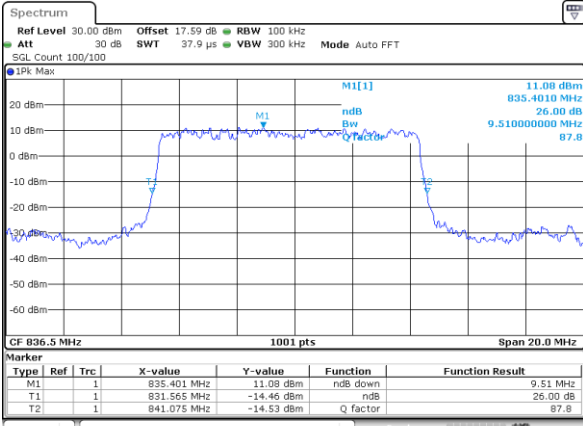




FR1 n5 / 10MHz / DFT-S OFDM / Middle Channel

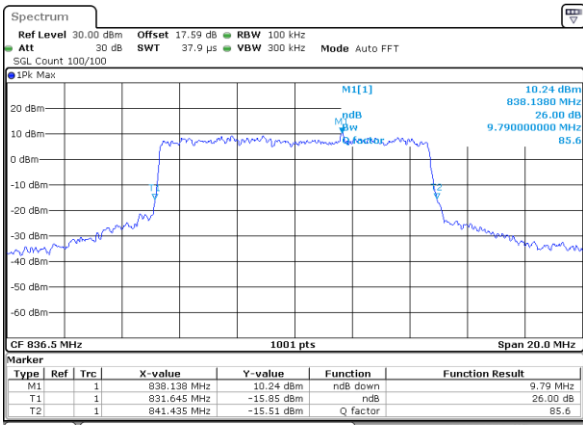
PI/2 BPSK



Date: 18_AUG.2020 16:08:44

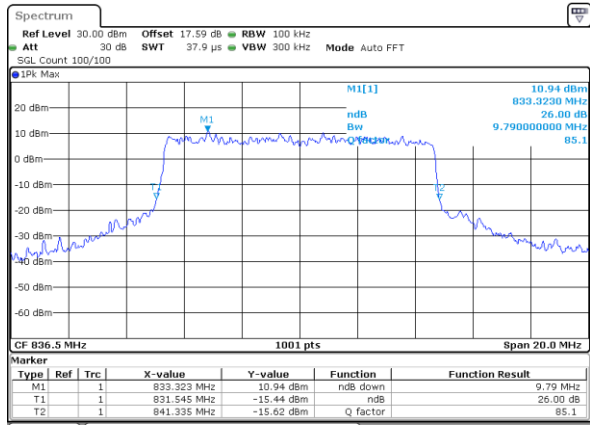
FR1 n5 / 10MHz / CP OFDM / Middle Channel

QPSK



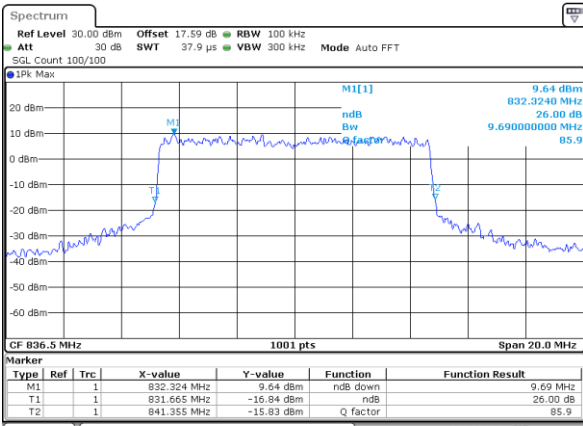
Date: 18_AUG.2020 16:05:53

16QAM



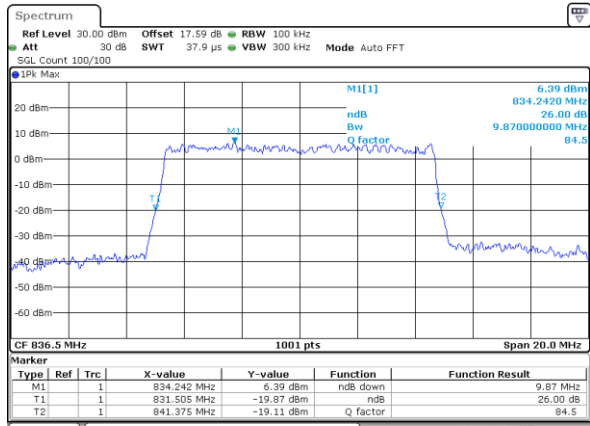
Date: 18_AUG.2020 16:10:24

64QAM



Date: 18_AUG.2020 16:07:21

256QAM

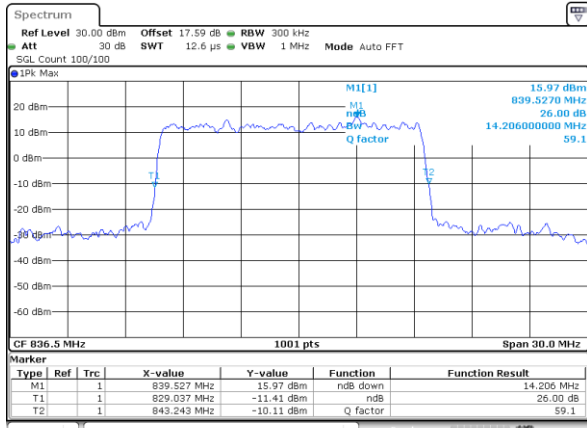


Date: 18_AUG.2020 16:10:56



FR1 n5 / 15MHz / DFT-S OFDM / Middle Channel

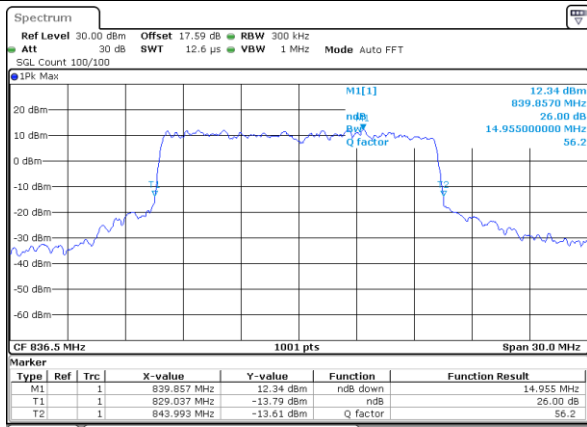
PI/2 BPSK



Date: 18_AUG_2020 16:18:29

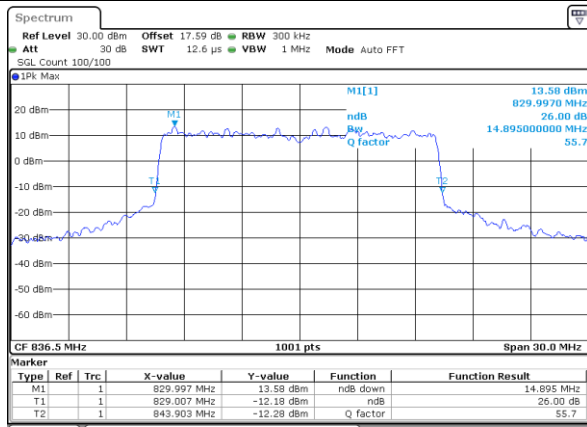
FR1 n5 / 15MHz / CP OFDM / Middle Channel

QPSK



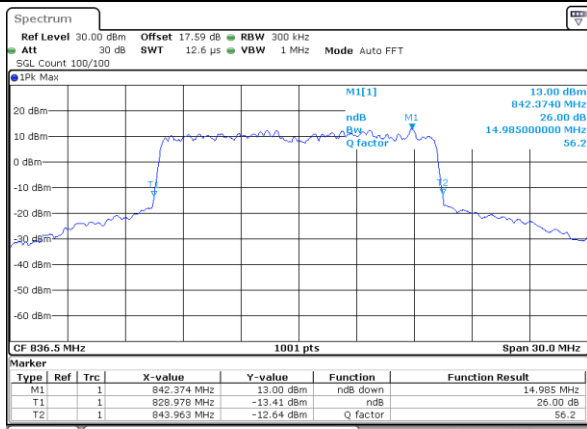
Date: 18_AUG_2020 16:15:49

16QAM



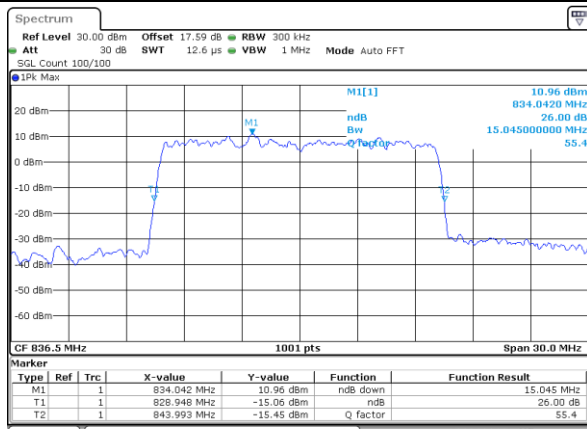
Date: 18_AUG_2020 16:11:26

64QAM



Date: 18_AUG_2020 16:16:59

256QAM

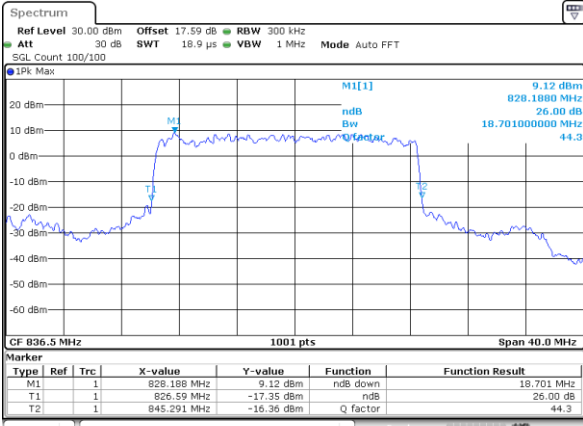


Date: 18_AUG_2020 16:11:39



FR1 n5 / 20MHz / DFT-S OFDM / Middle Channel

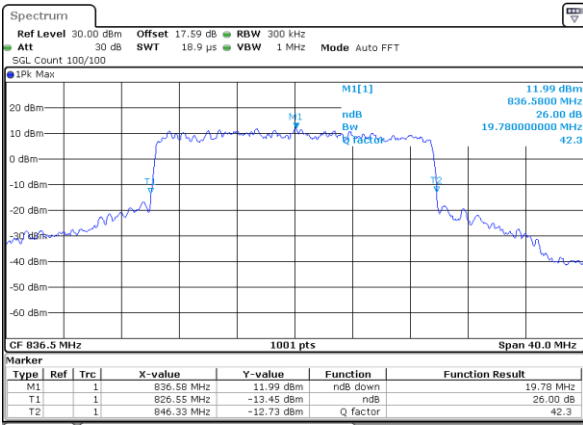
PI/2 BPSK



Date: 18_AUG_2020 16:25:36

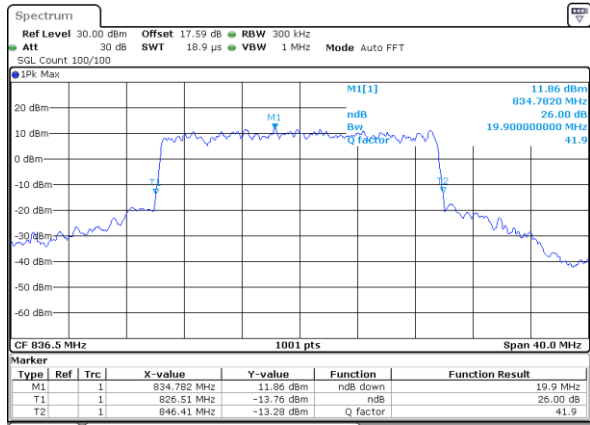
FR1 n5 / 20MHz / CP OFDM

QPSK



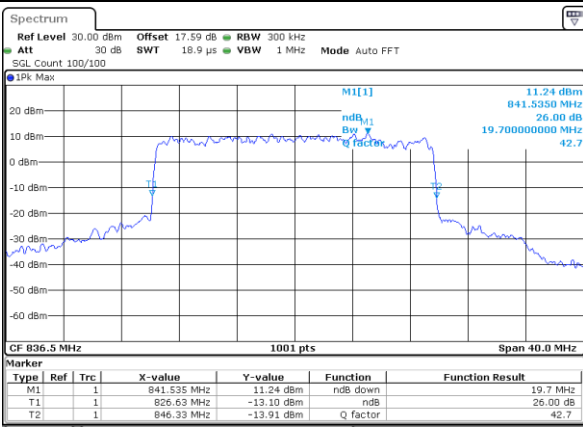
Date: 18_AUG_2020 16:21:50

16QAM



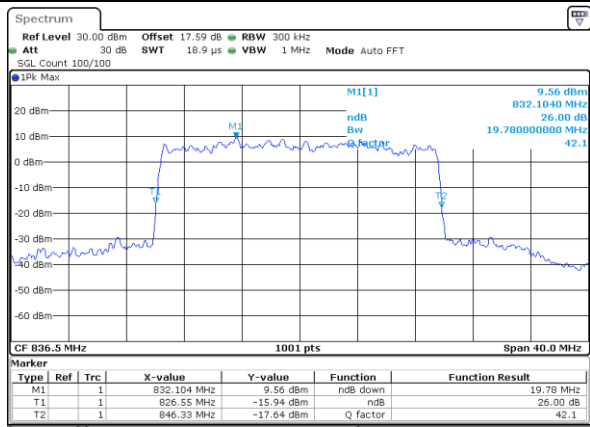
Date: 18_AUG_2020 16:22:57

64QAM



Date: 18_AUG_2020 16:23:44

256QAM



Date: 18_AUG_2020 16:24:33



Occupied Bandwidth

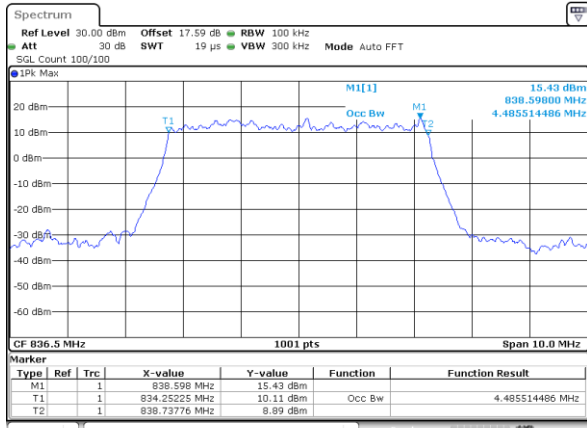
Mode	FR1 n5 : 99%OBW(MHz) / DFT-S OFDM							
BW	5MHz		10MHz		15MHz		20MHz	
Mod.	PI/2 BPSK		PI/2 BPSK		PI/2 BPSK		PI/2 BPSK	
Middle CH	4.49		8.93		13.43		17.82	

Mode	FR1 n5 : 99%OBW (MHz) / CP OFDM							
BW	5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	4.50	4.49	9.29	9.27	14.12	14.15	18.94	18.82
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	4.50	4.47	9.25	9.29	14.12	14.12	18.86	18.86



FR1 n5 / 5MHz / DFT-S OFDM / Middle Channel

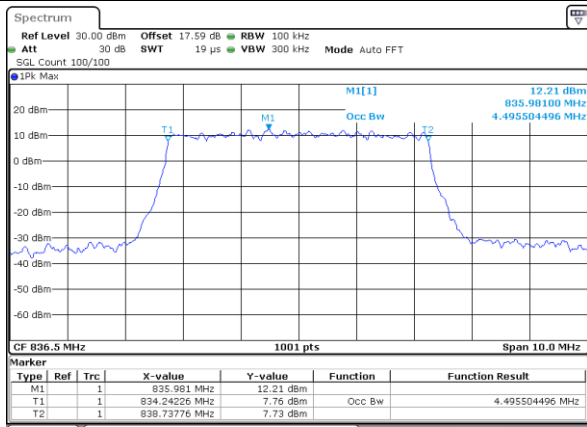
PI/2 BPSK



Date: 18_AUG.2020 16:01:57

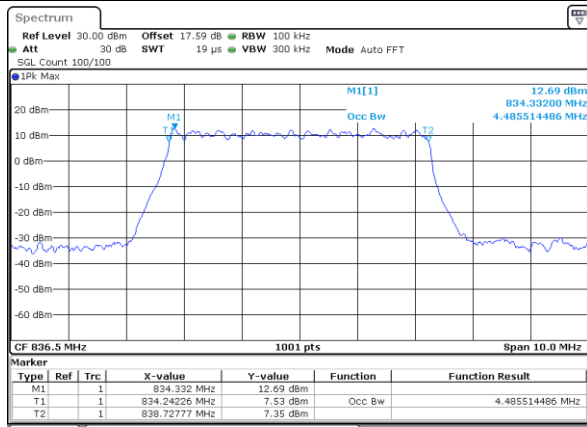
FR1 n5 / 5MHz / CP OFDM

QPSK



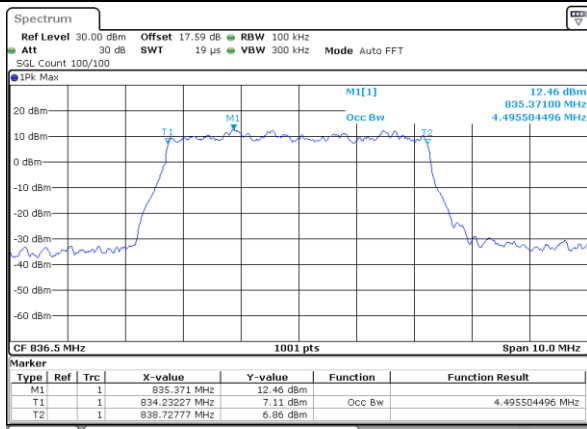
Date: 18_AUG.2020 15:58:47

16QAM



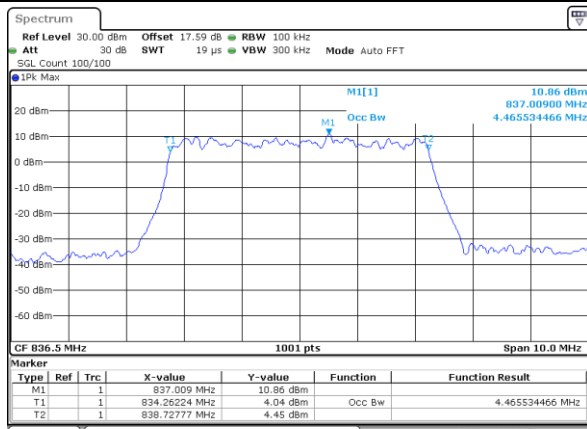
Date: 18_AUG.2020 15:59:22

64QAM



Date: 18_AUG.2020 16:00:15

256QAM

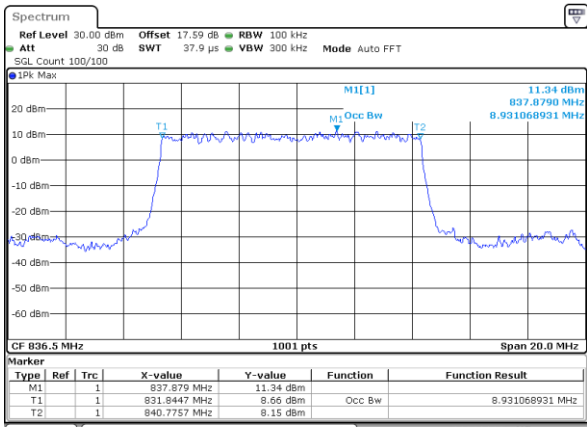


Date: 18_AUG.2020 16:00:56



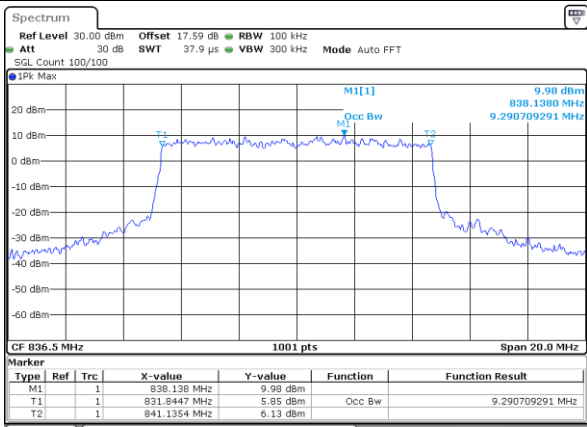
FR1 n5 / 10MHz / DFT-S OFDM / Middle Channel

PI/2 BPSK

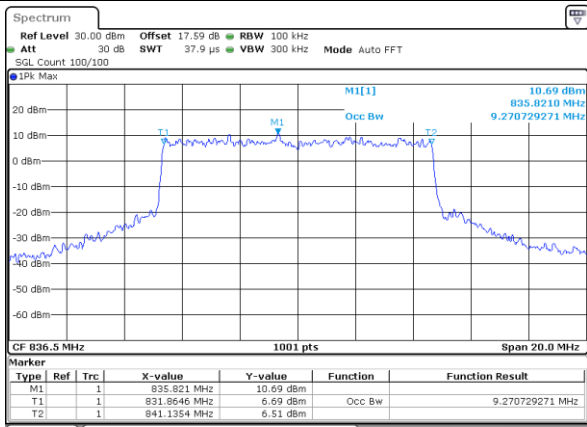


FR1 n5 / 10MHz / CP OFDM

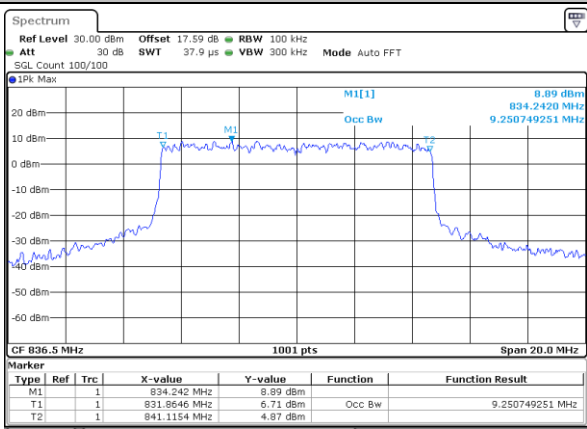
QPSK



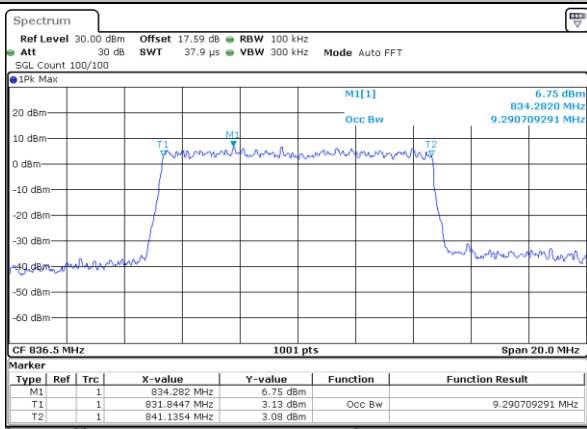
16QAM



64QAM



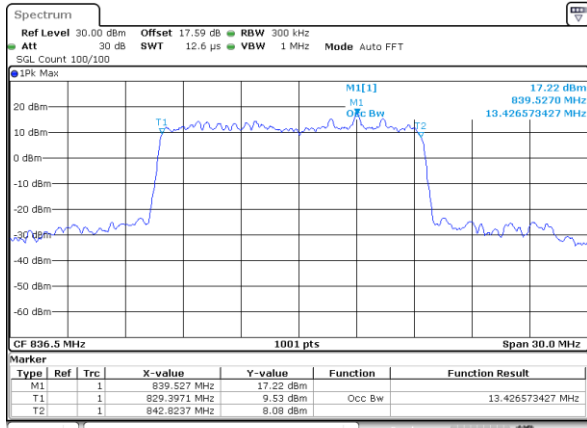
256QAM





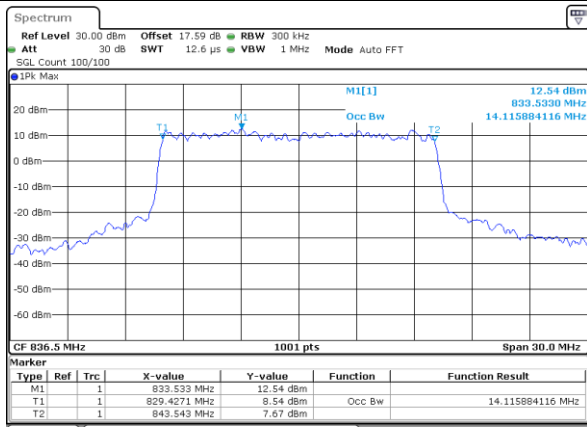
FR1 n5 / 15MHz / DFT-S OFDM / Middle Channel

PI/2 BPSK

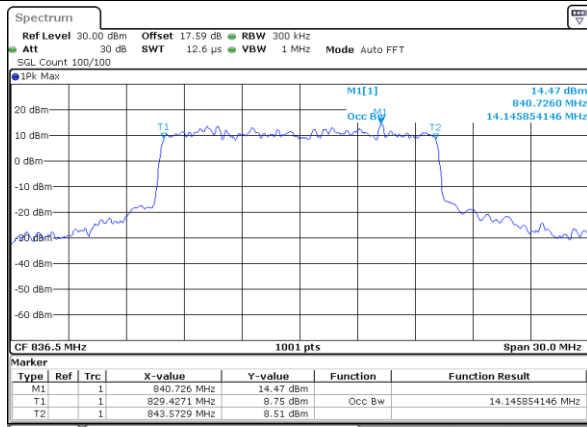


FR1 n5 / 15MHz / CP OFDM

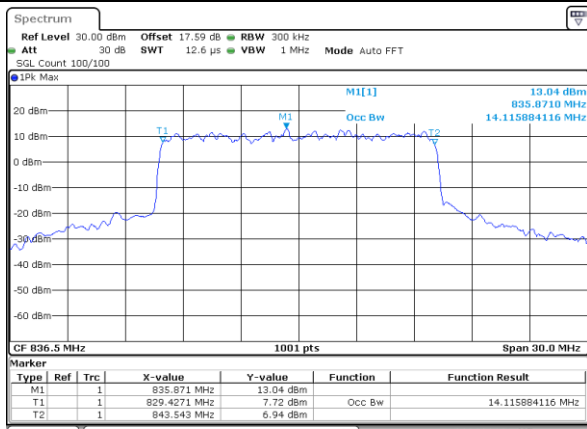
QPSK



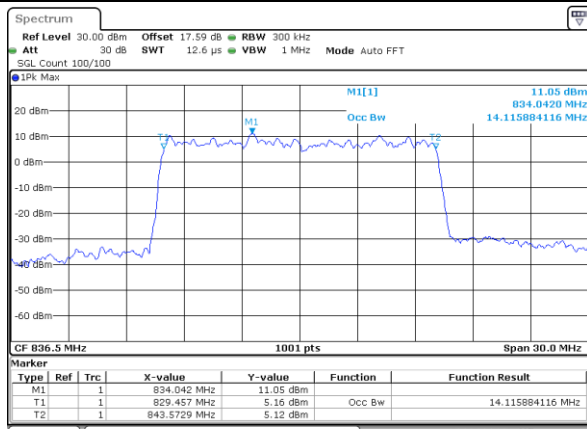
16QAM



64QAM



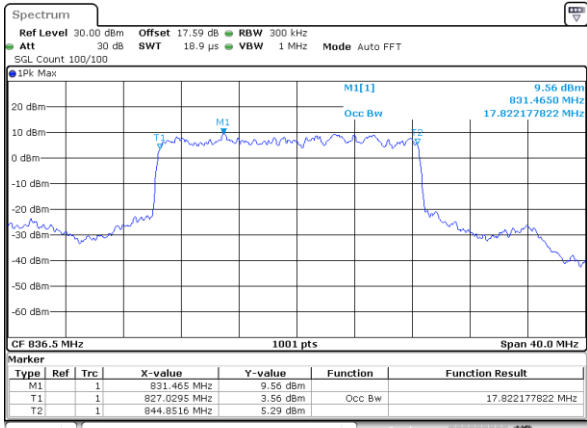
256QAM





FR1 n5 / 20MHz / DFT-S OFDM / Middle Channel

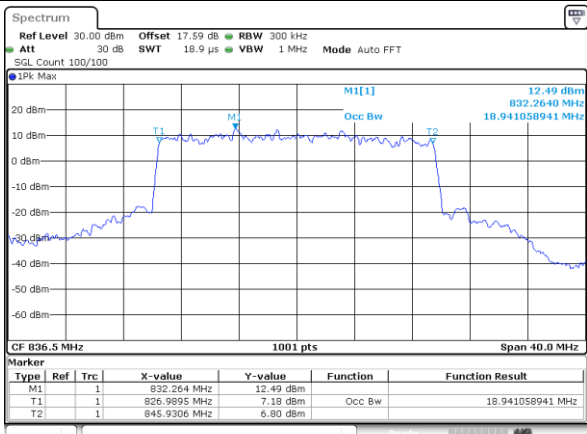
PI/2 BPSK



Date: 18_AUG_2020 16:25:25

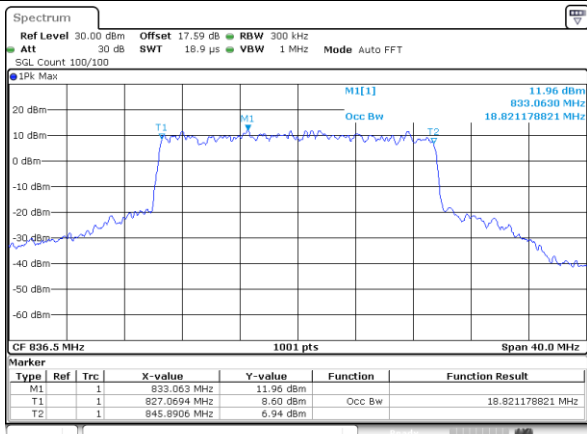
FR1 n5 / 20MHz / CP OFDM

QPSK



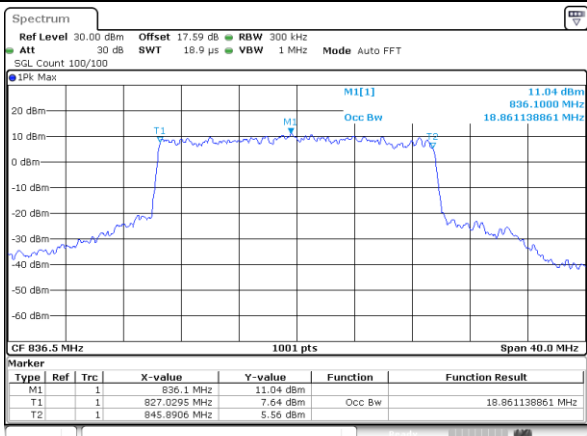
Date: 18_AUG_2020 16:21:36

16QAM



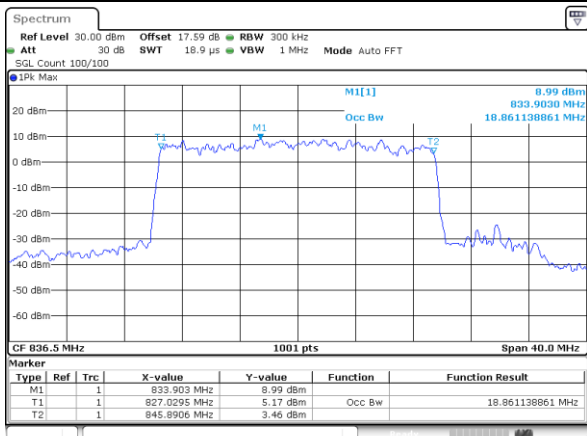
Date: 18_AUG_2020 16:22:46

64QAM



Date: 18_AUG_2020 16:23:33

256QAM



Date: 18_AUG_2020 16:24:21

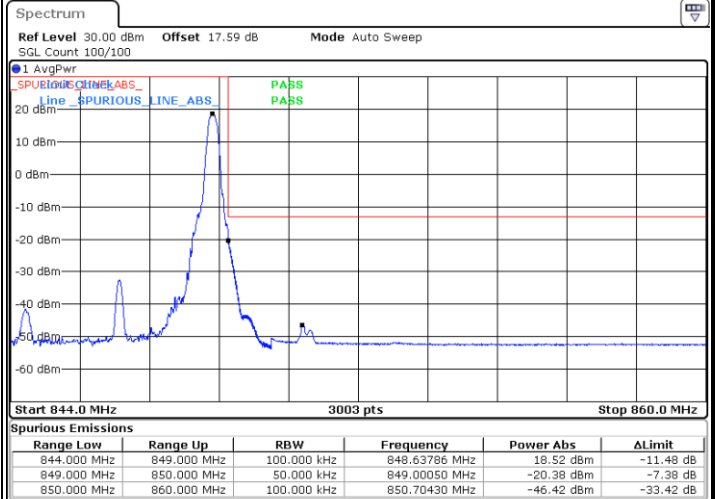
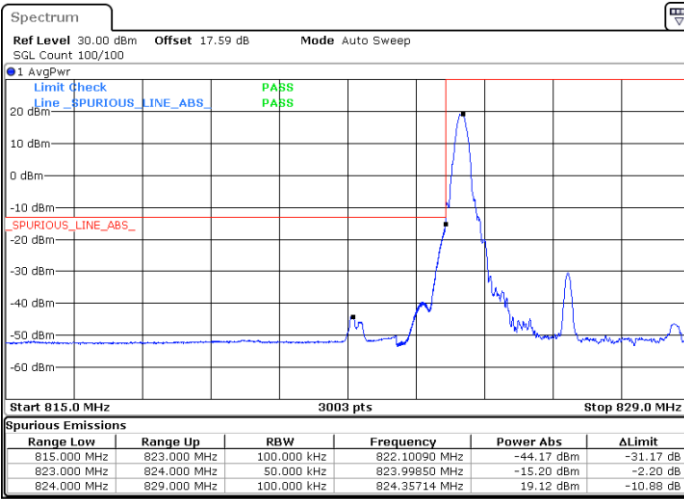


Conducted Band Edge

FR1 n5 / 5MHz / DFT-S OFDM / PI/2 BPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

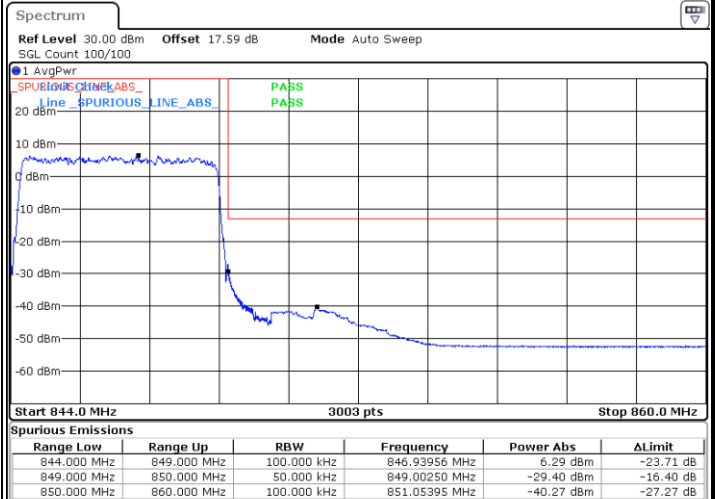
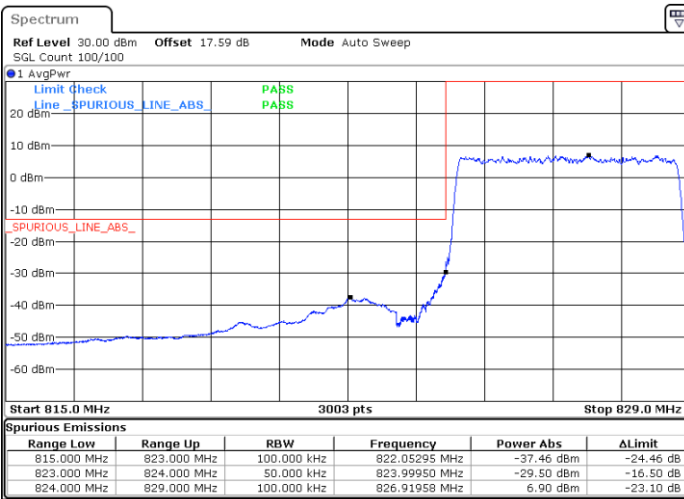


Date: 18.AUG.2020 11:07:43

Date: 18.AUG.2020 14:36:13

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 18.AUG.2020 11:04:27

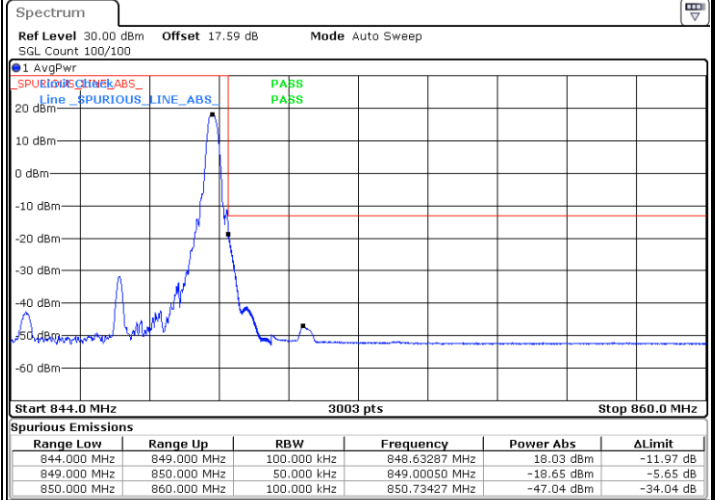
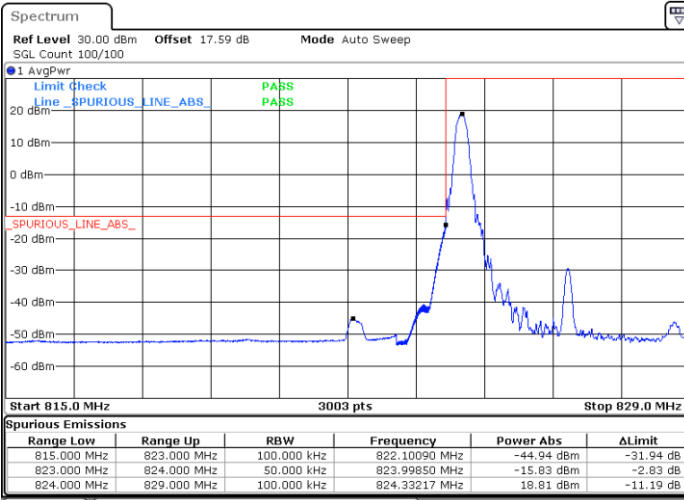
Date: 18.AUG.2020 14:33:04



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

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

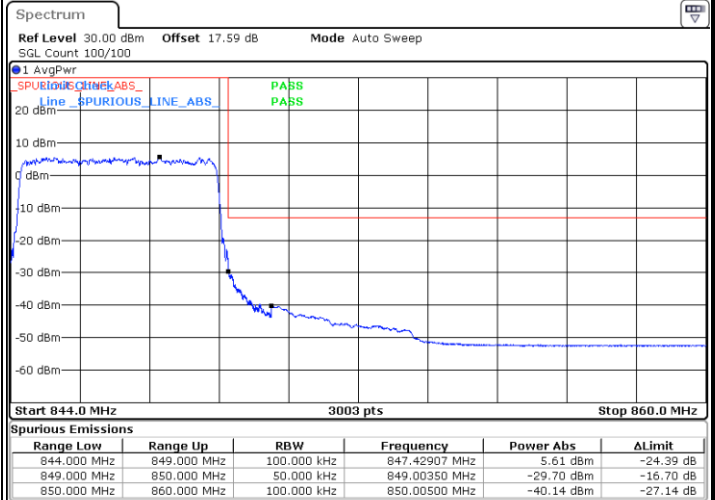
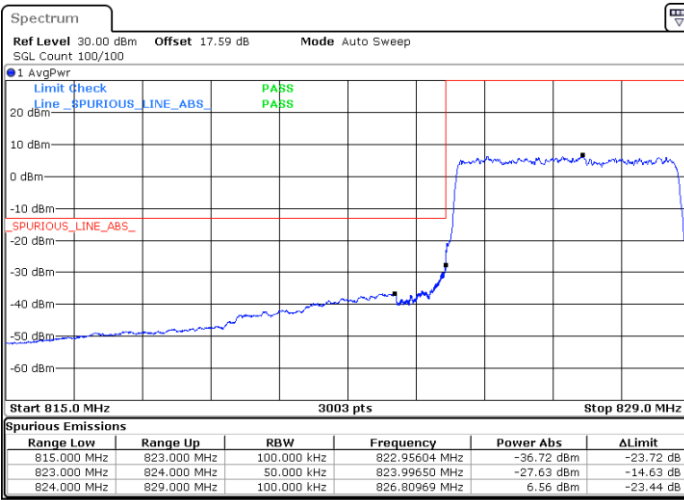


Date: 18.AUG.2020 11:06:47

Date: 18.AUG.2020 14:35:07

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 18.AUG.2020 11:05:27

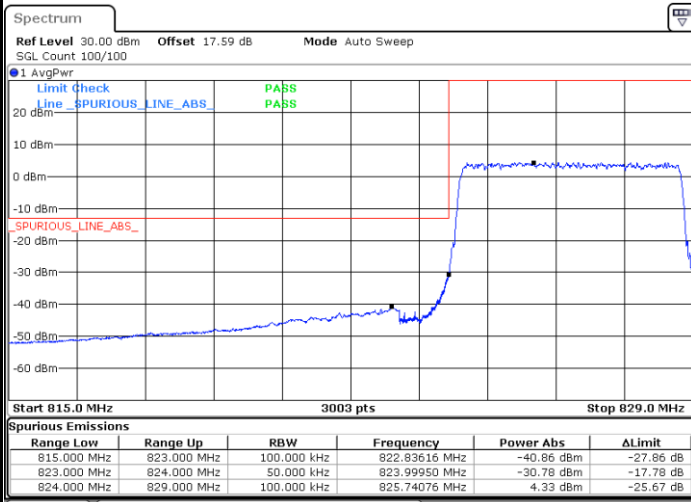
Date: 18.AUG.2020 14:33:58



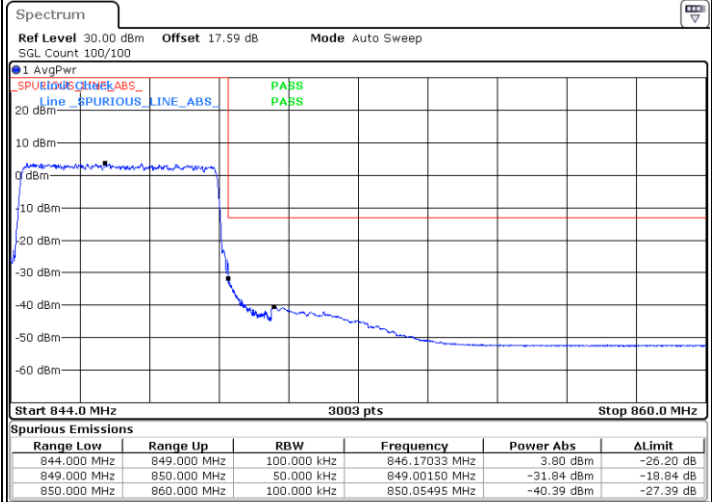
FR1 n5 / 5MHz / CP OFDM / QPSK

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 18.AUG.2020 11:03:14



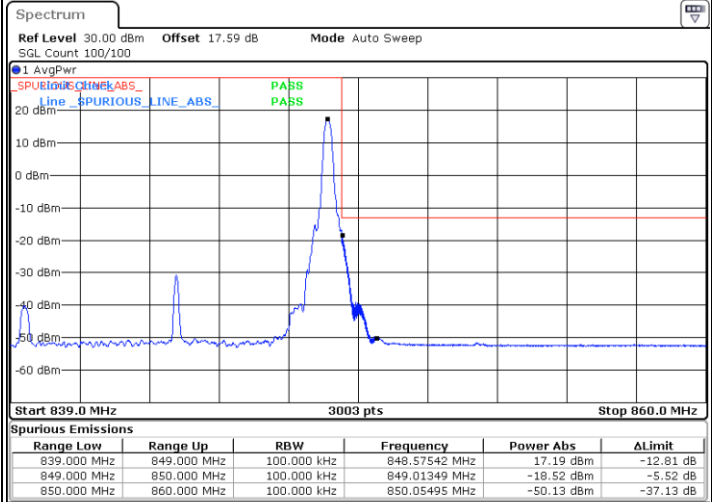
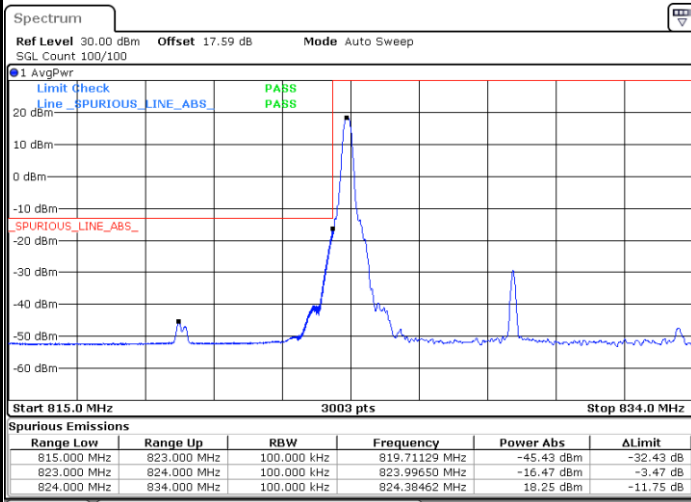
Date: 18.AUG.2020 14:31:46



FR1 n5 / 10MHz / DFT-s-OFDM / PI/2 BPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

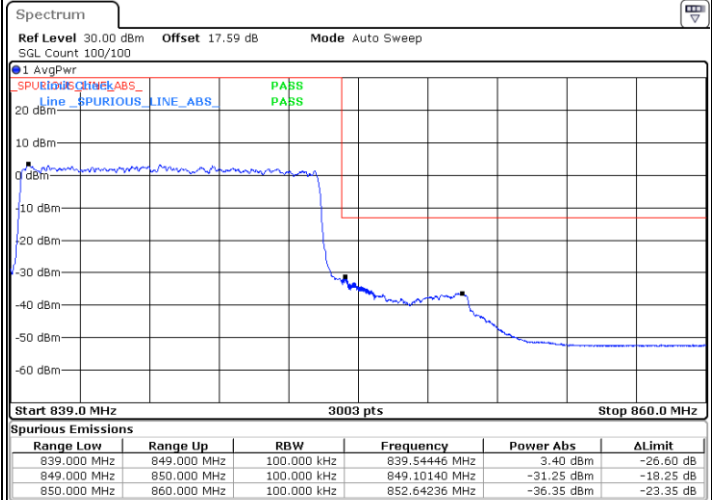
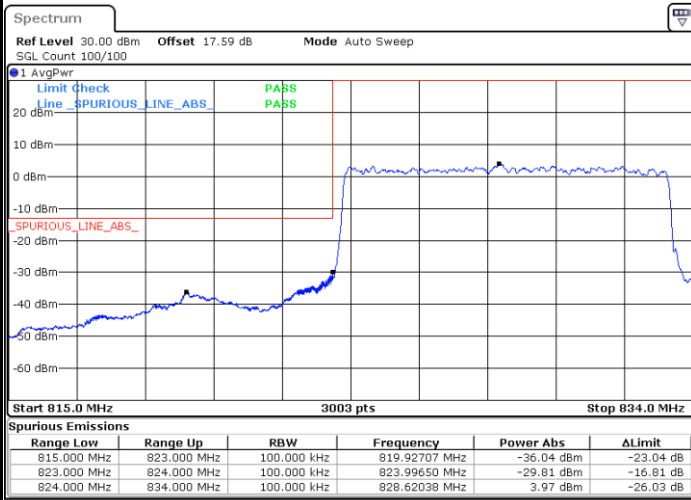


Date: 18.AUG.2020 11:13:55

Date: 18.AUG.2020 14:42:09

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 18.AUG.2020 11:11:20

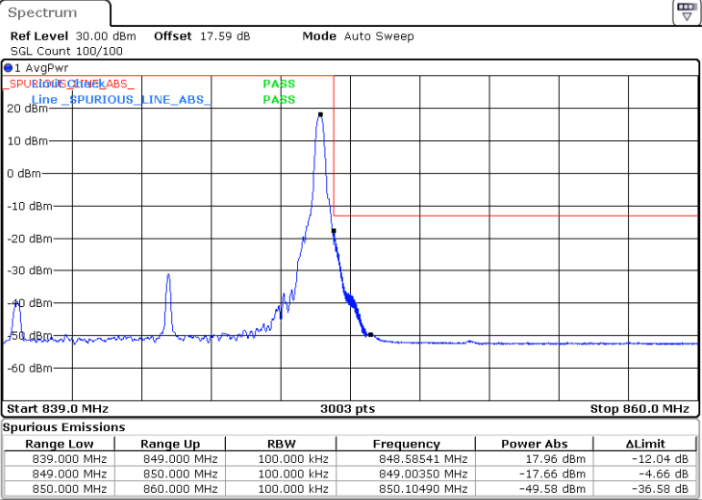
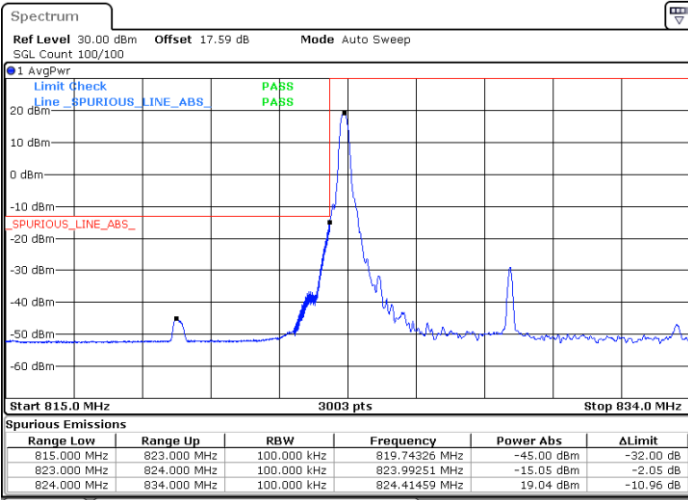
Date: 18.AUG.2020 14:39:09



FR1 n5 / 10MHz / DFT-s-OFDM / QPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

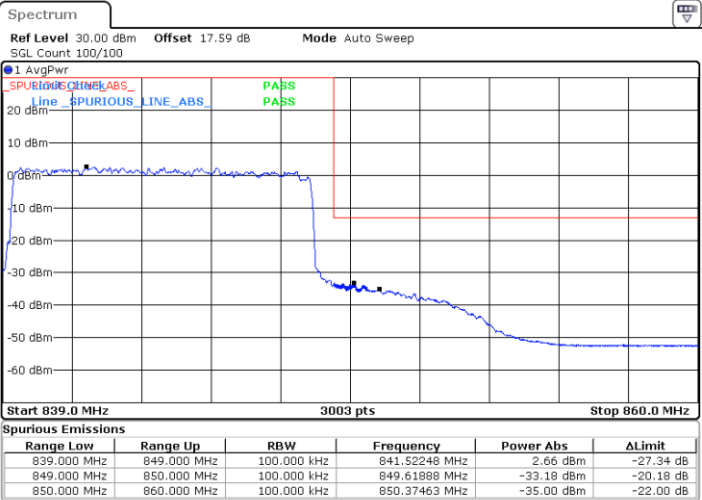
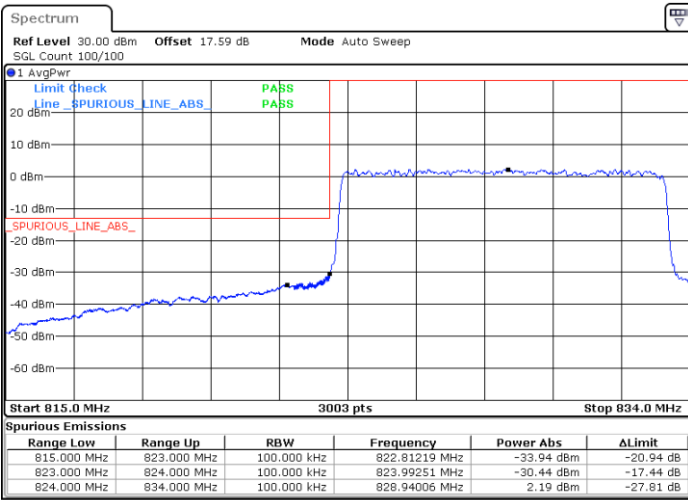


Date: 18.AUG.2020 11:13:00

Date: 18.AUG.2020 14:41:18

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



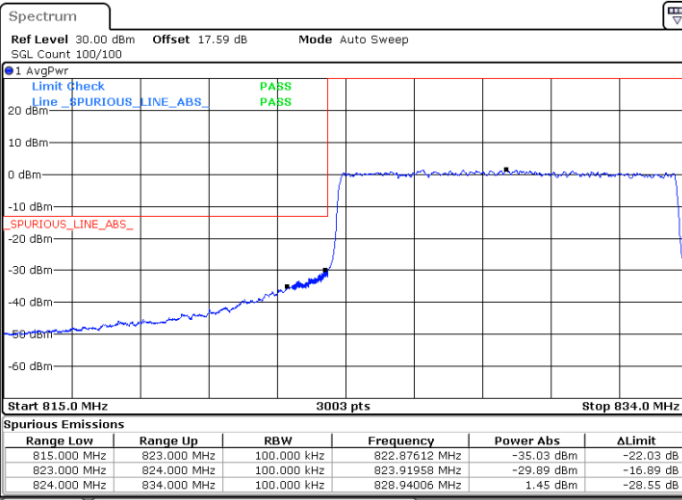
Date: 18.AUG.2020 11:12:06

Date: 18.AUG.2020 14:40:02



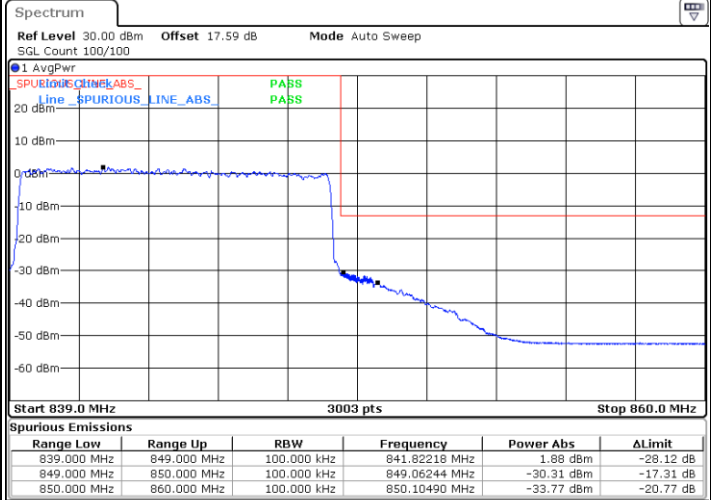
FR1 n5 / 10MHz / CP OFDM / QPSK

Lowest Band Edge / Full RB



Date: 18.AUG.2020 11:10:18

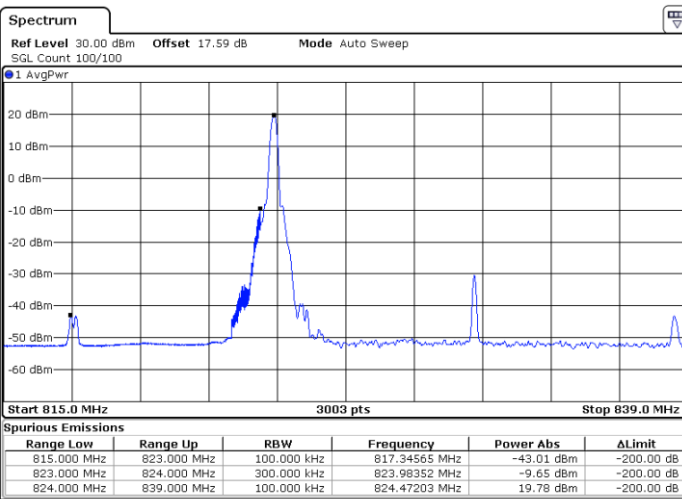
Highest Band Edge / Full RB



Date: 18.AUG.2020 14:38:07

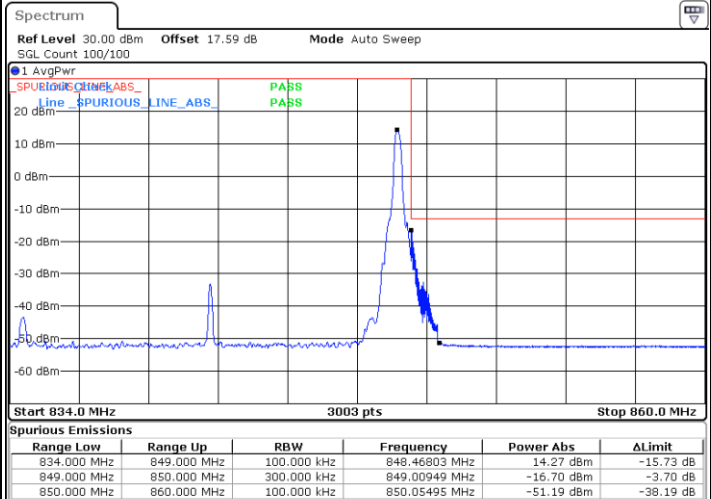
FR1 n5 / 15MHz / DFT-s-OFDM / PI/2 BPSK

Lowest Band Edge / 1RB0



Date: 27.AUG.2020 10:35:10

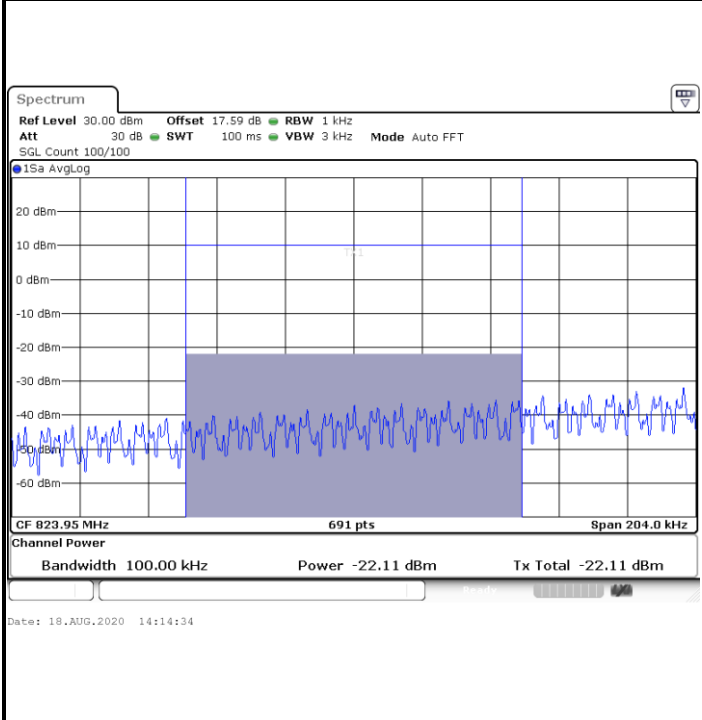
Highest Band Edge / 1RBmax



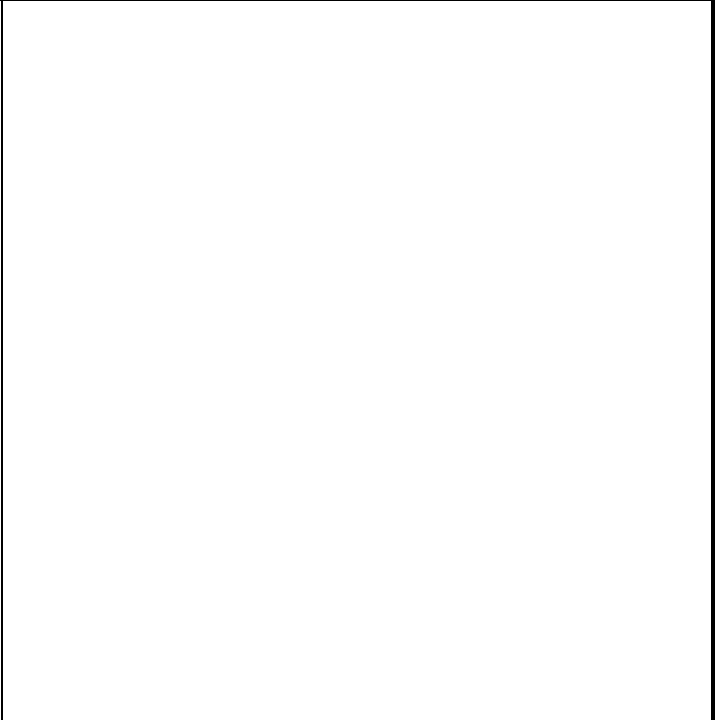
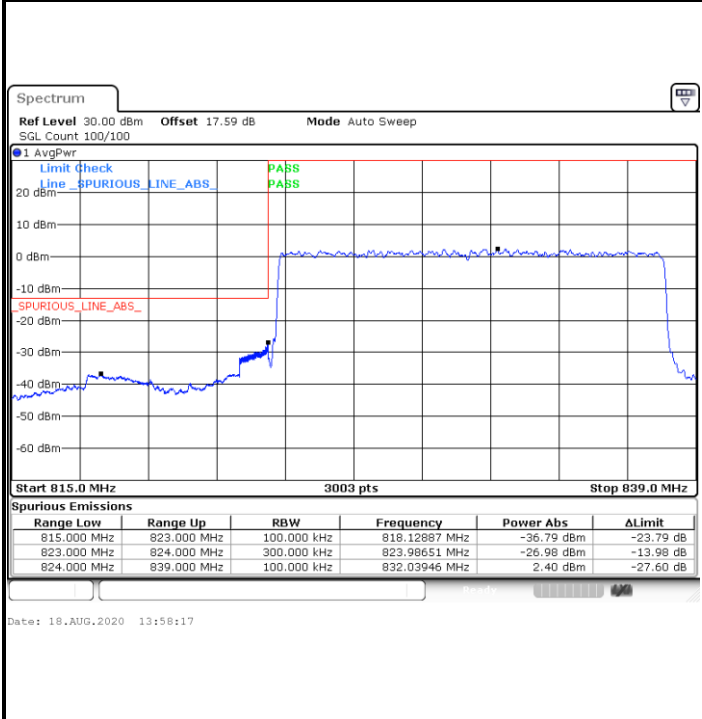
Date: 18.AUG.2020 14:47:35



Channel Power -21.11dBm < -13dBm (Pass)



Lowest Band Edge / Full RB



Highest Band Edge / Full RB

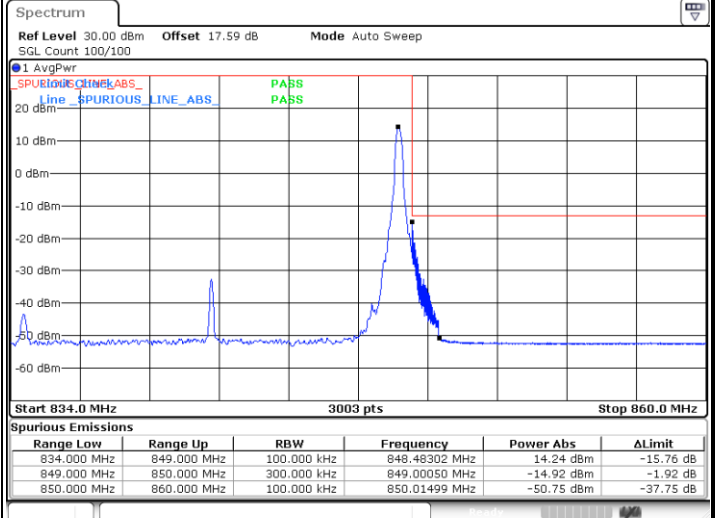
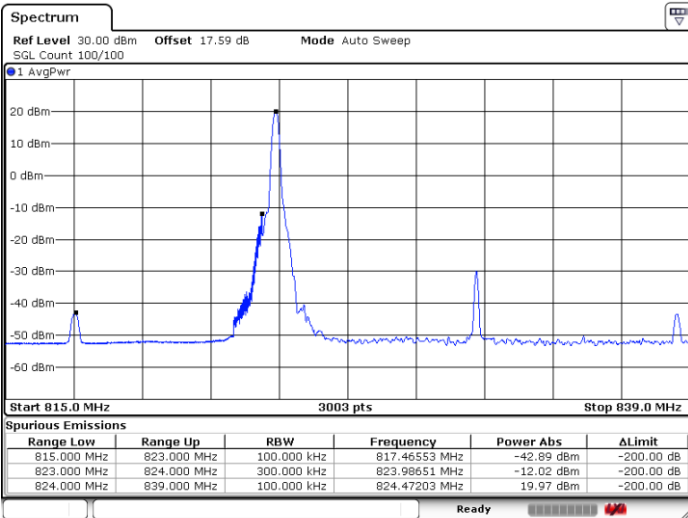




FR1 n5 / 15MHz / DFT-s-OFDM / QPSK

Lowest Band Edge / 1RB0

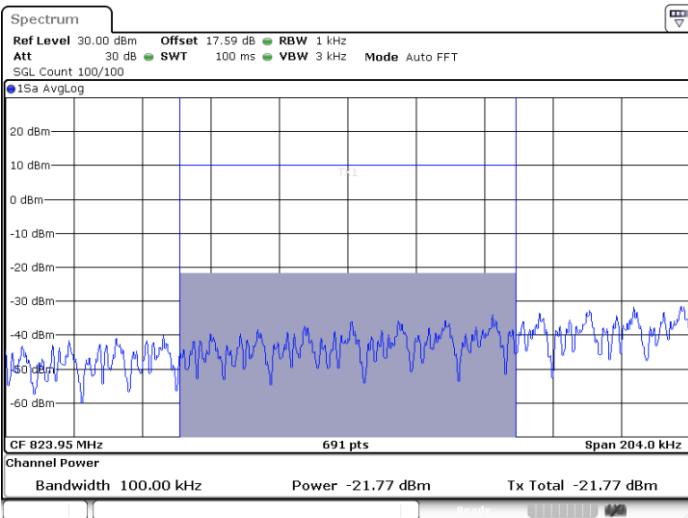
Highest Band Edge / 1RBmax



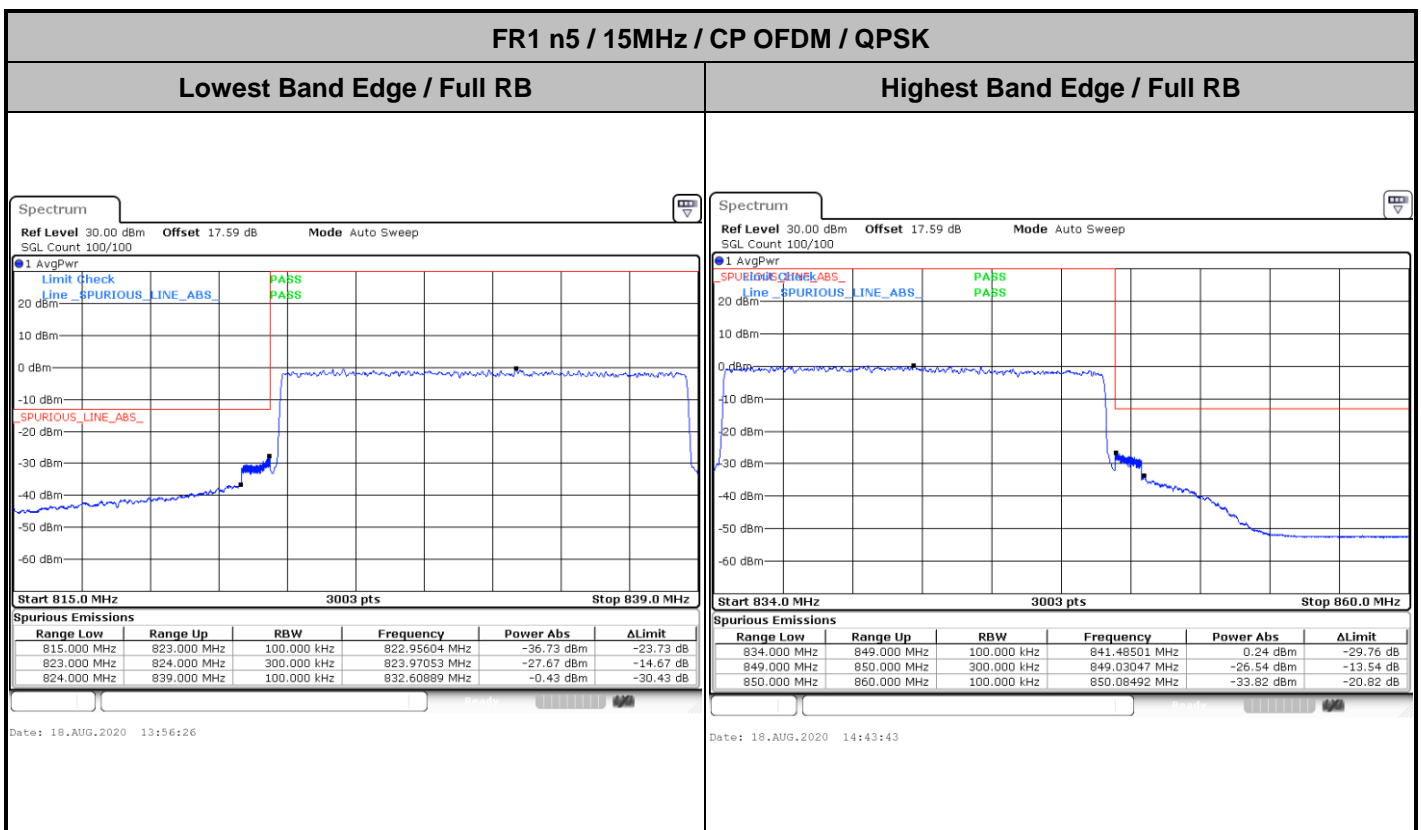
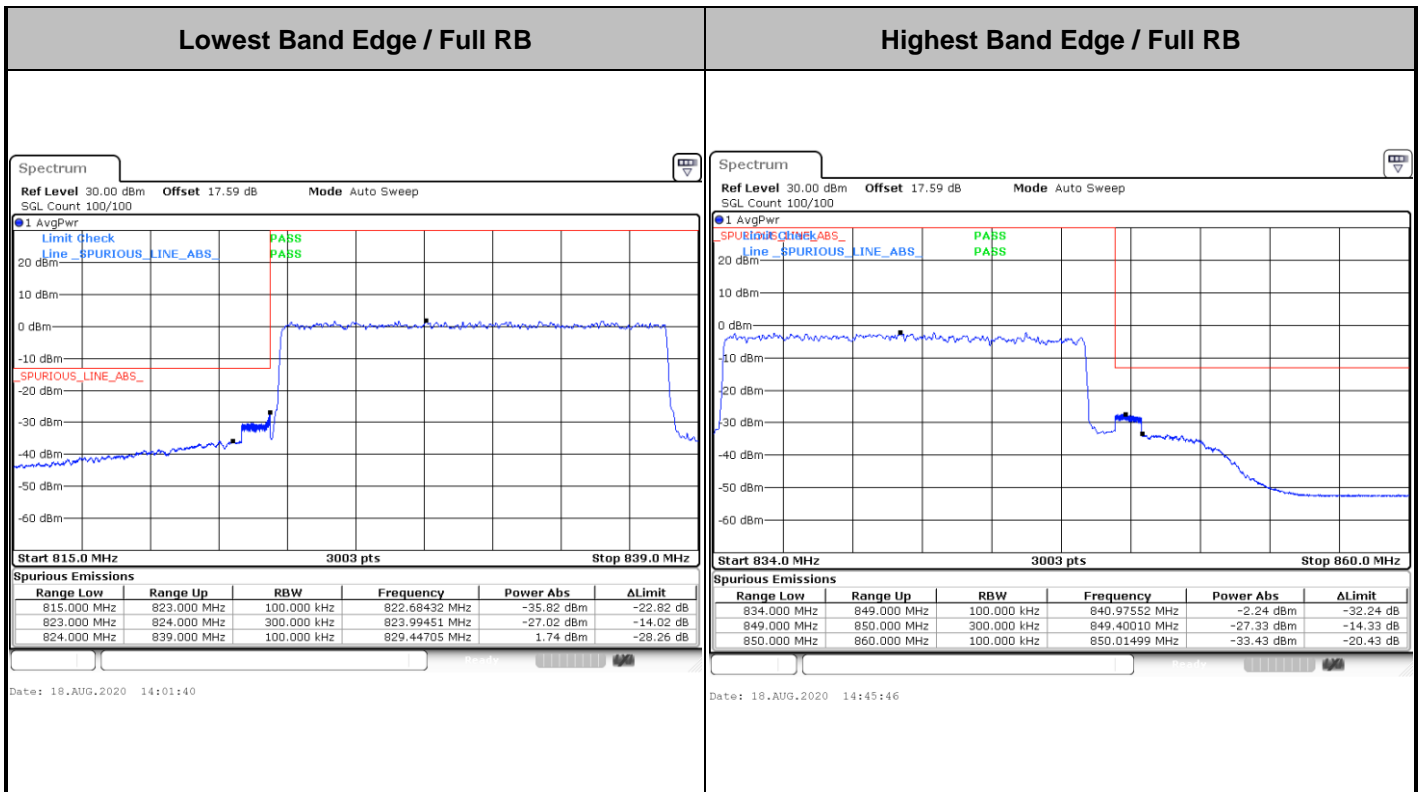
Date: 27.AUG.2020 10:40:43

Date: 18.AUG.2020 14:46:47

Channel Power -21.77dBm < -13dBm (Pass)



Date: 18.AUG.2020 14:19:04

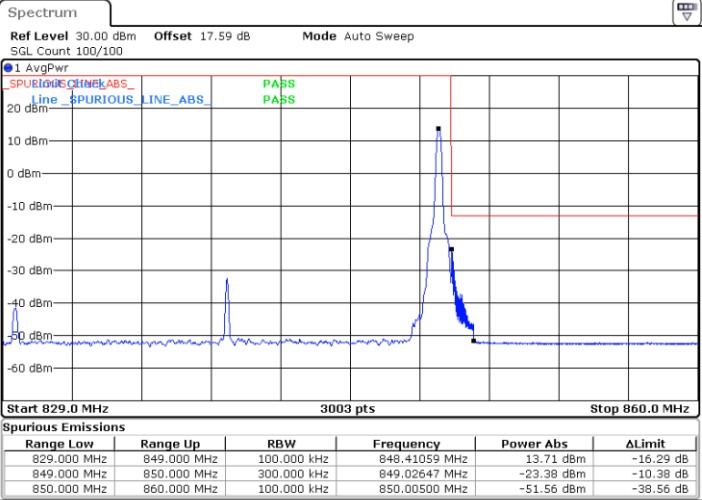
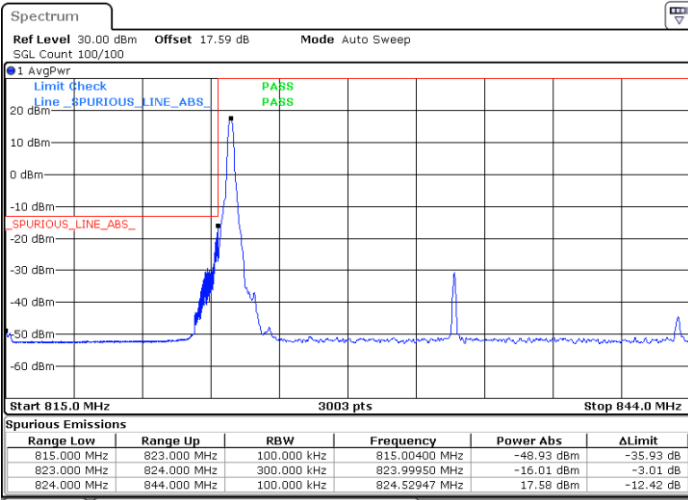




FR1 n5 / 20MHz / DFT-s-OFDM / PI/2 BPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

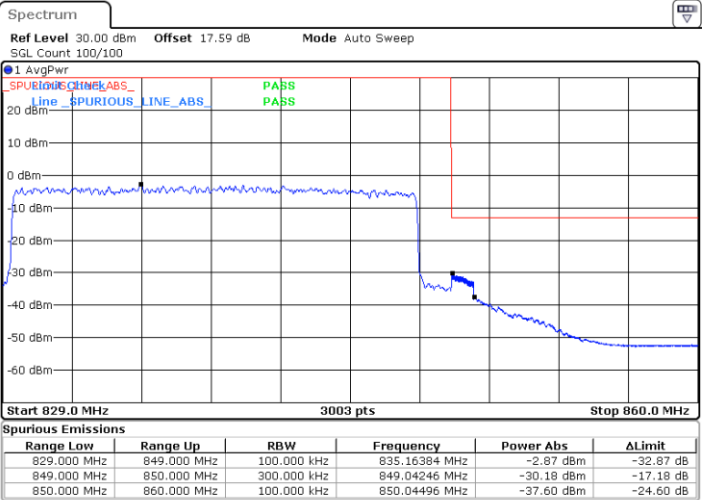
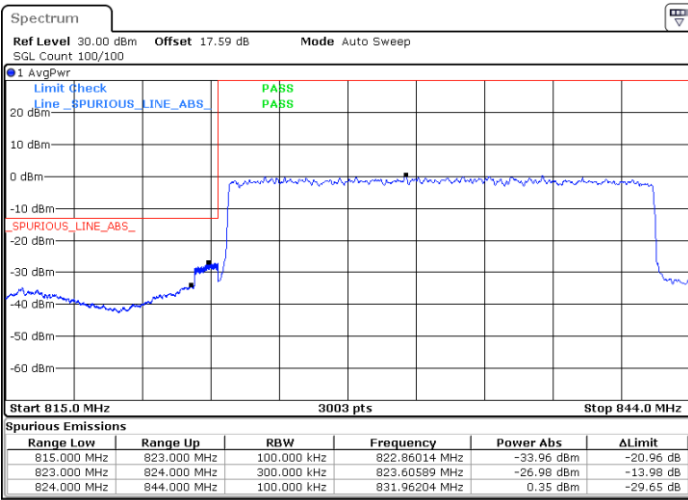


Date: 18.AUG.2020 14:27:19

Date: 18.AUG.2020 14:53:50

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 18.AUG.2020 14:25:05

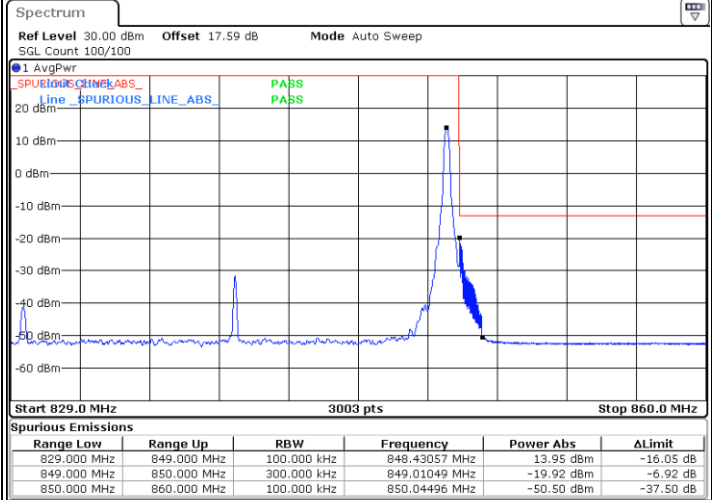
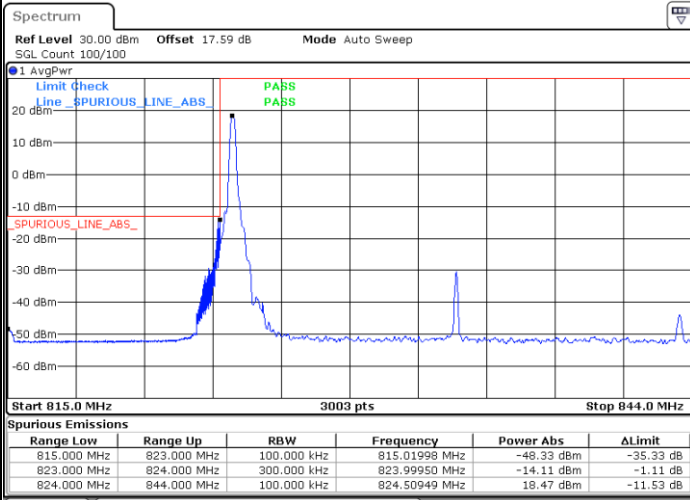
Date: 18.AUG.2020 14:50:24



FR1 n5 / 20MHz / DFT-s-OFDM / QPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

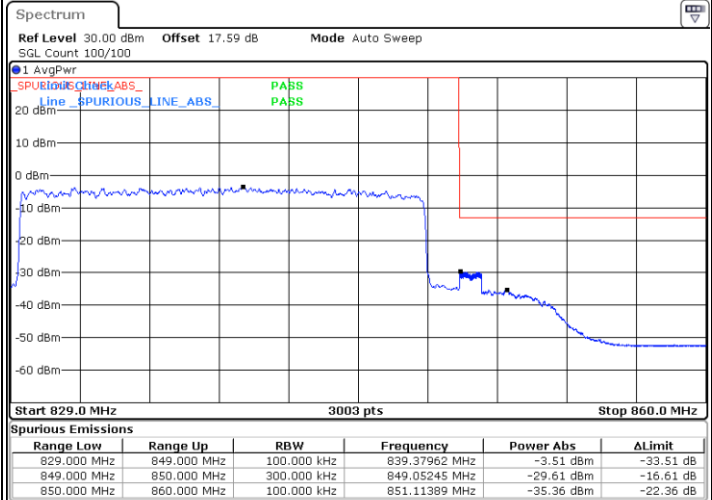
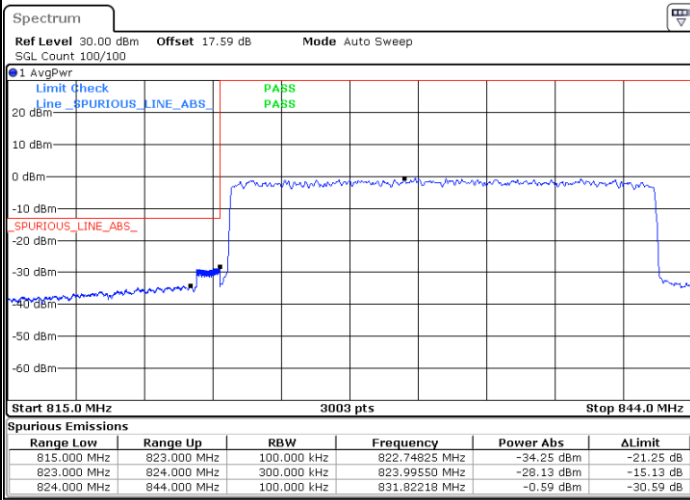


Date: 18.AUG.2020 14:26:36

Date: 18.AUG.2020 14:52:51

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 18.AUG.2020 14:25:49

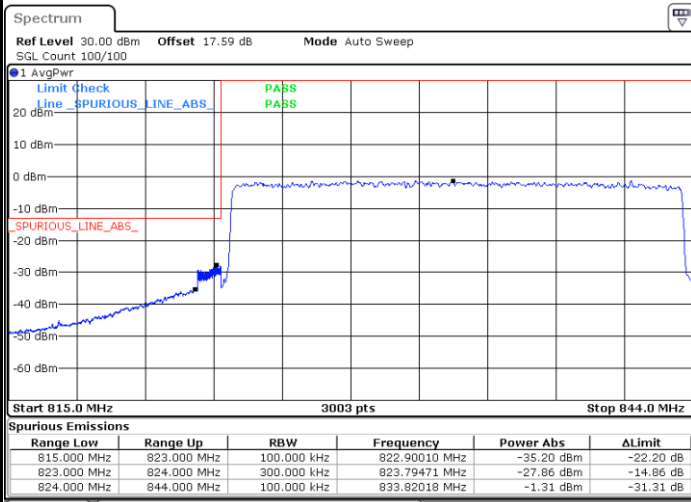
Date: 18.AUG.2020 14:51:20



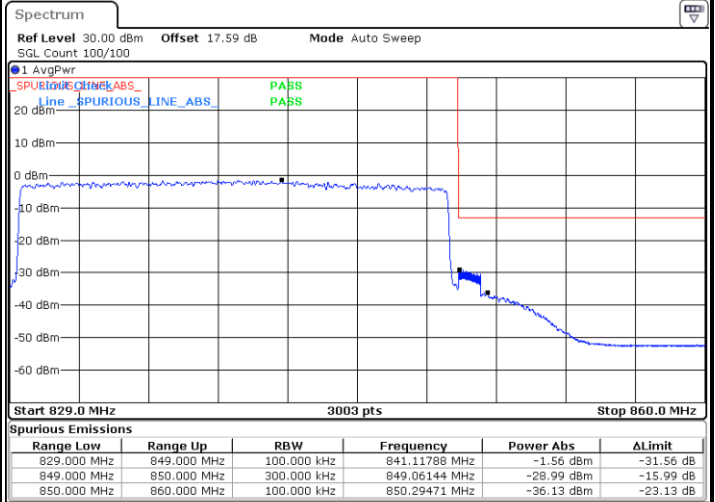
FR1 n5 / 20MHz / CP OFDM / QPSK

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 18.AUG.2020 14:23:56



Date: 18.AUG.2020 14:49:24

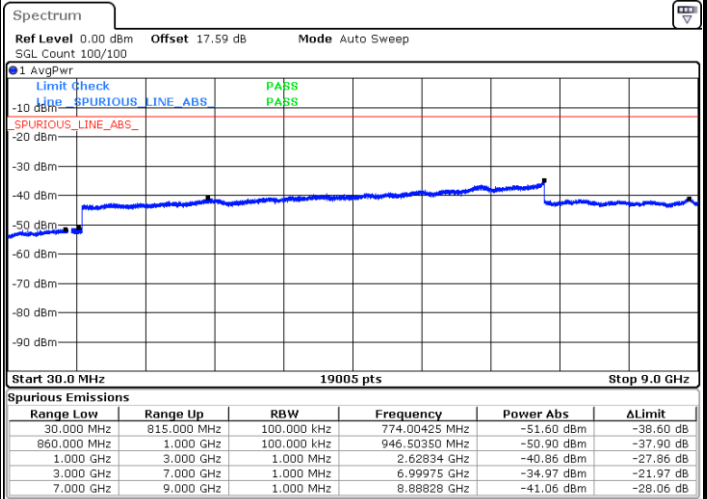
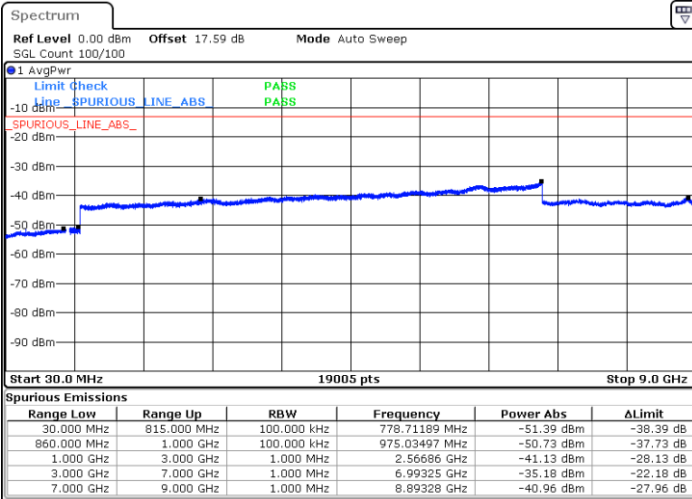


Conducted Spurious Emission

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

Lowest Channel / 1RB1

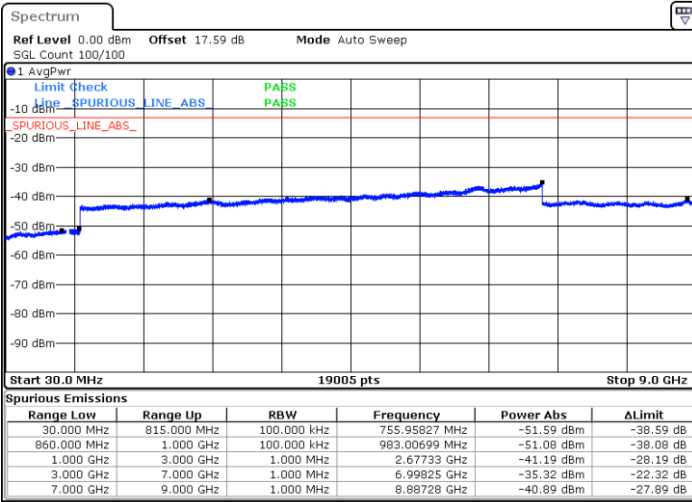
Middle Channel / 1RB1



Date: 18.AUG.2020 15:03:20

Date: 18.AUG.2020 16:03:40

Highest Channel / 1RB1



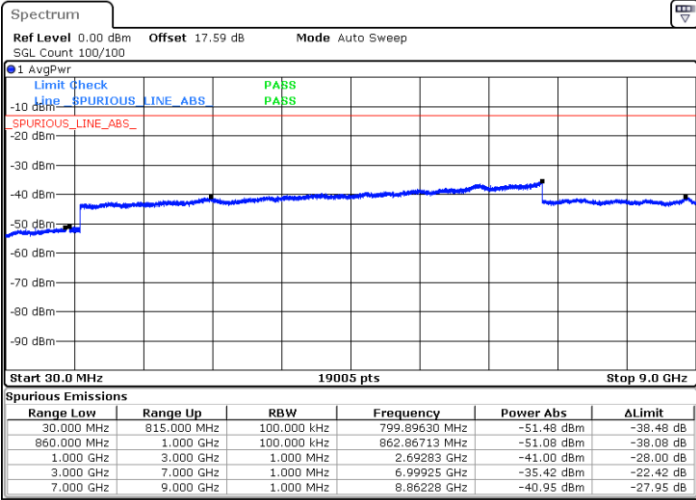
Date: 18.AUG.2020 16:47:32



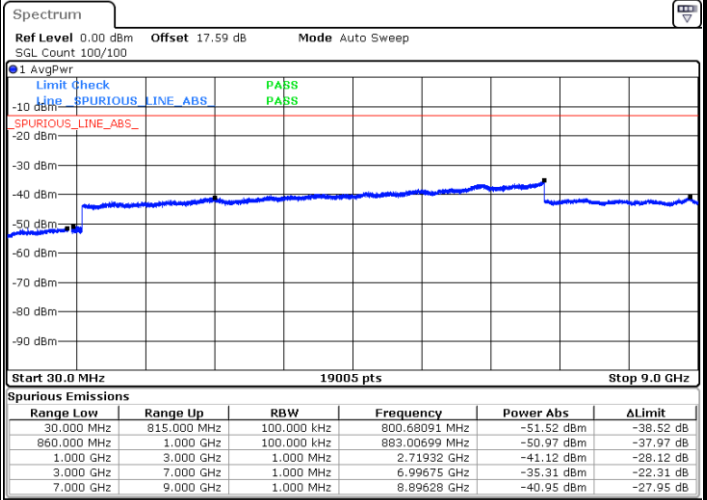
FR1 n5 / 10MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB1

Middle Channel / 1RB1

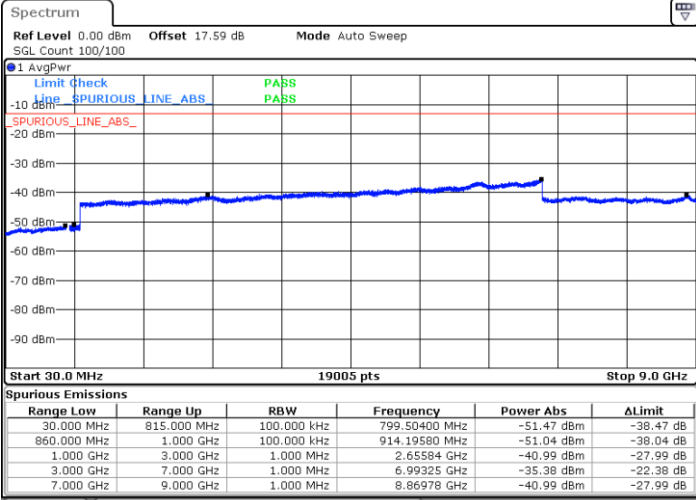


Date: 18.AUG.2020 15:10:13



Date: 18.AUG.2020 16:10:28

Highest Channel / 1RB1



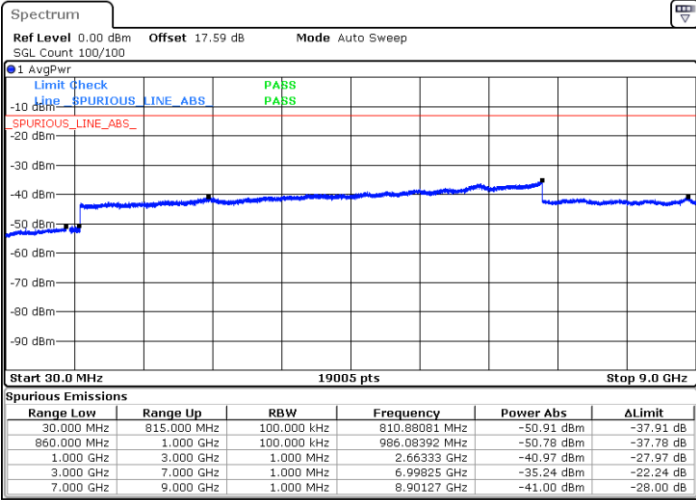
Date: 18.AUG.2020 17:10:11



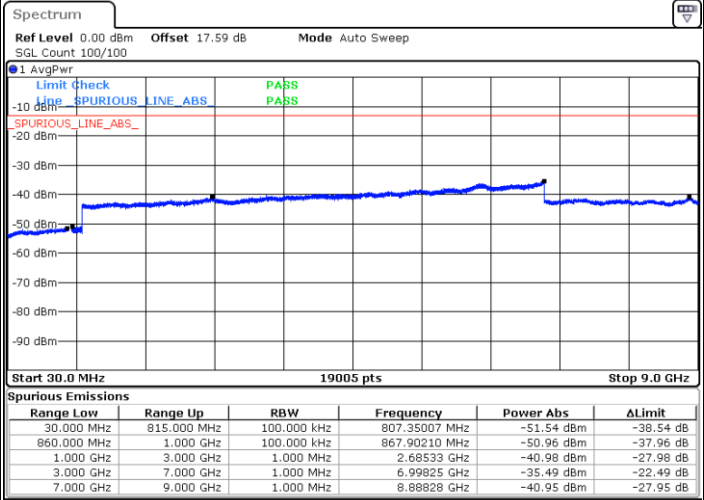
FR1 n5 / 15MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB1

Middle Channel / 1RB1

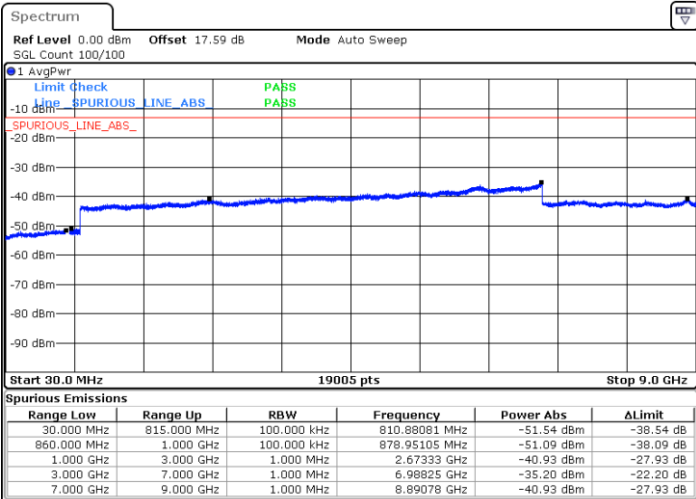


Date: 18.AUG.2020 15:52:11



Date: 18.AUG.2020 16:14:28

Highest Channel / 1RB1



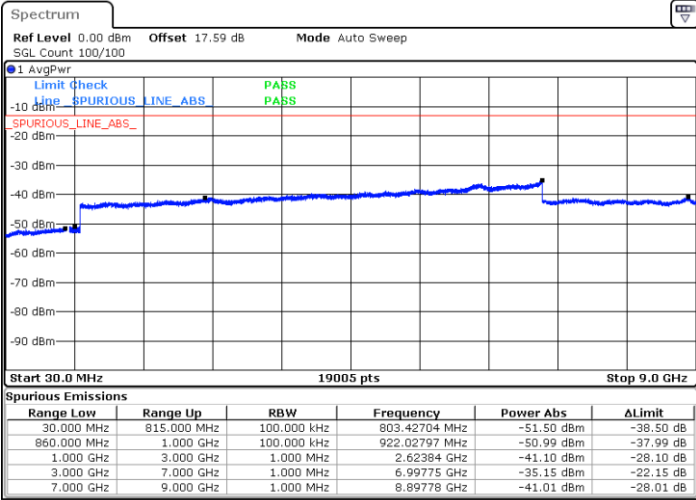
Date: 18.AUG.2020 17:21:42



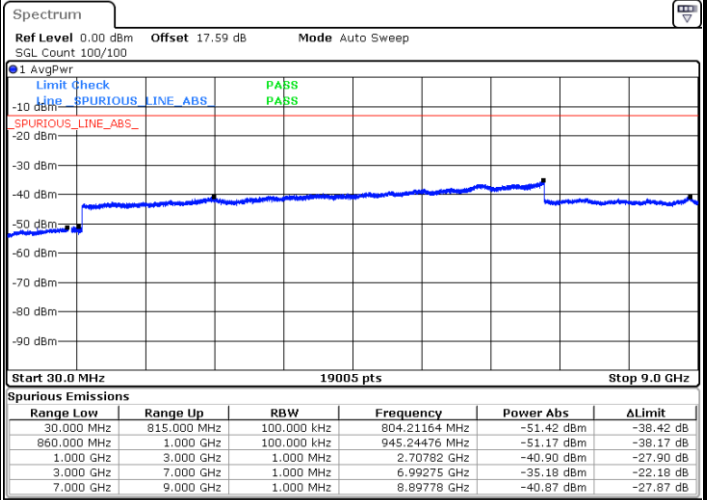
FR1 n5 / 20MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB1

Middle Channel / 1RB1

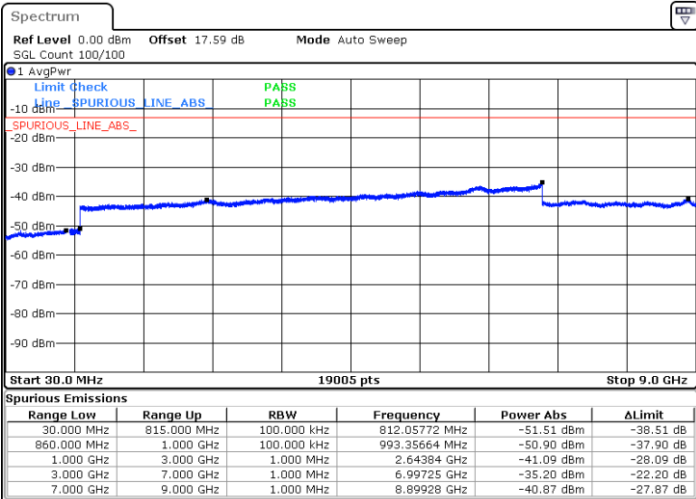


Date: 18.AUG.2020 15:33:16



Date: 18.AUG.2020 16:19:51

Highest Channel / 1RB1



Date: 18.AUG.2020 17:28:32



Frequency Stability

Test Conditions		FR1 n5 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 20MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0018	PASS
40	Normal Voltage	0.0002	
30	Normal Voltage	0.0010	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0012	
0	Normal Voltage	0.0018	
-10	Normal Voltage	0.0004	
-20	Normal Voltage	0.0014	
-30	Normal Voltage	0.0011	
20	Maximum Voltage	0.0008	
20	Normal Voltage	0.0005	
20	Battery End Point	0.0013	

Note:

- 1. Normal Voltage =3.85 V. ; Battery End Point (BEP) =3.30 V. ; Maximum Voltage =4.25 V.
- 2. The frequency fundamental emissions stay within the authorized frequency block.



FR1 n12

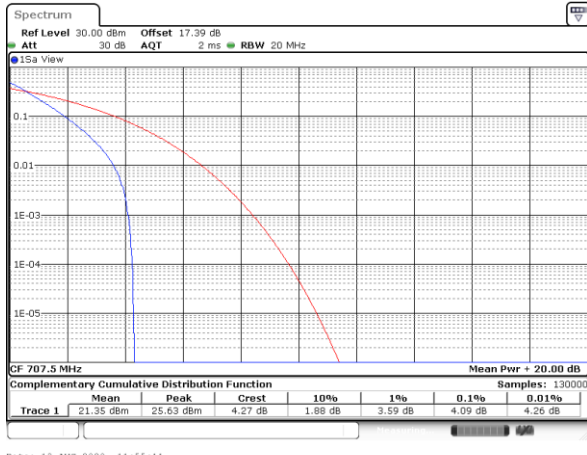
Peak-to-Average Ratio

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	4.67	5.57	6.03	PASS
Mode	FR1 n12 / 15MHz / DFT-S OFDM				
Mod.	256QAM				Limit: 13dB
RB Size	Full RB				Result
Middle CH	6.55				PASS



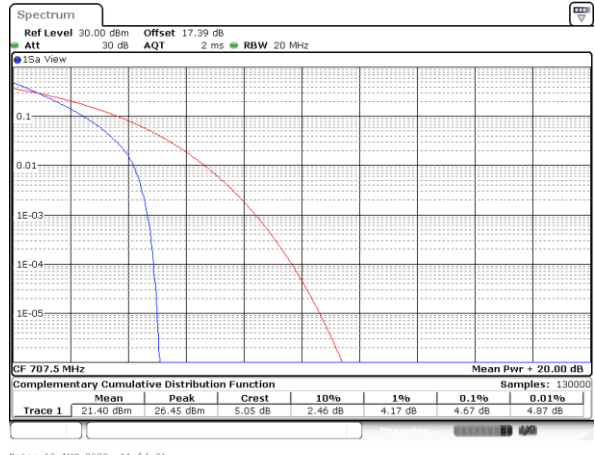
FR1 n12 / 15MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK



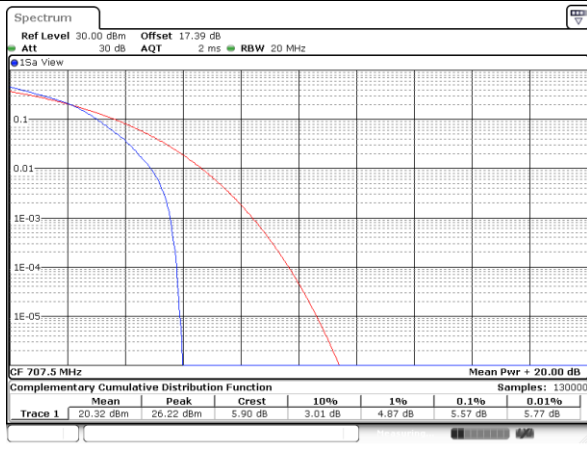
Date: 13.AUG.2020 11:55:11

QPSK



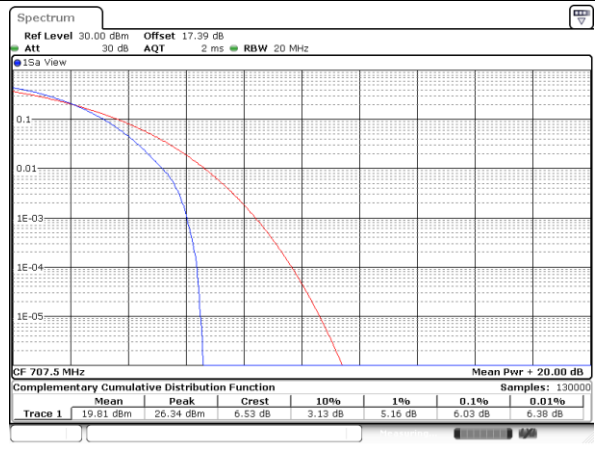
Date: 13.AUG.2020 11:54:31

16QAM



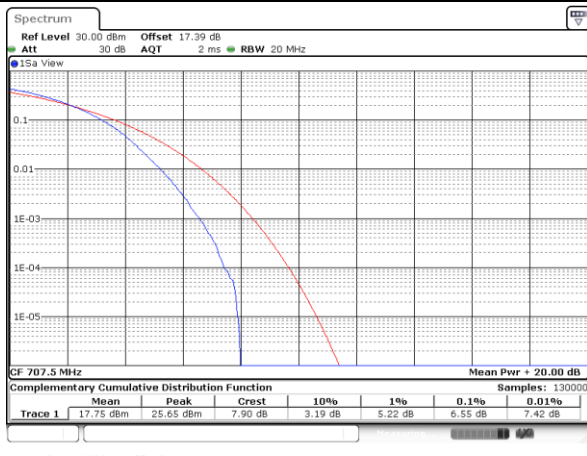
Date: 13.AUG.2020 11:56:06

64QAM



Date: 13.AUG.2020 11:56:41

256QAM



Date: 13.AUG.2020 11:57:16



26dB Bandwidth

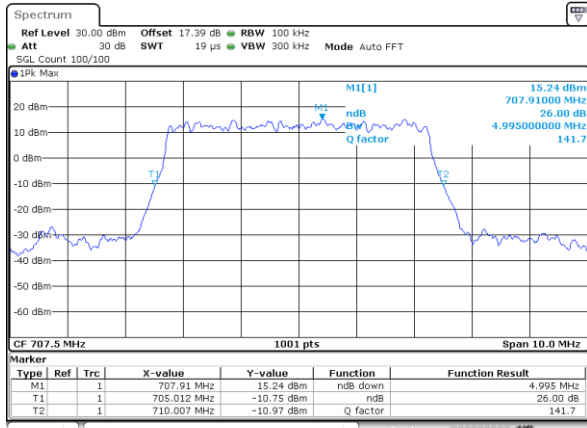
Mode	FR1 n12 : 26dB BW(MHz) / DFT-S OFDM					
BW	5MHz		10MHz		15MHz	
Mod.	PI/2 BPSK		PI/2 BPSK		PI/2 BPSK	
Middle CH	5.00		9.45		14.24	

Mode	FR1 n12 : 26dB BW(MHz) / CP OFDM					
BW	5MHz		10MHz		15MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	4.96	5.03	9.85	9.83	14.99	14.93
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	5.04	4.93	9.89	9.75	14.87	15.02



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

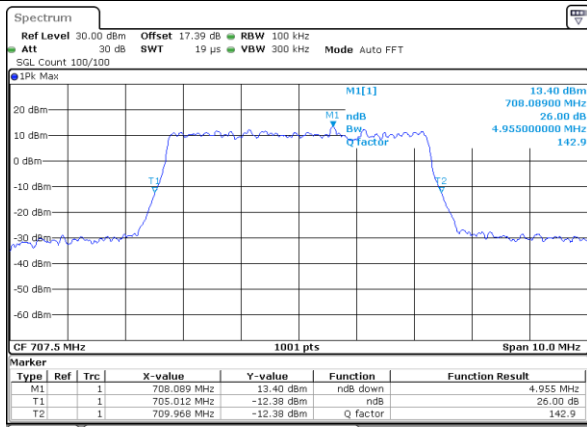
PI/2 BPSK



Date: 13_AUG_2020 10:09:47

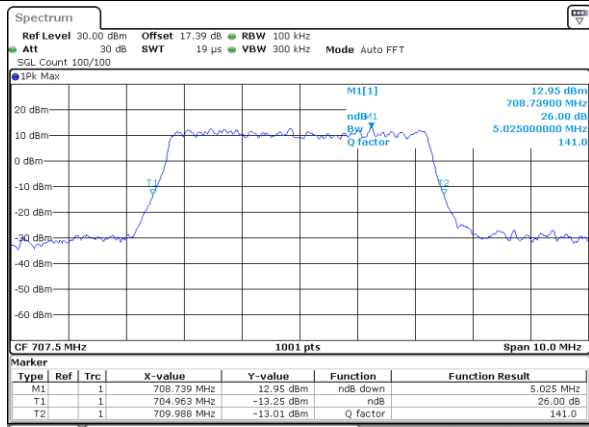
FR1 n12 / 5MHz / CP OFDM

QPSK



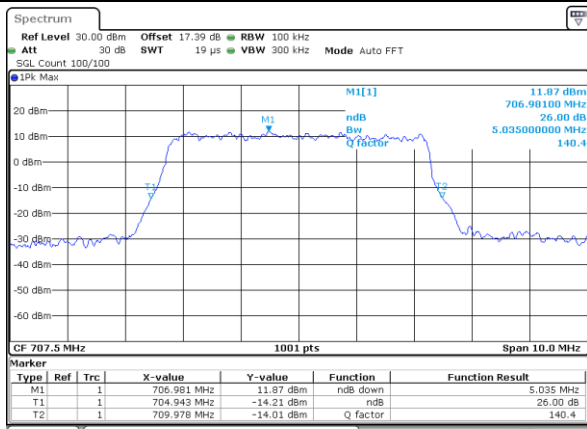
Date: 13_AUG_2020 10:06:11

16QAM



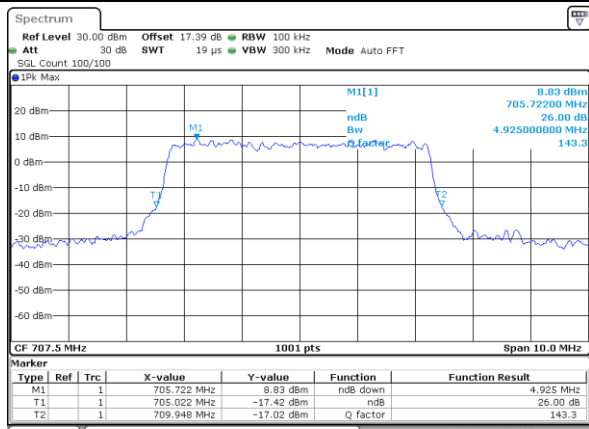
Date: 13_AUG_2020 10:06:49

64QAM



Date: 13_AUG_2020 10:07:22

256QAM

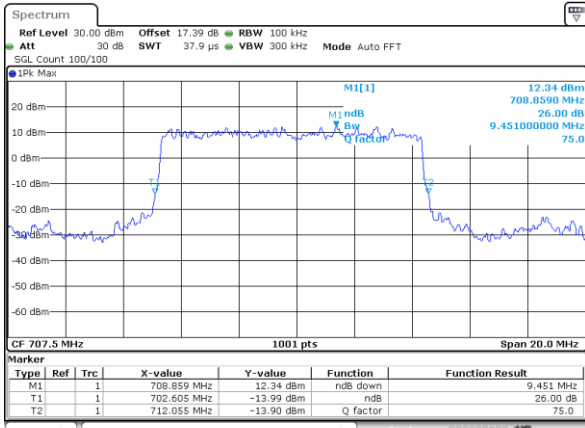


Date: 13_AUG_2020 10:08:06



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

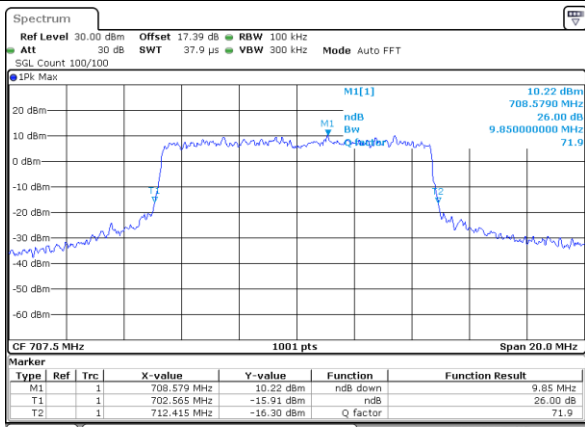
PI/2 BPSK



Date: 13_AUG_2020 10:17:44

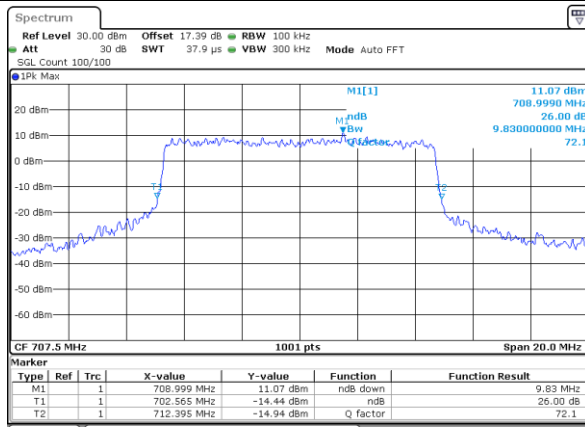
FR1 n12 / 10MHz / CP OFDM

QPSK



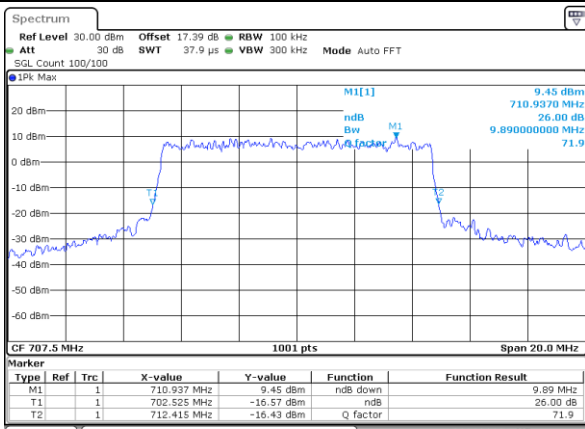
Date: 13_AUG_2020 10:14:28

16QAM



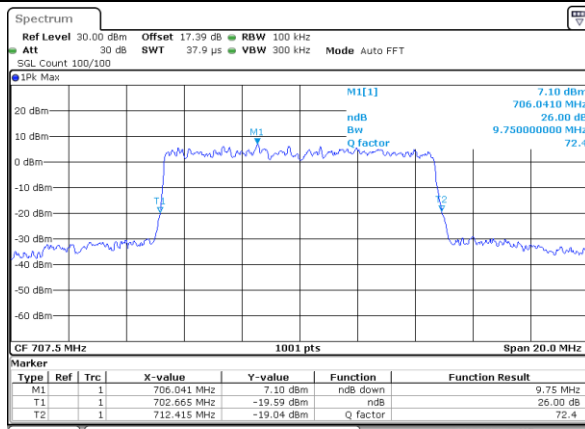
Date: 13_AUG_2020 10:15:12

64QAM



Date: 13_AUG_2020 10:15:52

256QAM

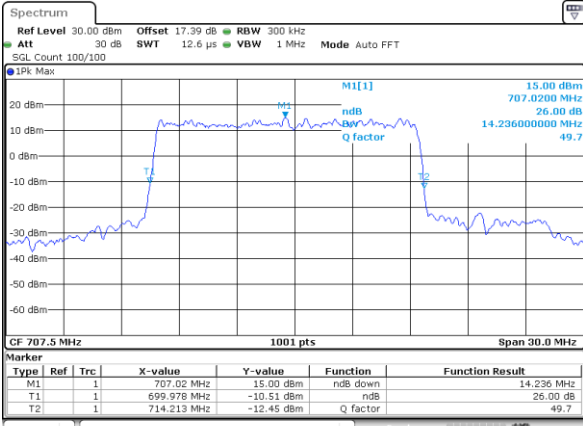


Date: 13_AUG_2020 10:16:32



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

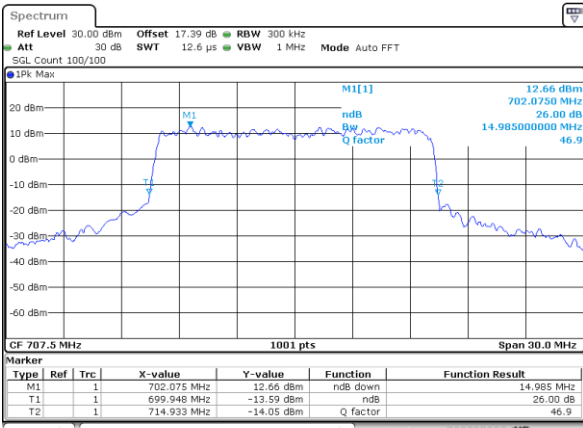
PI/2 BPSK



Date: 13_AUG_2020 10:19:13

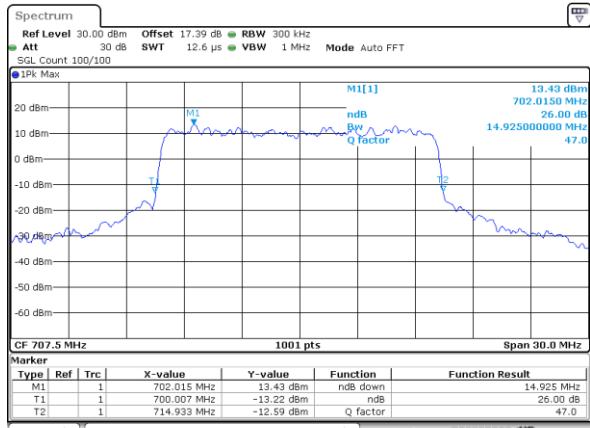
FR1 n12 / 15MHz / CP OFDM

QPSK



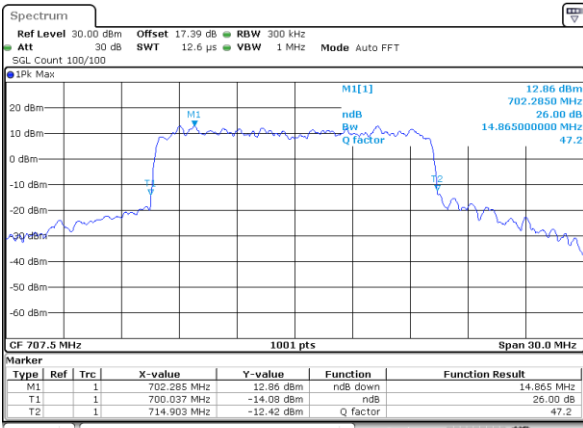
Date: 13_AUG_2020 10:20:09

16QAM



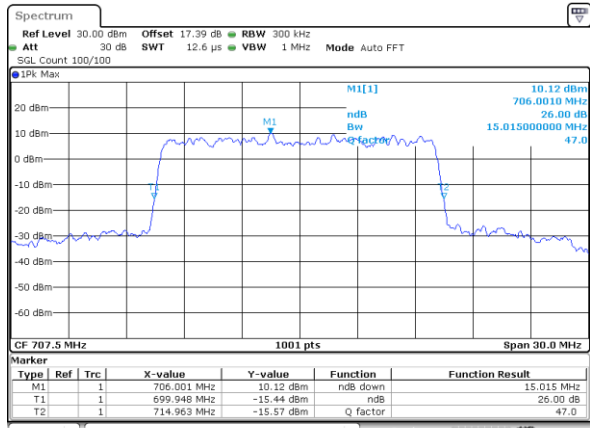
Date: 13_AUG_2020 10:20:47

64QAM



Date: 13_AUG_2020 10:21:20

256QAM



Date: 13_AUG_2020 10:21:58



Occupied Bandwidth

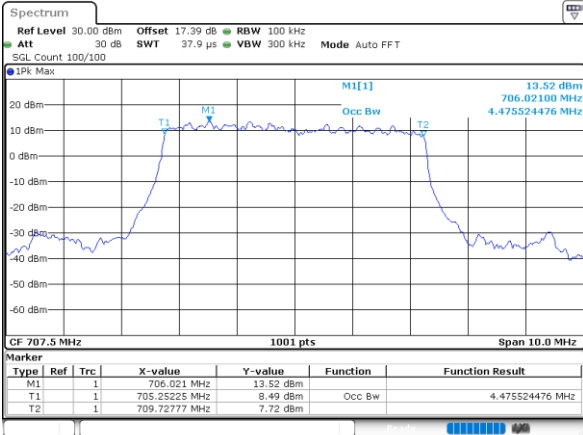
Mode	FR1 n12 : 99%OBW(MHz) / DFT-S OFDM					
BW	5MHz		10MHz		15MHz	
Mod.	PI/2 BPSK		PI/2 BPSK		PI/2 BPSK	
Middle CH	4.48		8.89		13.40	

Mode	FR1 n12 : 99%OBW (MHz) / CP OFDM					
BW	5MHz		10MHz		15MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	4.49	4.49	9.25	9.25	14.15	14.09
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	4.49	4.50	9.31	9.25	14.06	14.06



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

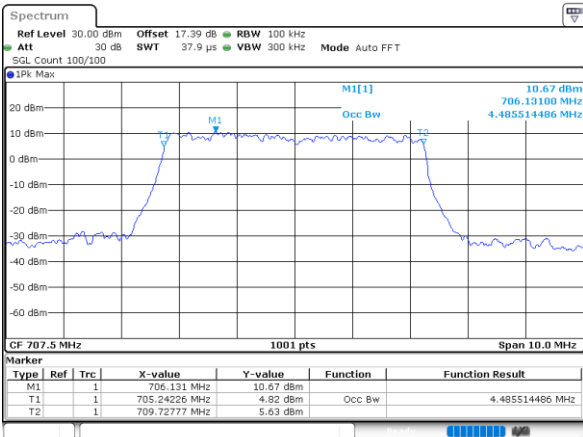
PI/2 BPSK



Date: 12.AUG.2020 21:26:15

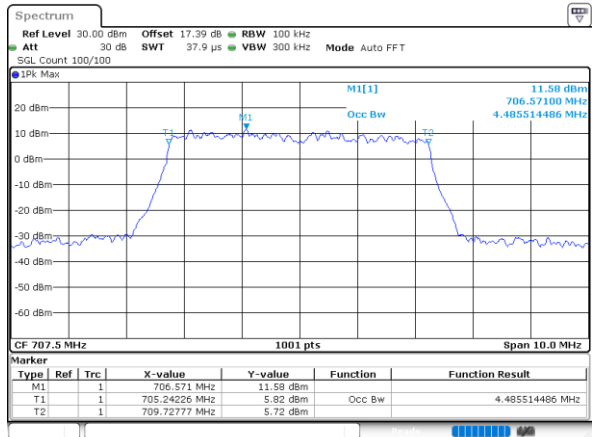
FR1 n12 / 5MHz / CP OFDM

QPSK



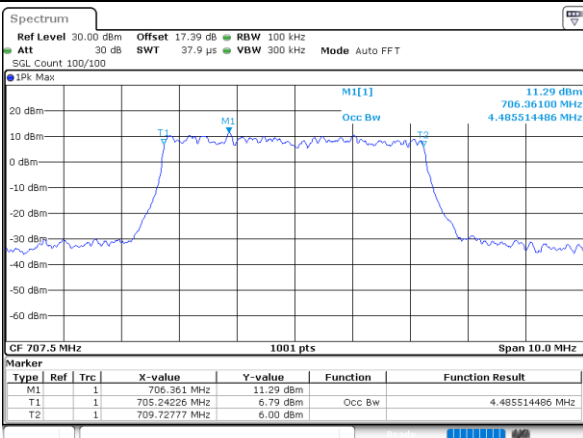
Date: 12.AUG.2020 21:23:43

16QAM



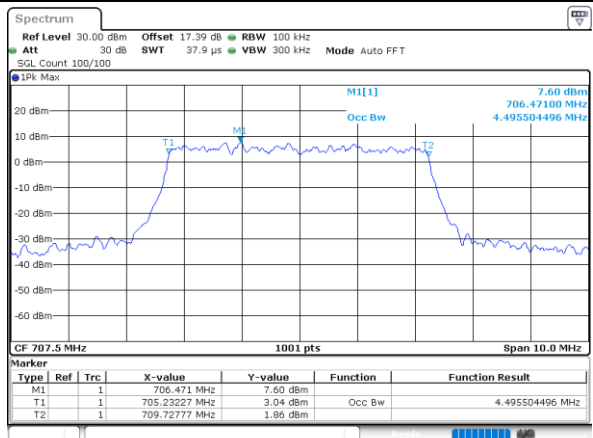
Date: 12.AUG.2020 21:24:27

64QAM



Date: 12.AUG.2020 21:25:00

256QAM



Date: 12.AUG.2020 21:25:27