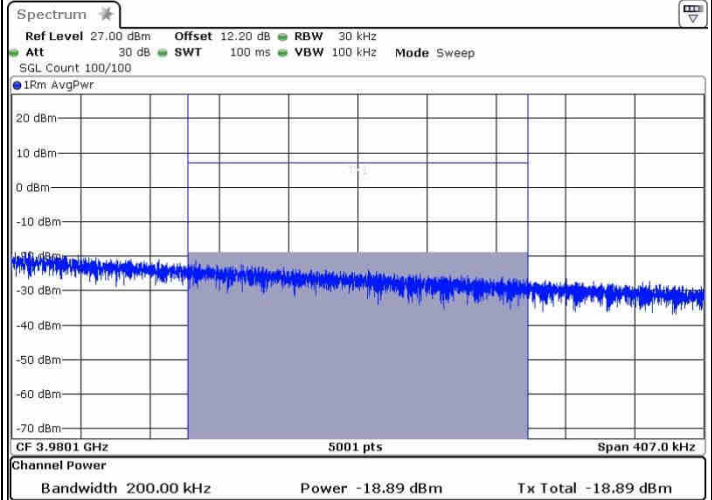
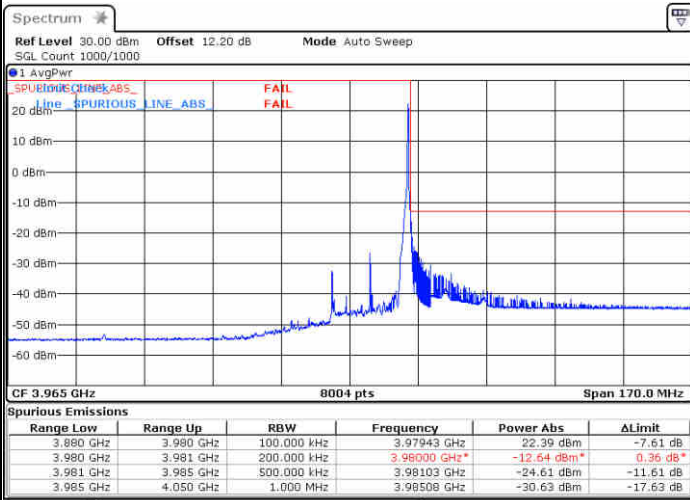




FR1 n77 / 20MHz / DFT-S OFDM QPSK

Highest Band Edge / 1 RB

Channel Power < -13dBm Pass

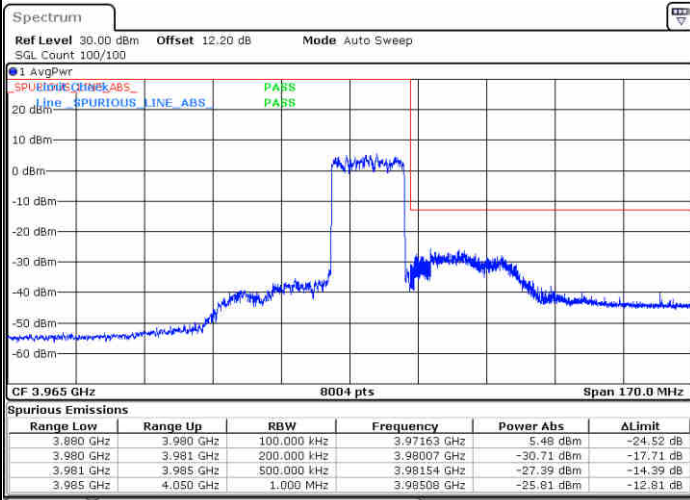


Date: 13.MAR.2021 06:53:49

Date: 13.MAR.2021 08:44:14

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



Date: 13.MAR.2021 06:33:22

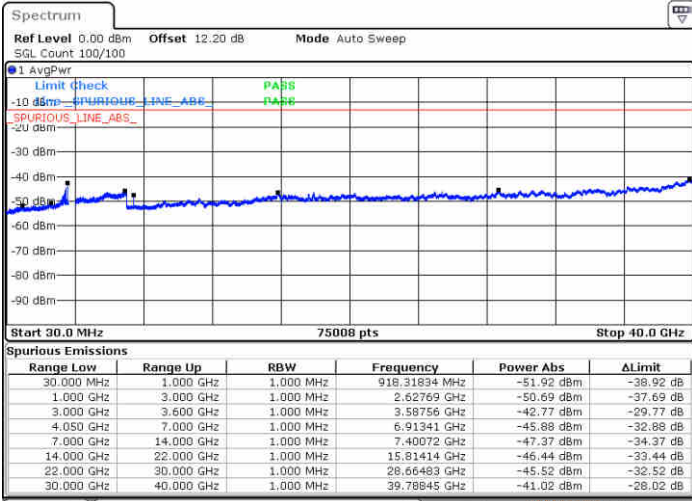


# Conducted Spurious Emission

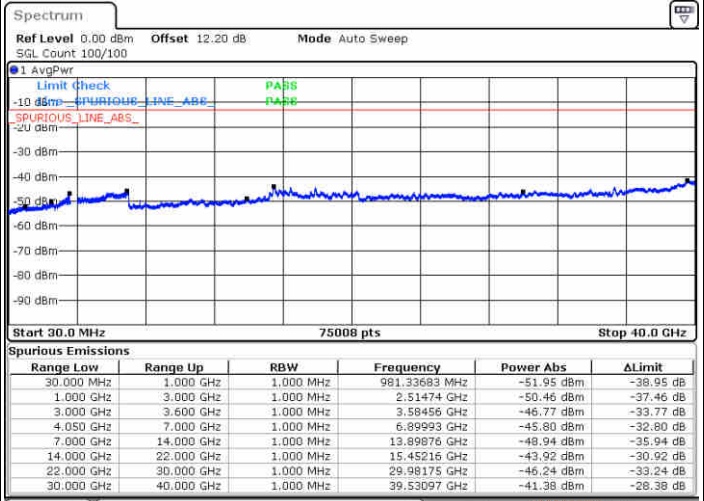
FR1 n77 / 10MHz / DFT-S OFDM / BPSK

Lowest Channel / 1RB

Middle Channel / 1RB

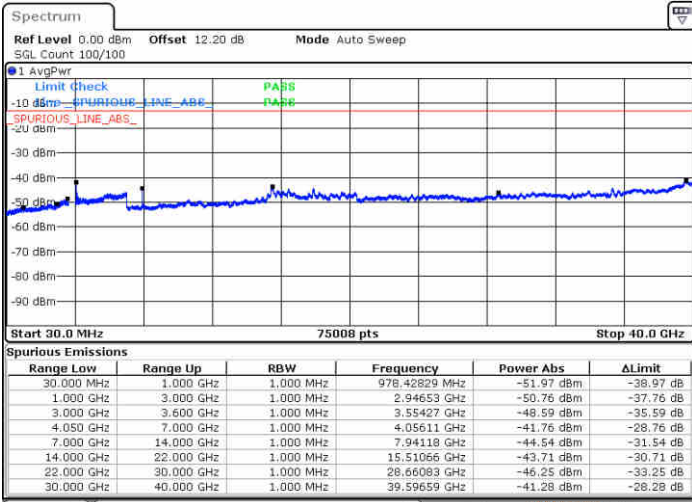


Date: 4.MAR.2021 06:01:27



Date: 9.FEB.2021 11:19:45

Highest Channel / 1RB



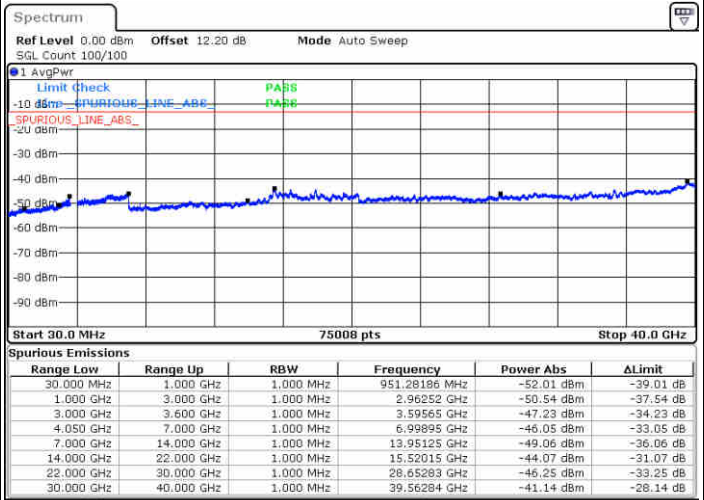
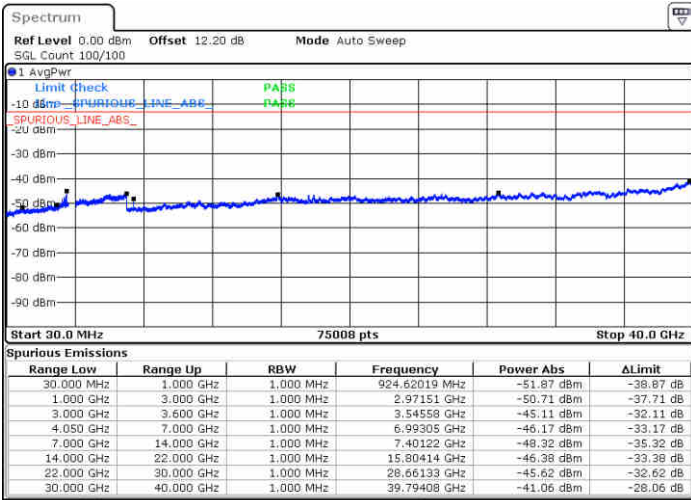
Date: 9.FEB.2021 11:26:10



FR1 n77 / 10MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB

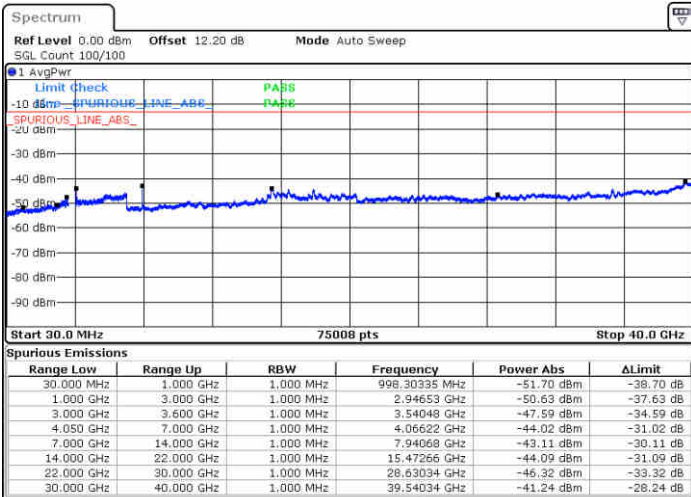
Middle Channel / 1RB



Date: 4.MAR.2021 05:59:57

Date: 9.FEB.2021 11:21:44

Highest Channel / 1RB



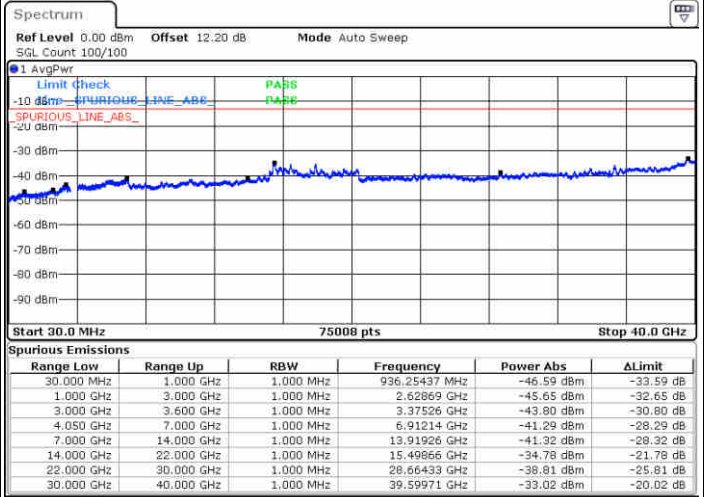
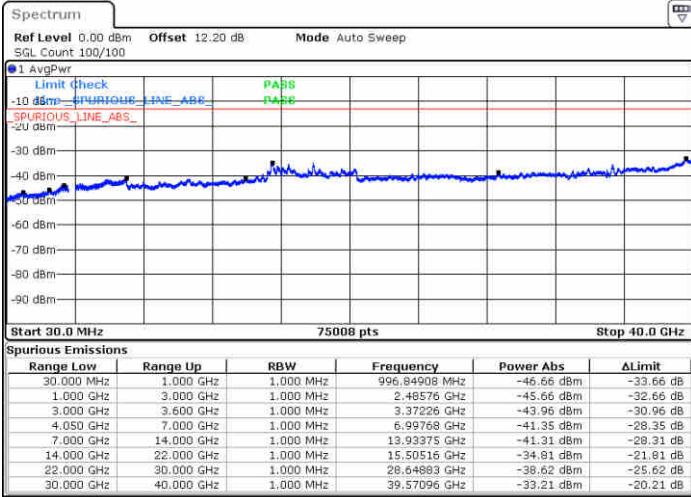
Date: 9.FEB.2021 11:24:37



FR1 n77 / 15MHz / DFT-S OFDM / BPSK

Lowest Channel / 1RB

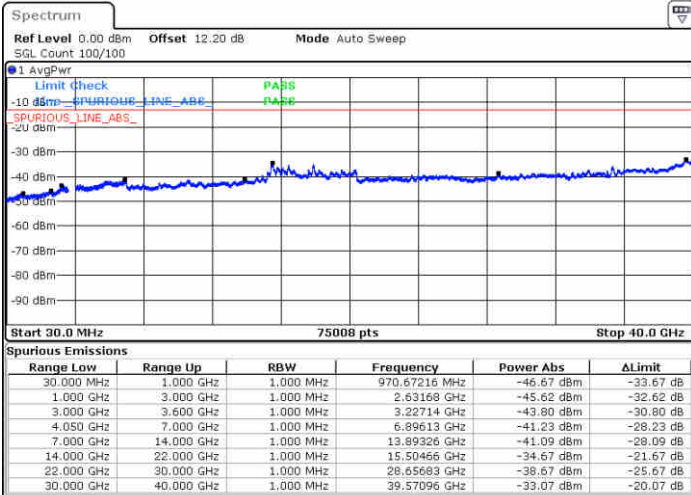
Middle Channel / 1RB



Date: 9.FEB.2021 09:56:26

Date: 9.FEB.2021 10:13:19

Highest Channel / 1RB



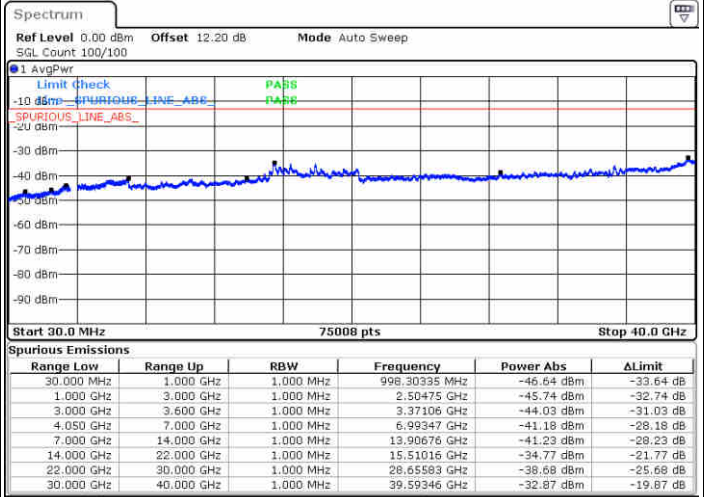
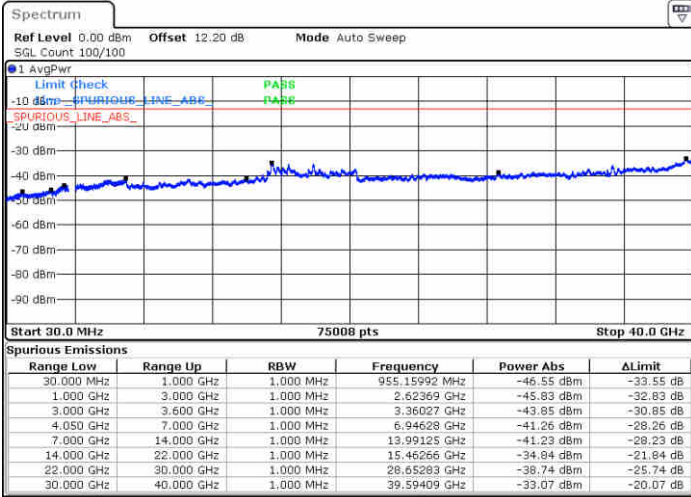
Date: 9.FEB.2021 10:18:34



FR1 n77 / 15MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB

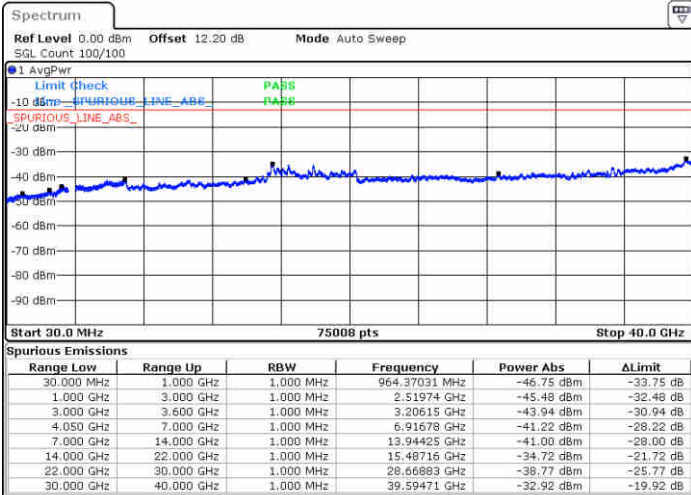
Middle Channel / 1RB



Date: 9.FEB.2021 10:01:16

Date: 9.FEB.2021 10:14:39

Highest Channel / 1RB



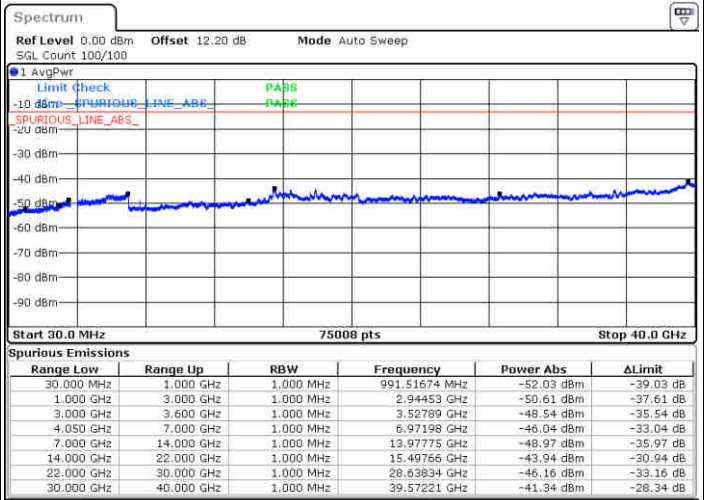
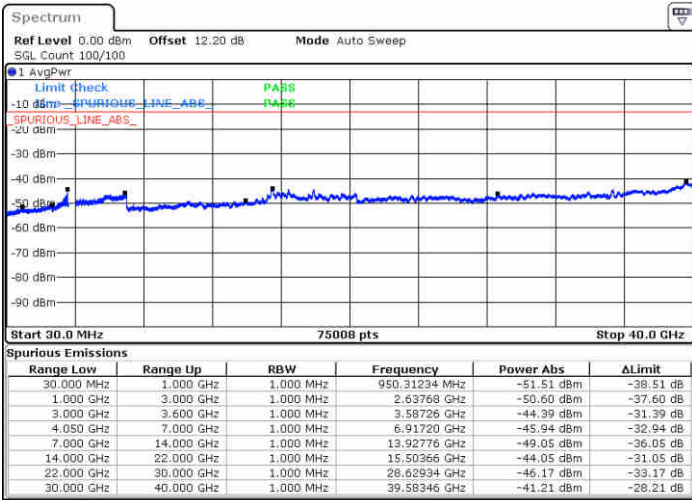
Date: 9.FEB.2021 10:17:13



FR1 n77 / 20MHz / DFT-S OFDM / BPSK

Lowest Channel / 1RB

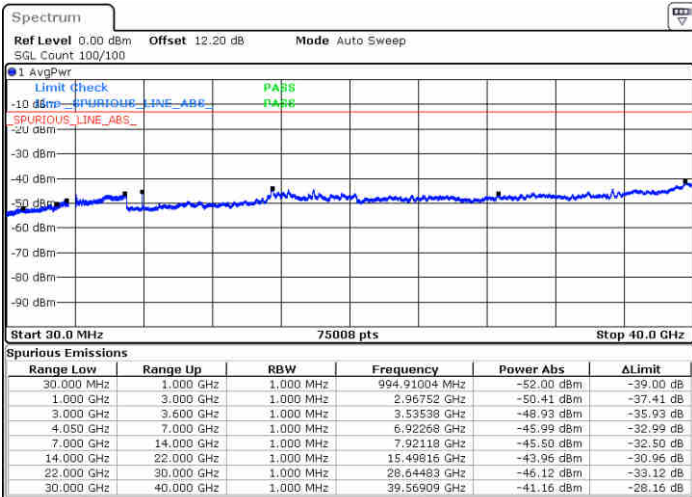
Middle Channel / 1RB



Date: 9.FEB.2021 09:00:41

Date: 9.FEB.2021 09:13:33

Highest Channel / 1RB



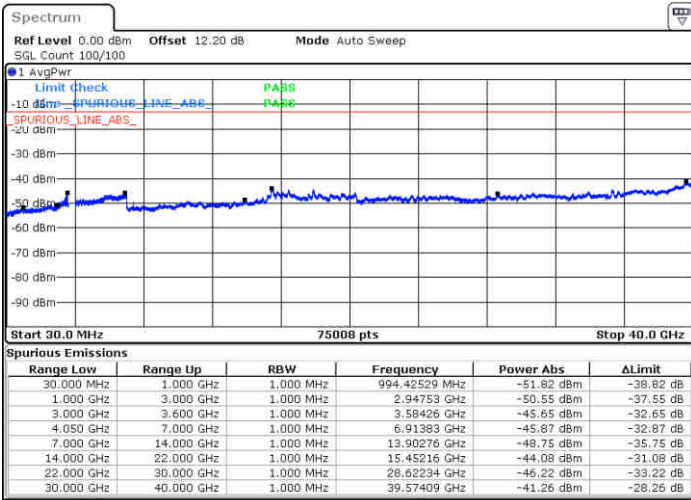
Date: 9.FEB.2021 09:22:15



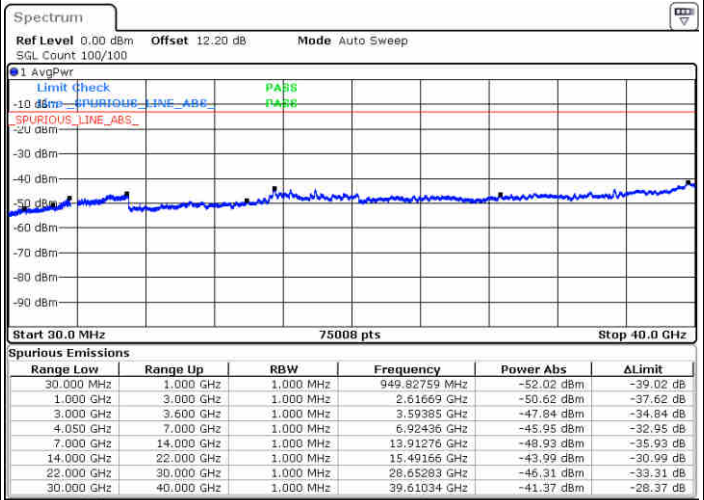
FR1 n77 / 20MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB

Middle Channel / 1RB

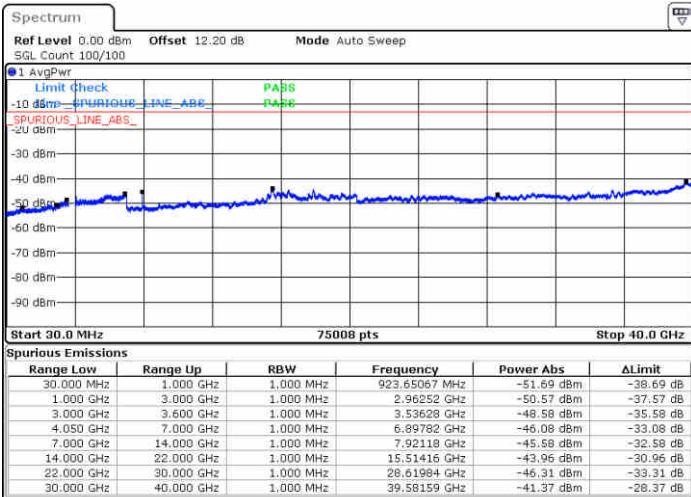


Date: 9.FEB.2021 09:18:04



Date: 9.FEB.2021 09:16:19

Highest Channel / 1RB



Date: 9.FEB.2021 09:20:39



### Frequency Stability

Test Conditions		NR n77 (BPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 20MHz	Within Band
		Deviation (ppm)	Result
50	Normal Voltage	0.0015	PASS
40	Normal Voltage	0.0026	
30	Normal Voltage	0.0022	
20(Ref.)	Normal Voltage	0.0015	
10	Normal Voltage	0.0019	
0	Normal Voltage	0.0006	
-10	Normal Voltage	0.0018	
-20	Normal Voltage	0.0022	
-30	Normal Voltage	0.0018	
20	Maximum Voltage	0.0021	
20	Normal Voltage	0.0014	
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 SA-SCS 30K

## Peak-to-Average Ratio

Mode	FR1 n77 / 10MHz / DFT-S OFDM				
Mod.	PI/2 BPSK	PI/2 BPSK	QPSK	QPSK	Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.06	5.04	5.04	5.33	<b>PASS</b>
Middle CH	3.42	4.03	5.04	5.16	
Highest CH	3.97	3.91	5.19	5.25	



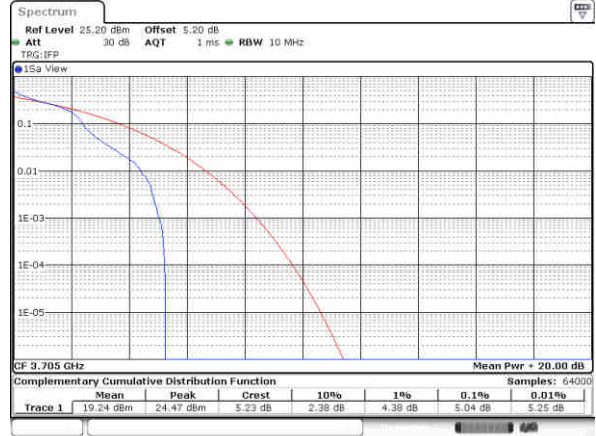
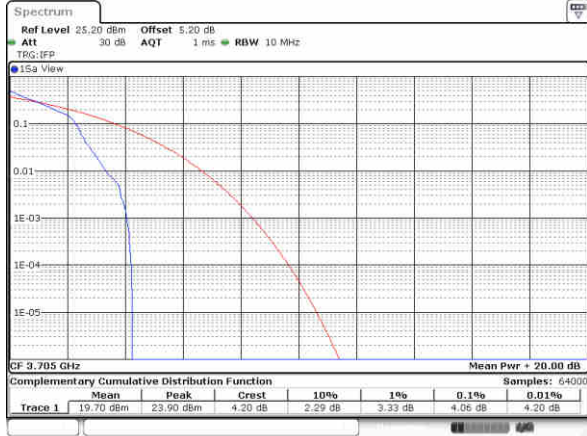
FR1 n77 / 10MHz / DFT-S OFDM

PI/2 BPSK

QPSK

Lowest Channel / 1RB

Lowest Channel / 1RB

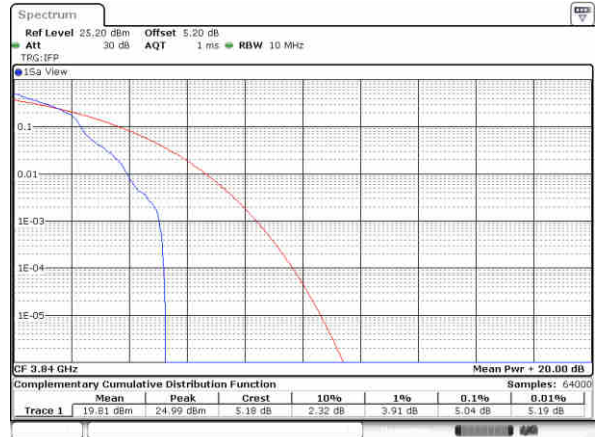
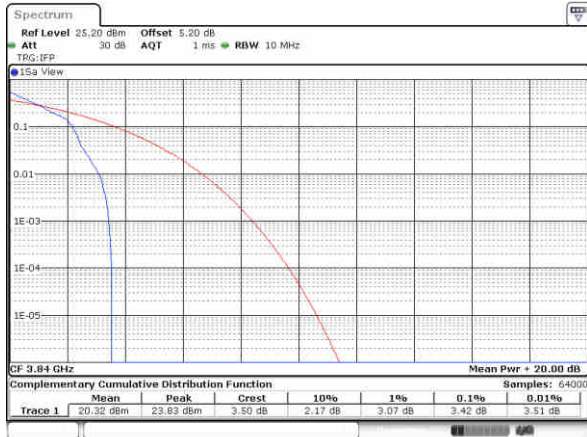


Date: 2.FEB.2021 07:53:55

Date: 2.FEB.2021 07:53:37

Middle Channel / 1 RB

Middle Channel / 1 RB

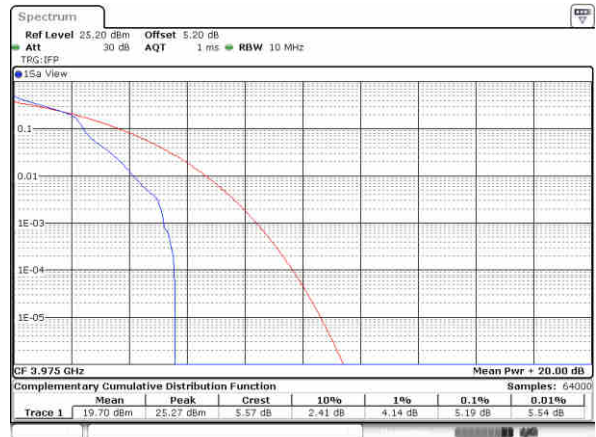
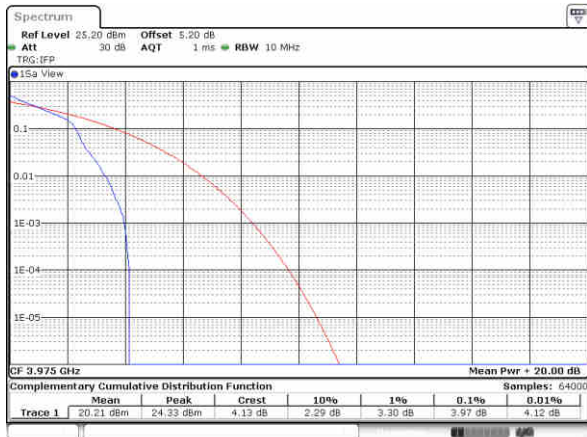


Date: 2.FEB.2021 07:40:56

Date: 2.FEB.2021 07:40:31

Highest Channel / 1 RB

Highest Channel / 1 RB



Date: 2.FEB.2021 08:11:19

Date: 2.FEB.2021 08:10:47



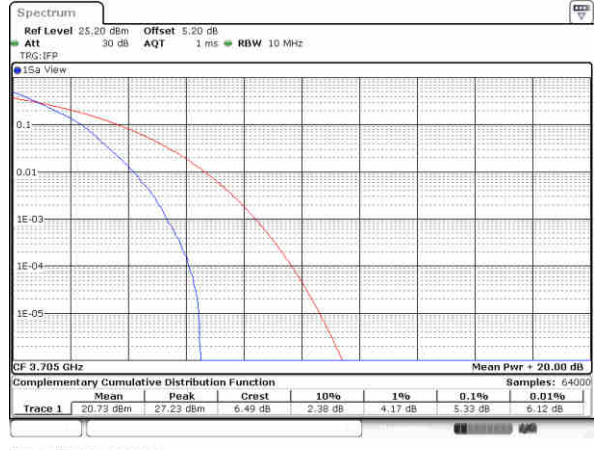
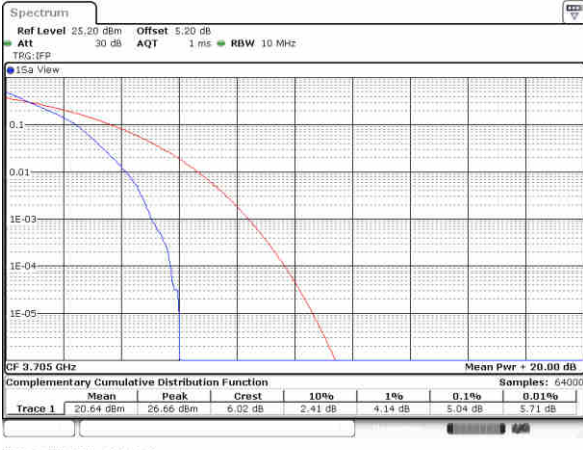
FR1 n77 / 10MHz / DFT-S OFDM

PI/2 BPSK

QPSK

Lowest Channel / Full RB

Lowest Channel / Full RB

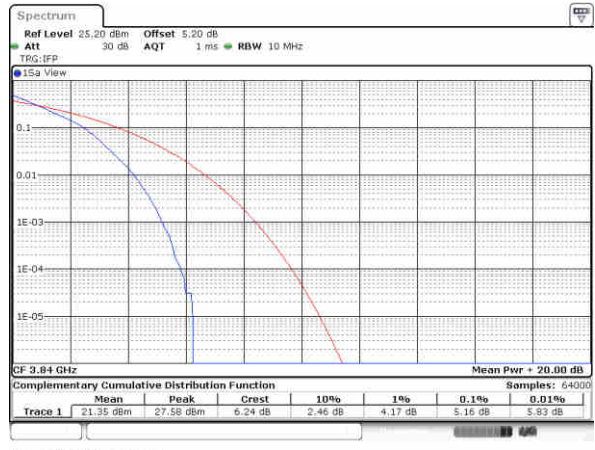
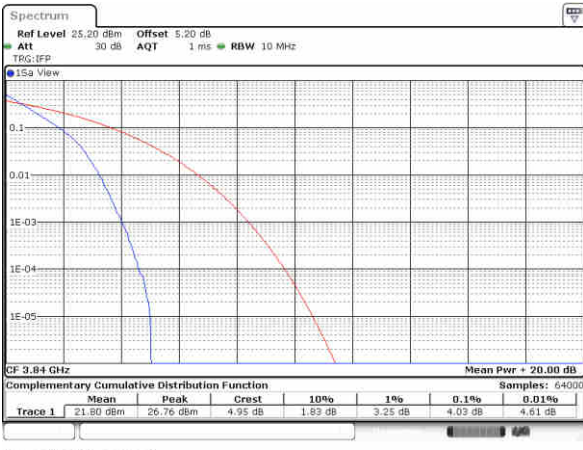


Date: 2.FEB.2021 07:53:09

Date: 2.FEB.2021 07:52:32

Middle Channel / Full RB

Middle Channel / Full RB

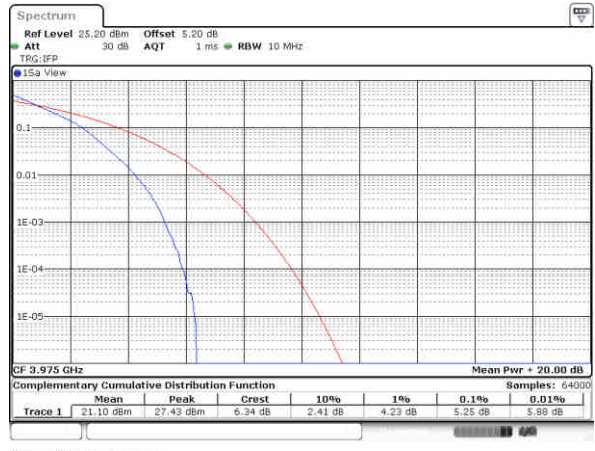
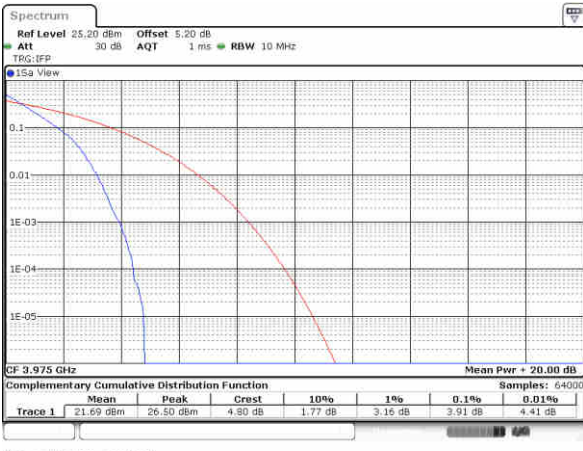


Date: 2.FEB.2021 07:39:03

Date: 2.FEB.2021 07:39:55

Highest Channel / Full RB

Highest Channel / Full RB



Date: 2.FEB.2021 08:09:23H

Date: 2.FEB.2021 08:10:17



26dB Bandwidth

Mode	FR1 n77 : 26dB BW(MHz) / CP-OFDM							
BW	10MHz	10MHz	10MHz	10MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	9.17	9.33	9.21	9.03				

Mode	FR1 n77 : 26dB BW(MHz) / CP-OFDM							
BW	15MHz	15MHz	15MHz	15MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	14.33	14.42	14.51	14.36				

Mode	FR1 n77 : 26dB BW(MHz) / CP-OFDM							
BW	20MHz	20MHz	20MHz	20MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	19.62	19.22	19.10	19.22				

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

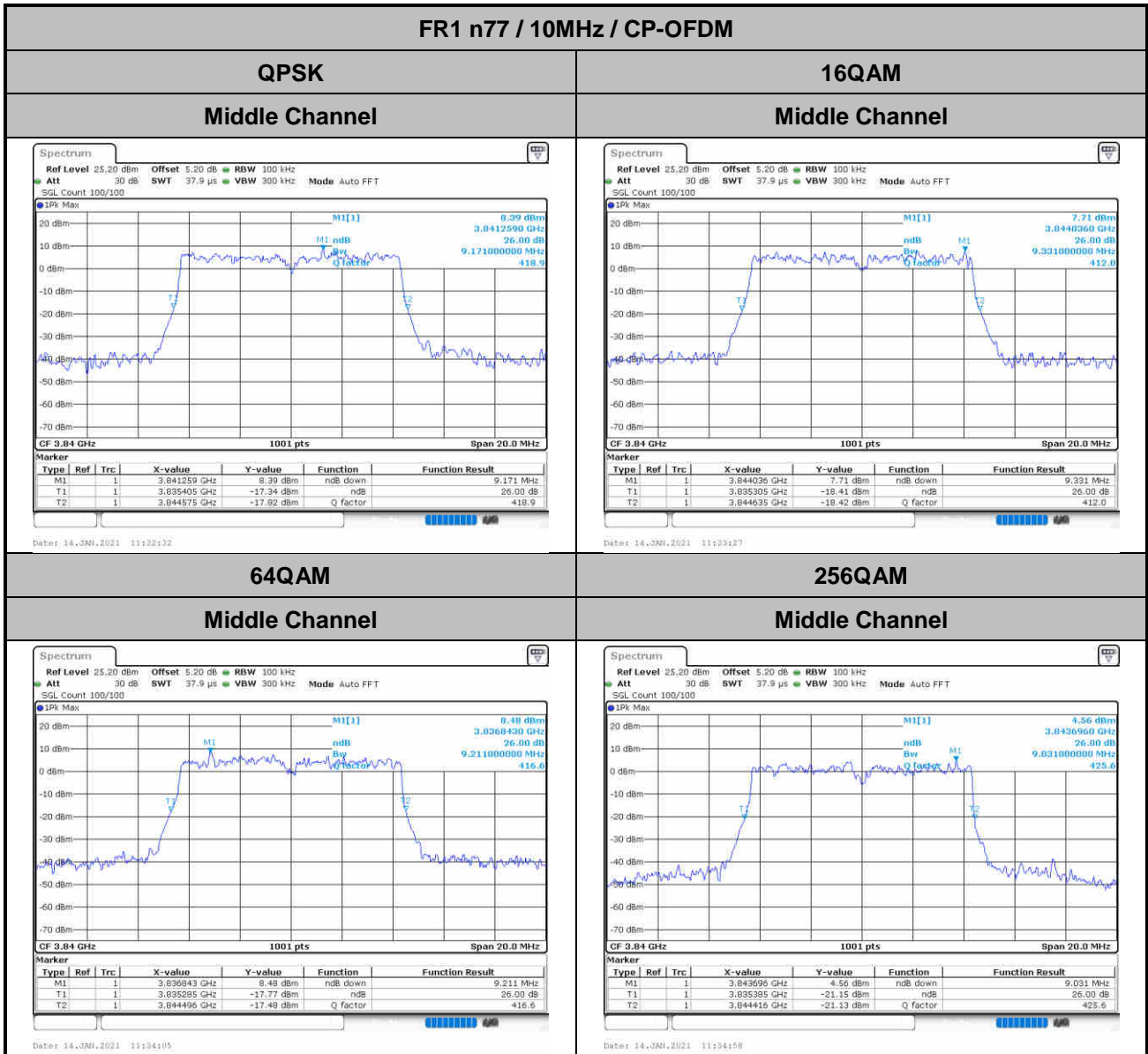
Mode	FR1 n77 : 26dB BW(MHz) / CP-OFDM							
BW	50MHz	50MHz	50MHz	50MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	49.85	49.75	49.65	49.75				

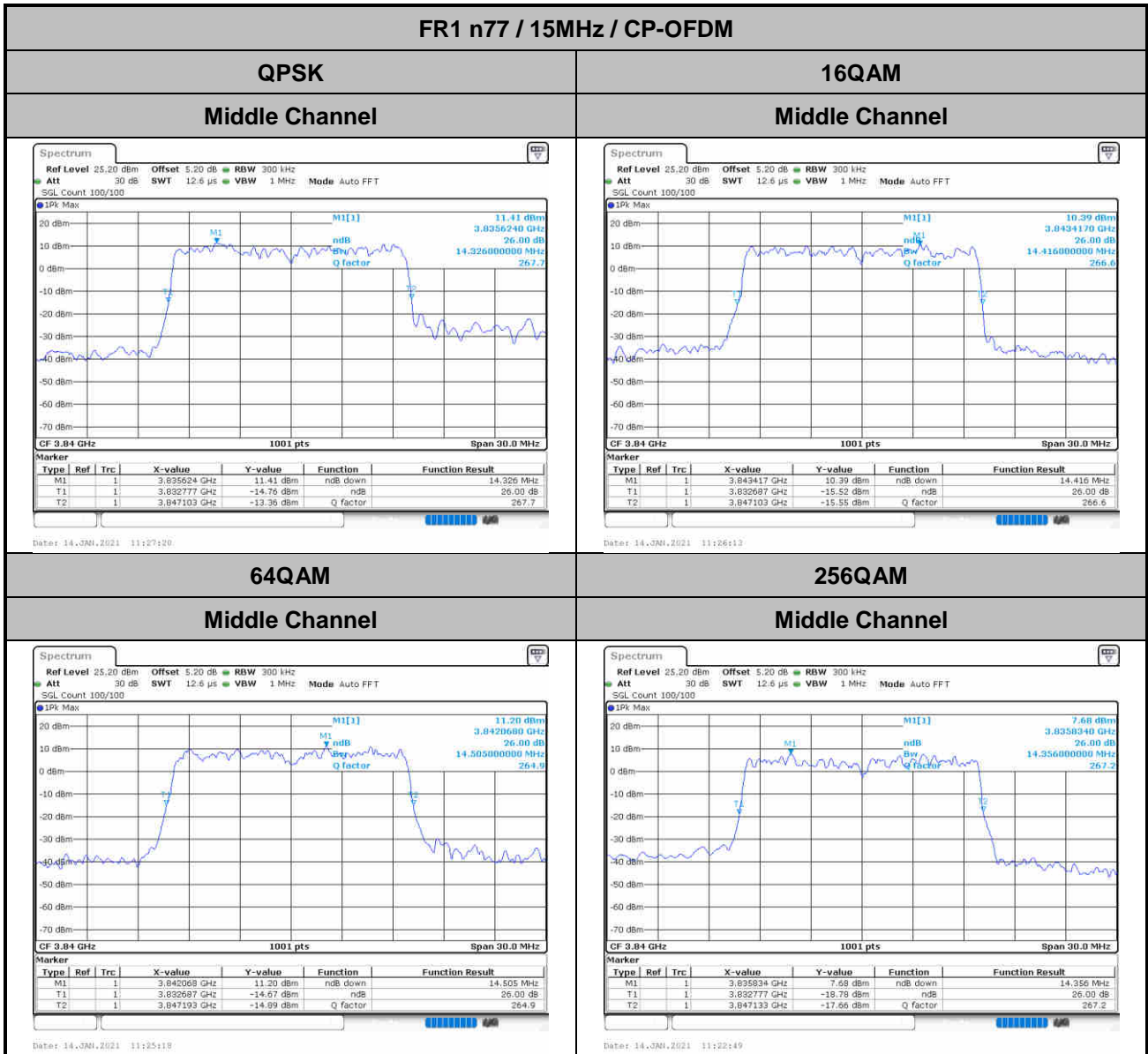
Mode	FR1 n77 : 26dB BW(MHz) / CP-OFDM							
BW	60MHz	60MHz	60MHz	60MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	60.54	60.42	60.42	60.42				

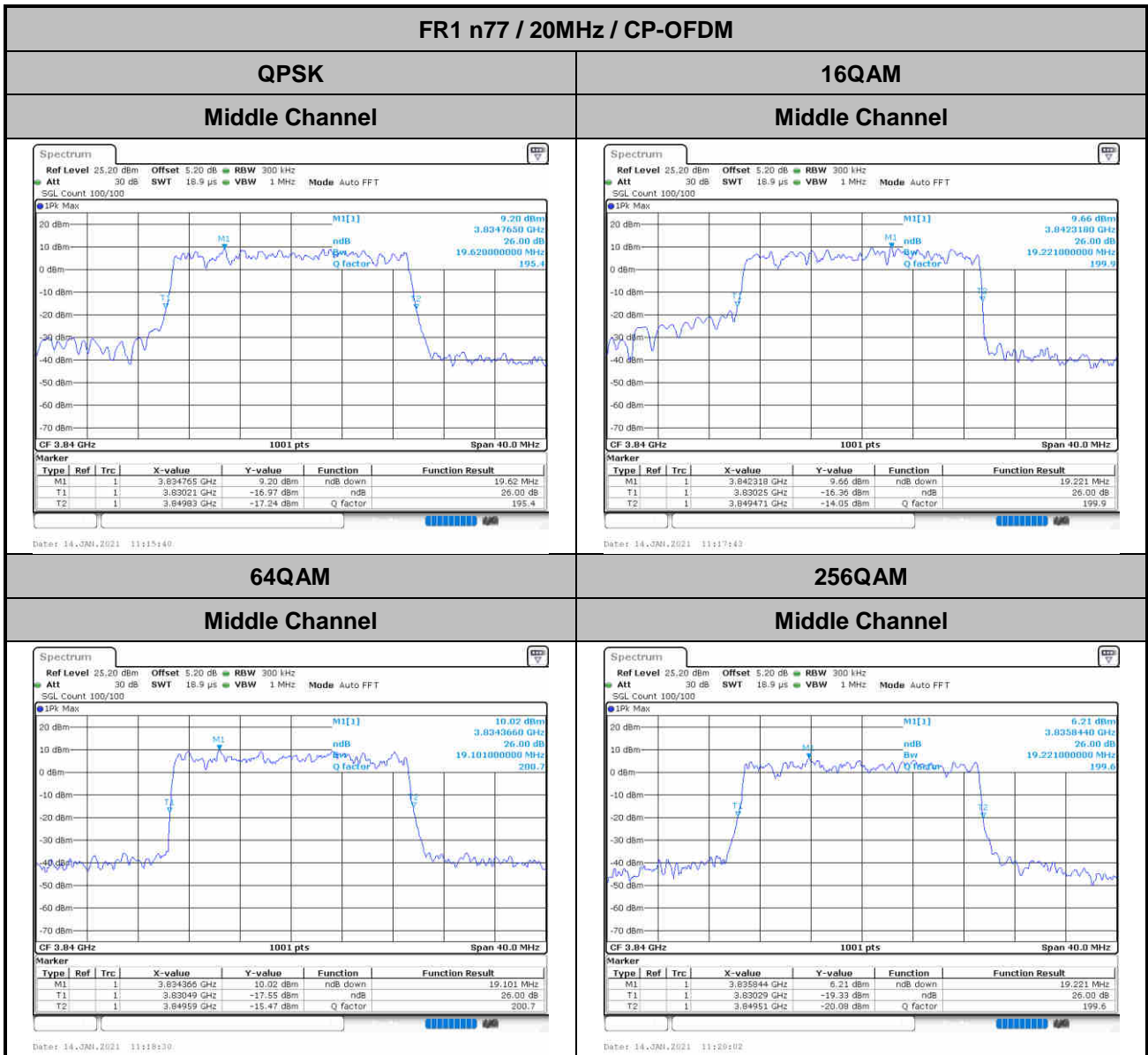


Mode	FR1 n77 : 26dB BW(MHz) / CP-OFDM							
BW	80MHz	80MHz	80MHz	80MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	79.92	79.92	79.92	80.08				

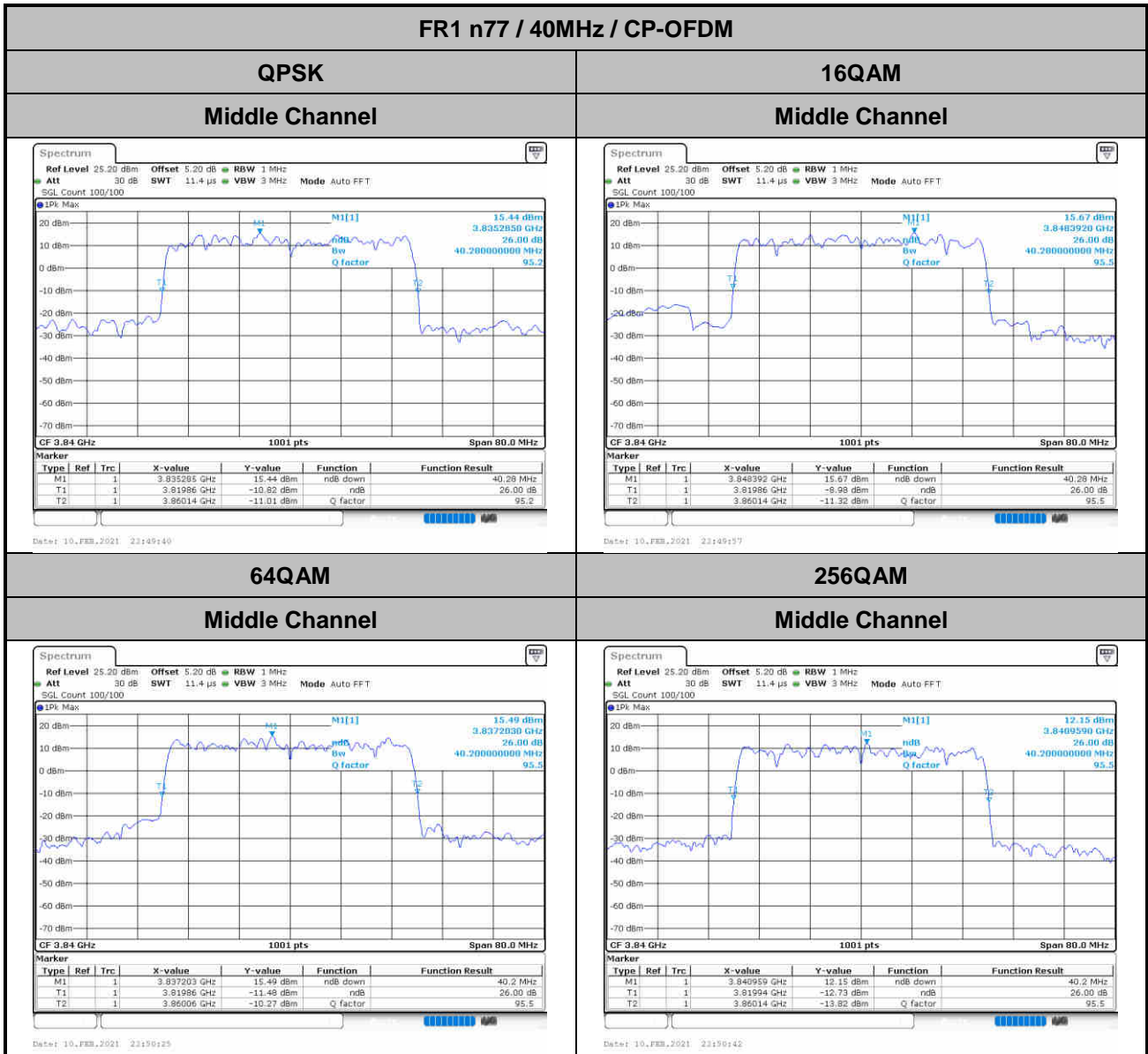
Mode	FR1 n77 : 26dB BW(MHz) / CP-OFDM							
BW	100MHz	100MHz	100MHz	100MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	100.30	100.30	100.30	100.30				

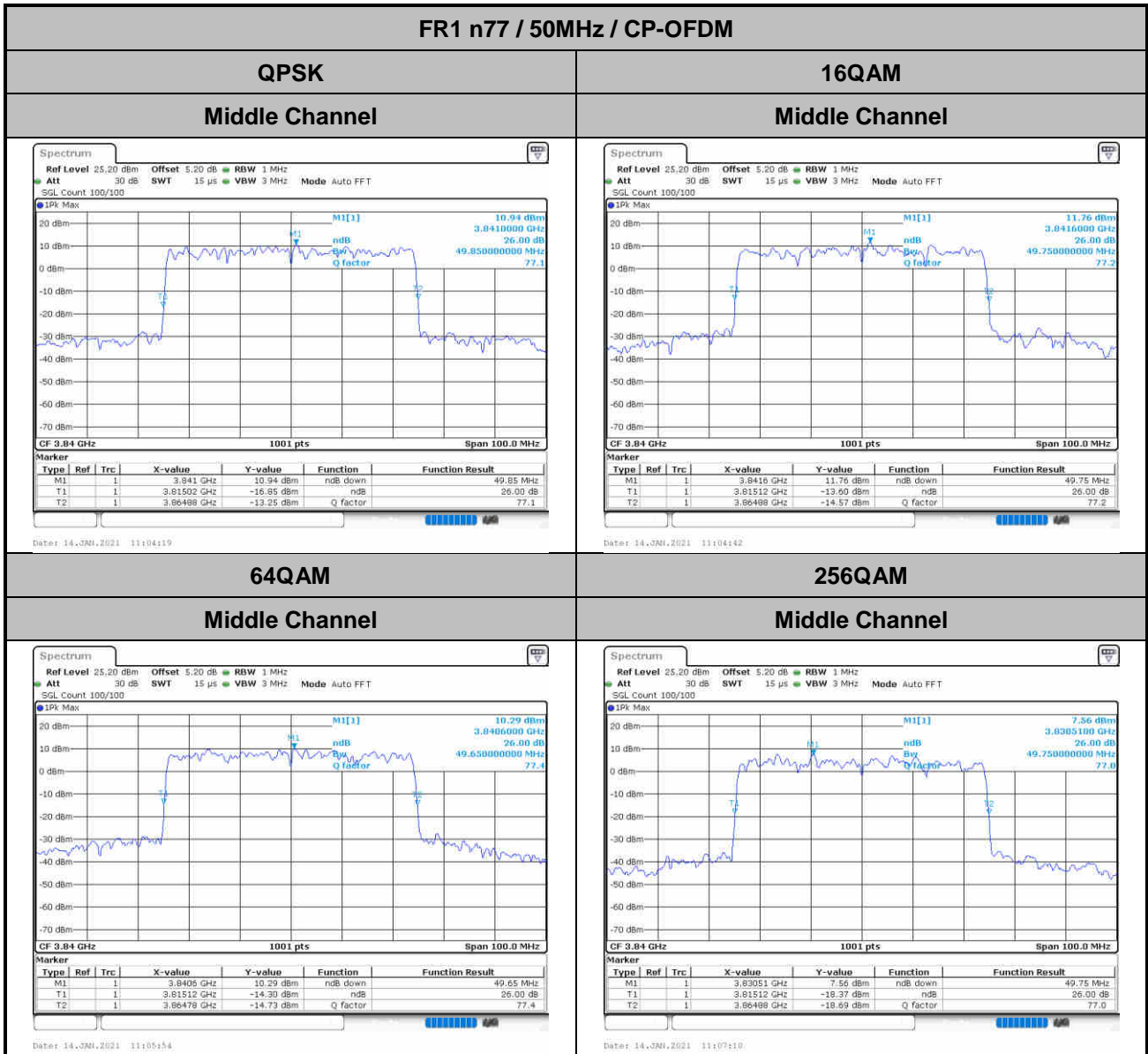


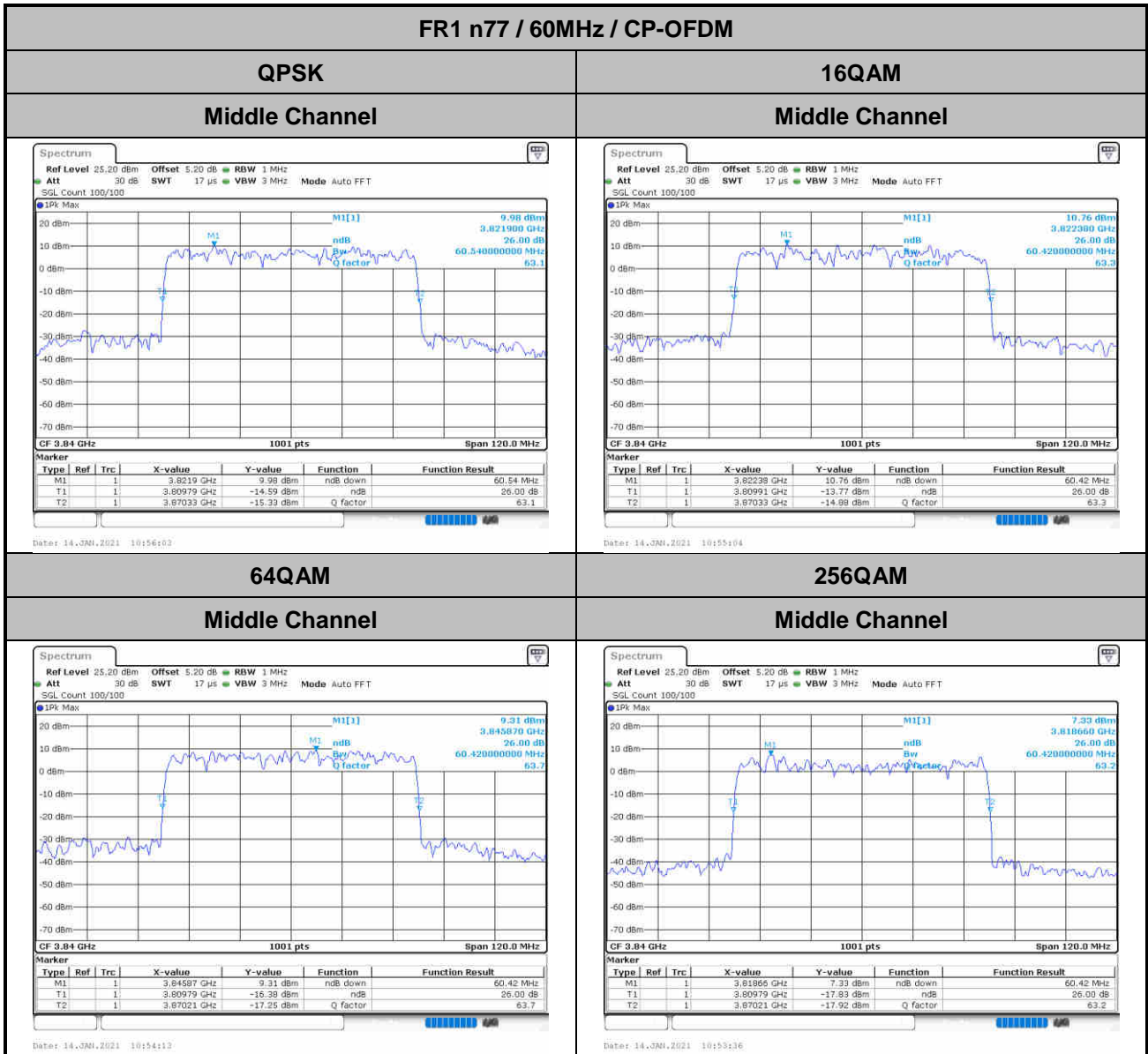


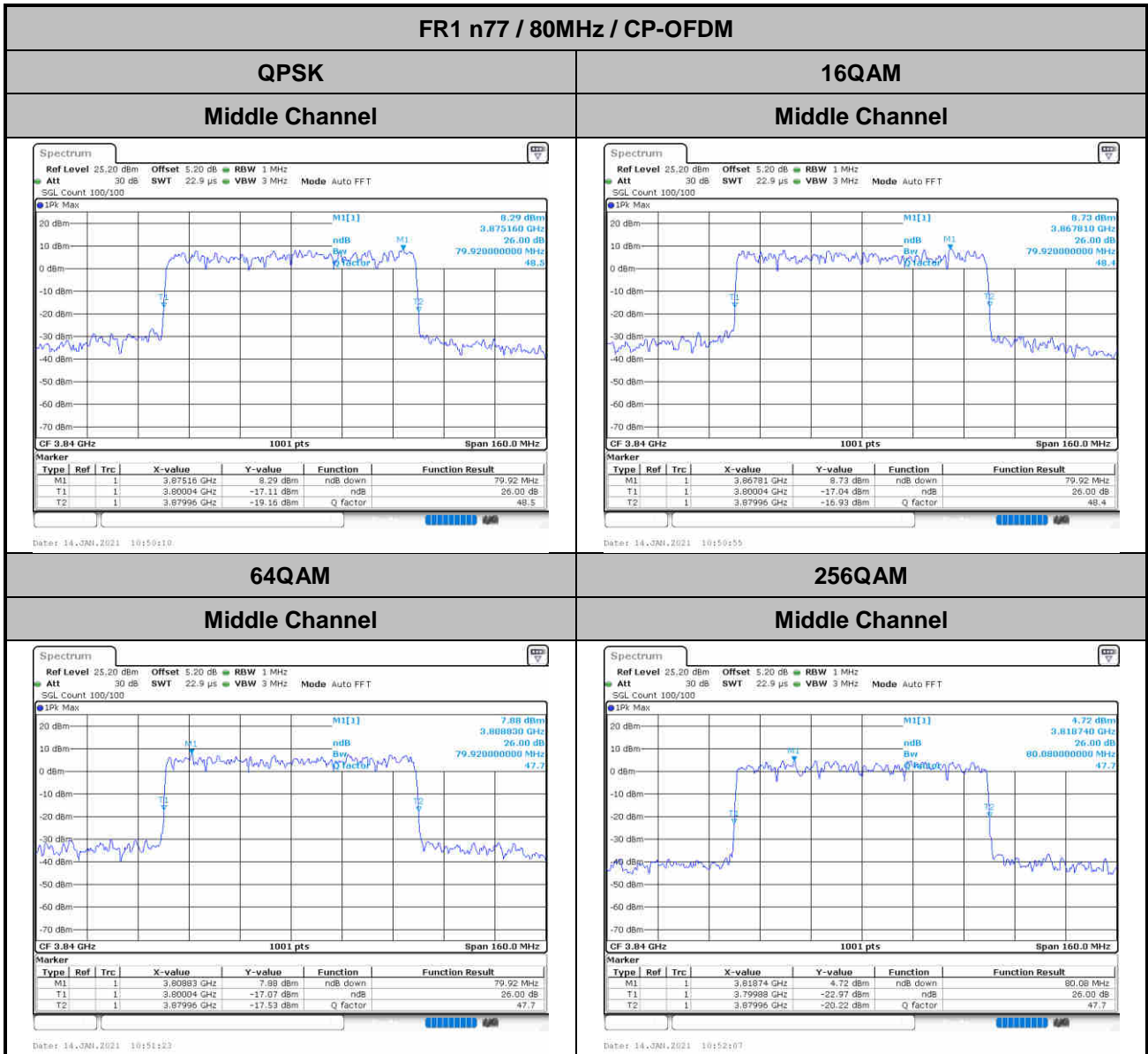














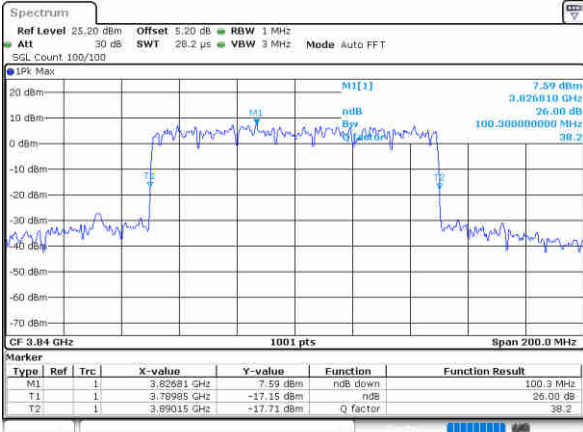
FR1 n77 / 100MHz / CP-OFDM

QPSK

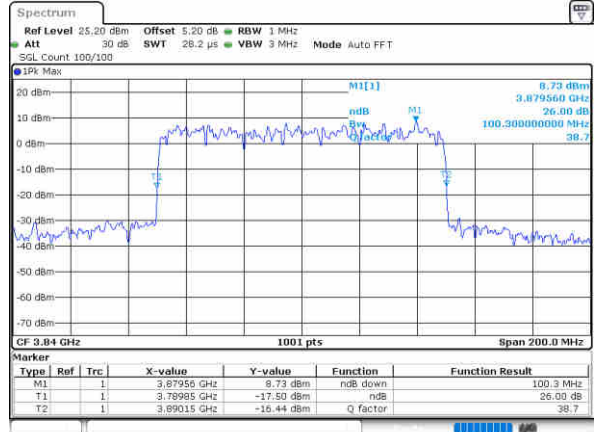
16QAM

Middle Channel

Middle Channel



Date: 14, JAN, 2021 10:14:49



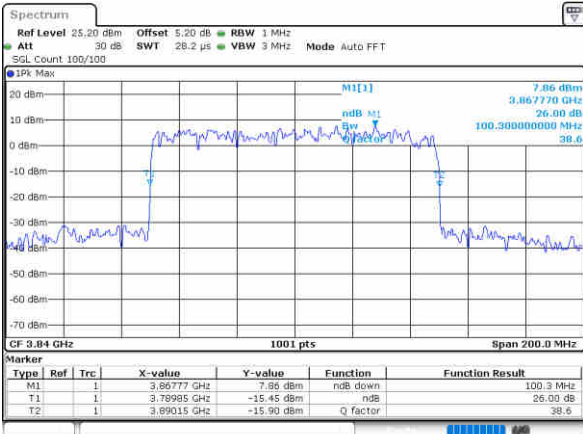
Date: 14, JAN, 2021 10:15:59

64QAM

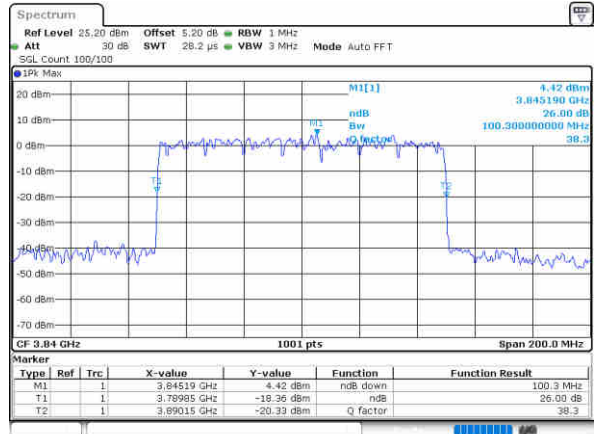
256QAM

Middle Channel

Middle Channel



Date: 14, JAN, 2021 10:16:53



Date: 14, JAN, 2021 10:17:19



### Occupied Bandwidth

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

Mode	FR1 n77 : OBW(MHz) / CP-OFDM							
BW	15MHz	15MHz	15MHz	15MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	13.64	13.55	13.55	13.64				

Mode	FR1 n77 : OBW(MHz) / CP-OFDM							
BW	20MHz	20MHz	20MHz	20MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	18.22	18.26	18.26	18.30				

Mode	FR1 n77 : OBW(MHz) / CP-OFDM							
BW	40MHz	40MHz	40MHz	40MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	38.04	38.12	37.88	37.96				

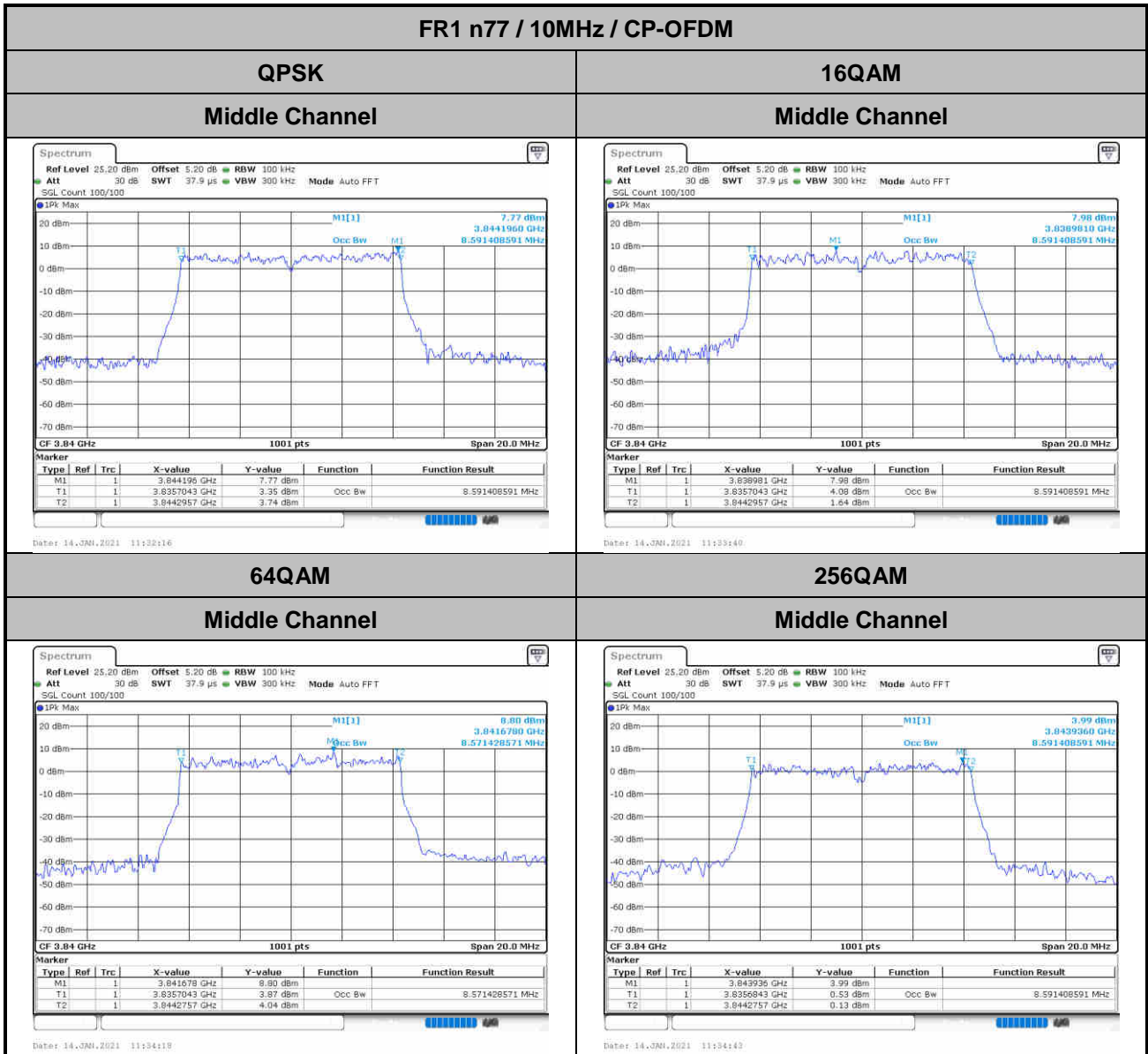
Mode	FR1 n77 : OBW(MHz) / CP-OFDM							
BW	50MHz	50MHz	50MHz	50MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	47.55	47.95	47.55	47.55				

Mode	FR1 n77 : OBW(MHz) / CP-OFDM							
BW	60MHz	60MHz	60MHz	60MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	58.02	58.02	58.02	57.42				

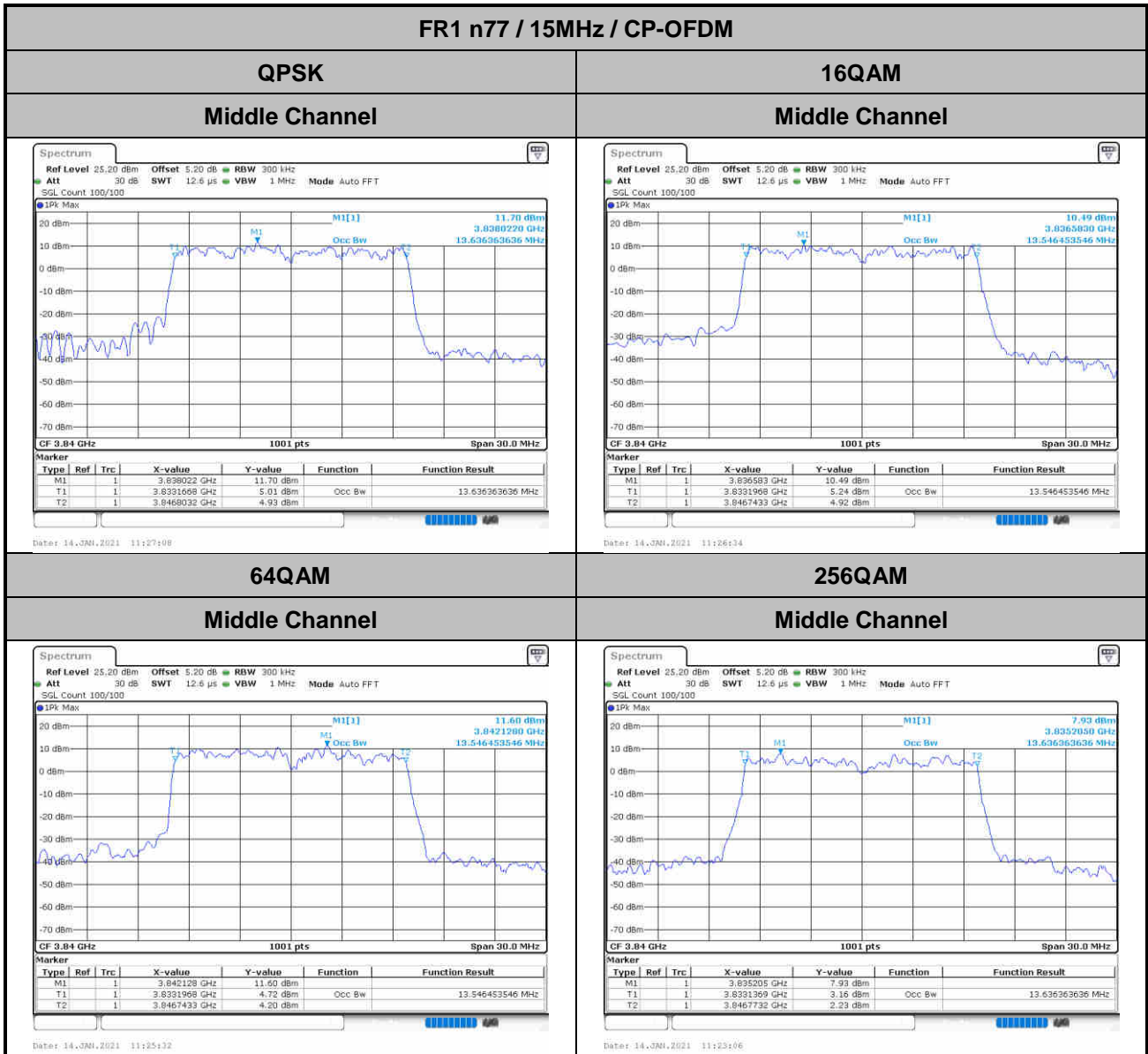


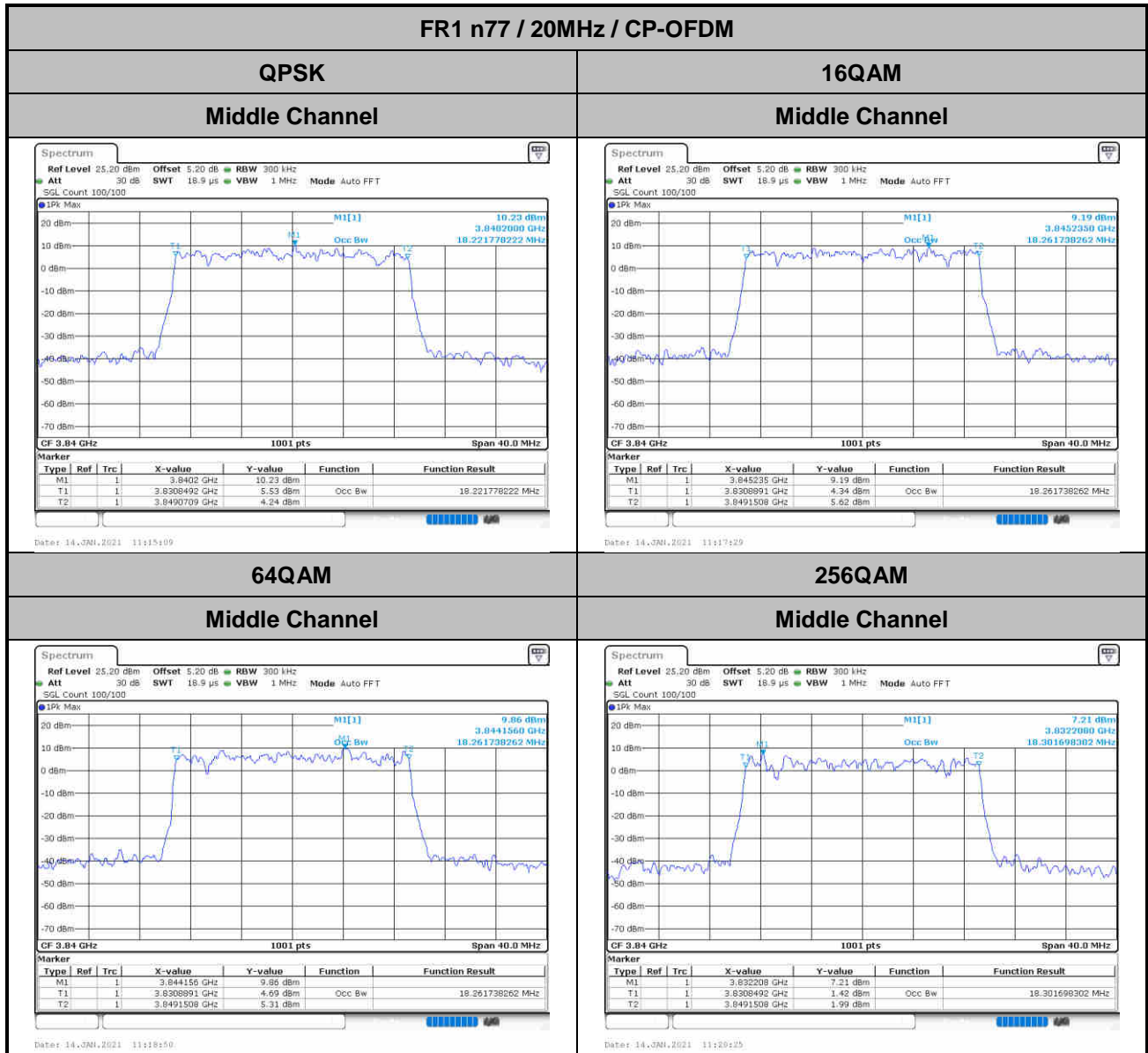
Mode	FR1 n77 : OBW(MHz) / CP-OFDM							
BW	80MHz	80MHz	80MHz	80MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	77.36	77.52	77.20	77.52				

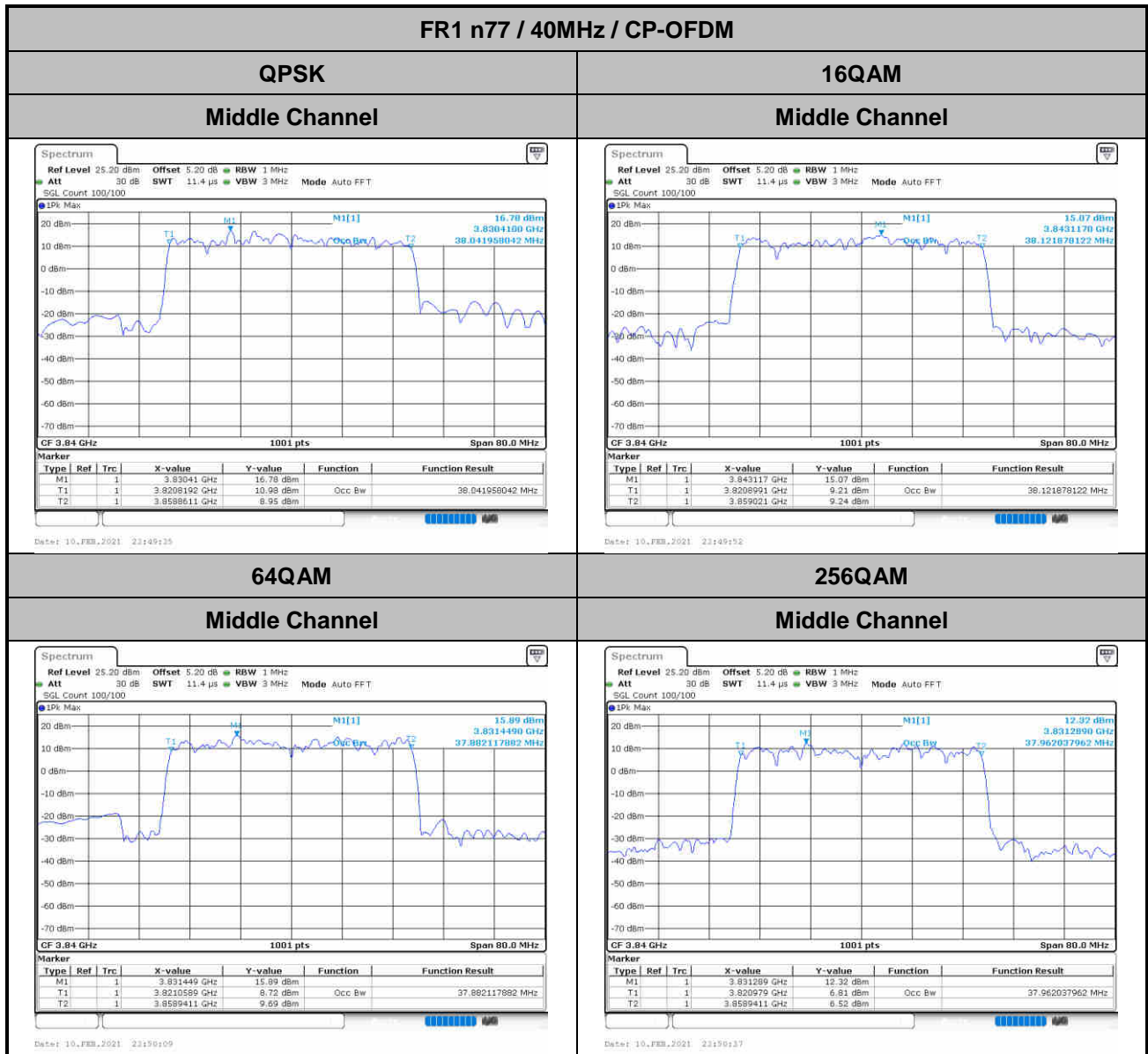
Mode	FR1 n77 : OBW(MHz) / CP-OFDM							
BW	100MHz	100MHz	100MHz	100MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	97.50	97.10	97.30	97.50				

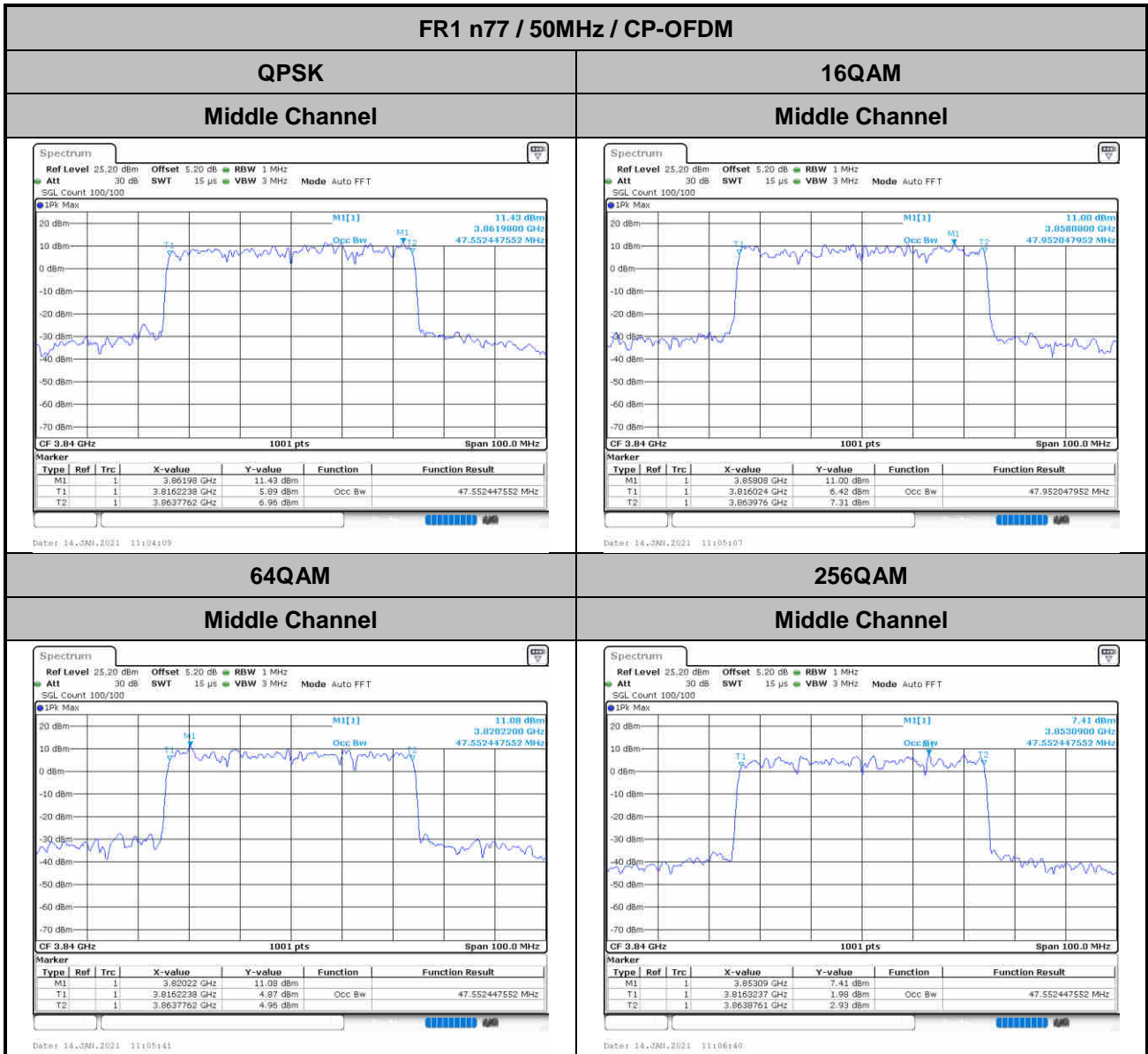


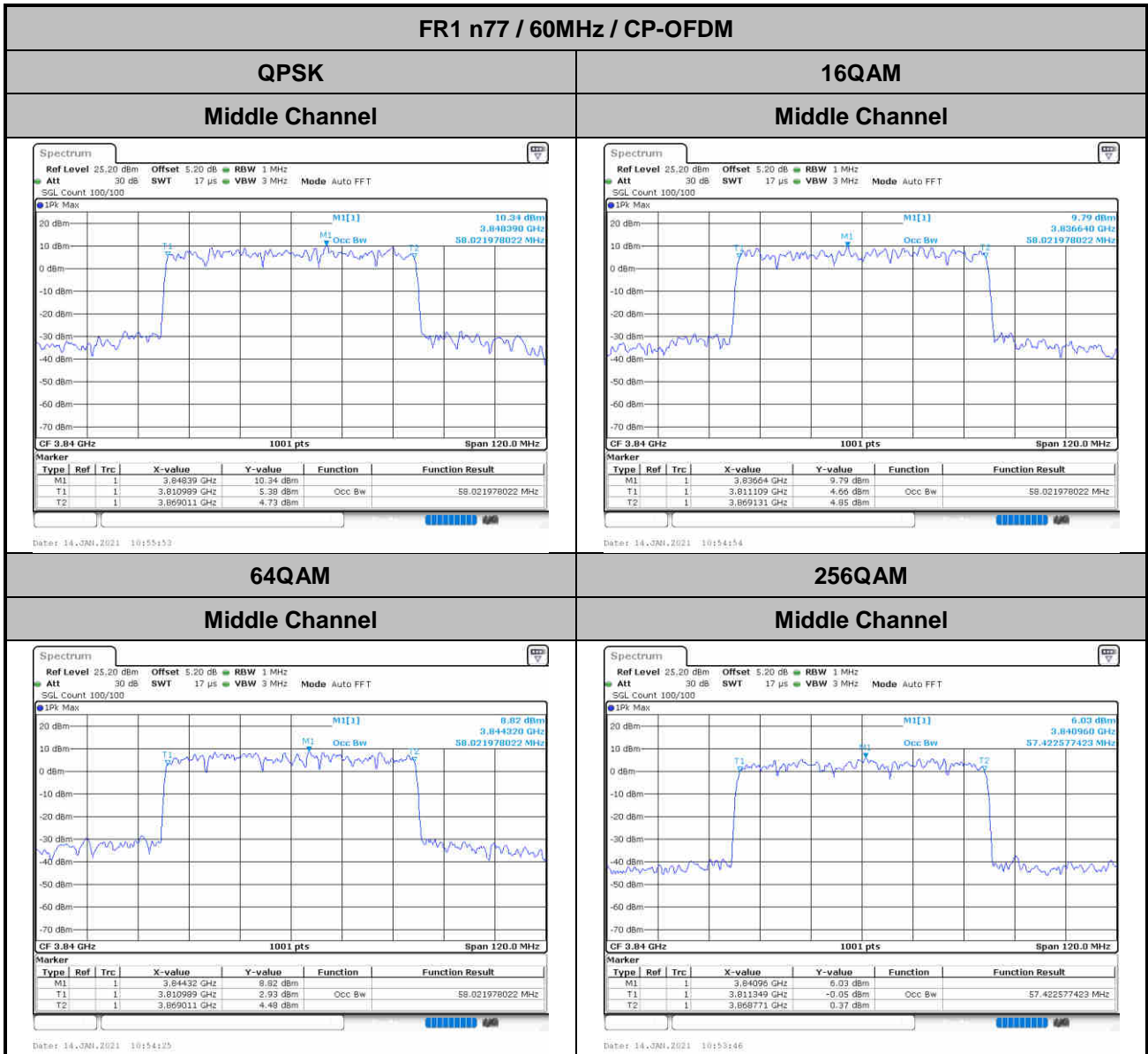


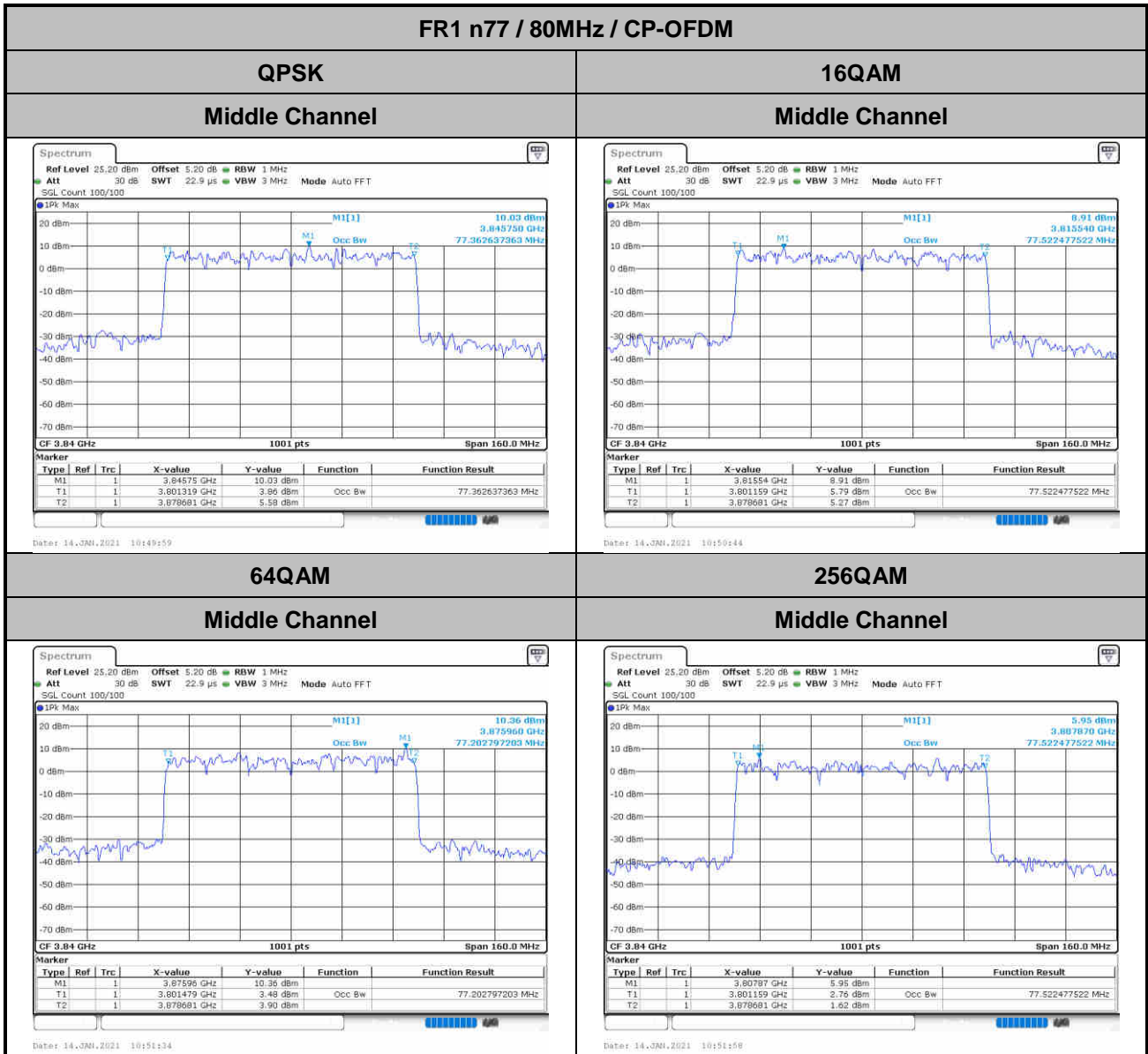


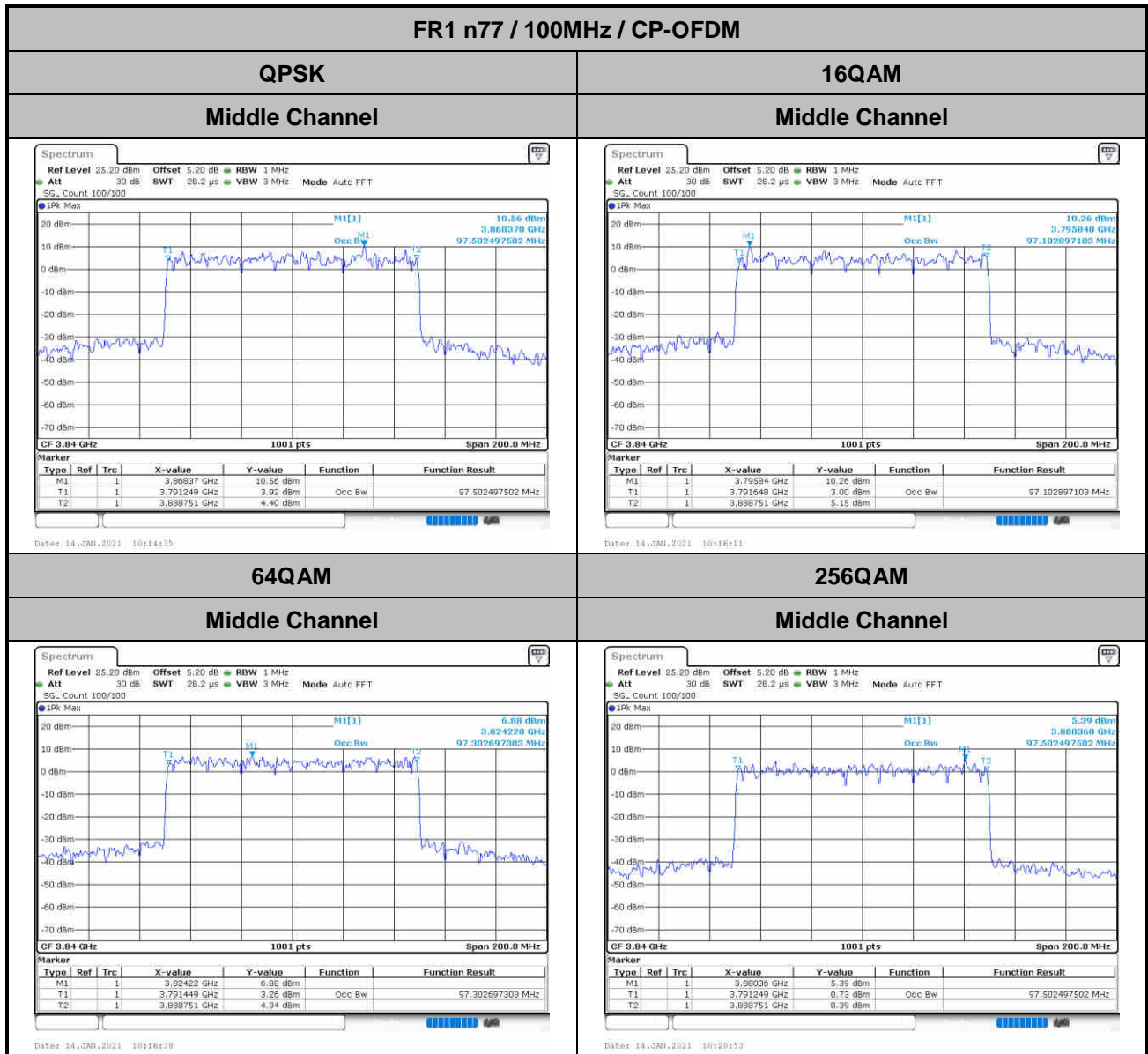






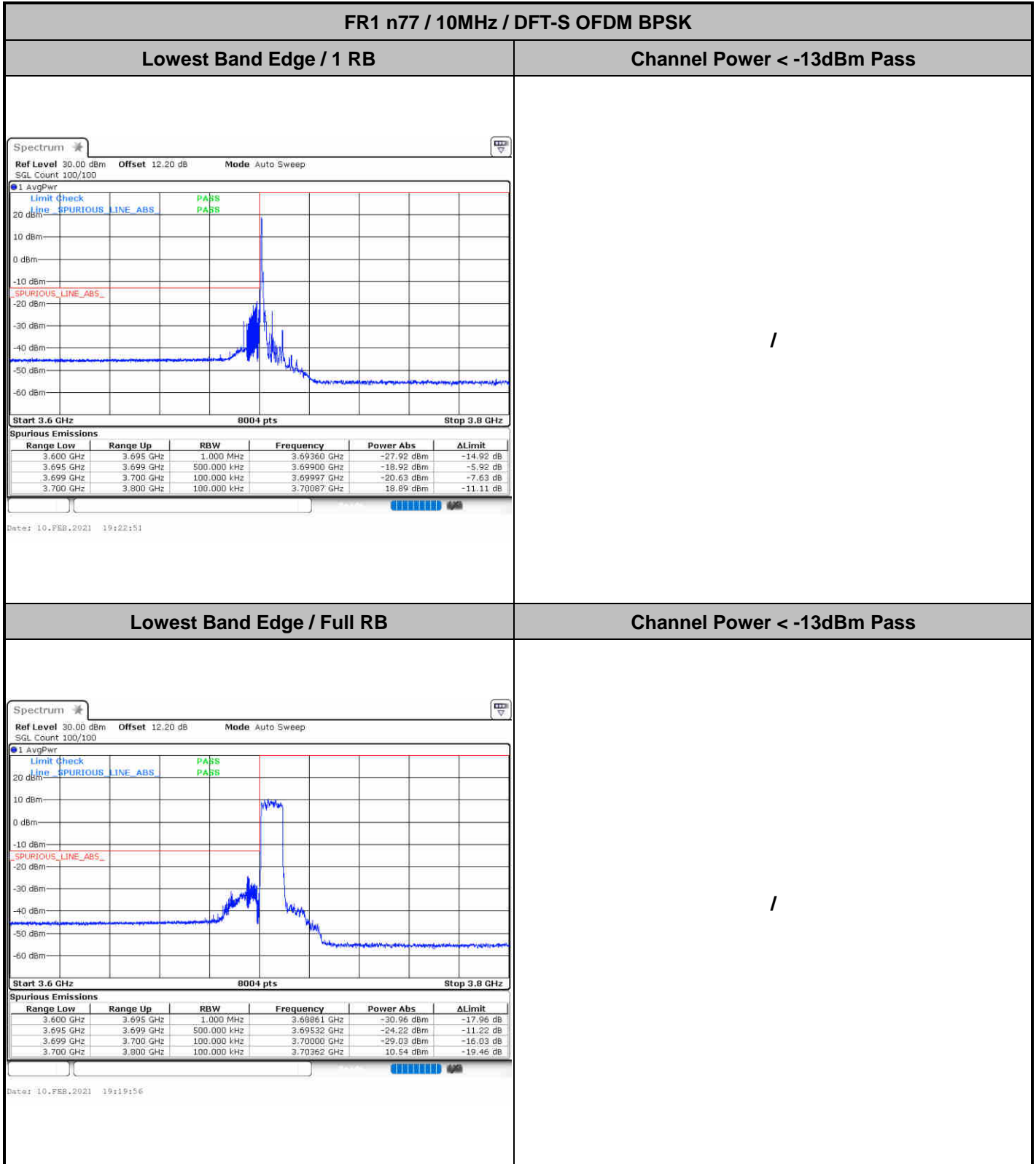








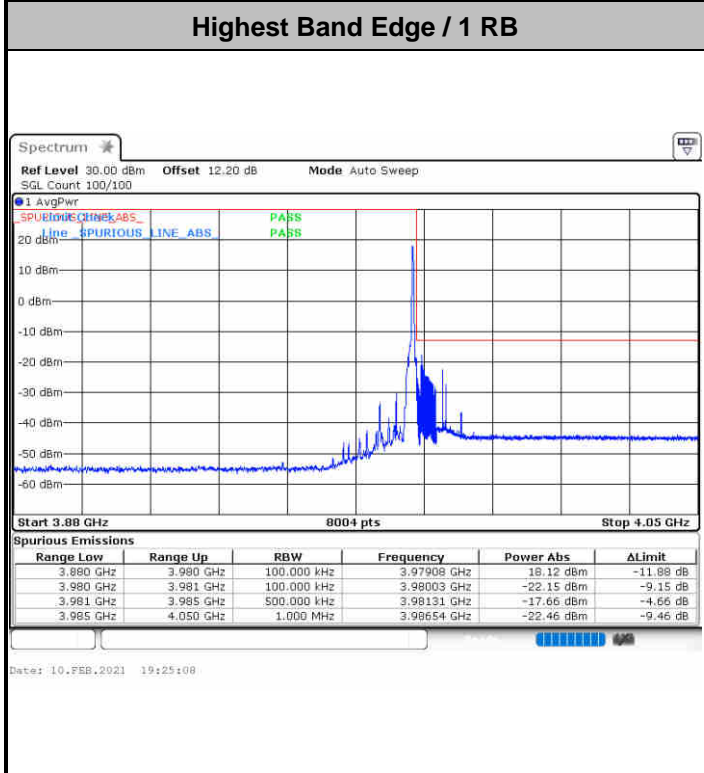
# Conducted Band Edge





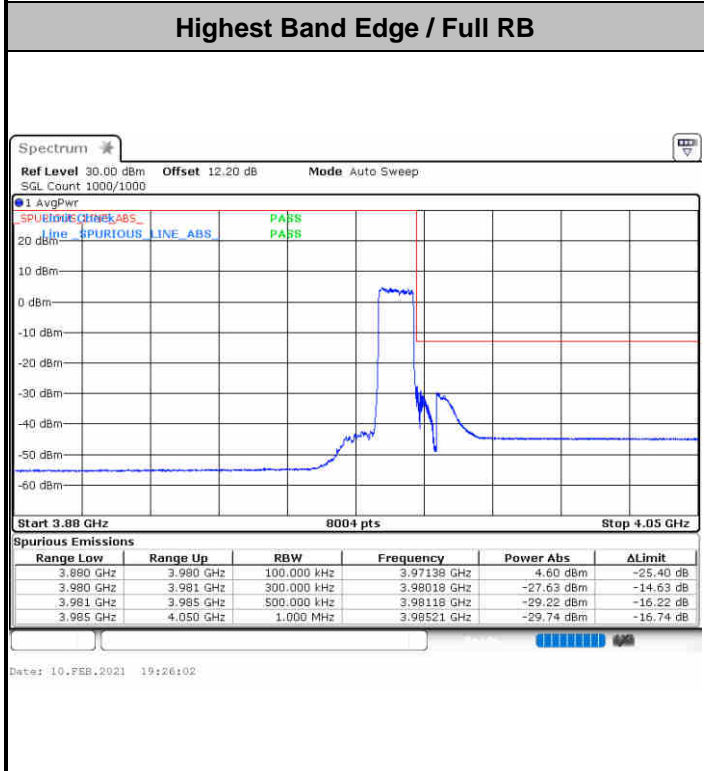


FR1 n77 / 10MHz / DFT-S OFDM BPSK



Channel Power < -13dBm Pass

/



Channel Power < -13dBm Pass

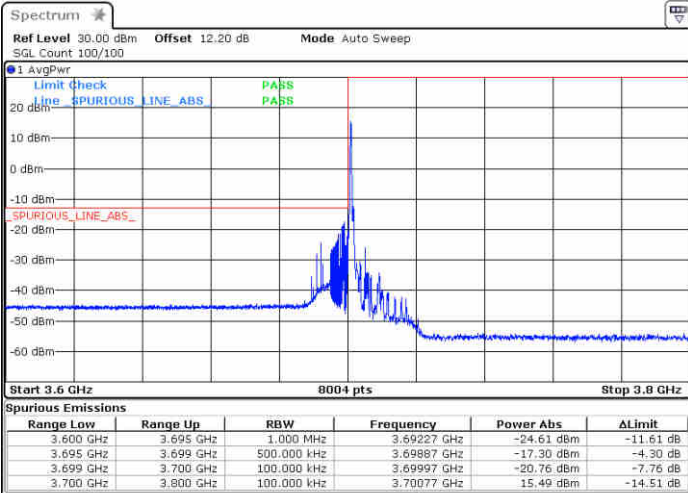
/



FR1 n77 / 10MHz / DFT-S OFDM QPSK

Lowest Band Edge / 1 RB

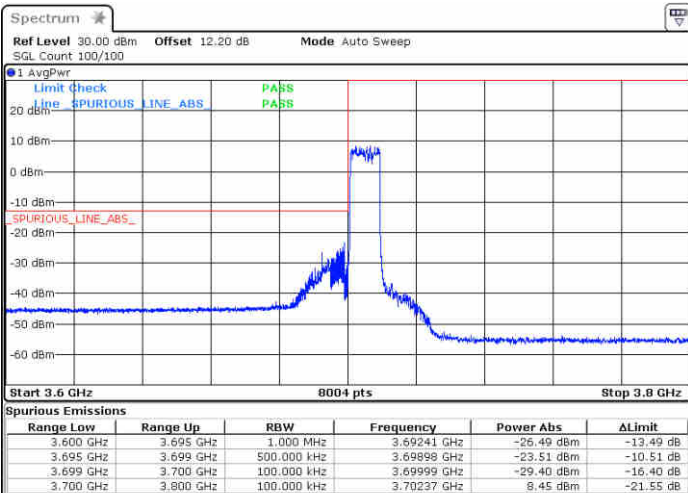
Channel Power < -13dBm Pass



Date: 10.FEB.2021 19:23:37

Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



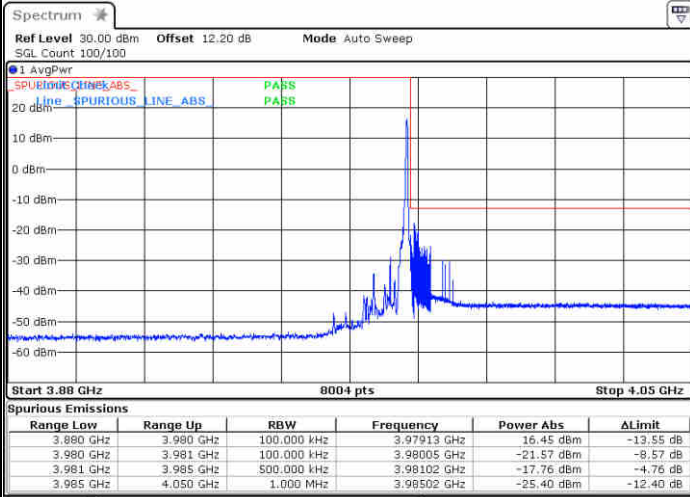
Date: 10.FEB.2021 19:14:08



FR1 n77 / 10MHz / DFT-S OFDM QPSK

Highest Band Edge / 1 RB

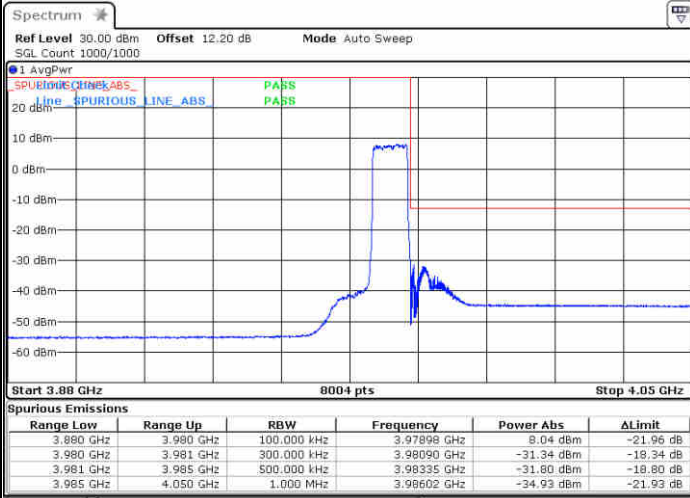
Channel Power < -13dBm Pass



Date: 10.FEB.2021 19:24:35

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



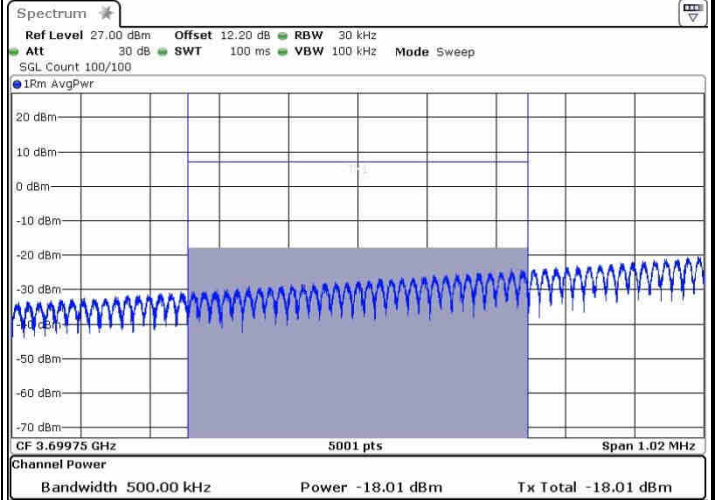
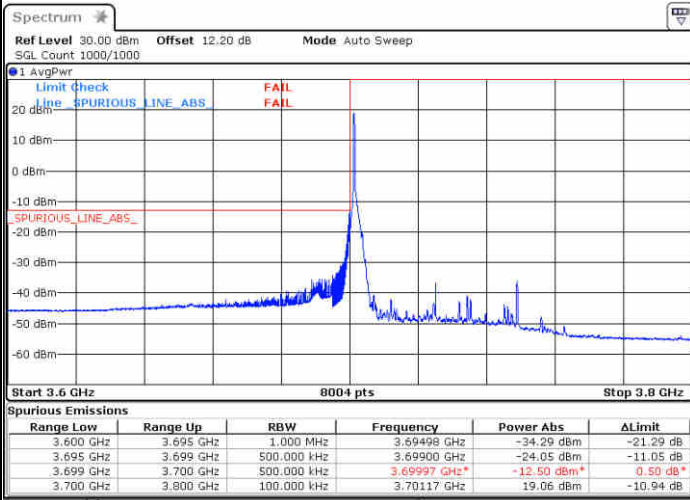
Date: 10.FEB.2021 19:26:57



FR1 n77 / 50MHz / DFT-S OFDM BPSK

Lowest Band Edge / 1 RB

Channel Power < -13dBm Pass

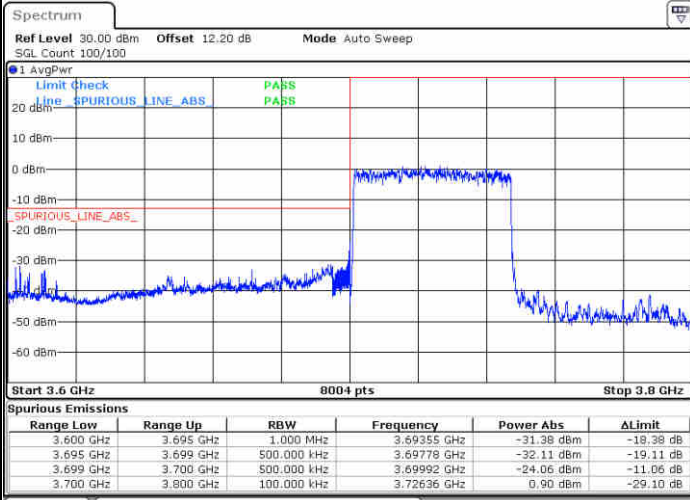


Date: 9.FEB.2021 22:06:46

Date: 9.FEB.2021 22:07:39

Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



Date: 9.FEB.2021 22:04:04

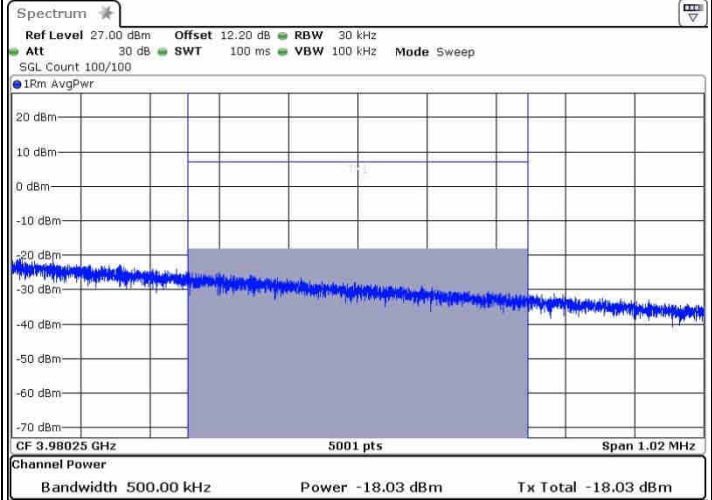
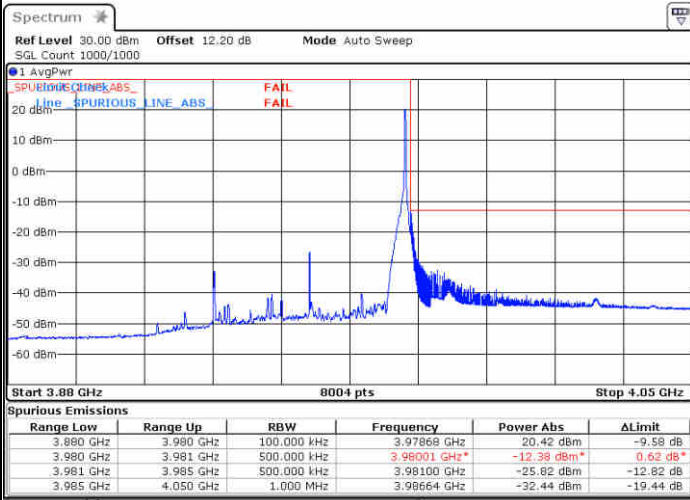
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FR1 n77 / 50MHz / DFT-S OFDM BPSK

Highest Band Edge / 1 RB

Channel Power < -13dBm Pass

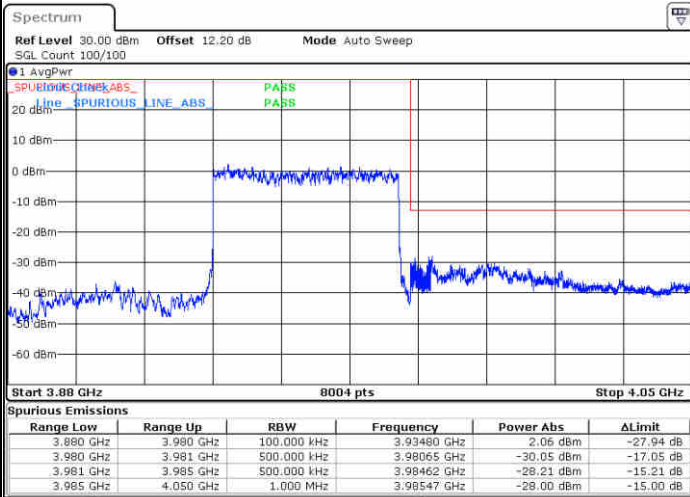


Date: 9.FEB.2021 21:55:27

Date: 9.FEB.2021 22:01:46

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



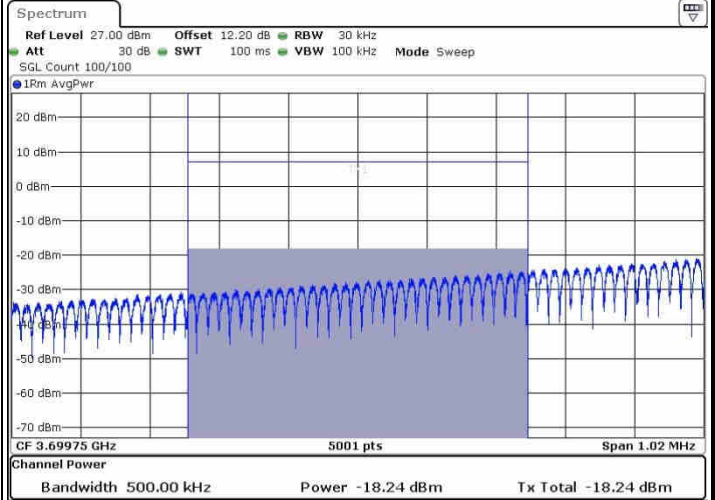
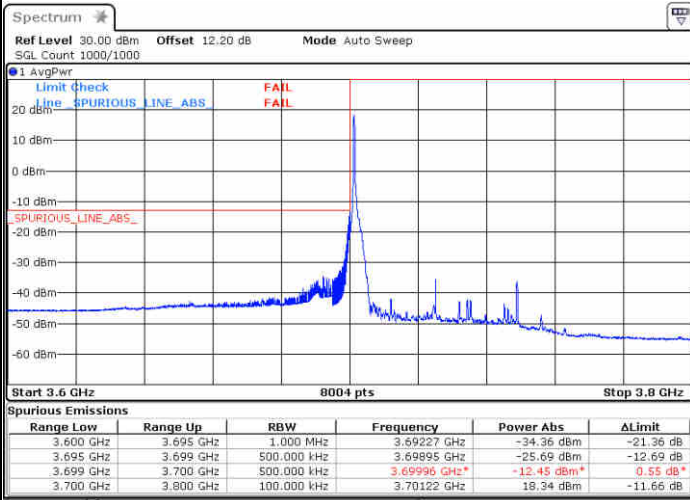
Date: 9.FEB.2021 22:03:07



FR1 n77 / 50MHz / DFT-S OFDM QPSK

Lowest Band Edge / 1 RB

Channel Power < -13dBm Pass

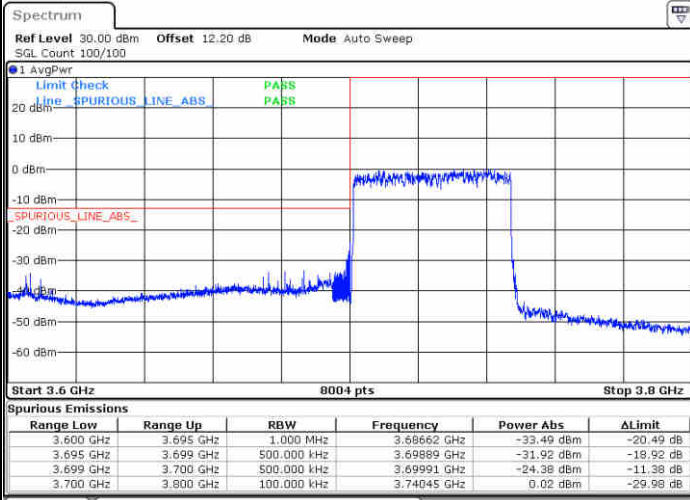


Date: 9.FEB.2021 22:05:34

Date: 9.FEB.2021 22:08:06

Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



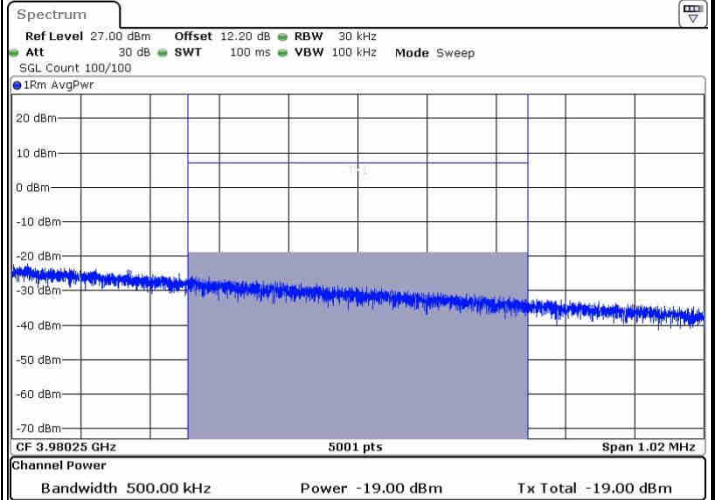
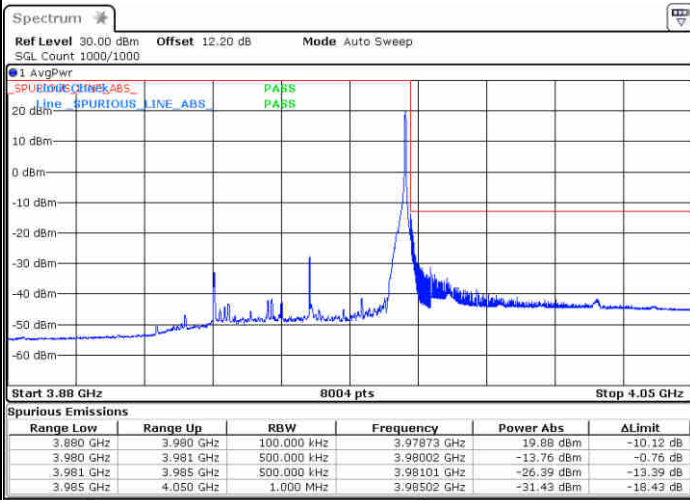
Date: 9.FEB.2021 22:04:19



FR1 n77 / 50MHz / DFT-S OFDM QPSK

Highest Band Edge / 1 RB

Channel Power < -13dBm Pass

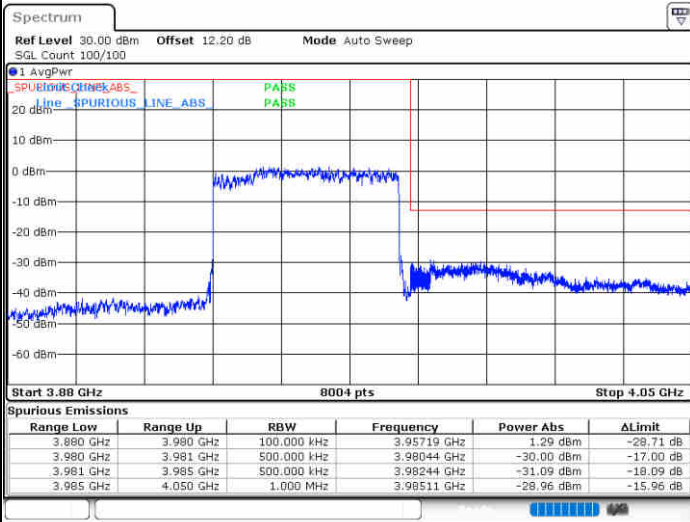


Date: 9.FEB.2021 21:53:28

Date: 9.FEB.2021 22:02:07

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



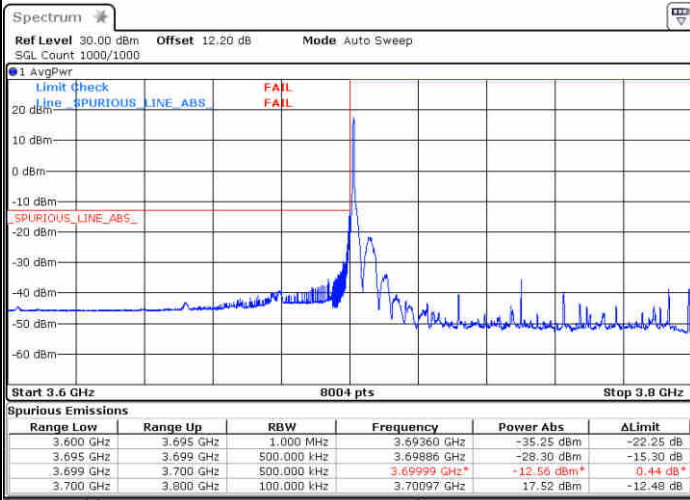
Date: 9.FEB.2021 22:02:44



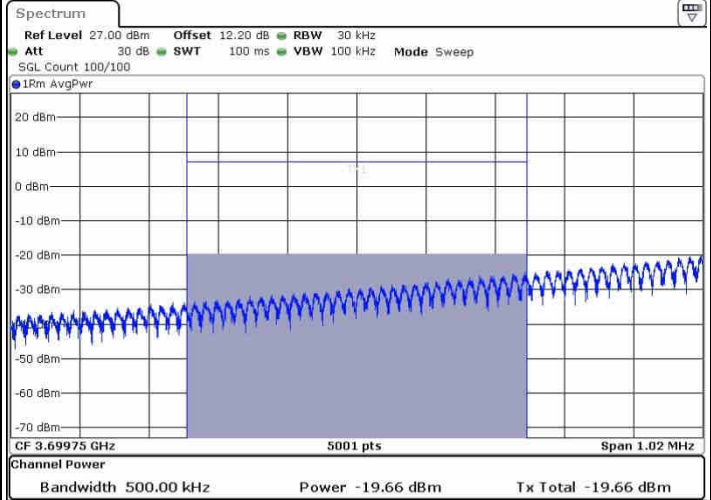
FR1 n77 / 100MHz / DFT-S OFDM BPSK

Lowest Band Edge / 1 RB

Channel Power < -13dBm Pass



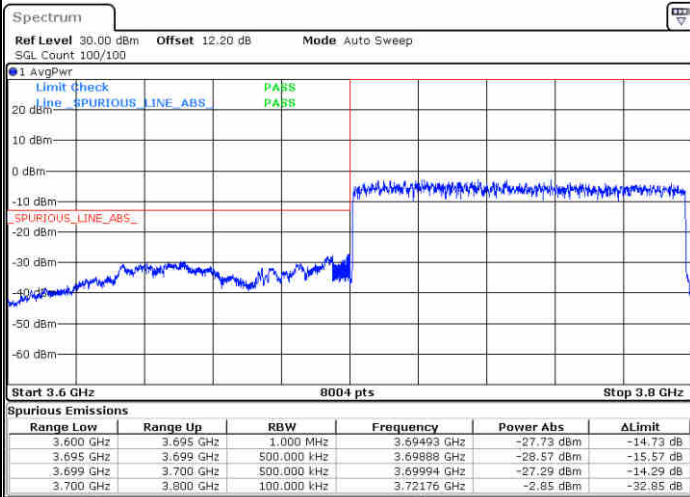
Date: 9.FEB.2021 19:24:25



Date: 9.FEB.2021 19:29:00

Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



Date: 9.FEB.2021 19:23:30

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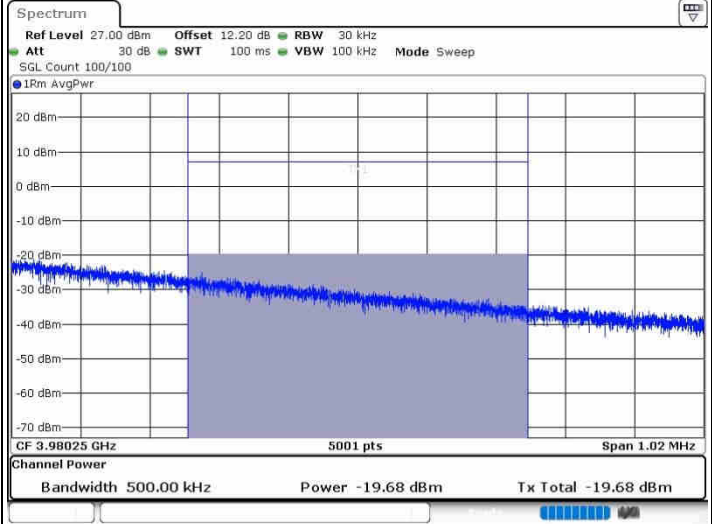
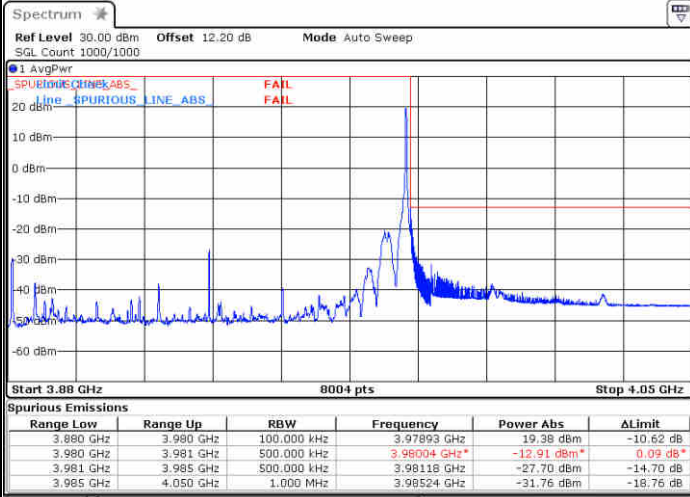




FR1 n77 / 100MHz / DFT-S OFDM BPSK

Highest Band Edge / 1 RB

Channel Power < -13dBm Pass



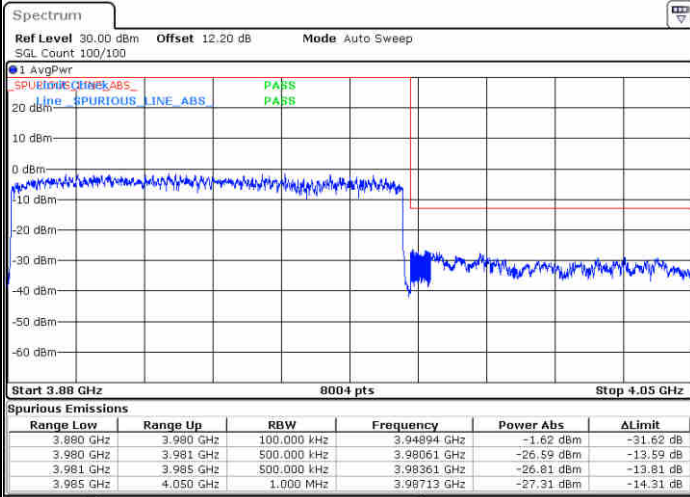
Date: 9.FEB.2021 19:31:49

Date: 9.FEB.2021 19:36:32

/

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



Date: 9.FEB.2021 19:37:09

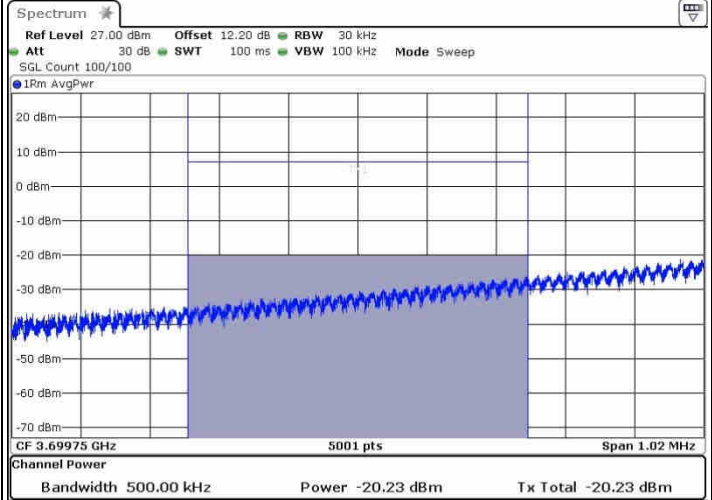
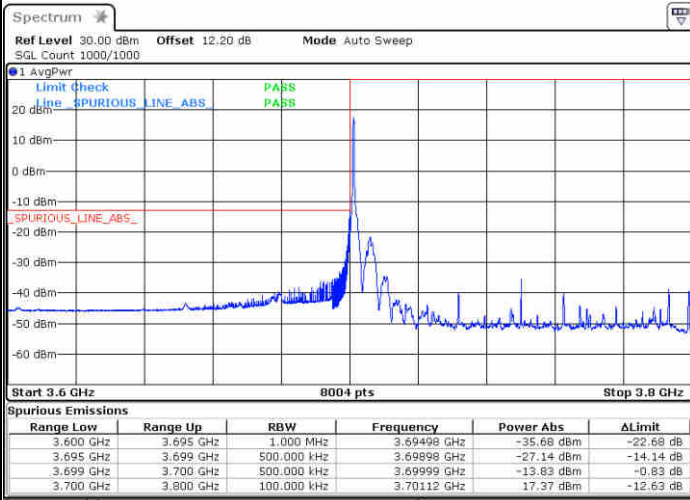
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FR1 n77 / 100MHz / DFT-S OFDM QPSK

Lowest Band Edge / 1 RB

Channel Power < -13dBm Pass

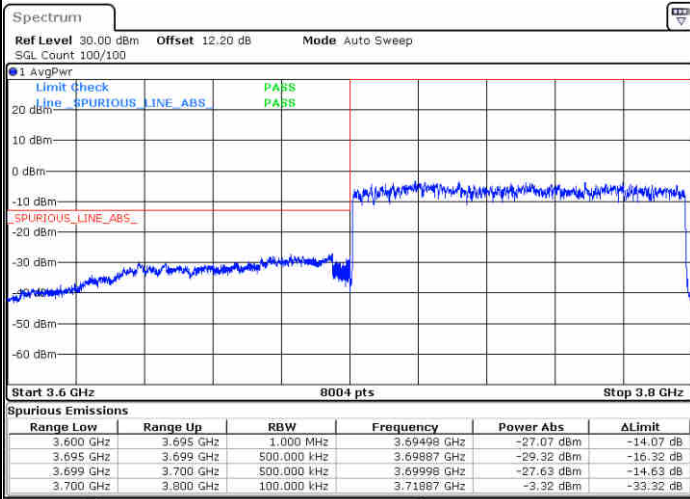


Date: 9.FEB.2021 19:25:18

Date: 9.FEB.2021 19:28:39

Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



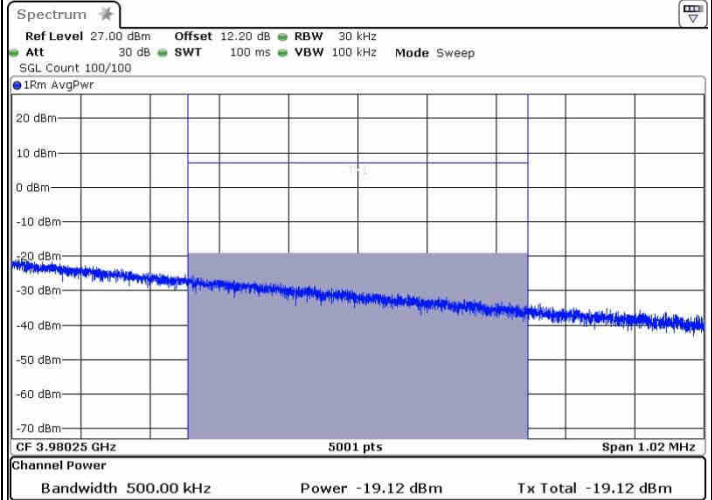
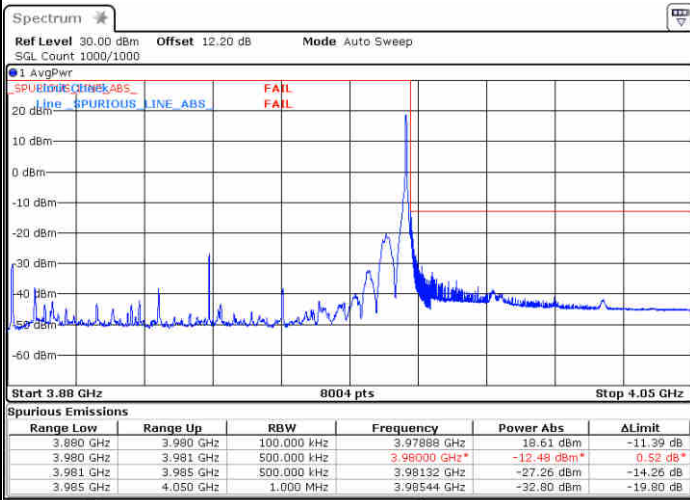
Date: 9.FEB.2021 19:23:08



FR1 n77 / 100MHz / DFT-S OFDM QPSK

Highest Band Edge / 1 RB

Channel Power < -13dBm Pass

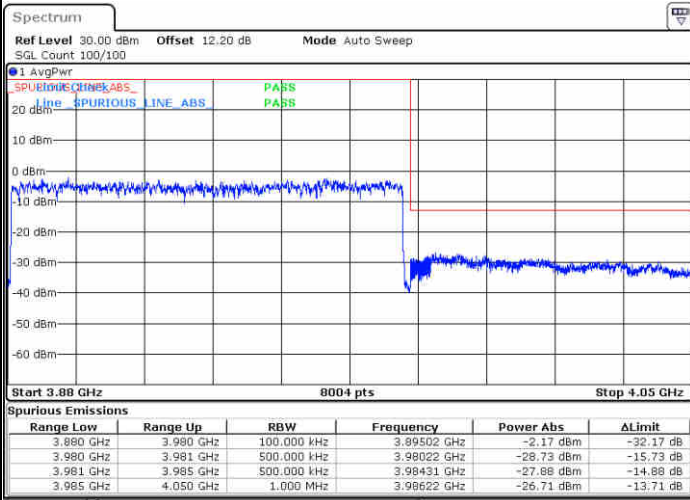


Date: 9.FEB.2021 19:23:29

Date: 9.FEB.2021 19:36:04

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



Date: 9.FEB.2021 19:37:25

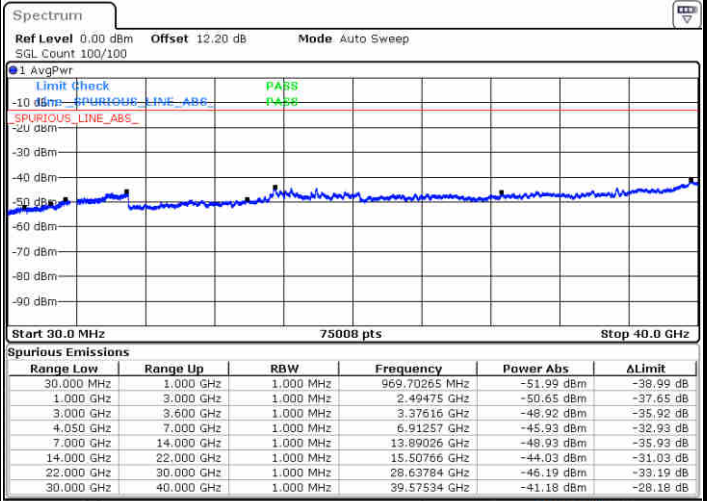
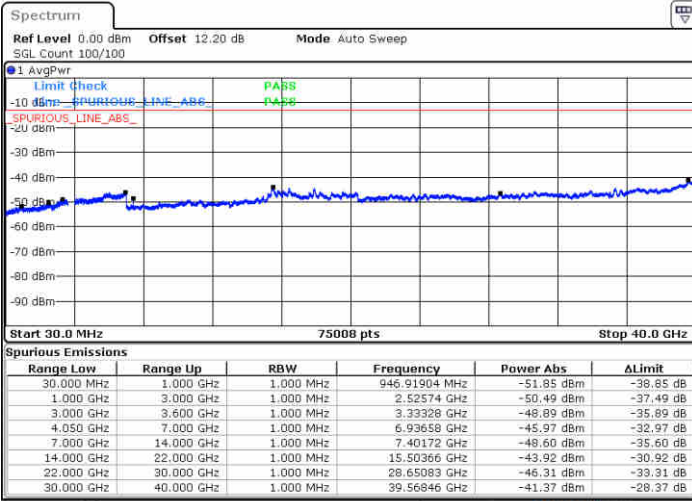


# Conducted Spurious Emission

FR1 n77 / 10MHz / DFT-S OFDM / BPSK

Lowest Channel / 1RB

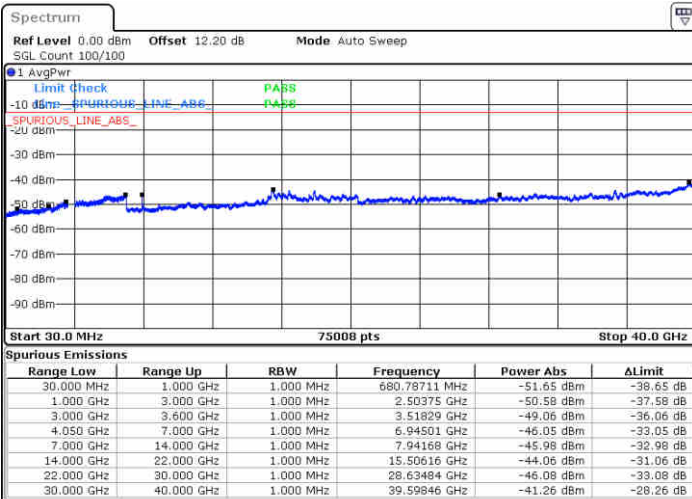
Middle Channel / 1RB



Date: 9.FEB.2021 23:04:35

Date: 9.FEB.2021 22:59:48

Highest Channel / 1RB



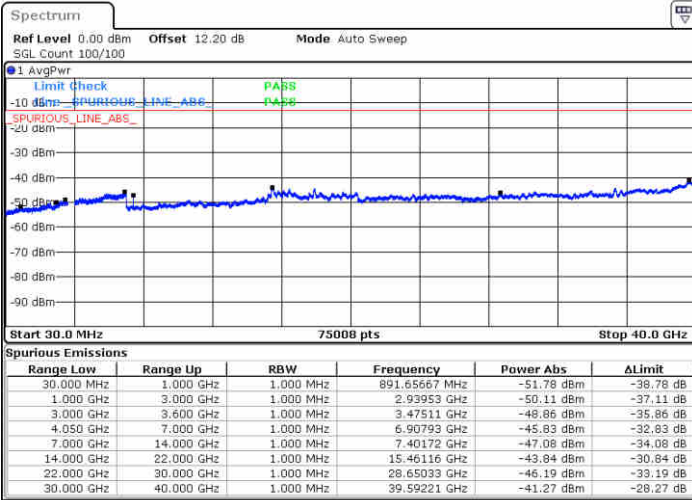
Date: 9.FEB.2021 23:06:01



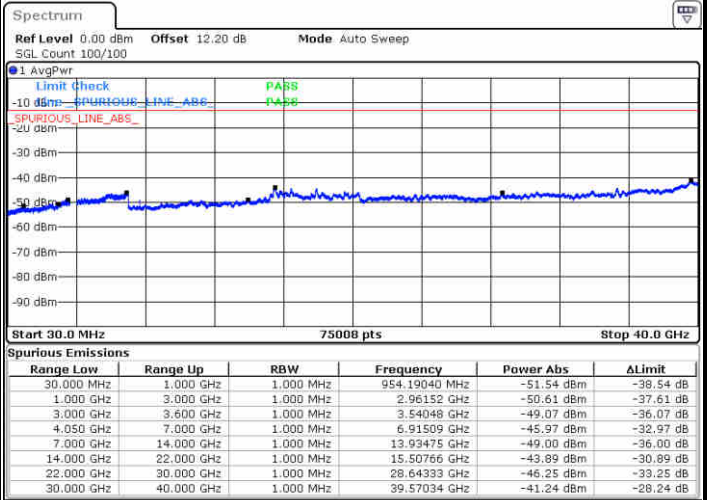
FR1 n77 / 10MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB

Middle Channel / 1RB

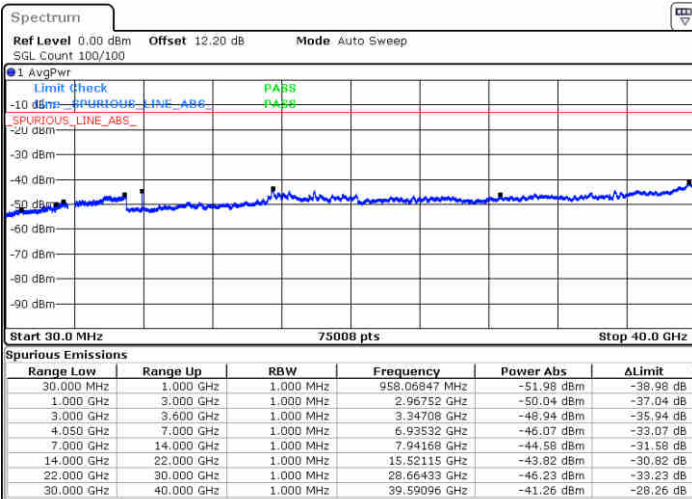


Date: 9.FEB.2021 23:02:51



Date: 9.FEB.2021 23:01:01

Highest Channel / 1RB



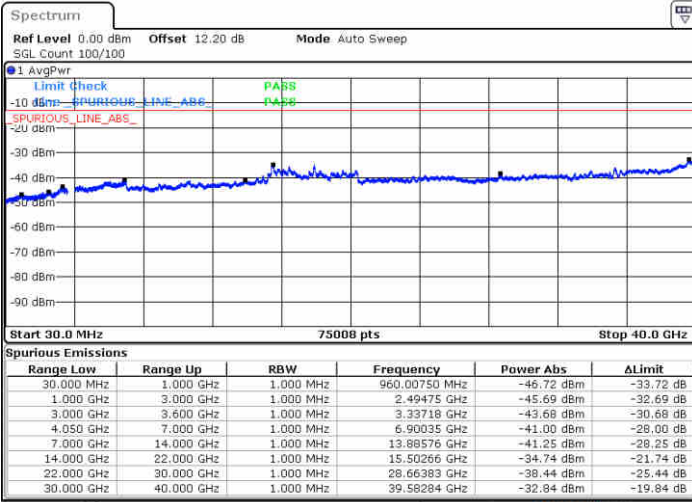
Date: 9.FEB.2021 23:07:22



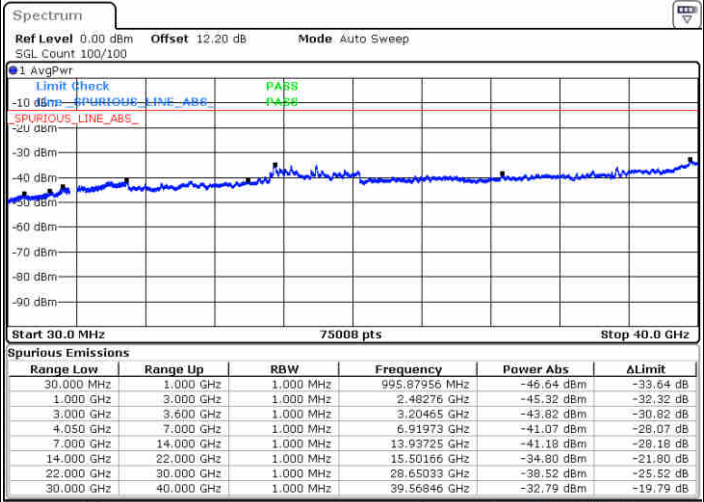
FR1 n77 / 50MHz / DFT-S OFDM / BPSK

Lowest Channel / 1RB

Middle Channel / 1RB

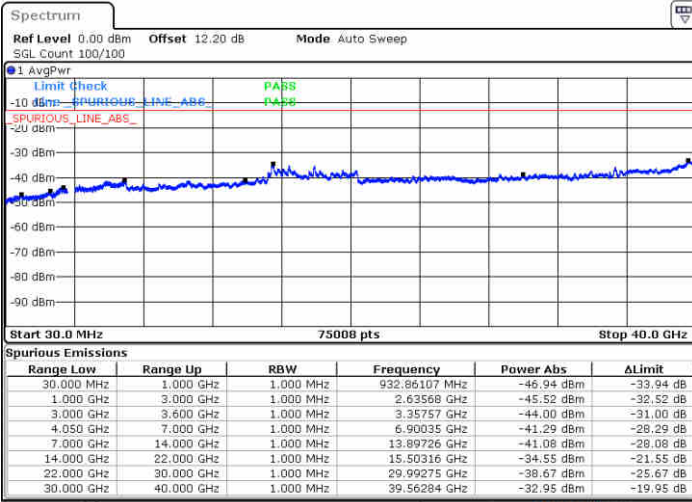


Date: 9.FEB.2021 20:57:13



Date: 9.FEB.2021 20:44:41

Highest Channel / 1RB



Date: 9.FEB.2021 20:58:46