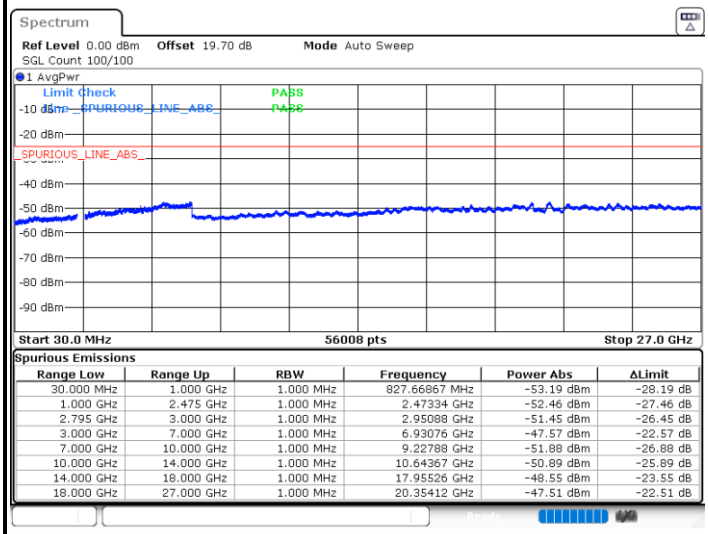
FR1 n41 /100MHz / CP OFDM /16QAM

Lowest Channel / 1RB1

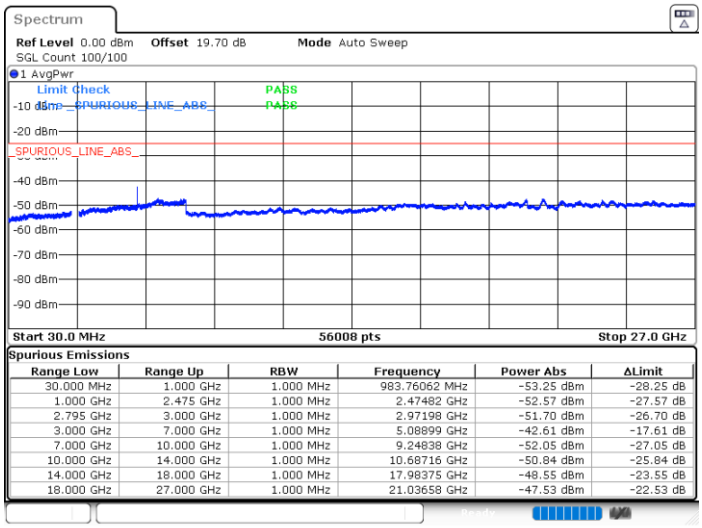


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	827.66867 MHz	-53.19 dBm	-28.19 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.47334 GHz	-52.46 dBm	-27.46 dB
2.795 GHz	3.000 GHz	1.000 MHz	2.95088 GHz	-51.45 dBm	-26.45 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.93076 GHz	-47.57 dBm	-22.57 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.22788 GHz	-51.88 dBm	-26.88 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.64367 GHz	-50.89 dBm	-25.89 dB
14.000 GHz	18.000 GHz	1.000 MHz	17.95526 GHz	-48.55 dBm	-23.55 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.35412 GHz	-47.51 dBm	-22.51 dB

Date: 7.SEP.2022 18:28:12

Middle Channel / 1RB1

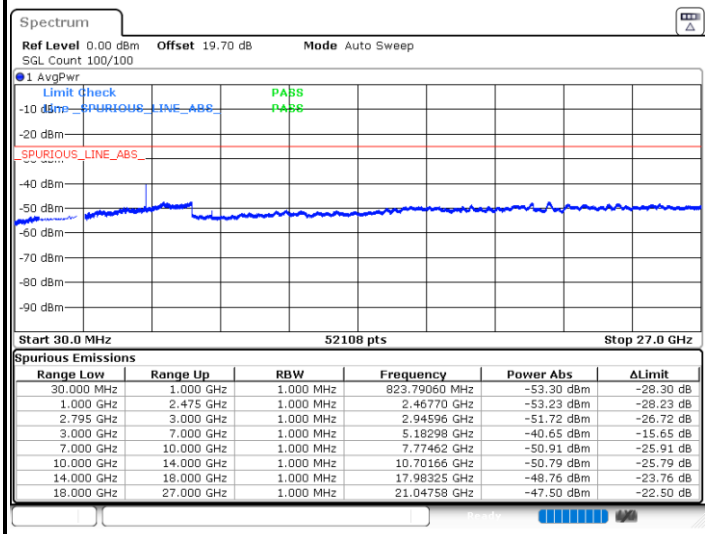


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	983.76062 MHz	-53.25 dBm	-28.25 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.47482 GHz	-52.57 dBm	-27.57 dB
2.795 GHz	3.000 GHz	1.000 MHz	2.97198 GHz	-51.70 dBm	-26.70 dB
3.000 GHz	7.000 GHz	1.000 MHz	5.08899 GHz	-42.61 dBm	-17.61 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.24838 GHz	-52.05 dBm	-27.05 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.68716 GHz	-50.84 dBm	-25.84 dB
14.000 GHz	18.000 GHz	1.000 MHz	17.98375 GHz	-48.55 dBm	-23.55 dB
18.000 GHz	27.000 GHz	1.000 MHz	21.03658 GHz	-47.53 dBm	-22.53 dB

Date: 7.SEP.2022 17:40:50

Highest Channel / 1RB1



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	823.79060 MHz	-53.30 dBm	-28.30 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.46770 GHz	-53.23 dBm	-28.23 dB
2.795 GHz	3.000 GHz	1.000 MHz	2.94596 GHz	-51.72 dBm	-26.72 dB
3.000 GHz	7.000 GHz	1.000 MHz	5.18298 GHz	-40.65 dBm	-15.65 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.77462 GHz	-50.91 dBm	-25.91 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.70166 GHz	-50.79 dBm	-25.79 dB
14.000 GHz	18.000 GHz	1.000 MHz	17.98325 GHz	-48.76 dBm	-23.76 dB
18.000 GHz	27.000 GHz	1.000 MHz	21.04758 GHz	-47.50 dBm	-22.50 dB

Date: 7.SEP.2022 18:37:10

Frequency Stability

Test Conditions		FR1 n41 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 20MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0001	PASS
40	Normal Voltage	0.0026	
30	Normal Voltage	0.0010	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0003	
0	Normal Voltage	0.0031	
-10	Normal Voltage	0.0026	
-20	Normal Voltage	0.0012	
-30	Normal Voltage	0.0011	
20	Maximum Voltage	0.0033	
20	Normal Voltage	0.0026	
20	Battery End Point	0.0031	

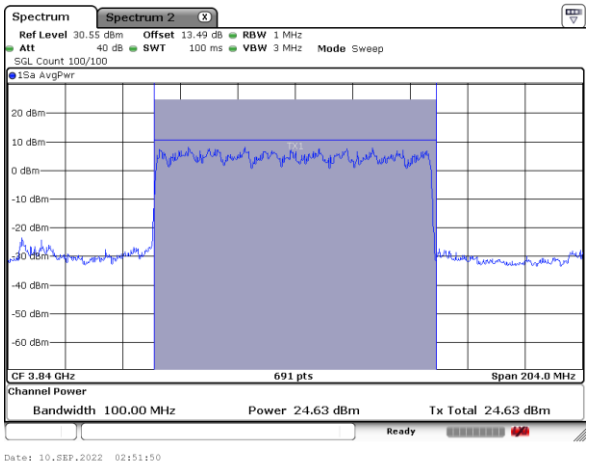
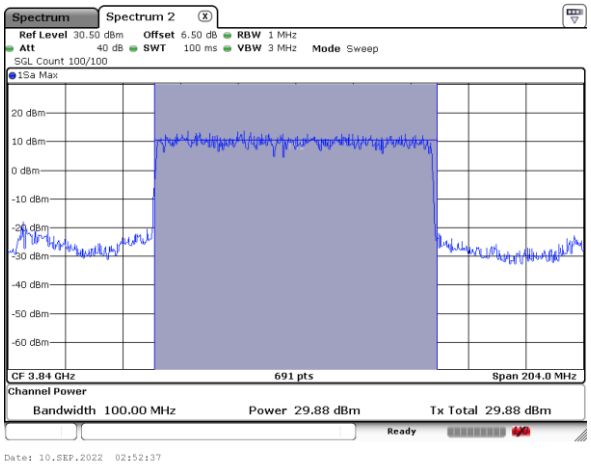
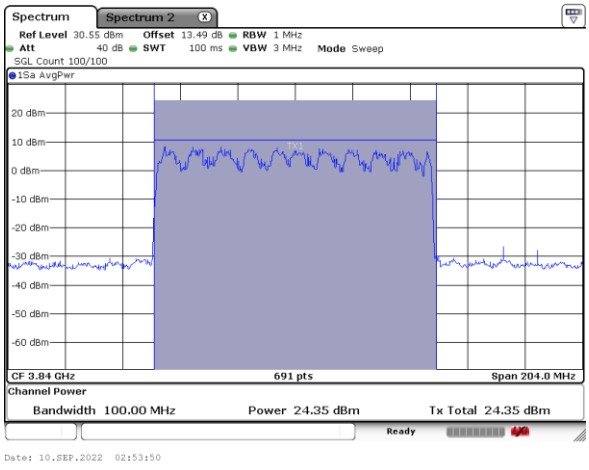
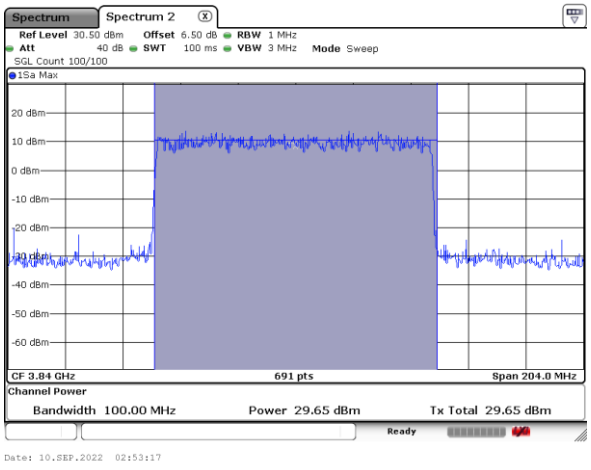
Note:

1. Normal Voltage =3.89 V. ; Battery End Point (BEP) =3.4V. ; Maximum Voltage =4.48 V.
2. The frequency fundamental emissions stay within the authorized frequency block.

FR1 n77

Peak-to-Average Ratio

Mode	FR1 n77 / 100MHz / DFT-S OFDM		
Mod.	100M		Limit: 13dB
RB Size	BPSK	QPSK	Result
Middle CH	5.25	5.3	PASS

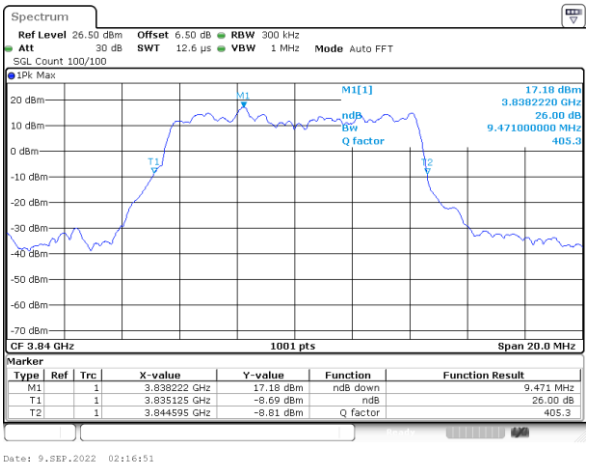
BPSK-A	BPSK-P
	
QPSK-A	**QPSK-P**
	

26dB Bandwidth

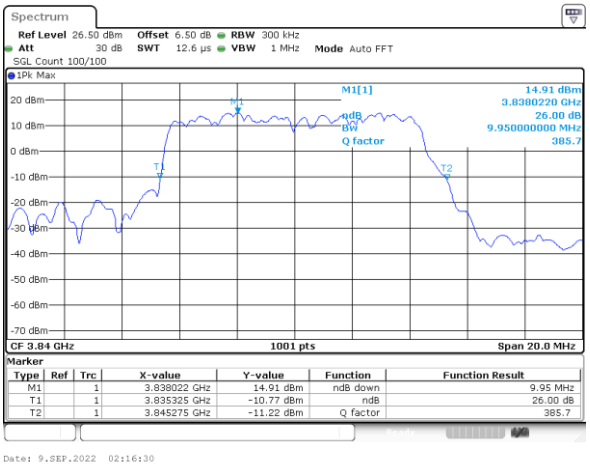
Mode	FR1 n77 : 26dB BW(10 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	9.47	9.95	9.49	9.67
Mode	FR1 n77 : 26dB BW(15 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	15.08	14.99	14.69	15.29
Mode	FR1 n77 : 26dB BW(20 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	19.38	19.30	19.30	19.18
Mode	FR1 n77 : 26dB BW(25 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	24.14	24.46	24.46	24.62
Mode	FR1 n77 : 26dB BW(30 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	29.17	29.01	28.85	28.77
Mode	FR1 n77 : 26dB BW(40 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	40.28	40.76	40.28	40.36
Mode	FR1 n77 : 26dB BW(50 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	49.75	49.75	49.75	49.75
Mode	FR1 n77 : 26dB BW(60 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	60.66	60.42	60.42	60.42
Mode	FR1 n77 : 26dB BW(70 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	70.33	70.33	70.01	70.33
Mode	FR1 n77 : 26dB BW(80 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	79.92	79.92	79.92	79.92
Mode	FR1 n77 : 26dB BW(90 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	92.07	92.25	92.07	92.07
Mode	FR1 n77 : 26dB BW(100 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	102.3	102.3	102.3	102.5

10MHz CP

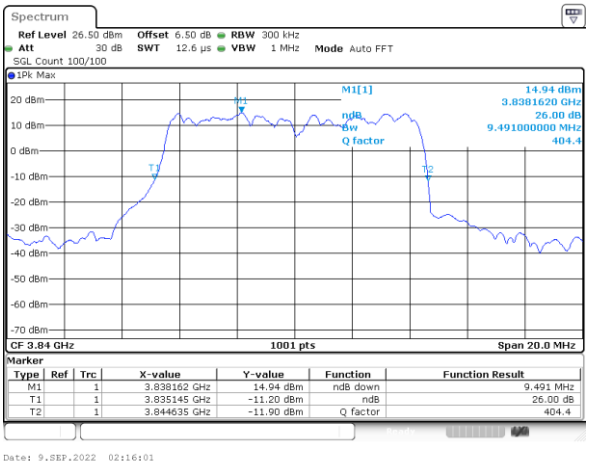
QPSK



16QAM



64QAM



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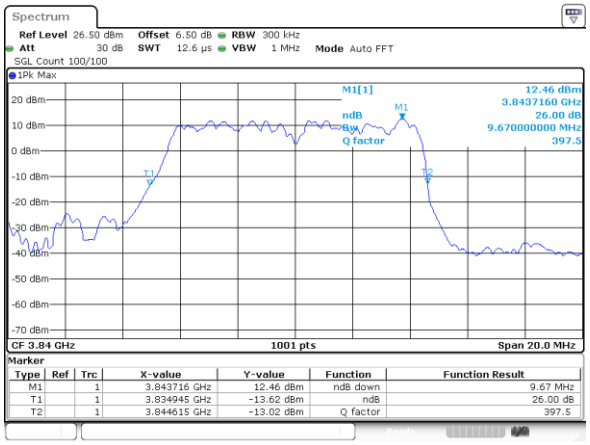
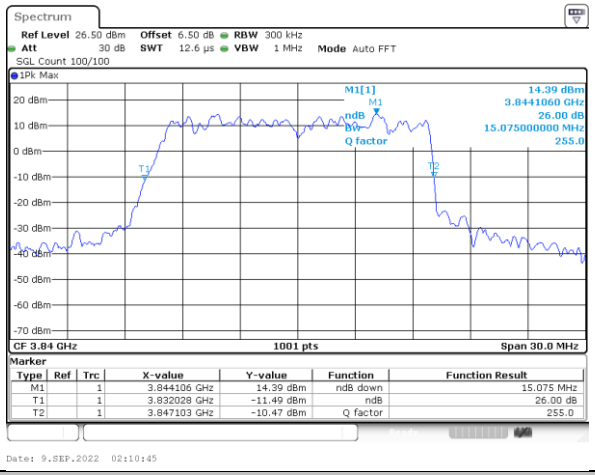


15MHz CP

QPSK



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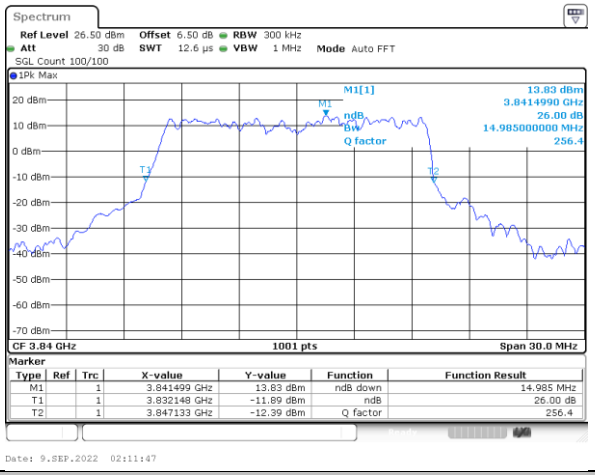

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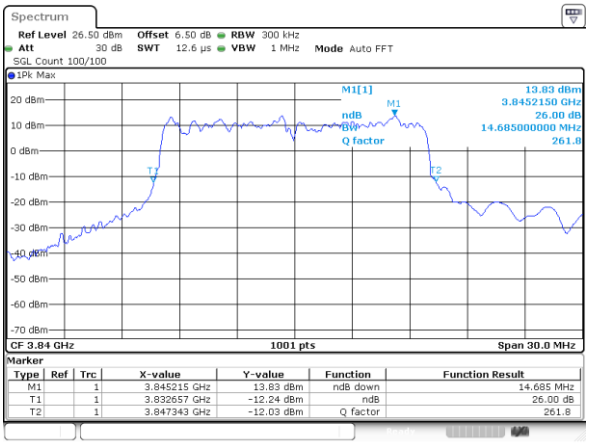

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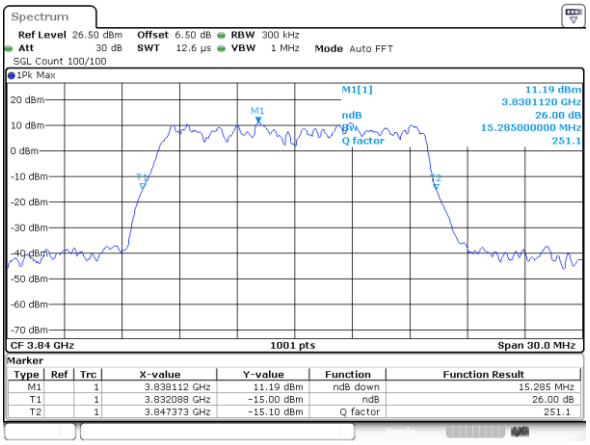
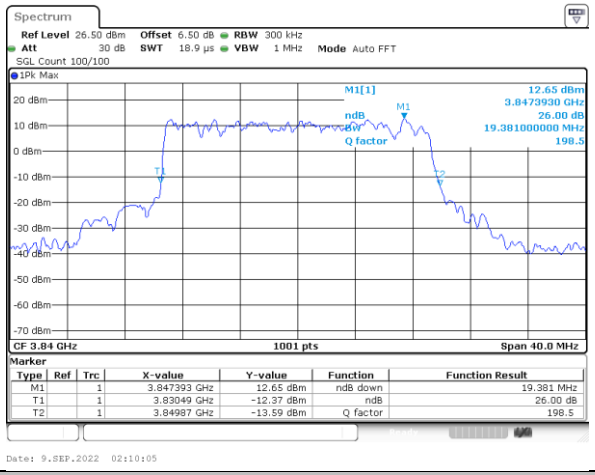


20MHz CP

QPSK



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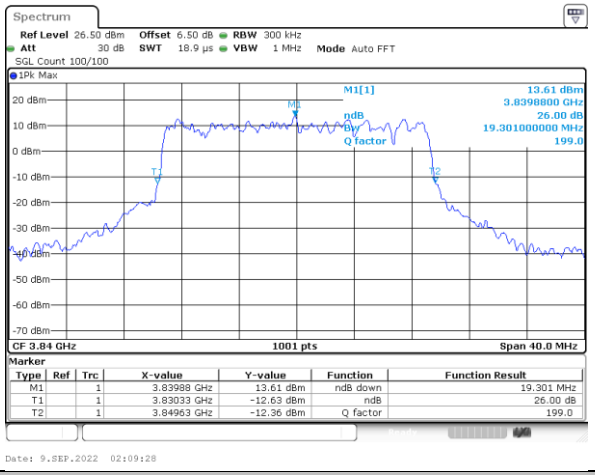

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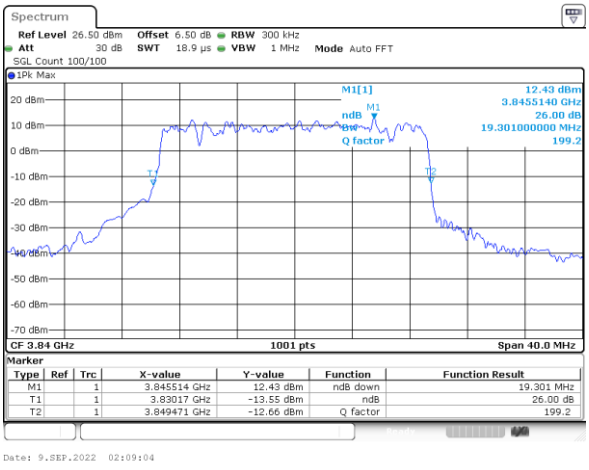

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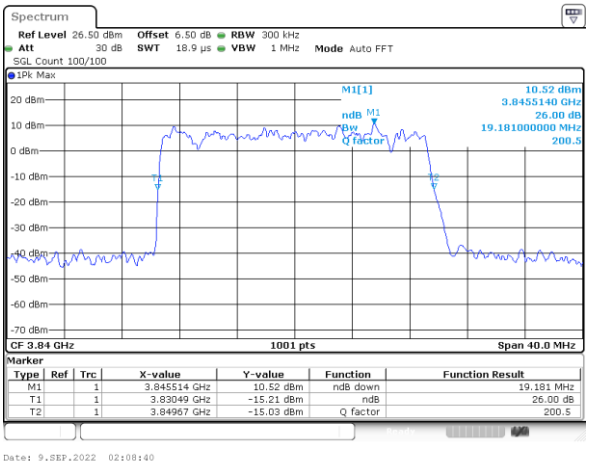
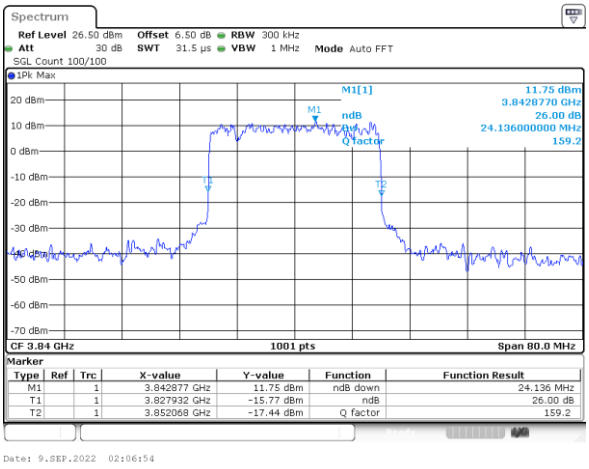


25MHz CP

QPSK



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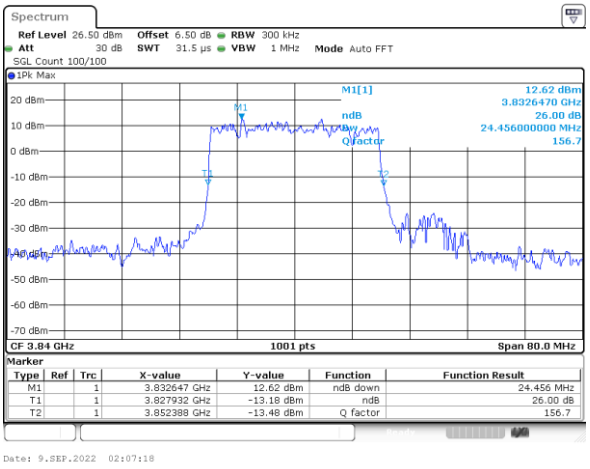

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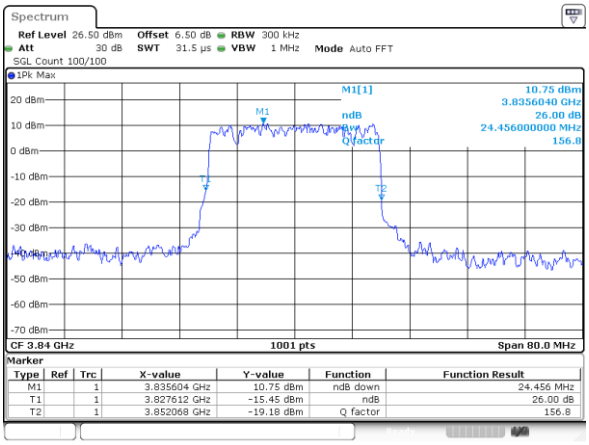

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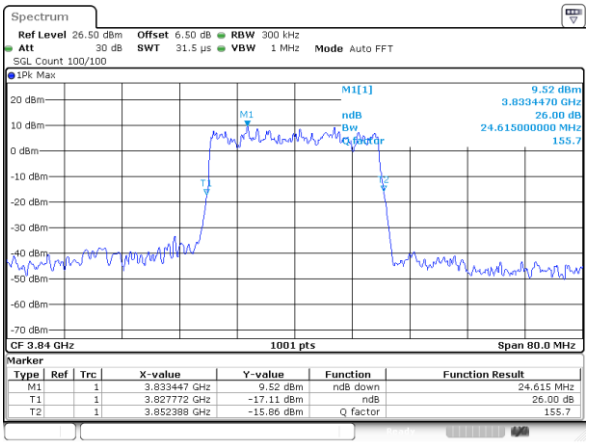
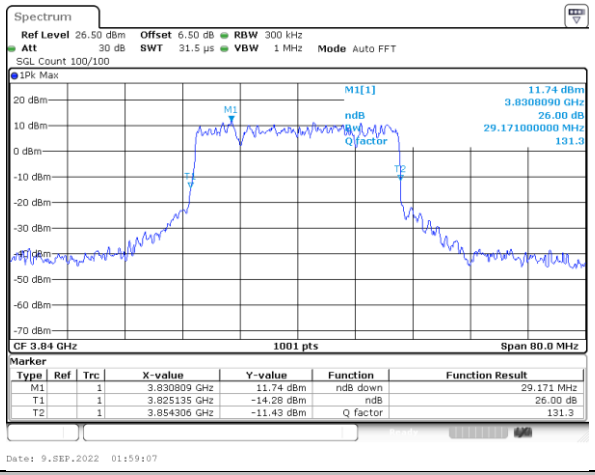


30MHz CP

QPSK



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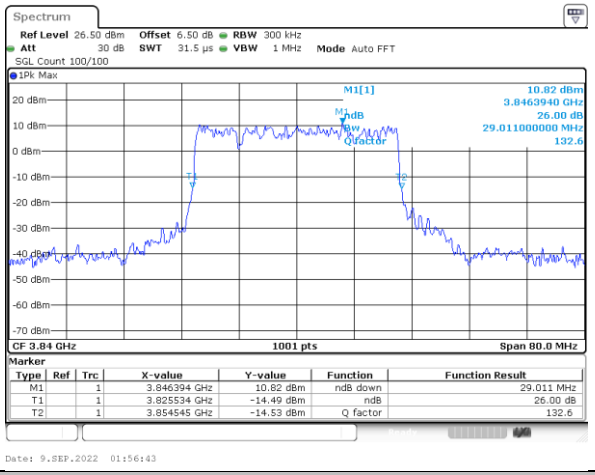

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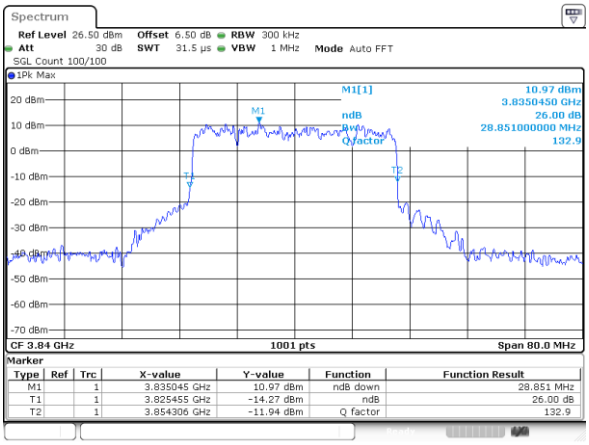

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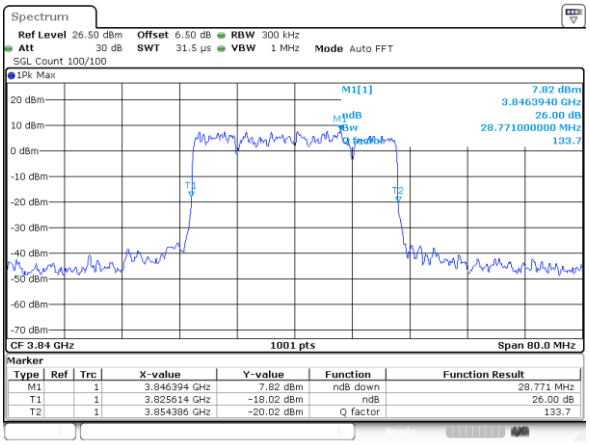
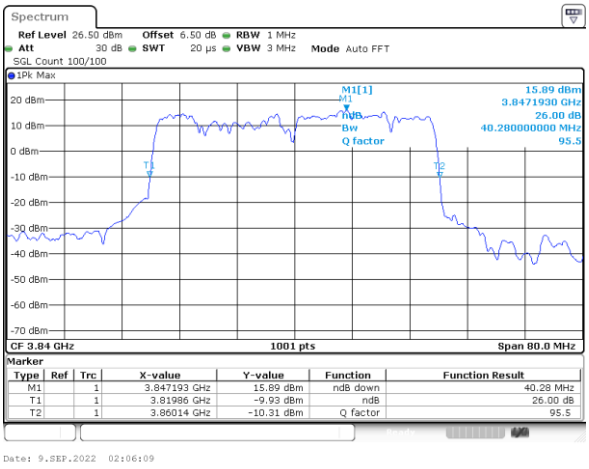


40MHz CP

QPSK



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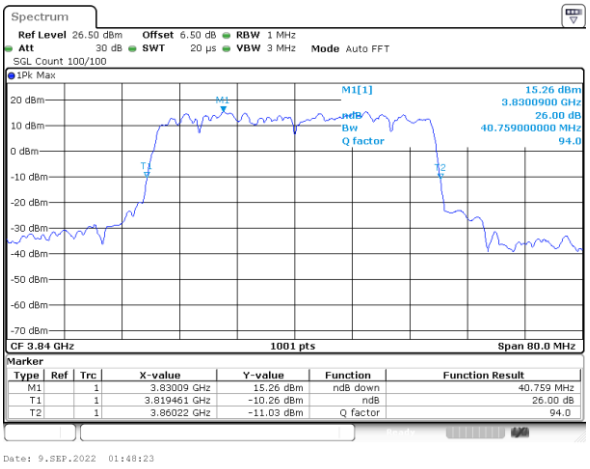

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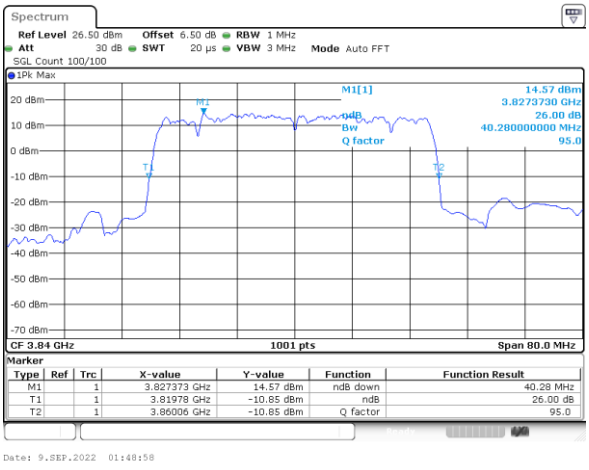

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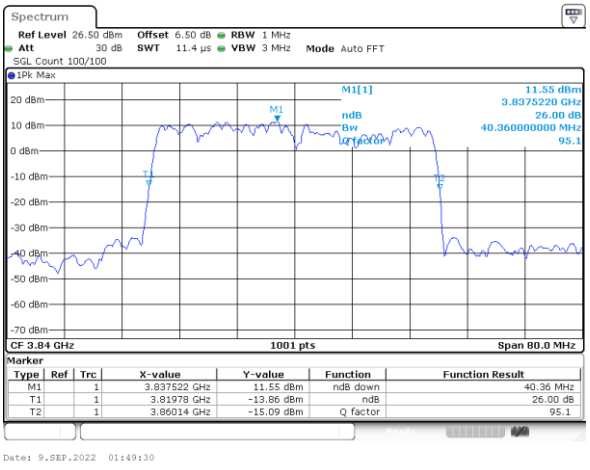
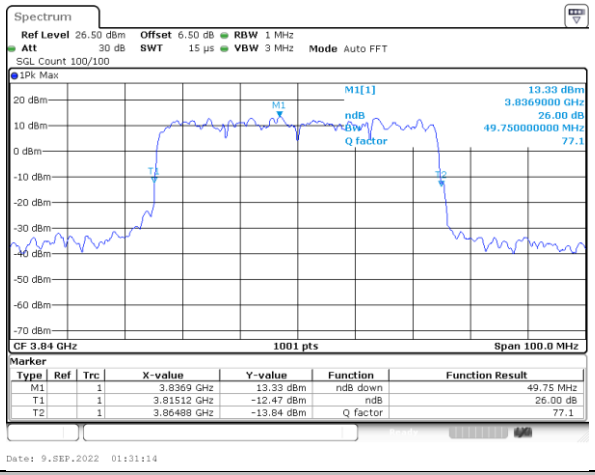


50MHz CP

QPSK



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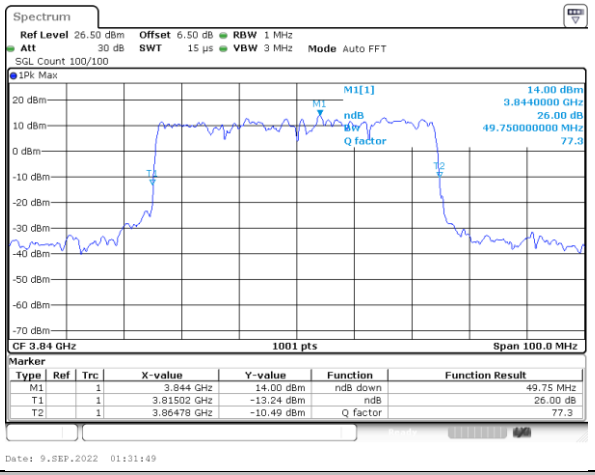

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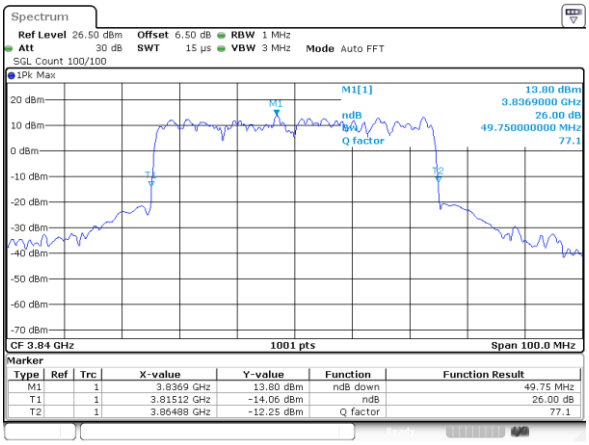

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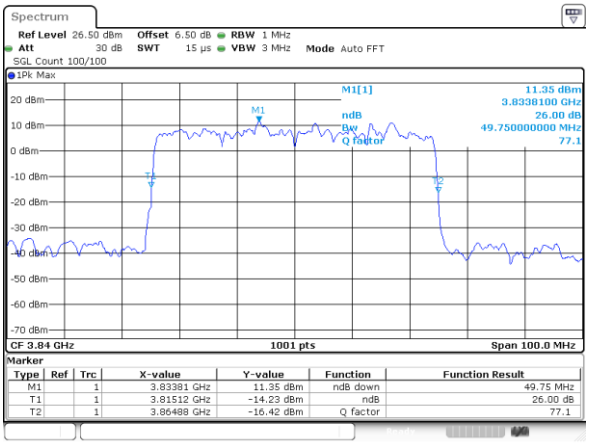
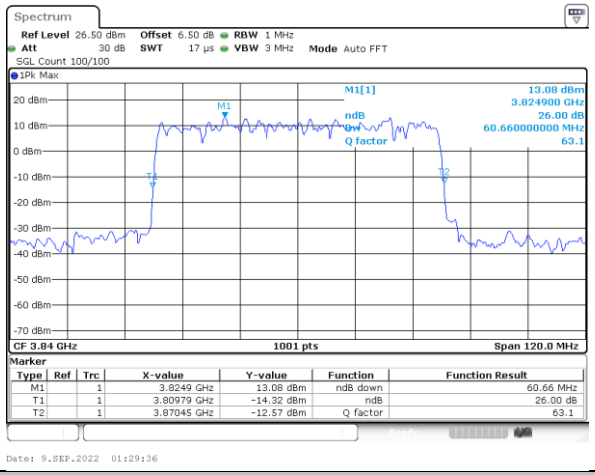


60MHz CP

QPSK



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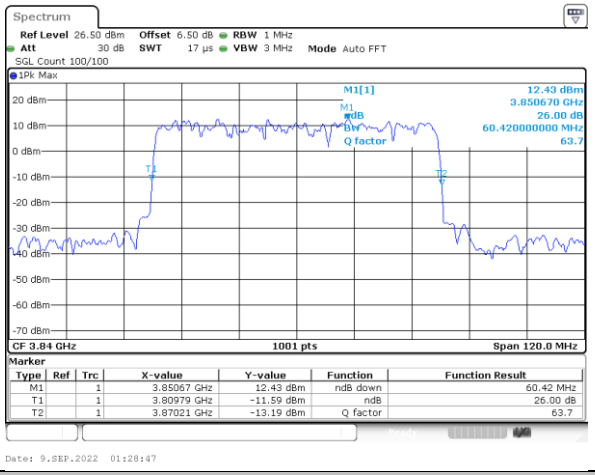

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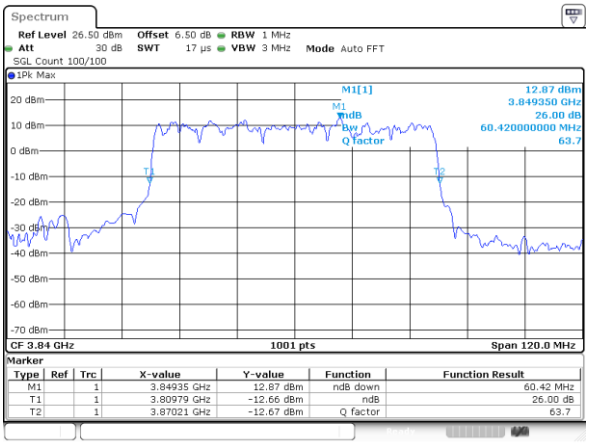

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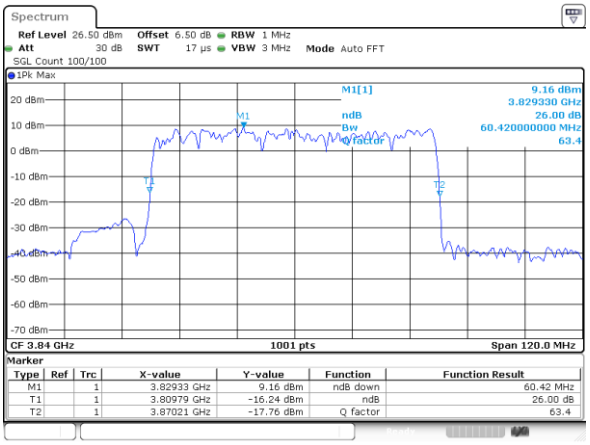
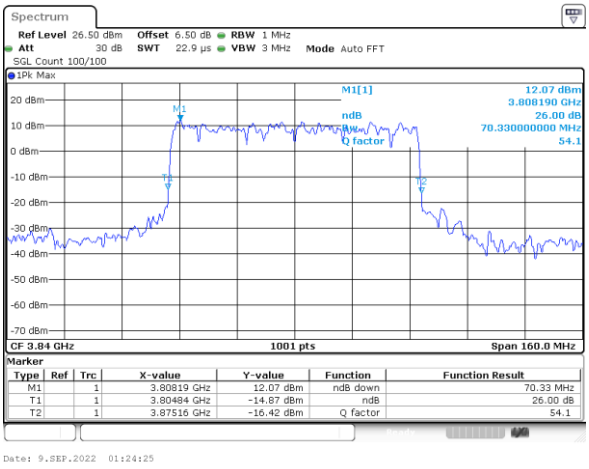


70MHz CP

QPSK



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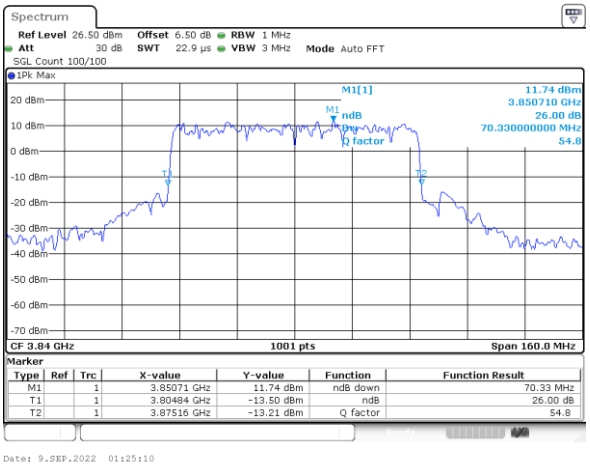

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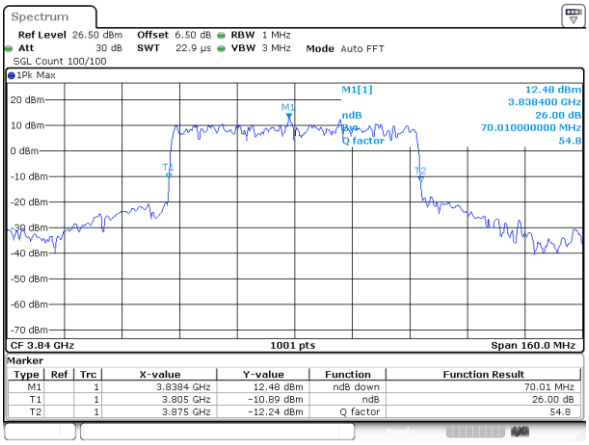

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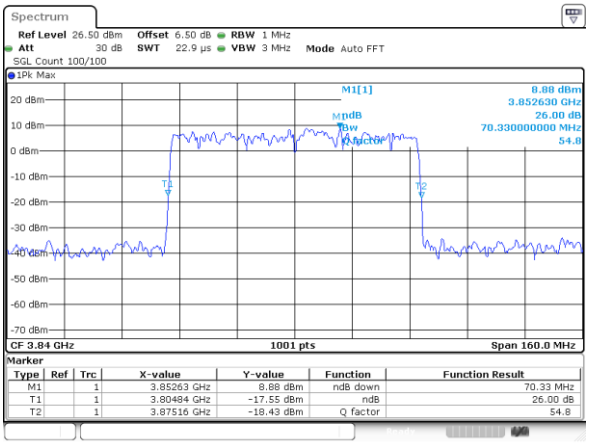
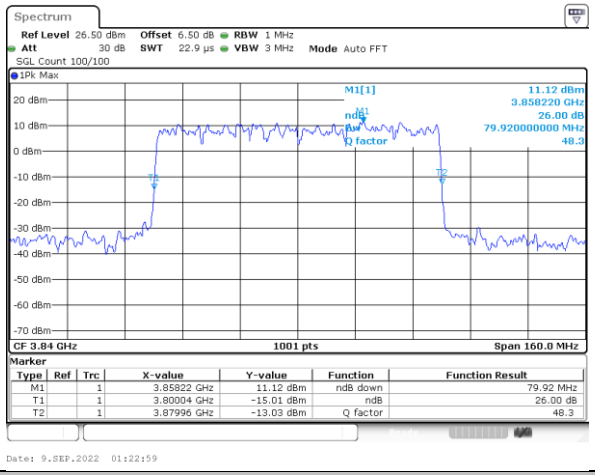


80MHz CP

QPSK



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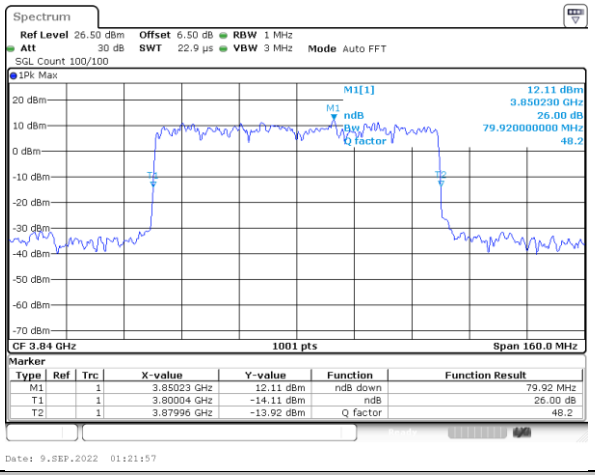

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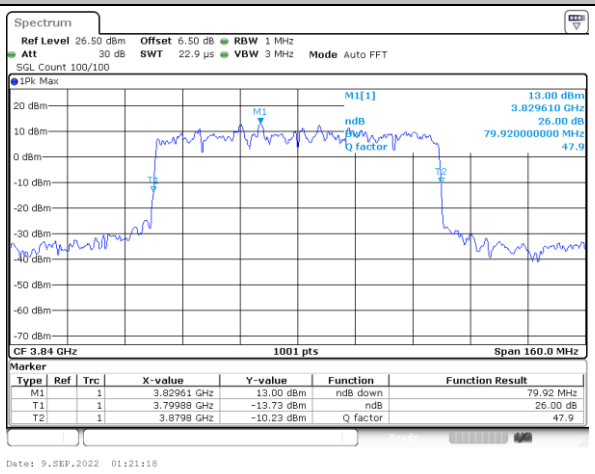

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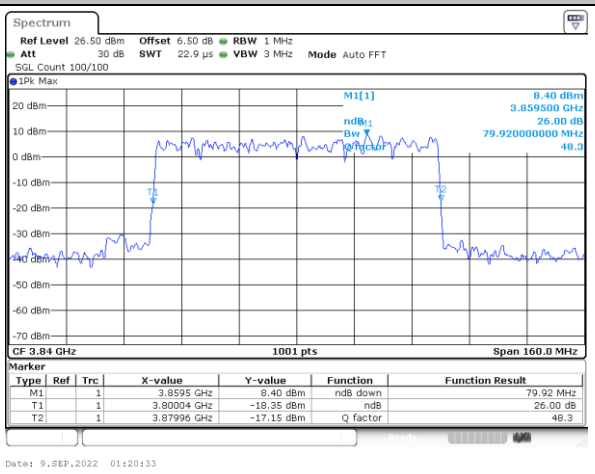
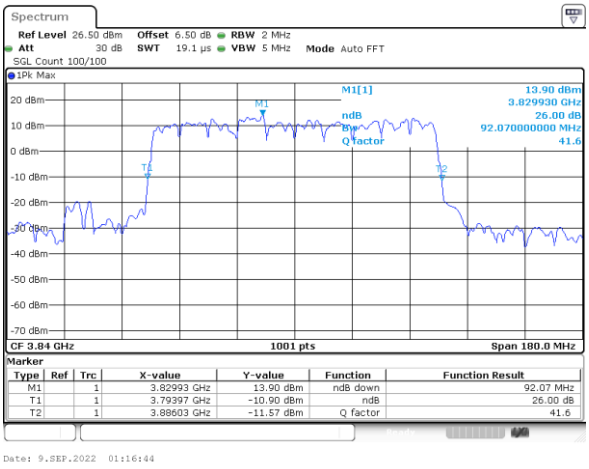


90MHz CP

QPSK



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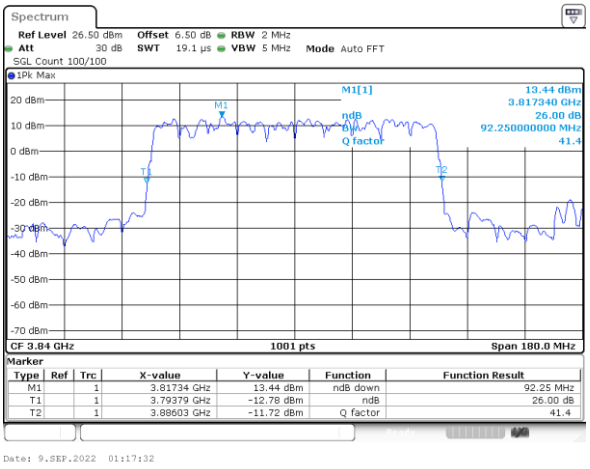

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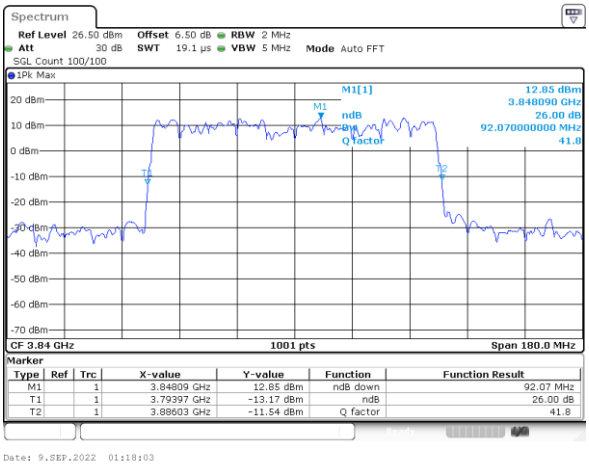

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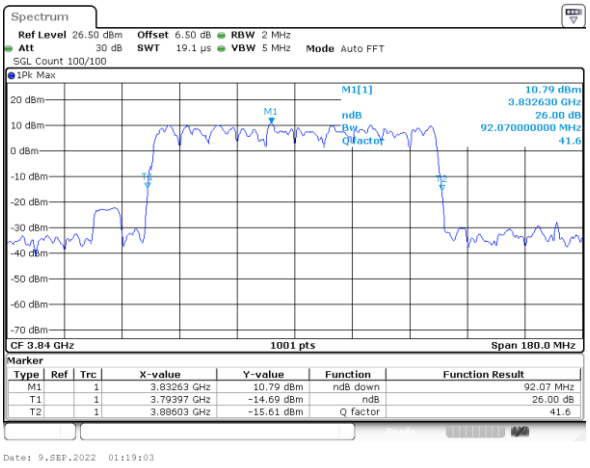
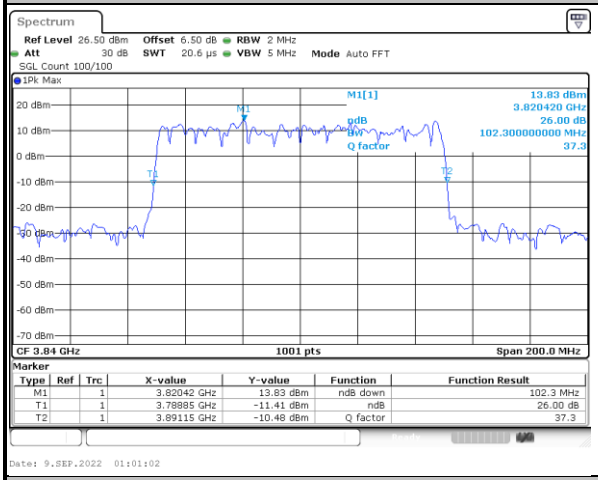


100MHz CP

QPSK



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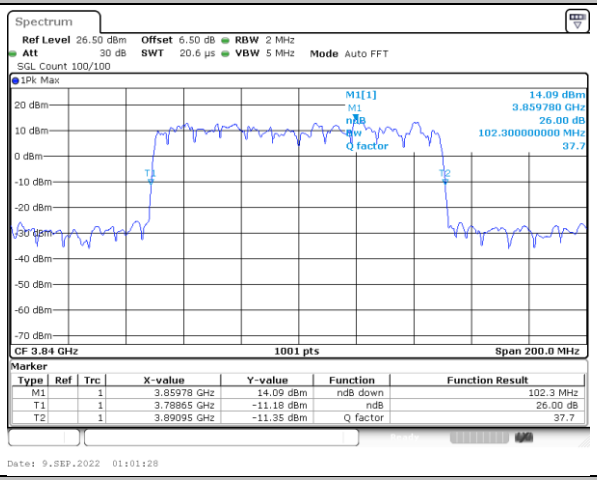

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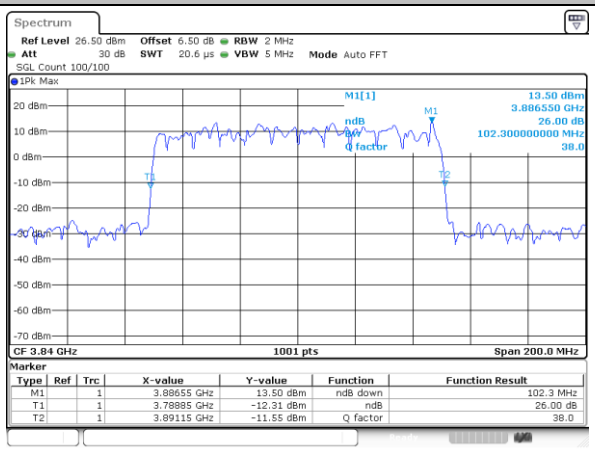

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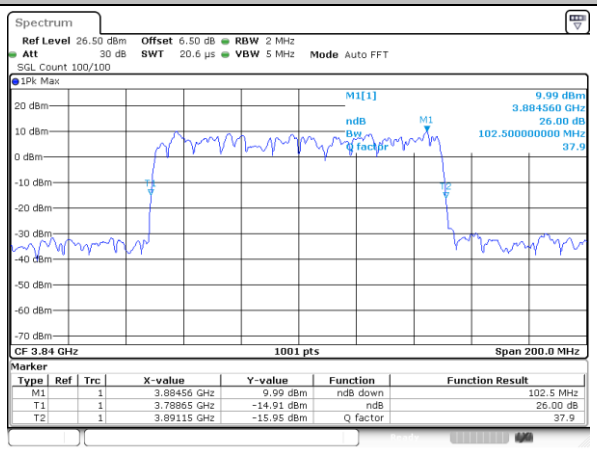
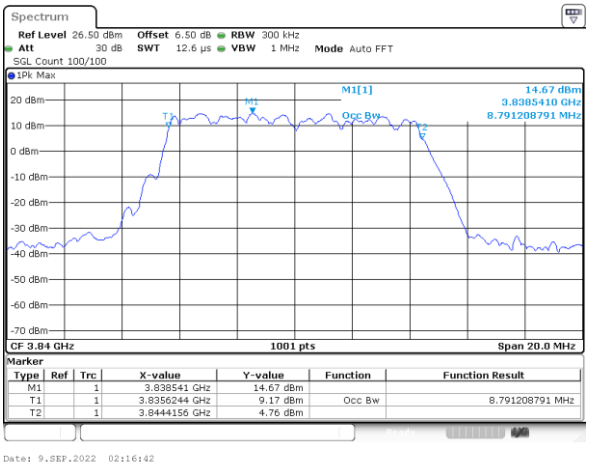


Occupied Bandwidth

Mode	FR1 n77 : OB BW(10 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	8.79	8.75	8.71	8.65
Mode	FR1 n77 : OB BW(15 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	13.76	13.64	13.64	13.58
Mode	FR1 n77 : OB BW(20 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	18.30	18.26	18.22	18.26
Mode	FR1 n77 : OB BW(25 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	23.26	23.34	23.26	23.18
Mode	FR1 n77 : OB BW(30 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	27.73	27.73	27.73	27.73
Mode	FR1 n77 : OB BW(40 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	38.20	37.64	37.80	37.96
Mode	FR1 n77 : OB BW(50 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	47.45	47.55	47.65	47.65
Mode	FR1 n77 : OB BW(60 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	58.02	57.66	57.78	57.90
Mode	FR1 n77 : OB BW(70 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	67.93	67.45	67.45	67.29
Mode	FR1 n77 : OB BW(80 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	77.68	77.20	77.36	77.52
Mode	FR1 n77 : OB BW(90 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	87.57	87.21	87.03	86.85
Mode	FR1 n77 : OB BW(100 MHz) / CP OFDM			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	97.70	97.70	97.10	97.90

10MHz CP

QPSK



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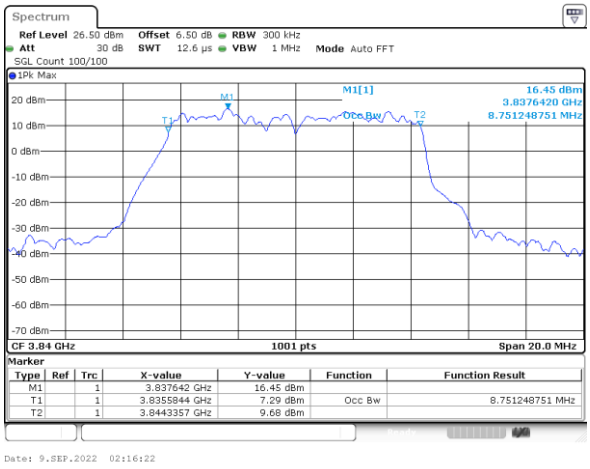

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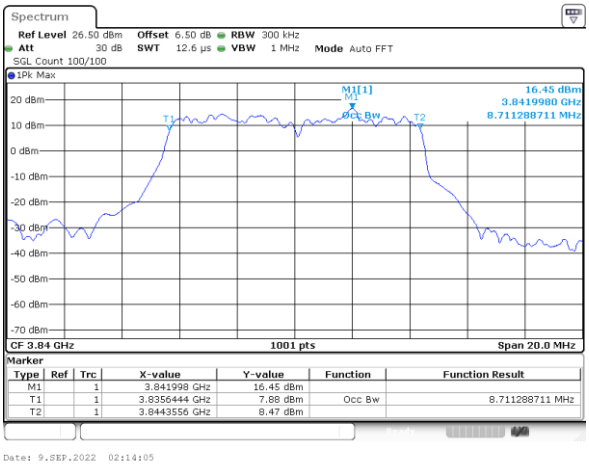

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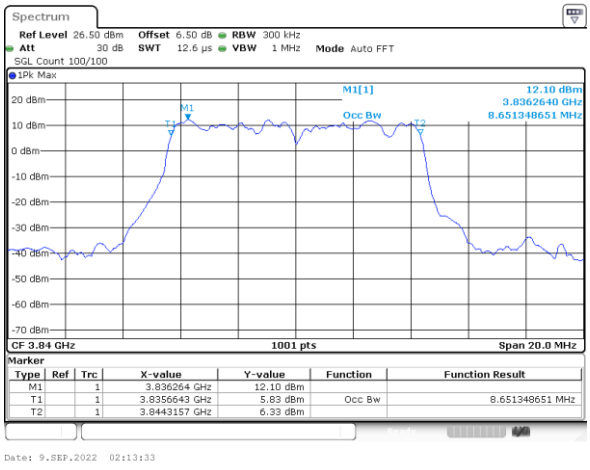
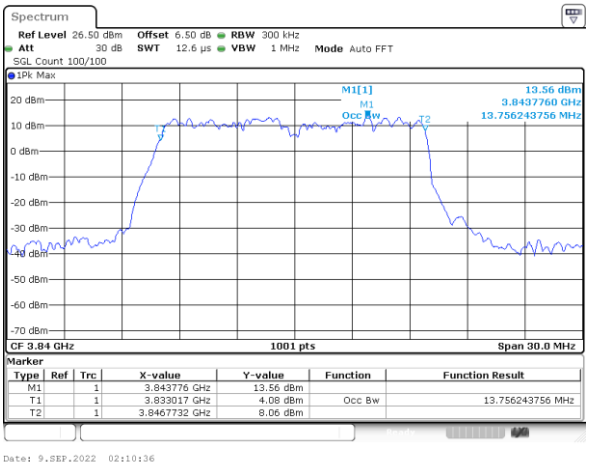


15MHz CP

QPSK



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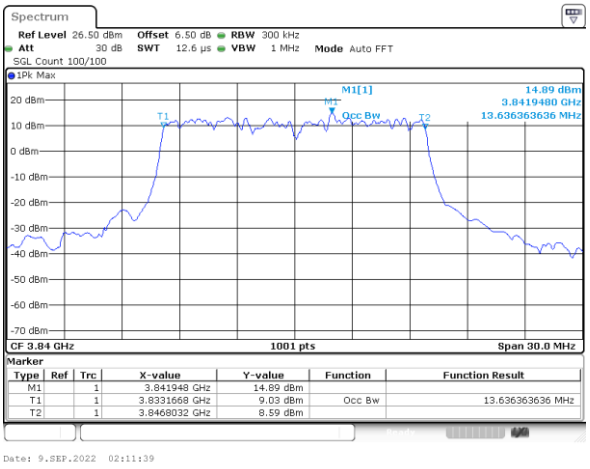

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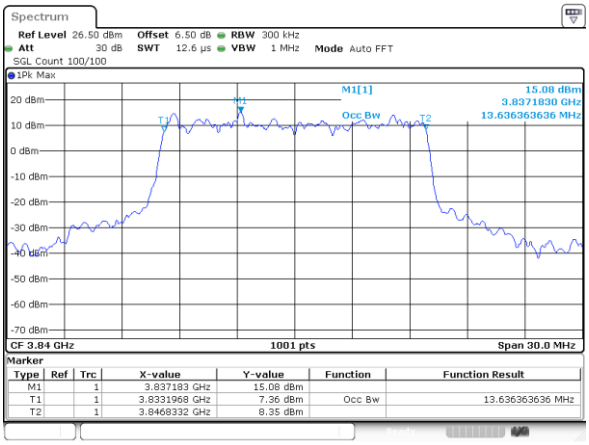

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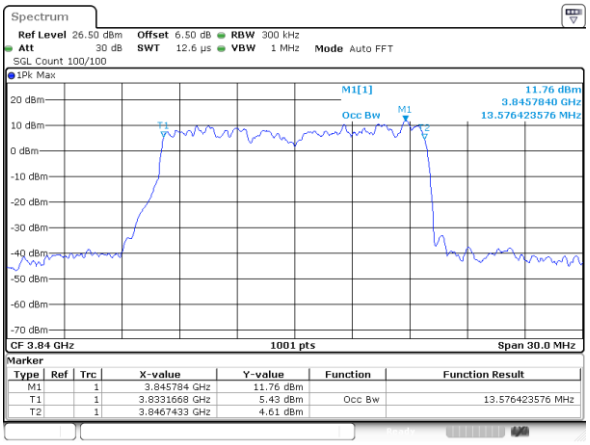
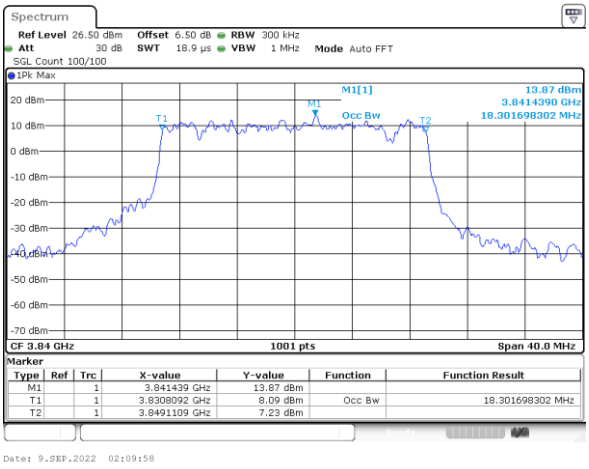


20MHz CP

QPSK



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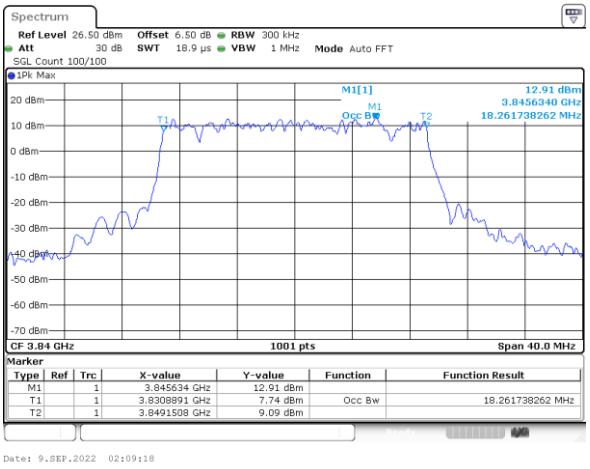

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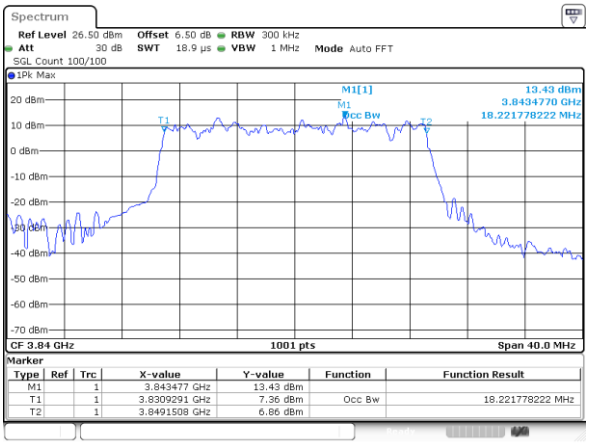

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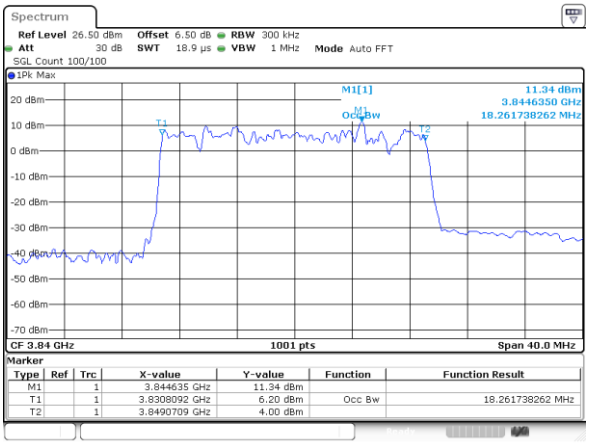
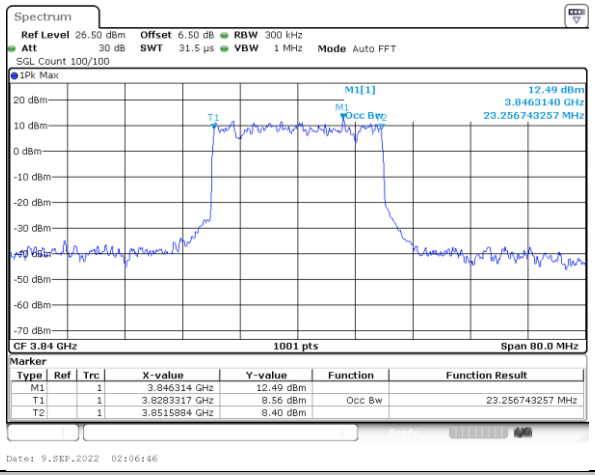


25MHz CP

QPSK



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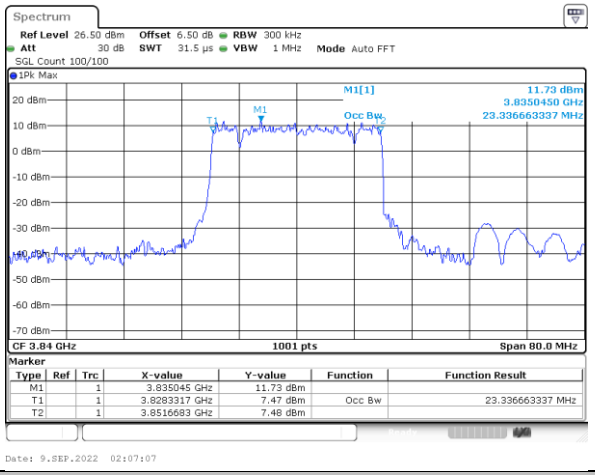

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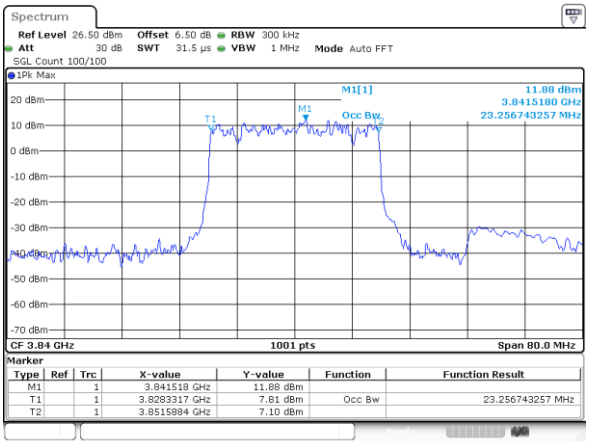

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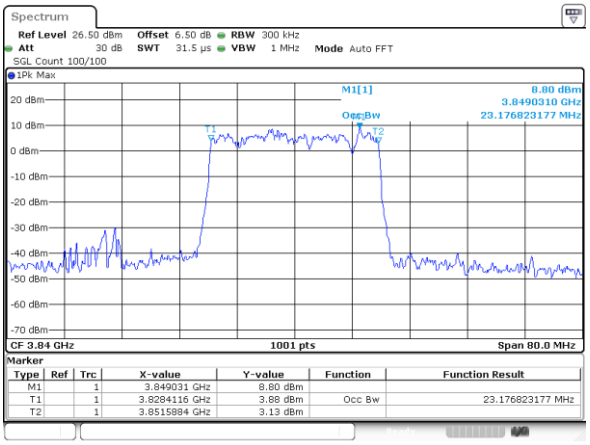
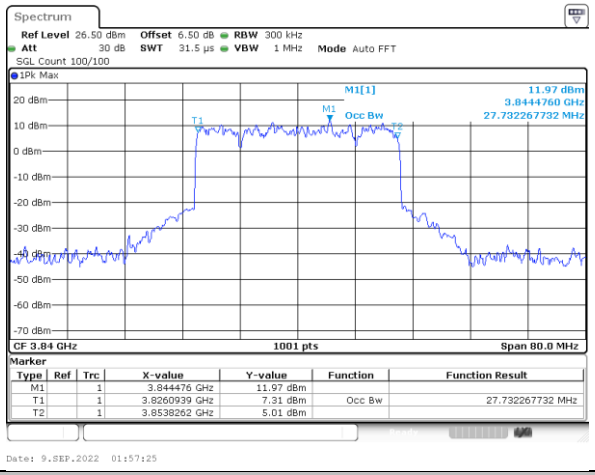


30MHz CP

QPSK



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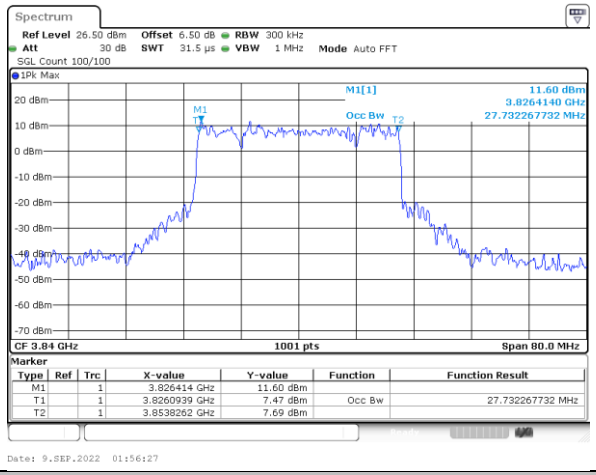

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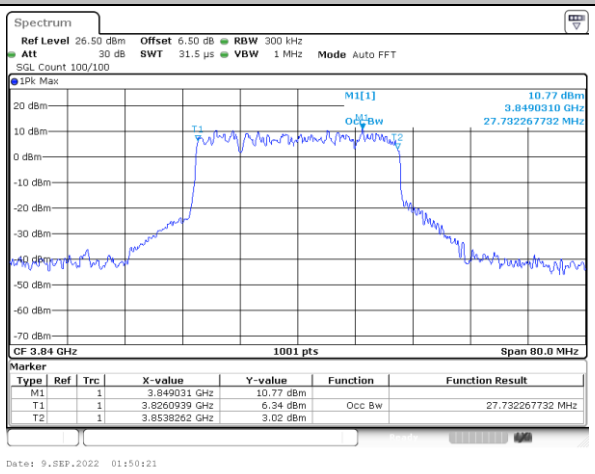

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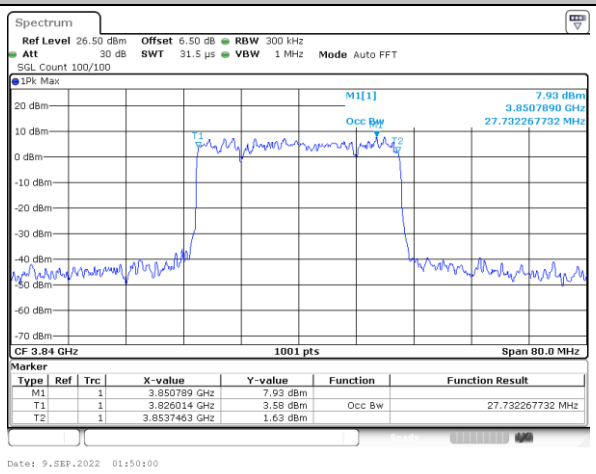
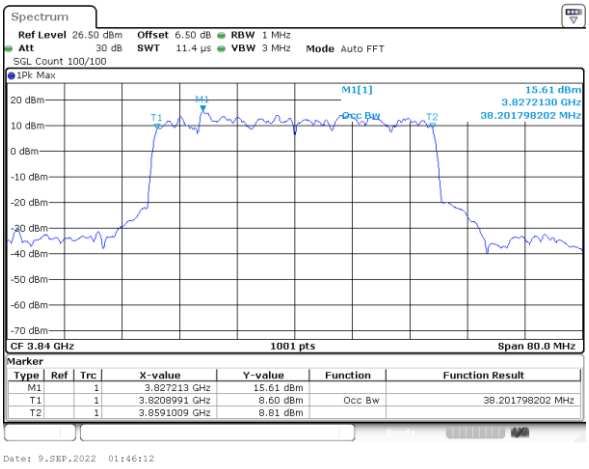


40MHz CP

QPSK



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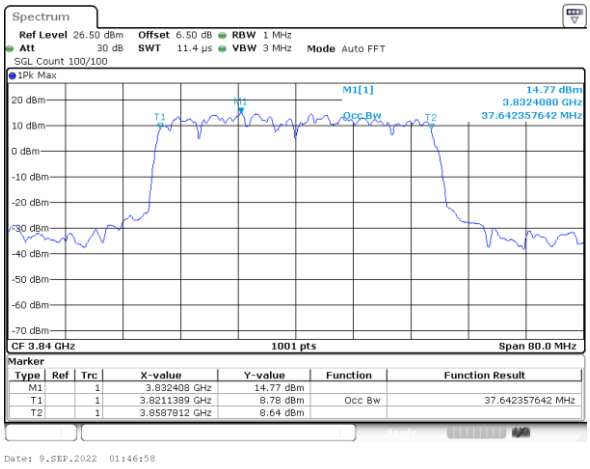

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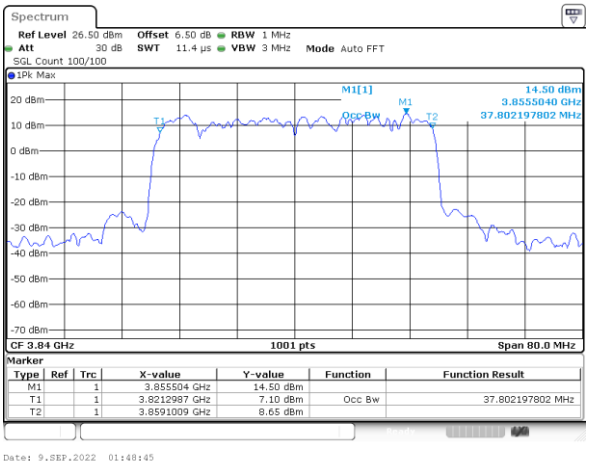

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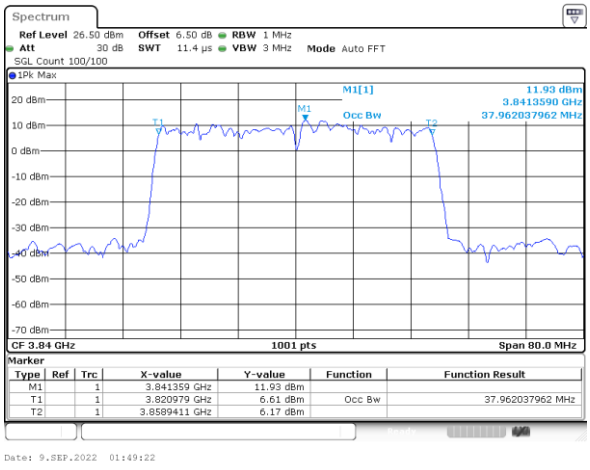
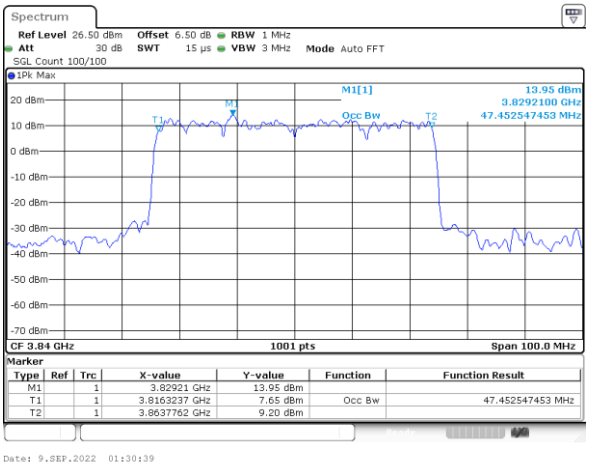


50MHz CP

QPSK



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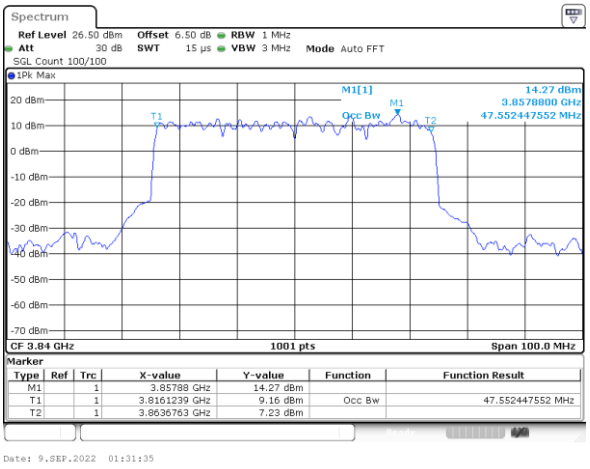

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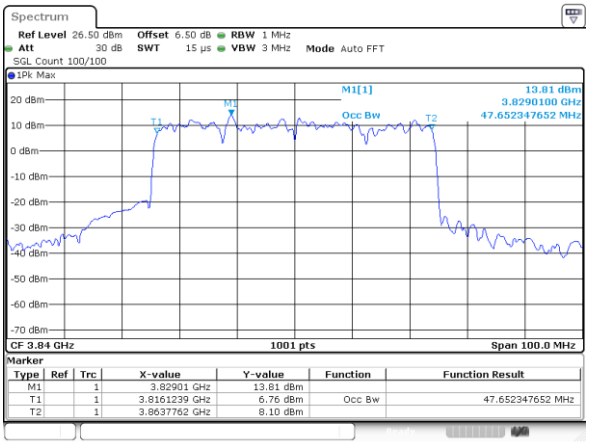

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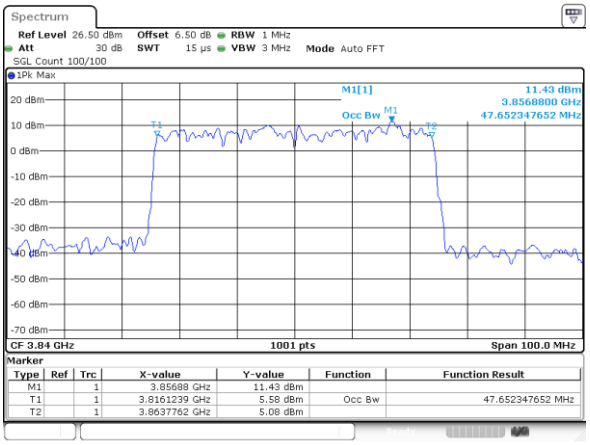
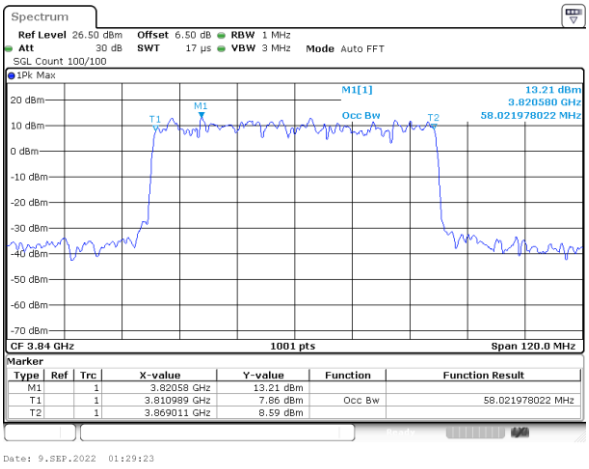


60MHz CP

QPSK



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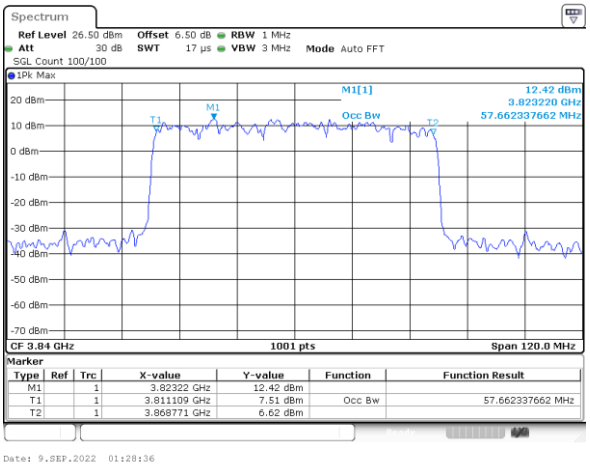

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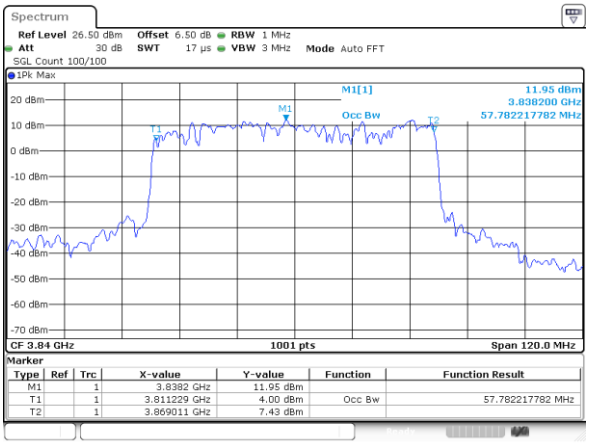

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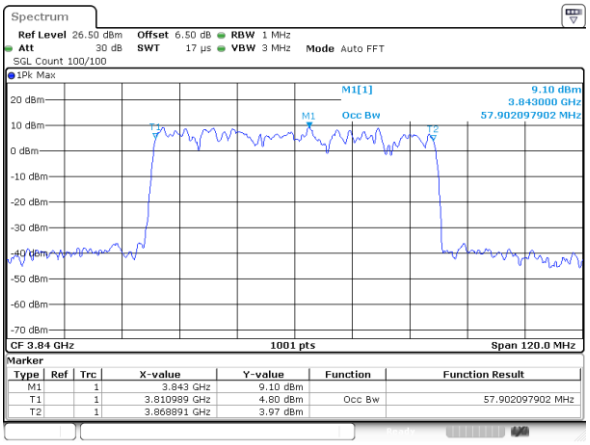
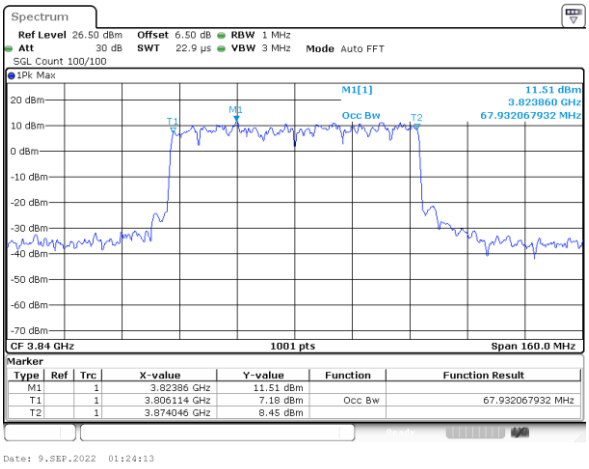


70MHz CP

QPSK



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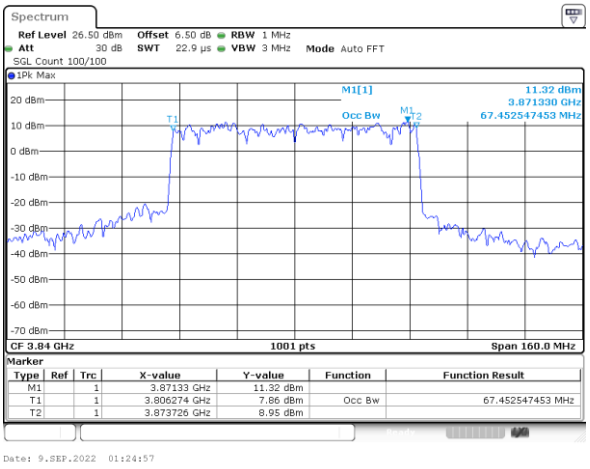

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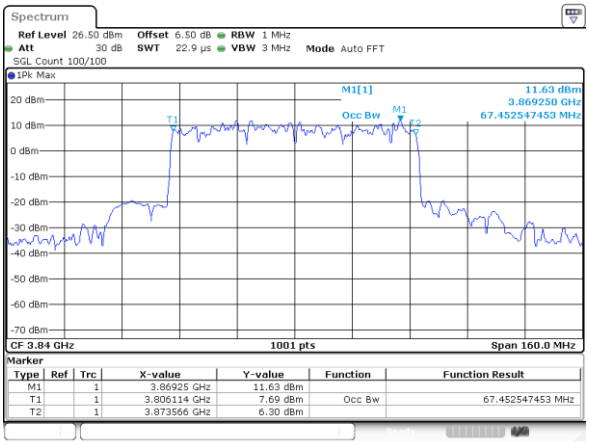
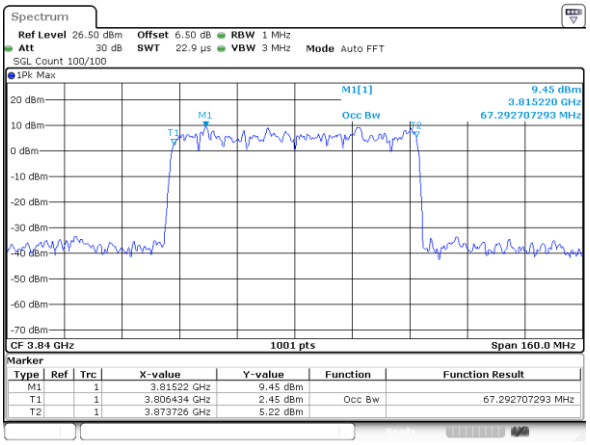
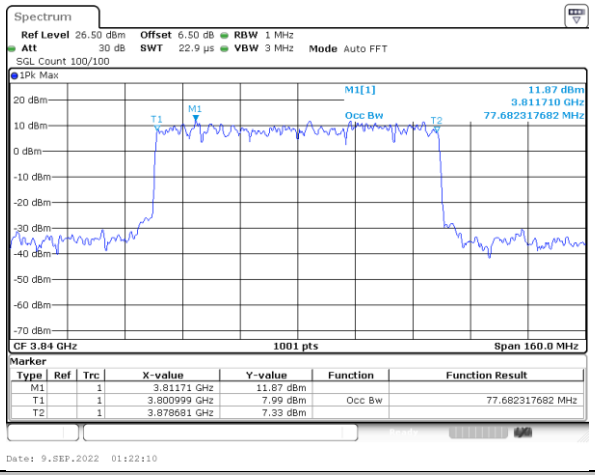


256QAM

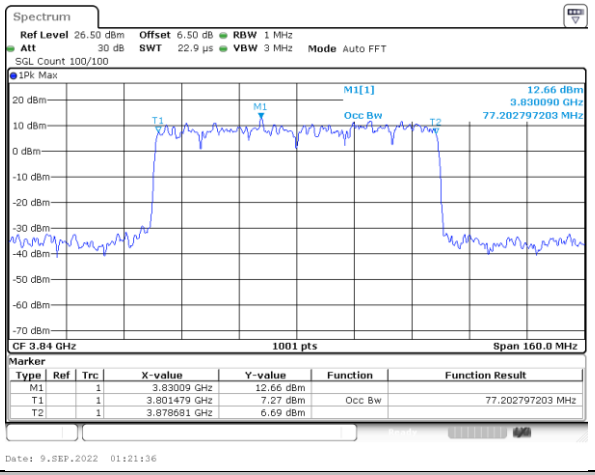


80MHz CP

QPSK



16QAM



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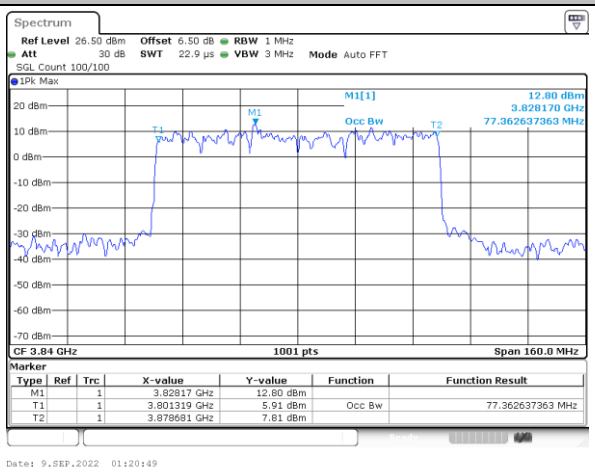

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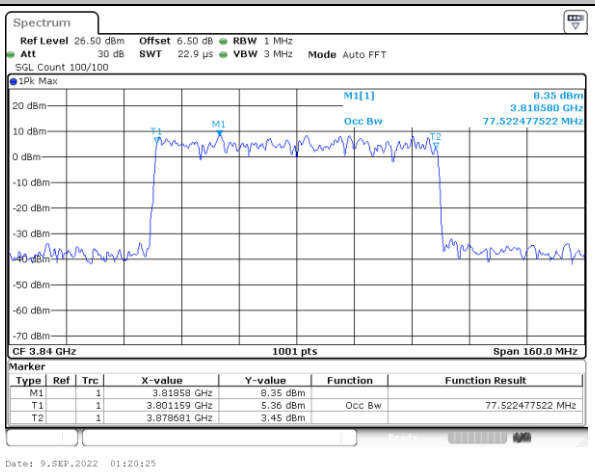
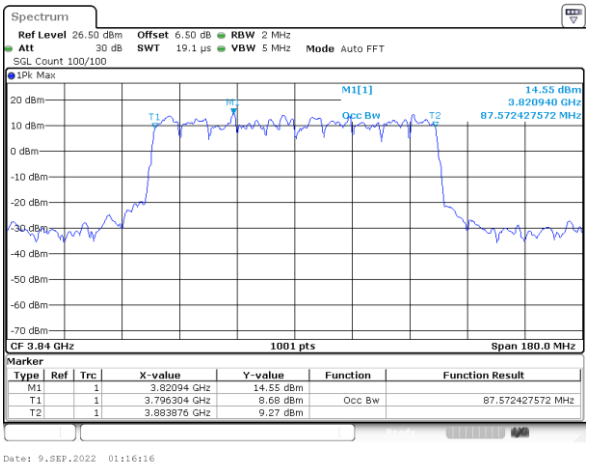


90MHz CP

QPSK



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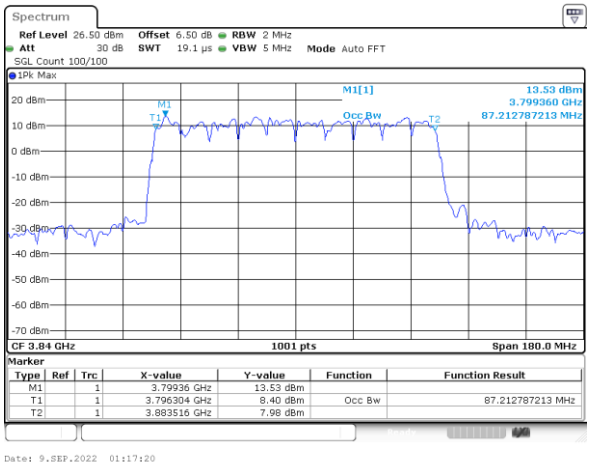

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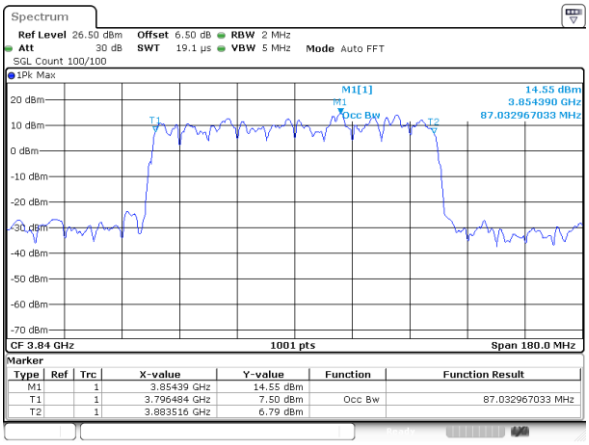

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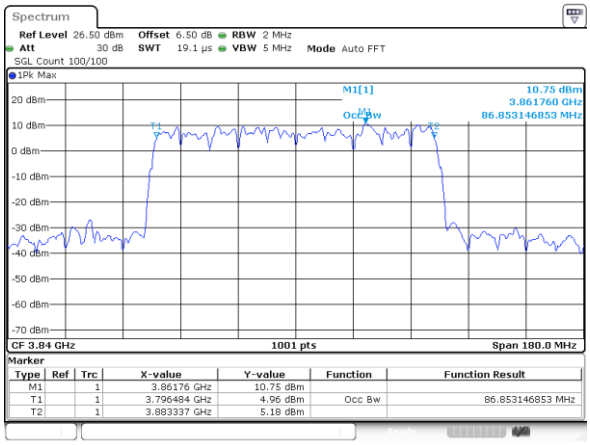
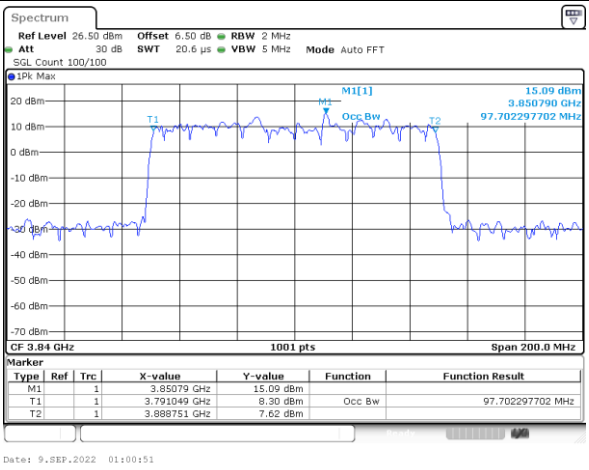


100MHz CP

QPSK



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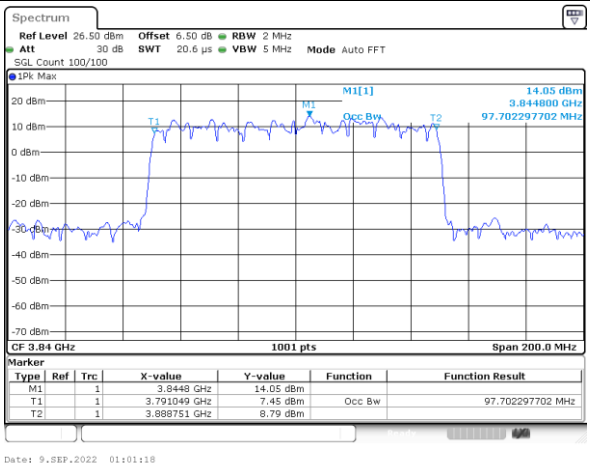

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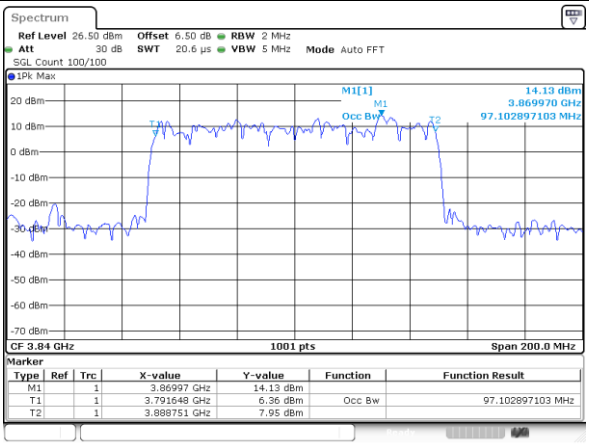

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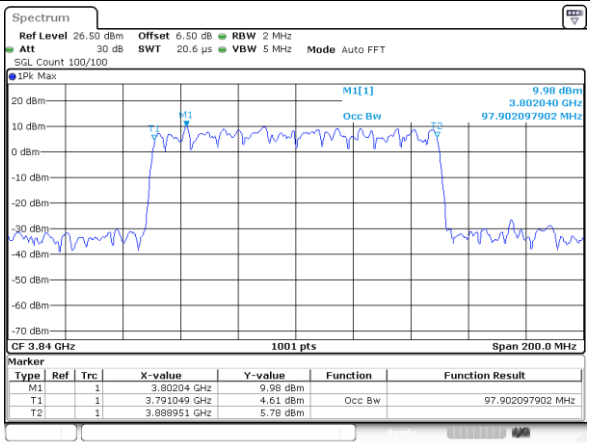
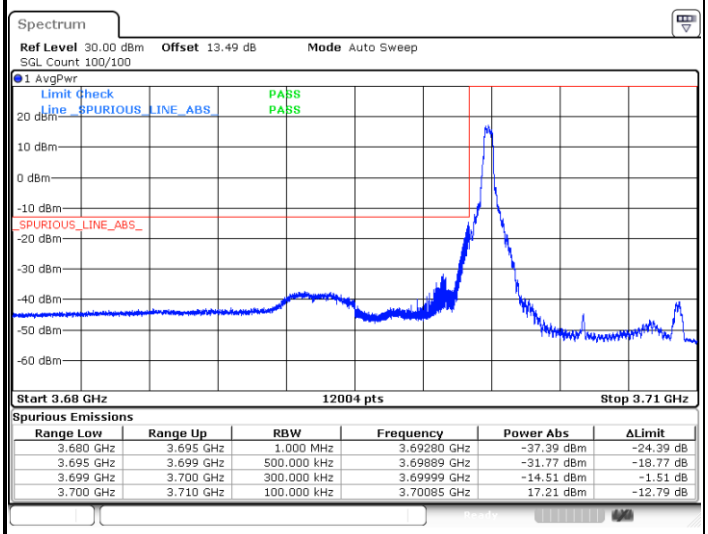


Conducted Band Edge

FR1 n77 / 10MHz / DFT-S OFDM / PI/2 BPSK

Lowest Band Edge / 1RB0

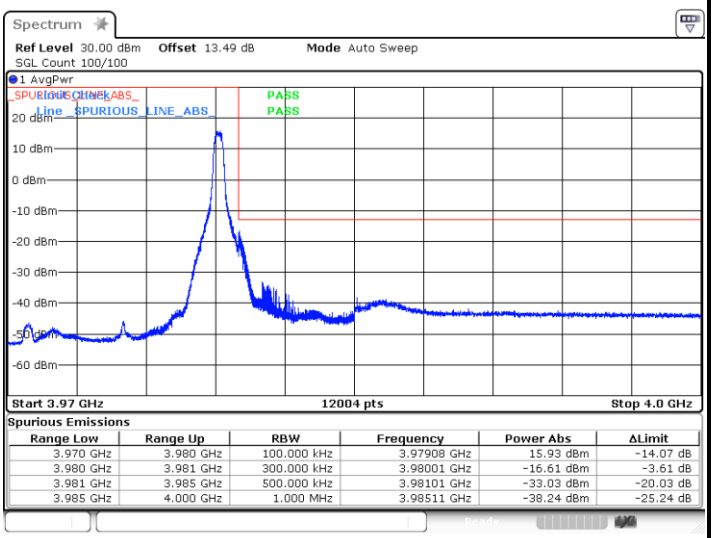


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69280 GHz	-37.39 dBm	-24.39 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69889 GHz	-31.77 dBm	-18.77 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69999 GHz	-14.51 dBm	-1.51 dB
3.700 GHz	3.710 GHz	100.000 kHz	3.70085 GHz	17.21 dBm	-12.79 dB

Date: 9.SEP.2022 02:18:25

Highest Band Edge / 1RBmax

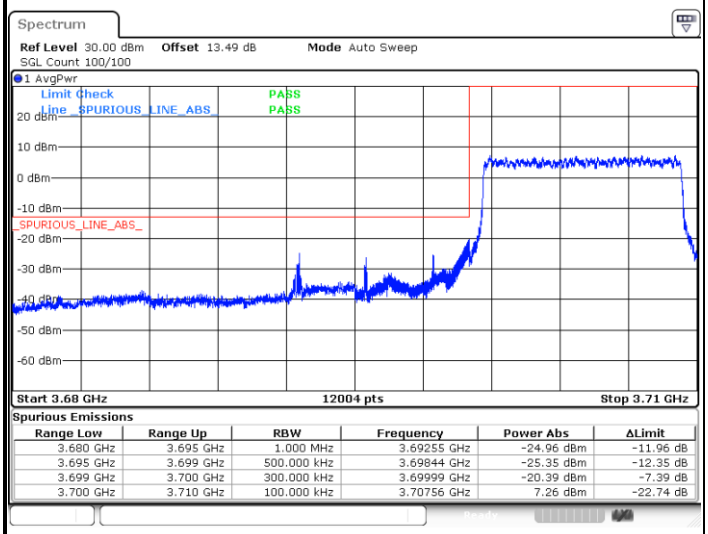


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.970 GHz	3.980 GHz	100.000 kHz	3.97908 GHz	15.93 dBm	-14.07 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98001 GHz	-16.61 dBm	-3.61 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98101 GHz	-33.03 dBm	-20.03 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98511 GHz	-38.24 dBm	-25.24 dB

Date: 9.SEP.2022 02:26:12

Lowest Band Edge / Full RB

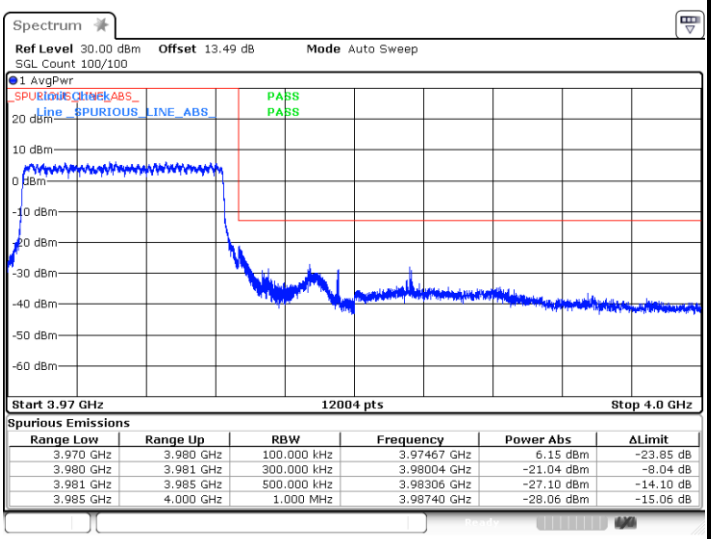


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69255 GHz	-24.96 dBm	-11.96 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69844 GHz	-25.35 dBm	-12.35 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69999 GHz	-20.39 dBm	-7.39 dB
3.700 GHz	3.710 GHz	100.000 kHz	3.70756 GHz	7.26 dBm	-22.74 dB

Date: 9.SEP.2022 02:21:30

Highest Band Edge / Full RB



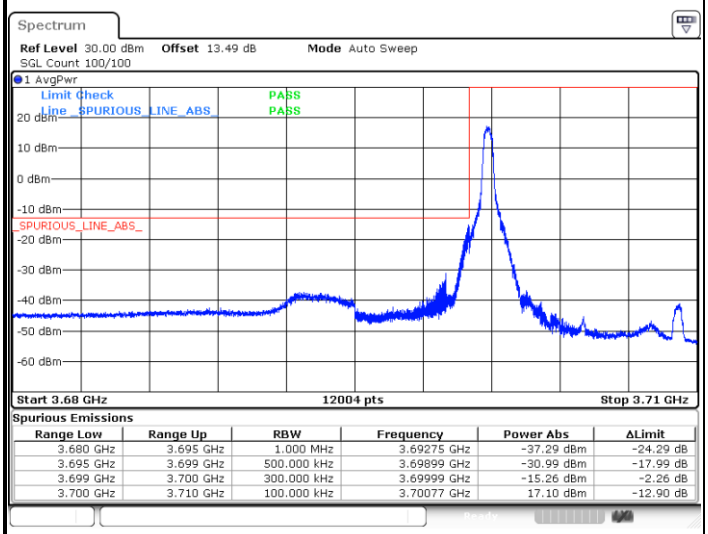
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.970 GHz	3.980 GHz	100.000 kHz	3.97467 GHz	6.15 dBm	-23.85 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98004 GHz	-21.04 dBm	-8.04 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98306 GHz	-27.10 dBm	-14.10 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98740 GHz	-28.06 dBm	-15.06 dB

Date: 9.SEP.2022 02:22:51

FR1 n77 / 10MHz / DFT-S OFDM / QPSK

Lowest Band Edge / 1RB0

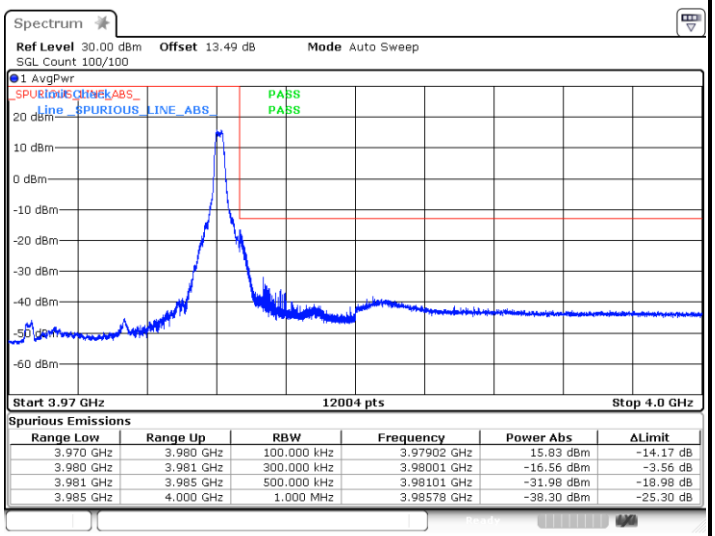


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69275 GHz	-37.29 dBm	-24.29 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69899 GHz	-30.99 dBm	-17.99 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69999 GHz	-15.26 dBm	-2.26 dB
3.700 GHz	3.710 GHz	100.000 kHz	3.70077 GHz	17.10 dBm	-12.90 dB

Date: 9.SEP.2022 02:19:56

Highest Band Edge / 1RBmax

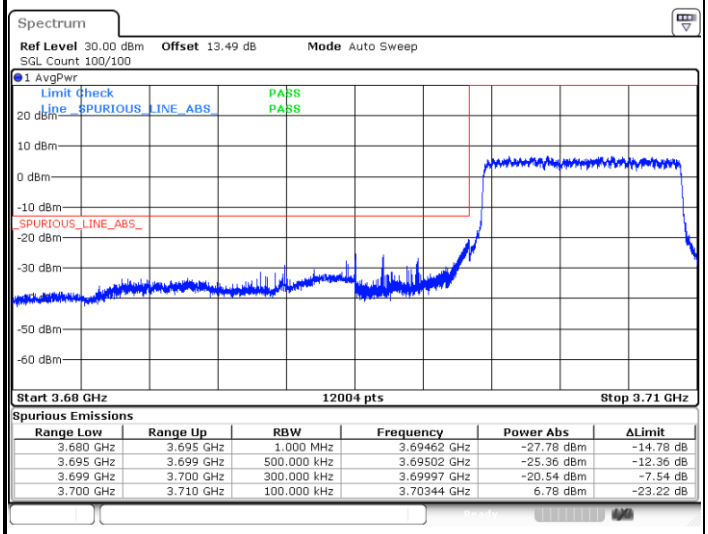


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.970 GHz	3.980 GHz	100.000 kHz	3.97902 GHz	15.83 dBm	-14.17 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98001 GHz	-16.56 dBm	-3.56 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98101 GHz	-31.98 dBm	-18.98 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98578 GHz	-38.30 dBm	-25.30 dB

Date: 9.SEP.2022 02:25:02

Lowest Band Edge / Full RB

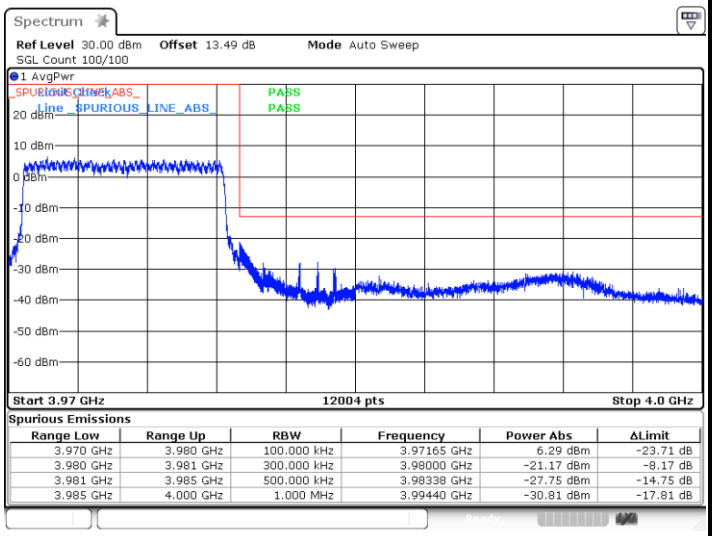


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69462 GHz	-27.78 dBm	-14.78 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69502 GHz	-25.36 dBm	-12.36 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69997 GHz	-20.54 dBm	-7.54 dB
3.700 GHz	3.710 GHz	100.000 kHz	3.70344 GHz	6.78 dBm	-23.22 dB

Date: 9.SEP.2022 02:20:40

Highest Band Edge / Full RB



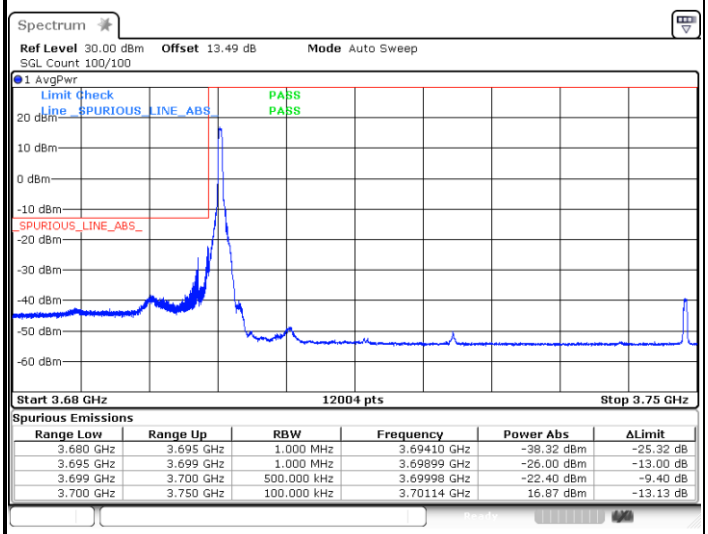
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.970 GHz	3.980 GHz	100.000 kHz	3.97165 GHz	6.29 dBm	-23.71 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98000 GHz	-21.17 dBm	-8.17 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98338 GHz	-27.75 dBm	-14.75 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.99440 GHz	-30.81 dBm	-17.81 dB

Date: 9.SEP.2022 02:23:41

FR1 n77 / 50MHz / DFT-S OFDM / PI/2 BPSK

Lowest Band Edge / 1RB0

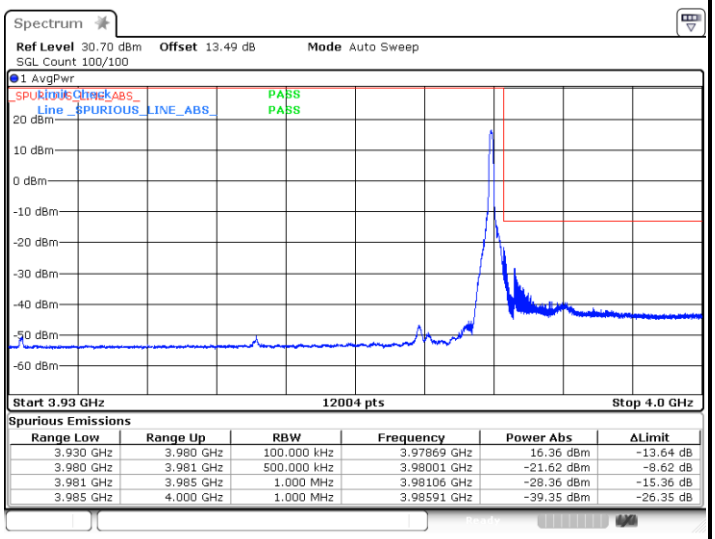


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69410 GHz	-38.32 dBm	-25.32 dB
3.695 GHz	3.699 GHz	1.000 MHz	3.69899 GHz	-26.00 dBm	-13.00 dB
3.699 GHz	3.700 GHz	500.000 kHz	3.69998 GHz	-22.40 dBm	-9.40 dB
3.700 GHz	3.750 GHz	100.000 kHz	3.70114 GHz	16.87 dBm	-13.13 dB

Date: 9.SEP.2022 01:35:48

Highest Band Edge / 1RBmax

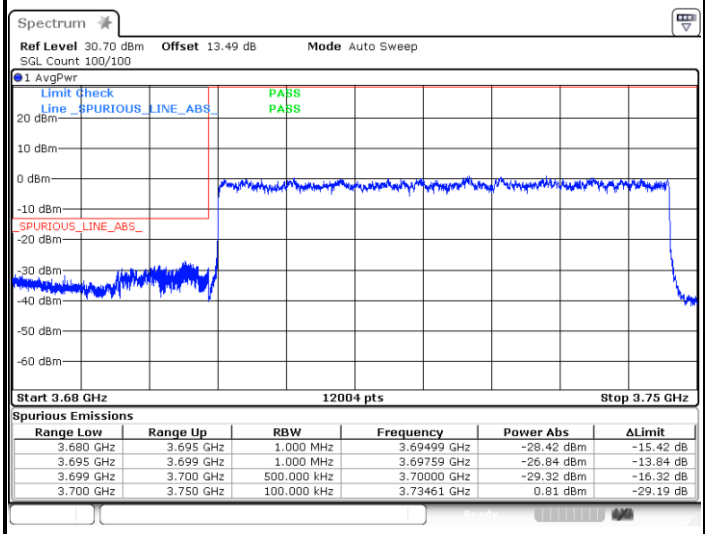


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.930 GHz	3.980 GHz	100.000 kHz	3.97869 GHz	16.36 dBm	-13.64 dB
3.980 GHz	3.981 GHz	500.000 kHz	3.98001 GHz	-21.62 dBm	-8.62 dB
3.981 GHz	3.985 GHz	1.000 MHz	3.98106 GHz	-28.36 dBm	-15.36 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98591 GHz	-39.35 dBm	-26.35 dB

Date: 9.SEP.2022 01:45:12

Lowest Band Edge / Full RB

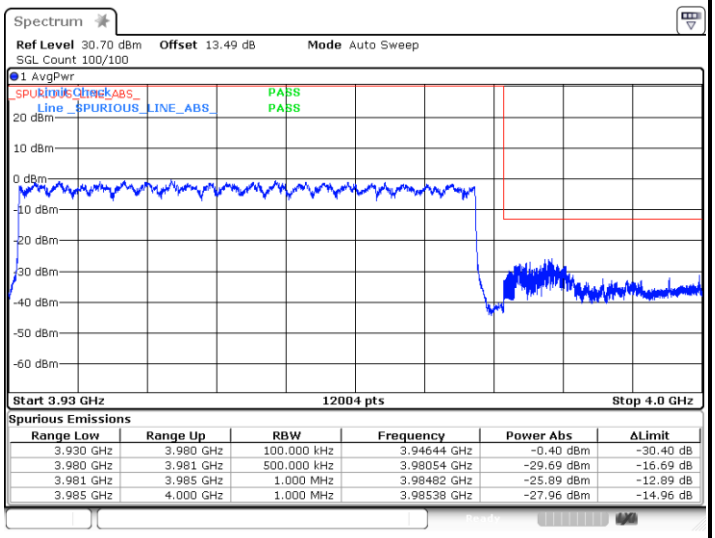


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69499 GHz	-28.42 dBm	-15.42 dB
3.695 GHz	3.699 GHz	1.000 MHz	3.69759 GHz	-26.84 dBm	-13.84 dB
3.699 GHz	3.700 GHz	500.000 kHz	3.70000 GHz	-29.32 dBm	-16.32 dB
3.700 GHz	3.750 GHz	100.000 kHz	3.73461 GHz	0.81 dBm	-29.19 dB

Date: 9.SEP.2022 01:40:15

Highest Band Edge / Full RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.930 GHz	3.980 GHz	100.000 kHz	3.94644 GHz	-0.40 dBm	-30.40 dB
3.980 GHz	3.981 GHz	500.000 kHz	3.98054 GHz	-29.69 dBm	-16.69 dB
3.981 GHz	3.985 GHz	1.000 MHz	3.98482 GHz	-25.89 dBm	-12.89 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98538 GHz	-27.96 dBm	-14.96 dB

Date: 9.SEP.2022 01:41:30