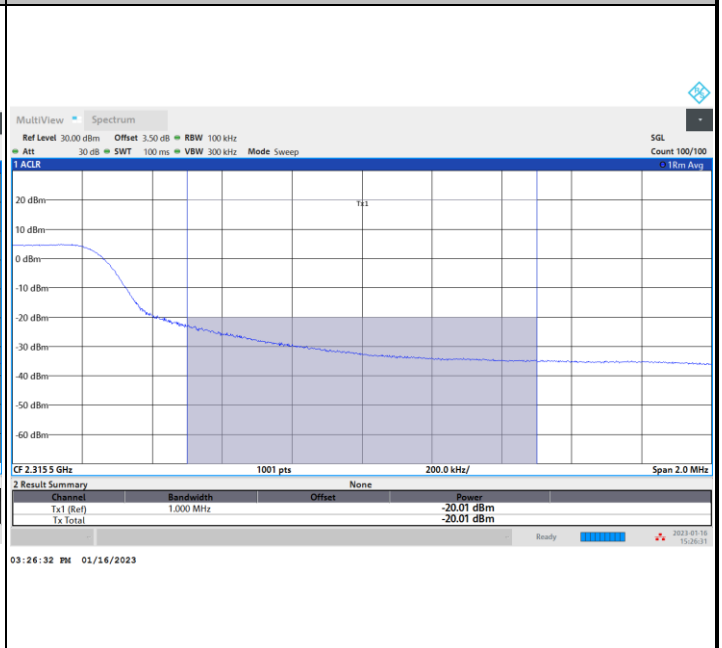
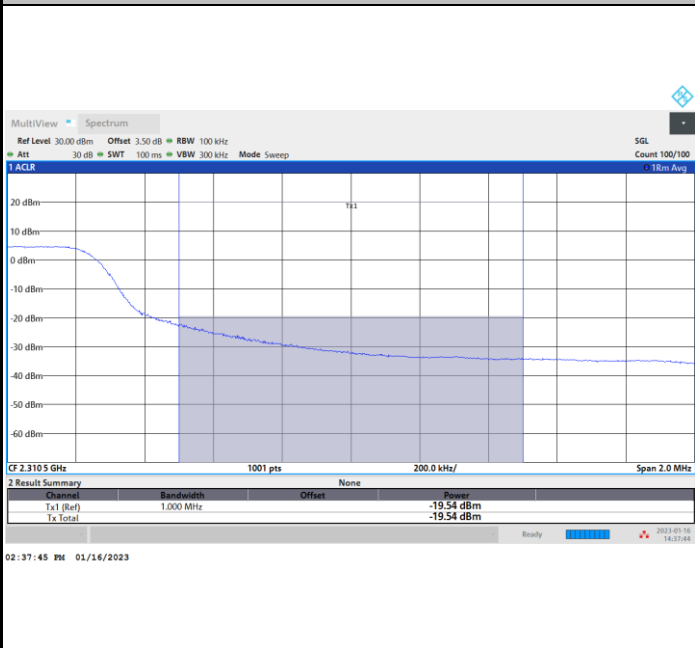




Lowest Band Edge / Full RB / Upper zoom in

Highest Band Edge / Full RB / Upper zoom in

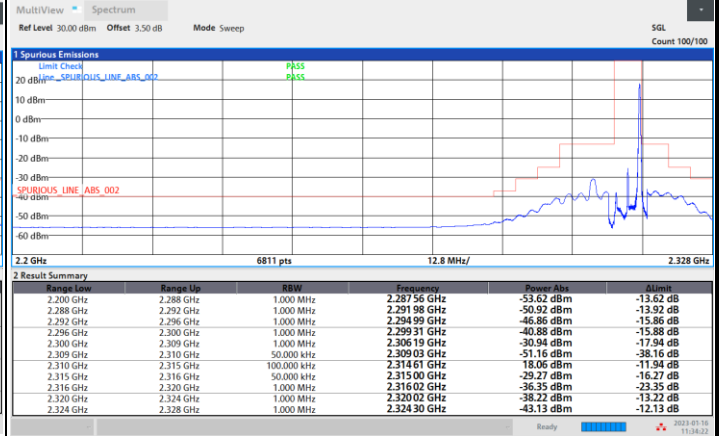
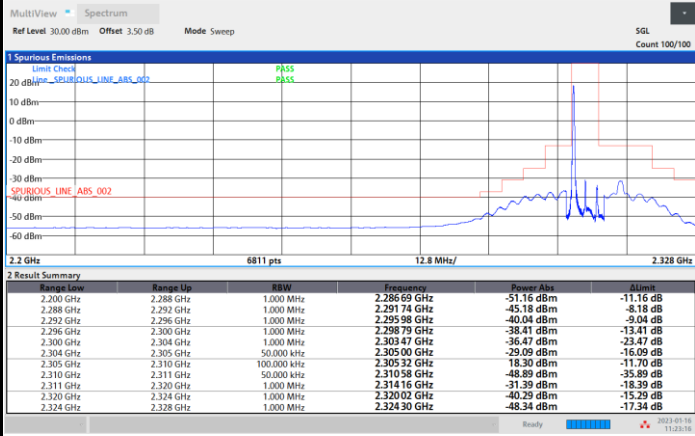




FR1 n30 / 5MHz / DFT-S OFDM / 64QAM

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

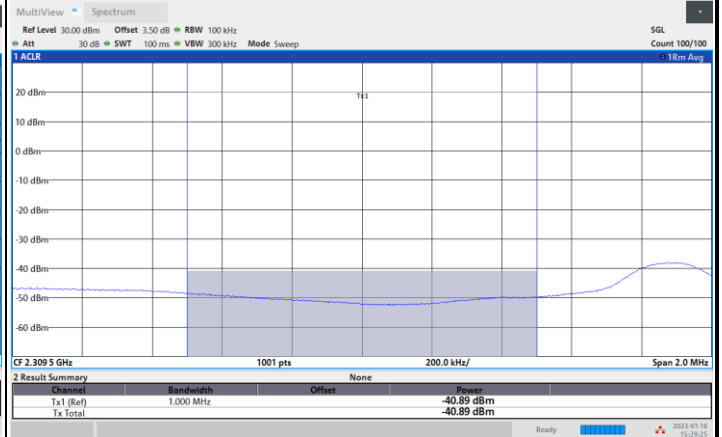
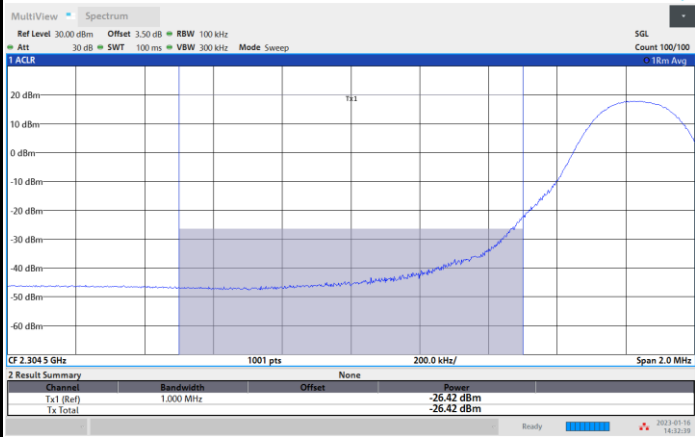


11:23:16 AM 01/16/2023

11:34:23 AM 01/16/2023

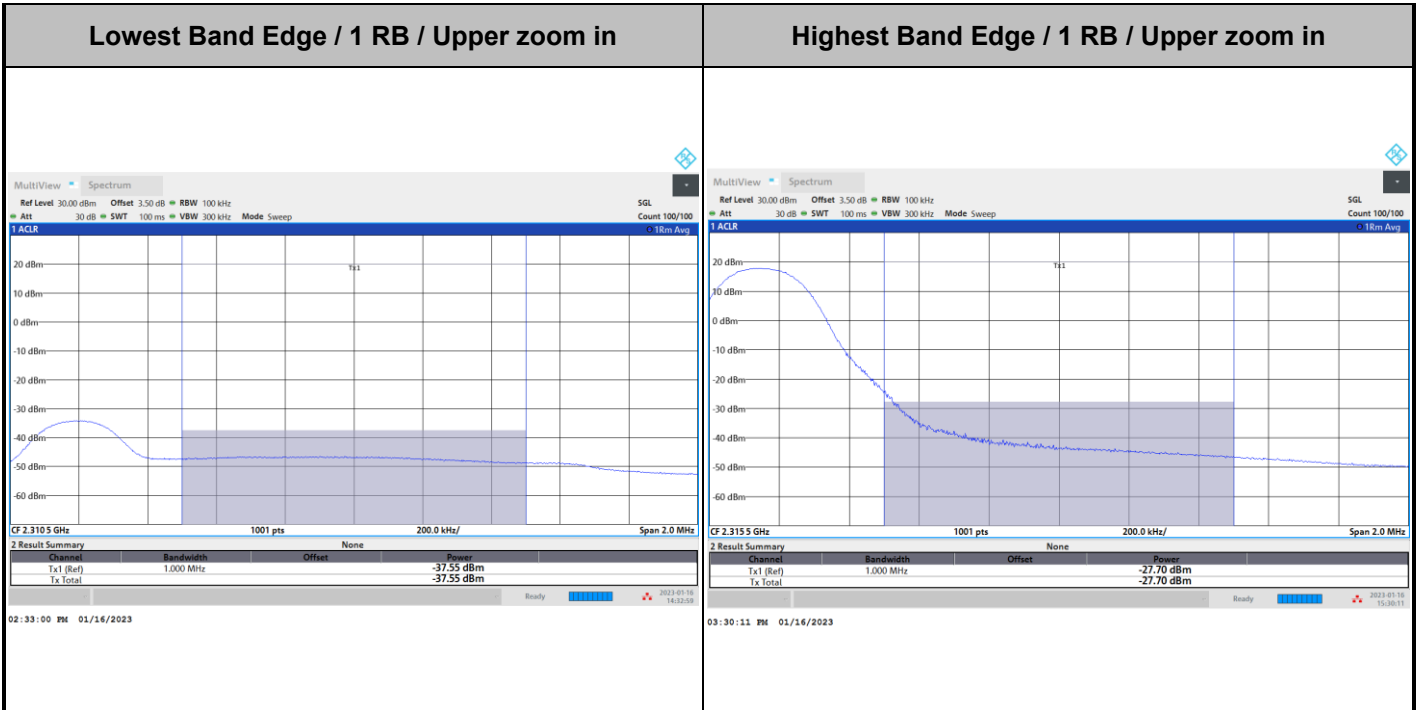
Lowest Band Edge / 1 RB / Lower zoom in

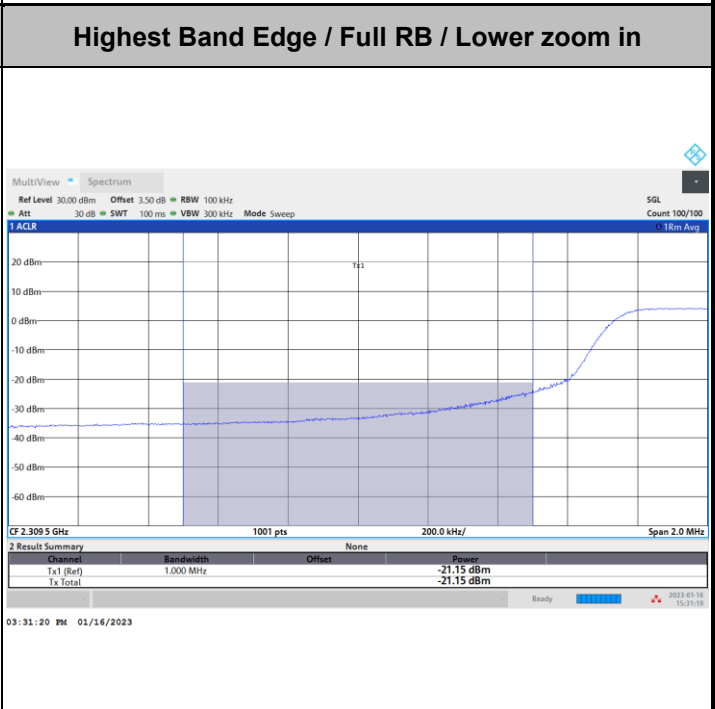
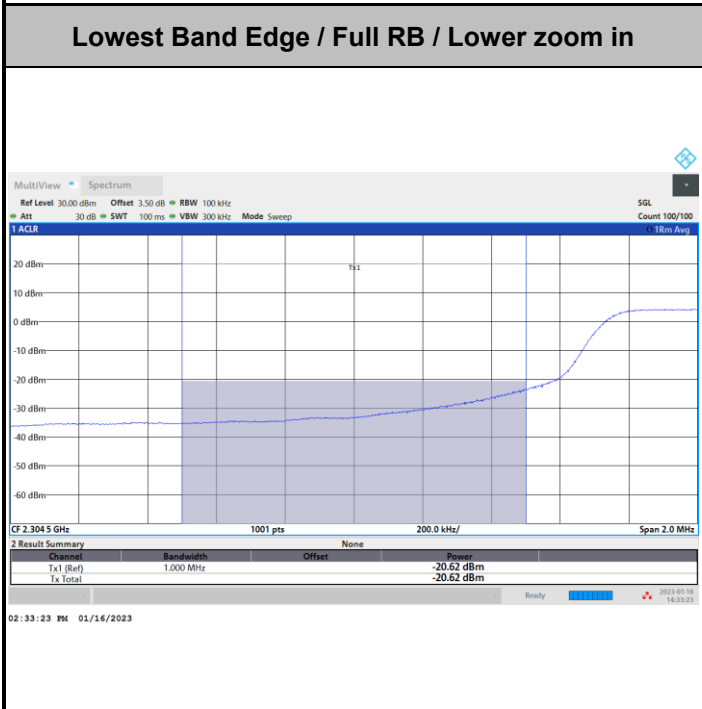
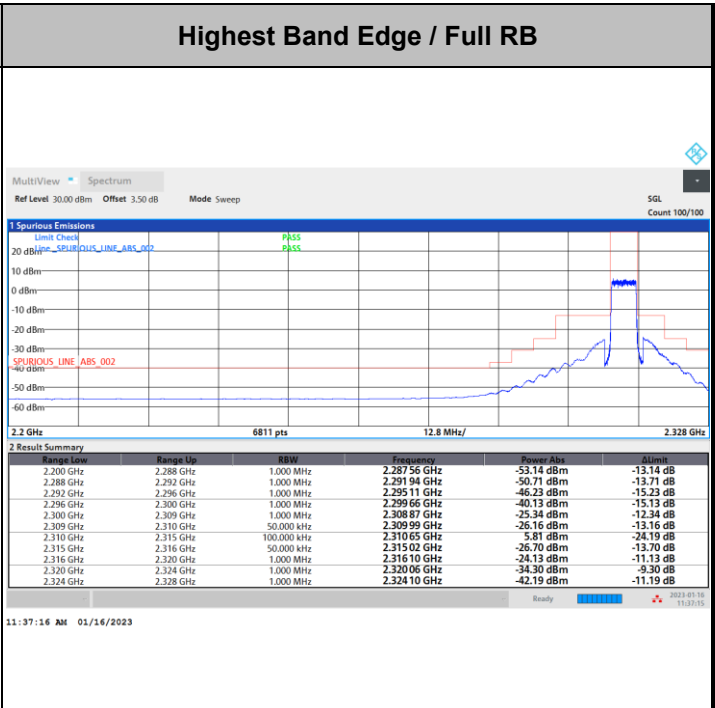
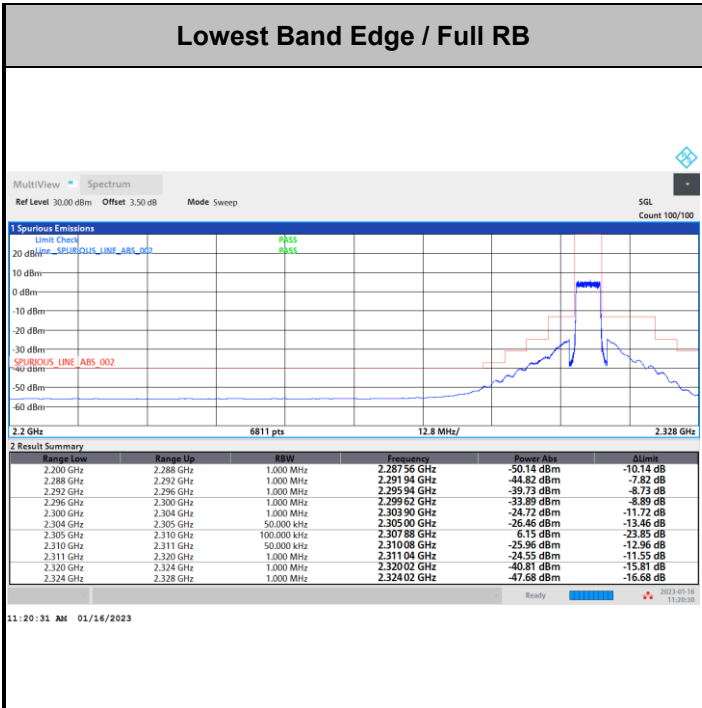
Highest Band Edge / 1 RB / Lower zoom in



02:32:39 PM 01/16/2023

03:29:26 PM 01/16/2023

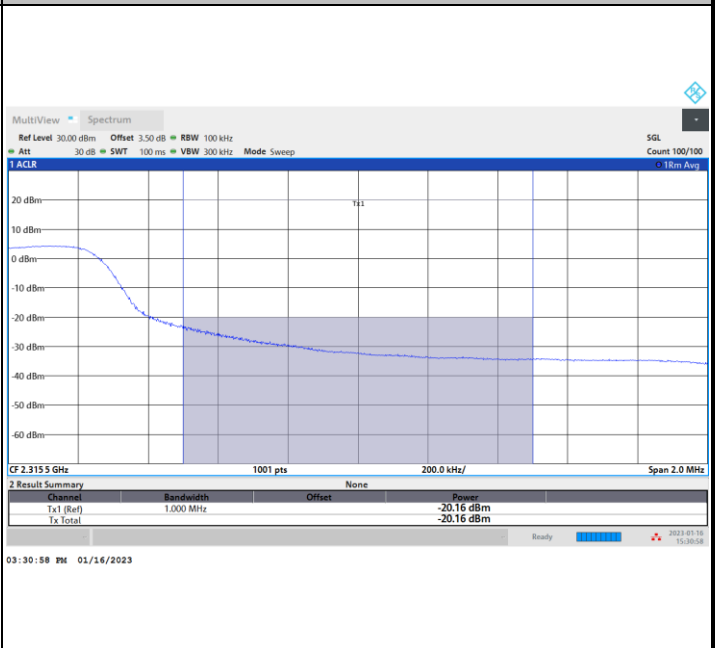
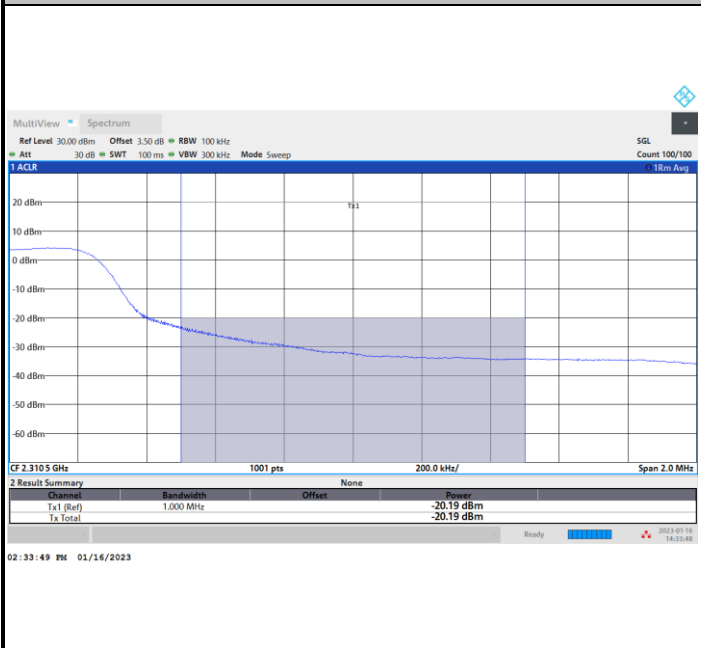






Lowest Band Edge / Full RB / Upper zoom in

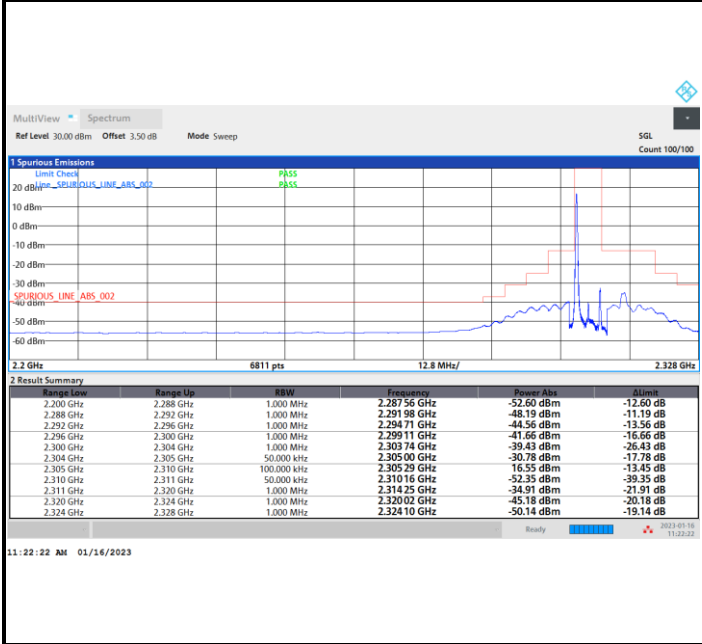
Highest Band Edge / Full RB / Upper zoom in



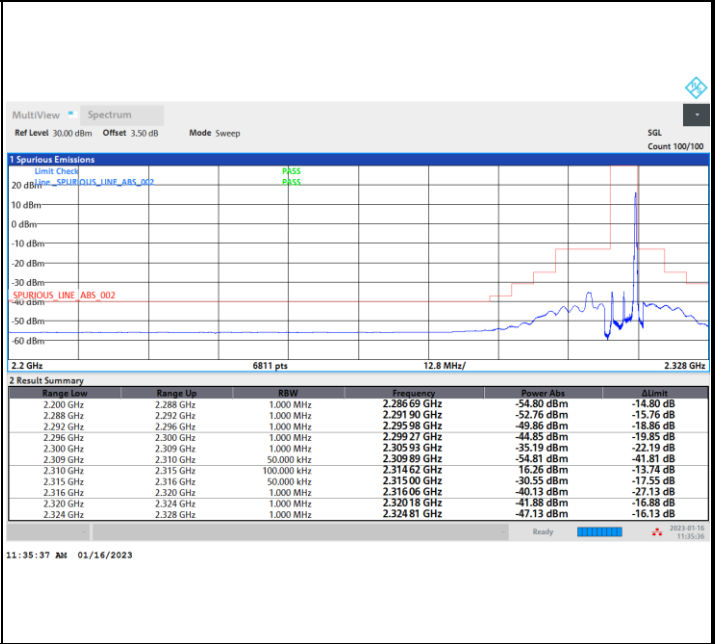


**FR1 n30 / 5MHz / DFT-S OFDM / 256QAM**

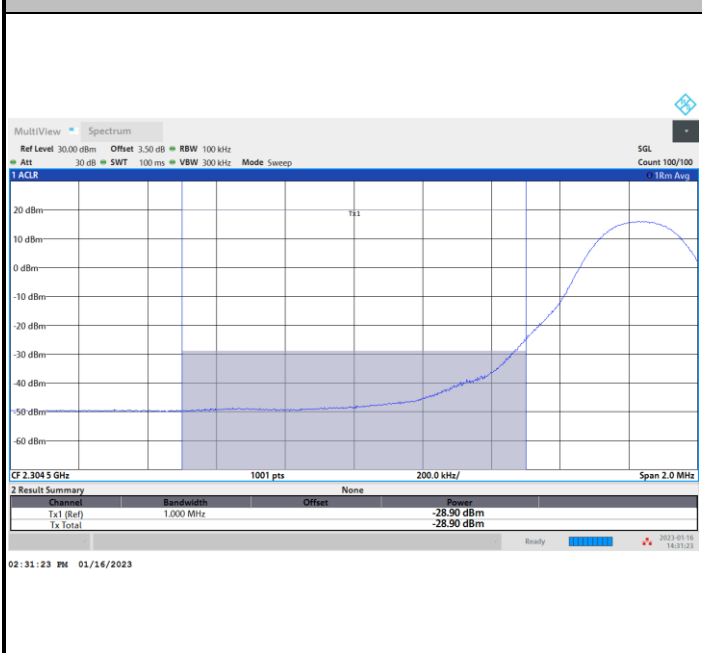
**Lowest Band Edge / 1RB0**



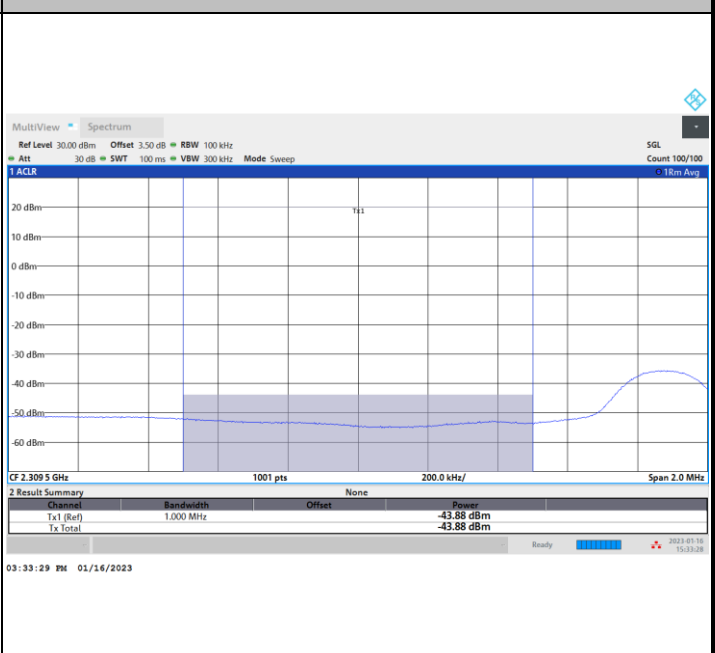
**Highest Band Edge / 1RBmax**

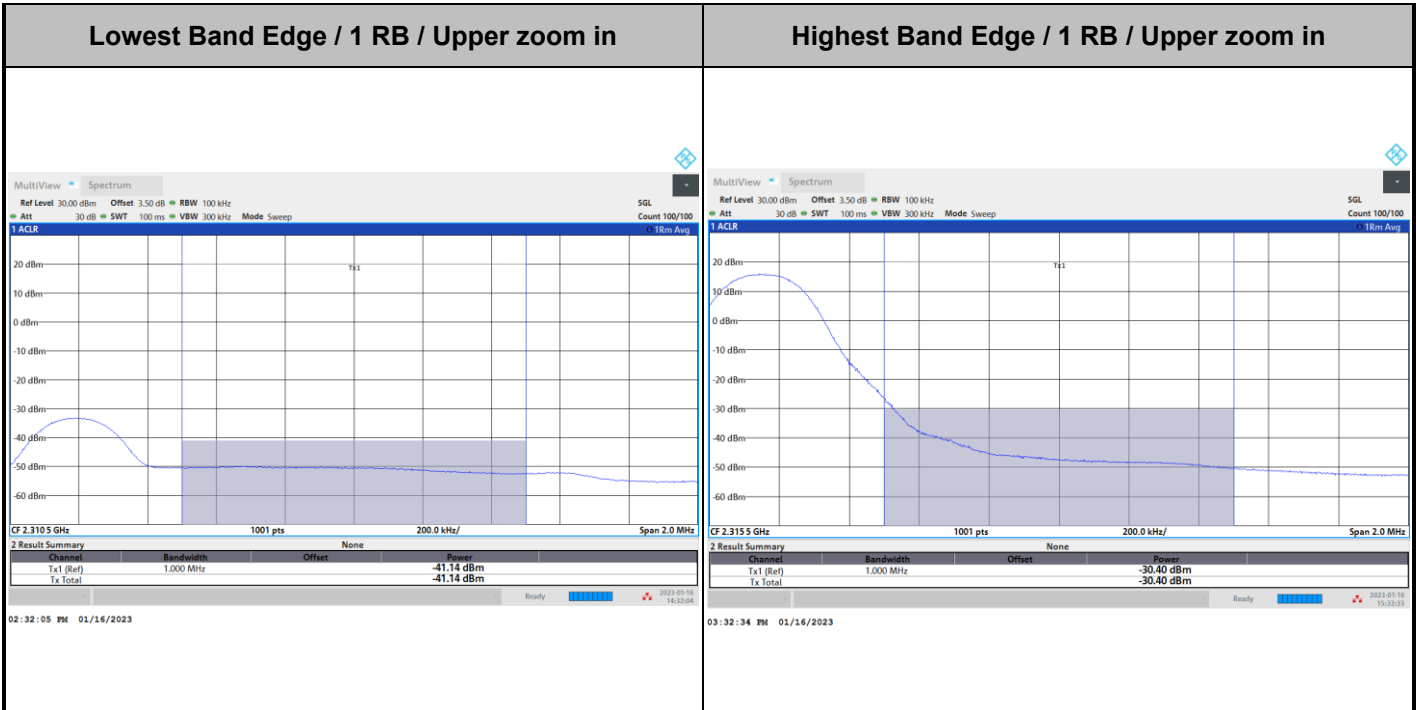


**Lowest Band Edge / 1 RB / Lower zoom in**

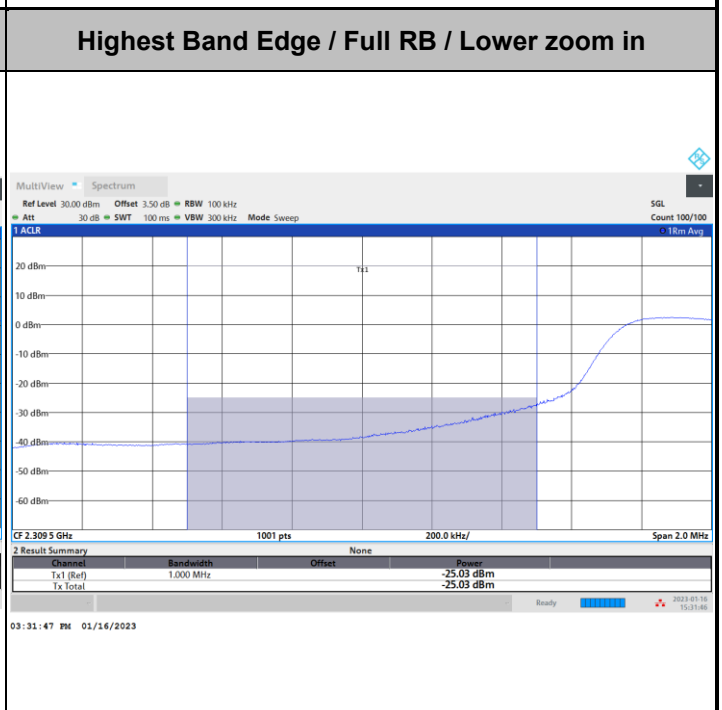
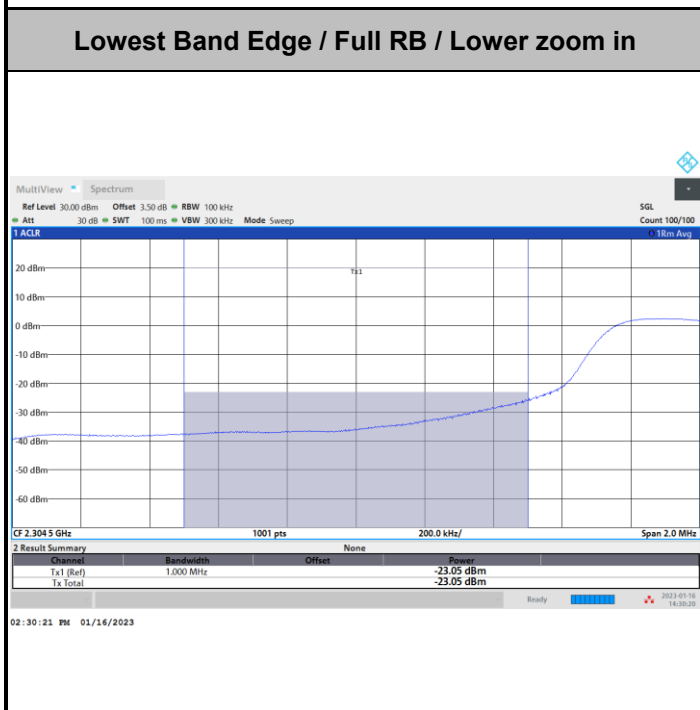
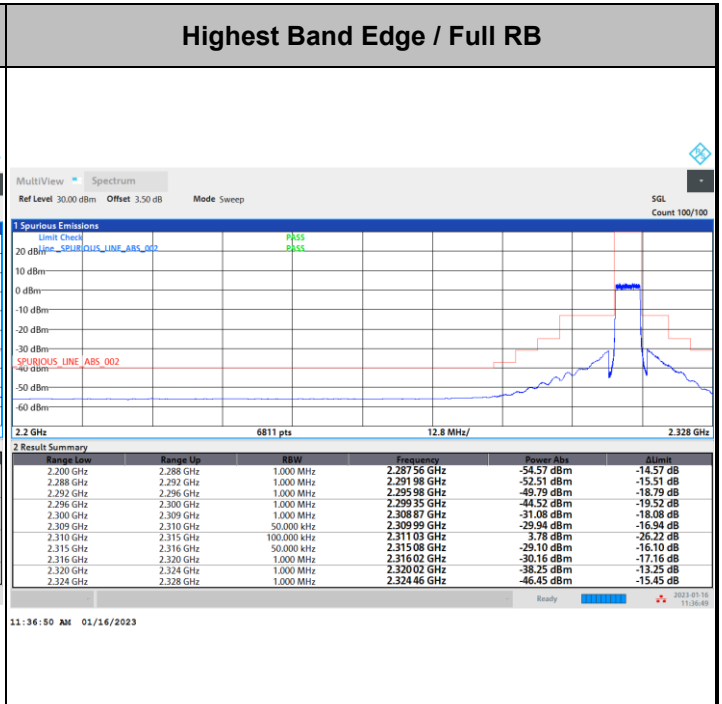
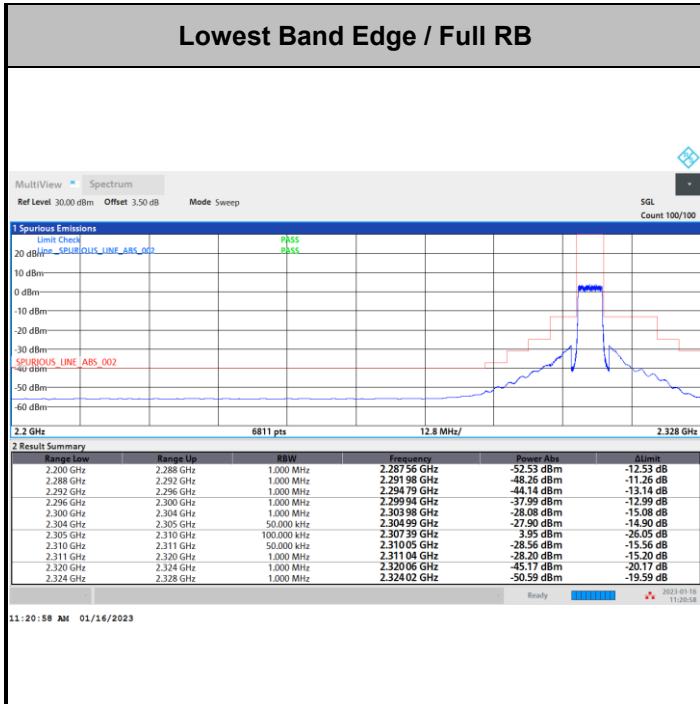


**Highest Band Edge / 1 RB / Lower zoom in**





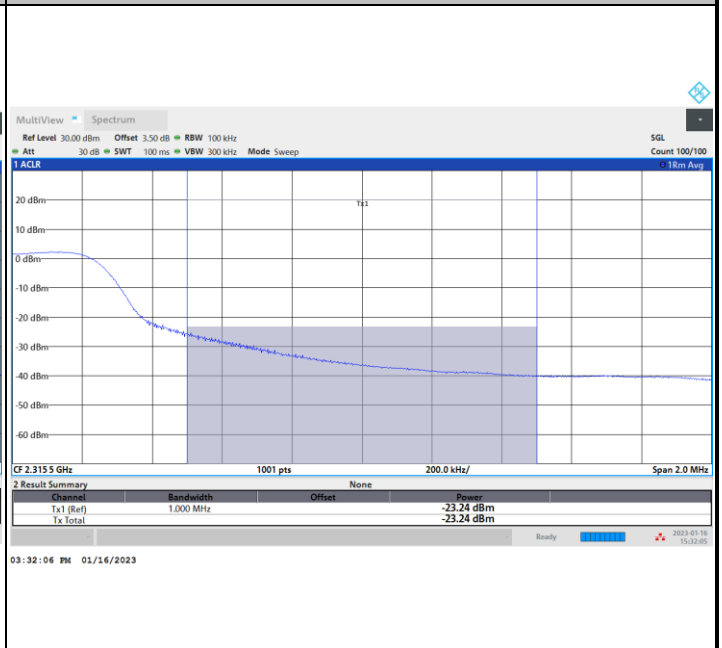
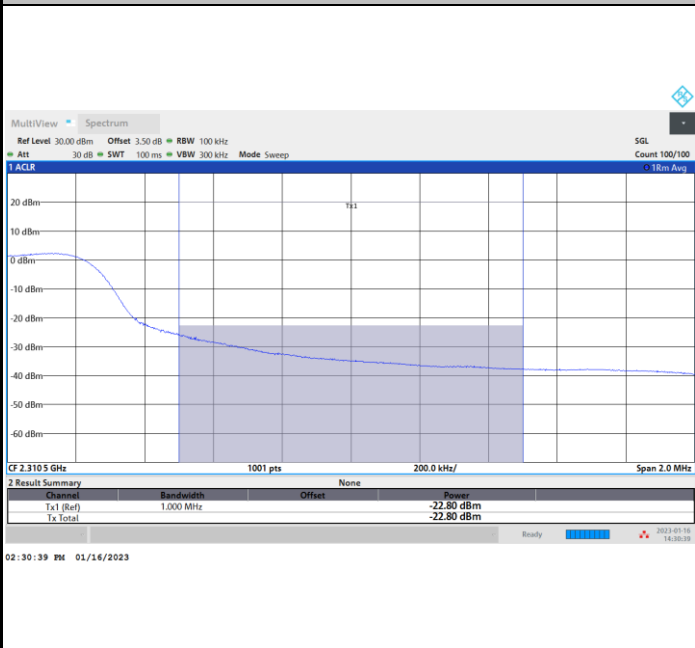






Lowest Band Edge / Full RB / Upper zoom in

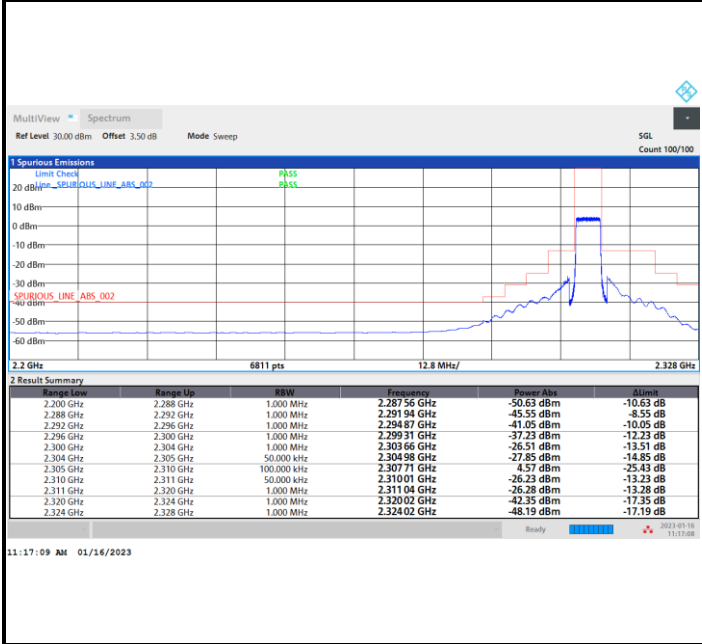
Highest Band Edge / Full RB / Upper zoom in



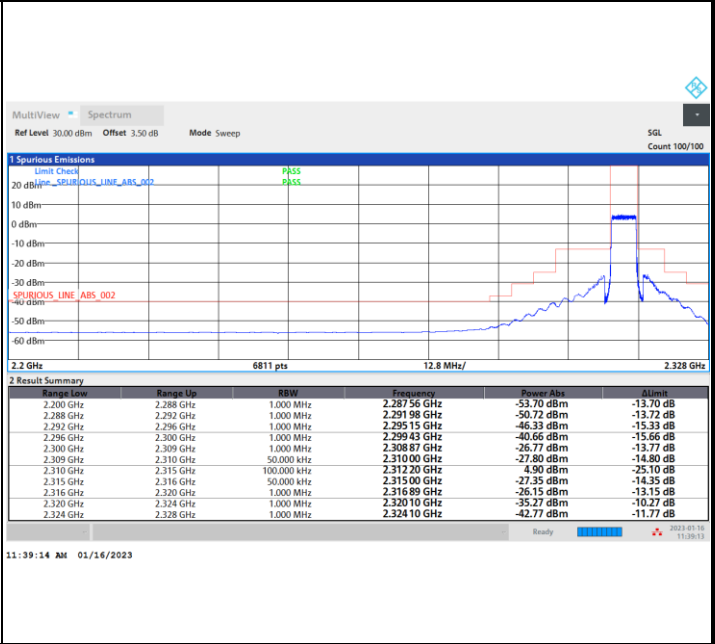


FR1 n30 / 5MHz / CP OFDM / QPSK / Full RB

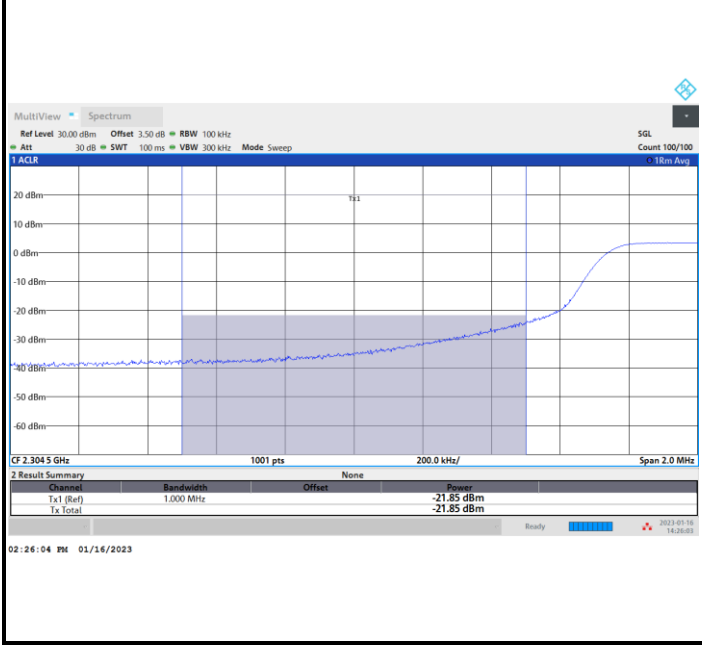
Lowest Band Edge



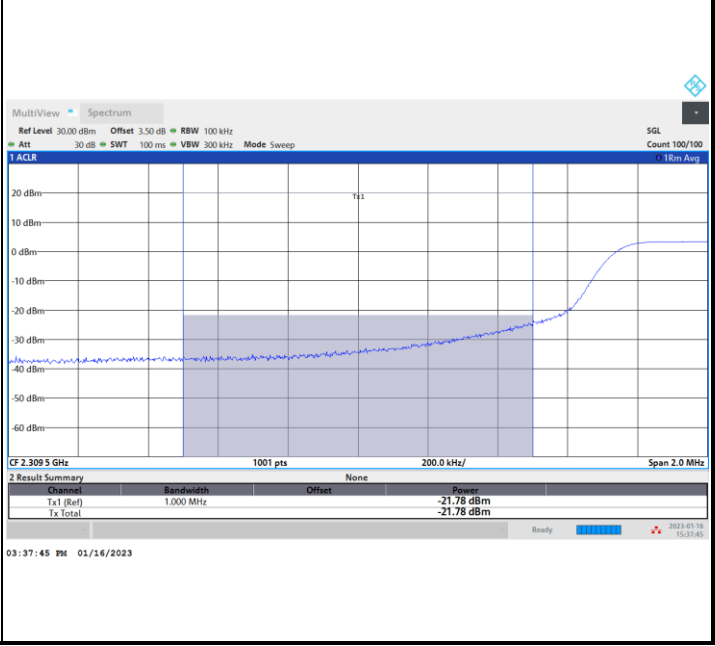
Highest Band Edge

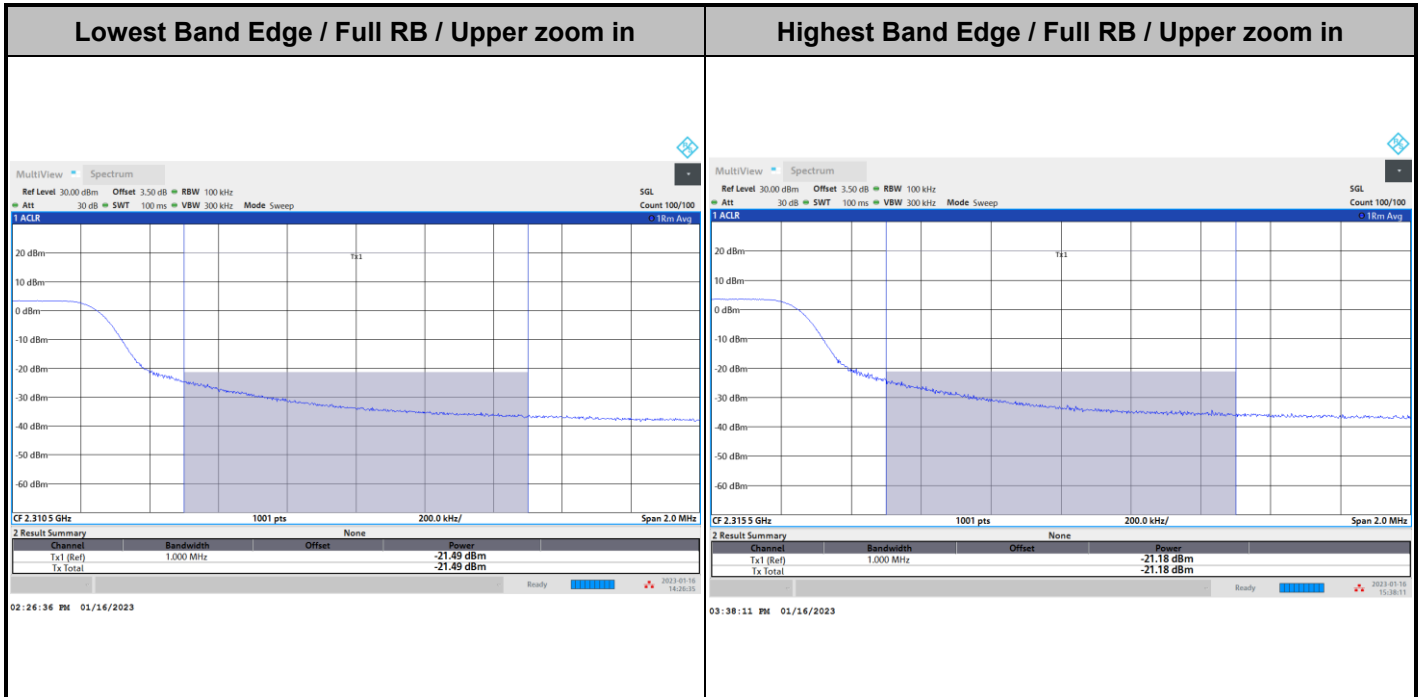


Lowest Band Edge / Full RB / Lower zoom in



Highest Band Edge / Full RB / Lower zoom in

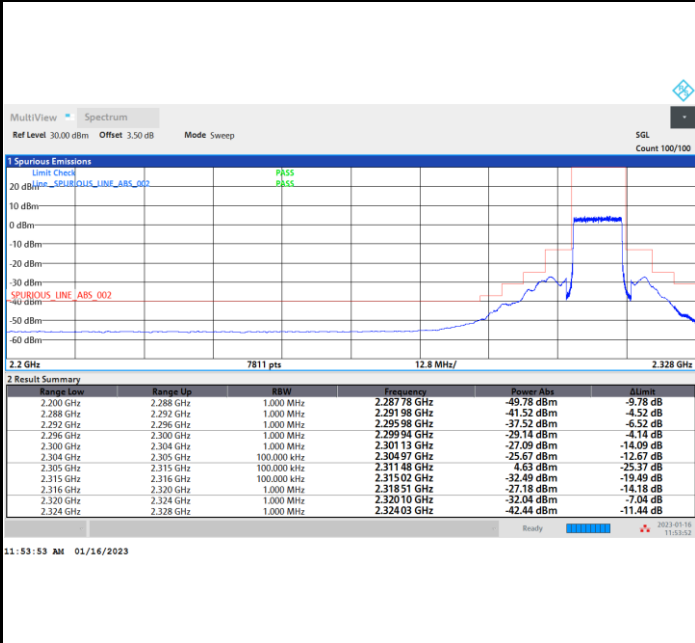




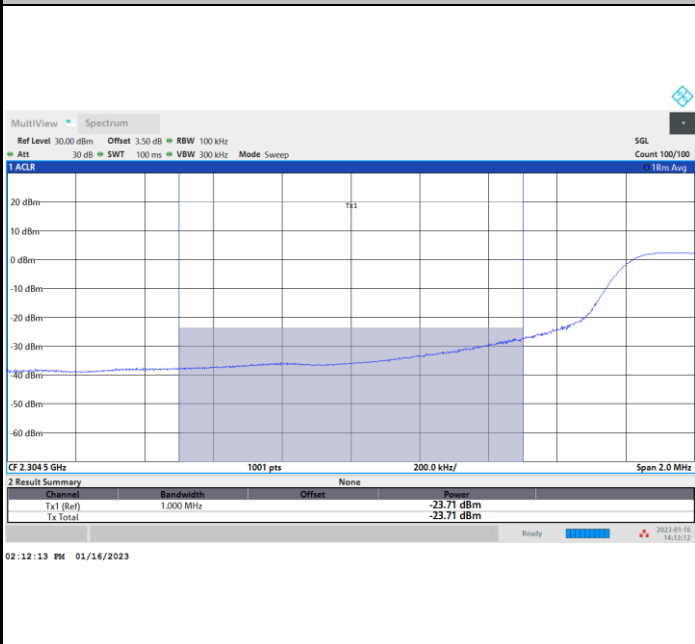


FR1 n30 / 10MHz / DFT-s-OFDM / PI/2 BPSK

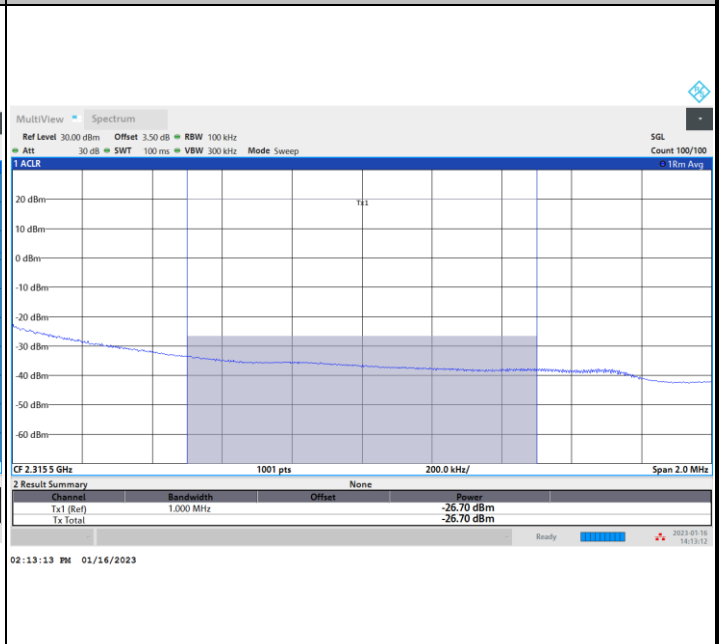
Middle Band Edge / Full RB



Middle Band Edge / Full RB / Lower zoom in



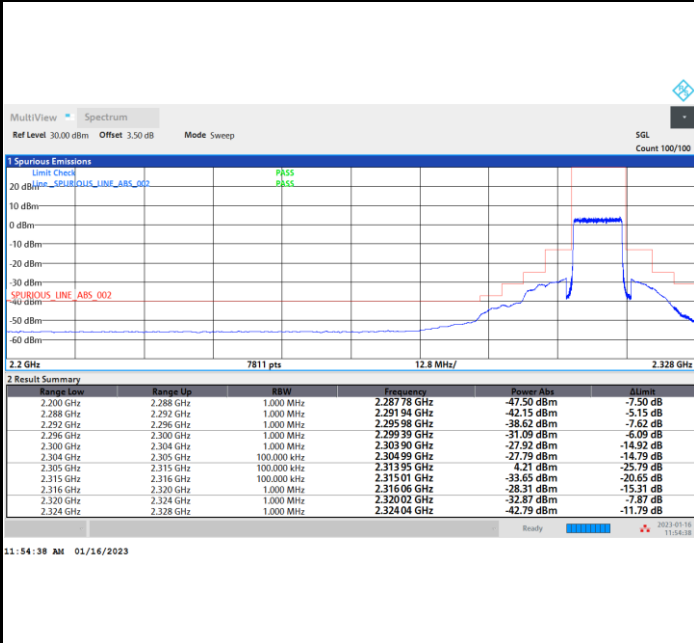
Middle Band Edge / Full RB / Upper zoom in



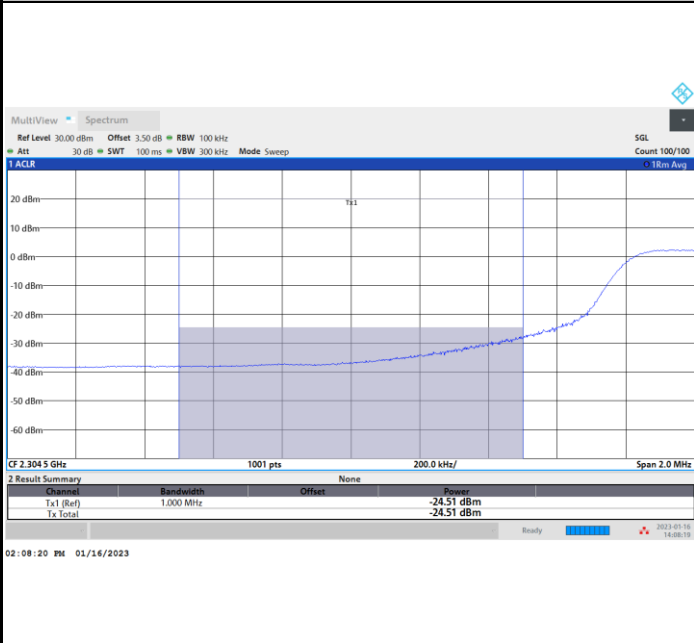


FR1 n30 / 10MHz / DFT-s-OFDM / QPSK

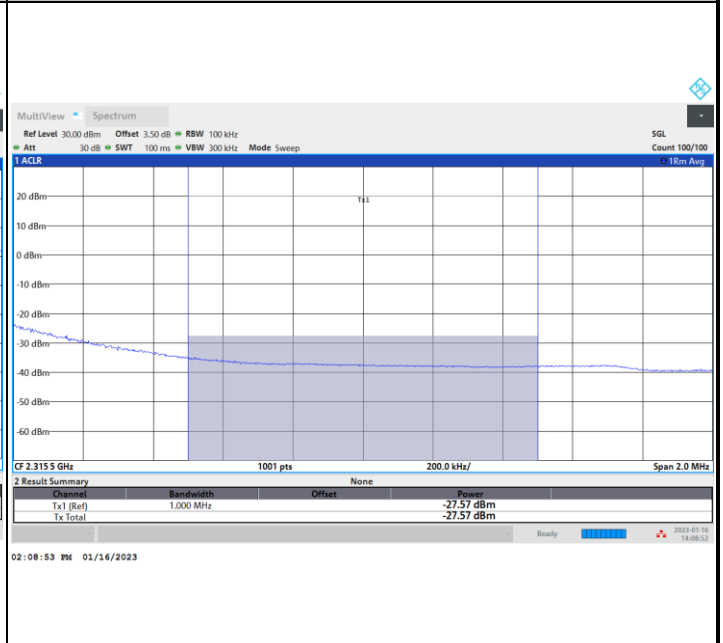
Middle Band Edge / Full RB



Middle Band Edge / Full RB / Lower zoom in



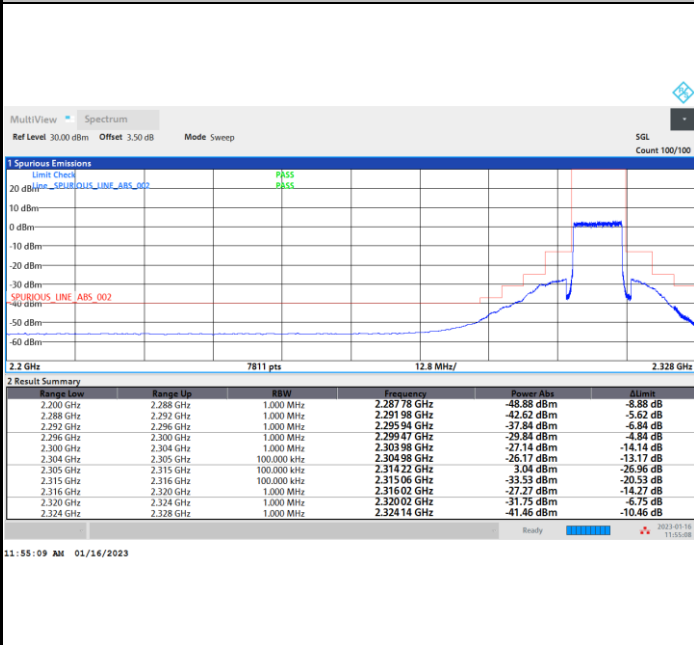
Middle Band Edge / Full RB / Upper zoom in



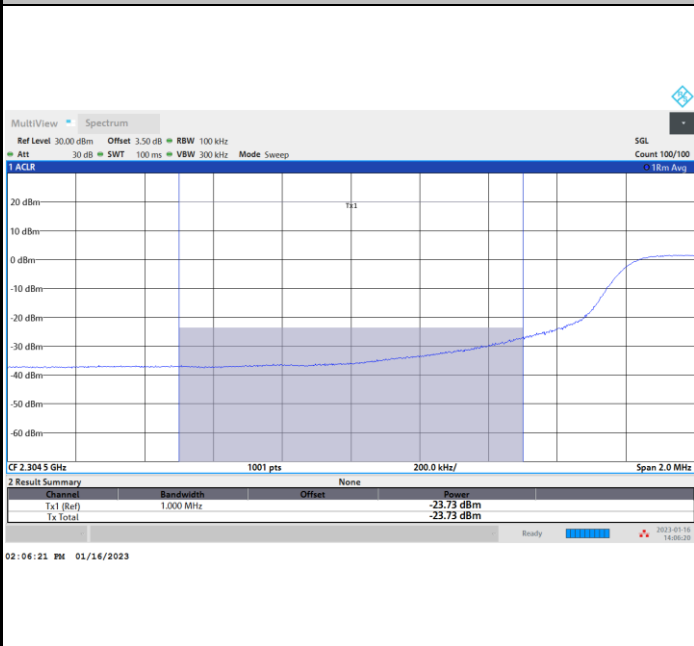


FR1 n30 / 10MHz / DFT-s-OFDM / 16QAM

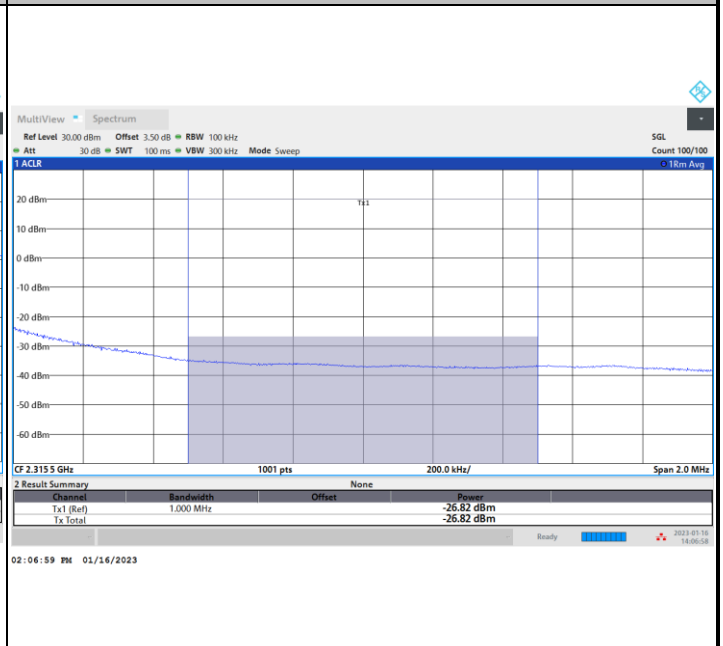
Middle Band Edge / Full RB



Middle Band Edge / Full RB / Lower zoom in



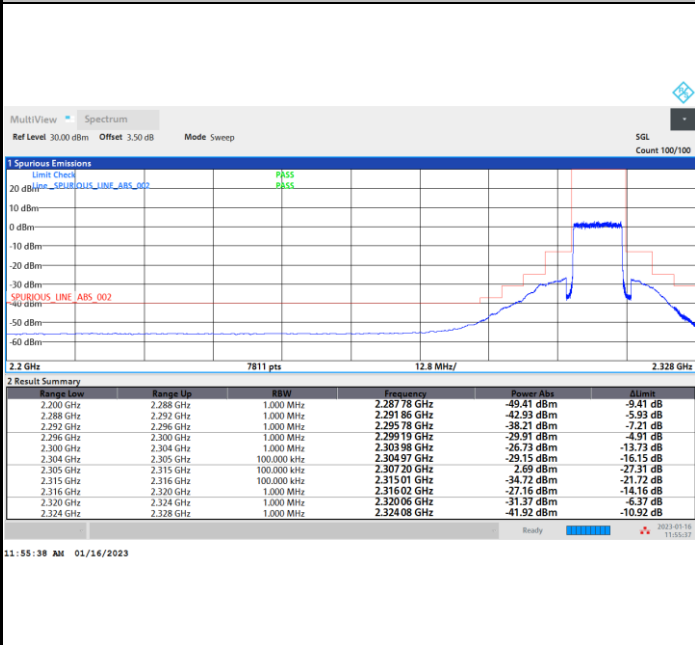
Middle Band Edge / Full RB / Upper zoom in



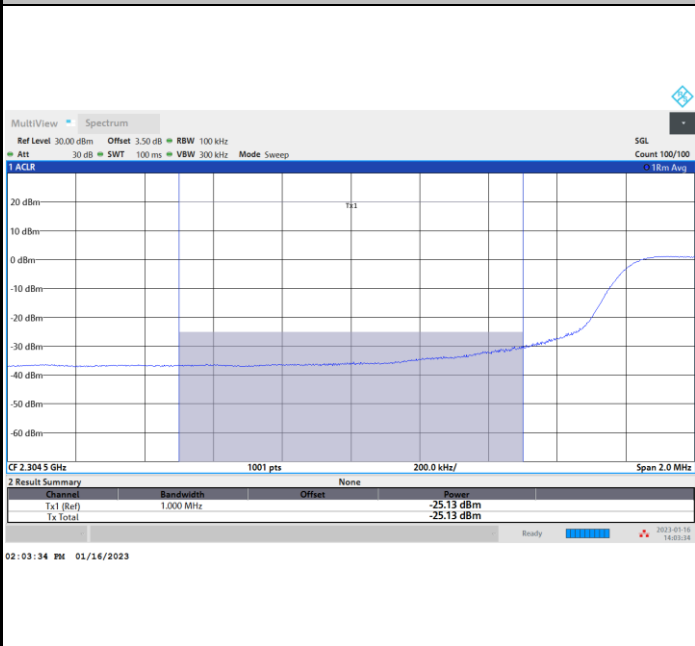


FR1 n30 / 10MHz / DFT-s-OFDM / 64QAM

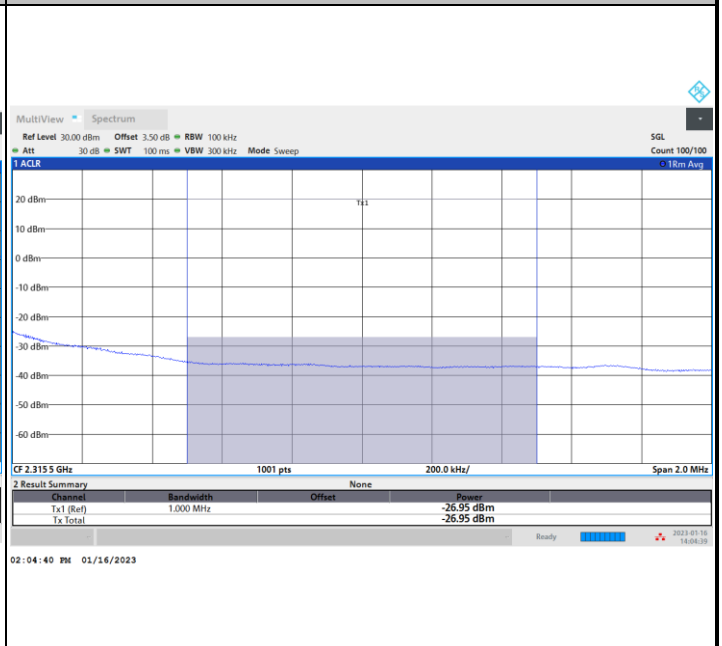
Middle Band Edge / Full RB



Middle Band Edge / Full RB / Lower zoom in



Middle Band Edge / Full RB / Upper zoom in

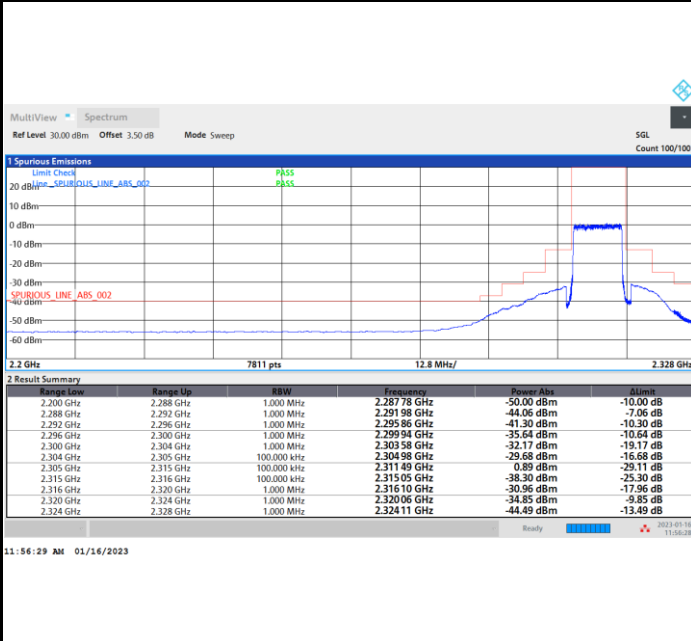




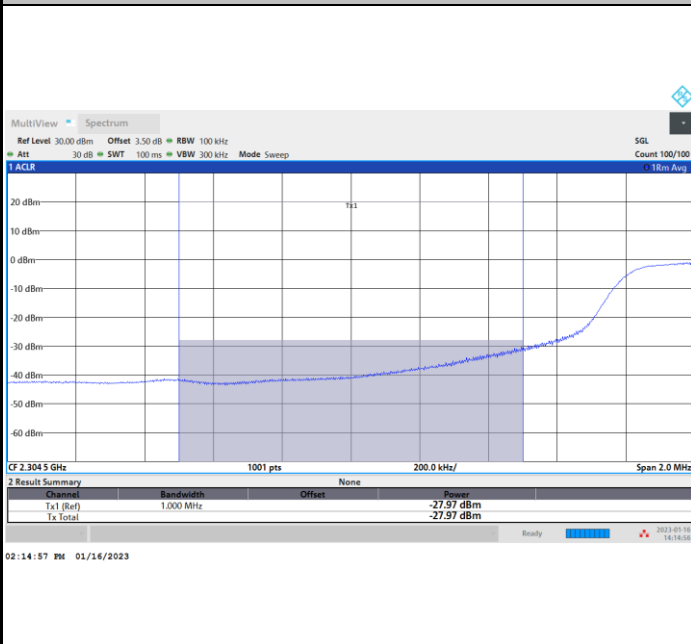


FR1 n30 / 10MHz / DFT-s-OFDM / 256QAM

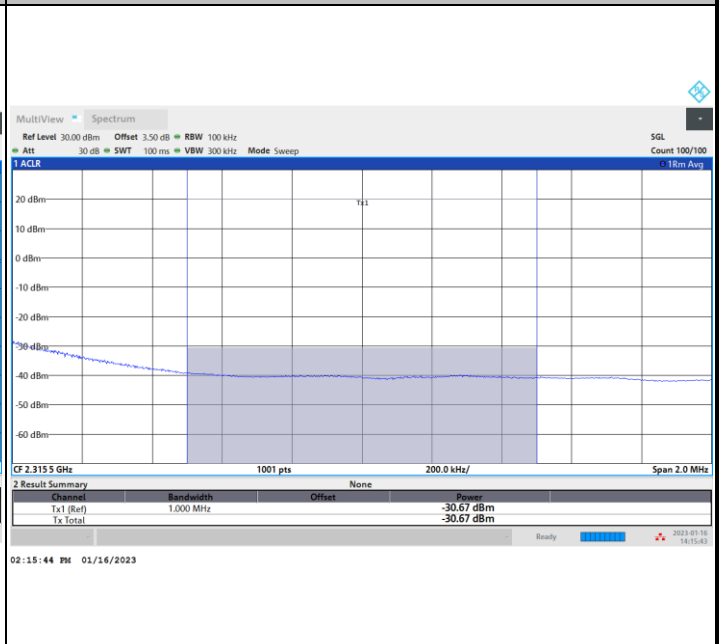
Middle Band Edge / Full RB



Middle Band Edge / Full RB / Lower zoom in



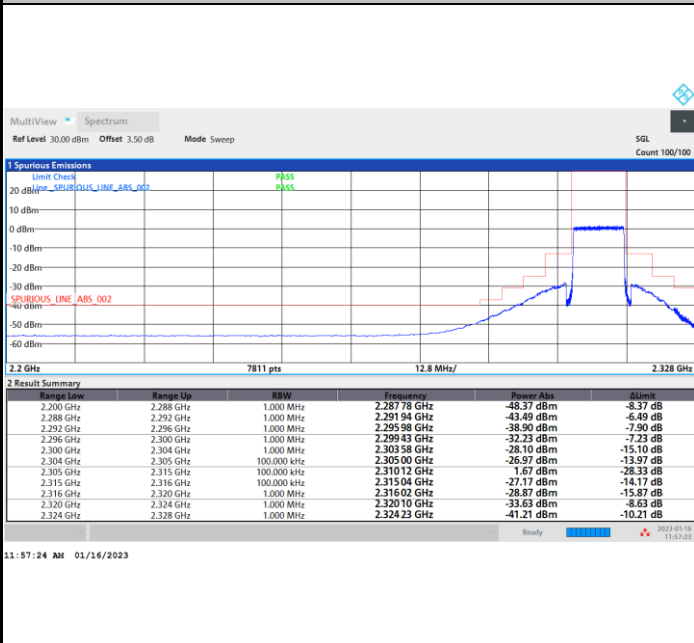
Middle Band Edge / Full RB / Upper zoom in



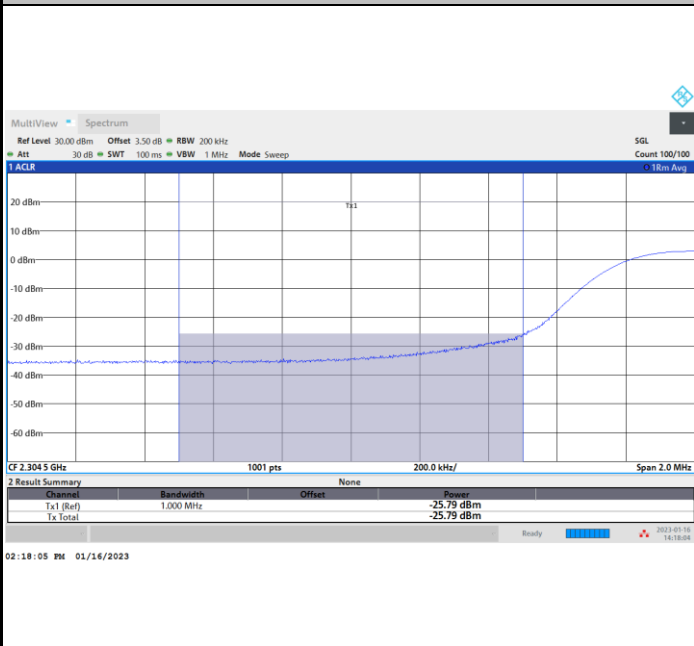


FR1 n30 / 10MHz / CP OFDM / QPSK / Full RB

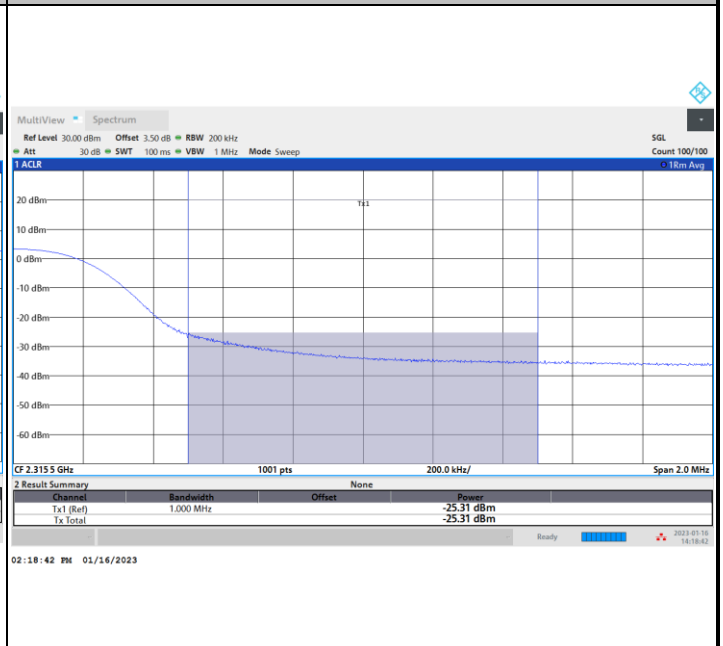
Middle Band Edge / Full RB



Middle Band Edge / Full RB / Lower zoom in



Middle Band Edge / Full RB / Upper zoom in



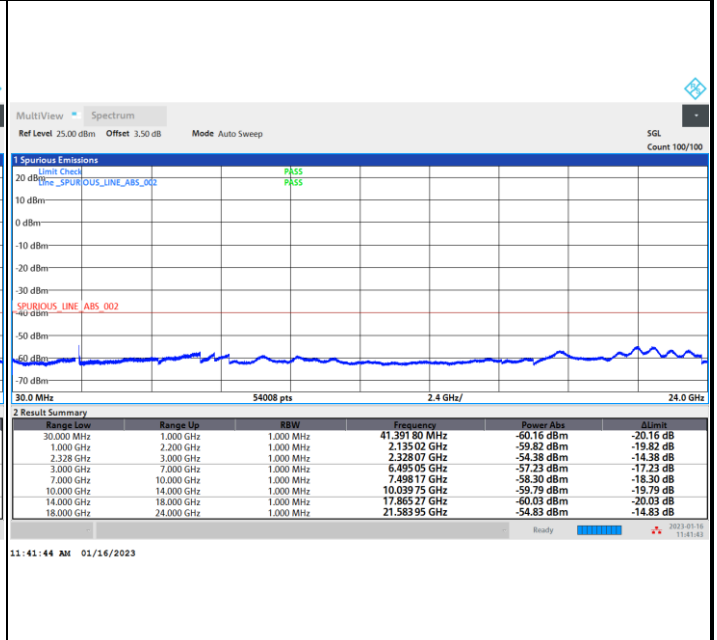
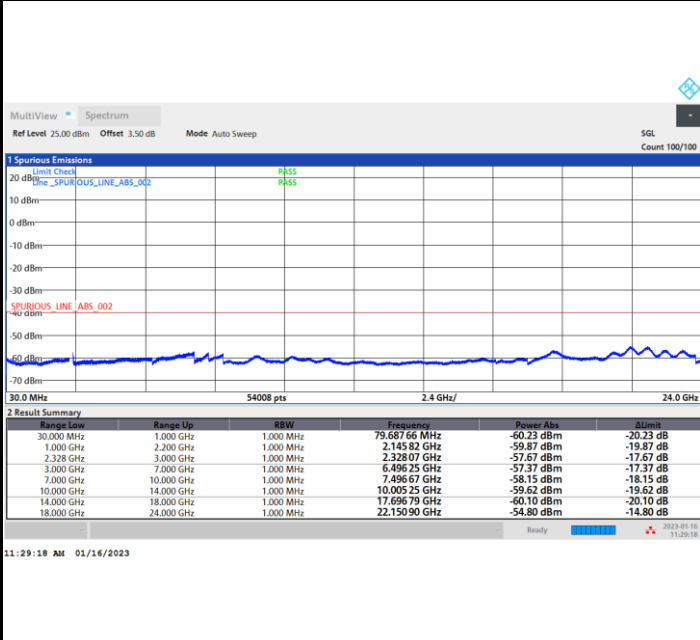


# Conducted Spurious Emission

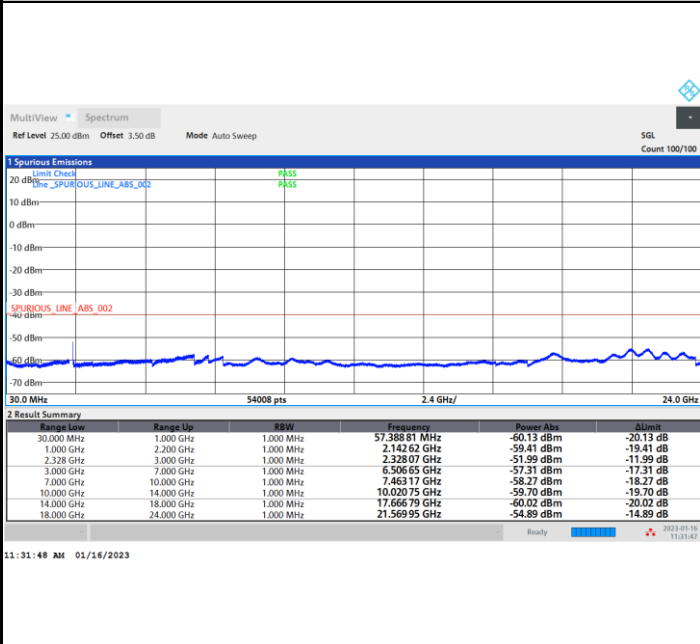
FR1 n30 / 5MHz / DFT-S OFDM / QPSK / 1RB1

## Lowest Channel

## Middle Channel



## Highest Channel





### Frequency Stability

Test Conditions		FR1 n30 (BPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0009	PASS
40	Normal Voltage	0.0012	
30	Normal Voltage	0.0071	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0048	
0	Normal Voltage	0.0007	
-10	Normal Voltage	0.0068	
-20	Normal Voltage	0.0059	
-30	Normal Voltage	0.0069	
20	Maximum Voltage	0.0073	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0069	

**Note:**

1. Normal Voltage = 3.88 V. ; Battery End Point (BEP) = 3.6 V. ; Maximum Voltage = 4.4 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



# FR1 n38

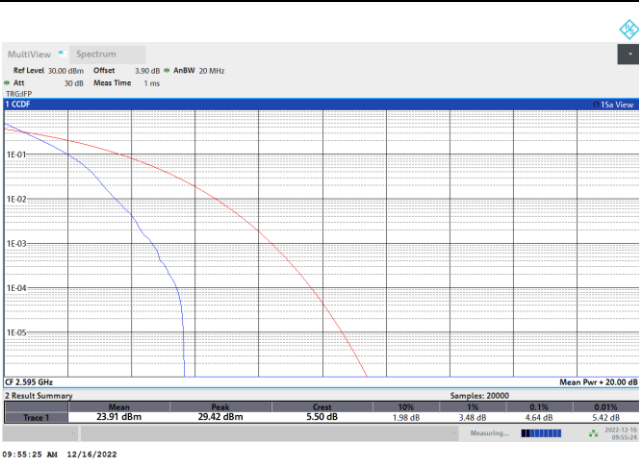
## Peak-to-Average Ratio

Mode	FR1 n38 / 20MHz / DFT-S OFDM				
Mod.	PI/2 BPSK	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	4.64	5.74	6.20	6.20	PASS
Mode	FR1 n38 / 20MHz / DFT-S OFDM				
Mod.	256QAM				Limit: 13dB
RB Size	Full RB				Result
Middle CH	6.88				PASS

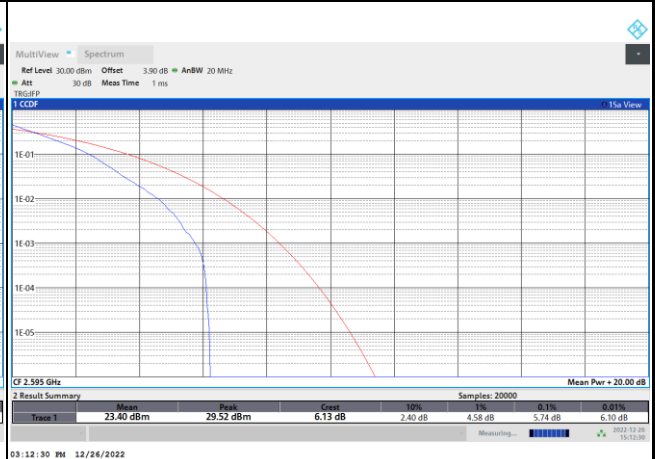


FR1 n38 / 20MHz / DFT-S OFDM / Middle Channel / Full RB

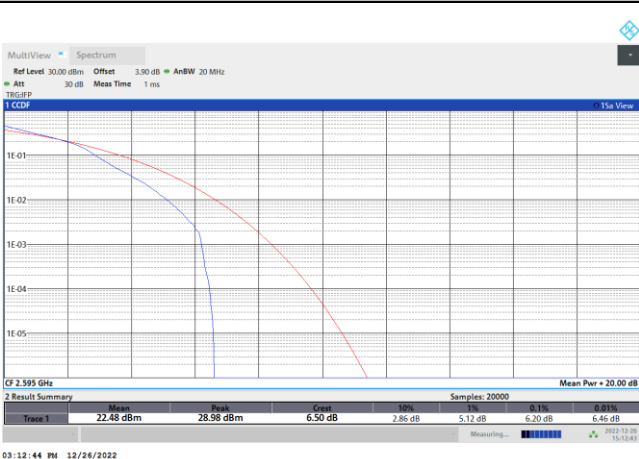
PI/2 BPSK



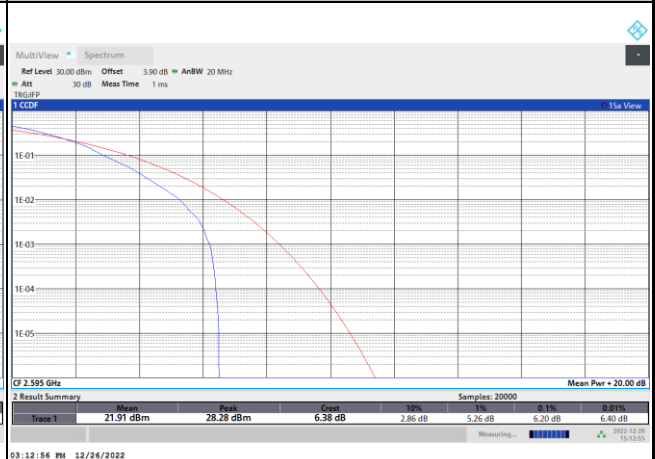
QPSK



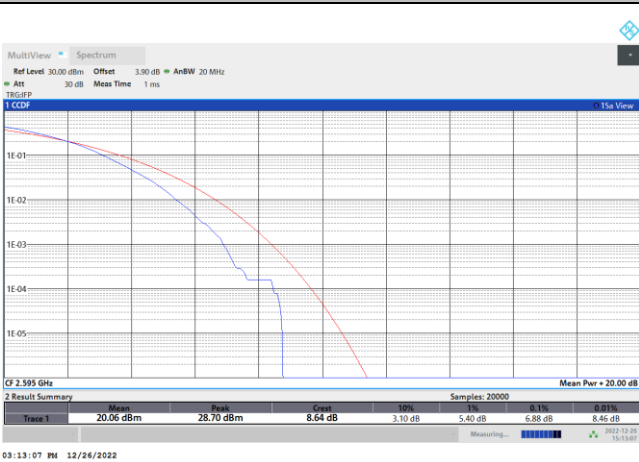
16QAM



64QAM



256QAM





**26dB Bandwidth**

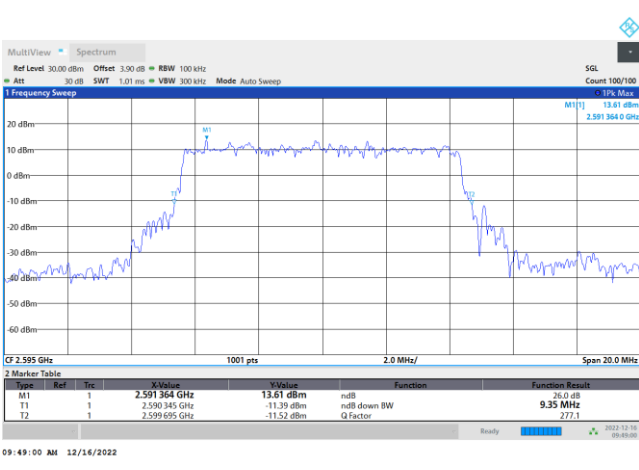
Mode	FR1 n38 : 26dB BW(MHz) / DFT-S OFDM						
BW	10MHz	15MHz	20MHz				
Mod.	PI/2 BPSK	PI/2 BPSK	PI/2 BPSK				
Middle CH	9.35	14.03	18.74				

Mode	FR1 n38 : 26dB BW(MHz) / CP OFDM						
BW	10MHz		15MHz		20MHz		
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	
Middle CH	8.93	9.11	14.60	14.66	19.34	19.06	
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	
Middle CH	9.23	9.19	14.33	14.39	19.26	19.26	



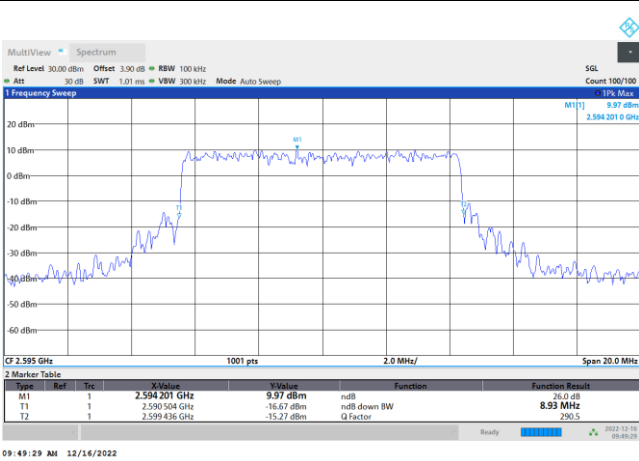
FR1 n38 / 10MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

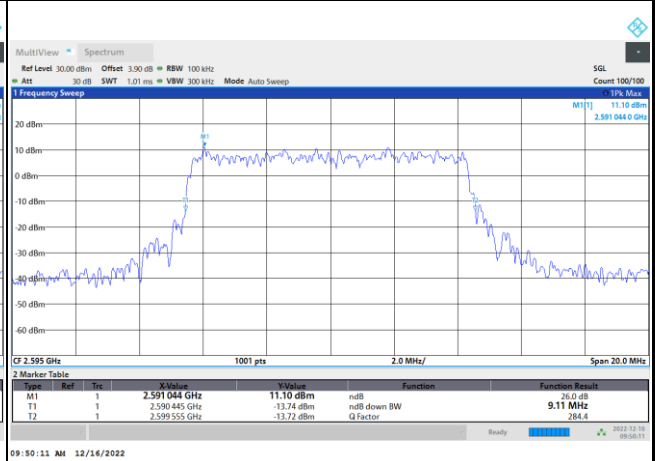


FR1 n38 / 10MHz / CP OFDM / Middle Channel / Full RB

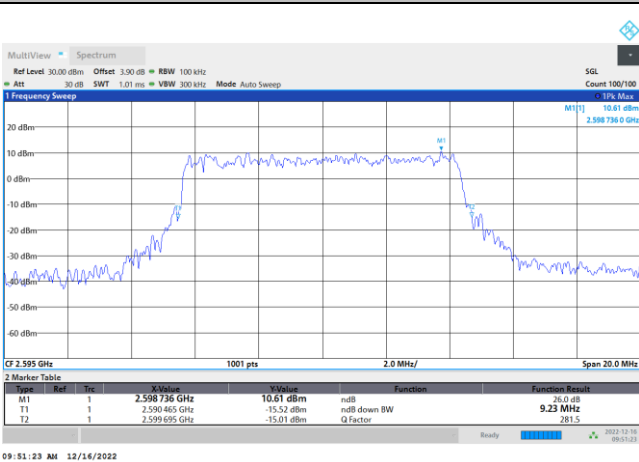
QPSK



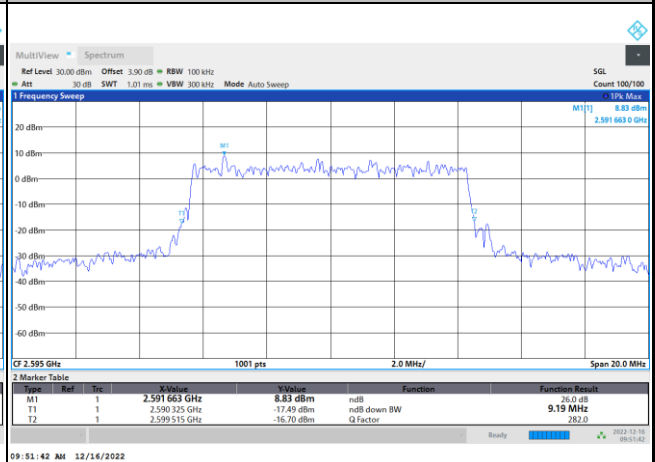
16QAM



64QAM



256QAM

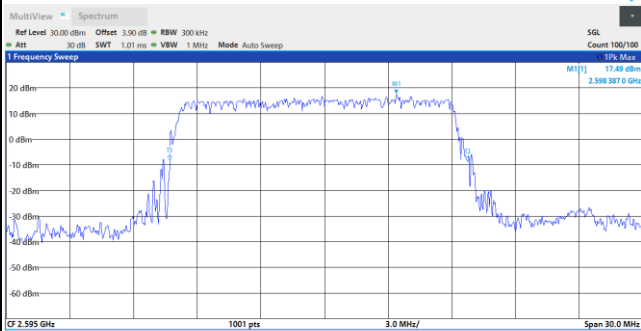






FR1 n38 / 15MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

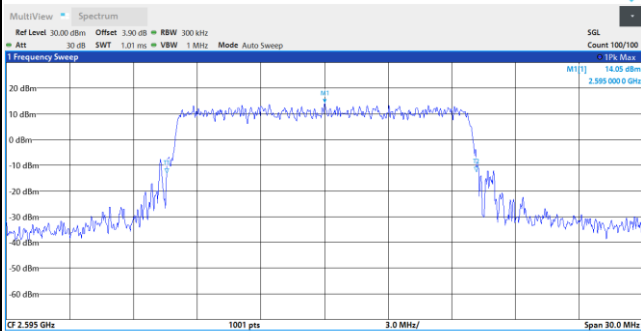


Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1	1		2.598387 GHz	17.49 dBm	n/dB	26.0 dB
T1	1		2.587717 GHz	-8.49 dBm	n/dB down BW	14.03 MHz
T2	1		2.601743 GHz	-8.99 dBm	Q Factor	165.3

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FR1 n38 / 15MHz / CP OFDM / Middle Channel / Full RB

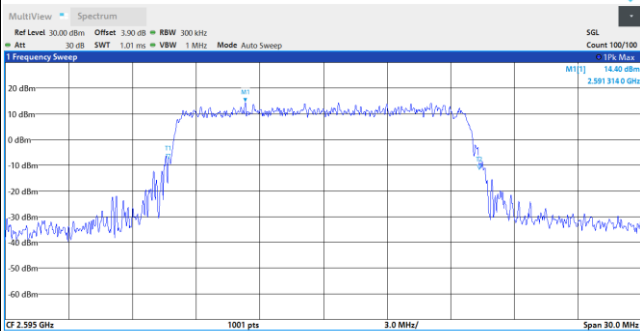
QPSK



Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1	1		2.595 GHz	14.05 dBm	n/dB	26.0 dB
T1	1		2.587567 GHz	-13.08 dBm	n/dB down BW	14.60 MHz
T2	1		2.60163 GHz	-12.42 dBm	Q Factor	177.8

09:53:14 AM 12/14/2022

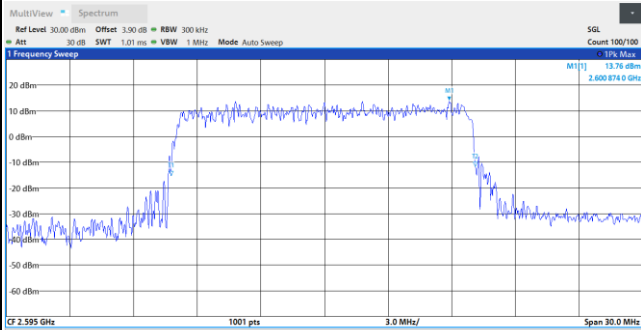
16QAM



Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1	1		2.591314 GHz	14.40 dBm	n/dB	26.0 dB
T1	1		2.587687 GHz	-7.47 dBm	n/dB down BW	14.65 MHz
T2	1		2.602343 GHz	-11.70 dBm	Q Factor	176.8

09:52:50 AM 12/14/2022

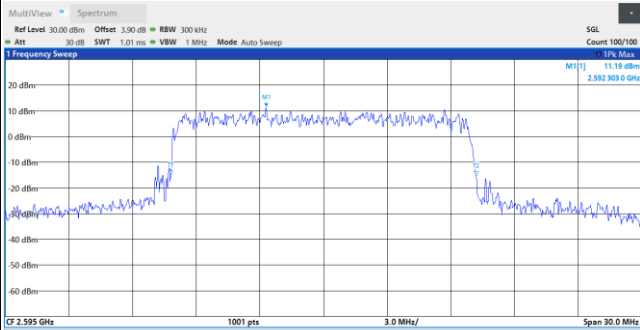
64QAM



Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1	1		2.600874 GHz	13.76 dBm	n/dB	26.0 dB
T1	1		2.587777 GHz	-15.31 dBm	n/dB down BW	14.33 MHz
T2	1		2.602103 GHz	-11.64 dBm	Q Factor	181.8

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256QAM



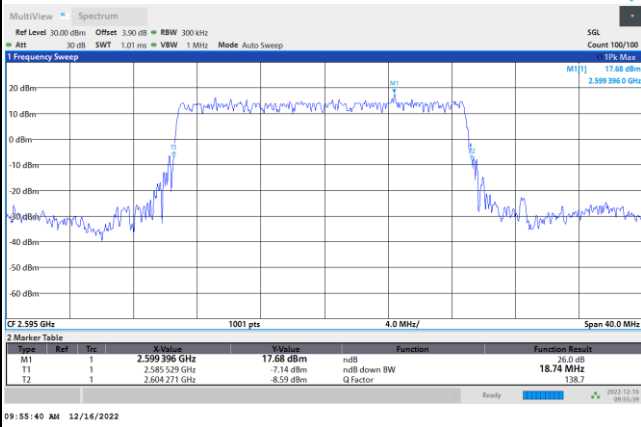
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1	1		2.592303 GHz	11.19 dBm	n/dB	26.0 dB
T1	1		2.587807 GHz	-15.05 dBm	n/dB down BW	14.39 MHz
T2	1		2.602193 GHz	-15.42 dBm	Q Factor	180.2

09:52:10 AM 12/14/2022



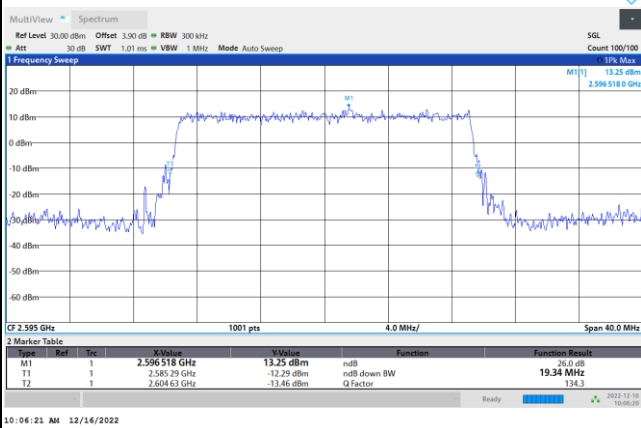
FR1 n38 / 20MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

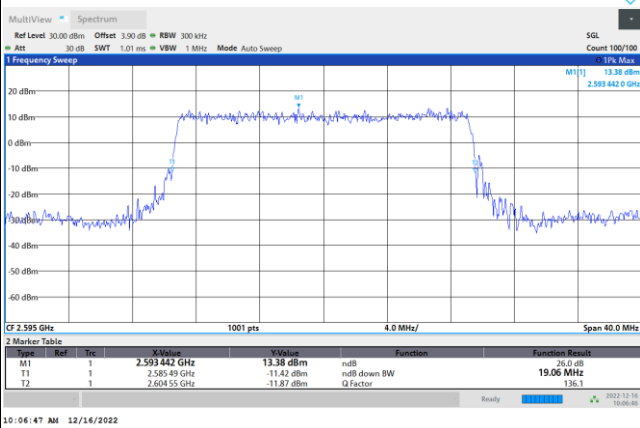


FR1 n38 / 20MHz / CP OFDM / Middle Channel / Full RB

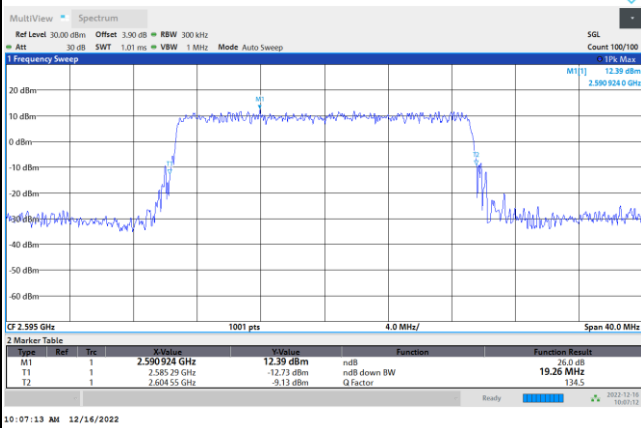
QPSK



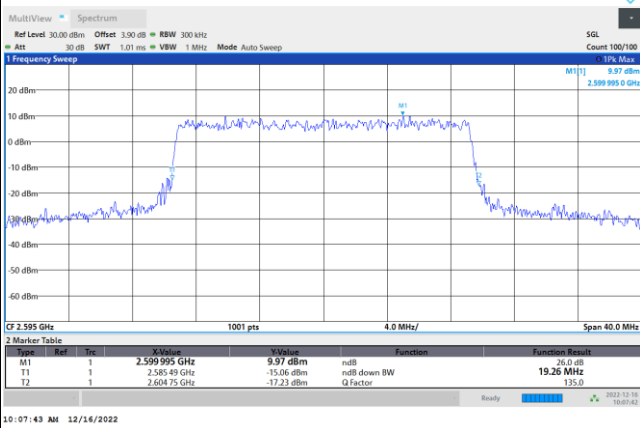
16QAM



64QAM



256QAM





### Occupied Bandwidth

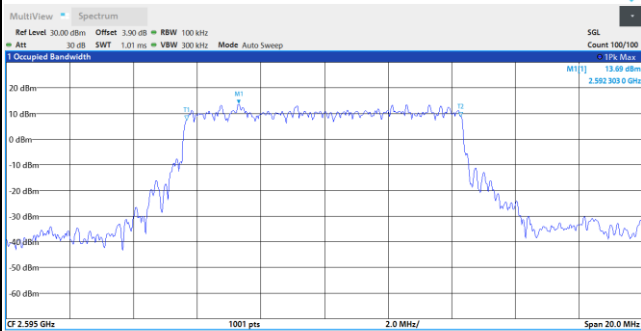
Mode	FR1 n38 : OB BW(MHz) / DFT-S OFDM						
BW	10MHz	15MHz	20MHz				
Mod.	PI/2 BPSK	PI/2 BPSK	PI/2 BPSK				
Middle CH	8.61	12.92	17.90				

Mode	FR1 n38 : OB BW(MHz) / CP OFDM						
BW	10MHz		15MHz		20MHz		
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	
Middle CH	8.56	8.55	13.61	13.61	18.27	18.26	
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	
Middle CH	8.59	8.57	13.57	13.61	18.24	18.29	



FR1 n38 / 10MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

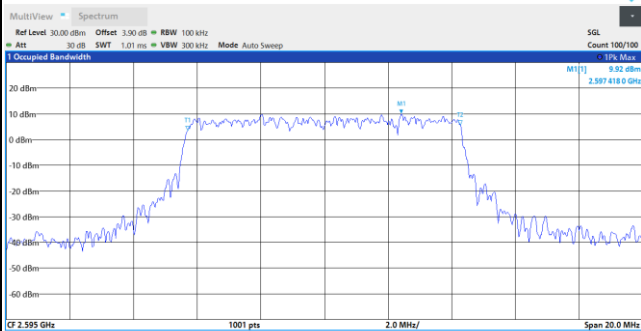


Type	Ref	Tic	X-Value	Y-Value	Function	Function Result
M1	1		2.592303 GHz	13.69 dBm	Occ Bw	8.612956432 MHz
T1	1		2.5906732 GHz	7.40 dBm	Occ Bw Centroid	2.594979655 GHz
T2	1		2.5992861 GHz	8.84 dBm	Occ Bw Freq Offset	-20.345255537 kHz

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FR1 n38 / 10MHz / CP OFDM / Middle Channel / Full RB

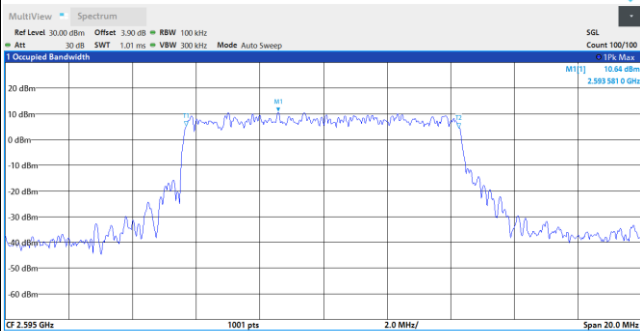
QPSK



Type	Ref	Tic	X-Value	Y-Value	Function	Function Result
M1	1		2.597418 GHz	9.92 dBm	Occ Bw	8.569716517 MHz
T1	1		2.5907809 GHz	3.58 dBm	Occ Bw Centroid	2.594985783 GHz
T2	1		2.5992706 GHz	5.66 dBm	Occ Bw Freq Offset	-14.21701551 kHz

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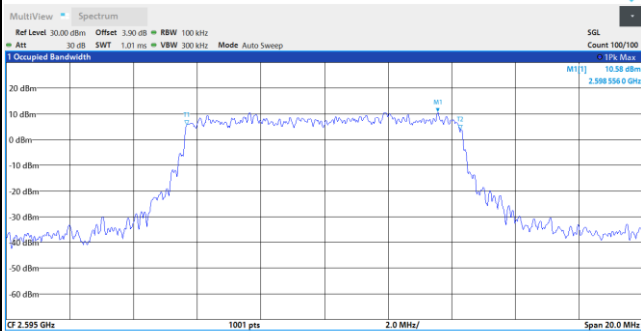
16QAM



Type	Ref	Tic	X-Value	Y-Value	Function	Function Result
M1	1		2.599381 GHz	10.64 dBm	Occ Bw	8.559238469 MHz
T1	1		2.5906925 GHz	5.16 dBm	Occ Bw Centroid	2.59497213 GHz
T2	1		2.5992517 GHz	4.55 dBm	Occ Bw Freq Offset	-27.869828021 kHz

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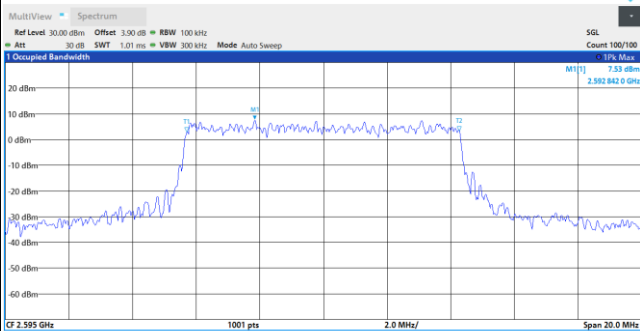
64QAM



Type	Ref	Tic	X-Value	Y-Value	Function	Function Result
M1	1		2.598556 GHz	10.58 dBm	Occ Bw	8.595627194 MHz
T1	1		2.5906725 GHz	5.63 dBm	Occ Bw Centroid	2.594970347 GHz
T2	1		2.5992682 GHz	3.82 dBm	Occ Bw Freq Offset	-29.653060186 kHz

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256QAM



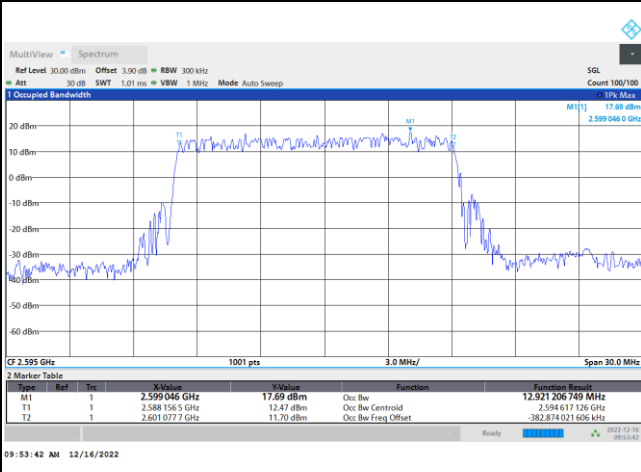
Type	Ref	Tic	X-Value	Y-Value	Function	Function Result
M1	1		2.597842 GHz	7.53 dBm	Occ Bw	8.573277757 MHz
T1	1		2.590696 GHz	2.90 dBm	Occ Bw Centroid	2.594982604 GHz
T2	1		2.5992692 GHz	3.31 dBm	Occ Bw Freq Offset	-17.395903122 kHz

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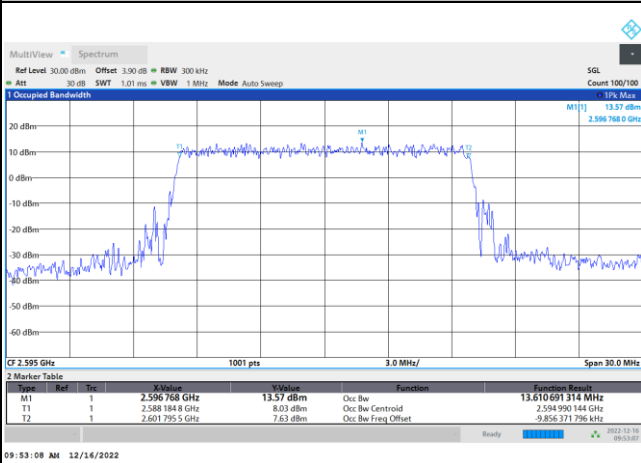
FR1 n38 / 15MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

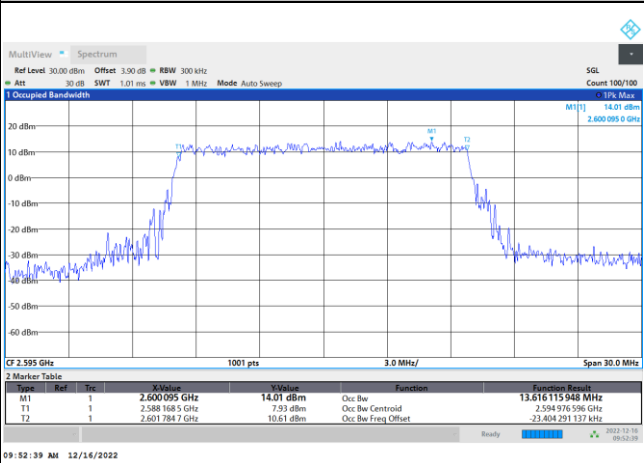


FR1 n38 / 15MHz / CP OFDM / Middle Channel / Full RB

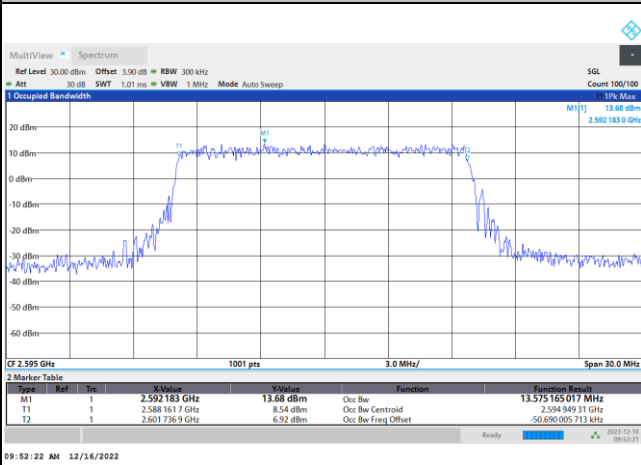
QPSK



16QAM



64QAM



256QAM

