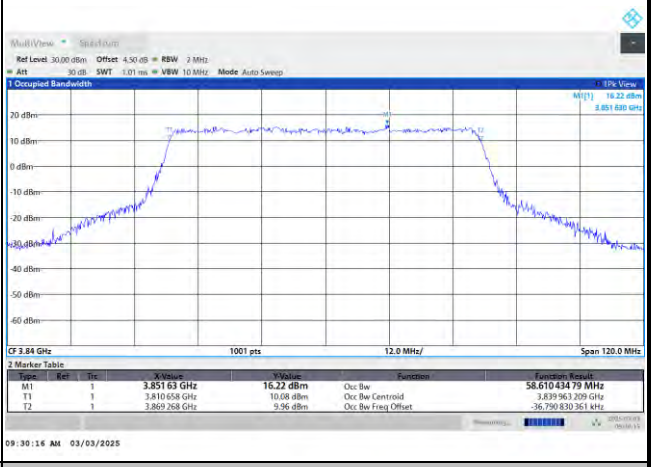
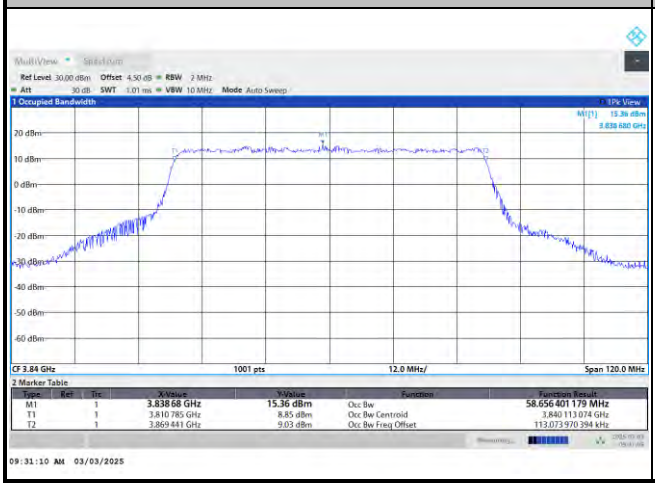
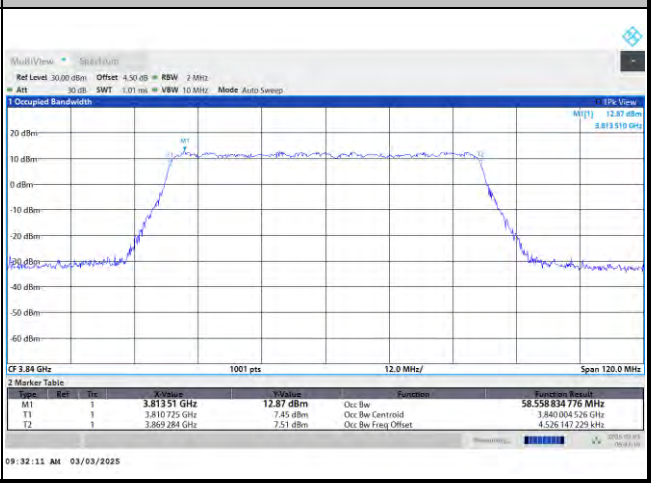
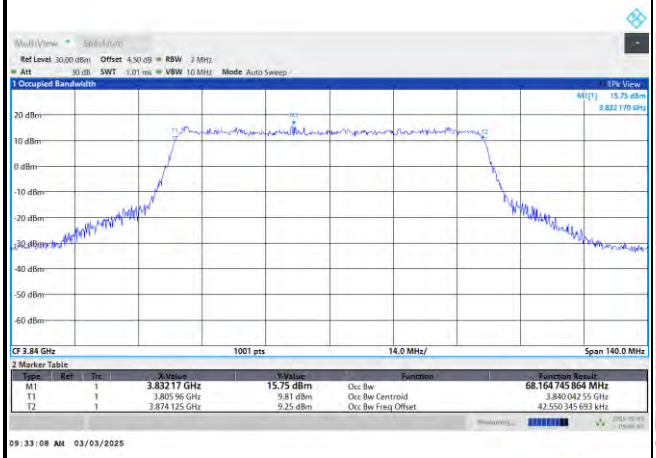
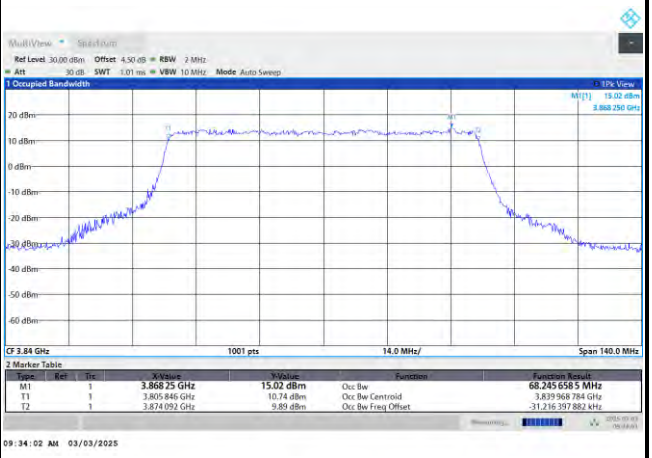
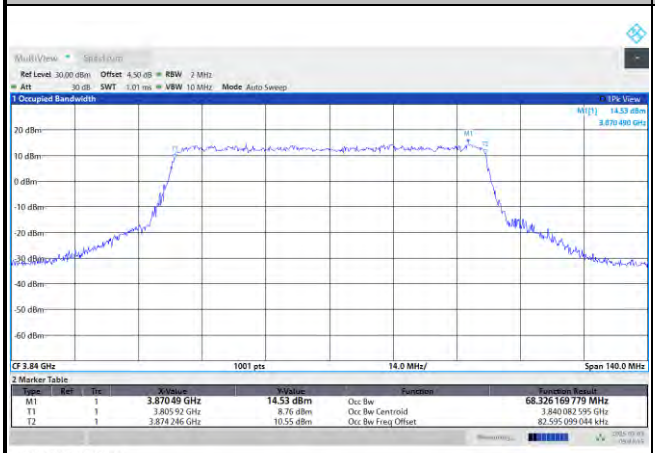
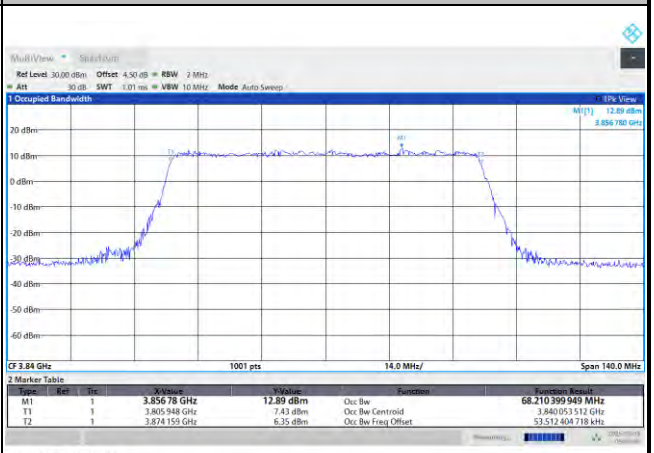
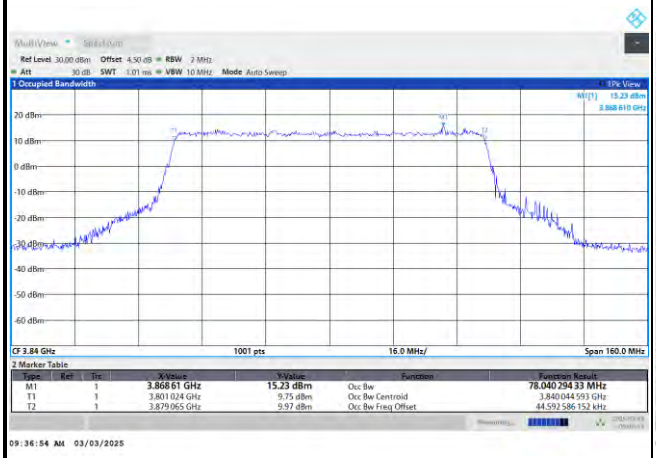
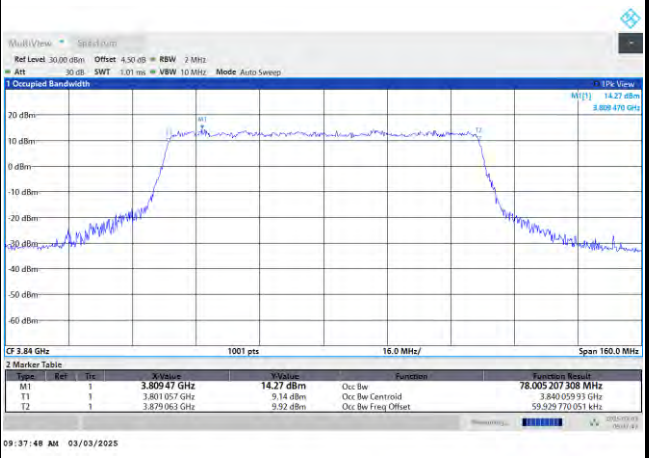
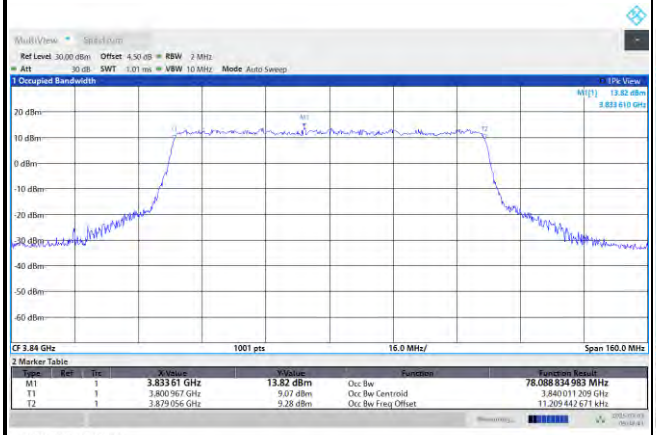
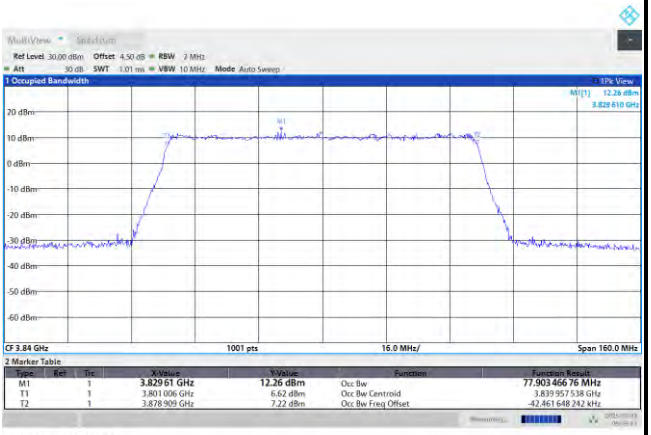
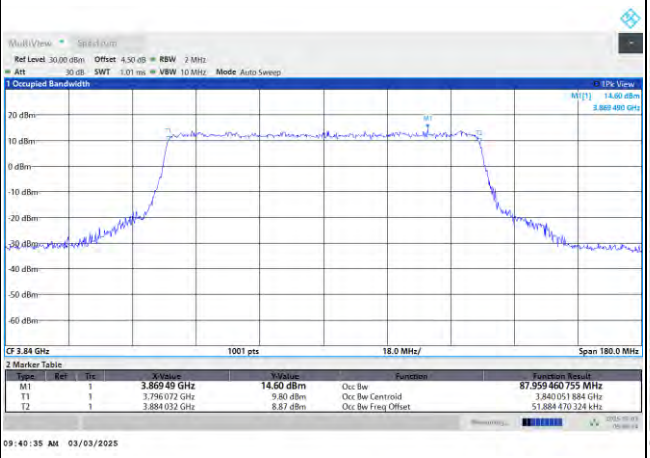
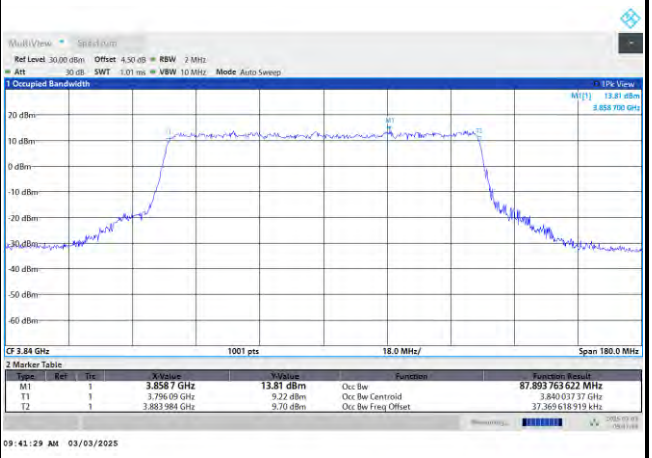
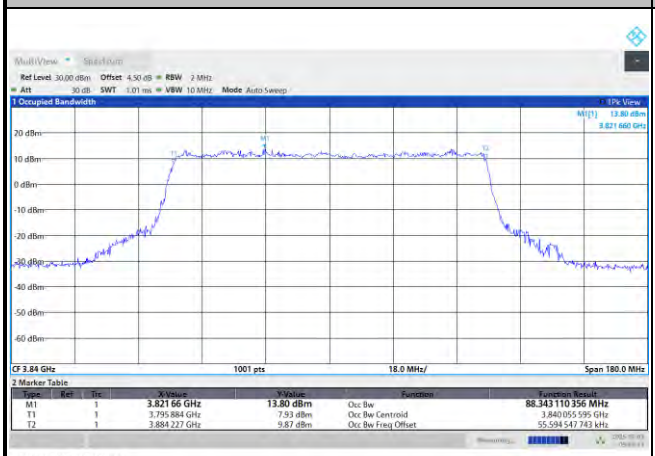
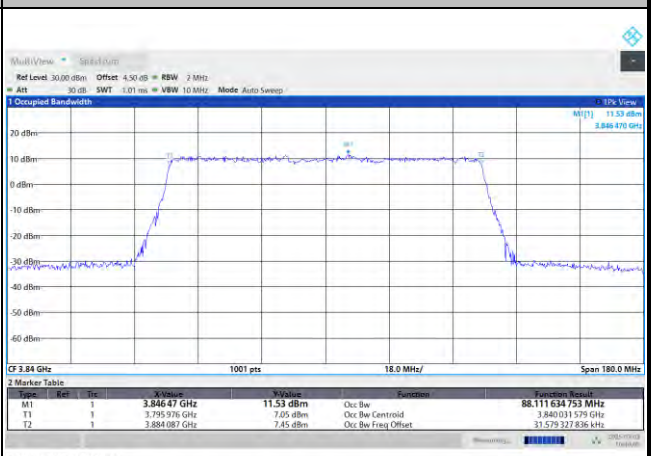
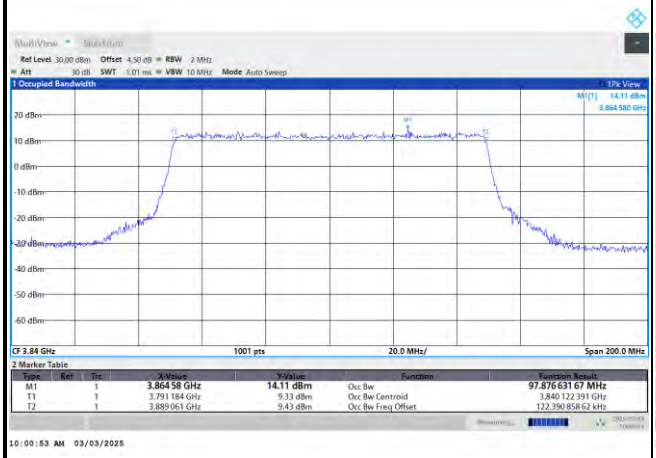
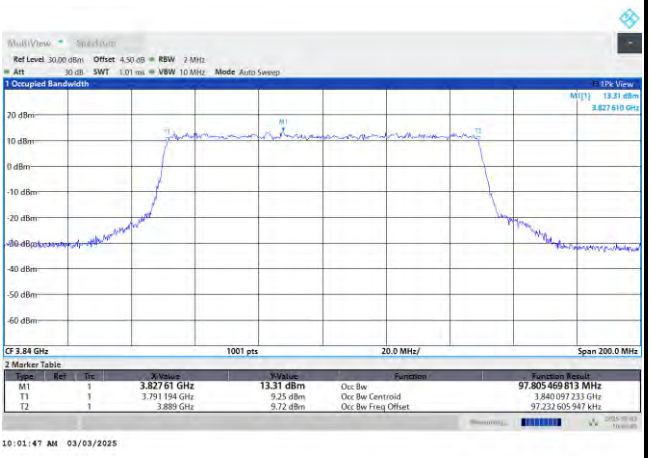
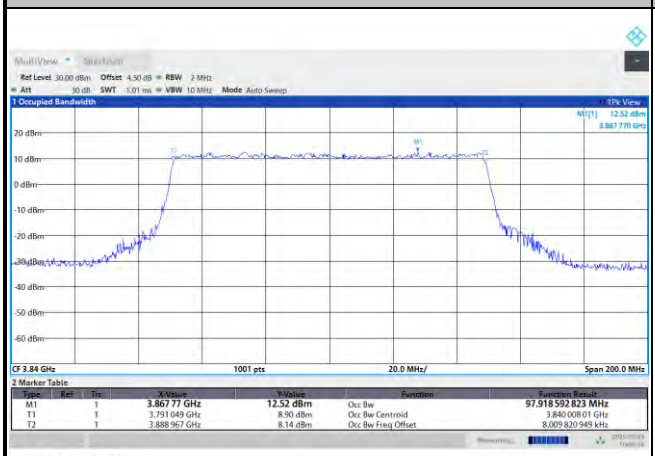
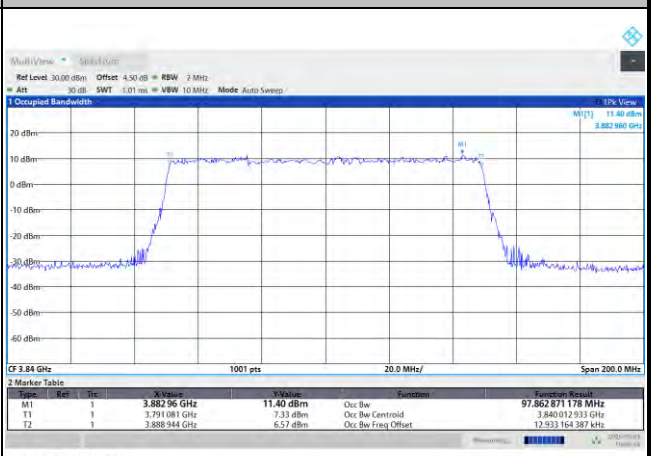
FR1 n77 / 60MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

FR1 n77 / 70MHz / CP OFDM / Middle Channel / Full RB	
QPSK	**16QAM**
	
64QAM	**256QAM**
	

FR1 n77 / 80MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

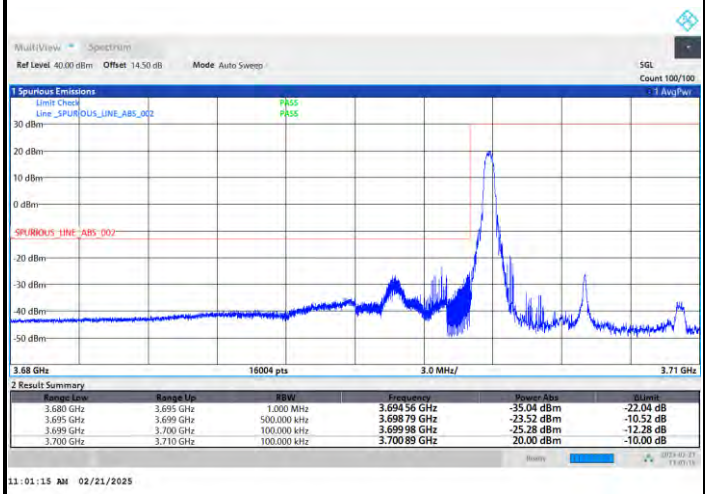
FR1 n77 / 90MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

FR1 n77 / 100MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

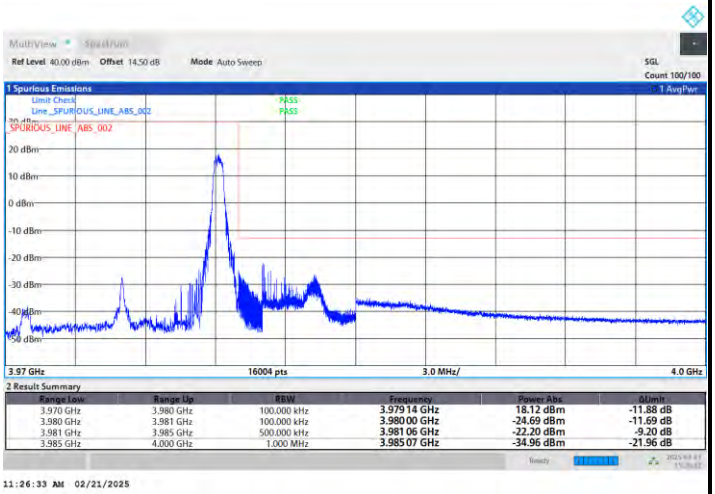
Conducted Band Edge

FR1 n77 / 10MHz / CP OFDM / QPSK

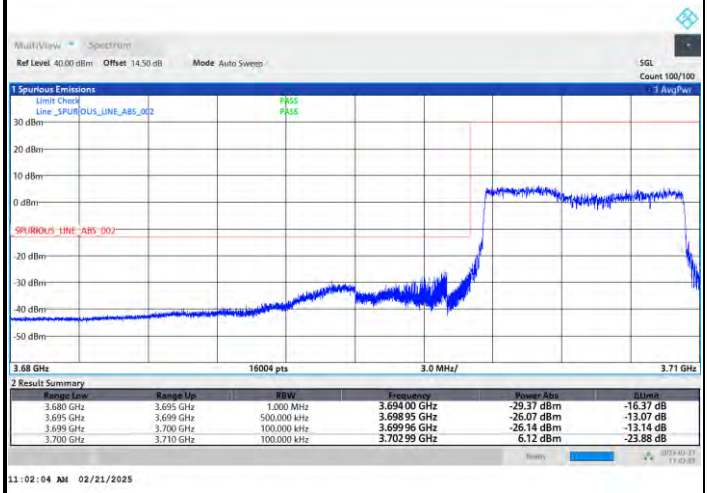
Lowest Band Edge / 1RB0



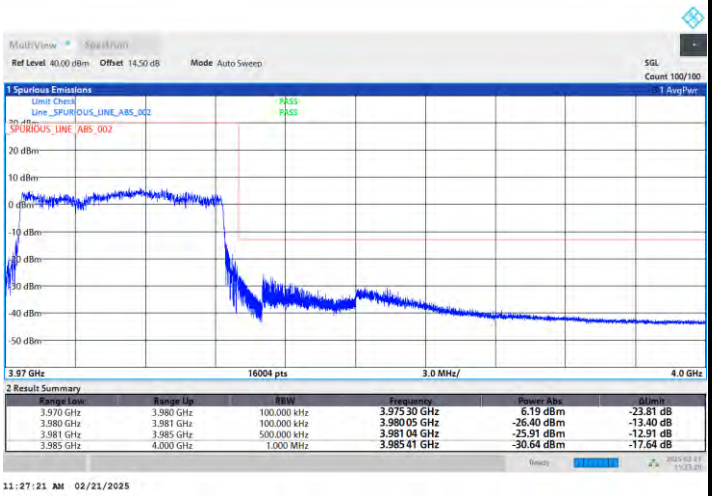
Highest Band Edge / 1RBmax



Lowest Band Edge / Full RB

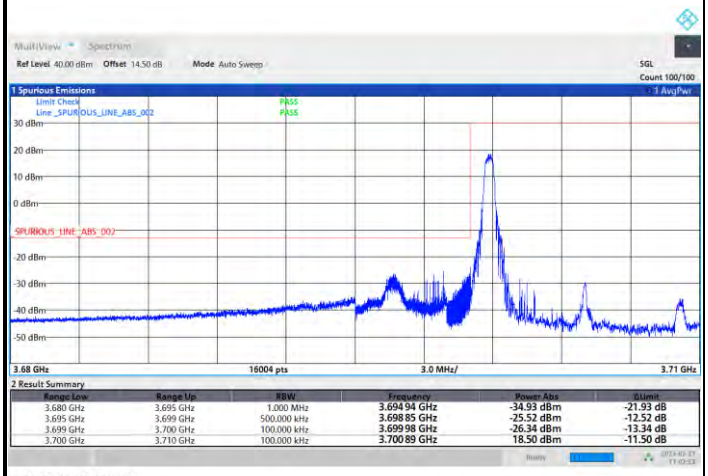


Highest Band Edge / Full RB

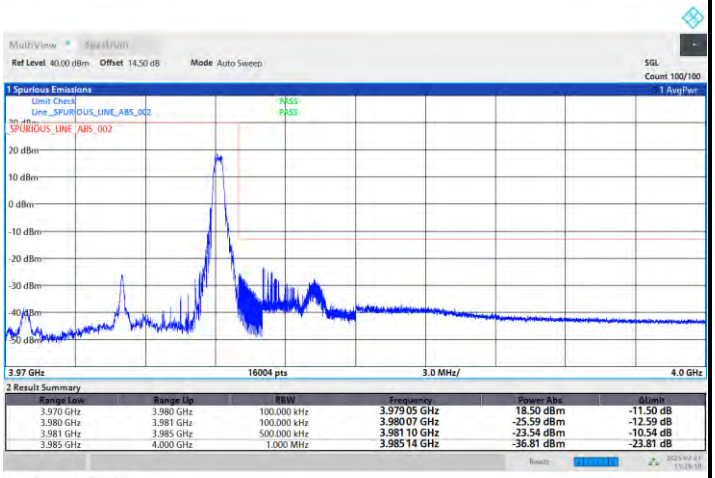


FR1 n77 / 10MHz / CP OFDM / 16QAM

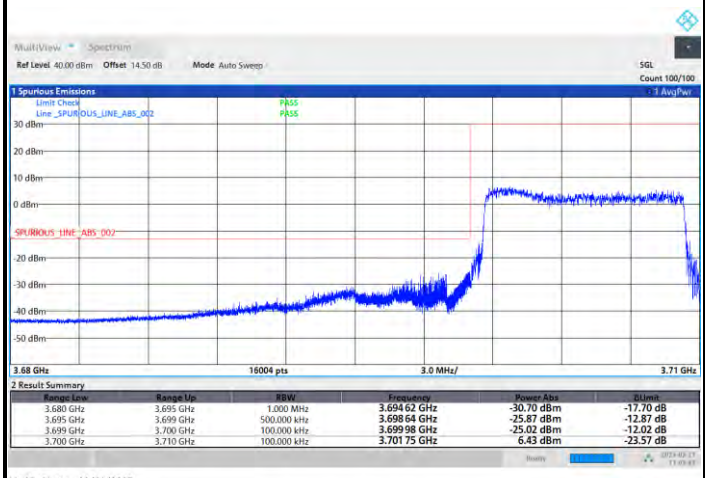
Lowest Band Edge / 1RB0



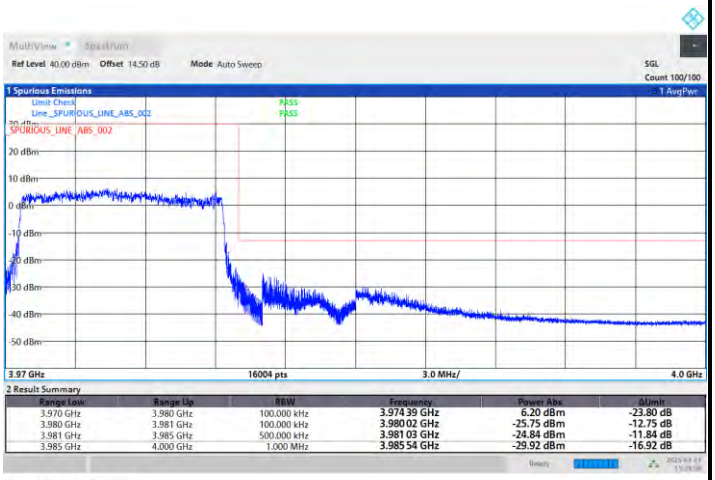
Highest Band Edge / 1RBmax



Lowest Band Edge / Full RB



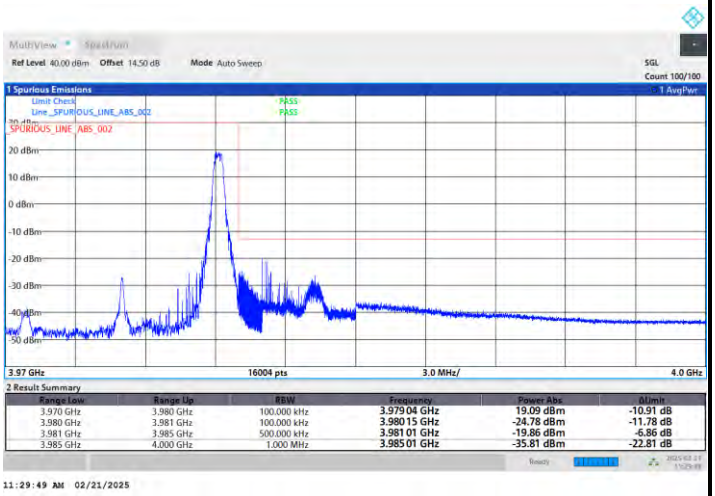
Highest Band Edge / Full RB



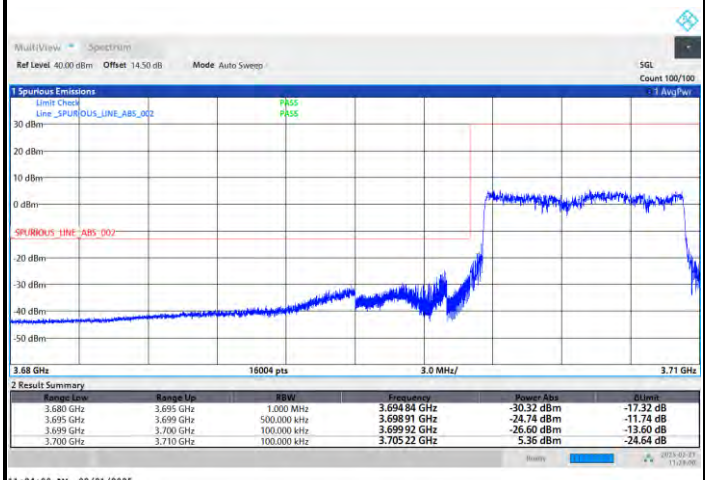
FR1 n77 / 10MHz / CP OFDM / 64QAM

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax



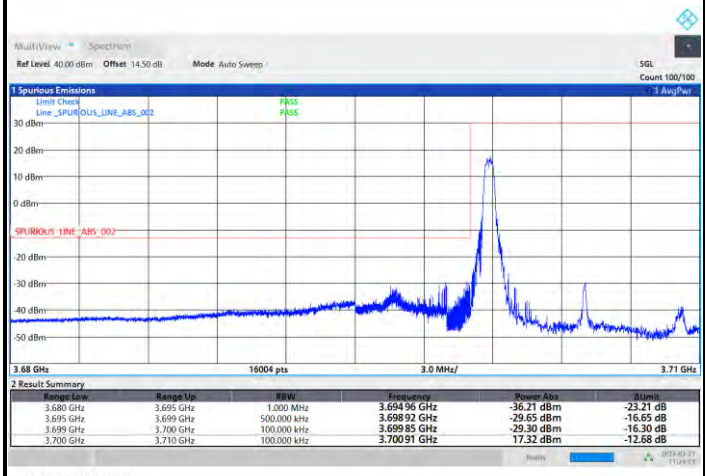
Lowest Band Edge / Full RB



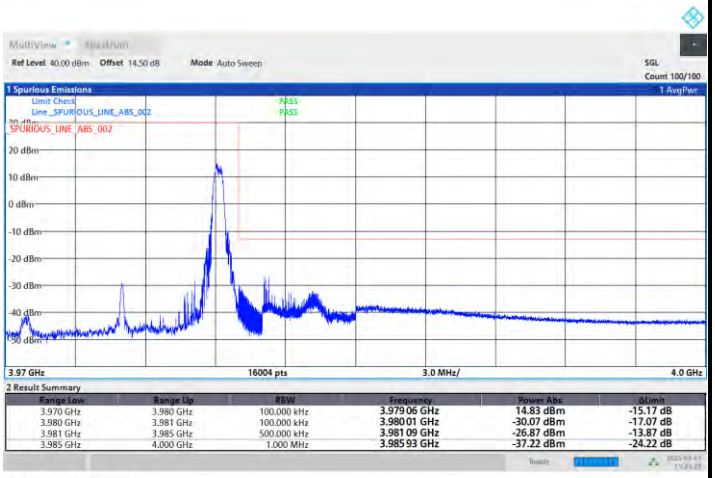
Highest Band Edge / Full RB

FR1 n77 / 10MHz / CP OFDM / 256QAM

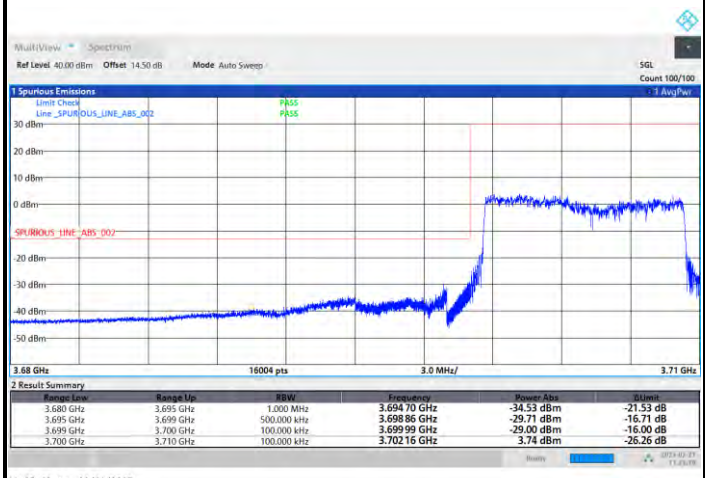
Lowest Band Edge / 1RB0



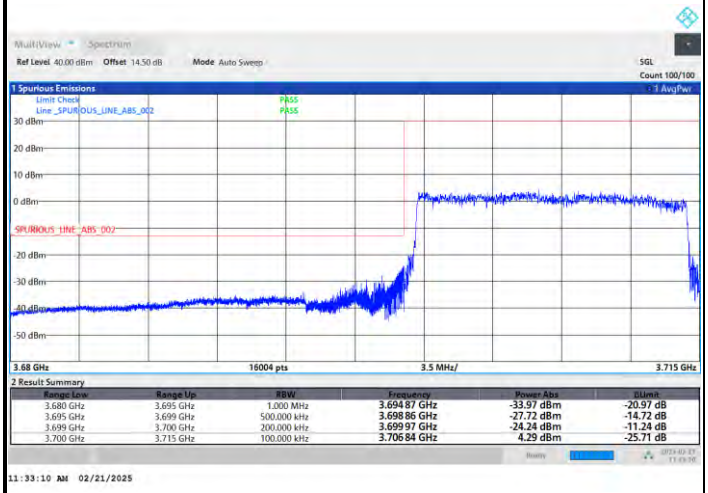
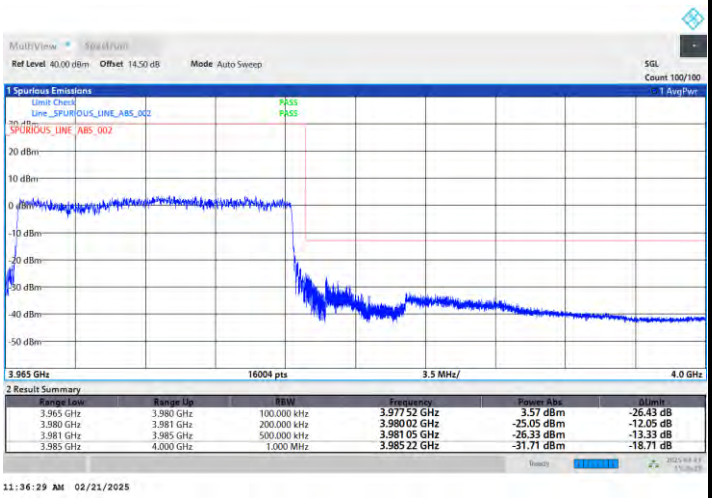
Highest Band Edge / 1RBmax

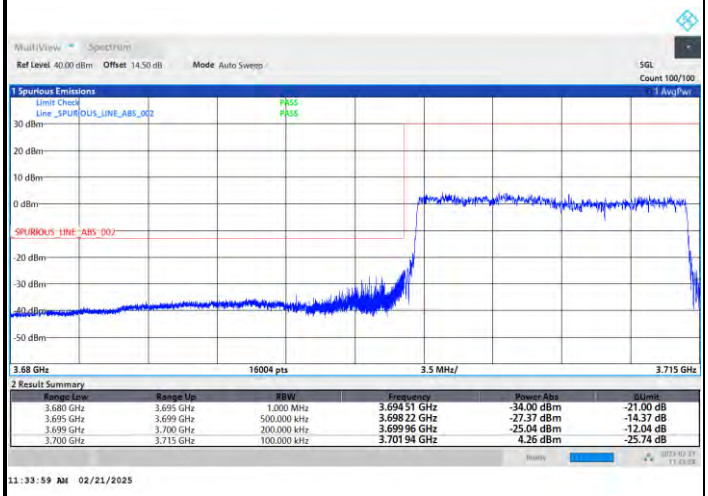
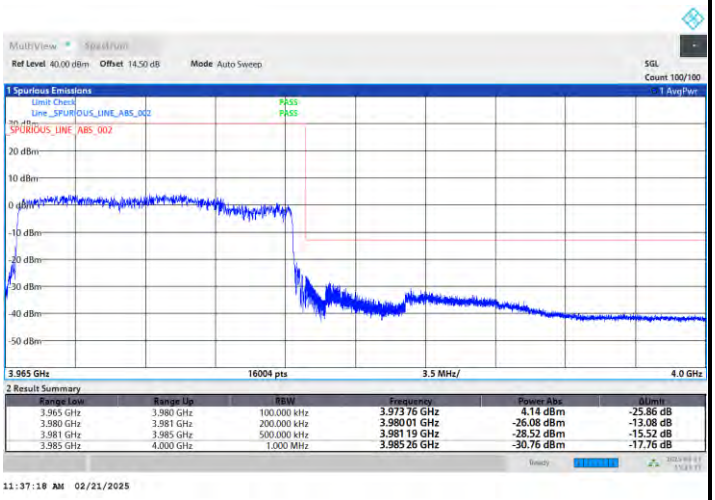


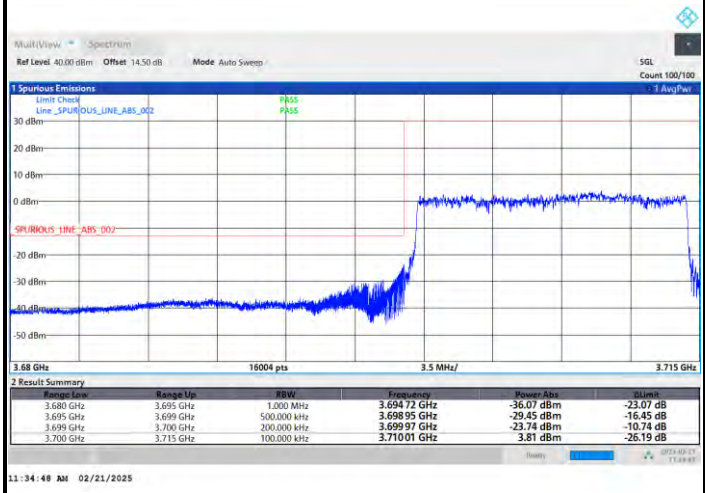
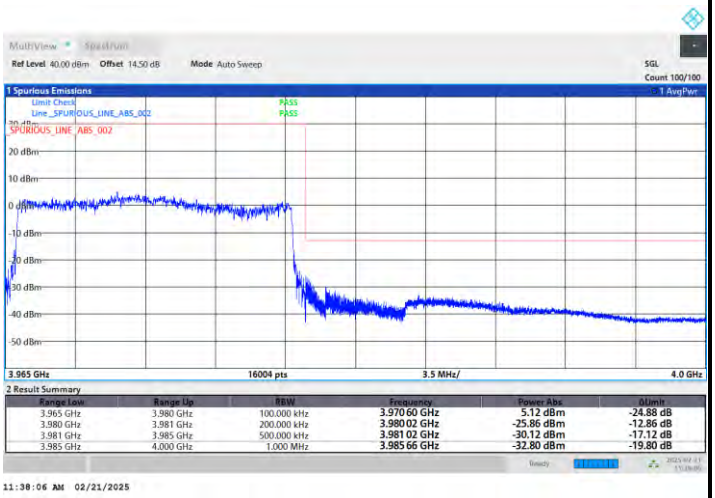
Lowest Band Edge / Full RB

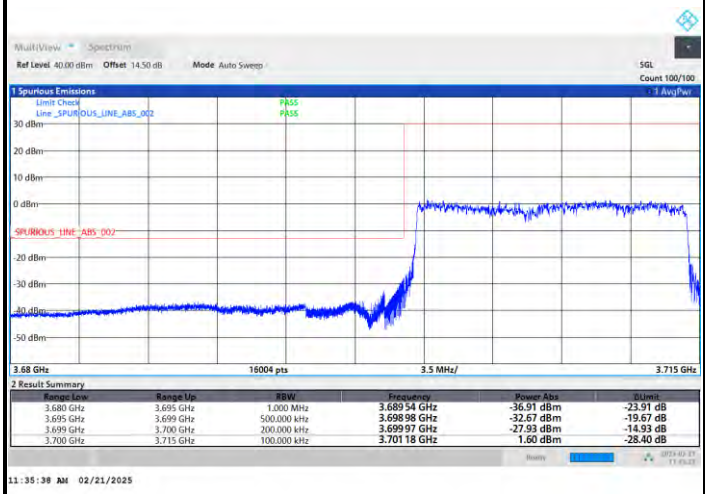
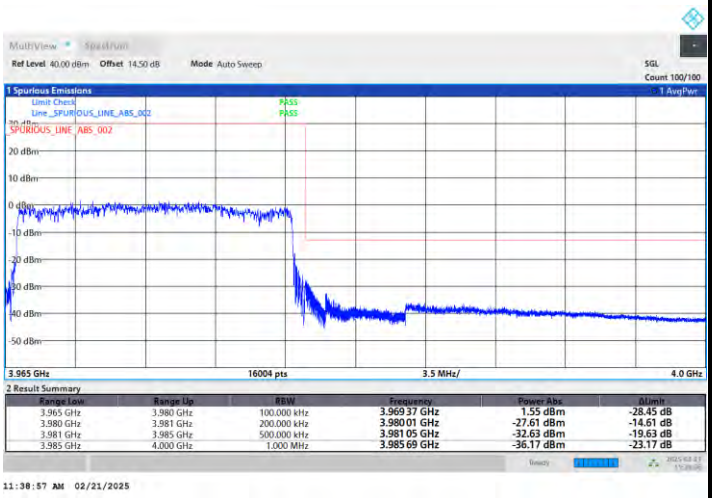


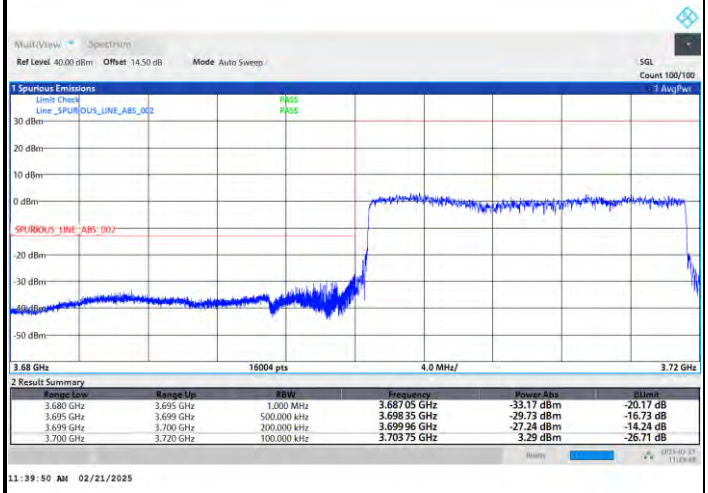
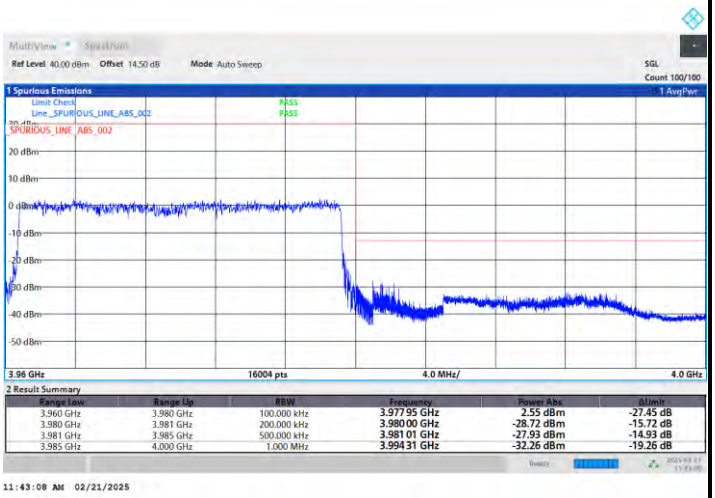
Highest Band Edge / Full RB

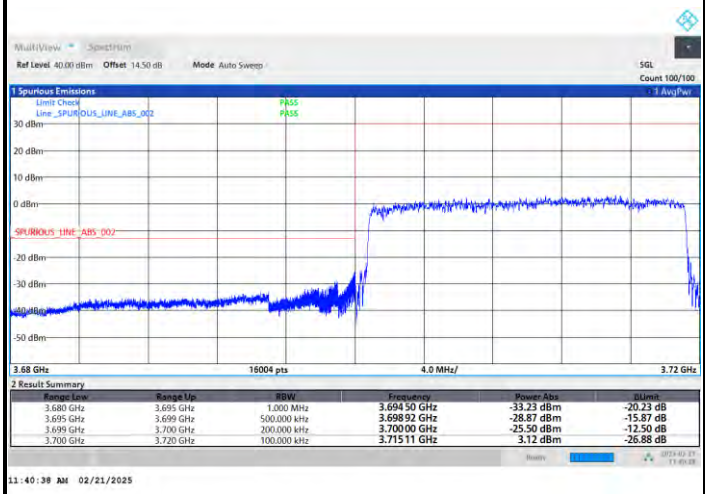
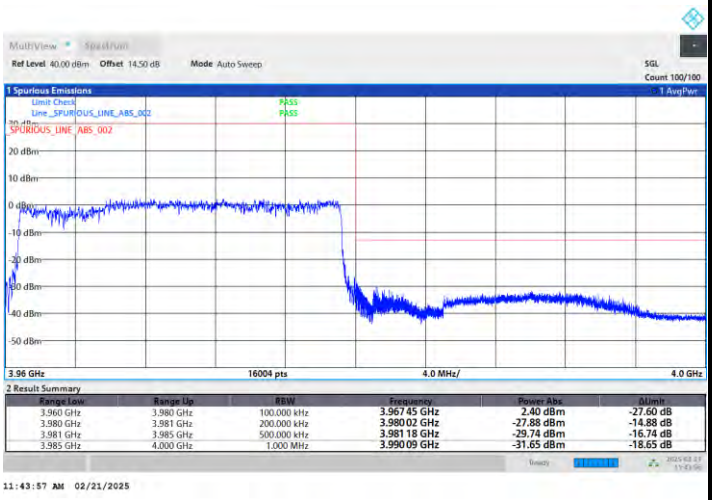
FR1 n77 / 15MHz / CP OFDM / QPSK	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

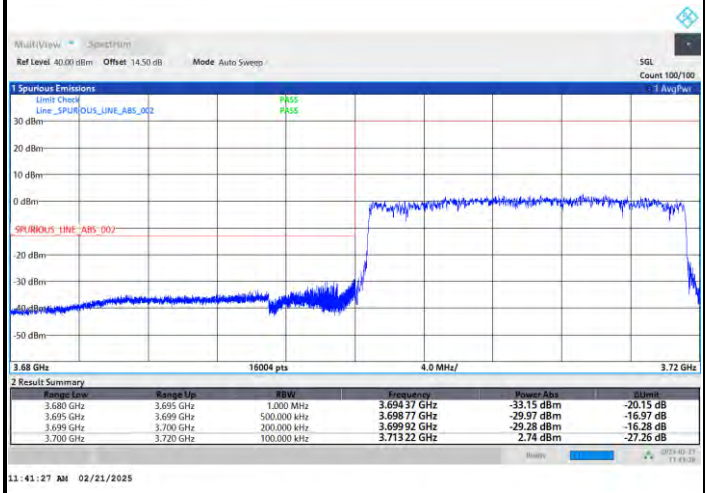
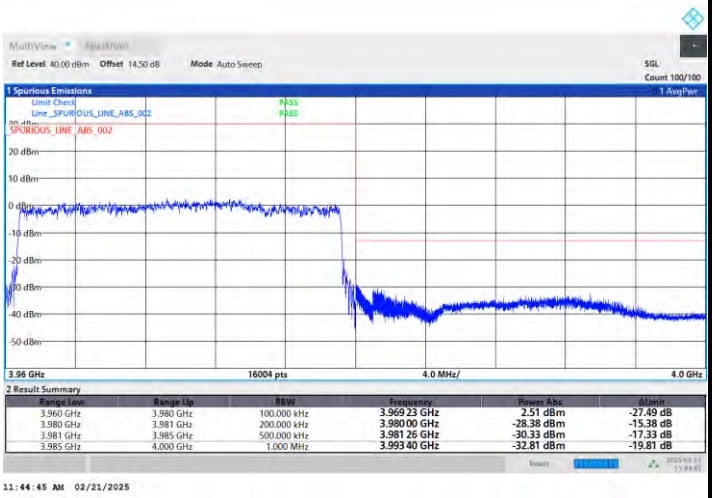
FR1 n77 / 15MHz / CP OFDM / 16QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

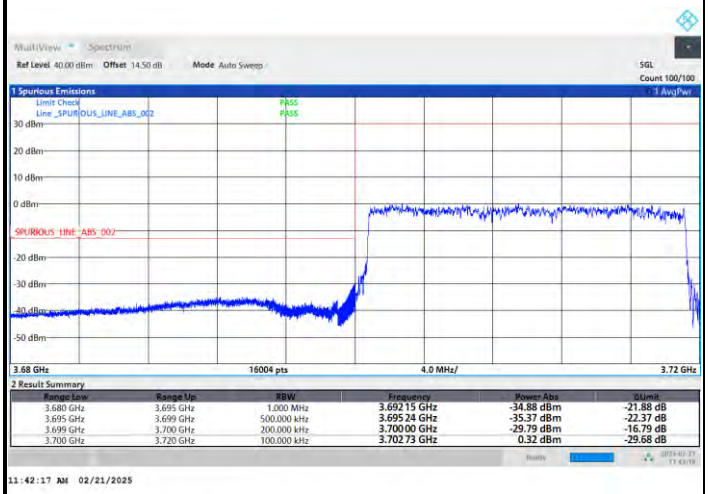
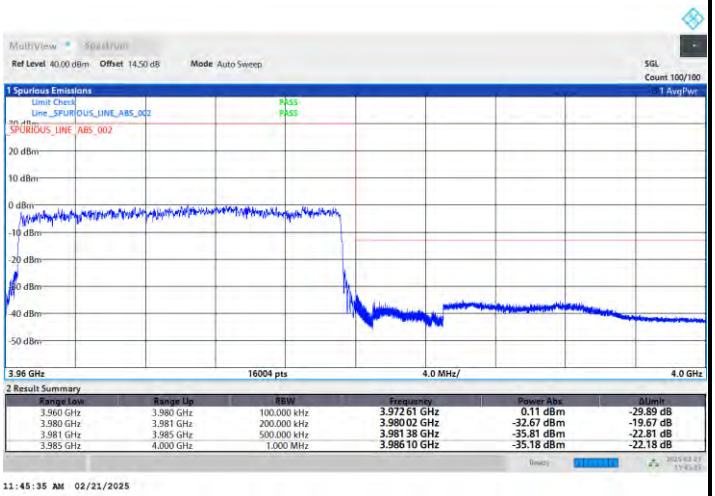
FR1 n77 / 15MHz / CP OFDM / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

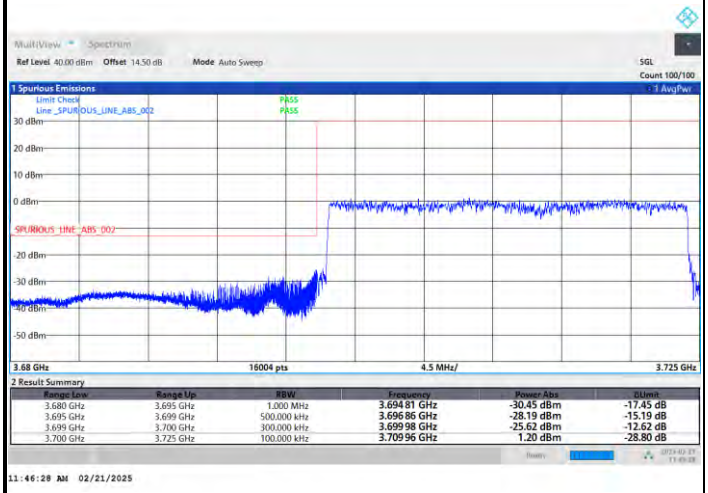
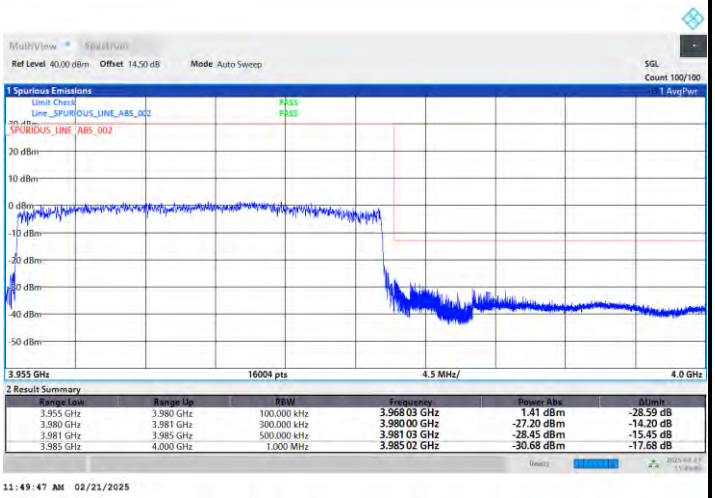
FR1 n77 / 15MHz / CP OFDM / 256QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

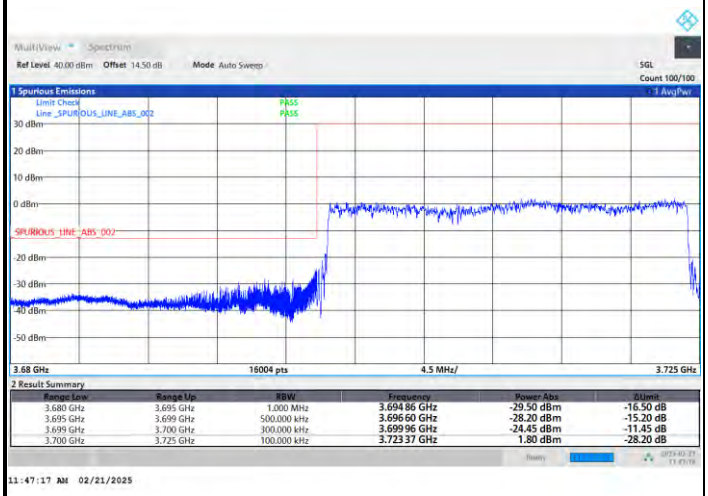
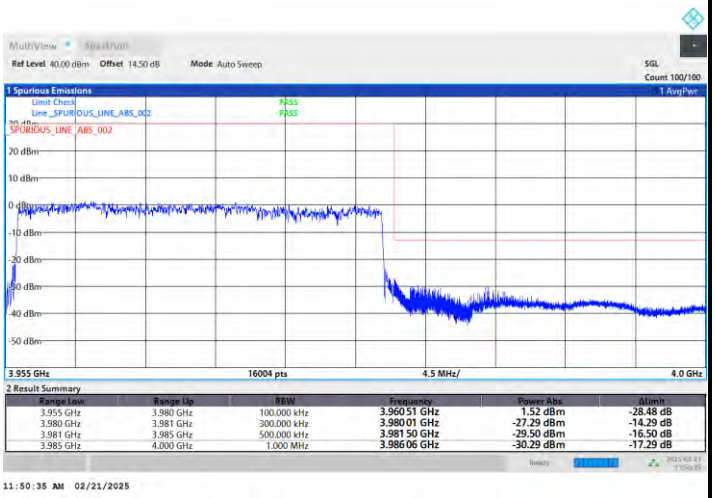
FR1 n77 / 20MHz / CP OFDM / QPSK	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

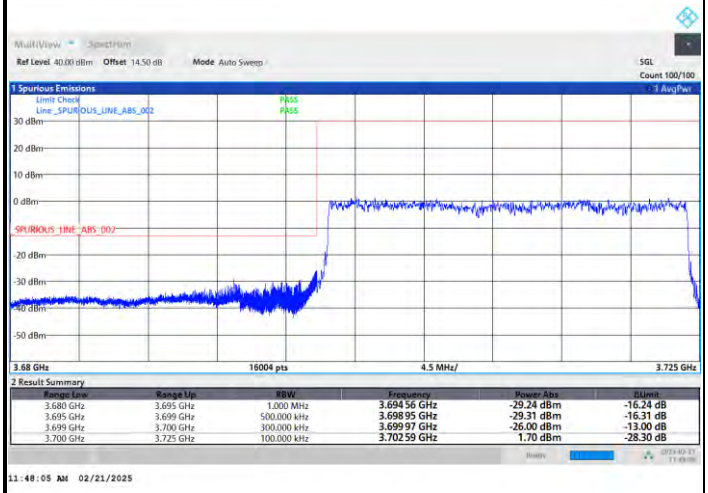
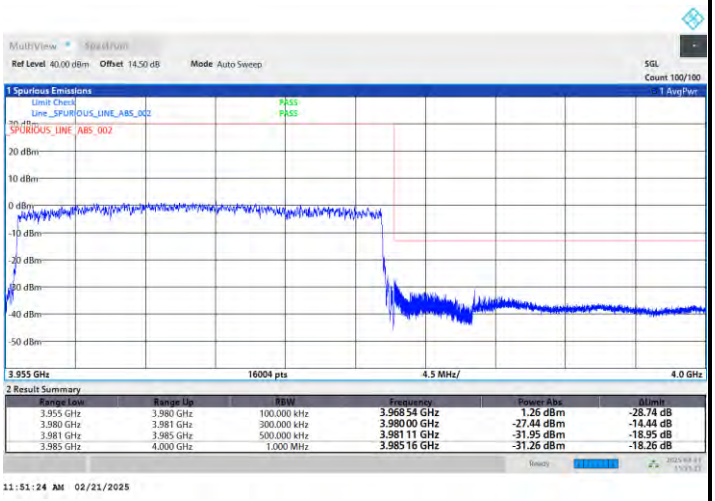
FR1 n77 / 20MHz / CP OFDM / 16QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

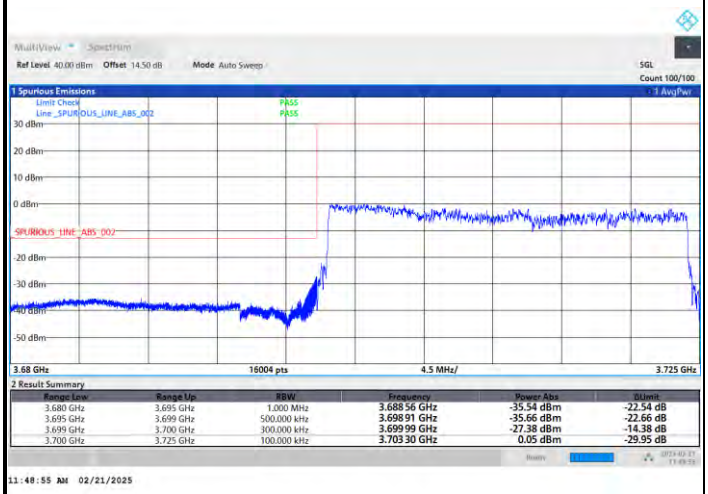
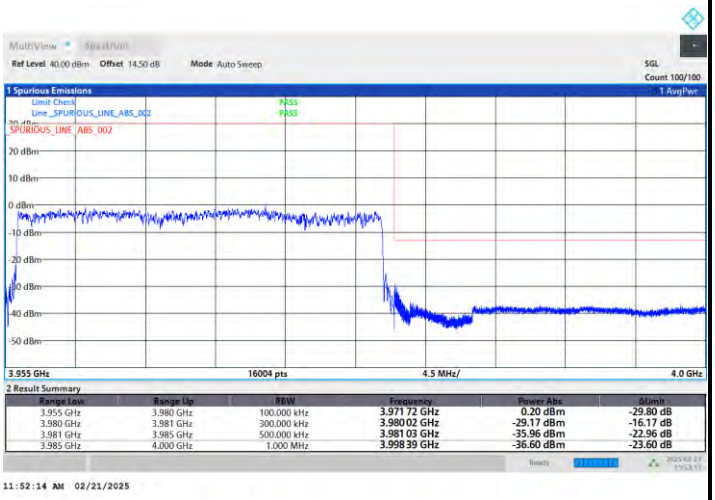
FR1 n77 / 20MHz / CP OFDM / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

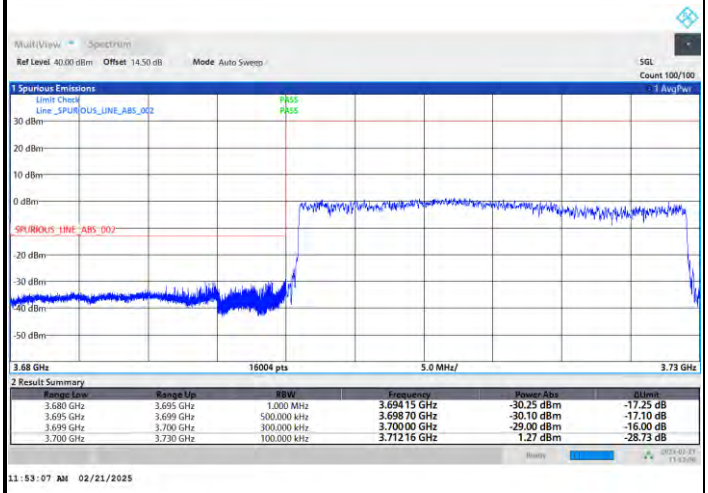
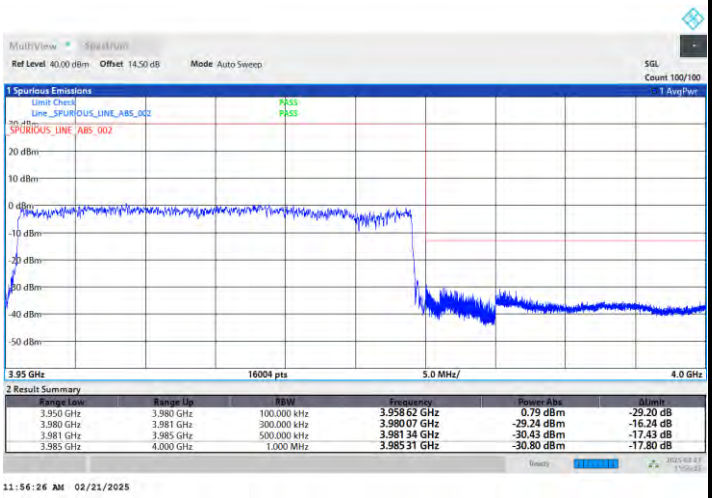
FR1 n77 / 20MHz / CP OFDM / 256QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

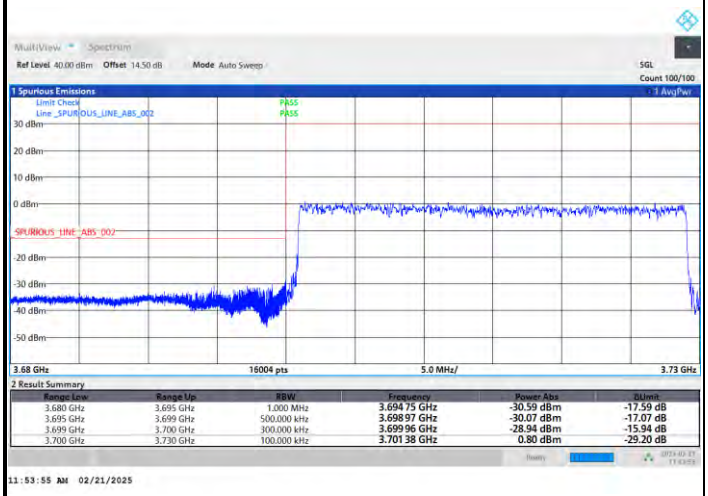
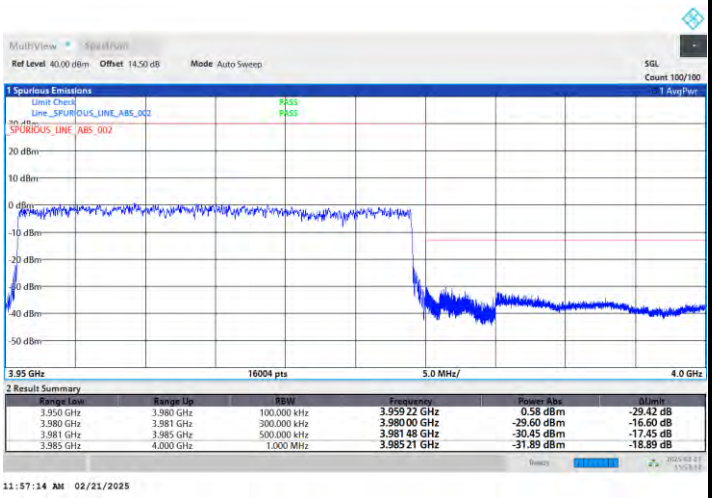
FR1 n77 / 25MHz / CP OFDM / QPSK	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

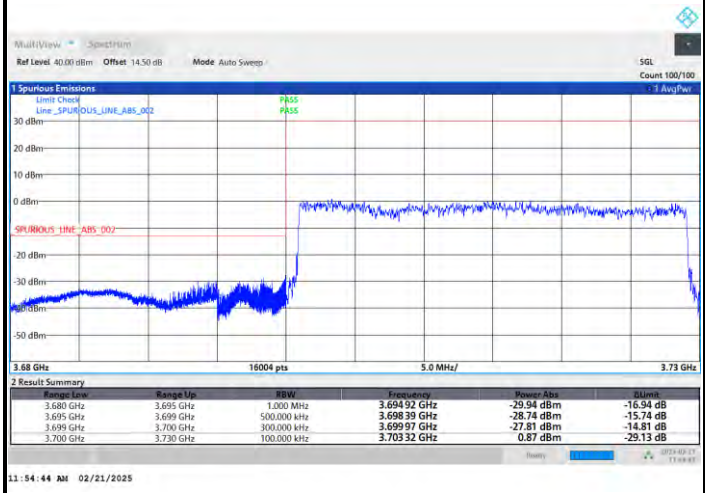
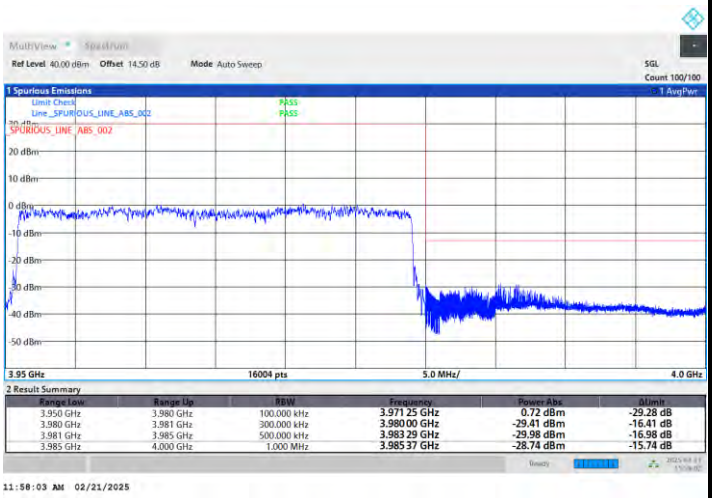
FR1 n77 / 25MHz / CP OFDM / 16QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

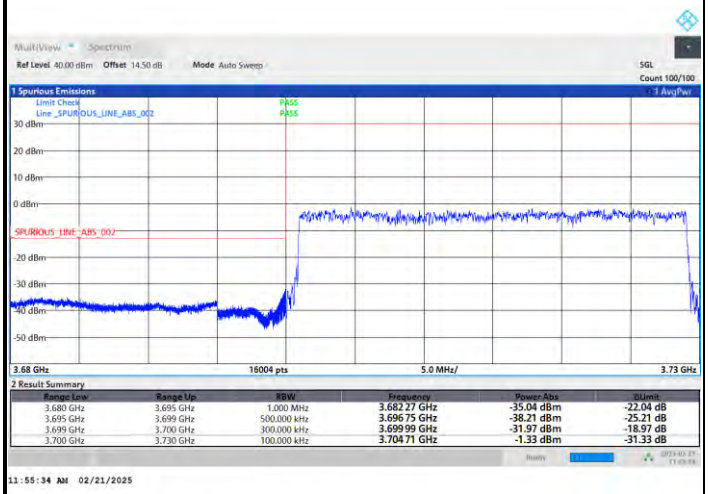
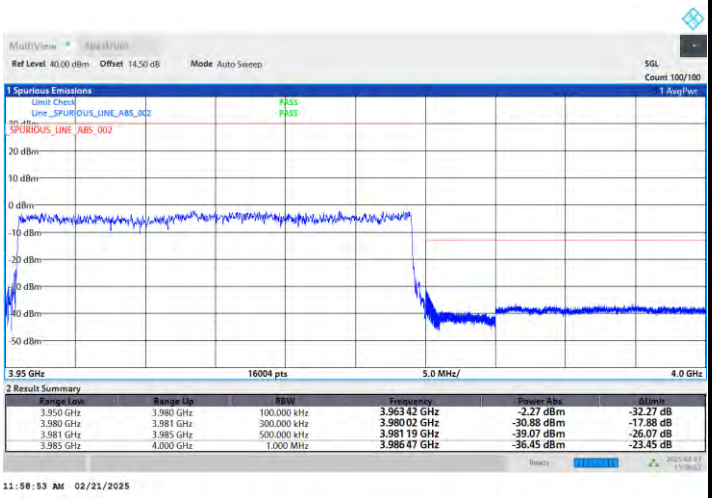
FR1 n77 / 25MHz / CP OFDM / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

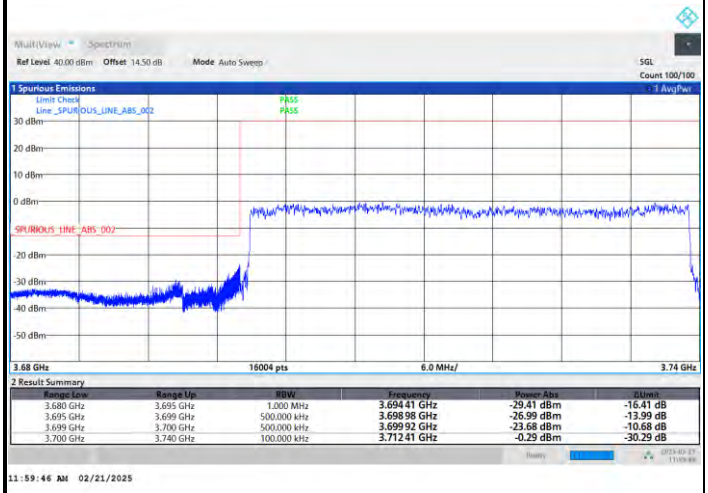
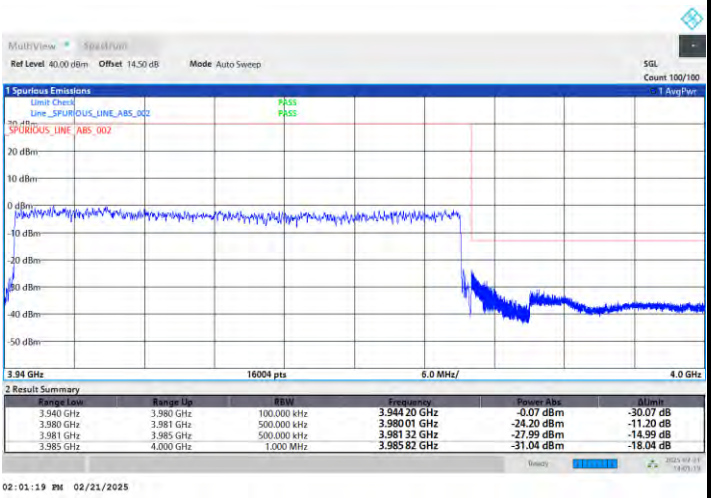
FR1 n77 / 25MHz / CP OFDM / 256QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

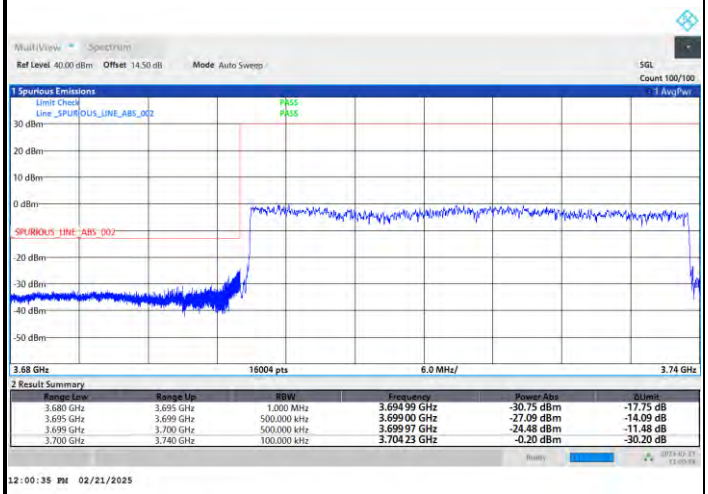
FR1 n77 / 30MHz / CP OFDM / QPSK	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

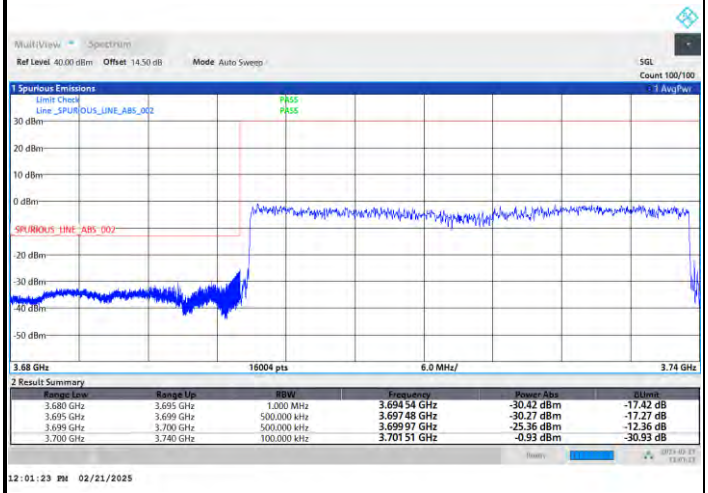
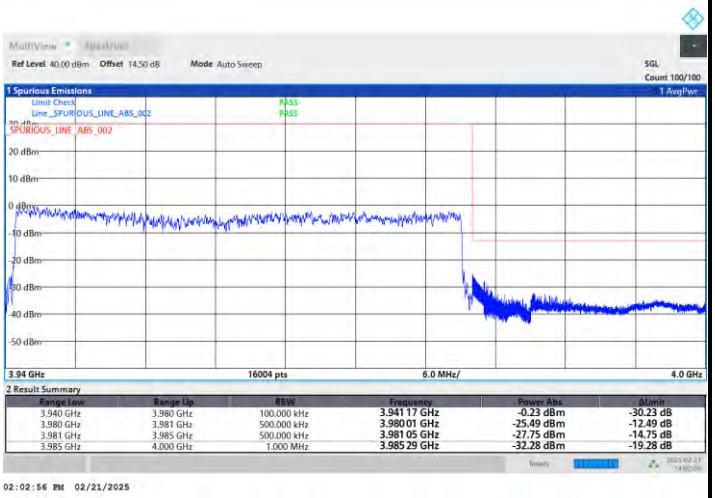
FR1 n77 / 30MHz / CP OFDM / 16QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

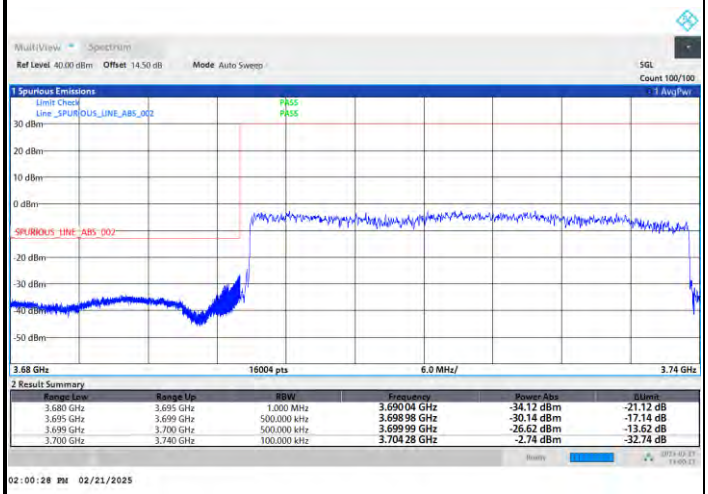
FR1 n77 / 30MHz / CP OFDM / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

FR1 n77 / 30MHz / CP OFDM / 256QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

FR1 n77 / 40MHz / CP OFDM / QPSK	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

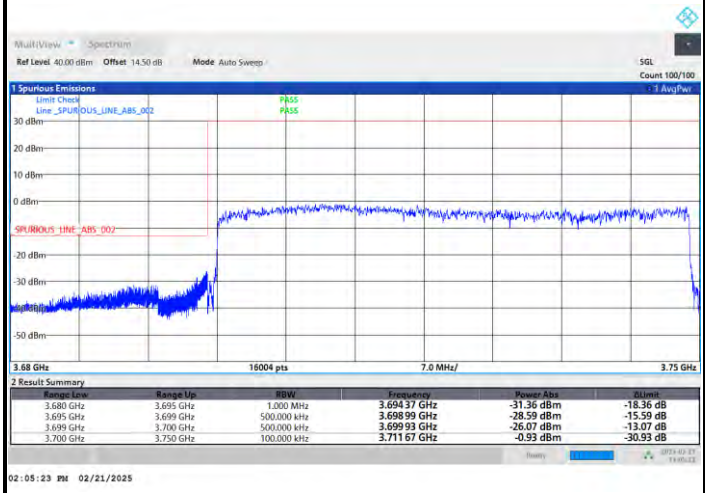
FR1 n77 / 40MHz / CP OFDM / 16QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

FR1 n77 / 40MHz / CP OFDM / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

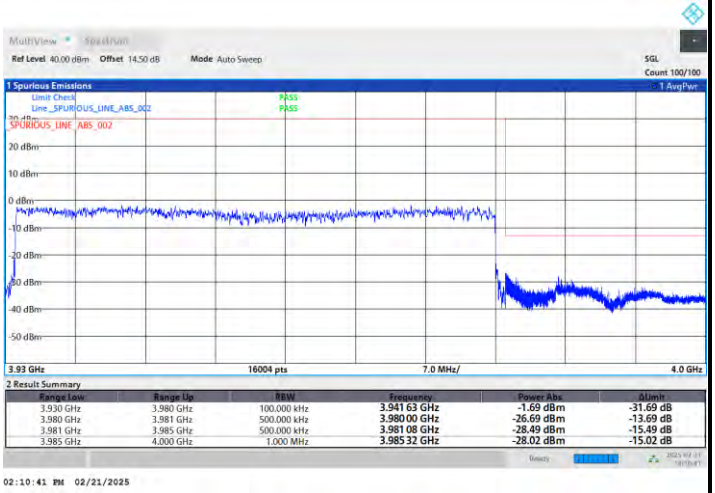
FR1 n77 / 40MHz / CP OFDM / 256QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

FR1 n77 / 50MHz / CP OFDM / QPSK

Lowest Band Edge / Full RB

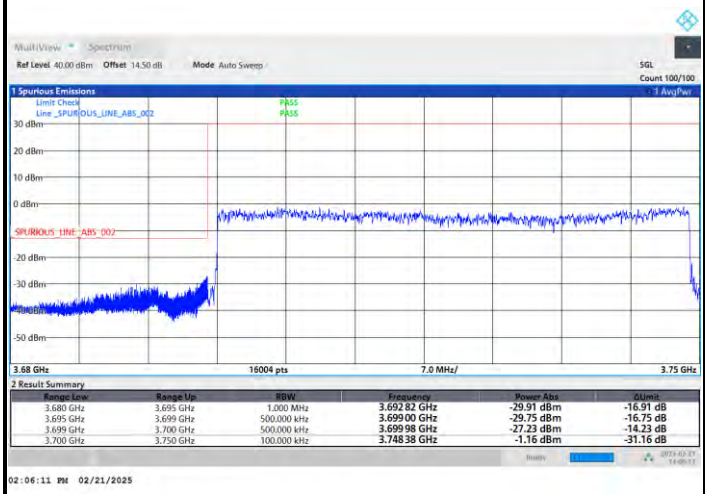


Highest Band Edge / Full RB

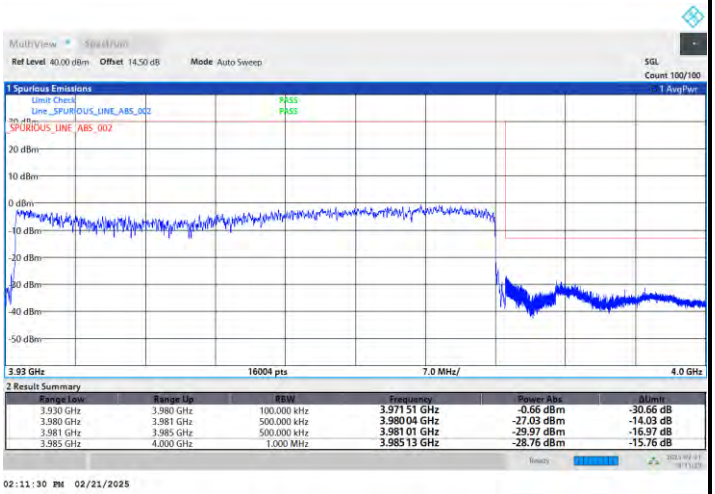


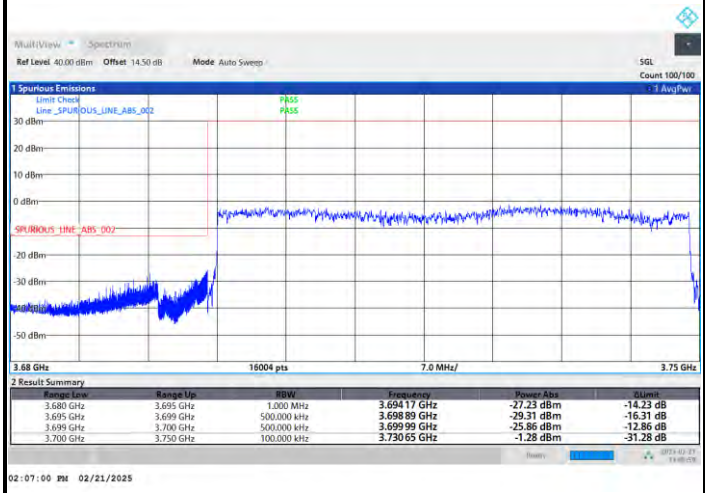
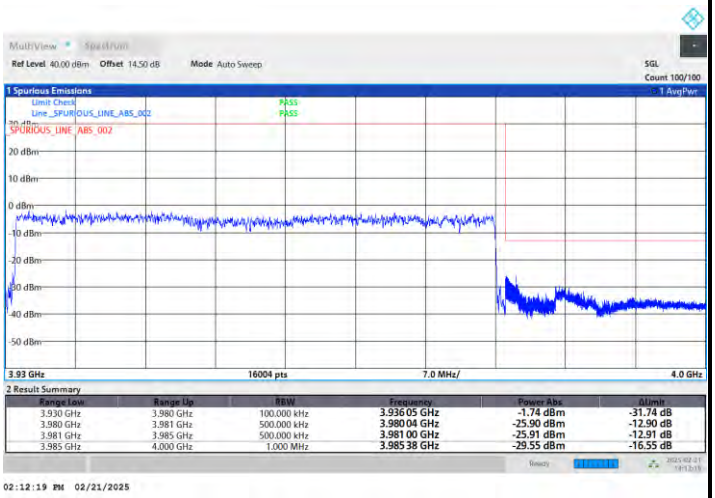
FR1 n77 / 50MHz / CP OFDM / 16QAM

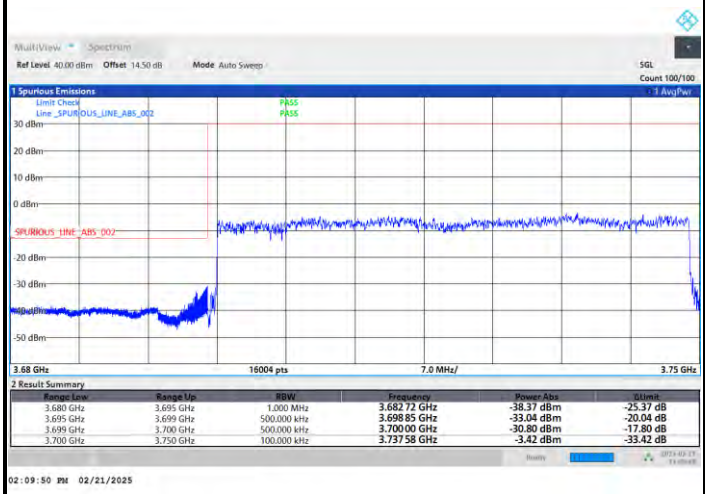
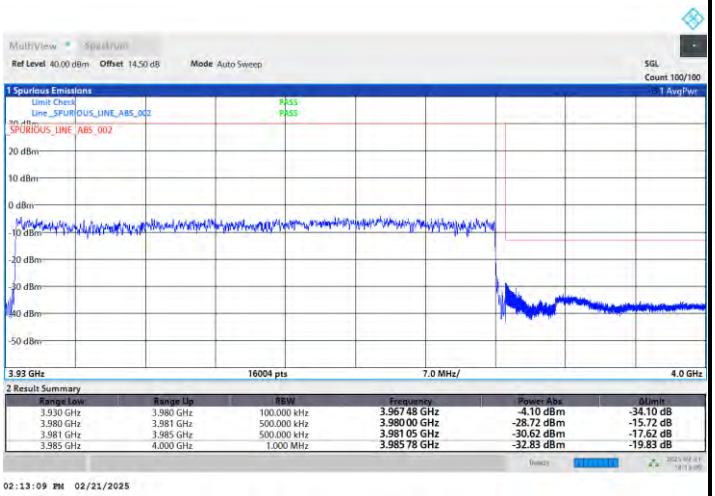
Lowest Band Edge / Full RB



Highest Band Edge / Full RB

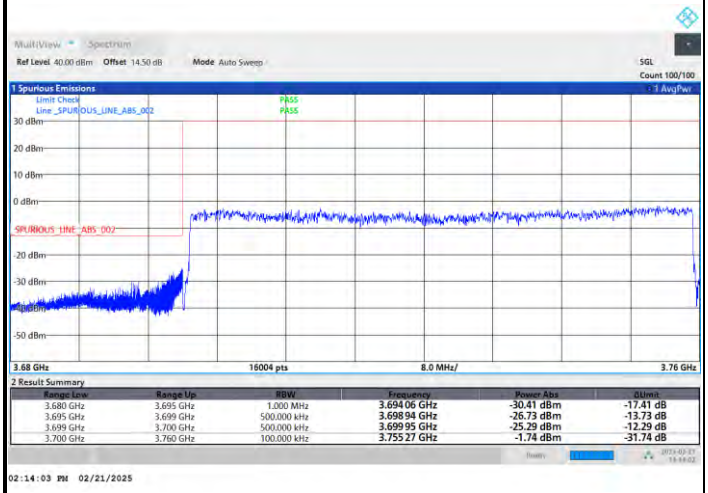


FR1 n77 / 50MHz / CP OFDM / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

FR1 n77 / 50MHz / CP OFDM / 256QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

FR1 n77 / 60MHz / CP OFDM / QPSK

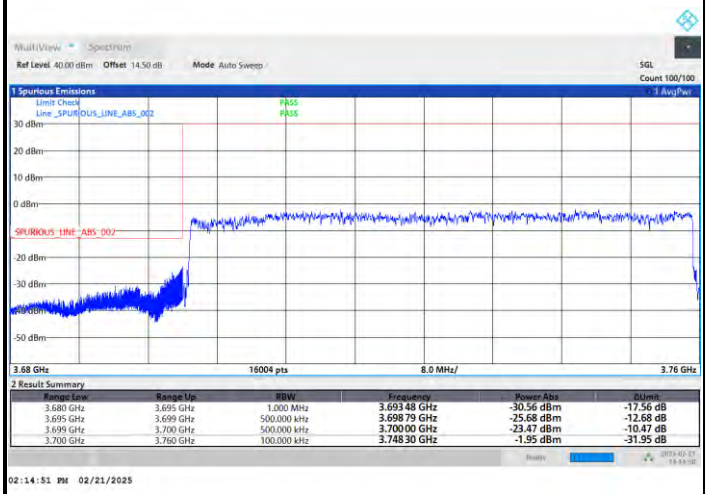
Lowest Band Edge / Full RB



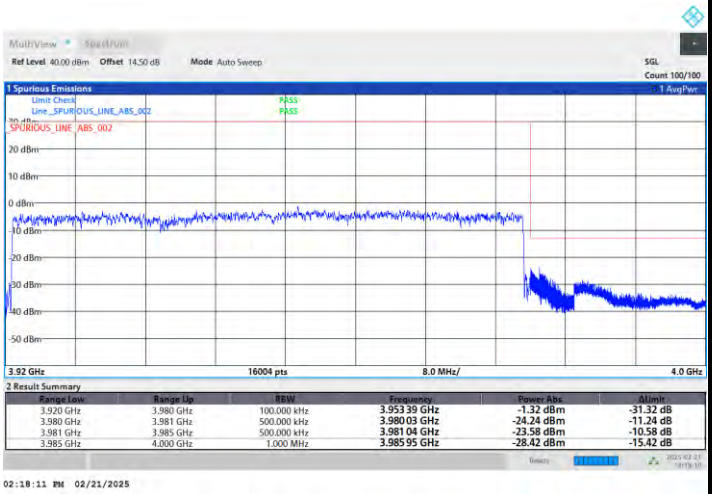
Highest Band Edge / Full RB

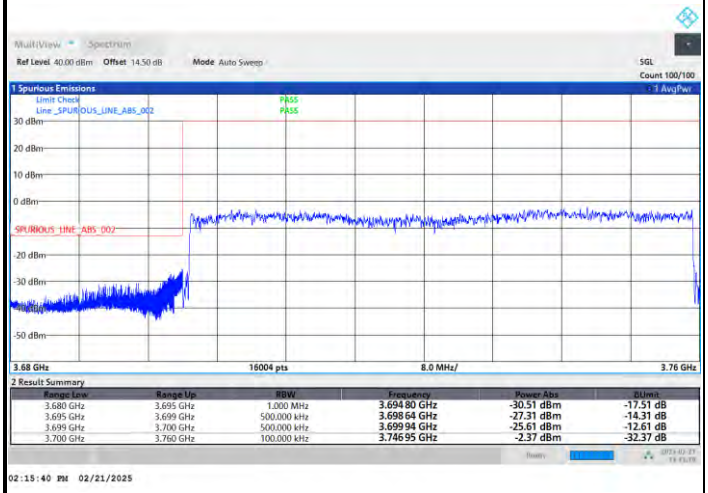
FR1 n77 / 60MHz / CP OFDM / 16QAM

Lowest Band Edge / Full RB



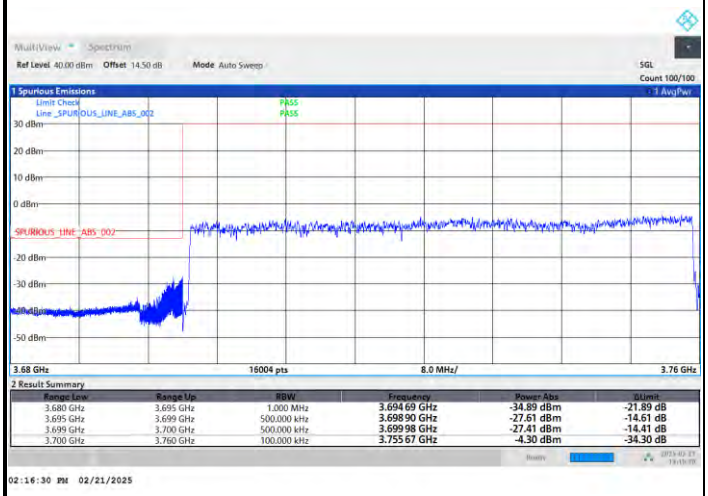
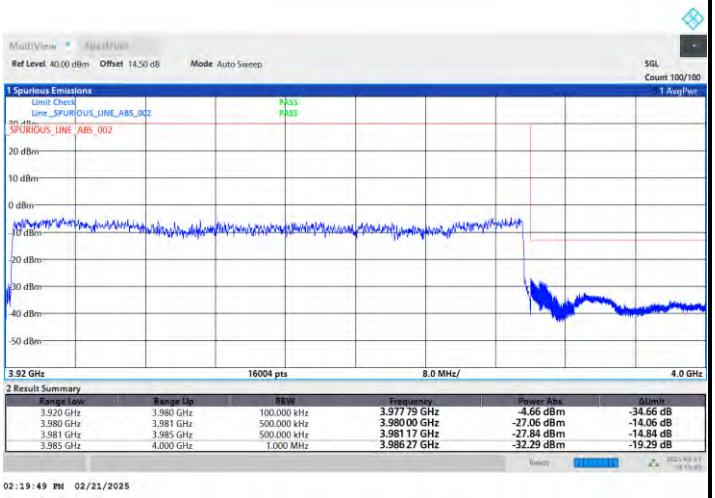
Highest Band Edge / Full RB



FR1 n77 / 60MHz / CP OFDM / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

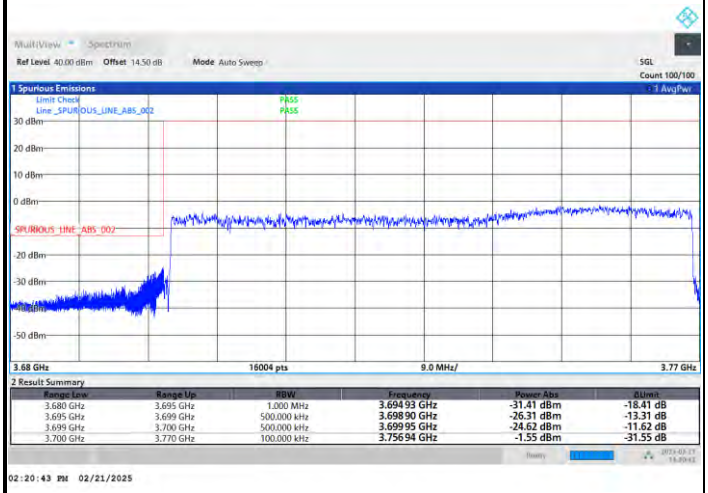
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.694 80 GHz	-30.51 dBm	-17.51 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.698 64 GHz	-27.31 dBm	-14.31 dB
3.699 GHz	3.700 GHz	500.000 kHz	3.699 94 GHz	-25.61 dBm	-12.61 dB
3.700 GHz	3.760 GHz	100.000 kHz	3.746 95 GHz	-2.37 dBm	-32.37 dB

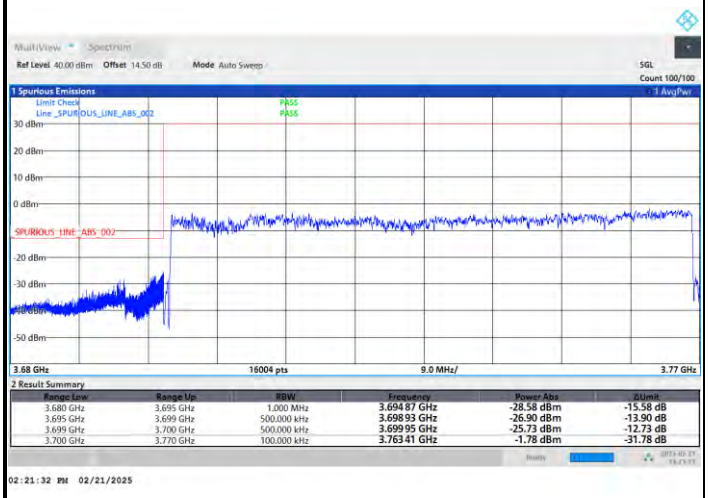
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.920 GHz	3.980 GHz	100.000 kHz	3.972 03 GHz	-2.74 dBm	-32.74 dB
3.980 GHz	3.981 GHz	500.000 kHz	3.980 05 GHz	-24.62 dBm	-11.62 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.981 20 GHz	-25.73 dBm	-12.73 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.985 57 GHz	-27.50 dBm	-14.50 dB

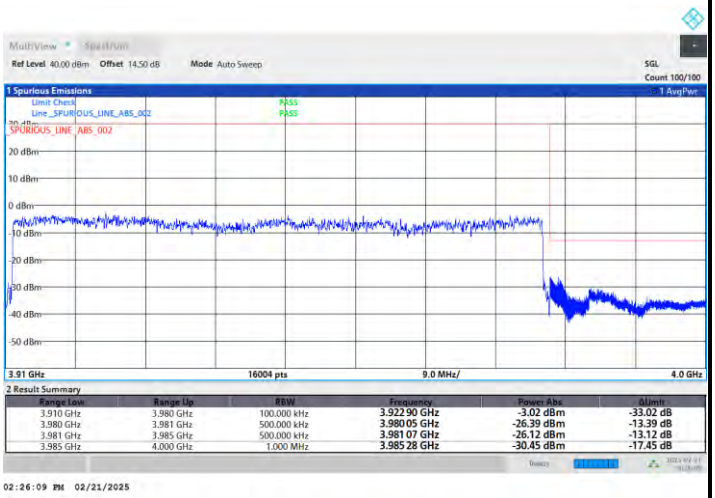
FR1 n77 / 60MHz / CP OFDM / 256QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

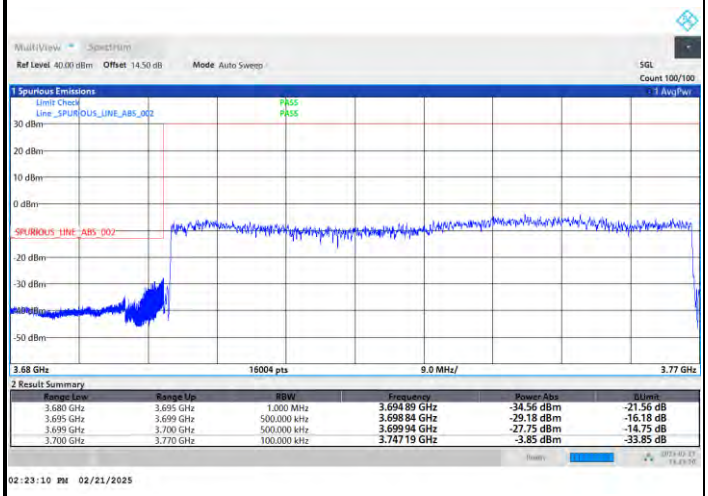
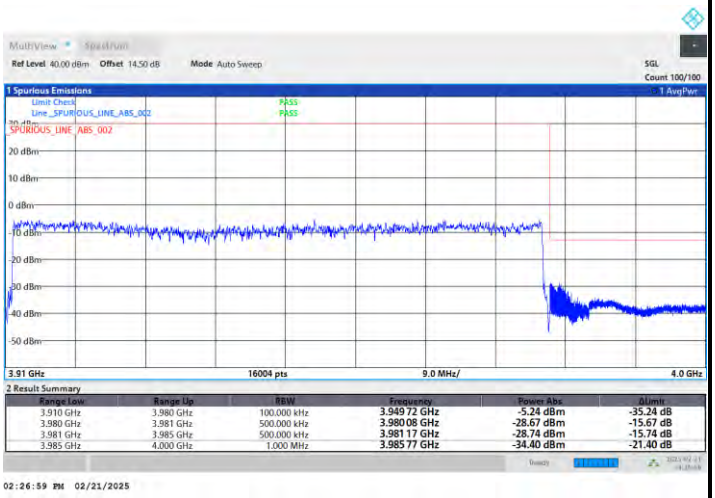
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.694 69 GHz	-34.89 dBm	-21.89 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.698 90 GHz	-27.61 dBm	-14.61 dB
3.699 GHz	3.700 GHz	500.000 kHz	3.699 98 GHz	-27.41 dBm	-14.41 dB
3.700 GHz	3.760 GHz	100.000 kHz	3.755 67 GHz	-4.30 dBm	-34.30 dB

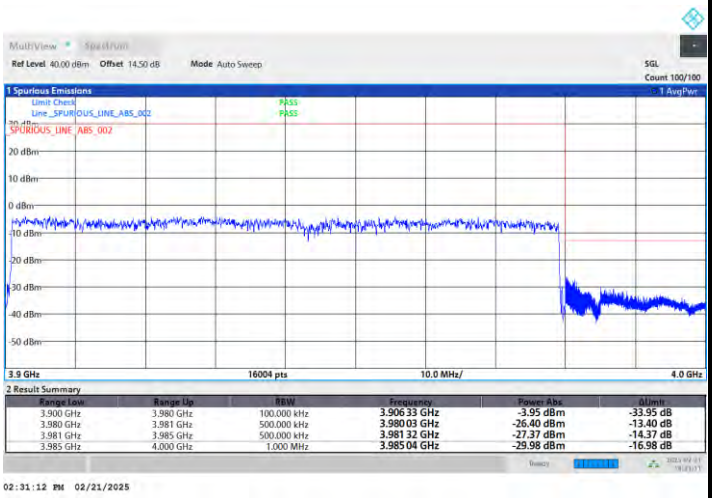
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.920 GHz	3.980 GHz	100.000 kHz	3.977 79 GHz	-4.66 dBm	-34.66 dB
3.980 GHz	3.981 GHz	500.000 kHz	3.980 00 GHz	-27.06 dBm	-14.06 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.981 17 GHz	-27.84 dBm	-14.84 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.986 27 GHz	-32.29 dBm	-19.29 dB

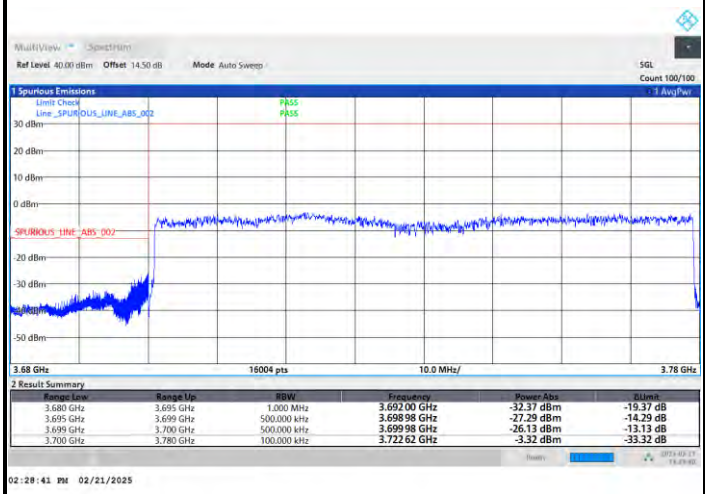
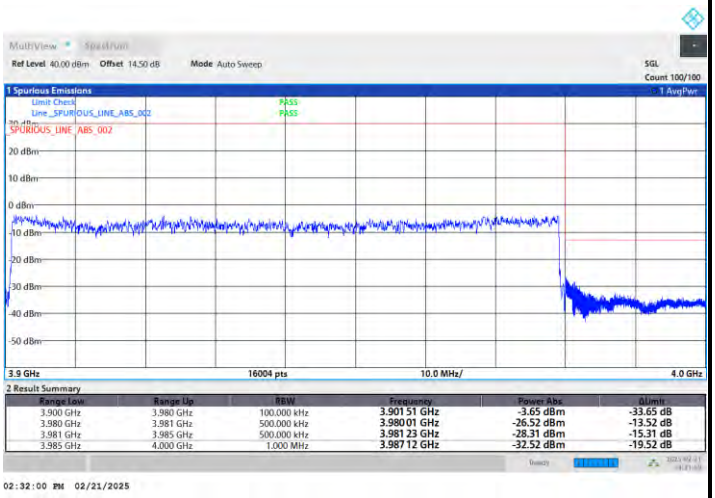
FR1 n77 / 70MHz / CP OFDM / QPSK	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

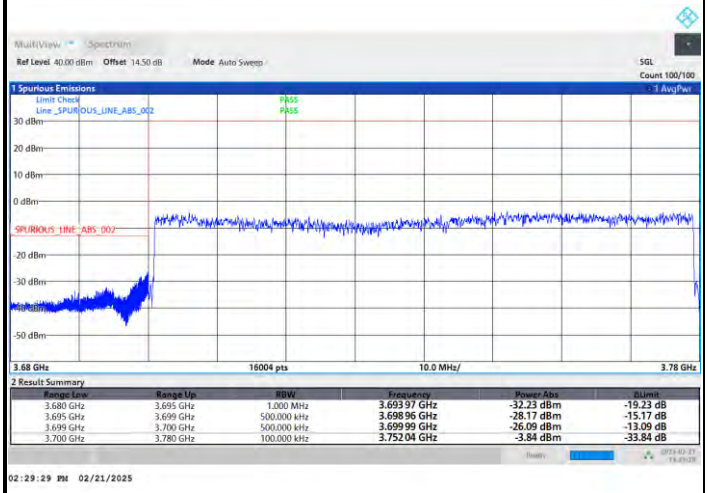
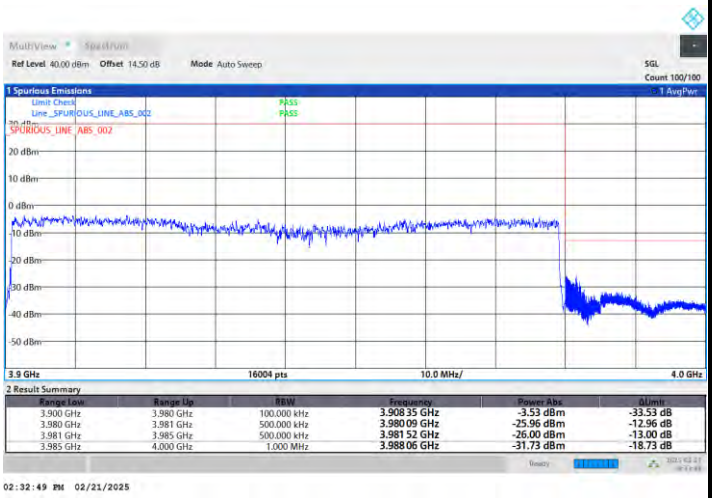
FR1 n77 / 70MHz / CP OFDM / 16QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

FR1 n77 / 70MHz / CP OFDM / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

FR1 n77 / 70MHz / CP OFDM / 256QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

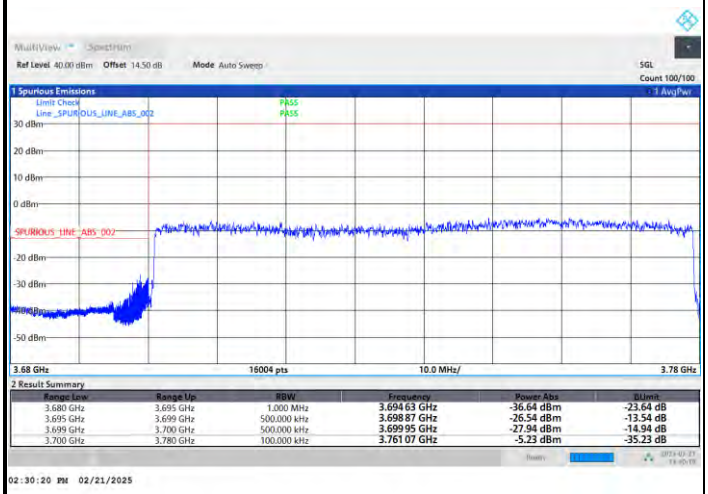
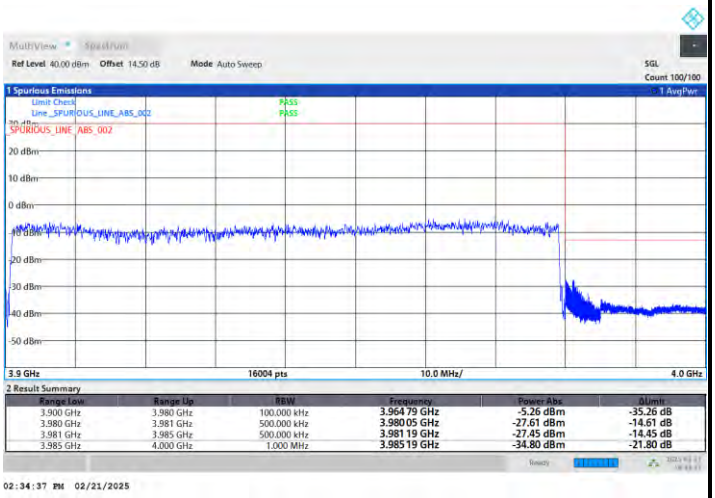
FR1 n77 / 80MHz / CP OFDM / QPSK	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

FR1 n77 / 80MHz / CP OFDM / 16QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

FR1 n77 / 80MHz / CP OFDM / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.693 97 GHz	-32.23 dBm	-19.23 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.698 96 GHz	-28.17 dBm	-15.17 dB
3.699 GHz	3.700 GHz	500.000 kHz	3.699 99 GHz	-26.09 dBm	-13.09 dB
3.700 GHz	3.780 GHz	100.000 kHz	3.752 04 GHz	-3.84 dBm	-33.84 dB

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.900 GHz	3.980 GHz	100.000 kHz	3.908 35 GHz	-3.53 dBm	-33.53 dB
3.980 GHz	3.981 GHz	500.000 kHz	3.980 09 GHz	-25.96 dBm	-12.96 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.981 52 GHz	-26.00 dBm	-13.00 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.988 06 GHz	-31.73 dBm	-18.73 dB

FR1 n77 / 80MHz / CP OFDM / 256QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

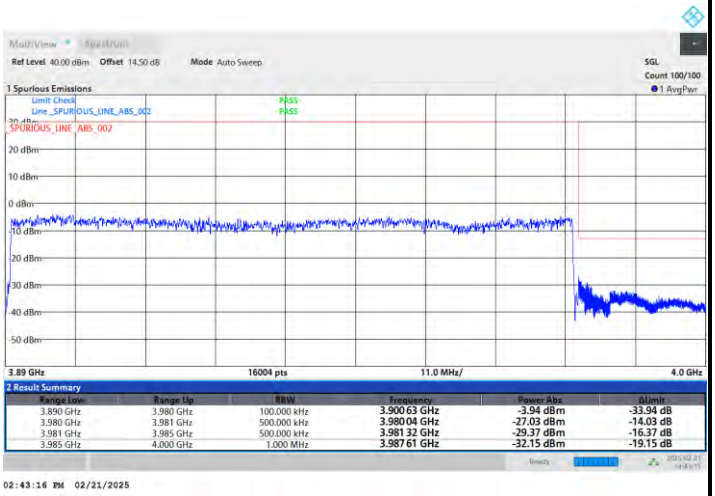
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.694 63 GHz	-36.64 dBm	-23.64 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.698 87 GHz	-26.54 dBm	-13.54 dB
3.699 GHz	3.700 GHz	500.000 kHz	3.699 95 GHz	-27.94 dBm	-14.94 dB
3.700 GHz	3.780 GHz	100.000 kHz	3.761 07 GHz	-5.23 dBm	-35.23 dB

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.900 GHz	3.980 GHz	100.000 kHz	3.964 79 GHz	-5.26 dBm	-35.26 dB
3.980 GHz	3.981 GHz	500.000 kHz	3.980 05 GHz	-27.61 dBm	-14.61 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.981 19 GHz	-27.45 dBm	-14.45 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.985 19 GHz	-34.80 dBm	-21.80 dB

FR1 n77 / 90MHz / CP OFDM / QPSK

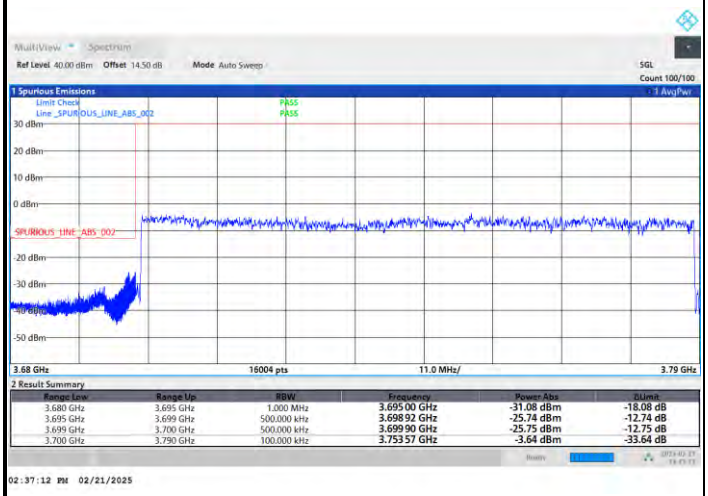
Lowest Band Edge / Full RB

Highest Band Edge / Full RB

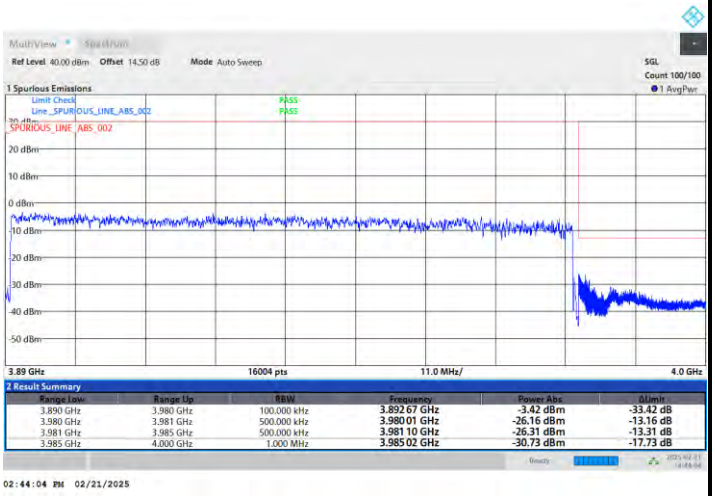


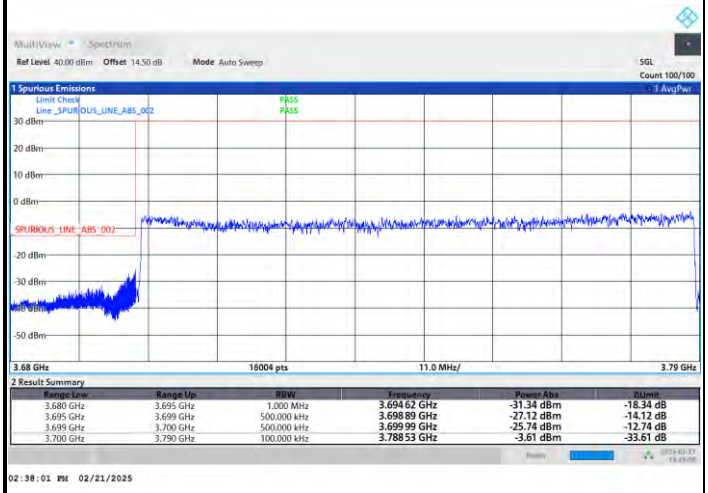
FR1 n77 / 90MHz / CP OFDM / 16QAM

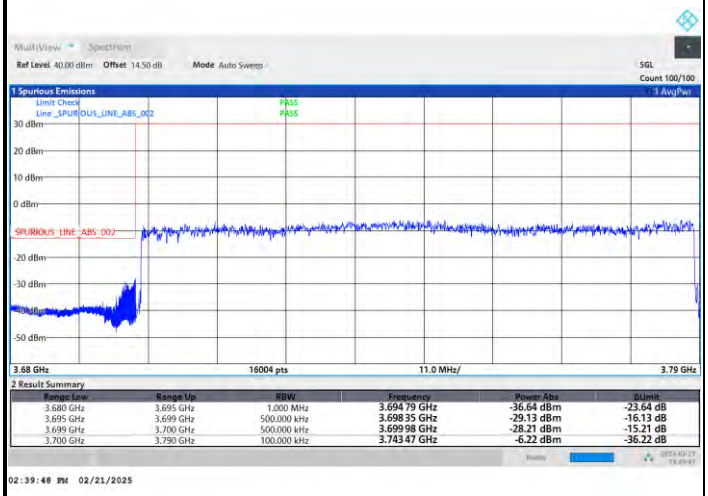
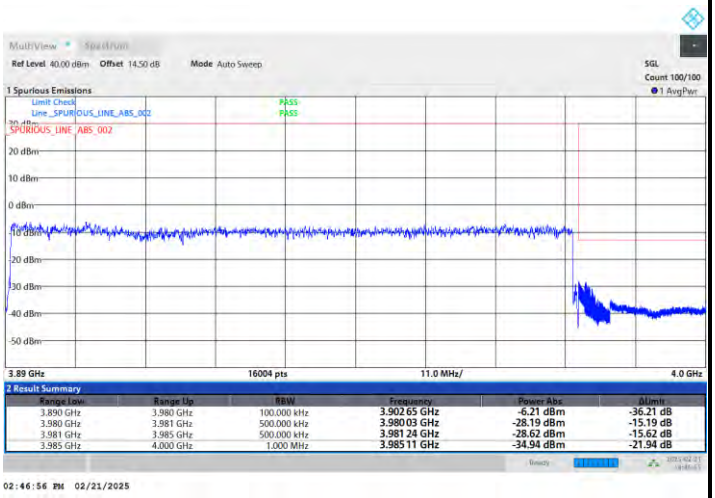
Lowest Band Edge / Full RB

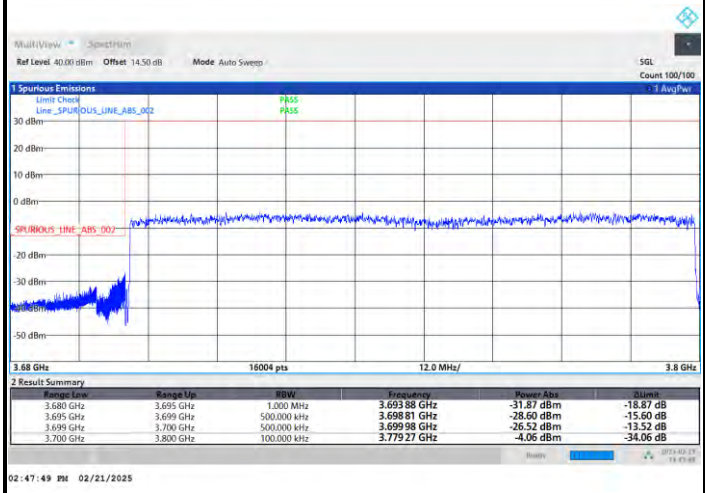


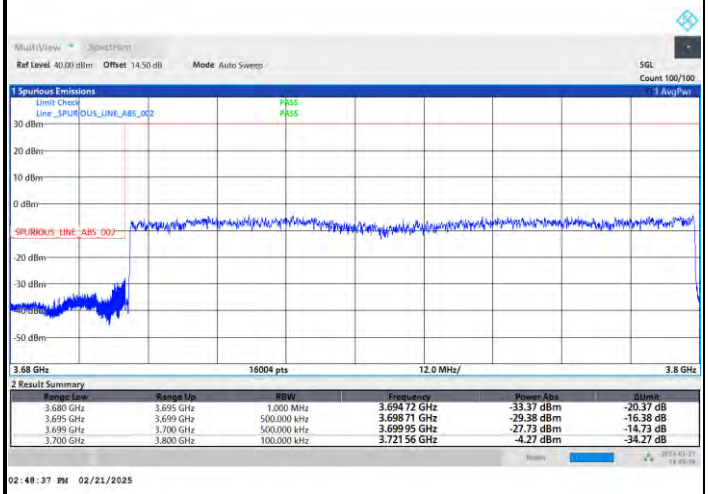
Highest Band Edge / Full RB

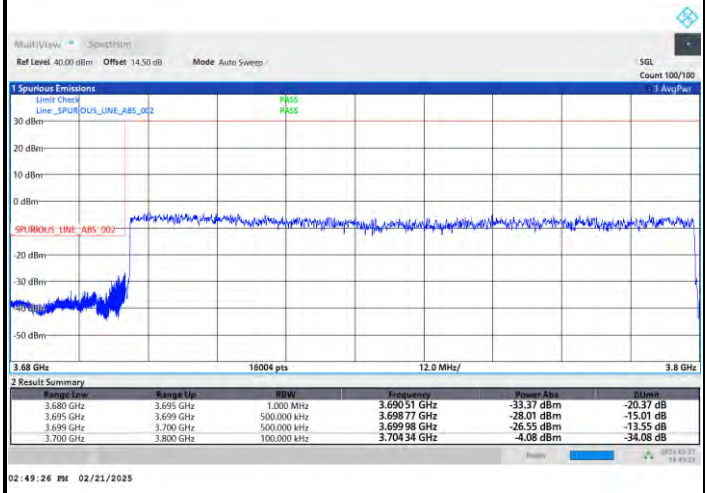


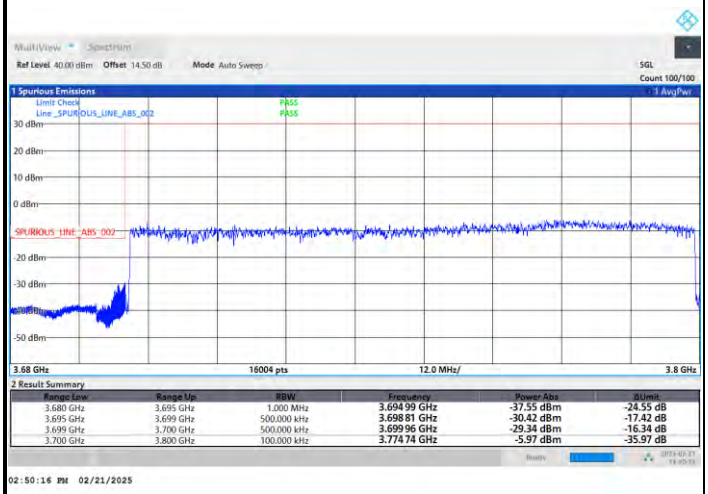
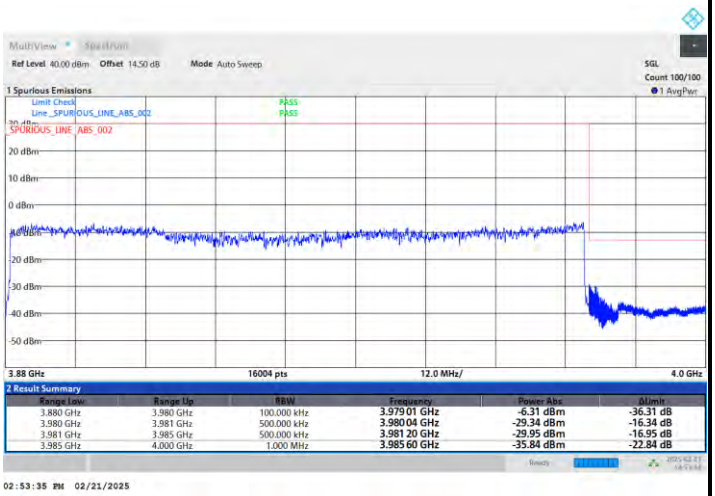
FR1 n77 / 90MHz / CP OFDM / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

FR1 n77 / 90MHz / CP OFDM / 256QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

FR1 n77 / 100MHz / CP OFDM / QPSK	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

FR1 n77 / 100MHz / CP OFDM / 16QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

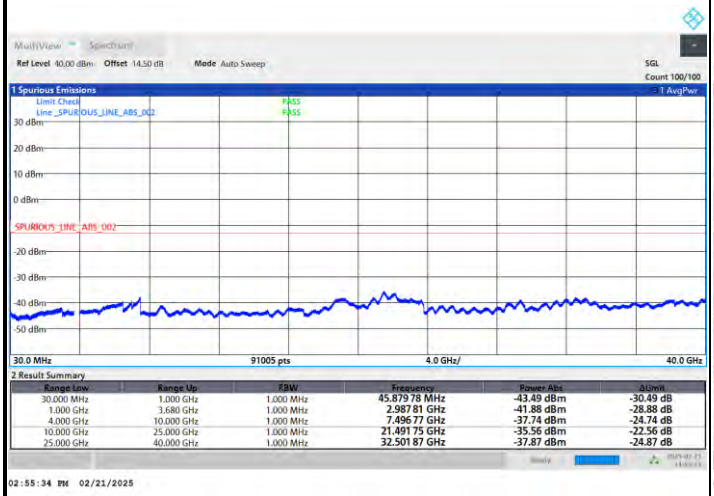
FR1 n77 / 100MHz / CP OFDM / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

FR1 n77 / 100MHz / CP OFDM / 256QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

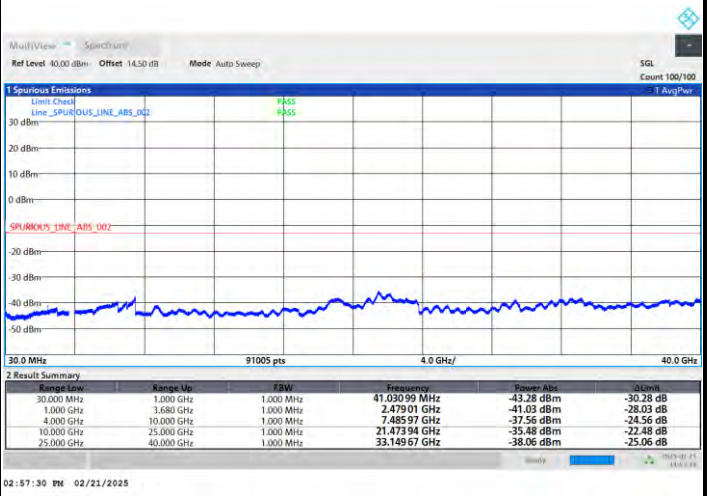
Conducted Spurious Emission

FR1 n77 / 10MHz / CP OFDM / QPSK / 1RB1

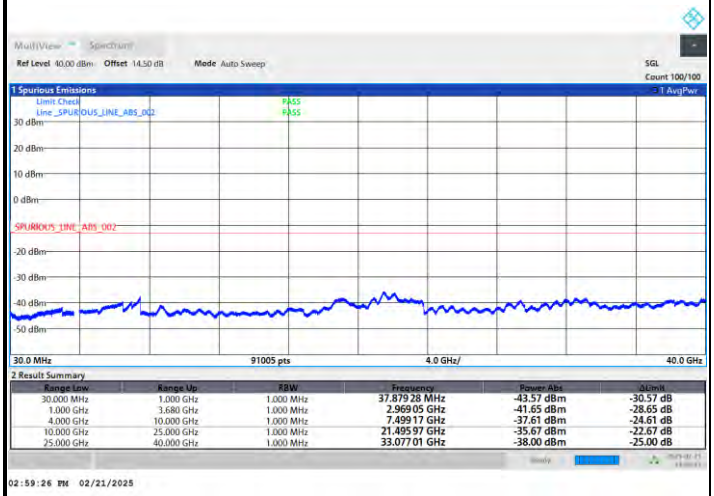
Lowest Channel



Middle Channel



Highest Channel



Frequency Stability

Test Conditions		FR1 n77 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 20MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0015	PASS
40	Normal Voltage	0.0010	
30	Normal Voltage	0.0029	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0010	
0	Normal Voltage	0.0026	
-10	Normal Voltage	0.0016	
-20	Normal Voltage	0.0007	
-30	Normal Voltage	0.0017	
20	Maximum Voltage	0.0004	
20	Normal Voltage	0.0012	
20	Minimum Voltage	0.0021	

Note:

1. Normal Voltage = 3.9 V.；Minimum Voltage = 3.6 V.；Maximum Voltage = 4.5 V.
2. The frequency fundamental emissions stay within the authorized frequency block.

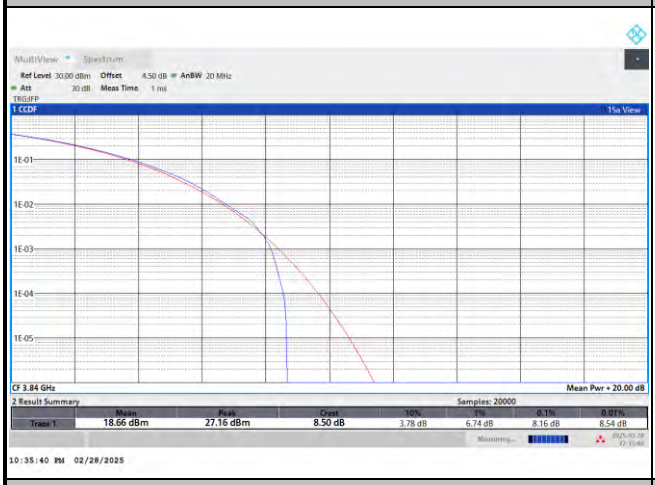
MIMO <Ant. 7+1> (Ant. 1)

Peak-to-Average Ratio

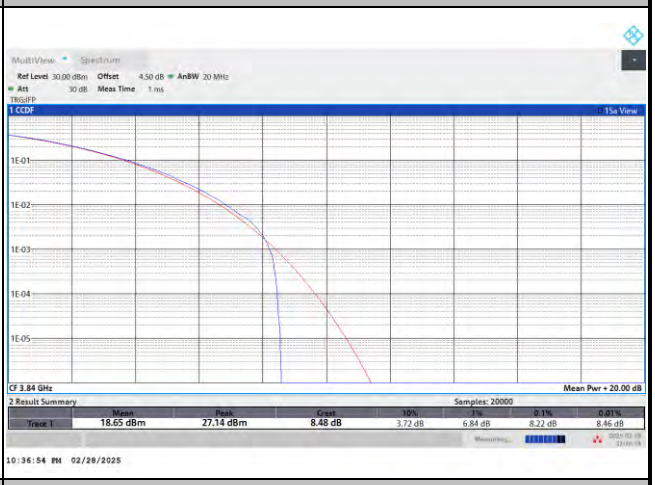
Mode	FR1 n77 / 20MHz / CP OFDM				
Mod.	QPSK	16QAM	64QAM	256QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	8.16	8.22	7.96	8.48	PASS

FR1 n77 / 20MHz /CP OFDM / Middle Channel / Full RB

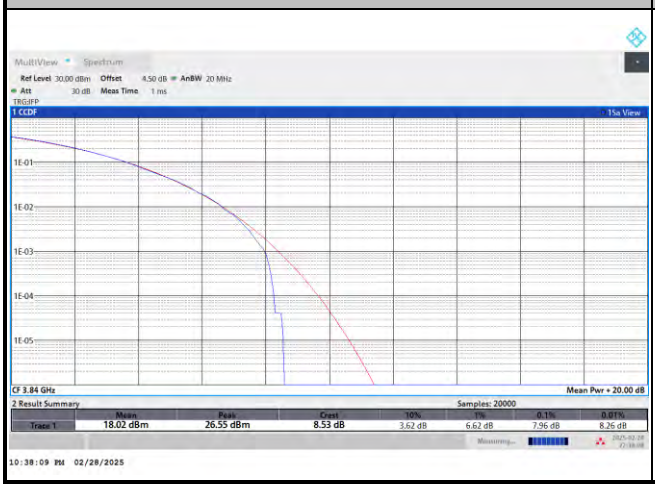
QPSK



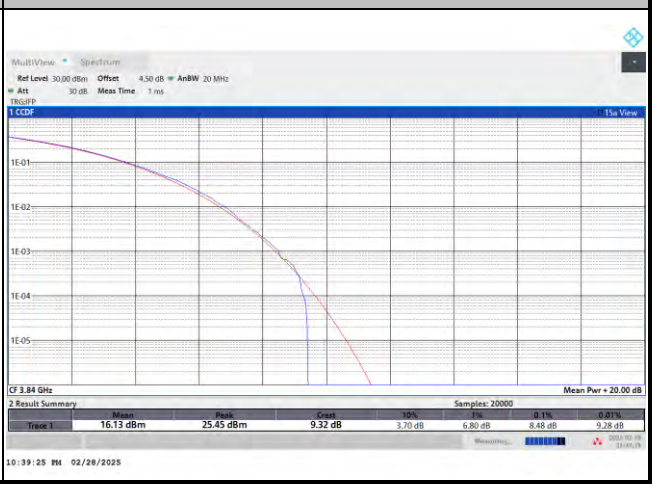
16QAM



64QAM

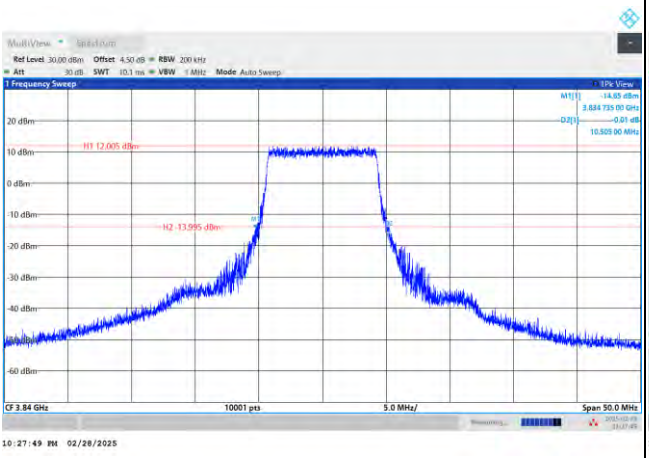
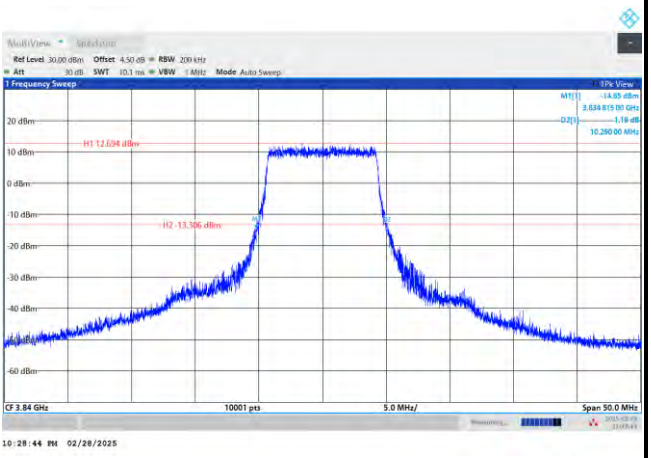
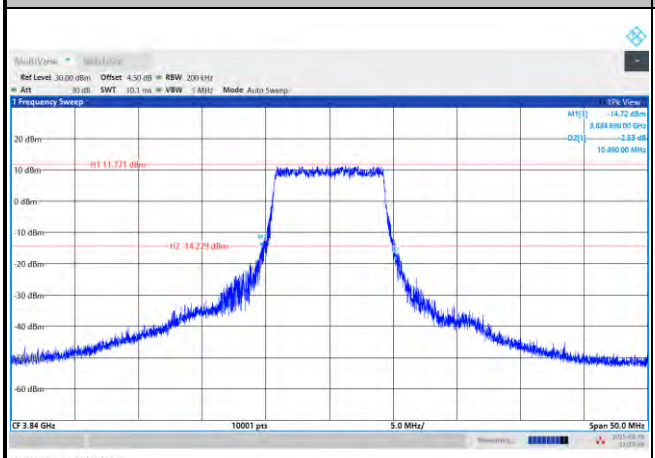
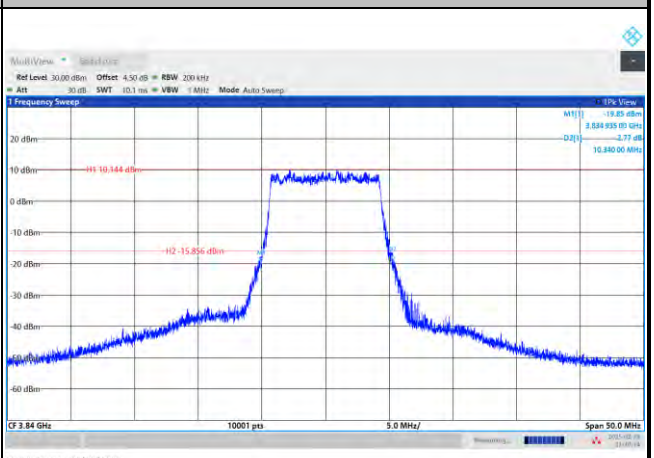


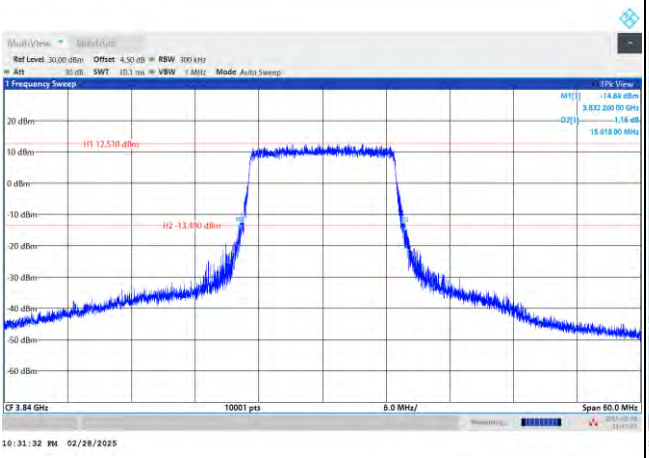
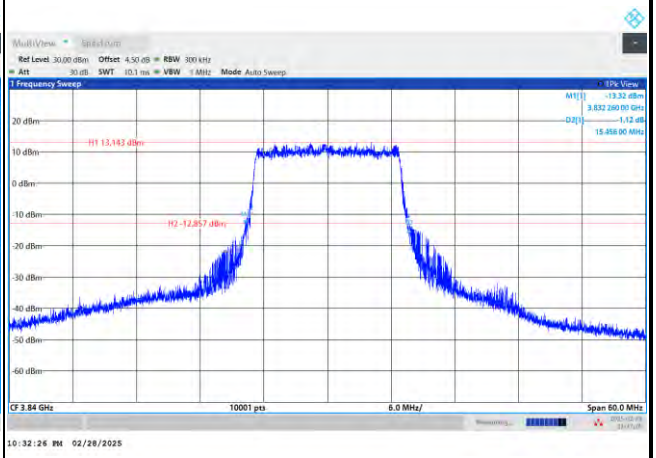
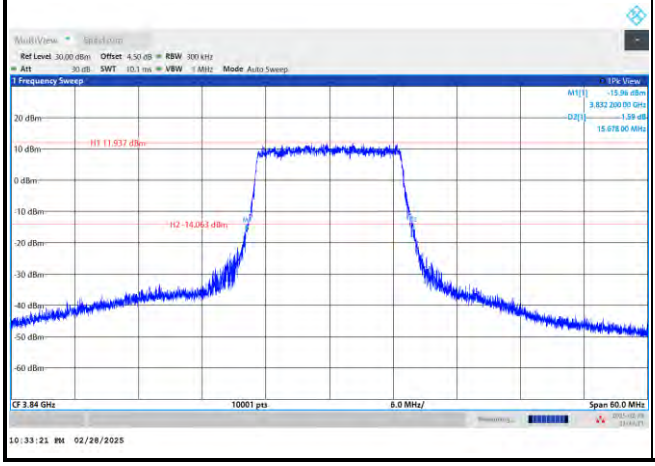
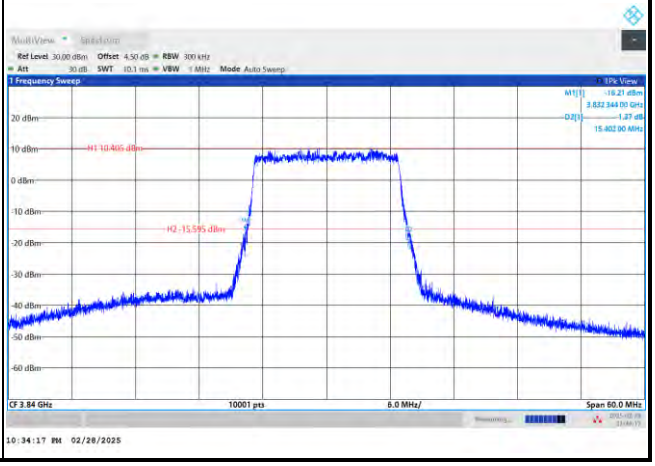
256QAM

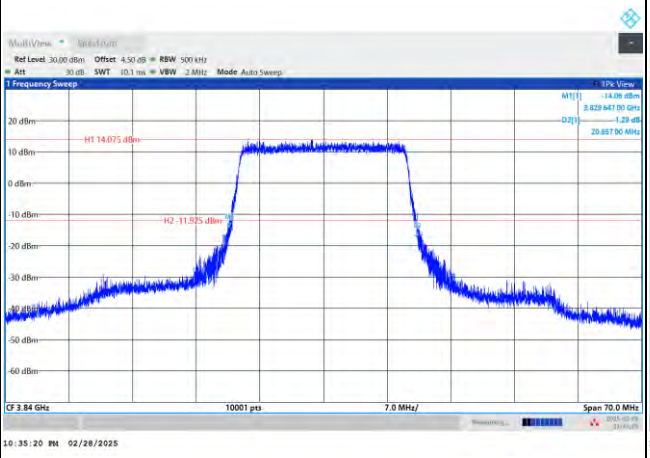
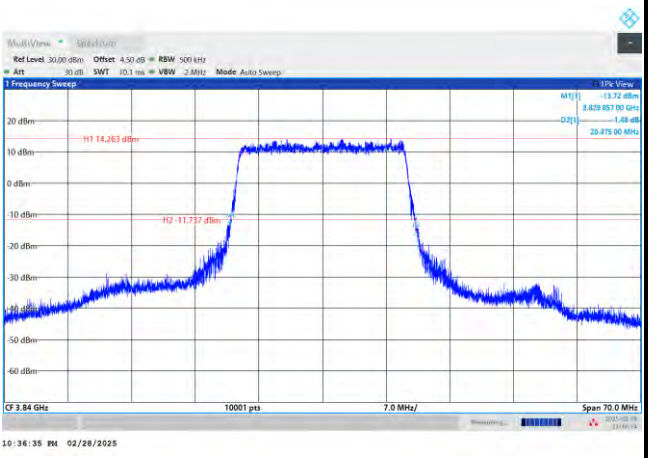
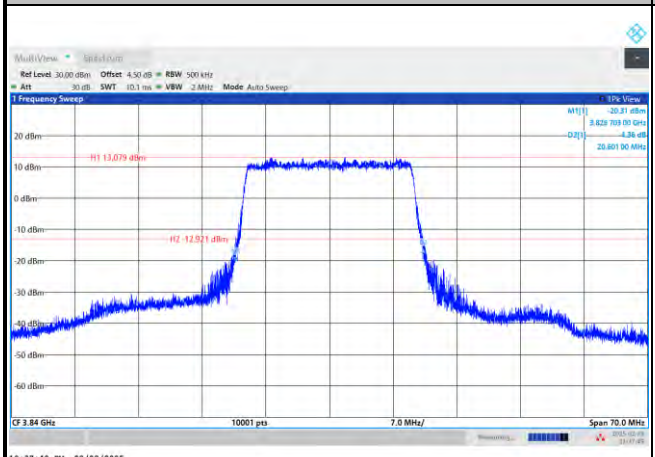
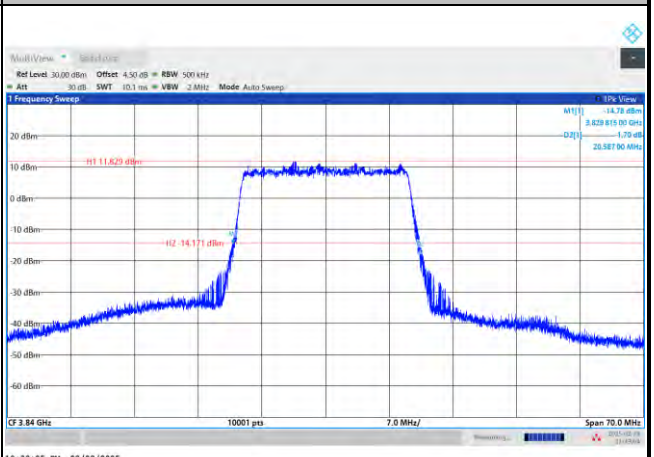


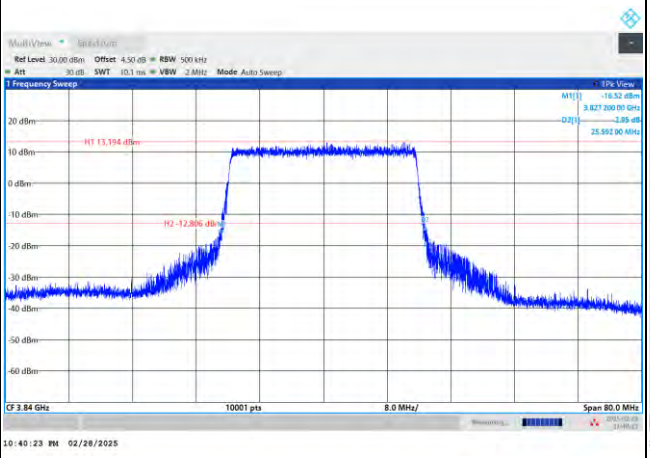
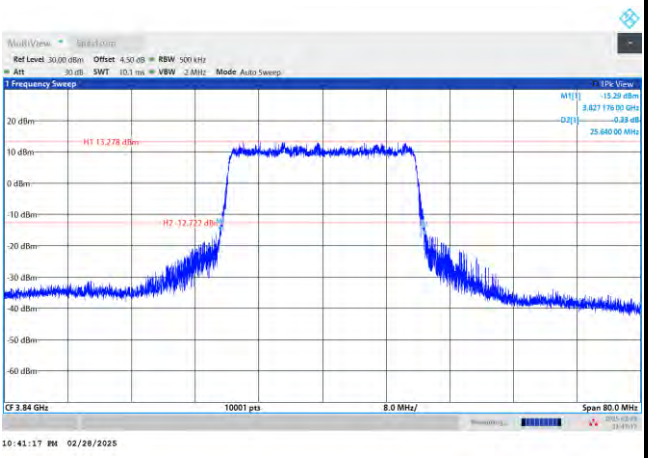
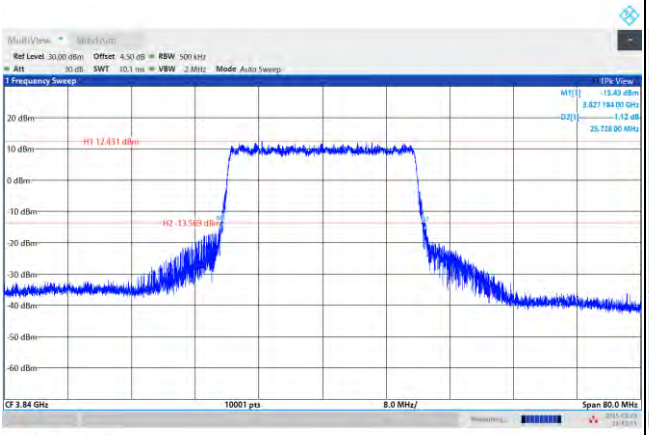
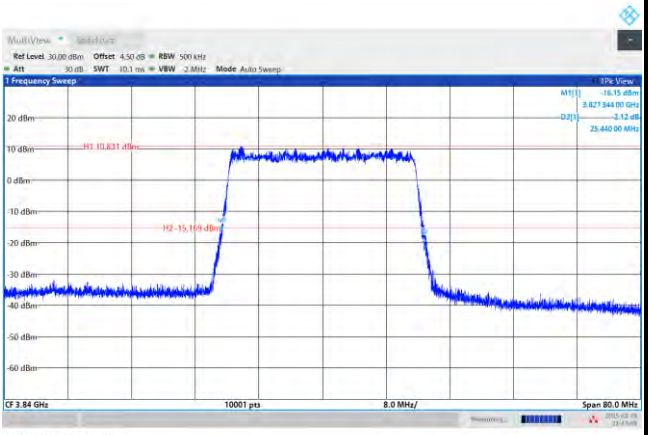
26dB Bandwidth

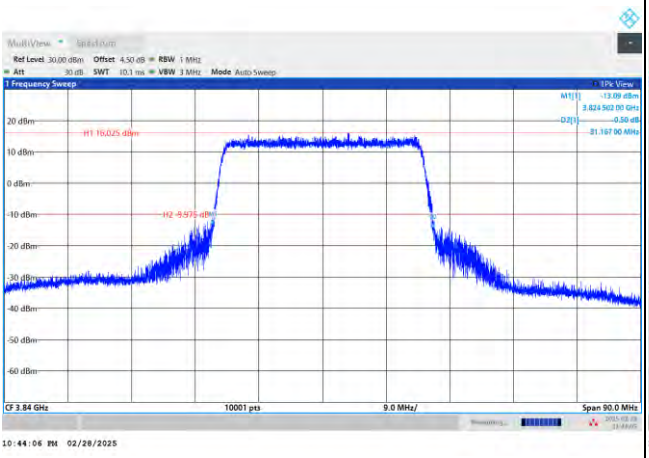
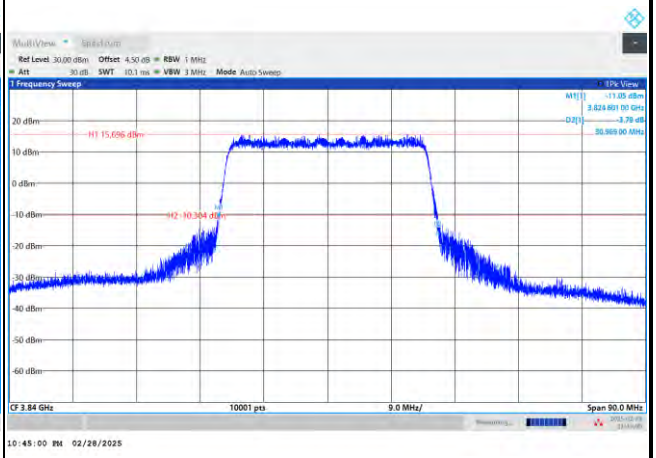
Mode	FR1 n77 : 26dB BW(MHz) / CP OFDM							
BW	10MHz		15MHz		20MHz		25MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	10.50	10.29	15.61	15.45	20.65	20.47	25.59	25.64
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	10.49	10.34	15.67	15.40	20.60	20.58	25.72	25.44
BW	30MHz		40MHz		50MHz		60MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	31.16	30.96	42.70	42.93	52.42	52.00	67.00	66.40
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	31.09	30.87	42.70	42.33	52.42	51.72	66.49	66.84
BW	70MHz		80MHz		90MHz		100MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	76.33	76.73	84.98	84.30	96.78	95.97	106.49	107.24
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	77.23	76.73	85.25	84.18	97.60	96.49	106.74	106.30

FR1 n77 / 10MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

FR1 n77 / 15MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

FR1 n77 / 20MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

FR1 n77 / 25MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

FR1 n77 / 30MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
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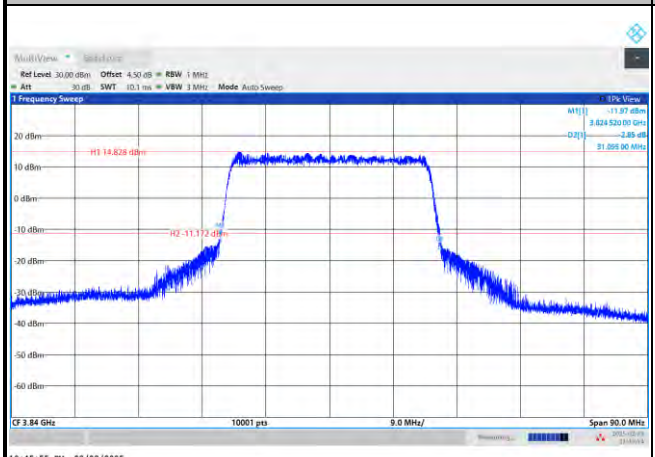
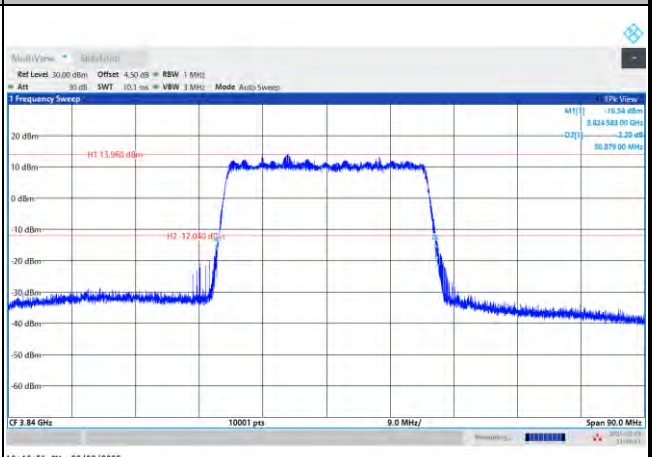
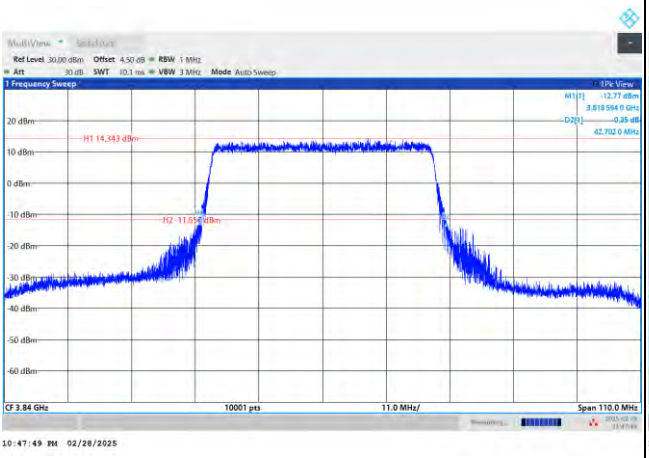
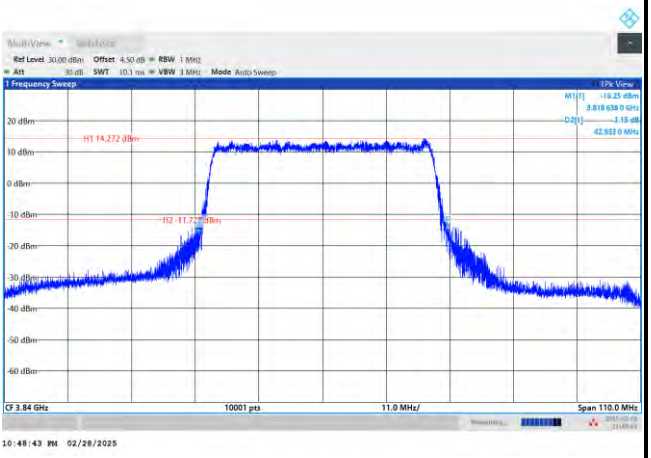
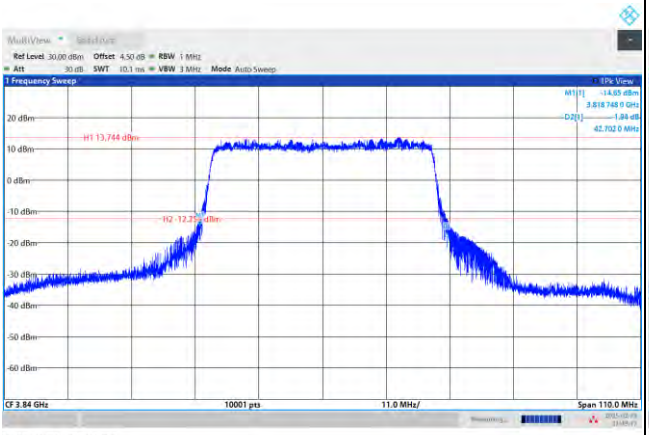
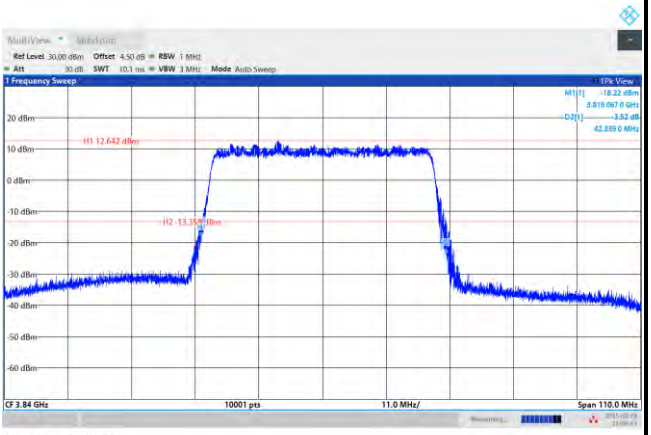
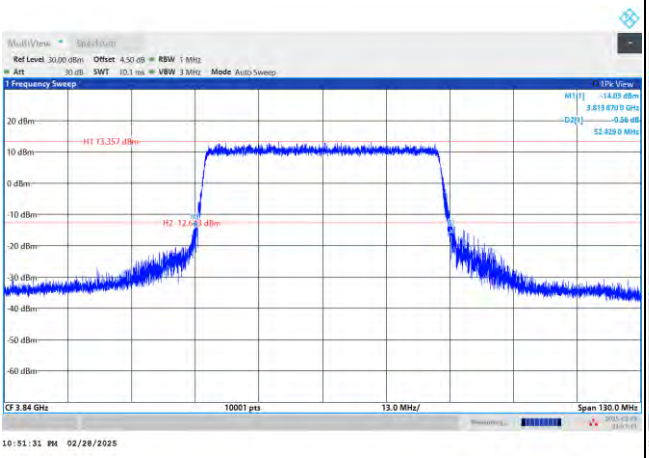
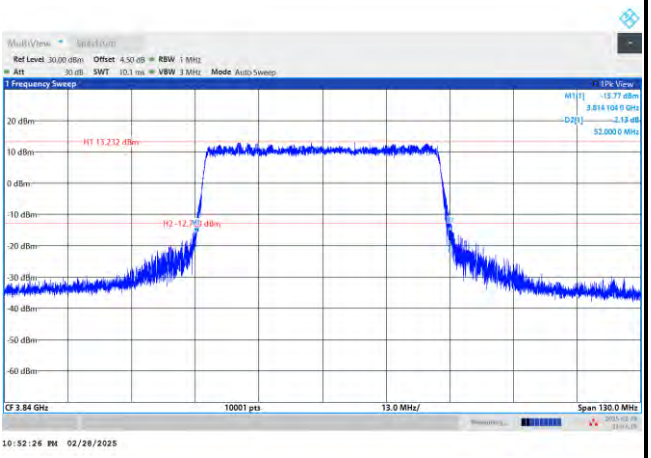
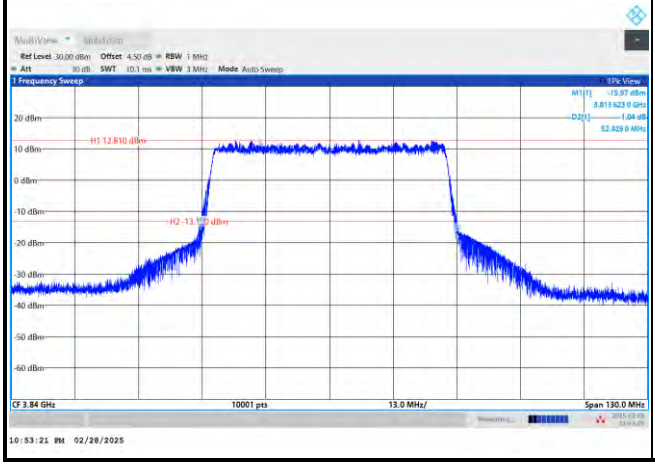
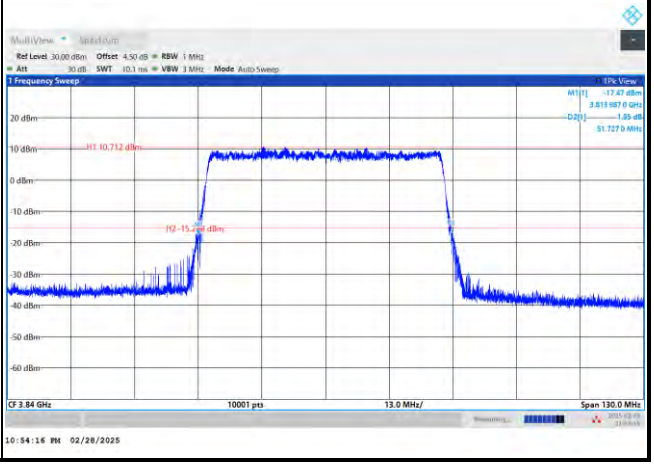
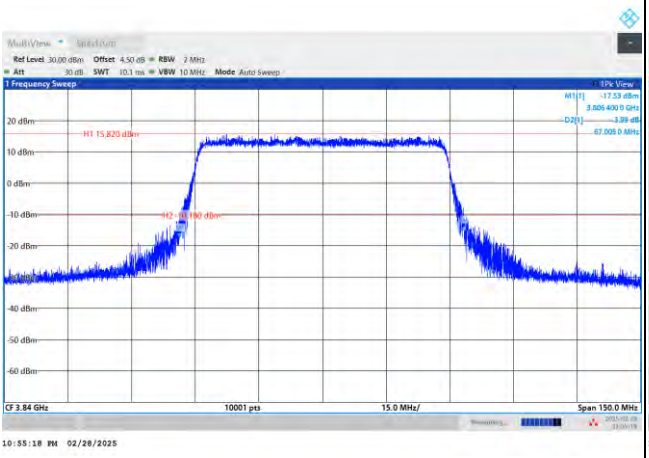
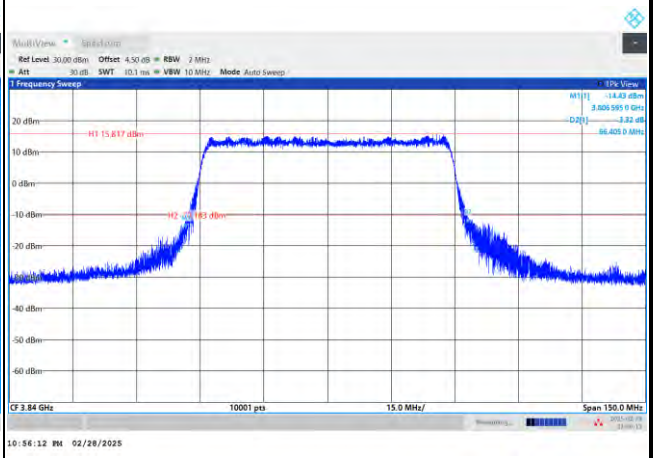
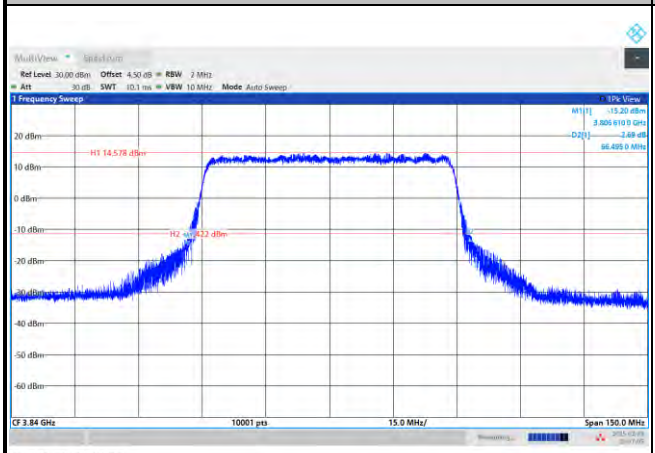
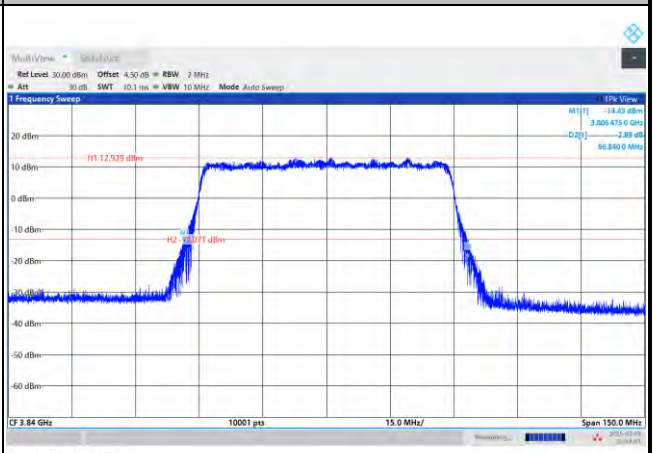
	

FR1 n77 / 40MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

FR1 n77 / 50MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

FR1 n77 / 60MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

FR1 n77 / 70MHz / CP OFDM / Middle Channel / Full RB	
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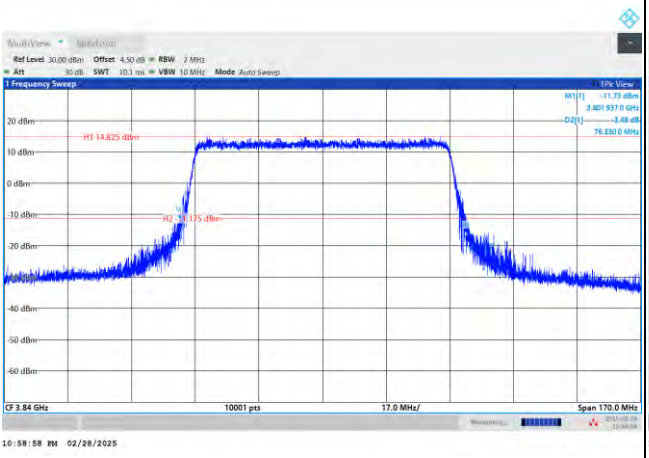
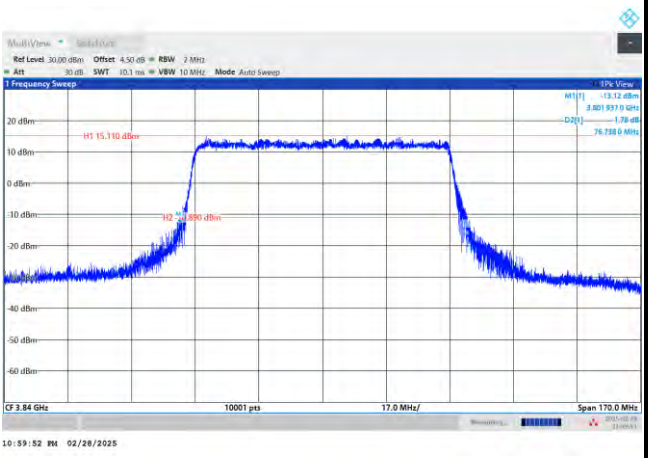
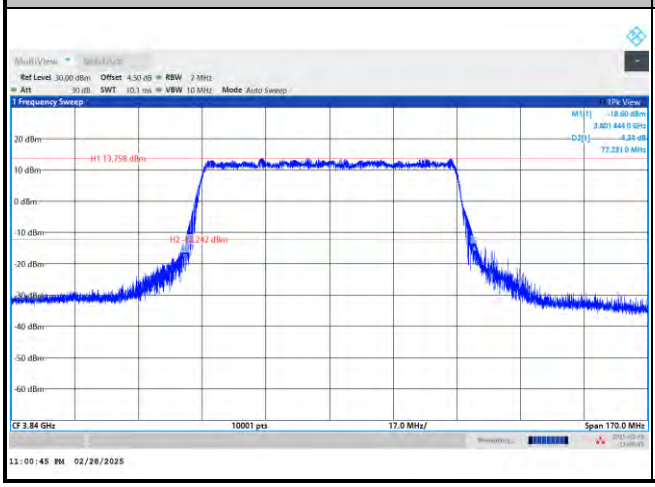
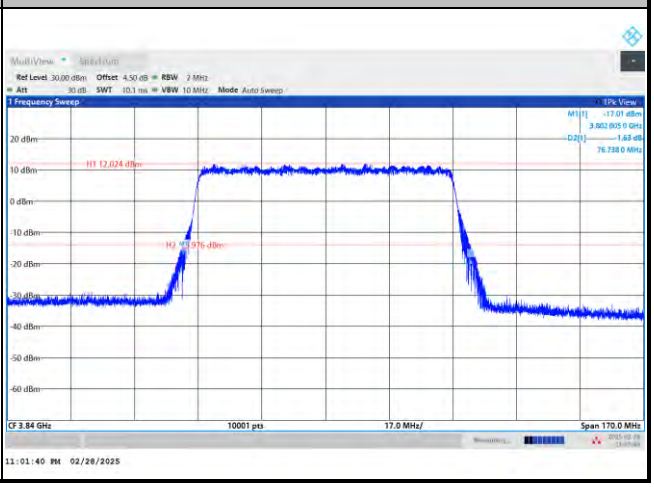
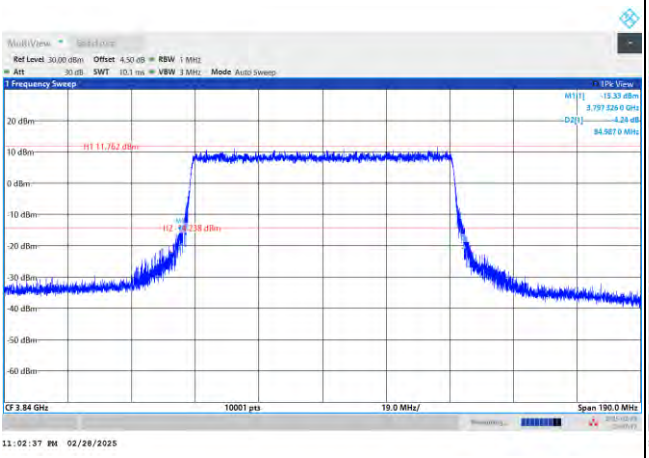
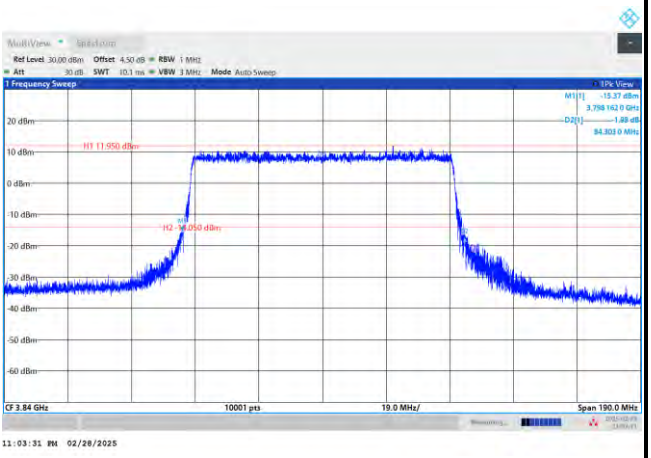
	
64QAM	256QAM
	

FR1 n77 / 80MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
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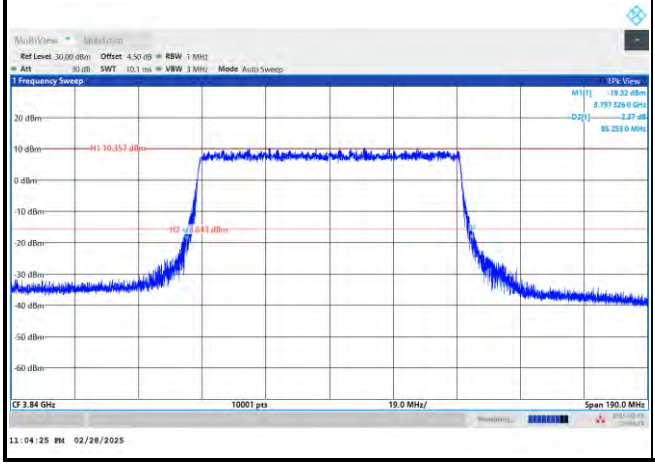
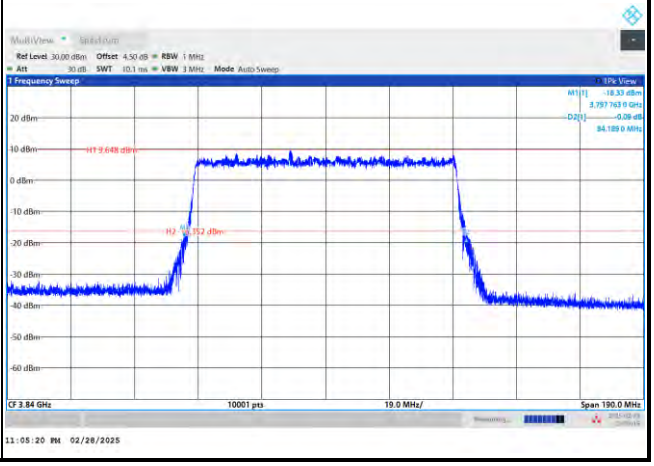
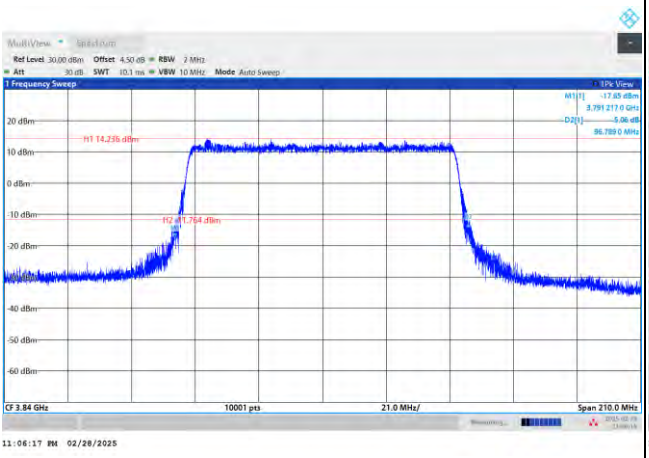
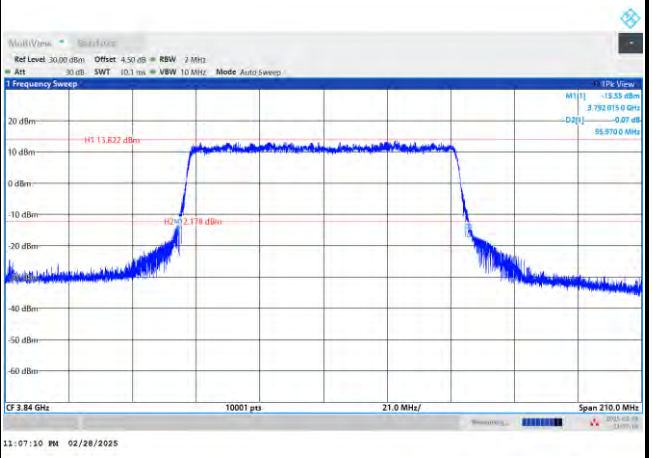
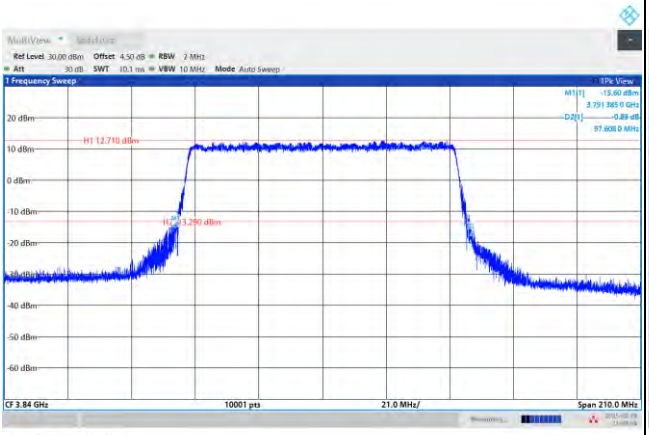
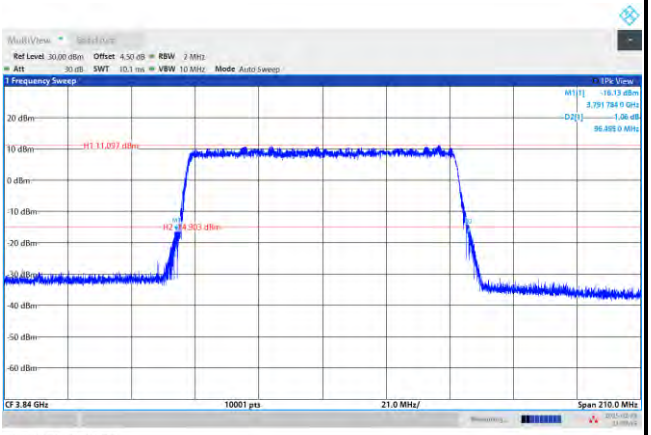
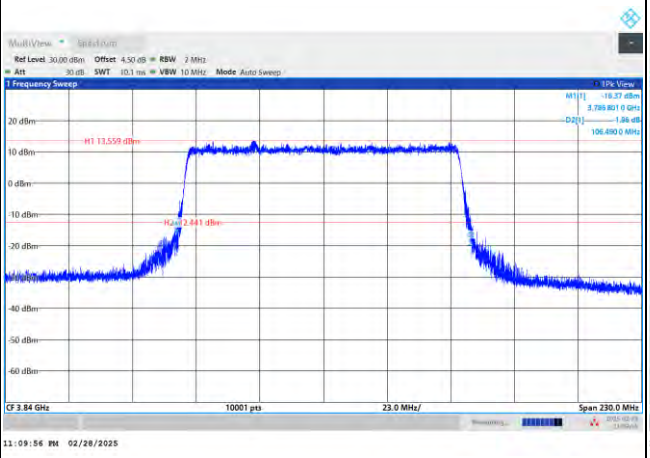
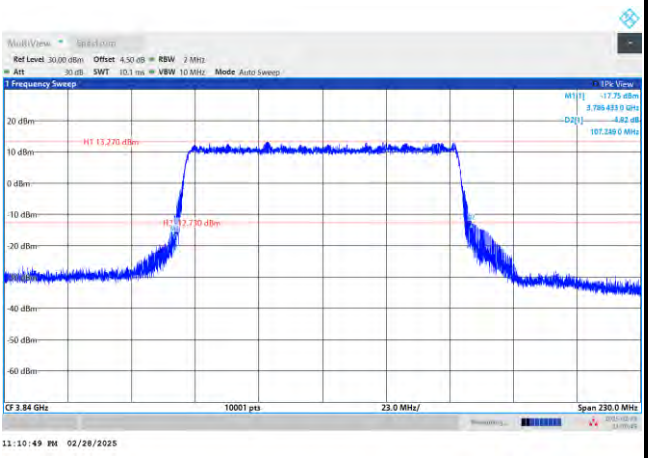
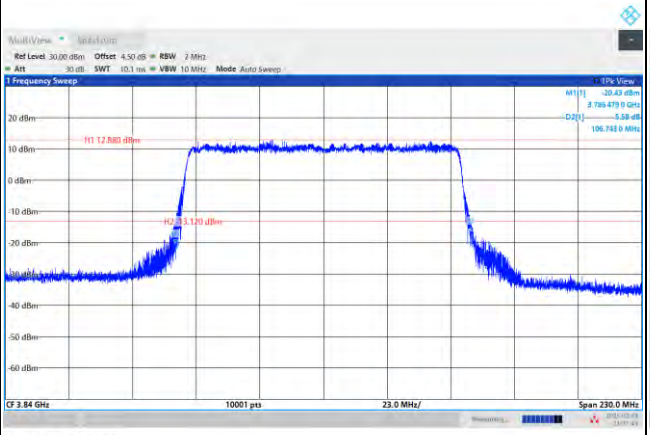
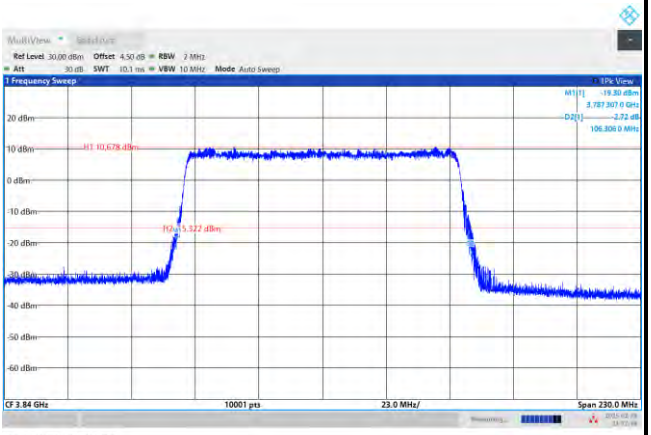
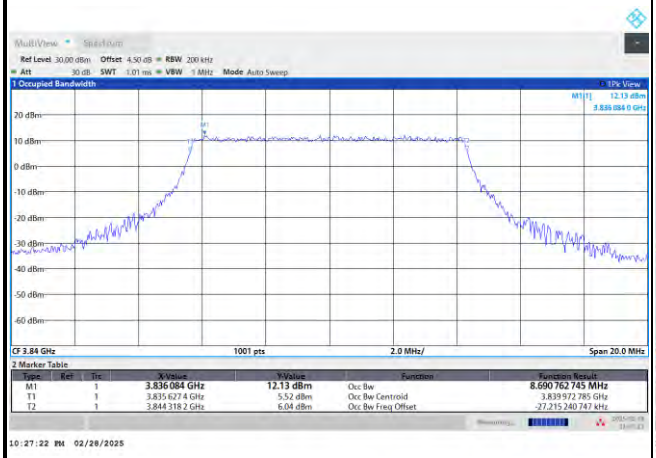
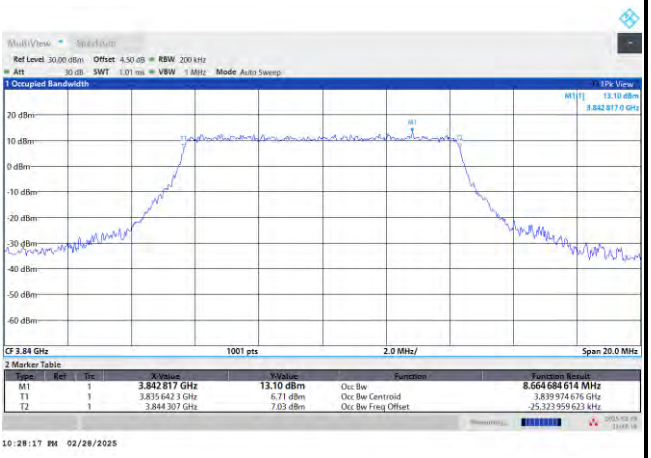
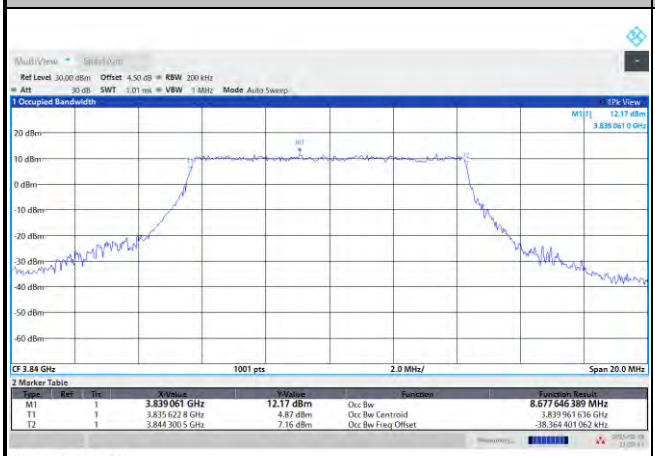
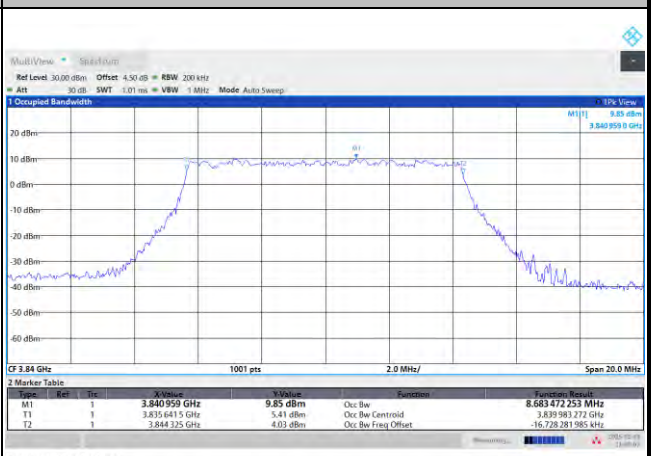
	

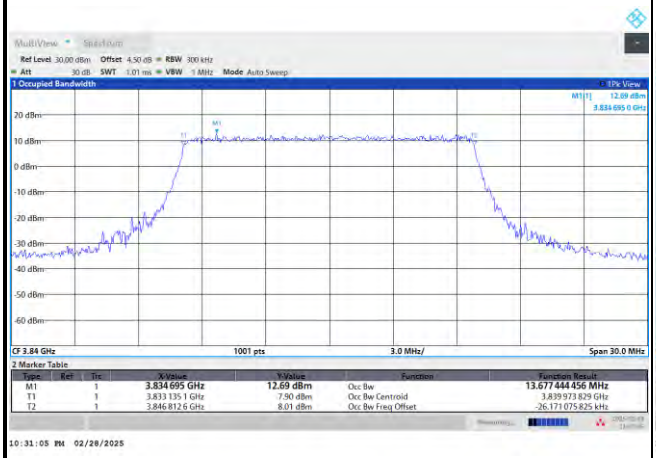
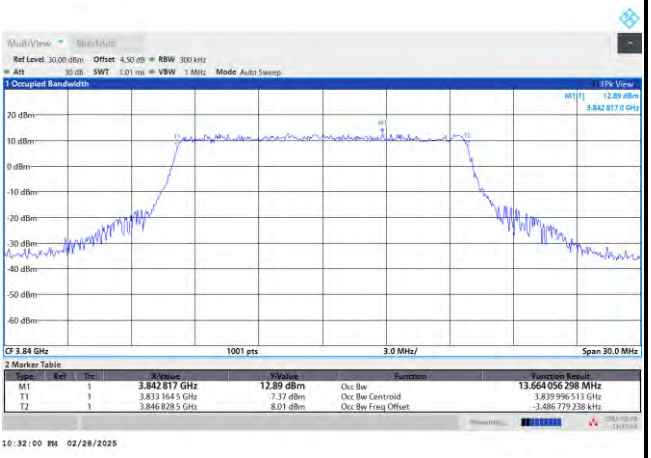
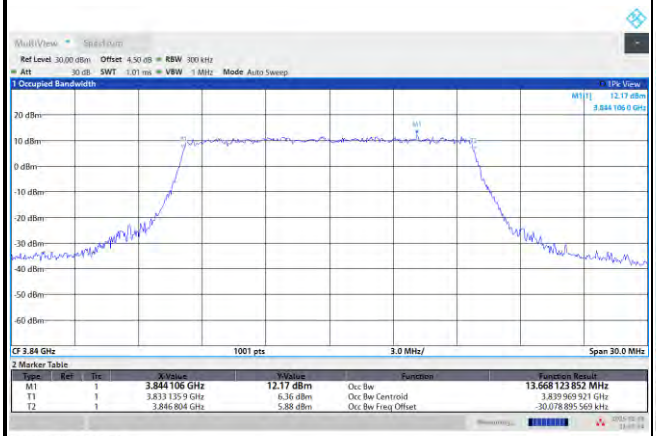
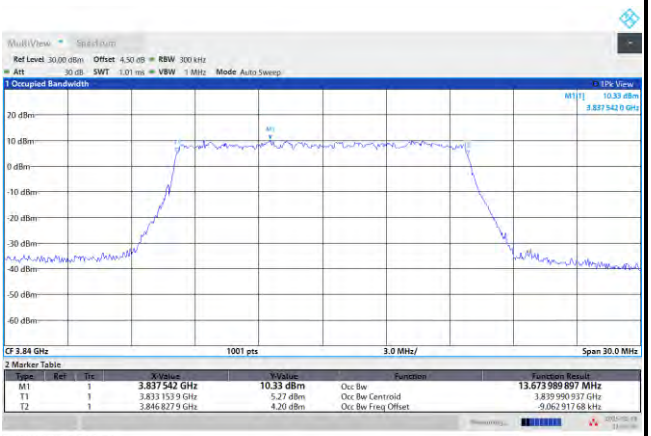
FR1 n77 / 90MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

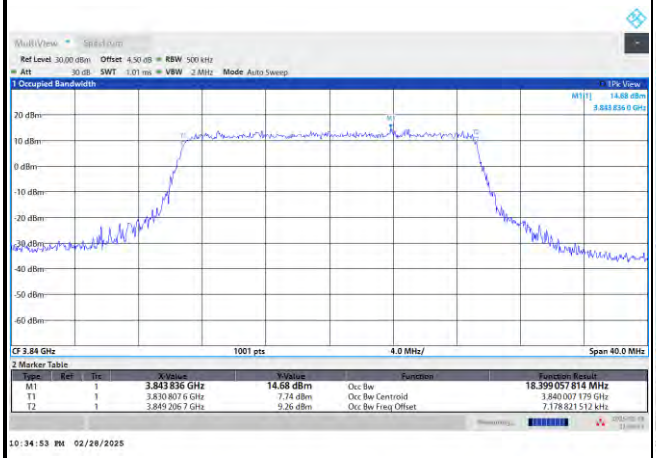
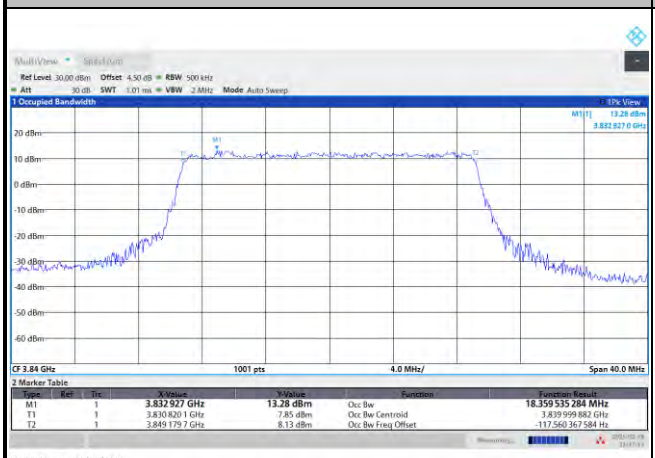
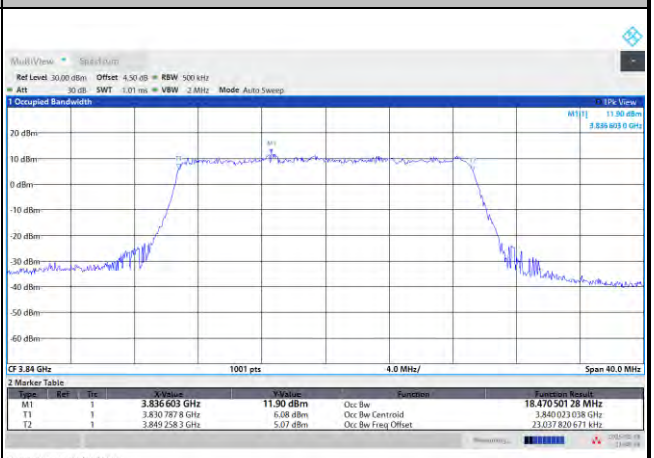
FR1 n77 / 100MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

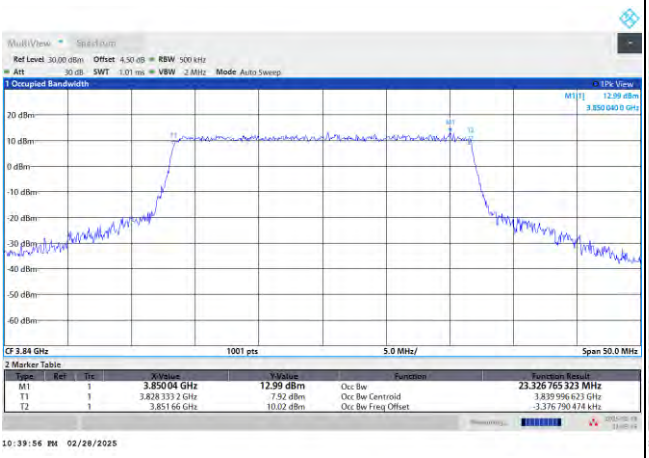
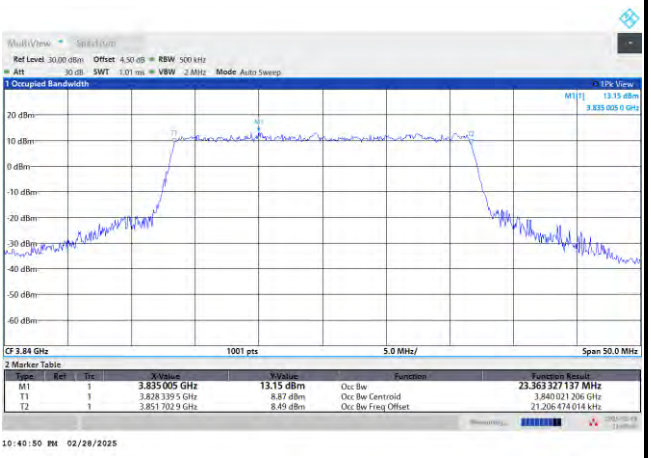
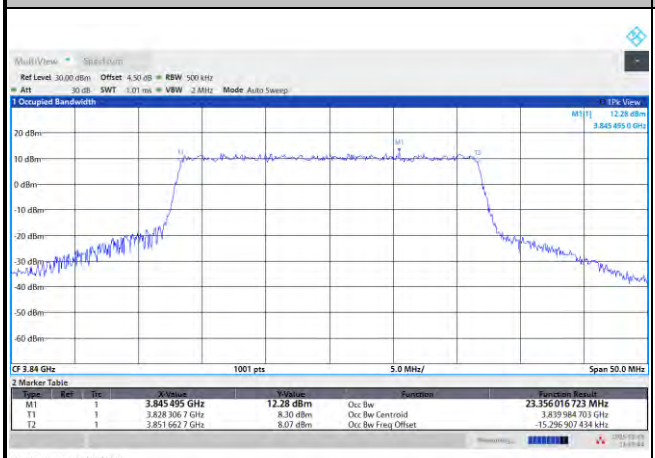
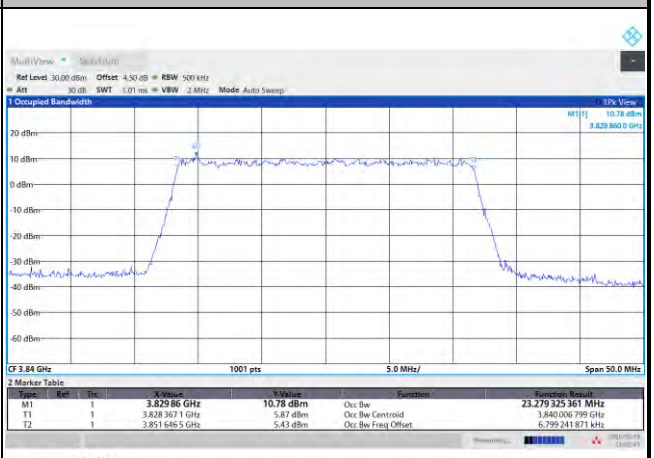
Occupied Bandwidth

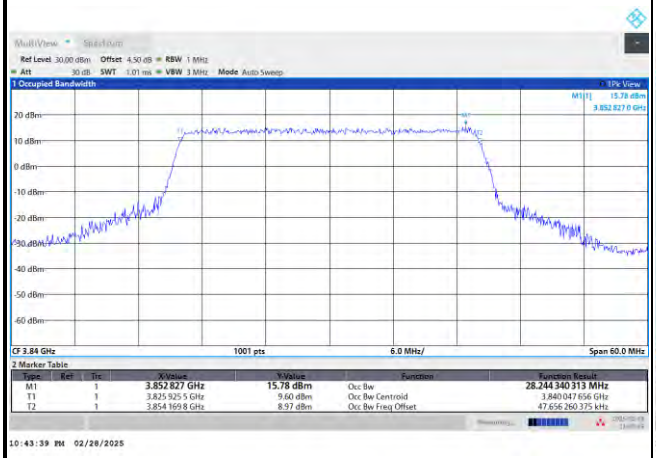
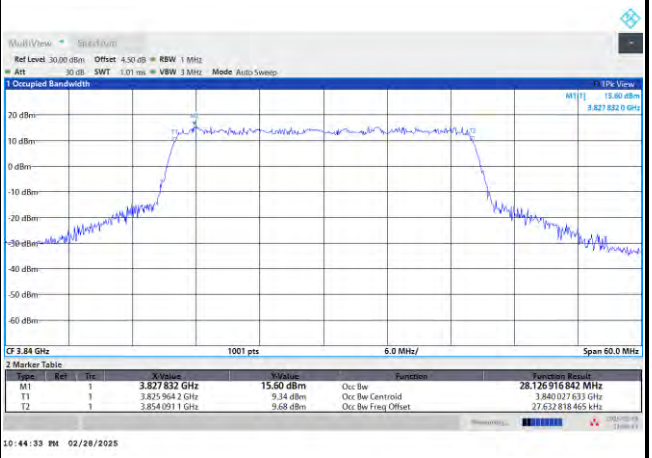
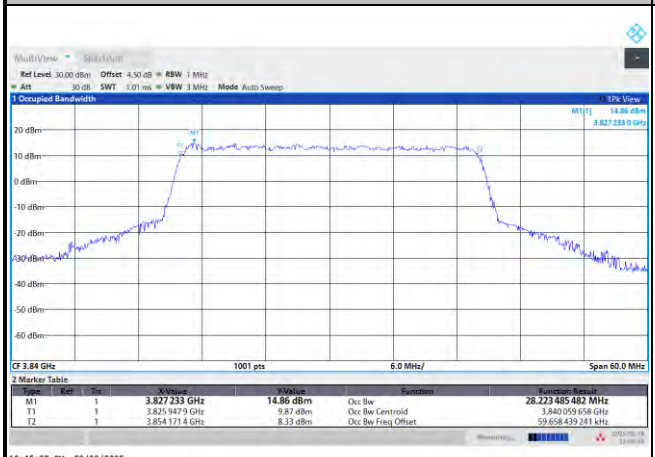
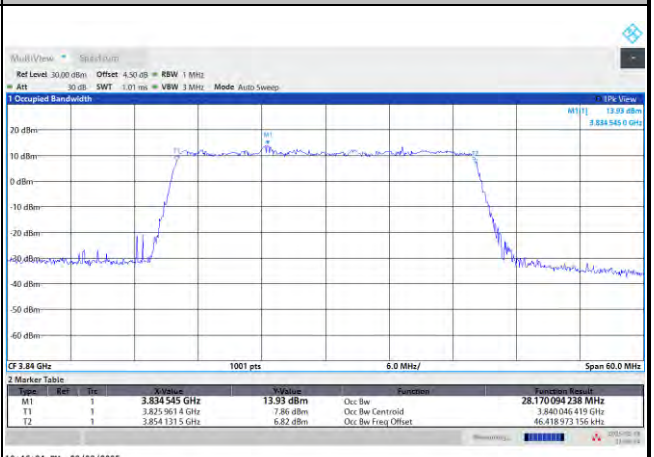
Mode	FR1 n77 : OB BW(MHz) / CP OFDM							
BW	10MHz		15MHz		20MHz		25MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	8.69	8.66	13.67	13.66	18.39	18.33	23.32	23.36
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	8.67	8.68	13.66	13.67	18.35	18.47	23.35	23.27
BW	30MHz		40MHz		50MHz		60MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	28.24	28.12	38.16	38.11	47.70	47.64	58.60	58.38
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	28.22	28.17	38.10	37.98	47.68	47.60	58.55	58.68
BW	70MHz		80MHz		90MHz		100MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	68.28	68.42	77.95	77.93	87.87	88.01	97.87	97.86
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	68.20	67.95	78.14	78.11	87.86	88.13	97.95	97.74

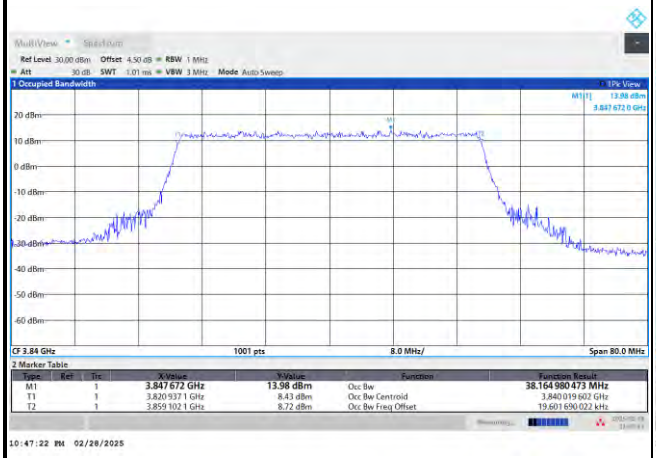
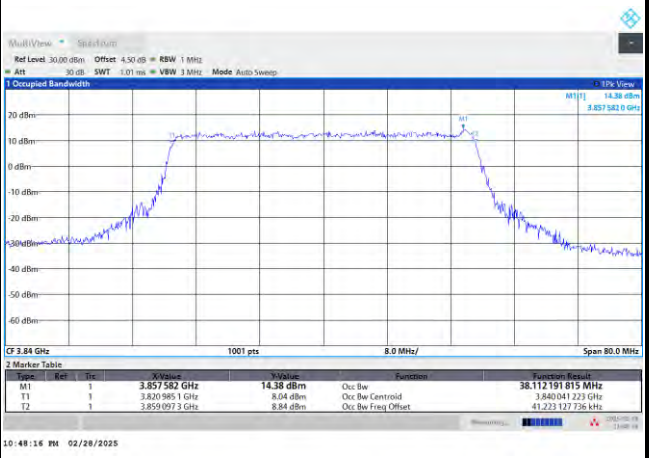
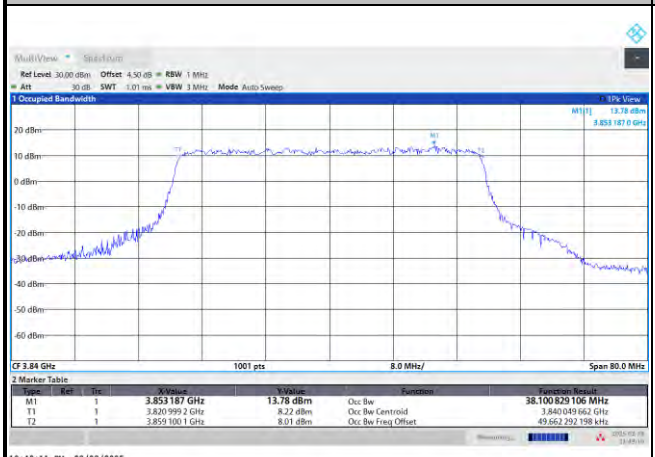
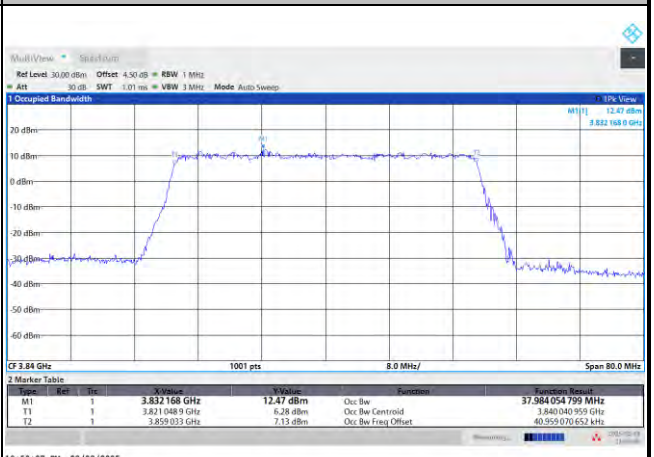
FR1 n77 / 10MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

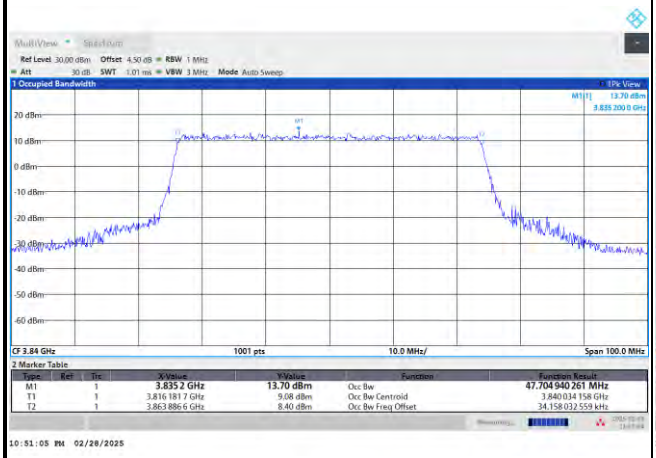
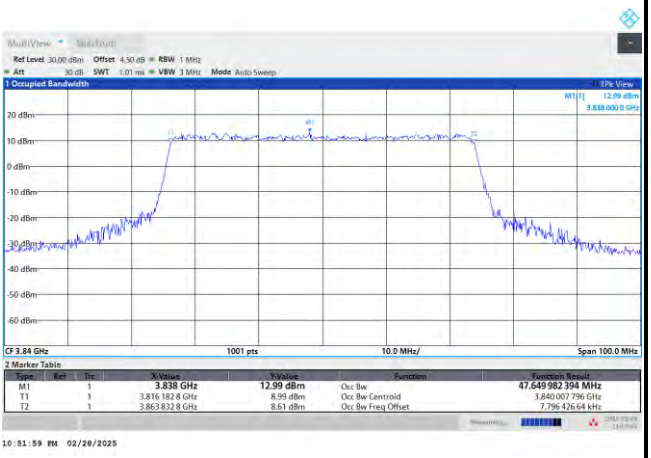
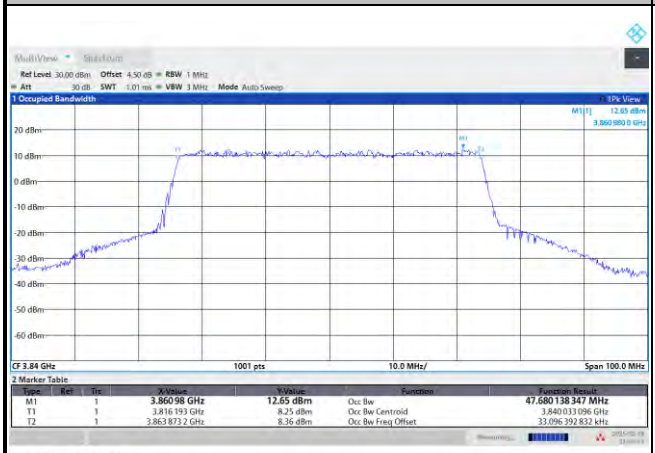
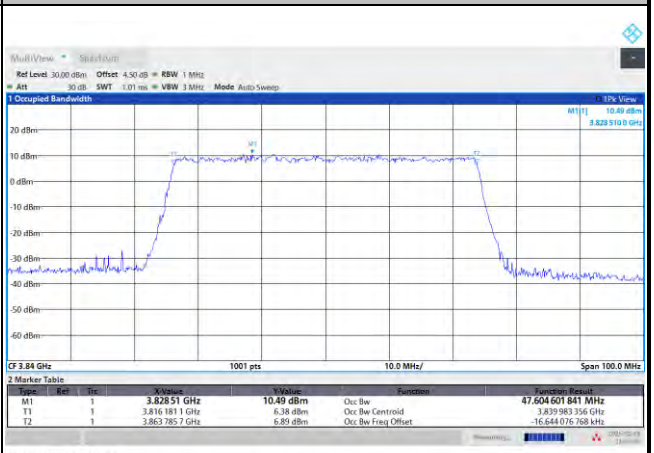
FR1 n77 / 15MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

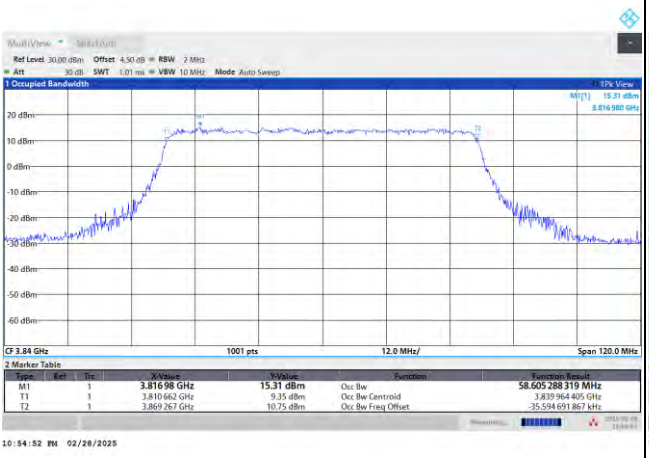
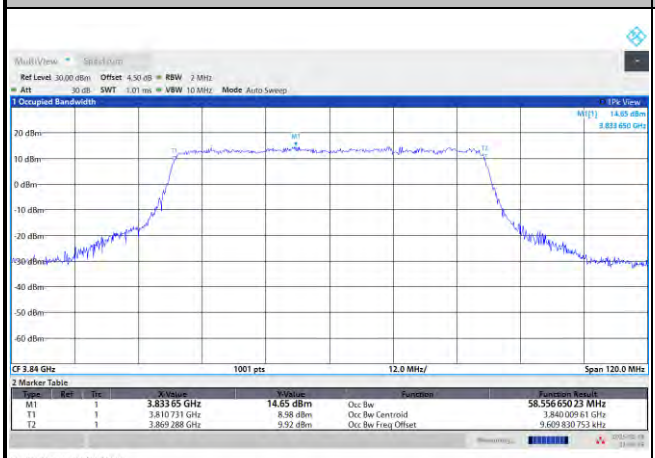
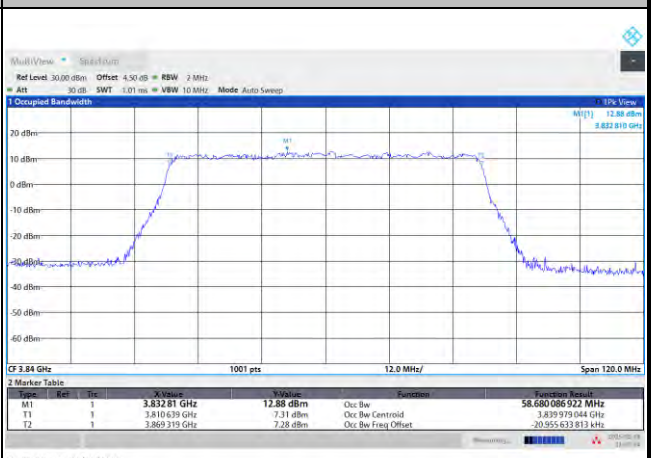
FR1 n77 / 20MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

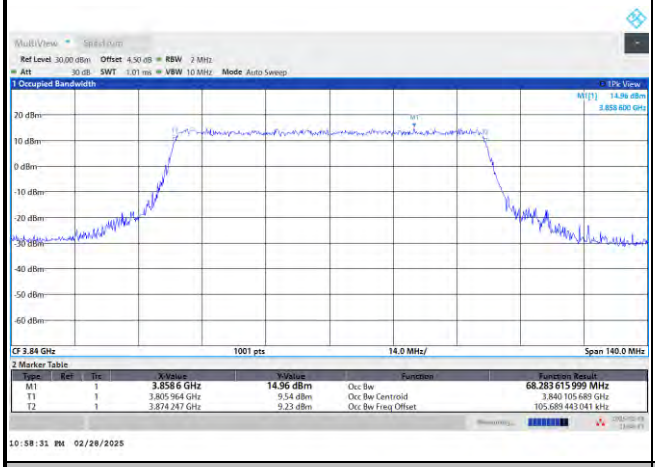
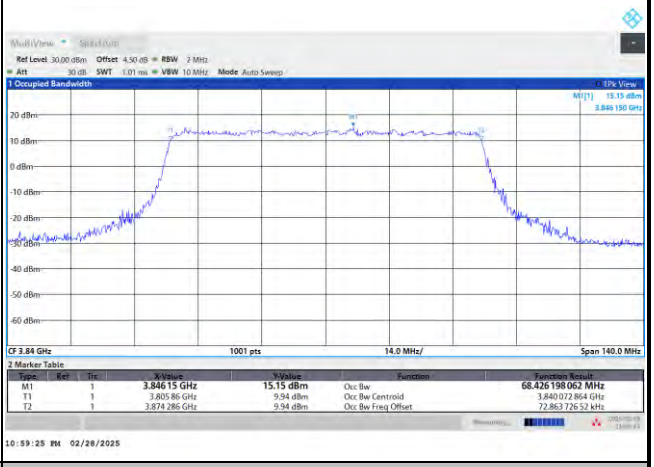
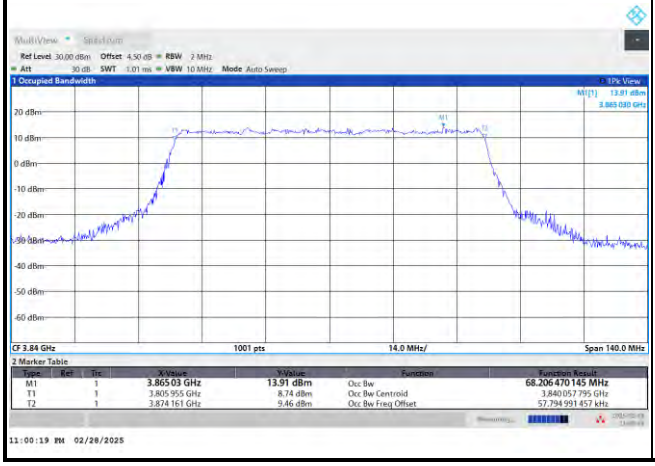
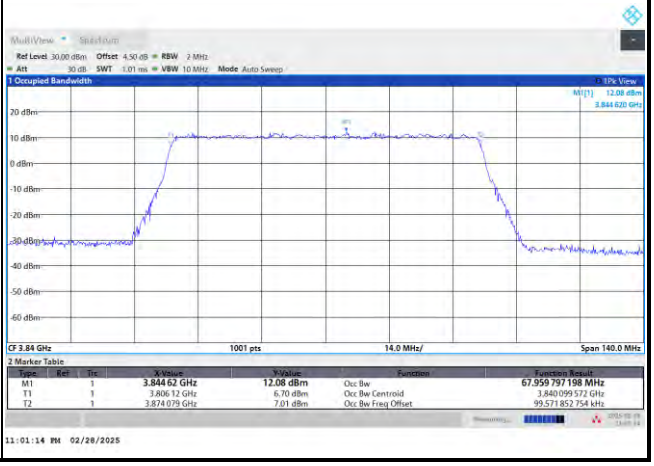
FR1 n77 / 25MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

FR1 n77 / 30MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

FR1 n77 / 40MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

FR1 n77 / 50MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

FR1 n77 / 60MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

FR1 n77 / 70MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM