11.2.5 Block edge compliance

Description:

The spectrum at the band edges must comply with the spurious emissions limits.

Measurement:

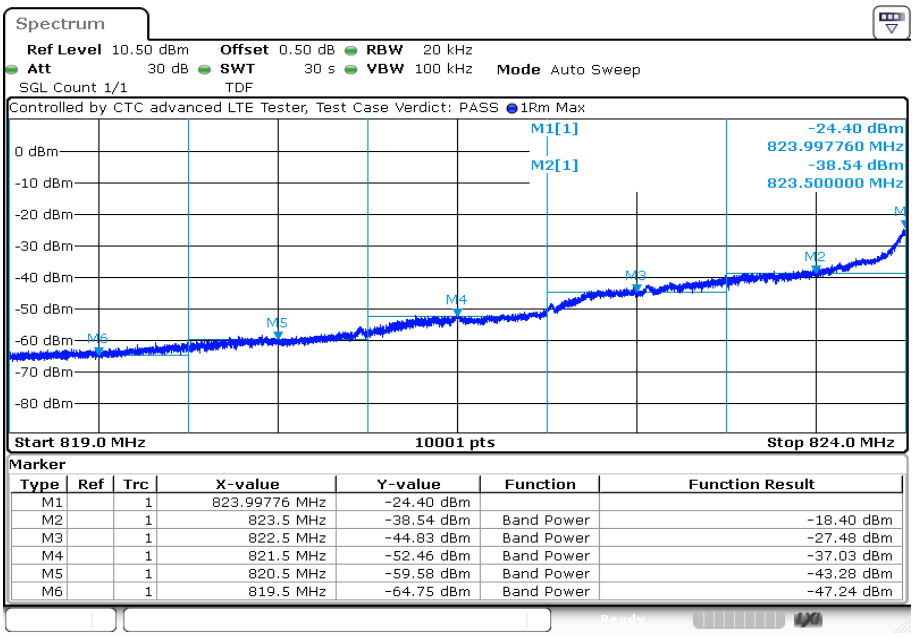
Measurement parameters	
Detector:	RMS
Sweep time:	30s
Resolution bandwidth:	> 1% of the emission bandwidth
Video bandwidth:	> 3xRBW
Span:	5 MHz
Trace mode:	Max Hold
Measurement function:	1 MHz band power
Used equipment:	See chapter 7.2 setup A
Measurement uncertainty:	See chapter 8
Measurement procedure:	FCC: § 2.1051

Limits:

FCC
§ 22.917(a) & (b)
(a) The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least **43 + 10 log(P) dB**. (b)(1) In the spectrum below 1 GHz, instrumentation should employ a reference bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block, a RBW of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy, provided that the measured power is integrated over the full required reference bandwidth (i.e., 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. (b)(2) In the spectrum above 1 GHz, instrumentation should employ a reference bandwidth of 1 MHz.
-13 dBm Correction factor according to KDB 890810 if RBW < 1 % emission bandwidth: ☒N/A here ☐10 log (RBW1/RBW2) = X dB; whereas: RBW1 = Y, RBW2 = Z

Results:

Plot 1: 1.4 MHz – QPSK - Lowest channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	823.99776 MHz	-24.40 dBm		
M2		1	823.5 MHz	-38.54 dBm	Band Power	-18.40 dBm
M3		1	822.5 MHz	-44.83 dBm	Band Power	-27.48 dBm
M4		1	821.5 MHz	-52.46 dBm	Band Power	-37.03 dBm
M5		1	820.5 MHz	-59.58 dBm	Band Power	-43.28 dBm
M6		1	819.5 MHz	-64.75 dBm	Band Power	-47.24 dBm

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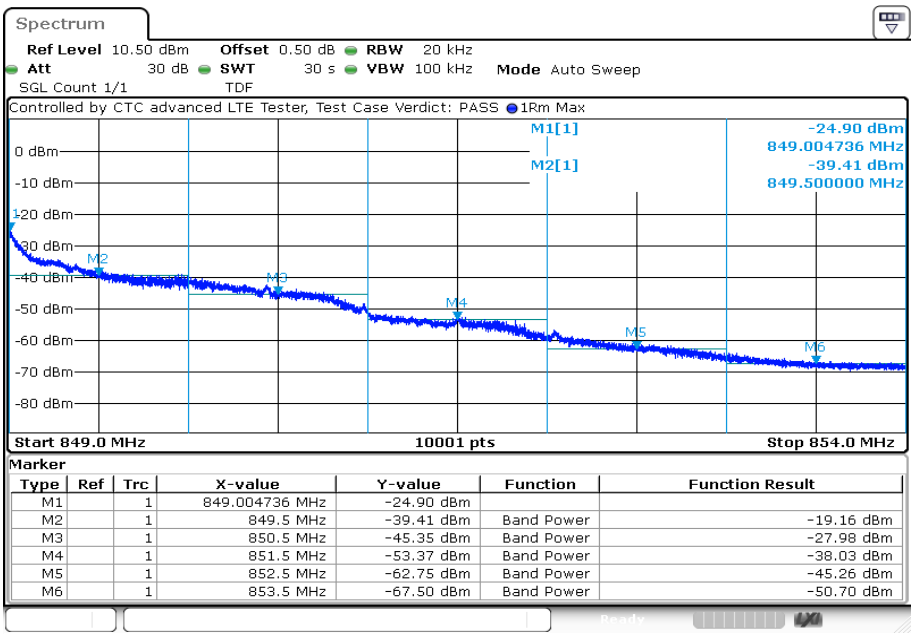
Plot 2: 1.4 MHz – QPSK - Highest channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	849.004736 MHz	-24.90 dBm		
M2		1	849.5 MHz	-39.41 dBm	Band Power	-19.16 dBm
M3		1	850.5 MHz	-45.35 dBm	Band Power	-27.98 dBm
M4		1	851.5 MHz	-53.37 dBm	Band Power	-38.03 dBm
M5		1	852.5 MHz	-62.75 dBm	Band Power	-45.26 dBm
M6		1	853.5 MHz	-67.50 dBm	Band Power	-50.70 dBm

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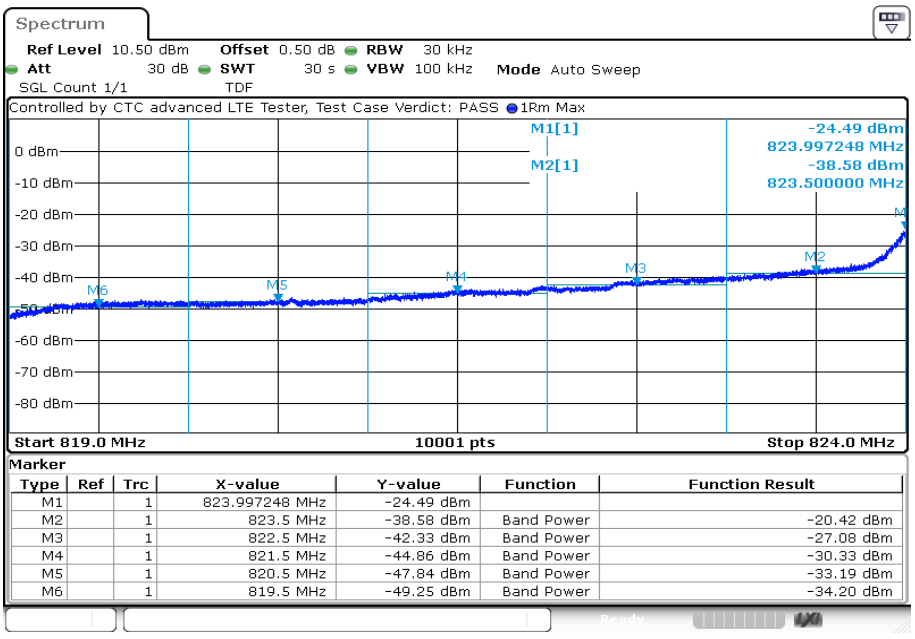
Plot 3: 3 MHz – QPSK - Lowest channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	823.997248 MHz	-24.49 dBm		
M2		1	823.5 MHz	-38.58 dBm	Band Power	-20.42 dBm
M3		1	822.5 MHz	-42.33 dBm	Band Power	-27.08 dBm
M4		1	821.5 MHz	-44.86 dBm	Band Power	-30.33 dBm
M5		1	820.5 MHz	-47.84 dBm	Band Power	-33.19 dBm
M6		1	819.5 MHz	-49.25 dBm	Band Power	-34.20 dBm

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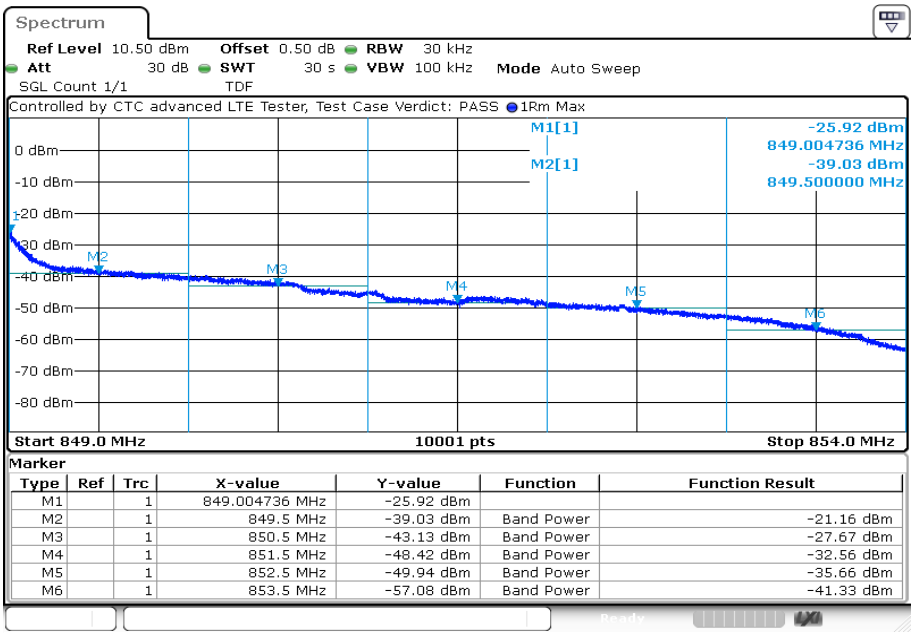
Plot 4: 3 MHz – QPSK - Highest channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	849.004736 MHz	-25.92 dBm		
M2		1	849.5 MHz	-39.03 dBm	Band Power	-21.16 dBm
M3		1	850.5 MHz	-43.13 dBm	Band Power	-27.67 dBm
M4		1	851.5 MHz	-48.42 dBm	Band Power	-32.56 dBm
M5		1	852.5 MHz	-49.94 dBm	Band Power	-35.66 dBm
M6		1	853.5 MHz	-57.08 dBm	Band Power	-41.33 dBm

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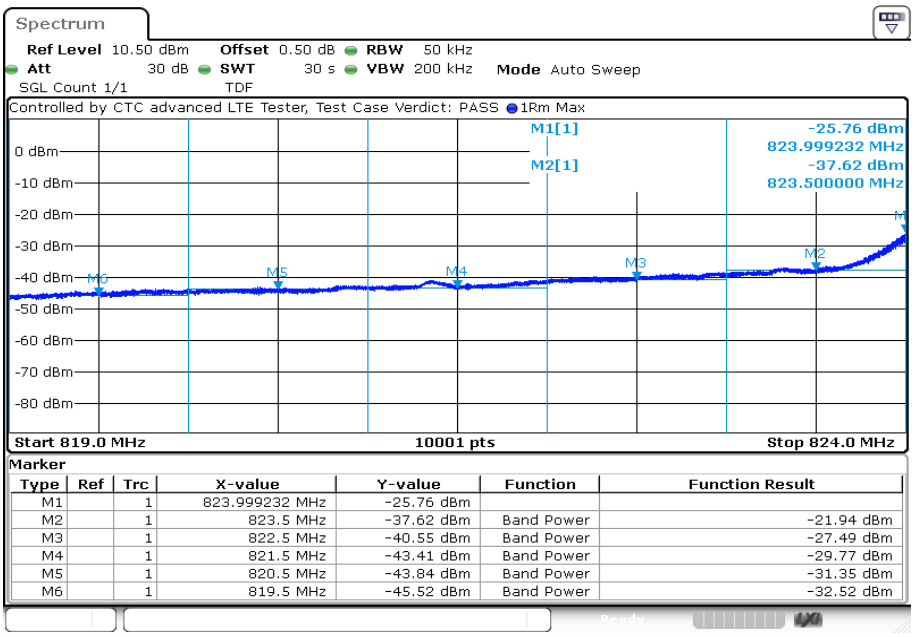
Plot 5: 5 MHz – QPSK - Lowest channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	823.999232 MHz	-25.76 dBm		
M2		1	823.5 MHz	-37.62 dBm	Band Power	-21.94 dBm
M3		1	822.5 MHz	-40.55 dBm	Band Power	-27.49 dBm
M4		1	821.5 MHz	-43.41 dBm	Band Power	-29.77 dBm
M5		1	820.5 MHz	-43.84 dBm	Band Power	-31.35 dBm
M6		1	819.5 MHz	-45.52 dBm	Band Power	-32.52 dBm

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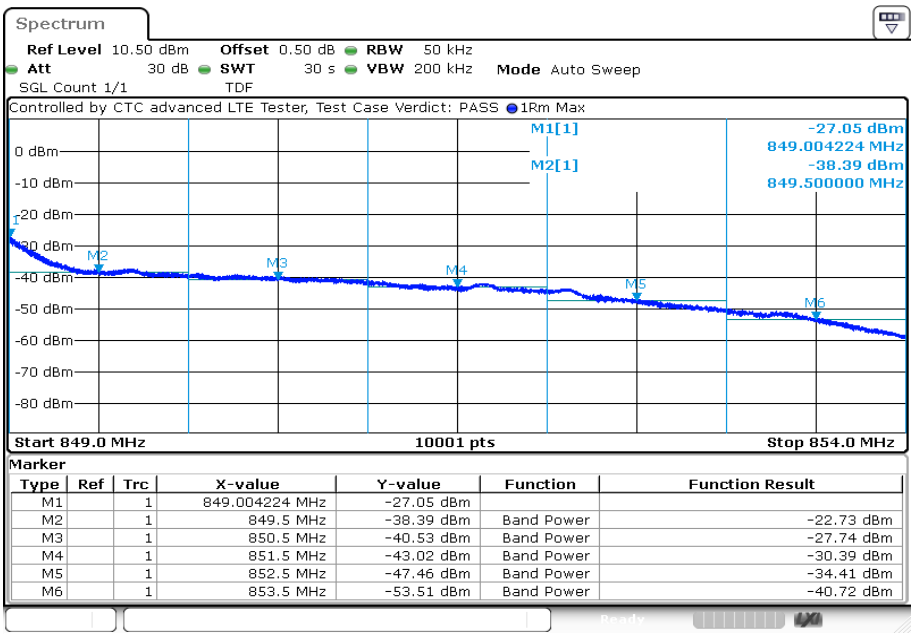
Plot 6: 5 MHz – QPSK - Highest channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	849.004224 MHz	-27.05 dBm		
M2		1	849.5 MHz	-38.39 dBm	Band Power	-22.73 dBm
M3		1	850.5 MHz	-40.53 dBm	Band Power	-27.74 dBm
M4		1	851.5 MHz	-43.02 dBm	Band Power	-30.39 dBm
M5		1	852.5 MHz	-47.46 dBm	Band Power	-34.41 dBm
M6		1	853.5 MHz	-53.51 dBm	Band Power	-40.72 dBm

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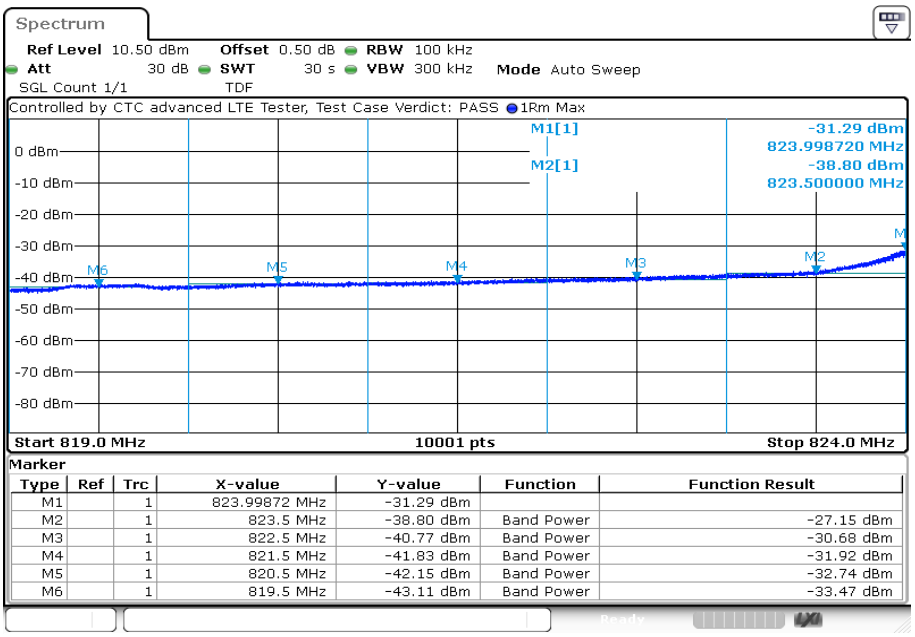
Plot 7: 10 MHz – QPSK - Lowest channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	823.99872 MHz	-31.29 dBm		
M2		1	823.5 MHz	-38.80 dBm	Band Power	-27.15 dBm
M3		1	822.5 MHz	-40.77 dBm	Band Power	-30.68 dBm
M4		1	821.5 MHz	-41.83 dBm	Band Power	-31.92 dBm
M5		1	820.5 MHz	-42.15 dBm	Band Power	-32.74 dBm
M6		1	819.5 MHz	-43.11 dBm	Band Power	-33.47 dBm

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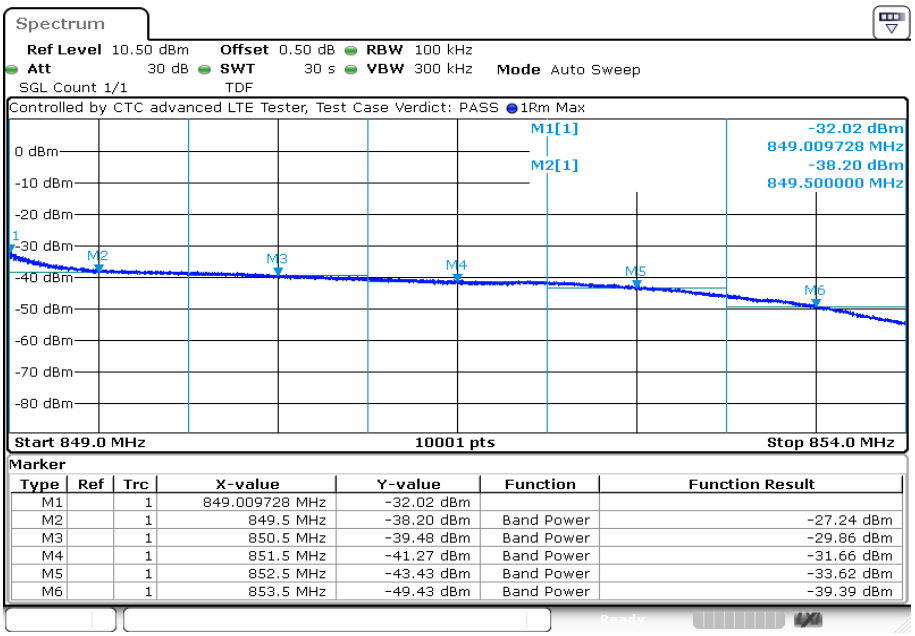
Plot 8: 10 MHz – QPSK - Highest channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	849.009728 MHz	-32.02 dBm		
M2		1	849.5 MHz	-38.20 dBm	Band Power	-27.24 dBm
M3		1	850.5 MHz	-39.48 dBm	Band Power	-29.86 dBm
M4		1	851.5 MHz	-41.27 dBm	Band Power	-31.66 dBm
M5		1	852.5 MHz	-43.43 dBm	Band Power	-33.62 dBm
M6		1	853.5 MHz	-49.43 dBm	Band Power	-39.39 dBm

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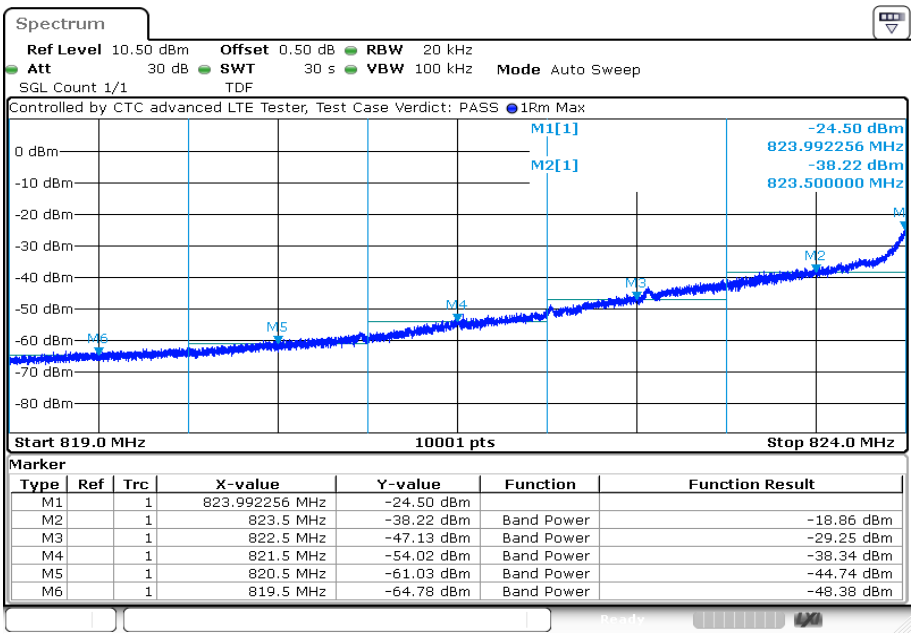
Plot 9: 1.4 MHz – 16-QAM - Lowest channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	823.992256 MHz	-24.50 dBm		
M2		1	823.5 MHz	-38.22 dBm	Band Power	-18.86 dBm
M3		1	822.5 MHz	-47.13 dBm	Band Power	-29.25 dBm
M4		1	821.5 MHz	-54.02 dBm	Band Power	-38.34 dBm
M5		1	820.5 MHz	-61.03 dBm	Band Power	-44.74 dBm
M6		1	819.5 MHz	-64.78 dBm	Band Power	-48.38 dBm

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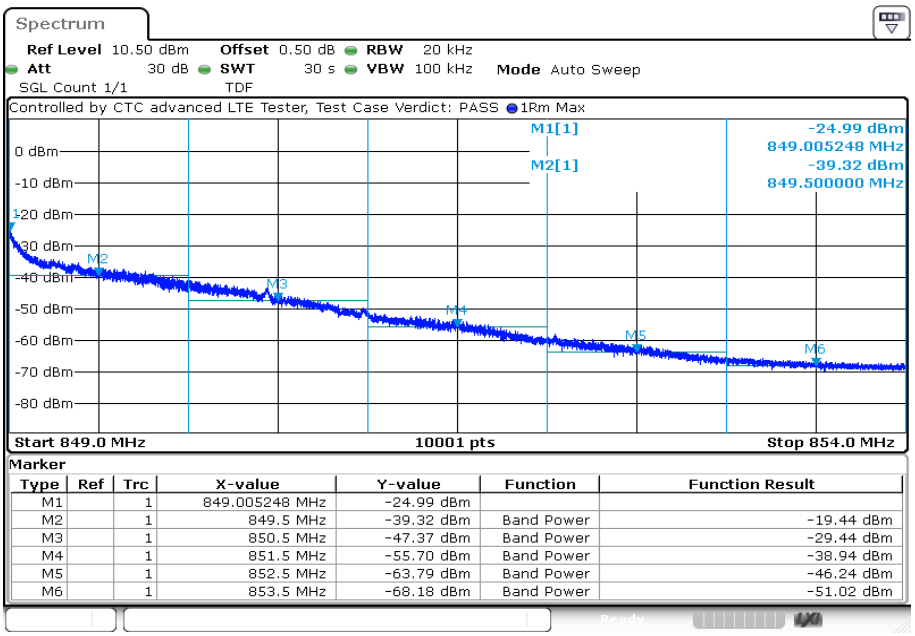
Plot 10: 1.4 MHz – 16-QAM - Highest channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	849.005248 MHz	-24.99 dBm		
M2		1	849.5 MHz	-39.32 dBm	Band Power	-19.44 dBm
M3		1	850.5 MHz	-47.37 dBm	Band Power	-29.44 dBm
M4		1	851.5 MHz	-55.70 dBm	Band Power	-38.94 dBm
M5		1	852.5 MHz	-63.79 dBm	Band Power	-46.24 dBm
M6		1	853.5 MHz	-68.18 dBm	Band Power	-51.02 dBm

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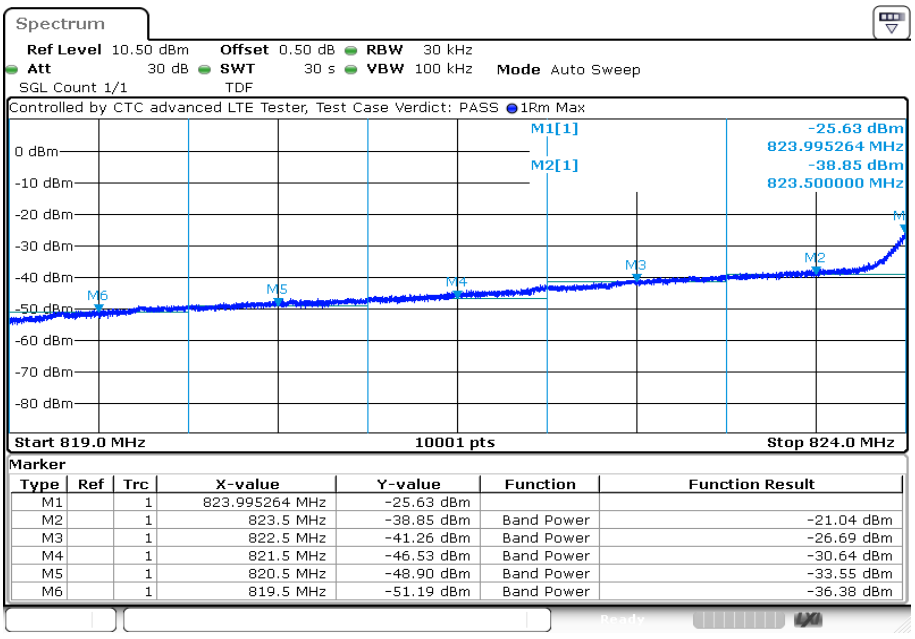
Plot 11: 3 MHz – 16-QAM - Lowest channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	823.995264 MHz	-25.63 dBm		
M2		1	823.5 MHz	-38.85 dBm	Band Power	-21.04 dBm
M3		1	822.5 MHz	-41.26 dBm	Band Power	-26.69 dBm
M4		1	821.5 MHz	-46.53 dBm	Band Power	-30.64 dBm
M5		1	820.5 MHz	-48.90 dBm	Band Power	-33.55 dBm
M6		1	819.5 MHz	-51.19 dBm	Band Power	-36.38 dBm

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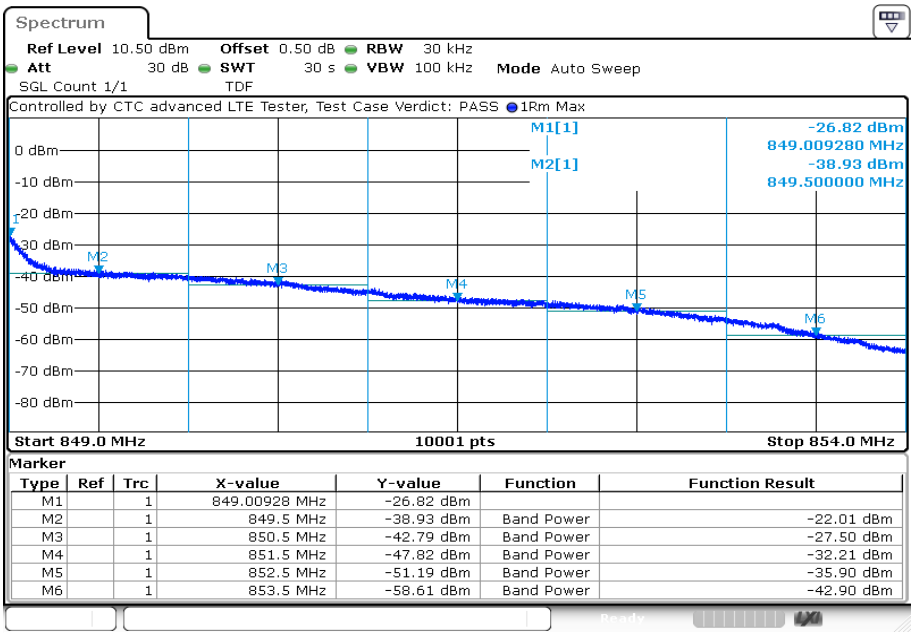
Plot 12: 3 MHz – 16-QAM - Highest channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	849.00928 MHz	-26.82 dBm		
M2		1	849.5 MHz	-38.93 dBm	Band Power	-22.01 dBm
M3		1	850.5 MHz	-42.79 dBm	Band Power	-27.50 dBm
M4		1	851.5 MHz	-47.82 dBm	Band Power	-32.21 dBm
M5		1	852.5 MHz	-51.19 dBm	Band Power	-35.90 dBm
M6		1	853.5 MHz	-58.61 dBm	Band Power	-42.90 dBm

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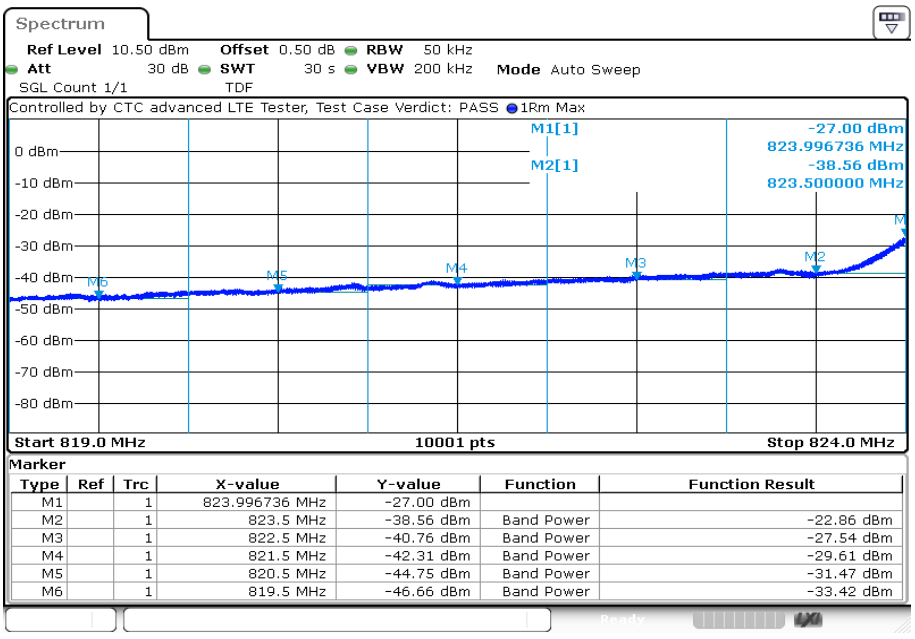
Plot 13: 5 MHz – 16-QAM - Lowest channel

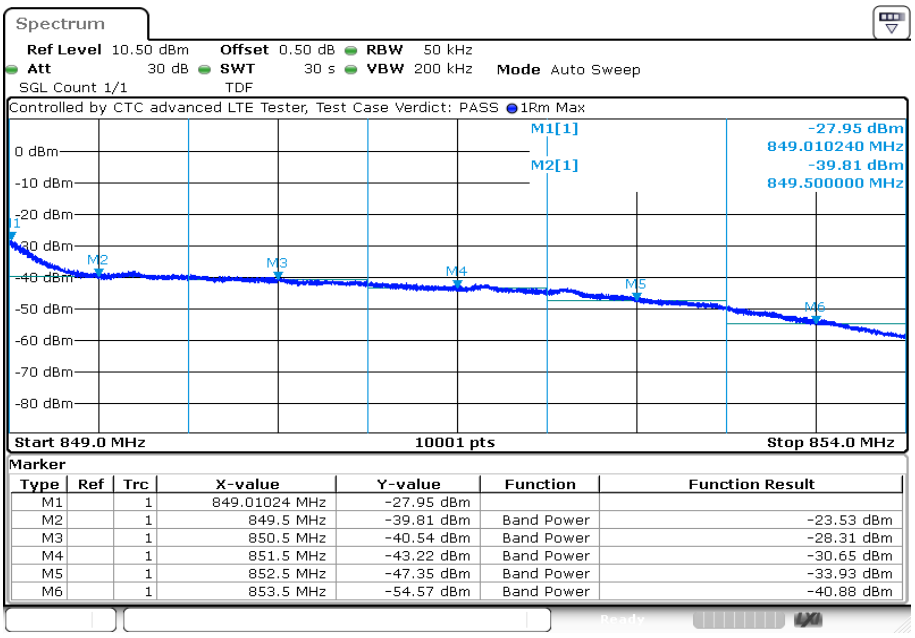


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	823.996736 MHz	-27.00 dBm		
M2		1	823.5 MHz	-38.56 dBm	Band Power	-22.86 dBm
M3		1	822.5 MHz	-40.76 dBm	Band Power	-27.54 dBm
M4		1	821.5 MHz	-42.31 dBm	Band Power	-29.61 dBm
M5		1	820.5 MHz	-44.75 dBm	Band Power	-31.47 dBm
M6		1	819.5 MHz	-46.66 dBm	Band Power	-33.42 dBm

Date: 14.NOV.2022 10:40:16

Plot 14: 5 MHz – 16-QAM - Highest channel

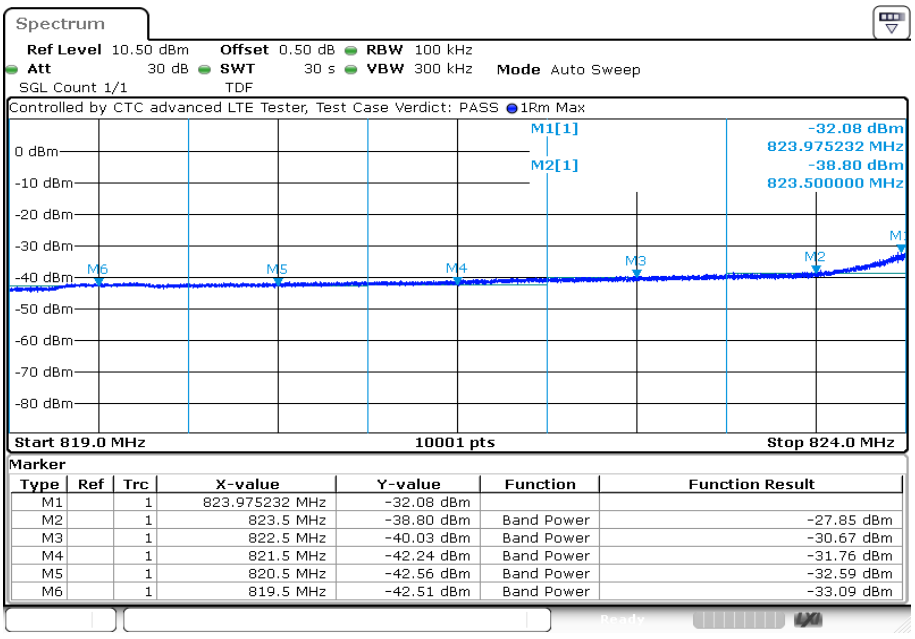


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	849.01024 MHz	-27.95 dBm		
M2		1	849.5 MHz	-39.81 dBm	Band Power	-23.53 dBm
M3		1	850.5 MHz	-40.54 dBm	Band Power	-28.31 dBm
M4		1	851.5 MHz	-43.22 dBm	Band Power	-30.65 dBm
M5		1	852.5 MHz	-47.35 dBm	Band Power	-33.93 dBm
M6		1	853.5 MHz	-54.57 dBm	Band Power	-40.88 dBm

Date: 14.NOV.2022 10:48:46

Plot 15: 10 MHz – 16-QAM - Lowest channel

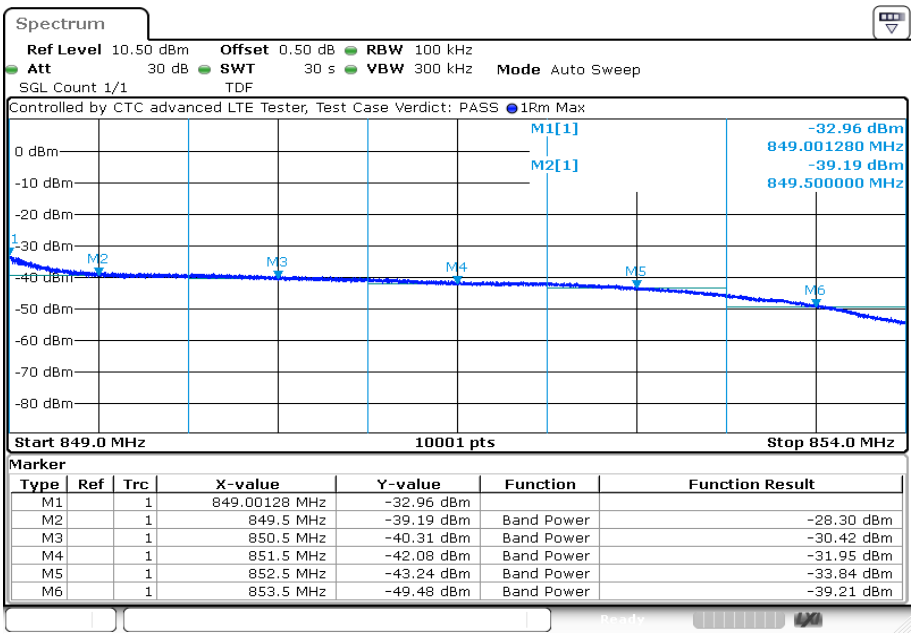


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	823.975232 MHz	-32.08 dBm		
M2		1	823.5 MHz	-38.80 dBm	Band Power	-27.85 dBm
M3		1	822.5 MHz	-40.03 dBm	Band Power	-30.67 dBm
M4		1	821.5 MHz	-42.24 dBm	Band Power	-31.76 dBm
M5		1	820.5 MHz	-42.56 dBm	Band Power	-32.59 dBm
M6		1	819.5 MHz	-42.51 dBm	Band Power	-33.09 dBm

Date: 14.NOV.2022 10:54:01

Plot 16: 10 MHz – 16-QAM - Highest channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	849.00128 MHz	-32.96 dBm		
M2		1	849.5 MHz	-39.19 dBm	Band Power	-28.30 dBm
M3		1	850.5 MHz	-40.31 dBm	Band Power	-30.42 dBm
M4		1	851.5 MHz	-42.08 dBm	Band Power	-31.95 dBm
M5		1	852.5 MHz	-43.24 dBm	Band Power	-33.84 dBm
M6		1	853.5 MHz	-49.48 dBm	Band Power	-39.21 dBm

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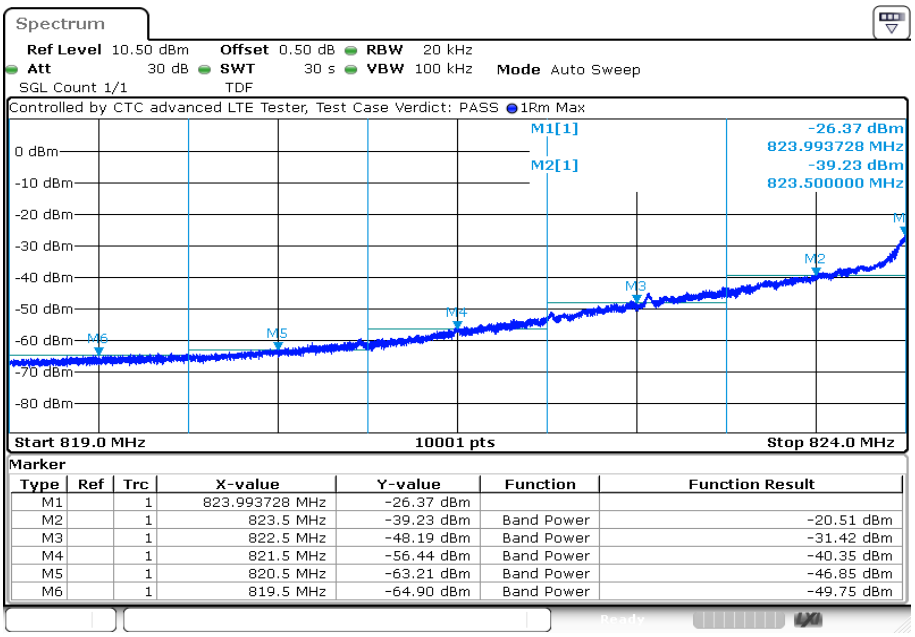
Plot 17: 1.4 MHz – 64-QAM - Lowest channel

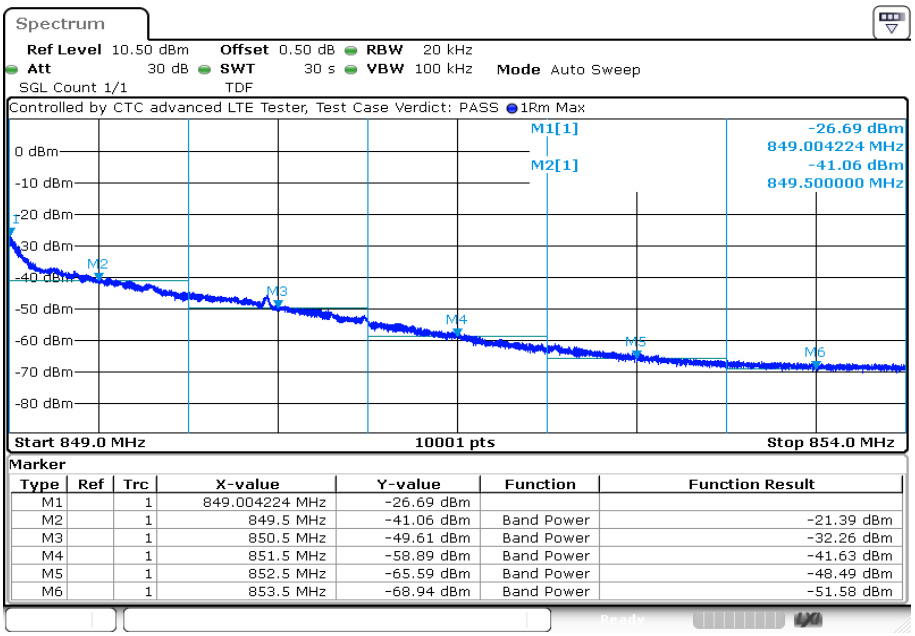


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	823.993728 MHz	-26.37 dBm		
M2		1	823.5 MHz	-39.23 dBm	Band Power	-20.51 dBm
M3		1	822.5 MHz	-48.19 dBm	Band Power	-31.42 dBm
M4		1	821.5 MHz	-56.44 dBm	Band Power	-40.35 dBm
M5		1	820.5 MHz	-63.21 dBm	Band Power	-46.85 dBm
M6		1	819.5 MHz	-64.90 dBm	Band Power	-49.75 dBm

Date: 14.NOV.2022 10:14:27

Plot 18: 1.4 MHz – 64-QAM - Highest channel

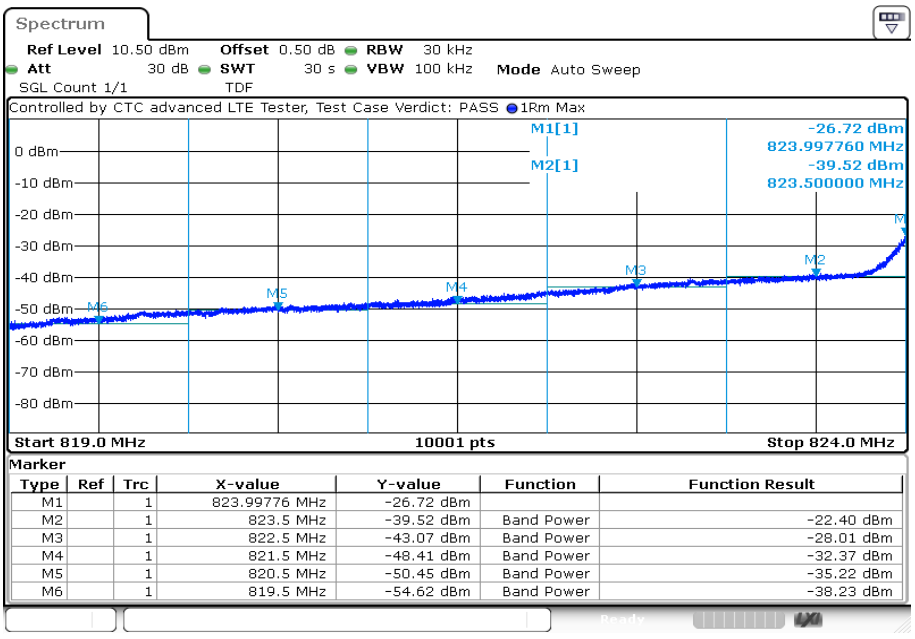


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	849.004224 MHz	-26.69 dBm		
M2		1	849.5 MHz	-41.06 dBm	Band Power	-21.39 dBm
M3		1	850.5 MHz	-49.61 dBm	Band Power	-32.26 dBm
M4		1	851.5 MHz	-58.89 dBm	Band Power	-41.63 dBm
M5		1	852.5 MHz	-65.59 dBm	Band Power	-48.49 dBm
M6		1	853.5 MHz	-68.94 dBm	Band Power	-51.58 dBm

Date: 14.NOV.2022 10:22:56

Plot 19: 3 MHz – 64-QAM - Lowest channel

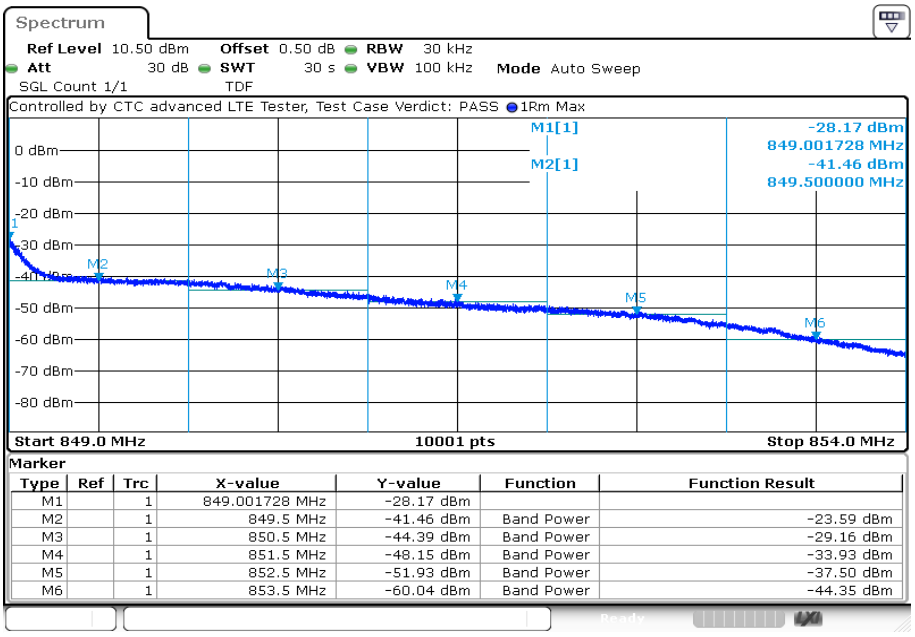


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	823.99776 MHz	-26.72 dBm		
M2		1	823.5 MHz	-39.52 dBm	Band Power	-22.40 dBm
M3		1	822.5 MHz	-43.07 dBm	Band Power	-28.01 dBm
M4		1	821.5 MHz	-48.41 dBm	Band Power	-32.37 dBm
M5		1	820.5 MHz	-50.45 dBm	Band Power	-35.22 dBm
M6		1	819.5 MHz	-54.62 dBm	Band Power	-38.23 dBm

Date: 14.NOV.2022 10:28:11

Plot 20: 3 MHz – 64-QAM - Highest channel

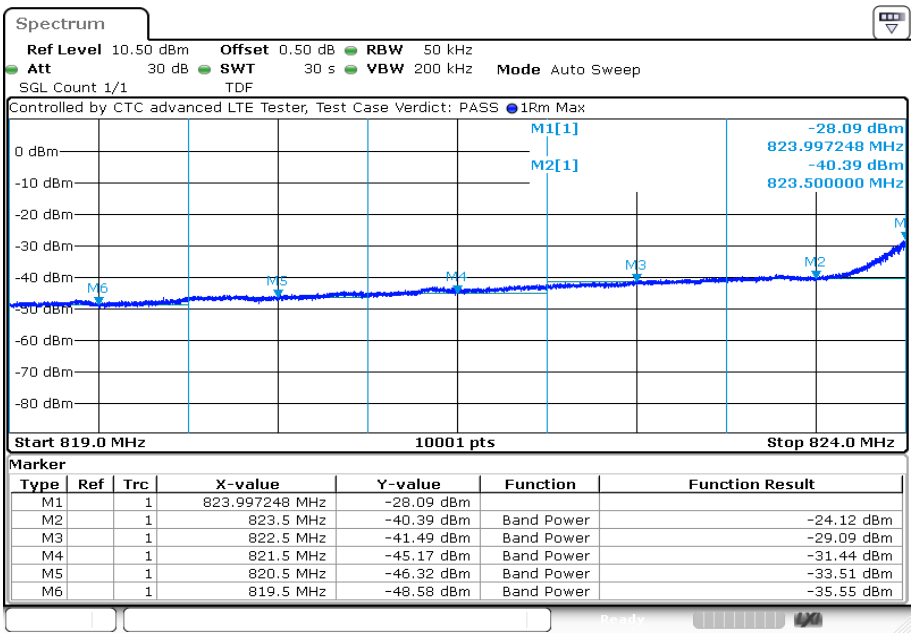


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	849.001728 MHz	-28.17 dBm		
M2		1	849.5 MHz	-41.46 dBm	Band Power	-23.59 dBm
M3		1	850.5 MHz	-44.39 dBm	Band Power	-29.16 dBm
M4		1	851.5 MHz	-48.15 dBm	Band Power	-33.93 dBm
M5		1	852.5 MHz	-51.93 dBm	Band Power	-37.50 dBm
M6		1	853.5 MHz	-60.04 dBm	Band Power	-44.35 dBm

Date: 14.NOV.2022 10:36:41

Plot 21: 5 MHz – 64-QAM - Lowest channel

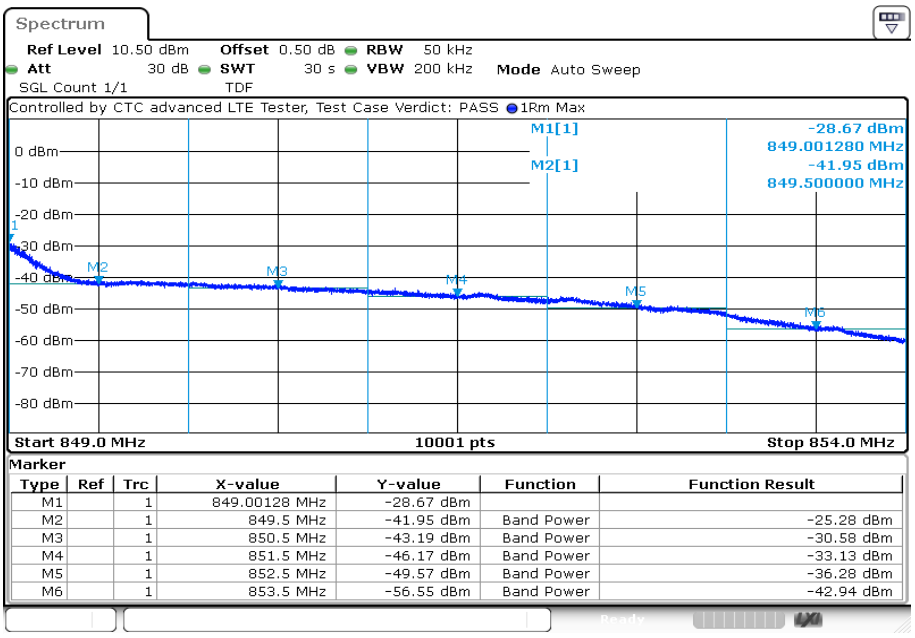


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	823.997248 MHz	-28.09 dBm		
M2		1	823.5 MHz	-40.39 dBm	Band Power	-24.12 dBm
M3		1	822.5 MHz	-41.49 dBm	Band Power	-29.09 dBm
M4		1	821.5 MHz	-45.17 dBm	Band Power	-31.44 dBm
M5		1	820.5 MHz	-46.32 dBm	Band Power	-33.51 dBm
M6		1	819.5 MHz	-48.58 dBm	Band Power	-35.55 dBm

Date: 14.NOV.2022 10:41:57

Plot 22: 5 MHz – 64-QAM - Highest channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	849.00128 MHz	-28.67 dBm		
M2		1	849.5 MHz	-41.95 dBm	Band Power	-25.28 dBm
M3		1	850.5 MHz	-43.19 dBm	Band Power	-30.58 dBm
M4		1	851.5 MHz	-46.17 dBm	Band Power	-33.13 dBm
M5		1	852.5 MHz	-49.57 dBm	Band Power	-36.28 dBm
M6		1	853.5 MHz	-56.55 dBm	Band Power	-42.94 dBm

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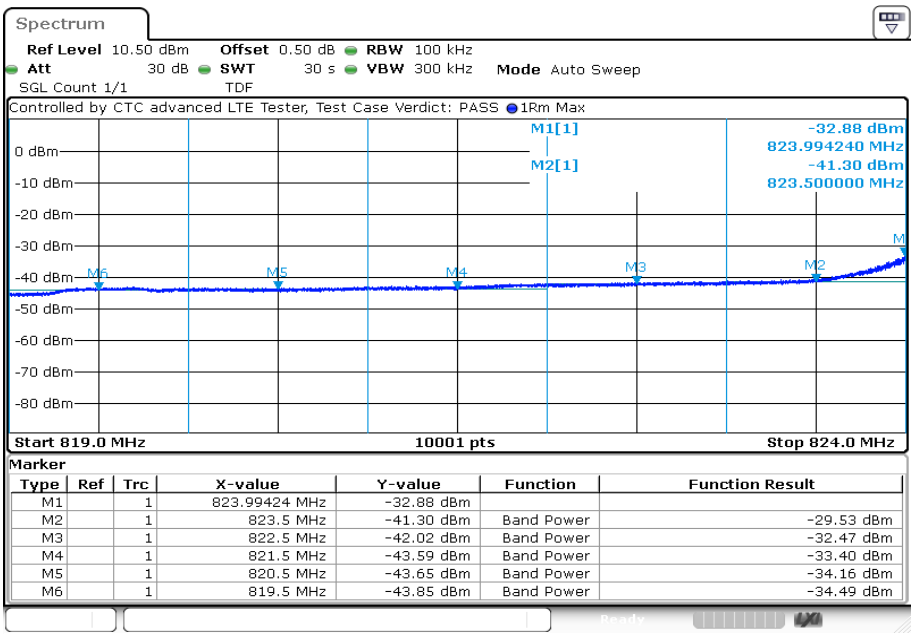
Plot 23: 10 MHz – 64-QAM - Lowest channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	823.99424 MHz	-32.88 dBm		
M2		1	823.5 MHz	-41.30 dBm	Band Power	-29.53 dBm
M3		1	822.5 MHz	-42.02 dBm	Band Power	-32.47 dBm
M4		1	821.5 MHz	-43.59 dBm	Band Power	-33.40 dBm
M5		1	820.5 MHz	-43.65 dBm	Band Power	-34.16 dBm
M6		1	819.5 MHz	-43.85 dBm	Band Power	-34.49 dBm

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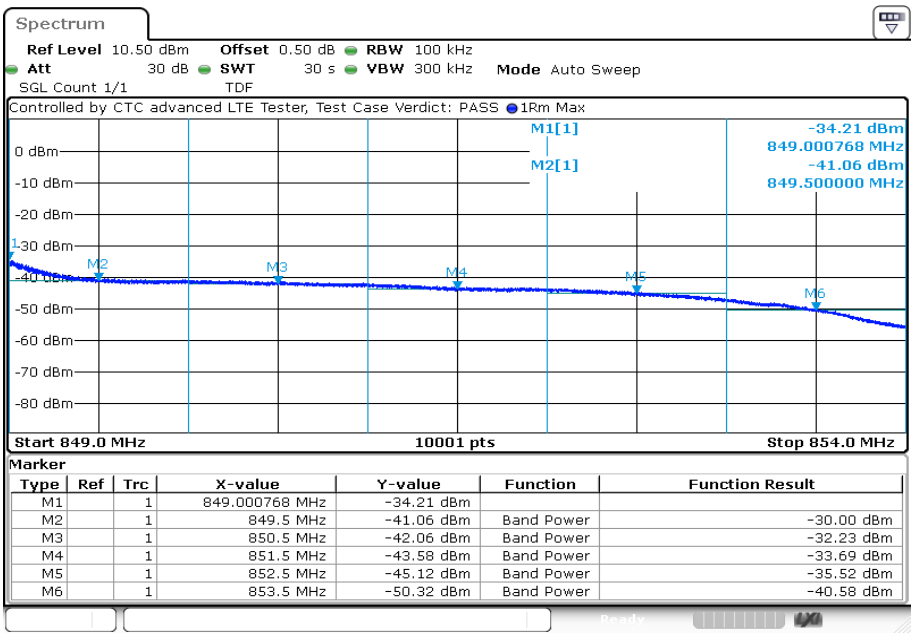
Plot 24: 10 MHz – 64-QAM - Highest channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	849.000768 MHz	-34.21 dBm		
M2		1	849.5 MHz	-41.06 dBm	Band Power	-30.00 dBm
M3		1	850.5 MHz	-42.06 dBm	Band Power	-32.23 dBm
M4		1	851.5 MHz	-43.58 dBm	Band Power	-33.69 dBm
M5		1	852.5 MHz	-45.12 dBm	Band Power	-35.52 dBm
M6		1	853.5 MHz	-50.32 dBm	Band Power	-40.58 dBm

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11.2.6 Occupied bandwidth

Description:

Measurement of the occupied bandwidth of the transmitted signal.

Measurement:

Data were taken at the extreme and middle frequencies of the LTE bands 5 + 26a. The table below lists the measured 99% power and -26dBc occupied bandwidths. Spectrum analyzer plots are included on the following pages.

Measurement parameters	
Detector:	Peak
Sweep time:	180s
Resolution bandwidth:	30 kHz
Video bandwidth:	100 kHz
Span:	2 x nominal BW
Trace mode:	Max Hold
Used equipment:	See chapter 7.2 setup A
Measurement uncertainty:	See chapter 8
Measurement procedure:	FCC: § 2.1049

Limits:

FCC
§ 2.1049
Reporting only

Results:

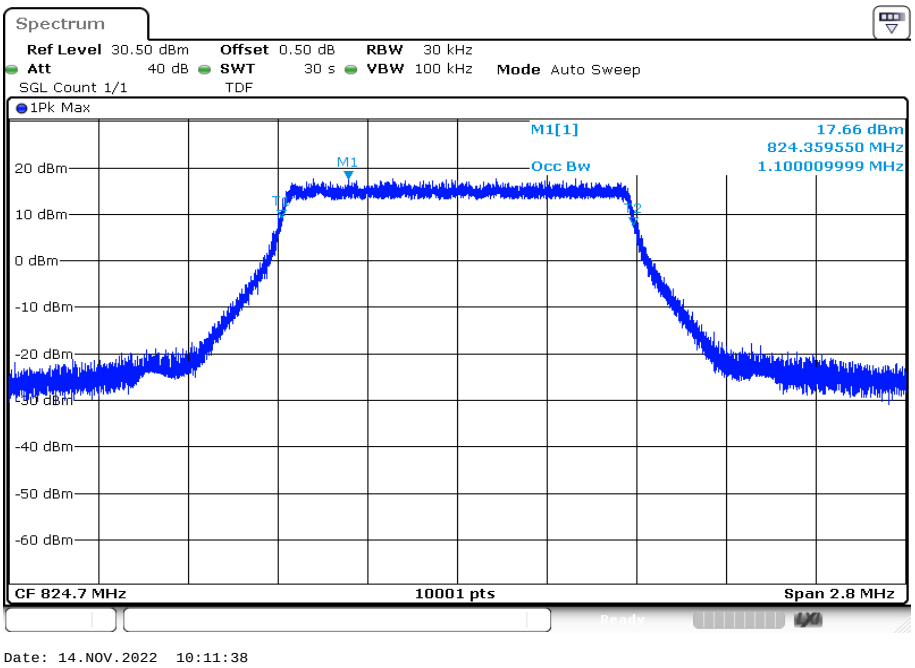
Occupied Bandwidth – QPSK – LTE 5			
Bandwidth	**Channel**	**99% OBW (MHz)**	**-26 dBc BW (MHz)**
1.4	low	1.10	1.37
	mid	1.10	1.39
	high	1.10	1.38
3.0	low	2.74	3.16
	mid	2.74	3.14
	high	2.75	3.15
5.0	low	4.51	5.18
	mid	4.52	5.19
	high	4.52	5.17
10.0	low	9.04	10.26
	mid	9.07	10.31
	high	9.03	10.35

Occupied Bandwidth – 16-QAM – LTE 5			
Bandwidth	**Channel**	**99% OBW (MHz)**	**-26 dBc BW (MHz)**
1.4	low	1.10	1.38
	mid	1.10	1.38
	high	1.11	1.40
3.0	low	2.74	3.17
	mid	2.75	3.15
	high	2.75	3.14
5.0	low	4.52	5.20
	mid	4.52	5.18
	high	4.52	5.18
10.0	low	9.04	10.30
	mid	9.08	10.30
	high	9.03	10.21

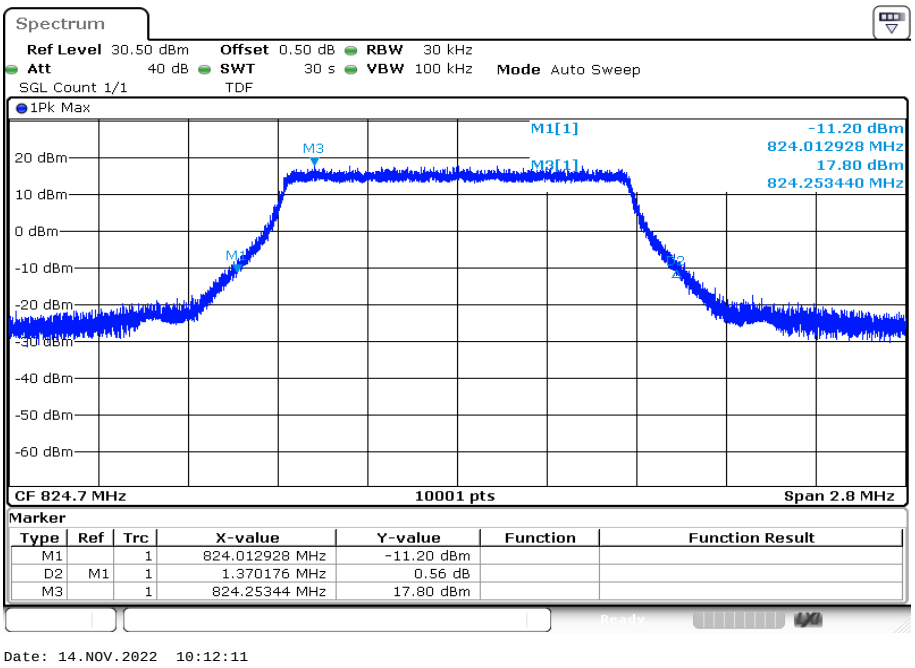
Occupied Bandwidth – 64-QAM – LTE 5			
Bandwidth	**Channel**	**99% OBW (MHz)**	**-26 dBc BW (MHz)**
1.4	low	1.10	1.34
	mid	1.10	1.38
	high	1.10	1.36
3.0	low	2.74	3.17
	mid	2.74	3.15
	high	2.75	3.17
5.0	low	4.52	5.19
	mid	4.52	5.20
	high	4.52	5.16
10.0	low	9.03	10.24
	mid	9.07	10.27
	high	9.02	10.18

Plots: LTE band 5

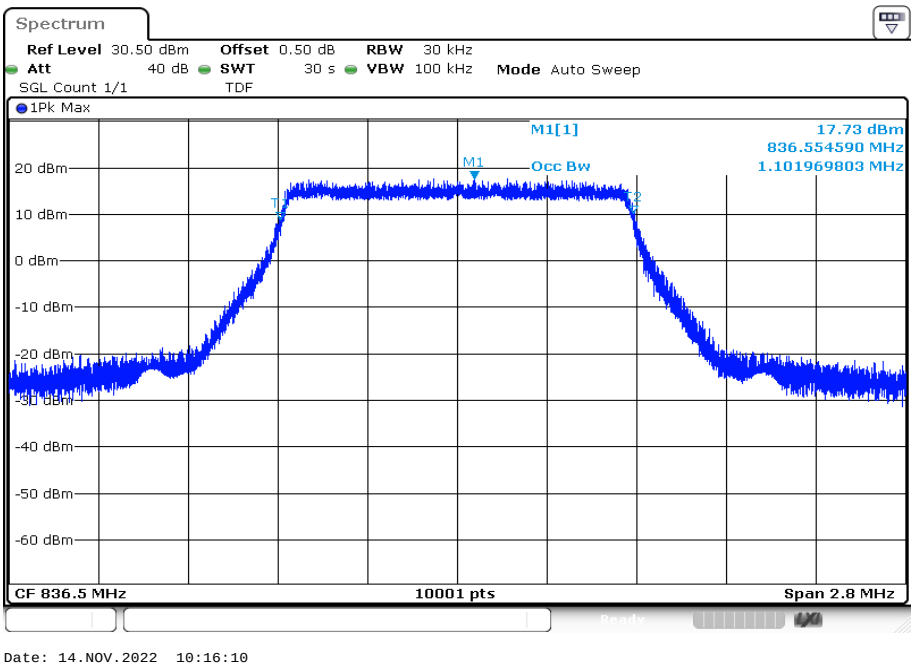
Plot 1: 1.4 MHz – QPSK - lowest channel (99% - OBW)



Plot 2: 1.4 MHz – QPSK - lowest channel (-26 dBc BW)



Plot 3: 1.4 MHz – QPSK – middle channel (99% - OBW)



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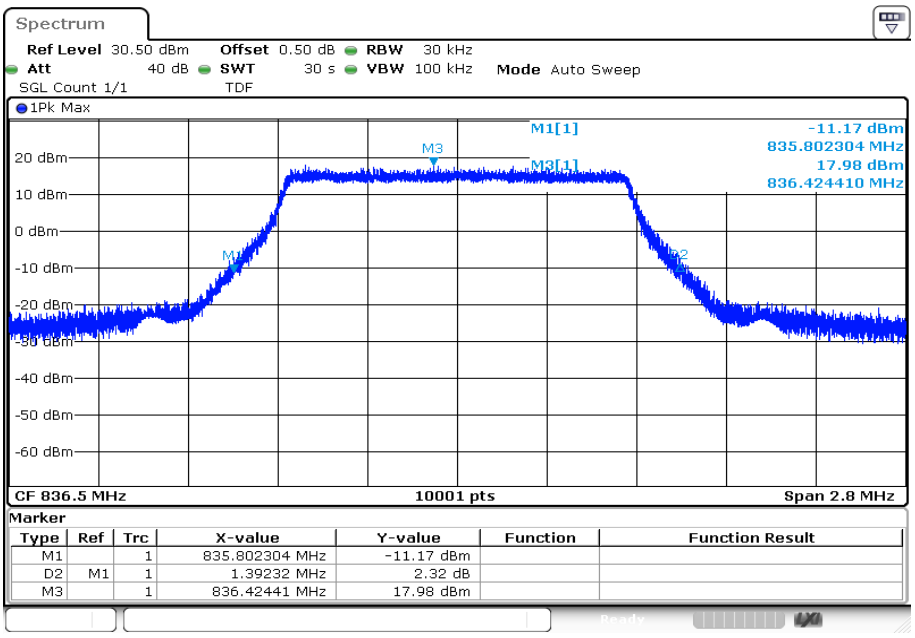
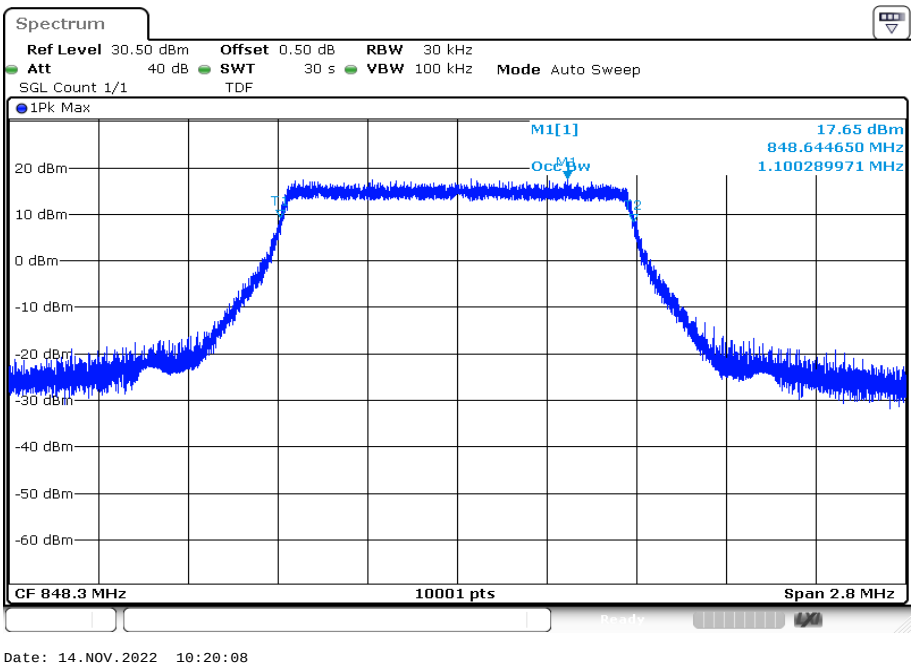
Plot 4: 1.4 MHz – QPSK – middle channel (-26 dBc BW)

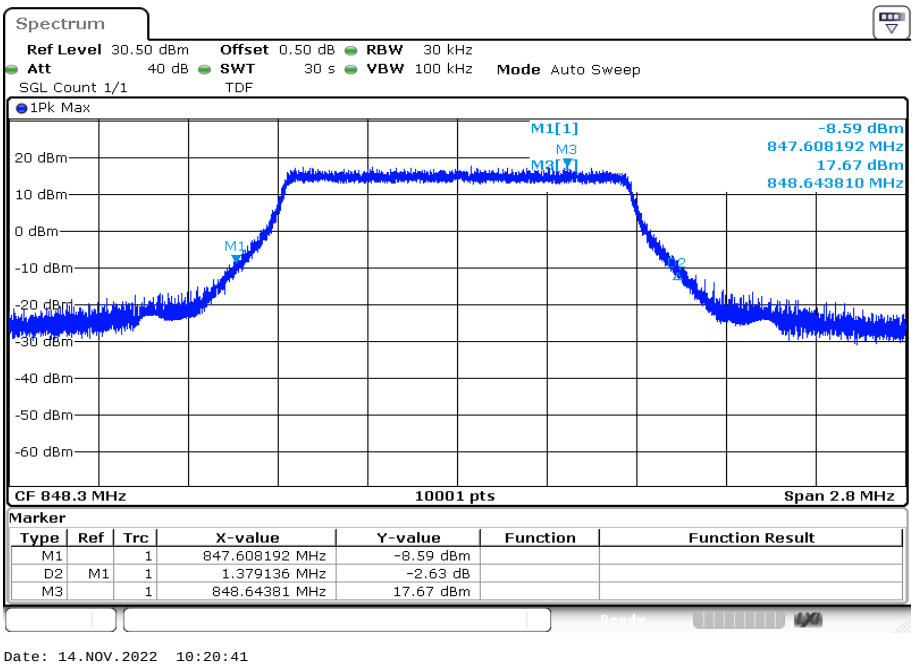


Date: 14.NOV.2022 10:16:42

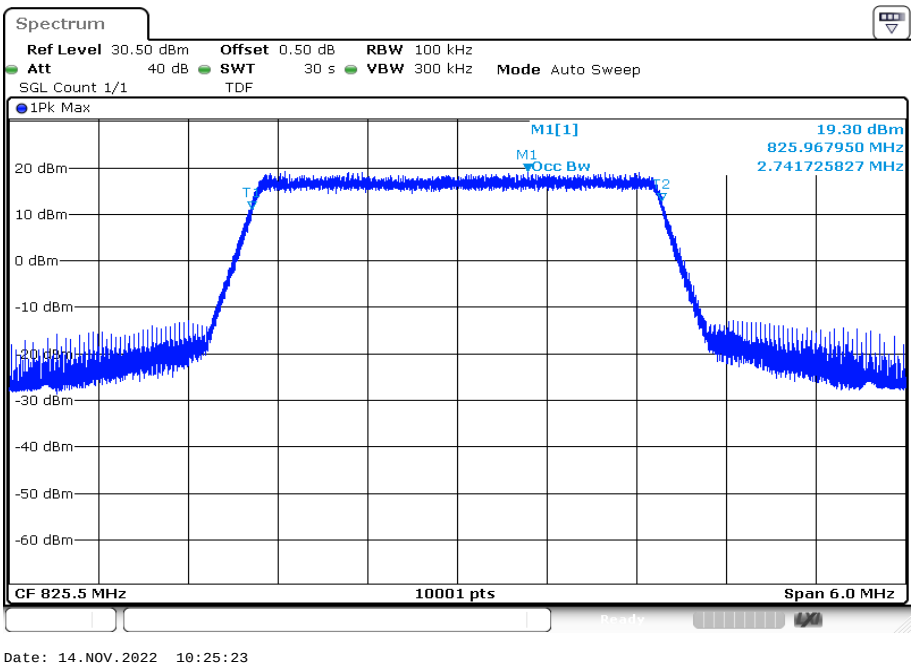
Plot 5: 1.4 MHz – QPSK - highest channel (99% - OBW)



Plot 6: 1.4 MHz – QPSK - highest channel (-26 dBc BW)



Plot 7: 3 MHz – QPSK - lowest channel (99% - OBW)



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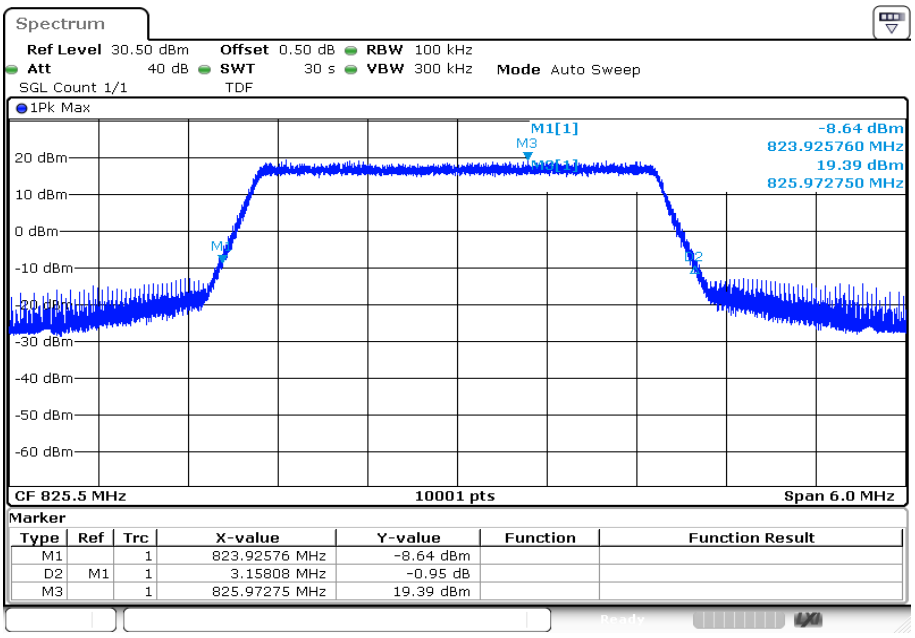
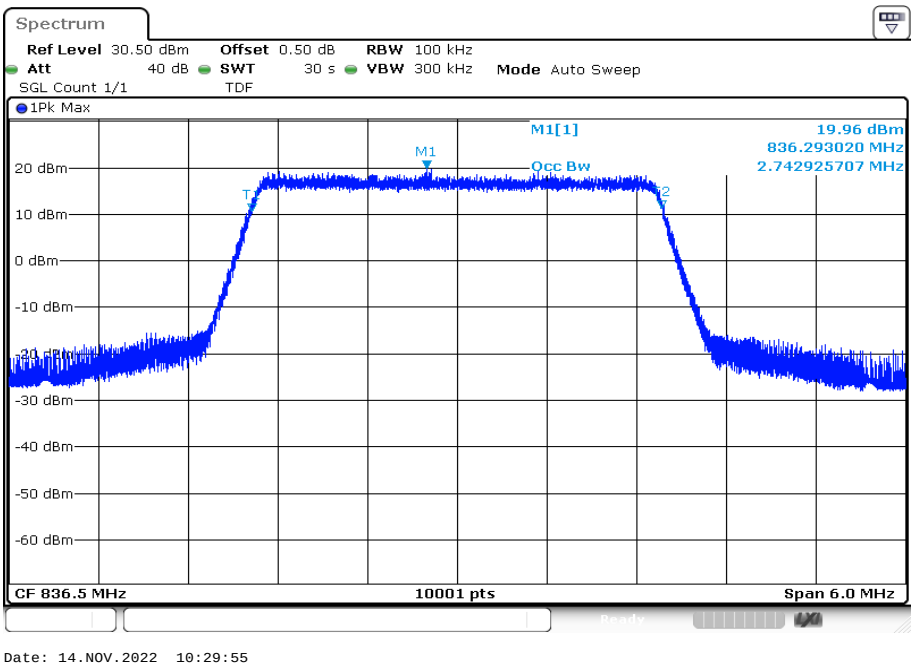
Plot 8: 3 MHz – QPSK - lowest channel (-26 dBc BW)



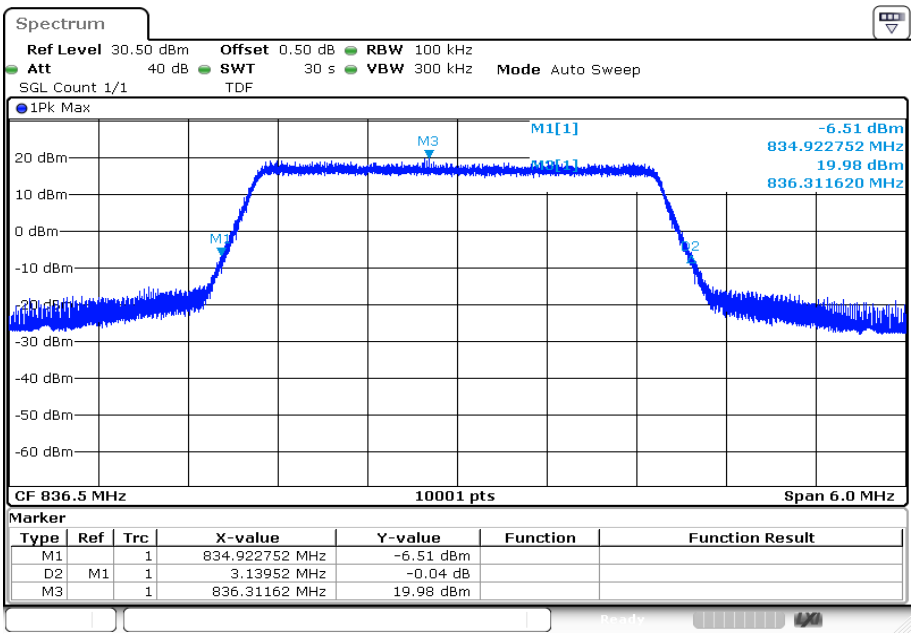
Date: 14.NOV.2022 10:25:56

Plot 9: 3 MHz – QPSK - middle channel (99% - OBW)



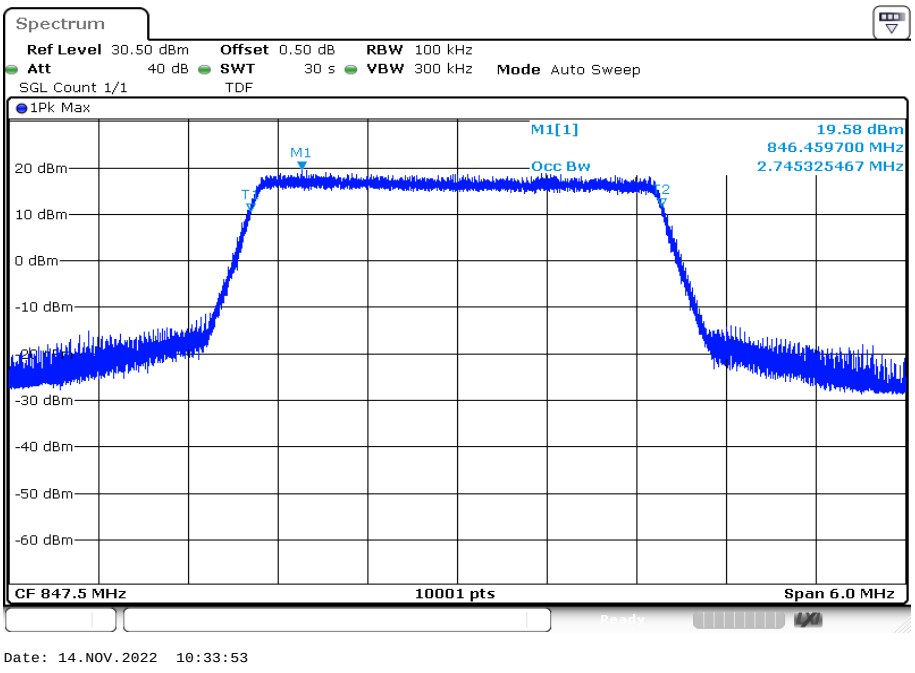
Date: 14.NOV.2022 10:29:55

Plot 10: 3 MHz – QPSK - middle channel (-26 dBc BW)

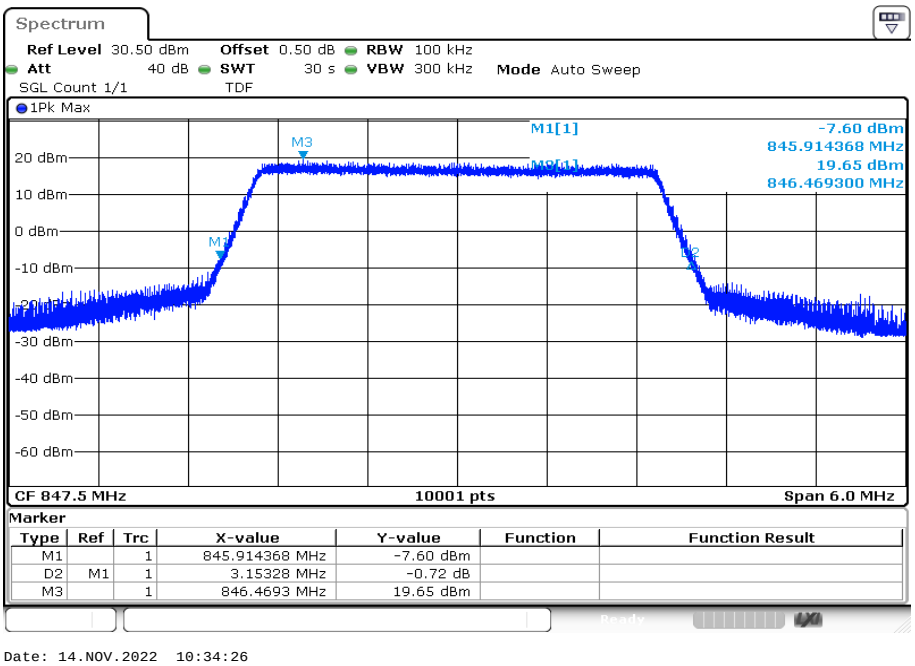


Date: 14.NOV.2022 10:30:27

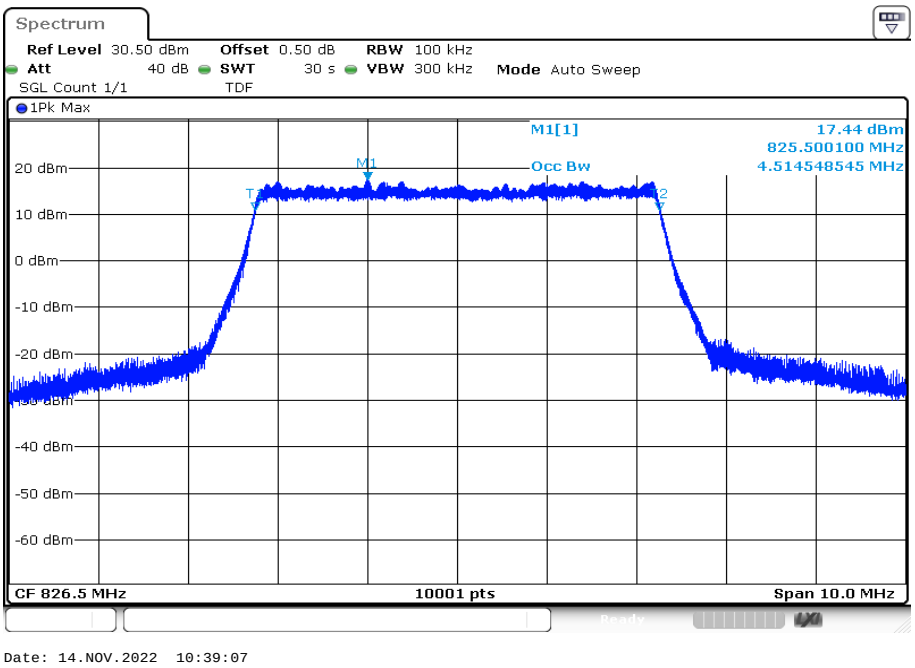
Plot 11: 3 MHz – QPSK - highest channel (99% - OBW)



Plot 12: 3 MHz – QPSK - highest channel (-26 dBc BW)

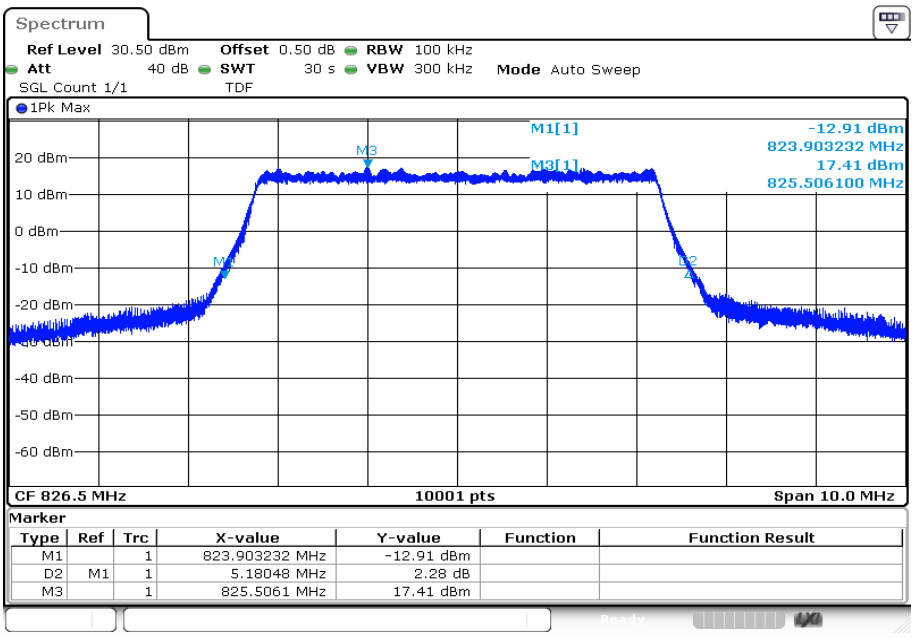


Plot 13: 5 MHz – QPSK - lowest channel (99% - OBW)



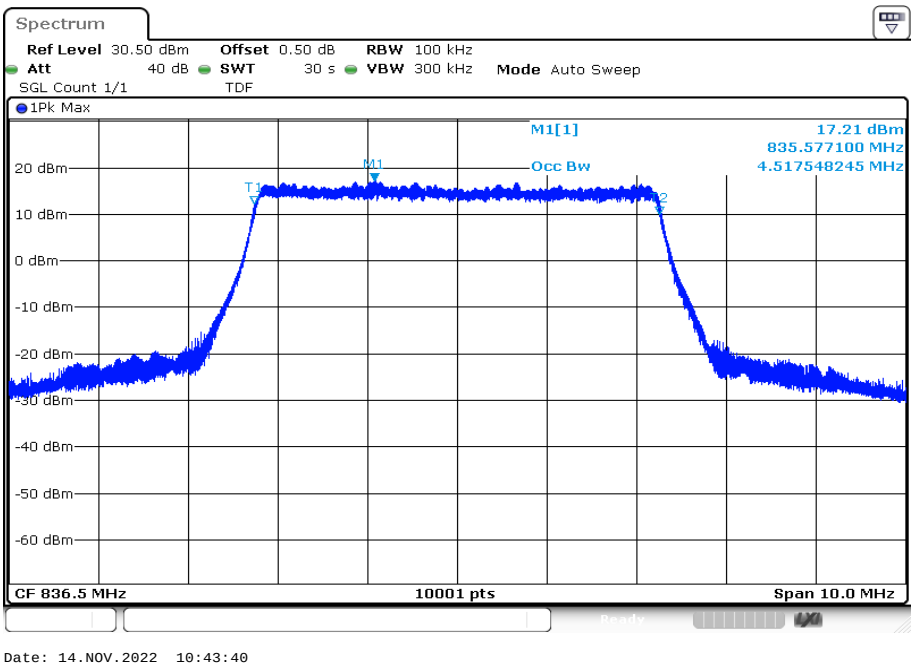
Date: 14.NOV.2022 10:39:07

Plot 14: 5 MHz – QPSK - lowest channel (-26 dBc BW)

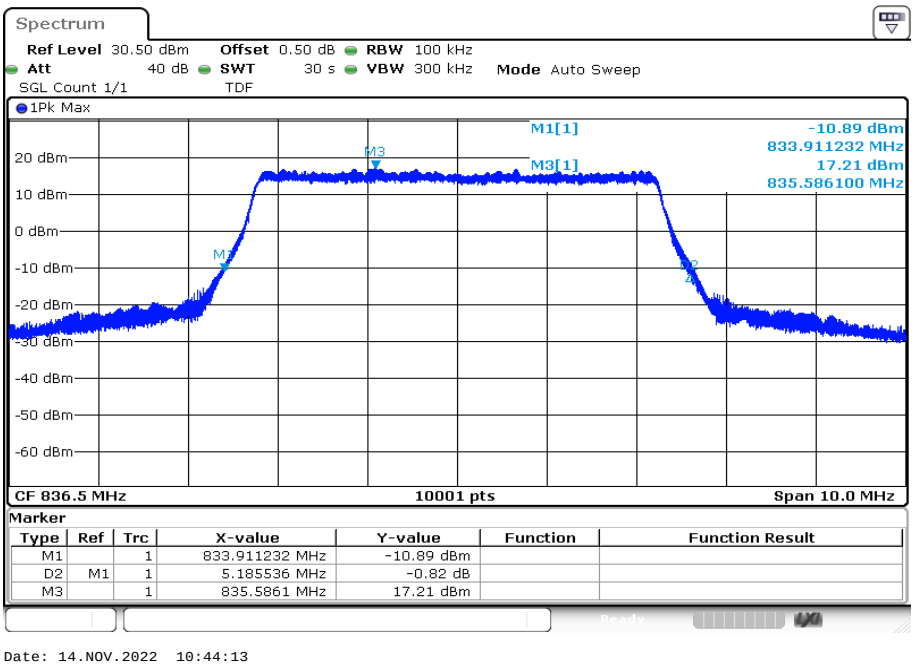


Date: 14.NOV.2022 10:39:40

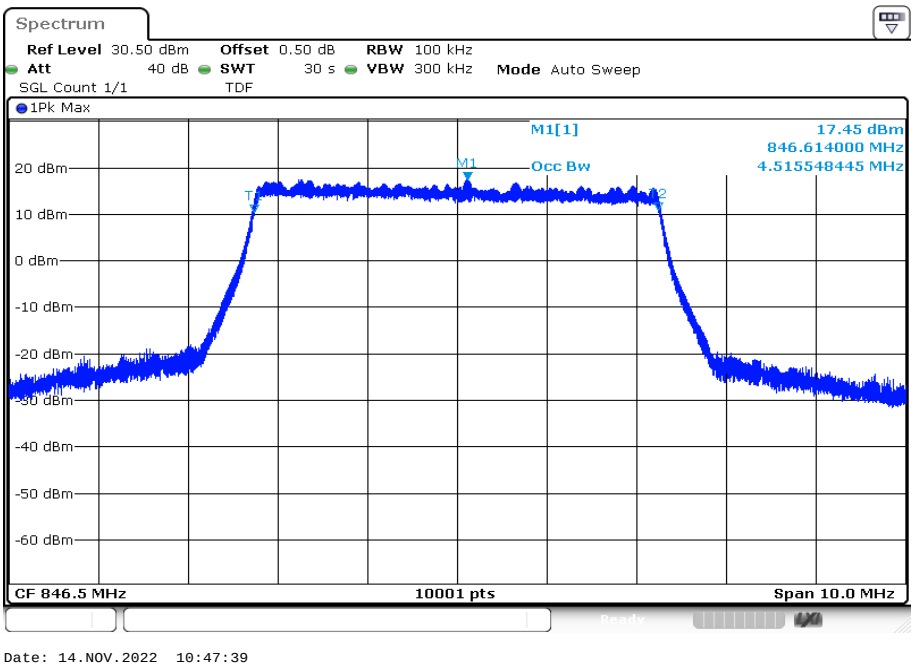
Plot 15: 5 MHz – QPSK - middle channel (99% - OBW)



Plot 16: 5 MHz – QPSK - middle channel (-26 dBc BW)

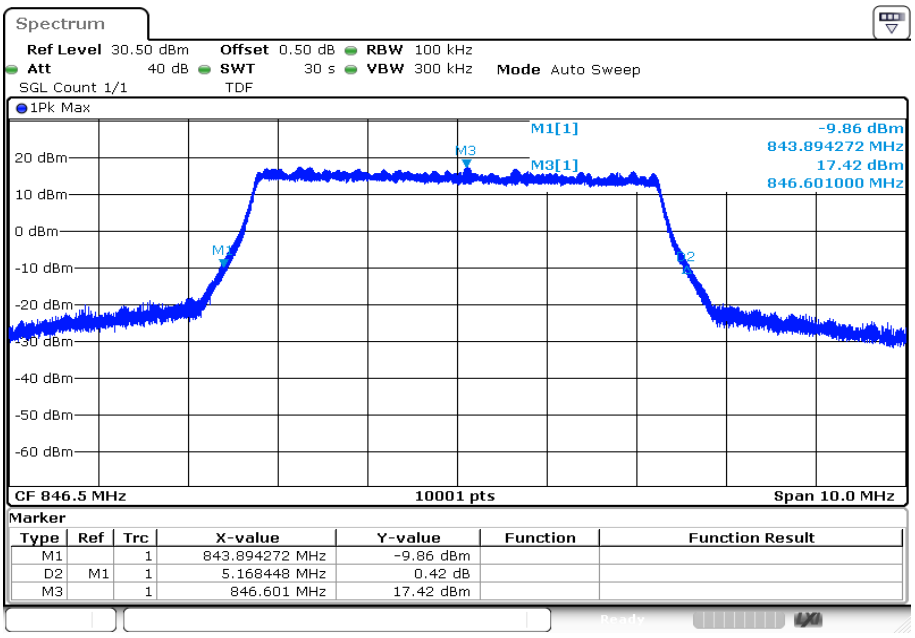


Plot 17: 5 MHz – QPSK - highest channel (99% - OBW)



Date: 14.NOV.2022 10:47:39

Plot 18: 5 MHz – QPSK - highest channel (-26 dBc BW)



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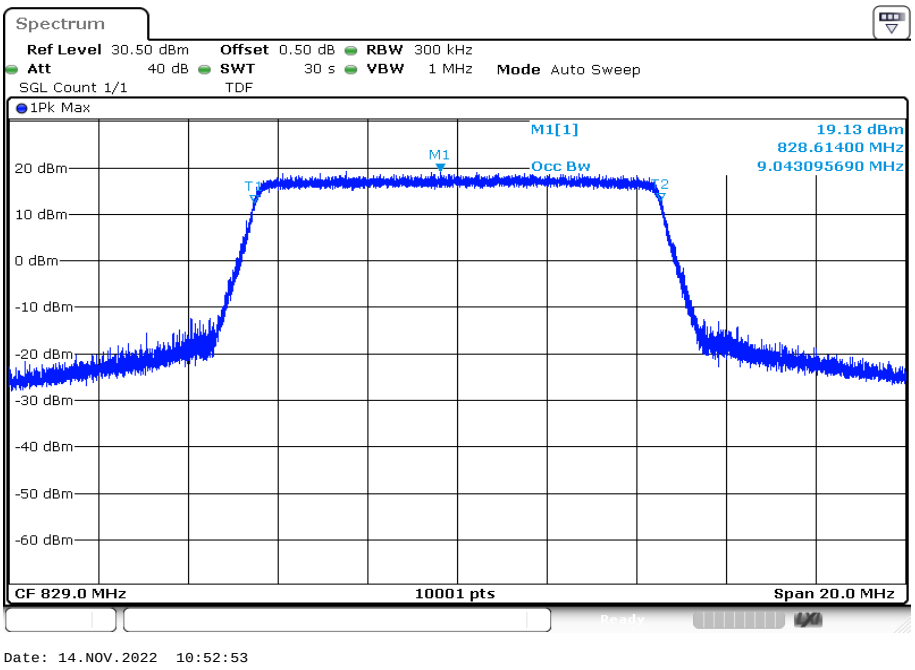
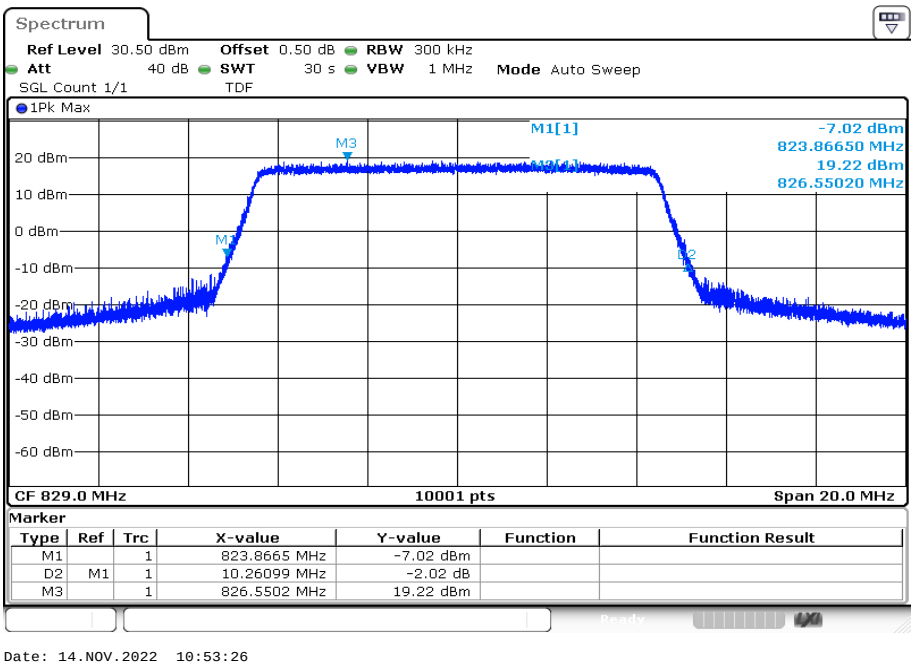
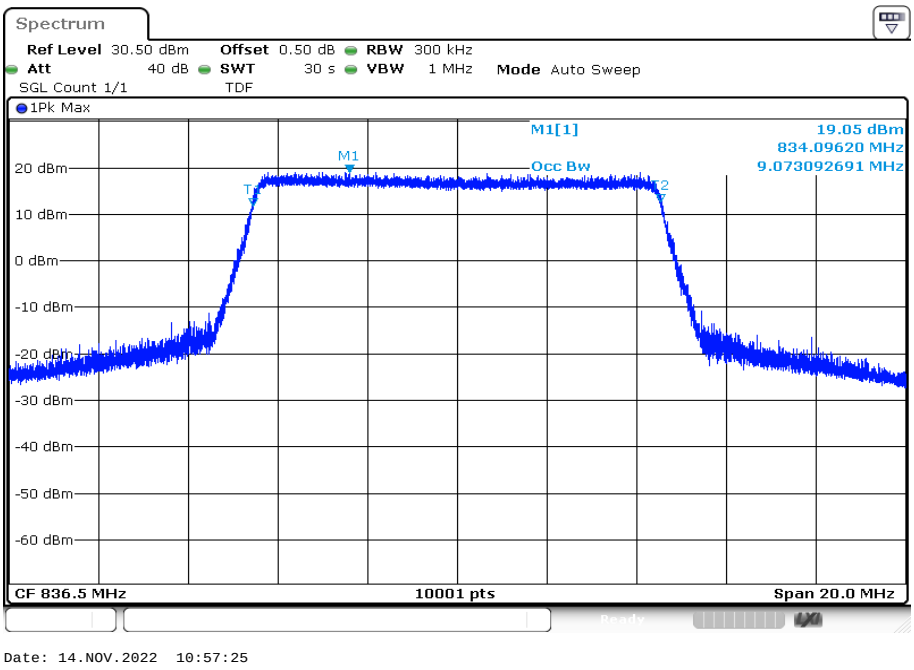
Plot 19: 10 MHz – QPSK - lowest channel (99% - OBW)



Plot 20: 10 MHz – QPSK - lowest channel (-26 dBc BW)



Plot 21: 10 MHz – QPSK - middle channel (99% - OBW)



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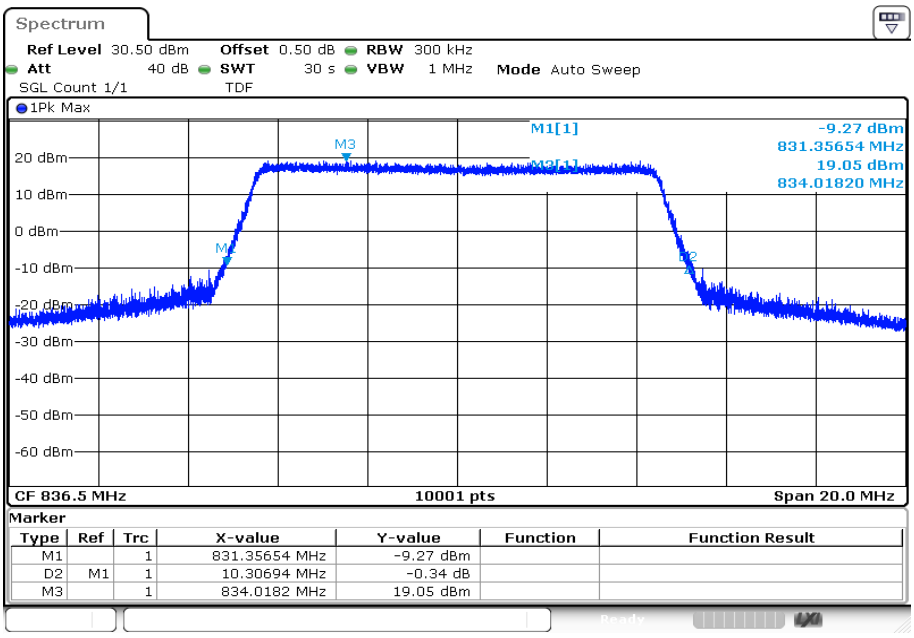
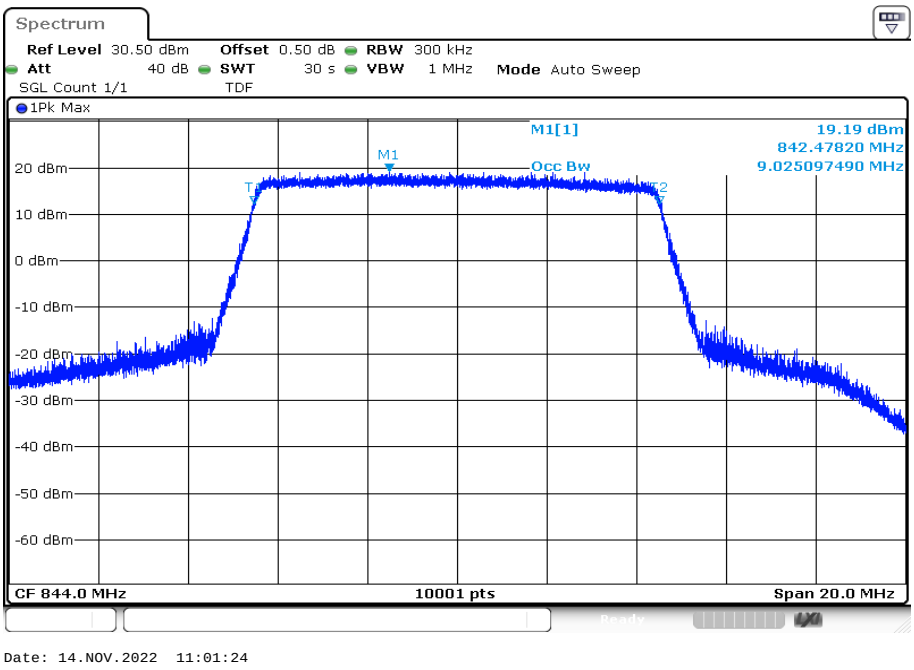
Plot 22: 10 MHz – QPSK - middle channel (-26 dBc BW)

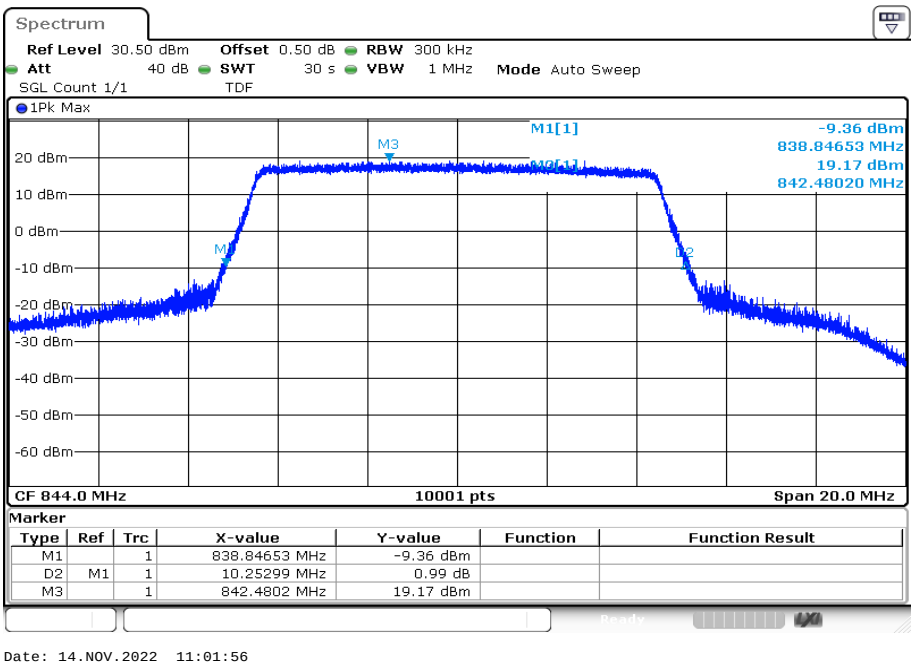


Date: 14.NOV.2022 10:57:57

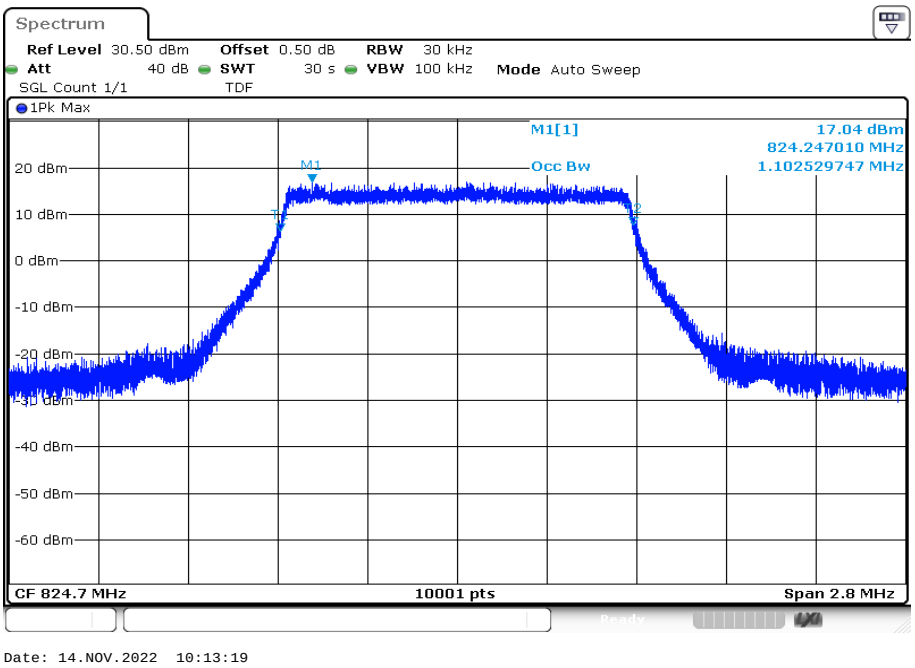
Plot 23: 10 MHz – QPSK - highest channel (99% - OBW)



Plot 24: 10 MHz – QPSK - highest channel (-26 dBc BW)

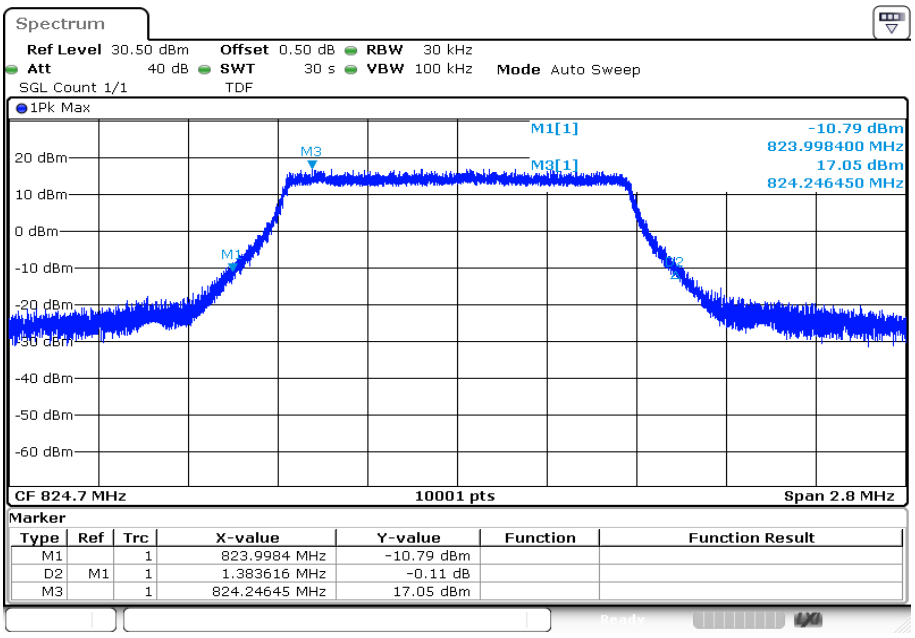


Plot 25: 1.4 MHz – 16-QAM - lowest channel (99% - OBW)



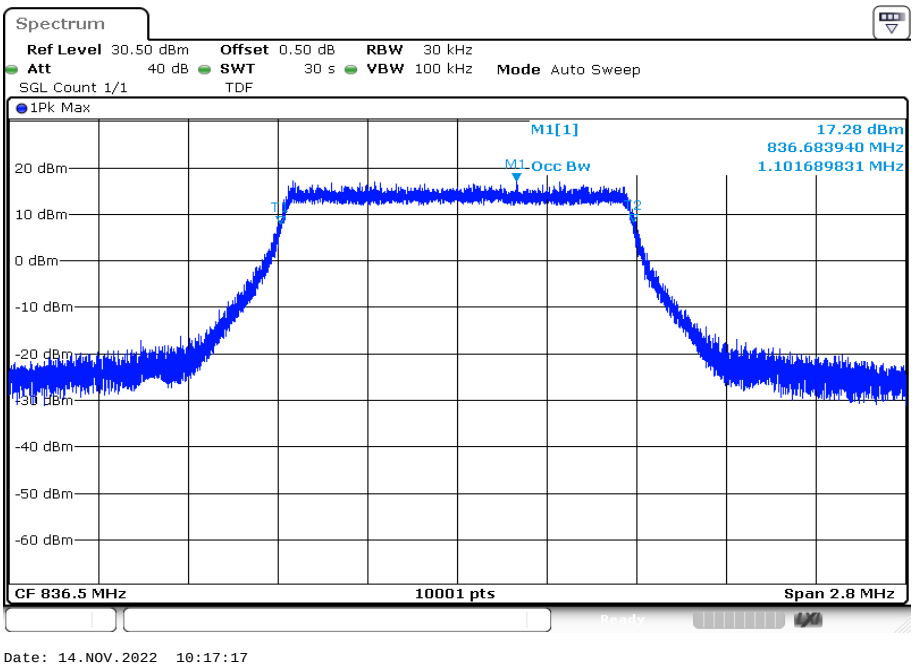
Date: 14.NOV.2022 10:13:19

Plot 26: 1.4 MHz – 16-QAM - lowest channel (-26 dBc BW)



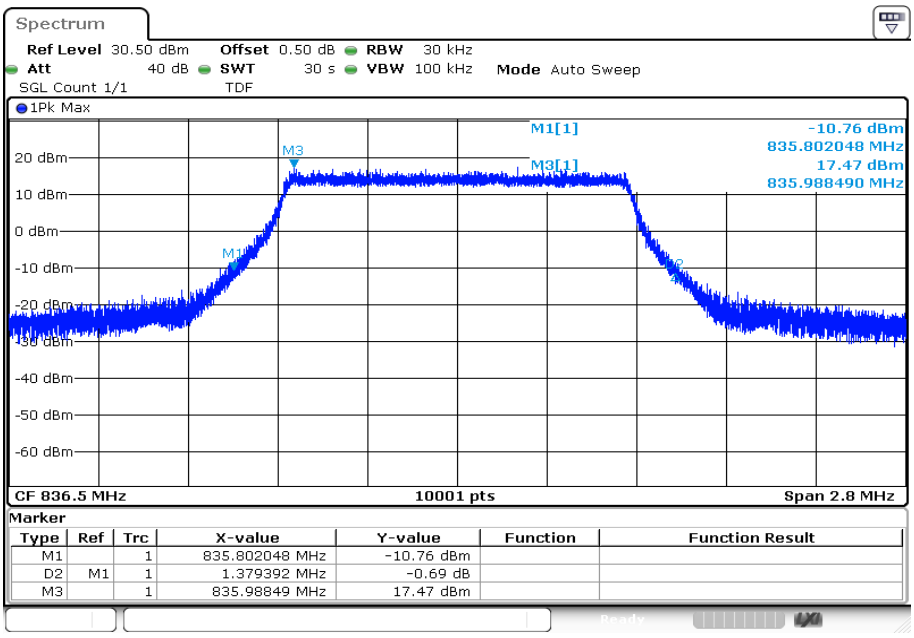
Date: 14.NOV.2022 10:13:52

Plot 27: 1.4 MHz – 16-QAM - middle channel (99% - OBW)



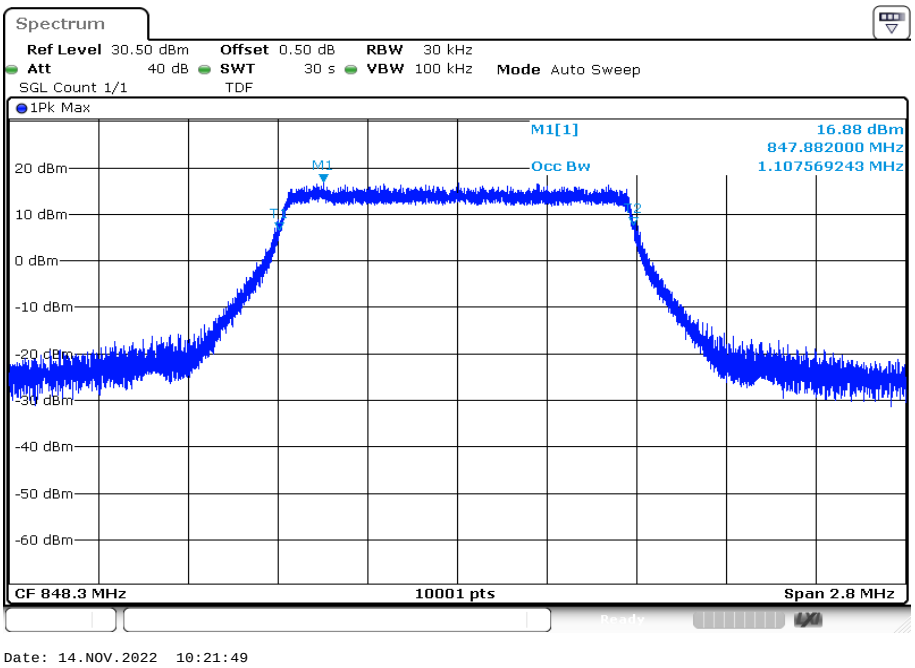
Date: 14.NOV.2022 10:17:17

Plot 28: 1.4 MHz – 16-QAM - middle channel (-26 dBc BW)



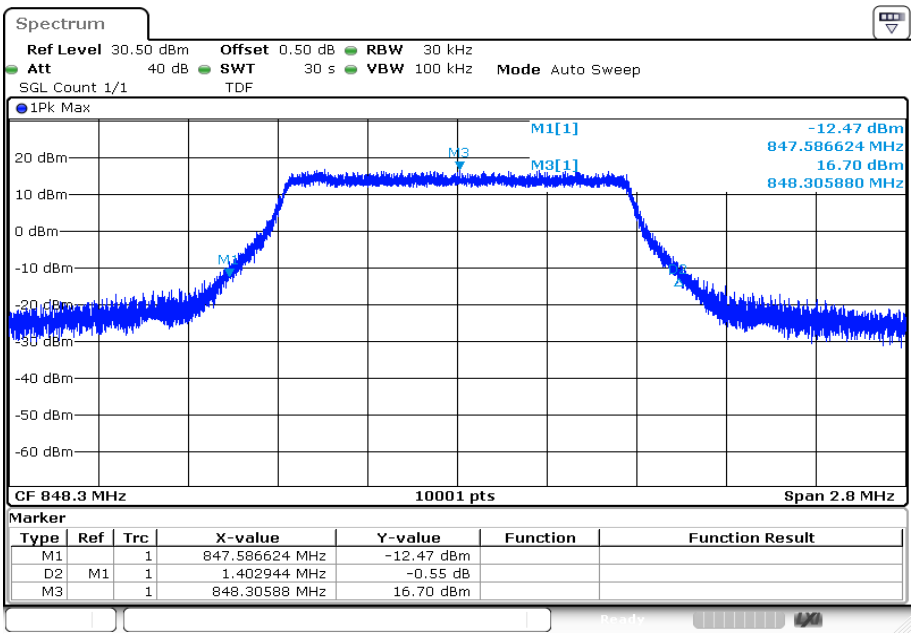
Date: 14.NOV.2022 10:17:50

Plot 29: 1.4 MHz – 16-QAM - highest channel (99% - OBW)



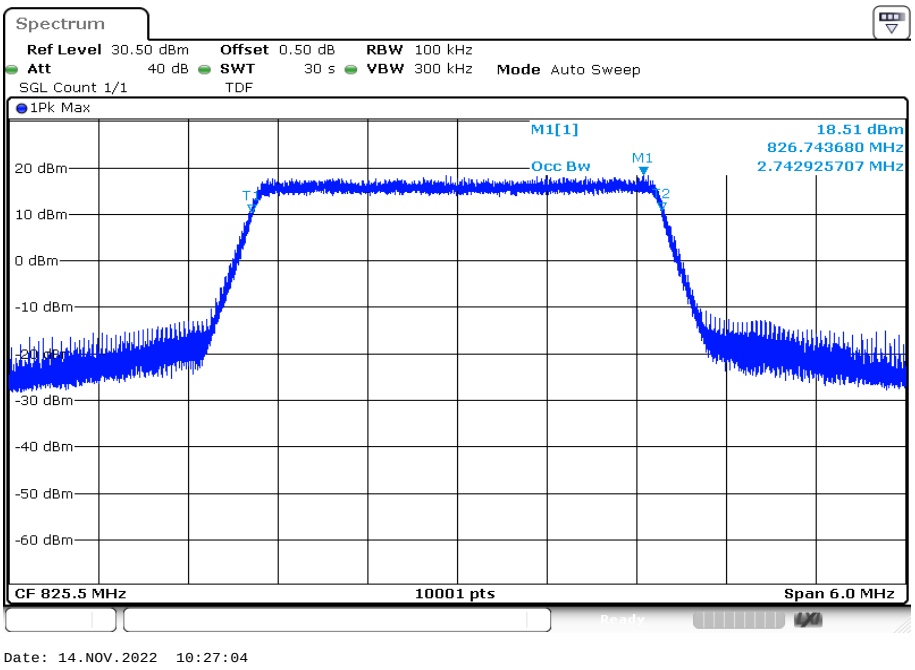
Date: 14.NOV.2022 10:21:49

Plot 30: 1.4 MHz – 16-QAM - highest channel (-26 dBc BW)

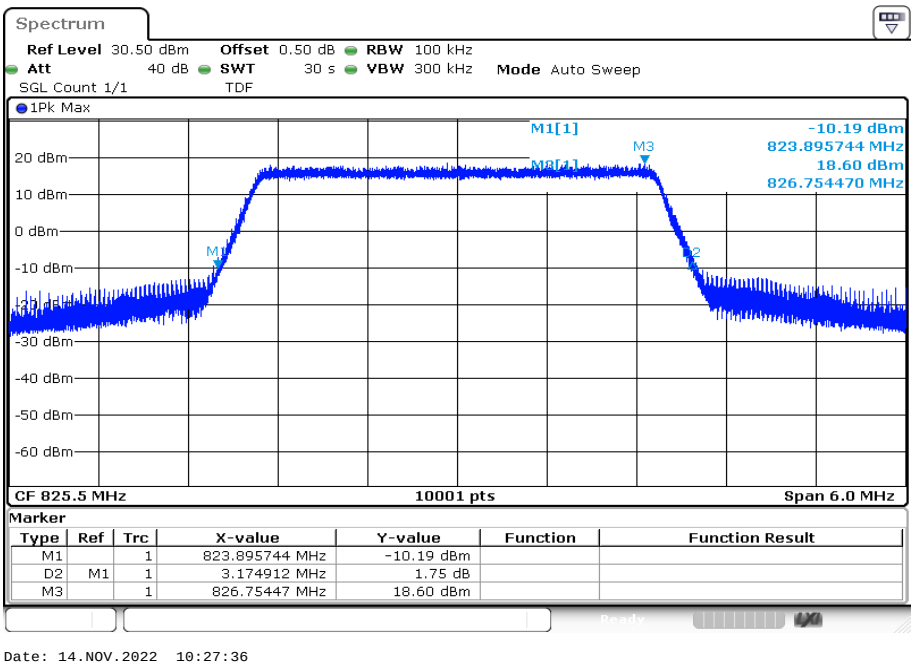


Date: 14.NOV.2022 10:22:21

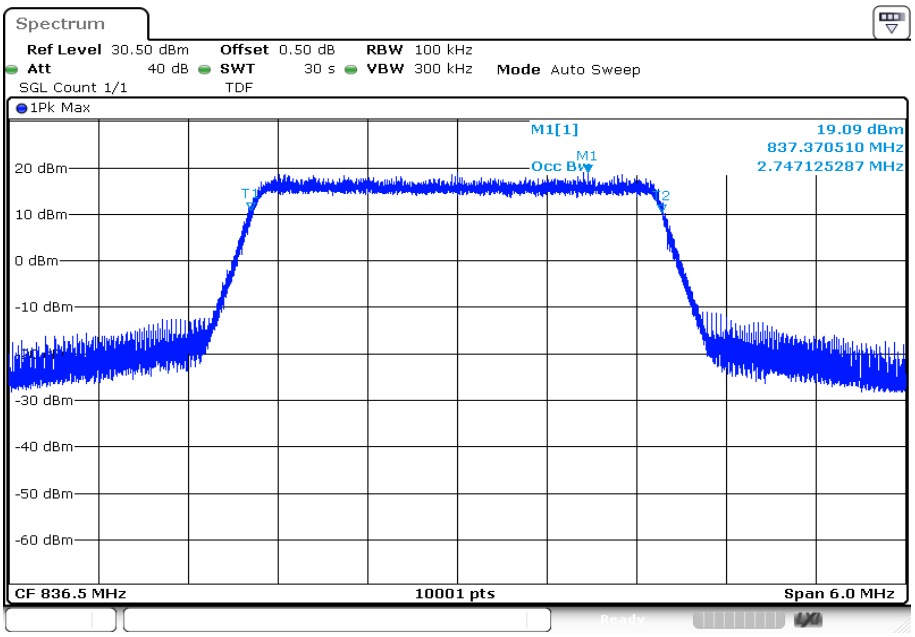
Plot 31: 3 MHz – 16-QAM - lowest channel (99% - OBW)



Plot 32: 3 MHz – 16-QAM - lowest channel (-26 dBc BW)

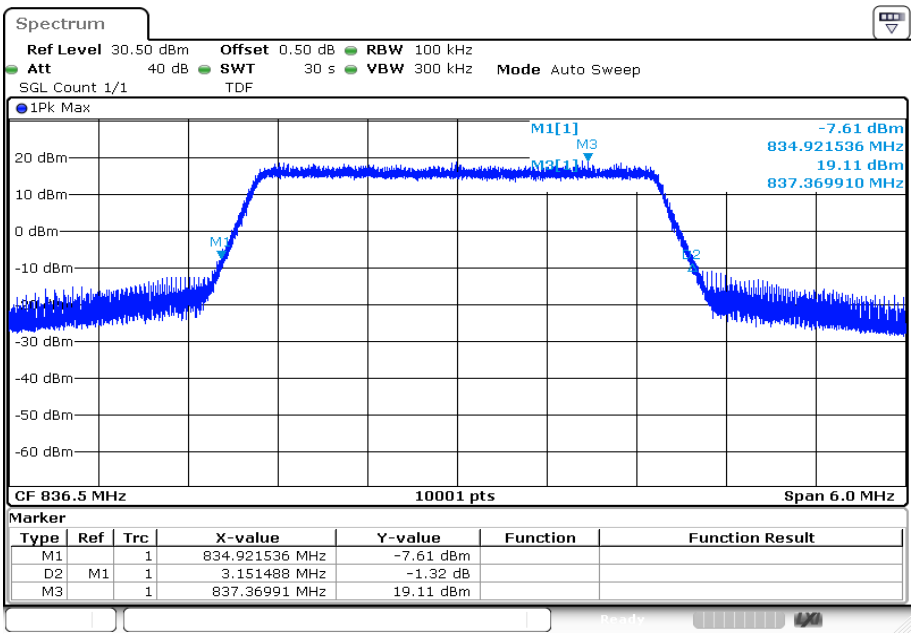


Plot 33: 3 MHz – 16-QAM - middle channel (99% - OBW)



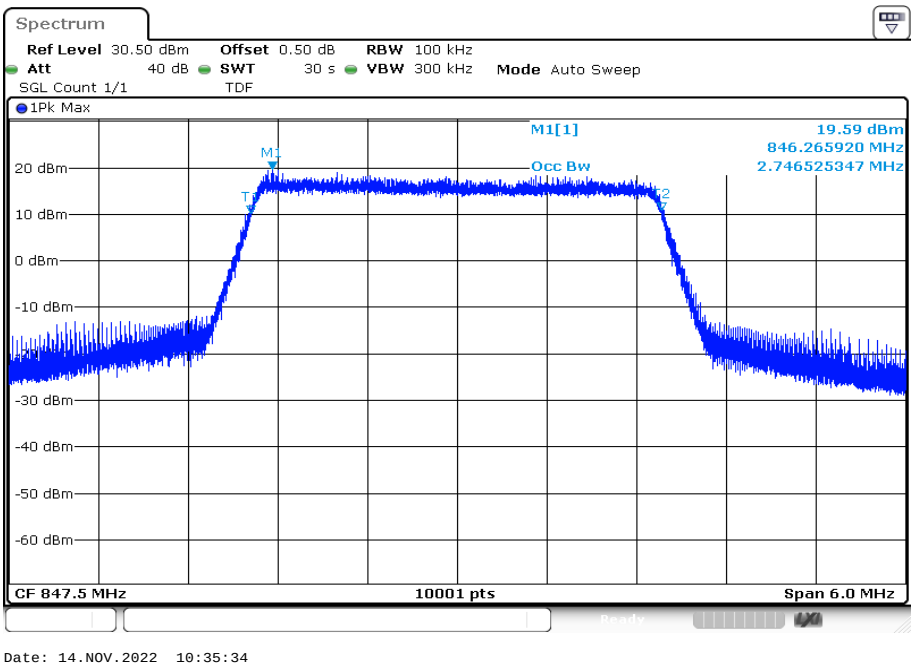
Date: 14.NOV.2022 10:31:02

Plot 34: 3 MHz – 16-QAM - middle channel (-26 dBc BW)

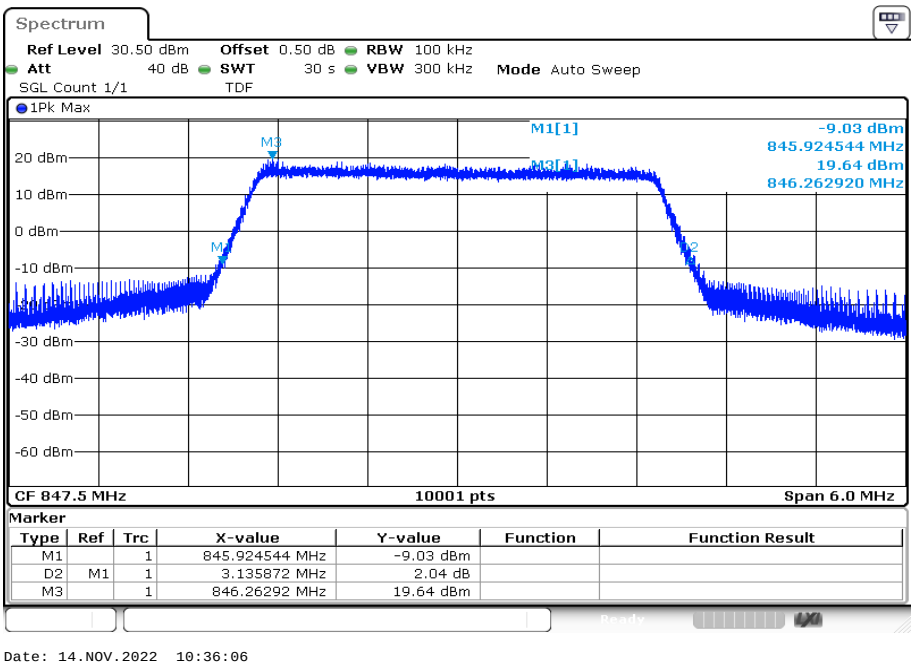


Date: 14.NOV.2022 10:31:35

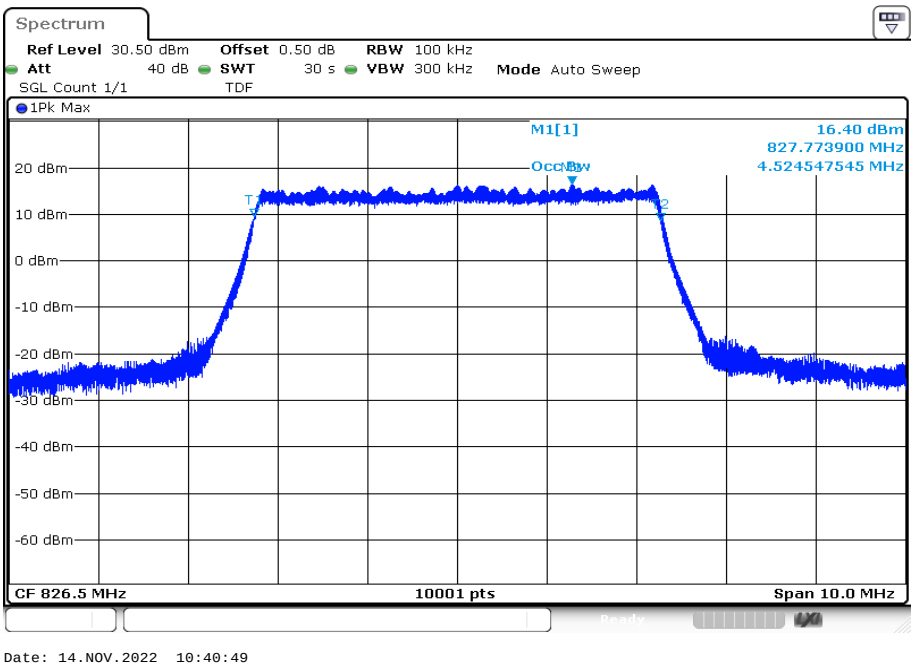
Plot 35: 3 MHz – 16-QAM - highest channel (99% - OBW)



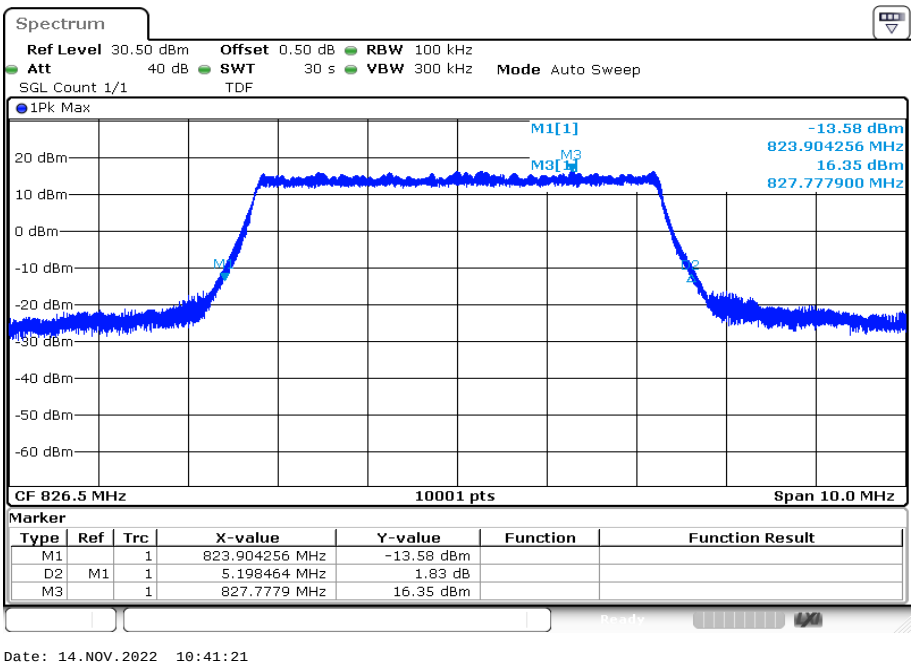
Plot 36: 3 MHz – 16-QAM - highest channel (-26 dBc BW)



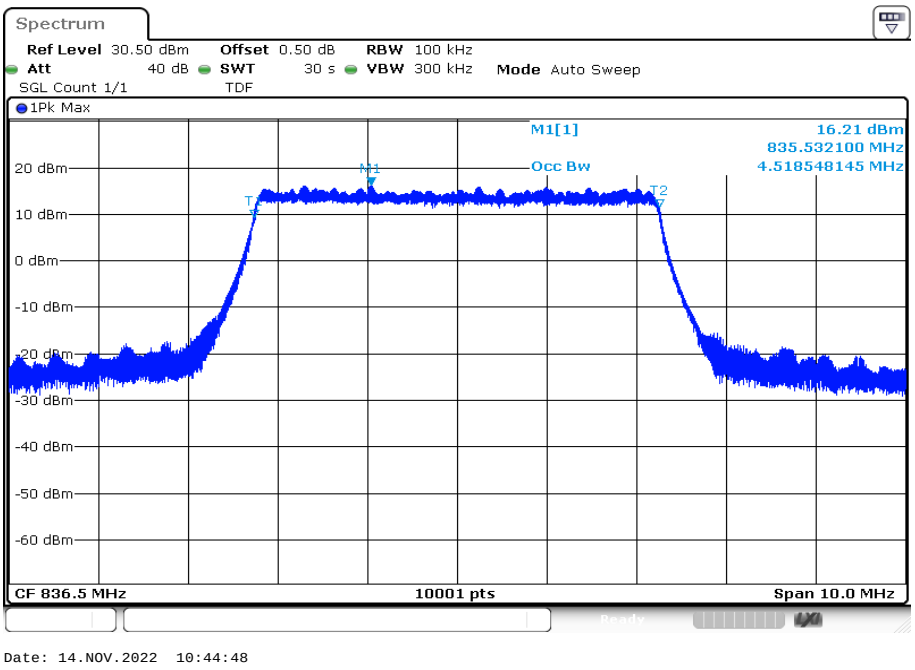
Plot 37: 5 MHz – 16-QAM - lowest channel (99% - OBW)



Plot 38: 5 MHz – 16-QAM - lowest channel (-26 dBc BW)

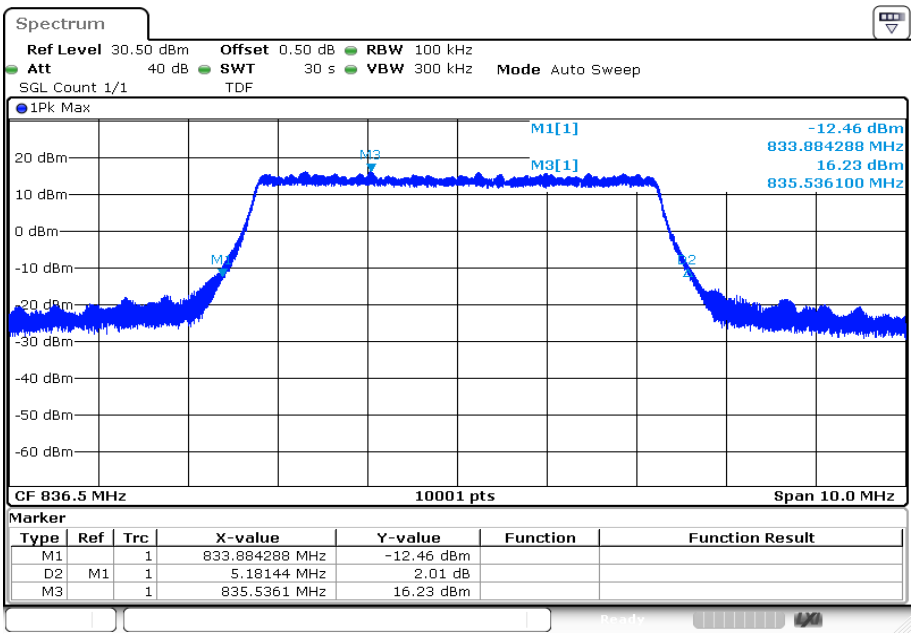


Plot 39: 5 MHz – 16-QAM - middle channel (99% - OBW)



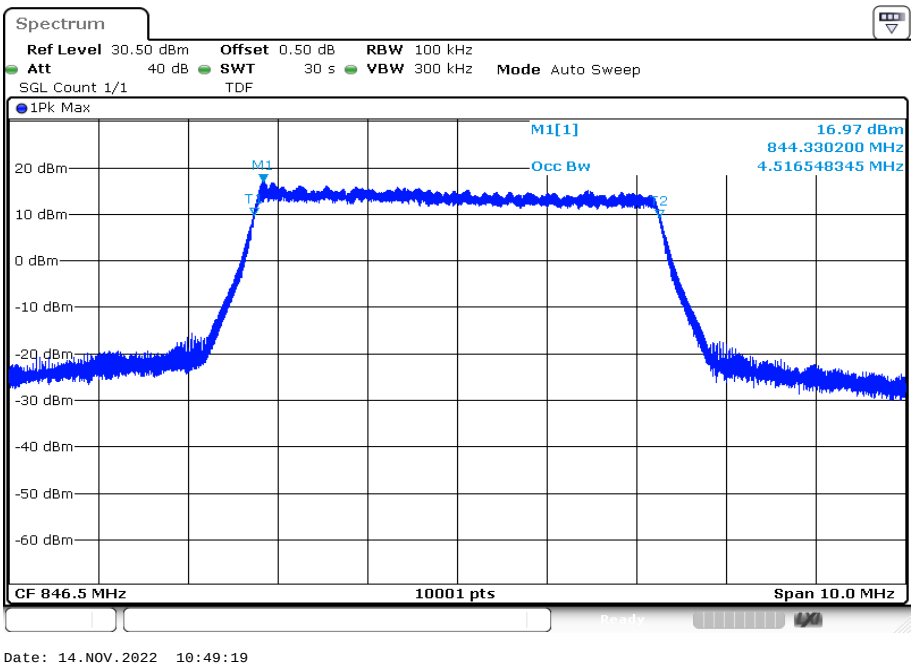
Date: 14.NOV.2022 10:44:48

Plot 40: 5 MHz – 16-QAM - middle channel (-26 dBc BW)



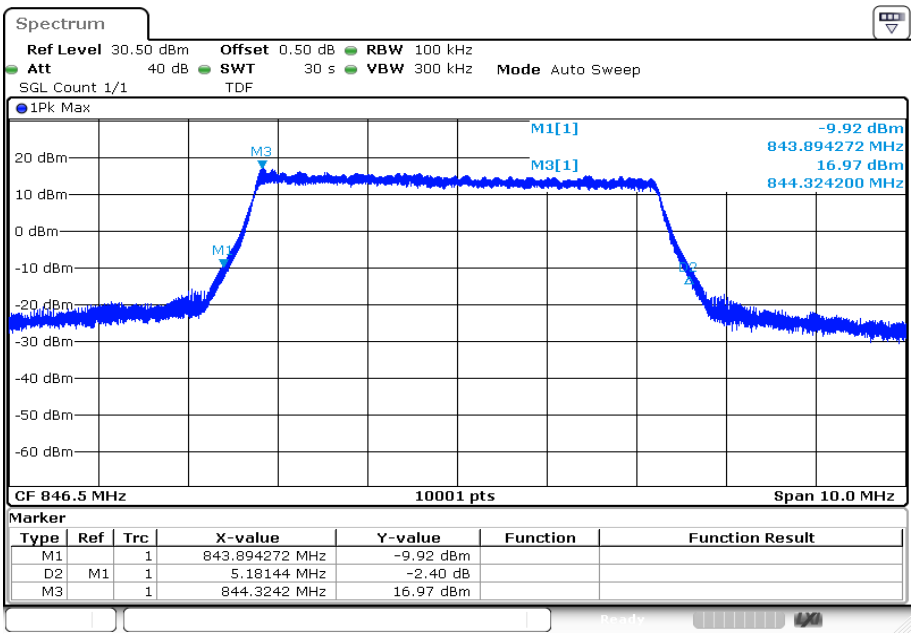
Date: 14.NOV.2022 10:45:20

Plot 41: 5 MHz – 16-QAM - highest channel (99% - OBW)



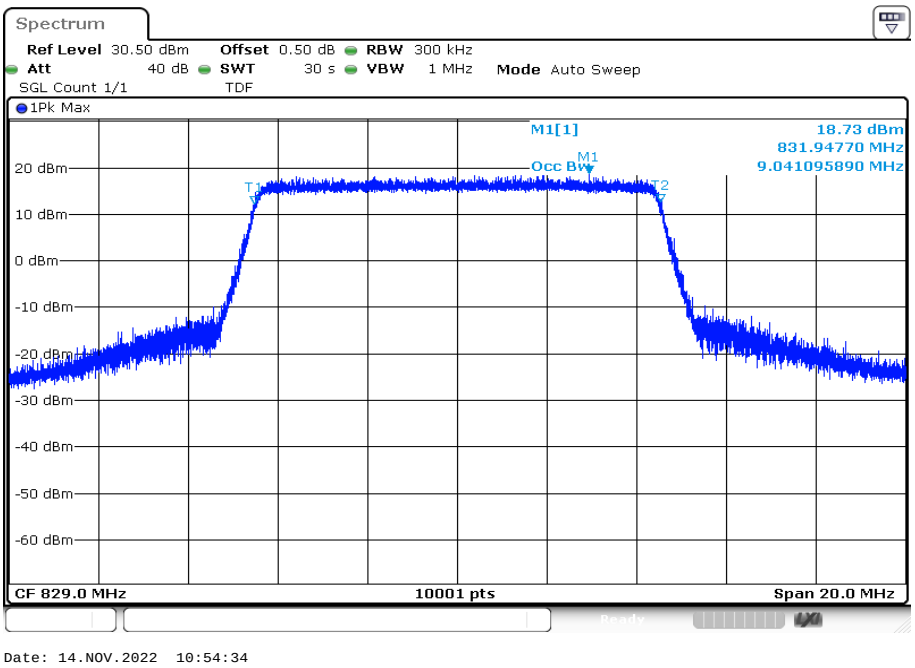
Date: 14.NOV.2022 10:49:19

Plot 42: 5 MHz – 16-QAM - highest channel (-26 dBc BW)



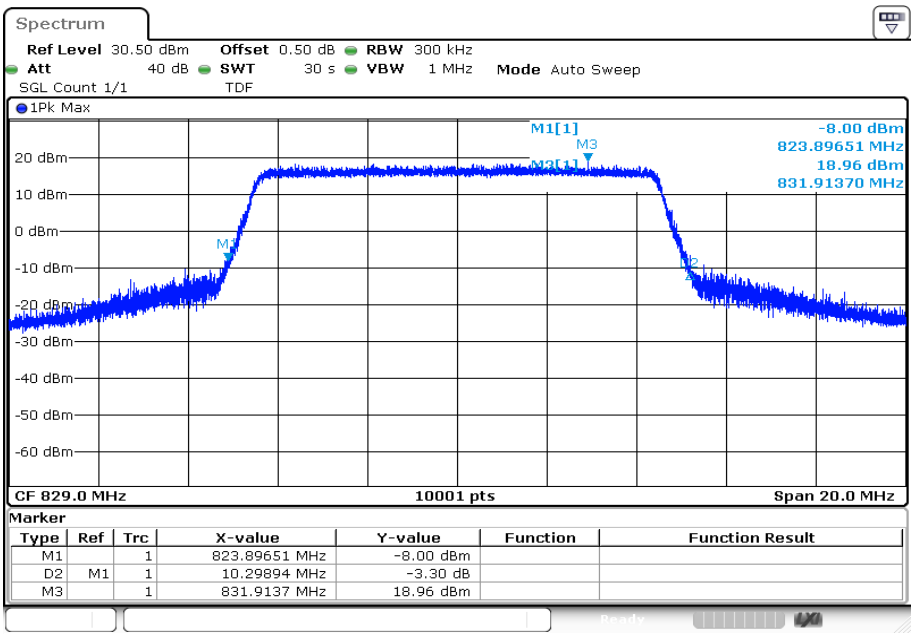
Date: 14.NOV.2022 10:49:52

Plot 43: 10 MHz – 16-QAM - lowest channel (99% - OBW)



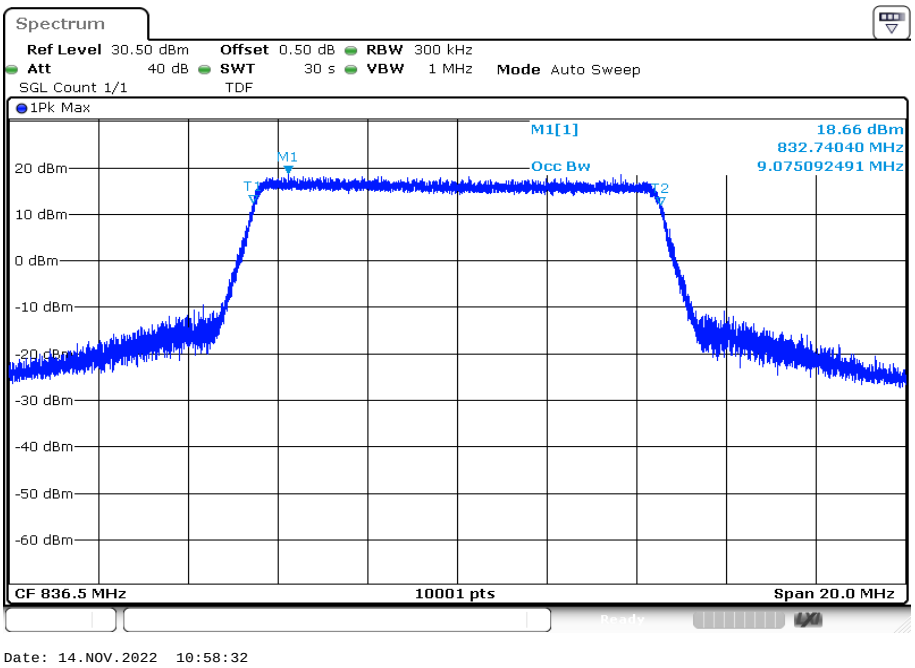
Date: 14.NOV.2022 10:54:34

Plot 44: 10 MHz – 16-QAM - lowest channel (-26 dBc BW)



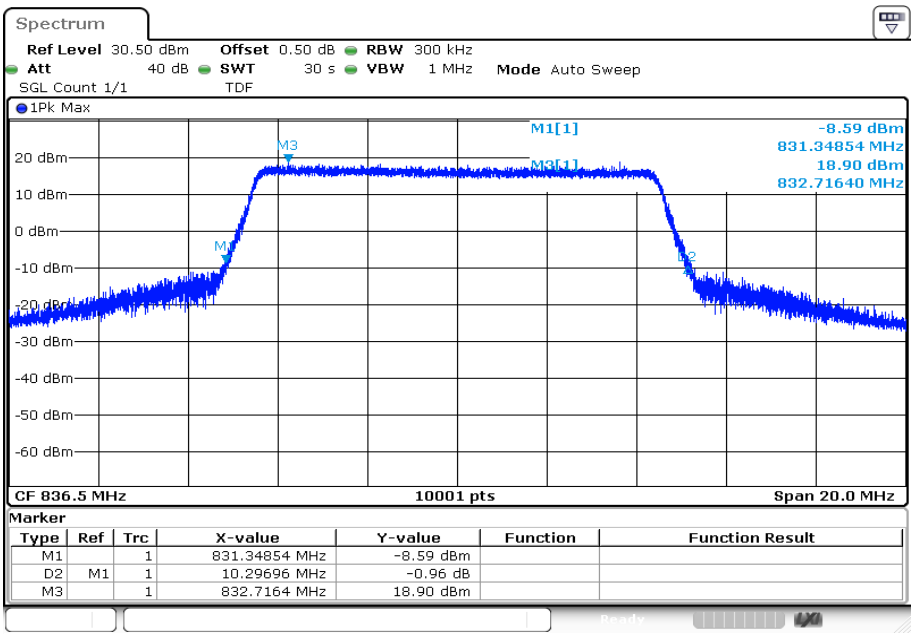
Date: 14.NOV.2022 10:55:06

Plot 45: 10 MHz – 16-QAM - middle channel (99% - OBW)



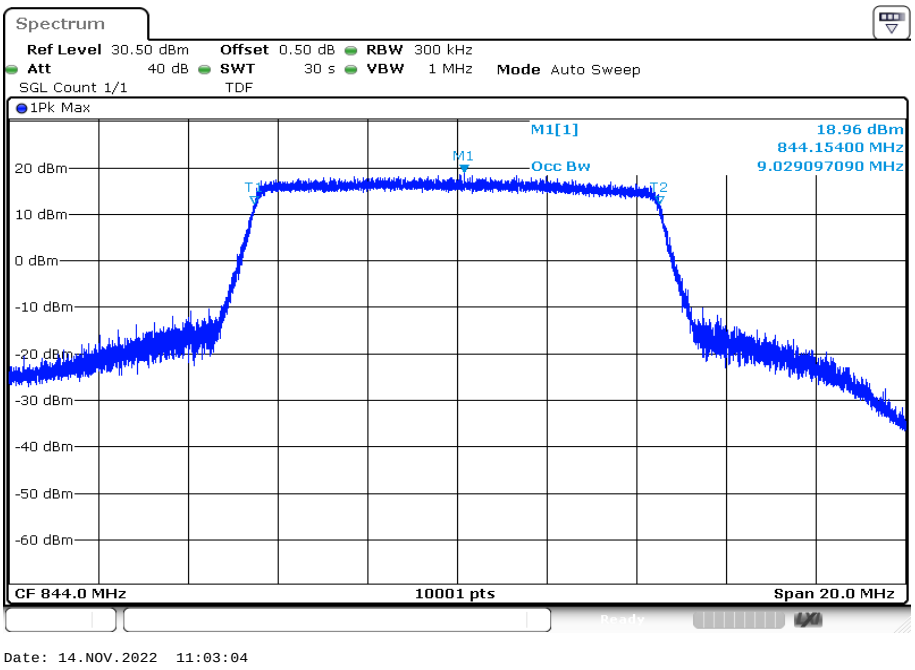
Date: 14.NOV.2022 10:58:32

Plot 46: 10 MHz – 16-QAM - middle channel (-26 dBc BW)



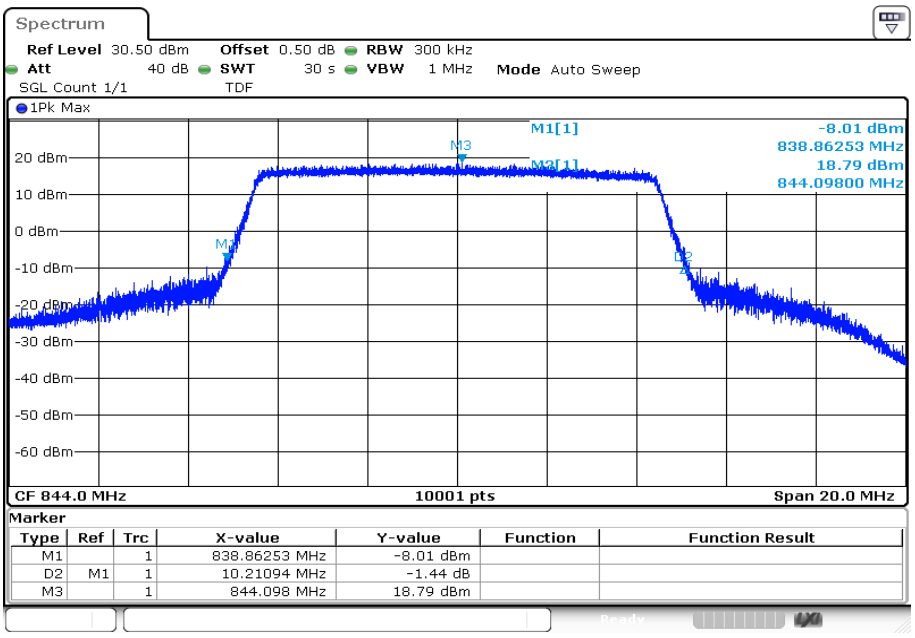
Date: 14.NOV.2022 10:59:05

Plot 47: 10 MHz – 16-QAM - highest channel (99% - OBW)



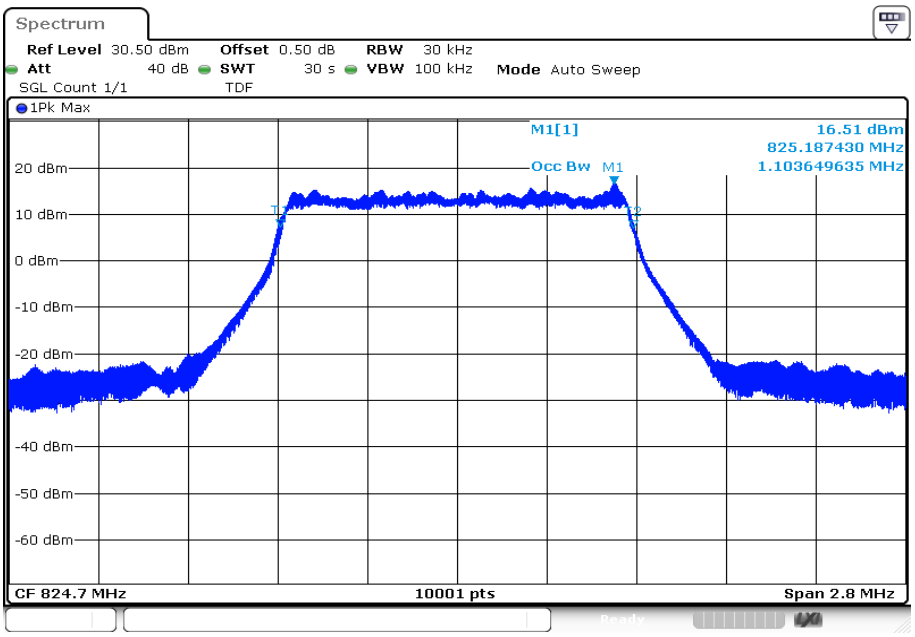
Date: 14.NOV.2022 11:03:04

Plot 48: 10 MHz – 16-QAM - highest channel (-26 dBc BW)



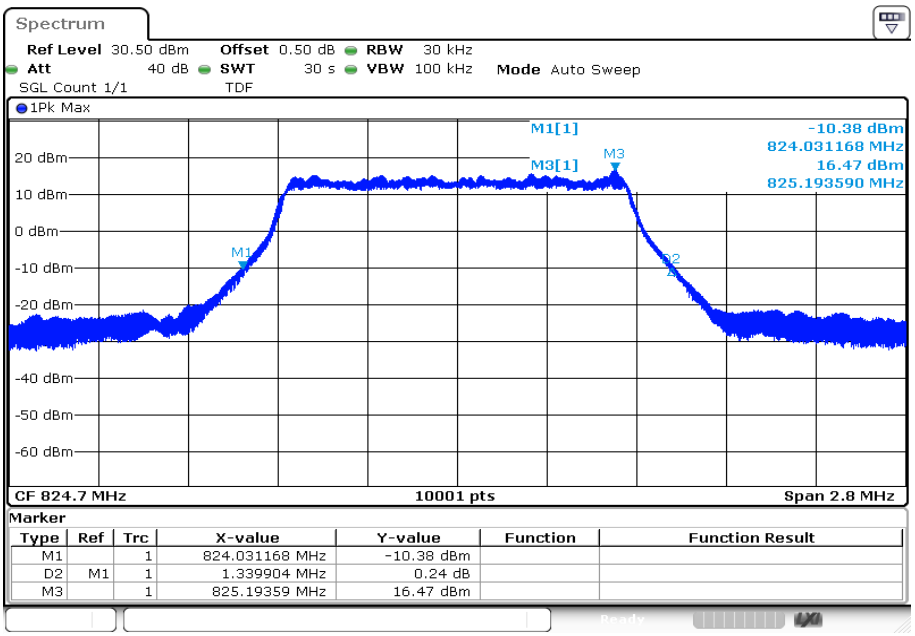
Date: 14.NOV.2022 11:03:37

Plot 49: 1.4 MHz – 64-QAM - lowest channel (99% - OBW)



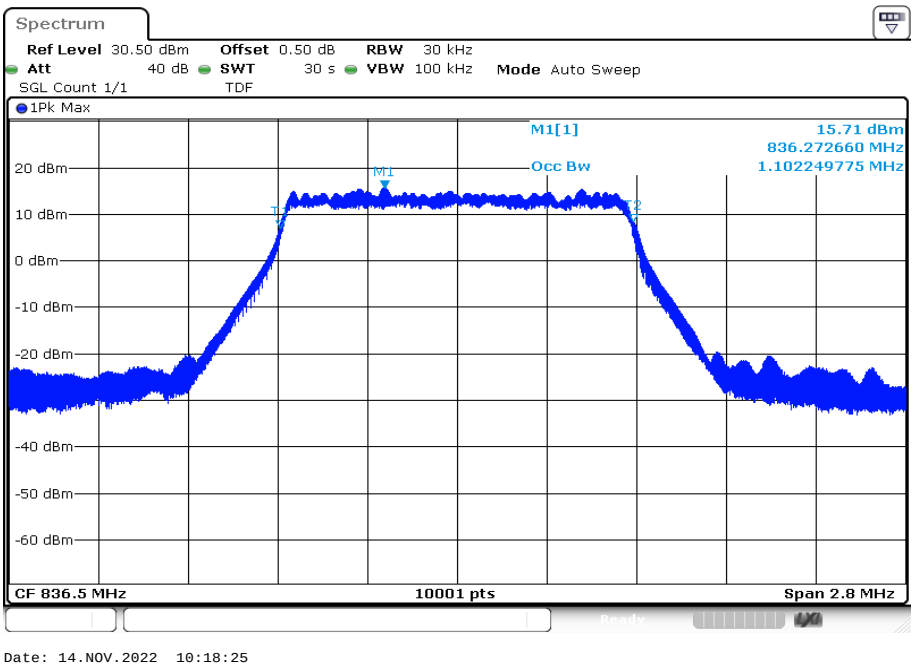
Date: 14.NOV.2022 10:15:00

Plot 50: 1.4 MHz – 64-QAM - lowest channel (-26 dBc BW)

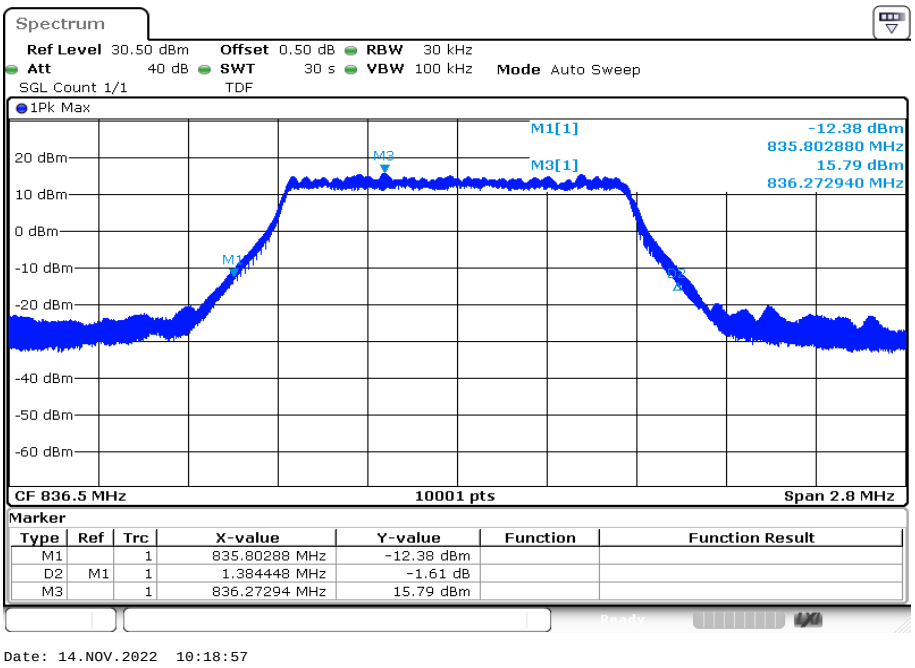


Date: 14.NOV.2022 10:15:33

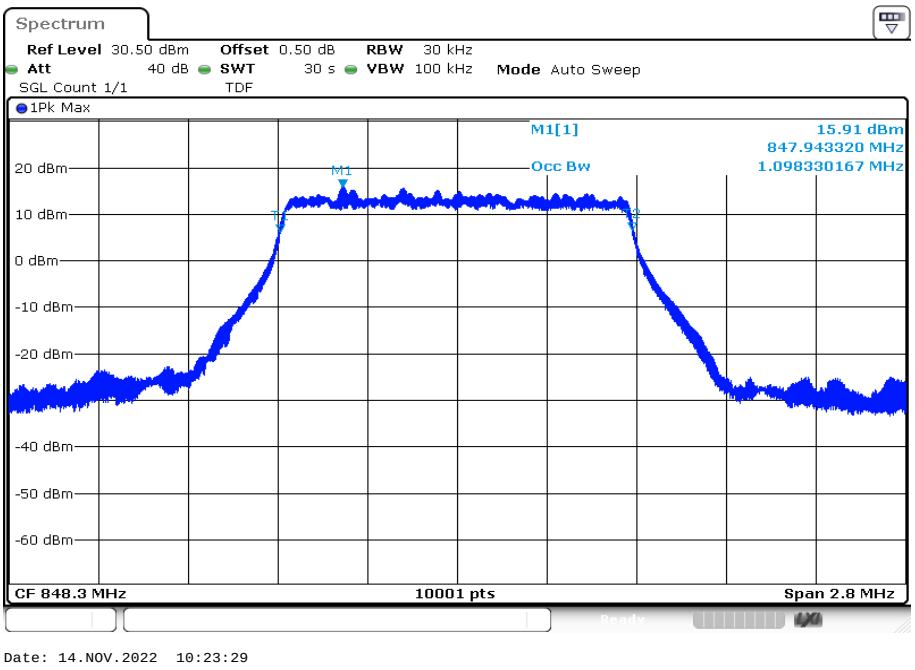
Plot 51: 1.4 MHz – 64-QAM - middle channel (99% - OBW)



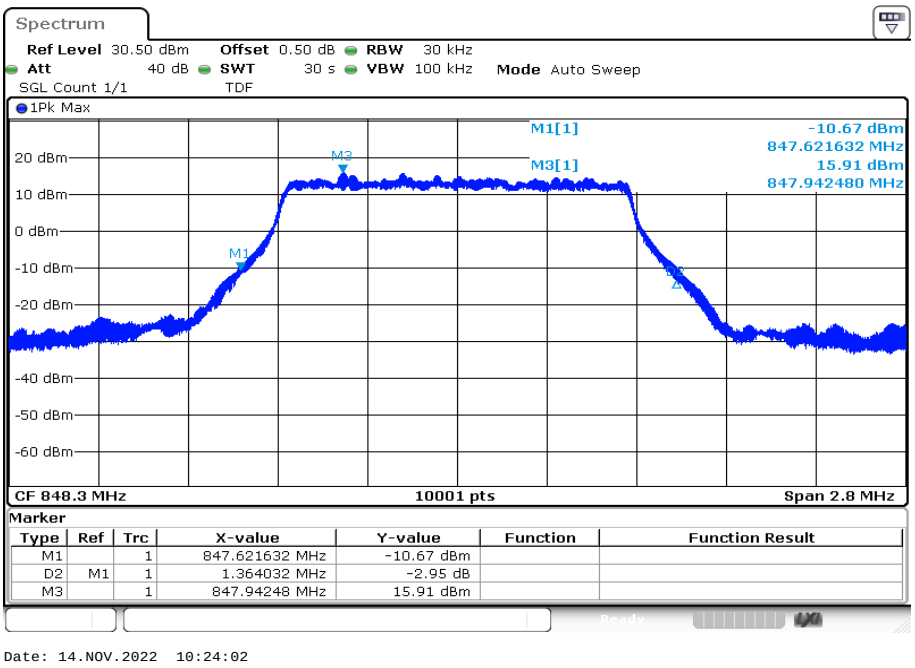
Plot 52: 1.4 MHz – 64-QAM - middle channel (-26 dBc BW)



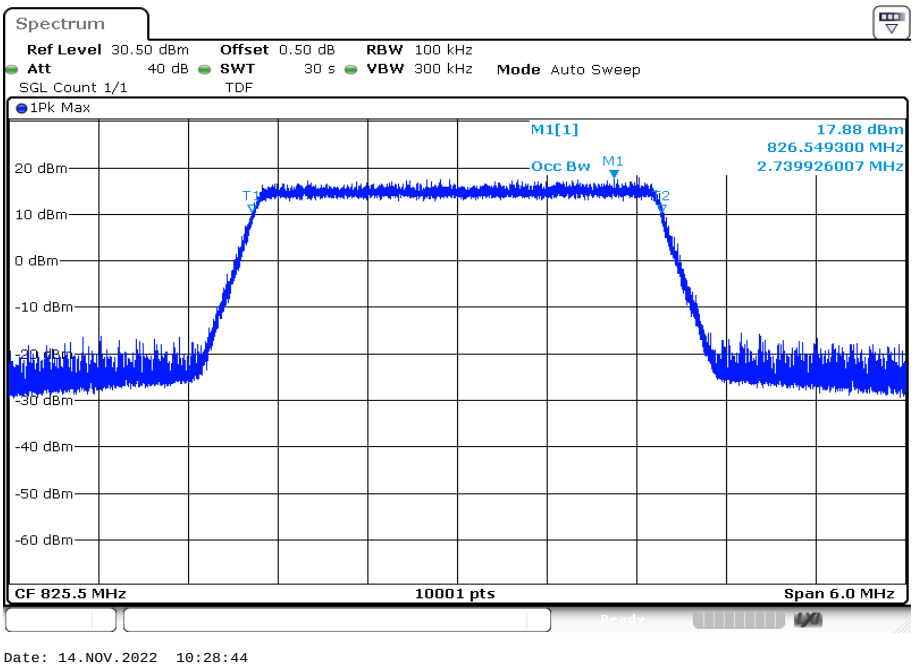
Plot 53: 1.4 MHz – 64-QAM - highest channel (99% - OBW)



Plot 54: 1.4 MHz – 64-QAM - highest channel (-26 dBc BW)

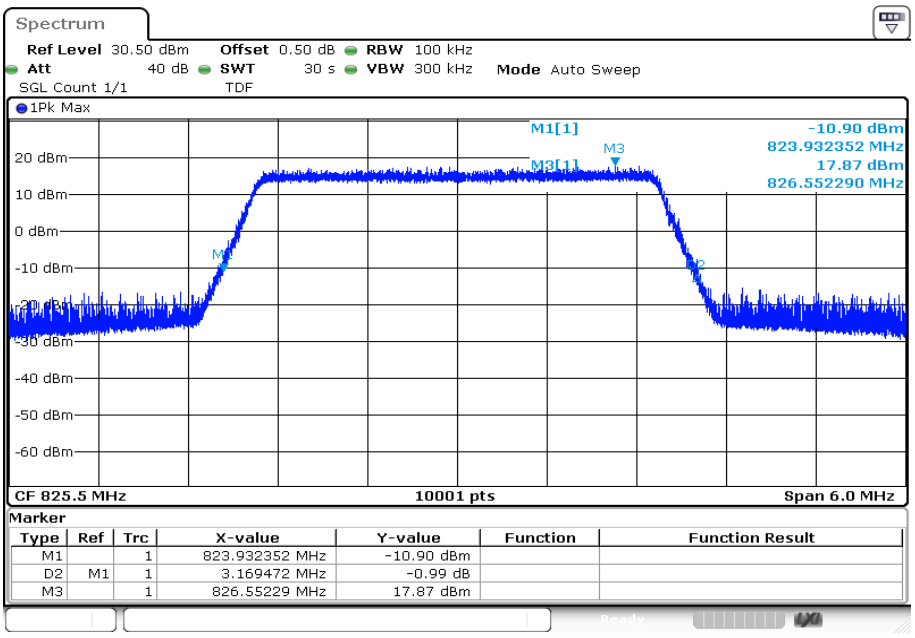


Plot 55: 3 MHz – 64-QAM - lowest channel (99% - OBW)



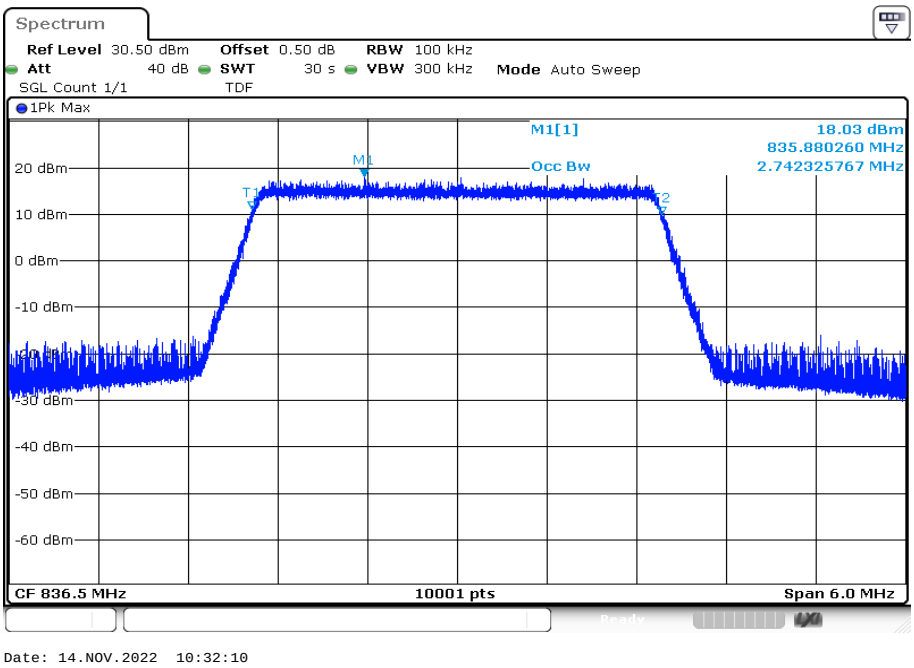
Date: 14.NOV.2022 10:28:44

Plot 56: 3 MHz – 64-QAM - lowest channel (-26 dBc BW)



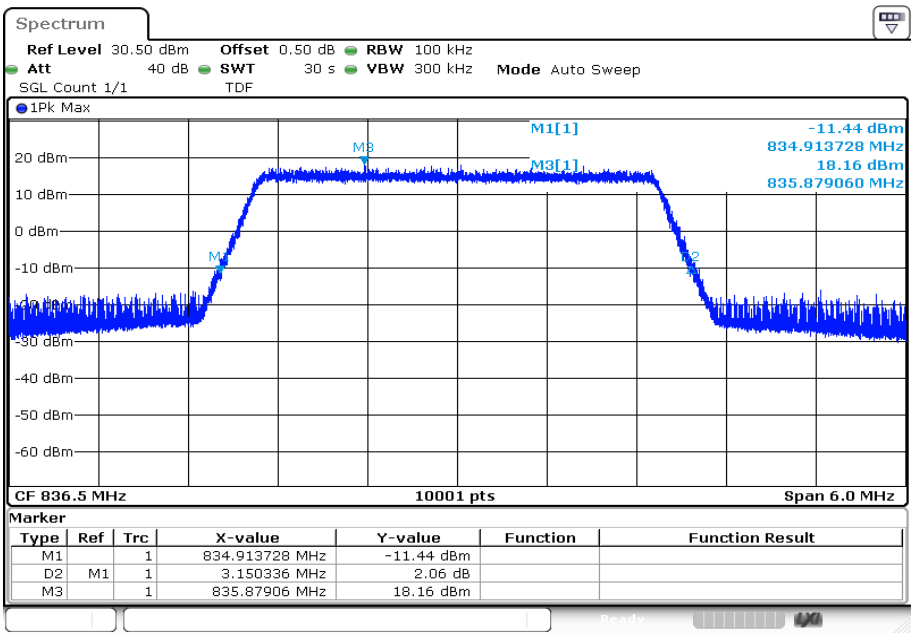
Date: 14.NOV.2022 10:29:17

Plot 57: 3 MHz – 64-QAM - middle channel (99% - OBW)



Date: 14.NOV.2022 10:32:10

Plot 58: 3 MHz – 64-QAM - middle channel (-26 dBc BW)



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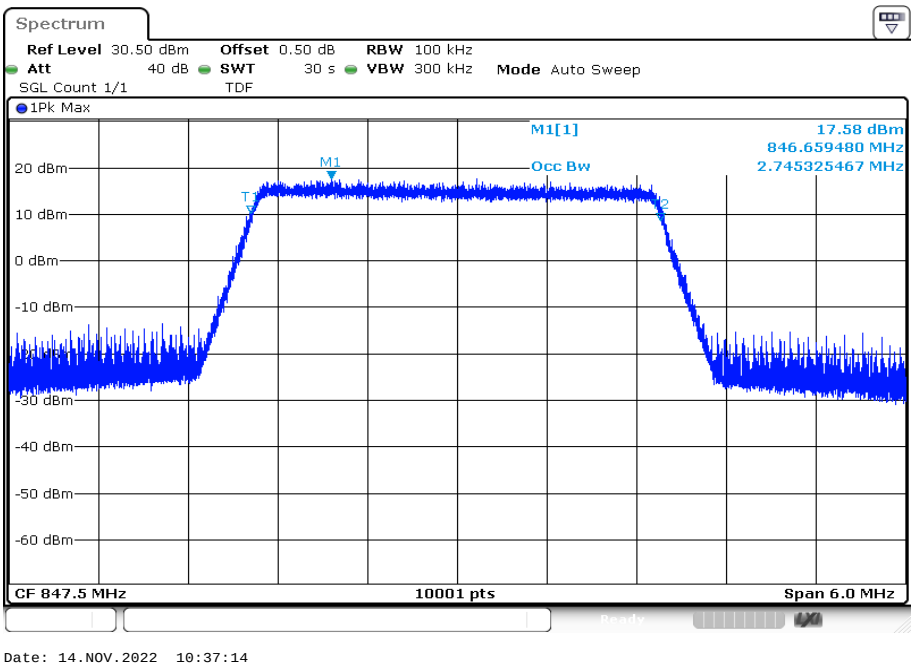
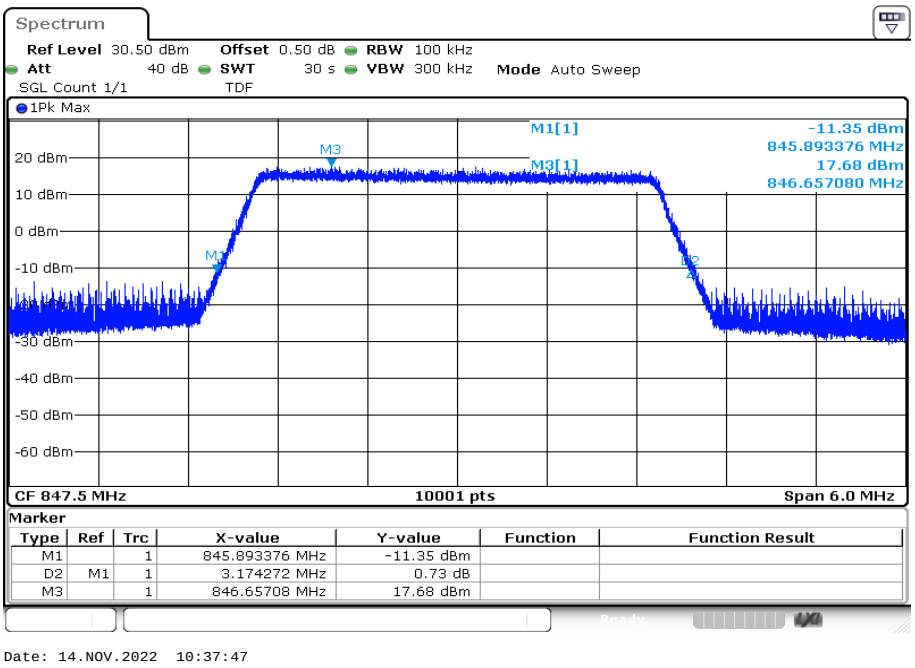
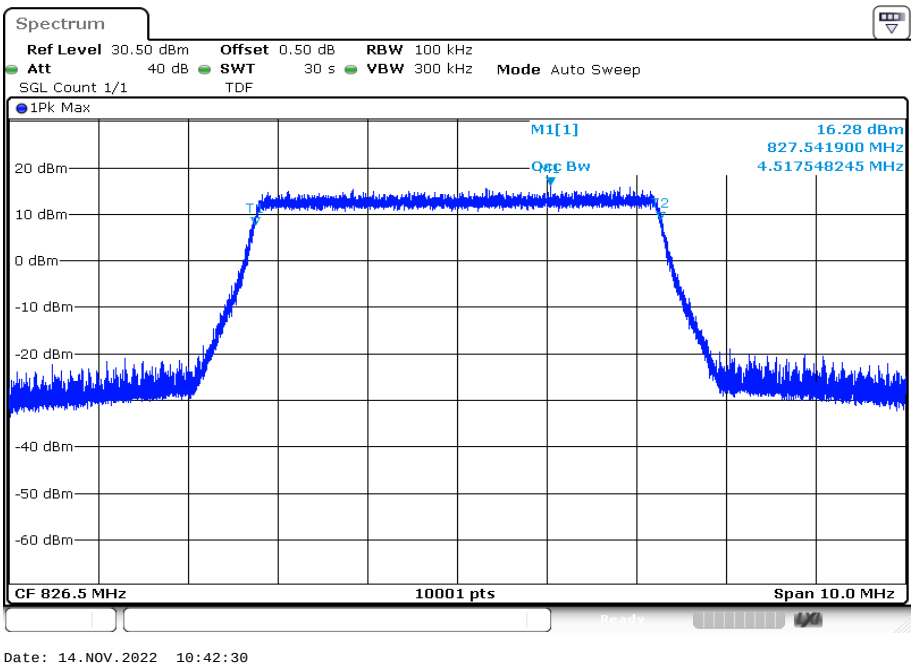
Plot 59: 3 MHz – 64-QAM - highest channel (99% - OBW)



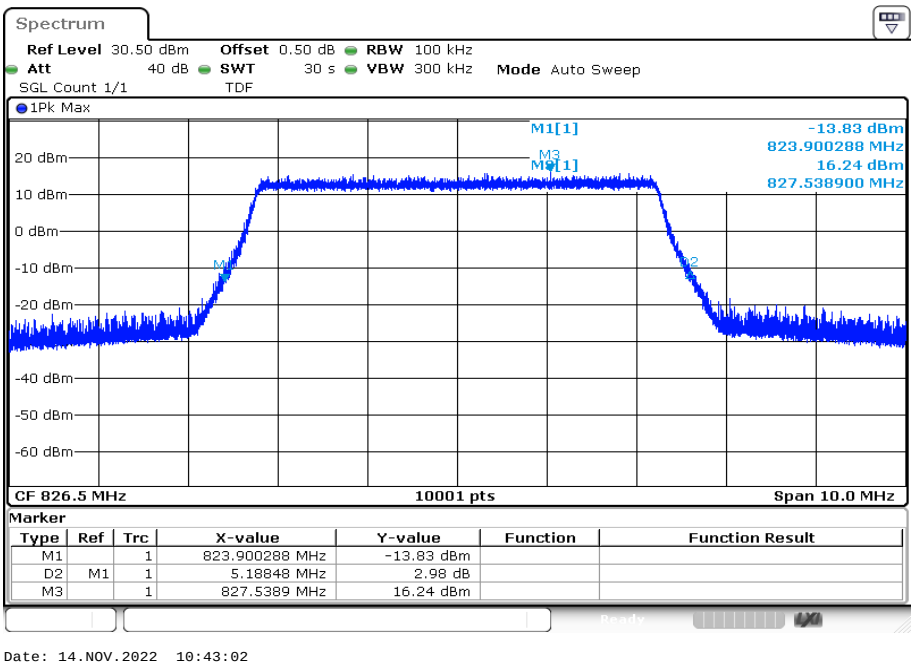
Plot 60: 3 MHz – 64-QAM - highest channel (-26 dBc BW)



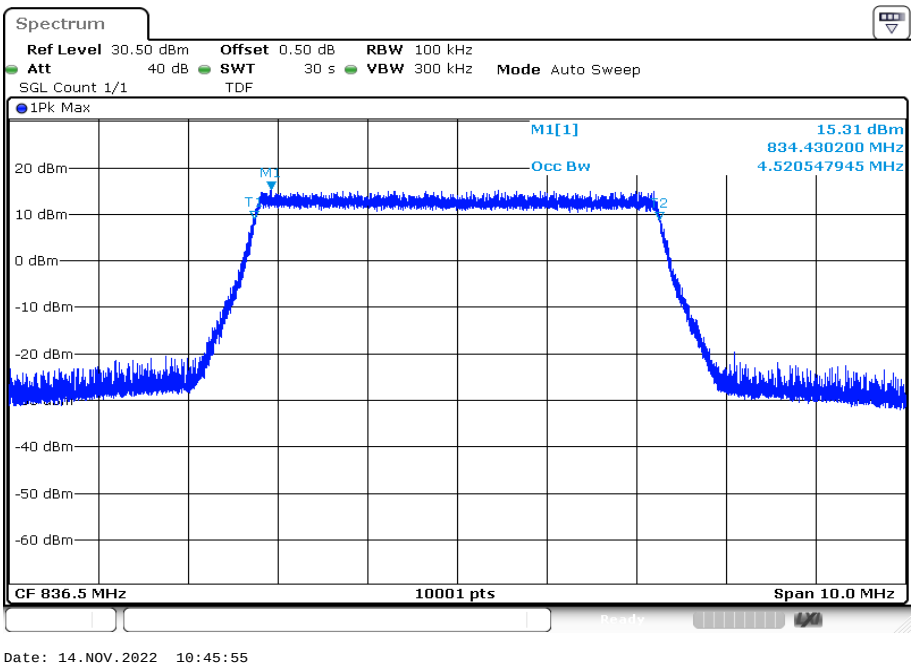
Plot 61: 5 MHz – 64-QAM - lowest channel (99% - OBW)



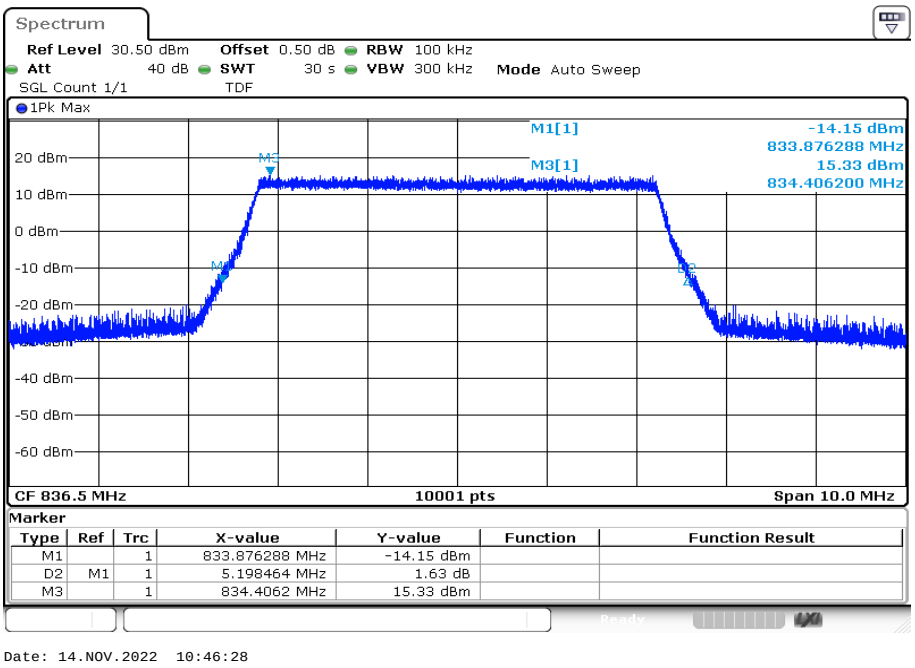
Plot 62: 5 MHz – 64-QAM - lowest channel (-26 dBc BW)



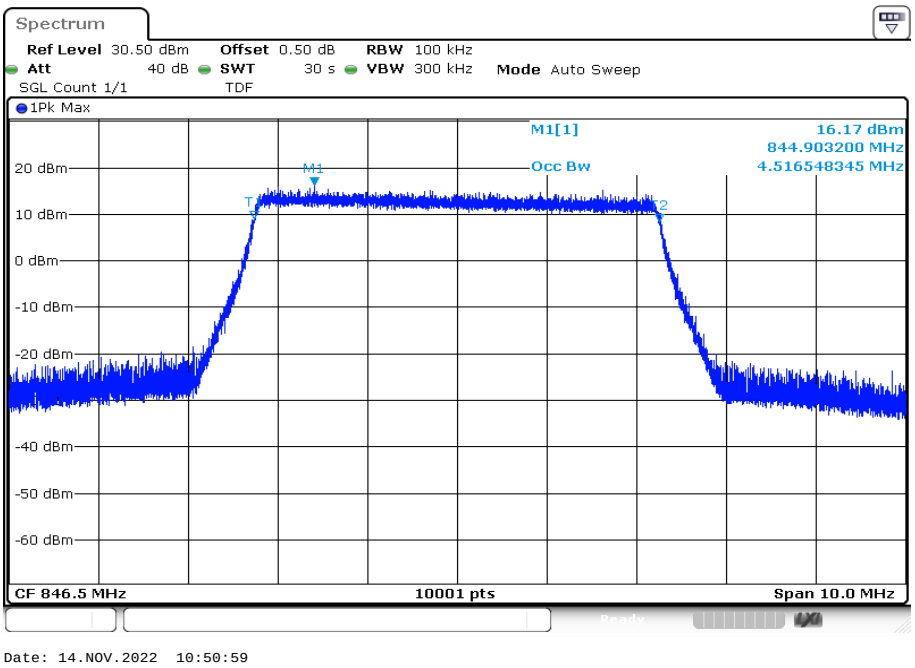
Plot 63: 5 MHz – 64-QAM - middle channel (99% - OBW)



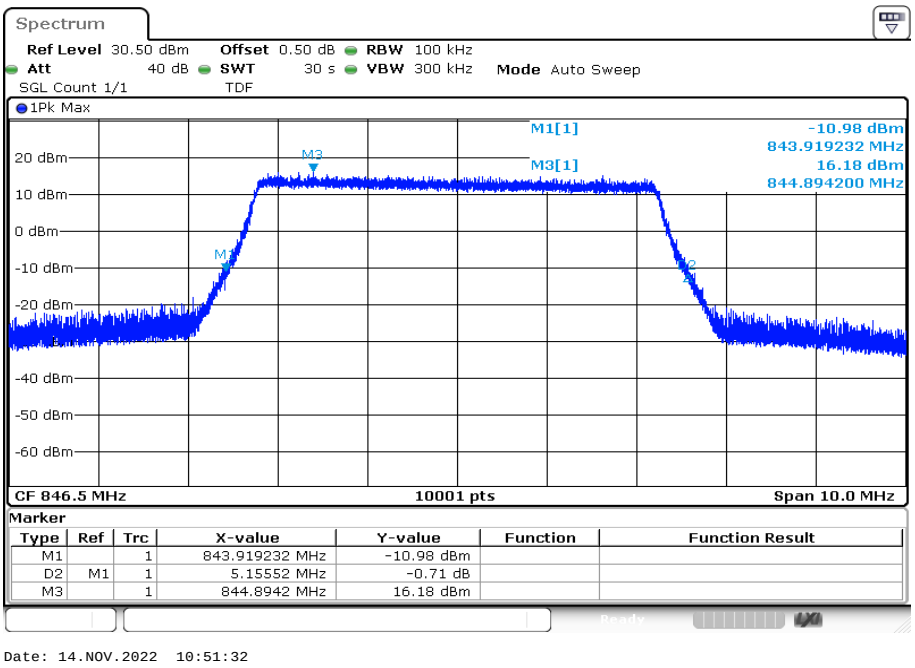
Plot 64: 5 MHz – 64-QAM - middle channel (-26 dBc BW)



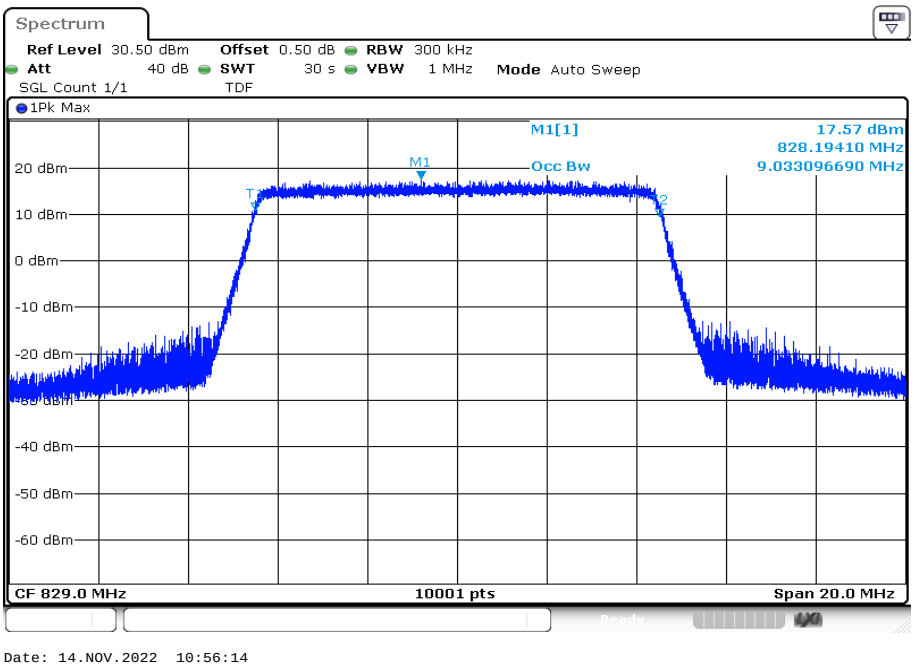
Plot 65: 5 MHz – 64-QAM - highest channel (99% - OBW)



Plot 66: 5 MHz – 64-QAM - highest channel (-26 dBc BW)



Plot 67: 10 MHz – 64-QAM - lowest channel (99% - OBW)



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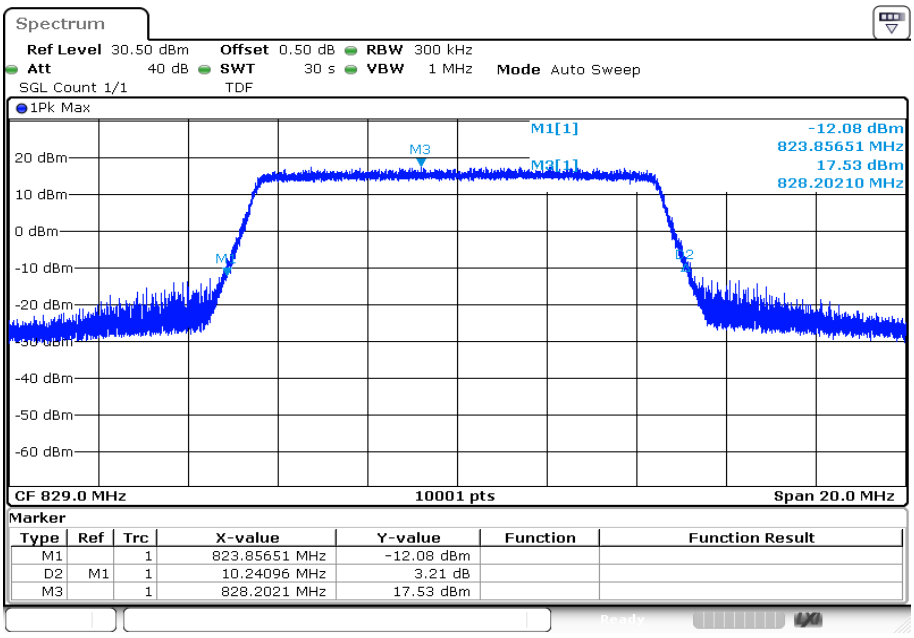
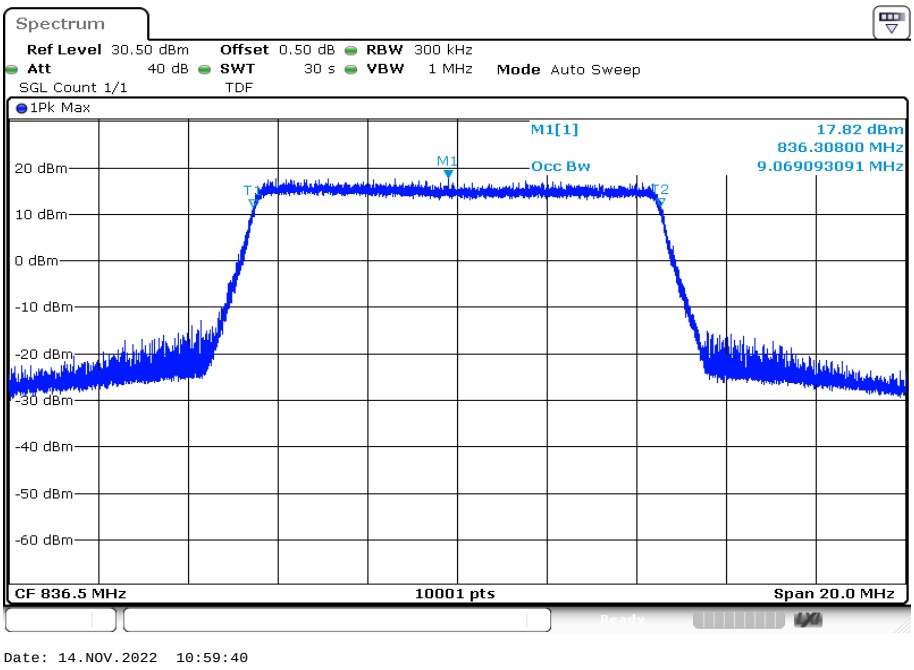
Plot 68: 10 MHz – 64-QAM - lowest channel (-26 dBc BW)



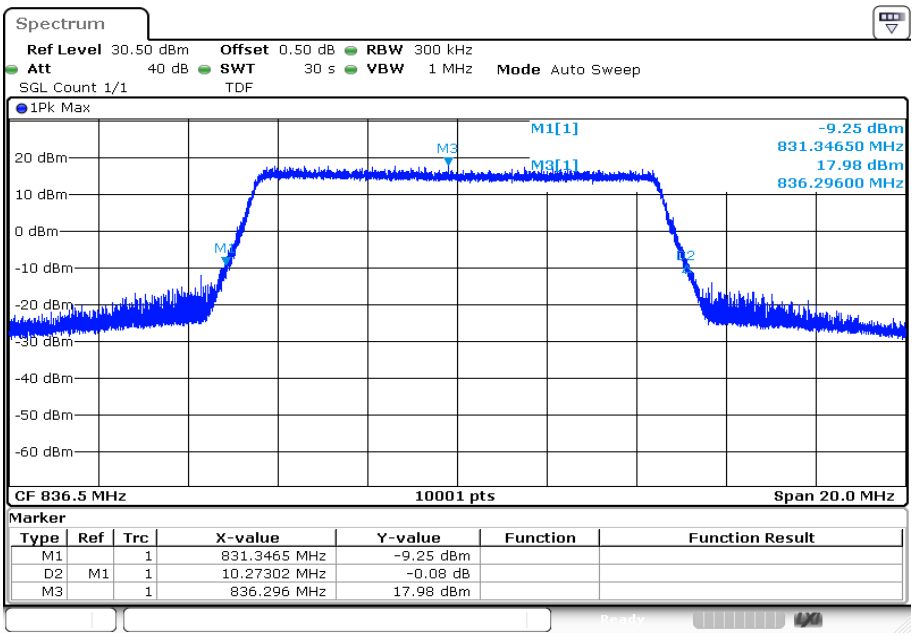
Date: 14.NOV.2022 10:56:47

Plot 69: 10 MHz – 64-QAM - middle channel (99% - OBW)



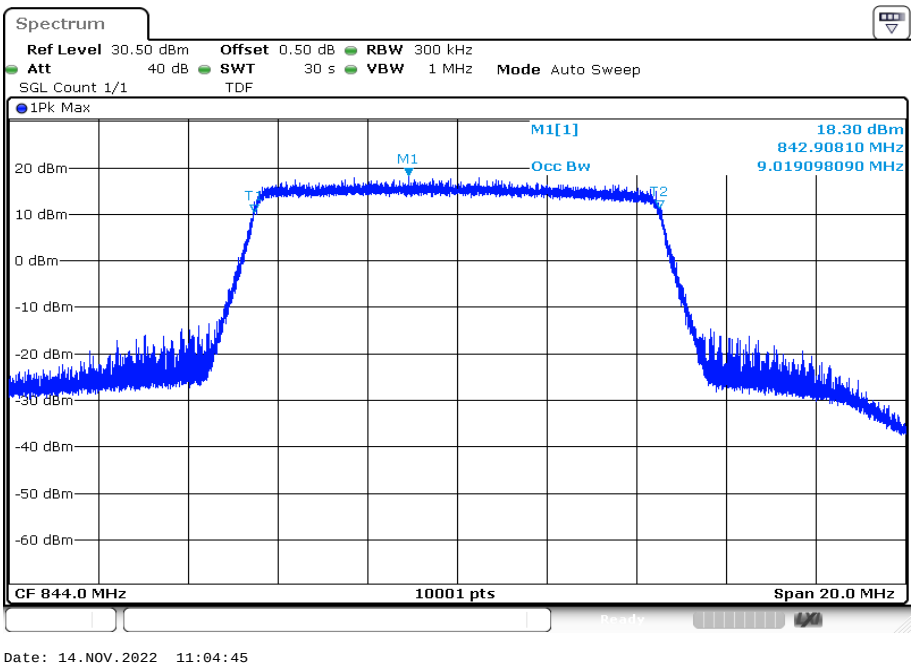
Date: 14.NOV.2022 10:59:40

Plot 70: 10 MHz – 64-QAM - middle channel (-26 dBc BW)



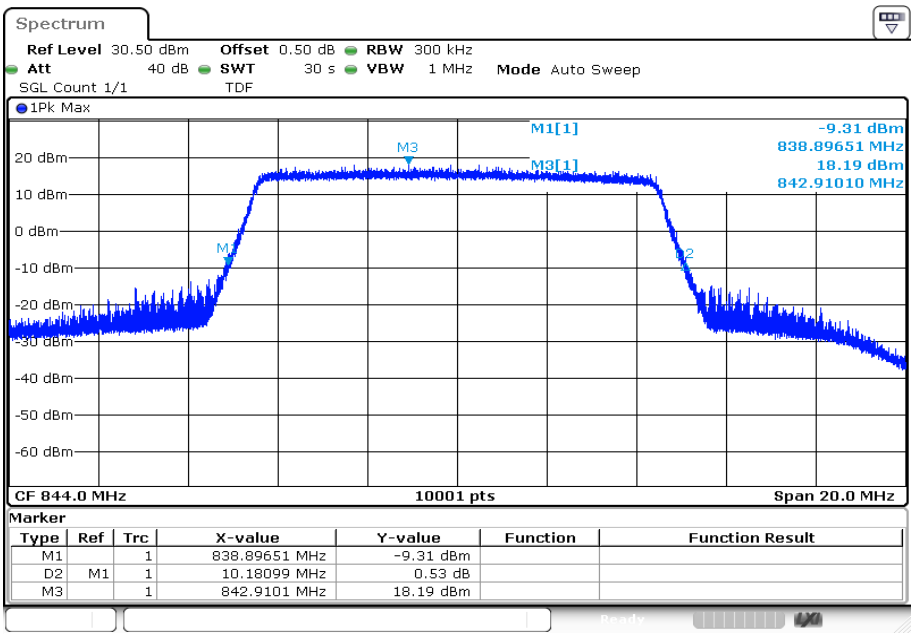
Date: 14.NOV.2022 11:00:13

Plot 71: 10 MHz – 64-QAM - highest channel (99% - OBW)



Date: 14.NOV.2022 11:04:45

Plot 72: 10 MHz – 64-QAM - highest channel (-26 dBc BW)



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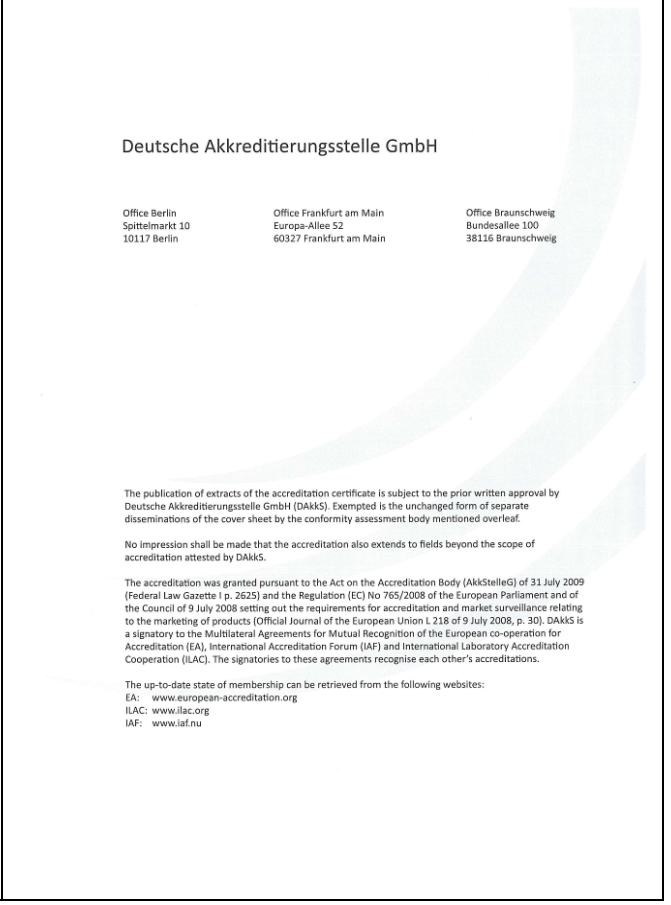
12 Glossary

EUT	Equipment under test
DUT	Device under test
UUT	Unit under test
GUE	GNSS User Equipment
ETSI	European Telecommunications Standards Institute
EN	European Standard
FCC	Federal Communications Commission
FCC ID	Company Identifier at FCC
IC	Industry Canada
PMN	Product marketing name
HMN	Host marketing name
HVIN	Hardware version identification number
FVIN	Firmware version identification number
EMC	Electromagnetic Compatibility
HW	Hardware
SW	Software
Inv. No.	Inventory number
S/N or SN	Serial number
C	Compliant
NC	Not compliant
NA	Not applicable
NP	Not performed
PP	Positive peak
QP	Quasi peak
AVG	Average
OC	Operating channel
OCW	Operating channel bandwidth
OBW	Occupied bandwidth
OOB	Out of band
DFS	Dynamic frequency selection
CAC	Channel availability check
OP	Occupancy period
NOP	Non occupancy period
DC	Duty cycle
PER	Packet error rate
CW	Clean wave
MC	Modulated carrier
WLAN	Wireless local area network
RLAN	Radio local area network
DSSS	Dynamic sequence spread spectrum
OFDM	Orthogonal frequency division multiplexing
FHSS	Frequency hopping spread spectrum
GNSS	Global Navigation Satellite System
C/N_0	Carrier to noise-density ratio, expressed in dB-Hz

13 Document history

Version	Applied changes	Date of release
-/-	Initial release	2022-12-21

14 Accreditation Certificate – D-PL-12076-01-05

first page	last page
	

Note: The current certificate annex is published on the websites (link see below).

https://www.dakks.de/files/data/as/pdf/D-PL-12076-01-05e.pdf

or

https://ctcadvanced.com/app/uploads/2020/06/D-PL-12076-01-05_TCB_USA.pdf

################################ END OF TEST REPORT ################################