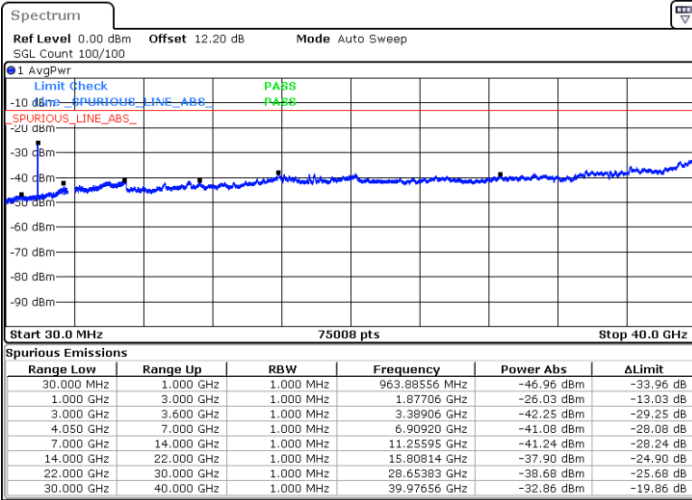




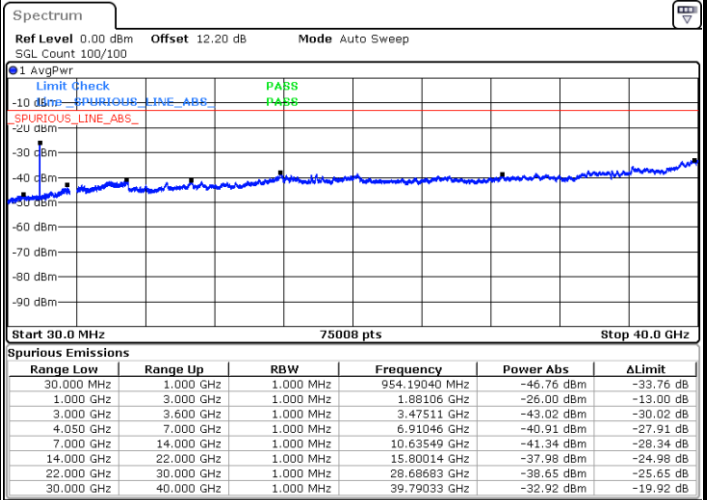
FR1 n77 / 50MHz / DFT-S OFDM / BPSK

Lowest Channel / 1RB

Middle Channel / 1RB

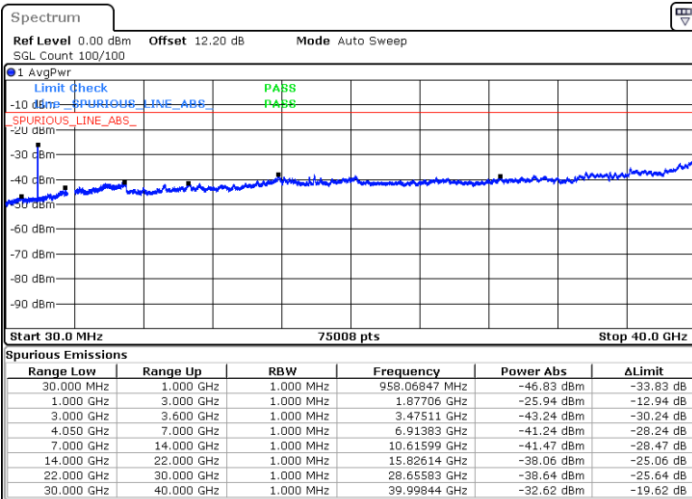


Date: 4.MAR.2021 10:33:01



Date: 4.MAR.2021 10:39:32

Highest Channel / 1RB



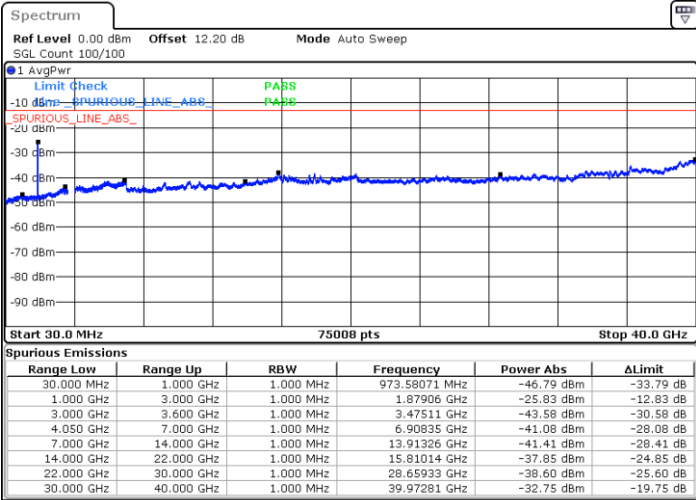
Date: 4.MAR.2021 10:47:09



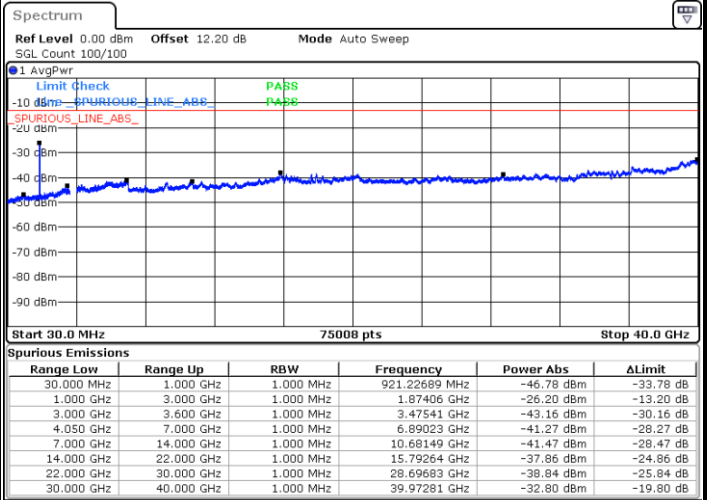
FR1 n77 / 50MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB

Middle Channel / 1RB

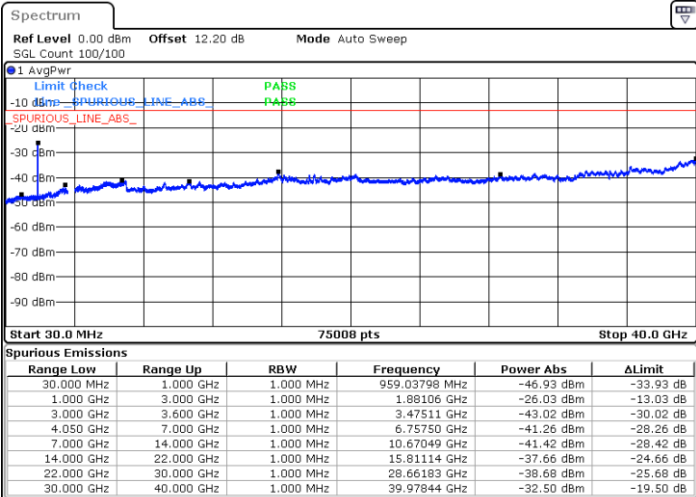


Date: 4.MAR.2021 10:27:02



Date: 4.MAR.2021 10:41:52

Highest Channel / 1RB



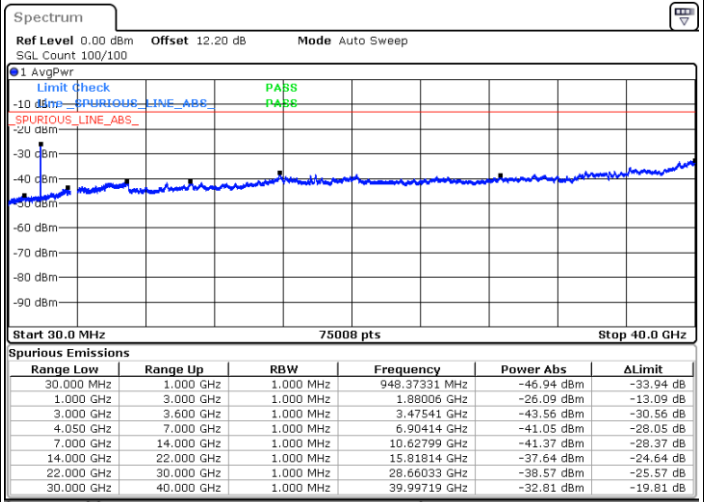
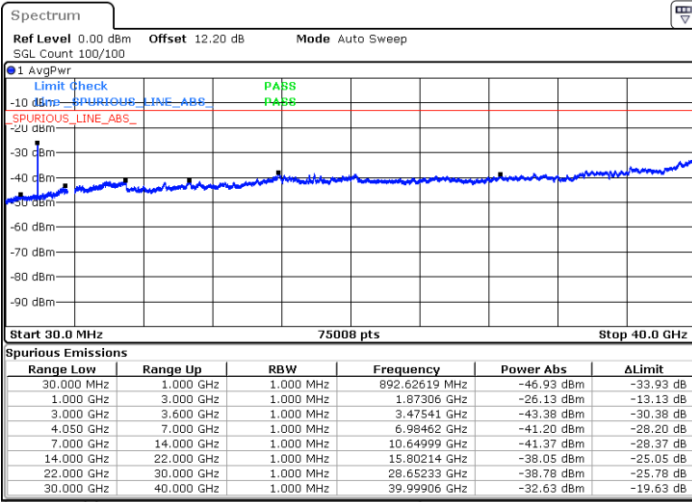
Date: 4.MAR.2021 10:48:24



FR1 n77 / 100MHz / DFT-S OFDM / BPSK

Lowest Channel / 1RB

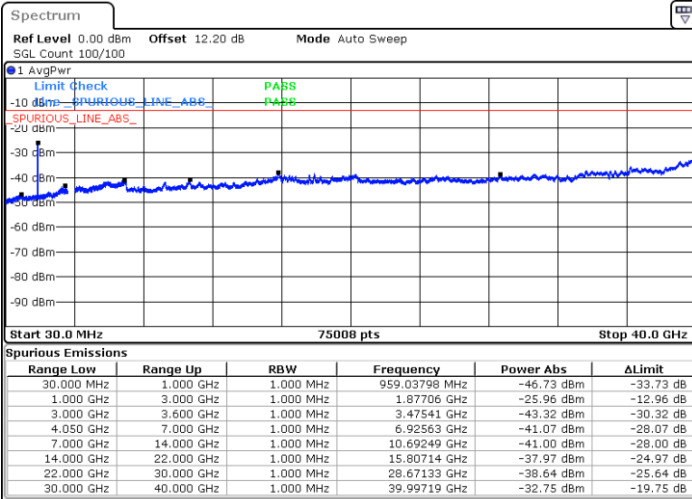
Middle Channel / 1RB



Date: 4.MAR.2021 09:44:00

Date: 4.MAR.2021 09:36:26

Highest Channel / 1RB



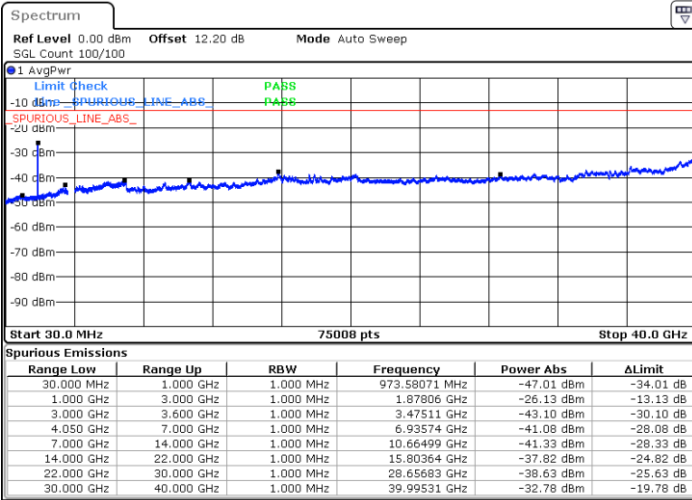
Date: 4.MAR.2021 09:59:16



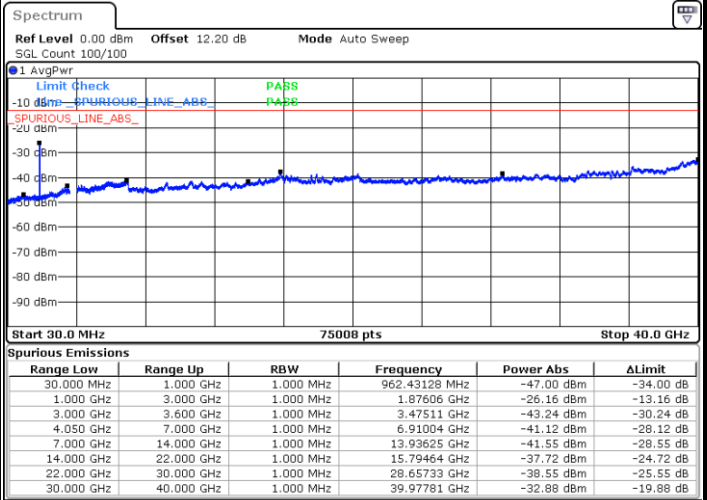
FR1 n77 / 20MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB

Middle Channel / 1RB

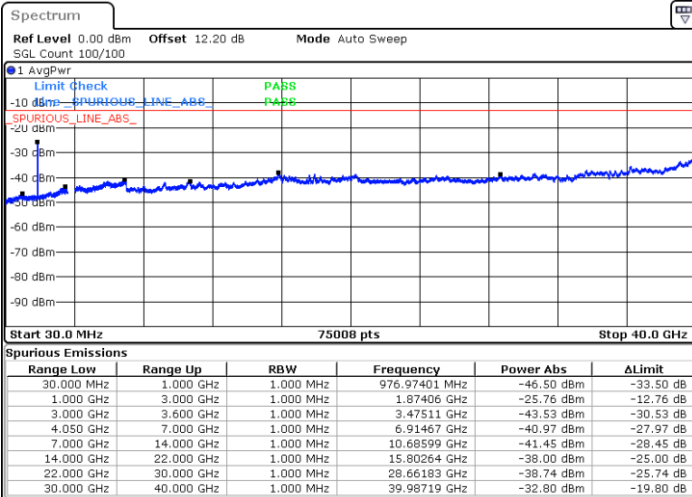


Date: 4.MAR.2021 09:46:30



Date: 4.MAR.2021 09:31:10

Highest Channel / 1RB



Date: 4.MAR.2021 09:57:52

**Frequency Stability**

Test Conditions		NR n77 (BPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 20MHz	Within Band
		Deviation (ppm)	Result
50	Normal Voltage	0.0011	PASS
40	Normal Voltage	0.0003	
30	Normal Voltage	0.0014	
20(Ref.)	Normal Voltage	0.0013	
10	Normal Voltage	0.0013	
0	Normal Voltage	0.0012	
-10	Normal Voltage	0.0015	
-20	Normal Voltage	0.0015	
-30	Normal Voltage	0.0017	
20	Maximum Voltage	0.0019	
20	Normal Voltage	0.0013	
20	Battery End Point	0.0022	

**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 n78 SA-SCS 15K

## Peak-to-Average Ratio

Mode	FR1 n78 / 20MHz / 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	4.43	3.91	5.28	5.42	<b>PASS</b>
Middle CH	4.32	3.86	5.59	5.39	
Highest CH	4.61	3.91	6.29	5.04	



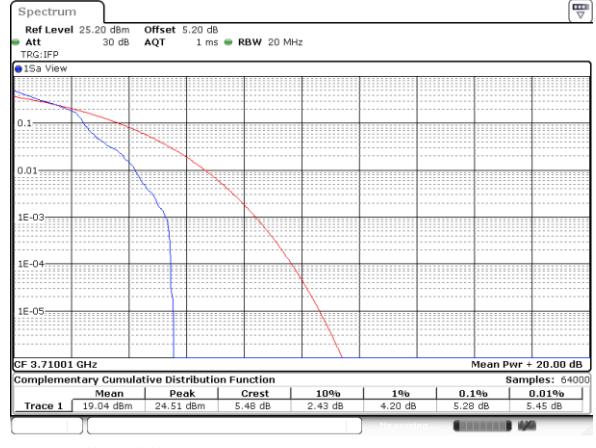
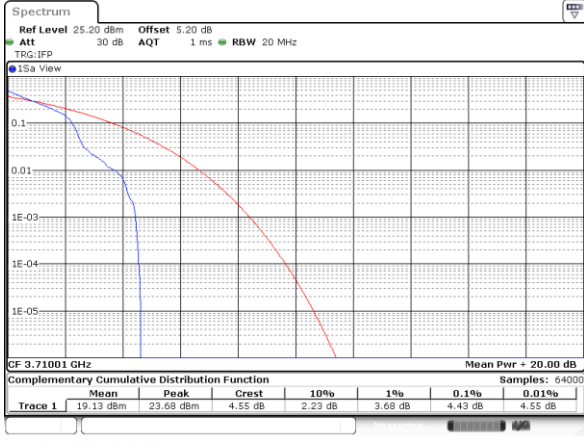
FR1 n78 / 20MHz / DFT-S OFDM

PI/2 BPSK

QPSK

Lowest Channel / 1RB

Lowest Channel / 1RB

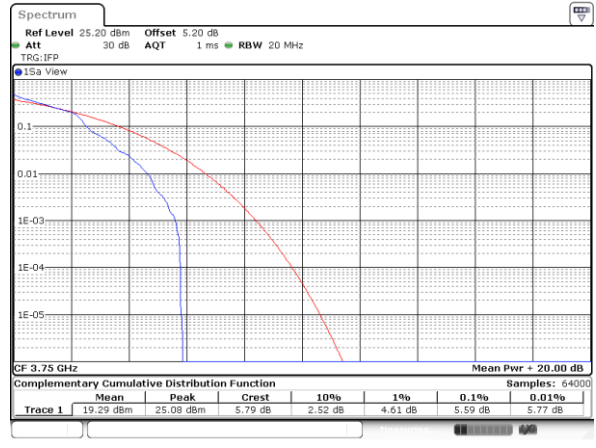
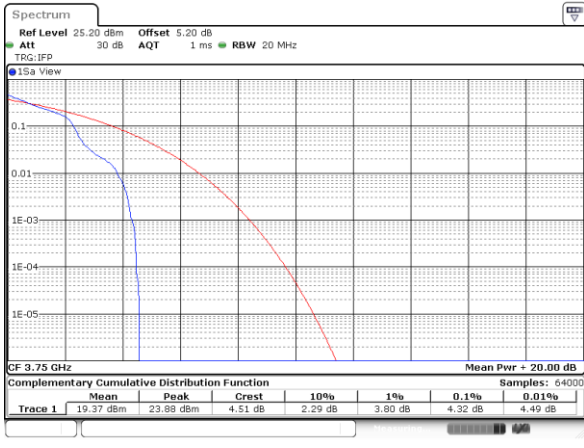


Date: 2.FEB.2021 04:48:36

Date: 2.FEB.2021 04:49:06

Middle Channel / 1 RB

Middle Channel / 1 RB

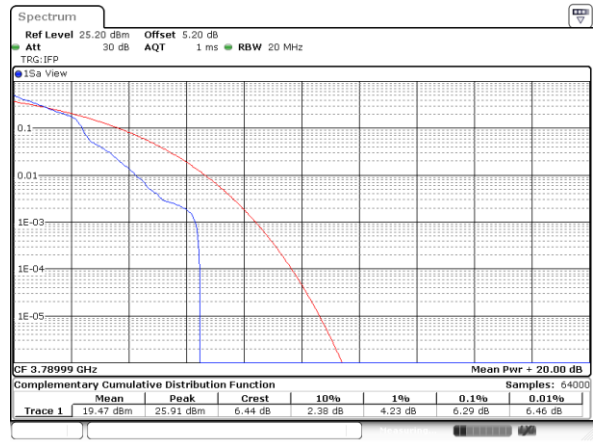
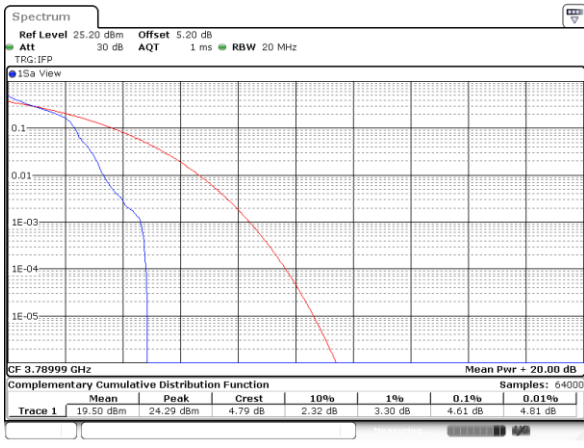


Date: 2.FEB.2021 05:00:11

Date: 2.FEB.2021 05:00:33

Highest Channel / 1 RB

Highest Channel / 1 RB



Date: 2.FEB.2021 05:10:32

Date: 2.FEB.2021 05:09:43



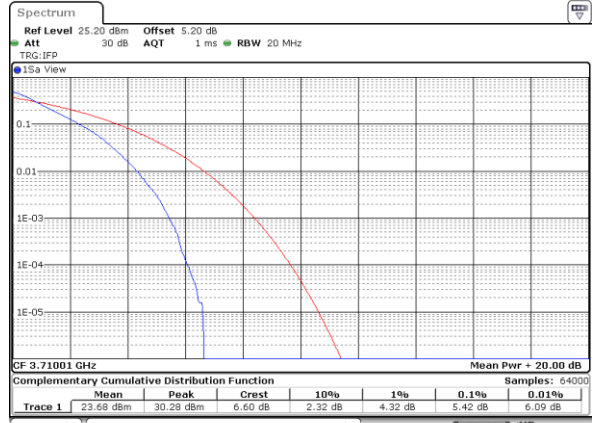
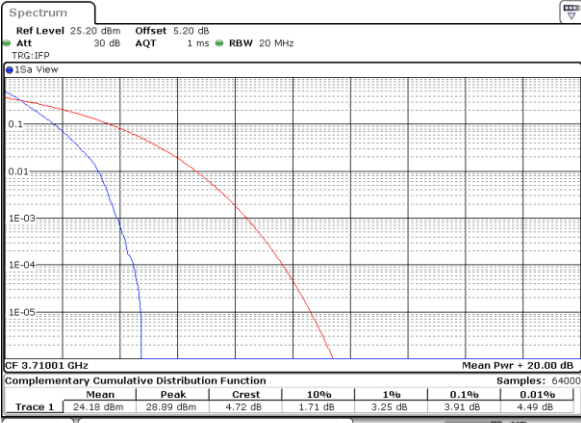
FR1 n78 / 20MHz / DFT-S OFDM

PI/2 BPSK

QPSK

Lowest Channel / Full RB

Lowest Channel / Full RB

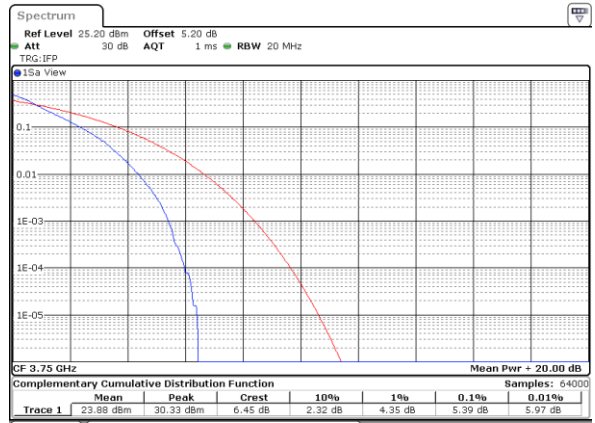
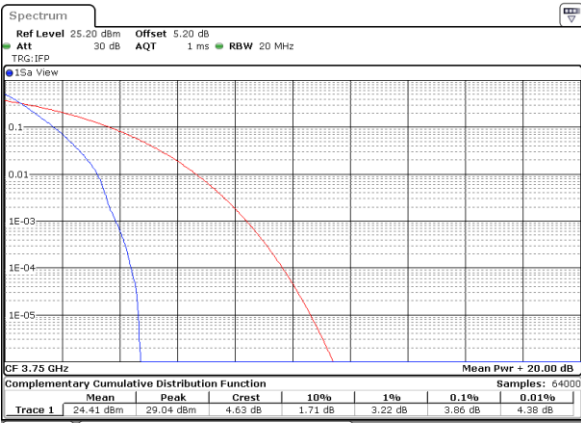


Date: 2.FEB.2021 04:47:38

Date: 2.FEB.2021 04:46:33

Middle Channel / Full RB

Middle Channel / Full RB

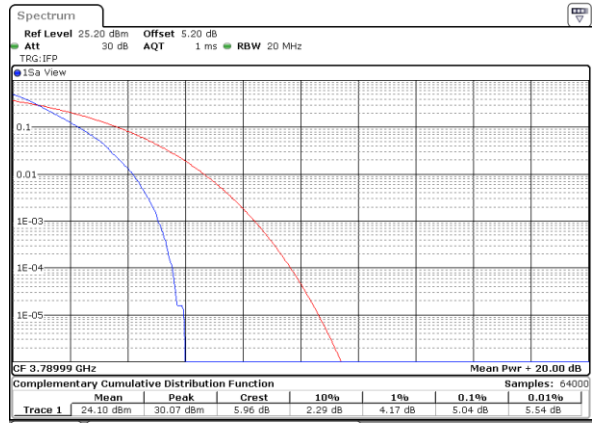
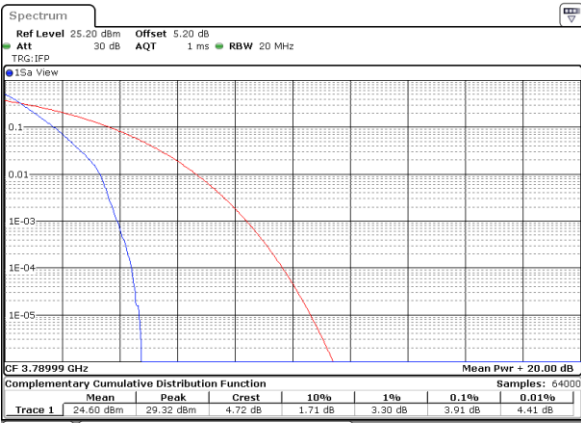


Date: 2.FEB.2021 04:59:39

Date: 2.FEB.2021 04:58:46

Highest Channel / Full RB

Highest Channel / Full RB



Date: 2.FEB.2021 05:11:14

Date: 2.FEB.2021 05:12:51



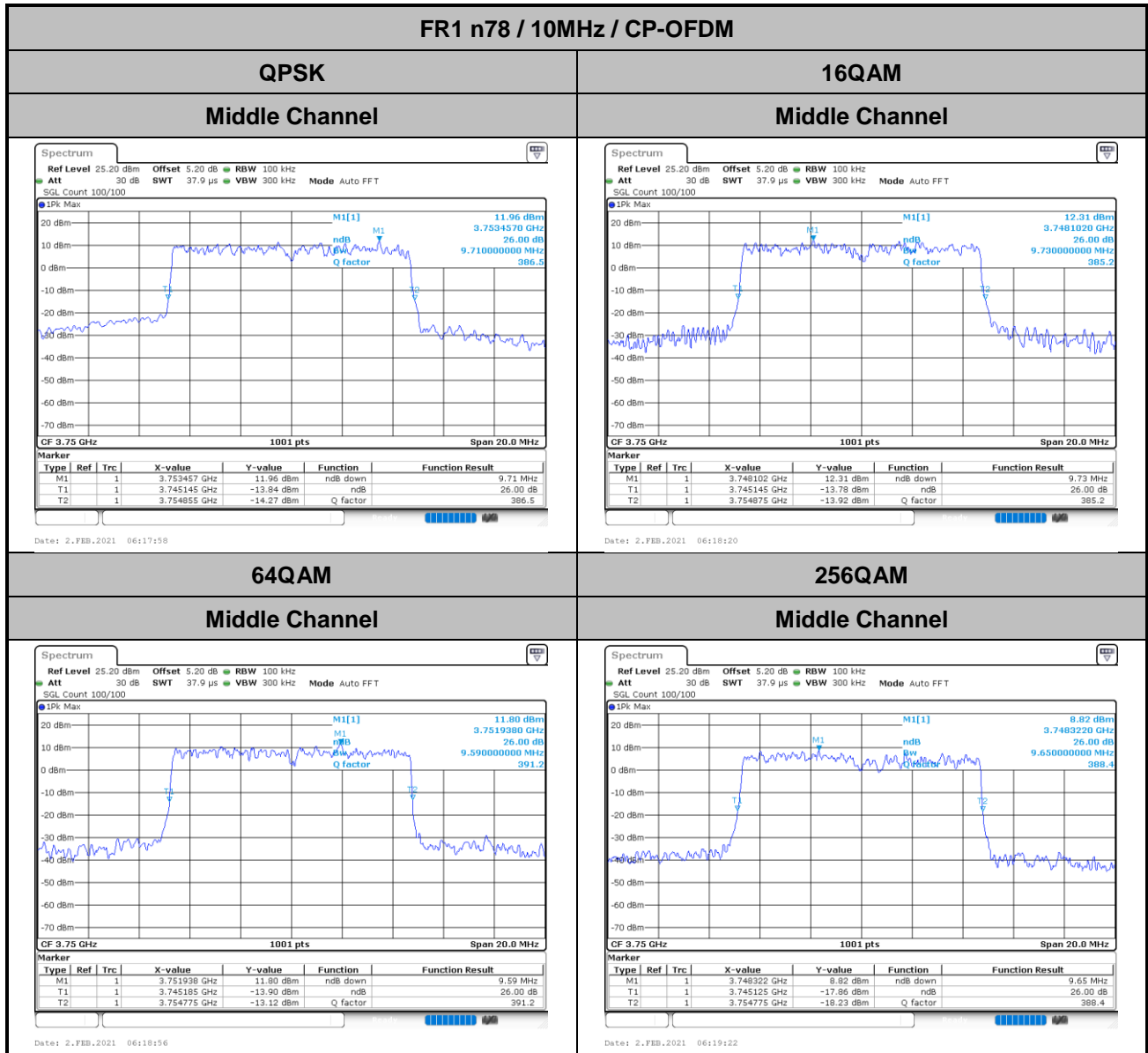


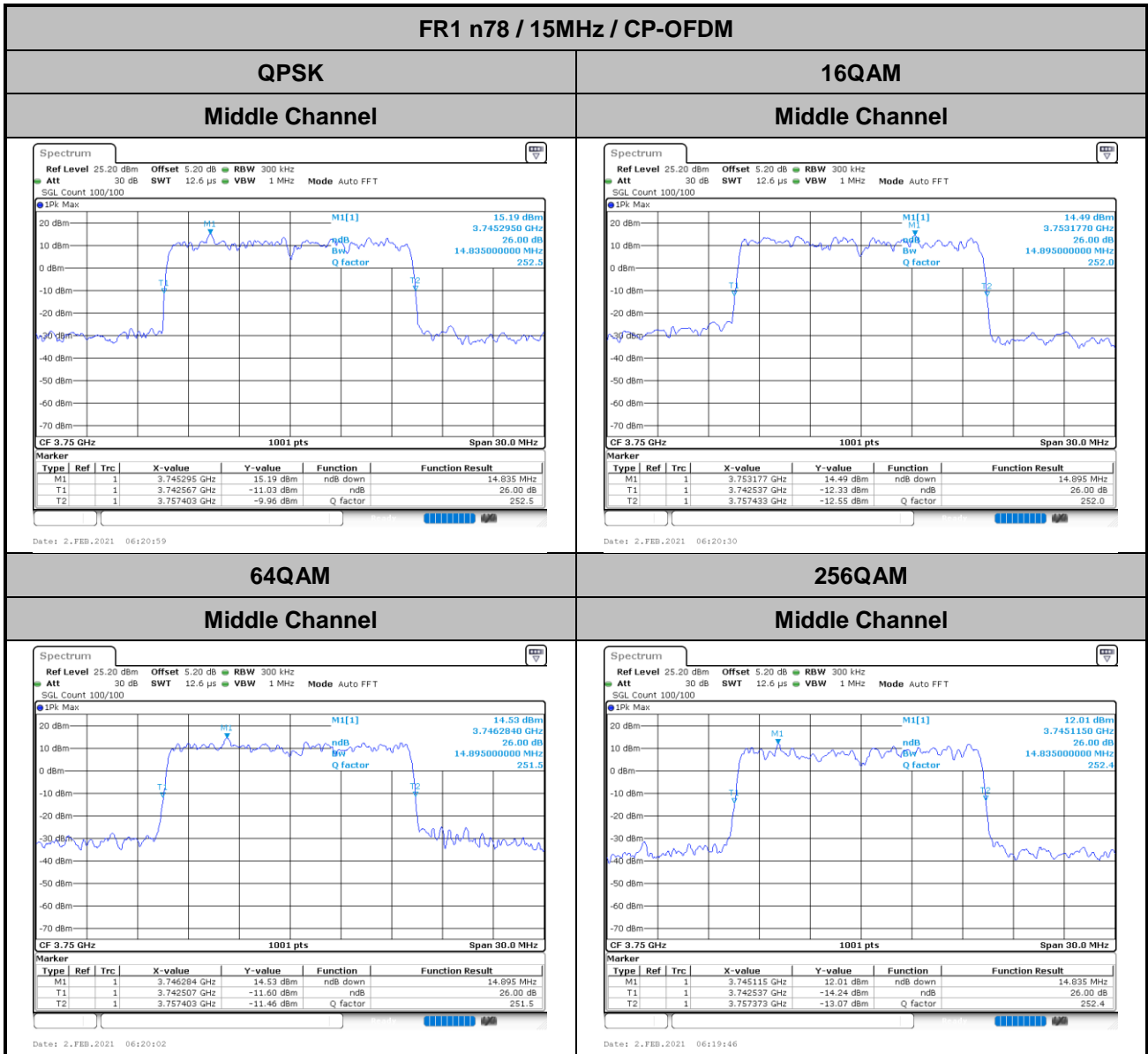
**26dB Bandwidth**

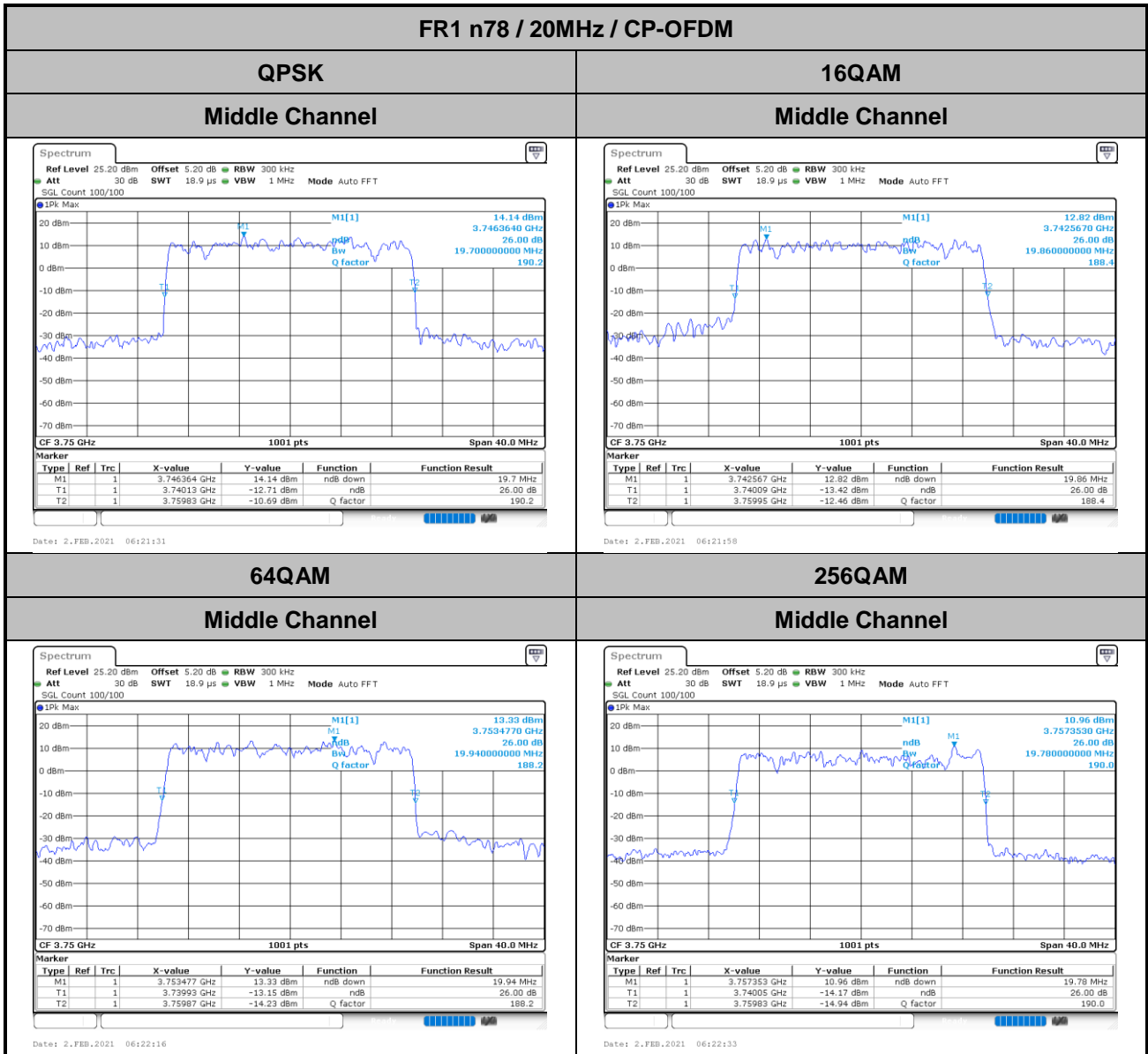
Mode	FR1 n78 : 26dB BW(MHz) / CP-OFDM							
BW	10MHz	10MHz	10MHz	10MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	9.71	9.73	9.59	9.65				

Mode	FR1 n78 : 26dB BW(MHz) / CP-OFDM							
BW	15MHz	15MHz	15MHz	15MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	14.84	14.90	14.90	14.84				

Mode	FR1 n78 : 26dB BW(MHz) / CP-OFDM							
BW	20MHz	20MHz	20MHz	20MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	19.7	19.86	19.94	19.78				







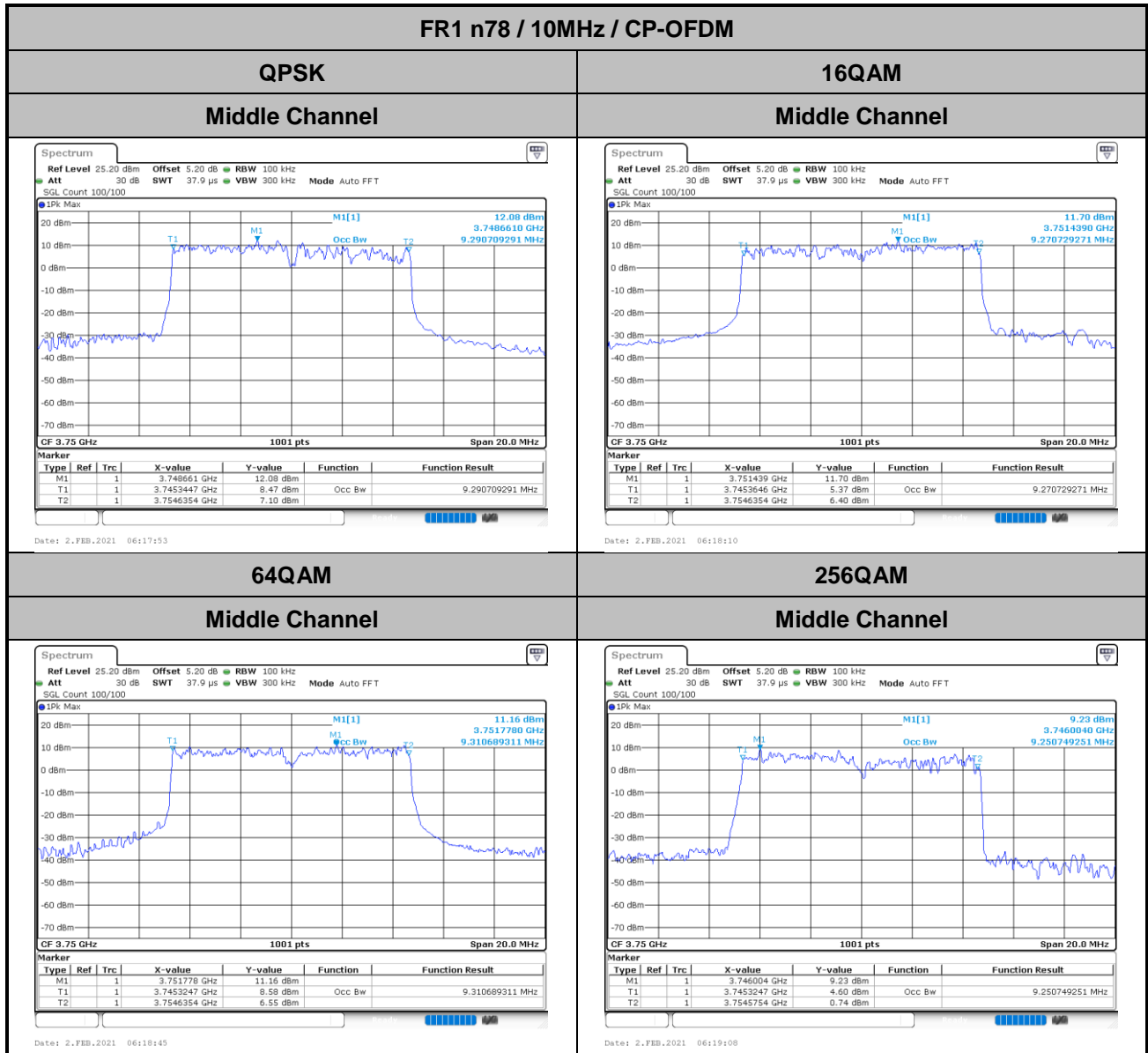


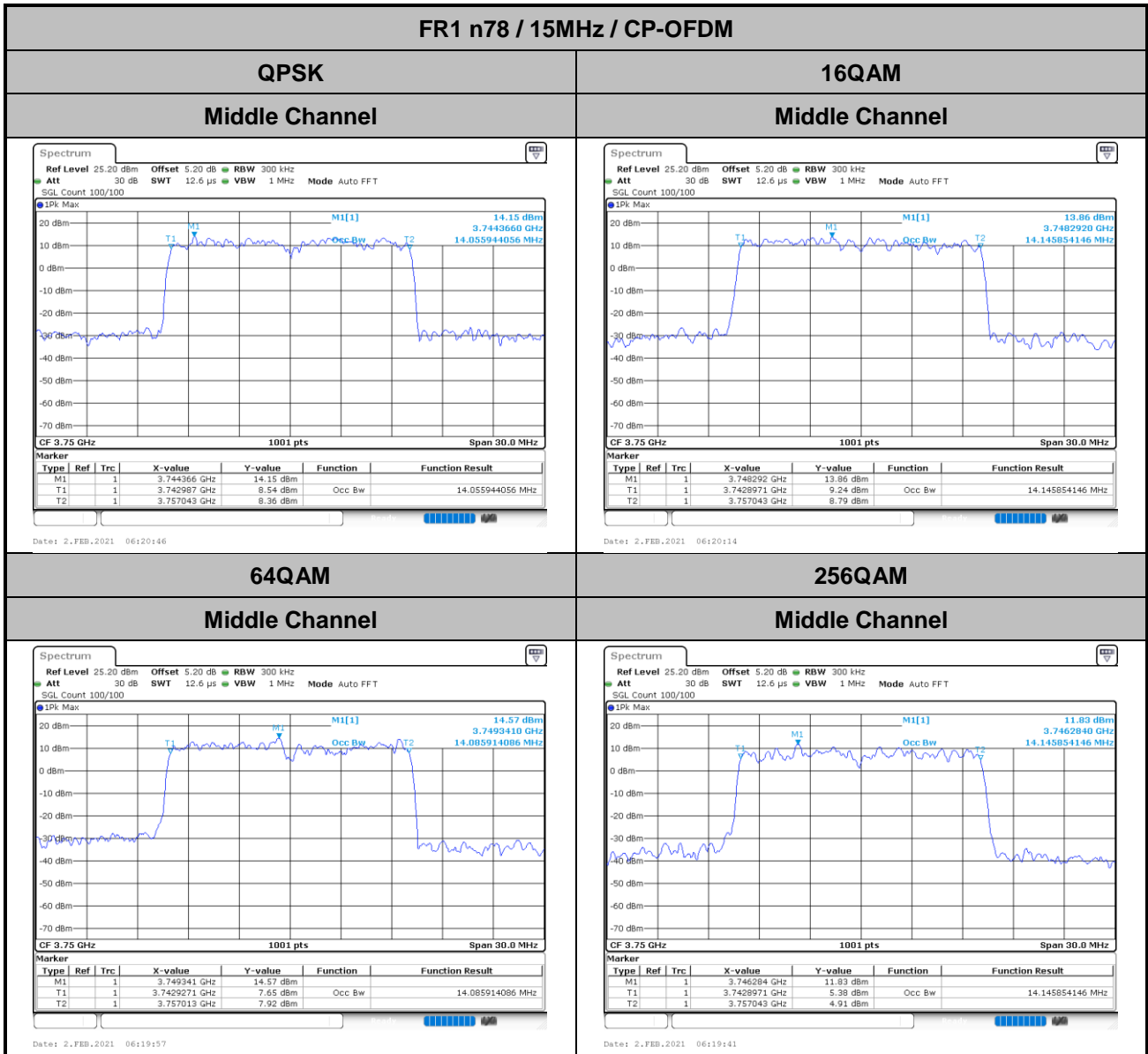
### Occupied Bandwidth

Mode	FR1 n78 : OBW(MHz) / CP-OFDM							
BW	10MHz	10MHz	10MHz	10MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	9.29	9.30	9.31	9.25				

Mode	FR1 n78 : OBW(MHz) / CP-OFDM							
BW	15MHz	15MHz	15MHz	15MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	14.06	14.15	14.09	14.15				

Mode	FR1 n78 : OBW(MHz) / CP-OFDM							
BW	20MHz	20MHz	20MHz	20MHz				
Mod.	QPSK	16QAM	64QAM	256QAM				
Middle CH	18.90	18.98	18.94	18.94				







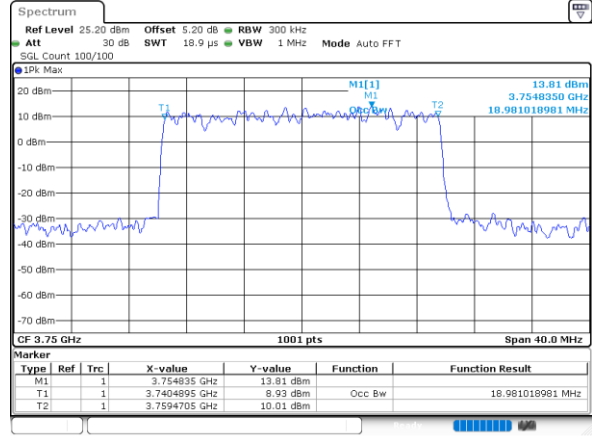
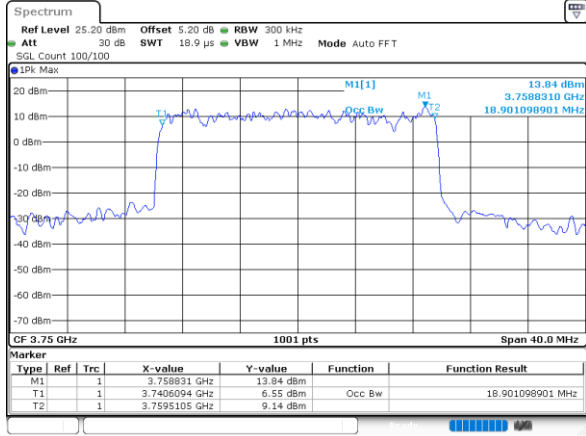
FR1 n78 / 20MHz / CP-OFDM

QPSK

16QAM

Middle Channel

Middle Channel



Date: 2.FEB.2021 06:21:26

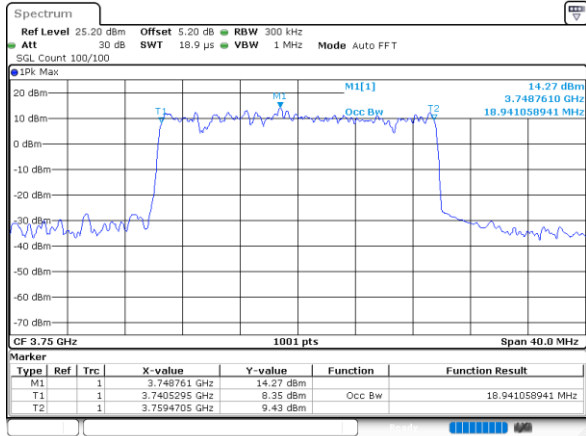
Date: 2.FEB.2021 06:21:47

64QAM

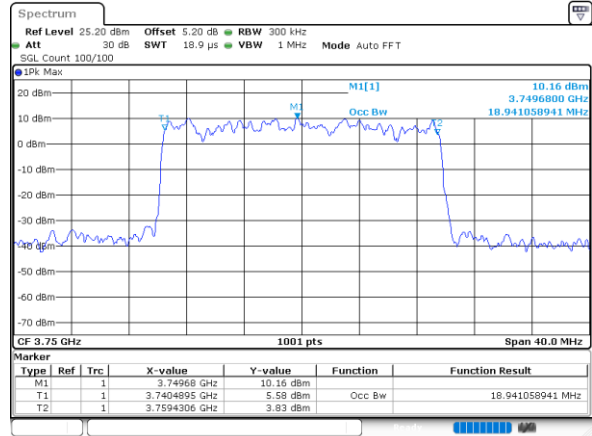
256QAM

Middle Channel

Middle Channel



Date: 2.FEB.2021 06:22:10

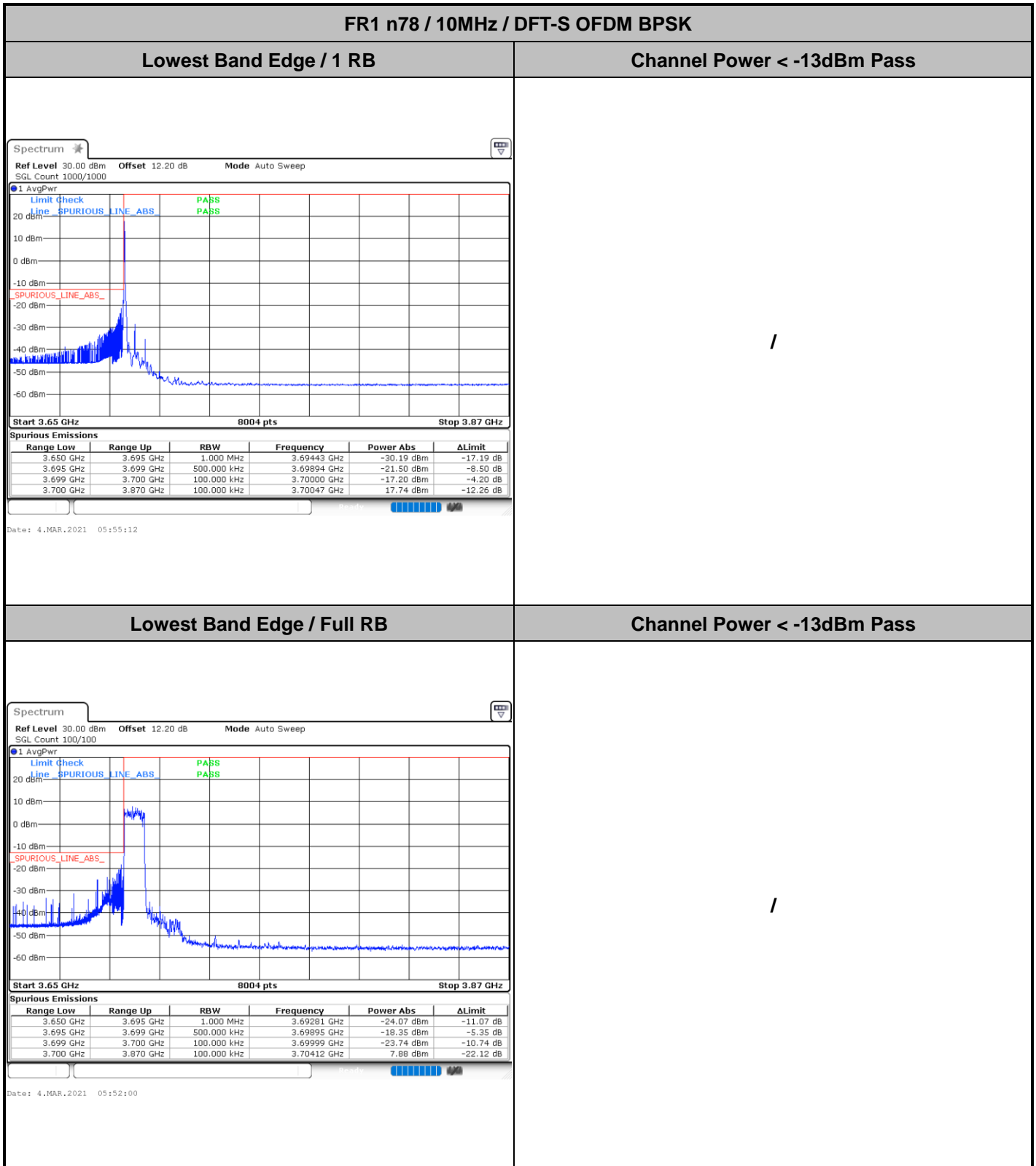


Date: 2.FEB.2021 06:22:28





# Conducted Band Edge

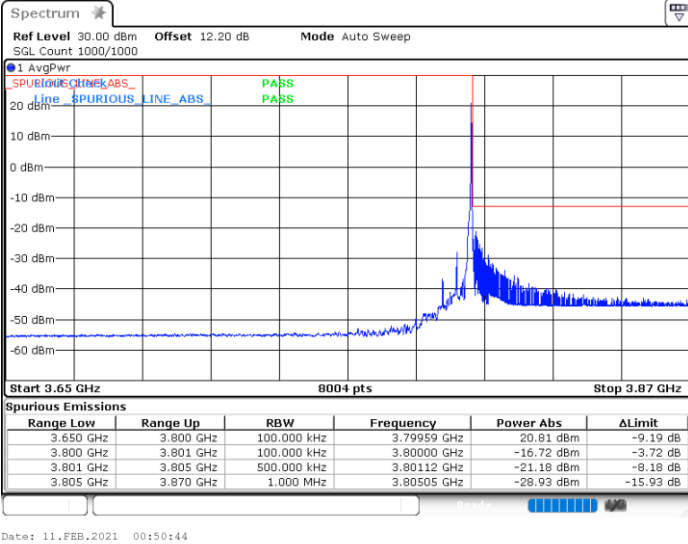




FR1 n78 / 10MHz / DFT-S OFDM BPSK

Highest Band Edge / 1 RB

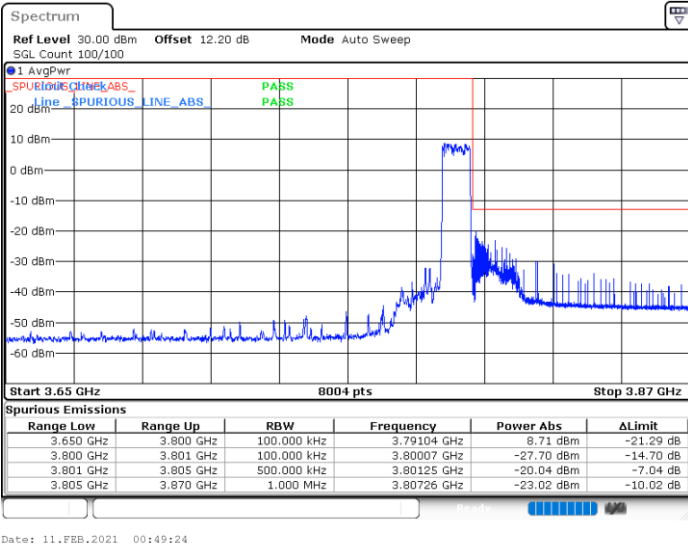
Channel Power < -13dBm Pass



/

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



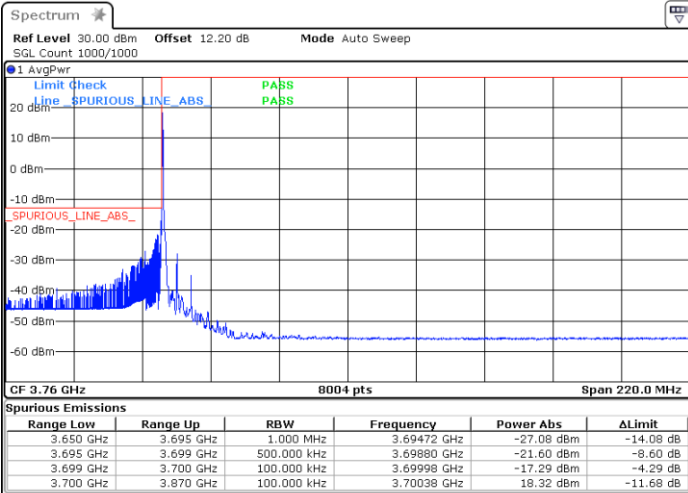
/



FR1 n78 / 10MHz / DFT-S OFDM QPSK

Lowest Band Edge / 1 RB

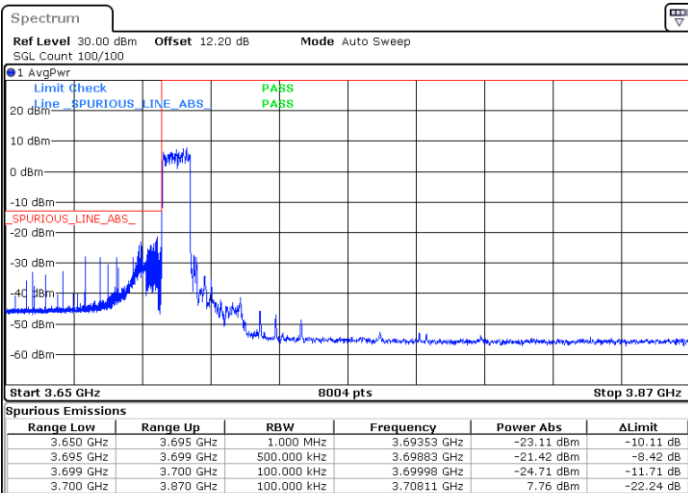
Channel Power < -13dBm Pass



Date: 4.MAR.2021 05:54:01

Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



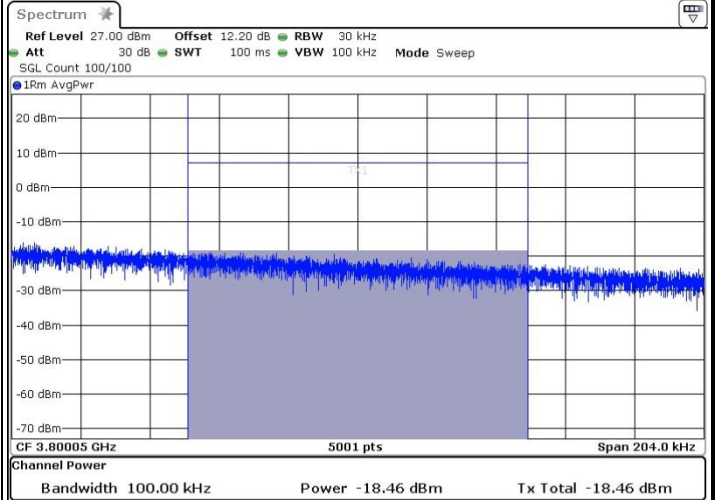
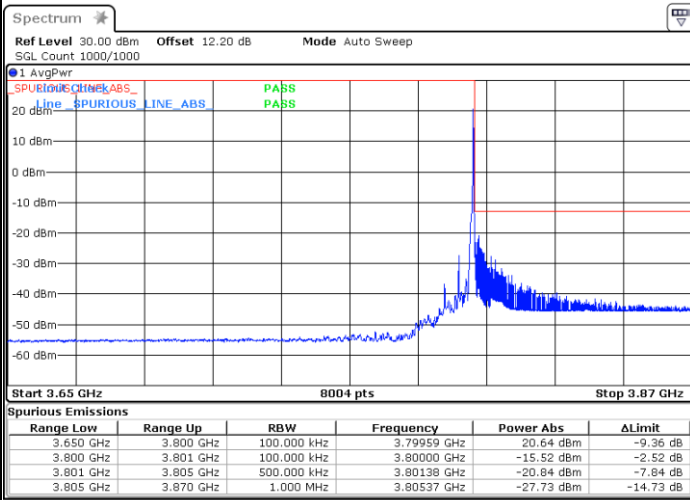
Date: 4.MAR.2021 05:52:38



FR1 n78 / 10MHz / DFT-S OFDM QPSK

Highest Band Edge / 1 RB

Channel Power < -13dBm Pass

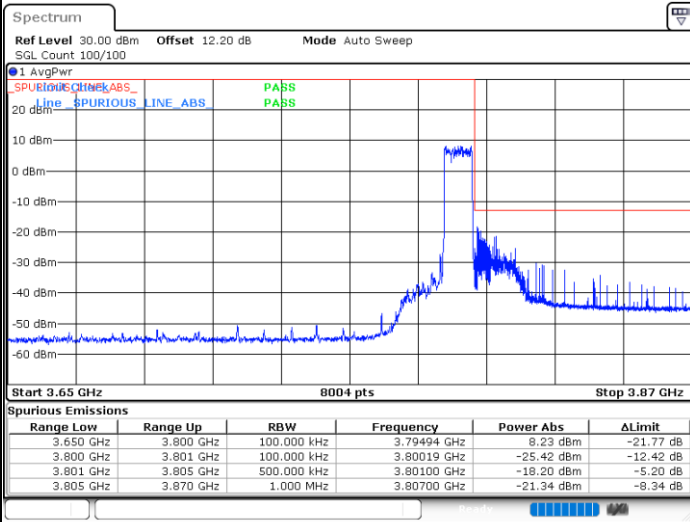


Date: 11.FEB.2021 00:51:50

Date: 11.FEB.2021 00:53:08

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



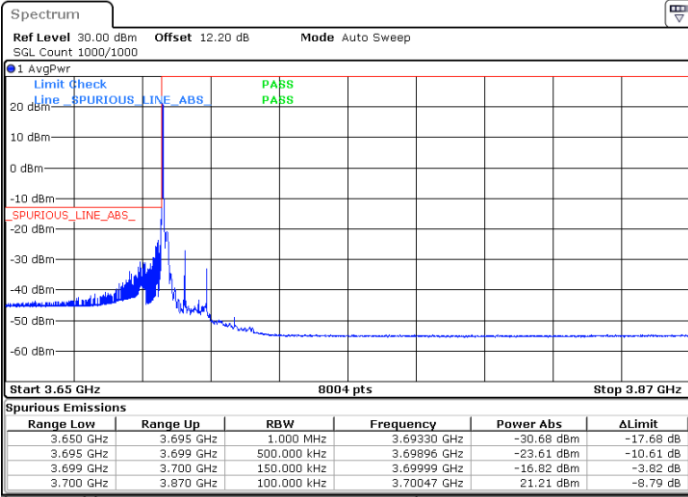
Date: 11.FEB.2021 00:48:11



FR1 n78 / 15MHz / DFT-S OFDM BPSK

Lowest Band Edge / 1 RB

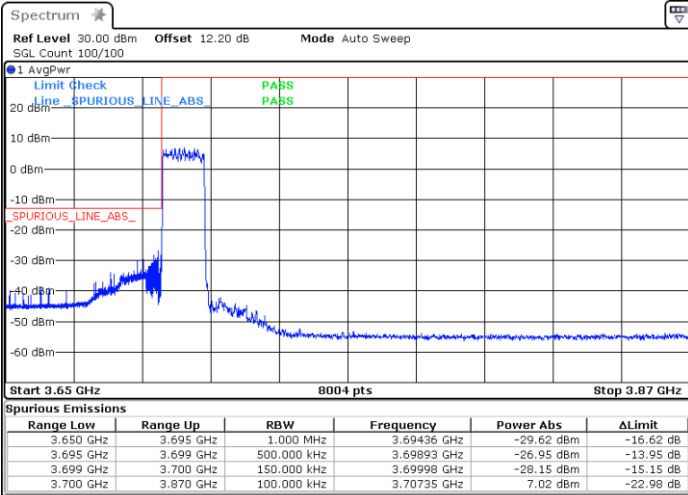
Channel Power < -13dBm Pass



Date: 12.MAR.2021 04:52:19

Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



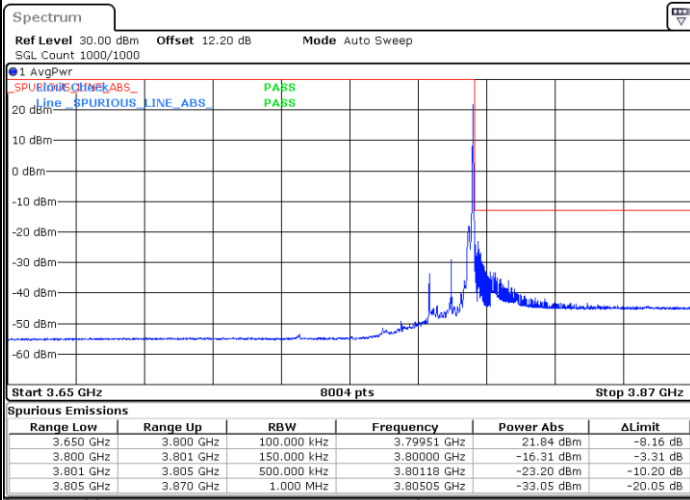
Date: 12.MAR.2021 04:52:53



FR1 n78 / 15MHz / DFT-S OFDM BPSK

Highest Band Edge / 1 RB

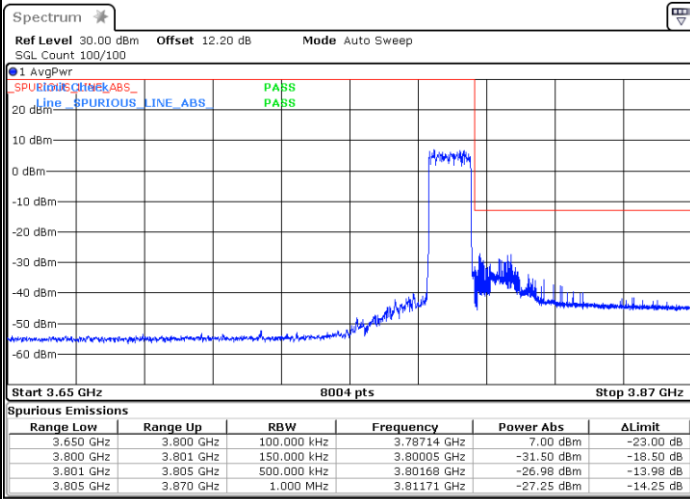
Channel Power < -13dBm Pass



Date: 12.MAR.2021 04:55:08

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



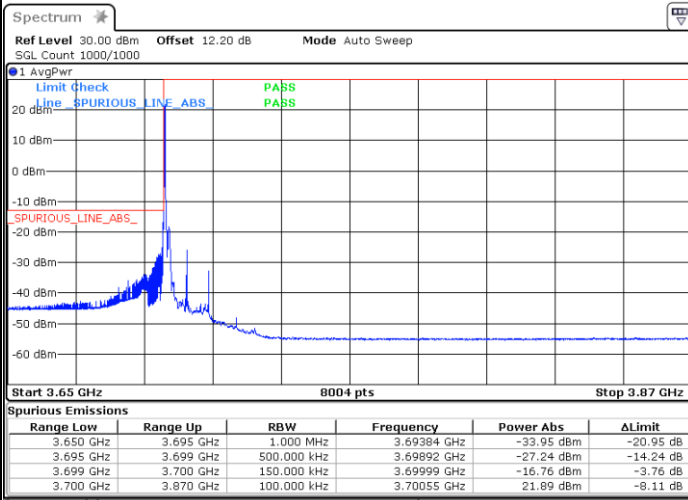
Date: 12.MAR.2021 04:54:11



FR1 n78 / 15MHz / DFT-S OFDM QPSK

Lowest Band Edge / 1 RB

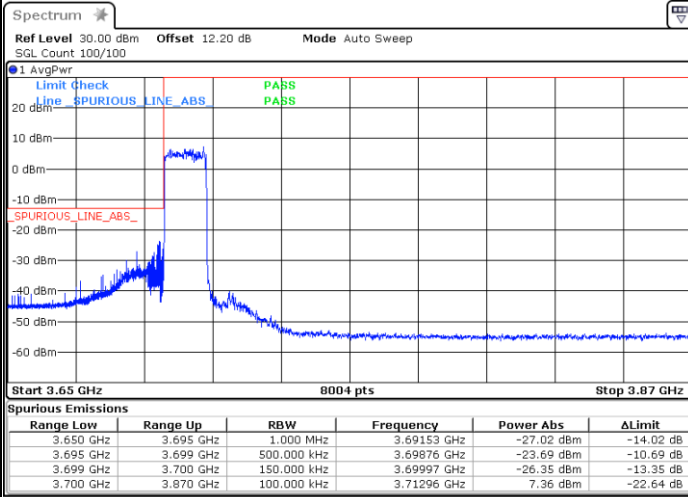
Channel Power < -13dBm Pass



Date: 12.MAR.2021 03:27:14

Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



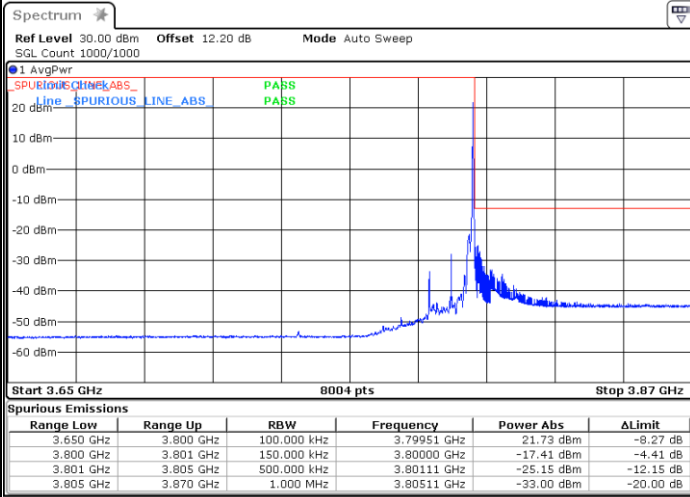
Date: 12.MAR.2021 04:53:16



FR1 n78 / 15MHz / DFT-S OFDM QPSK

Highest Band Edge / 1 RB

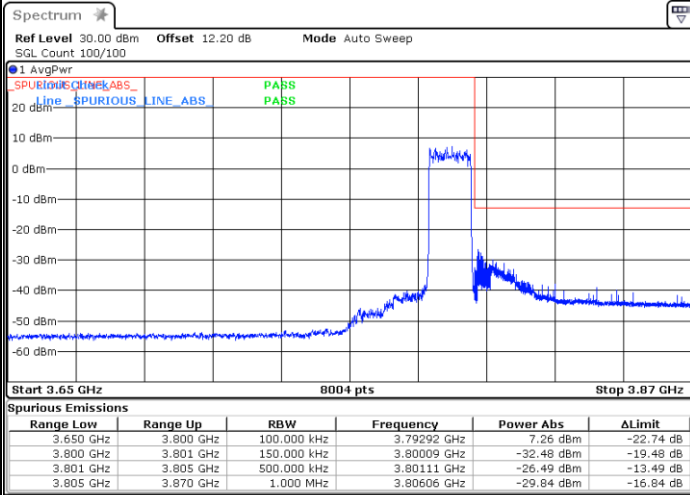
Channel Power < -13dBm Pass



Date: 12.MAR.2021 03:20:52

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



Date: 12.MAR.2021 04:53:48

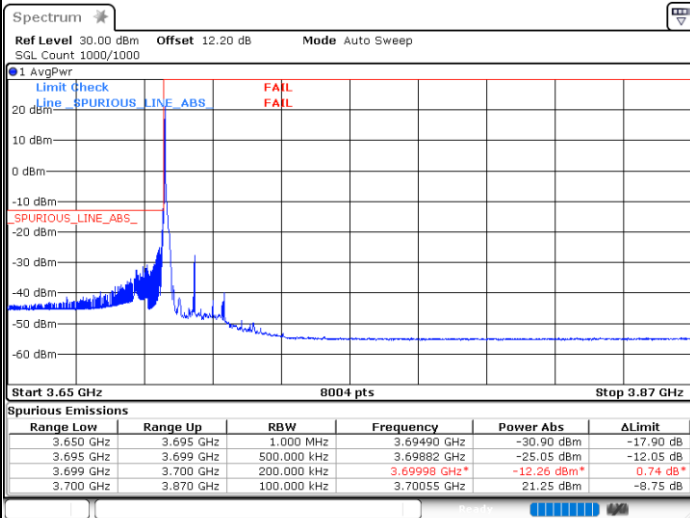




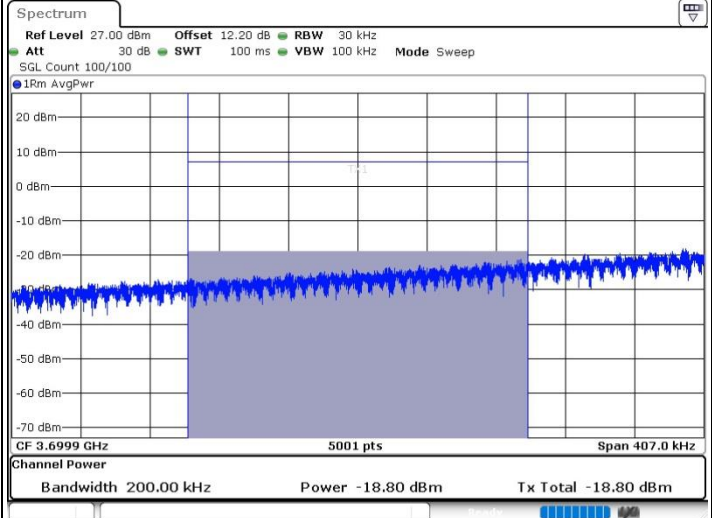
FR1 n78 / 20MHz / DFT-S OFDM BPSK

Lowest Band Edge / 1 RB

Channel Power < -13dBm Pass



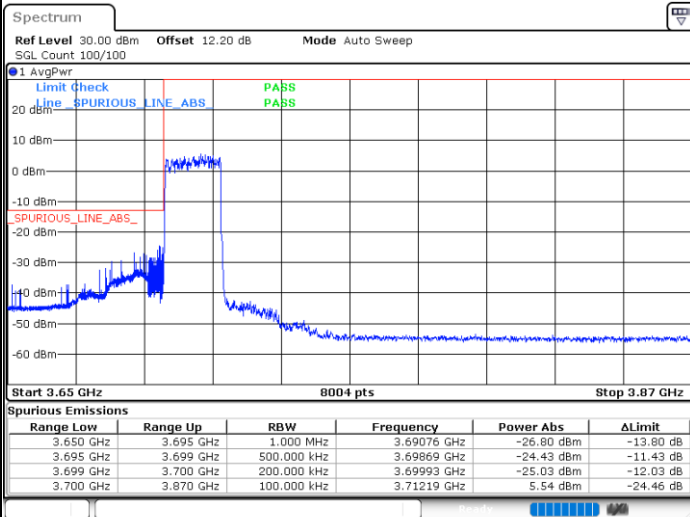
Date: 13.MAR.2021 07:19:30



Date: 13.MAR.2021 08:35:35

Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



Date: 13.MAR.2021 07:26:29

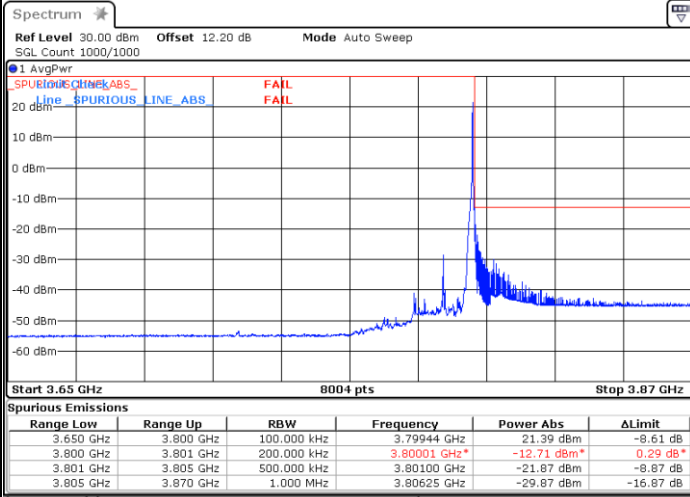
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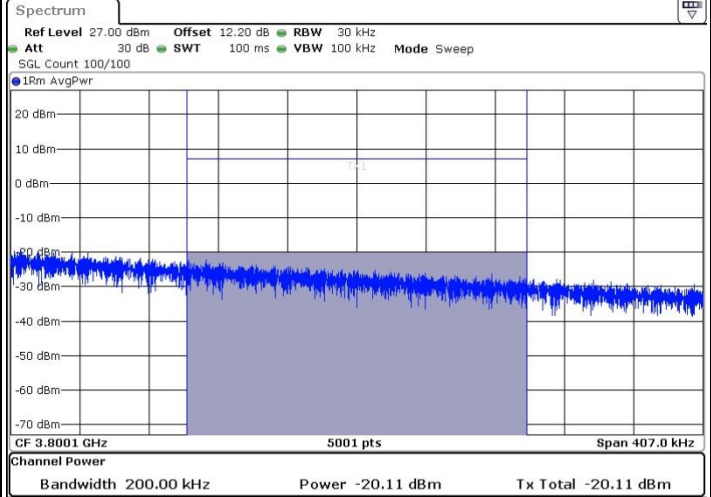
FR1 n78 / 20MHz / DFT-S OFDM BPSK

Highest Band Edge / 1 RB

Channel Power < -13dBm Pass



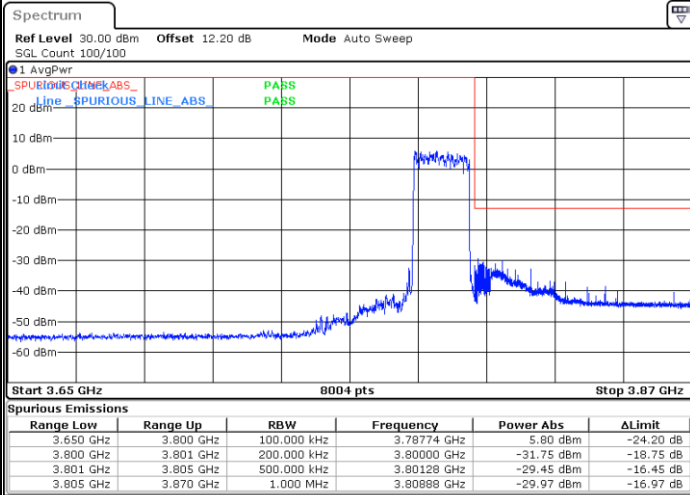
Date: 13.MAR.2021 07:33:21



Date: 13.MAR.2021 08:37:15

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



Date: 13.MAR.2021 07:40:21

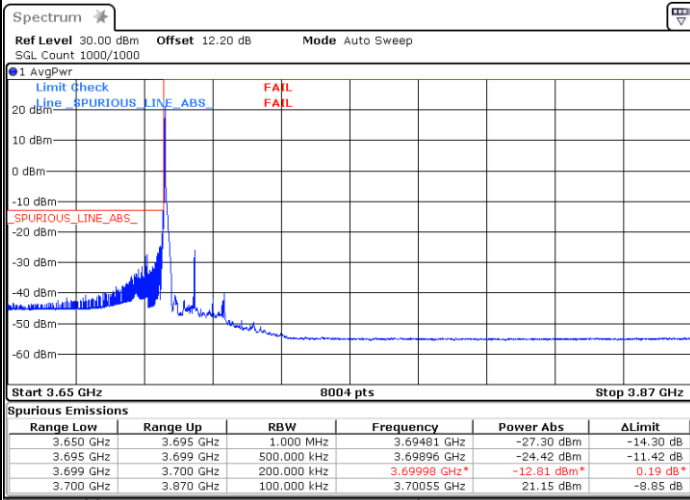




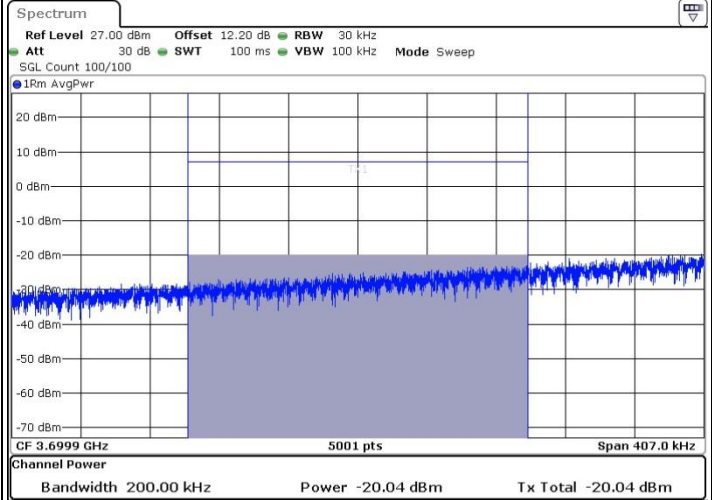
FR1 n78 / 20MHz / DFT-S OFDM QPSK

Lowest Band Edge / 1 RB

Channel Power < -13dBm Pass



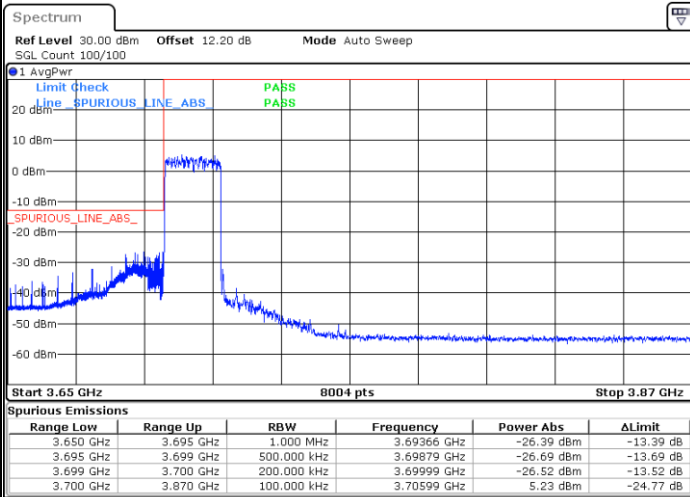
Date: 13.MAR.2021 07:23:07



Date: 13.MAR.2021 08:35:52

Lowest Band Edge / Full RB

Channel Power < -13dBm Pass



Date: 13.MAR.2021 07:25:06

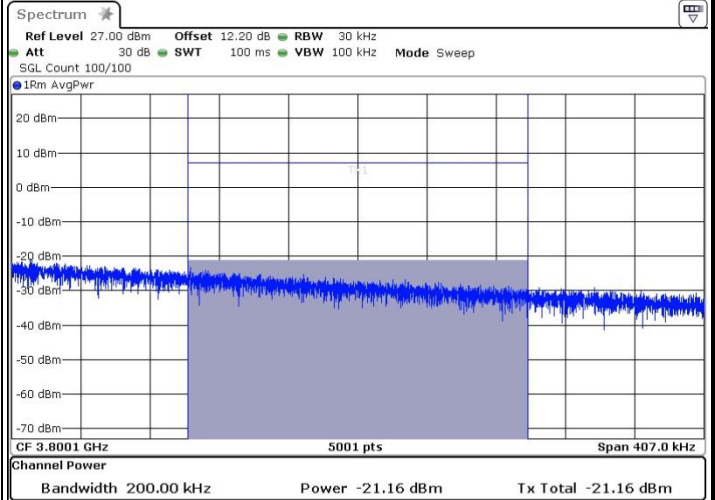
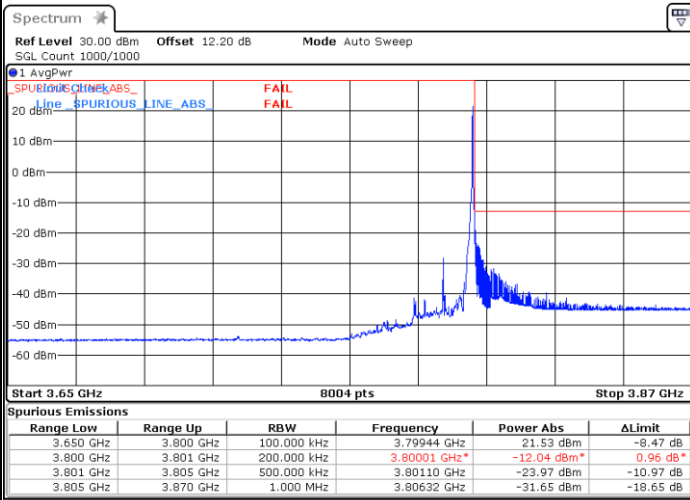
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FR1 n78 / 20MHz / DFT-S OFDM QPSK

Highest Band Edge / 1 RB

Channel Power < -13dBm Pass

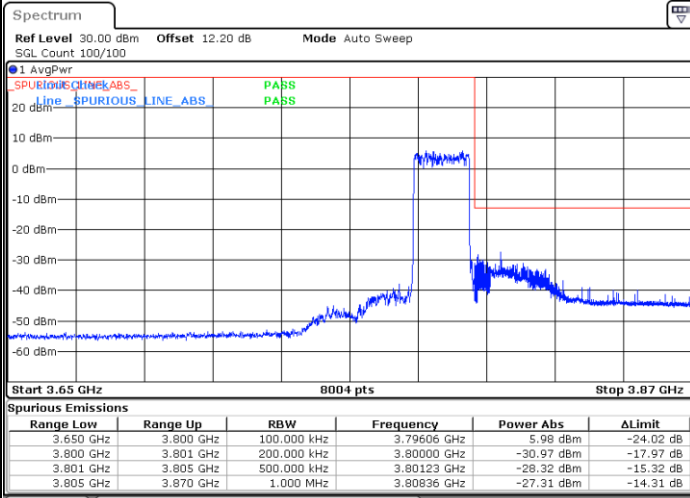


Date: 13.MAR.2021 07:38:23

Date: 13.MAR.2021 08:36:51

Highest Band Edge / Full RB

Channel Power < -13dBm Pass



Date: 13.MAR.2021 07:38:55

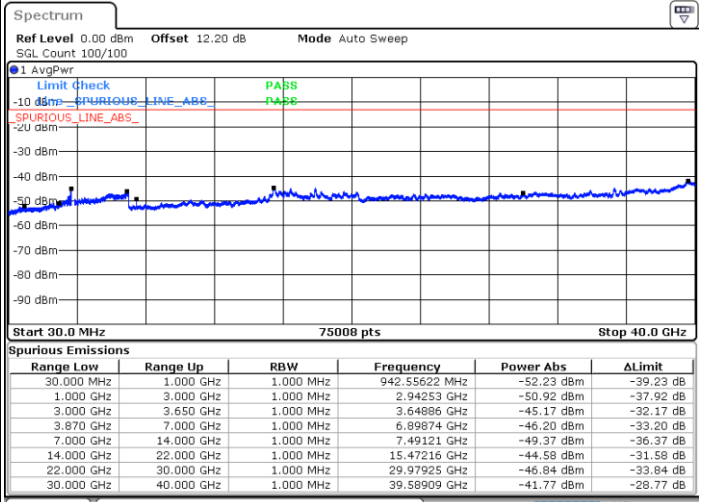
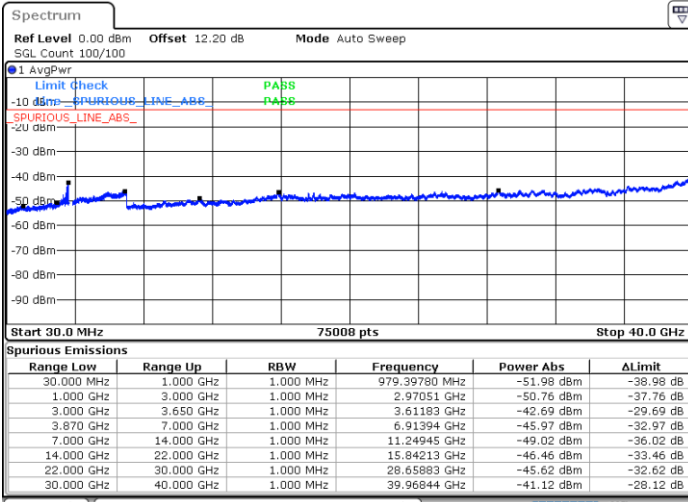


# Conducted Spurious Emission

FR1 n78 / 10MHz / DFT-S OFDM / BPSK

Lowest Channel / 1RB

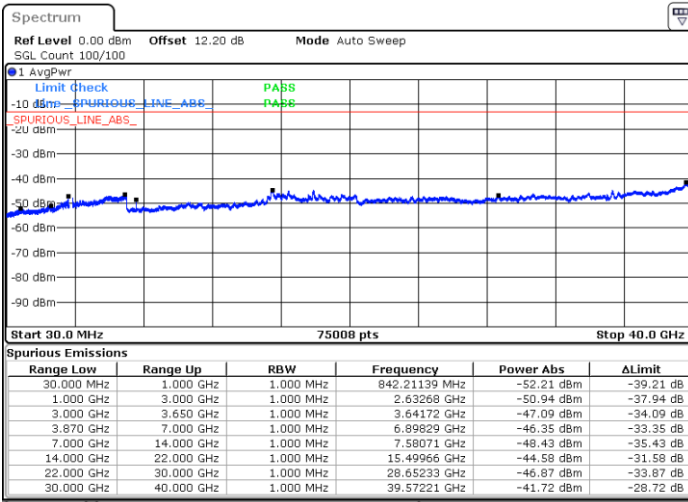
Middle Channel / 1RB



Date: 4.MAR.2021 05:56:26

Date: 2.FEB.2021 06:06:40

Highest Channel / 1RB



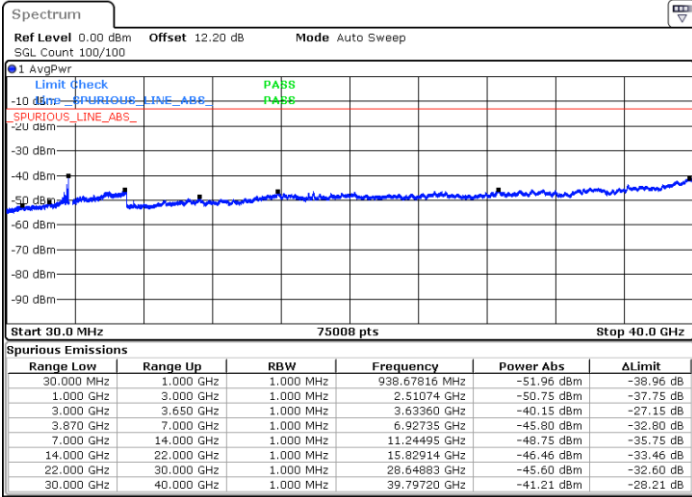
Date: 2.FEB.2021 06:15:34



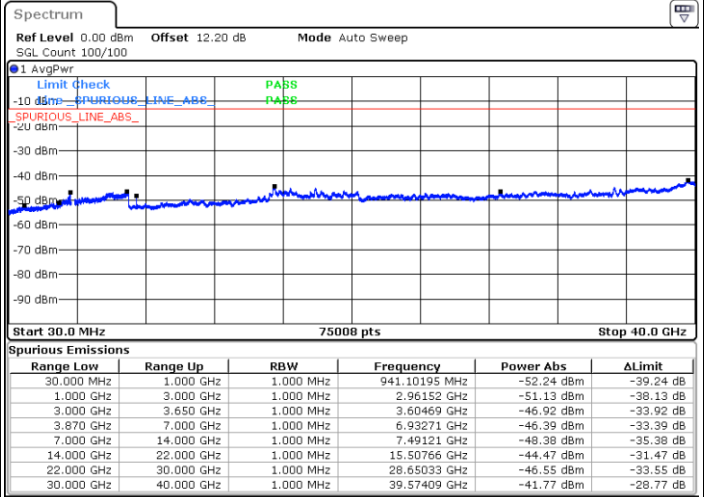
FR1 n78 / 10MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB

Middle Channel / 1RB

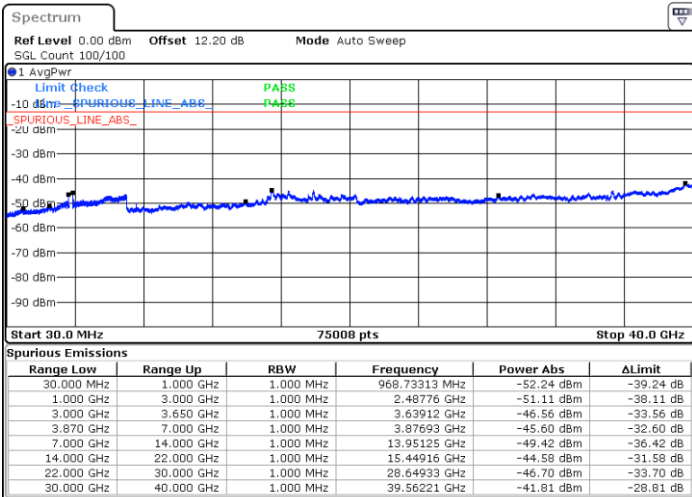


Date: 4.MAR.2021 05:57:44



Date: 2.FEB.2021 06:05:06

Highest Channel / 1RB



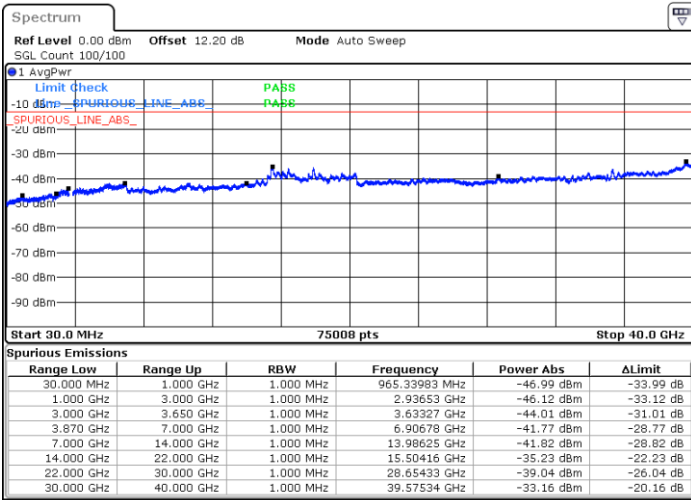
Date: 2.FEB.2021 06:14:25



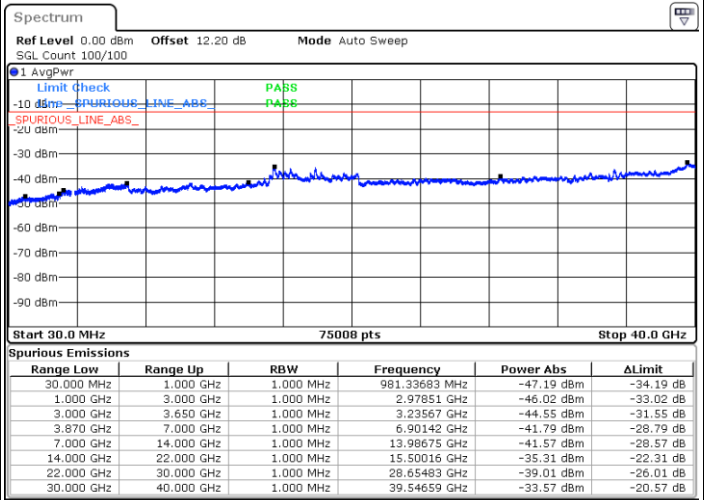
FR1 n78 / 15MHz / DFT-S OFDM / BPSK

Lowest Channel / 1RB

Middle Channel / 1RB

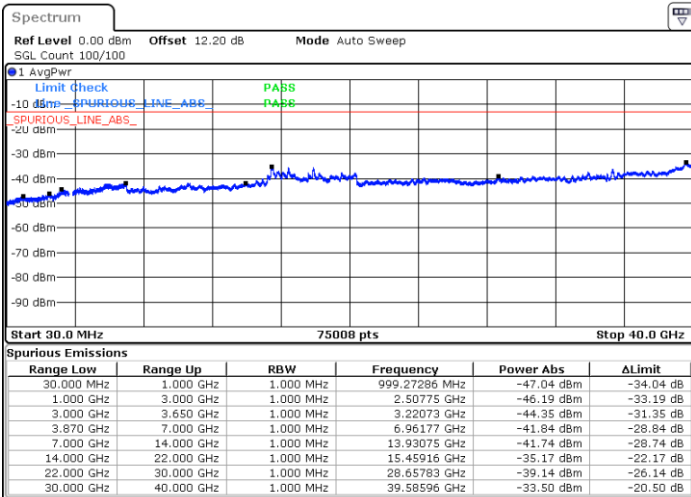


Date: 2.FEB.2021 05:25:10



Date: 2.FEB.2021 05:29:05

Highest Channel / 1RB



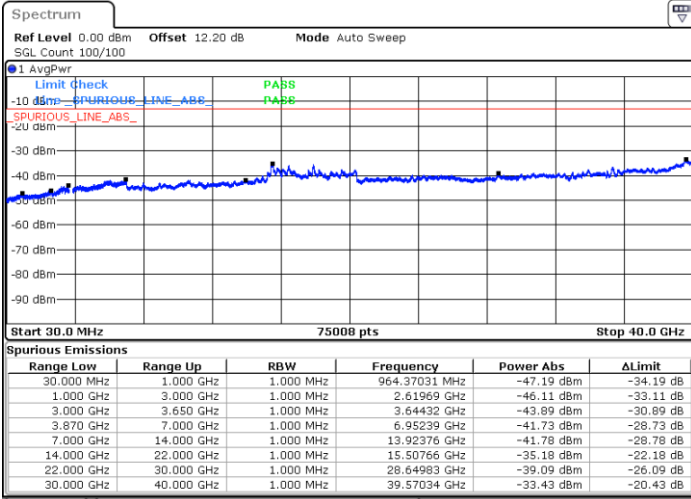
Date: 2.FEB.2021 05:48:13



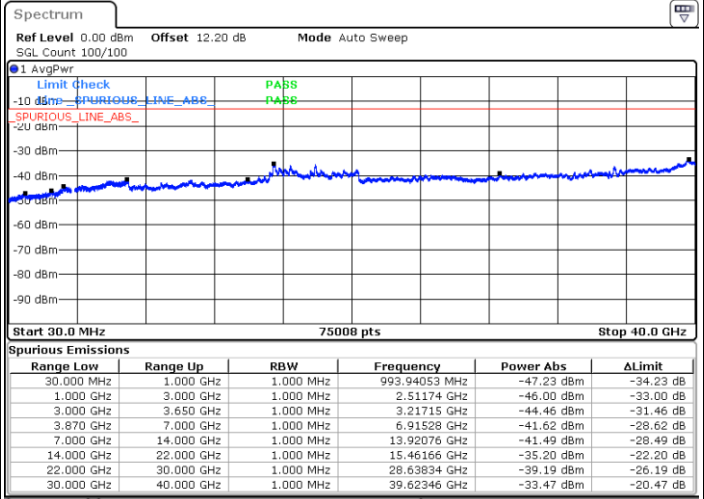
FR1 n78 / 15MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB

Middle Channel / 1RB

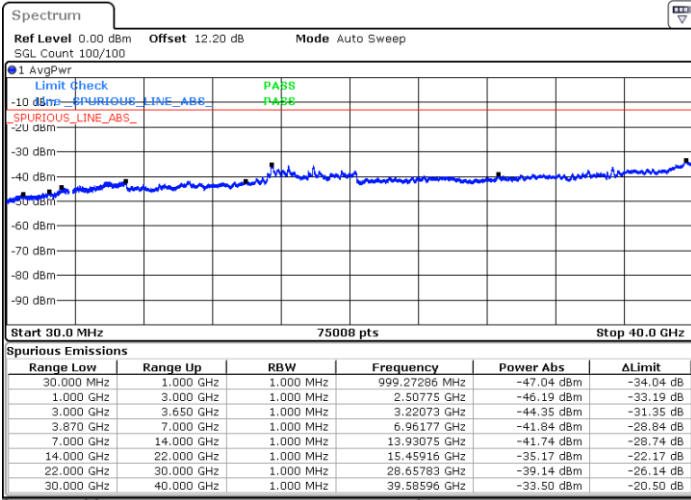


Date: 2.FEB.2021 05:26:21



Date: 2.FEB.2021 05:27:50

Highest Channel / 1RB



Date: 2.FEB.2021 05:48:13

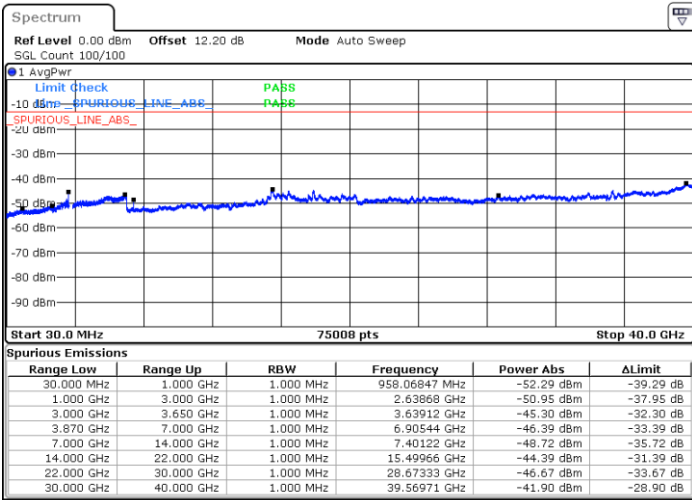




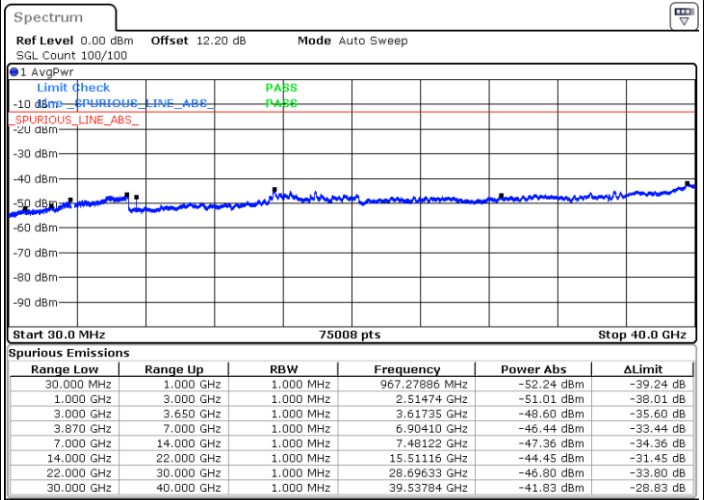
FR1 n78 / 20MHz / DFT-S OFDM / BPSK

Lowest Channel / 1RB

Middle Channel / 1RB

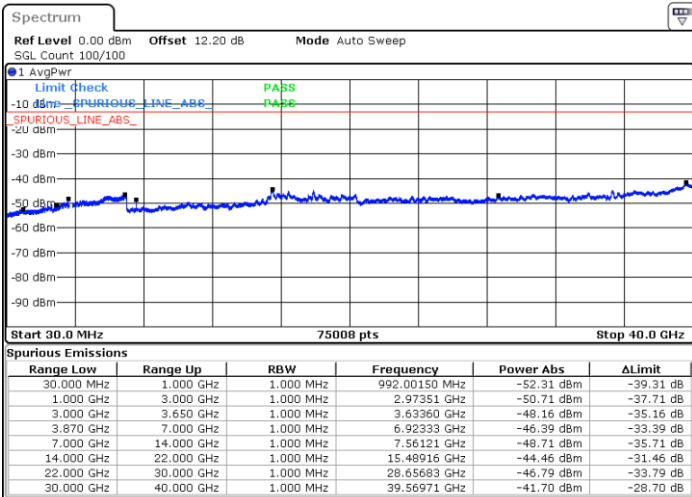


Date: 2.FEB.2021 04:52:52



Date: 2.FEB.2021 05:03:59

Highest Channel / 1RB



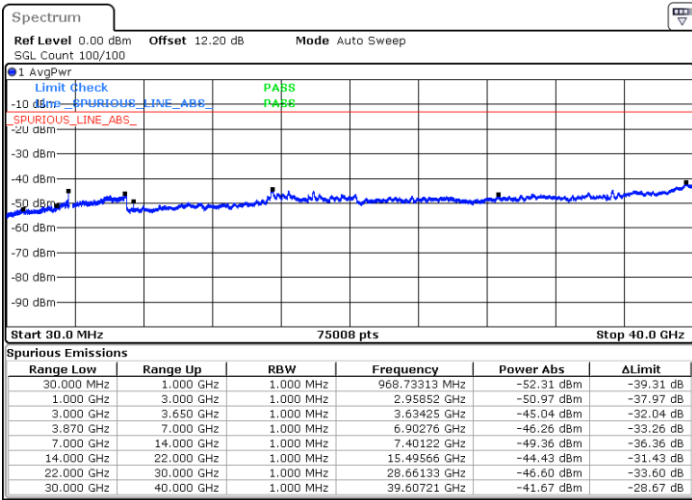
Date: 2.FEB.2021 05:07:42



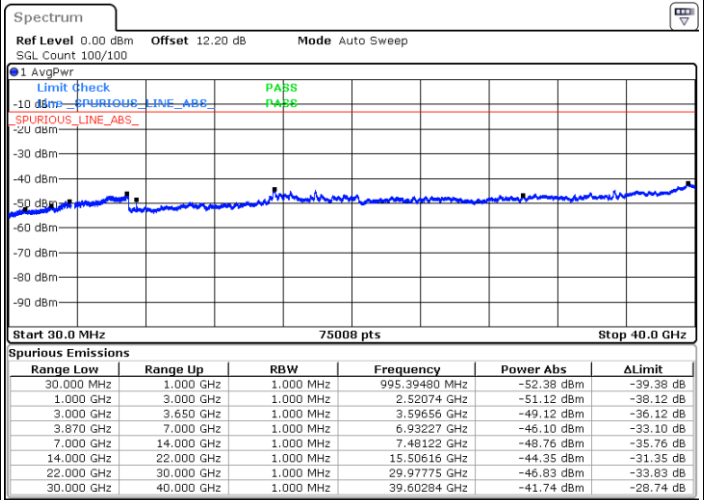
FR1 n78 / 20MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB

Middle Channel / 1RB

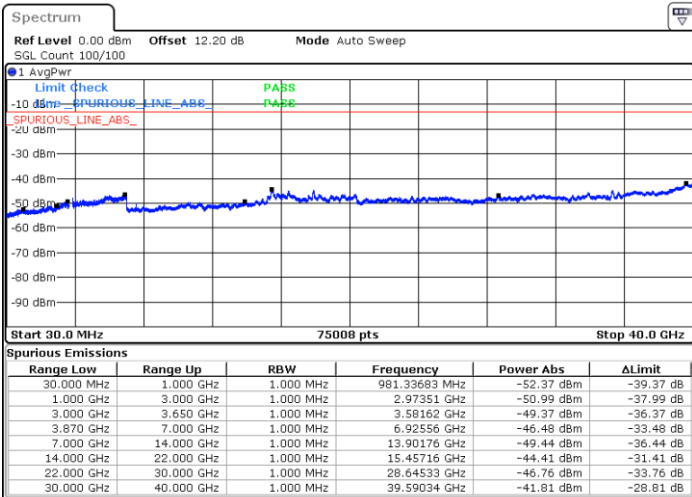


Date: 2.FEB.2021 04:50:25



Date: 2.FEB.2021 05:01:48

Highest Channel / 1RB



Date: 2.FEB.2021 05:09:09



Frequency Stability

Test Conditions		NR n78 (BPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 20MHz	Within Band
		Deviation (ppm)	Result
50	Normal Voltage	0.0025	PASS
40	Normal Voltage	0.0007	
30	Normal Voltage	0.0019	
20(Ref.)	Normal Voltage	0.0013	
10	Normal Voltage	0.0019	
0	Normal Voltage	0.0015	
-10	Normal Voltage	0.0012	
-20	Normal Voltage	0.0021	
-30	Normal Voltage	0.0010	
20	Maximum Voltage	0.0014	
20	Normal Voltage	0.0016	
20	Battery End Point	0.0029	

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 n78 SA-SCS 30K

#### Peak-to-Average Ratio

Mode	FR1 n78 / 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	4.09	3.88	4.96	5.48	<b>PASS</b>
Middle CH	4.43	4.09	5.39	4.99	
Highest CH	4.00	3.83	5.07	4.99	