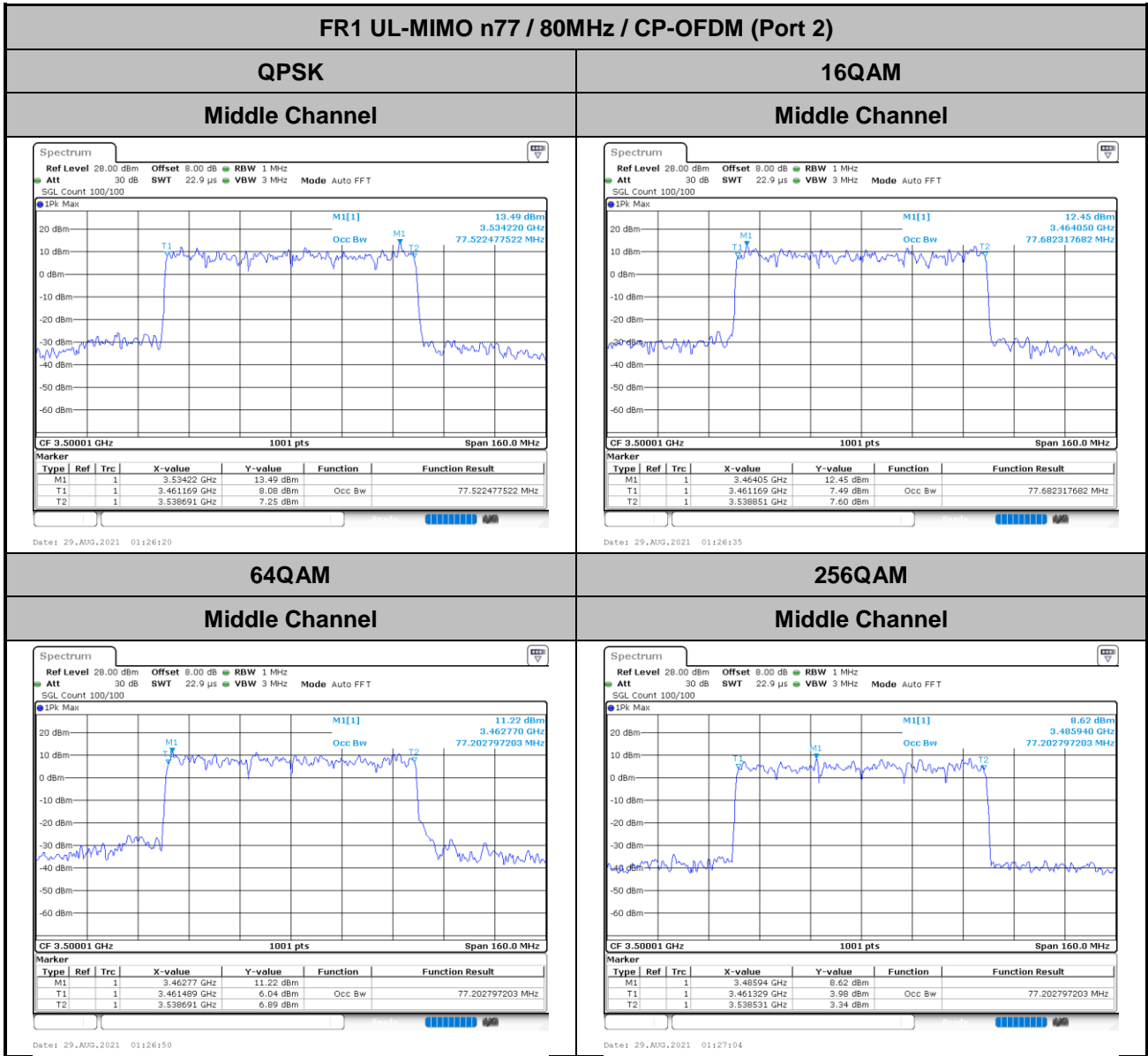


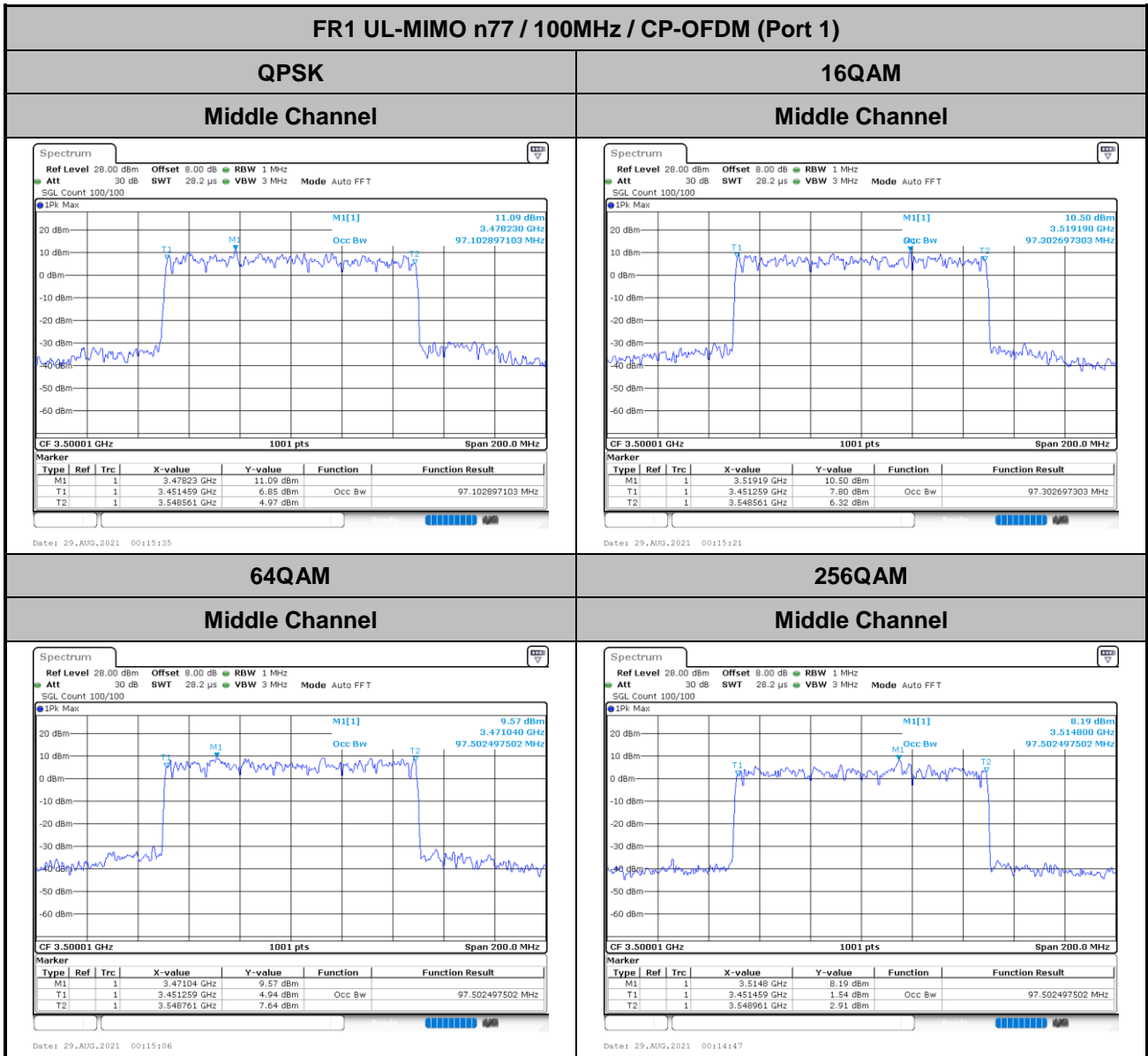


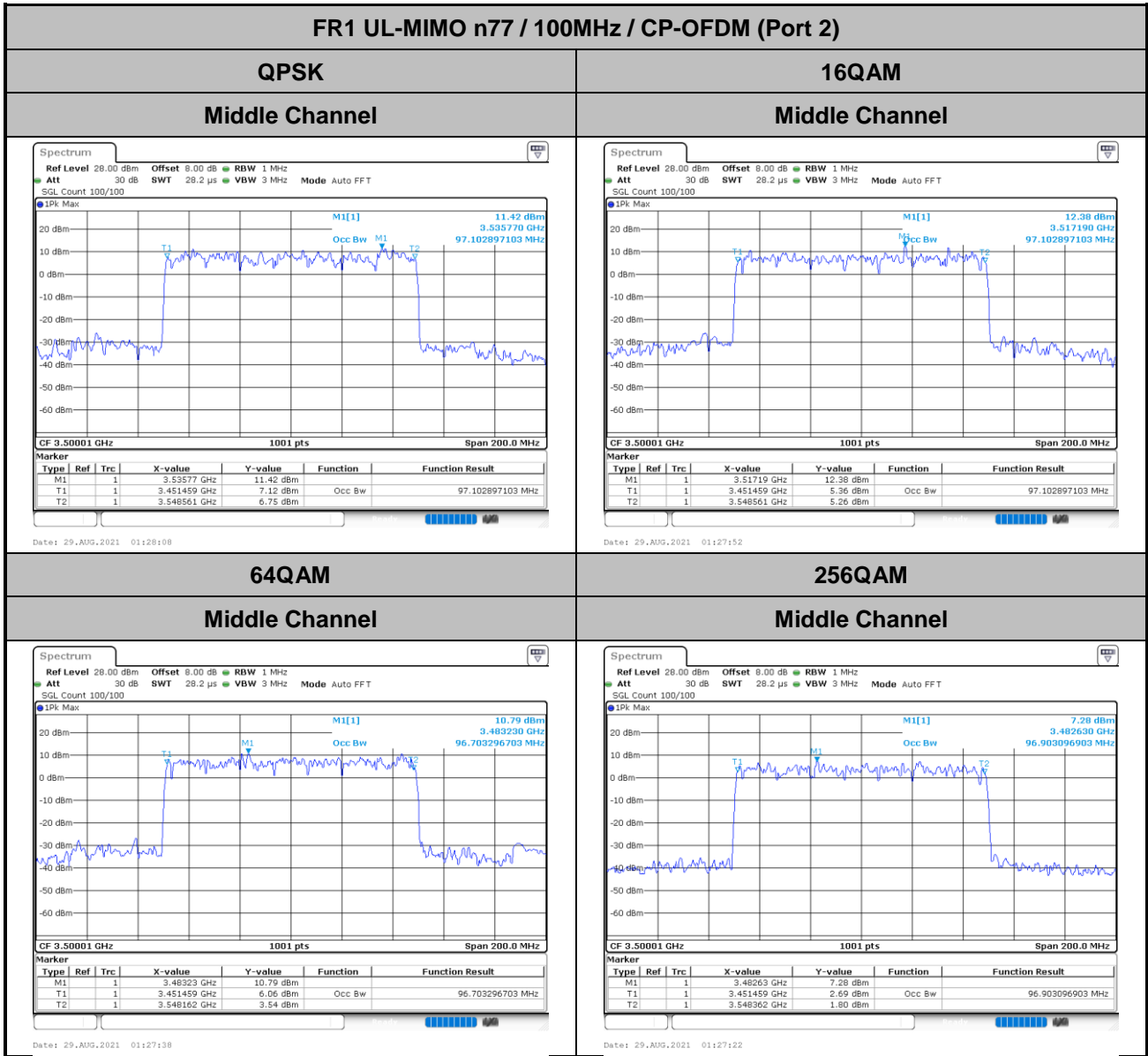






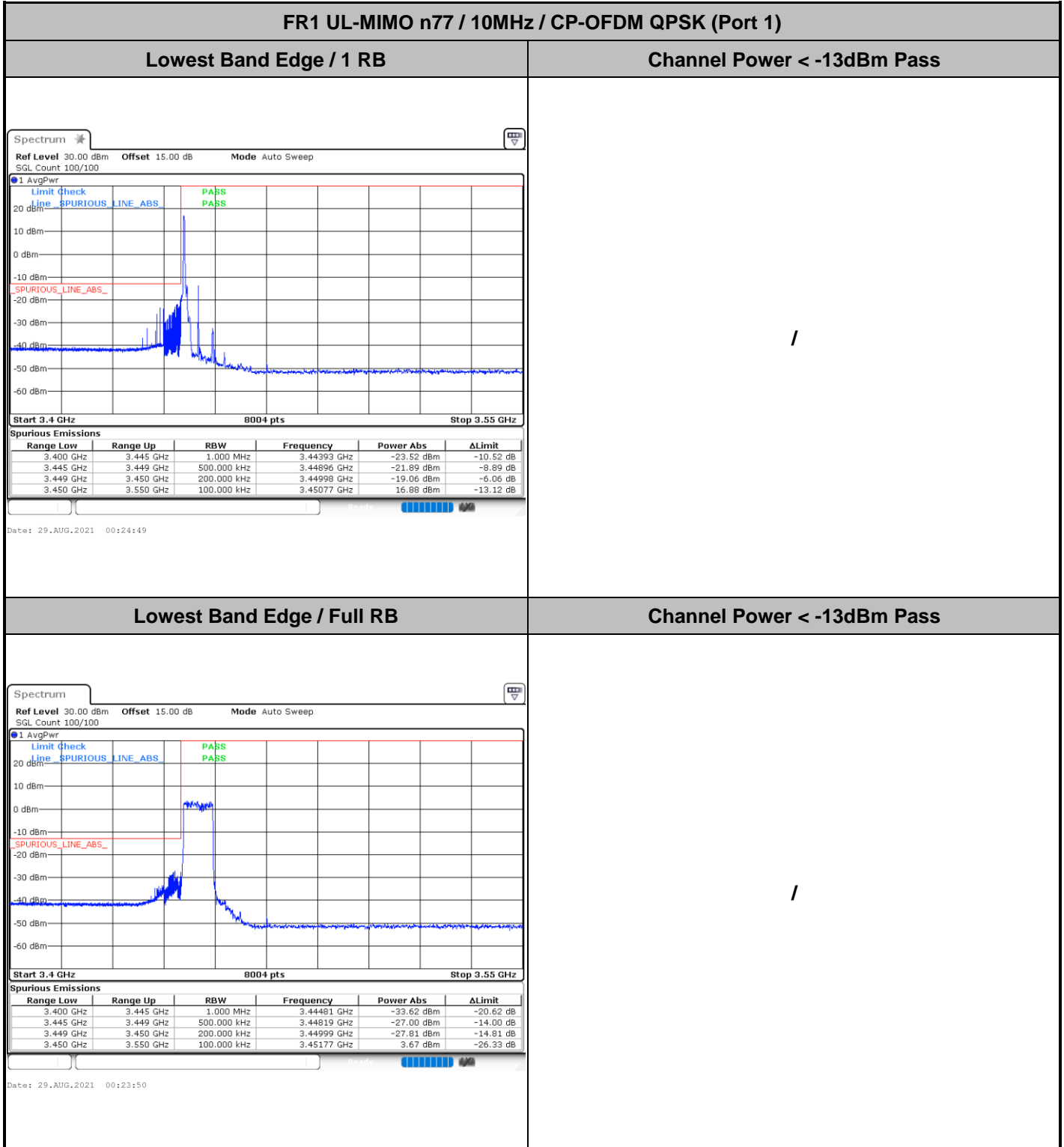








Conducted Band Edge

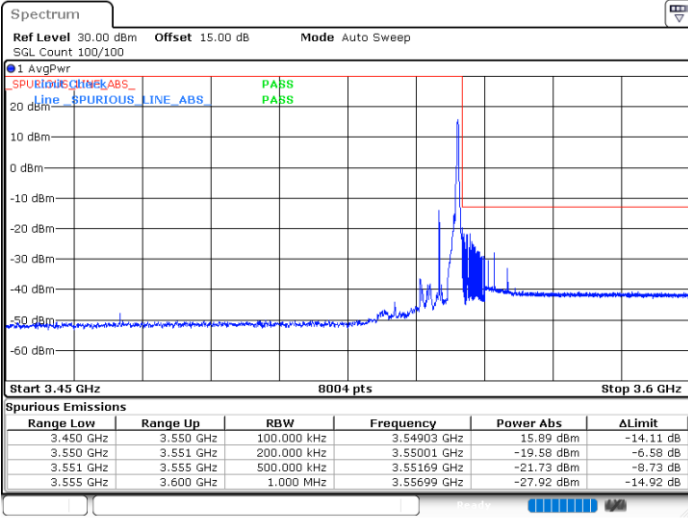




FR1 UL-MIMO n77 / 10MHz / CP-OFDM QPSK (Port 1)

Highest Band Edge / 1 RB

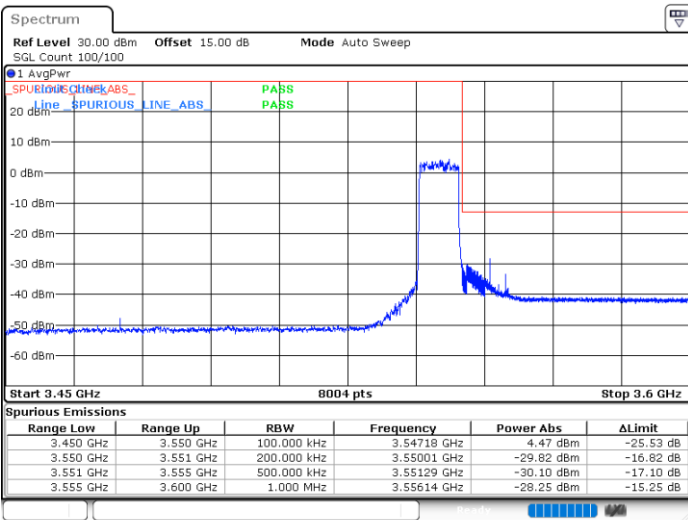
Channel Power < -13dBm Pass



Date: 29.AUG.2021 00:22:02

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



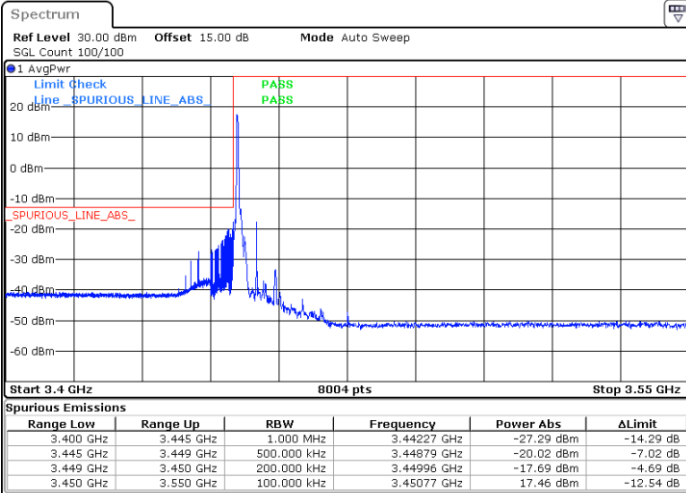
Date: 29.AUG.2021 00:23:27



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

Lowest Band Edge / 1 RB

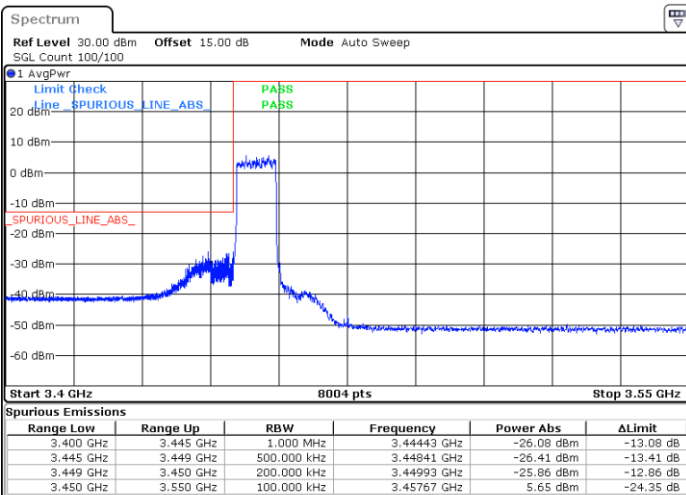
Channel Power < -13dBm Pass



Date: 26.AUG.2021 00:19:22

Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



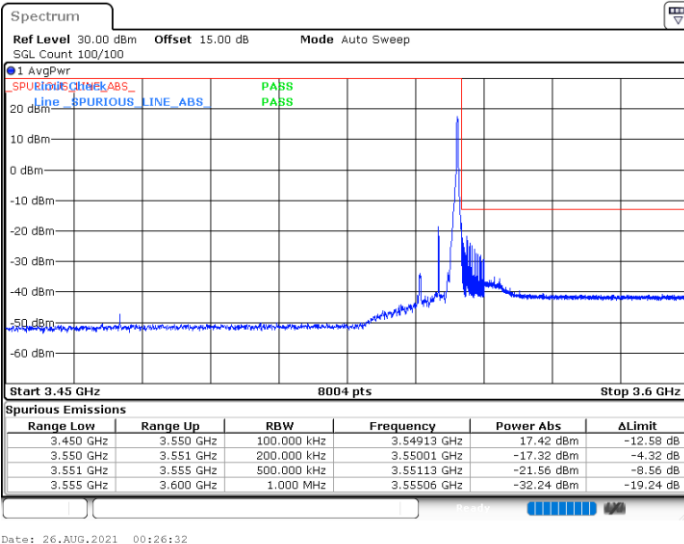
Date: 26.AUG.2021 00:16:35



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

Highest Band Edge / 1 RB

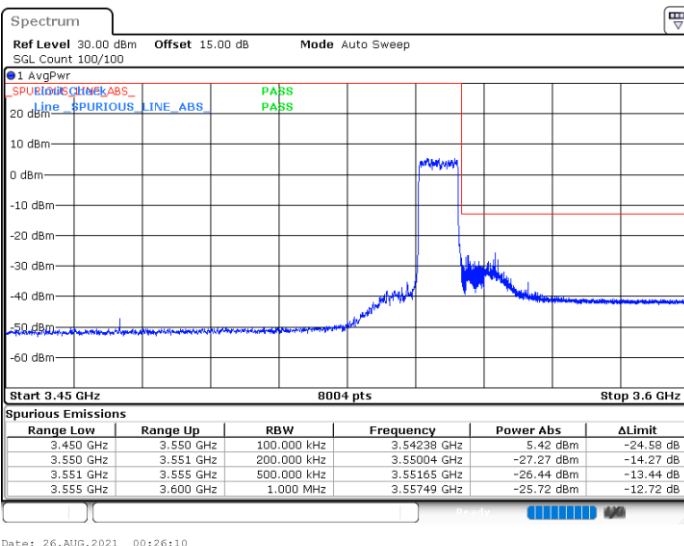
Channel Power < -13dBm Pass



/

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



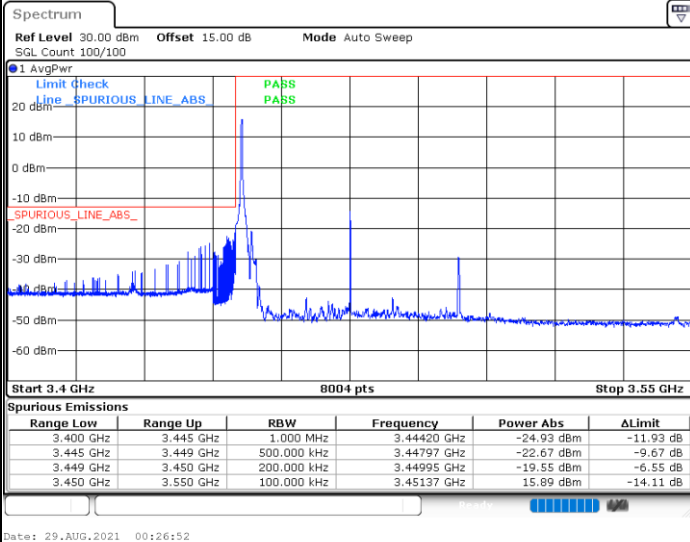
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FR1 UL-MIMO n77 / 50MHz / CP-OFDM QPSK (Port 1)

Lowest Band Edge / 1 RB

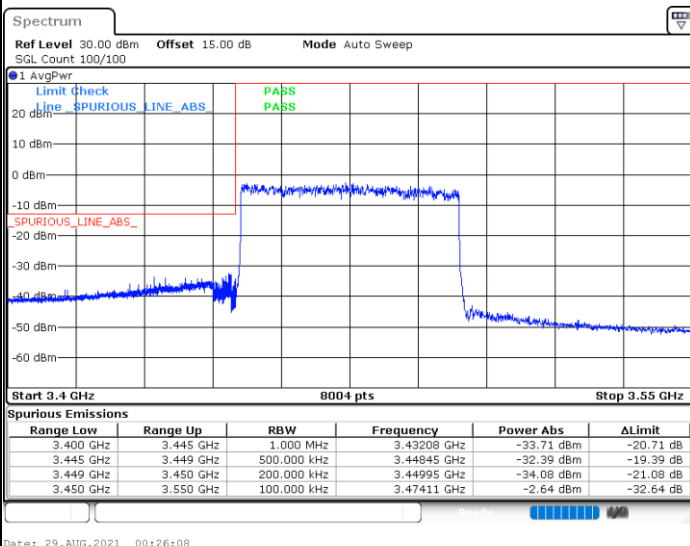
Channel Power < -13dBm Pass



Date: 29.AUG.2021 00:26:52

Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



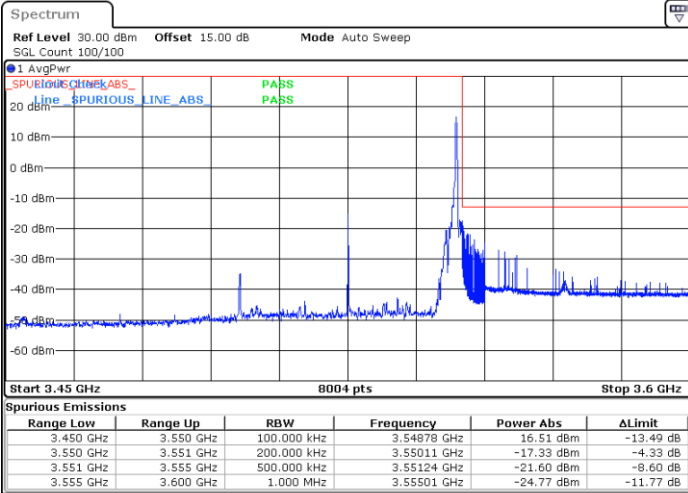
Date: 29.AUG.2021 00:26:08



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

Highest Band Edge / 1 RB

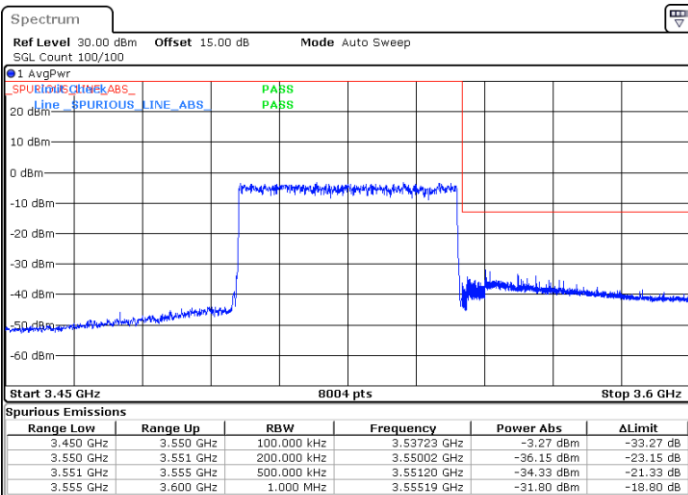
Channel Power < -13dBm Pass



Date: 29.AUG.2021 00:27:19

Highest Band Edge / Full RB

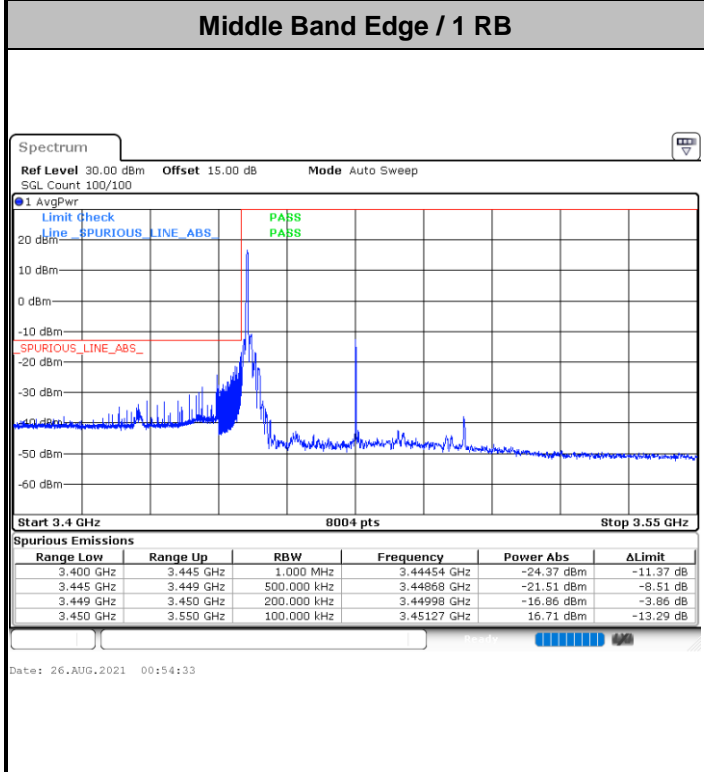
Channel Power < -13dBm Pass



Date: 29.AUG.2021 00:27:59

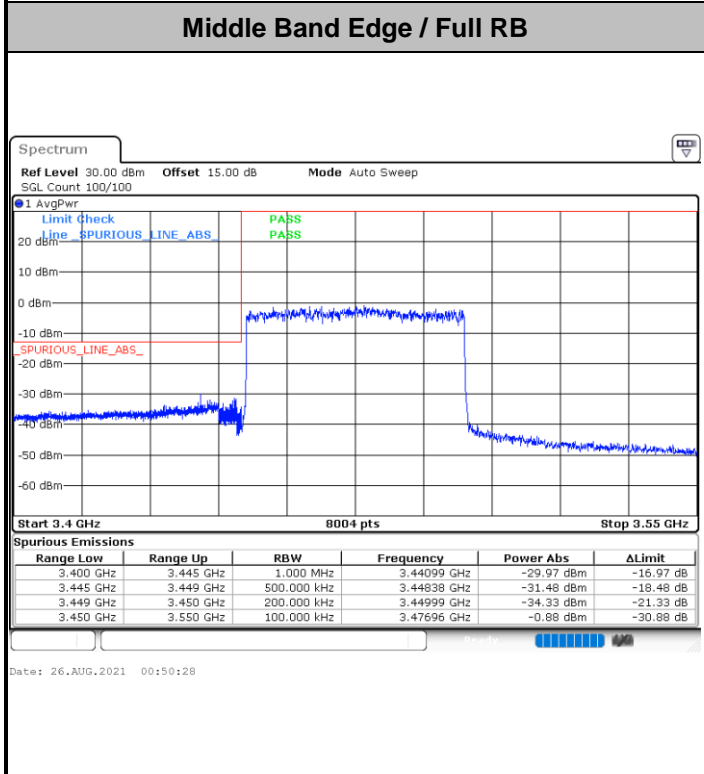


FR1 UL-MIMO n77 / 50MHz / CP-OFDM QPSK (Port 2)



Channel Power < -13dBm Pass

/



Channel Power < -13dBm Pass

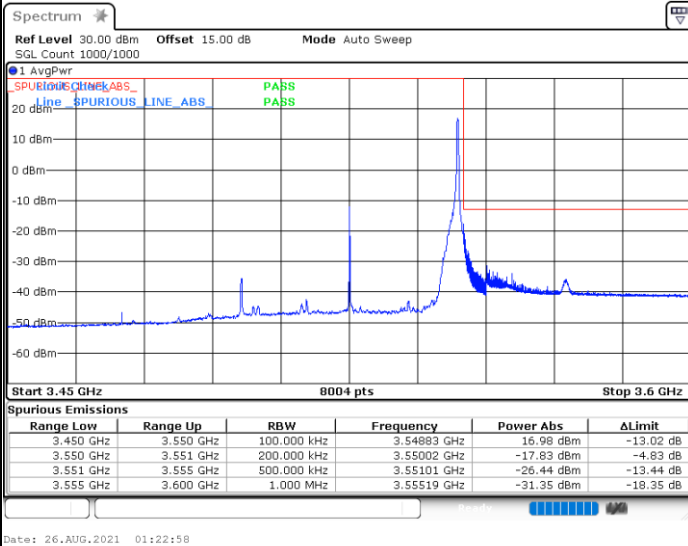
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FR1 UL-MIMO n77 / 50MHz / CP-OFDM QPSK (Port 2)

Middle Band Edge / 1 RB

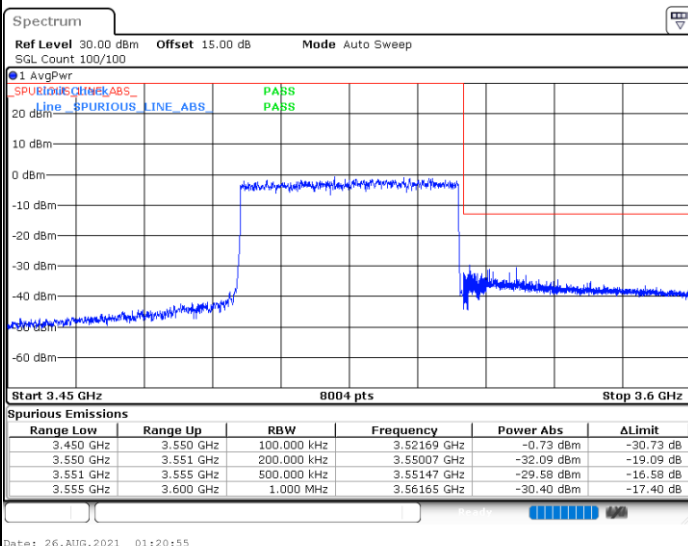
Channel Power < -13dBm Pass



Date: 26.AUG.2021 01:22:58

Highest Band Edge / Full RB

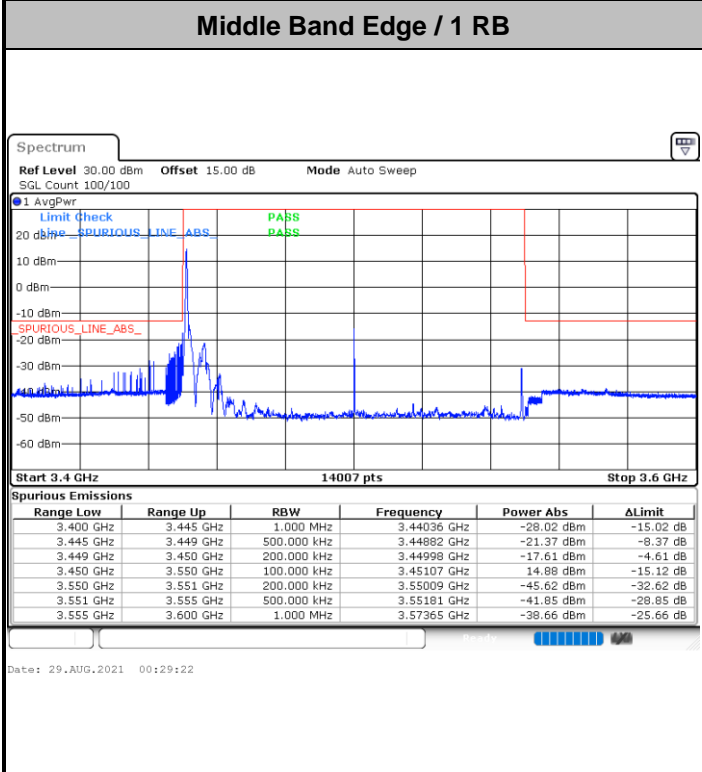
Channel Power < -13dBm Pass



Date: 26.AUG.2021 01:20:55

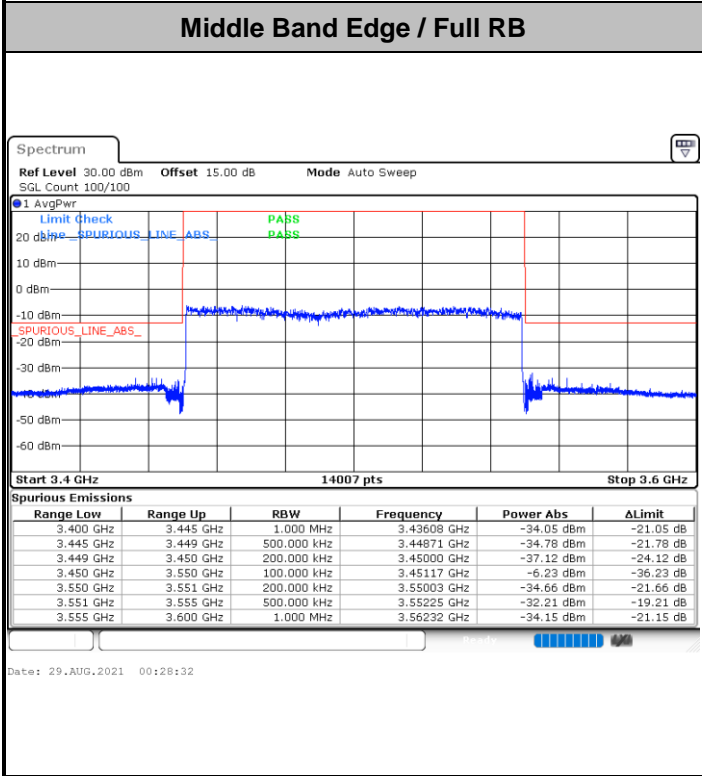


FR1 UL-MIMO n77 / 100MHz / CP-OFDM QPSK (Port 1)



Channel Power < -13dBm Pass

/



Channel Power < -13dBm Pass

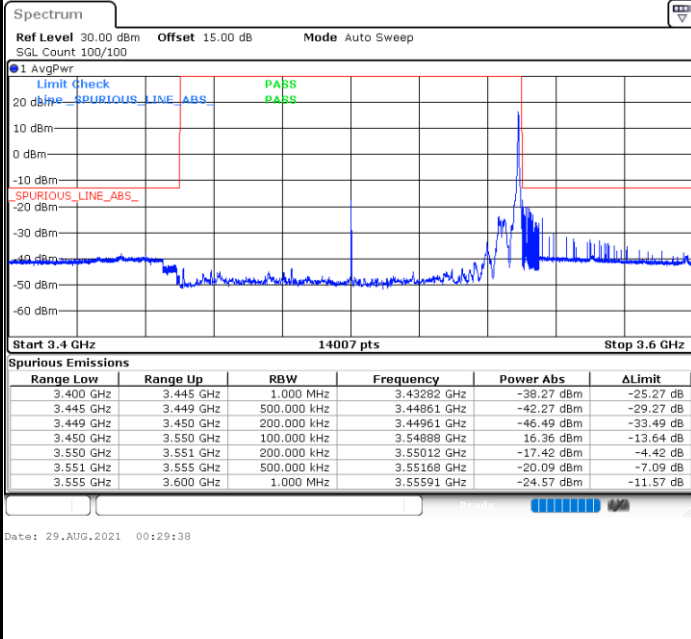
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FR1 UL-MIMO n77 / 100MHz / CP-OFDM QPSK (Port 1)

Middle Band Edge / 1 RB

Channel Power < -13dBm Pass



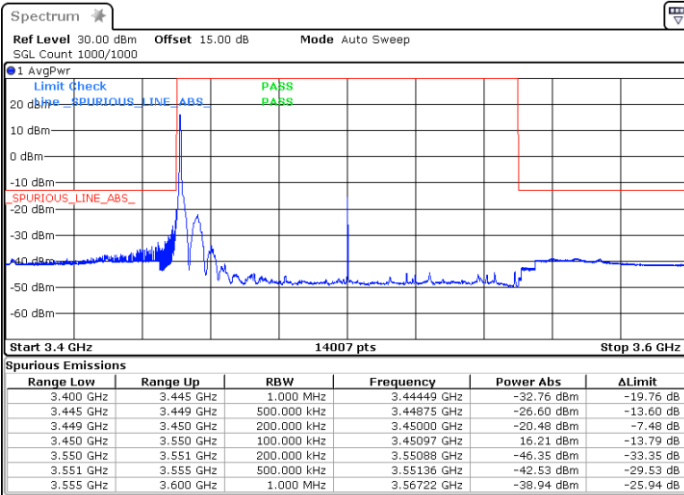
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FR1 UL-MIMO n77 / 100MHz / CP-OFDM QPSK (Port 2)

Middle Band Edge / 1 RB

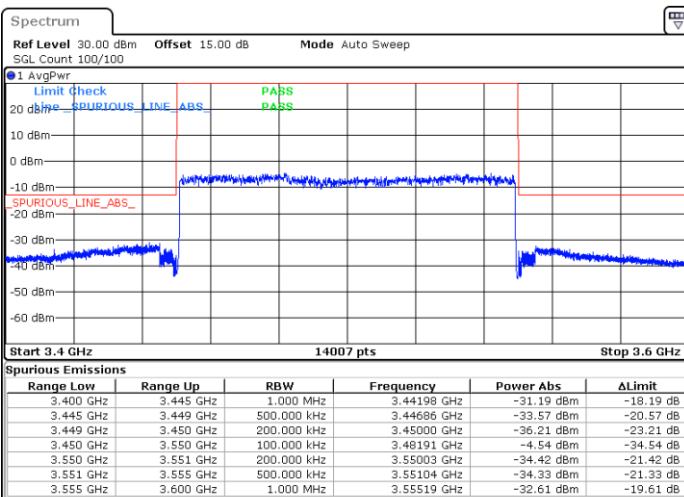
Channel Power < -13dBm Pass



Date: 26.AUG.2021 01:35:19

Middle Band Edge / Full RB

Channel Power < -13dBm Pass



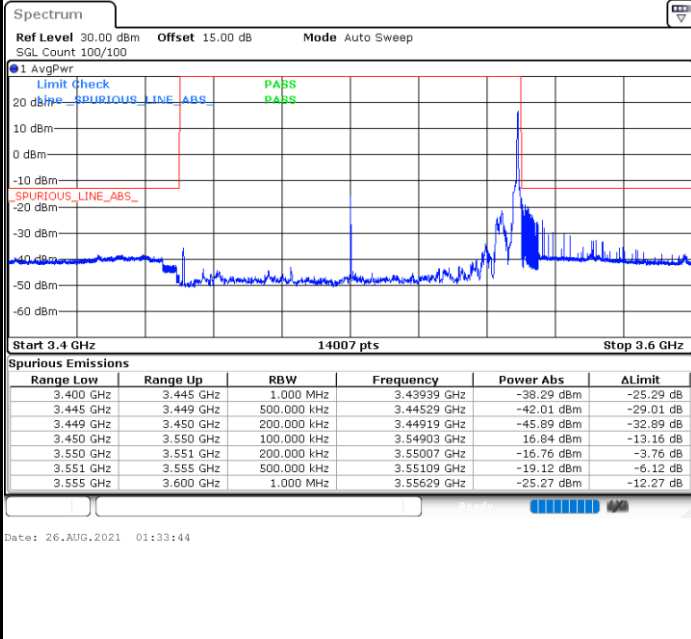
Date: 26.AUG.2021 01:29:58



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

Middle Band Edge / 1 RB

Channel Power < -13dBm Pass



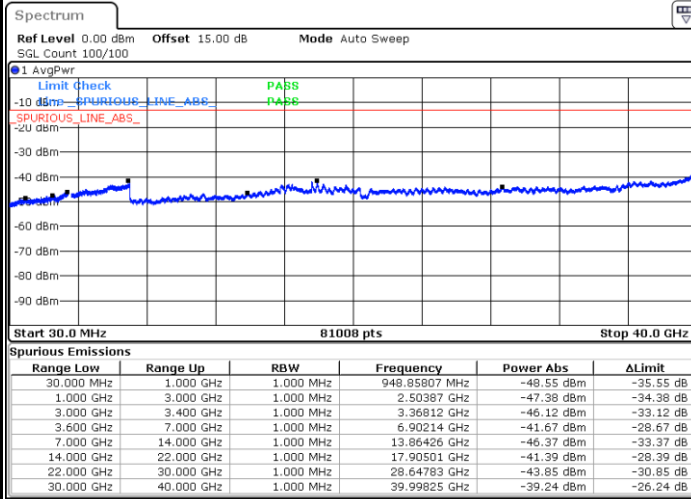
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Conducted Spurious Emission

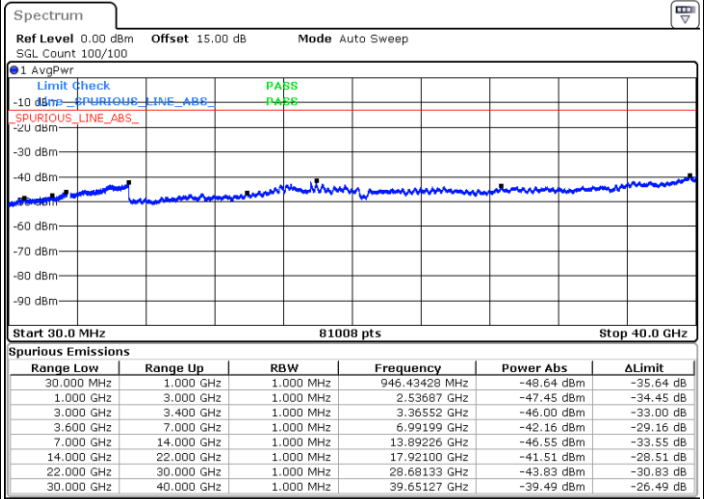
FR1 UL-MIMO n77 / 10MHz / CP-OFDM QPSK (Port 1)

Lowest Channel / 1RB



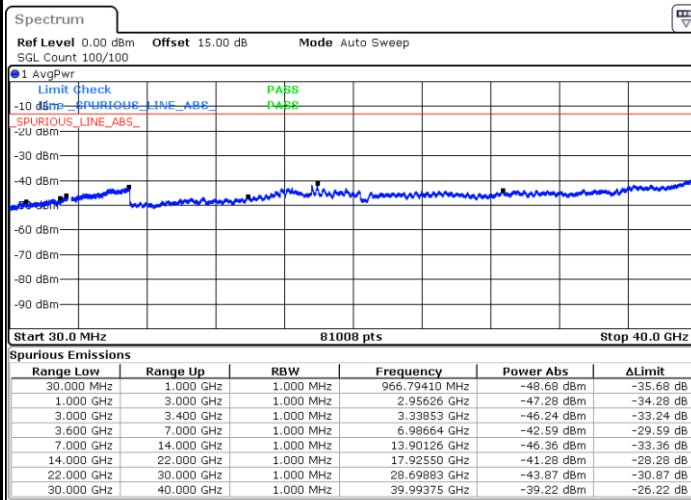
Date: 27.SEP.2021 16:01:38

Middle Channel / 1RB



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

Highest Channel / 1RB



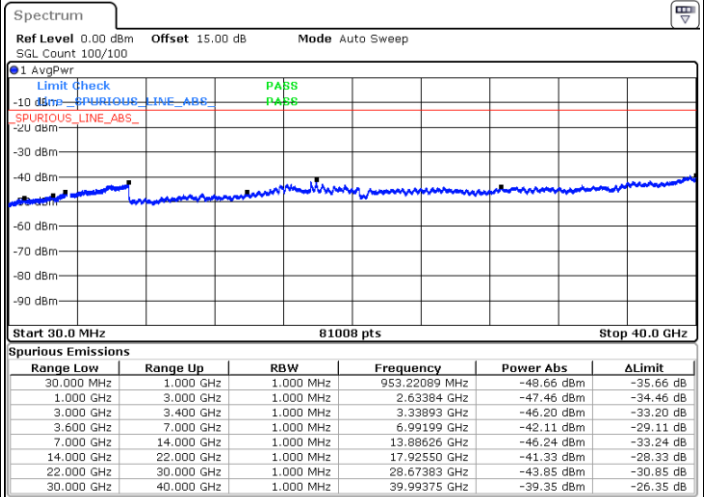
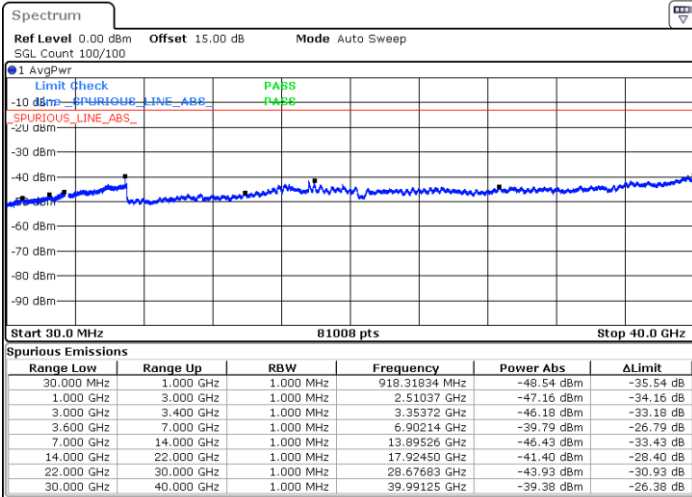
Date: 27.SEP.2021 16:13:08



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

Lowest Channel / 1RB

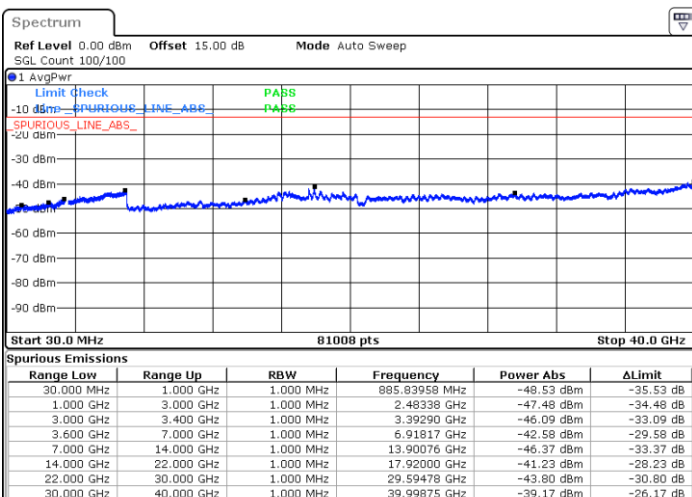
Middle Channel / 1RB



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

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

Highest Channel / 1RB



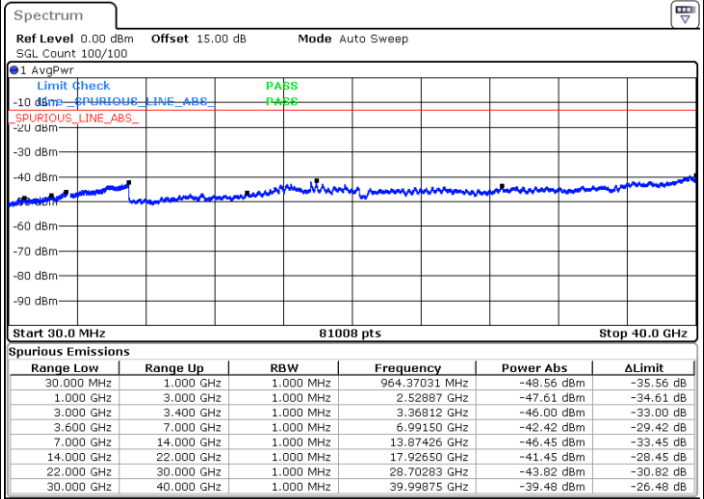
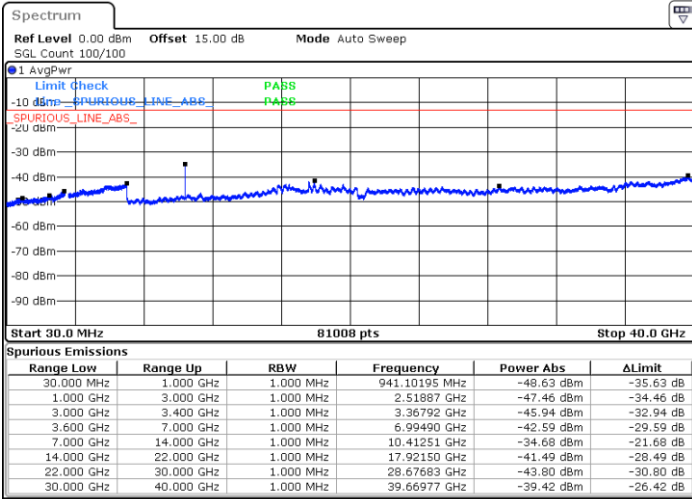
Date: 27.SEP.2021 16:14:16



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

Lowest Channel / 1RB

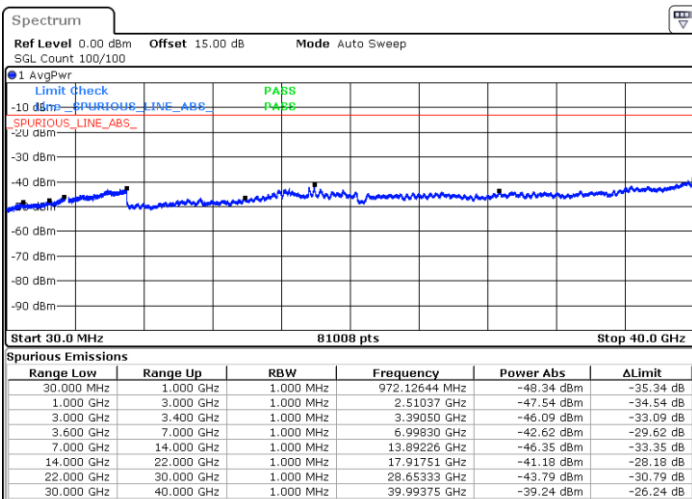
Middle Channel / 1RB



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

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

Highest Channel / 1RB



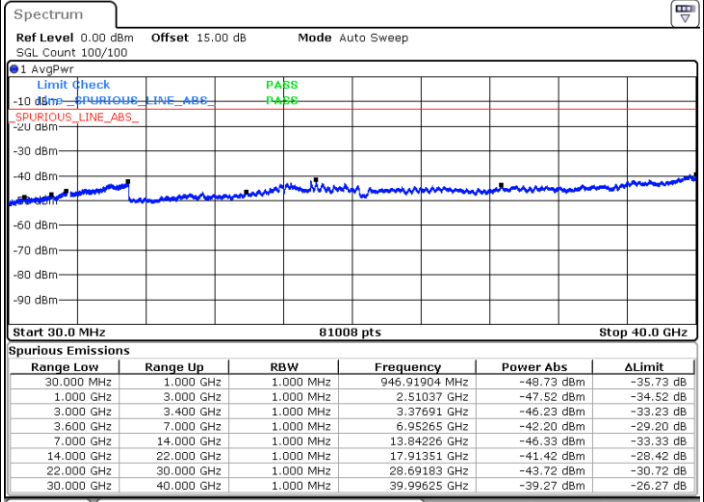
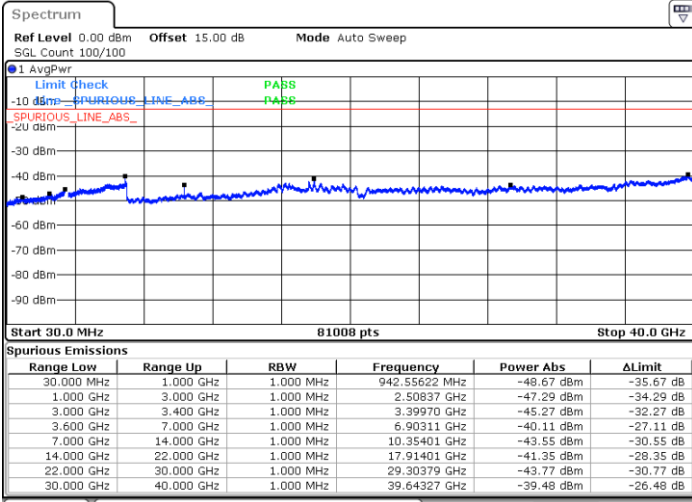
Date: 27.SEP.2021 16:23:04



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

Lowest Channel / 1RB

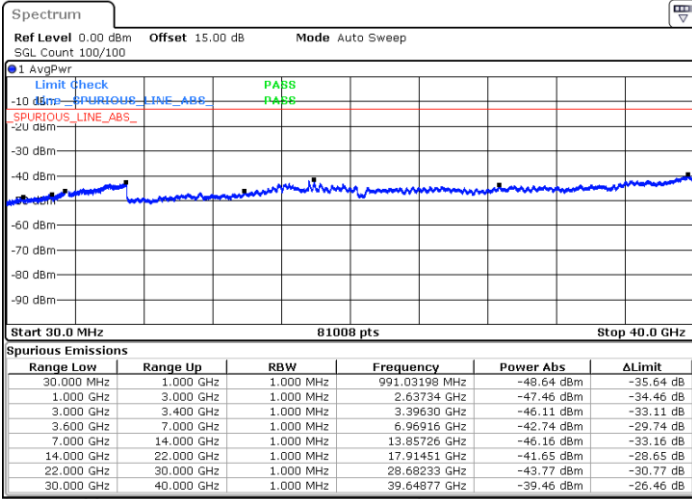
Middle Channel / 1RB



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

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

Highest Channel / 1RB

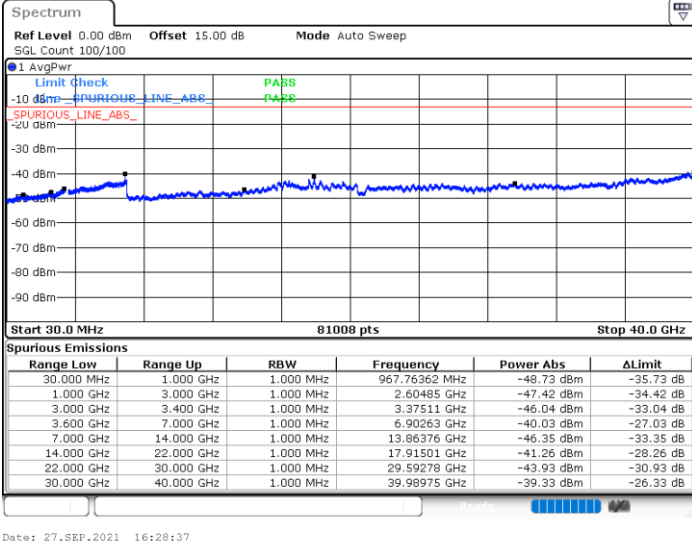


Date: 27.SEP.2021 16:24:16



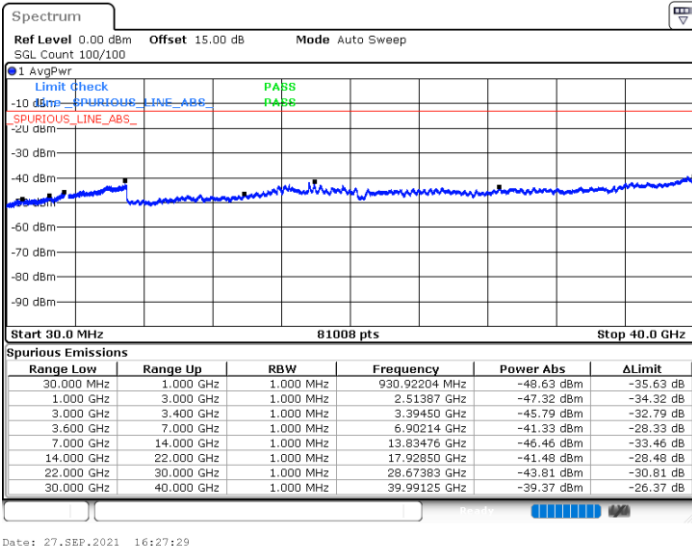
FR1 UL-MIMO n77 / 100MHz / CP-OFDM QPSK (Port 1)

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