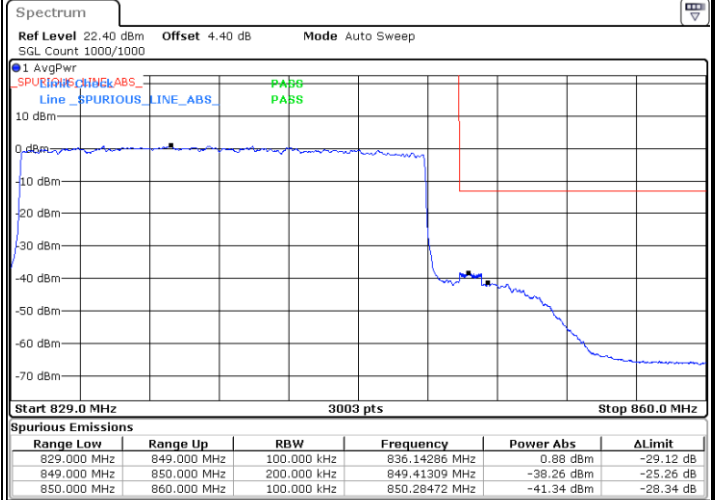
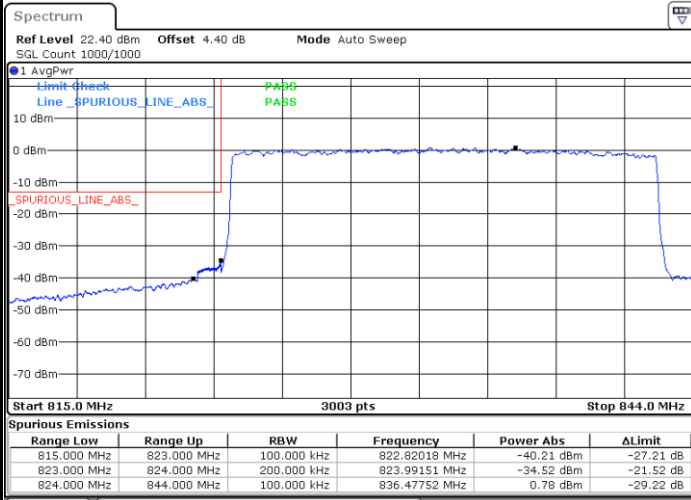




FR1 n5 / 20MHz / DFT-s-OFDM / 64QAM / Full RB

Lowest Band Edge

Highest Band Edge



Date: 15.DEC.2020 18:32:38

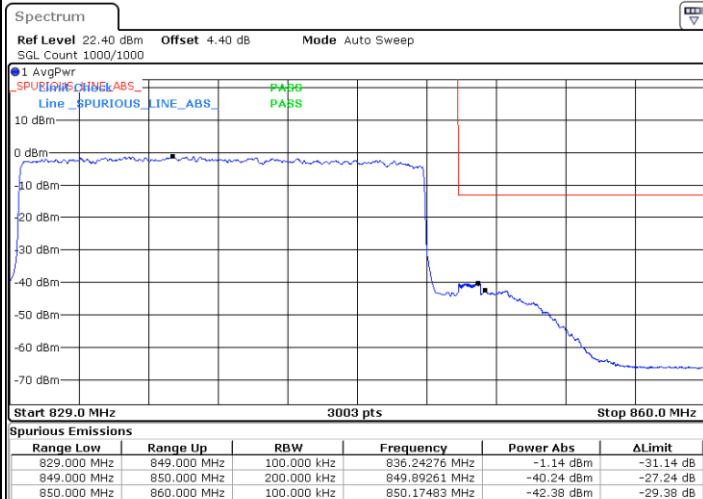
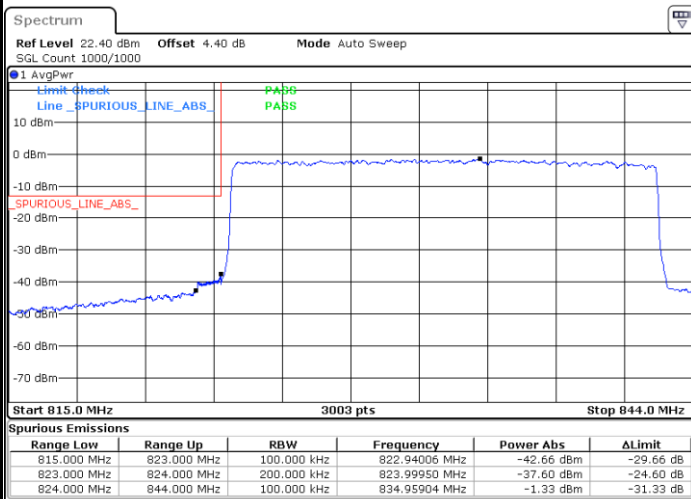
Date: 15.DEC.2020 18:51:15



FR1 n5 / 20MHz / DFT-s-OFDM / 256QAM / Full RB

Lowest Band Edge

Highest Band Edge



Date: 15.DEC.2020 18:33:42

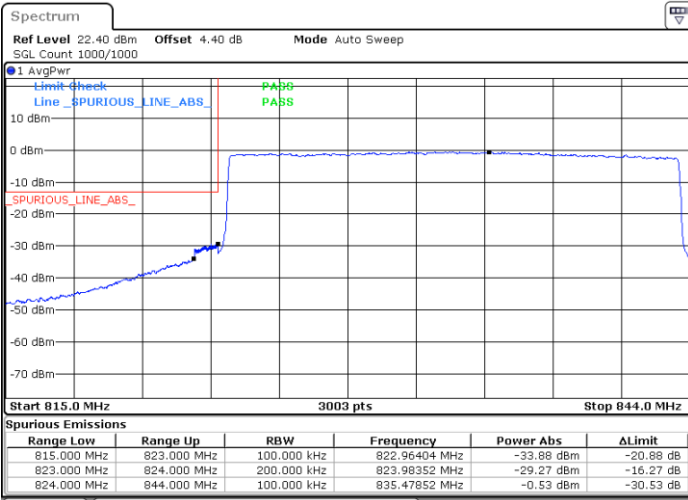
Date: 15.DEC.2020 18:56:20



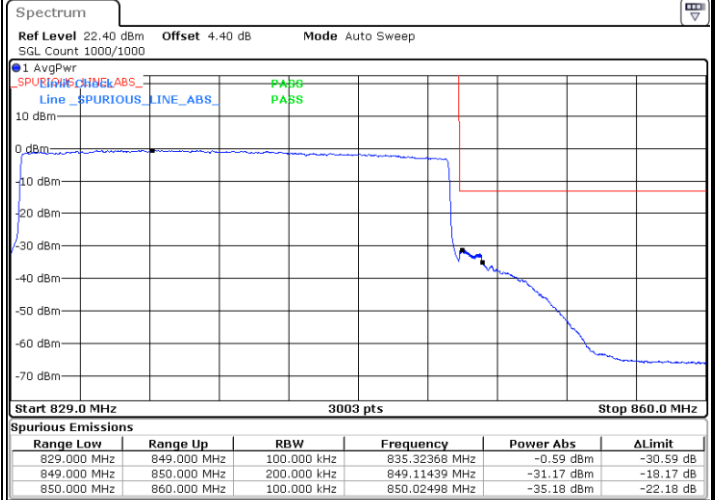
FR1 n5 / 20MHz / CP OFDM / QPSK / Full RB

Lowest Band Edge

Highest Band Edge



Date: 15.DEC.2020 18:34:56



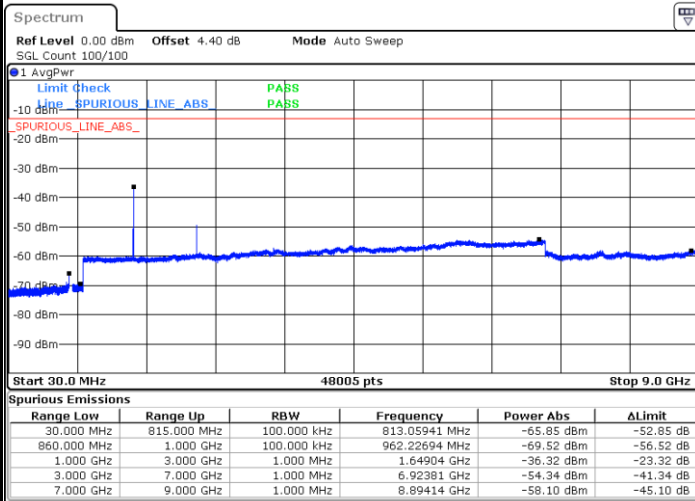
Date: 15.DEC.2020 18:36:26



Conducted Spurious Emission

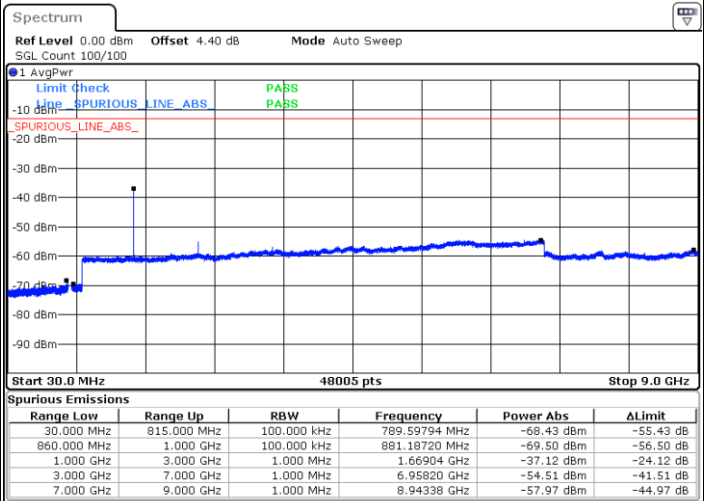
FR1 n5 / 5MHz / DFT-S OFDM / QPSK / 1RB1

Lowest Channel



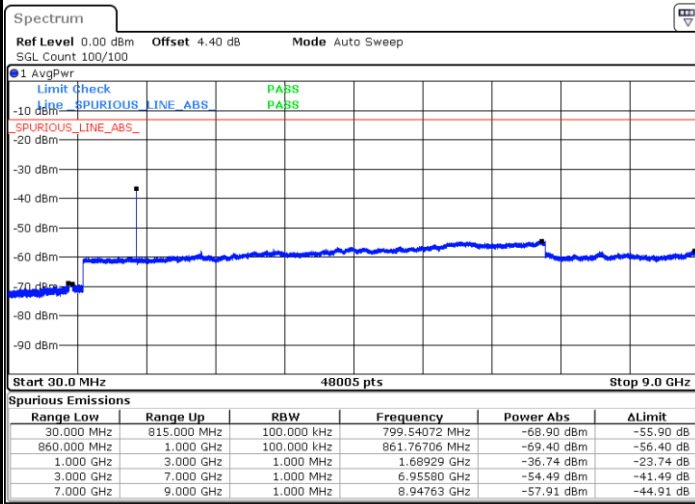
Date: 15.DEC.2020 08:42:04

Middle Channel



Date: 15.DEC.2020 08:50:25

Highest Channel



Date: 15.DEC.2020 08:51:01



Frequency Stability

Test Conditions		FR1 n5 (BPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 20MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0048	PASS
40	Normal Voltage	0.0005	
30	Normal Voltage	0.0049	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0011	
0	Normal Voltage	0.0261	
-10	Normal Voltage	0.0042	
-20	Normal Voltage	0.0014	
-30	Normal Voltage	0.0255	
20	Maximum Voltage	0.0005	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0001	

Note:

1. Normal Voltage =3.85 V. ; Battery End Point (BEP) =3.60 V. ; Maximum Voltage =4.45 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



FR1 n12

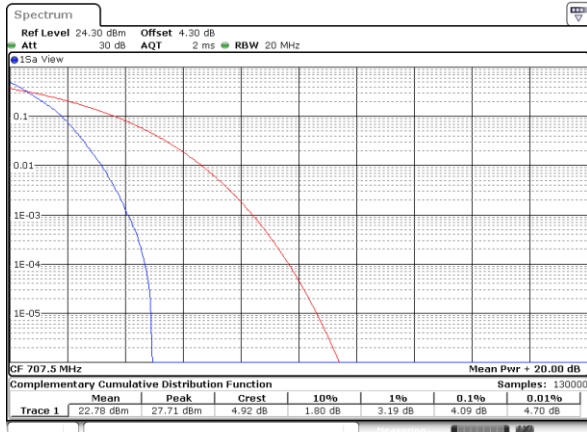
Peak-to-Average Ratio

Mode	FR1 n12 / 15MHz / DFT-S OFDM				
Mod.	PI/2 BPSK	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	4.09	5.16	6.03	6.29	PASS
Mode	FR1 n12 / 15MHz / DFT-S OFDM				
Mod.	256QAM				Limit: 13dB
RB Size	Full RB				Result
Middle CH	6.52				PASS



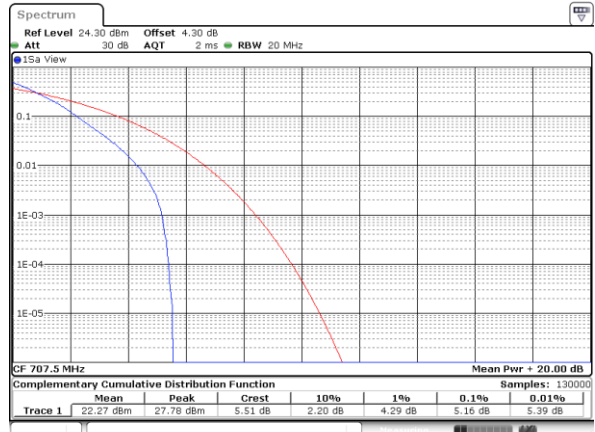
FR1 n12 / 15MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK



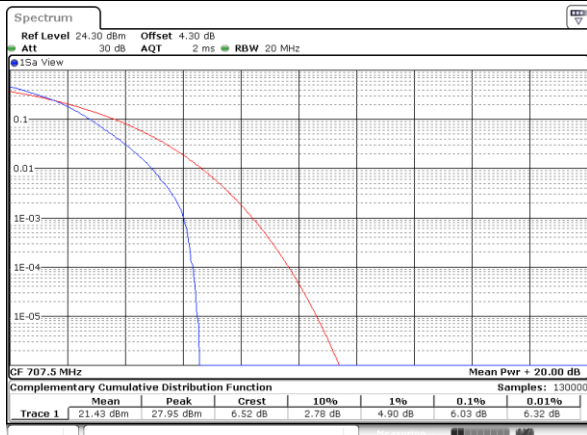
Date: 15.DEC.2020 13:02:21

QPSK



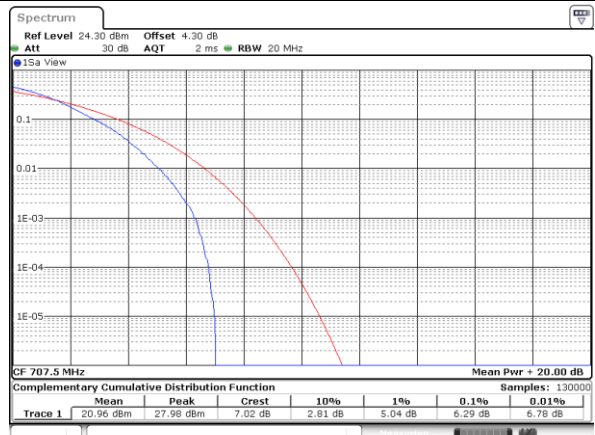
Date: 15.DEC.2020 13:03:28

16QAM



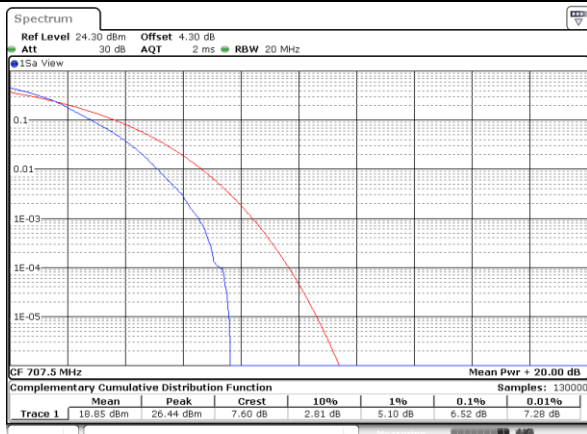
Date: 15.DEC.2020 13:03:39

64QAM



Date: 15.DEC.2020 13:03:51

256QAM



Date: 15.DEC.2020 13:04:10



26dB Bandwidth

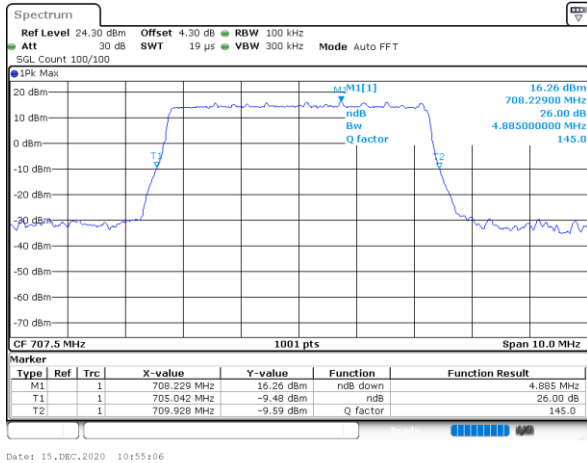
Mode	FR1 n12 : 26dB BW(MHz) / DFT-S OFDM							
BW	5MHz		10MHz		15MHz			
Mod.	PI/2 BPSK		PI/2 BPSK		PI/2 BPSK			
Middle CH	4.89		9.41		14.30			

Mode	FR1 n12 : 26dB BW(MHz) / CP OFDM							
BW	5MHz		10MHz		15MHz			
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM		
Middle CH	4.97	4.78	10.01	9.85	15.08	14.96		
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM		
Middle CH	4.97	4.99	9.93	9.75	14.87	14.87		



FR1 n12 / 5MHz / DFT-S OFDM / Middle Channel / Full RB

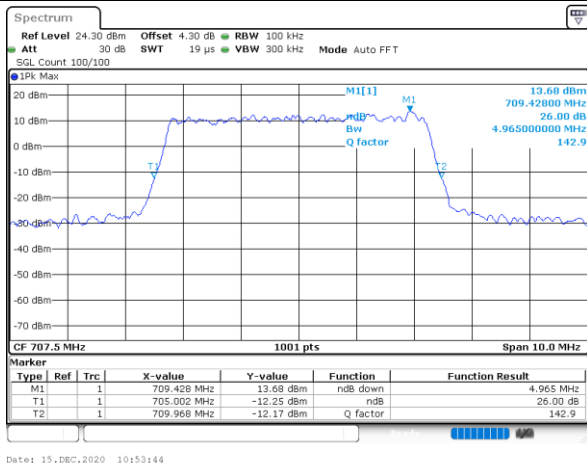
PI/2 BPSK



Date: 15, DEC, 2020 10:55:06

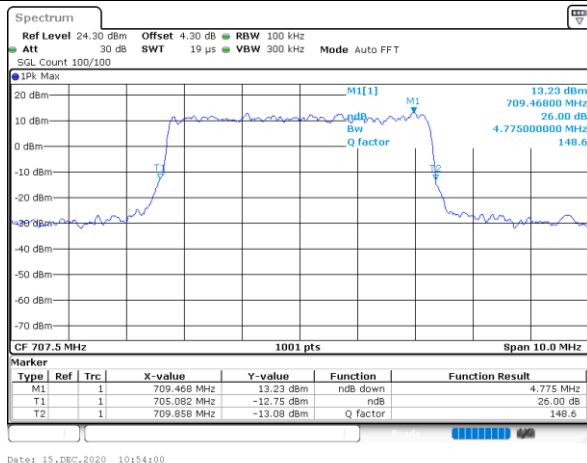
FR1 n12 / 5MHz / CP OFDM / Middle Channel / Full RB

QPSK



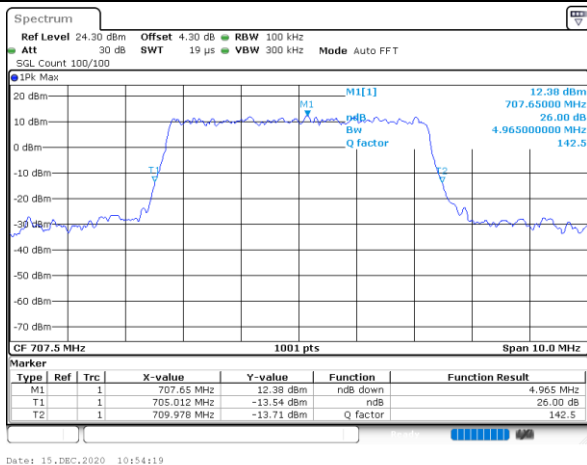
Date: 15, DEC, 2020 10:53:44

16QAM



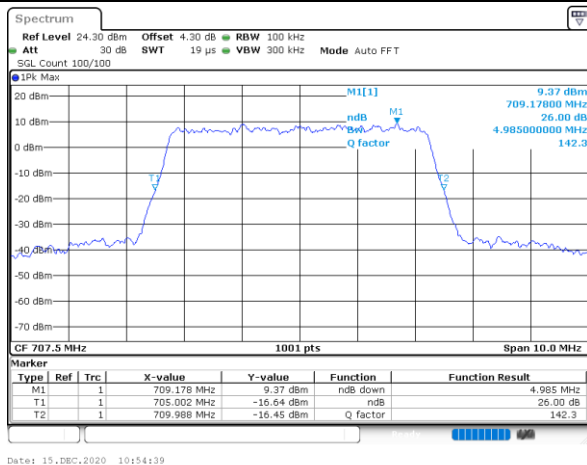
Date: 15, DEC, 2020 10:54:00

64QAM



Date: 15, DEC, 2020 10:54:19

256QAM

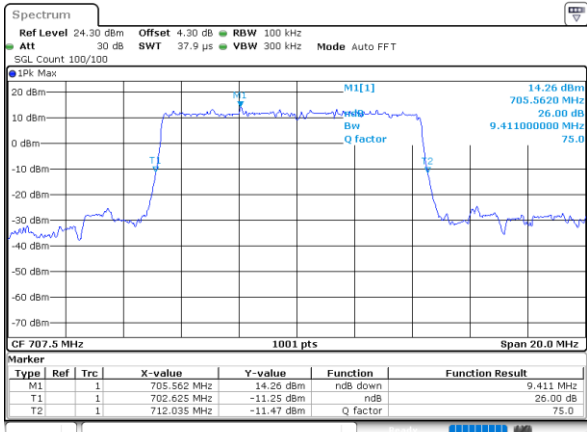


Date: 15, DEC, 2020 10:54:39



FR1 n12 / 10MHz / DFT-S OFDM / Middle Channel / Full RB

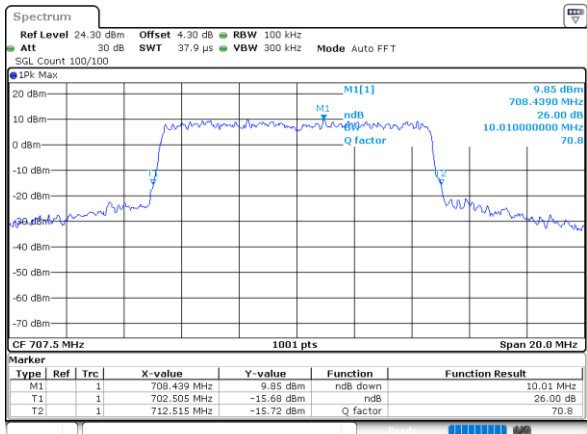
PI/2 BPSK



Date: 15, DEC, 2020 12:44:04

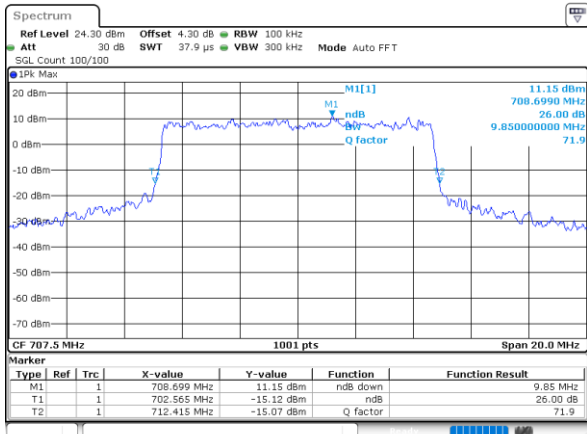
FR1 n12 / 10MHz / CP OFDM / Middle Channel / Full RB

QPSK



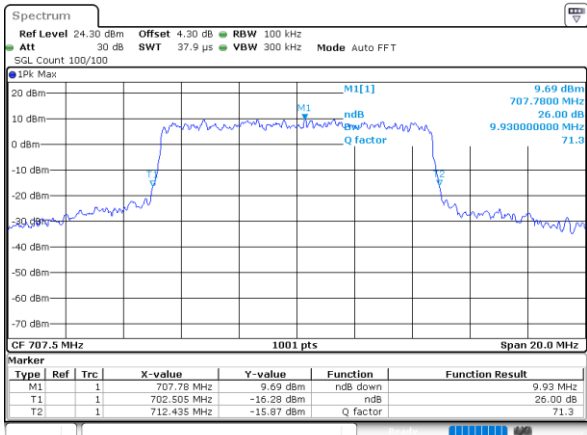
Date: 15, DEC, 2020 12:45:27

16QAM



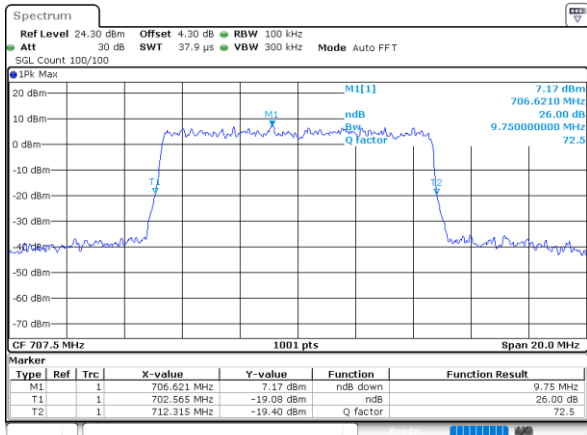
Date: 15, DEC, 2020 12:45:45

64QAM



Date: 15, DEC, 2020 12:46:02

256QAM

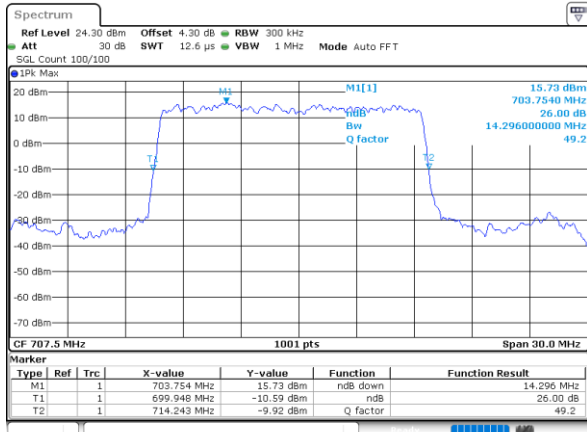


Date: 15, DEC, 2020 12:46:124



FR1 n12 / 15MHz / DFT-S OFDM / Middle Channel / Full RB

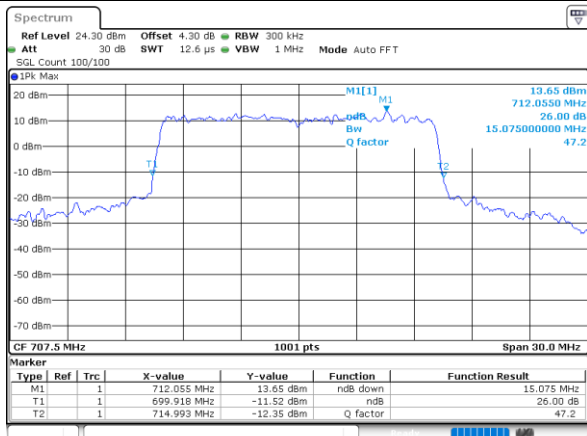
PI/2 BPSK



Date: 15. DEC. 2020 13:03:14

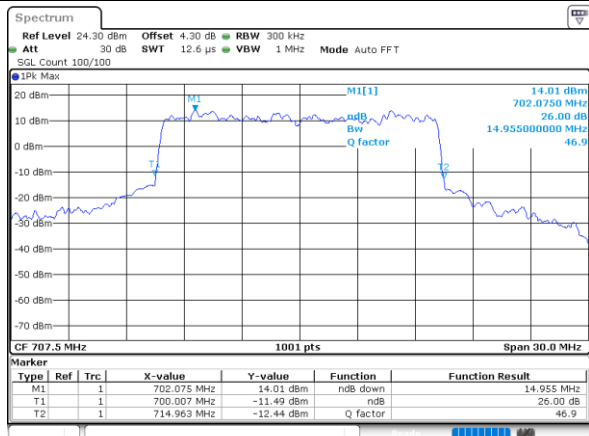
FR1 n12 / 15MHz / CP OFDM / Middle Channel / Full RB

QPSK



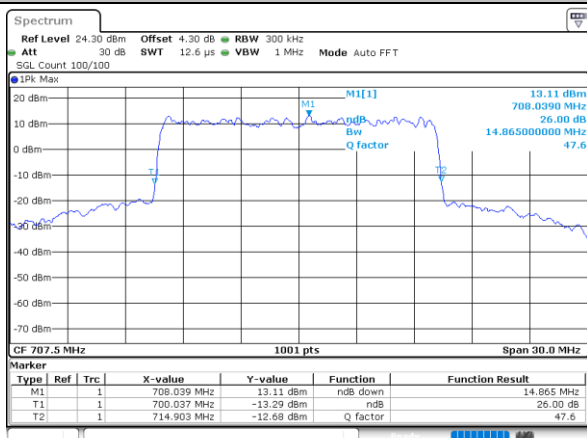
Date: 15. DEC. 2020 13:01:48

16QAM



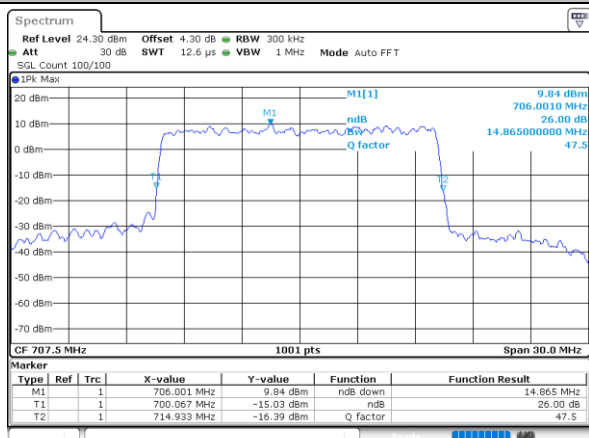
Date: 15. DEC. 2020 13:01:07

64QAM



Date: 15. DEC. 2020 13:00:40

256QAM



Date: 15. DEC. 2020 13:00:11



Occupied Bandwidth

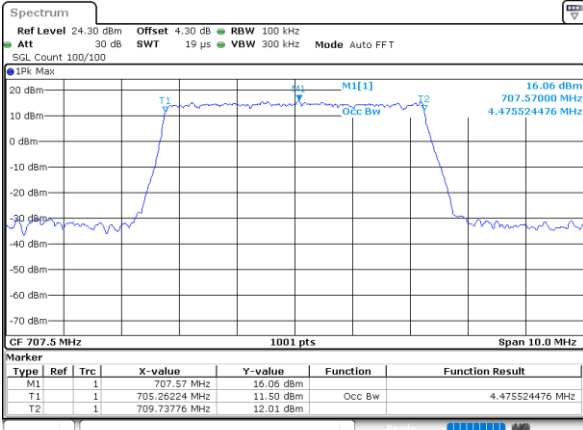
Mode	FR1 n12 : 99%OBW(MHz) / DFT-S OFDM							
BW	5MHz		10MHz		15MHz			
Mod.	PI/2 BPSK		PI/2 BPSK		PI/2 BPSK			
Middle CH	4.48		8.89		13.49			

Mode	FR1 n12 : 99%OBW (MHz) / CP OFDM							
BW	5MHz		10MHz		15MHz			
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM		
Middle CH	4.51	4.51	9.27	9.25	14.18	14.15		
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM		
Middle CH	4.51	4.47	9.27	9.27	14.15	14.12		



FR1 n12 / 5MHz / DFT-S OFDM / Middle Channel / Full RB

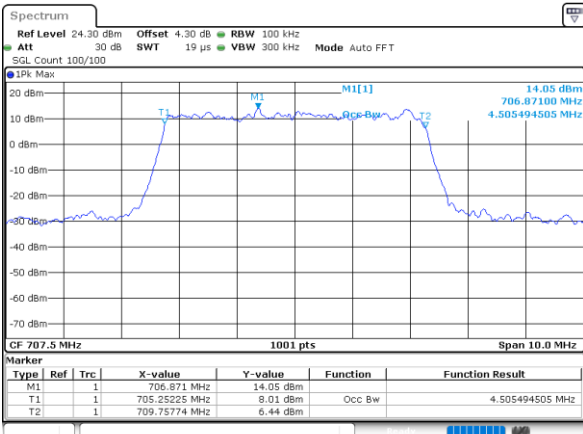
PI/2 BPSK



Date: 15. DEC. 2020 10:54:59

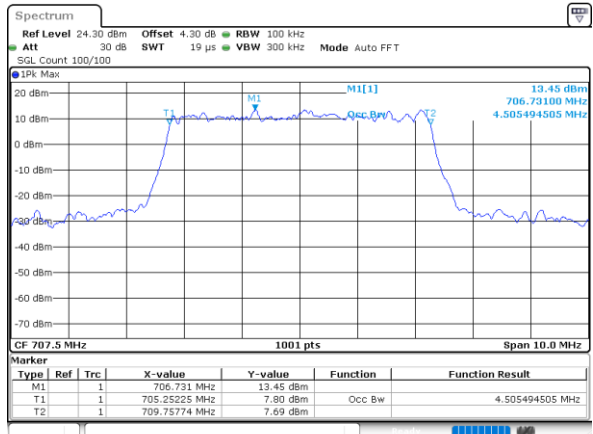
FR1 n12 / 5MHz / CP OFDM / Middle Channel / Full RB

QPSK



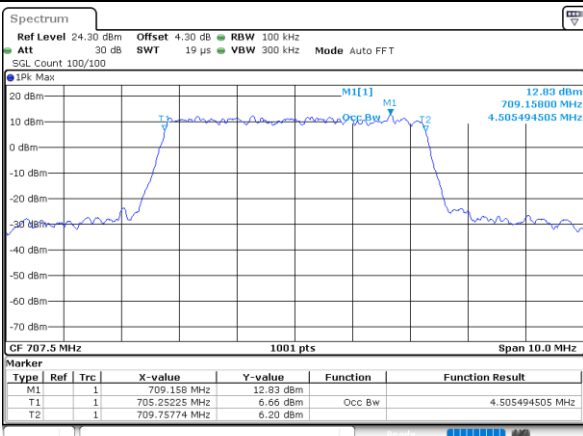
Date: 15. DEC. 2020 10:53:39

16QAM



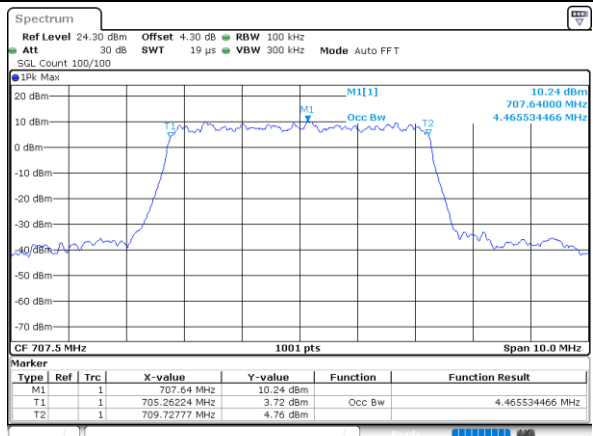
Date: 15. DEC. 2020 10:53:53

64QAM



Date: 15. DEC. 2020 10:54:12

256QAM

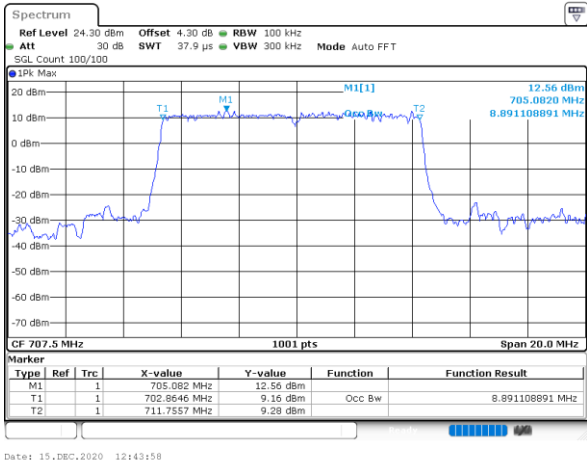


Date: 15. DEC. 2020 10:54:33



FR1 n12 / 10MHz / DFT-S OFDM / Middle Channel / Full RB

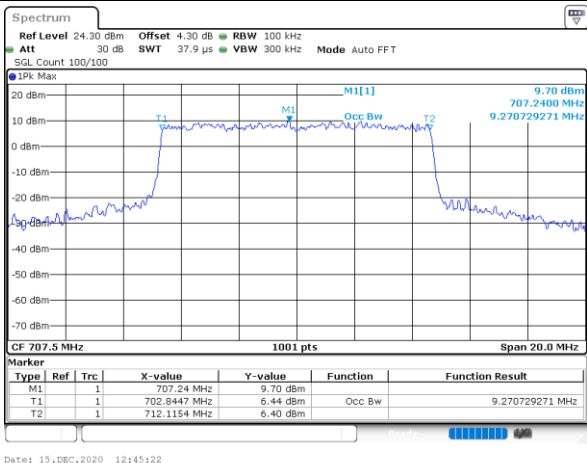
PI/2 BPSK



Date: 15. DEC. 2020 12:43:58

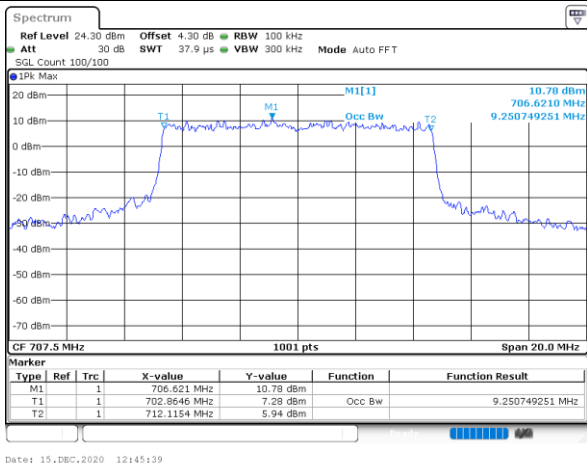
FR1 n12 / 10MHz / CP OFDM / Middle Channel / Full RB

QPSK



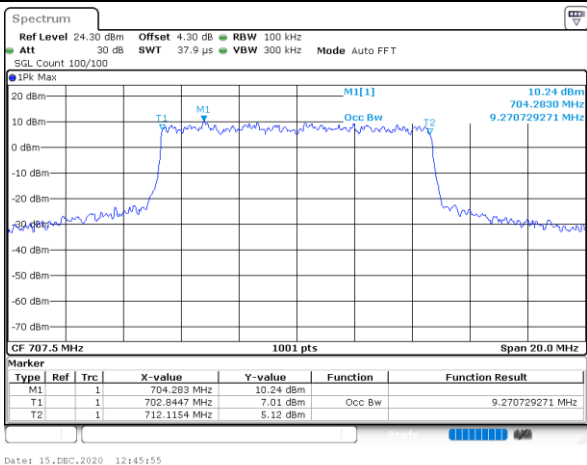
Date: 15. DEC. 2020 12:45:22

16QAM



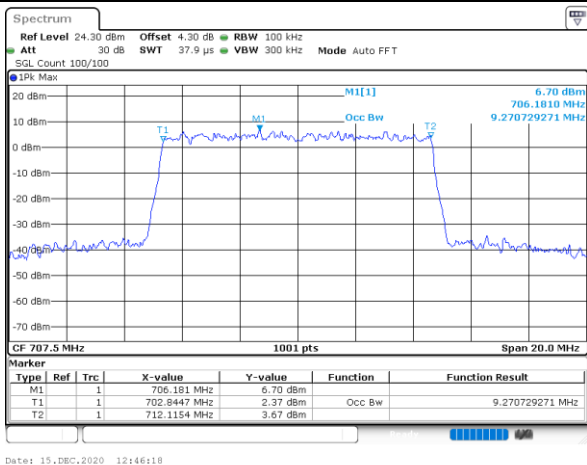
Date: 15. DEC. 2020 12:45:19

64QAM



Date: 15. DEC. 2020 12:45:55

256QAM

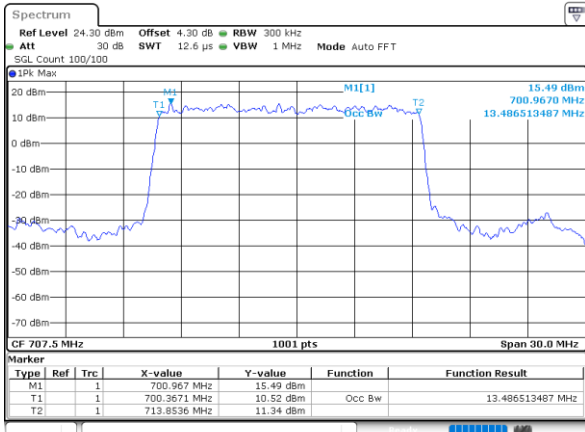


Date: 15. DEC. 2020 12:46:18



FR1 n12 / 15MHz / DFT-S OFDM / Middle Channel / Full RB

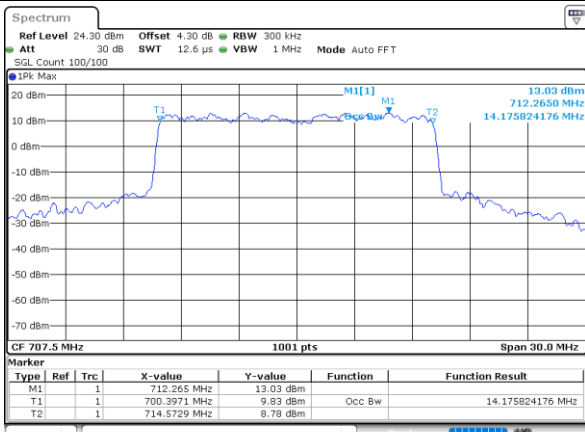
PI/2 BPSK



Date: 15. DEC. 2020 13:03:05

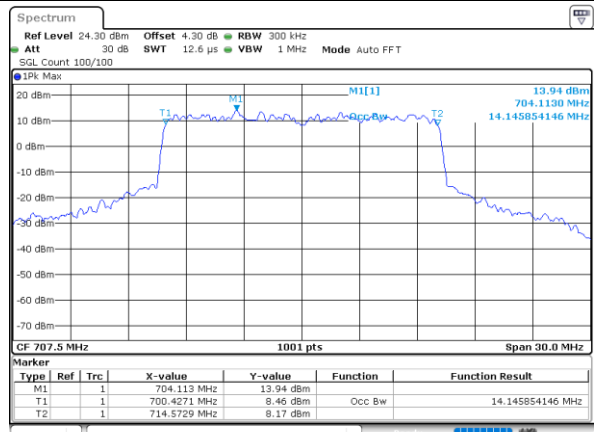
FR1 n12 / 15MHz / CP OFDM / Middle Channel / Full RB

QPSK



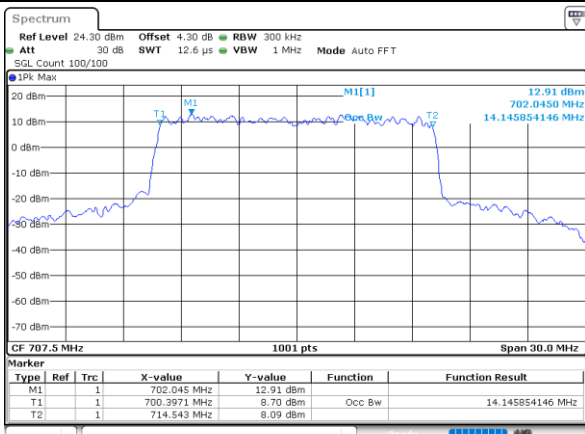
Date: 15. DEC. 2020 13:01:29

16QAM



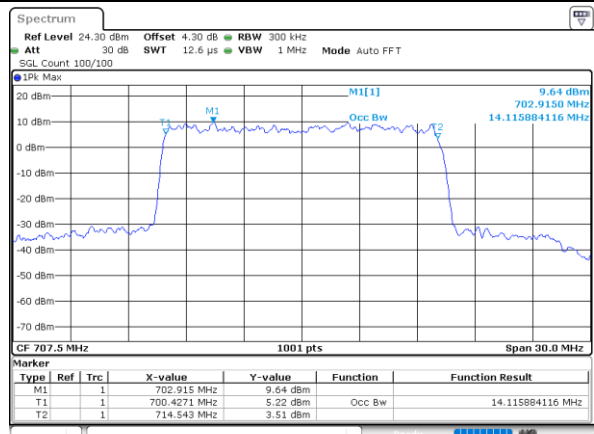
Date: 15. DEC. 2020 13:01:01

64QAM



Date: 15. DEC. 2020 13:01:34

256QAM



Date: 15. DEC. 2020 12:59:57

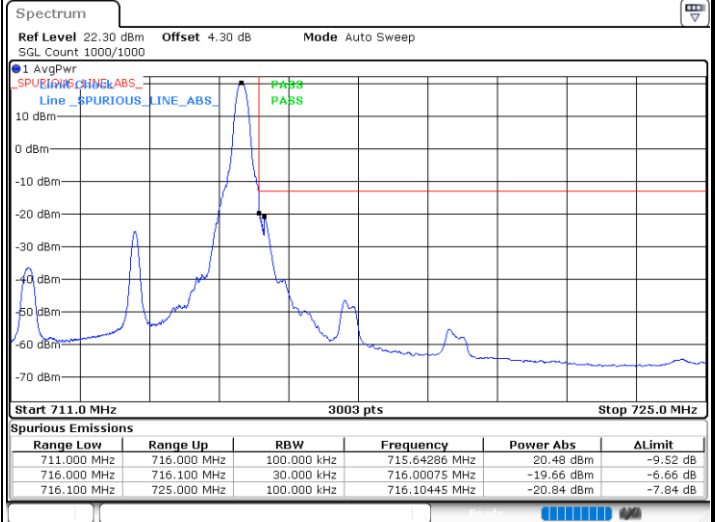
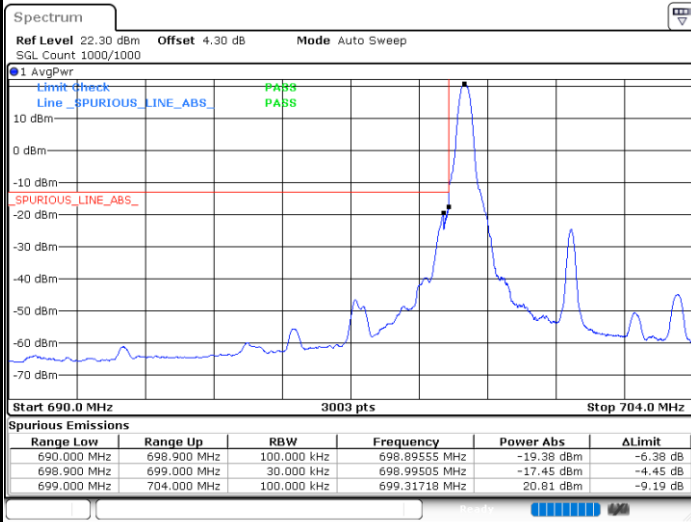


Conducted Band Edge

FR1 n12 / 5MHz / DFT-S OFDM / PI/2 BPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

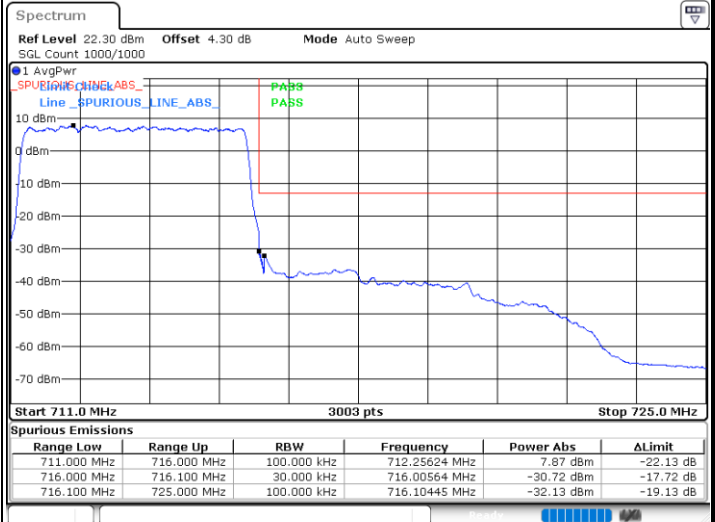
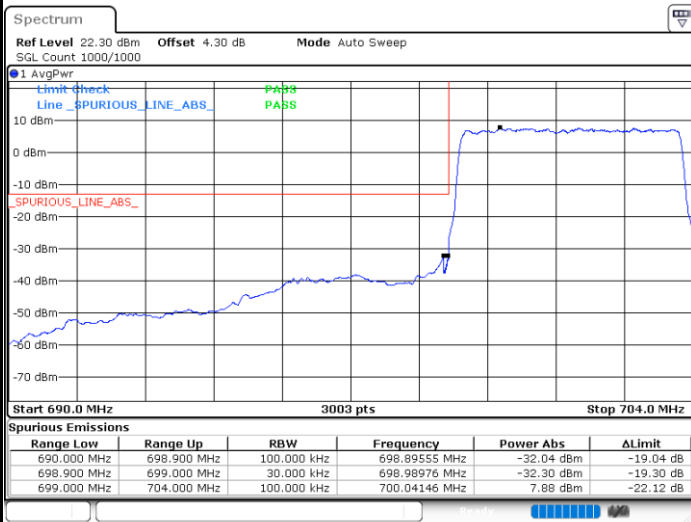


Date: 16.DEC.2020 08:37:18

Date: 16.DEC.2020 09:28:47

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 16.DEC.2020 08:48:43

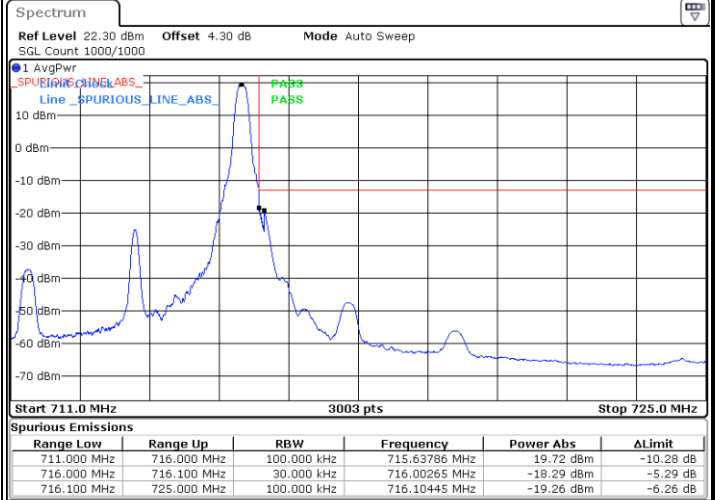
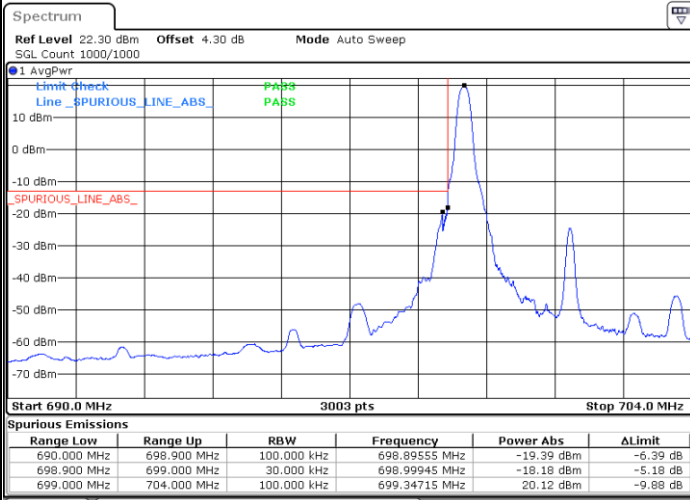
Date: 16.DEC.2020 09:43:27



FR1 n12 / 5MHz / DFT-S OFDM / QPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

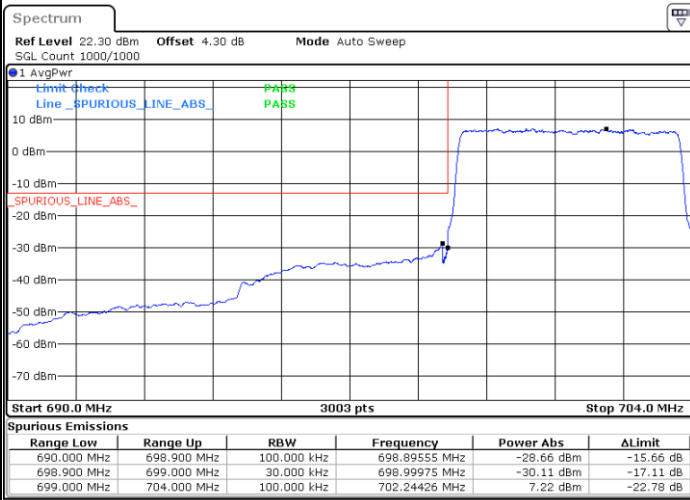


Date: 16.DEC.2020 08:41:27

Date: 16.DEC.2020 09:30:22

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 16.DEC.2020 08:47:35

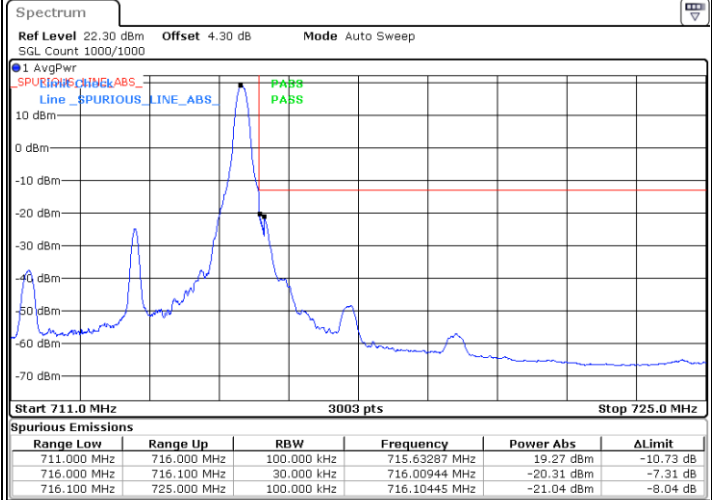
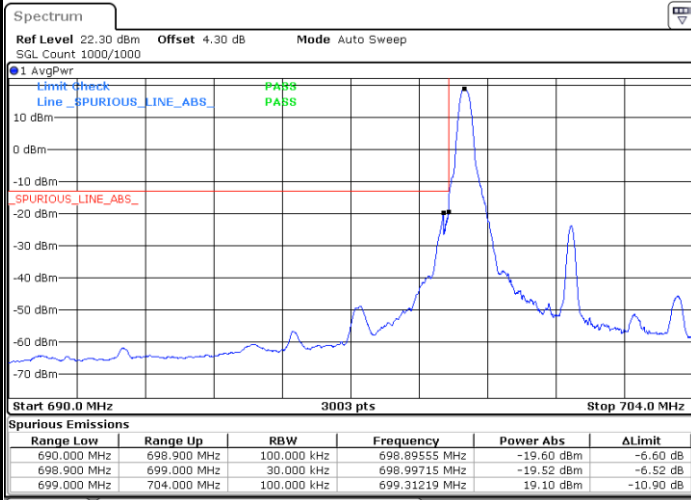
Date: 16.DEC.2020 09:36:54



FR1 n12 / 5MHz / DFT-S OFDM / 16QAM

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

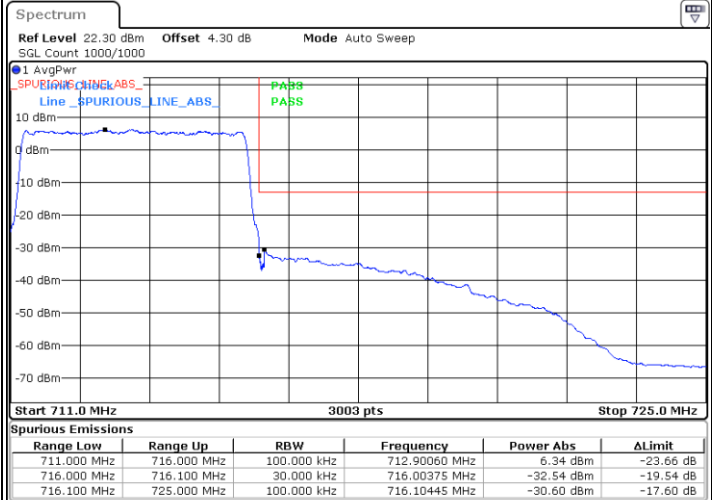
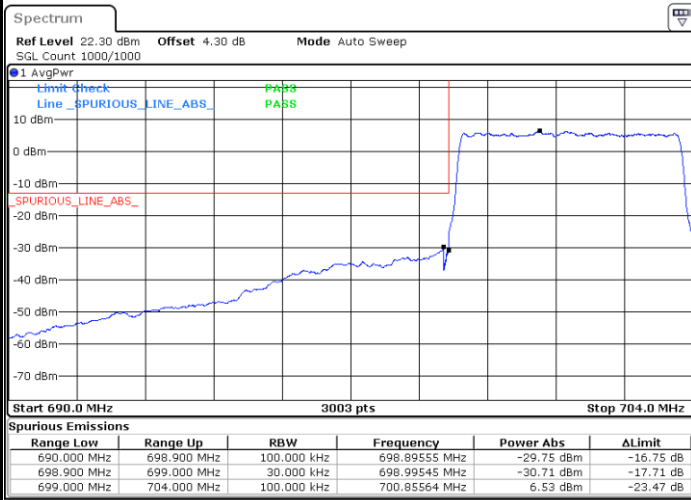


Date: 16.DEC.2020 08:42:33

Date: 16.DEC.2020 09:31:35

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 16.DEC.2020 08:46:35

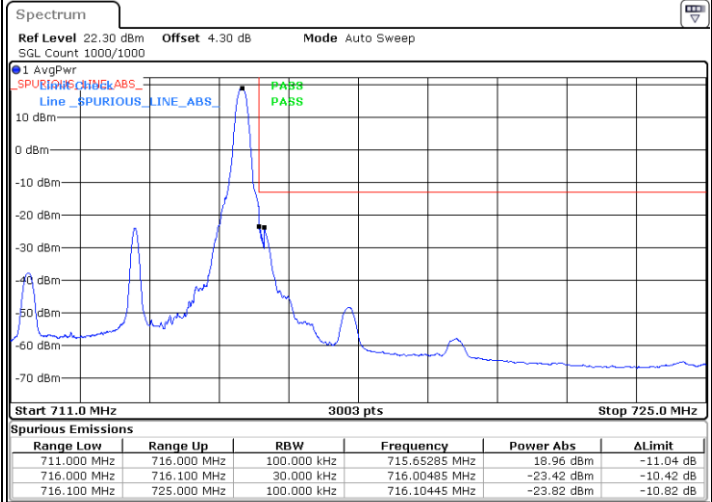
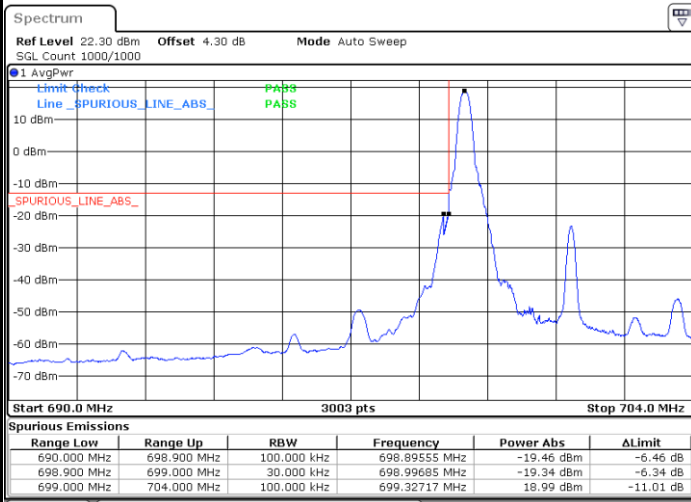
Date: 16.DEC.2020 09:36:00



FR1 n12 / 5MHz / DFT-S OFDM / 64QAM

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

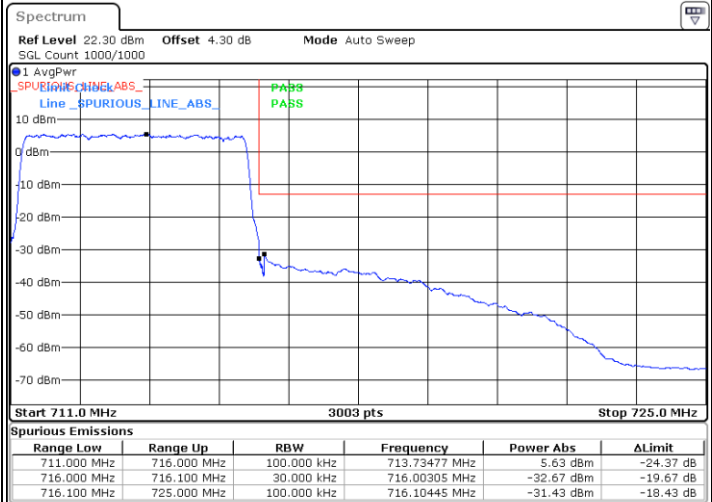
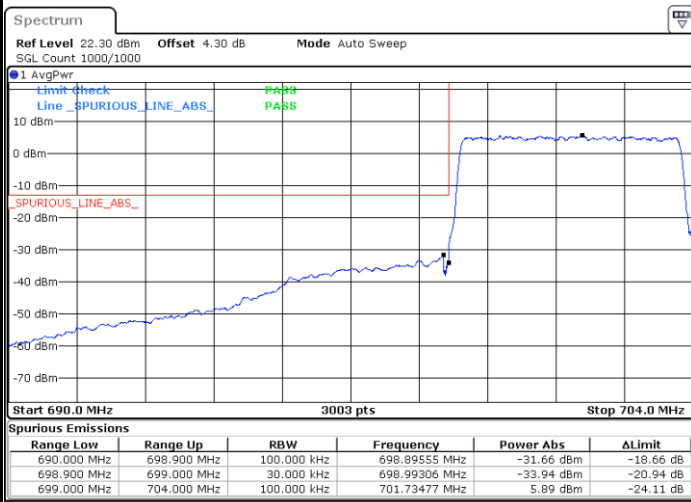


Date: 16.DEC.2020 08:43:32

Date: 16.DEC.2020 09:32:30

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 16.DEC.2020 08:44:48

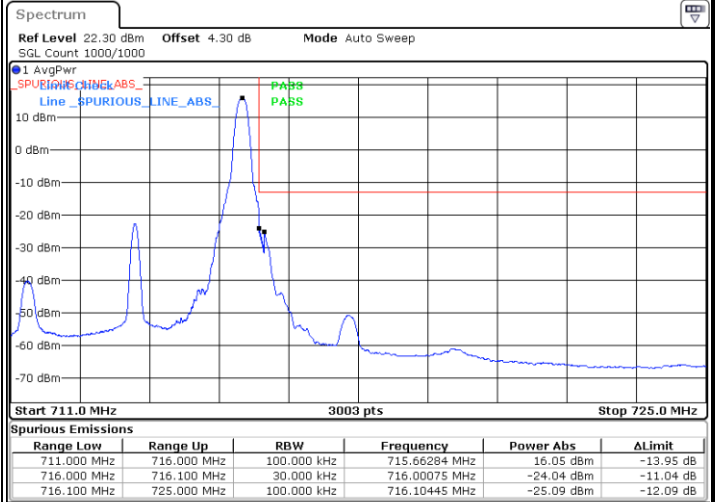
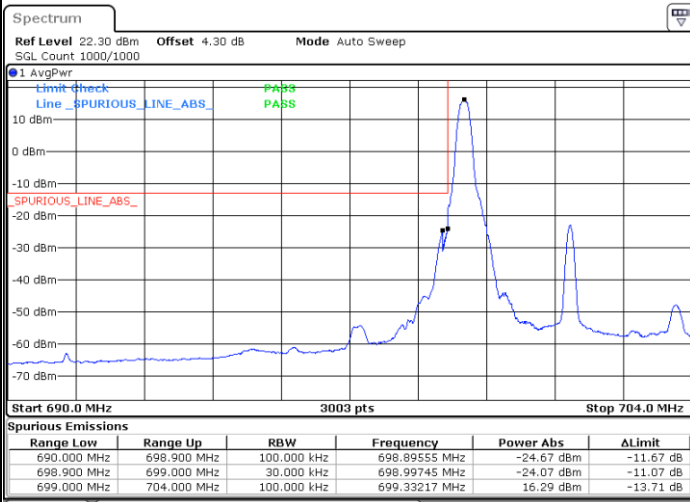
Date: 16.DEC.2020 09:33:47



FR1 n12 / 5MHz / DFT-S OFDM / 256QAM

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

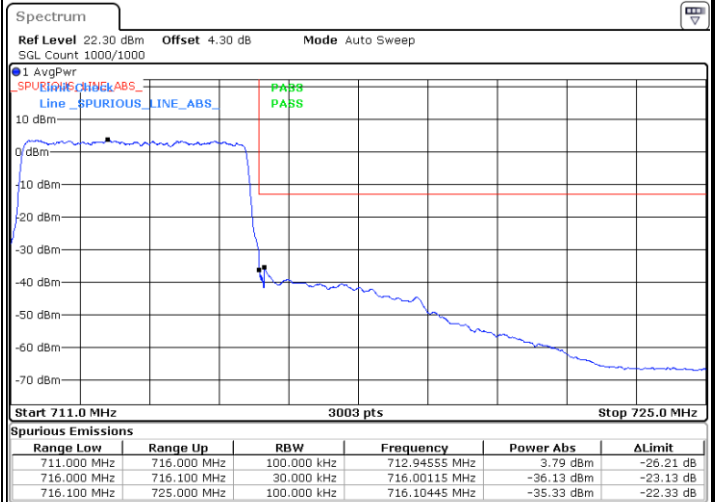
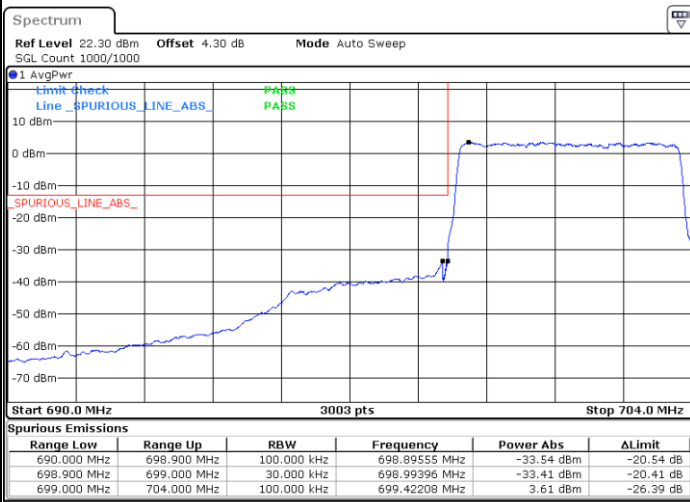


Date: 16.DEC.2020 08:57:23

Date: 16.DEC.2020 09:45:38

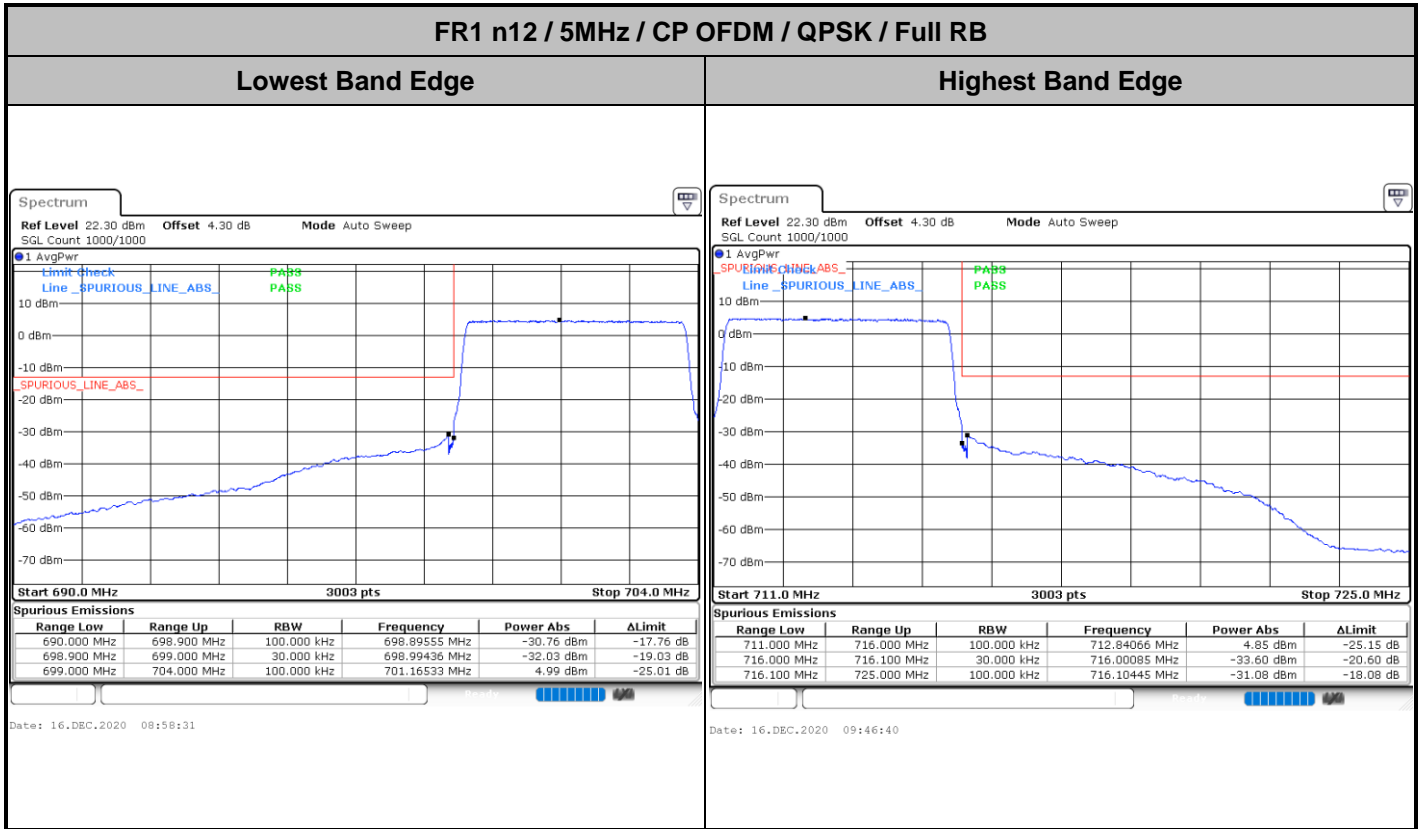
Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 16.DEC.2020 08:55:14

Date: 16.DEC.2020 09:44:39

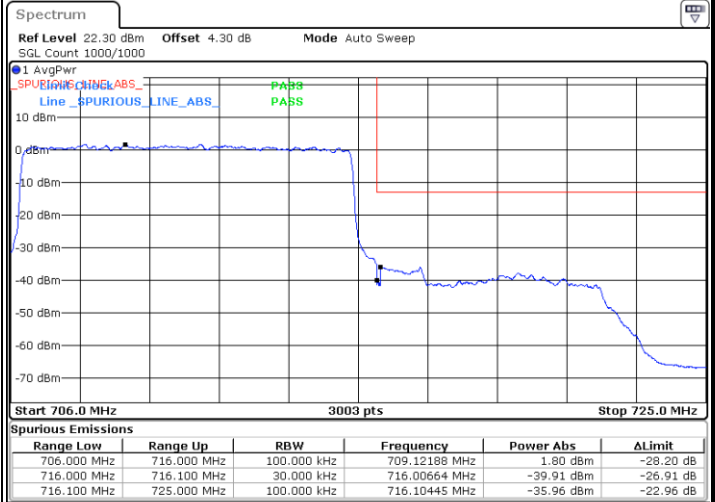
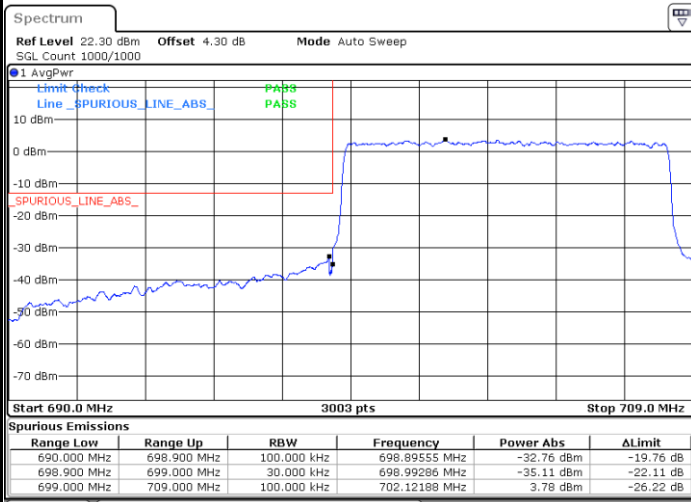




FR1 n12 / 10MHz / DFT-s-OFDM / PI/2 BPSK / Full RB

Lowest Band Edge

Highest Band Edge



Date: 16.DEC.2020 10:05:01

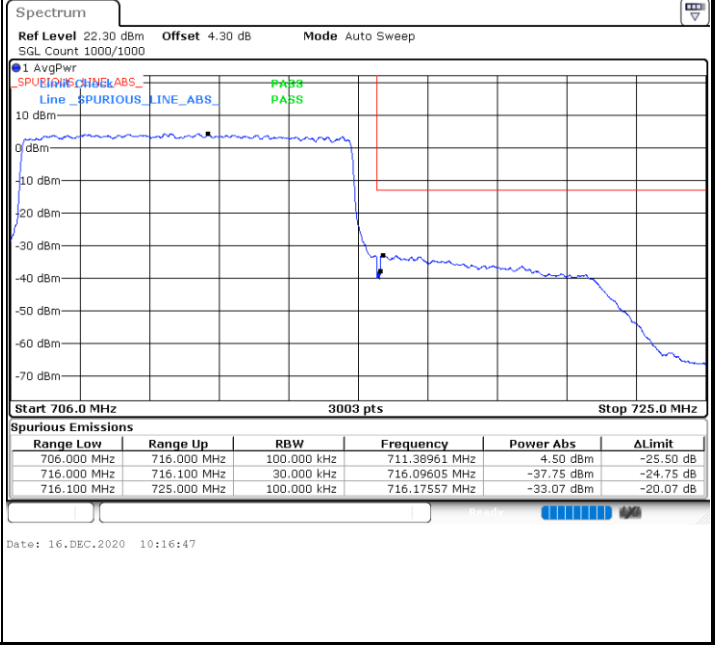
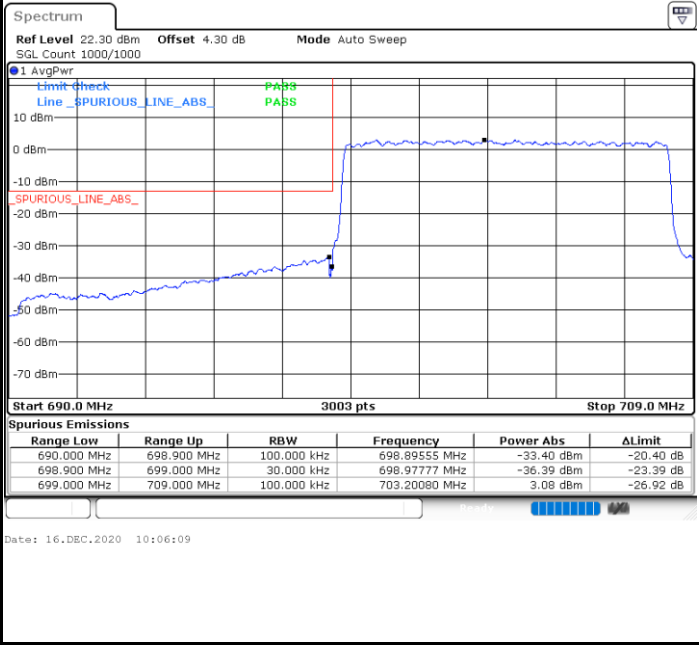
Date: 16.DEC.2020 10:18:14



FR1 n12 / 10MHz / DFT-s-OFDM / QPSK / Full RB

Lowest Band Edge

Highest Band Edge

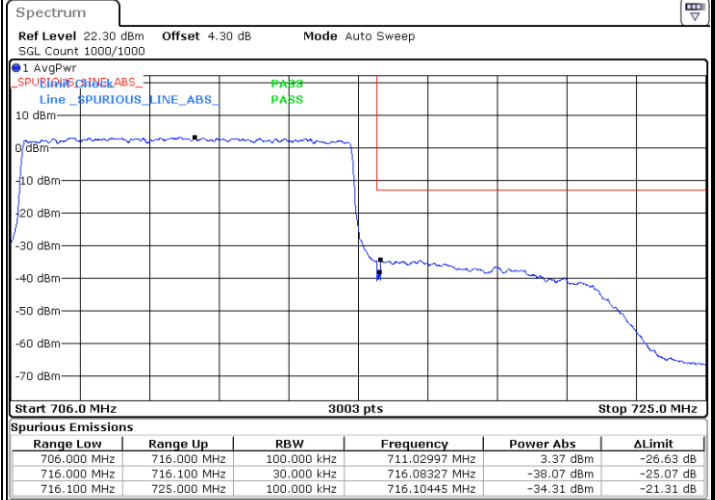
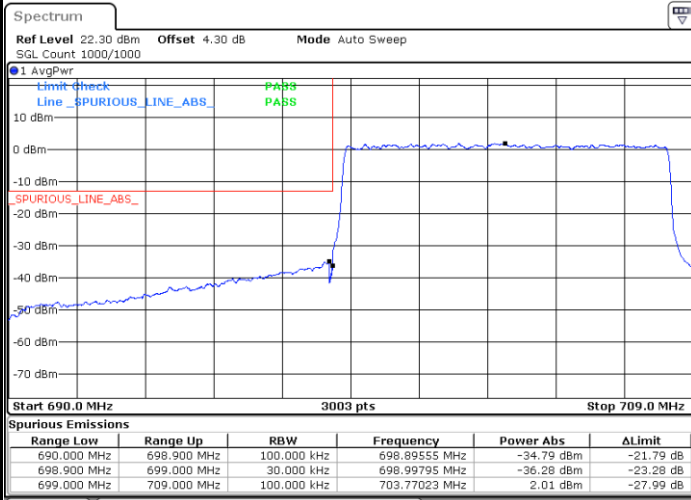




FR1 n12 / 10MHz / DFT-s-OFDM / 16QAM / Full RB

Lowest Band Edge

Highest Band Edge



Date: 16.DEC.2020 10:07:26

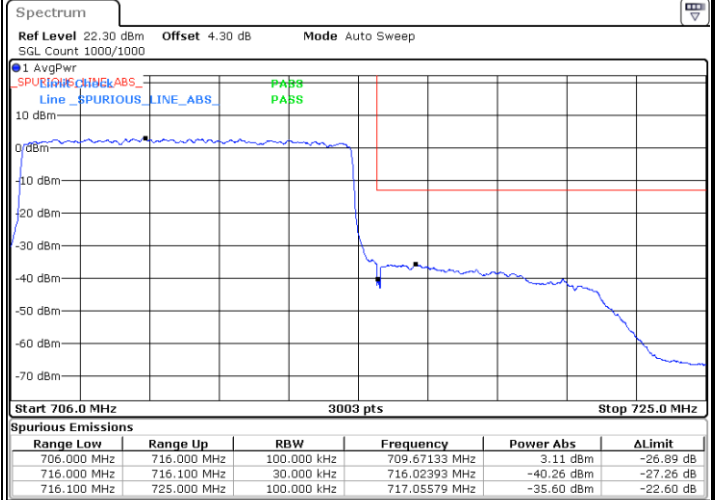
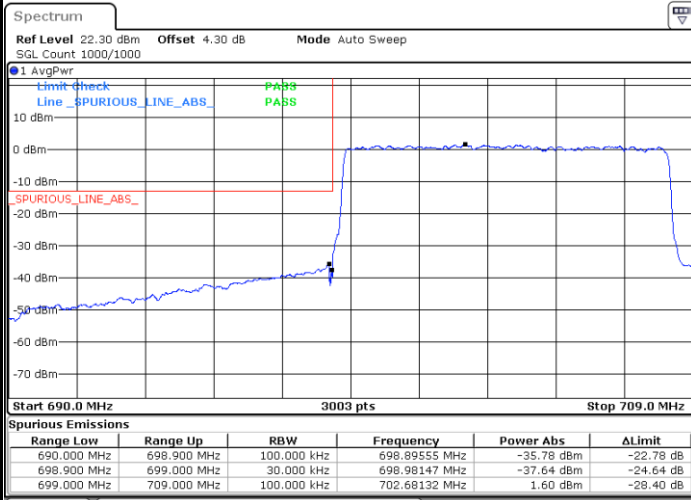
Date: 16.DEC.2020 10:15:44



FR1 n12 / 10MHz / DFT-s-OFDM / 64QAM / Full RB

Lowest Band Edge

Highest Band Edge



Date: 16.DEC.2020 10:09:38

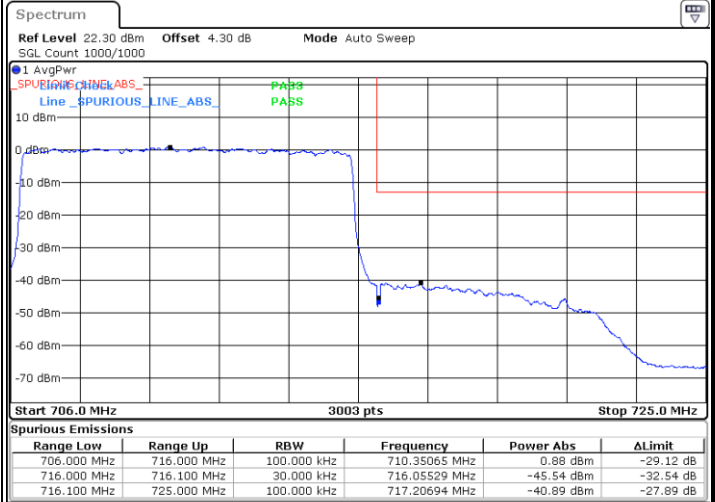
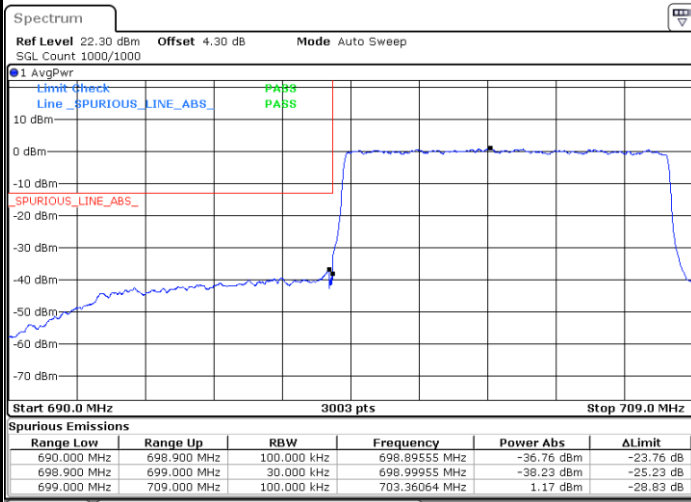
Date: 16.DEC.2020 10:13:51



FR1 n12 / 10MHz / DFT-s-OFDM / 256QAM / Full RB

Lowest Band Edge

Highest Band Edge



Date: 16.DEC.2020 10:10:44

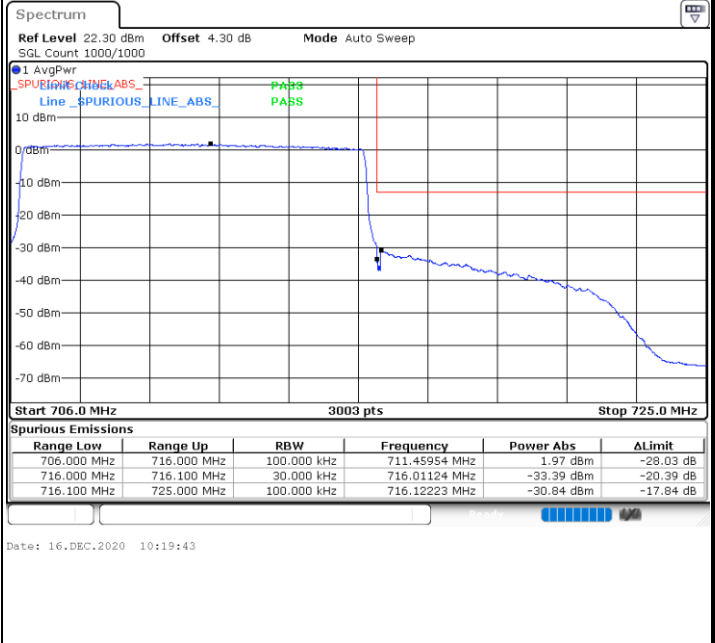
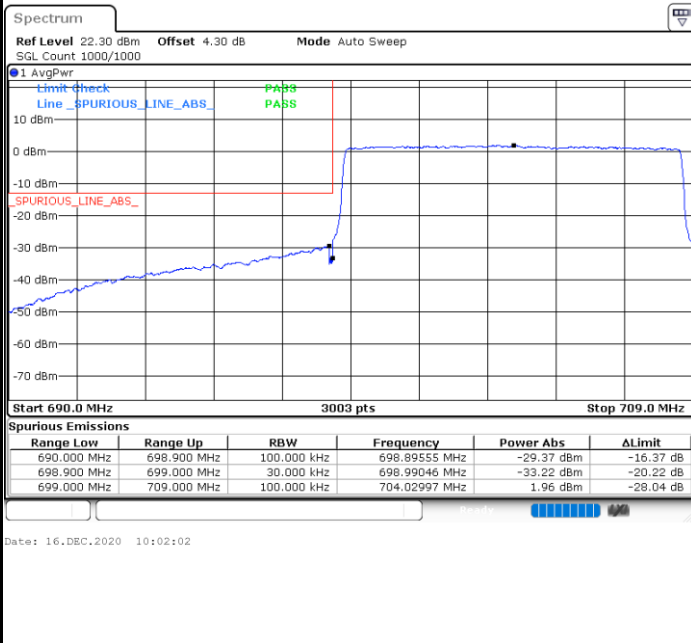
Date: 16.DEC.2020 10:12:41



FR1 n12 / 10MHz / CP OFDM / QPSK / Full RB

Lowest Band Edge

Highest Band Edge

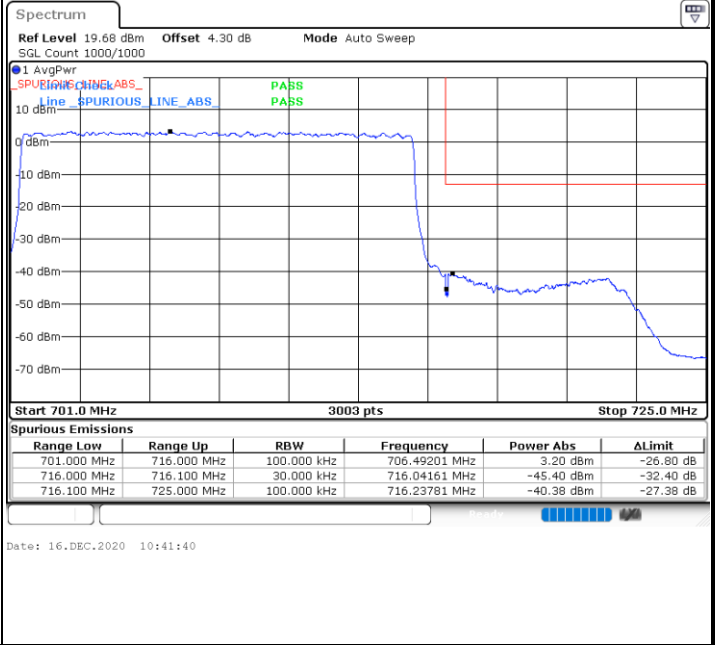
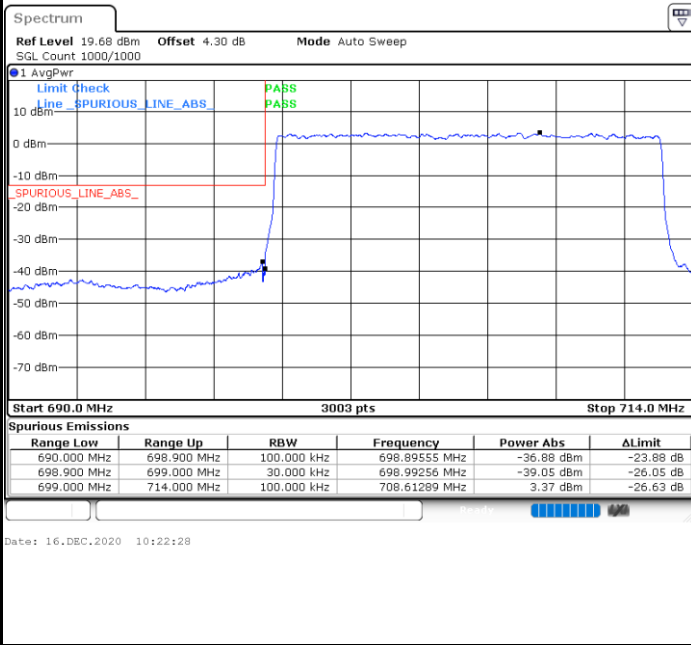




FR1 n12 / 15MHz / DFT-s-OFDM / PI/2 BPSK / Full RB

Lowest Band Edge

Highest Band Edge

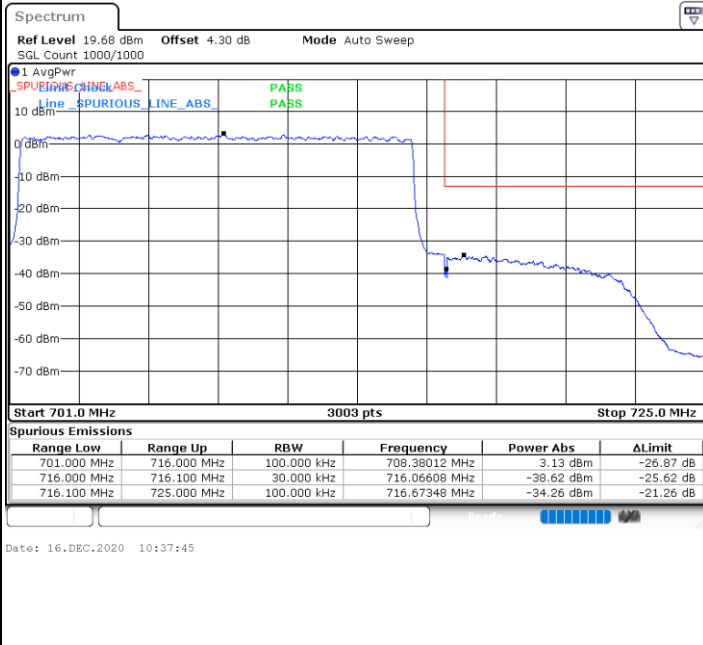
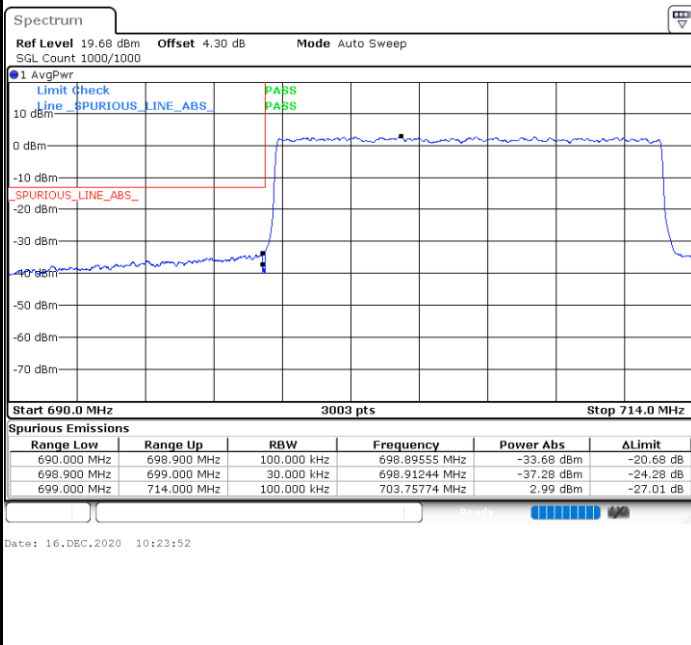


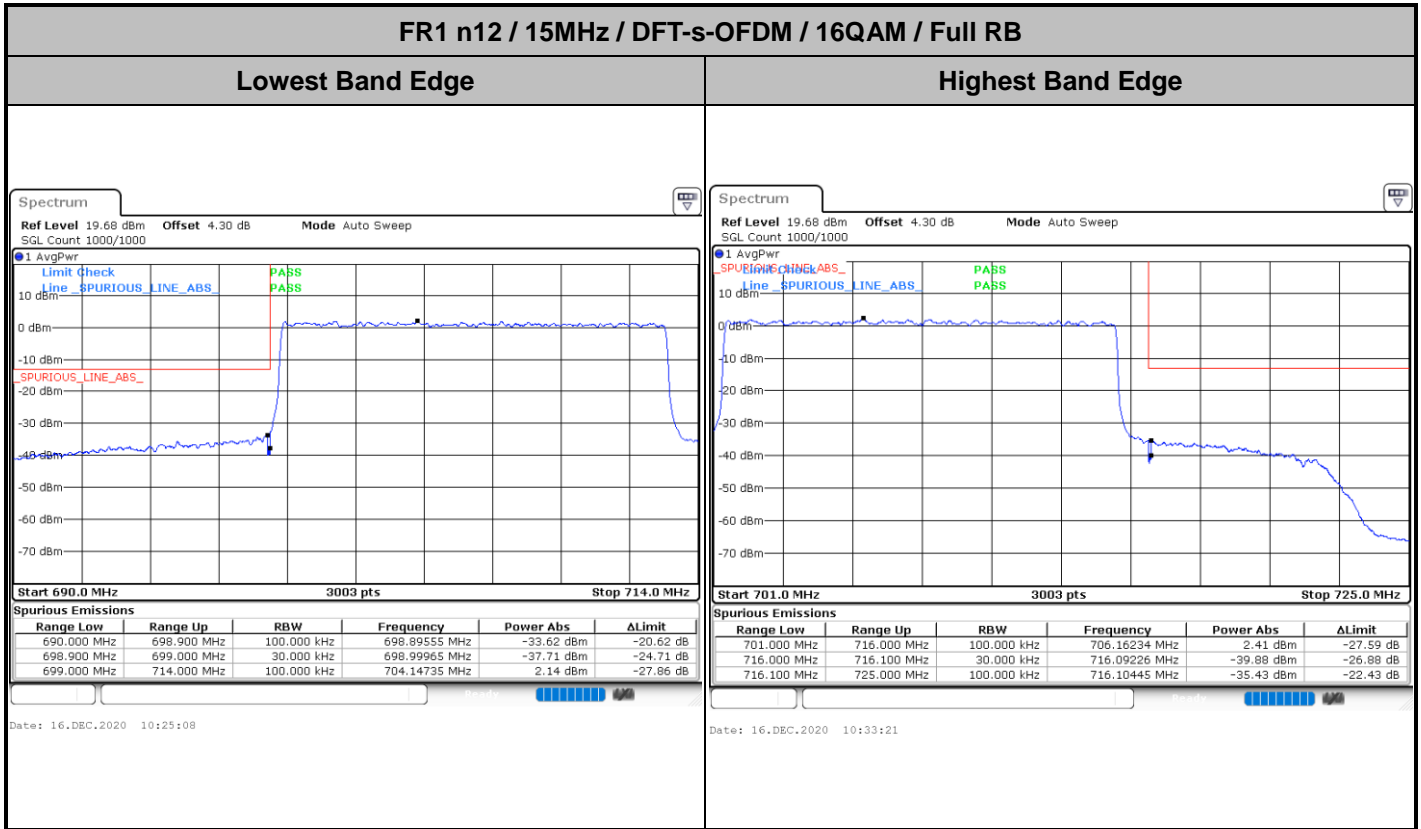


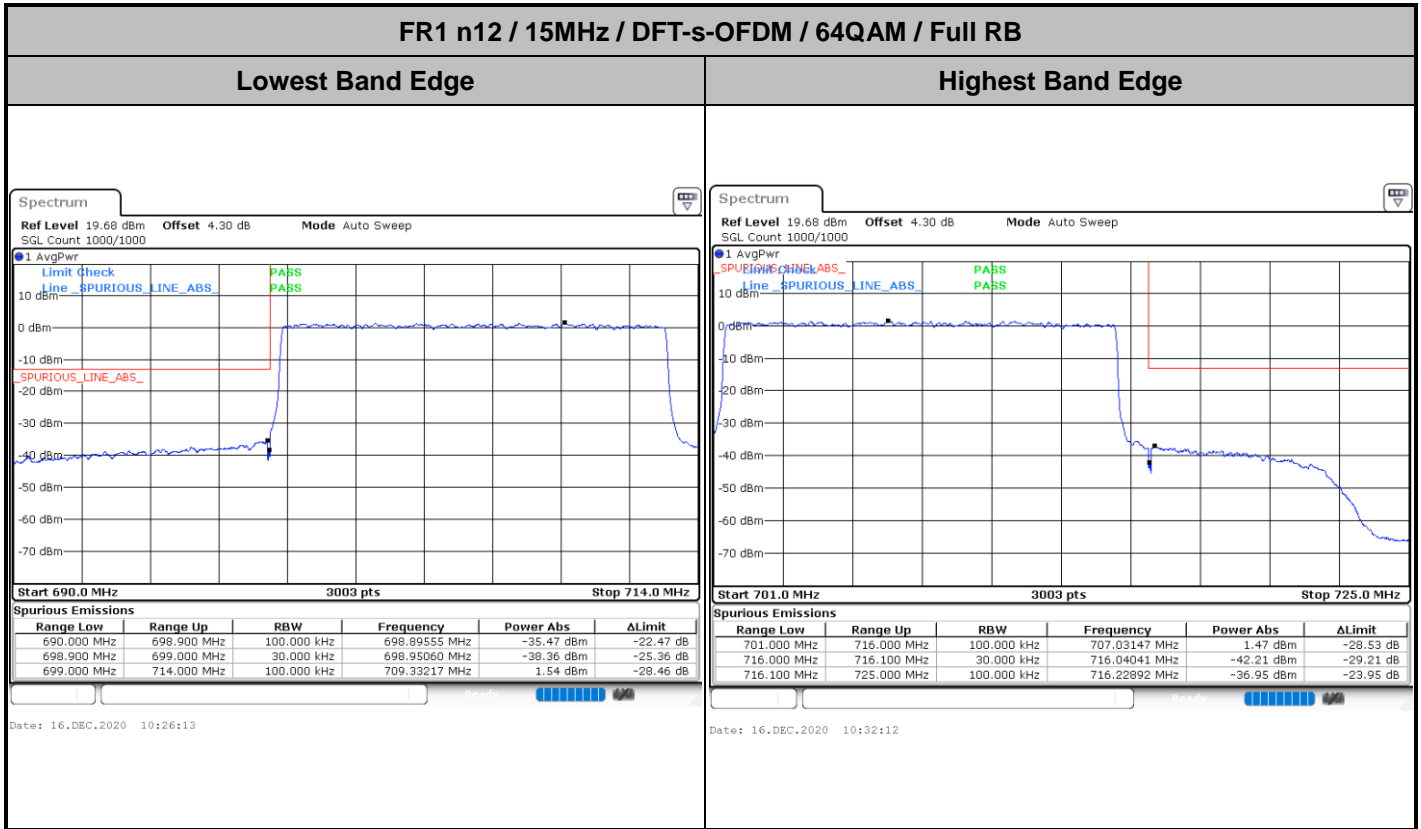
FR1 n12 / 15MHz / DFT-s-OFDM / QPSK / Full RB

Lowest Band Edge

Highest Band Edge





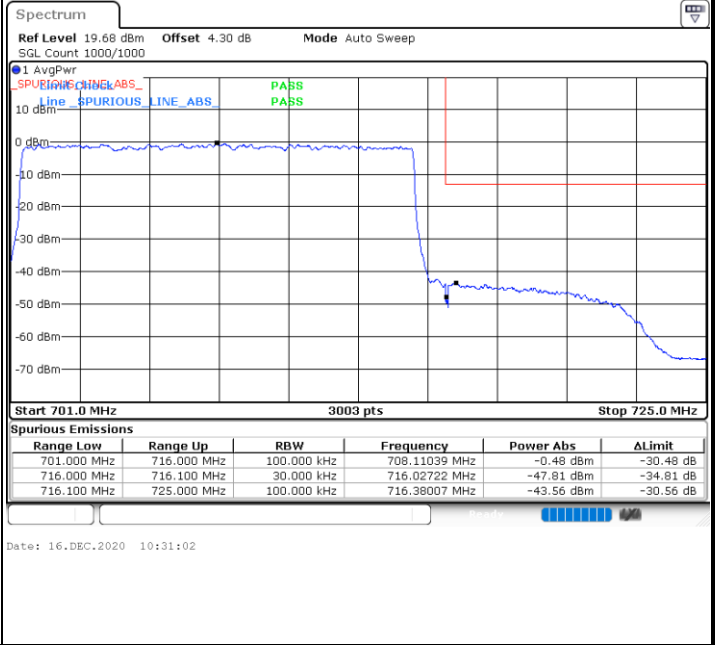
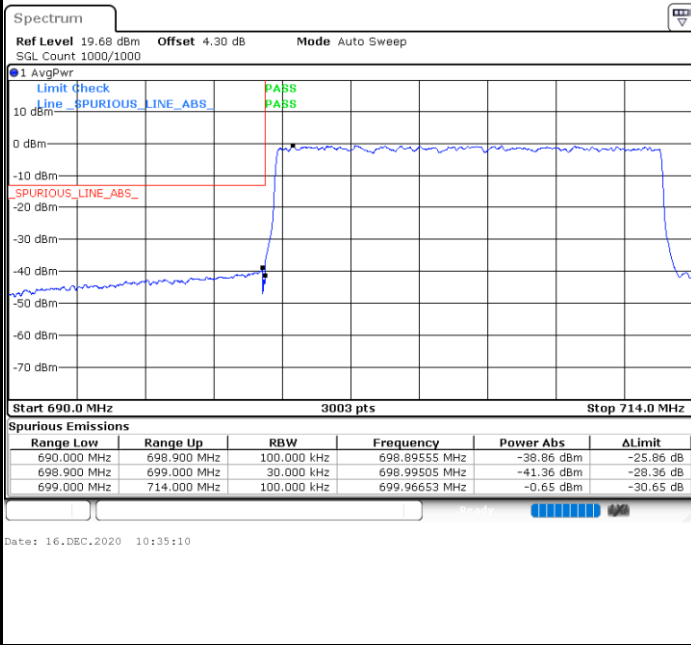


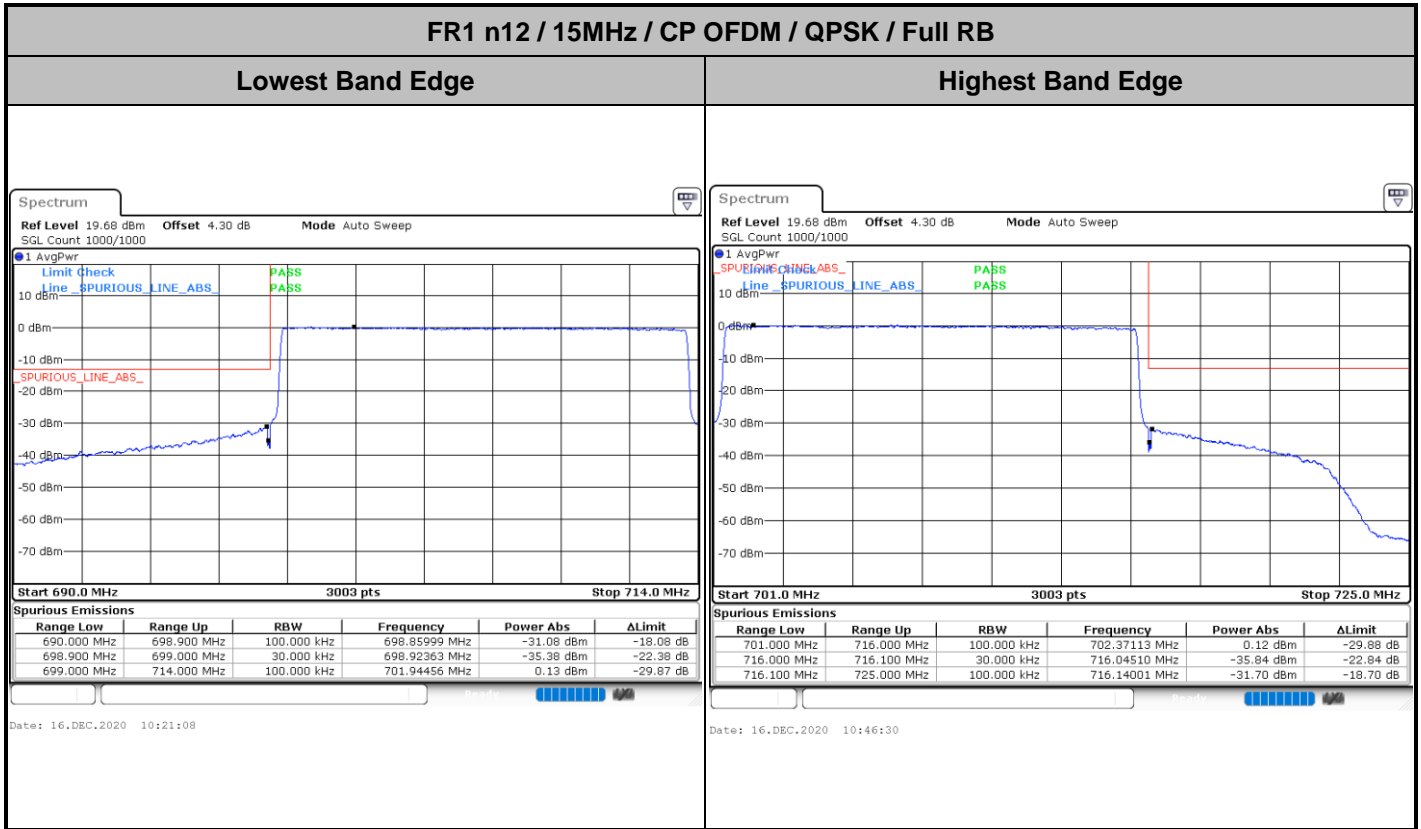


FR1 n12 / 15MHz / DFT-s-OFDM / 256QAM / Full RB

Lowest Band Edge

Highest Band Edge





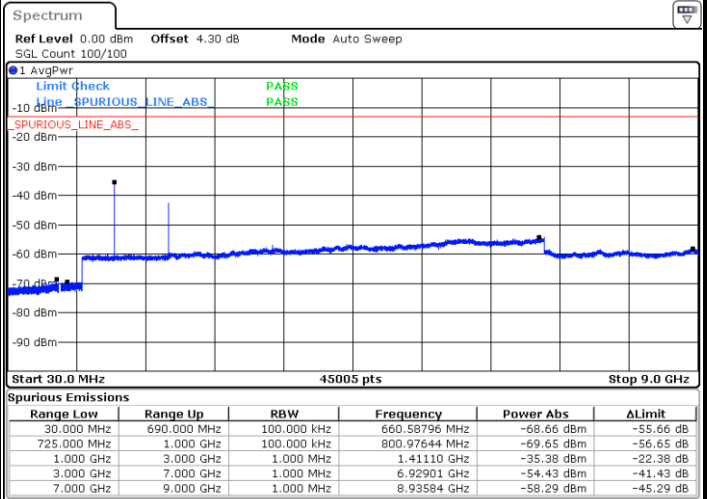
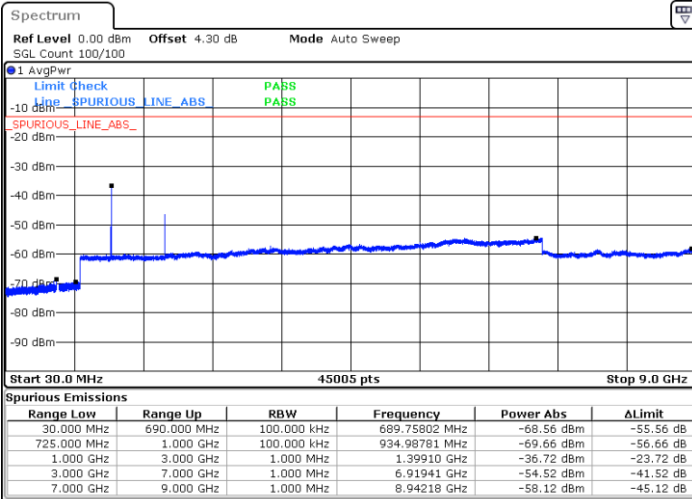


Conducted Spurious Emission

FR1 n12 / 5MHz / DFT-S OFDM / QPSK / 1RB1

Lowest Channel

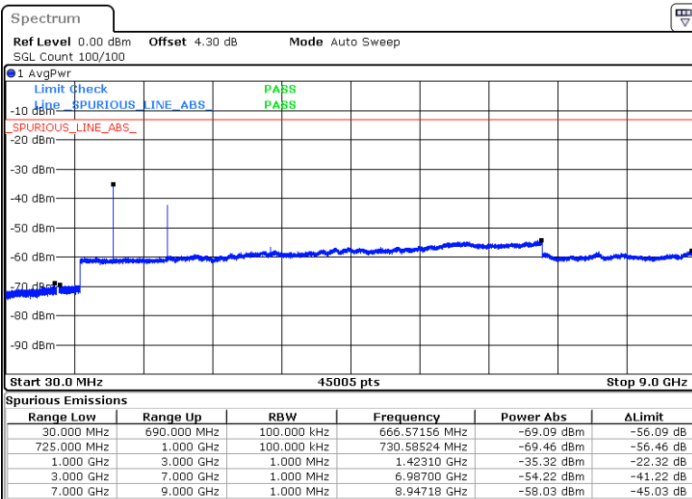
Middle Channel



Date: 15.DEC.2020 10:46:39

Date: 15.DEC.2020 12:38:29

Highest Channel



Date: 15.DEC.2020 12:39:07



Frequency Stability

Test Conditions		FR1 n12 (BPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 15MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0089	PASS
40	Normal Voltage	0.0010	
30	Normal Voltage	0.0051	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0086	
0	Normal Voltage	0.0243	
-10	Normal Voltage	0.0018	
-20	Normal Voltage	0.0024	
-30	Normal Voltage	0.0003	
20	Maximum Voltage	0.0016	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0062	

Note:

1. Normal Voltage =3.85 V. ; Battery End Point (BEP) =3.60 V. ; Maximum Voltage =4.45 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



FR1 n25

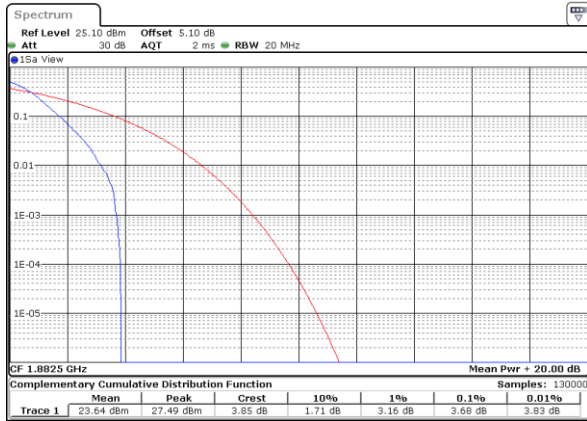
Peak-to-Average Ratio

Mode	FR1 n25 / 20MHz / DFT-S OFDM				
Mod.	PI/2 BPSK	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	3.68	4.29	5.48	5.83	PASS
Mode	FR1 n25 / 20MHz / DFT-S OFDM				
Mod.	256QAM				Limit: 13dB
RB Size	Full RB				Result
Middle CH	6.70				PASS



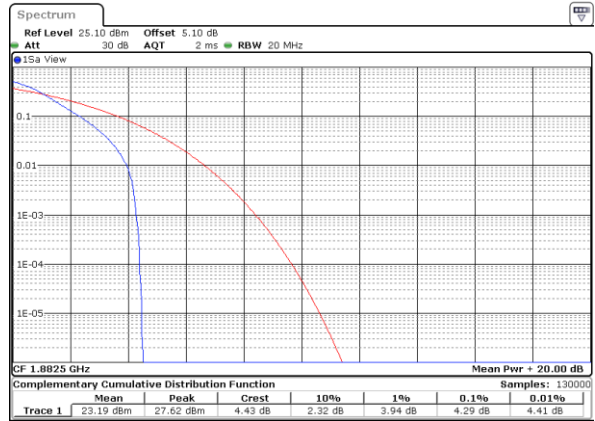
FR1 n25 / 20MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK



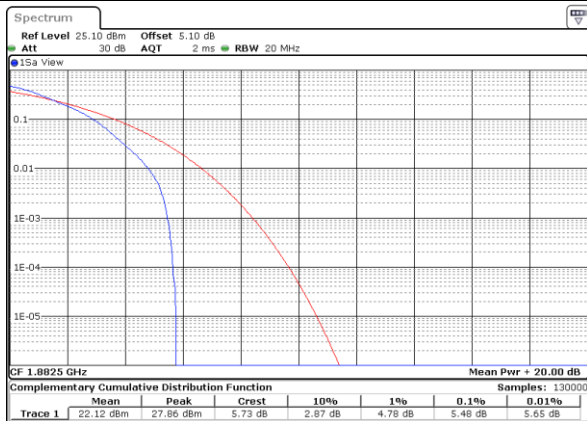
Date: 10_JAN_2021 13:42:30

QPSK



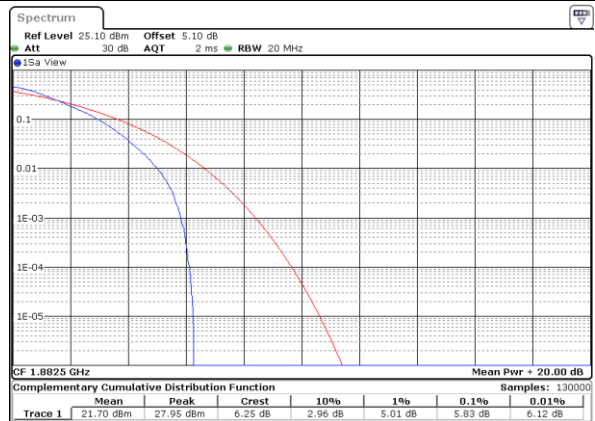
Date: 10_JAN_2021 13:42:40

16QAM



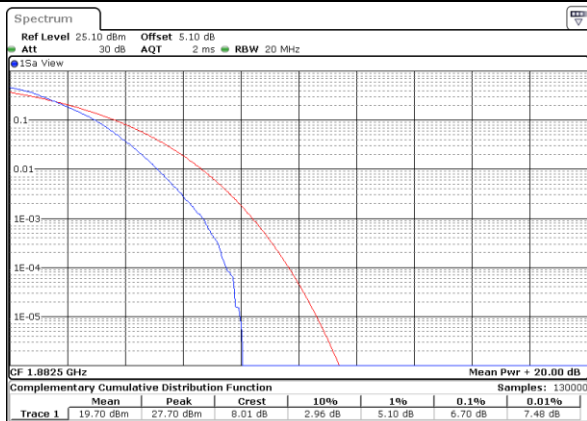
Date: 10_JAN_2021 13:42:52

64QAM



Date: 10_JAN_2021 13:43:05

256QAM



Date: 10_JAN_2021 13:43:20



26dB Bandwidth

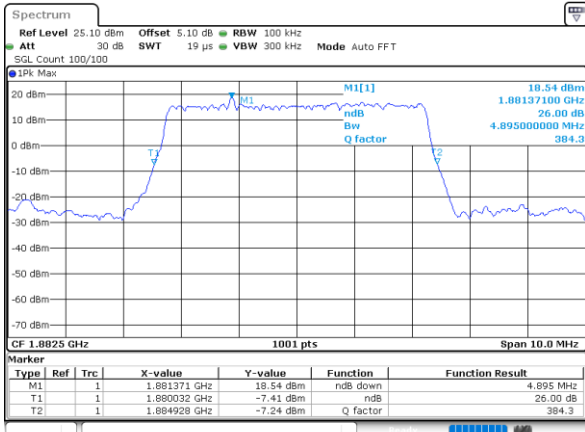
Mode	FR1 n25 : 26dB BW(MHz) / DFT-S OFDM							
BW	5MHz		10MHz		15MHz		20MHz	
Mod.	PI/2 BPSK		PI/2 BPSK		PI/2 BPSK		PI/2 BPSK	
Middle CH	4.89		9.43		14.27		18.90	

Mode	FR1 n25 : 26dB BW(MHz) / CP OFDM							
BW	5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	4.96	5.01	9.79	9.87	14.96	14.93	19.86	19.86
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	4.95	4.99	9.87	9.71	15.14	14.99	19.94	19.94



FR1 n25 / 5MHz / DFT-S OFDM / Middle Channel / Full RB

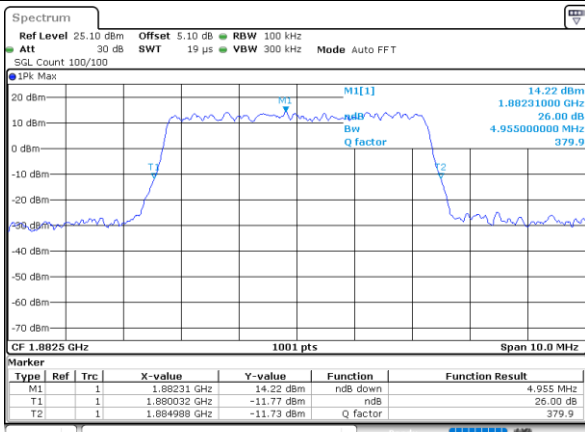
PI/2 BPSK



Date: 10_JAN_2021 12:19:08

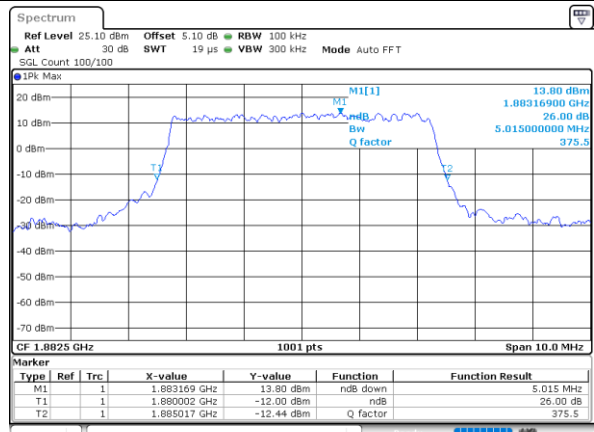
FR1 n25 / 5MHz / CP OFDM / Middle Channel / Full RB

QPSK



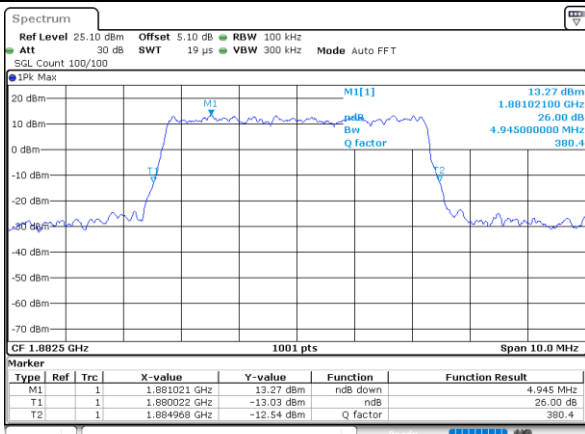
Date: 10_JAN_2021 12:19:30

16QAM



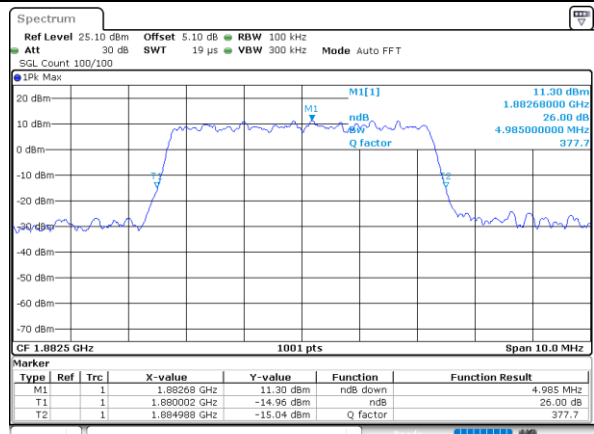
Date: 10_JAN_2021 12:19:46

64QAM



Date: 10_JAN_2021 12:20:03

256QAM

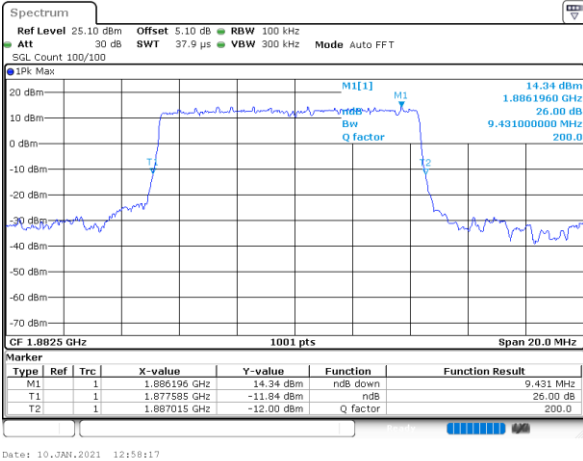


Date: 10_JAN_2021 12:20:21



FR1 n25 / 10MHz / DFT-S OFDM / Middle Channel / Full RB

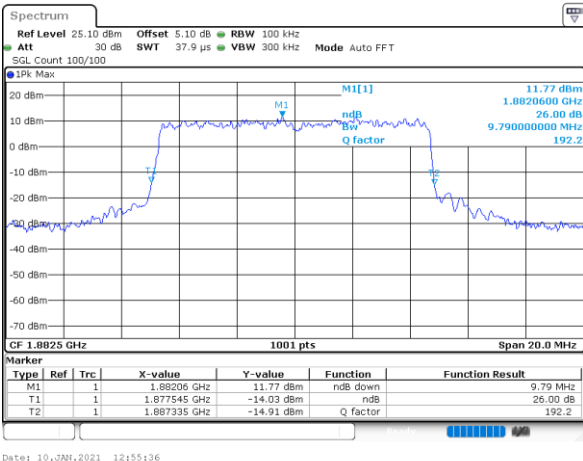
PI/2 BPSK



Date: 10_JAN_2021 12:58:17

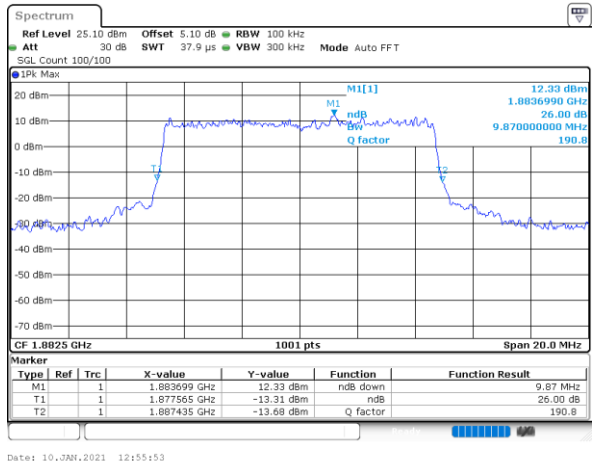
FR1 n25 / 10MHz / CP OFDM / Middle Channel / Full RB

QPSK



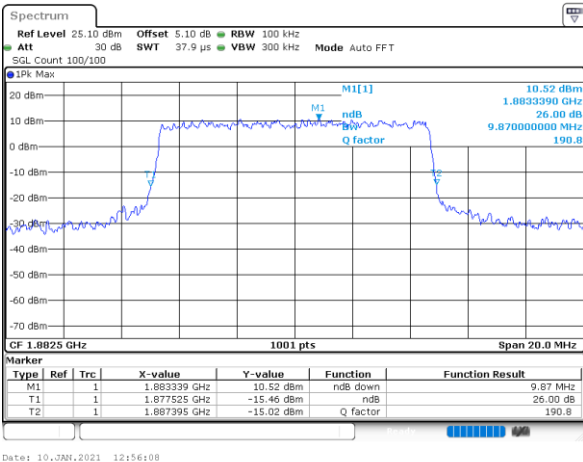
Date: 10_JAN_2021 12:55:36

16QAM



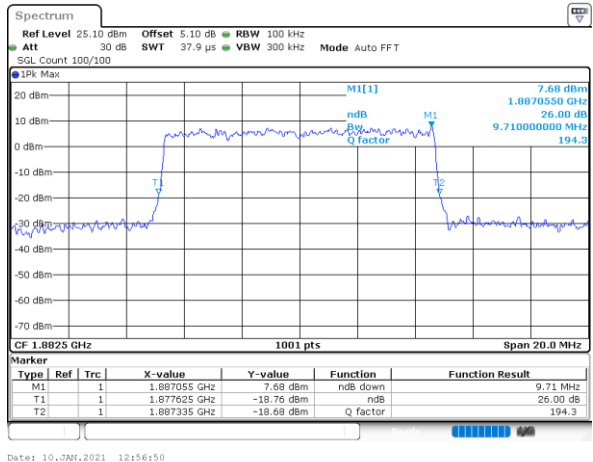
Date: 10_JAN_2021 12:55:53

64QAM



Date: 10_JAN_2021 12:56:08

256QAM

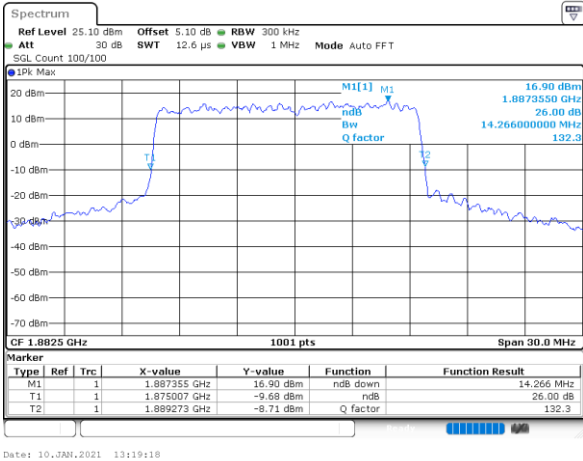


Date: 10_JAN_2021 12:56:50



FR1 n25 / 15MHz / DFT-S OFDM / Middle Channel / Full RB

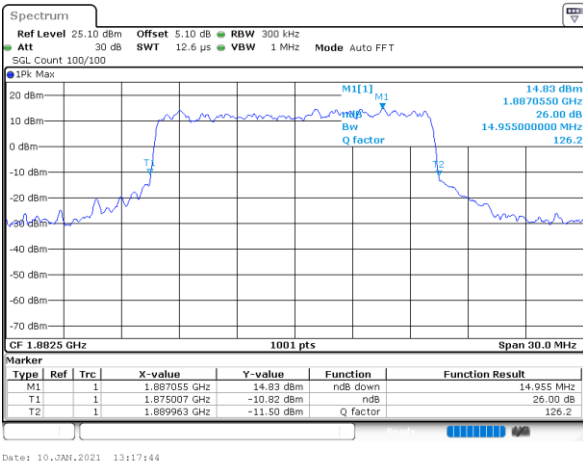
PI/2 BPSK



Date: 10_JAN_2021 13:19:18

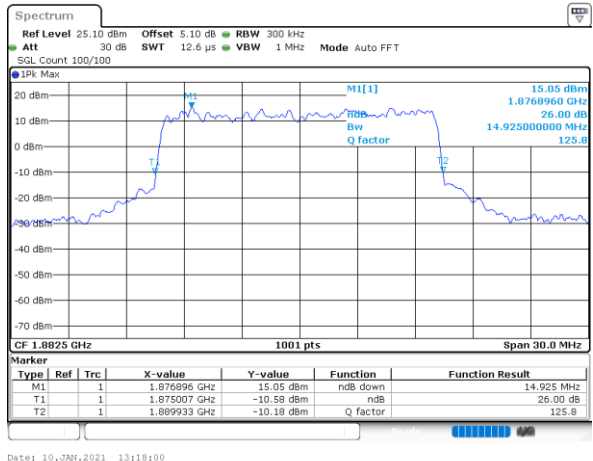
FR1 n25 / 15MHz / CP OFDM / Middle Channel / Full RB

QPSK



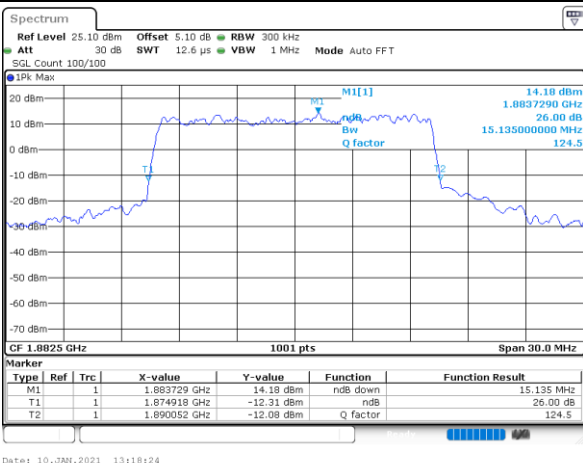
Date: 10_JAN_2021 13:17:44

16QAM



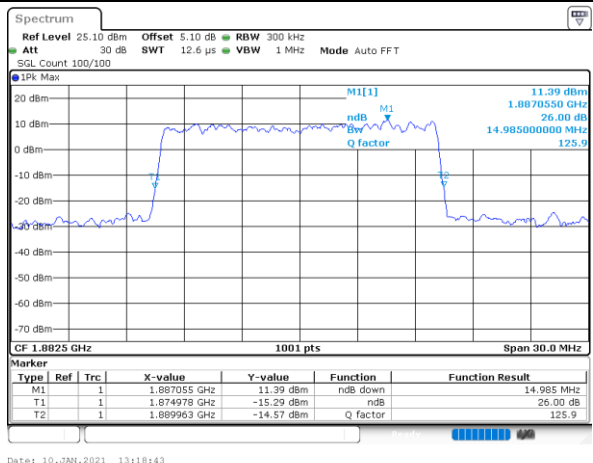
Date: 10_JAN_2021 13:18:00

64QAM



Date: 10_JAN_2021 13:18:24

256QAM



Date: 10_JAN_2021 13:18:43