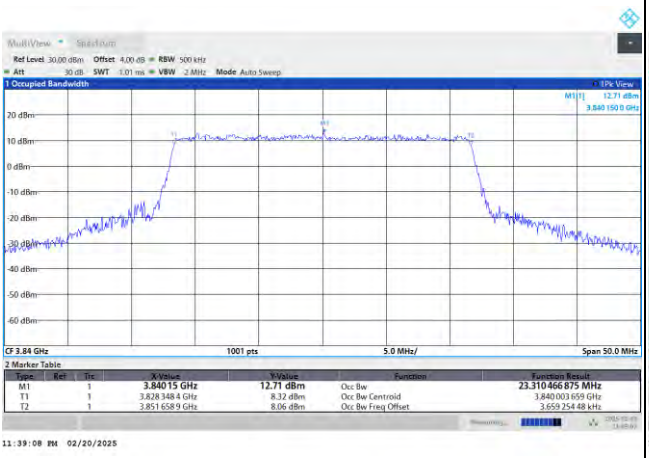
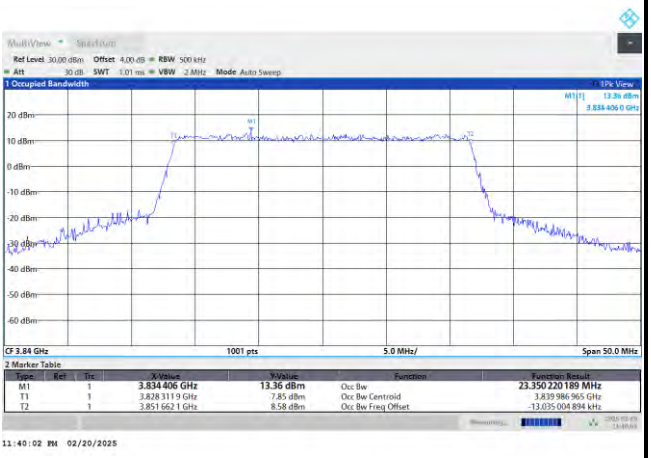
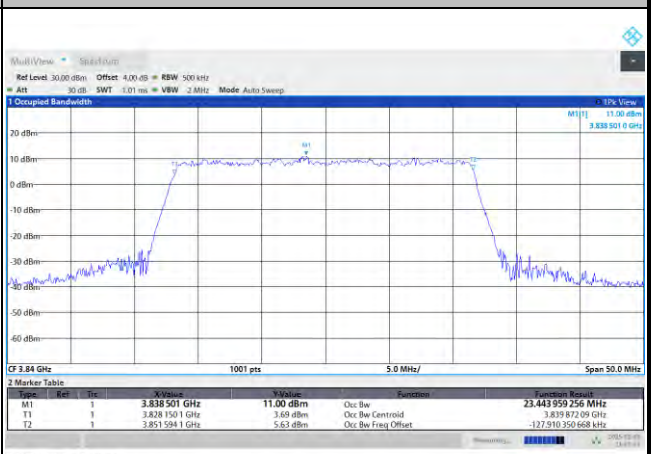
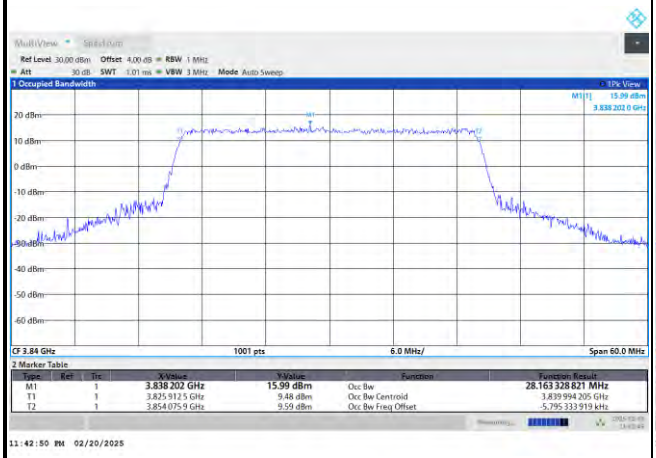
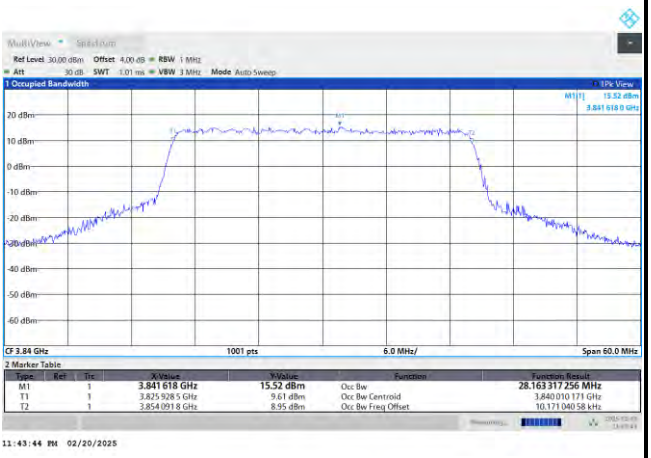
FR1 n77 / 25MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

FR1 n77 / 30MHz / CP OFDM / Middle Channel / Full RB

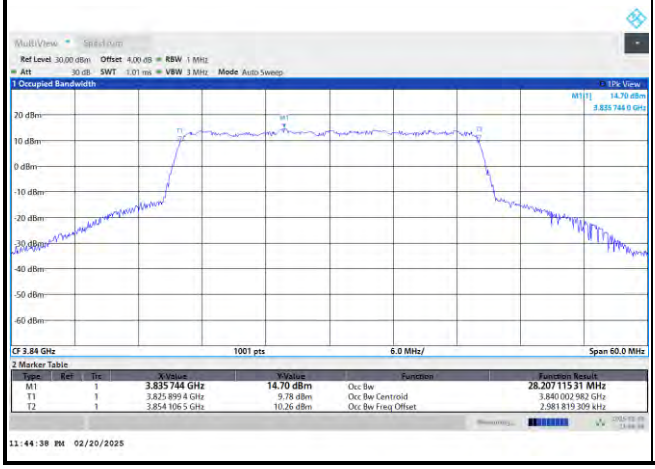
QPSK



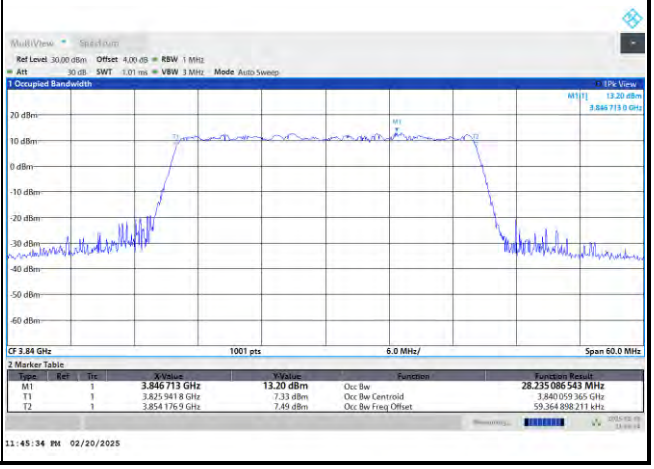
16QAM

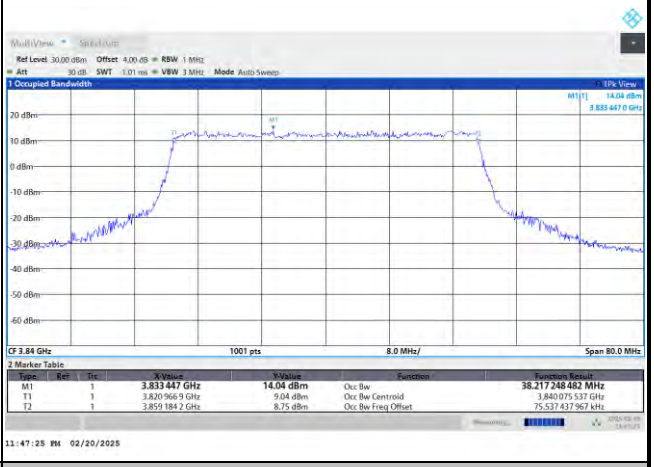
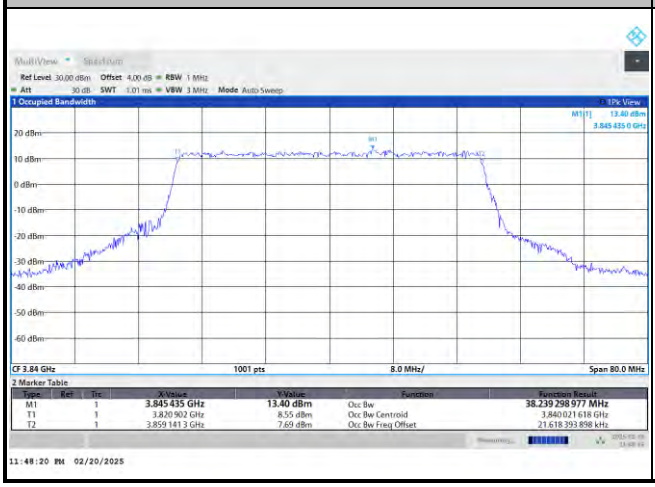
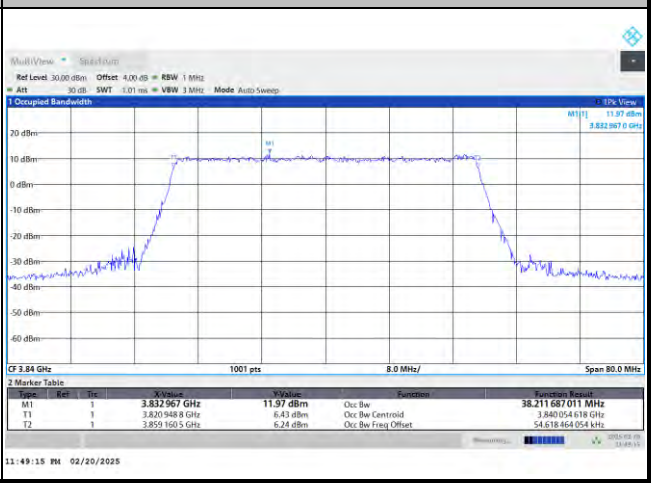


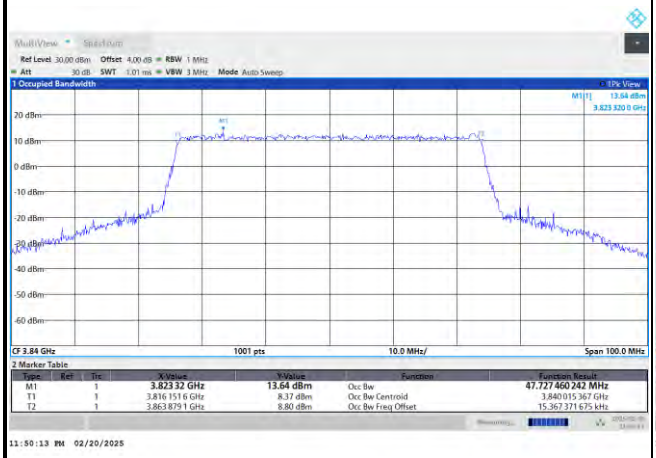
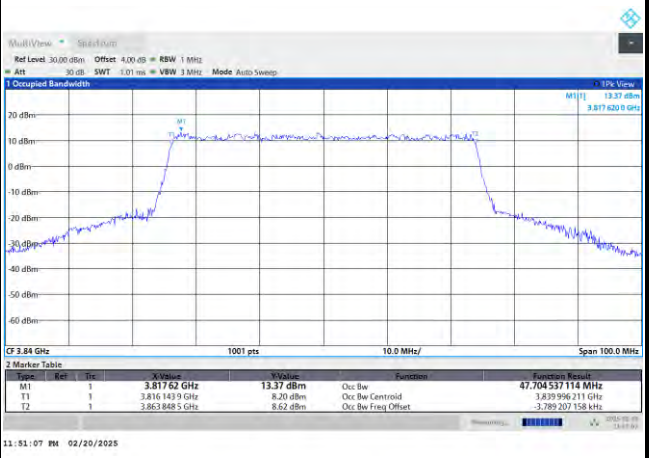
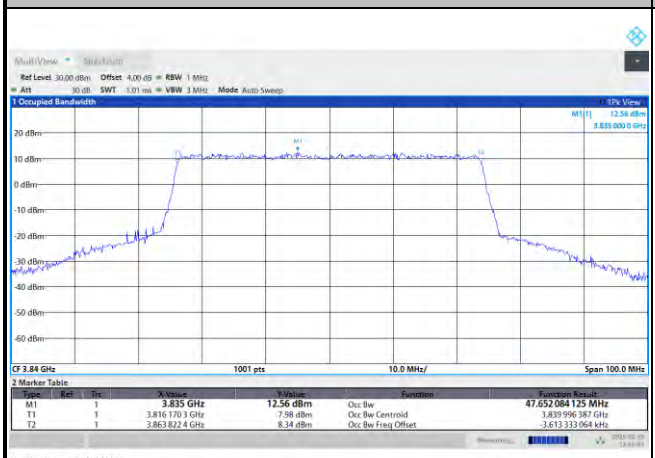
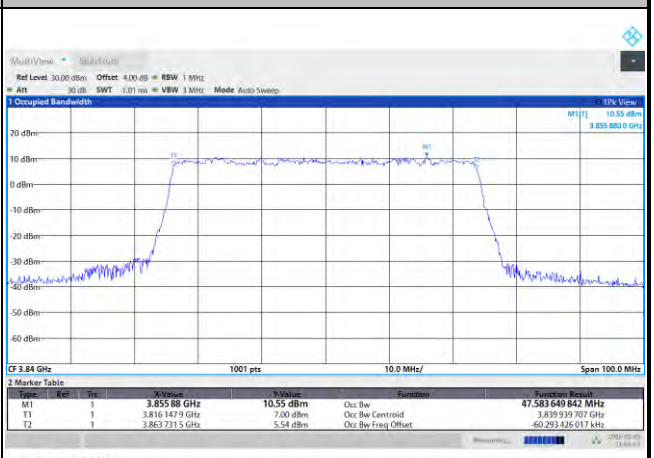
64QAM

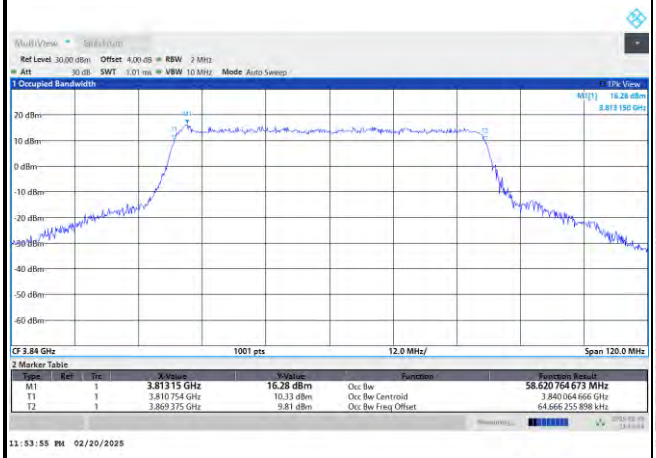
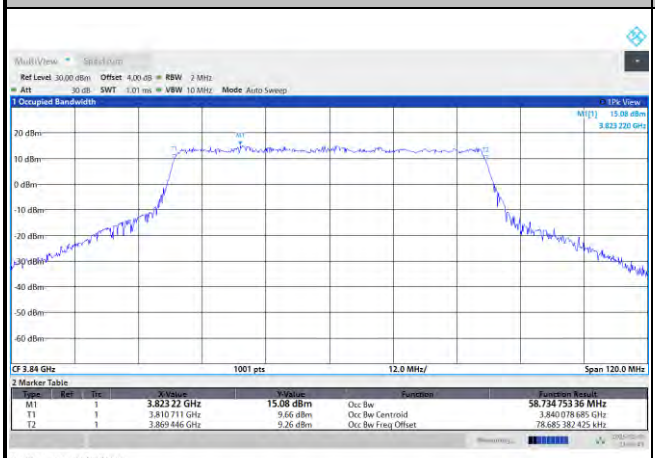
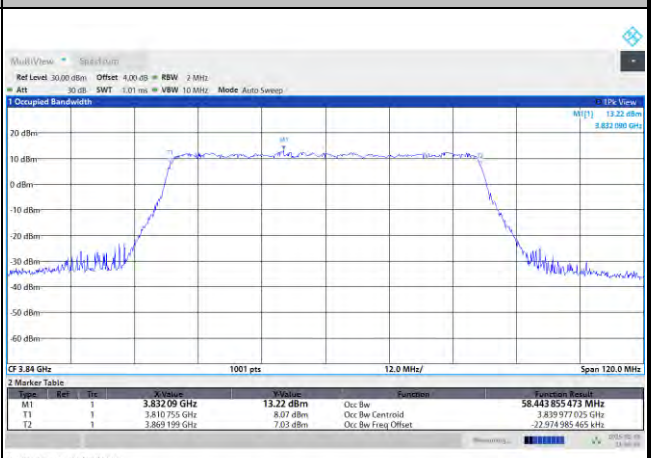


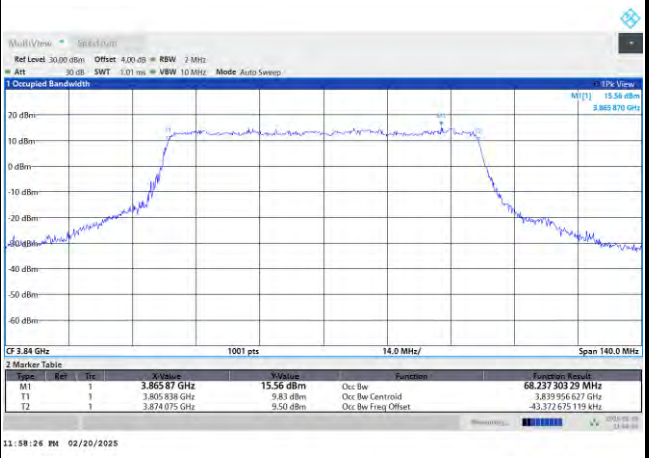
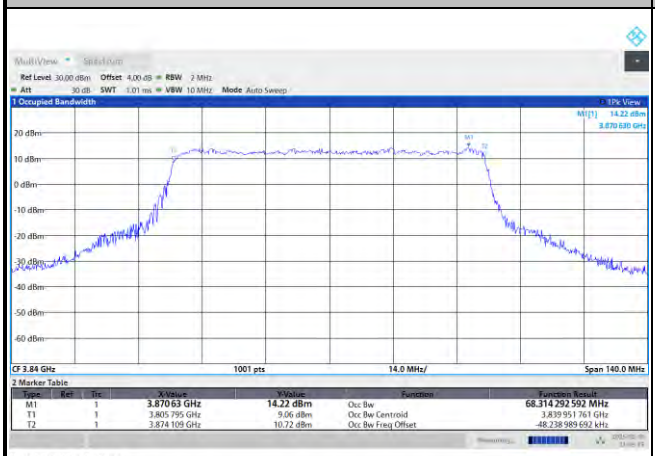
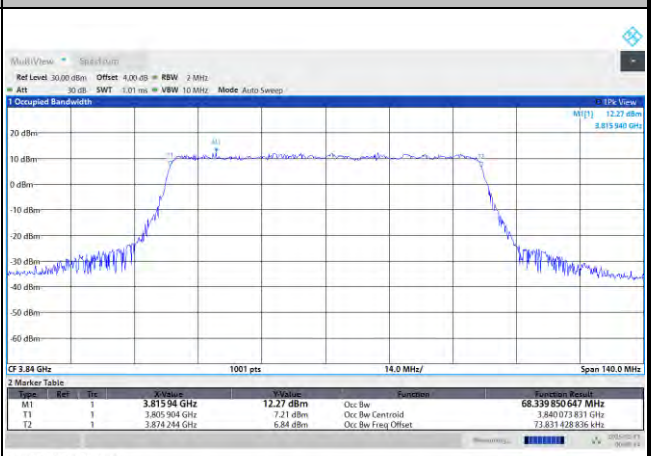
256QAM

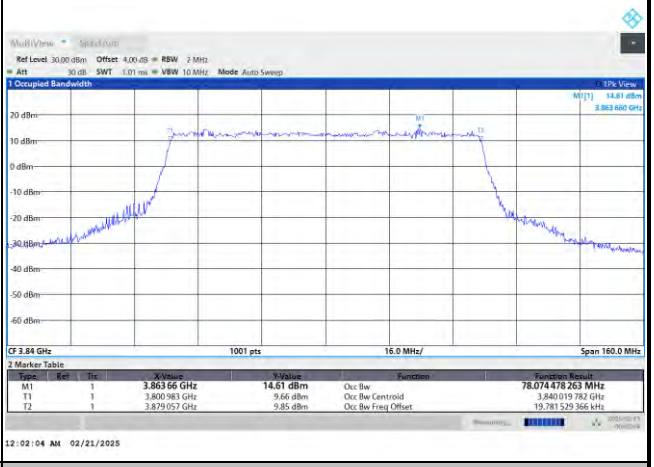
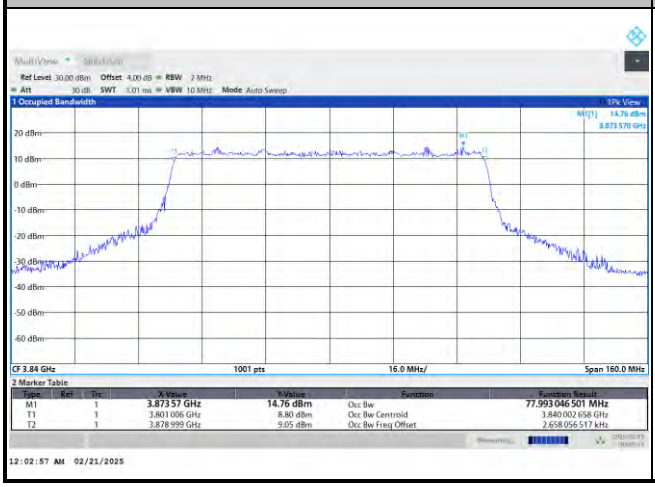
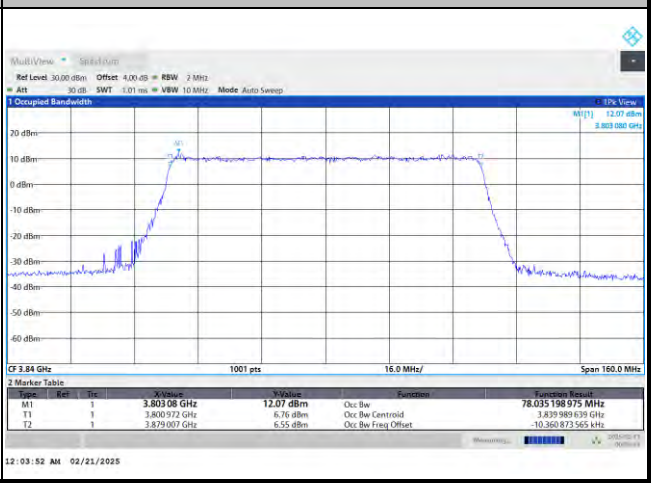


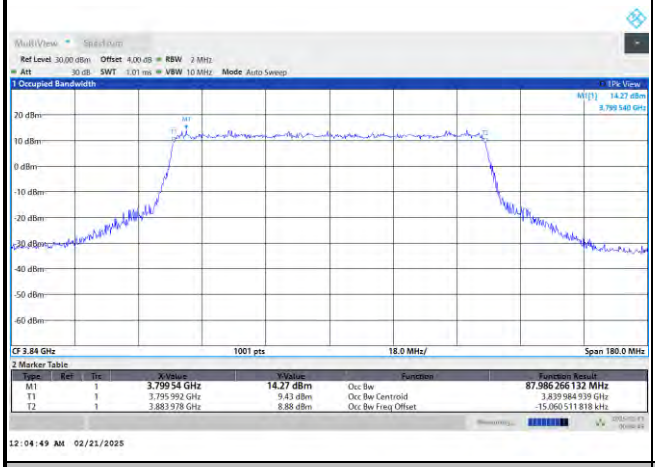
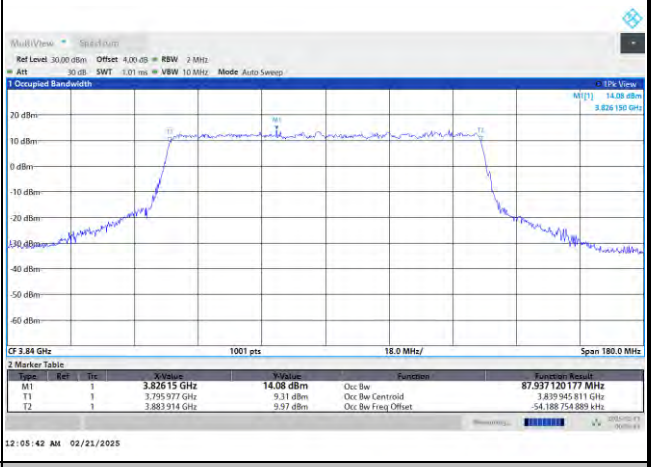
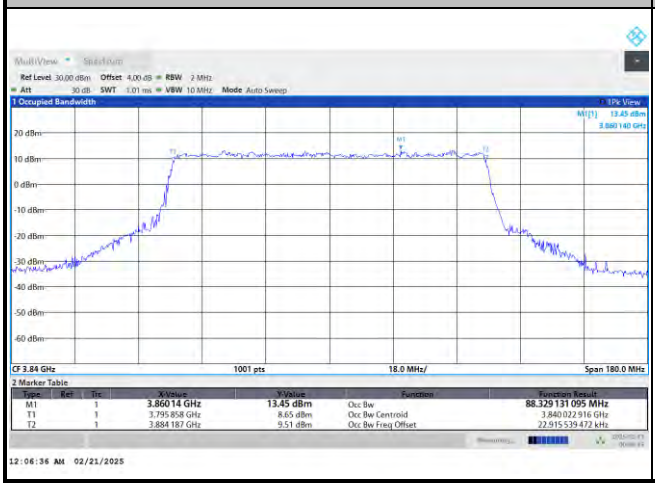
FR1 n77 / 40MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

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
	

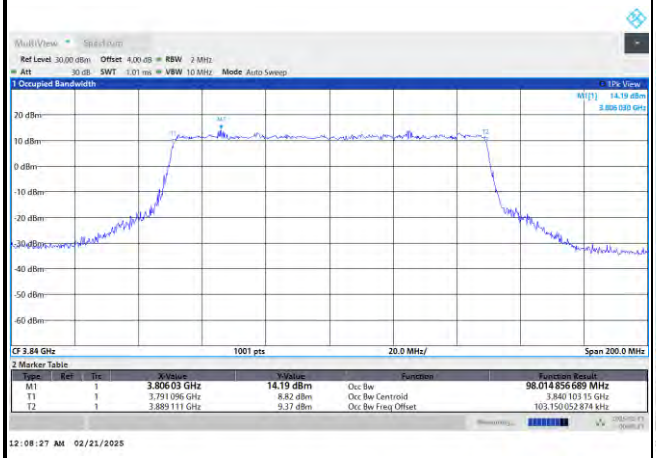
FR1 n77 / 70MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

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
	

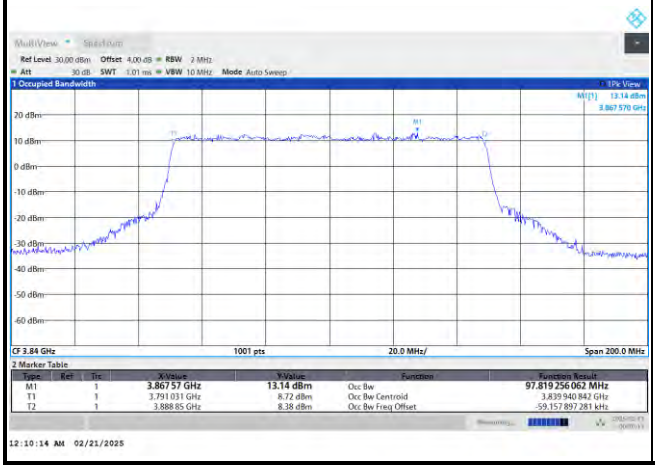
FR1 n77 / 100MHz / CP OFDM / Middle Channel / Full RB

QPSK



16QAM

64QAM

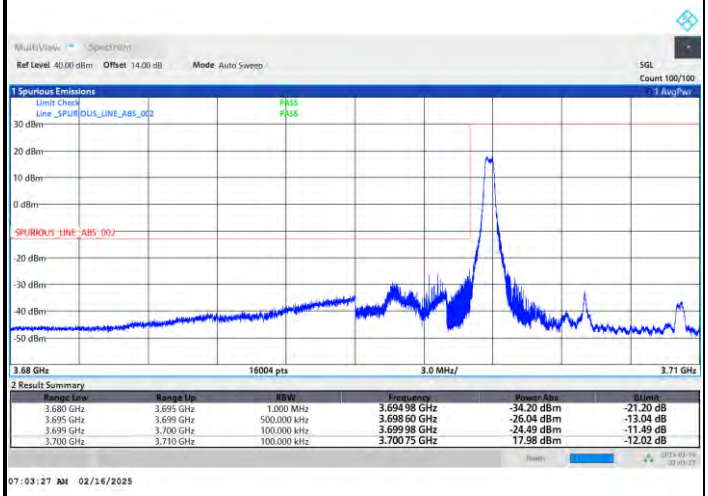


256QAM

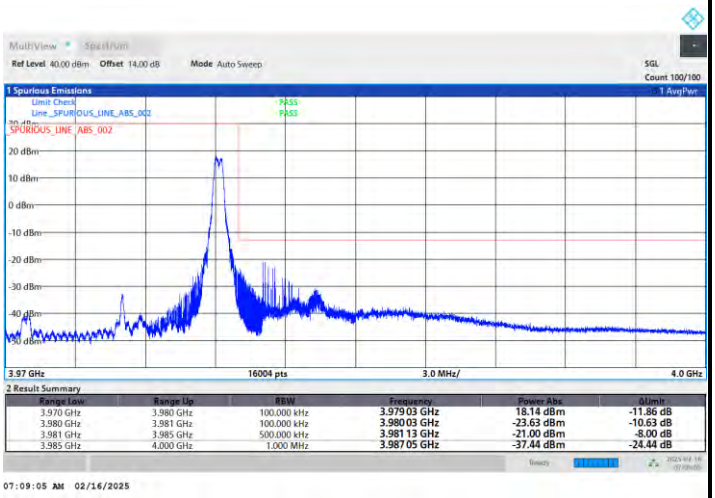
Conducted Band Edge

FR1 n77 / 10MHz / CP OFDM / QPSK

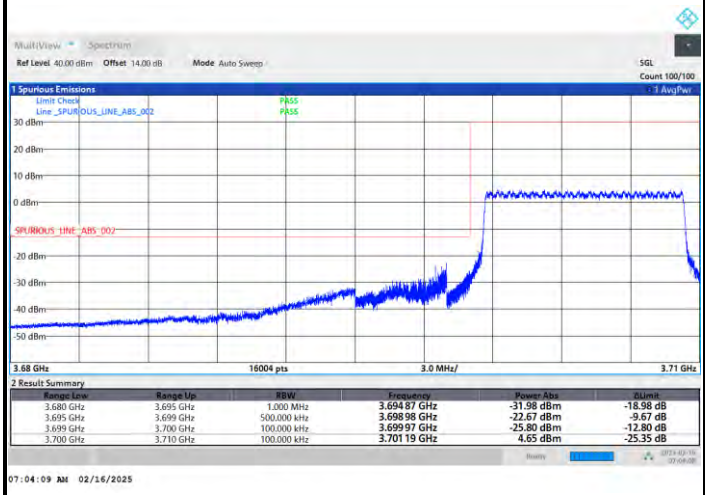
Lowest Band Edge / 1RB0



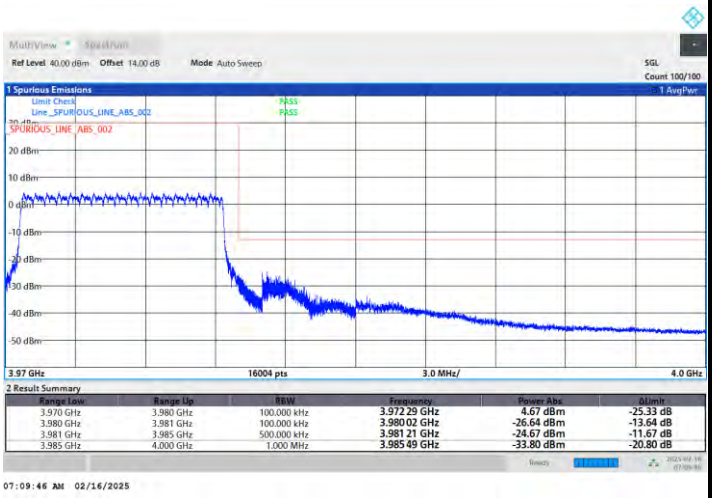
Highest Band Edge / 1RBmax



Lowest Band Edge / Full RB

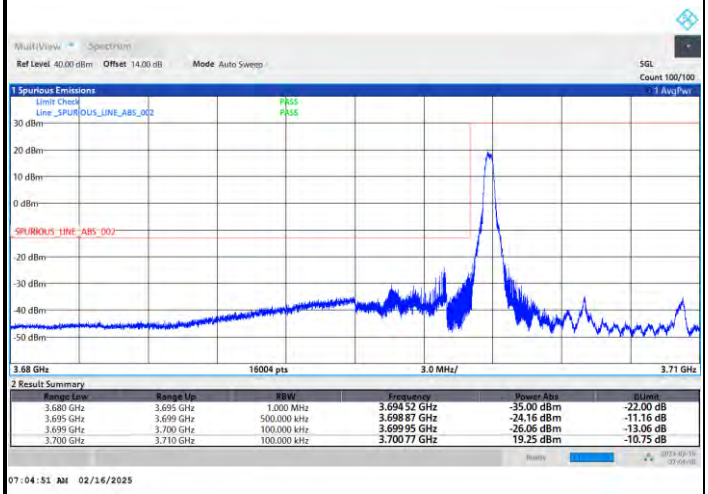


Highest Band Edge / Full RB

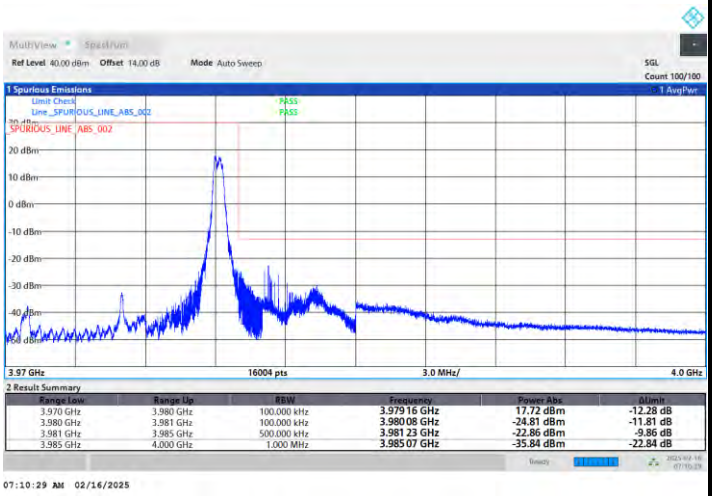


FR1 n77 / 10MHz / CP OFDM / 16QAM

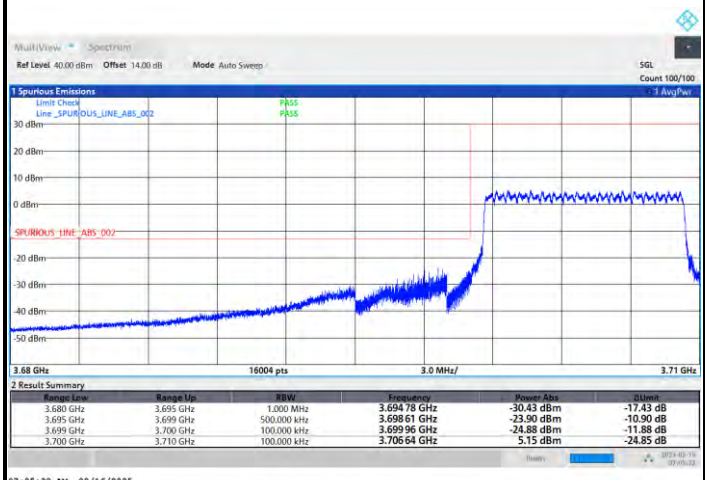
Lowest Band Edge / 1RB0



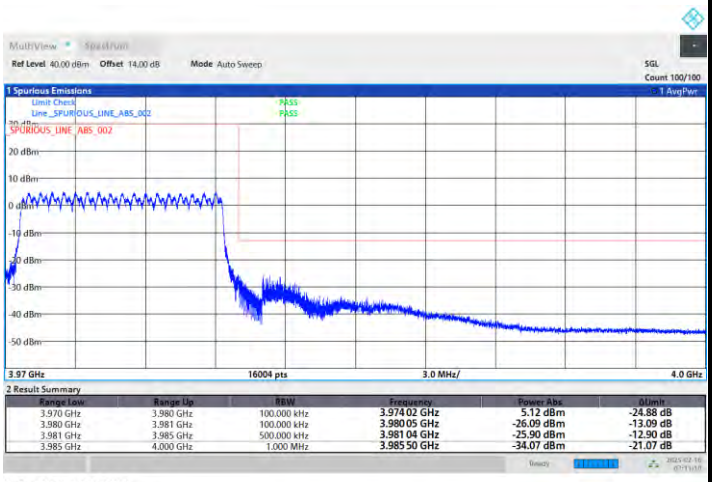
Highest Band Edge / 1RBmax



Lowest Band Edge / Full RB

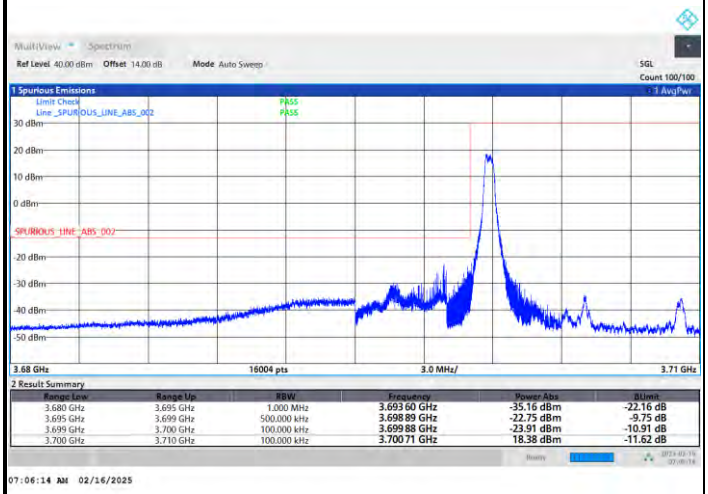


Highest Band Edge / Full RB

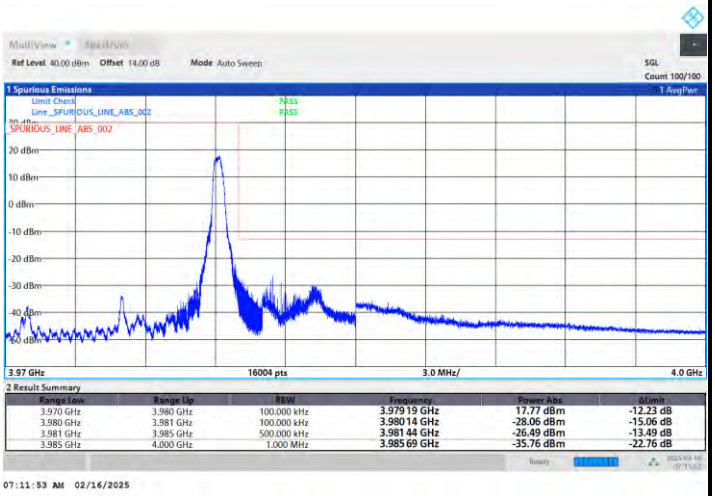


FR1 n77 / 10MHz / CP OFDM / 64QAM

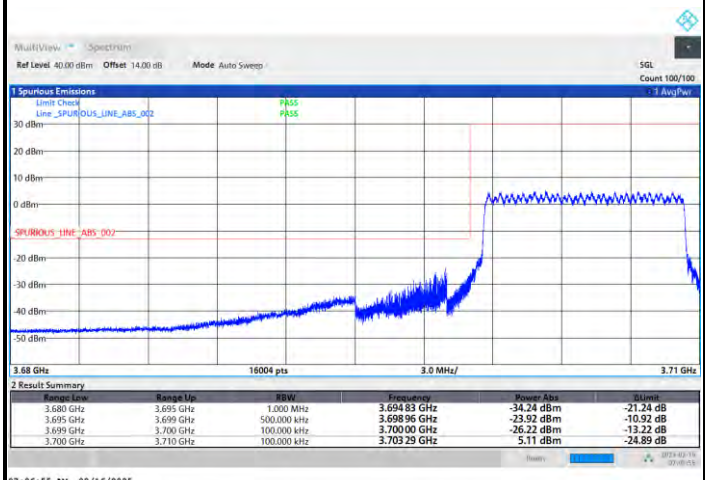
Lowest Band Edge / 1RB0



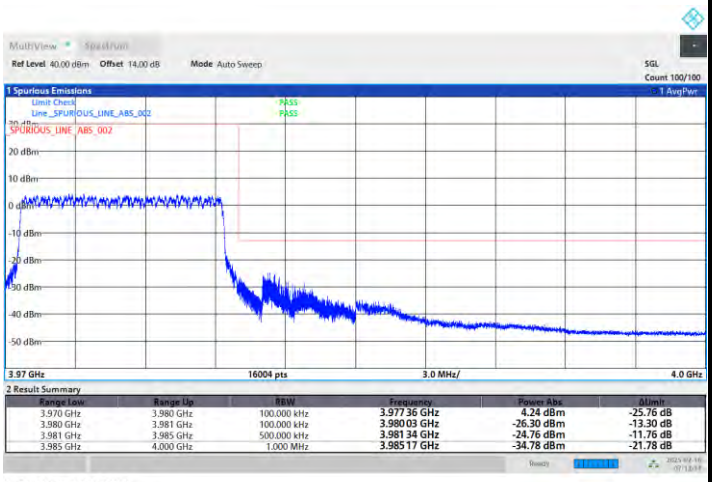
Highest Band Edge / 1RBmax



Lowest Band Edge / Full RB

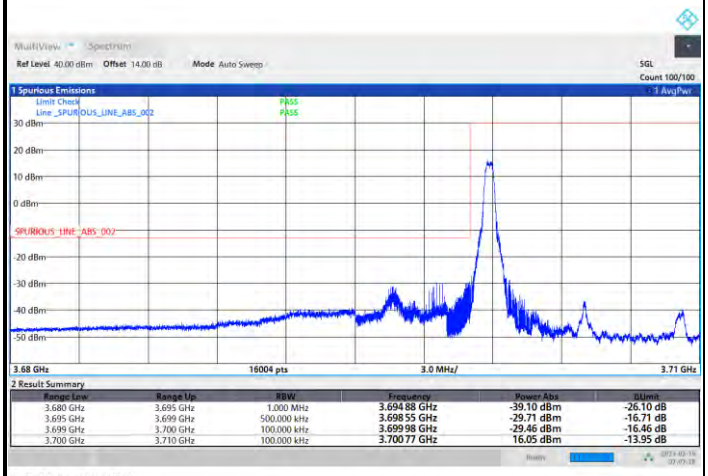


Highest Band Edge / Full RB

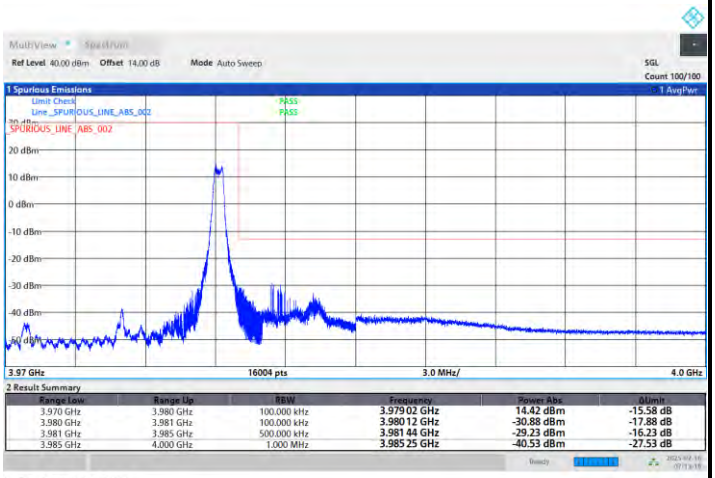


FR1 n77 / 10MHz / CP OFDM / 256QAM

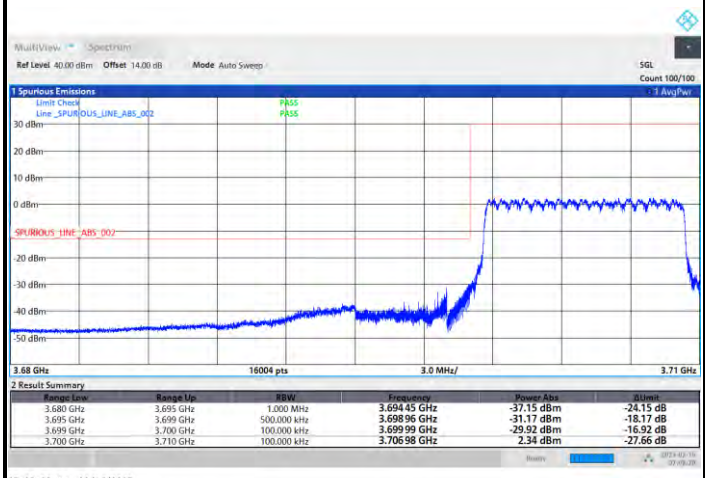
Lowest Band Edge / 1RB0



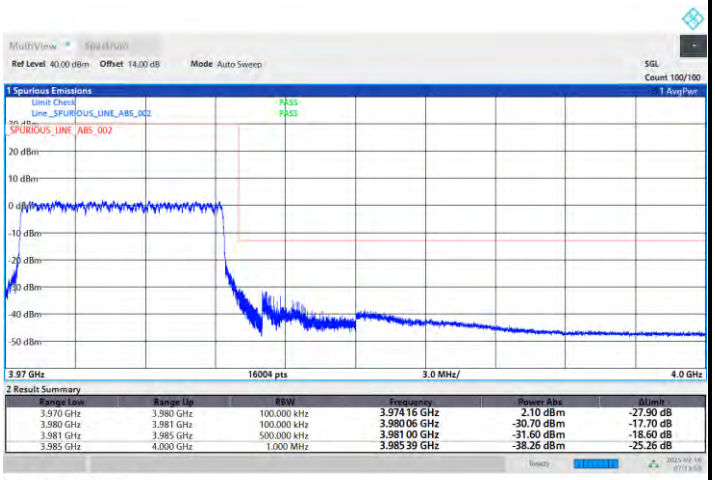
Highest Band Edge / 1RBmax

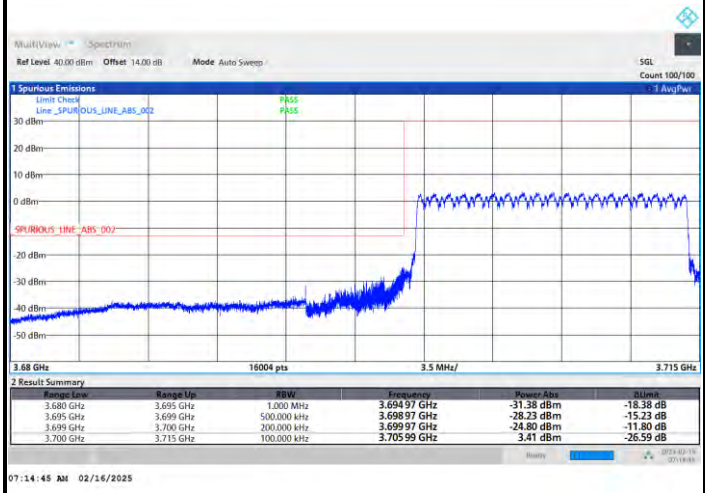
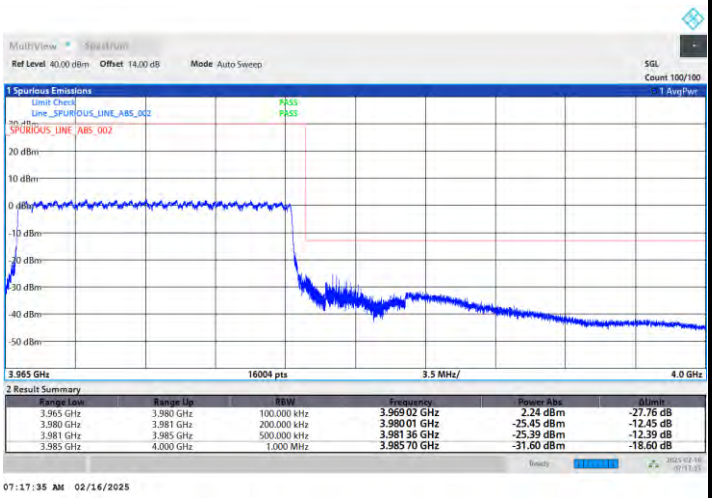


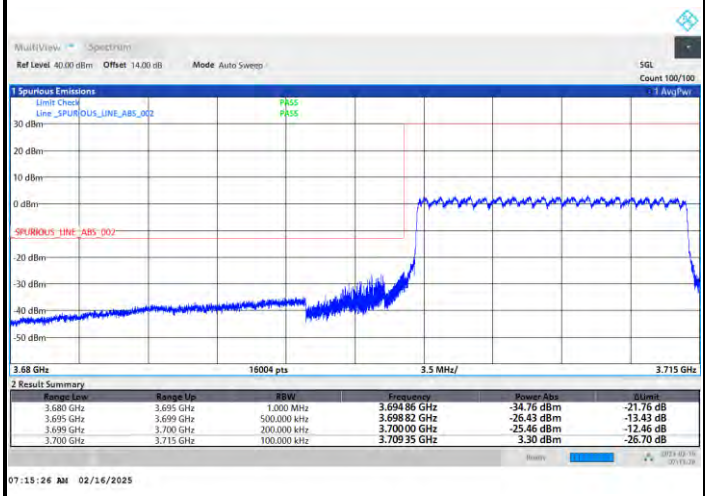
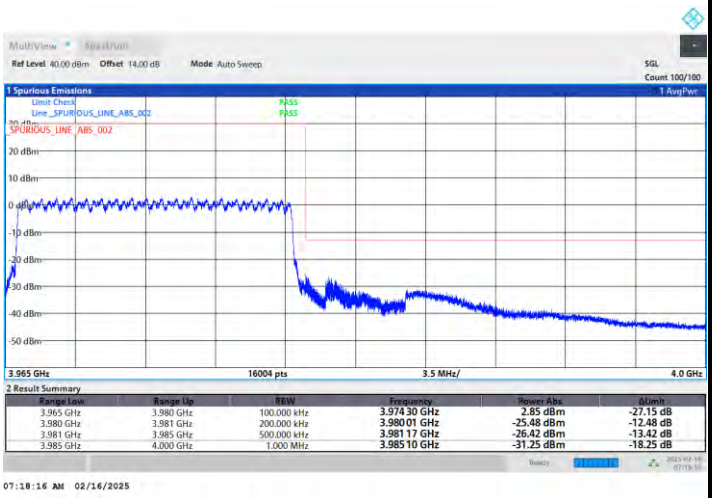
Lowest Band Edge / Full RB

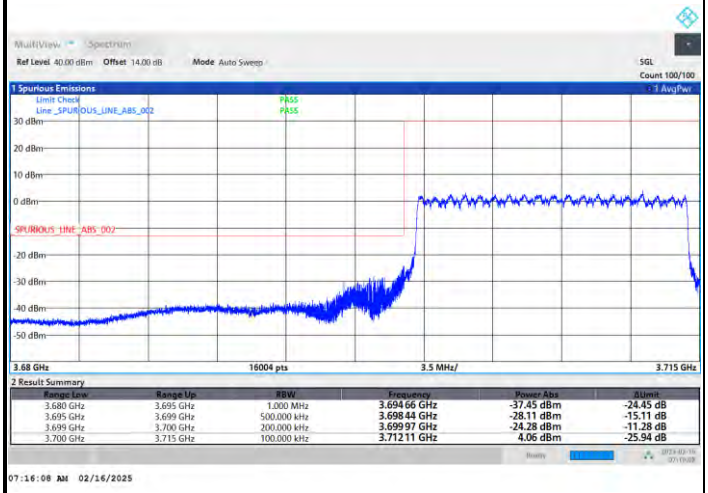
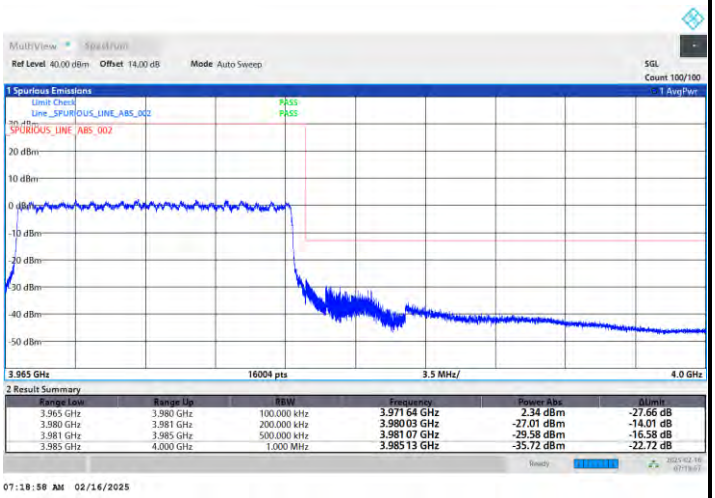


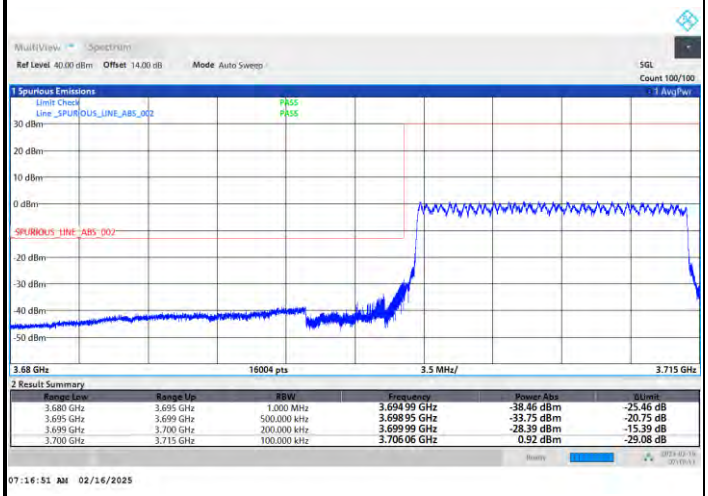
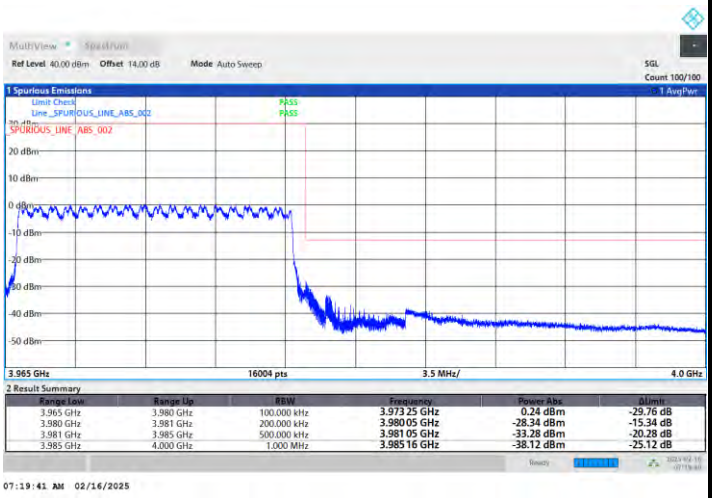
Highest Band Edge / Full RB

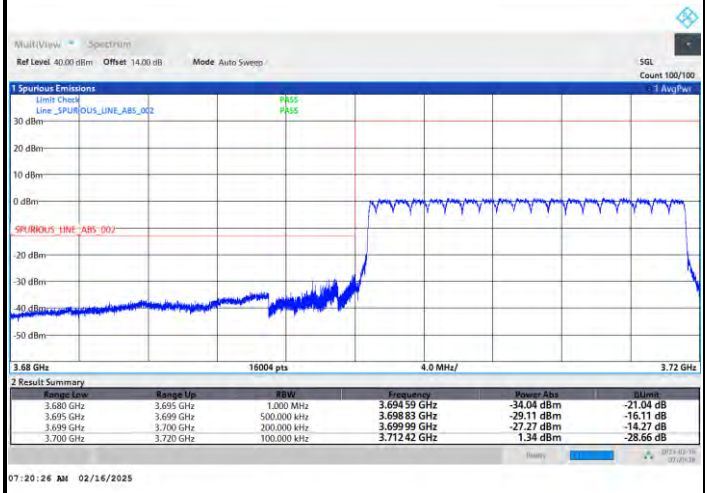
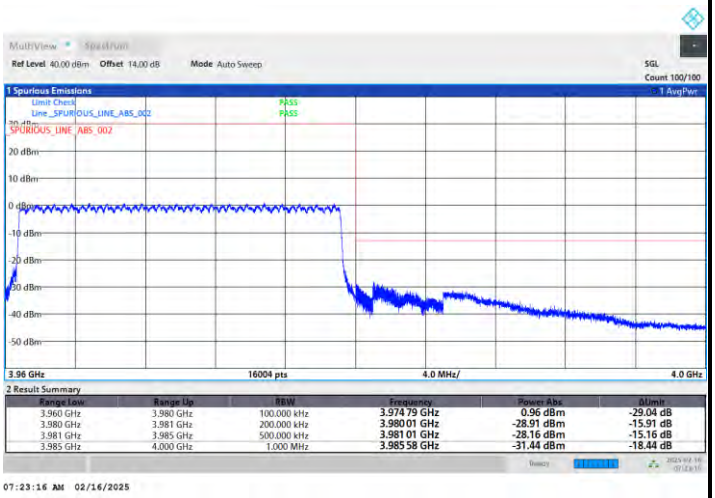


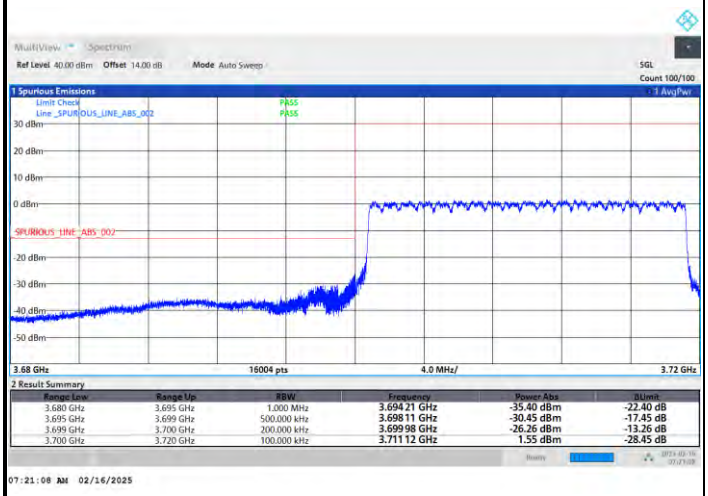
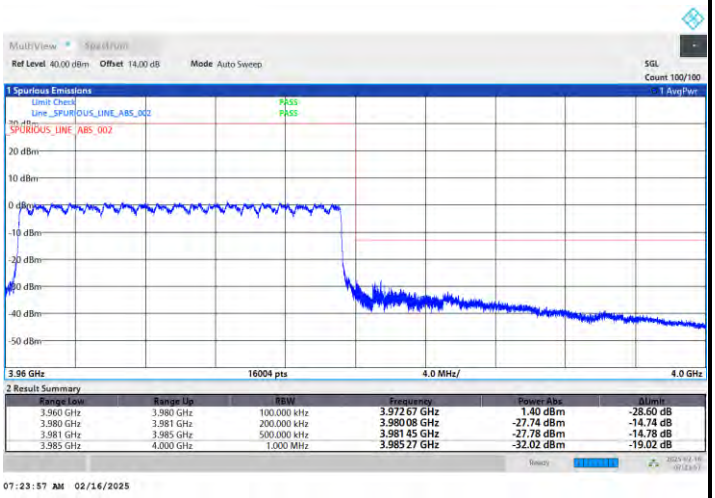
FR1 n77 / 15MHz / CP OFDM / QPSK	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

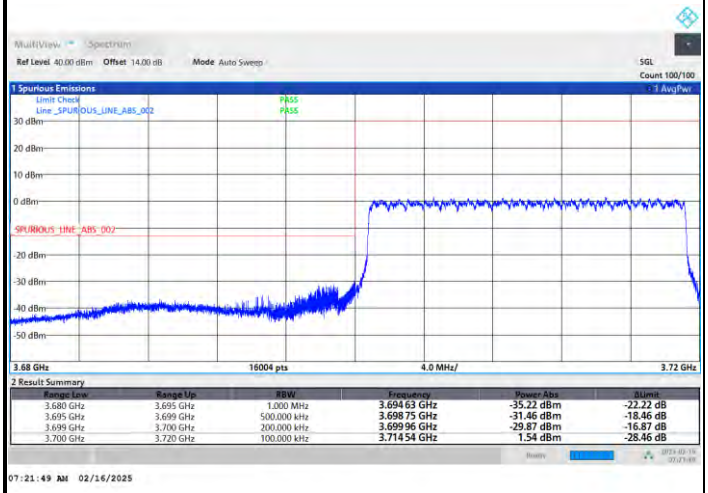
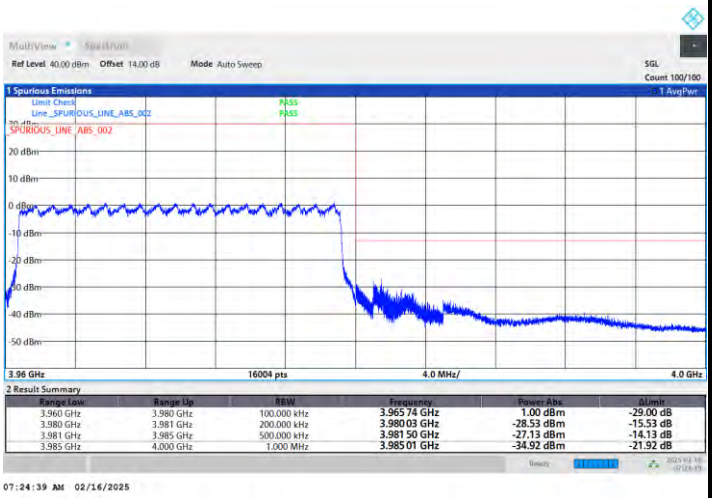
FR1 n77 / 15MHz / CP OFDM / 16QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

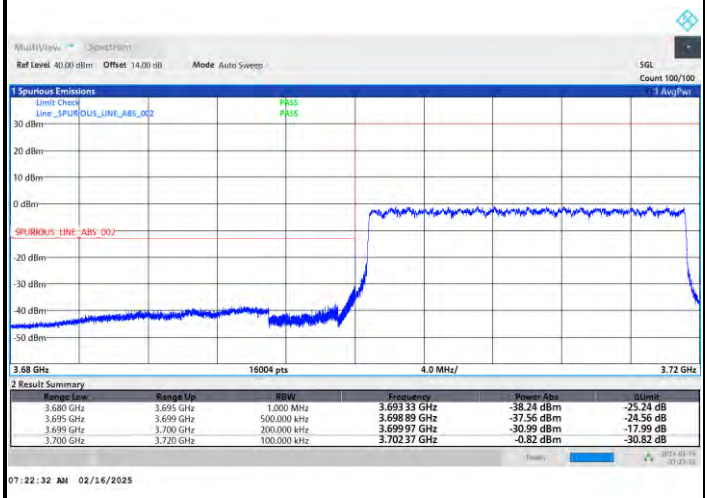
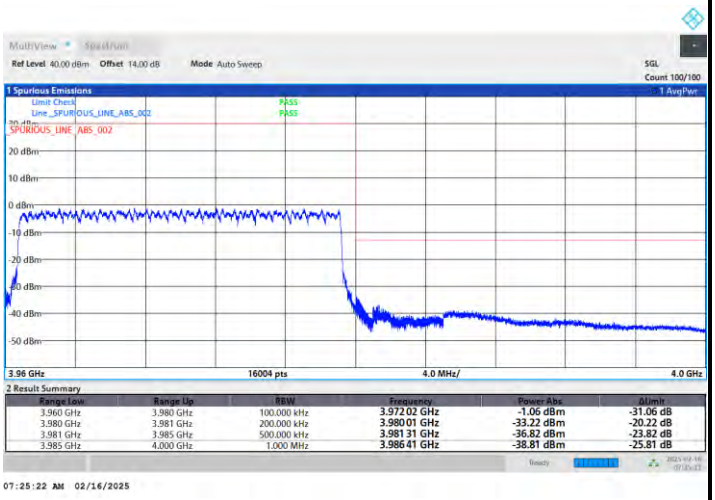
FR1 n77 / 15MHz / CP OFDM / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

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**
	

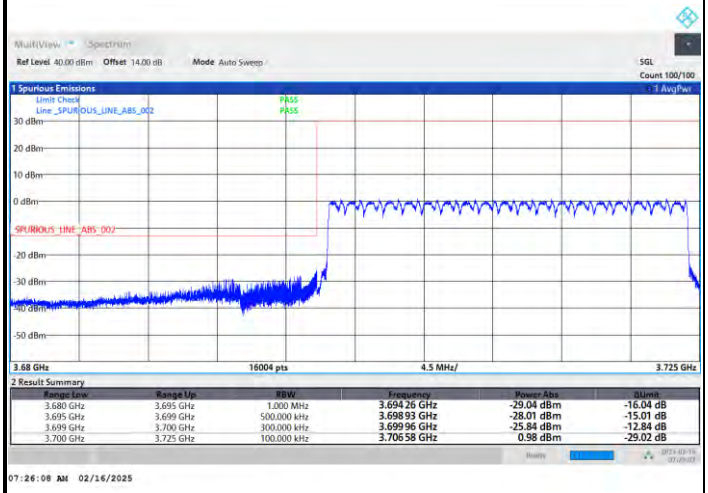
FR1 n77 / 20MHz / CP OFDM / 16QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

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

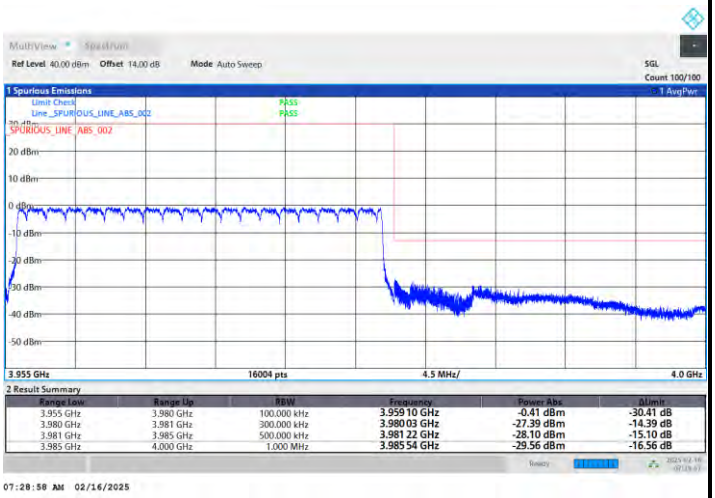
FR1 n77 / 20MHz / CP OFDM / 256QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

FR1 n77 / 25MHz / CP OFDM / QPSK

Lowest Band Edge / Full RB

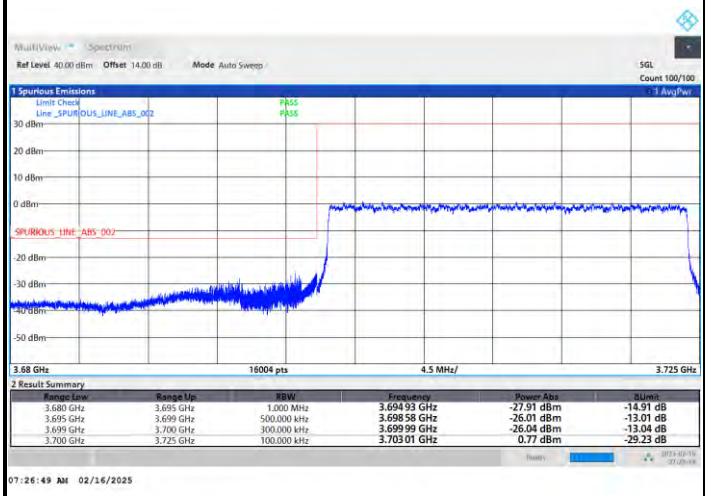


Highest Band Edge / Full RB

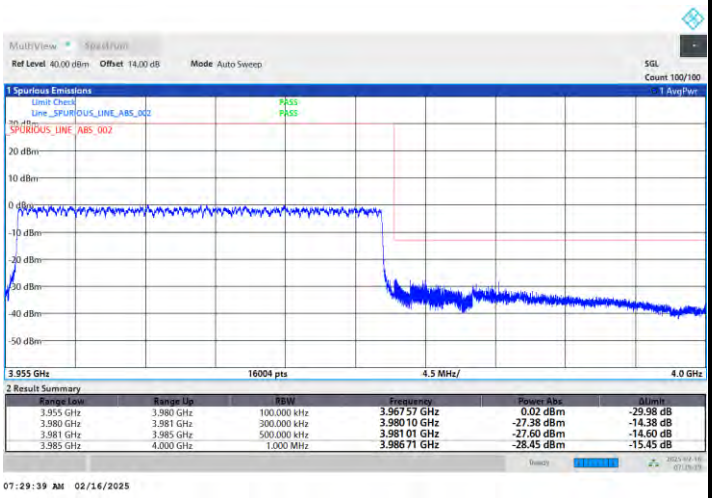


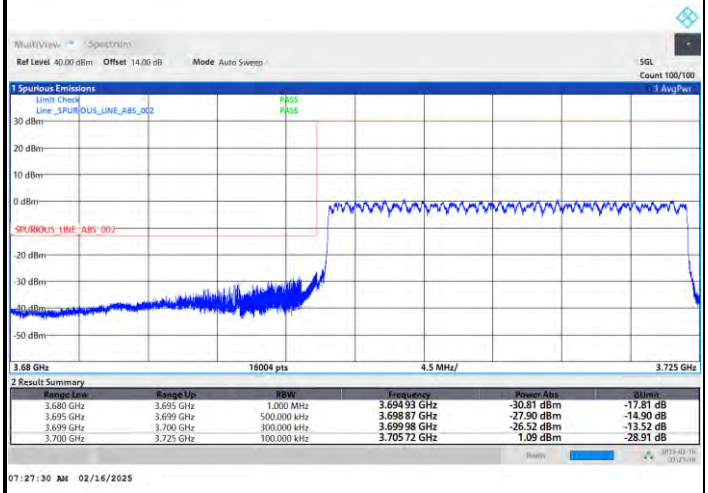
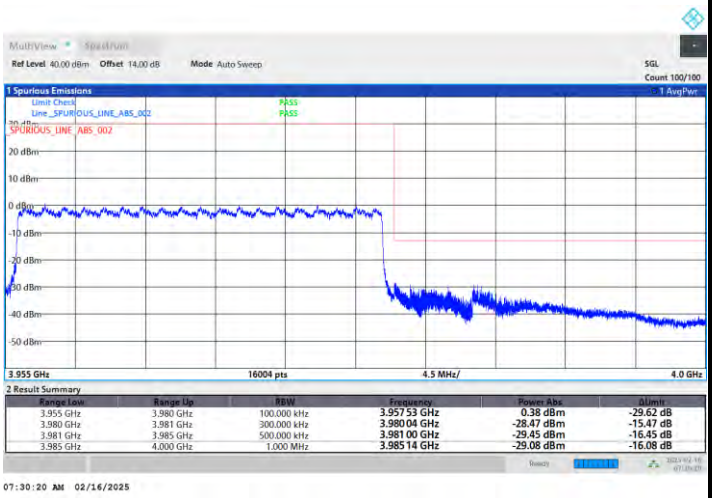
FR1 n77 / 25MHz / CP OFDM / 16QAM

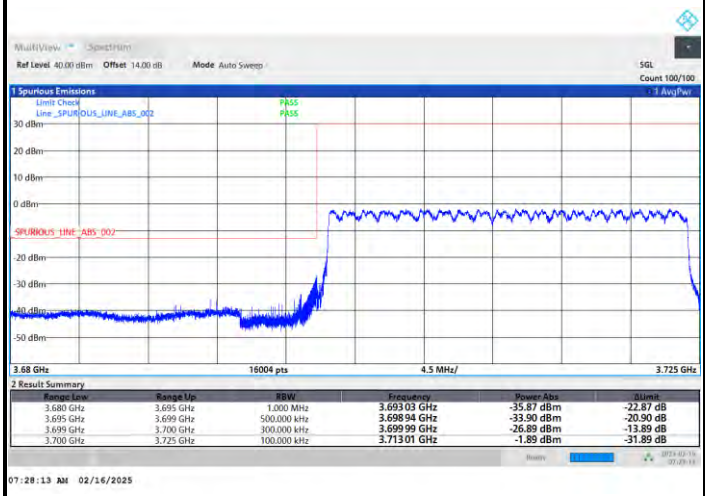
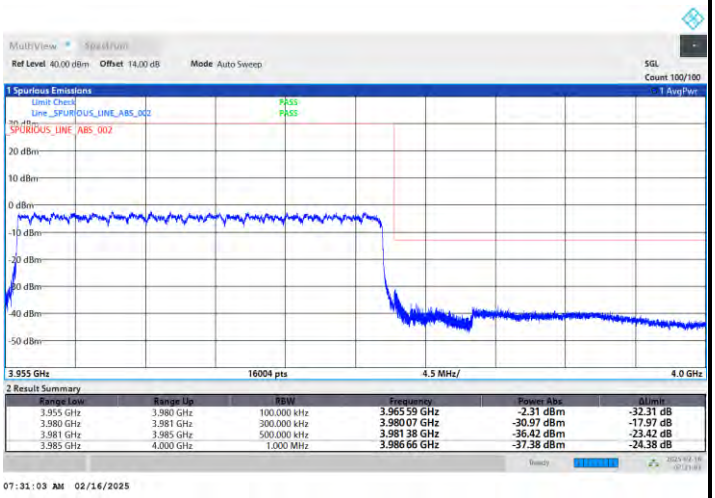
Lowest Band Edge / Full RB

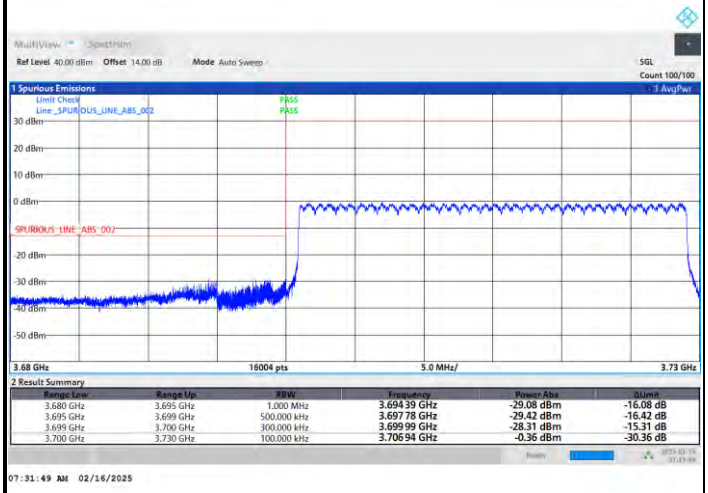
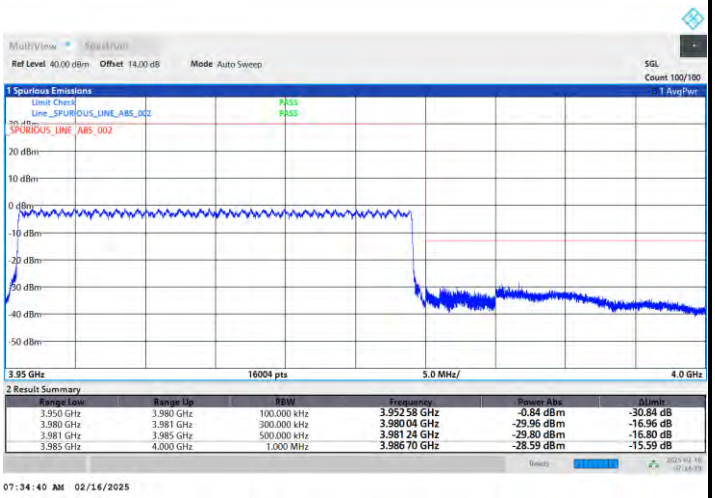


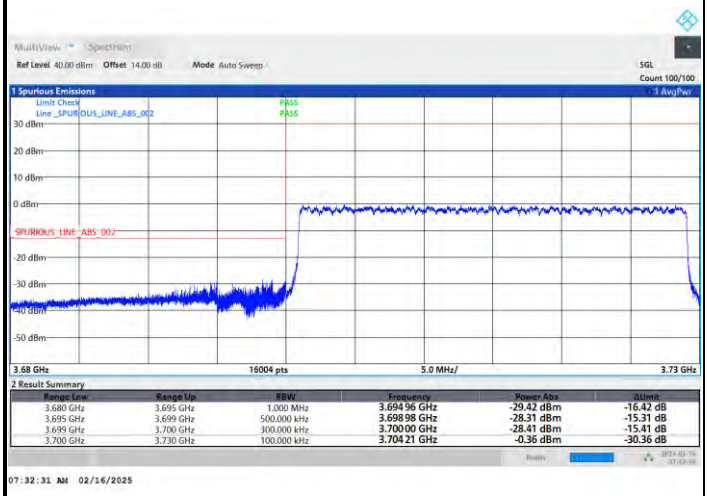
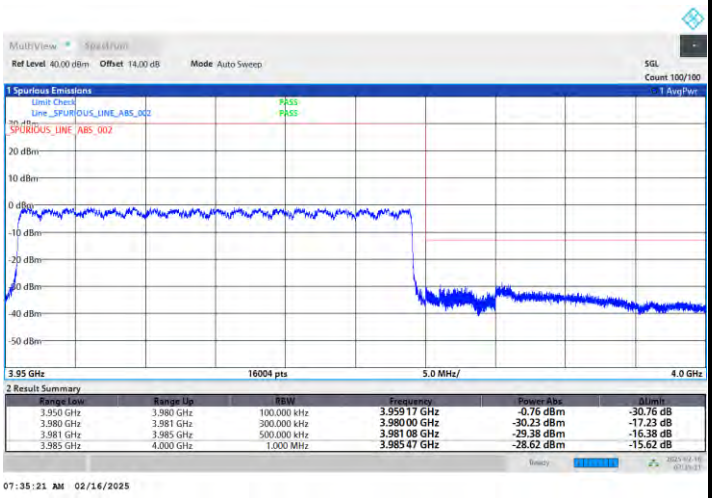
Highest Band Edge / Full RB

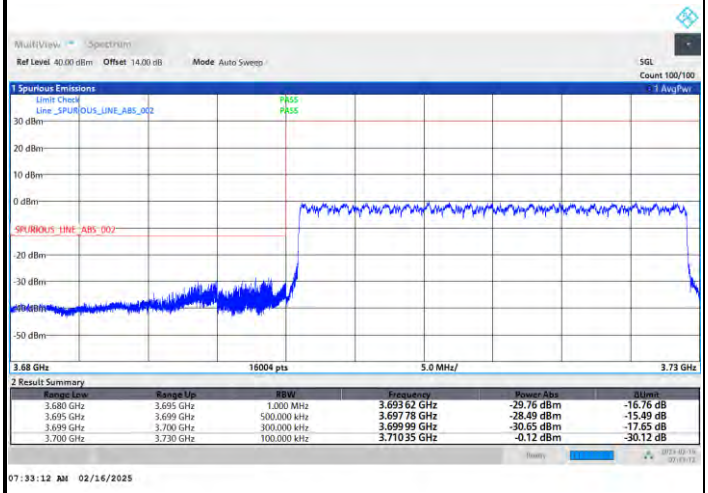
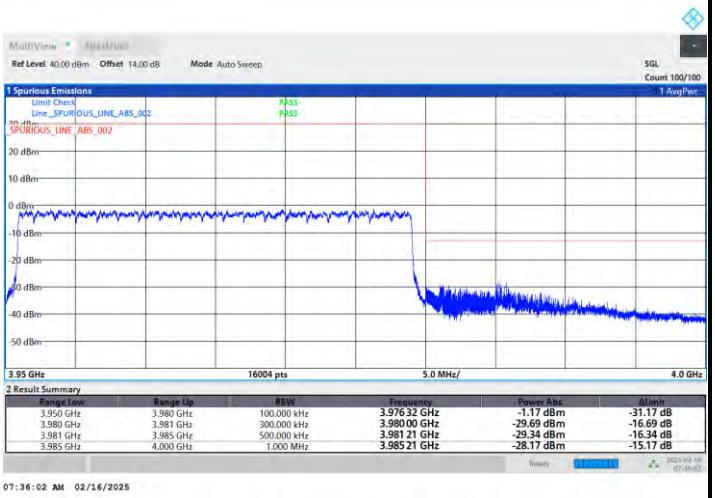


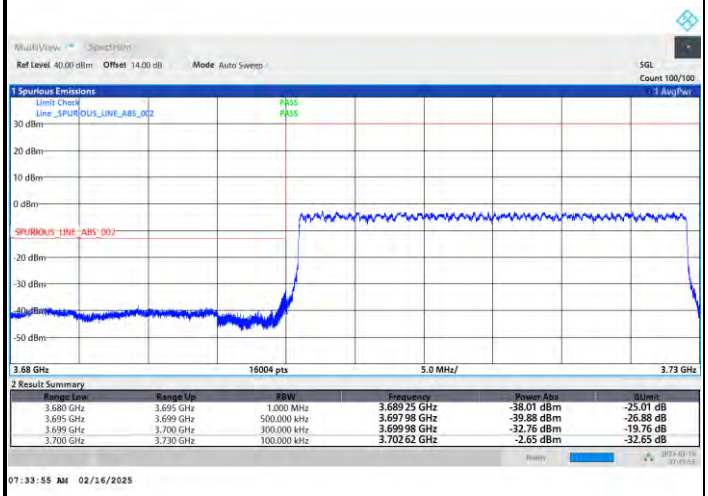
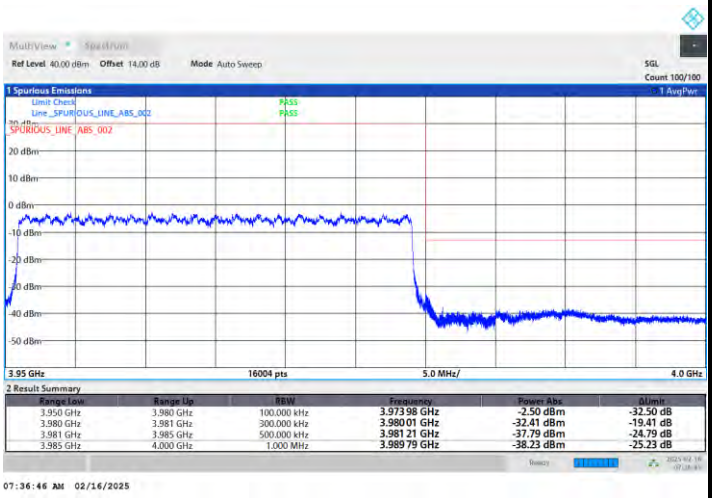
FR1 n77 / 25MHz / CP OFDM / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

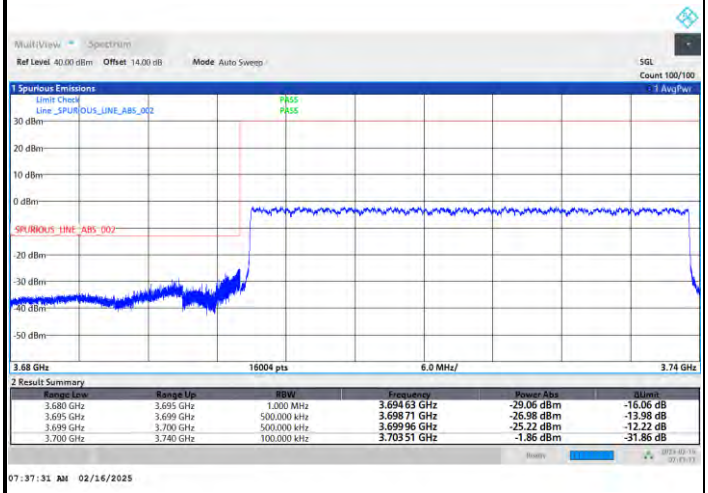
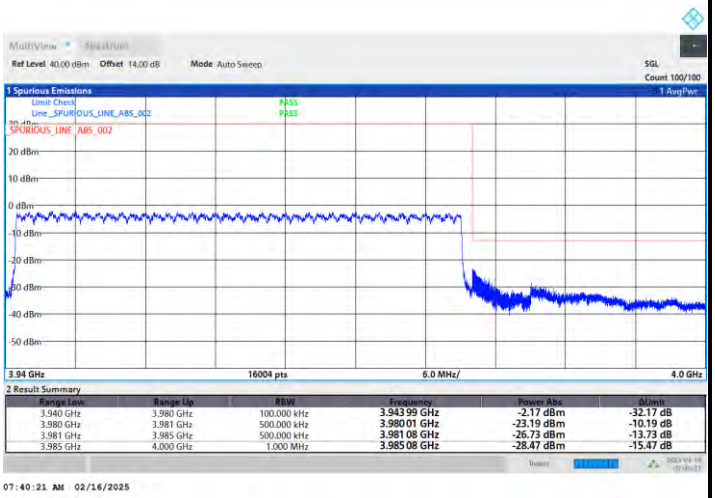
FR1 n77 / 25MHz / CP OFDM / 256QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

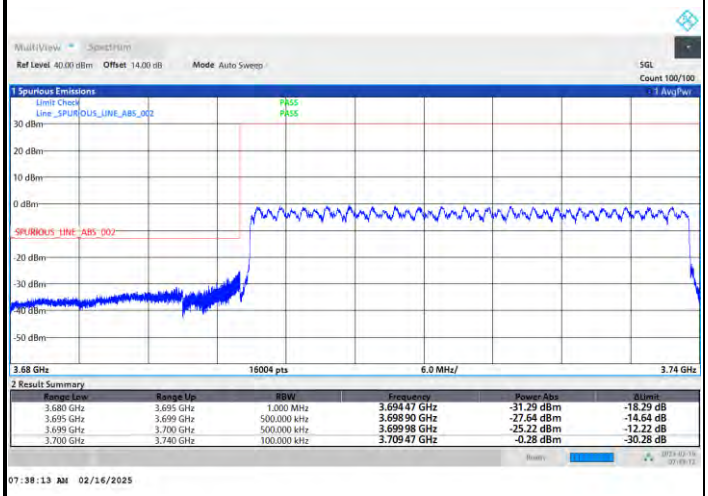
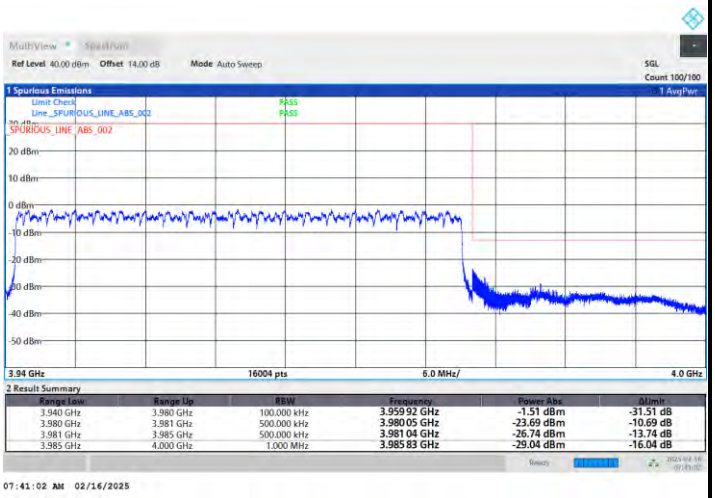
FR1 n77 / 30MHz / CP OFDM / QPSK	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

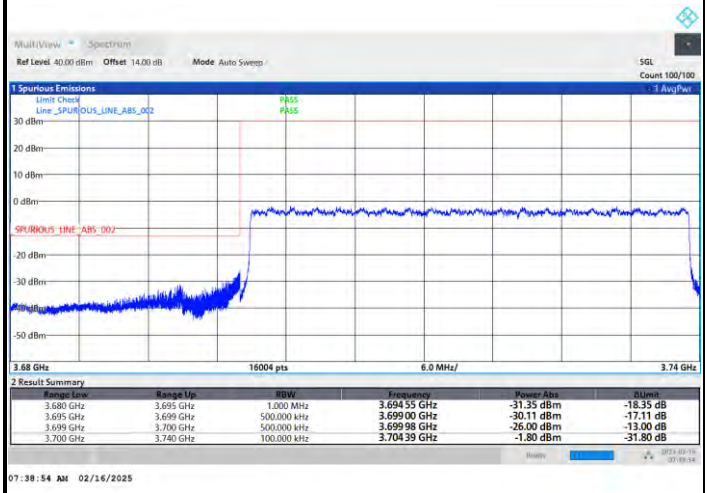
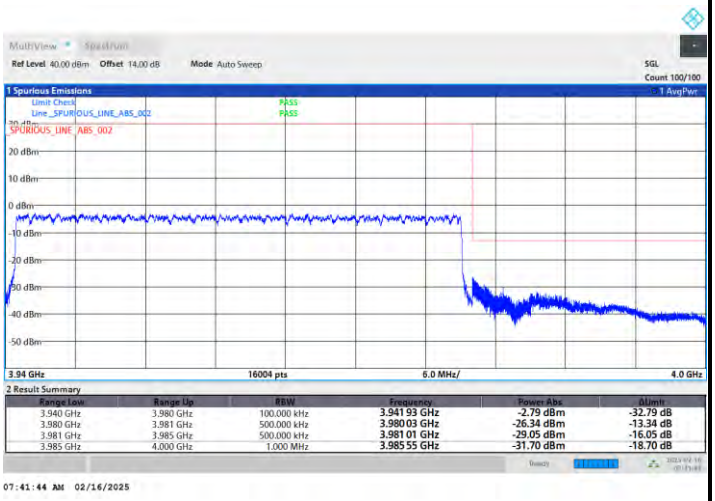
FR1 n77 / 30MHz / CP OFDM / 16QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

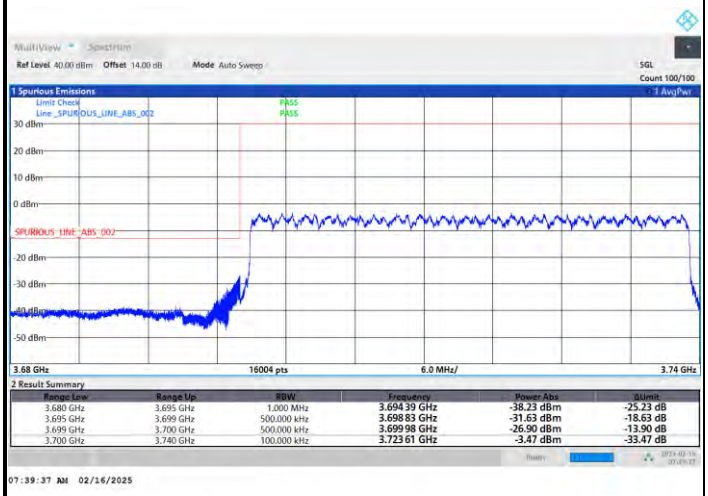
FR1 n77 / 30MHz / CP OFDM / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

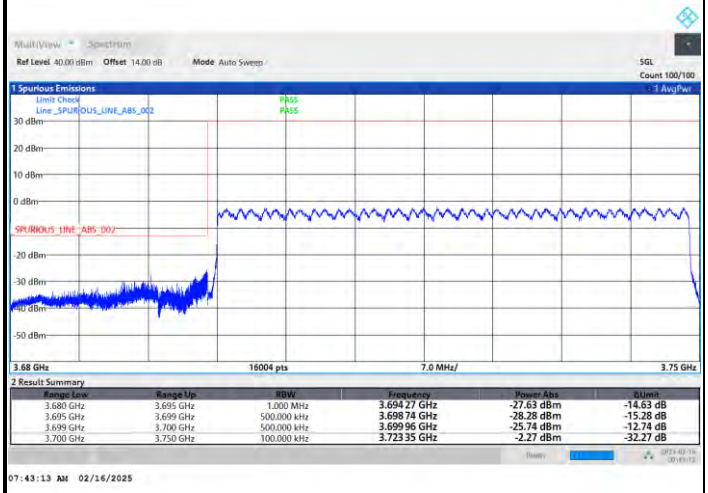
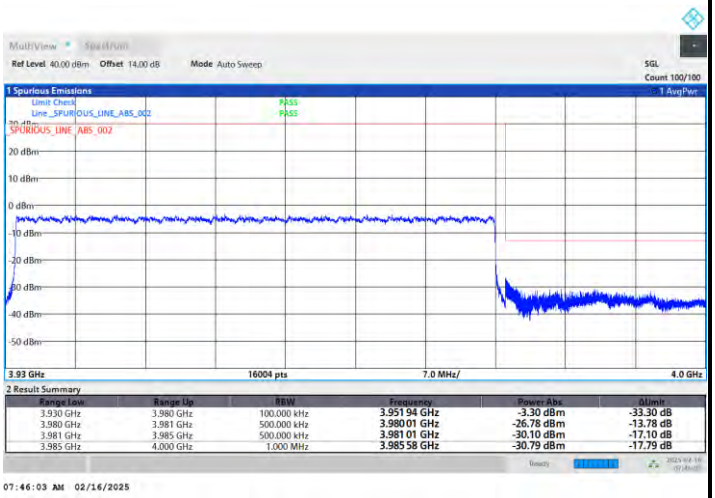
FR1 n77 / 30MHz / CP OFDM / 256QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

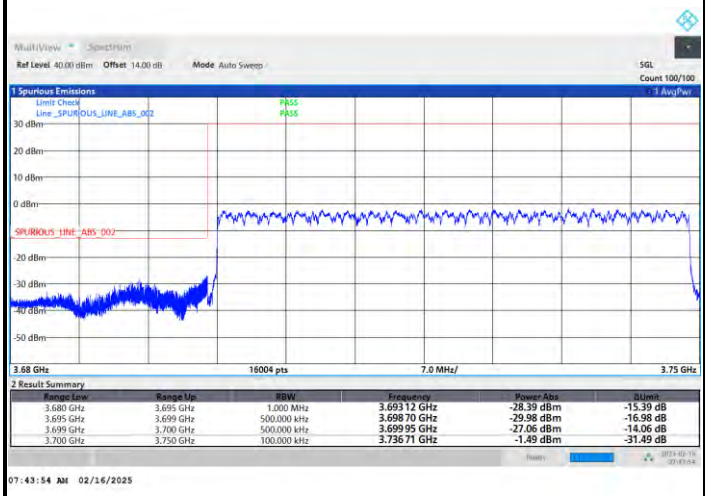
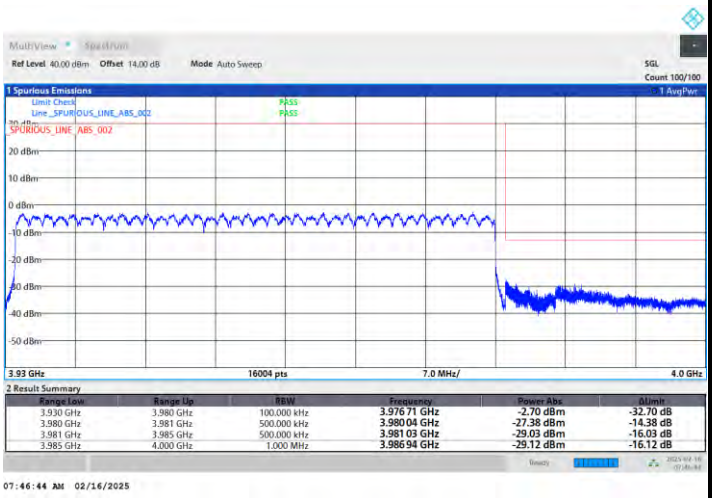
FR1 n77 / 40MHz / CP OFDM / QPSK	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

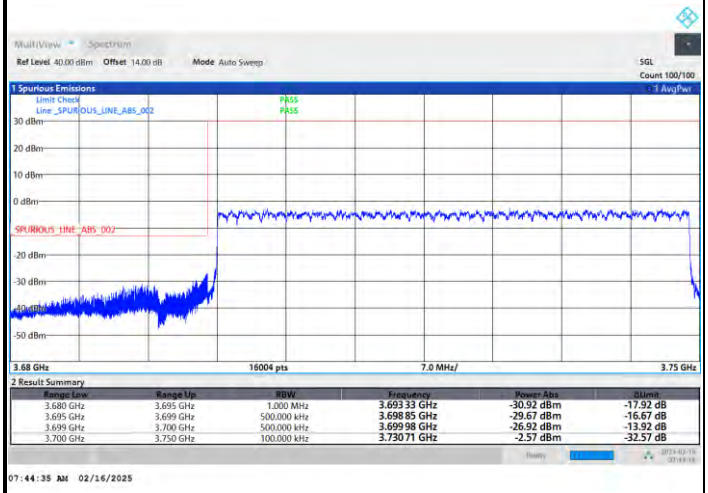
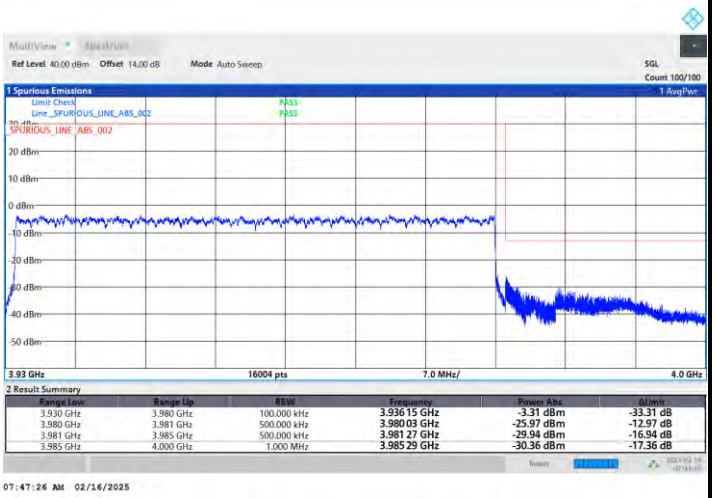
FR1 n77 / 40MHz / CP OFDM / 16QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

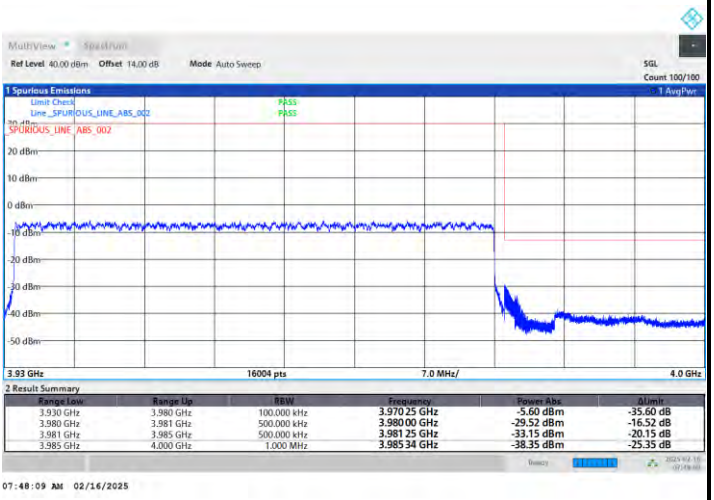
FR1 n77 / 40MHz / CP OFDM / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

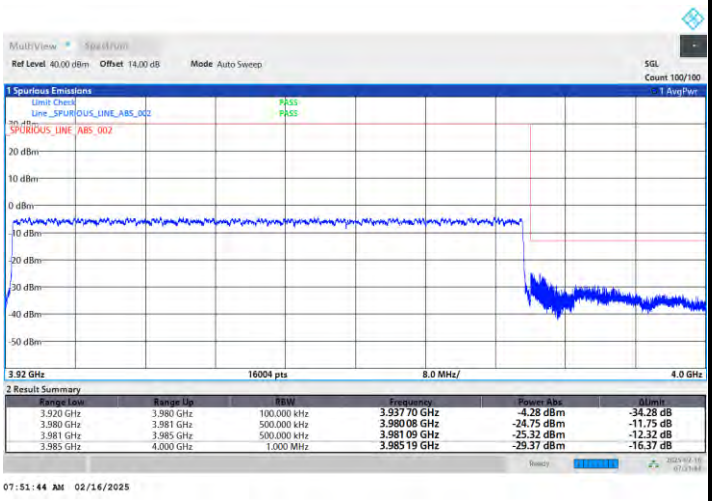
FR1 n77 / 40MHz / CP OFDM / 256QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

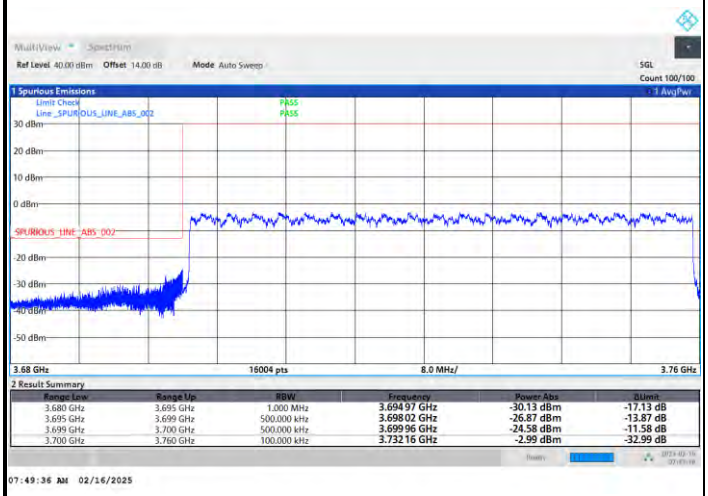
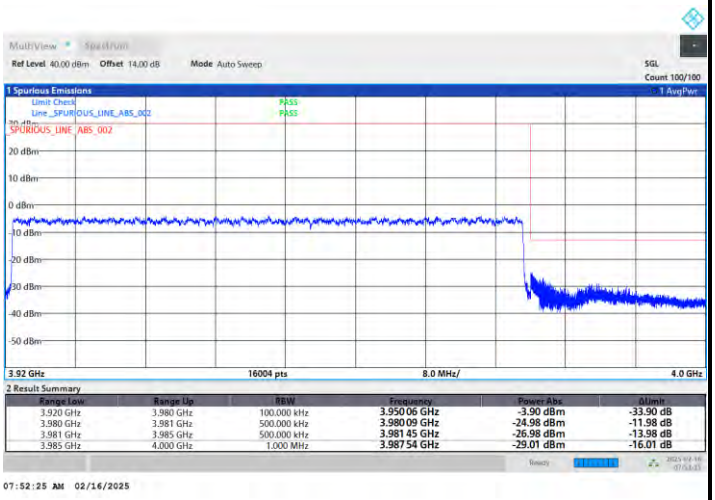
FR1 n77 / 50MHz / CP OFDM / QPSK	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

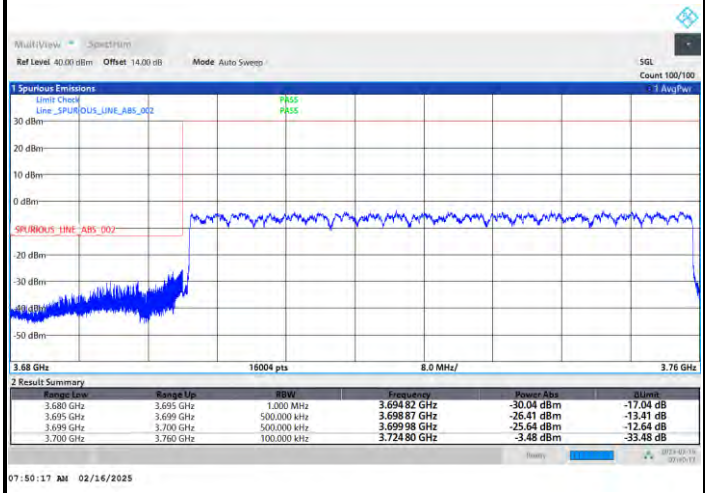
FR1 n77 / 50MHz / CP OFDM / 16QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

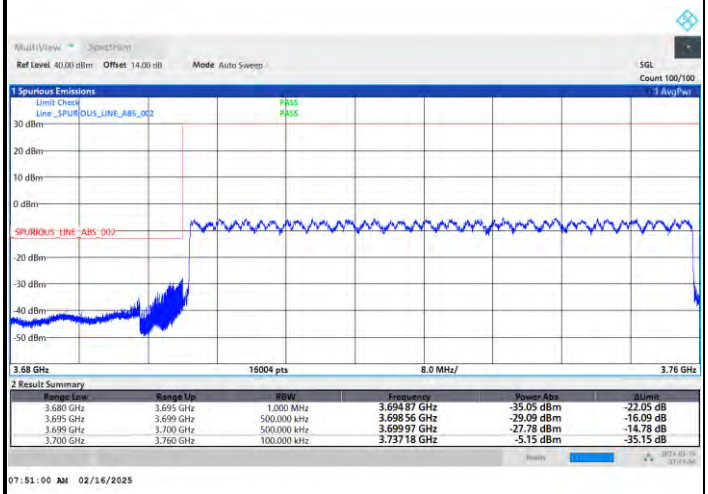
FR1 n77 / 50MHz / CP OFDM / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

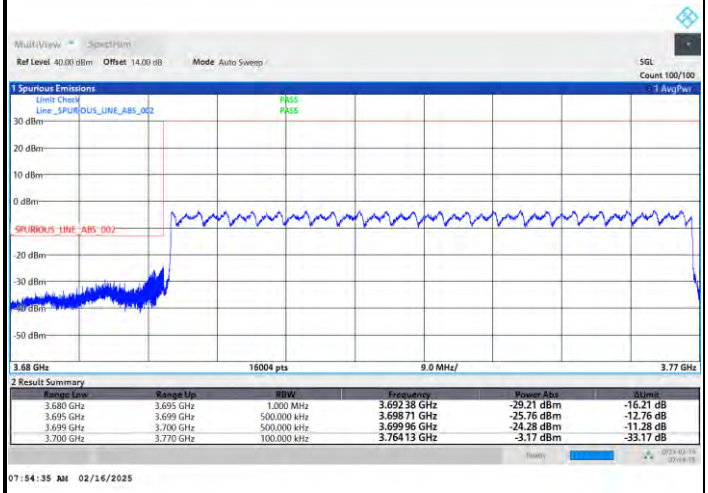
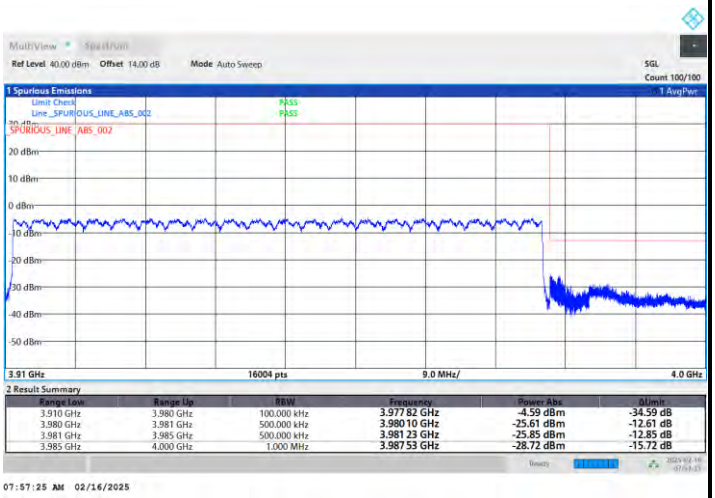
FR1 n77 / 50MHz / CP OFDM / 256QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

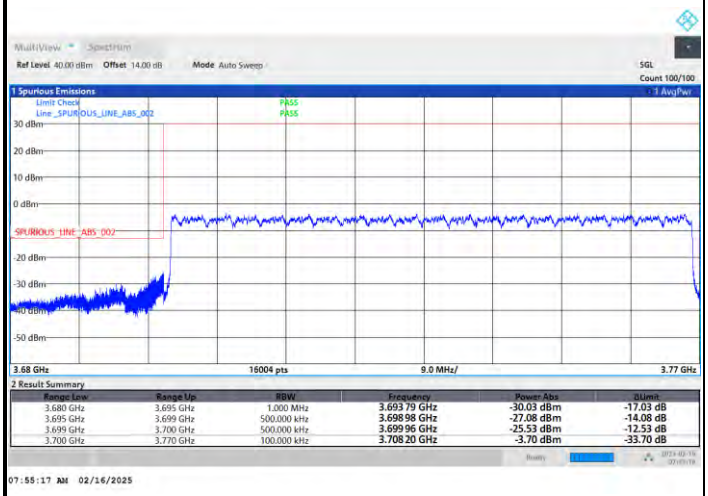
FR1 n77 / 60MHz / CP OFDM / QPSK	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

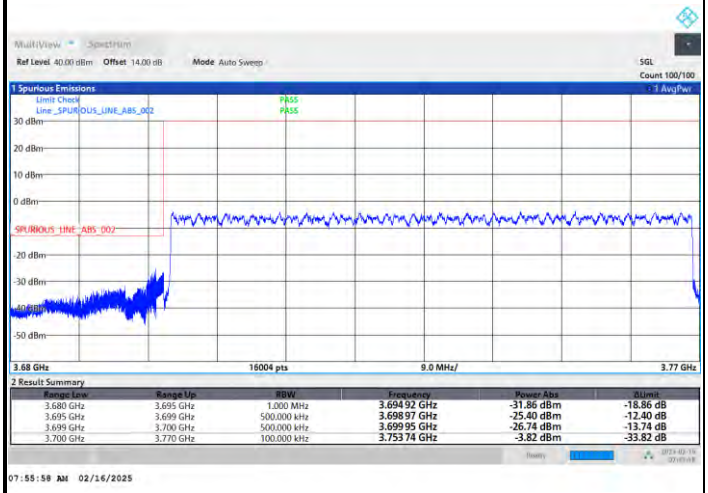
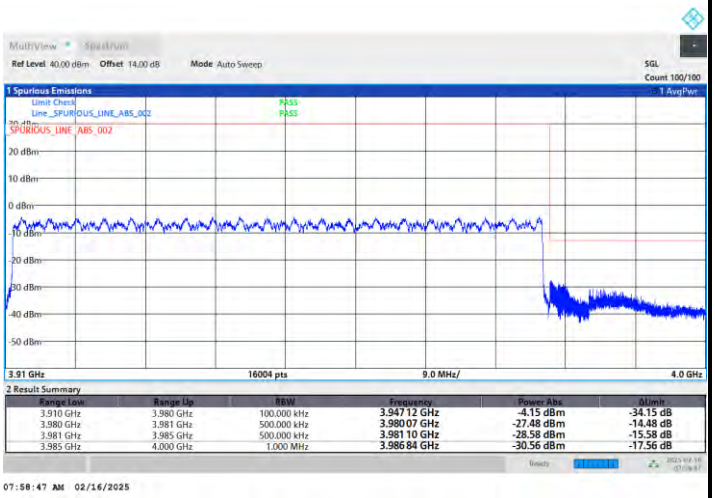
FR1 n77 / 60MHz / CP OFDM / 16QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

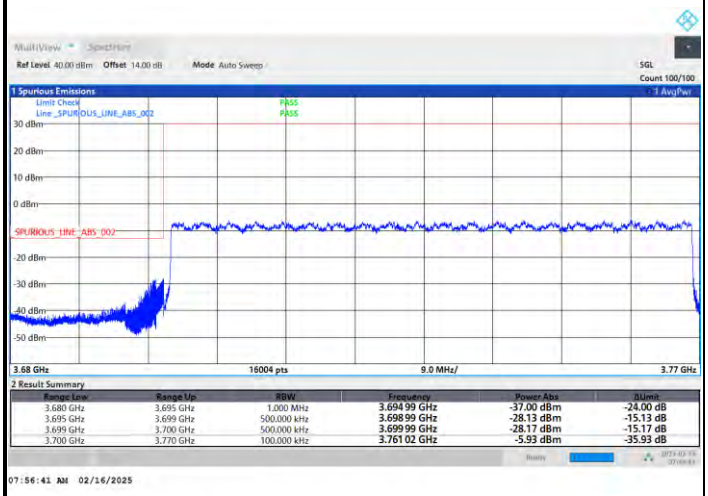
FR1 n77 / 60MHz / CP OFDM / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

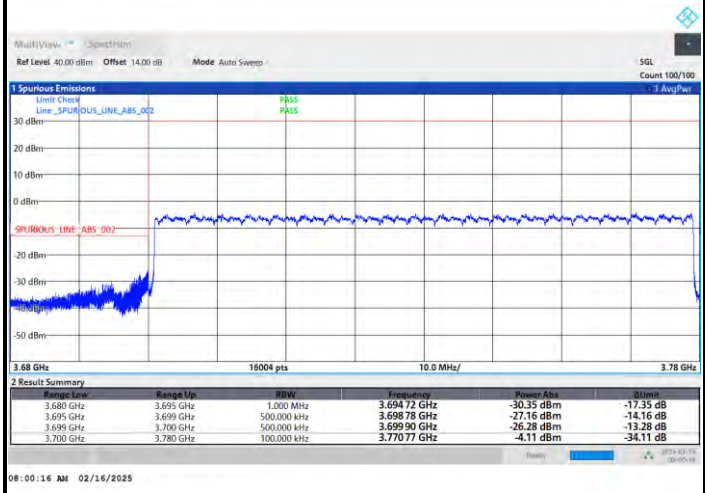
FR1 n77 / 60MHz / CP OFDM / 256QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

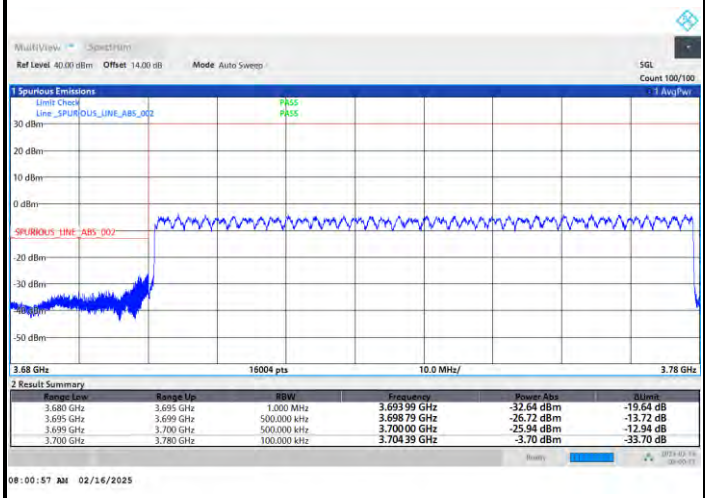
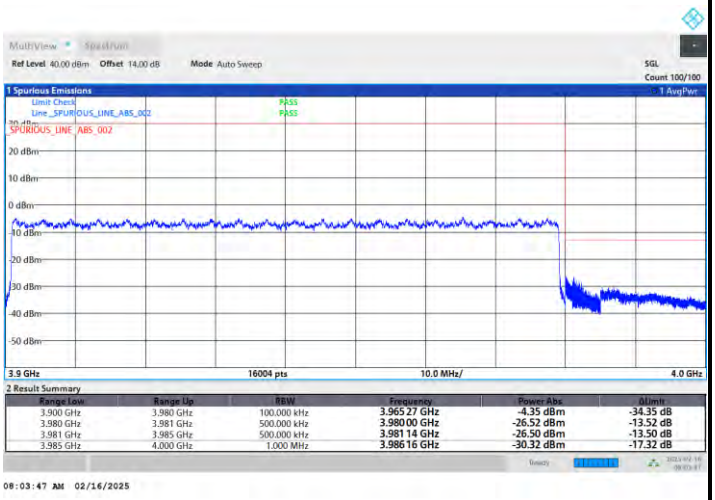
FR1 n77 / 70MHz / CP OFDM / QPSK	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

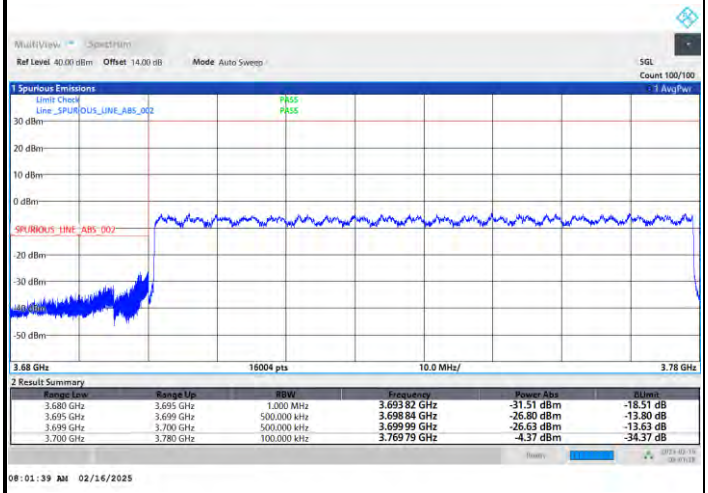
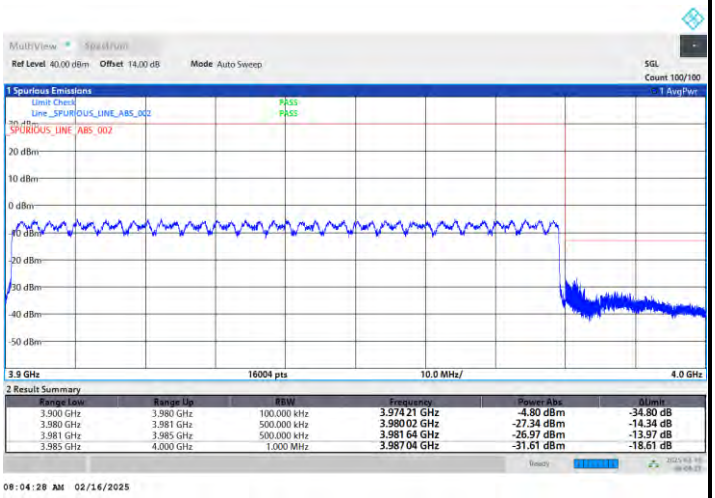
FR1 n77 / 70MHz / CP OFDM / 16QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

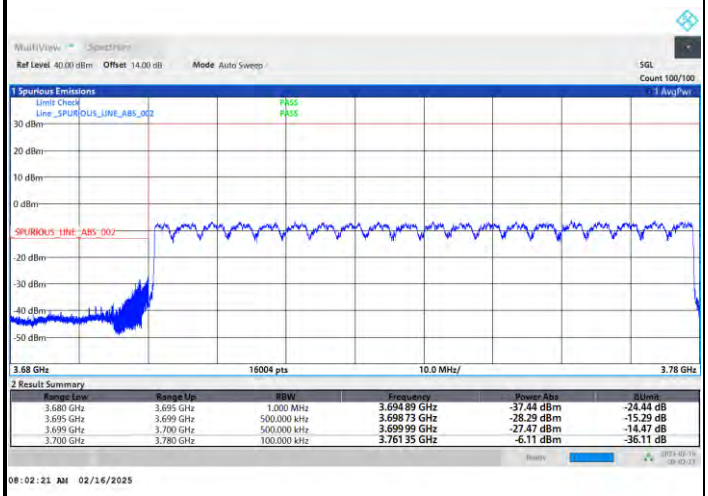
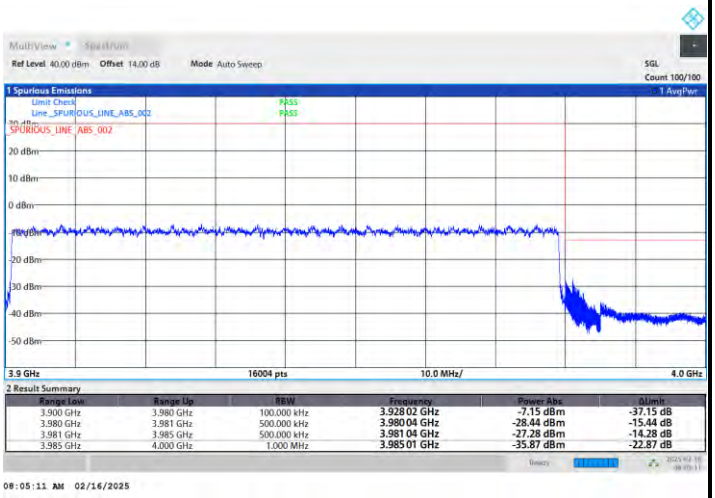
FR1 n77 / 70MHz / CP OFDM / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

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**
	

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

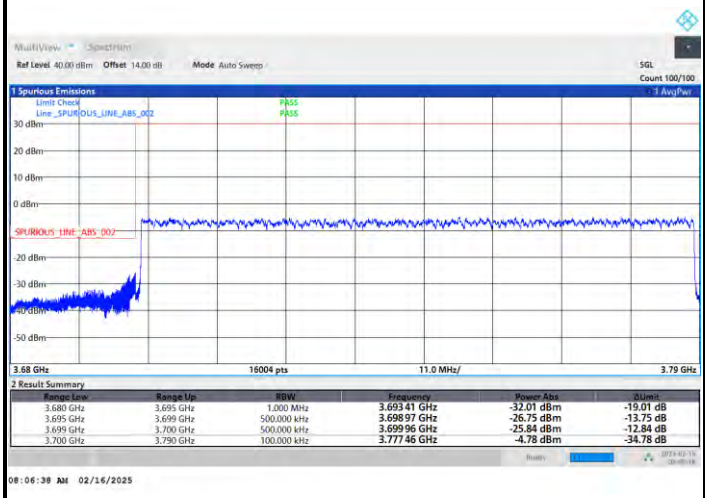
FR1 n77 / 90MHz / CP OFDM / QPSK

Lowest Band Edge / Full RB

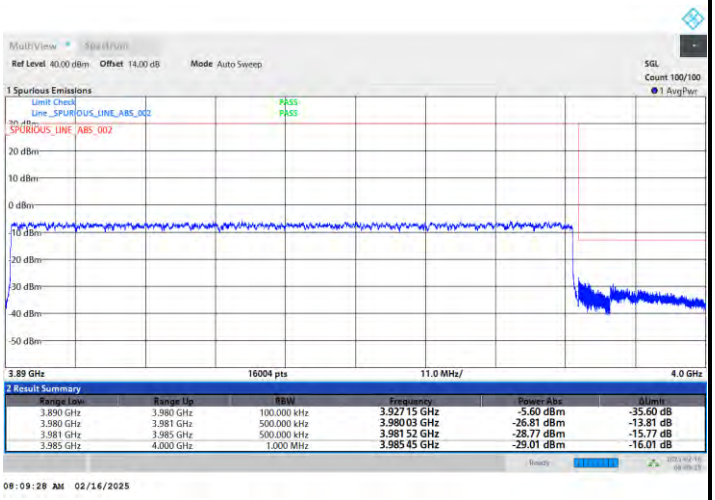
Highest Band Edge / Full RB

FR1 n77 / 90MHz / CP OFDM / 16QAM

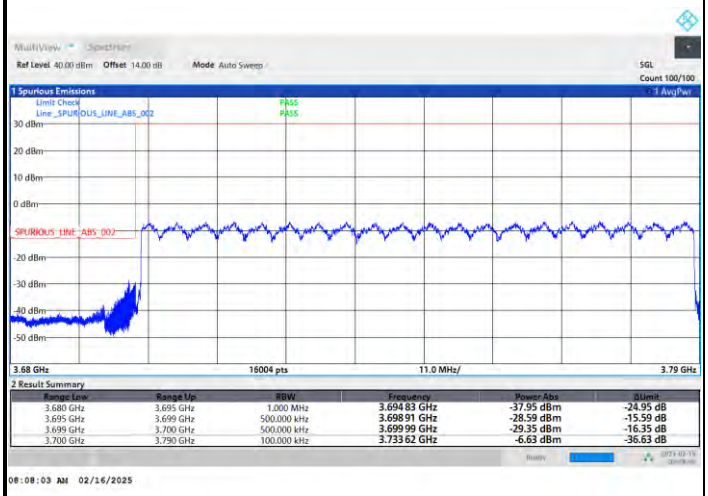
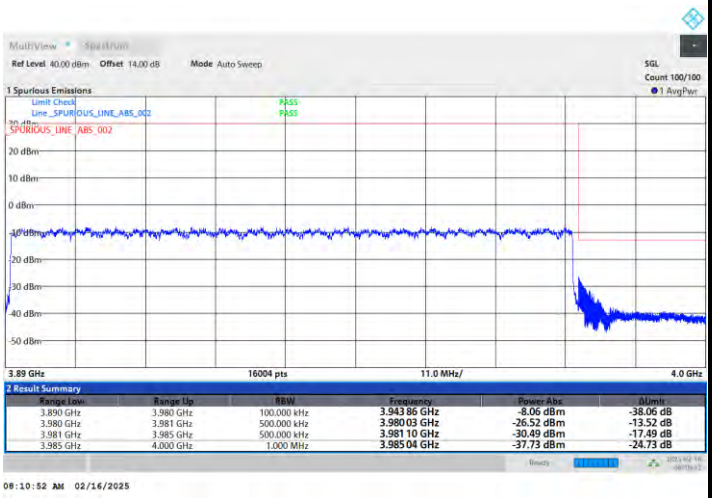
Lowest Band Edge / Full RB



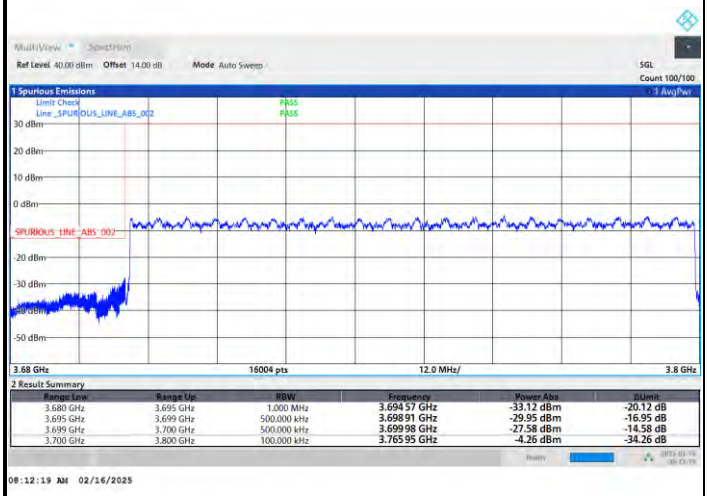
Highest Band Edge / Full RB



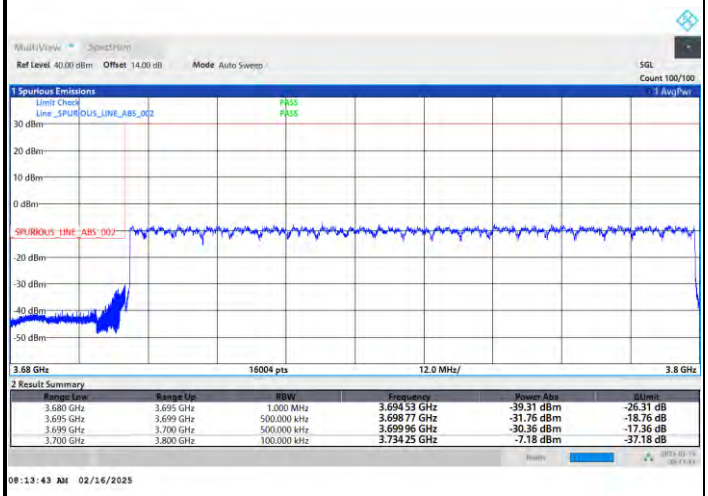
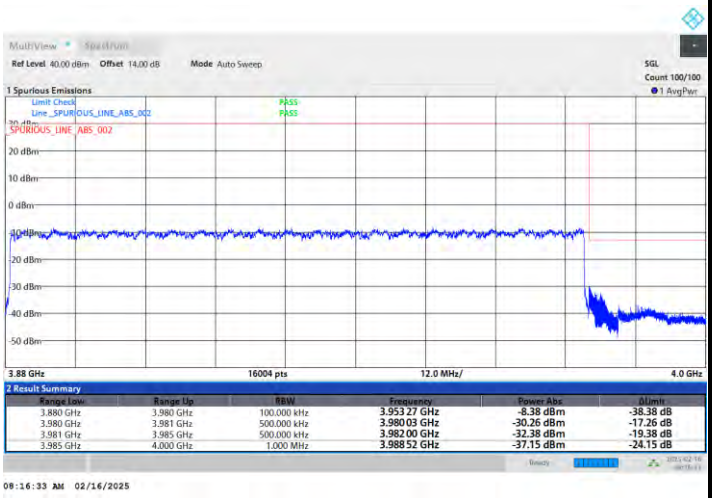
FR1 n77 / 90MHz / CP OFDM / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**

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**

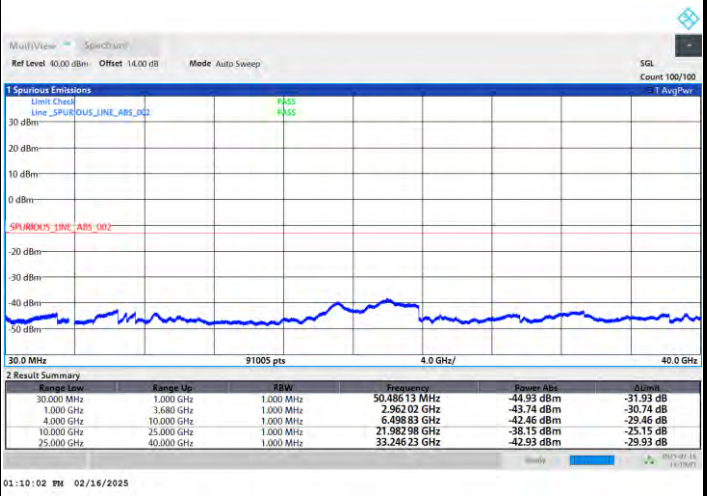
FR1 n77 / 100MHz / CP OFDM / 256QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

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	**0.0011**	PASS
40	Normal Voltage	**0.0014**	
30	Normal Voltage	**0.0105**	
20(Ref.)	Normal Voltage	**0.0000**	
10	Normal Voltage	**0.0085**	
0	Normal Voltage	**0.0030**	
-10	Normal Voltage	**0.0004**	
-20	Normal Voltage	**0.0079**	
-30	Normal Voltage	**0.0058**	
20	Maximum Voltage	**0.0051**	
20	Normal Voltage	**0.0045**	
20	Minimum Voltage	**0.0134**	

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. 6+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	8.12	8.12	7.96	8.72	PASS

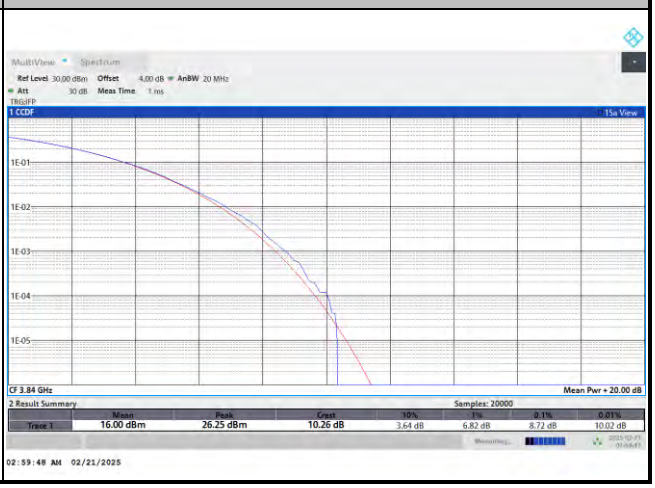
FR1 n77 / 20MHz /CP OFDM / Middle Channel / Full RB

QPSK

16QAM

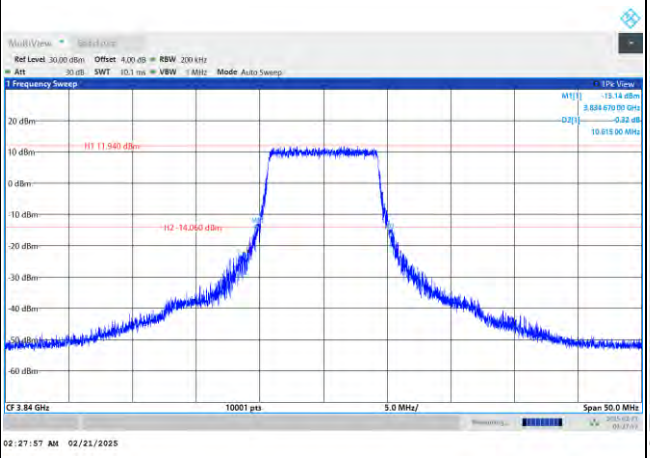
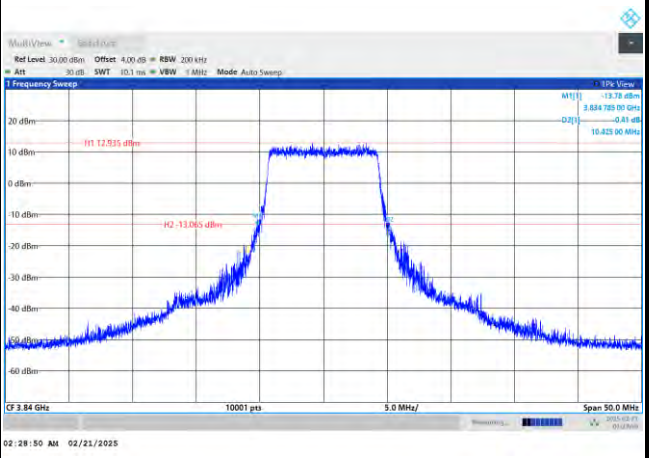
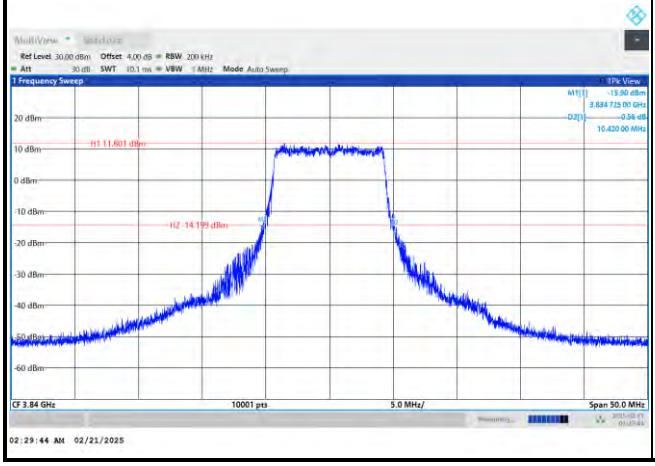
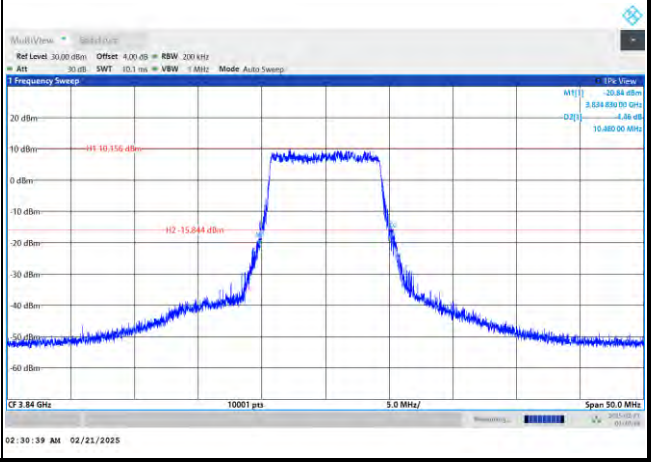
64QAM

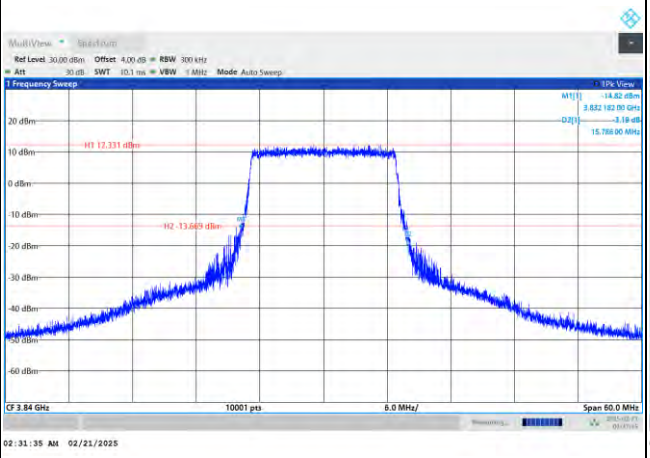
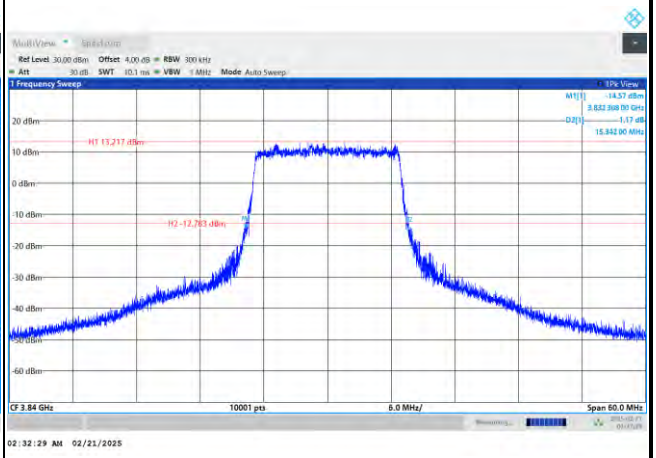
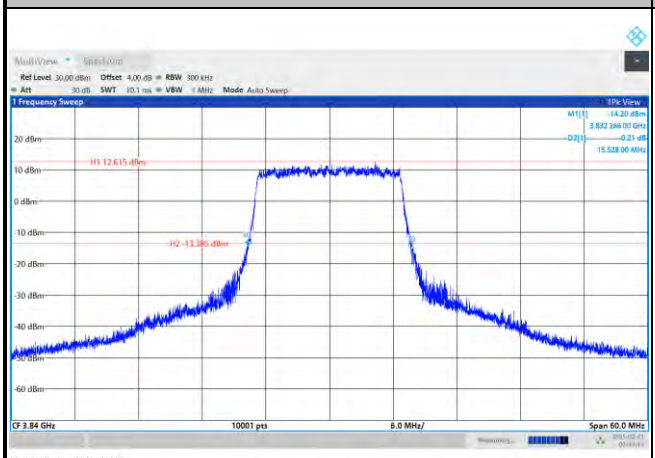
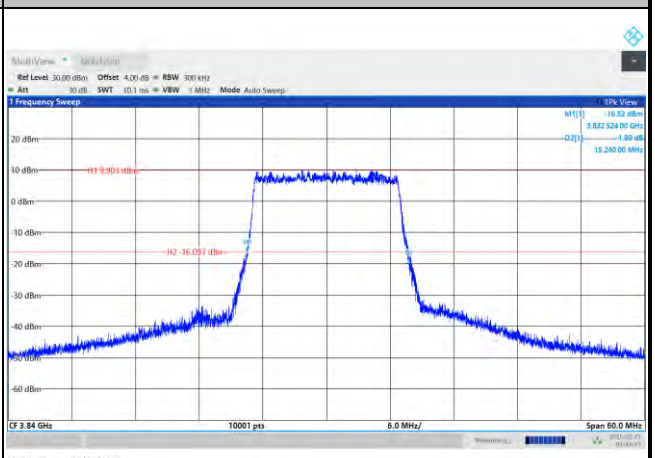
256QAM

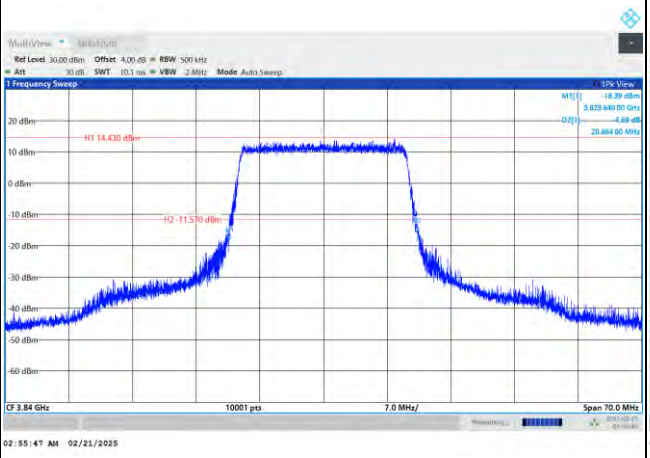
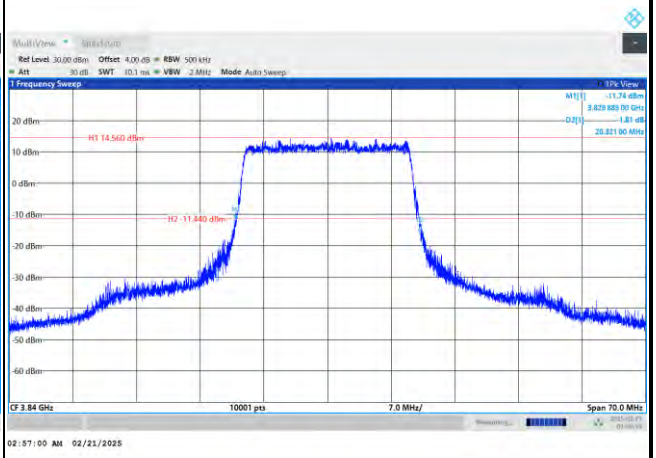
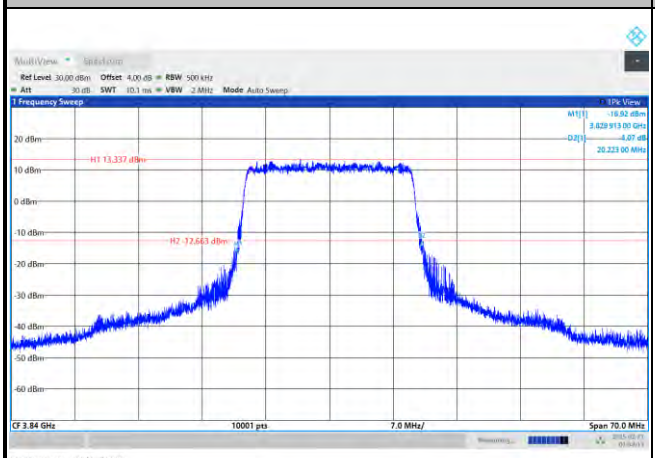
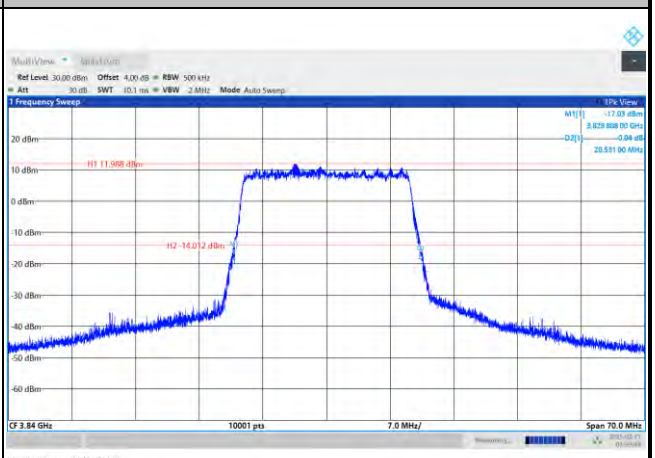


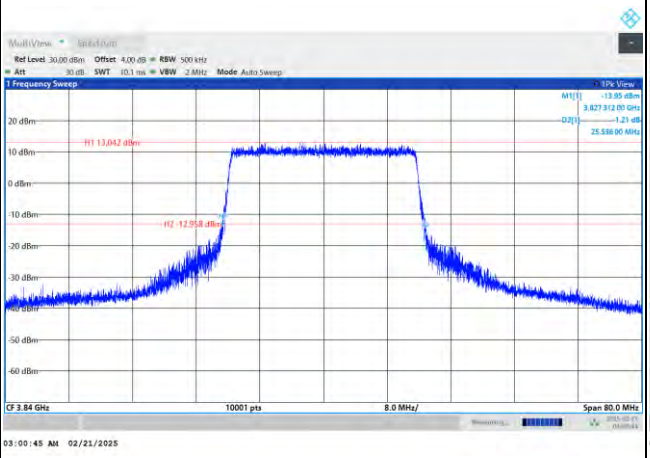
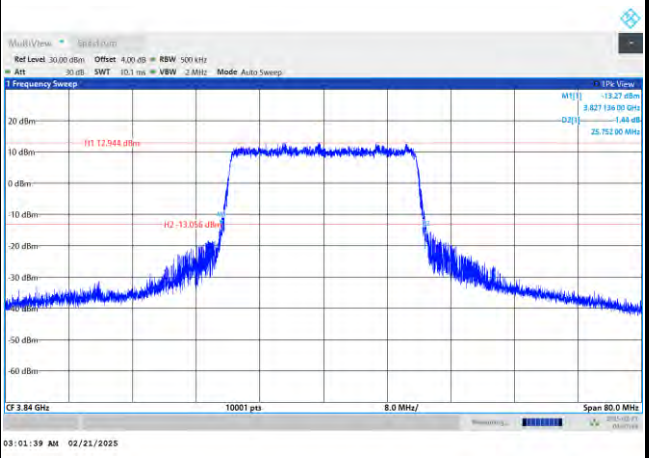
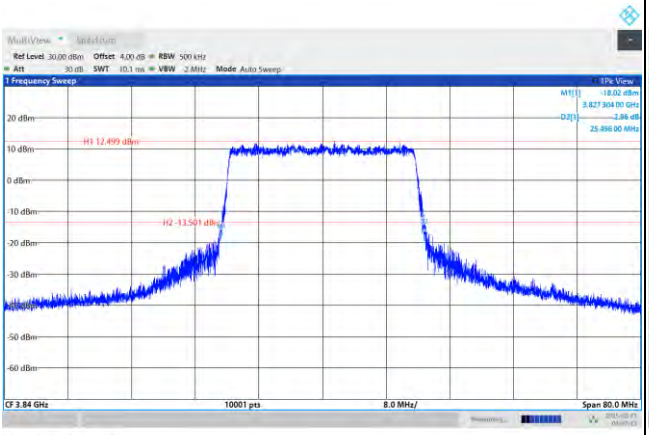
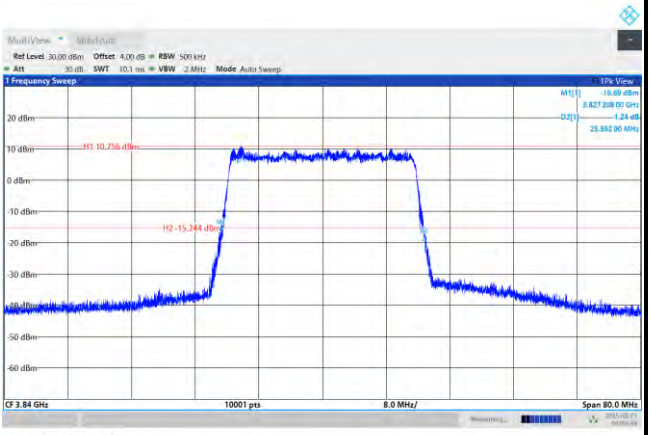
26dB Bandwidth

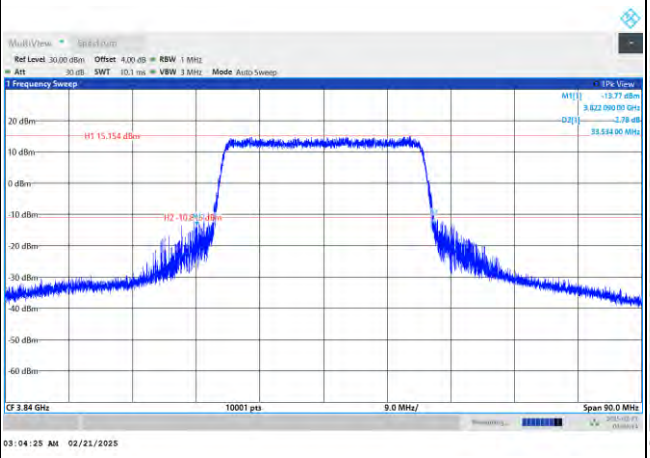
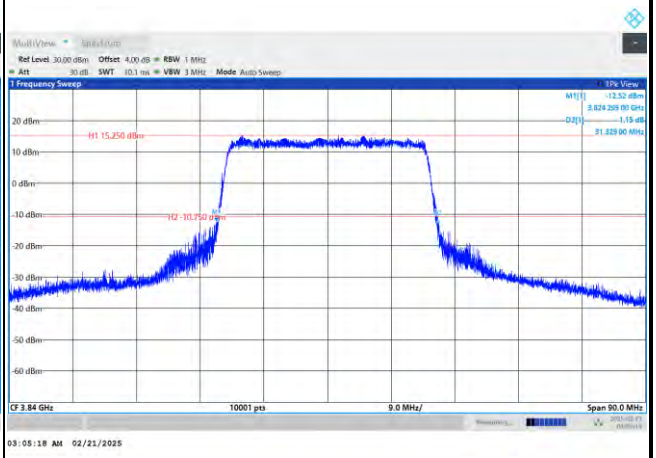
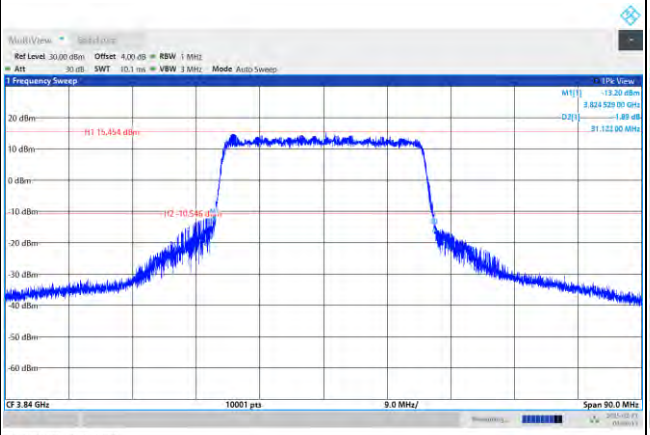
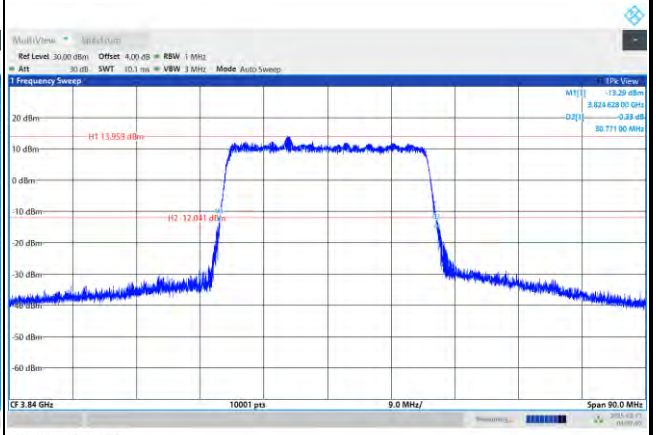
Mode	FR1 n77 : 26dB BW(MHz) / CP OFDM							
BW	10MHz		15MHz		20MHz		25MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	10.61	10.42	15.78	15.34	20.66	20.32	25.53	25.75
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	10.42	10.48	15.52	15.24	20.22	20.53	25.49	25.59
BW	30MHz		40MHz		50MHz		60MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	33.53	31.32	42.63	42.57	52.27	51.63	66.79	66.40
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	31.12	30.77	42.63	42.42	52.44	51.50	66.06	67.53
BW	70MHz		80MHz		90MHz		100MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	76.58	76.99	84.15	84.43	96.20	96.55	106.09	106.95
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	77.02	76.43	84.83	83.80	96.22	96.24	106.85	106.51

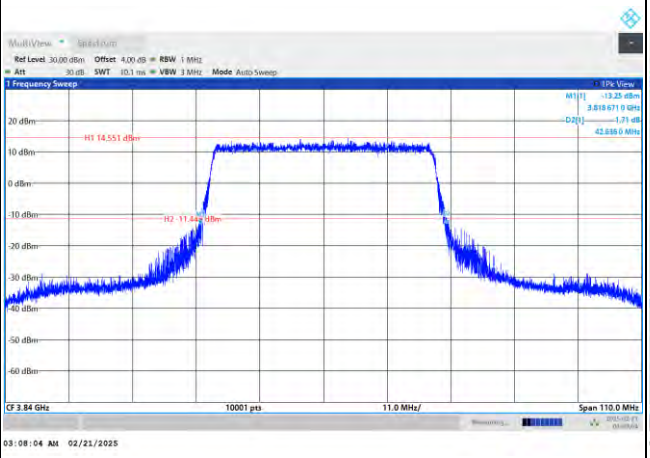
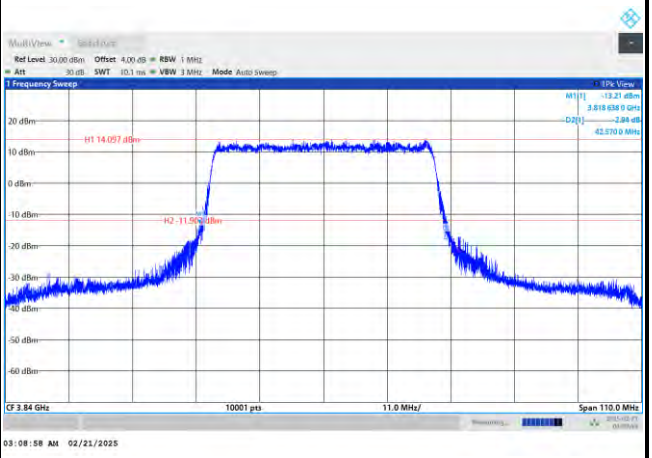
FR1 n77 / 10MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

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
	
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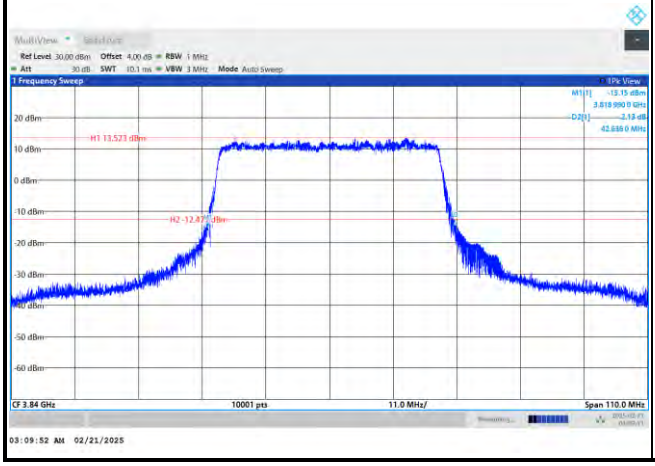
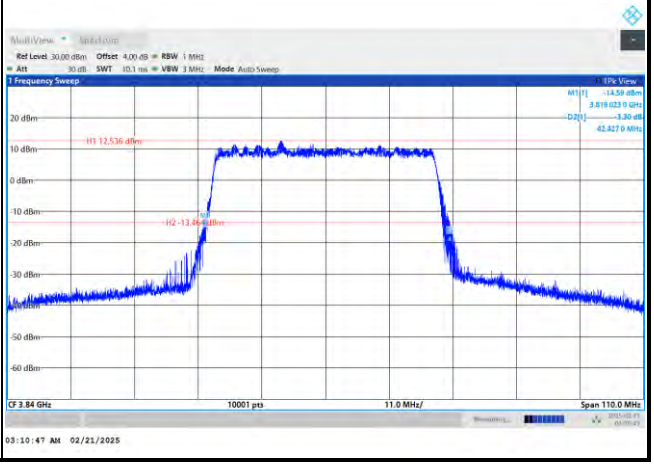
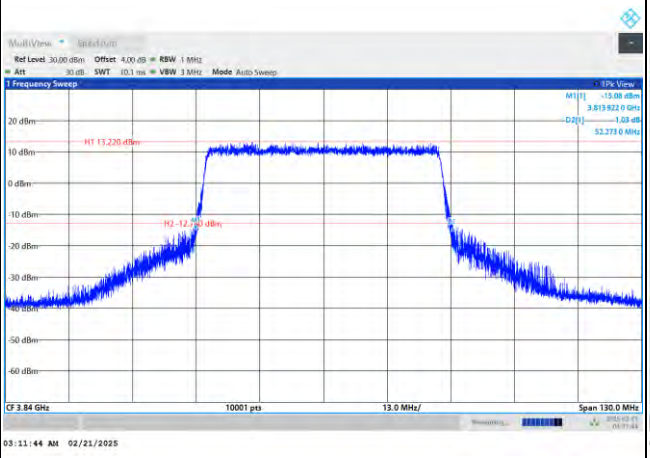
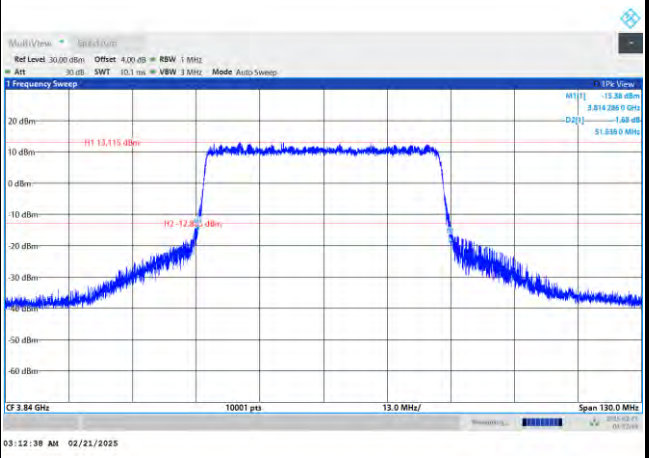
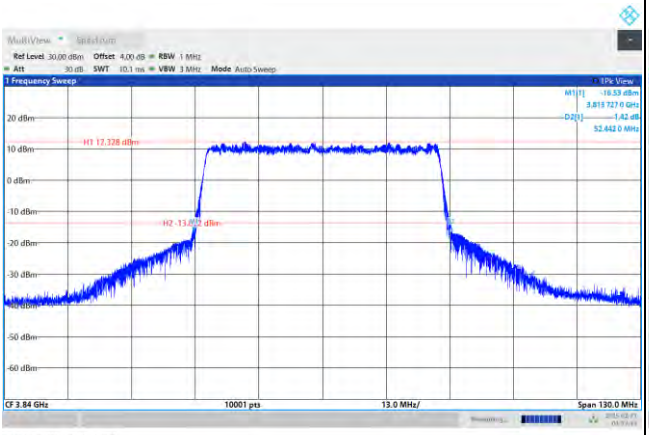
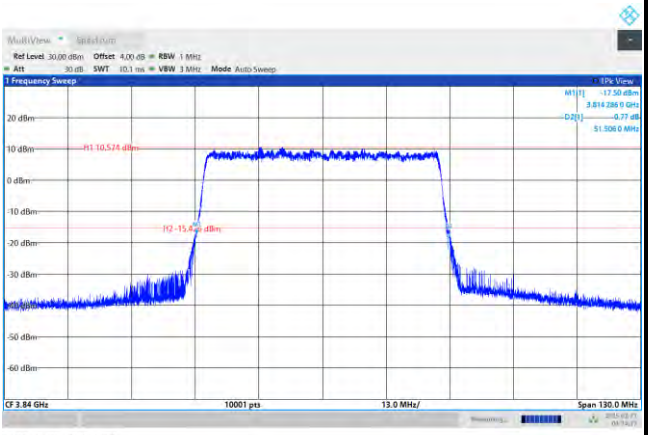
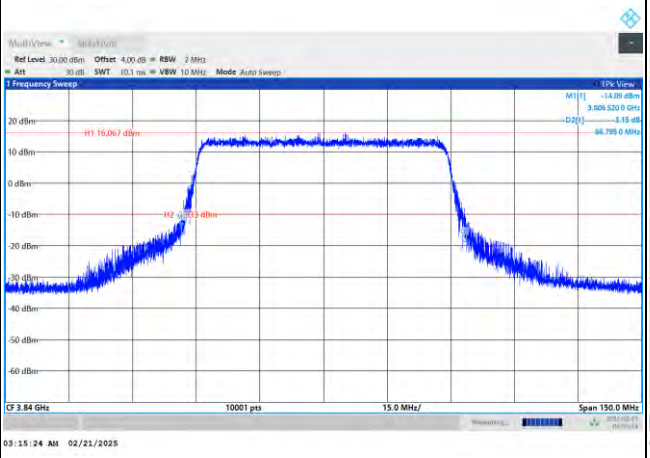
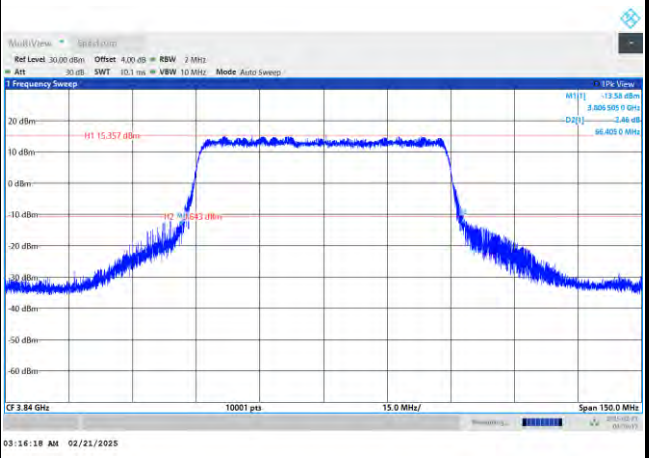
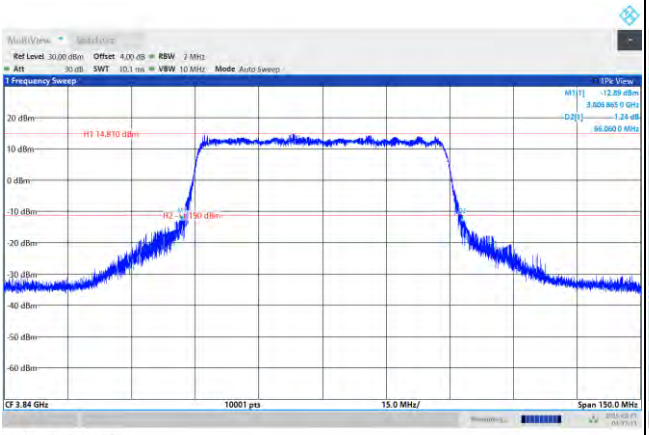
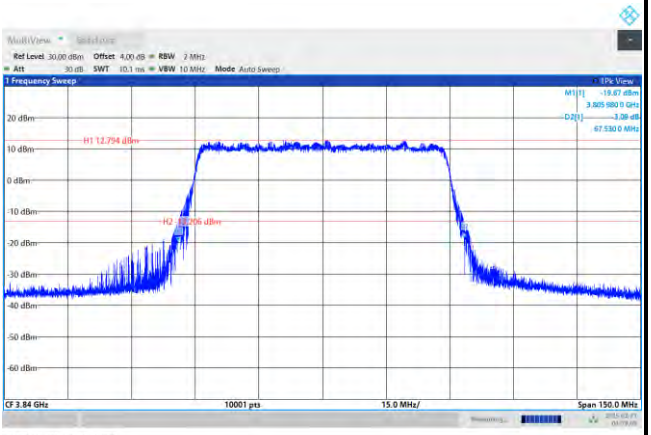
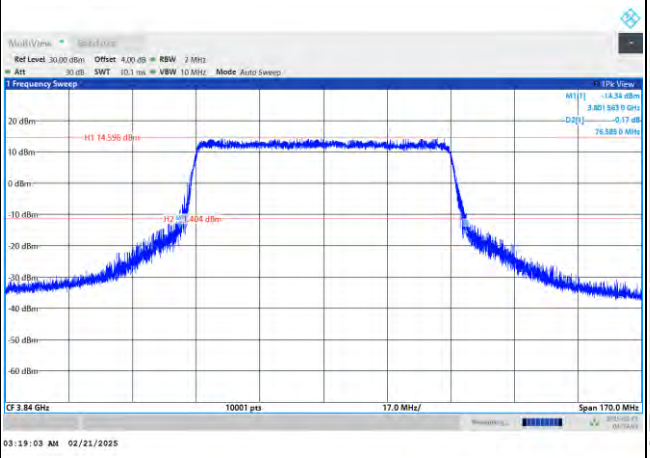
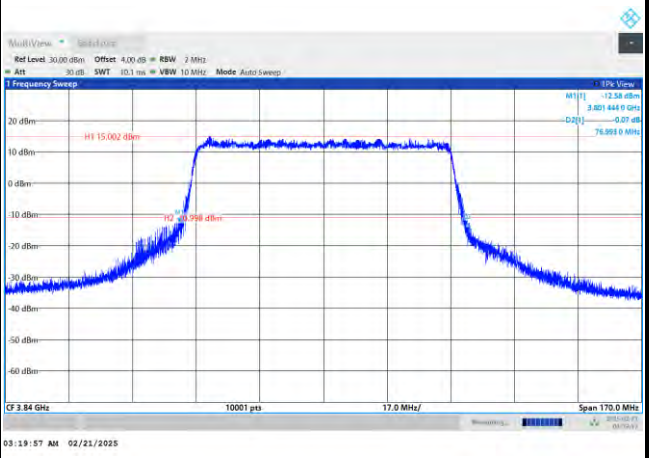
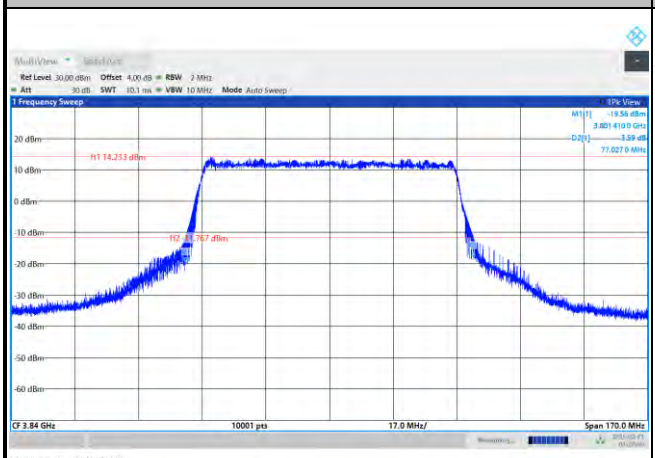
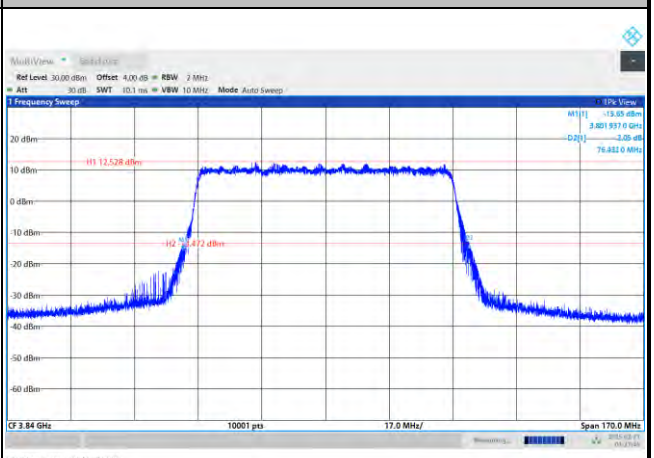
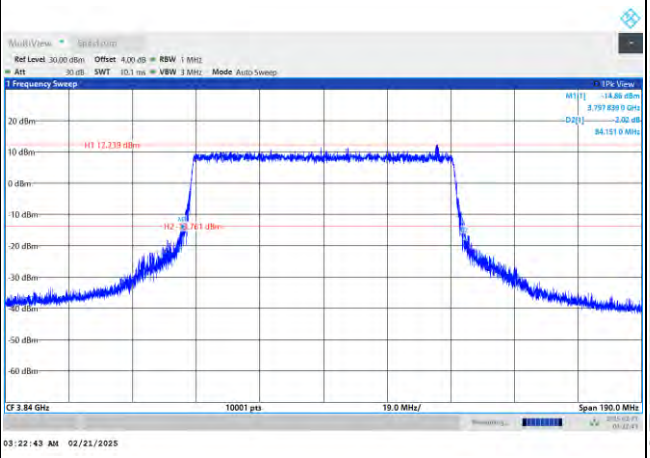
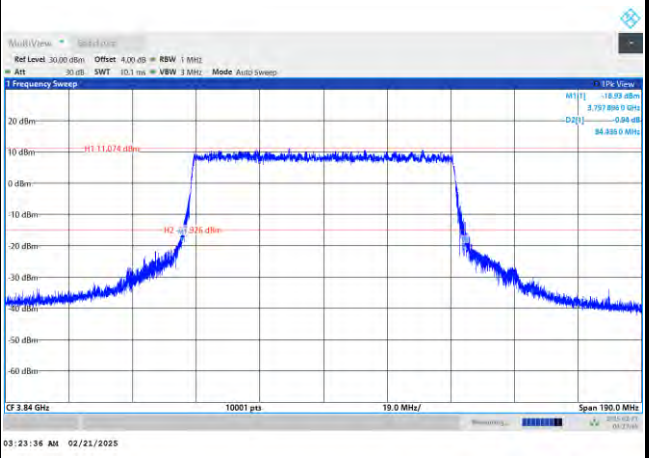
	

FR1 n77 / 50MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

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
	

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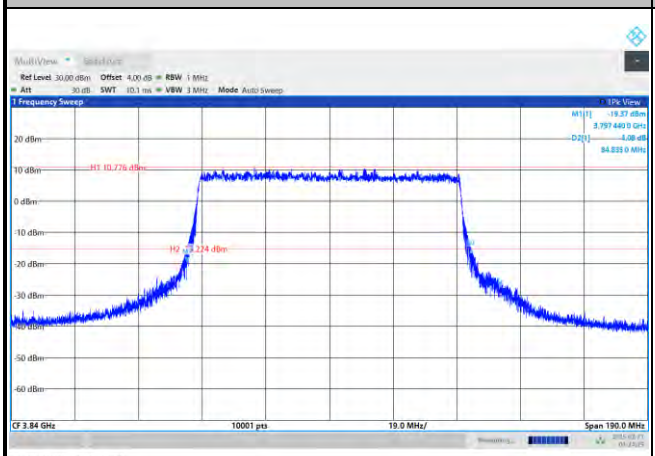
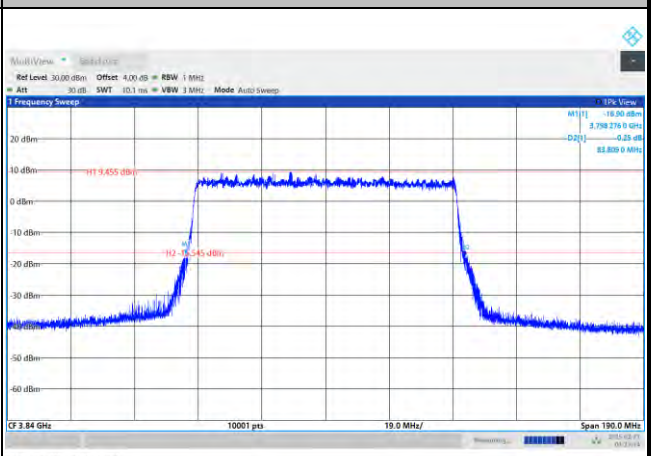
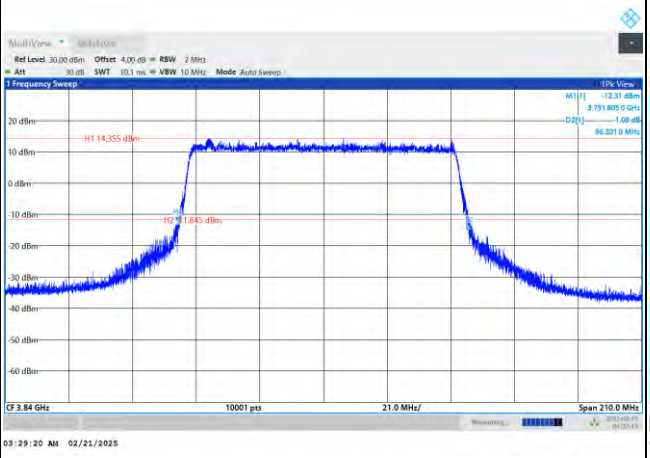
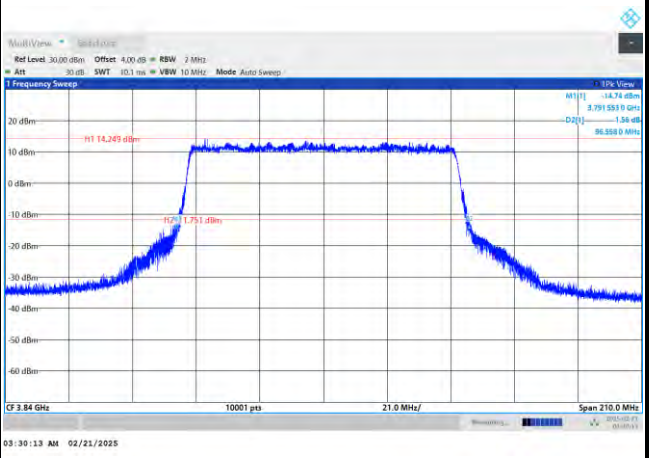
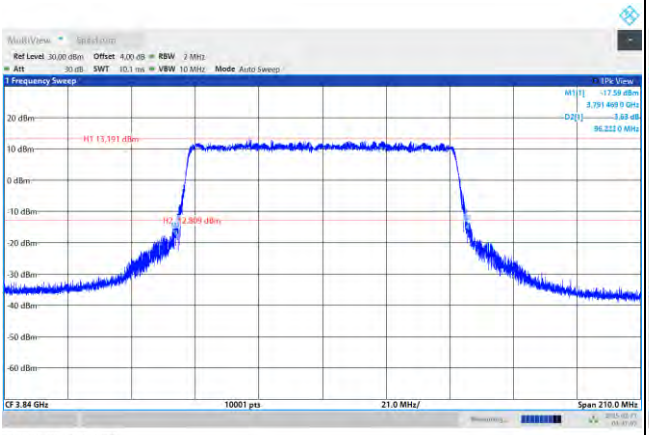
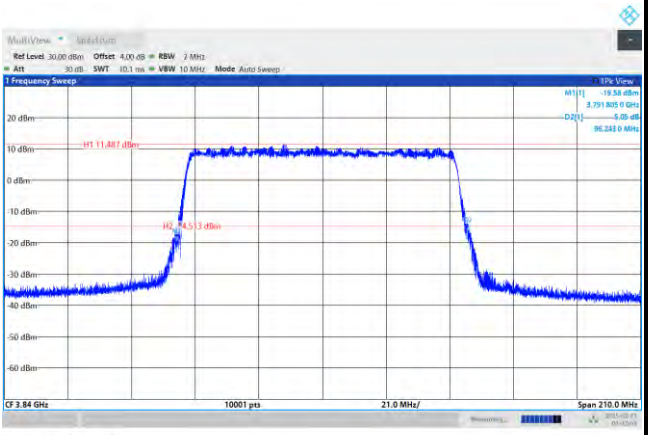
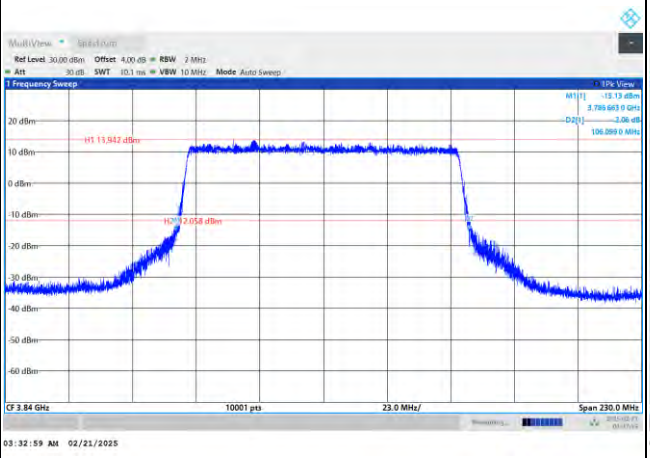
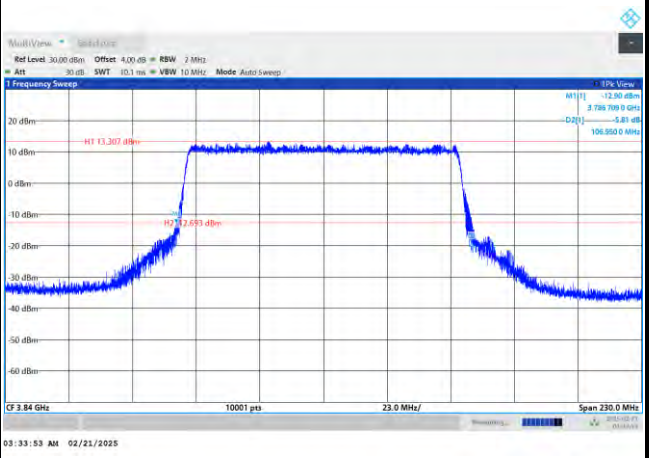
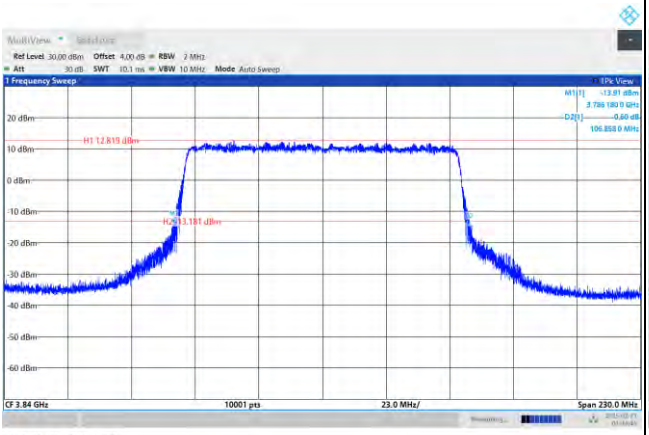
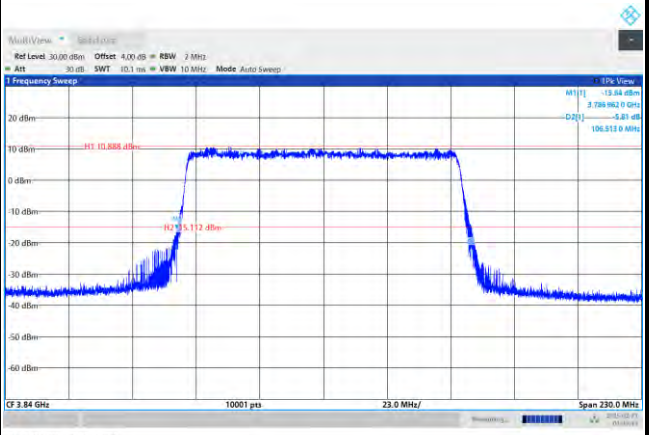
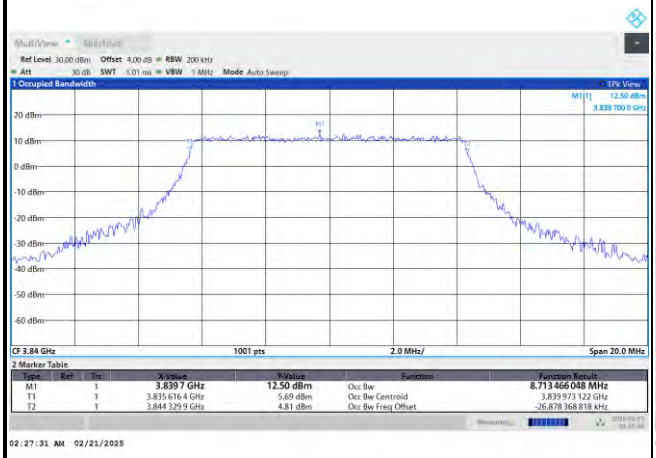
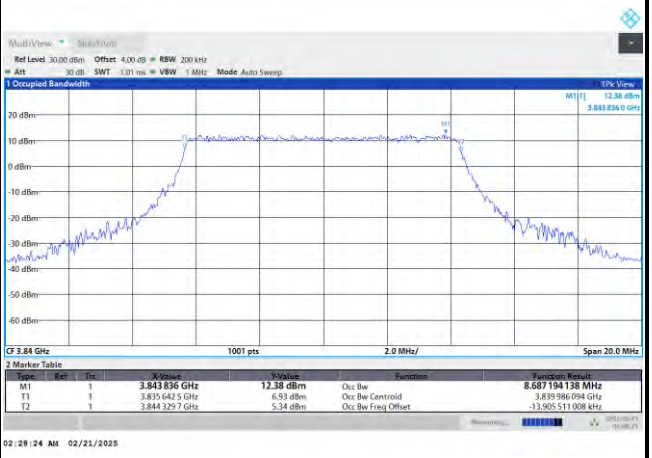
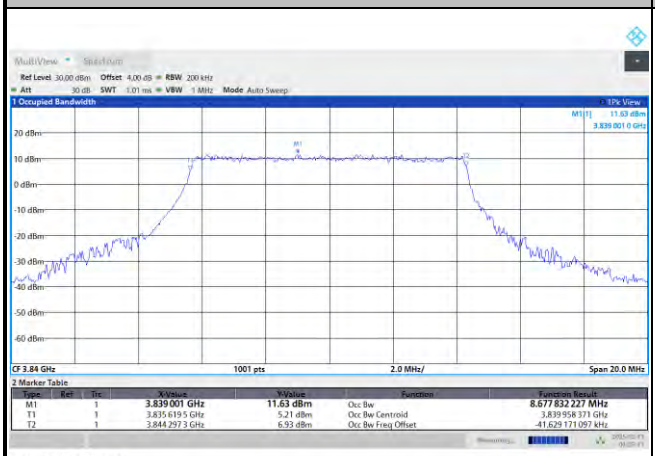
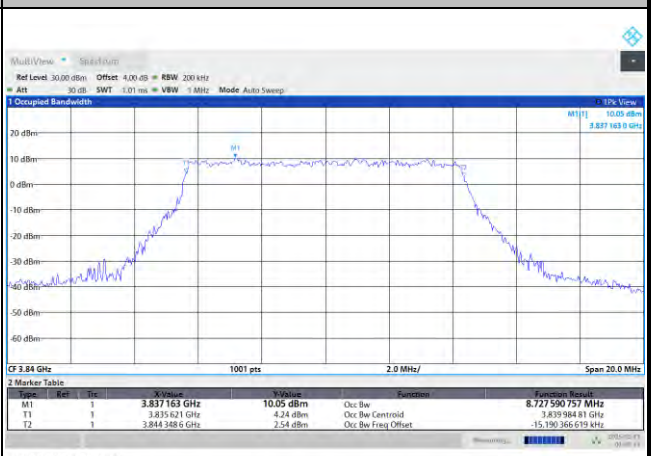
	

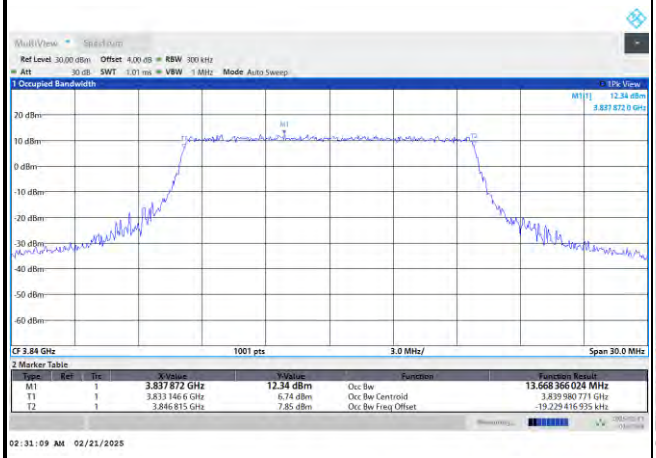
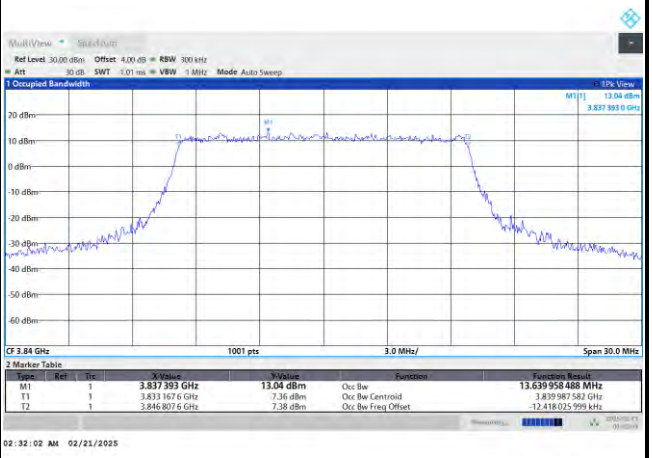
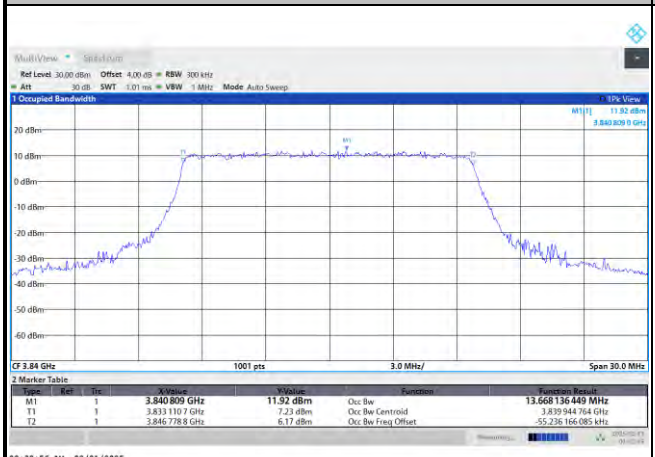
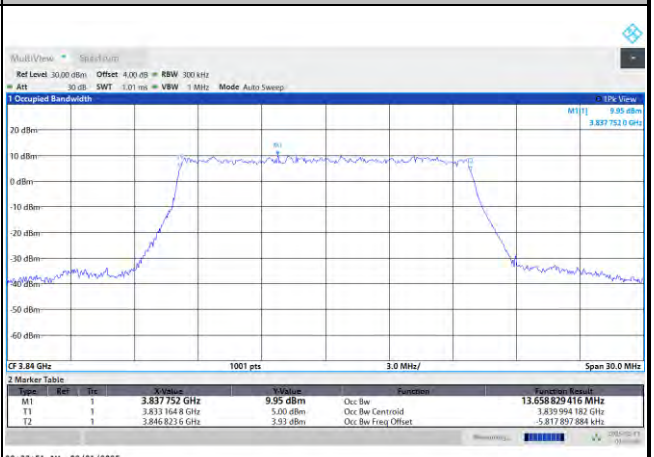
FR1 n77 / 90MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

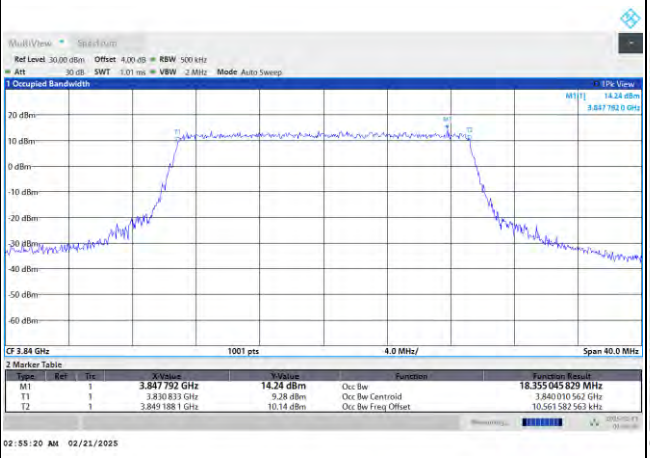
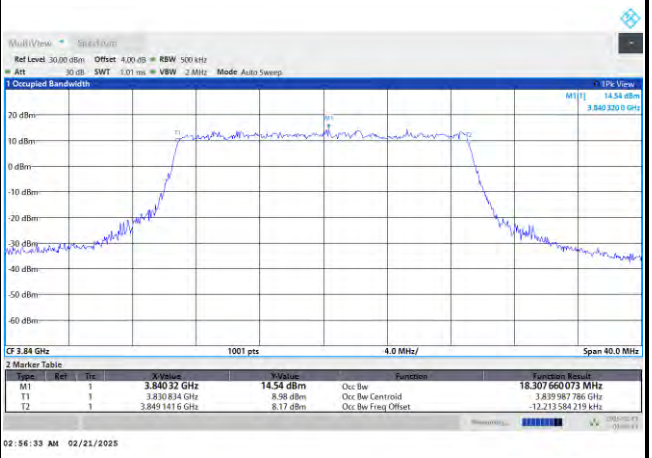
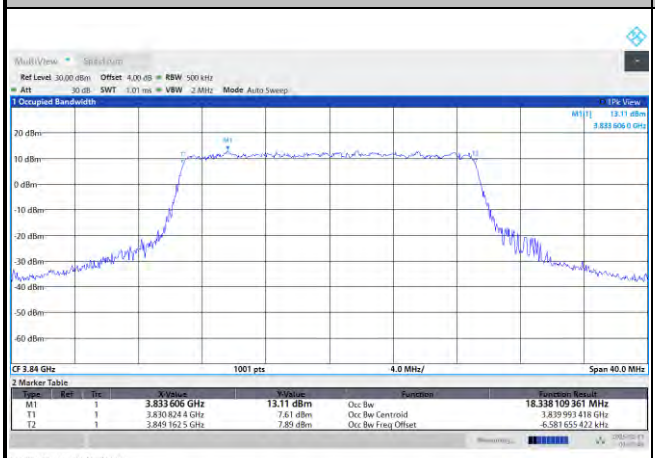
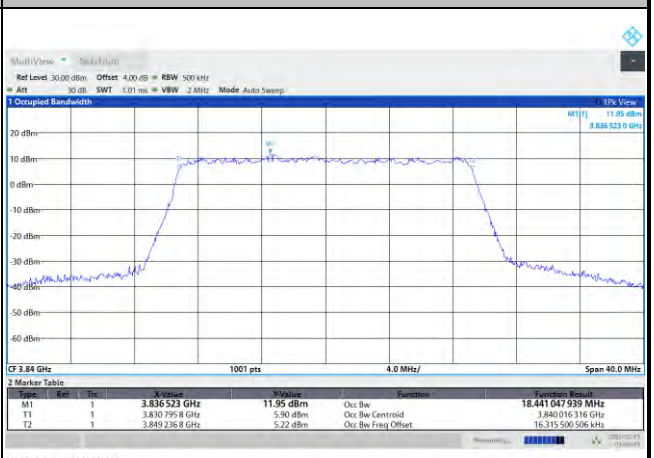
FR1 n77 / 100MHz / CP OFDM / Middle Channel / Full RB	
QPSK	16QAM
	
64QAM	256QAM
	

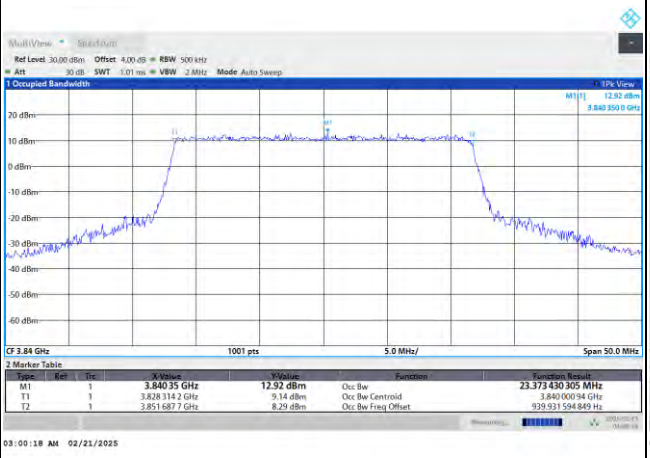
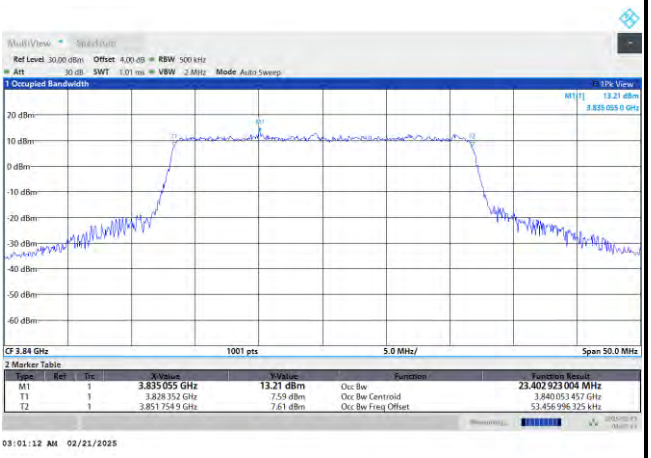
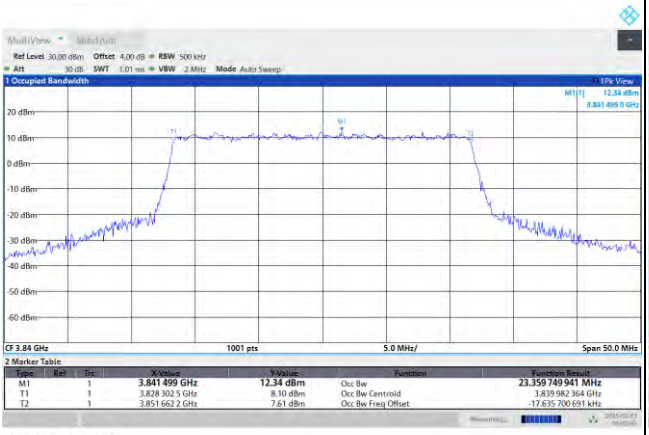
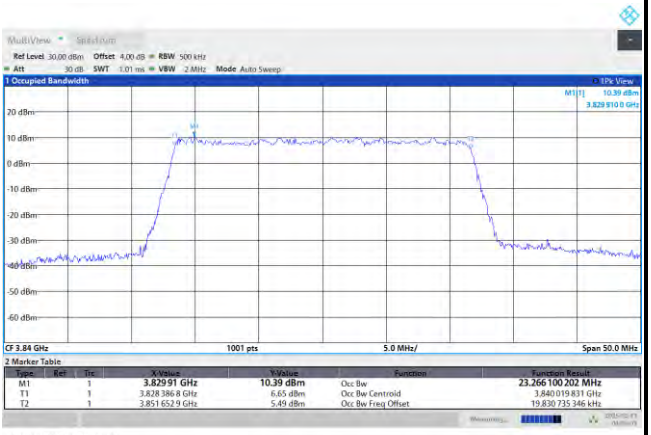
Occupied Bandwidth

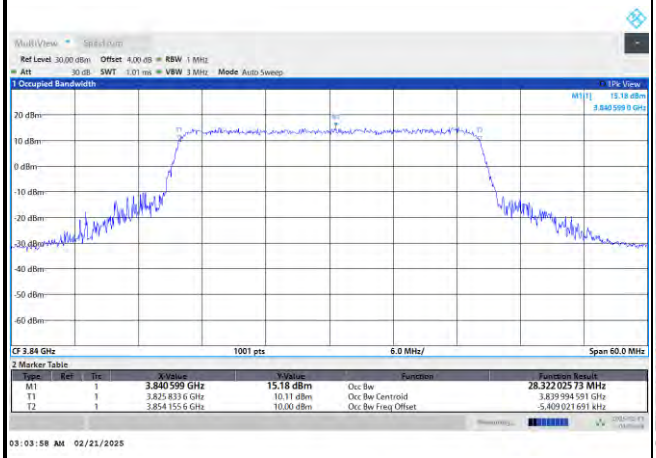
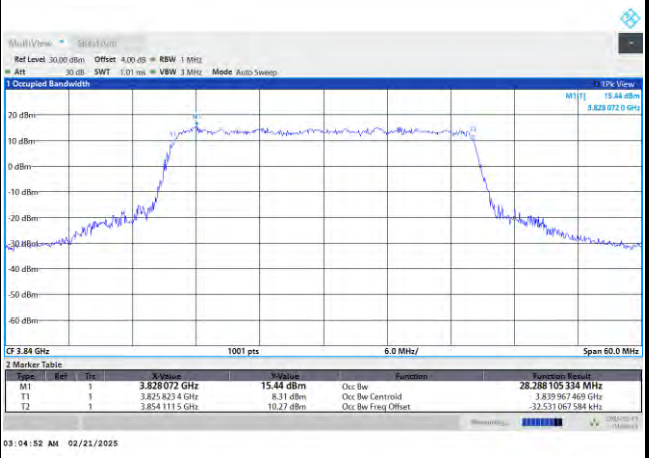
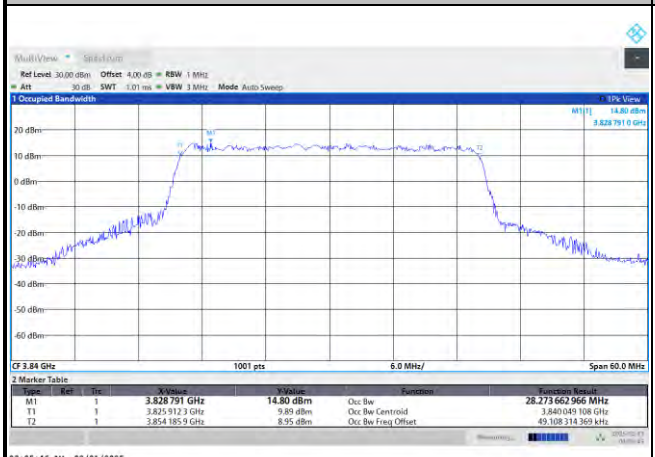
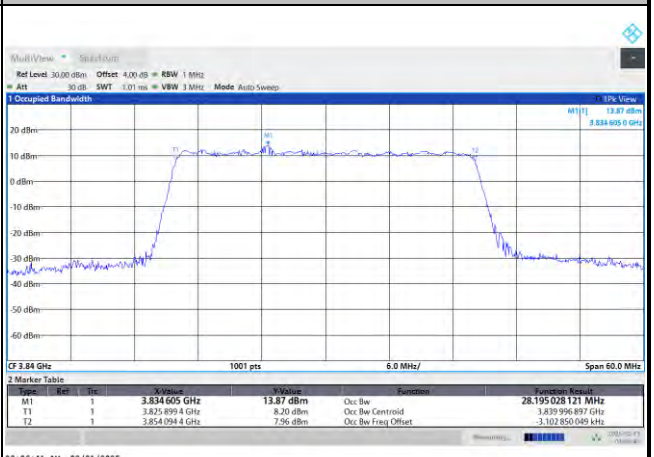
Mode	FR1 n77 : OB BW(MHz) / CP OFDM							
BW	10MHz		15MHz		20MHz		25MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	8.71	8.68	13.66	13.63	18.35	18.30	23.37	23.40
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	8.67	8.72	13.66	13.65	18.33	18.44	23.35	23.26
BW	30MHz		40MHz		50MHz		60MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	28.32	28.28	38.17	38.06	47.75	47.52	58.65	58.43
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	28.27	28.19	38.13	38.04	47.64	47.63	58.47	58.72
BW	70MHz		80MHz		90MHz		100MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	68.25	68.39	78.10	78.03	87.85	87.88	97.76	97.91
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	68.25	68.01	78.17	78.14	87.94	88.09	97.87	97.76

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