



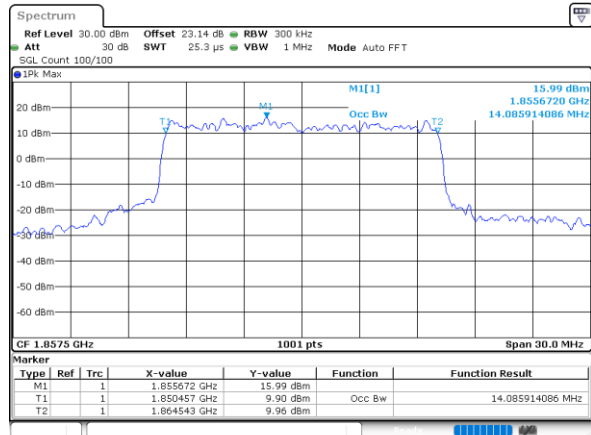
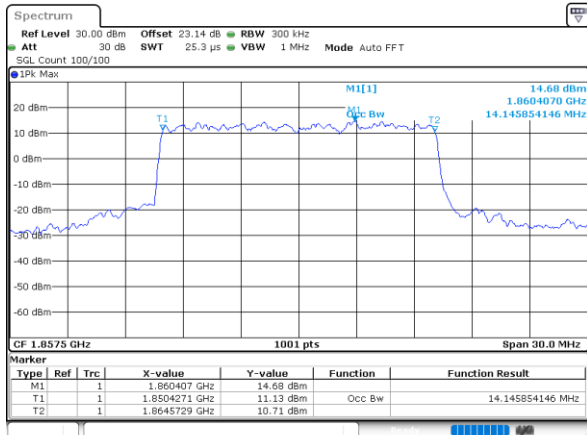
FR1 n2 / 15MHz / CP OFDM

QPSK

16QAM

Lowest Channel

Lowest Channel

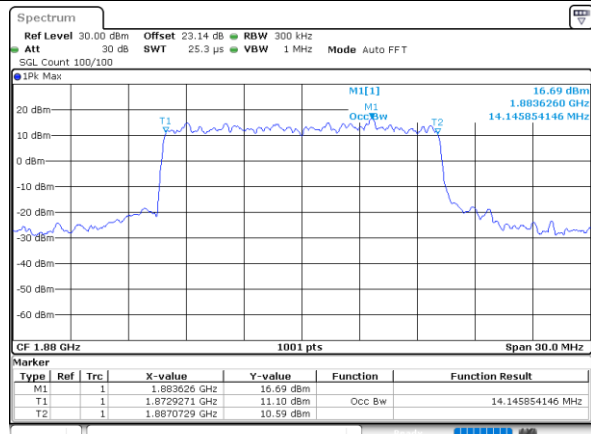
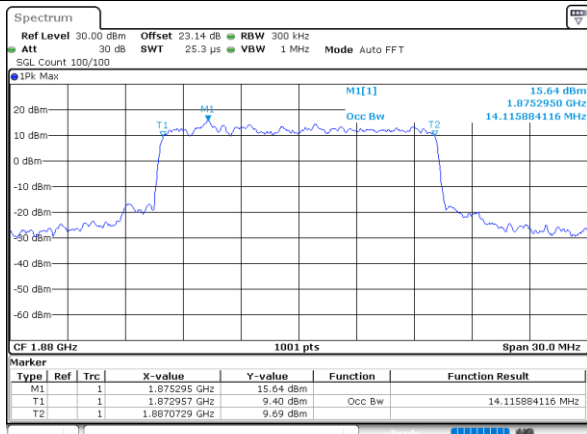


Date: 6 JUL 2020 09:23:13

Date: 6 JUL 2020 09:24:49

Middle Channel

Middle Channel

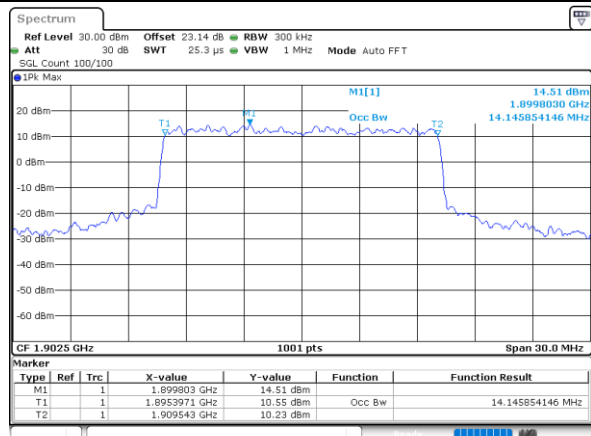
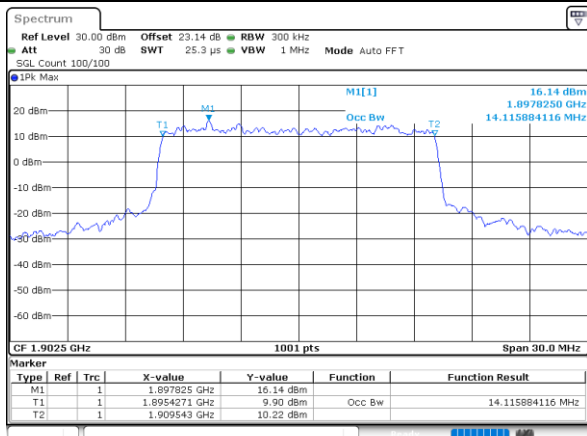


Date: 6 JUL 2020 09:15:10

Date: 6 JUL 2020 09:59:05

Highest Channel

Highest Channel



Date: 6 JUL 2020 10:27:01

Date: 6 JUL 2020 10:28:07



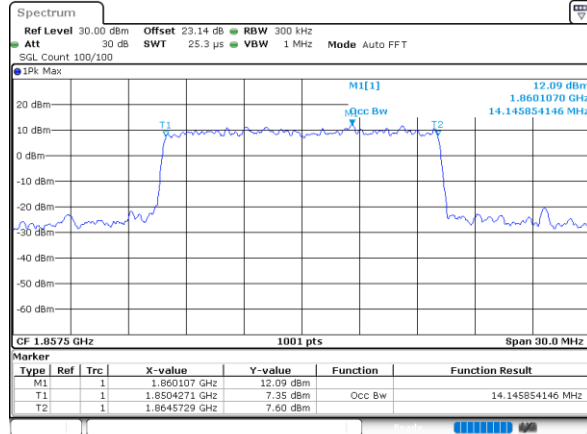
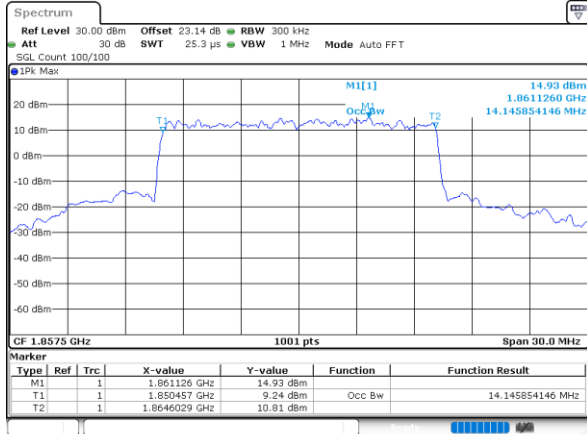
FR1 n2 / 15MHz / CP OFDM

64QAM

256QAM

Lowest Channel

Lowest Channel

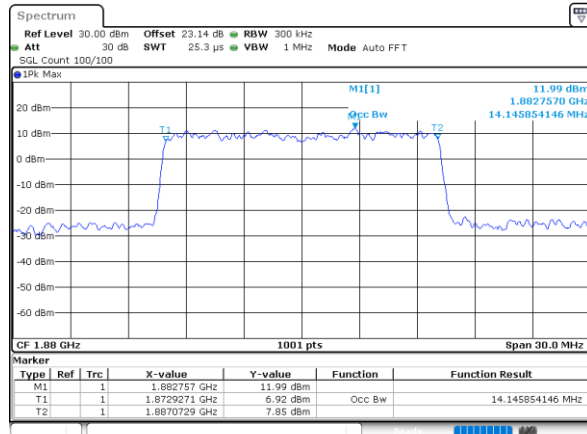
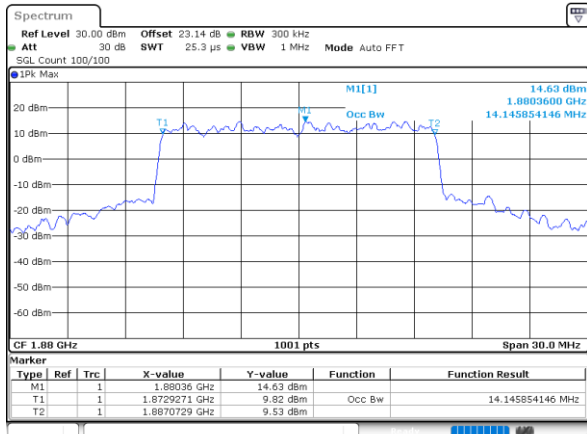


Date: 6.JUL.2020 09:25:44

Date: 6.JUL.2020 09:26:38

Middle Channel

Middle Channel

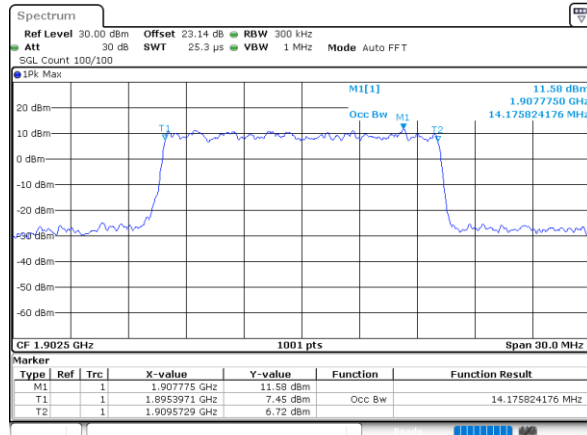
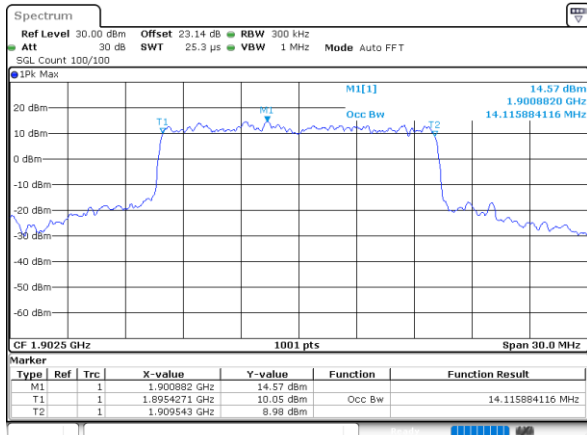


Date: 6.JUL.2020 09:15:48

Date: 6.JUL.2020 10:01:03

Highest Channel

Highest Channel



Date: 6.JUL.2020 10:29:03

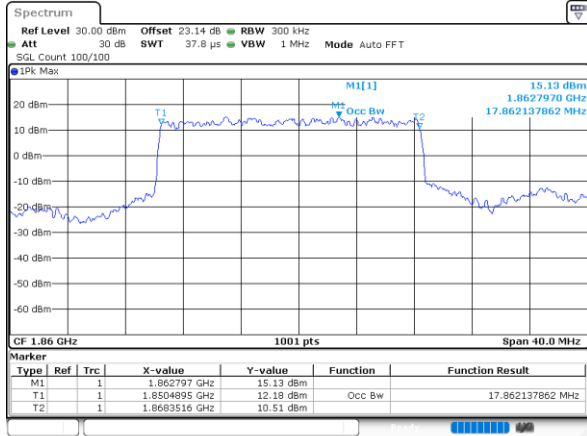
Date: 6.JUL.2020 10:29:50



FR1 n2 / 20MHz / DFT-S OFDM

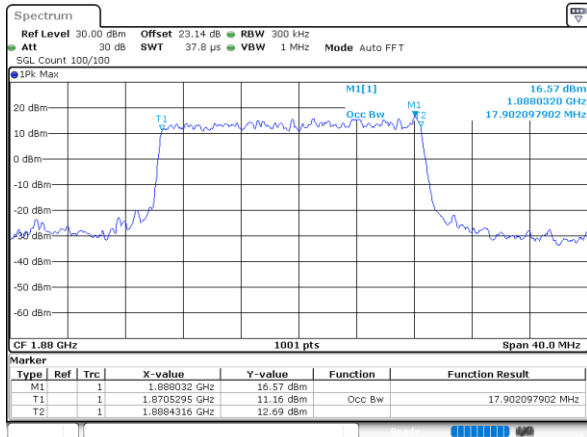
PI/2 BPSK

Lowest Channel



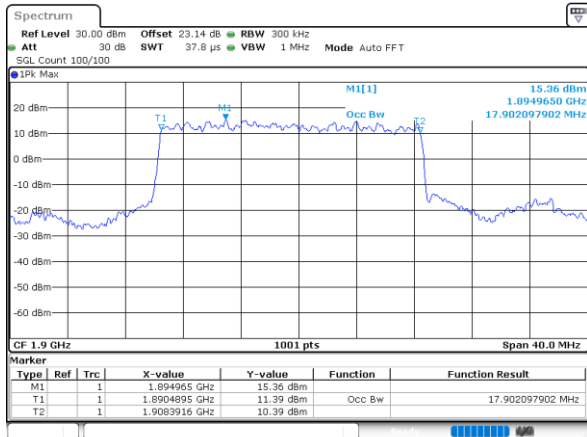
Date: 6 JUL 2020 09:40:34

Middle Channel



Date: 6 JUL 2020 10:09:37

Highest Channel



Date: 6 JUL 2020 11:06:40



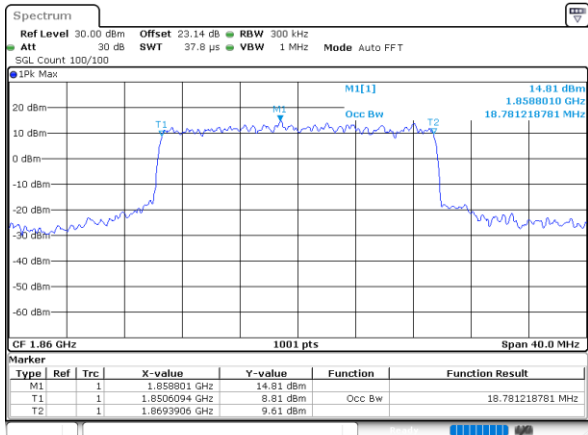
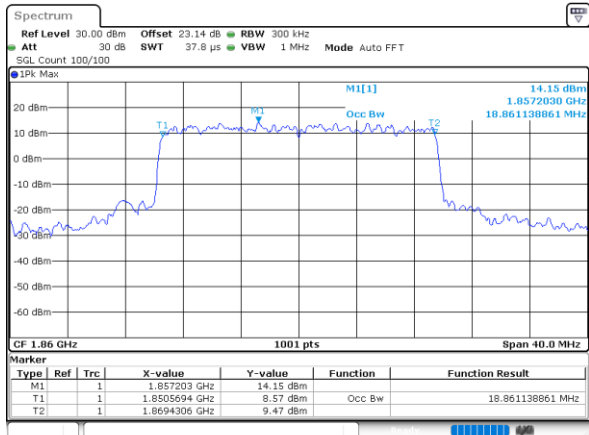
FR1 n2 / 20MHz / CP OFDM

QPSK

16QAM

Lowest Channel

Lowest Channel

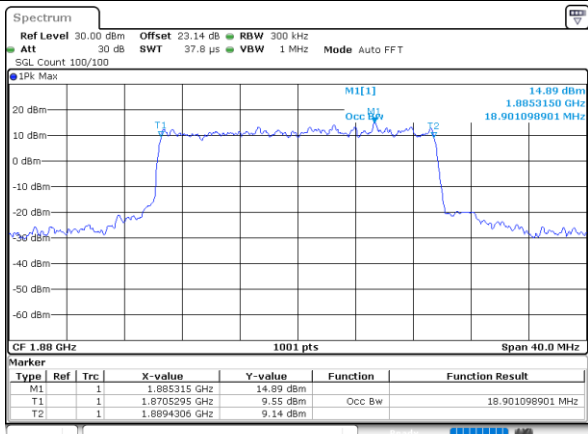
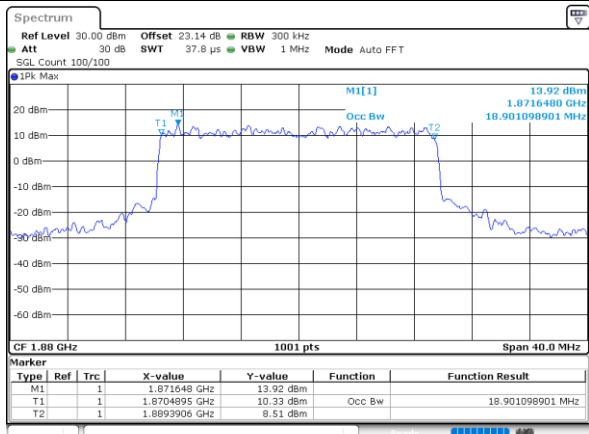


Date: 6.JUL.2020 09:30:31

Date: 6.JUL.2020 09:33:22

Middle Channel

Middle Channel

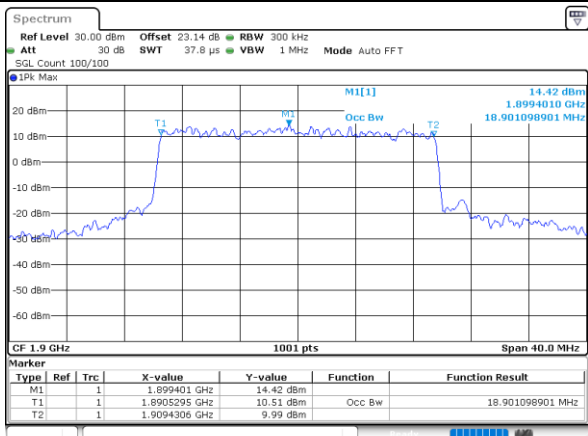
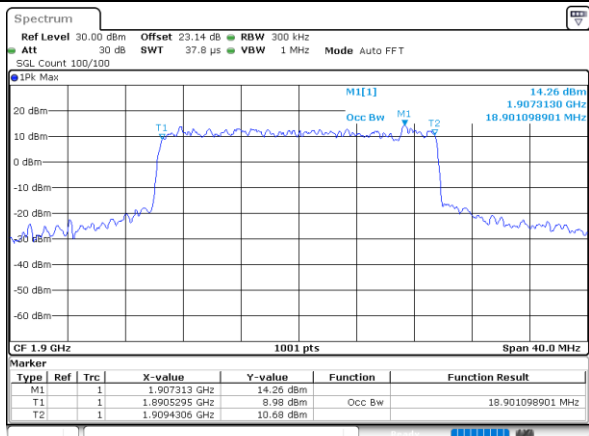


Date: 6.JUL.2020 10:04:54

Date: 6.JUL.2020 10:05:40

Highest Channel

Highest Channel



Date: 6.JUL.2020 10:33:12

Date: 6.JUL.2020 10:40:07



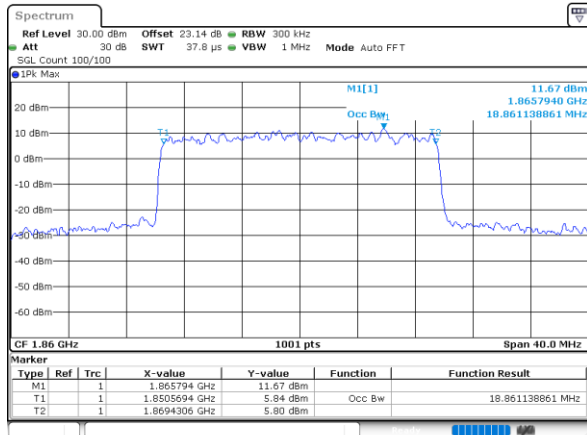
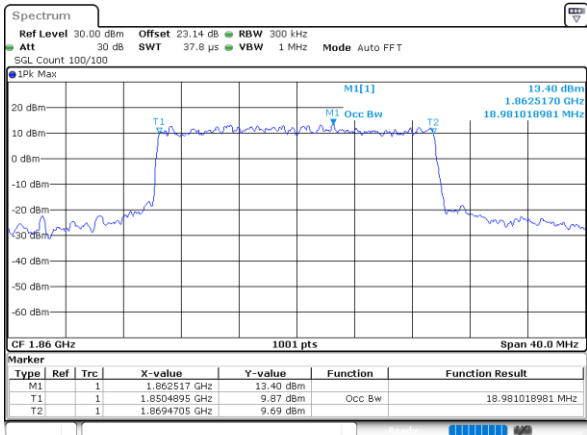
FR1 n2 / 20MHz / CP OFDM

64QAM

256QAM

Lowest Channel

Lowest Channel

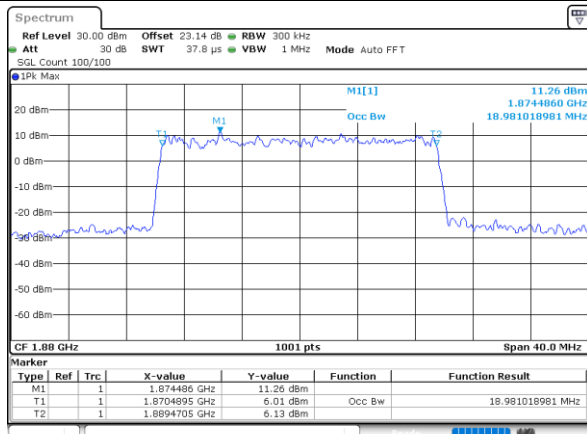
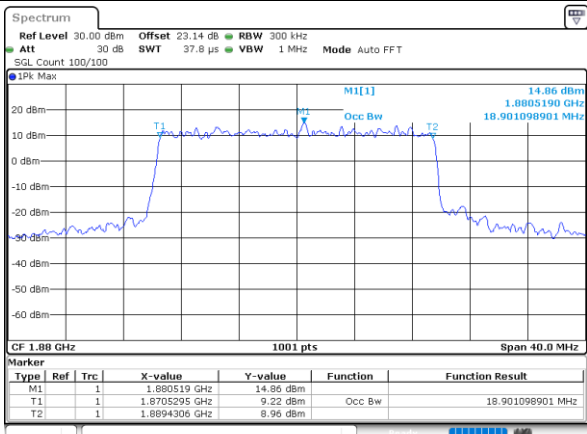


Date: 6 JUL 2020 09:39:08

Date: 6 JUL 2020 09:35:09

Middle Channel

Middle Channel

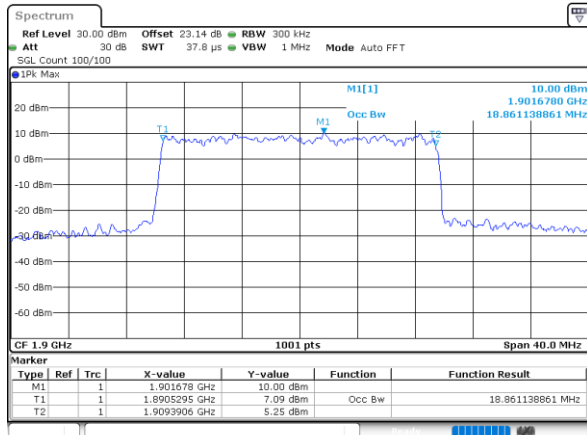
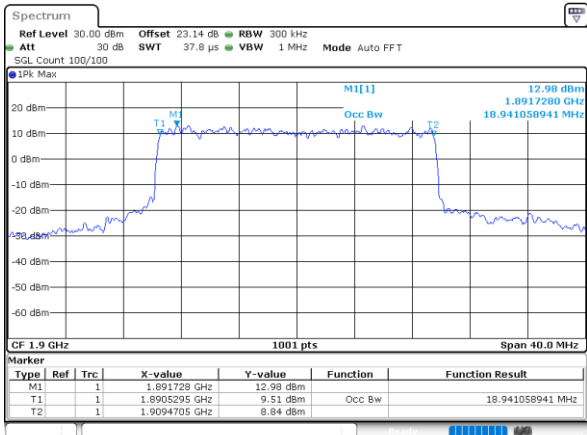


Date: 6 JUL 2020 10:06:32

Date: 6 JUL 2020 10:07:21

Highest Channel

Highest Channel



Date: 6 JUL 2020 10:40:48

Date: 6 JUL 2020 10:41:43

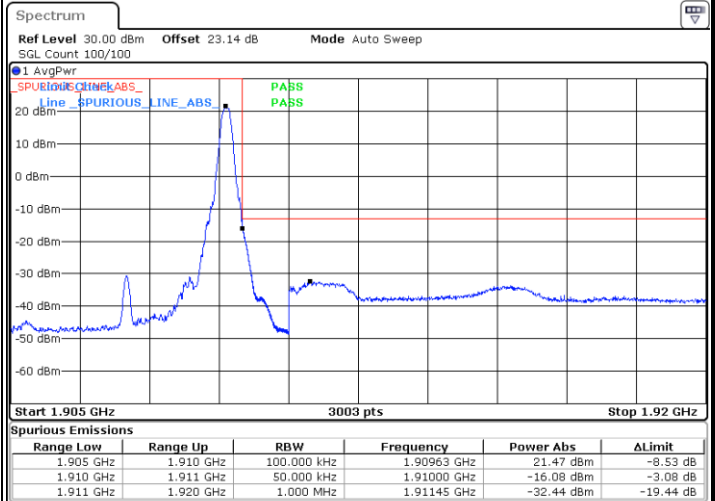
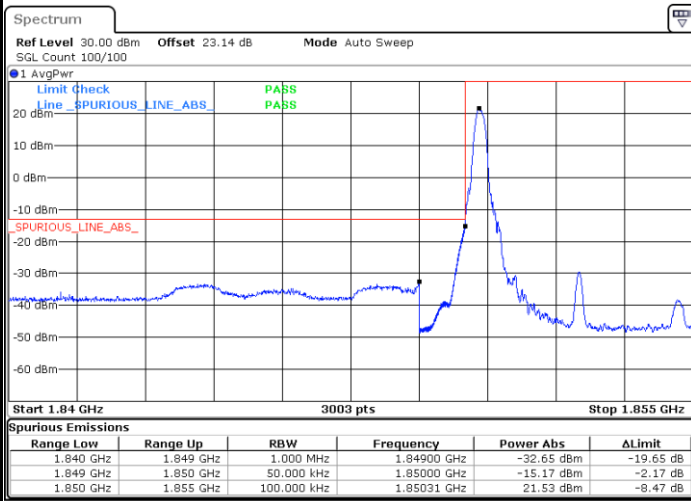


Conducted Band Edge

FR1 n2 / 5MHz / DFT-S OFDM / PI/2 BPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

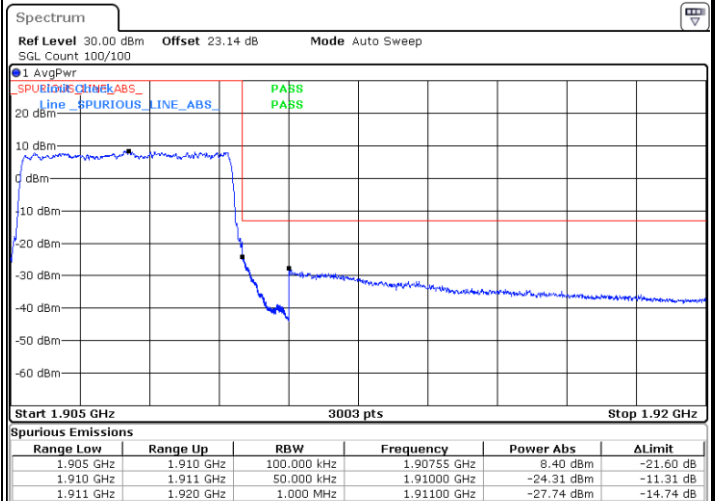
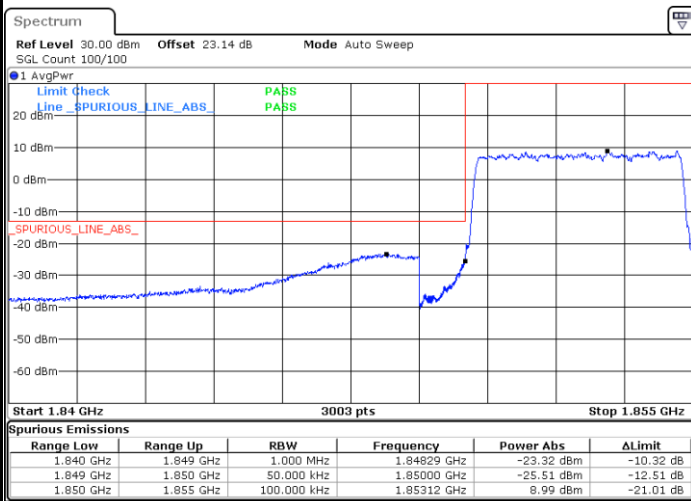


Date: 2.JUL.2020 10:29:33

Date: 2.JUL.2020 14:27:28

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 2.JUL.2020 10:25:40

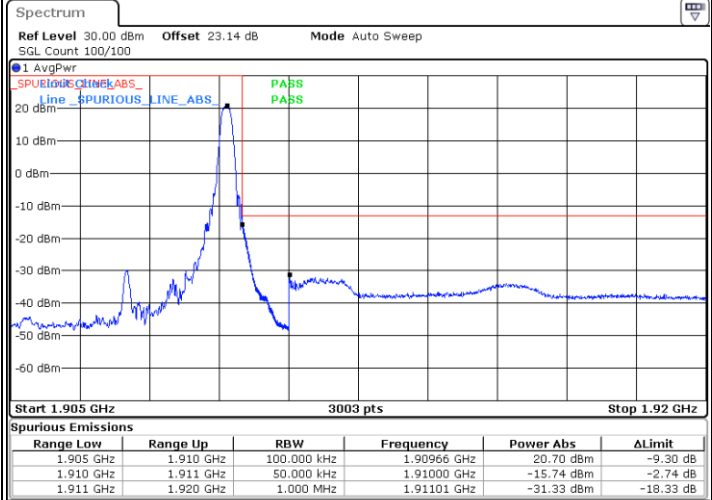
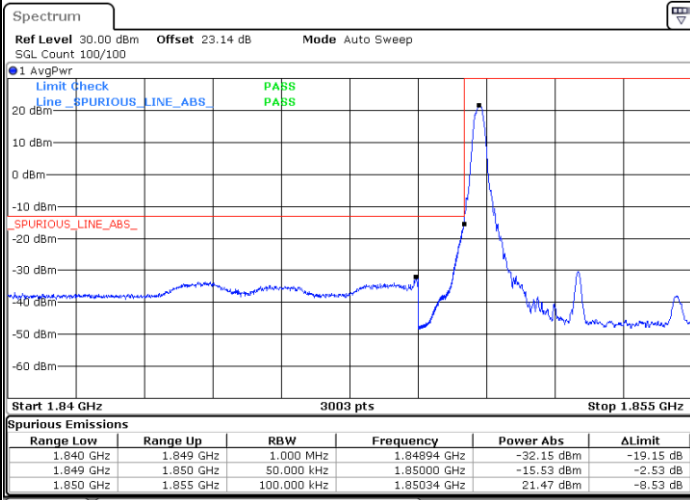
Date: 2.JUL.2020 14:23:15



FR1 n2 / 5MHz / DFT-S OFDM / QPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

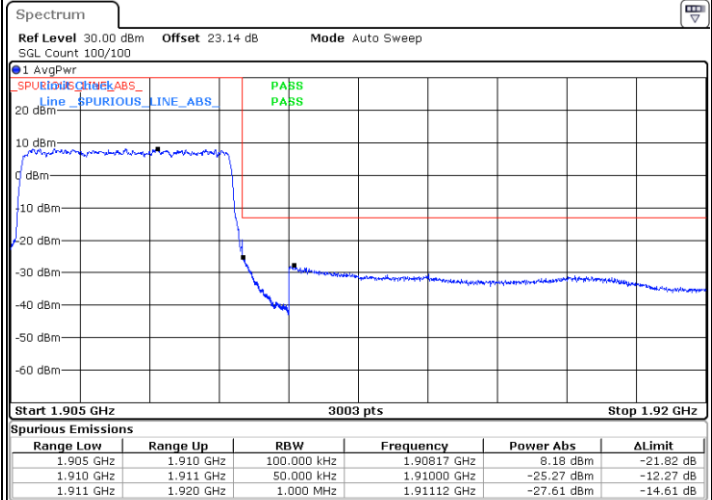
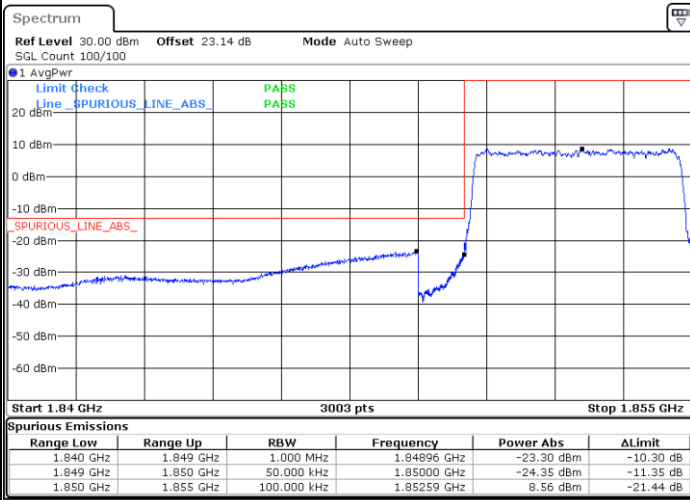


Date: 2.JUL.2020 10:30:33

Date: 2.JUL.2020 14:25:51

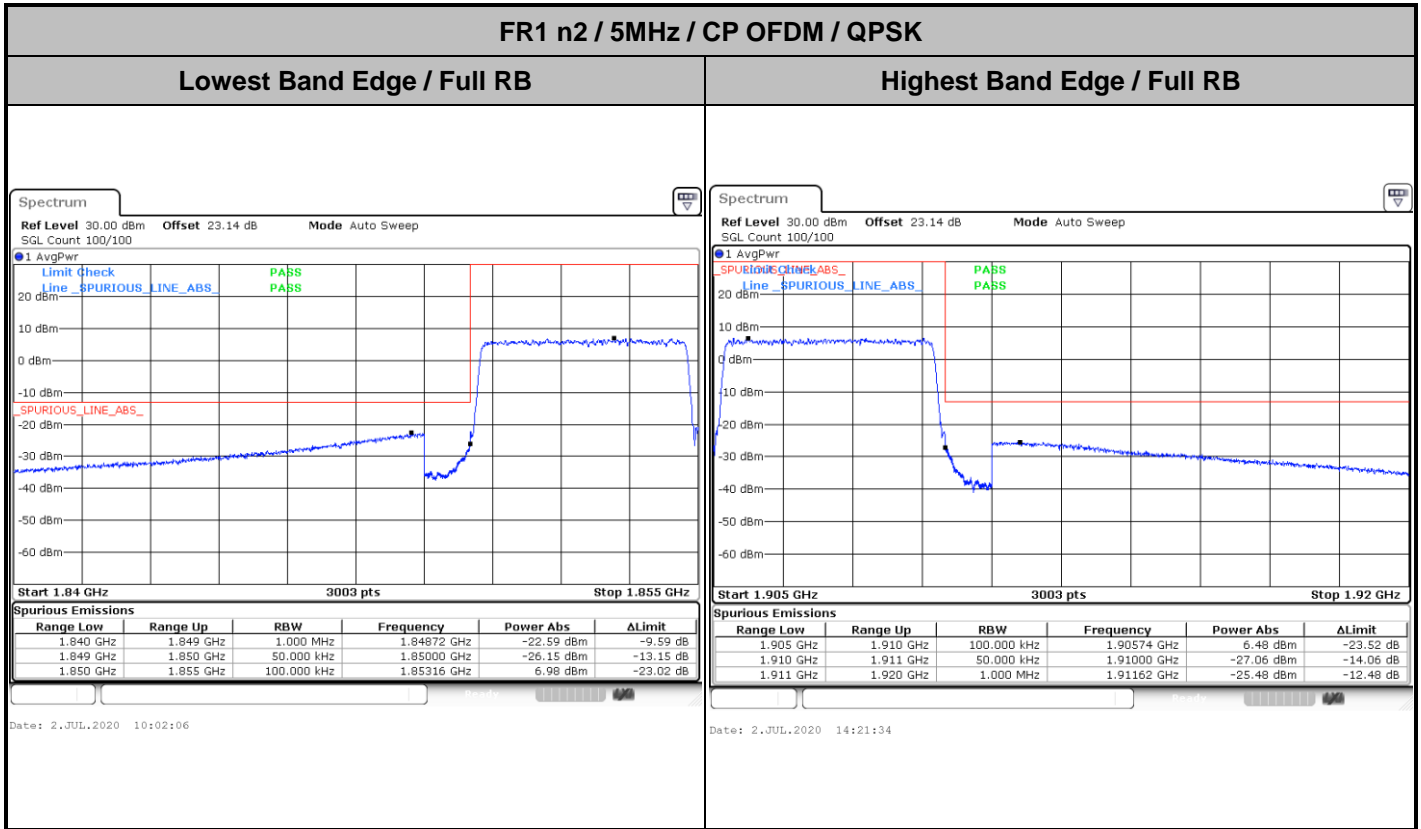
Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 2.JUL.2020 10:26:54

Date: 2.JUL.2020 14:24:12

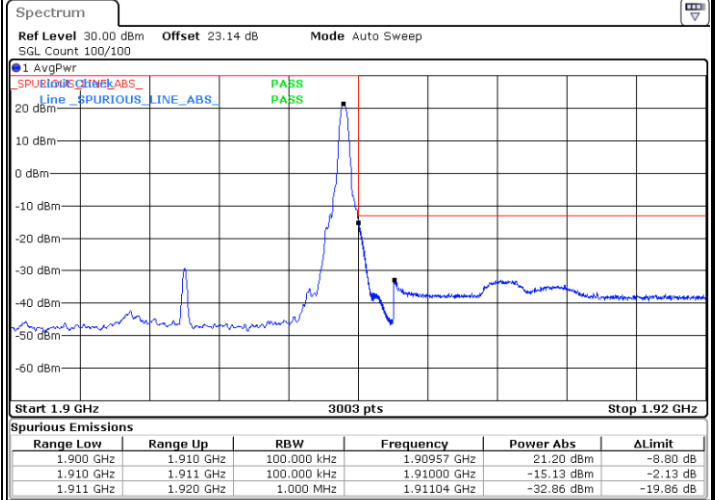
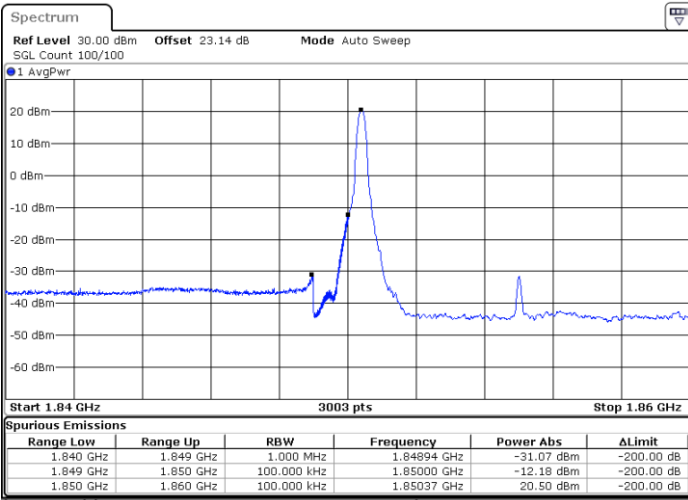




FR1 n2 / 10MHz / DFT-s-OFDM / PI/2 BPSK

Lowest Band Edge / 1RB0

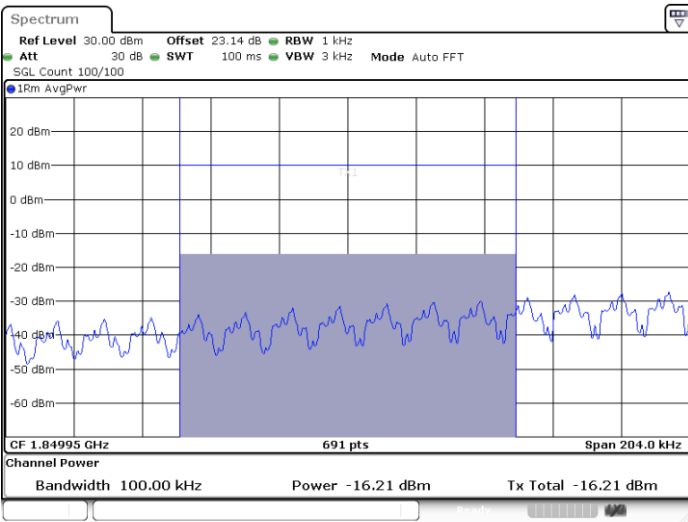
Highest Band Edge / 1RBmax



Date: 13.JUL.2020 11:11:17

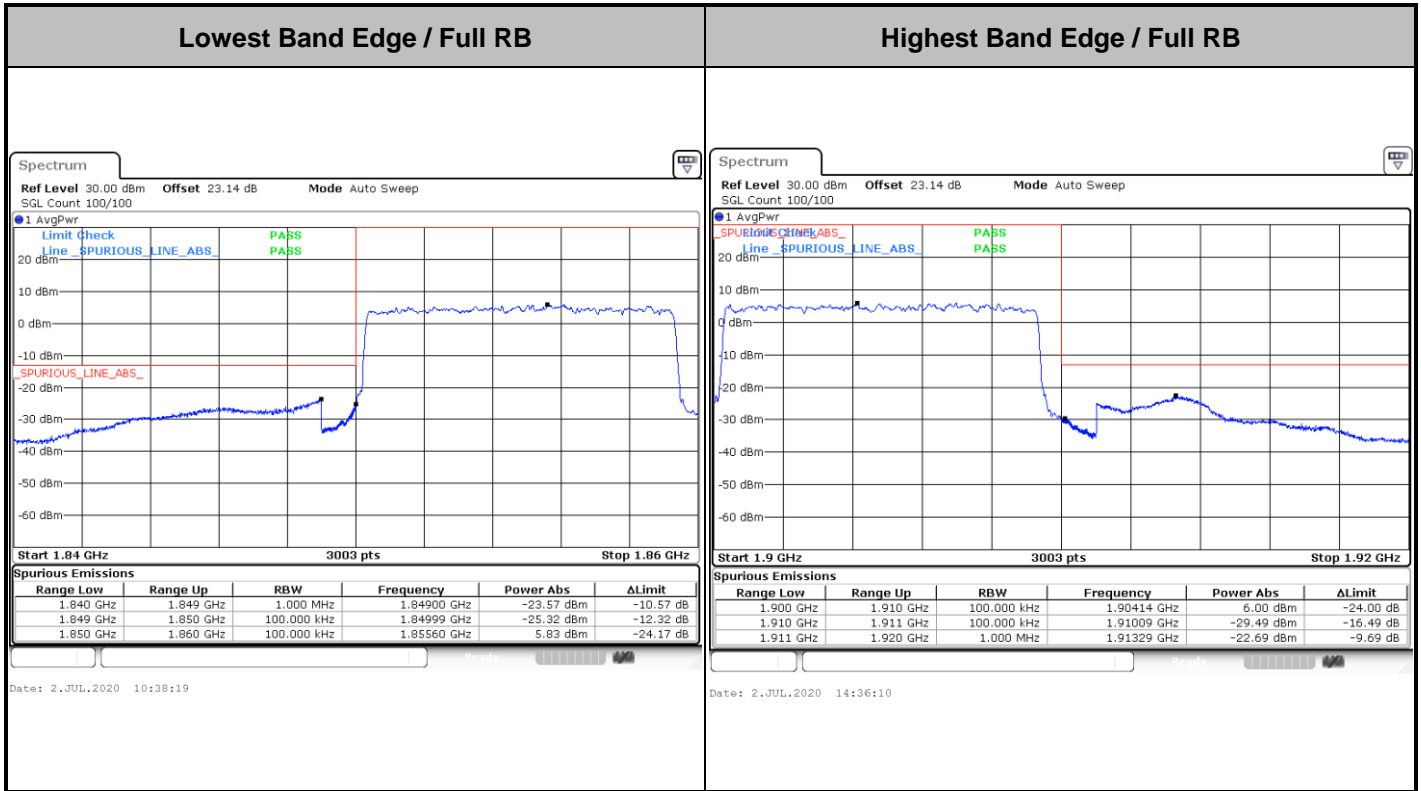
Date: 2.JUL.2020 14:39:36

Channel Power -16.21dBm < -13dBm (Pass)



Date: 13.JUL.2020 14:26:03

Note: The band edge is tested by channel power integration method, ANSI C63.26 clause 5.7.2.

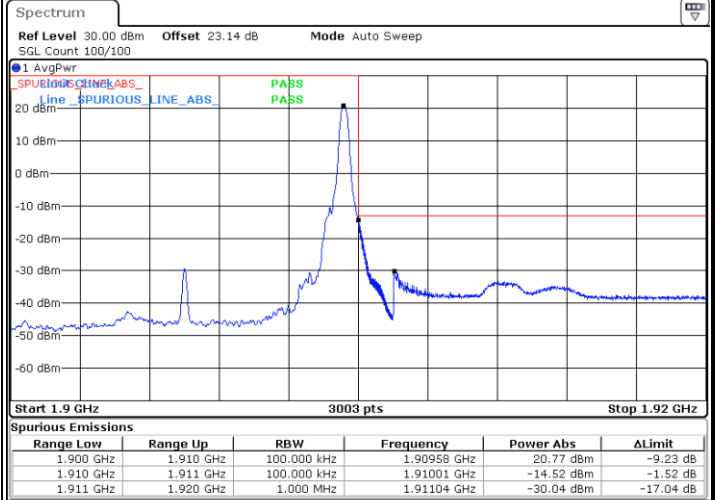
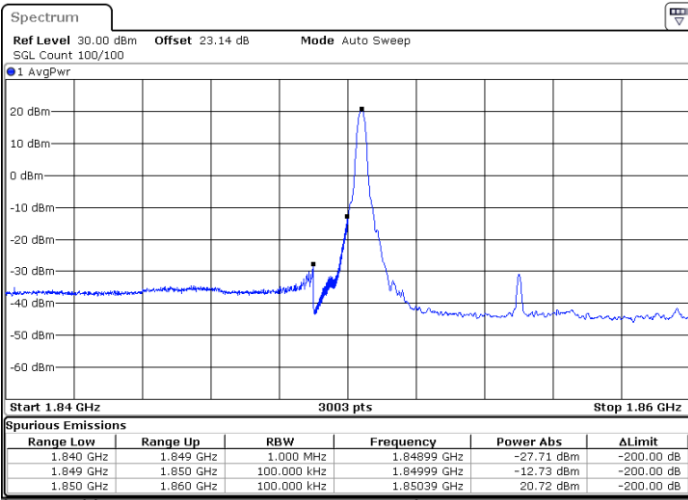




FR1 n2 / 10MHz / DFT-s-OFDM / QPSK

Lowest Band Edge / 1RB0

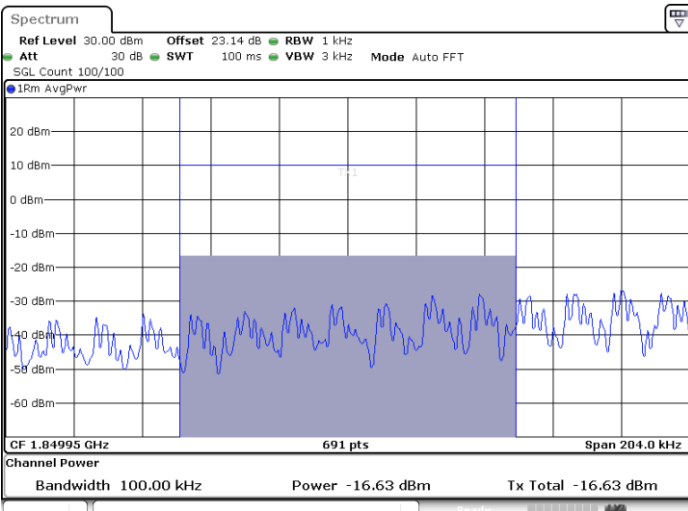
Highest Band Edge / 1RBmax



Date: 13.JUL.2020 11:16:35

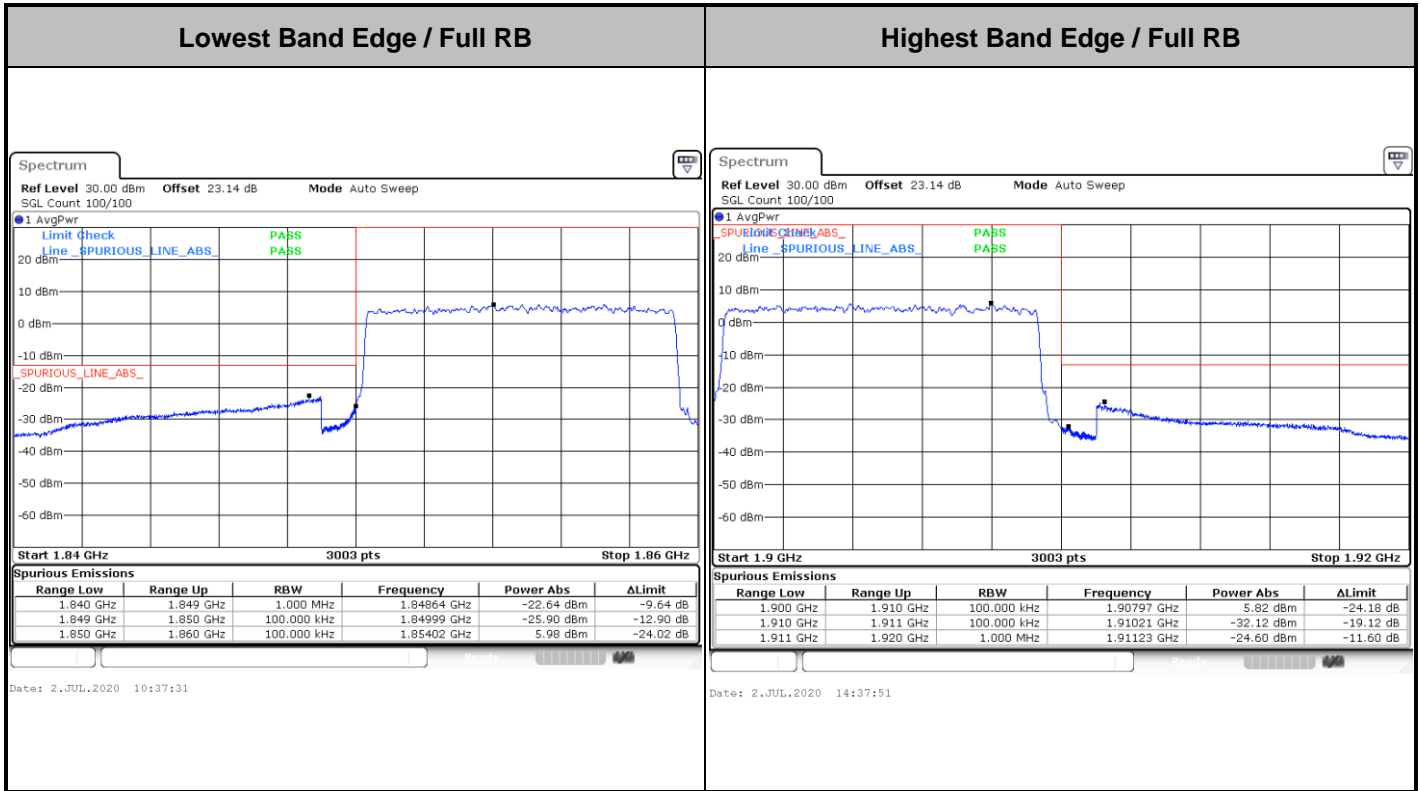
Date: 2.JUL.2020 14:38:52

Channel Power -16.63dBm < -13dBm (Pass)



Date: 13.JUL.2020 14:26:55

Note: The band edge is tested by channel power integration method, ANSI C63.26 clause 5.7.2

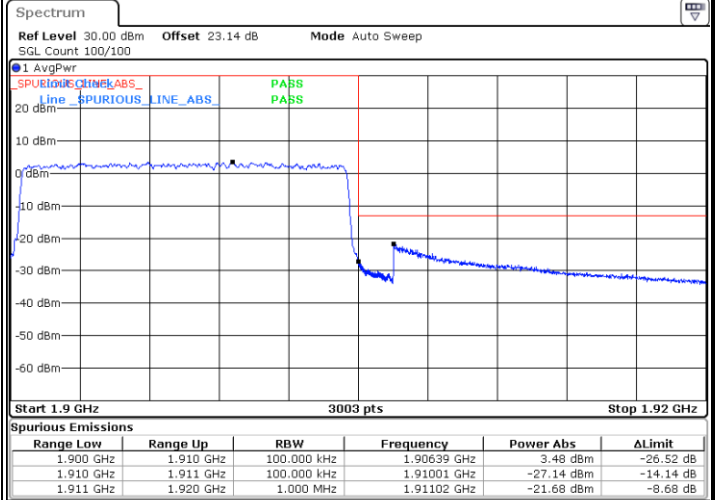
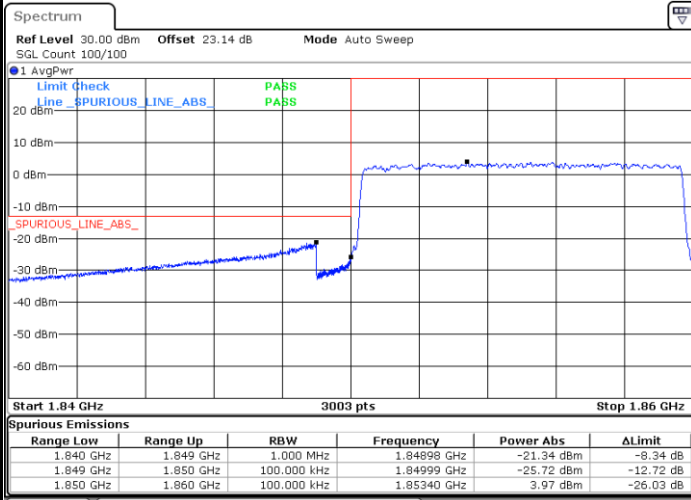




FR1 n2 / 10MHz / CP OFDM / QPSK

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 2.JUL.2020 10:07:54

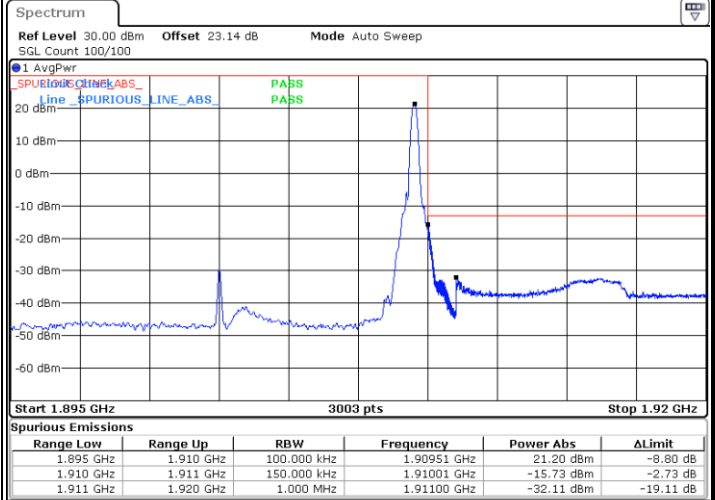
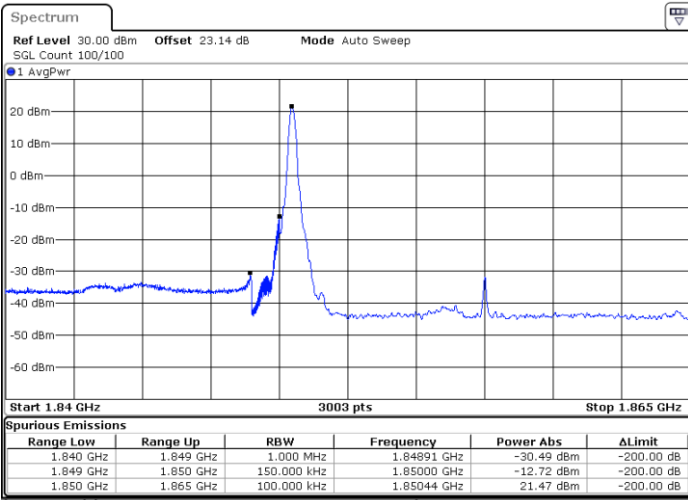
Date: 2.JUL.2020 14:29:42



FR1 n2 / 15MHz / DFT-s-OFDM / PI/2 BPSK

Lowest Band Edge / 1RB0

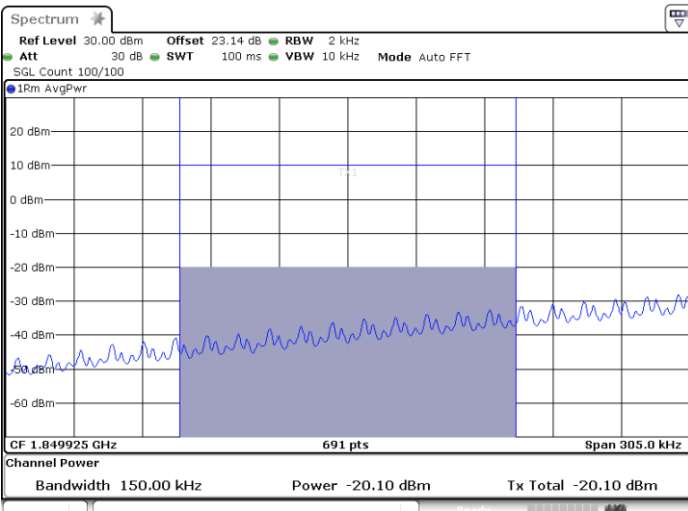
Highest Band Edge / 1RBmax



Date: 13.JUL.2020 11:26:17

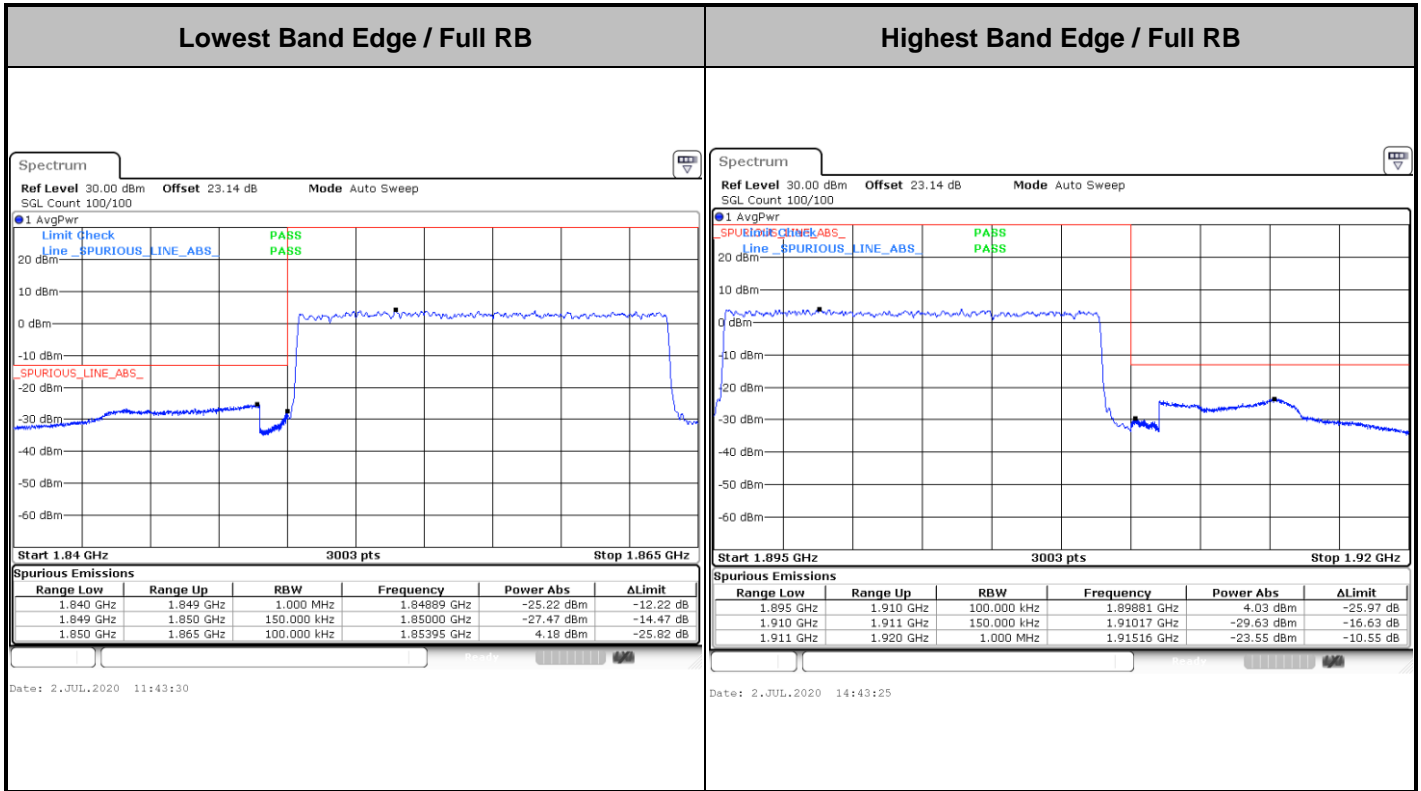
Date: 2.JUL.2020 14:47:58

Channel Power -20.1dBm < -13dBm (Pass)



Date: 13.JUL.2020 14:29:51

Note: The band edge is tested by channel power integration method, ANSI C63.26 clause 5.7.2.

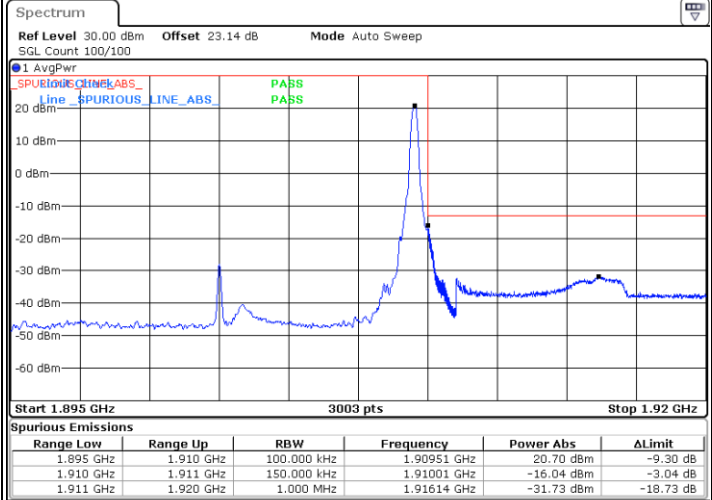
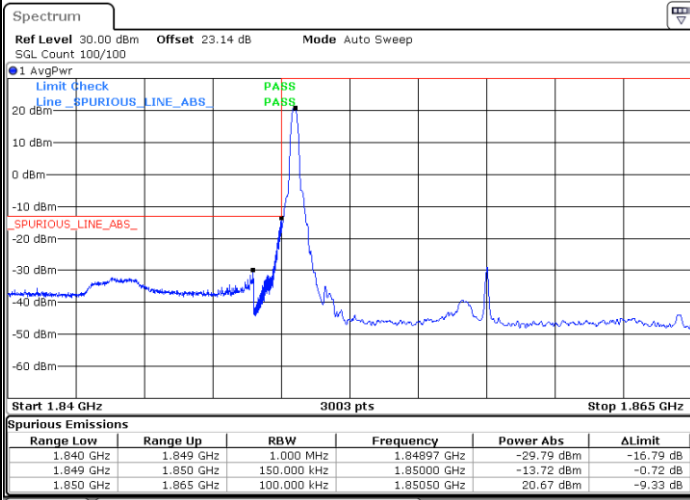




FR1 n2 / 15MHz / DFT-s-OFDM / QPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

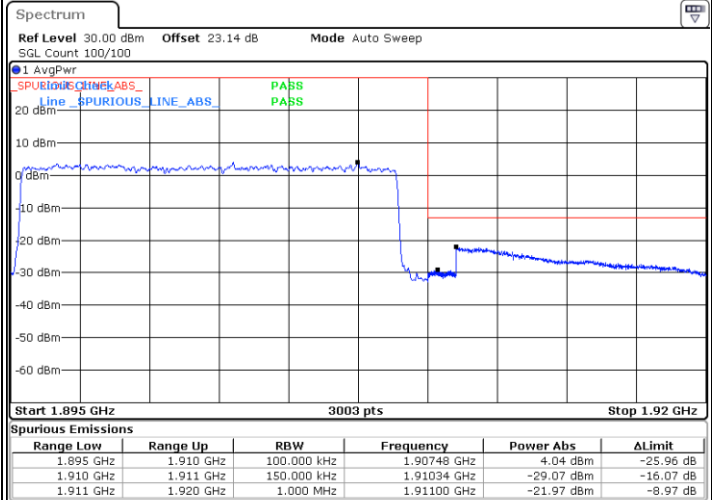
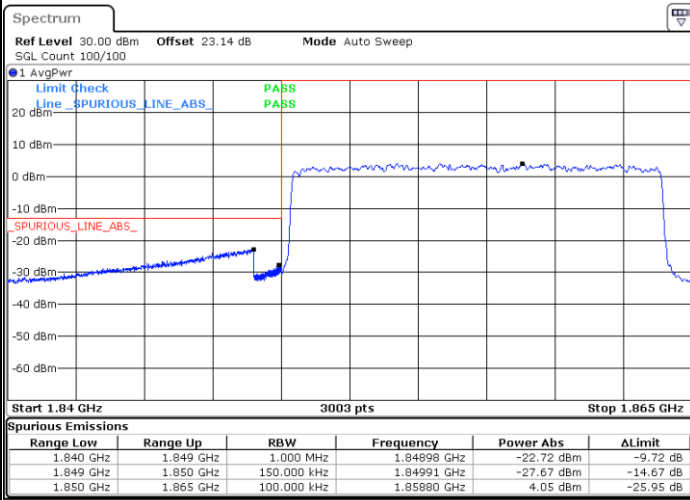


Date: 2.JUL.2020 11:40:27

Date: 2.JUL.2020 14:47:00

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 2.JUL.2020 11:42:46

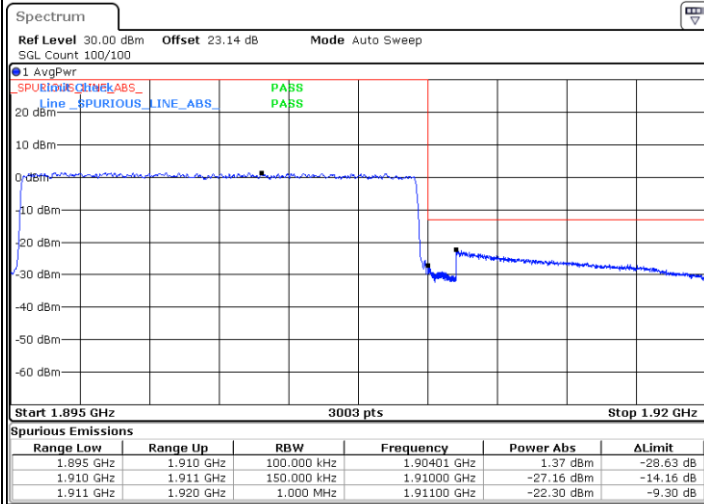
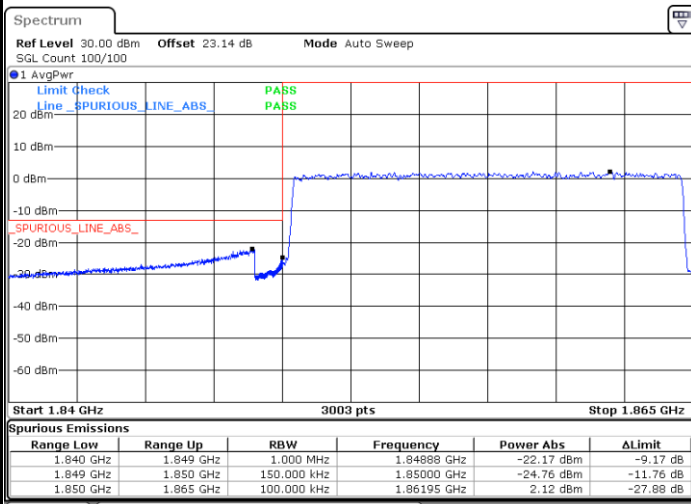
Date: 2.JUL.2020 14:44:54



FR1 n2 / 15MHz / CP OFDM / QPSK

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 2.JUL.2020 10:10:20

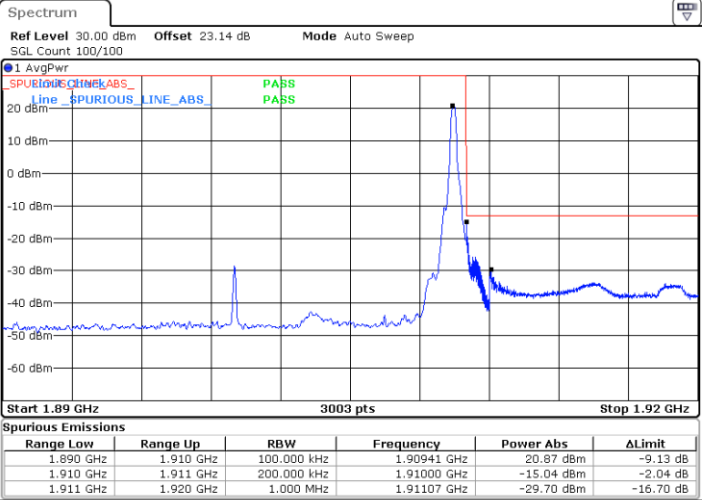
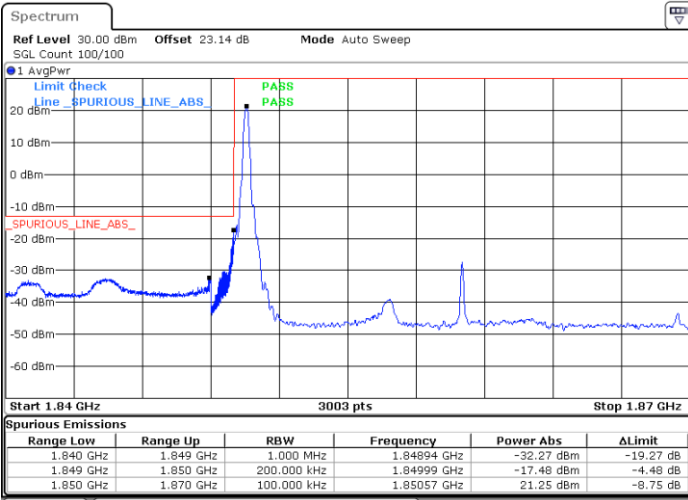
Date: 2.JUL.2020 14:42:07



FR1 n2 / 20MHz / DFT-s-OFDM / PI/2 BPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

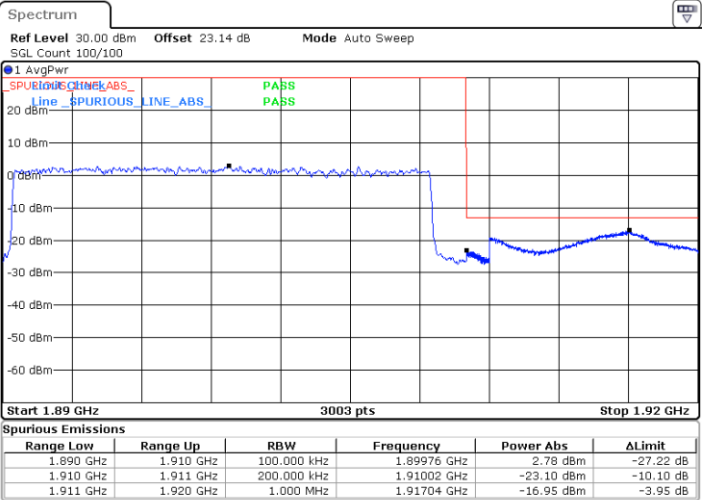
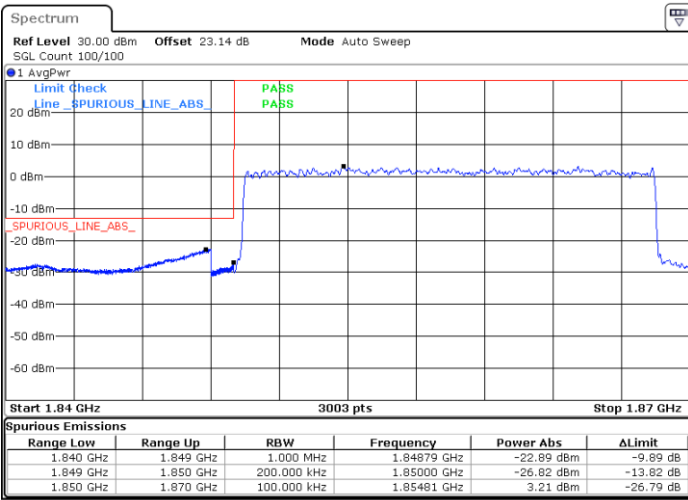


Date: 2.JUL.2020 14:12:54

Date: 2.JUL.2020 15:07:13

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 2.JUL.2020 14:16:41

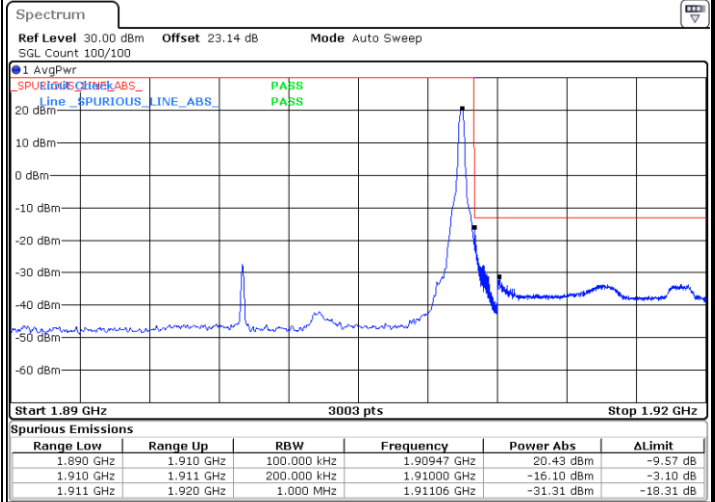
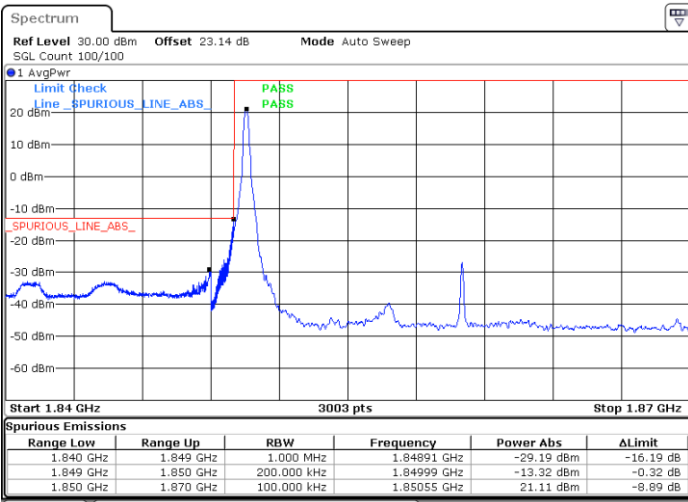
Date: 2.JUL.2020 15:03:17



FR1 n2 / 20MHz / DFT-s-OFDM / QPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

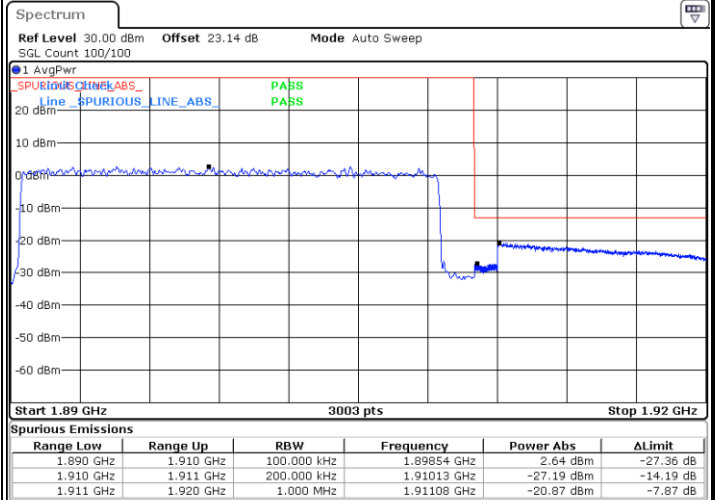
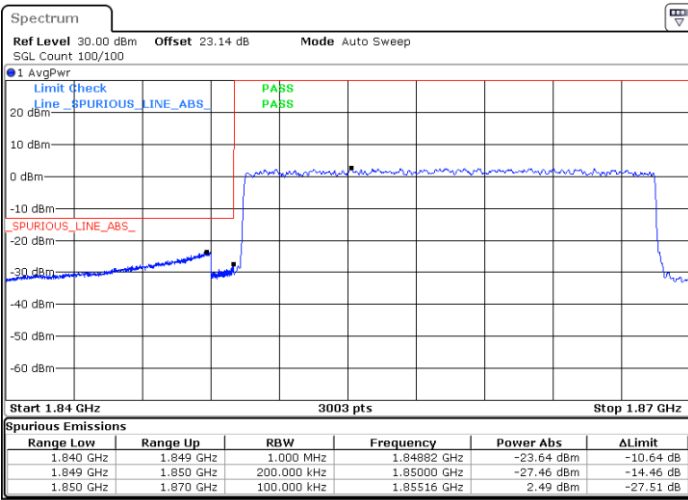


Date: 2.JUL.2020 14:13:35

Date: 2.JUL.2020 15:04:54

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 2.JUL.2020 14:15:57

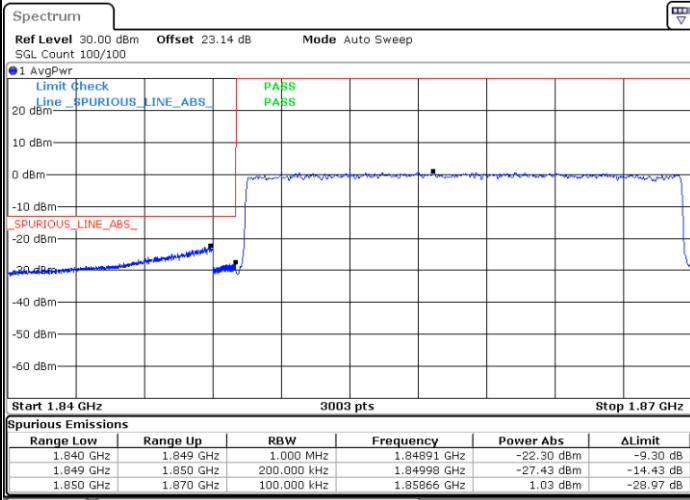
Date: 2.JUL.2020 15:03:55



FR1 n2 / 20MHz / CP OFDM / QPSK

Lowest Band Edge / Full RB

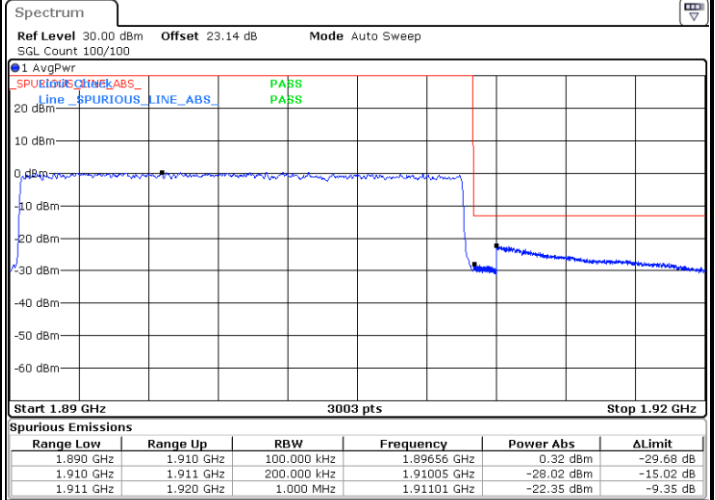
Highest Band Edge / Full RB



Start 1.84 GHz 3003 pts Stop 1.87 GHz

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84891 GHz	-22.30 dBm	-9.30 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84998 GHz	-27.43 dBm	-14.43 dB
1.850 GHz	1.870 GHz	100.000 kHz	1.85866 GHz	1.03 dBm	-28.97 dB

Date: 2.JUL.2020 10:12:35



Start 1.89 GHz 3003 pts Stop 1.92 GHz

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.890 GHz	1.910 GHz	100.000 kHz	1.89656 GHz	0.32 dBm	-29.68 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91005 GHz	-28.02 dBm	-15.02 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91101 GHz	-22.35 dBm	-9.35 dB

Date: 2.JUL.2020 15:01:23

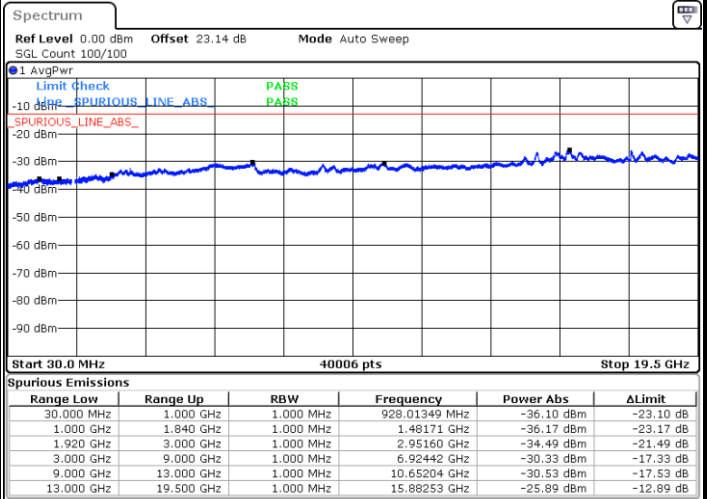
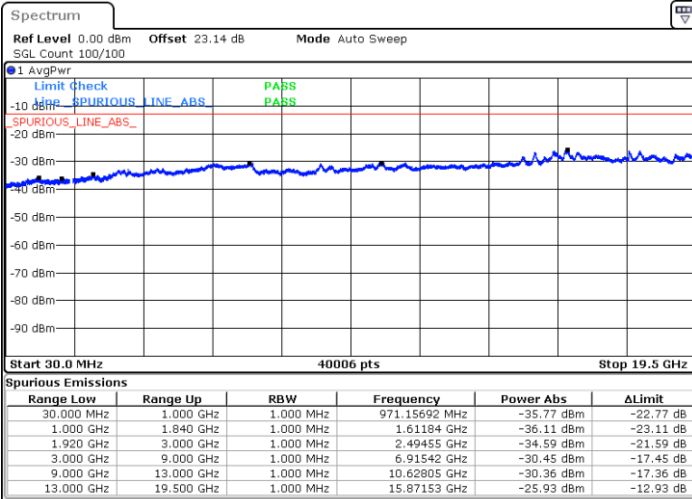


Conducted Spurious Emission

FR1 n2 / 5MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB1

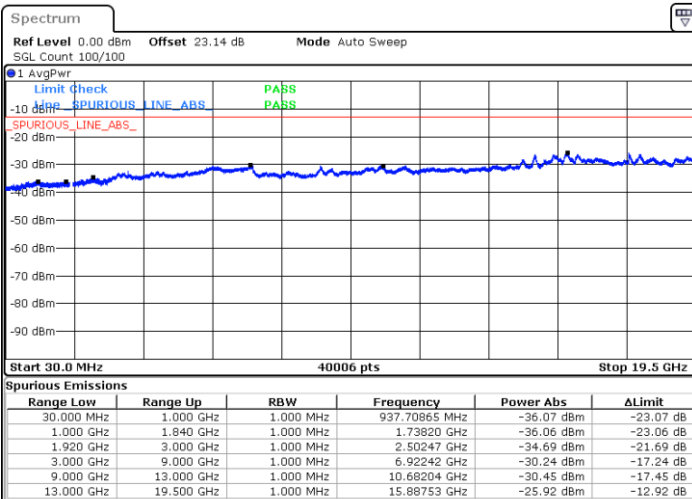
Middle Channel / 1RB1



Date: 7.JUL.2020 13:50:36

Date: 7.JUL.2020 14:18:31

Highest Channel / 1RB1



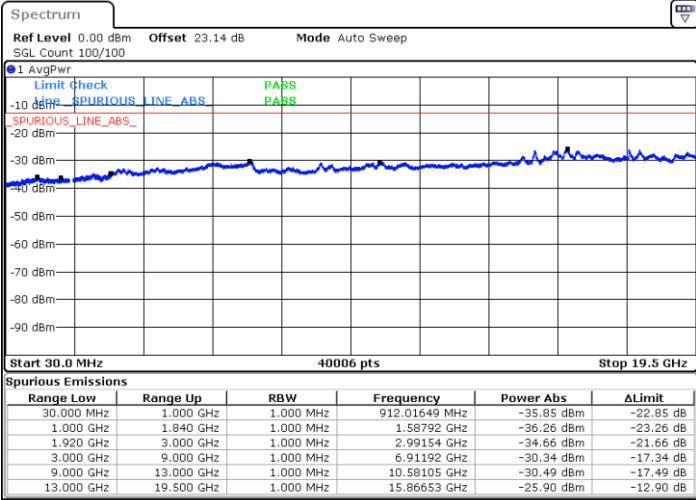
Date: 7.JUL.2020 14:36:59



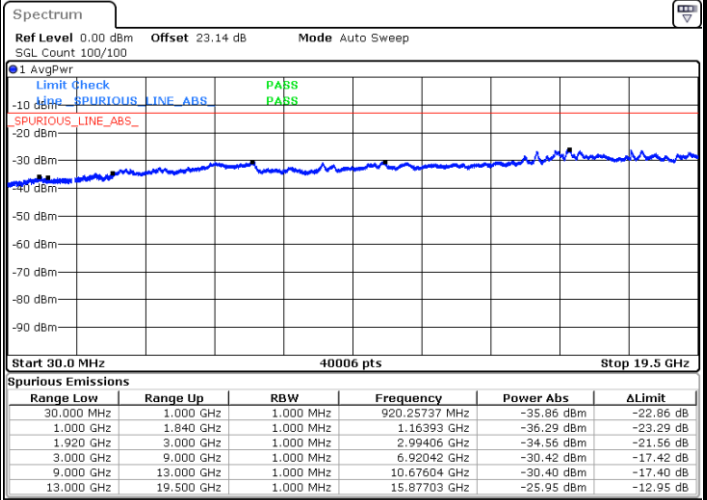
FR1 n2 / 10MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB1

Middle Channel / 1RB1

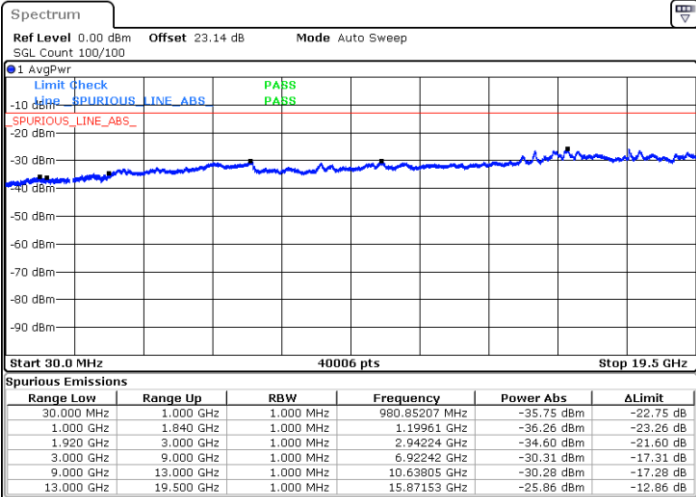


Date: 7.JUL.2020 14:00:03



Date: 7.JUL.2020 14:21:48

Highest Channel / 1RB1



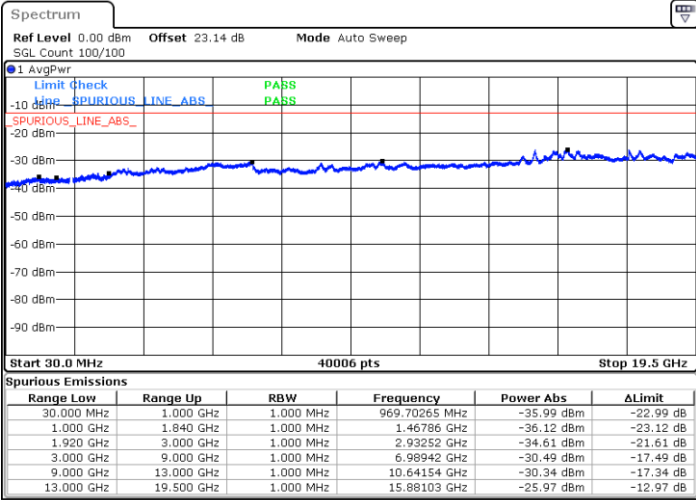
Date: 7.JUL.2020 14:39:46



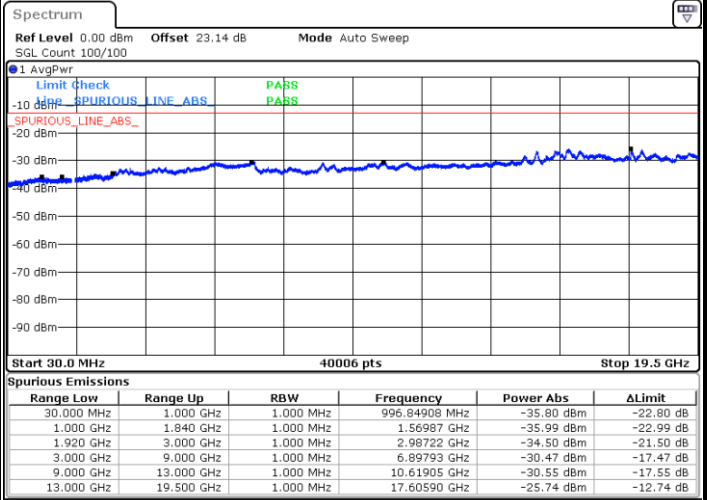
FR1 n2 / 15MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB1

Middle Channel / 1RB1

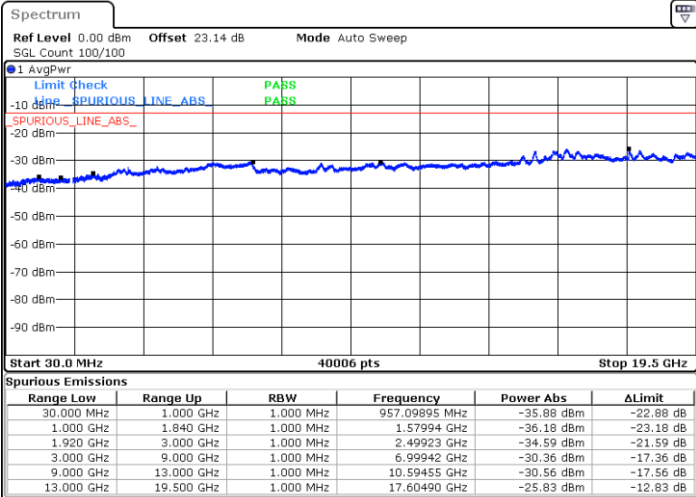


Date: 7.JUL.2020 14:03:12



Date: 7.JUL.2020 14:24:38

Highest Channel / 1RB1



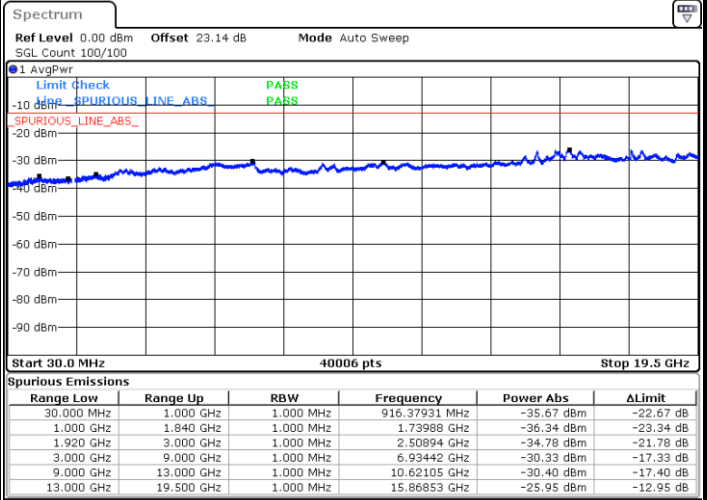
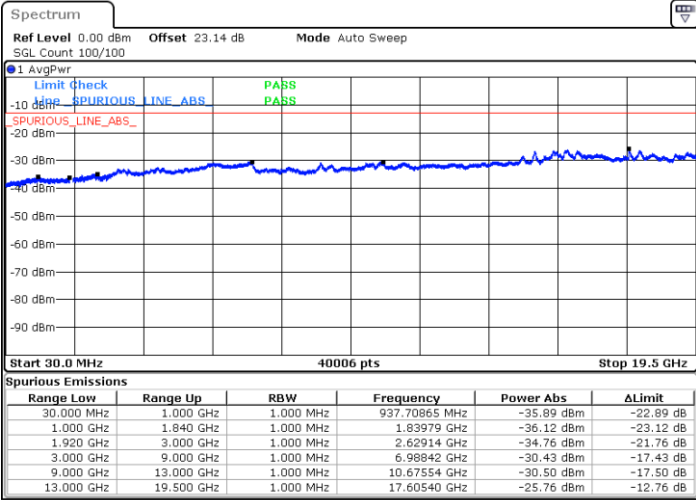
Date: 7.JUL.2020 14:48:46



FR1 n2 / 20MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB1

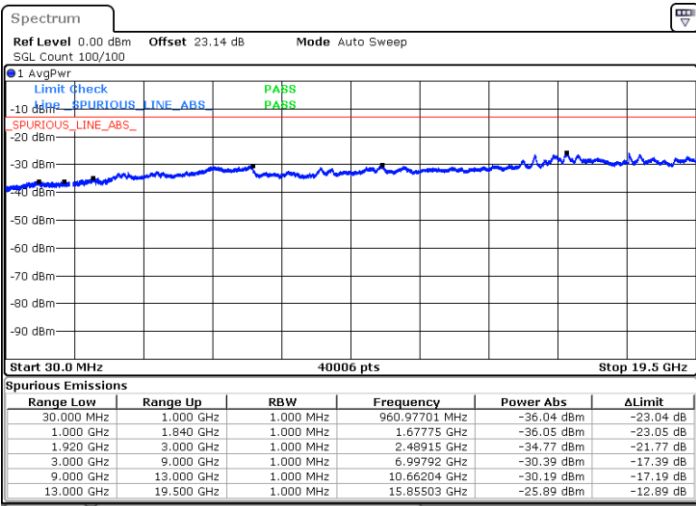
Middle Channel / 1RB1



Date: 7.JUL.2020 14:06:11

Date: 7.JUL.2020 14:28:46

Highest Channel / 1RB1



Date: 7.JUL.2020 14:51:32



Frequency Stability

Test Conditions		FR1 n2 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 20MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0010	PASS
40	Normal Voltage	0.0005	
30	Normal Voltage	0.0000	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0021	
0	Normal Voltage	0.0000	
-10	Normal Voltage	0.0015	
-20	Normal Voltage	0.0021	
-30	Normal Voltage	0.0021	
20	Maximum Voltage	0.0005	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0005	

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 n5

Peak-to-Average Ratio

Mode	FR1 n5 / 20MHz / DFT-S OFDM				
Mod.	PI/2 BPSK	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Lowest CH	3.54	4.58	5.74	6.20	PASS
Middle CH	3.74	4.87	6.12	6.58	
Highest CH	3.77	4.93	6.26	6.64	
Mode	FR1 n5 / 20MHz / DFT-S OFDM				
Mod.	256QAM				Limit: 13dB
RB Size	Full RB				Result
Lowest CH	7.19				PASS
Middle CH	7.51				
Highest CH	7.45				



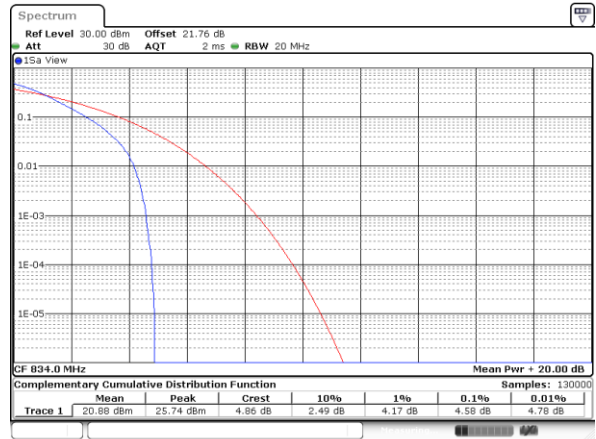
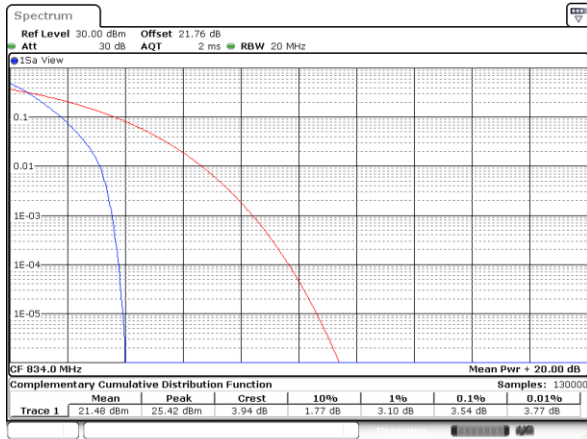
FR1 n5 / 20MHz / DFT-S OFDM

PI/2 BPSK

QPSK

Lowest Channel / Full RB

Lowest Channel / Full RB

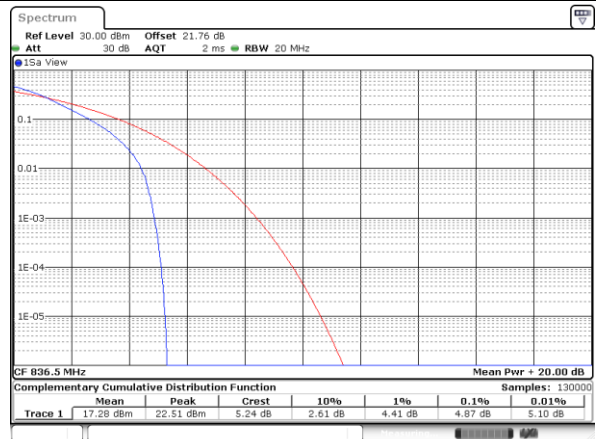
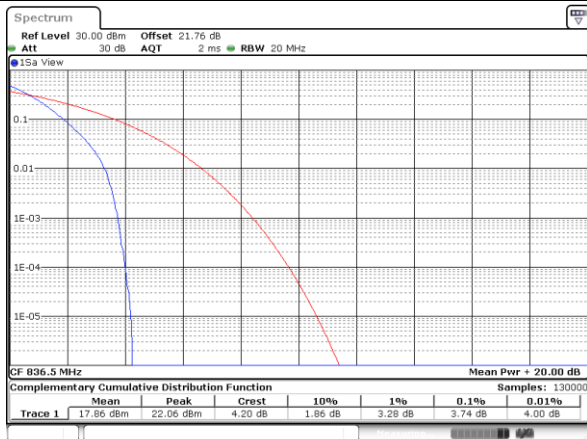


Date: 7_JUL_2020 15:11:57

Date: 7_JUL_2020 15:12:20

Middle Channel / Full RB

Middle Channel / Full RB

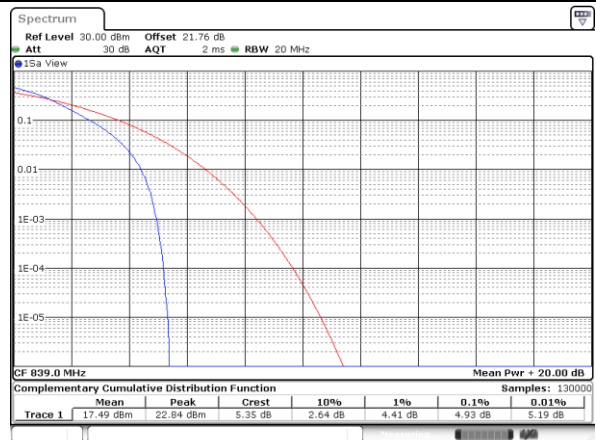
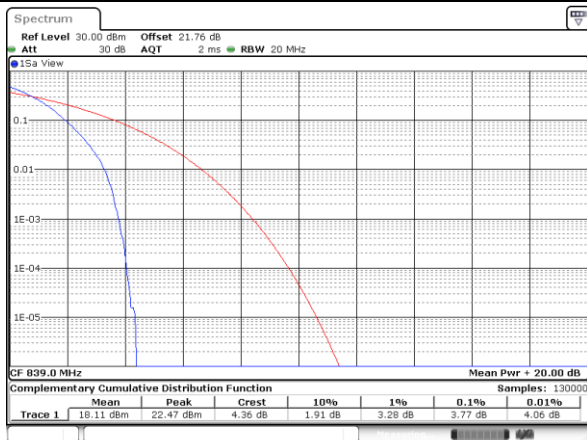


Date: 7_JUL_2020 15:26:36

Date: 7_JUL_2020 15:26:59

Highest Channel / Full RB

Highest Channel / Full RB



Date: 7_JUL_2020 15:50:21

Date: 7_JUL_2020 15:50:46



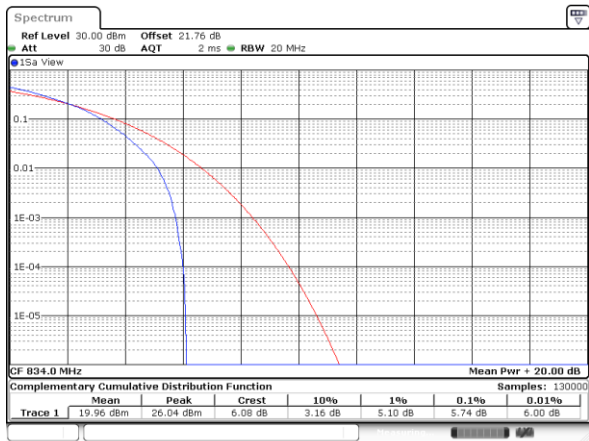
FR1 n5 / 20MHz / DFT-S OFDM

16QAM

64QAM

Lowest Channel / Full RB

Lowest Channel / Full RB

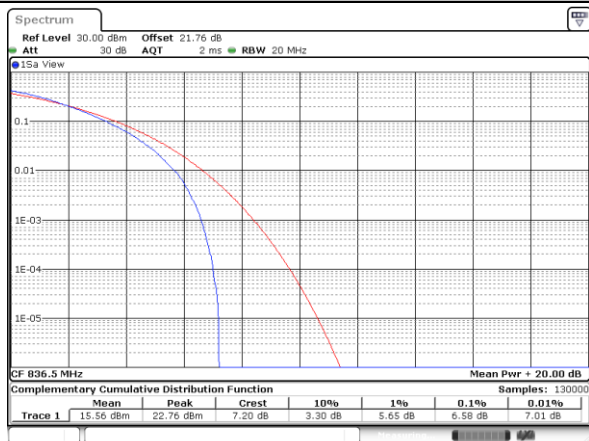
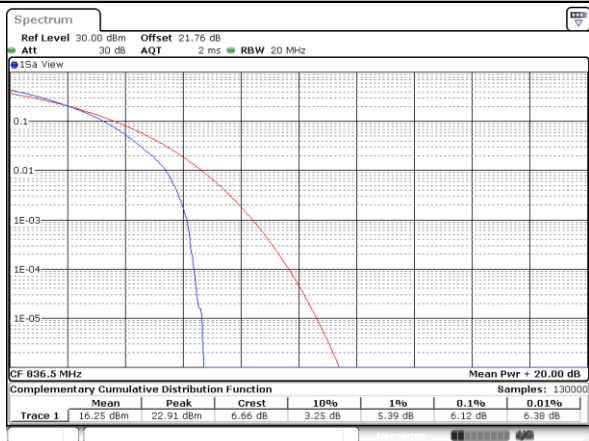


Date: 7_JUL_2020 15:12:44

Date: 7_JUL_2020 15:13:08

Middle Channel / Full RB

Middle Channel / Full RB

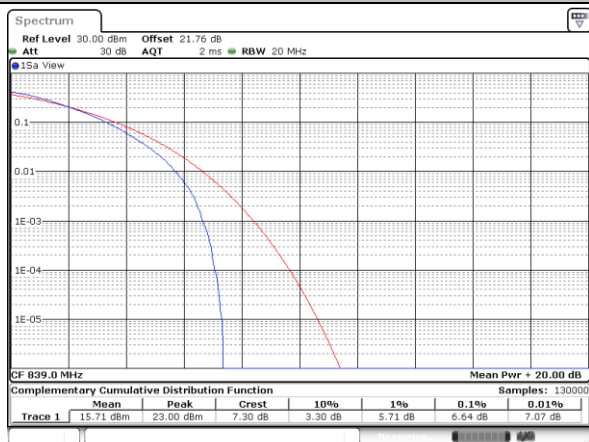
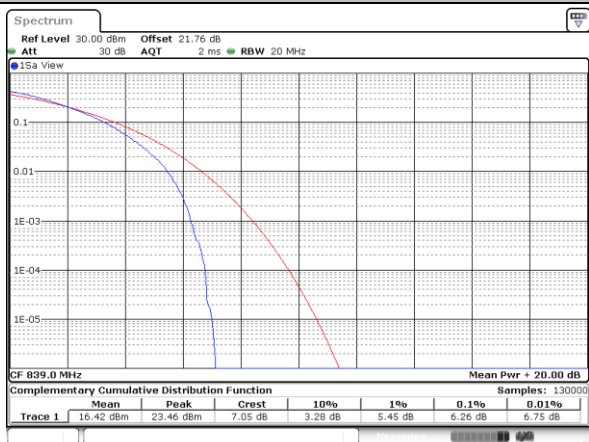


Date: 7_JUL_2020 15:12:22

Date: 7_JUL_2020 15:27:44

Highest Channel / Full RB

Highest Channel / Full RB



Date: 7_JUL_2020 15:51:15

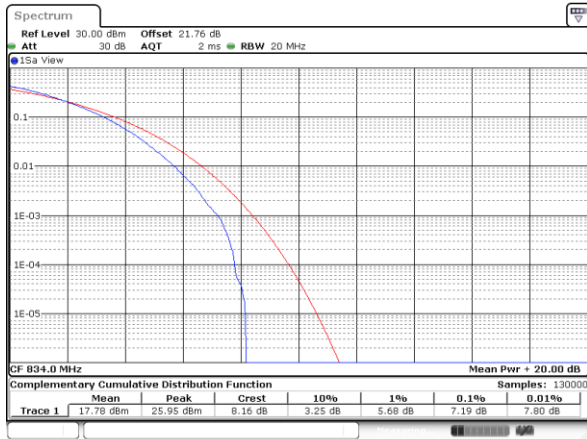
Date: 7_JUL_2020 15:51:47



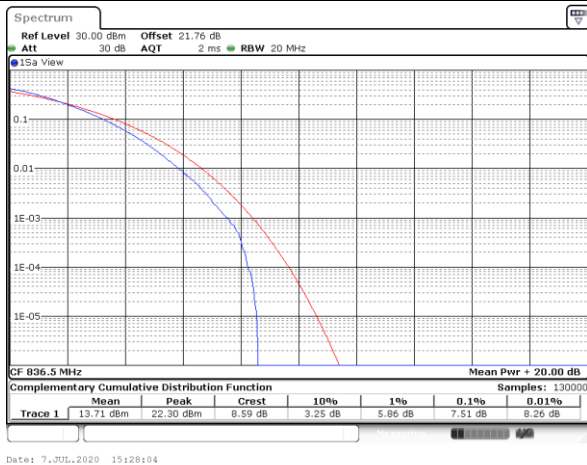
FR1 n5 / 20MHz / DFT-S OFDM

256QAM

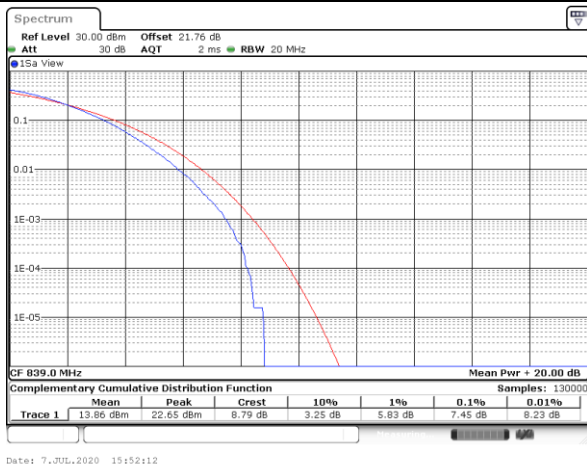
Lowest Channel / Full RB



Middle Channel / Full RB



Highest Channel / Full RB





26dB Bandwidth

Mode	FR1 n5 : 26dB BW(MHz) / DFT-S OFDM							
BW	5MHz		10MHz		15MHz		20MHz	
Mod.	PI/2 BPSK		PI/2 BPSK		PI/2 BPSK		PI/2 BPSK	
Lowest CH	4.92		9.55		14.21		18.62	
Middle CH	4.95		9.49		14.30		18.82	
Highest CH	5.22		9.47		14.33		18.86	

Mode	FR1 n5 : 26dB BW(MHz) / CP OFDM							
BW	5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	5.12	5.04	9.97	9.99	14.89	14.89	19.86	19.86
Middle CH	5.25	4.99	9.87	10.05	14.96	14.87	19.86	19.98
Highest CH	5.05	5.04	9.91	9.89	14.89	14.87	19.90	19.74

Mode	FR1 n5 : 26dB BW(MHz) / CP OFDM							
BW	5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Lowest CH	5.07	5.05	9.97	9.95	14.93	14.96	19.74	19.94
Middle CH	5.14	5.04	10.03	9.71	14.84	14.89	19.94	19.78
Highest CH	5.18	5.13	10.09	10.05	14.93	14.87	19.94	19.94

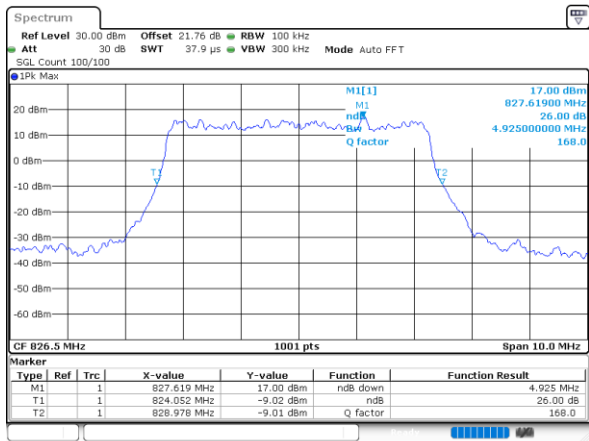
Note: The CP-OFDM (worst case) is more wider bandwidth than the DFT-S OFDM's.



FR1 n5 / 5MHz / DFT-S OFDM

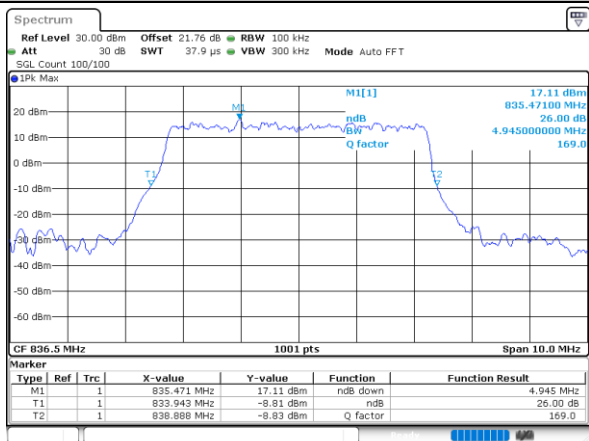
PI/2 BPSK

Lowest Channel



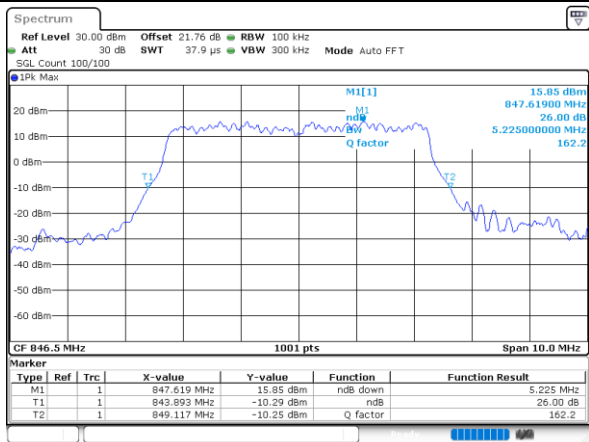
Date: 6 JUL 2020 13:58:57

Middle Channel



Date: 6 JUL 2020 14:27:07

Highest Channel



Date: 6 JUL 2020 15:10:11



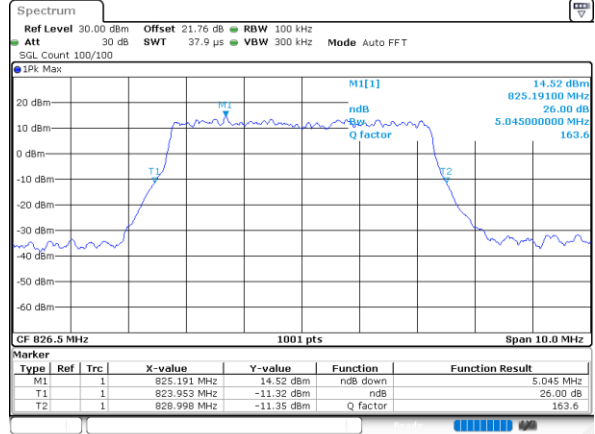
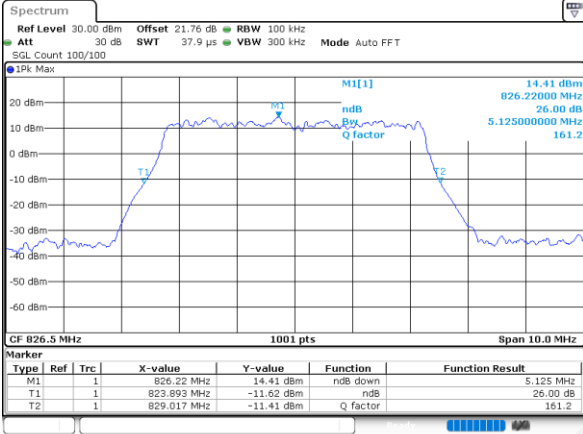
FR1 n5 / 5MHz / CP OFDM

QPSK

16QAM

Lowest Channel

Lowest Channel

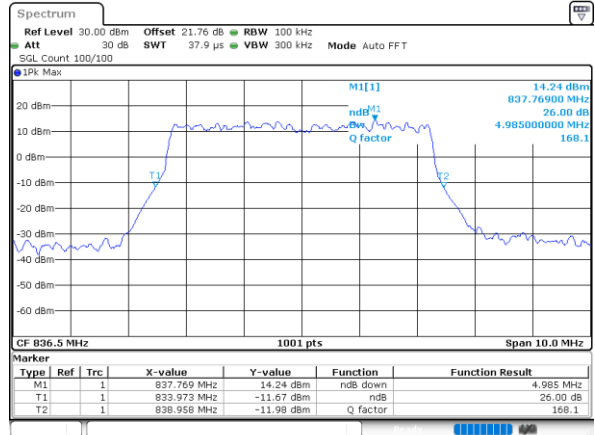
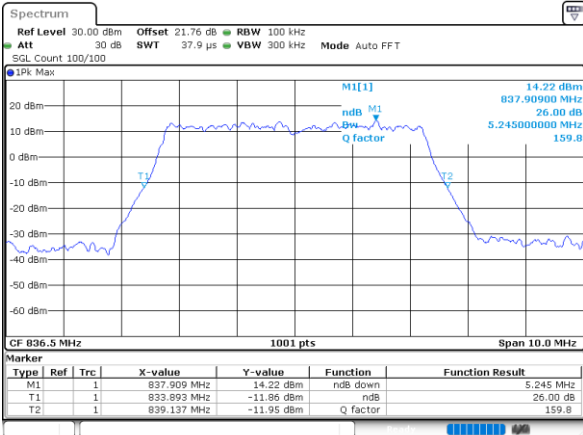


Date: 6 JUL 2020 13:55:19

Date: 6 JUL 2020 13:56:10

Middle Channel

Middle Channel

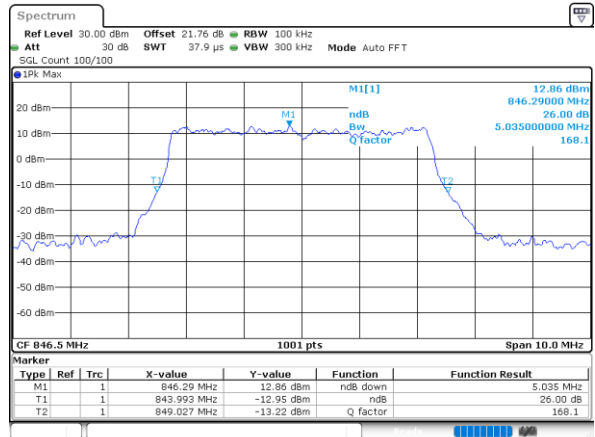
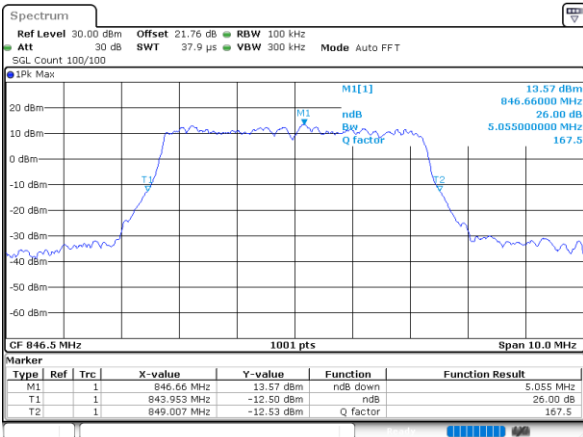


Date: 6 JUL 2020 14:23:08

Date: 6 JUL 2020 14:24:09

Highest Channel

Highest Channel



Date: 6 JUL 2020 15:05:51

Date: 6 JUL 2020 15:06:36



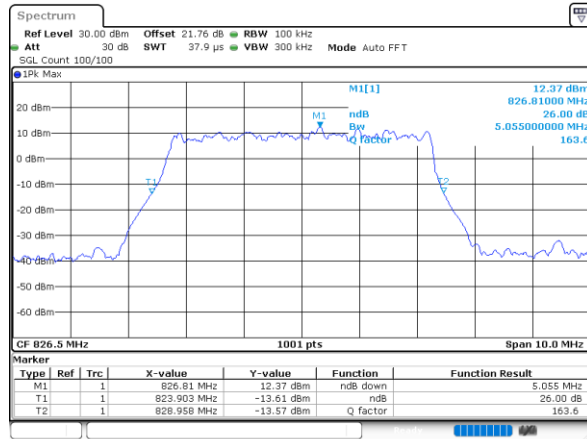
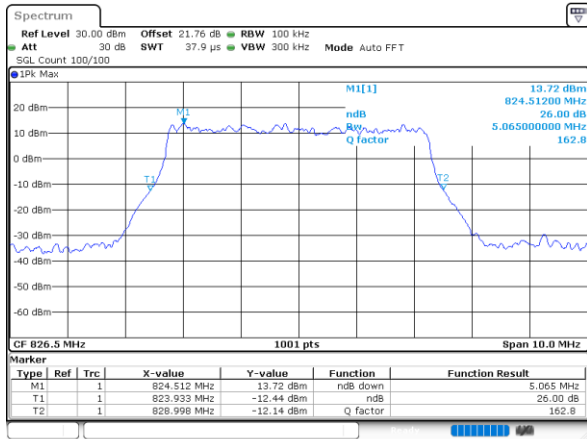
FR1 n5 / 5MHz / CP OFDM

64QAM

256QAM

Lowest Channel

Lowest Channel

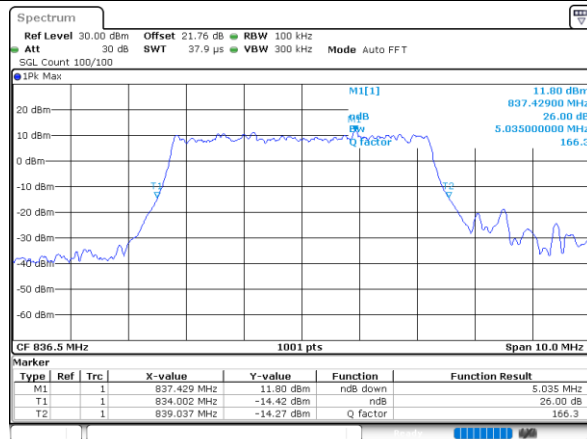
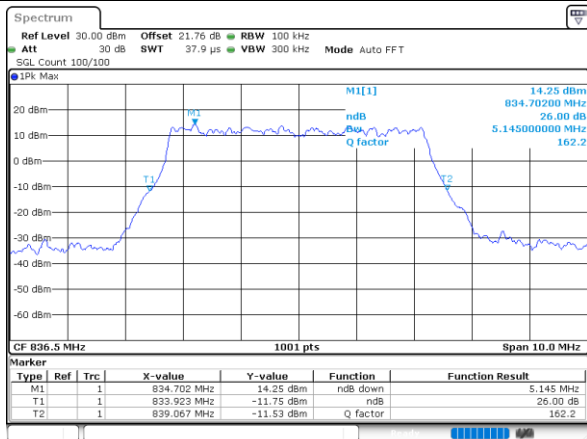


Date: 6 JUL 2020 13:57:03

Date: 6 JUL 2020 13:57:49

Middle Channel

Middle Channel

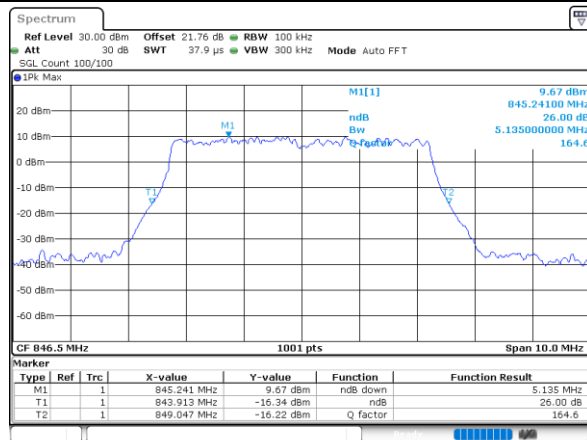
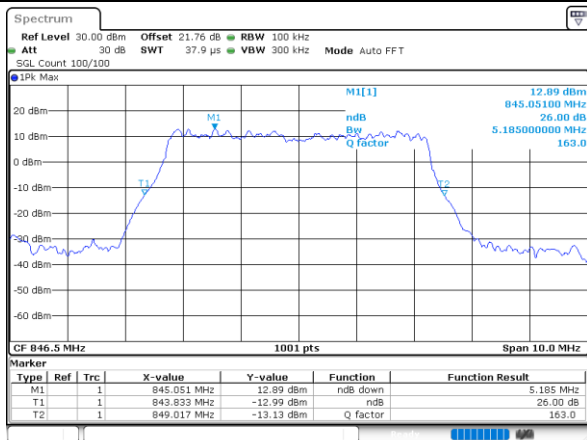


Date: 6 JUL 2020 14:24:59

Date: 6 JUL 2020 14:25:49

Highest Channel

Highest Channel



Date: 6 JUL 2020 15:08:13

Date: 6 JUL 2020 15:09:02