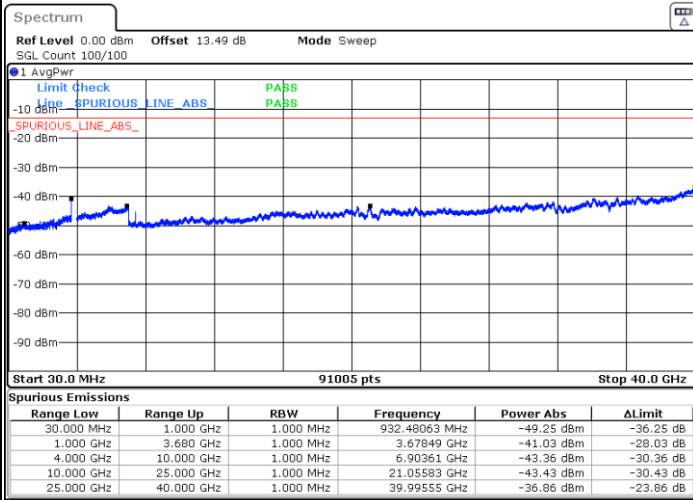




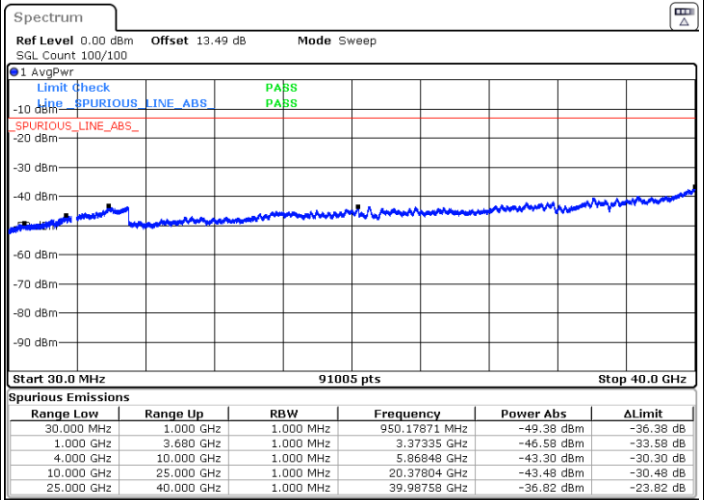
FR1 n77 / 100MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB1

Middle Channel / 1RB1

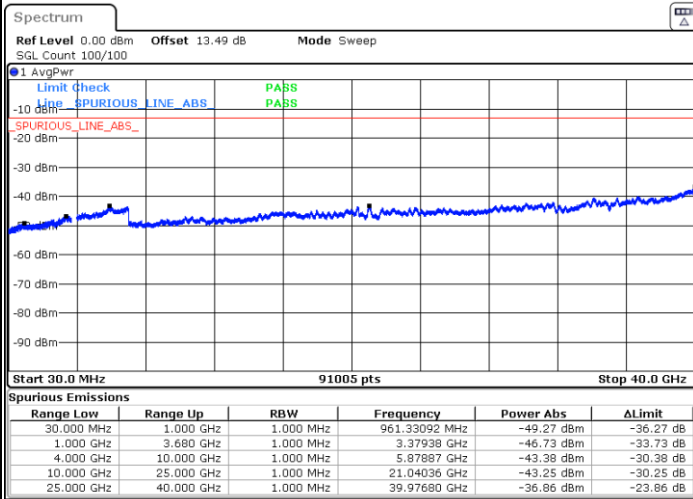


Date: 9 JUN.2022 04:20:24



Date: 9 JUN.2022 04:16:50

Highest Channel / 1RB1



Date: 9 JUN.2022 04:11:41



Frequency Stability

Test Conditions		FR1 n77 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 100MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0033	PASS
40	Normal Voltage	0.0028	
30	Normal Voltage	0.0025	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0017	
0	Normal Voltage	0.0021	
-10	Normal Voltage	0.0036	
-20	Normal Voltage	0.0013	
-30	Normal Voltage	0.0015	
20	Maximum Voltage	0.0075	
20	Normal Voltage	0.0029	
20	Battery End Point	0.0037	

Note:

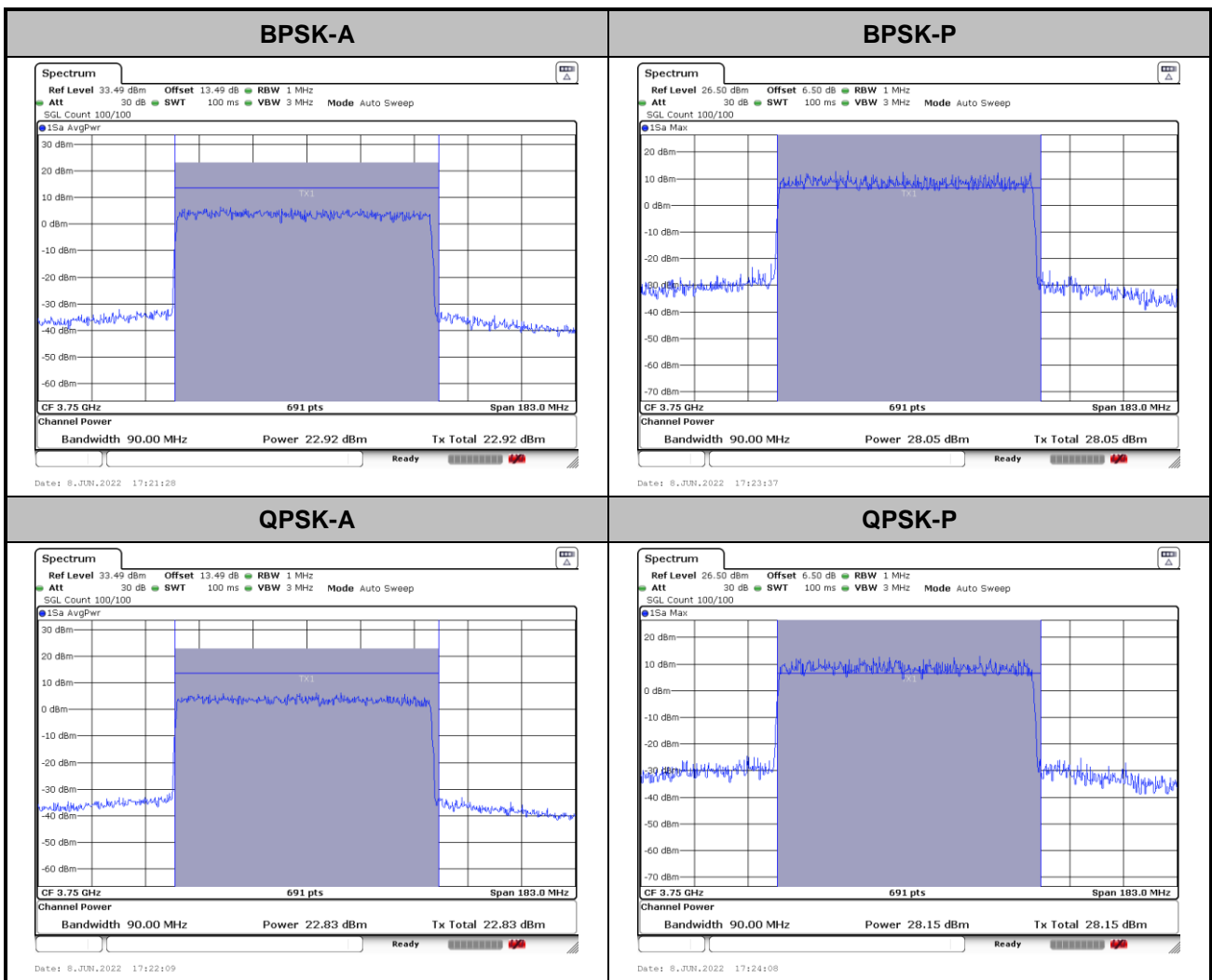
1. Normal Voltage =3.87 V. ; Battery End Point (BEP) =3.55 V. ; Maximum Voltage =4.45V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



FR1 n78

Peak-to-Average Ratio

Mode	FR1 n78 / 100MHz / DFT-S OFDM		
Mod.	100M		Limit: 13dB
RB Size	BPSK	QPSK	Result
Middle CH	5.13	5.32	PASS





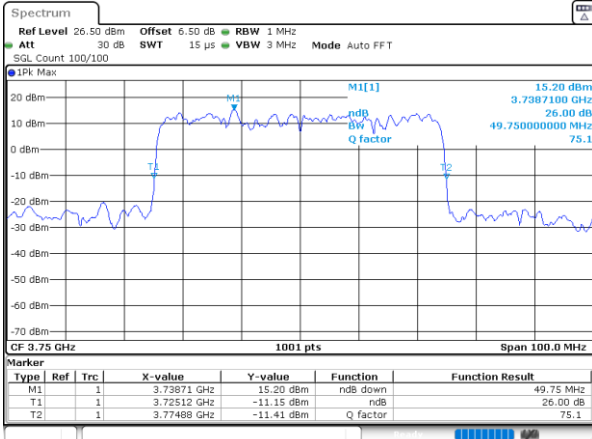
26dB Bandwidth

Mode	FR1 n78 : 26dB BW(MHz) / DFT-S OFDM				
BW	50M				
Mod.	-	QPSK	16QAM	64QAM	256QAM
Middle CH	-	49.75	49.75	49.65	49.65
BW	70M				
Mod.	-	QPSK	16QAM	64QAM	256QAM
Middle CH	-	70.13	70.23	70.23	70.23
BW	90M				
Mod.	-	QPSK	16QAM	64QAM	256QAM
Middle CH	-	92.43	92.43	92.43	92.25



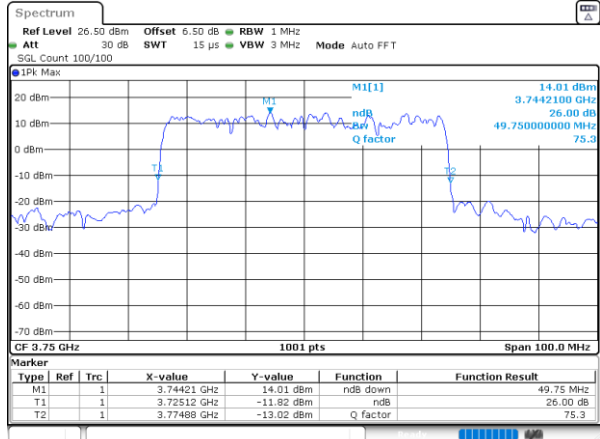
50M

QPSK



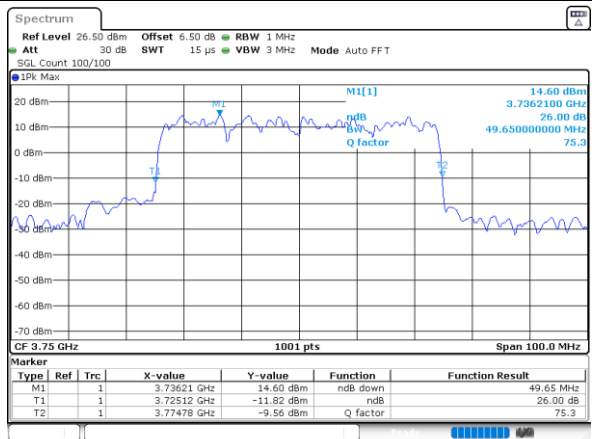
Date: 11 JUN 2022 14:27:34

16QAM



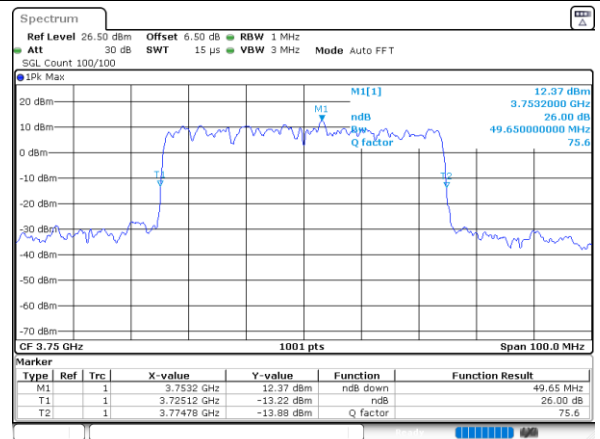
Date: 11 JUN 2022 14:28:01

64QAM



Date: 11 JUN 2022 14:28:22

256QAM

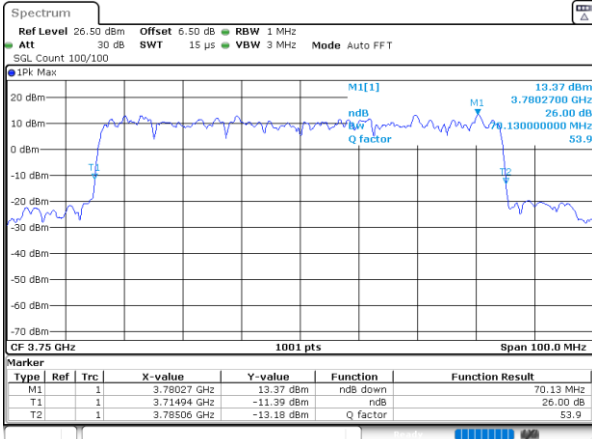


Date: 11 JUN 2022 14:28:45



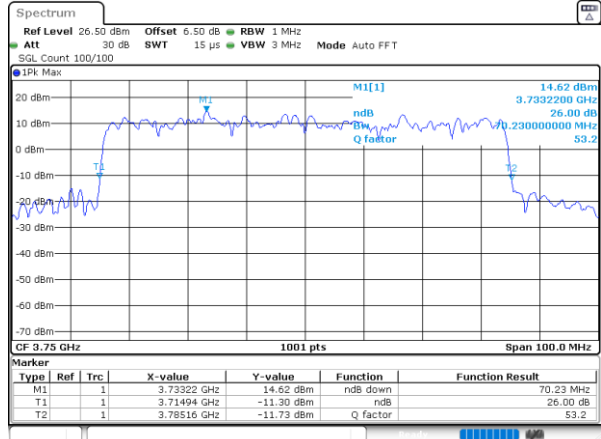
70M

QPSK



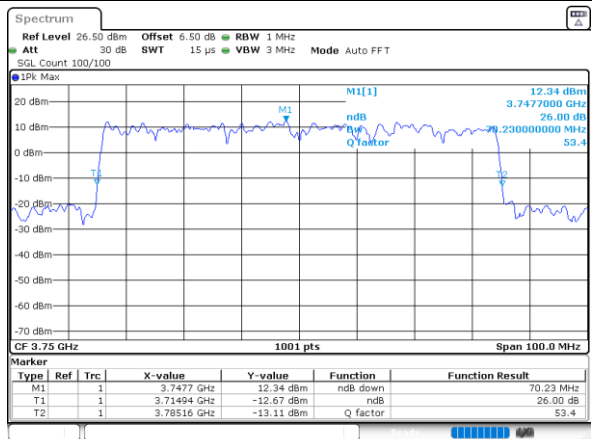
Date: 11 JUN 2022 14:30:46

16QAM



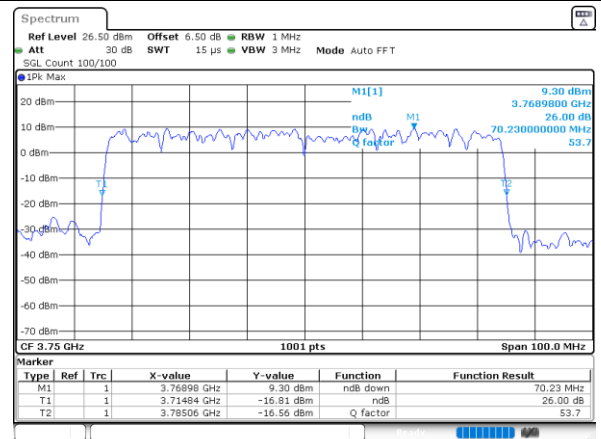
Date: 11 JUN 2022 14:30:30

64QAM



Date: 11 JUN 2022 14:30:13

256QAM

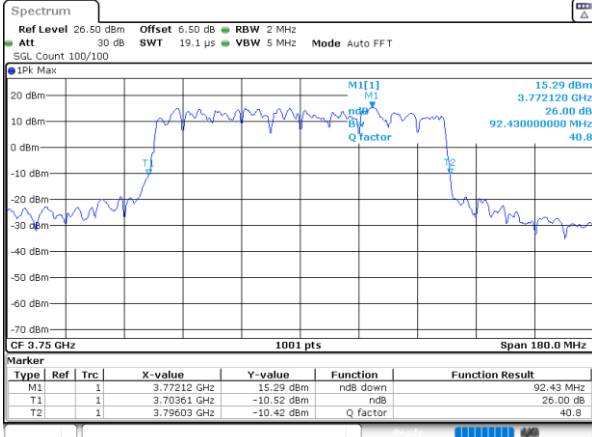


Date: 11 JUN 2022 14:29:24



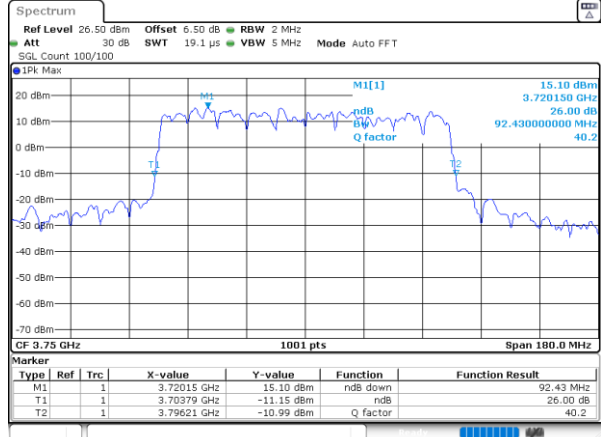
90M

QPSK



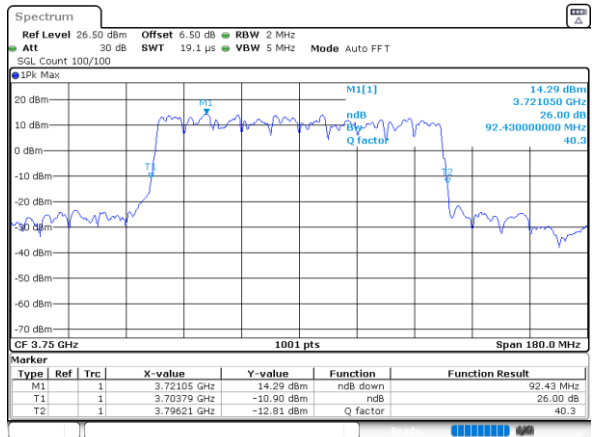
Date: 11 JUN 2022 14:31:27

16QAM



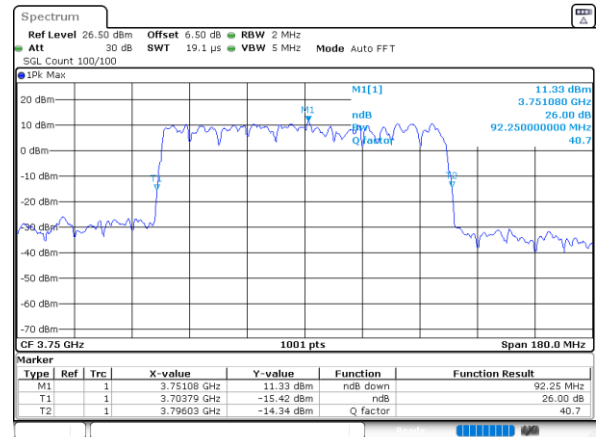
Date: 11 JUN 2022 14:31:47

64QAM



Date: 11 JUN 2022 14:32:04

256QAM



Date: 11 JUN 2022 14:32:24



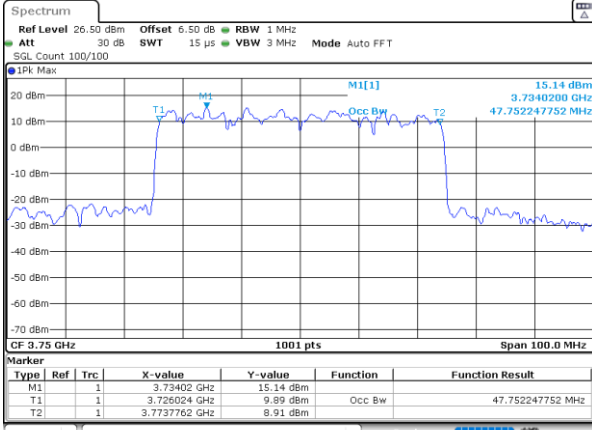
Occupied Bandwidth

Mode	FR1 n78: OB BW(MHz) / DFT-S OFDM				
BW	50M				
Mod.		QPSK	16QAM	64QAM	256QAM
Middle CH		47.75	47.55	47.65	47.75
BW	70M				
Mod.		QPSK	16QAM	64QAM	256QAM
Middle CH		67.23	67.53	67.73	67.83
BW	90M				
Mod.		QPSK	16QAM	64QAM	256QAM
Middle CH		87.03	87.57	87.57	87.75



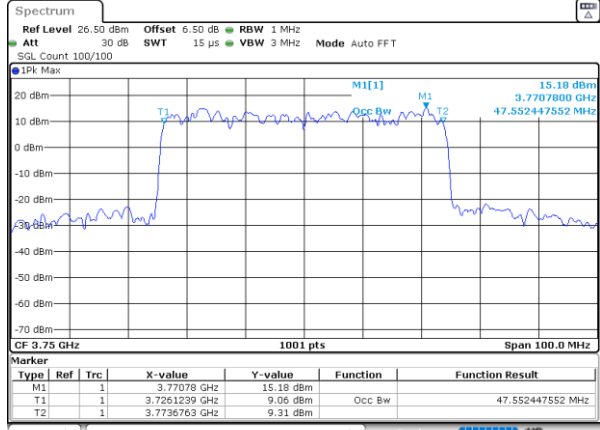
50M

QPSK



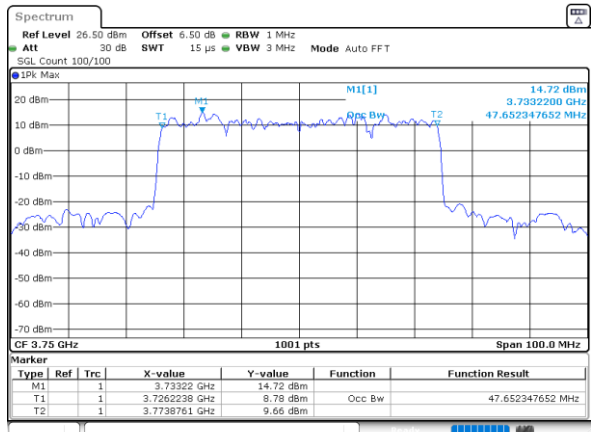
Date: 11 JUN 2022 14:27:13

16QAM



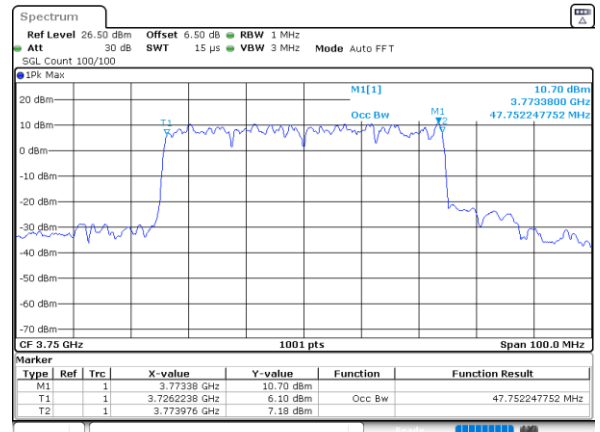
Date: 11 JUN 2022 14:27:53

64QAM



Date: 11 JUN 2022 14:28:12

256QAM

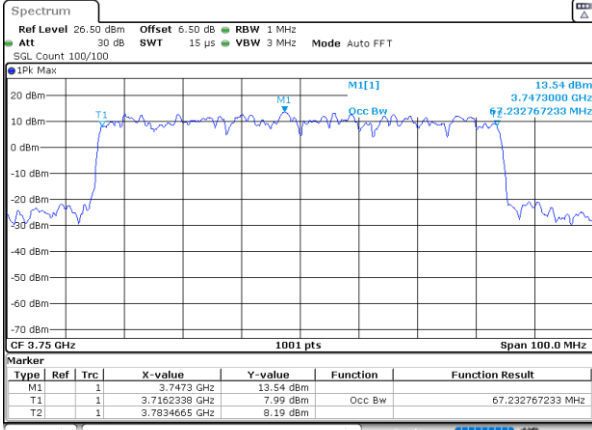


Date: 11 JUN 2022 14:28:35



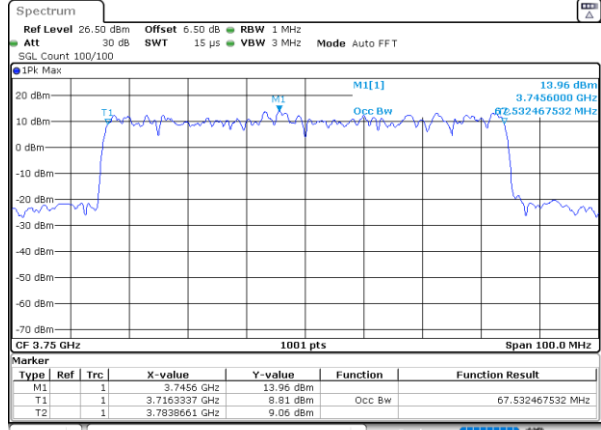
70M

QPSK



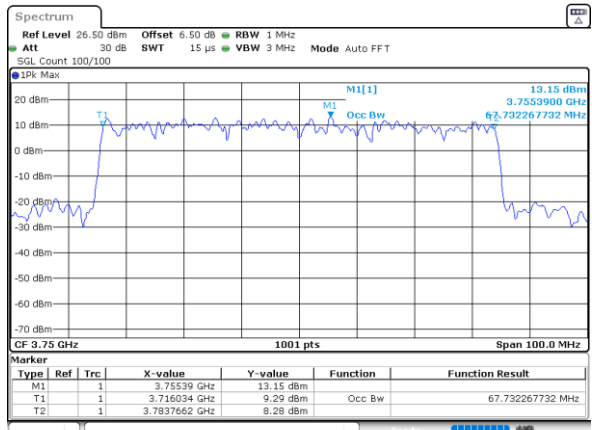
Date: 11 JUN 2022 14:30:19

16QAM



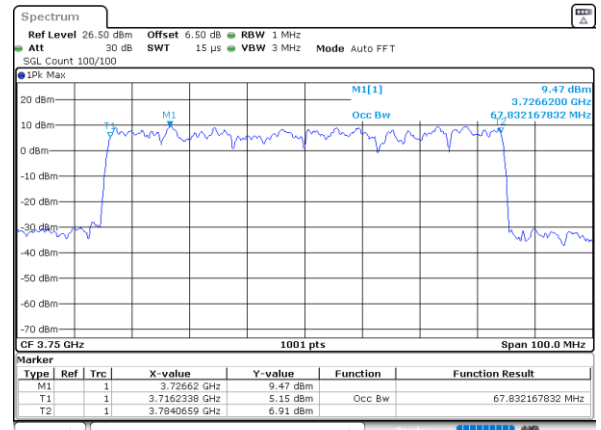
Date: 11 JUN 2022 14:30:23

64QAM



Date: 11 JUN 2022 14:30:06

256QAM

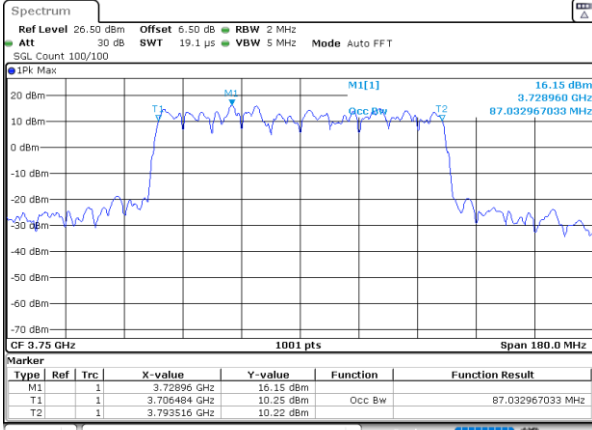


Date: 11 JUN 2022 14:29:15



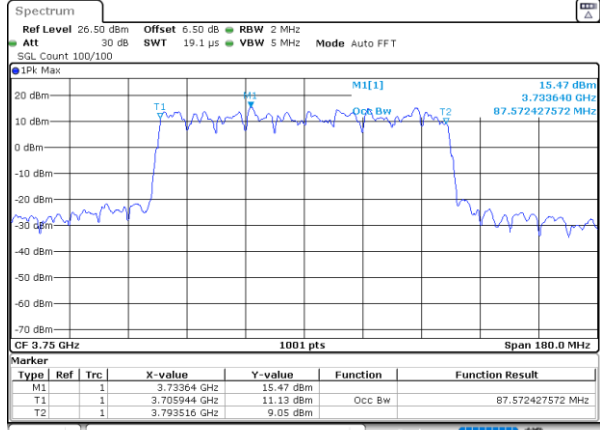
90M

QPSK



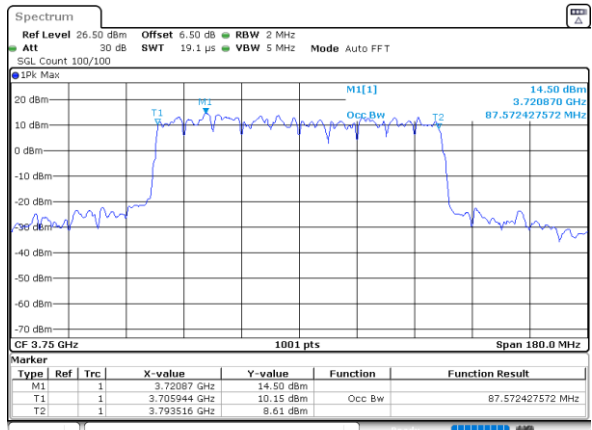
Date: 11 JUN 2022 14:31:14

16QAM



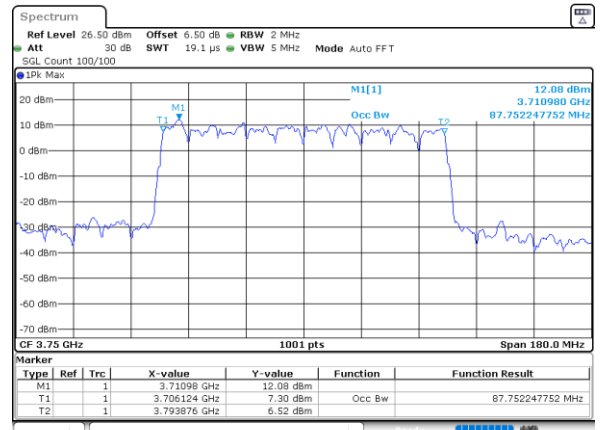
Date: 11 JUN 2022 14:31:38

64QAM



Date: 11 JUN 2022 14:31:56

256QAM



Date: 11 JUN 2022 14:32:16

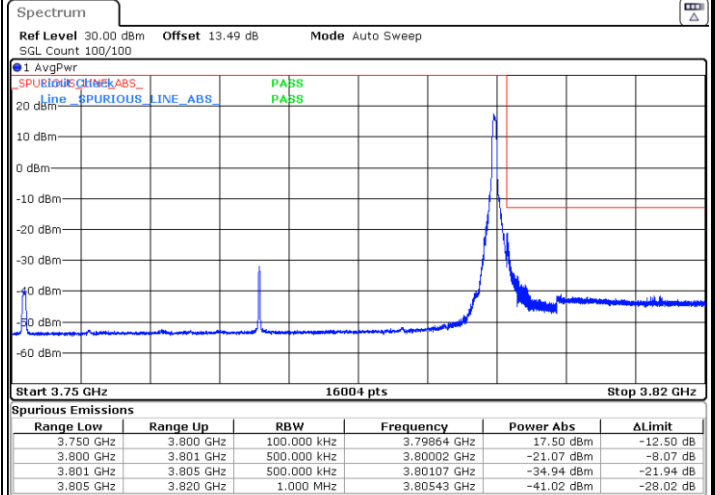
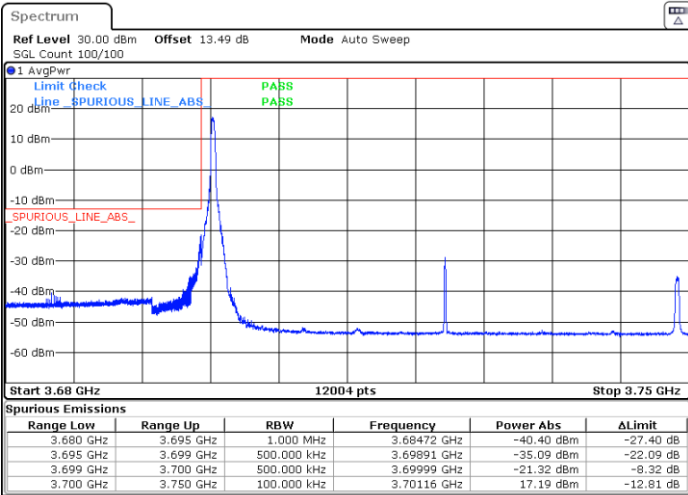


Conducted Band Edge

FR1 n78/ 50MHz / DFT-S OFDM / PI/2 BPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

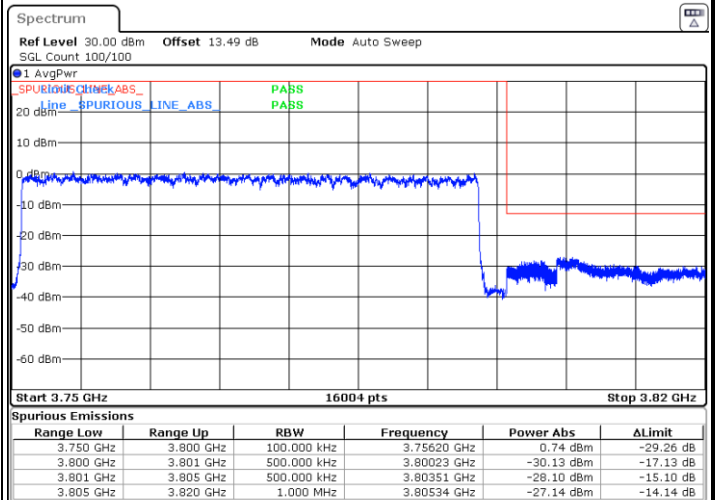
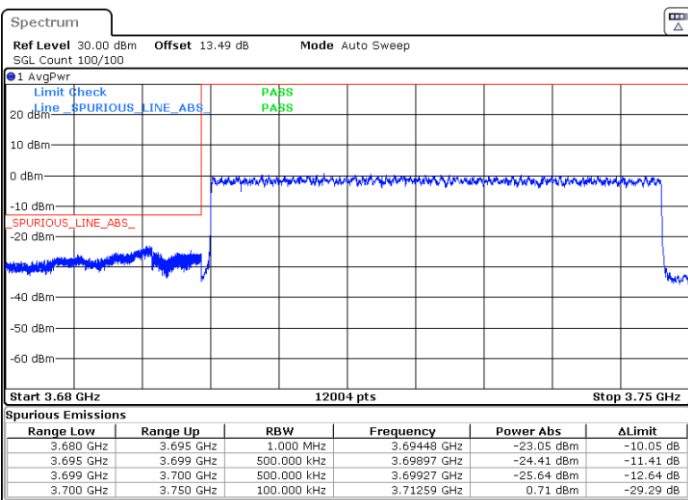


Date: 8 JUN, 2022 15:58:22

Date: 8 JUN, 2022 16:02:18

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 8 JUN, 2022 16:00:17

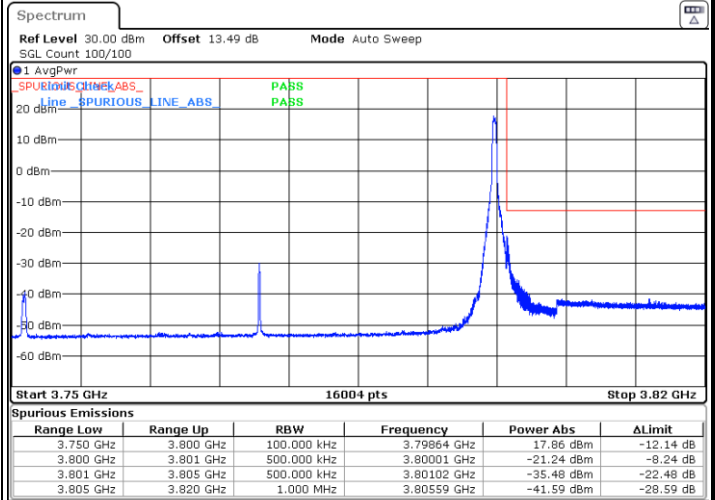
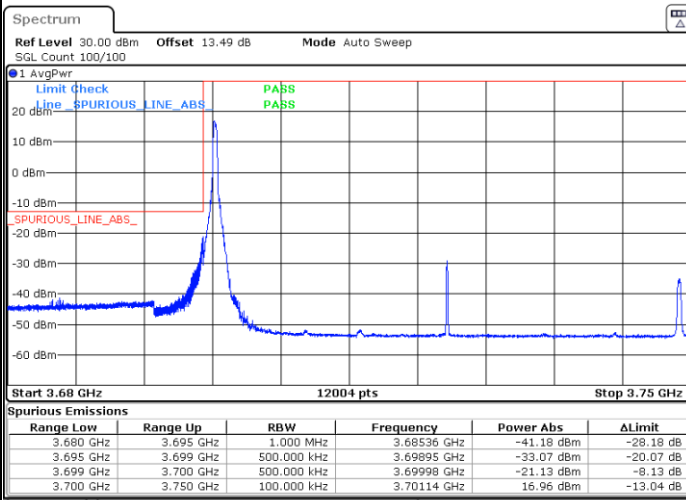
Date: 8 JUN, 2022 16:04:40



FR1 n78 / 50MHz / DFT-S OFDM / QPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

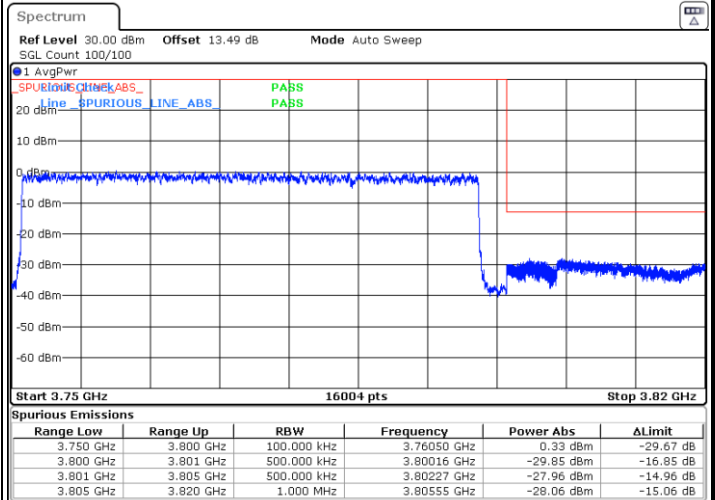
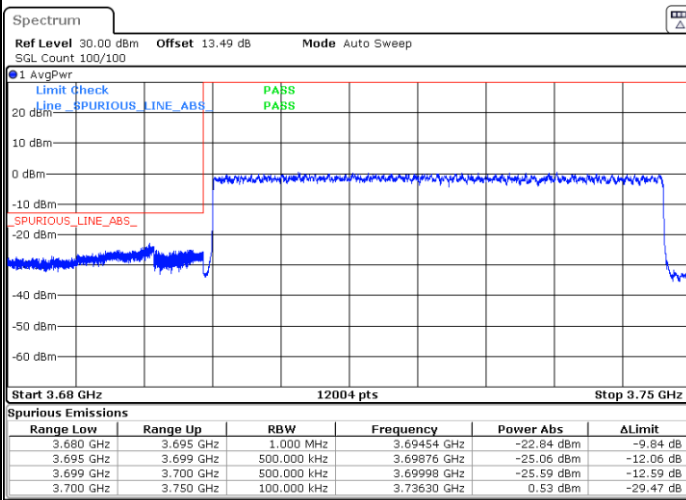


Date: 8 JUN, 2022 15:59:23

Date: 8 JUN, 2022 16:03:36

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 8 JUN, 2022 16:01:03

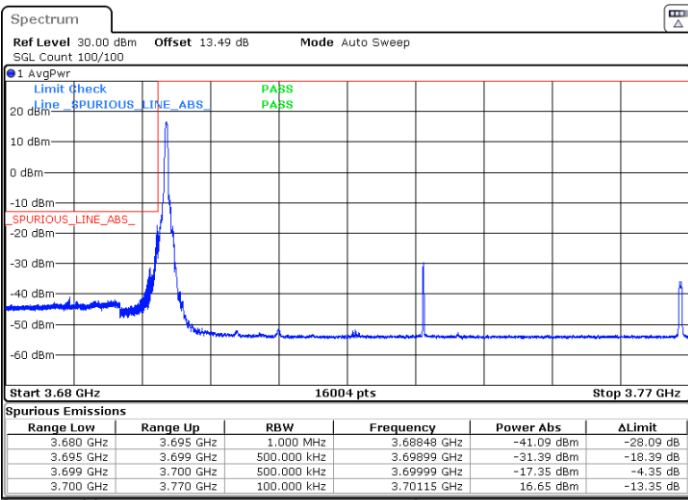
Date: 8 JUN, 2022 16:05:24



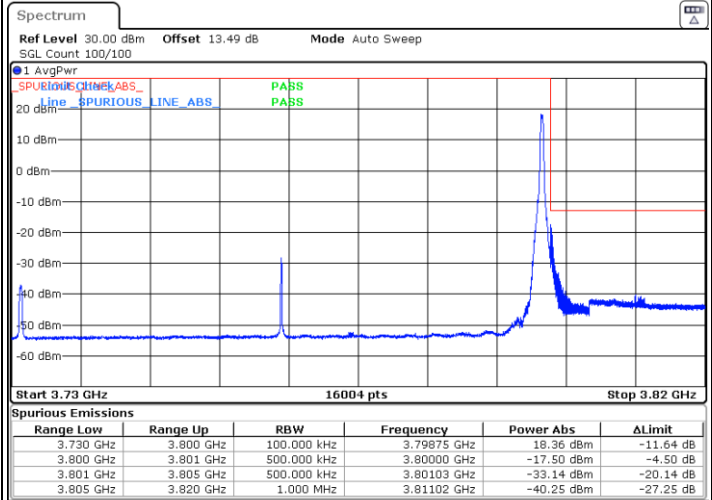
FR1 n78/ 70MHz / DFT-S OFDM / PI/2 BPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax



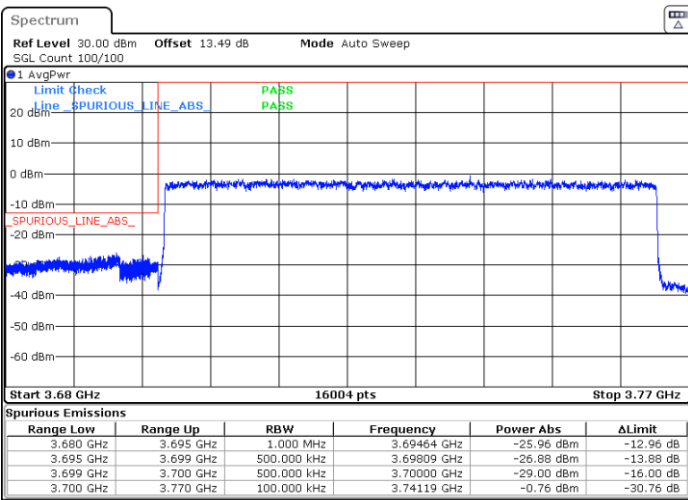
Date: 8 JUN, 2022 14:56:24



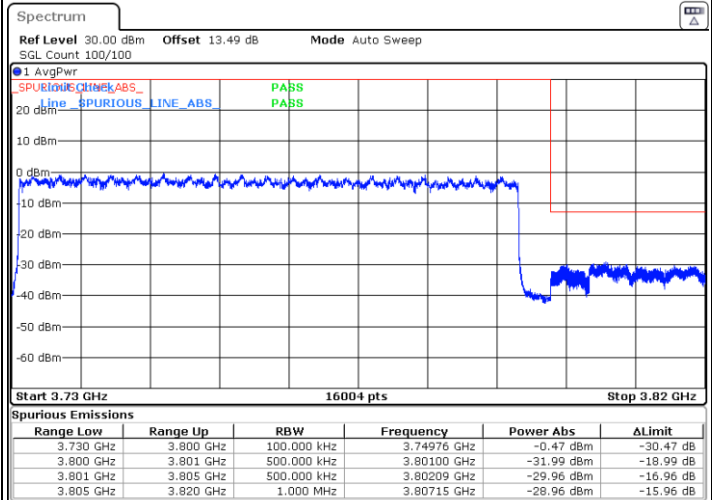
Date: 8 JUN, 2022 15:52:47

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 8 JUN, 2022 14:58:21



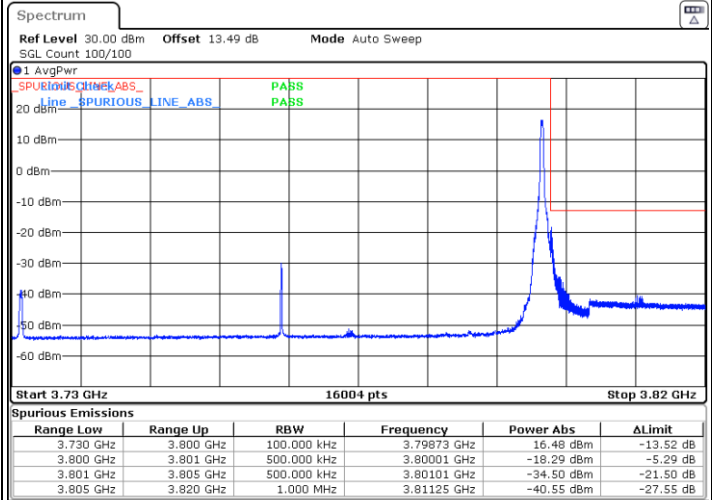
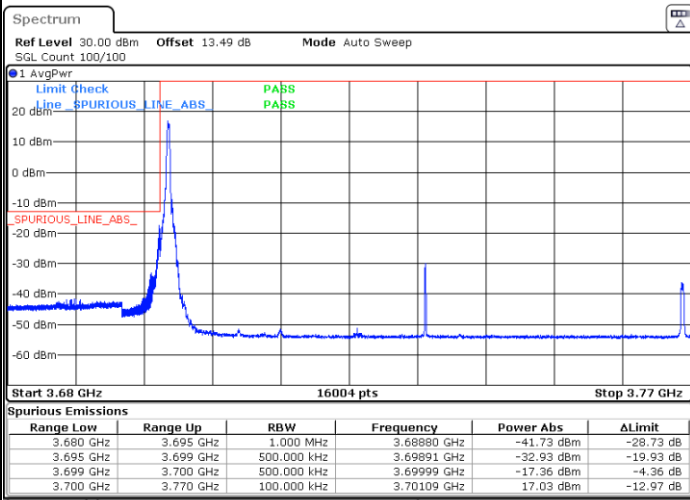
Date: 8 JUN, 2022 15:55:50



FR1 n78 / 70MHz / DFT-S OFDM / QPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

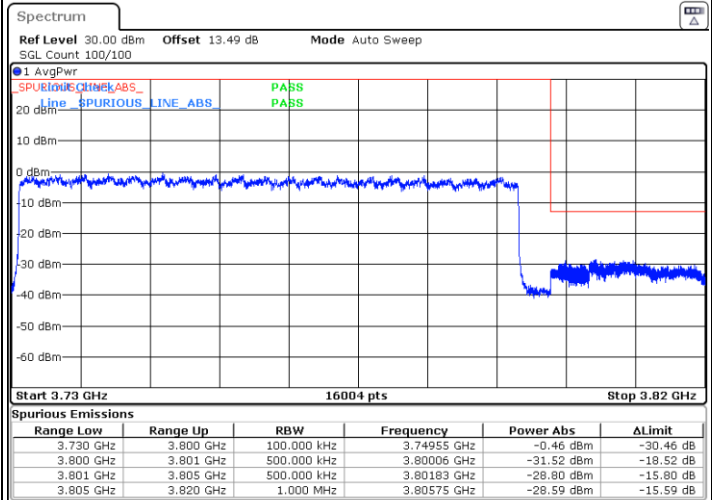
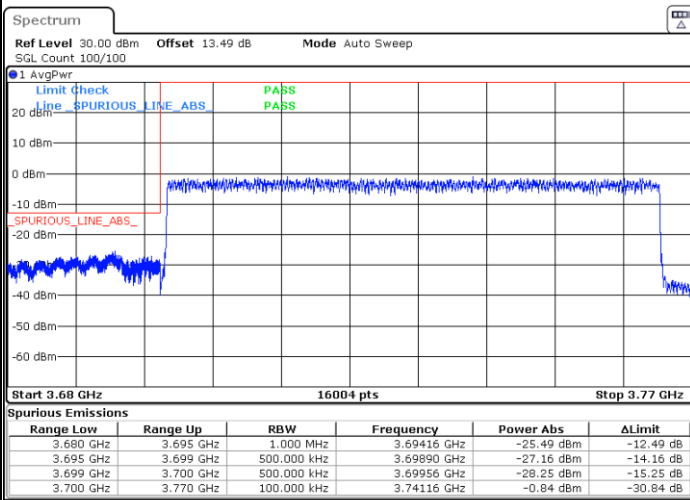


Date: 8 JUN 2022 14:57:28

Date: 8 JUN 2022 15:53:40

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 8 JUN 2022 15:51:27

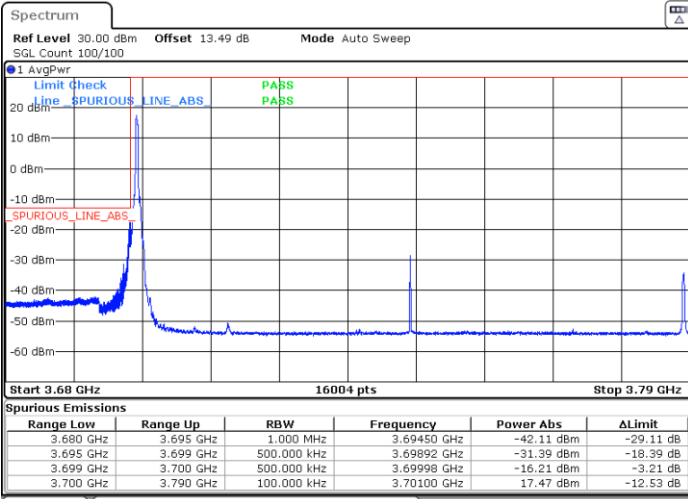
Date: 8 JUN 2022 15:54:35



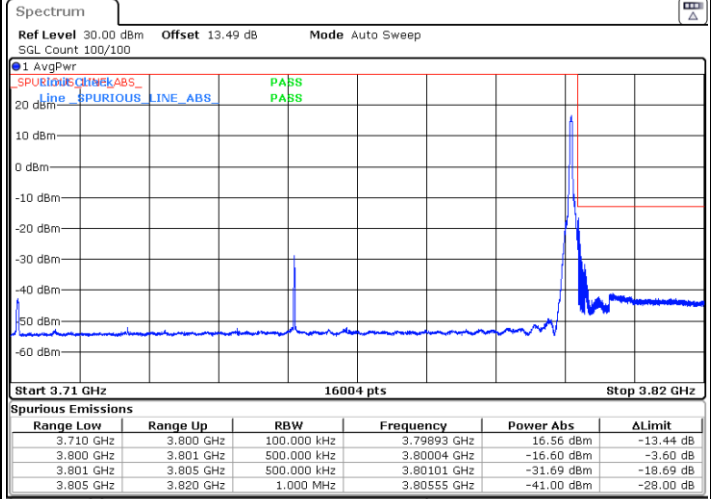
FR1 n78 / 90MHz / DFT-S OFDM / PI/2 BPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax



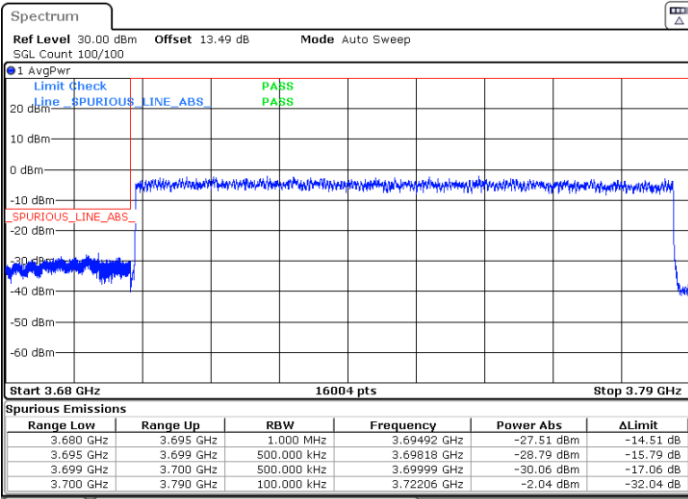
Date: 8 JUN.2022 14:41:29



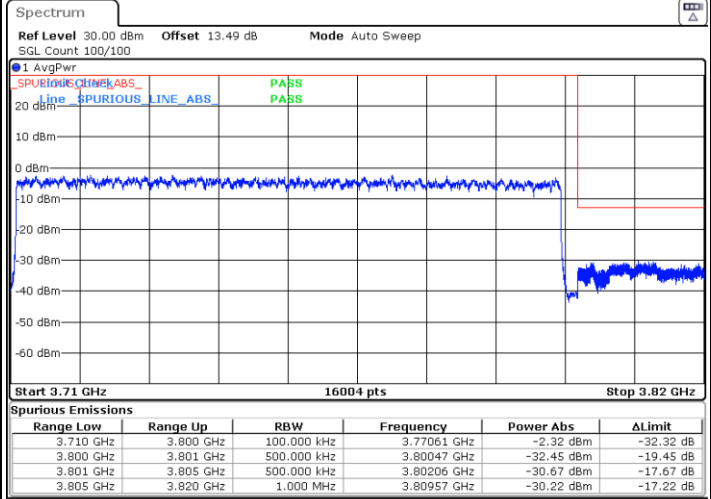
Date: 8 JUN.2022 14:46:11

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 8 JUN.2022 14:44:33



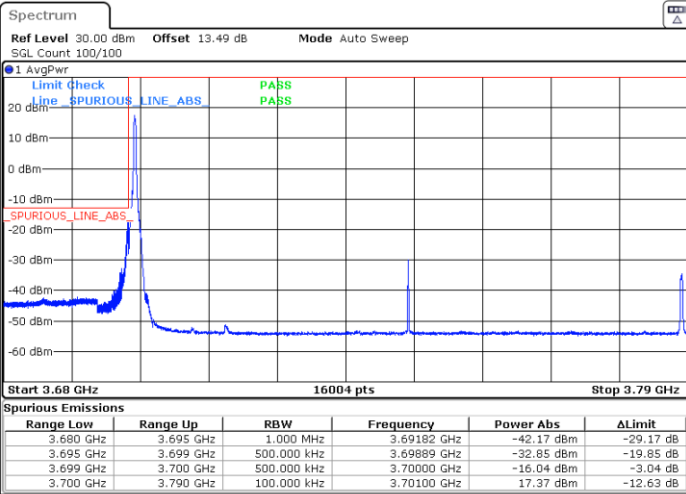
Date: 8 JUN.2022 14:49:25



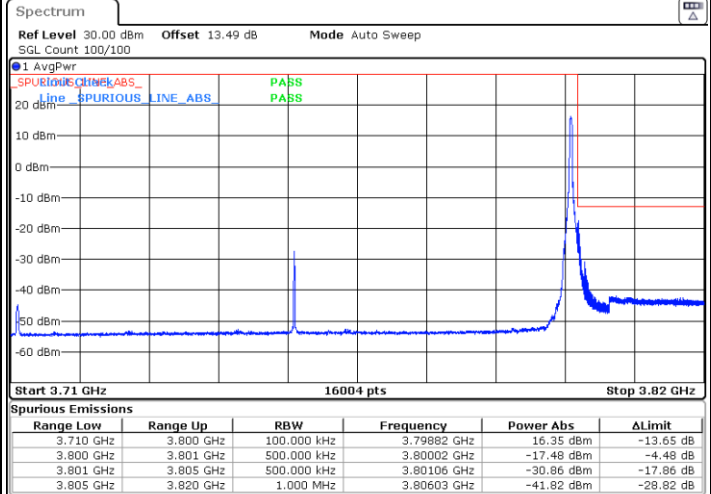
FR1 n78 / 90MHz / DFT-S OFDM / QPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax



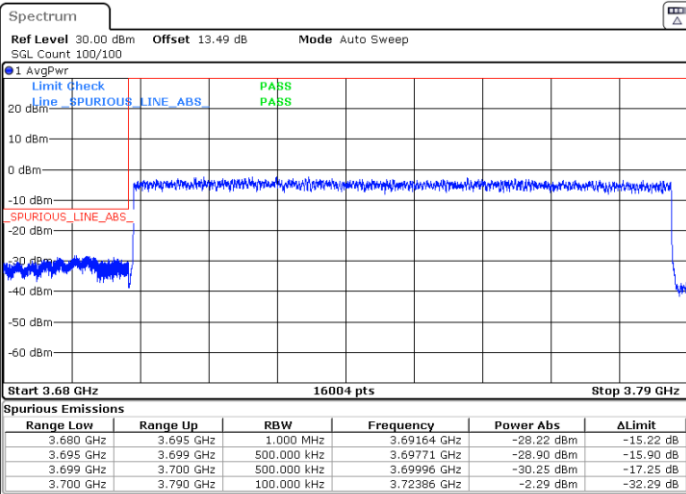
Date: 8 JUN 2022 14:42:53



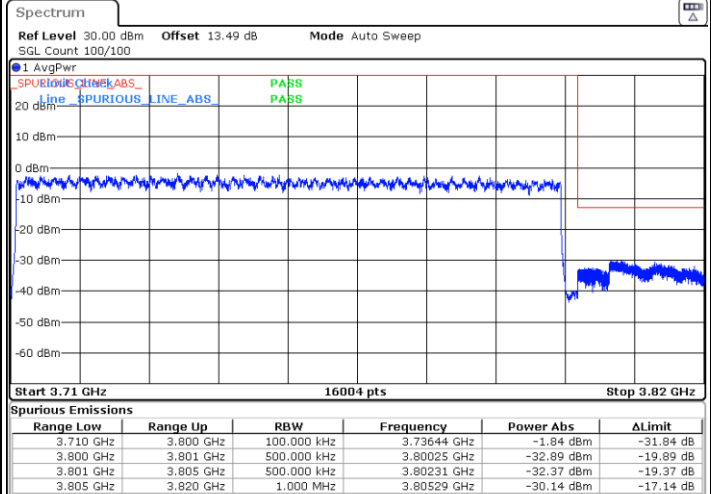
Date: 8 JUN 2022 14:47:16

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 8 JUN 2022 14:43:46



Date: 8 JUN 2022 14:48:16

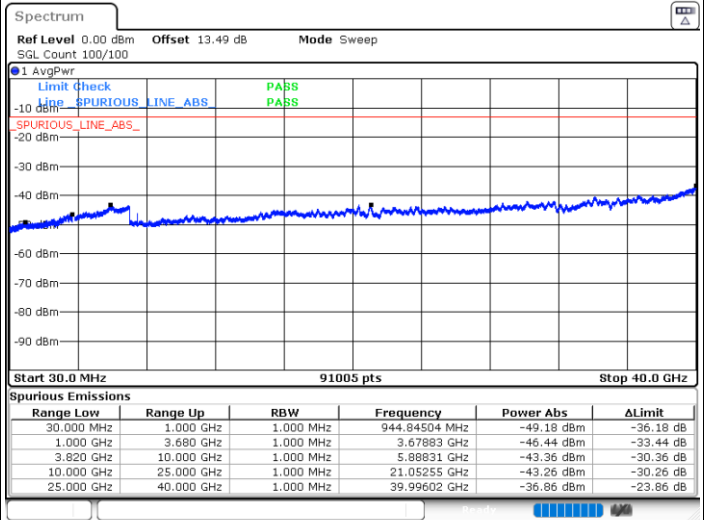
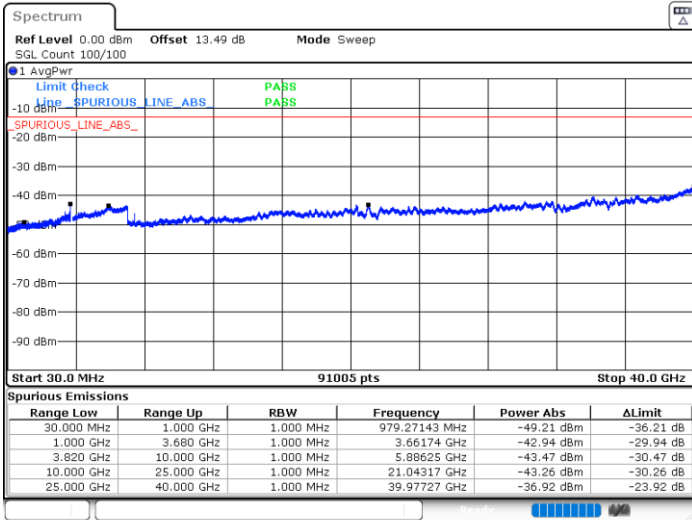


Conducted Spurious Emission

FR1 n78 / 50MHz / DFT-S OFDM / BPSK

Lowest Channel / 1RB1

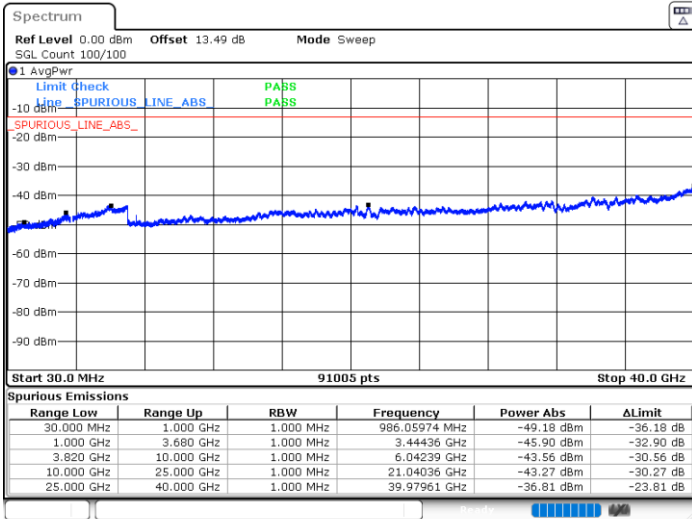
Middle Channel / 1RB1



Date: 9 JUN 2022 05:13:07

Date: 9 JUN 2022 05:15:54

Highest Channel / 1RB1



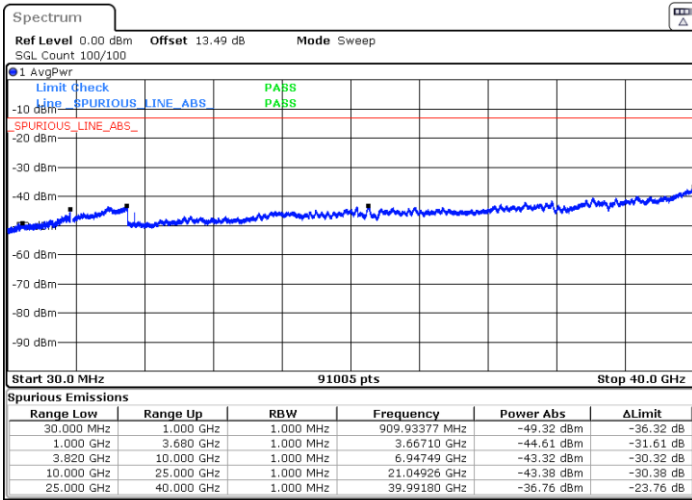
Date: 9 JUN 2022 05:19:46



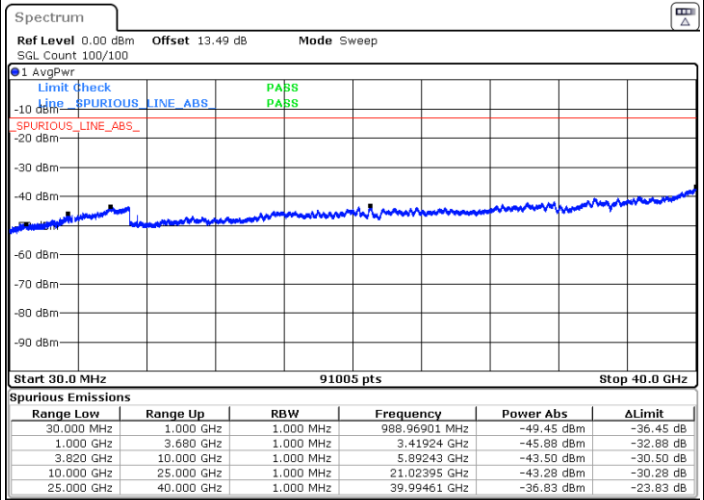
FR1 n78 / 50MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB1

Middle Channel / 1RB1

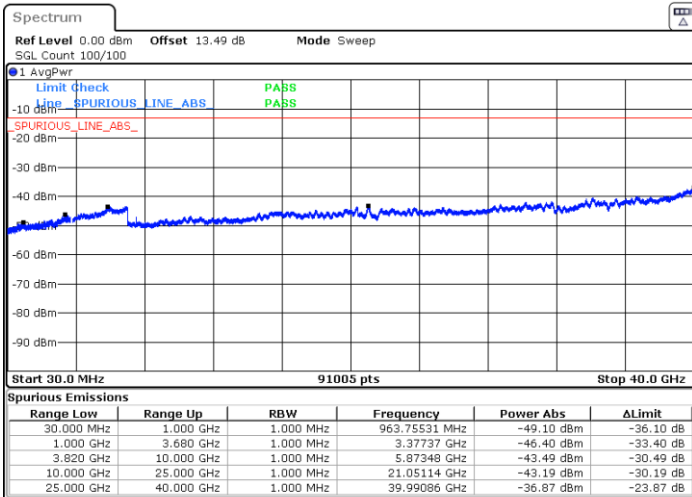


Date: 9 JUN.2022 05:14:22



Date: 9 JUN.2022 05:18:03

Highest Channel / 1RB1



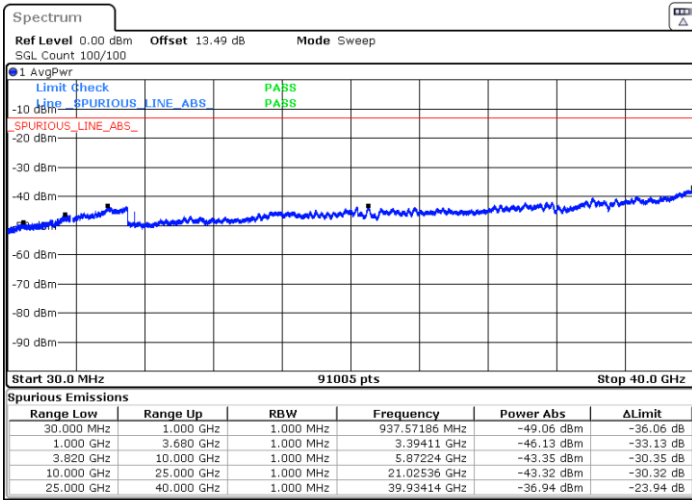
Date: 9 JUN.2022 05:23:17



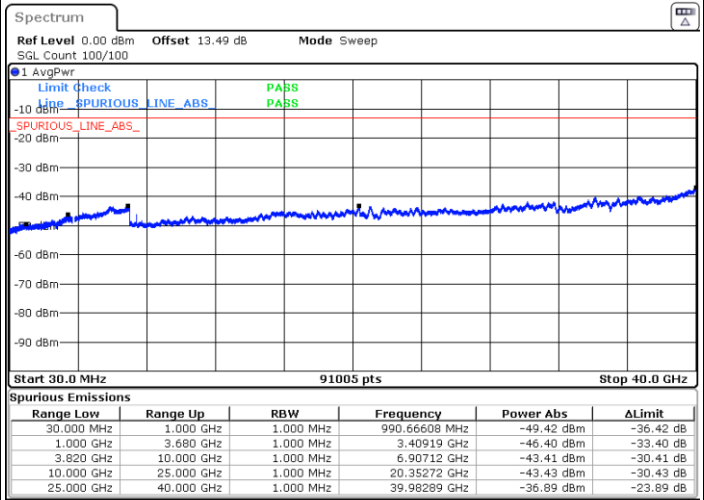
FR1 n78 / 70MHz / DFT-S OFDM / BPSK

Lowest Channel / 1RB1

Middle Channel / 1RB1

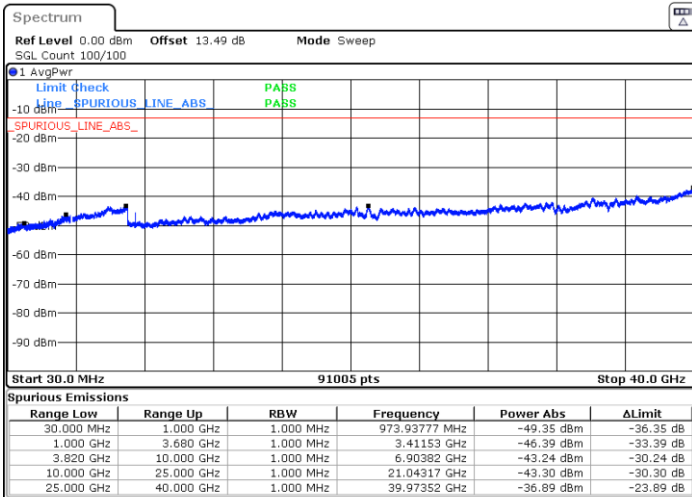


Date: 9. JUN. 2022 05:25:29



Date: 9. JUN. 2022 05:32:31

Highest Channel / 1RB1



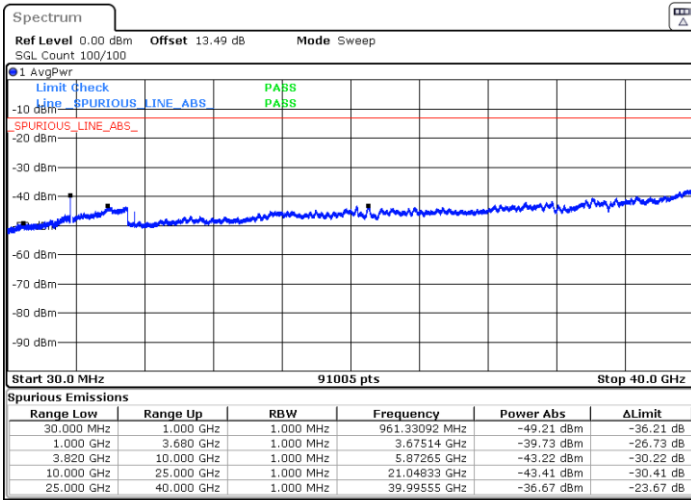
Date: 9. JUN. 2022 05:36:48



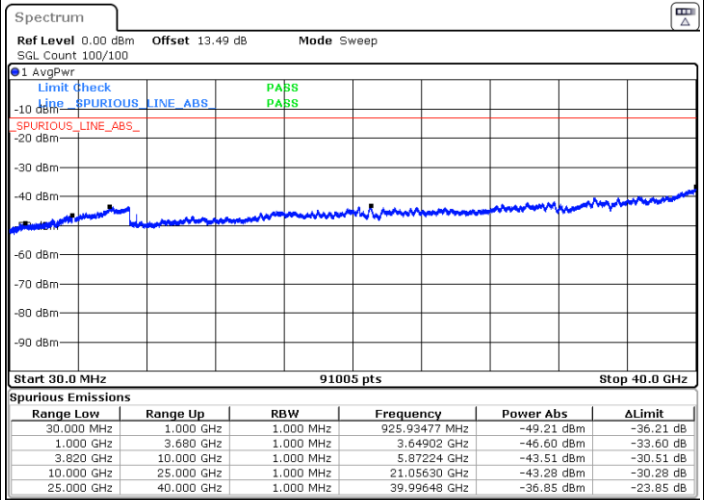
FR1 n78 / 70MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB1

Middle Channel / 1RB1

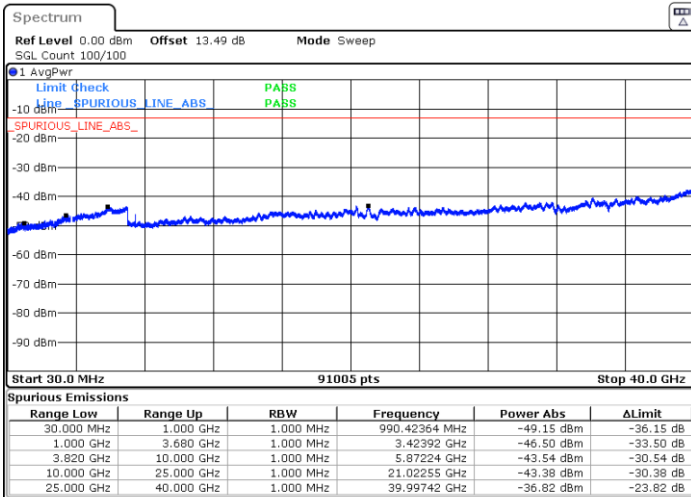


Date: 9. JUN. 2022 05:26:55



Date: 9. JUN. 2022 05:34:26

Highest Channel / 1RB1



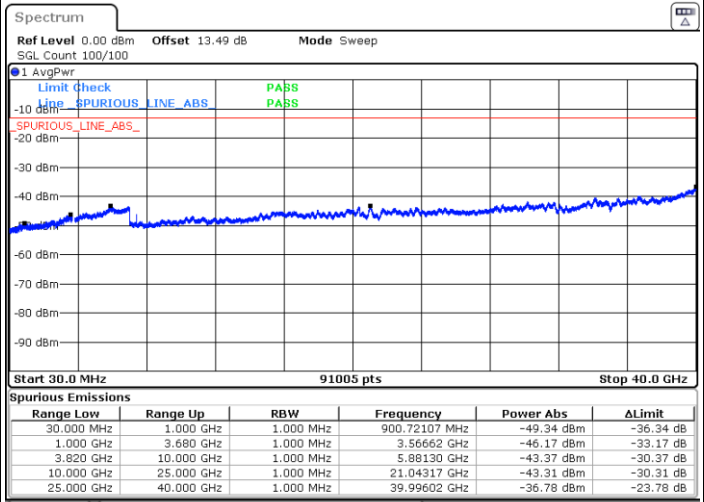
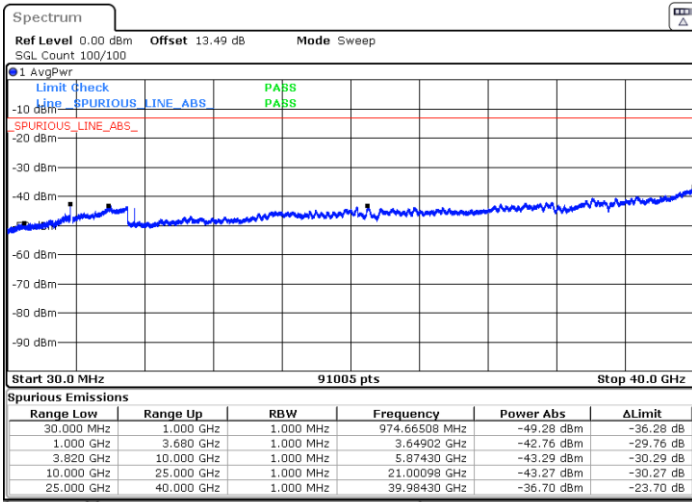
Date: 9. JUN. 2022 05:38:17



FR1 n78 / 90MHz / DFT-S OFDM / BPSK

Lowest Channel / 1RB1

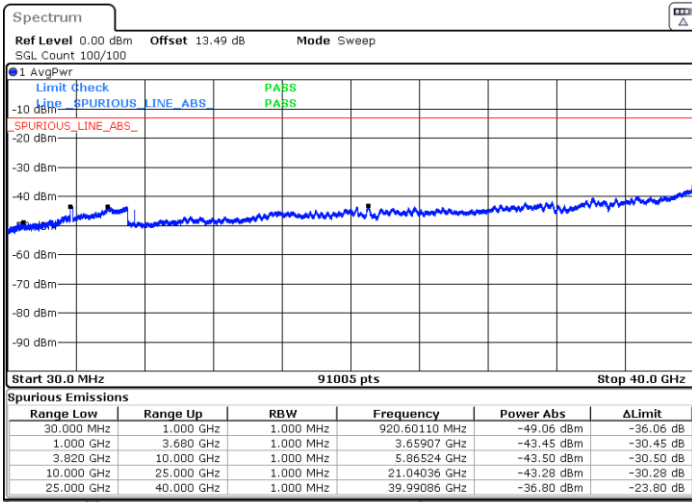
Middle Channel / 1RB1



Date: 9. JUN. 2022 05:41:28

Date: 9. JUN. 2022 05:45:40

Highest Channel / 1RB1



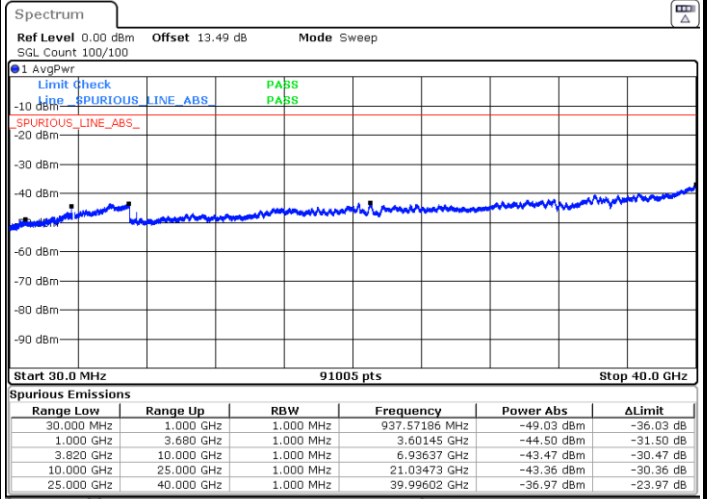
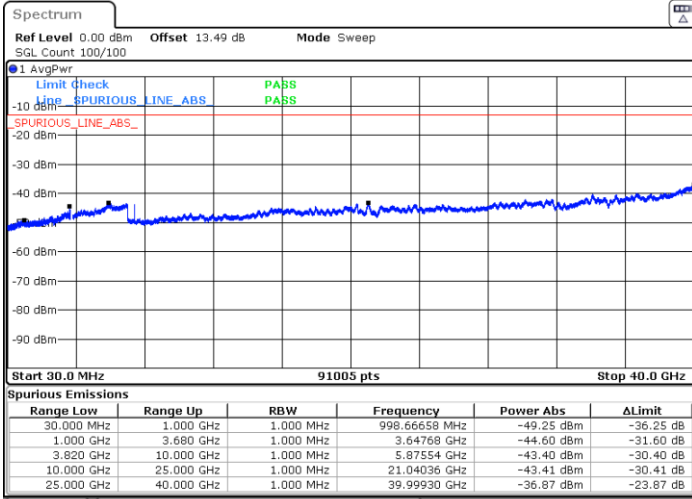
Date: 9. JUN. 2022 05:48:43



FR1 n78 / 90MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB1

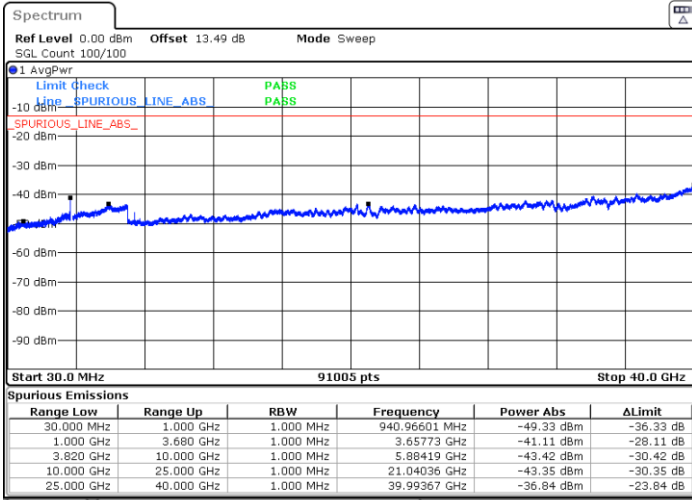
Middle Channel / 1RB1



Date: 9. JUN. 2022 05:43:43

Date: 9. JUN. 2022 05:47:17

Highest Channel / 1RB1



Date: 9. JUN. 2022 05:50:11



Frequency Stability

Test Conditions		FR1 n78 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 100MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0038	PASS
40	Normal Voltage	0.0023	
30	Normal Voltage	0.0034	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0021	
0	Normal Voltage	0.0017	
-10	Normal Voltage	0.0025	
-20	Normal Voltage	0.0033	
-30	Normal Voltage	0.0047	
20	Maximum Voltage	0.0062	
20	Normal Voltage	0.0039	
20	Battery End Point	0.0042	

Note:

1. Normal Voltage =3.87 V. ; Battery End Point (BEP) =3.55 V. ; Maximum Voltage =4.45V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

Test Engineer :	Carry Xu	Temperature :	23~25°C
		Relative Humidity :	41~42%

Note: Pre-scanned harmonic for the different antenna combinations, we choose the worst antenna mode to perform final test.

n77 SA / NR 100MHz / QPSK / ANT3								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	7404	-51.10	-13	-38.10	-61.58	2.76	13.24	H
	11106	-56.11	-13	-43.11	-65.70	3.42	13.01	H
	14820	-59.15	-13	-46.15	-68.76	3.83	13.44	H
	7404	-51.81	-13	-38.81	-62.25	2.80	13.24	V
	11106	-59.06	-13	-46.06	-68.61	3.46	13.01	V
	14820	-58.85	-13	-45.85	-68.41	3.88	13.44	V
Middle	7584	-48.21	-13	-35.21	-58.69	2.76	13.24	H
	11376	-55.93	-13	-42.93	-65.52	3.42	13.01	H
	15180	-58.87	-13	-45.87	-68.48	3.83	13.44	H
	7584	-50.12	-13	-37.12	-60.56	2.80	13.24	V
	11376	-57.11	-13	-44.11	-66.66	3.46	13.01	V
	15180	-58.67	-13	-45.67	-68.23	3.88	13.44	V
Highest	7764	-48.02	-13	-35.02	-58.50	2.76	13.24	H
	11646	-56.77	-13	-43.77	-66.36	3.42	13.01	H
	15540	-58.27	-13	-45.27	-67.88	3.83	13.44	H
	7764	-51.52	-13	-38.52	-61.96	2.80	13.24	V
	11652	-60.51	-13	-47.51	-70.06	3.46	13.01	V
	15540	-58.34	-13	-45.34	-67.90	3.88	13.44	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



EN-DC 7A_n77A / LTE 20MHz + NR 100MHz / QPSK / ANT0(LTE) & ANT3(NR)								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	7404	-49.53	-13	-36.53	-60.01	2.76	13.24	H
	11106	-58.66	-13	-45.66	-68.25	3.42	13.01	H
	14820	-59.10	-13	-46.10	-68.71	3.83	13.44	H
	7404	-54.96	-13	-41.96	-65.40	2.80	13.24	V
	11106	-58.67	-13	-45.67	-68.22	3.46	13.01	V
	14820	-59.00	-13	-46.00	-68.56	3.88	13.44	V
Middle	7584	-47.71	-13	-34.71	-58.19	2.76	13.24	H
	11376	-56.91	-13	-43.91	-66.50	3.42	13.01	H
	15180	-58.36	-13	-45.36	-67.97	3.83	13.44	H
	7584	-51.57	-13	-38.57	-62.01	2.80	13.24	V
	11376	-56.66	-13	-43.66	-66.21	3.46	13.01	V
	15180	-58.82	-13	-45.82	-68.38	3.88	13.44	V
Highest	7764	-43.29	-13	-30.29	-53.77	2.76	13.24	H
	11112	-59.87	-13	-46.87	-69.46	3.42	13.01	H
	15540	-58.40	-13	-45.40	-68.01	3.83	13.44	H
	7764	-46.87	-13	-33.87	-57.31	2.80	13.24	V
	11112	-60.21	-13	-47.21	-69.76	3.46	13.01	V
	15540	-58.27	-13	-45.27	-67.83	3.88	13.44	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.