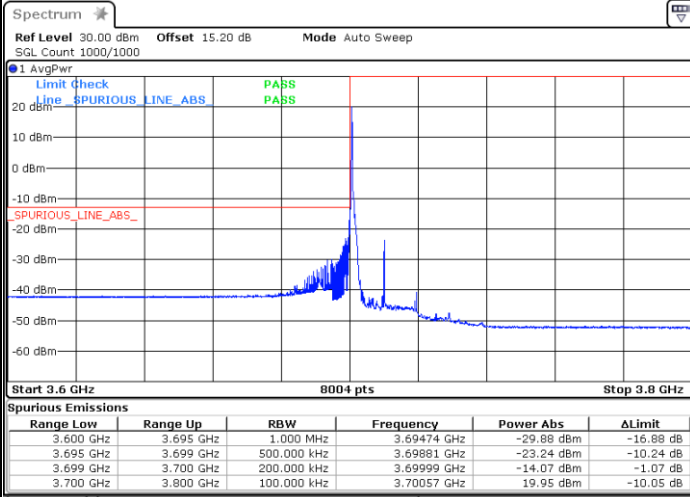




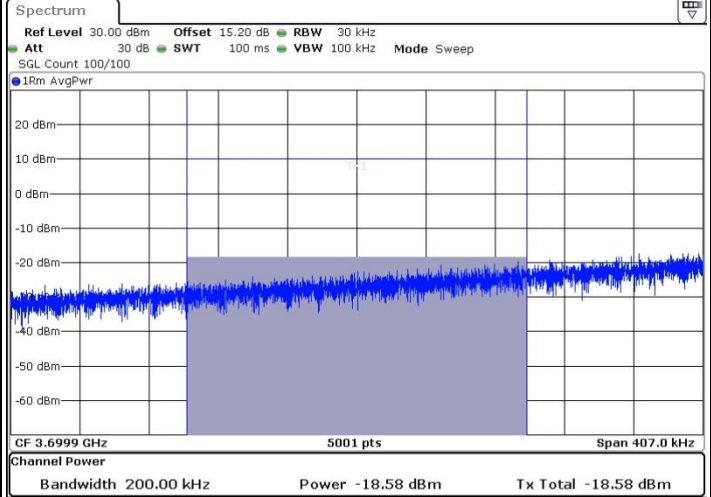
FR1 UL-MIMO n77 / 20MHz / CP-OFDM QPSK (M2)

Lowest Band Edge / 1 RB

Channel Power < -13dBm Pass



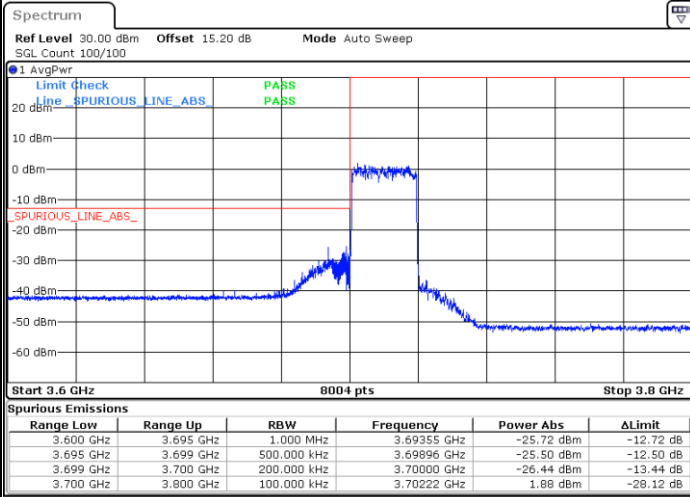
Date: 14.MAR.2021 01:55:44



Date: 14.MAR.2021 02:05:18

Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



Date: 14.MAR.2021 01:59:46

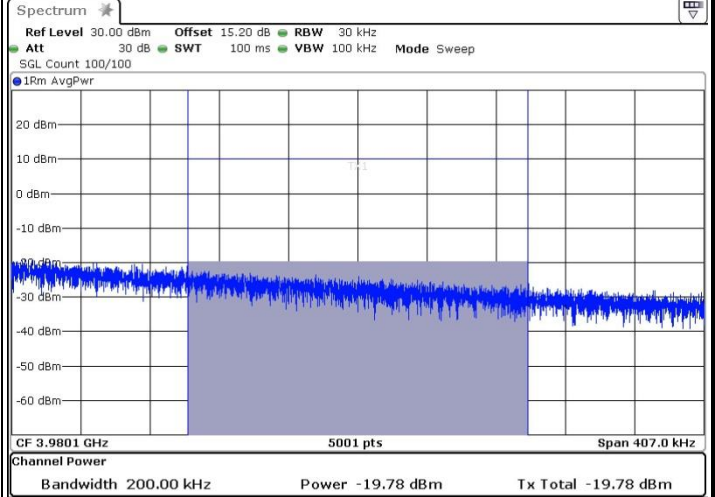
/



FR1 UL-MIMO n77 / 20MHz / CP-OFDM QPSK (M2)

Highest Band Edge / 1 RB

Channel Power < -13dBm Pass

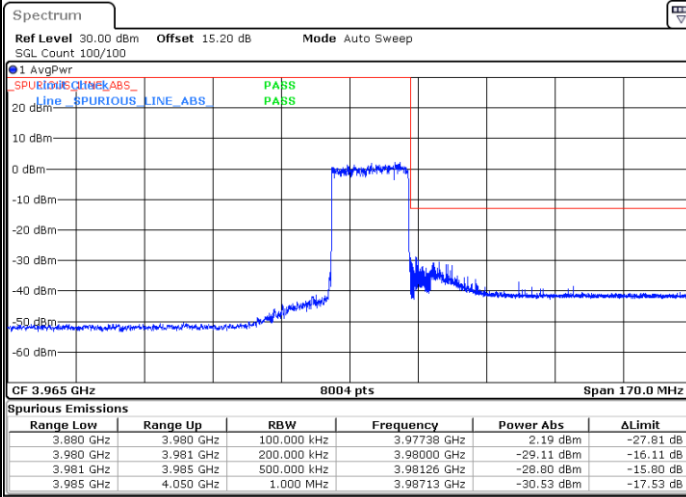


Date: 14.MAR.2021 02:10:29

Date: 14.MAR.2021 02:06:40

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



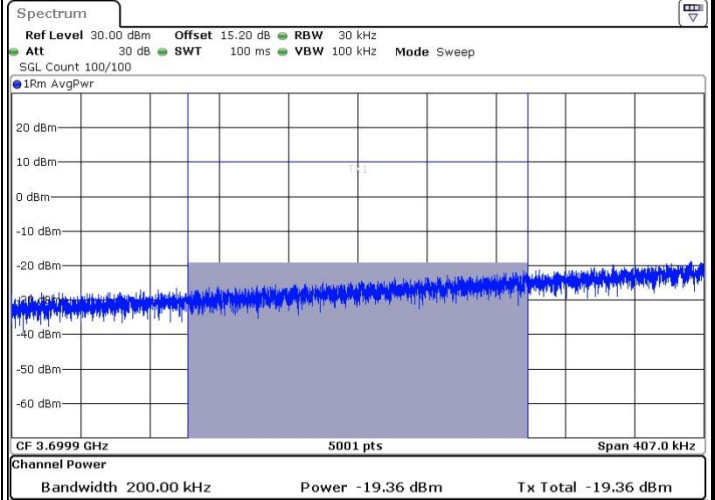
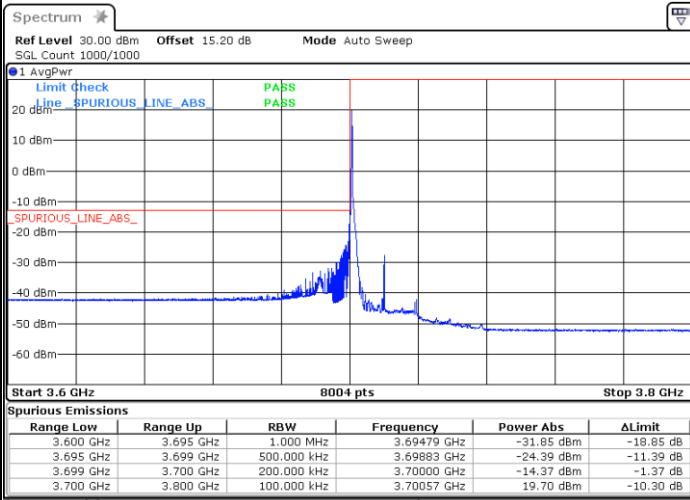
Date: 14.MAR.2021 02:00:20



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

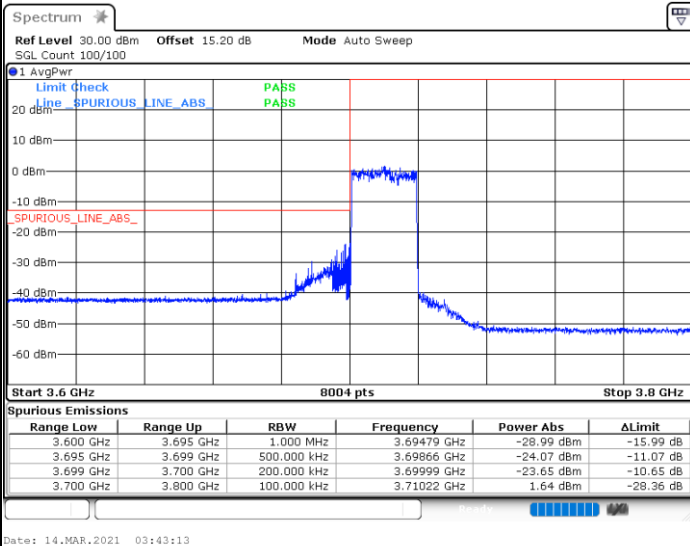
Lowest Band Edge / 1 RB

Channel Power < -13dBm Pass



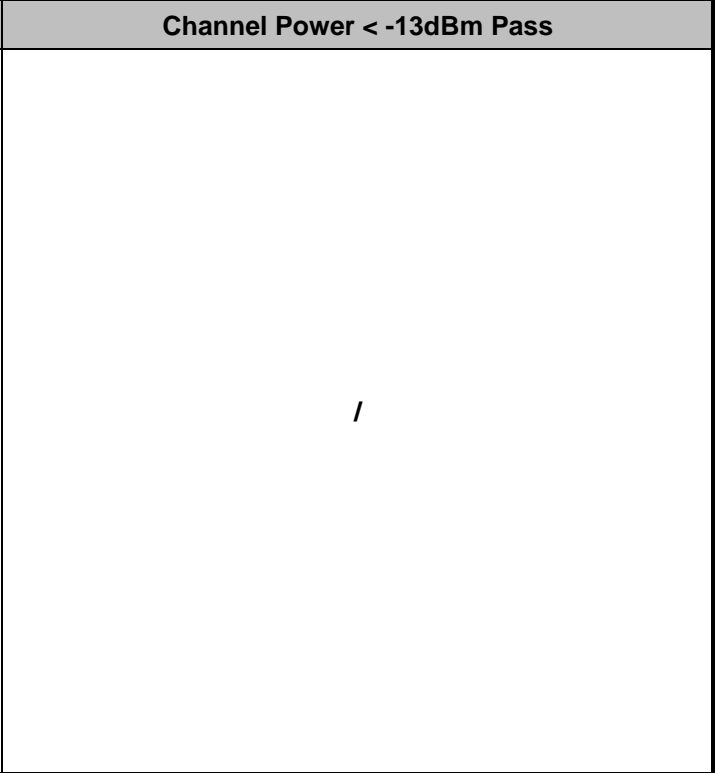
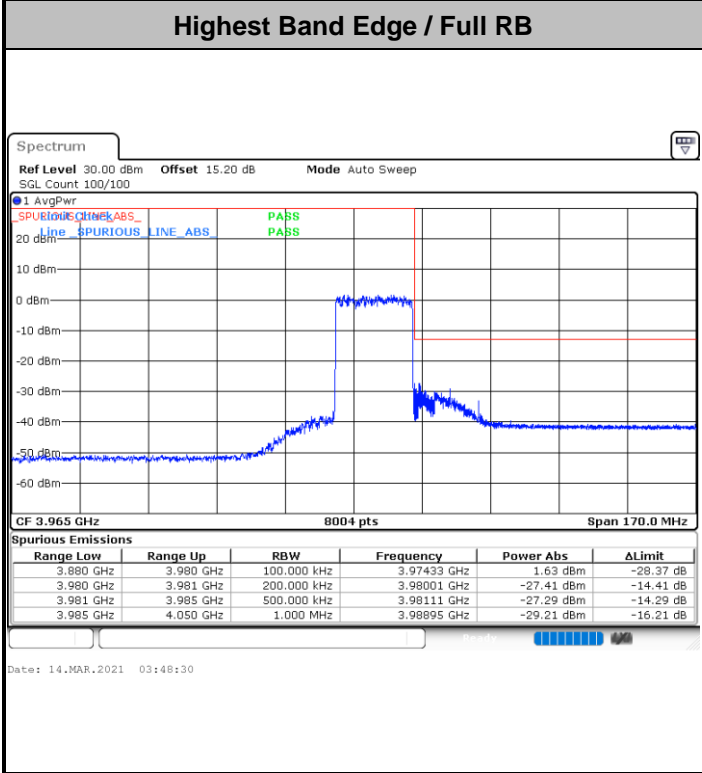
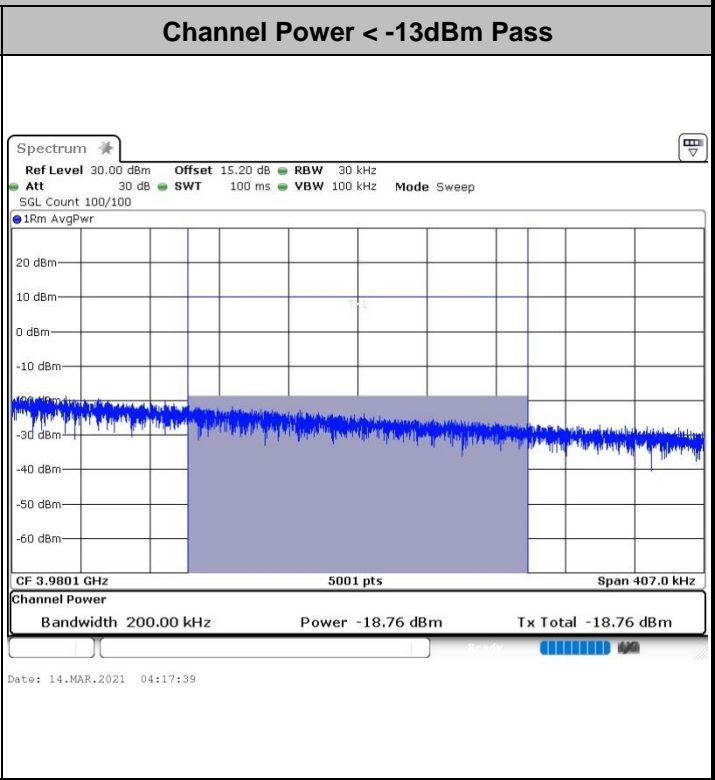
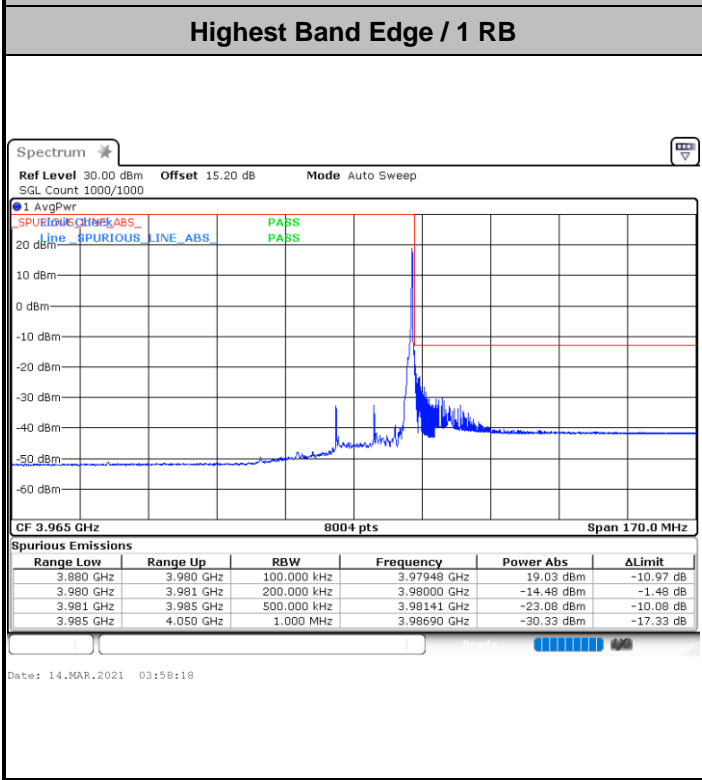
Lowest Band Edge / Full RB

Channel Power < -13dBm Pass





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



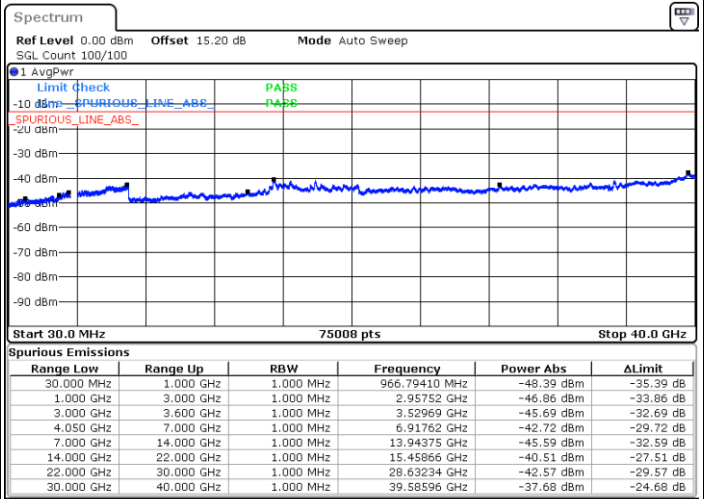
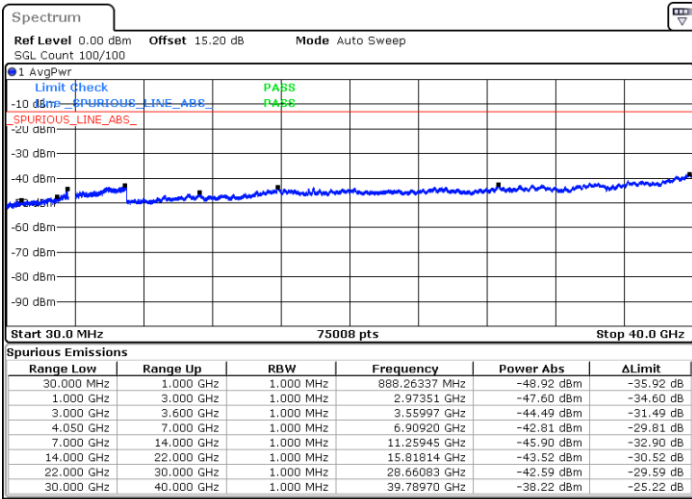


Conducted Spurious Emission

FR1 UL-MIMO n77 / 10MHz / CP-OFDM QPSK (M2)

Lowest Channel / 1RB

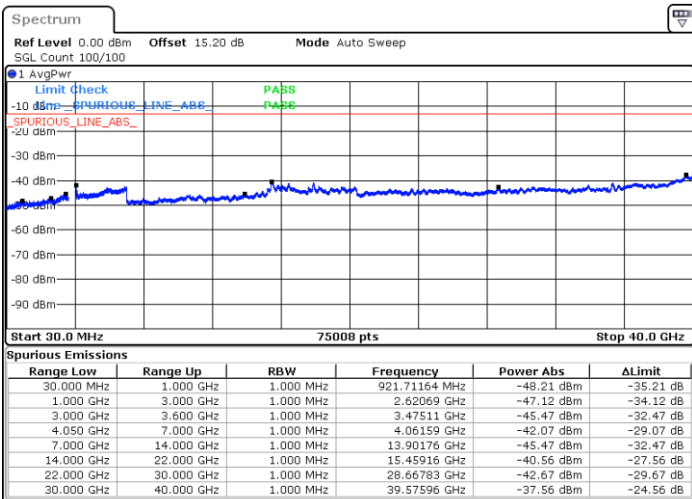
Middle Channel / 1RB



Date: 3.MAR.2021 03:18:09

Date: 13.FEB.2021 19:44:05

Highest Channel / 1RB

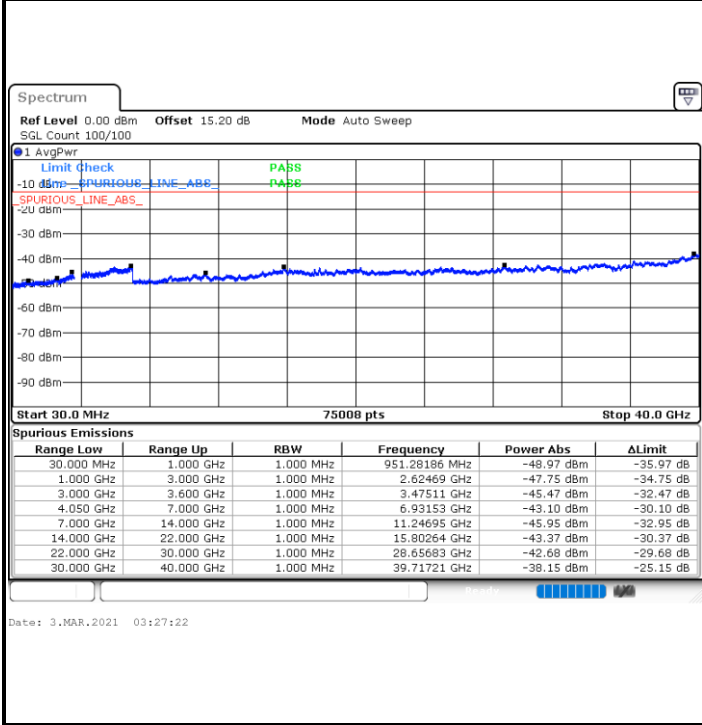


Date: 13.FEB.2021 19:50:50

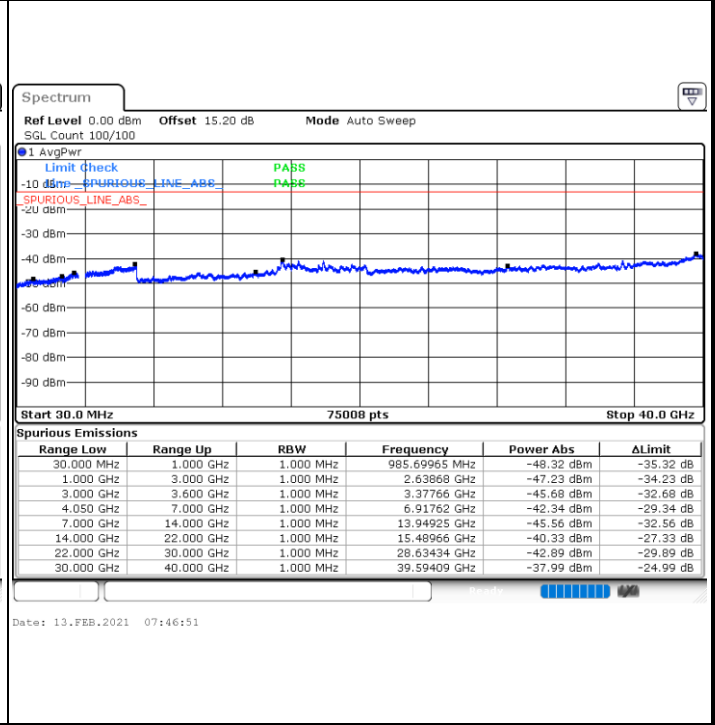


FR1 UL-MIMO n77 / 10MHz / CP-OFDM QPSK (M)

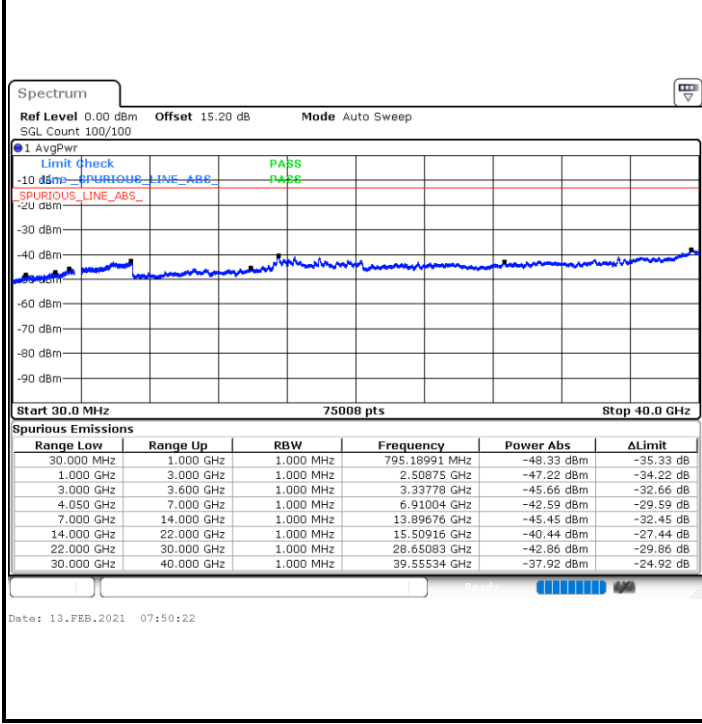
Lowest Channel / 1RB



Middle Channel / 1RB



Highest Channel / 1RB

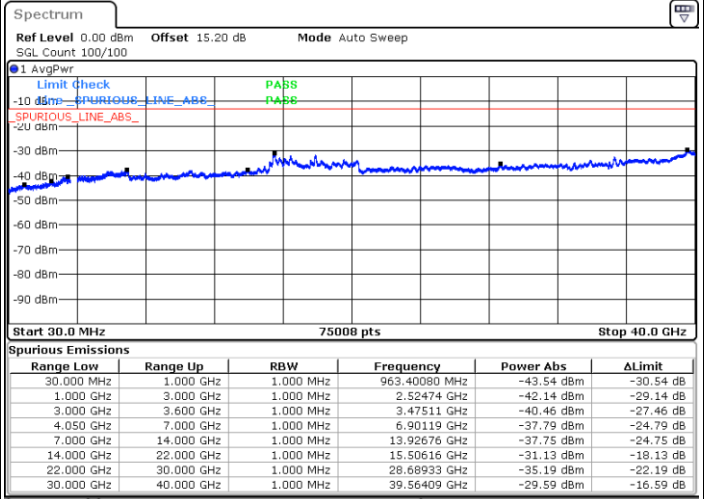
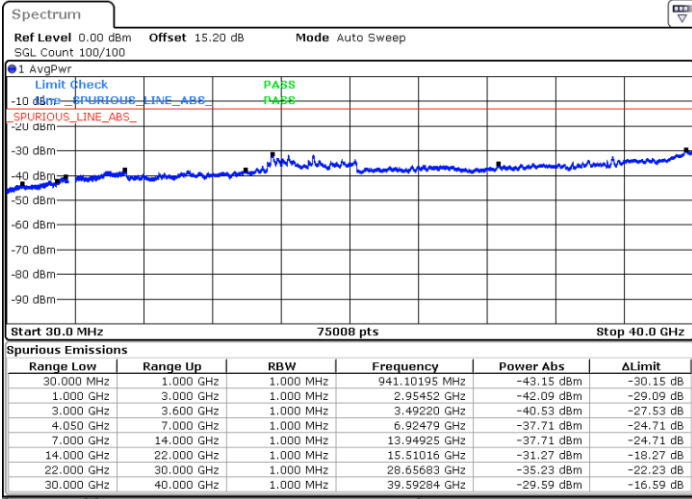




FR1 UL-MIMO n77 / 15MHz / CP-OFDM QPSK (M2)

Lowest Channel / 1RB

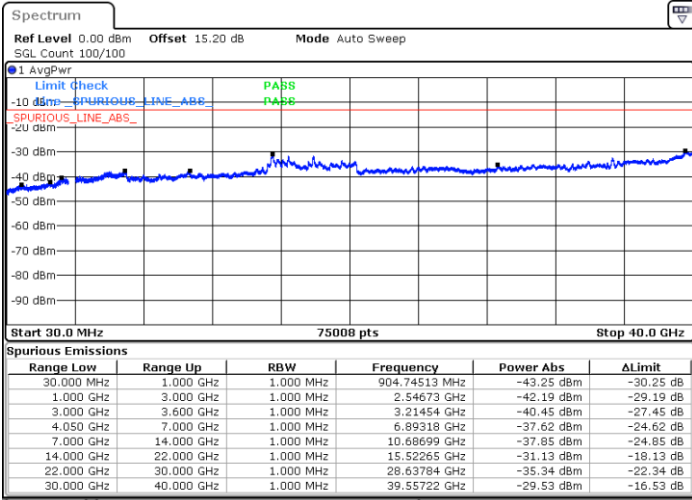
Middle Channel / 1RB



Date: 13.FEB.2021 19:15:24

Date: 13.FEB.2021 19:26:40

Highest Channel / 1RB



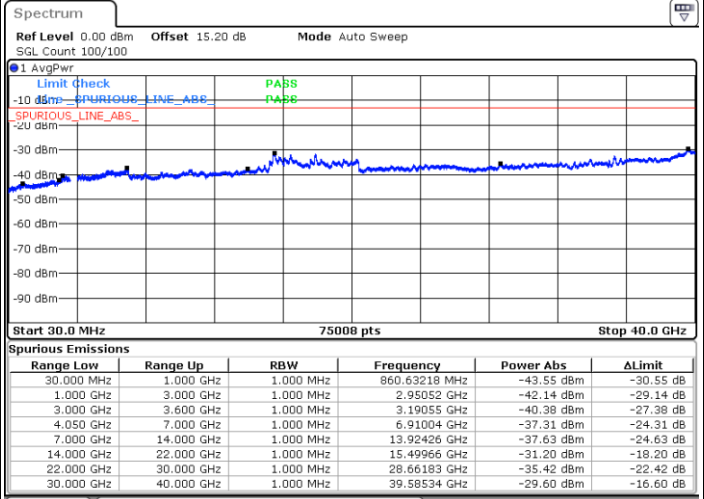
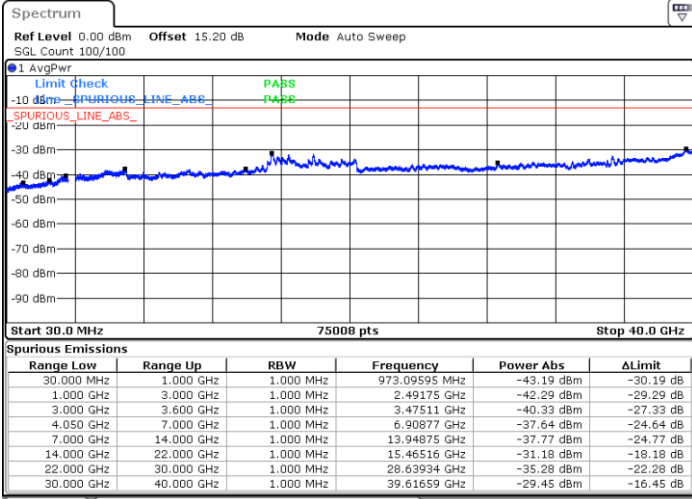
Date: 13.FEB.2021 19:30:45



FR1 UL-MIMO n77 / 15MHz / CP-OFDM QPSK (M)

Lowest Channel / 1RB

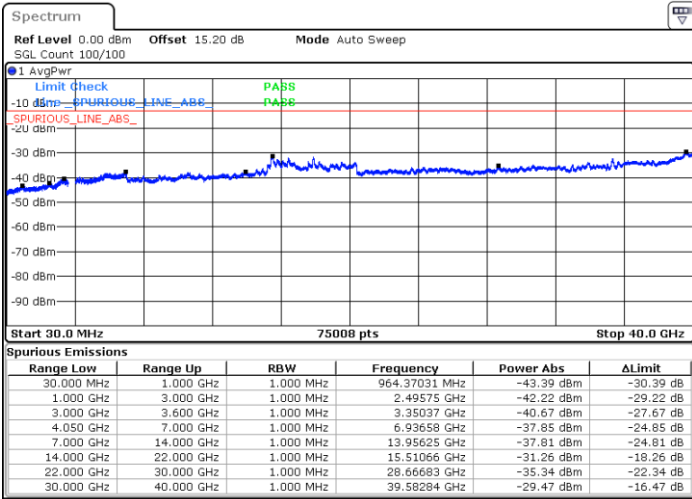
Middle Channel / 1RB



Date: 13.FEB.2021 06:01:19

Date: 13.FEB.2021 06:03:38

Highest Channel / 1RB



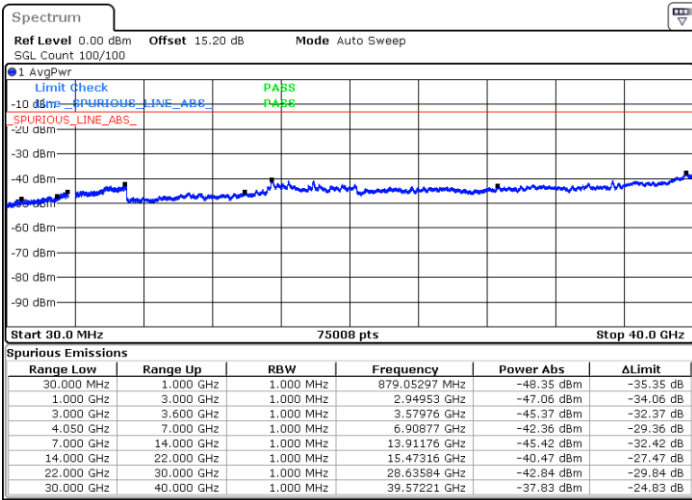
Date: 13.FEB.2021 06:15:40



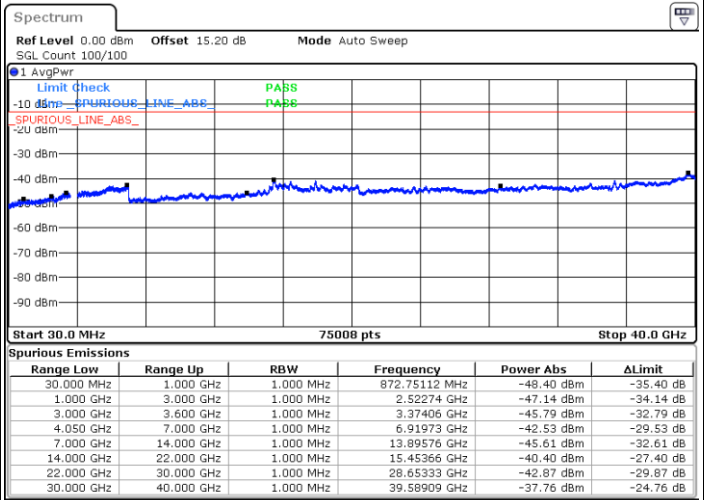
FR1 UL-MIMO n77 / 20MHz / CP-OFDM QPSK (M2)

Lowest Channel / 1RB

Middle Channel / 1RB

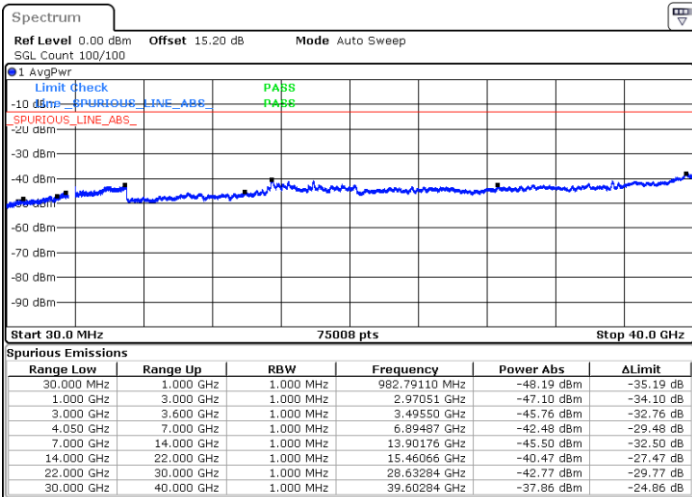


Date: 13.FEB.2021 18:01:51



Date: 13.FEB.2021 17:50:00

Highest Channel / 1RB



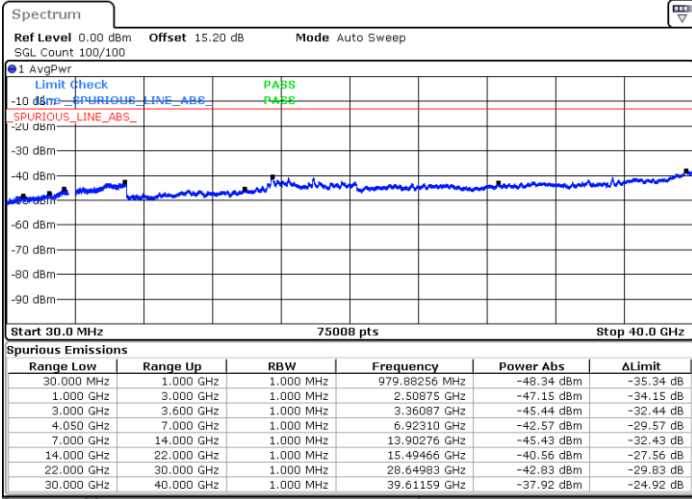
Date: 13.FEB.2021 18:12:32



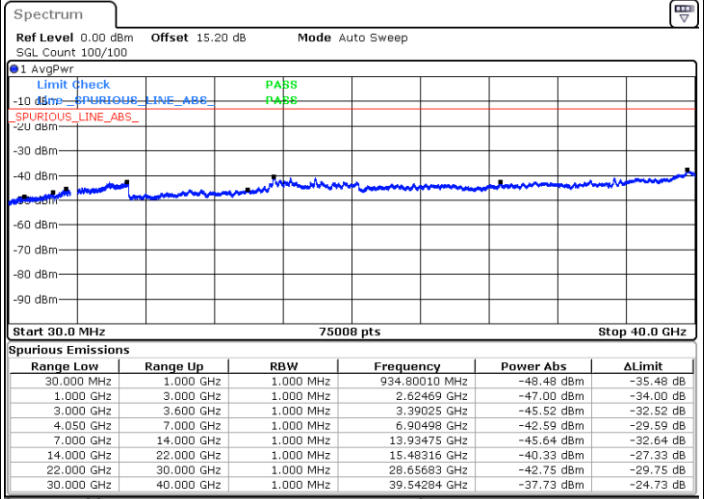
FR1 UL-MIMO n77 / 20MHz / CP-OFDM QPSK (M)

Lowest Channel / 1RB

Middle Channel / 1RB

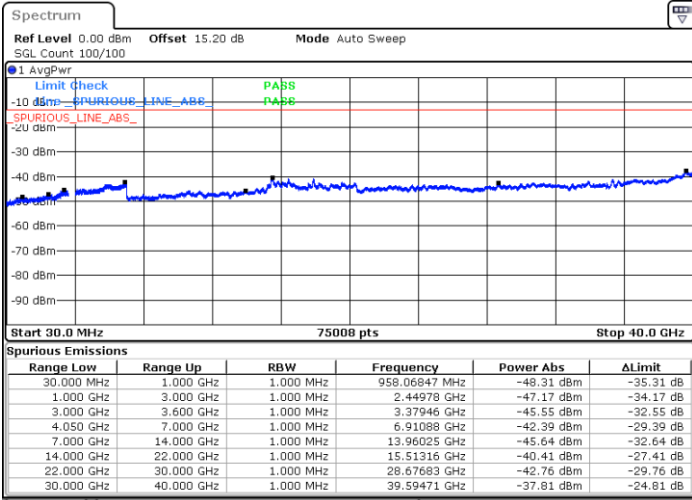


Date: 13.FEB.2021 04:51:58



Date: 13.FEB.2021 05:05:12

Highest Channel / 1RB



Date: 13.FEB.2021 05:07:16



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	0.0025	PASS
40	Normal Voltage	0.0019	
30	Normal Voltage	0.0024	
20(Ref.)	Normal Voltage	0.0015	
10	Normal Voltage	0.0019	
0	Normal Voltage	0.0023	
-10	Normal Voltage	0.0014	
-20	Normal Voltage	0.0017	
-30	Normal Voltage	0.0012	
20	Maximum Voltage	0.0025	
20	Normal Voltage	0.0026	
20	Battery End Point	0.0013	

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.



5G NR n77 UL_MIMO HPUE -SCS 30K

Peak-to-Average Ratio

Mode	FR1 UL-MIMO n77 / 10MHz / CP-OFDM (M2)				
Mod.	QPSK	QPSK			Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	7.65	8.35			PASS
Middle CH	7.45	8.38			
Highest CH	7.13	8.32			

Mode	FR1 UL-MIMO n77 / 10MHz / CP-OFDM (M)				
Mod.	QPSK	QPSK			Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	8.29	8.58			PASS
Middle CH	7.39	8.61			
Highest CH	7.86	8.17			



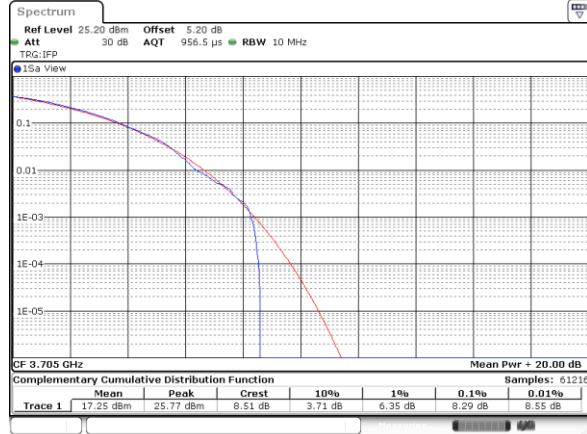
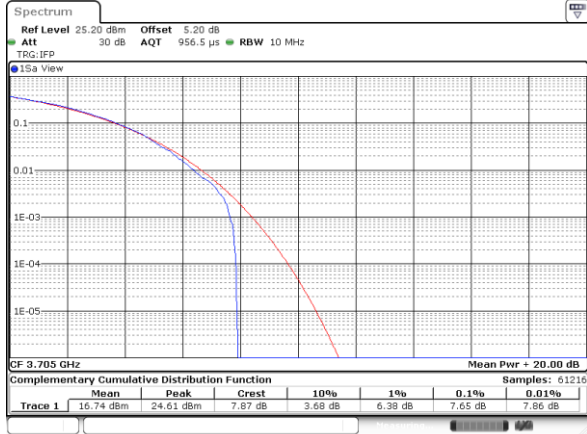
FR1 UL-MIMO n77 / 10MHz / CP-OFDM

QPSK(M2)

QPSK(M)

Lowest Channel / 1RB

Lowest Channel / 1RB

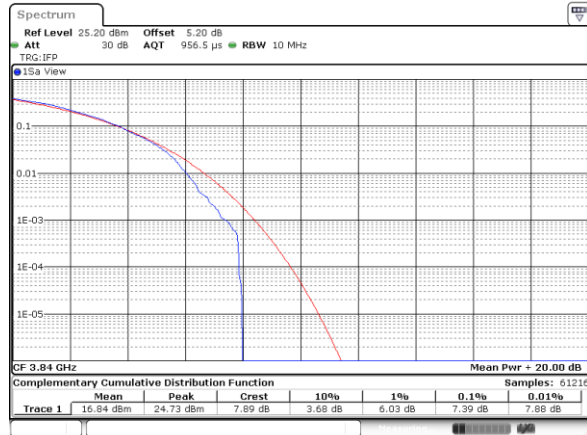
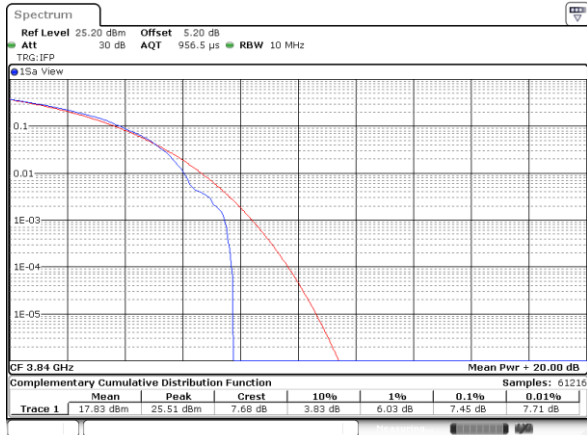


Date: 13.FEB.2021 16:38:56

Date: 13.FEB.2021 12:13:28

Middle Channel / 1 RB

Middle Channel / 1 RB

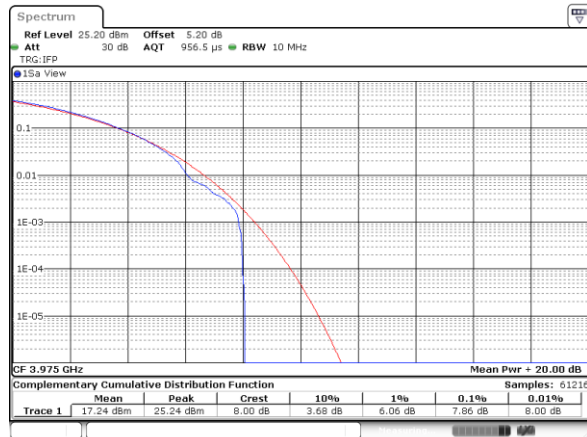
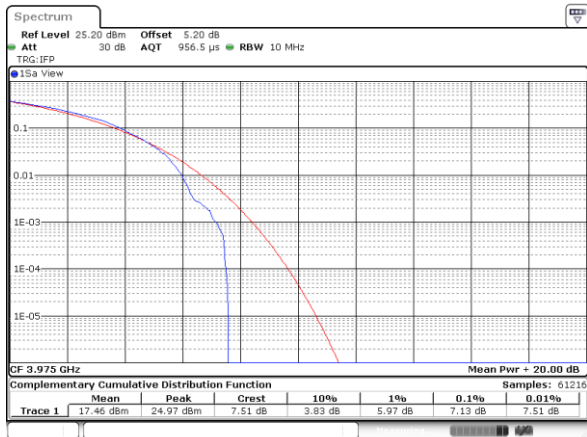


Date: 13.FEB.2021 16:25:58

Date: 13.FEB.2021 12:07:29

Highest Channel / 1 RB

Highest Channel / 1 RB



Date: 13.FEB.2021 17:14:41

Date: 13.FEB.2021 12:48:04



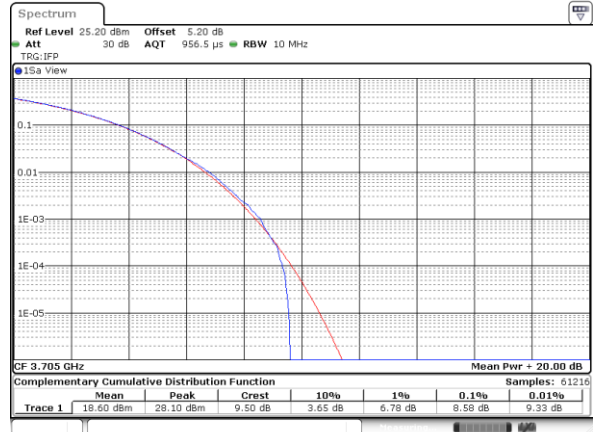
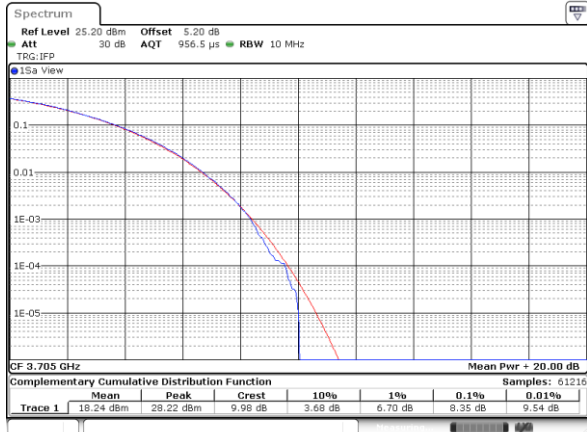
FR1 UL-MIMO n77 / 10MHz / CP-OFDM

QPSK(M2)

QPSK(M)

Lowest Channel / Full RB

Lowest Channel / Full RB

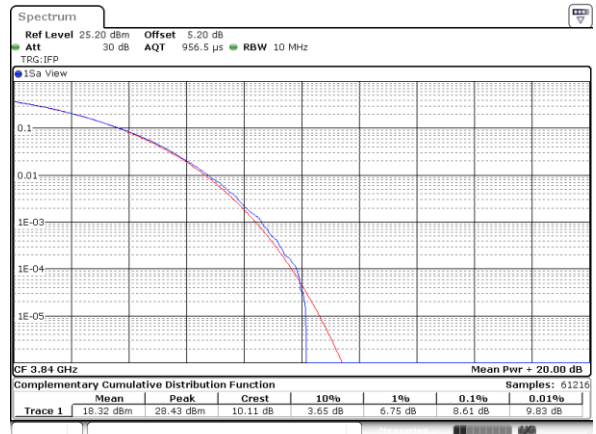
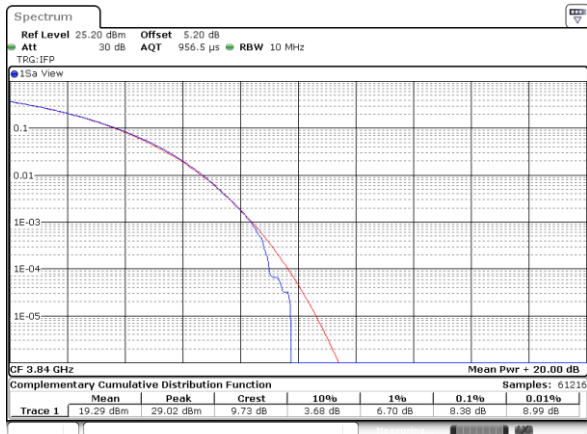


Date: 13.FEB.2021 16:46:17

Date: 13.FEB.2021 12:43:14

Middle Channel / Full RB

Middle Channel / Full RB

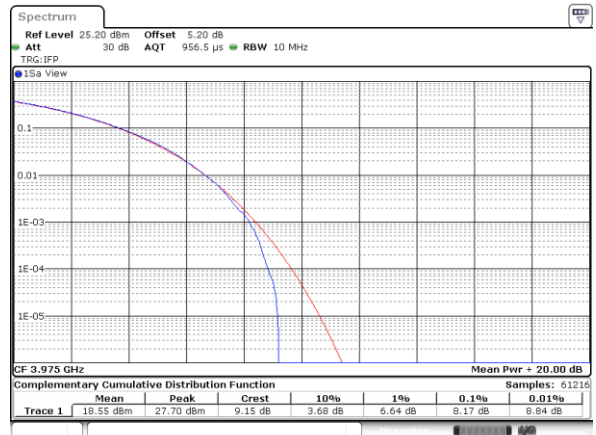
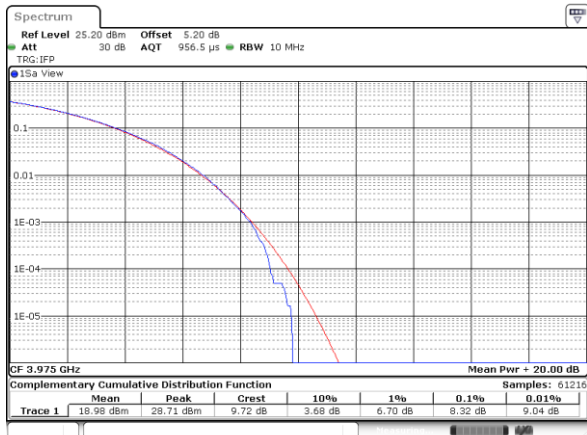


Date: 13.FEB.2021 16:23:25

Date: 13.FEB.2021 12:05:28

Highest Channel / Full RB

Highest Channel / Full RB



Date: 13.FEB.2021 17:07:55

Date: 13.FEB.2021 12:46:17



26dB Bandwidth

Mode	FR1 UL-MIMO n77 : 26dB BW(MHz) / CP-OFDM							
	M2				M			
BW	10MHz	10MHz	10MHz	10MHz	10MHz	10MHz	10MHz	10MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	9.23	9.11	9.15	9.15	9.33	9.07	9.11	9.29

Mode	FR1 UL-MIMO n77 : 26dB BW(MHz) / CP-OFDM							
	M2				M			
BW	15MHz	15MHz	15MHz	15MHz	15MHz	15MHz	15MHz	15MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	14.33	14.30	14.27	14.39	14.42	14.75	14.57	14.54

Mode	FR1 UL-MIMO n77 : 26dB BW(MHz) / CP-OFDM							
	M2				M			
BW	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	18.98	18.94	19.26	19.02	19.30	18.98	19.10	19.02

Mode	FR1 UL-MIMO n77 : 26dB BW(MHz) / CP-OFDM							
	M2				M			
BW	40MHz	40MHz	40MHz	40MHz	40MHz	40MHz	40MHz	40MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	40.28	40.28	40.12	40.2	40.2	40.12	40.36	40.36

Mode	FR1 UL-MIMO n77 : 26dB BW(MHz) / CP-OFDM							
	M2				M			
BW	50MHz	50MHz	50MHz	50MHz	50MHz	50MHz	50MHz	50MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	49.65	49.75	50.15	49.75	49.65	49.75	49.65	49.75

Mode	FR1 UL-MIMO n77 : 26dB BW(MHz) / CP-OFDM							
	M2				M			
BW	60MHz	60MHz	60MHz	60MHz	60MHz	60MHz	60MHz	60MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	60.42	60.42	60.3	60.54	60.42	60.54	60.3	60.42



Mode	FR1 UL-MIMO n77 : 26dB BW(MHz) / CP-OFDM							
	M2				M			
BW	80MHz	80MHz	80MHz	80MHz	80MHz	80MHz	80MHz	80MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	79.92	79.92	80.08	79.92	80.08	80.08	79.92	79.76

Mode	FR1 UL-MIMO n77 : 26dB BW(MHz) / CP-OFDM							
	M2				M			
BW	100MHz	100MHz	100MHz	100MHz	100MHz	100MHz	100MHz	100MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	100.3	100.5	100.1	100.3	100.3	100.3	100.1	100.3



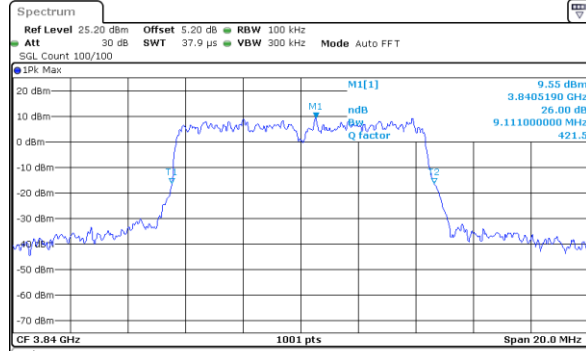
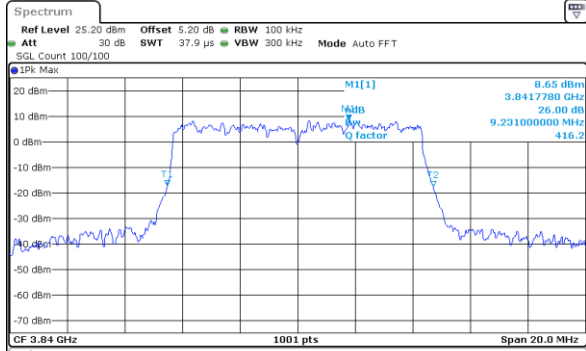
FR1 UL-MIMO n77 / 10MHz / CP-OFDM (M2)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 13.FEB.2021 16:21:57

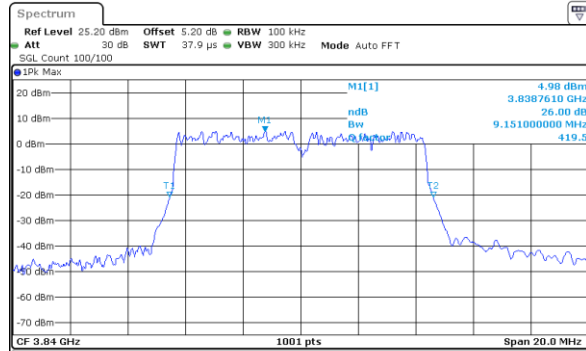
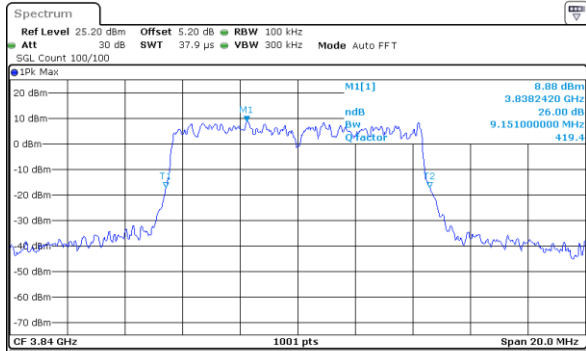
Date: 13.FEB.2021 16:22:17

64QAM

256QAM

Middle Channel

Middle Channel



Date: 13.FEB.2021 16:23:58

Date: 13.FEB.2021 16:25:24



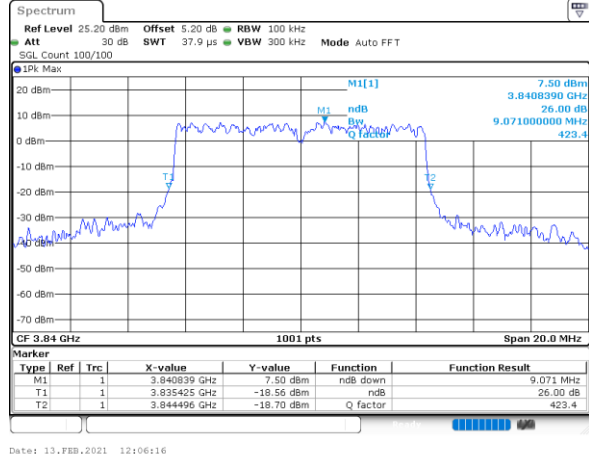
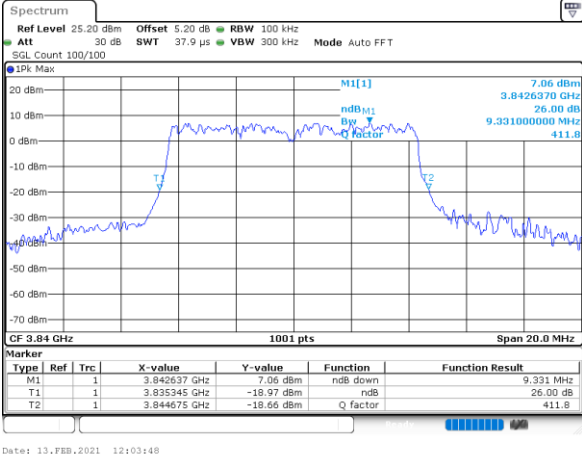
FR1 UL-MIMO n77 / 10MHz / CP-OFDM (M)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 13.FEB.2021 12:10:48

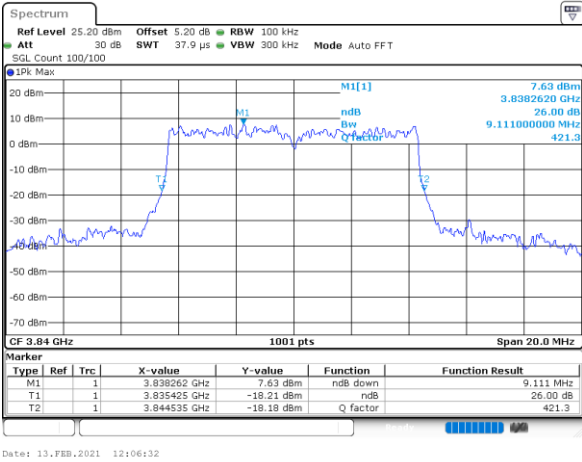
Date: 13.FEB.2021 12:10:16

64QAM

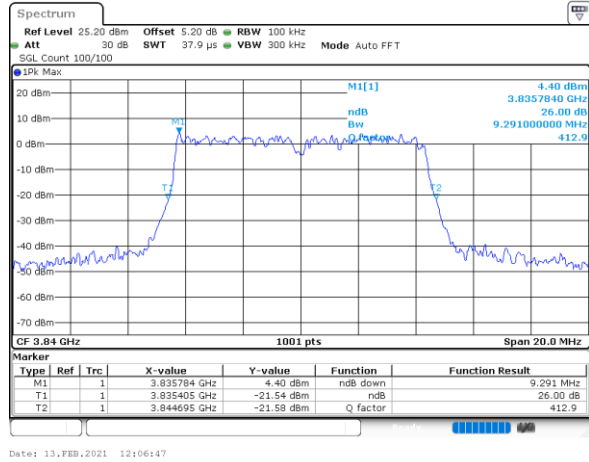
256QAM

Middle Channel

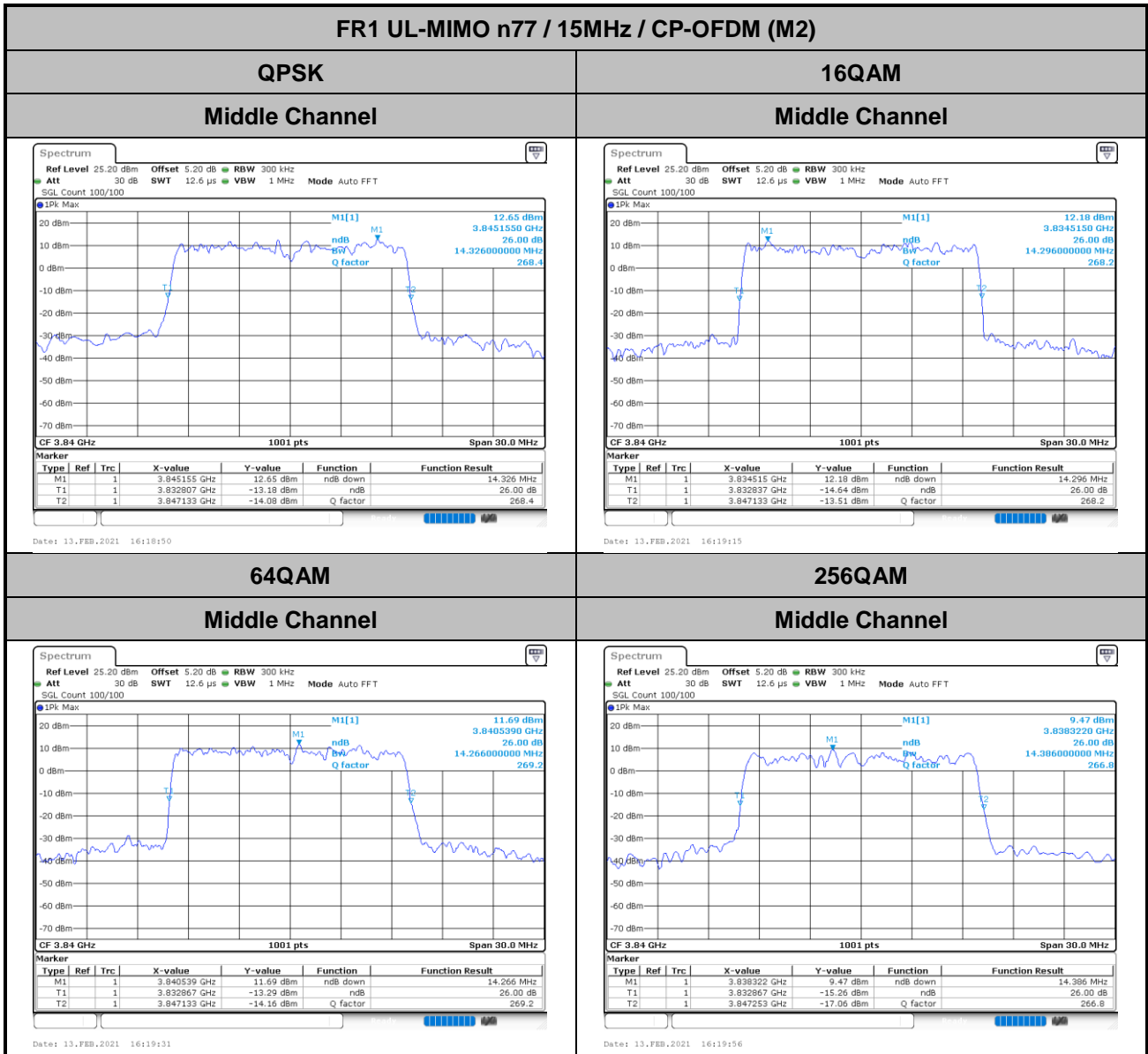
Middle Channel



Date: 13.FEB.2021 12:10:52



Date: 13.FEB.2021 12:10:47





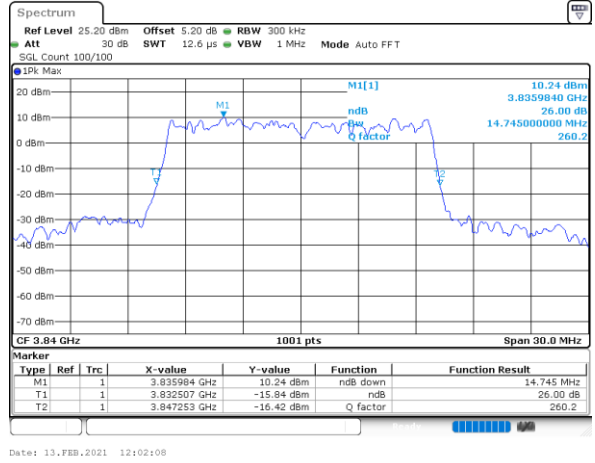
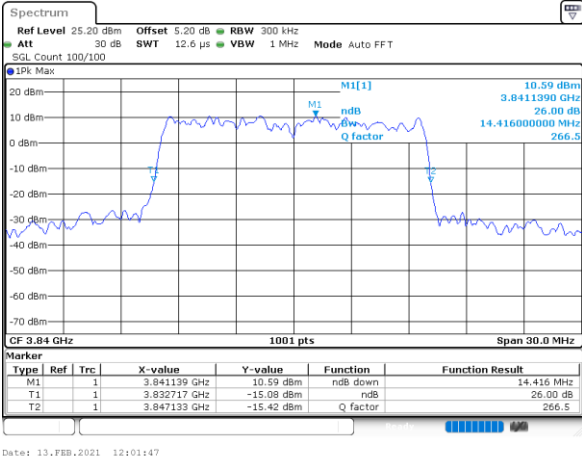
FR1 UL-MIMO n77 / 15MHz / CP-OFDM (M)

QPSK

16QAM

Middle Channel

Middle Channel

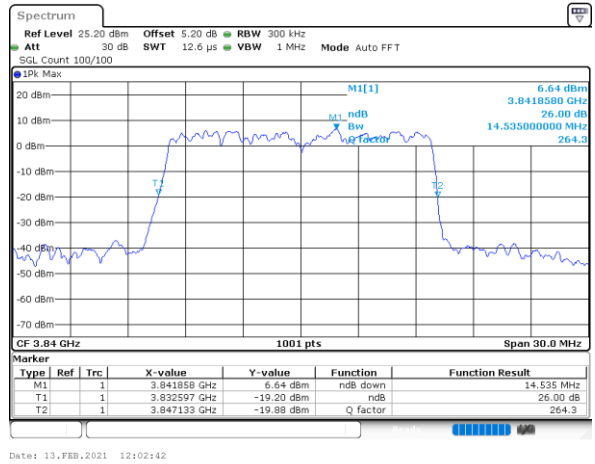
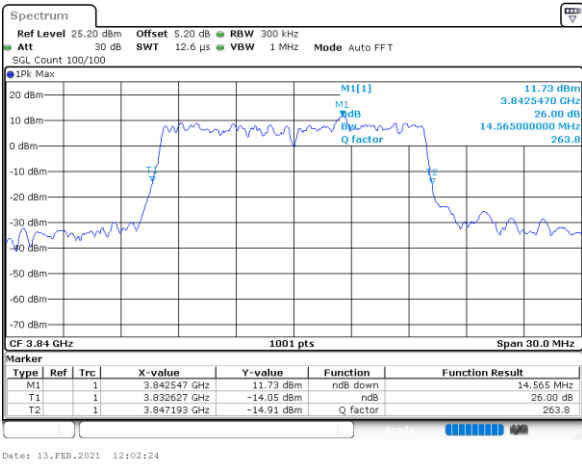


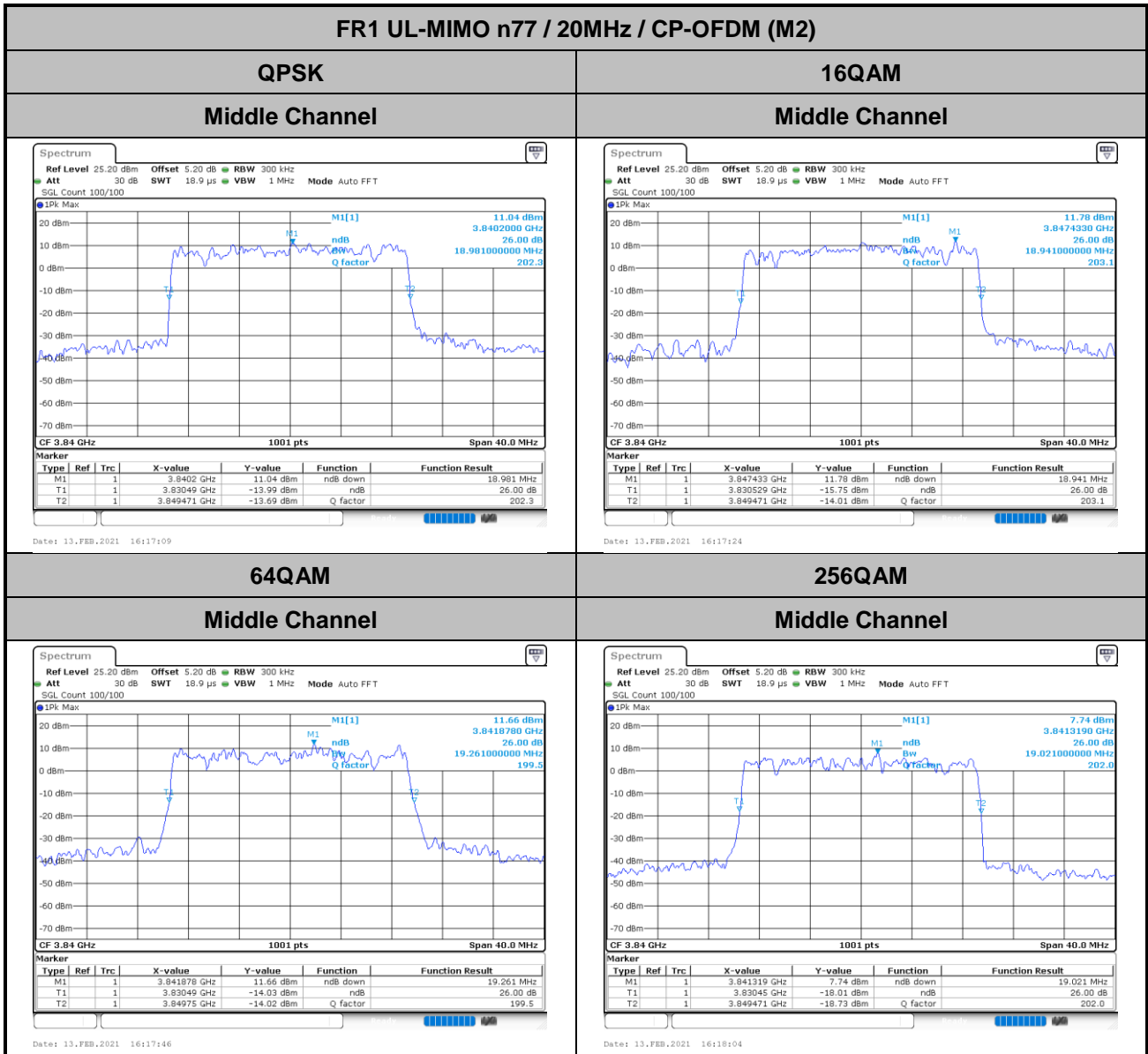
64QAM

256QAM

Middle Channel

Middle Channel







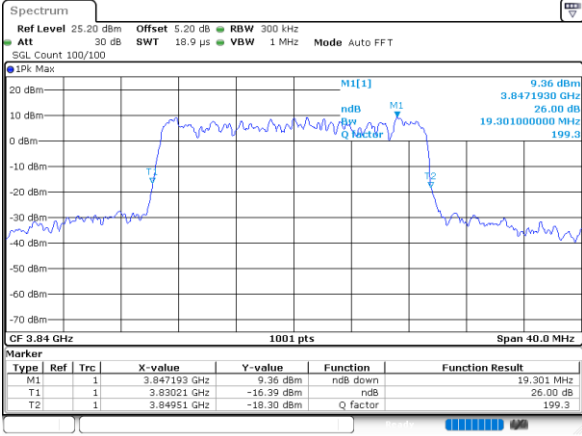
FR1 UL-MIMO n77 / 20MHz / CP-OFDM (M)

QPSK

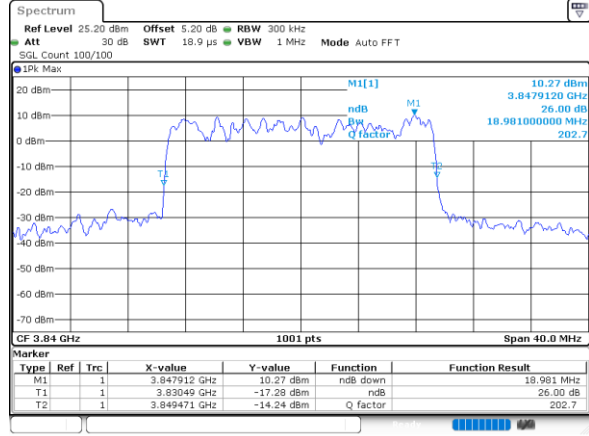
16QAM

Middle Channel

Middle Channel



Date: 13.FEB.2021 12:00:00



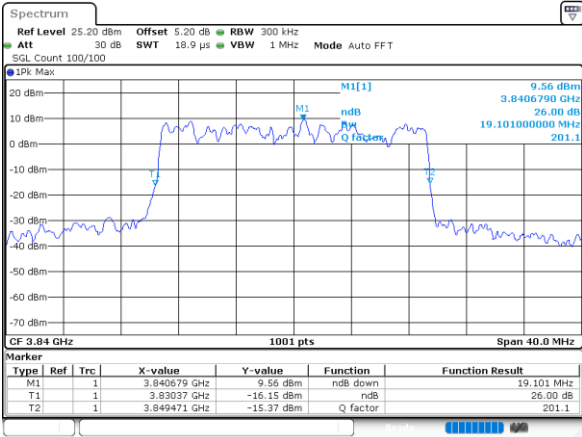
Date: 13.FEB.2021 12:00:58

64QAM

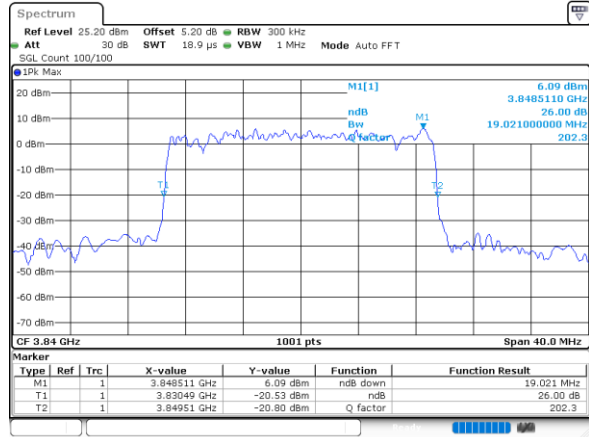
256QAM

Middle Channel

Middle Channel



Date: 13.FEB.2021 12:00:30



Date: 13.FEB.2021 12:00:46



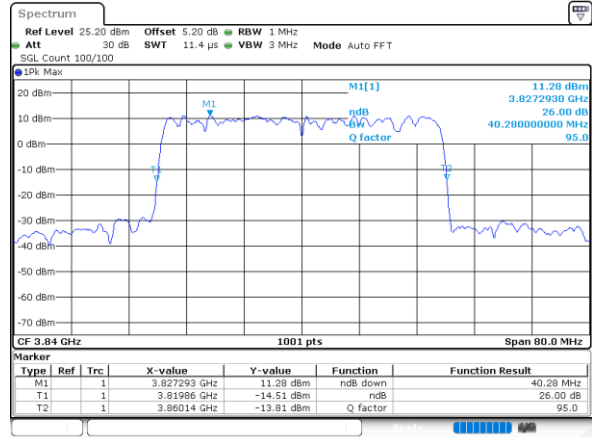
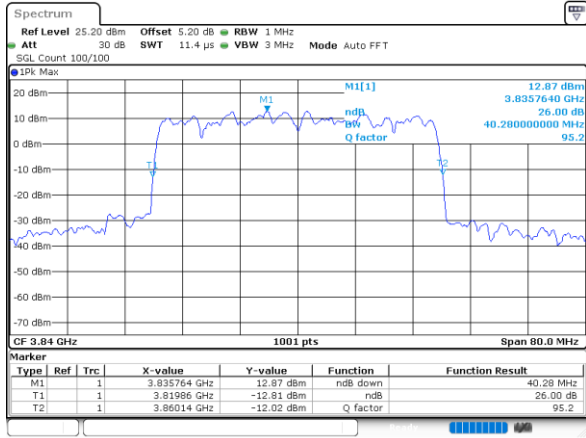
FR1 UL-MIMO n77 / 40MHz / CP-OFDM (M2)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 13.FEB.2021 16:15:46

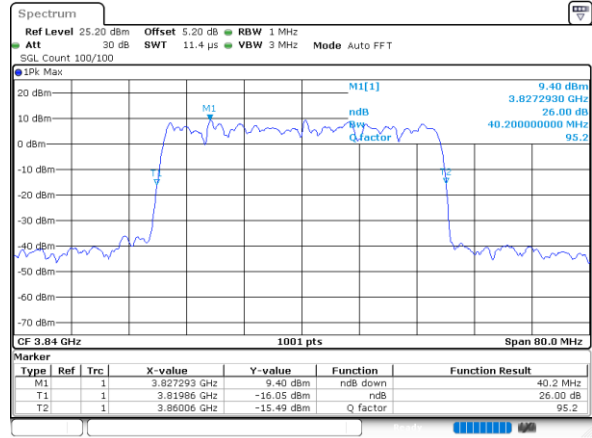
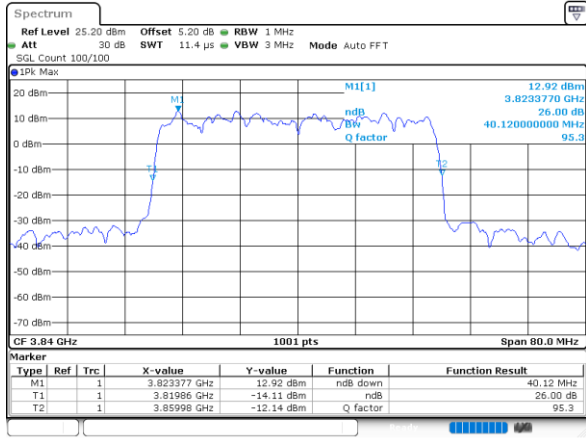
Date: 13.FEB.2021 16:15:33

64QAM

256QAM

Middle Channel

Middle Channel



Date: 13.FEB.2021 16:16:03

Date: 13.FEB.2021 16:16:29



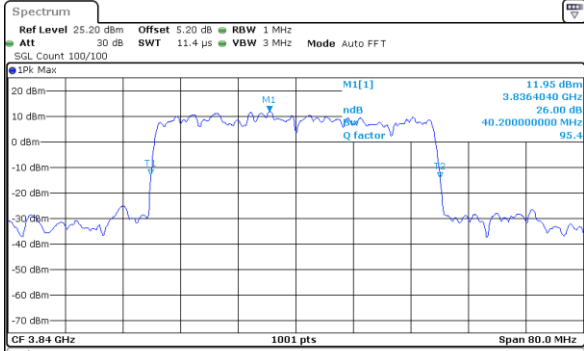
FR1 UL-MIMO n77 / 40MHz / CP-OFDM (M)

QPSK

16QAM

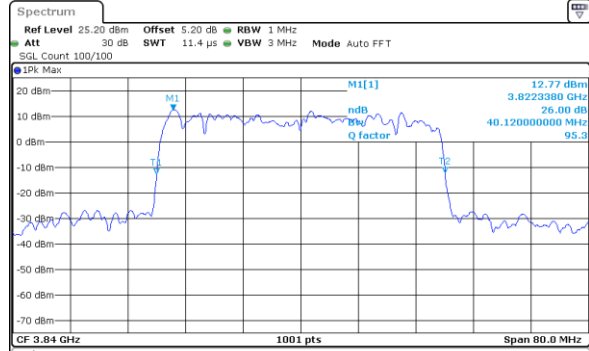
Middle Channel

Middle Channel



Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1		3.836404 GHz	11.95 dBm	ndB down	40.2 MHz
T1	1		3.81986 GHz	-12.82 dBm	ndB	26.00 dB
T2	1		3.86006 GHz	-13.89 dBm	Q factor	95.4

Date: 13.FEB.2021 11:58:05



Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1		3.8223380 GHz	12.77 dBm	ndB down	40.12 MHz
T1	1		3.81984 GHz	-12.49 dBm	ndB	26.00 dB
T2	1		3.86006 GHz	-11.83 dBm	Q factor	95.3

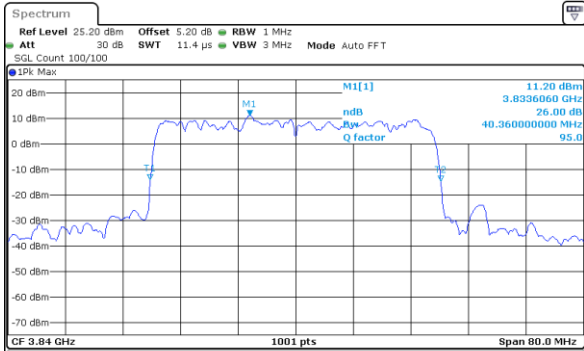
Date: 13.FEB.2021 11:58:23

64QAM

256QAM

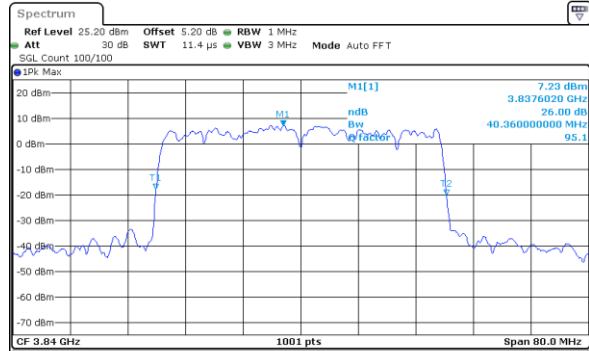
Middle Channel

Middle Channel



Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1		3.833606 GHz	11.20 dBm	ndB down	40.36 MHz
T1	1		3.81978 GHz	-13.90 dBm	ndB	26.00 dB
T2	1		3.86014 GHz	-14.49 dBm	Q factor	95.0

Date: 13.FEB.2021 11:58:36



Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1		3.8376020 GHz	7.23 dBm	ndB down	40.36 MHz
T1	1		3.81986 GHz	-17.76 dBm	ndB	26.00 dB
T2	1		3.86022 GHz	-19.91 dBm	Q factor	95.1

Date: 13.FEB.2021 11:58:49



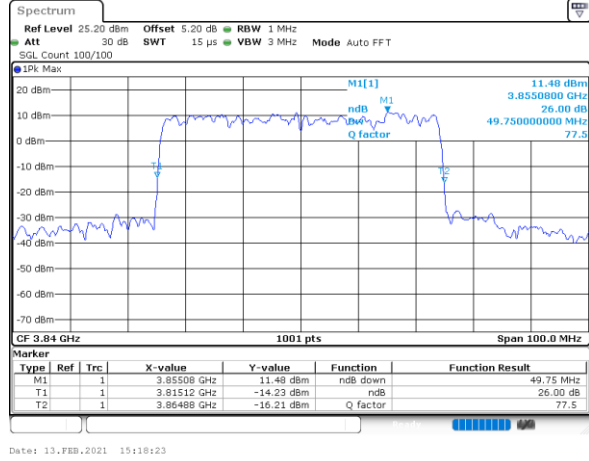
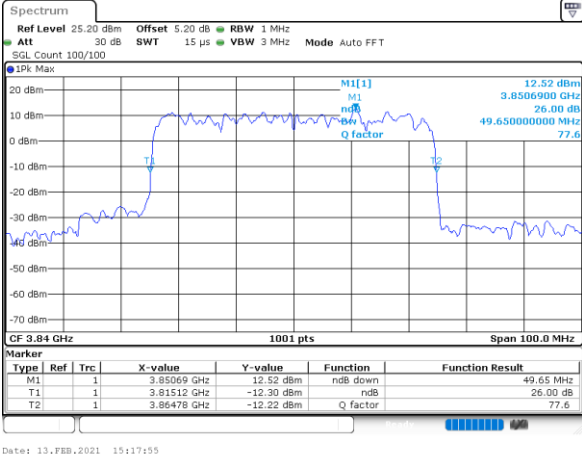
FR1 UL-MIMO n77 / 50MHz / CP-OFDM (M2)

QPSK

16QAM

Middle Channel

Middle Channel

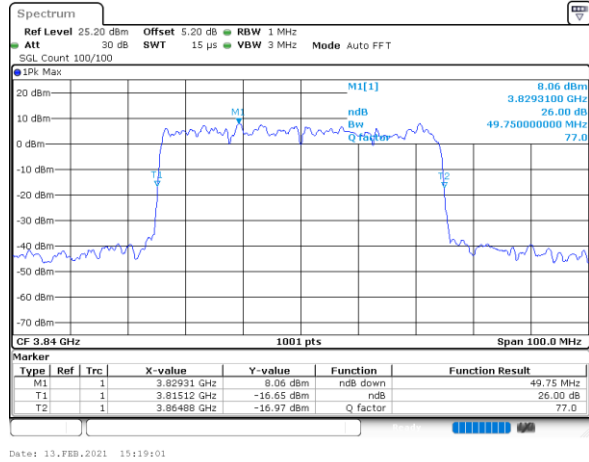
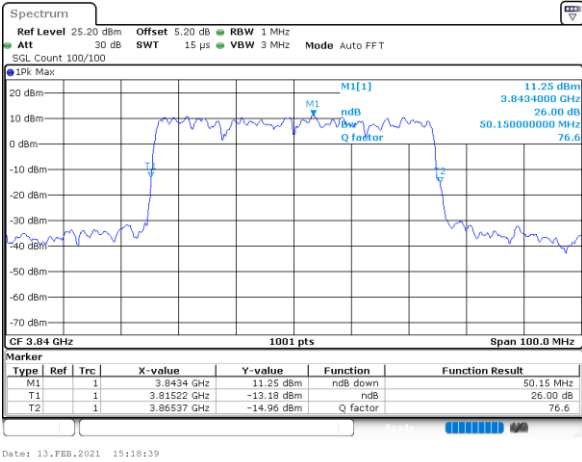


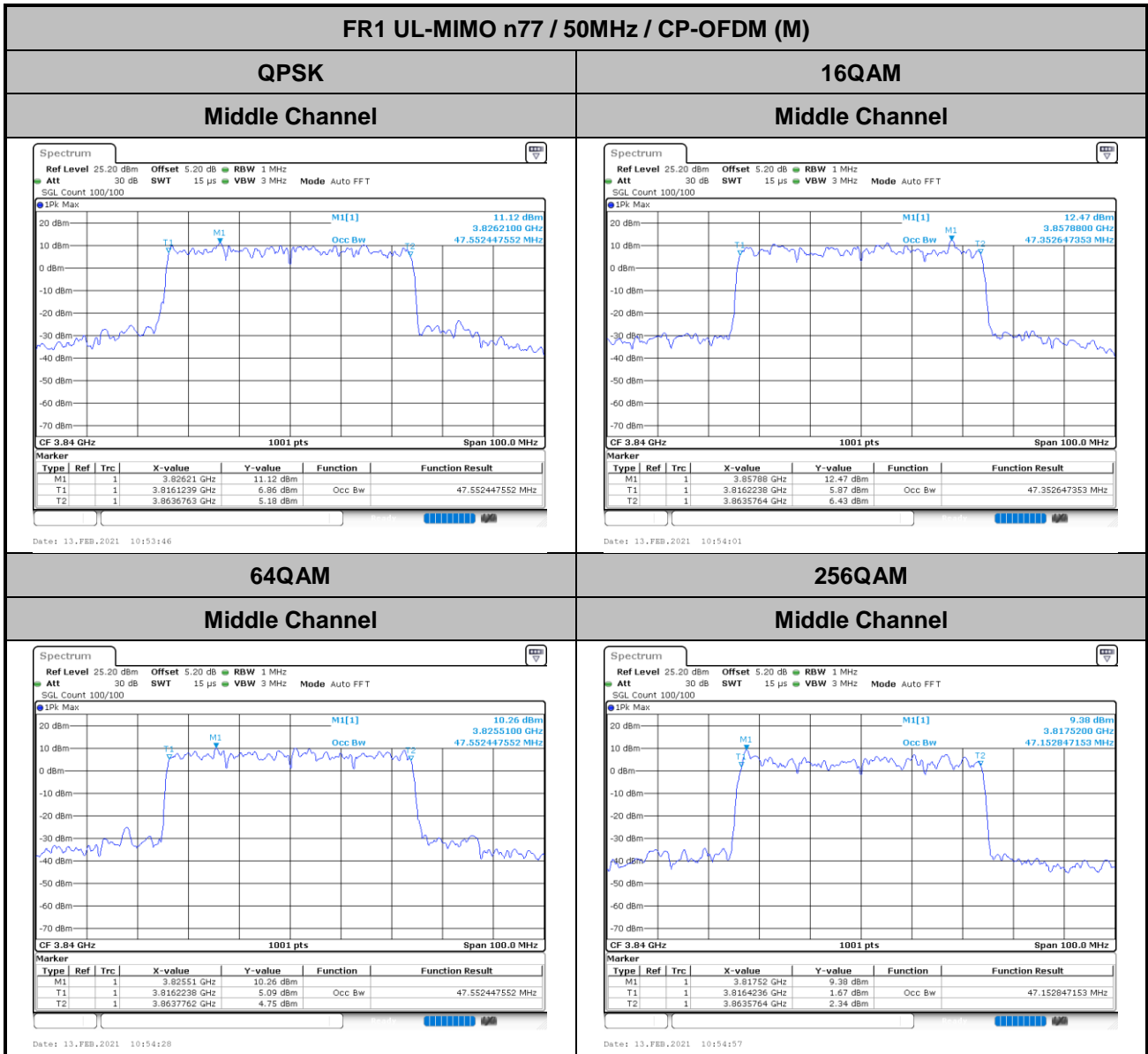
64QAM

256QAM

Middle Channel

Middle Channel







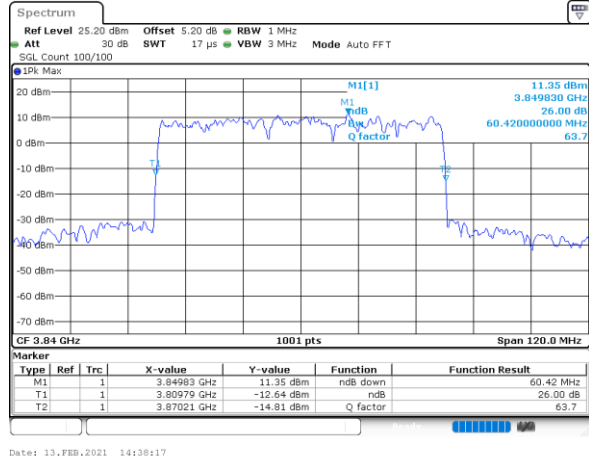
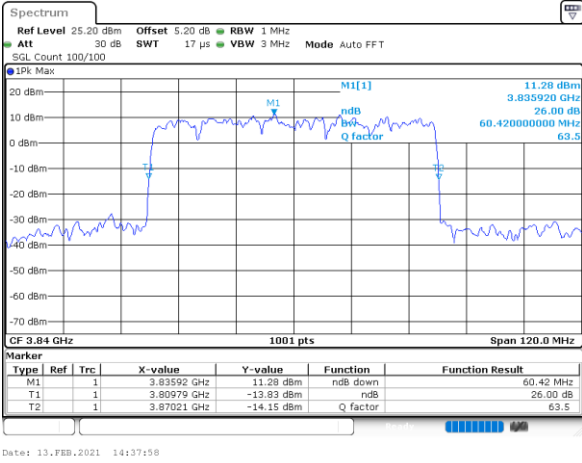
FR1 UL-MIMO n77 / 60MHz / CP-OFDM (M2)

QPSK

16QAM

Middle Channel

Middle Channel

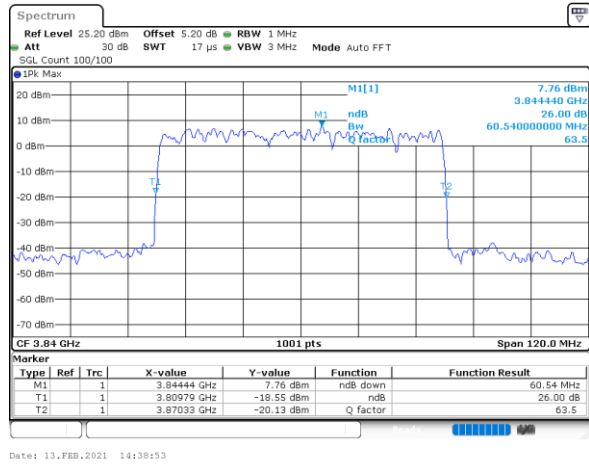
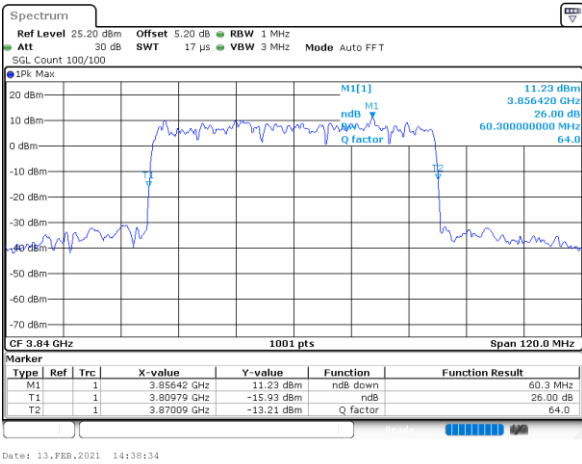


64QAM

256QAM

Middle Channel

Middle Channel





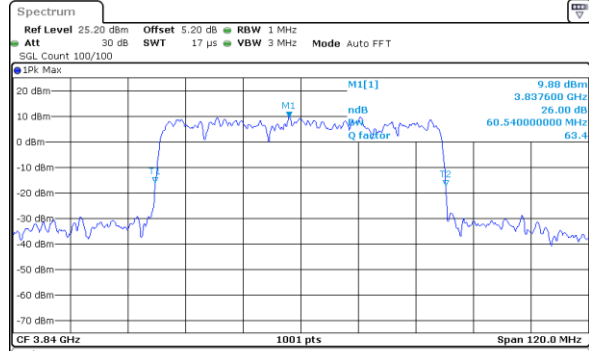
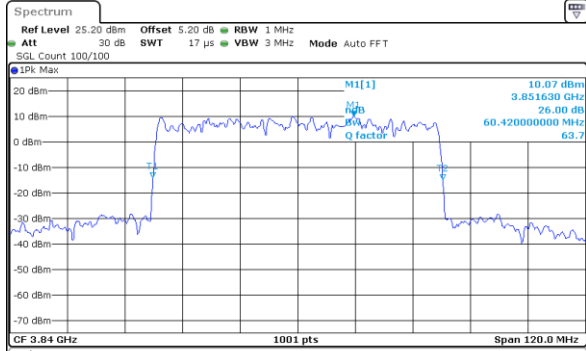
FR1 UL-MIMO n77 / 60MHz / CP-OFDM (M)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 13.FEB.2021 10:51:42

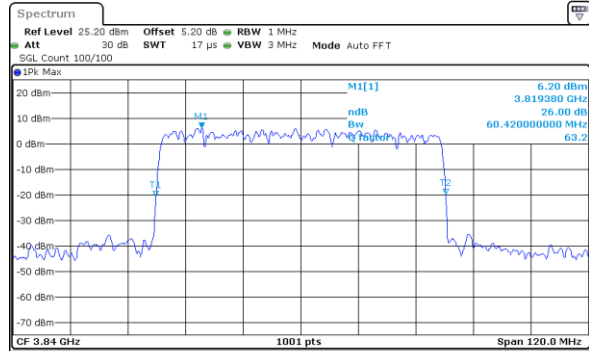
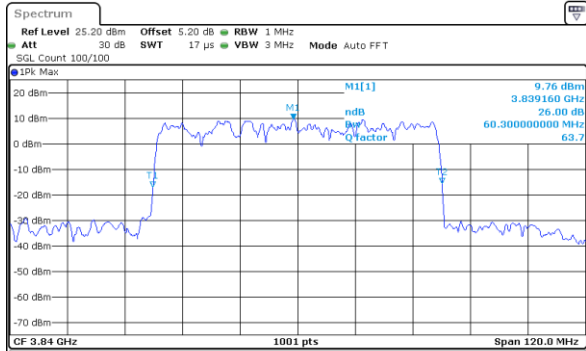
Date: 13.FEB.2021 10:52:04

64QAM

256QAM

Middle Channel

Middle Channel



Date: 13.FEB.2021 10:52:24

Date: 13.FEB.2021 10:52:40



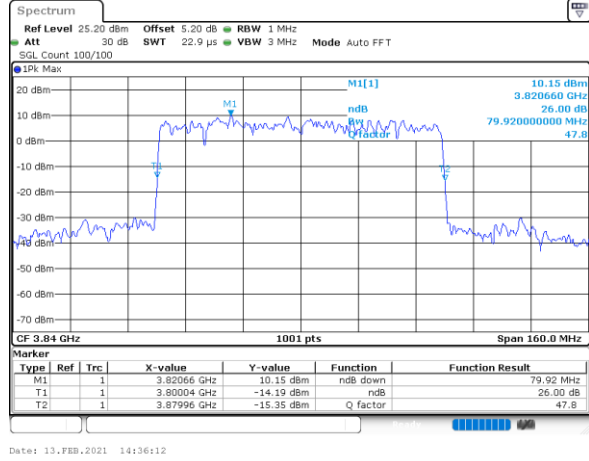
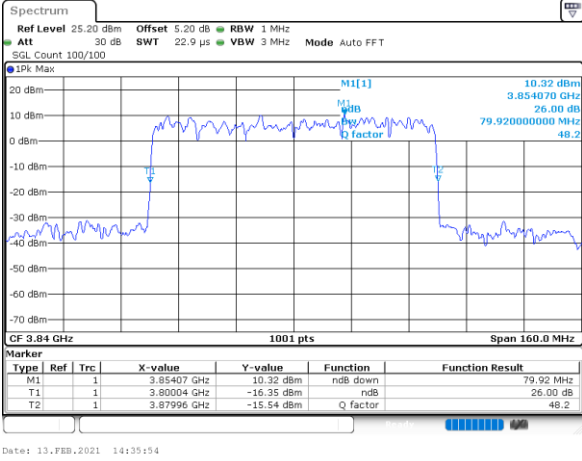
FR1 UL-MIMO n77 / 80MHz / CP-OFDM (M2)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 13.FEB.2021 14:35:54

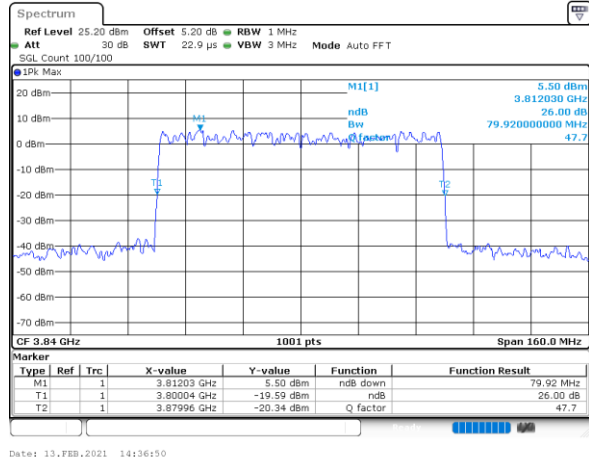
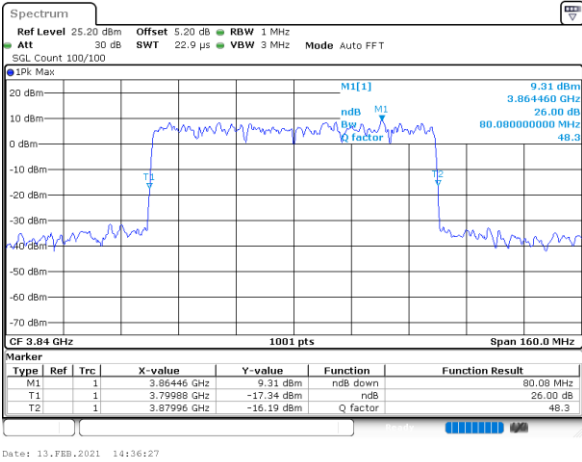
Date: 13.FEB.2021 14:36:12

64QAM

256QAM

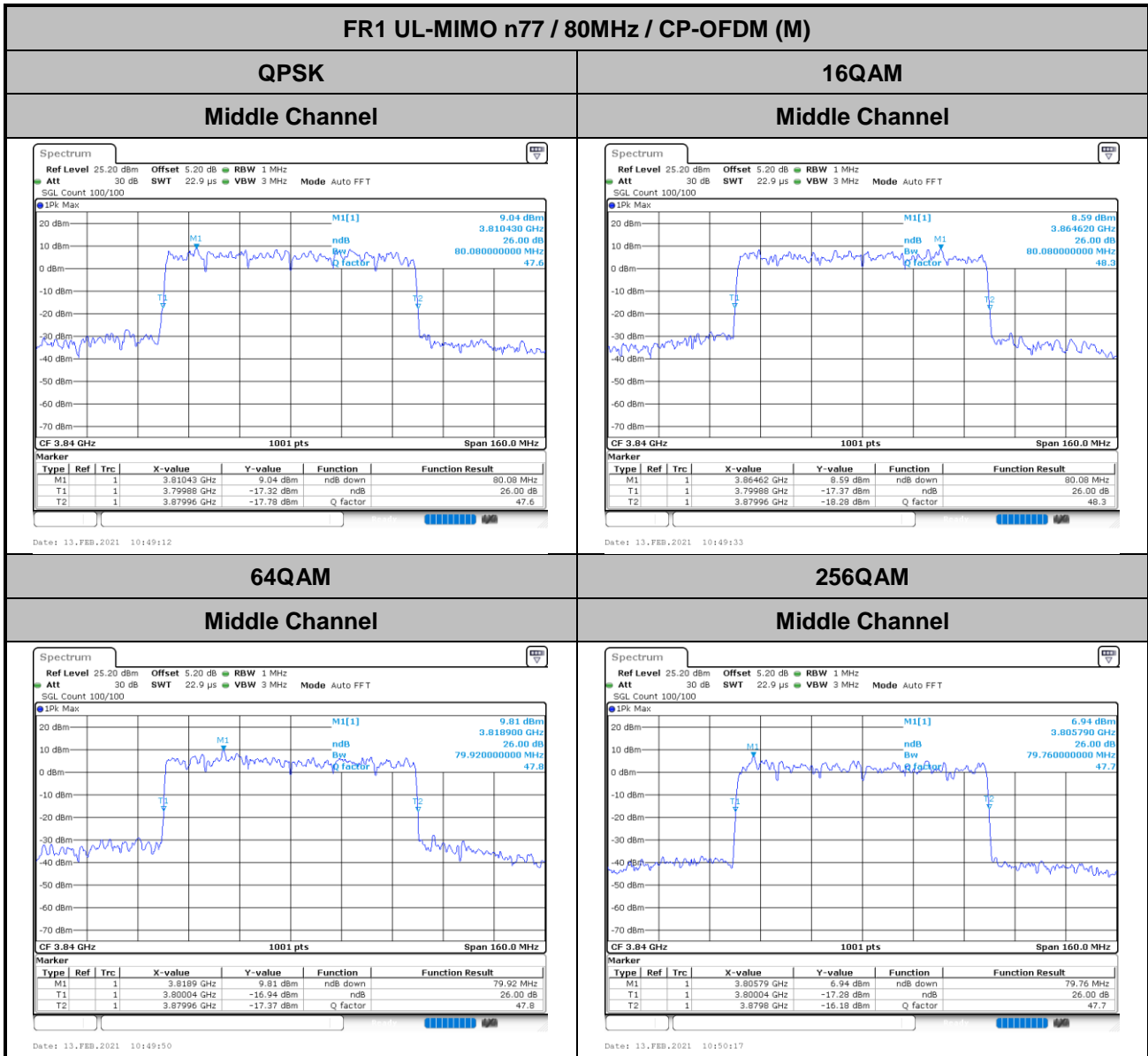
Middle Channel

Middle Channel



Date: 13.FEB.2021 14:36:27

Date: 13.FEB.2021 14:36:50





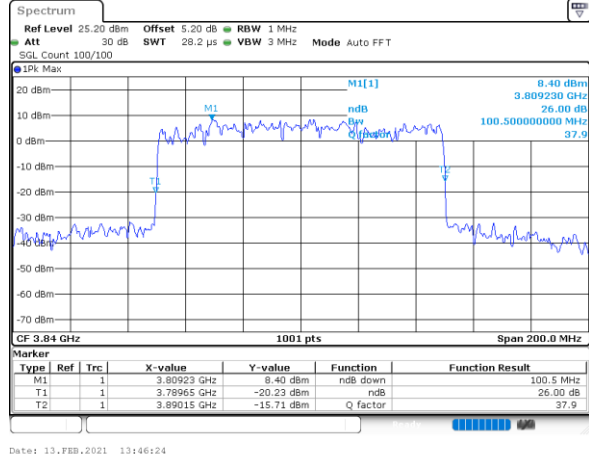
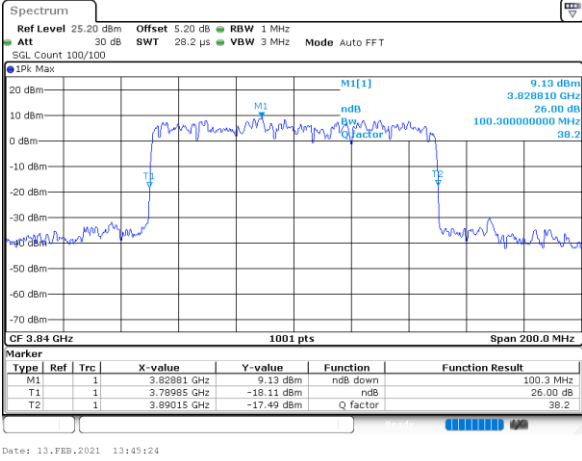
FR1 UL-MIMO n77 / 100MHz / CP-OFDM (M2)

QPSK

16QAM

Middle Channel

Middle Channel



Date: 13.FEB.2021 13:45:24

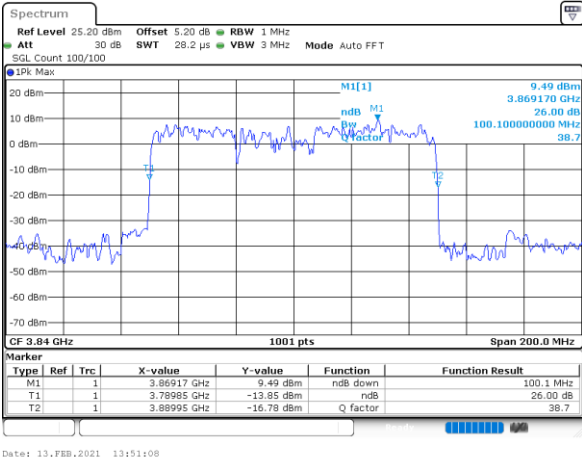
Date: 13.FEB.2021 13:46:24

64QAM

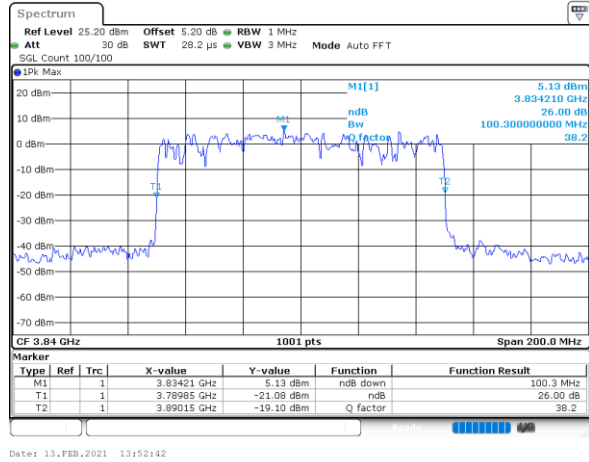
256QAM

Middle Channel

Middle Channel



Date: 13.FEB.2021 13:51:08



Date: 13.FEB.2021 13:52:42