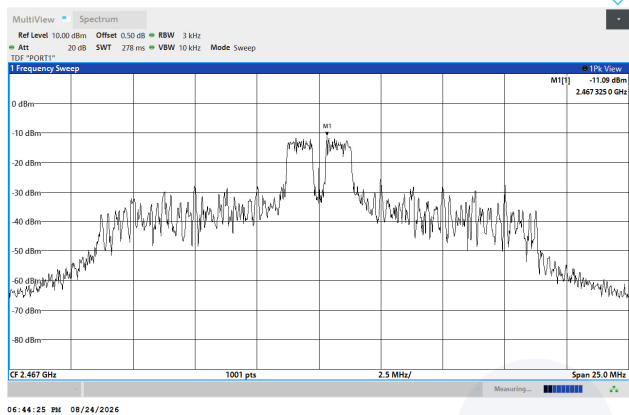
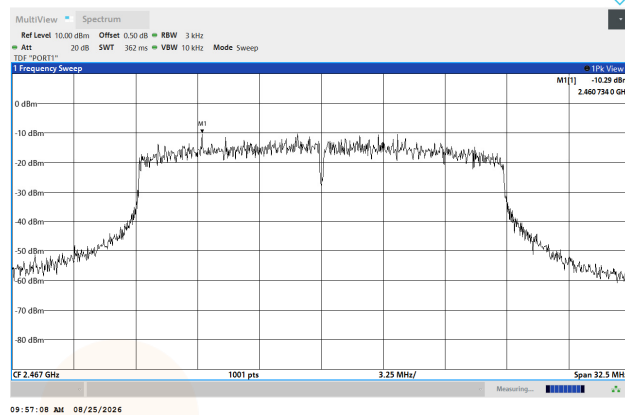


2 467 MHz

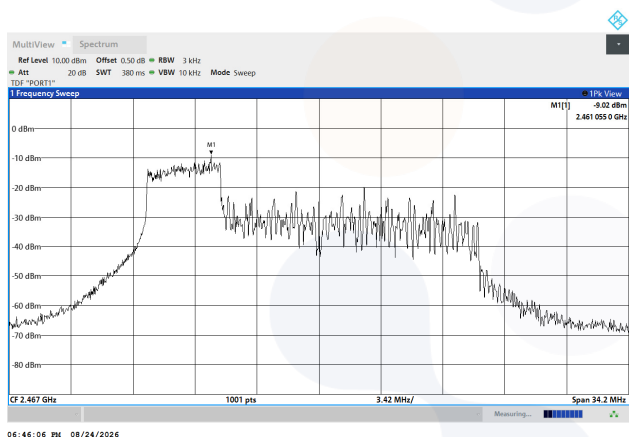
RU 26T offset 4



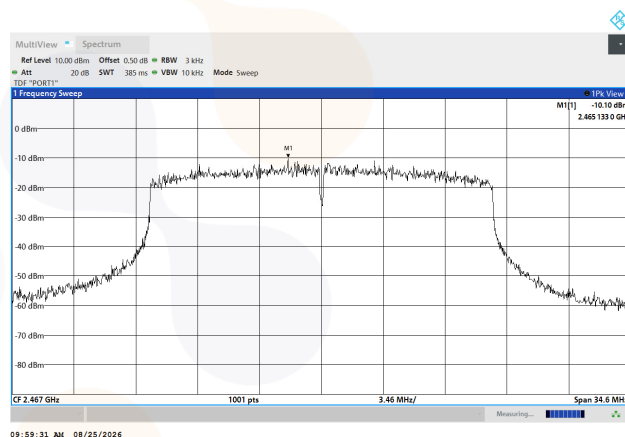
RU 242T offset 61



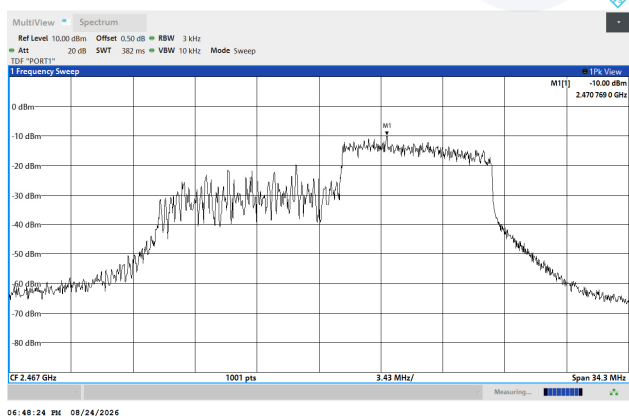
RU 52T offset 37



SU



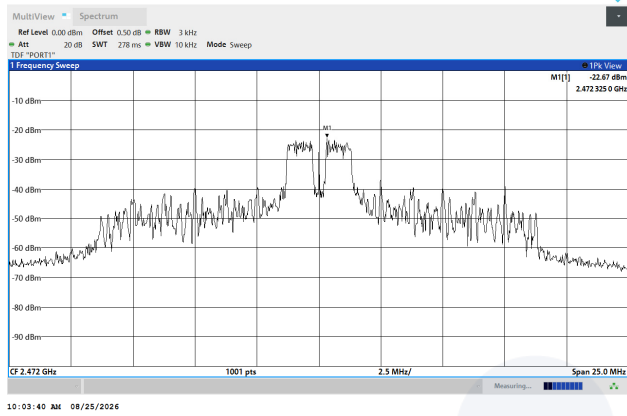
RU 106T offset 54



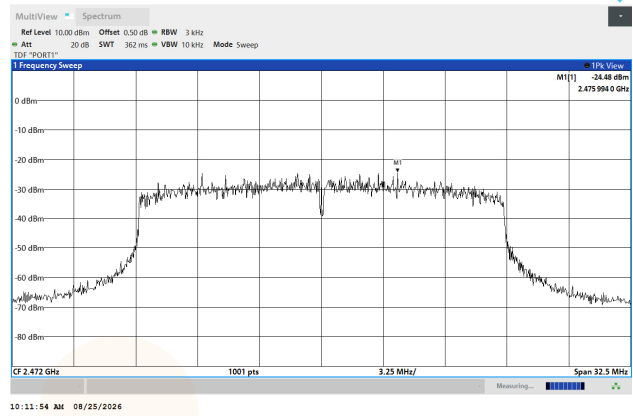
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2 472 MHz

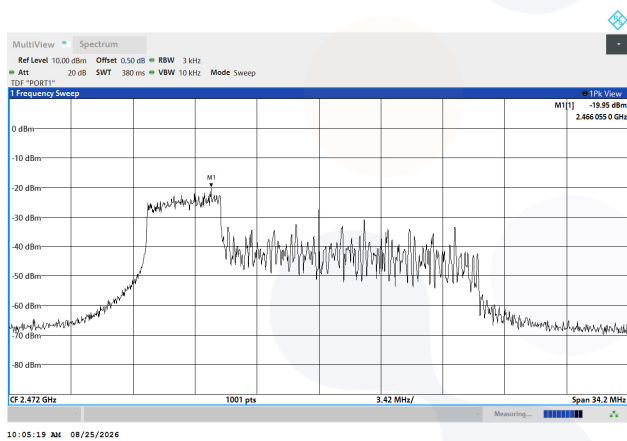
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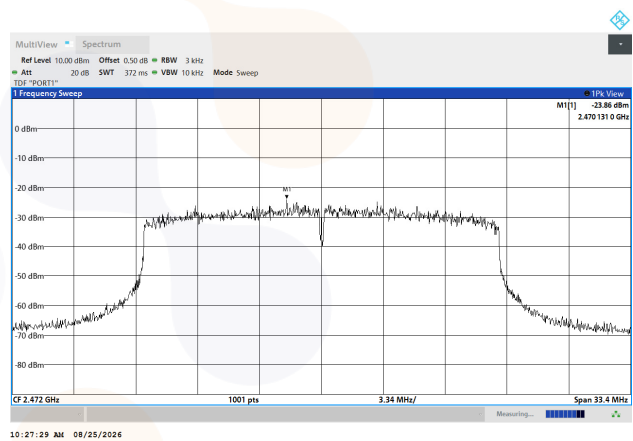
RU 242T offset 61



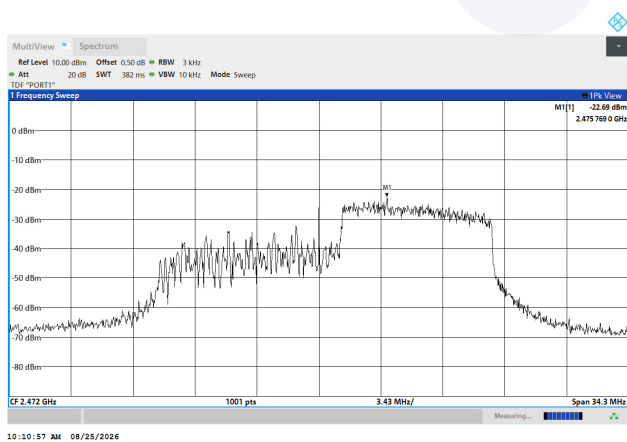
RU 52T offset 37



SU



RU 106T offset 54

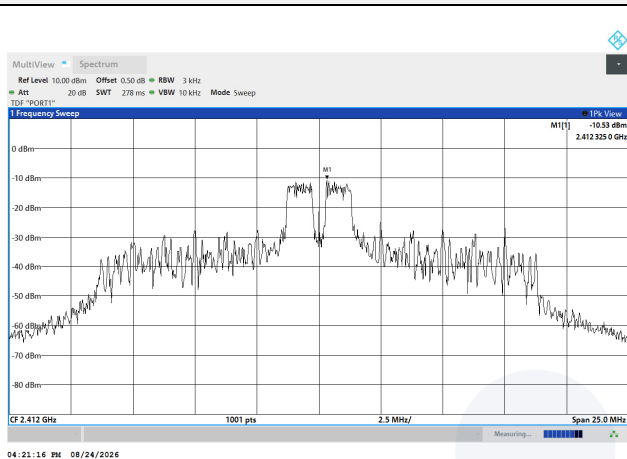


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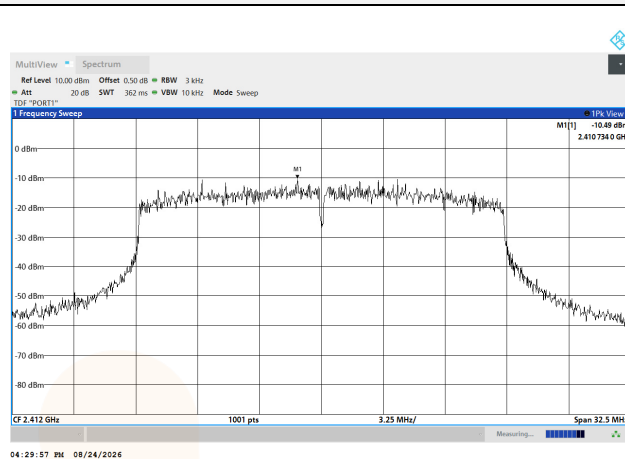
[DC 12 V]

2 412 MHz

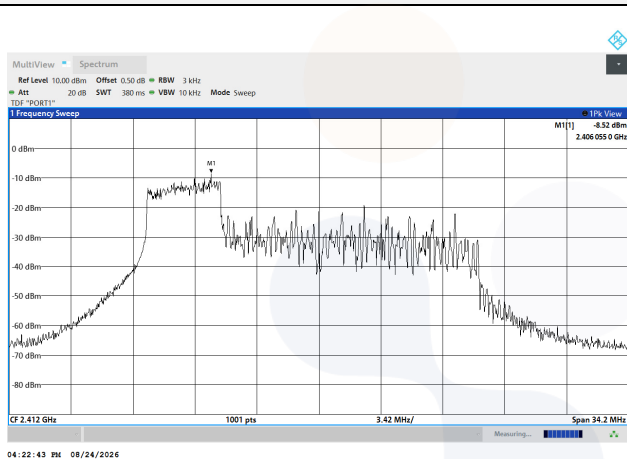
RU 26T offset 4



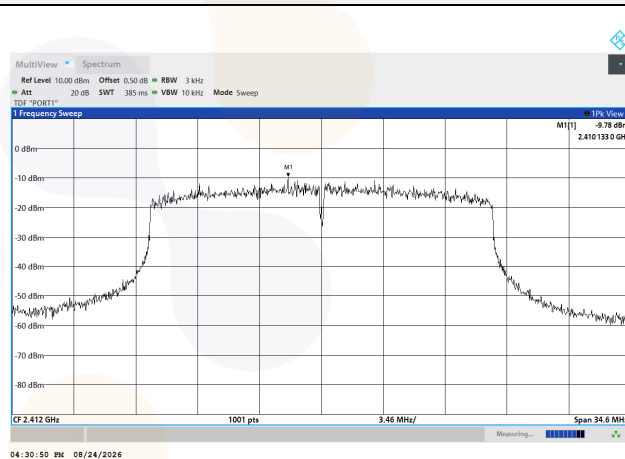
RU 242T offset 61



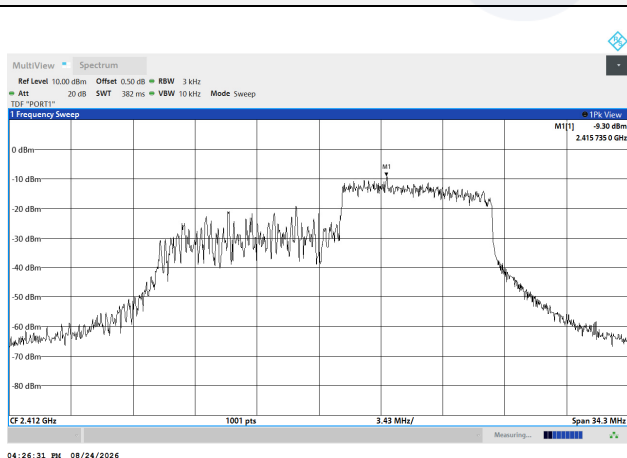
RU 52T offset 37



SU



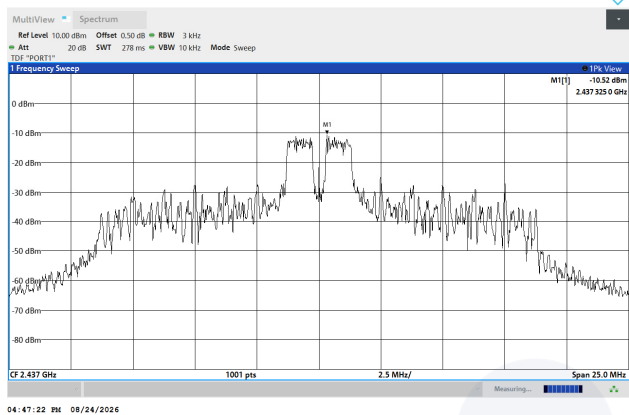
RU 106T offset 54



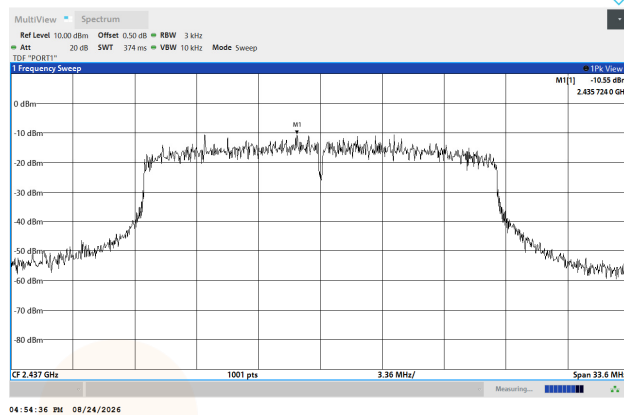
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2 437 MHz

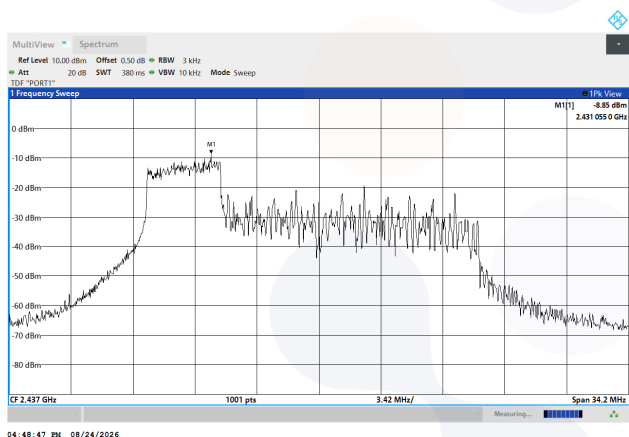
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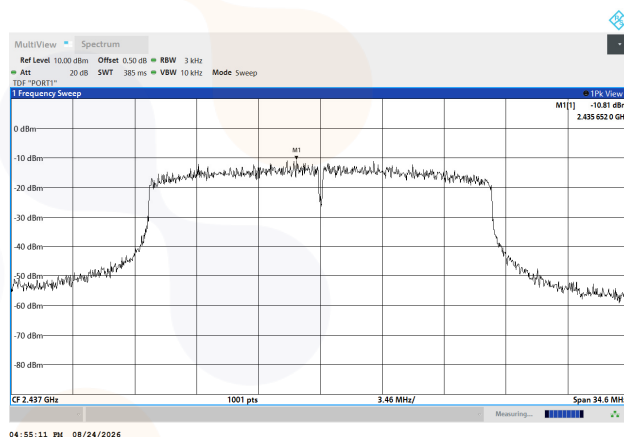
RU 242T offset 61



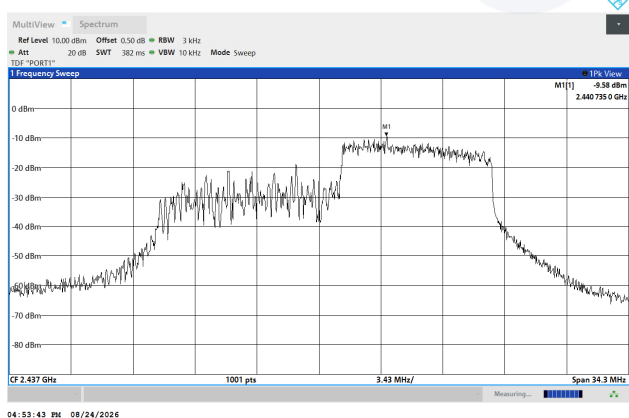
RU 52T offset 37



SU



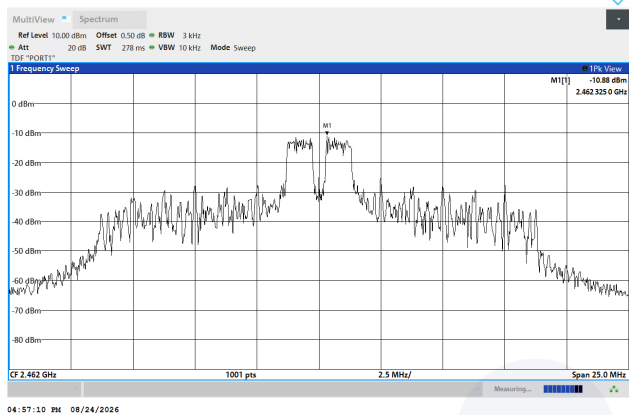
RU 106T offset 54



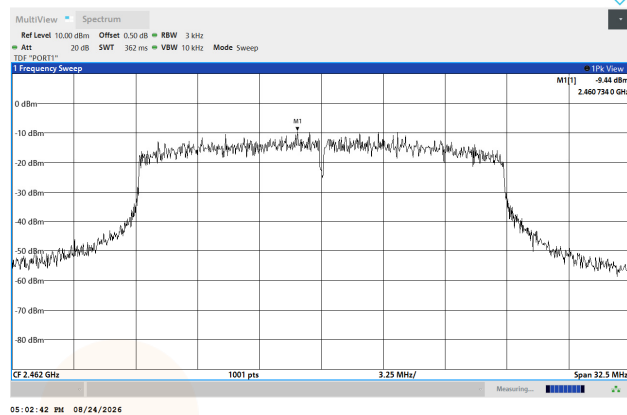
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2 462 MHz

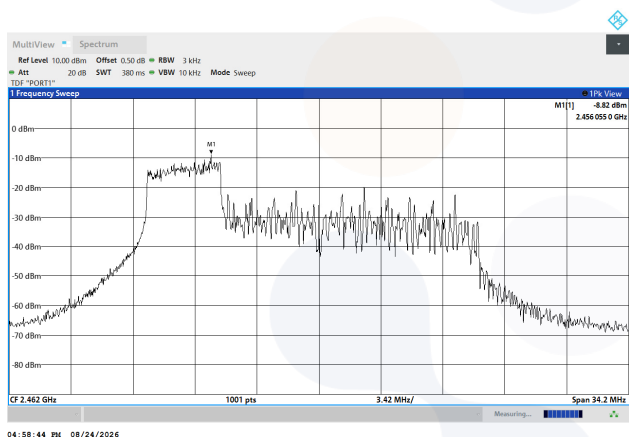
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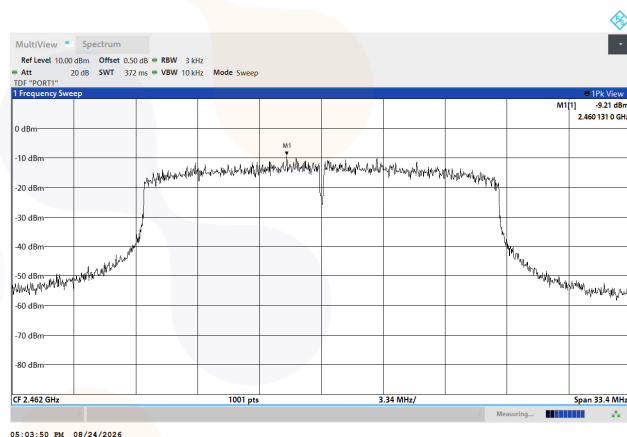
RU 242T offset 61



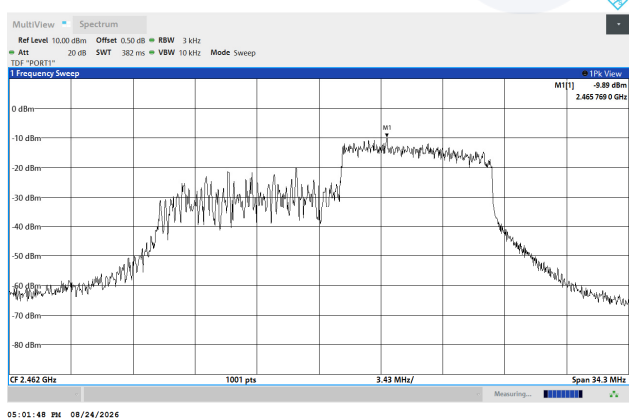
RU 52T offset 37



SU



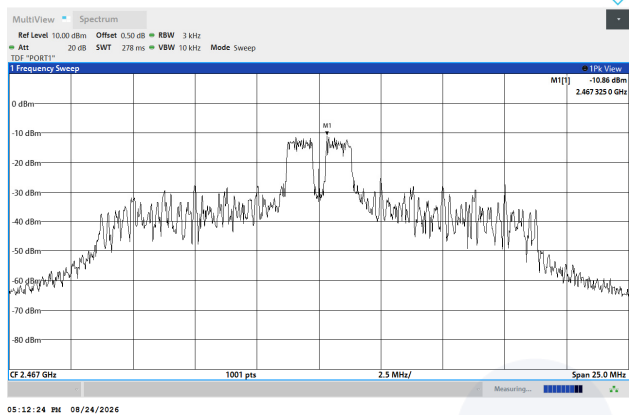
RU 106T offset 54



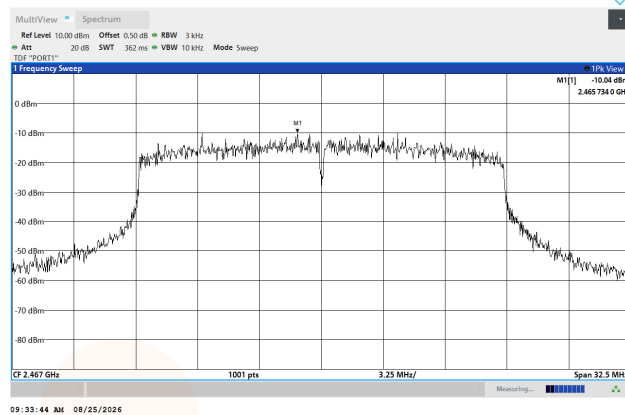
Blank

2 467 MHz

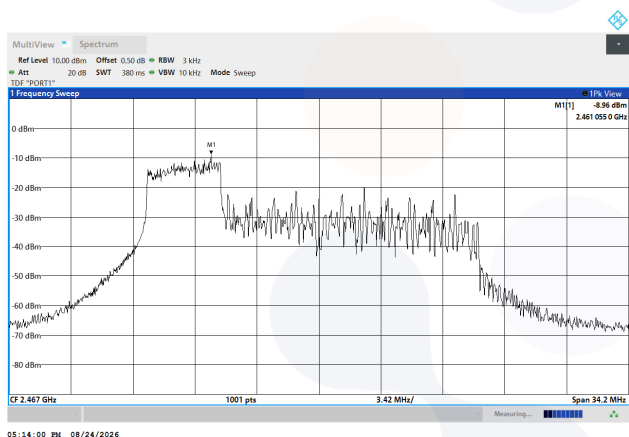
RU 26T offset 4



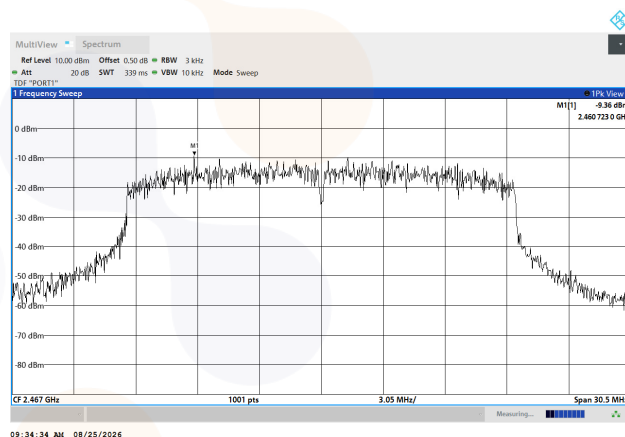
RU 242T offset 61



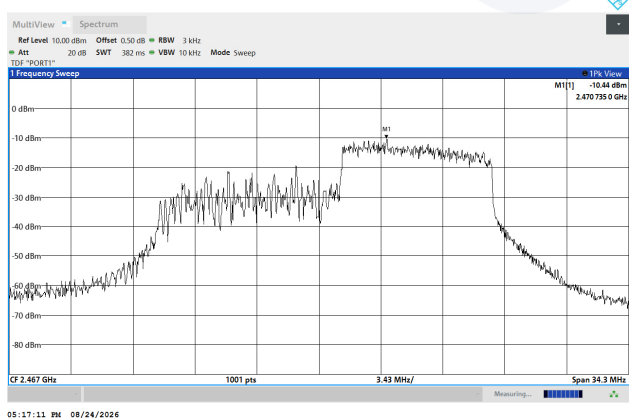
RU 52T offset 37



SU



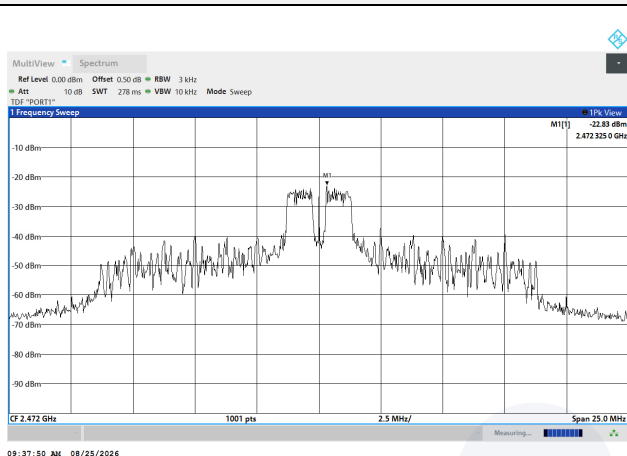
RU 106T offset 54



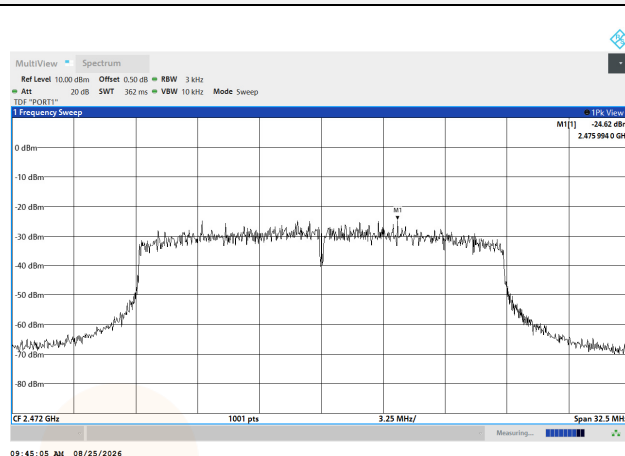
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2 472 MHz

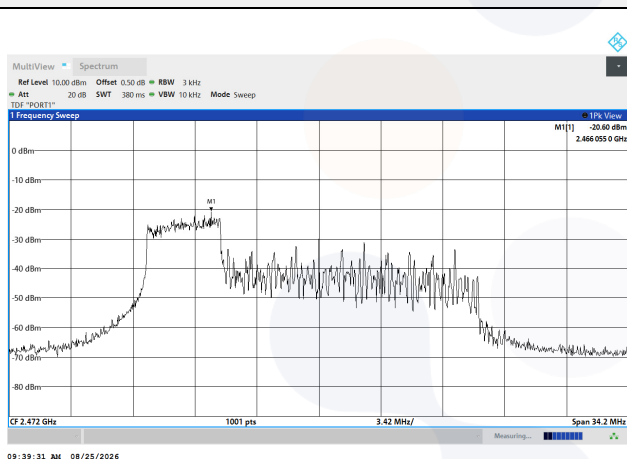
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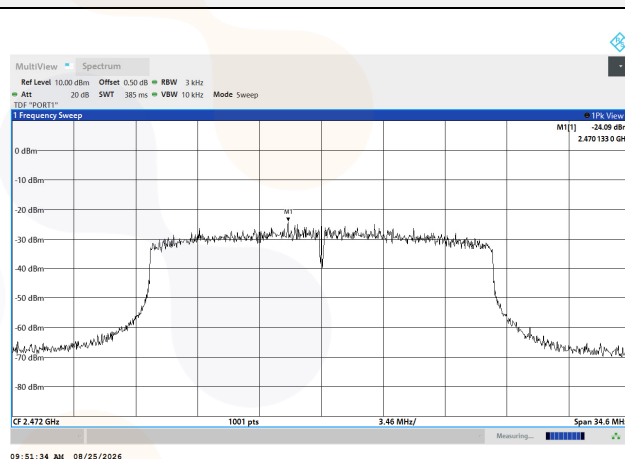
RU 242T offset 61



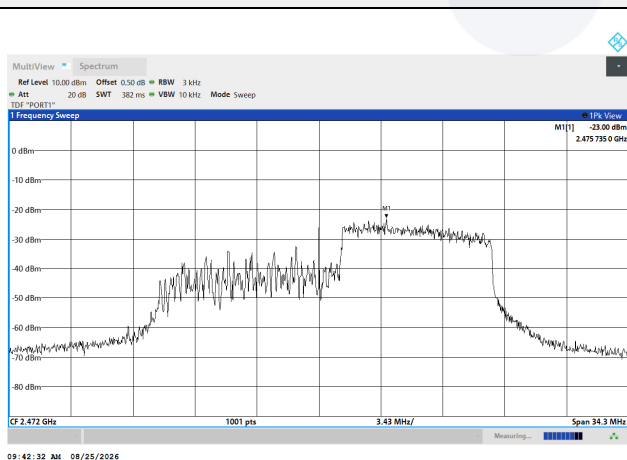
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SU



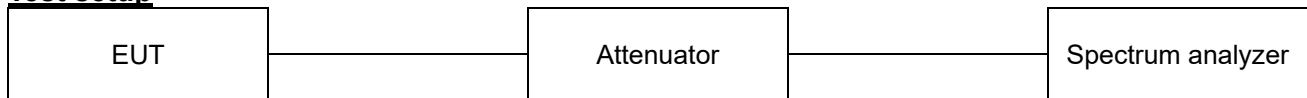
RU 106T offset 54



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7.3. 6 dB Bandwidth(DTS Channel Bandwidth) & 99% Bandwidth

Test setup



Limit

According to §15.247(a)(2),

Systems using digital modulation techniques may operate in the 2 400–2 483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

According to RSS-247(6.3.1)(a),

The following applies to the bands 902–928 MHz and 2 400-2 483.5 MHz
 The minimum 6 dB bandwidth shall be 500 kHz.

Test procedure

ANSI C63.10 - Section 11.8.2, 6.9.3

Test settings

DTS bandwidth

One of the following procedures may be used to determine the modulated DTS bandwidth.

Option 1

- 1) Set RBW = 100 kHz.
- 2) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- 3) Detector = Peak.
- 4) Trace mode = max hold.
- 5) Sweep = auto couple.
- 6) Allow the trace to stabilize.
- 7) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Option 2

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described in 11.8.1 (i.e., RBW = 100 kHz, VBW $\geq 3 \times$ RBW, and peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB..

Occupied bandwidth (or 99% emission bandwidth)

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.

The following procedure shall be used for measuring 99% power bandwidth:

- a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be at least three times the RBW, unless otherwise specified by the applicable requirement.
- c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (OBW/RBW)]$ below the reference level. Specific guidance is given in 4.1.6.2.
- d) Step a) through step c) might require iteration to adjust within the specified range.
- e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max-hold mode (until the trace stabilizes) shall be used.
- f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.
- g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.

The occupied bandwidth shall be reported by providing spectral plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

Note:

It may be necessary to repeat the measurement a few times until the RBW and VBW are in compliance with the above requirement.

Test results

[DC 5 V]

Frequency(MHz)	Tone	RU Offset	6 dB Bandwidth(MHz)	99% Bandwidth(MHz)
2 412	26T	0	17.100	18.401
		4	2.750	16.630
		8	15.900	18.550
	52T	37	17.100	18.128
		38	12.650	16.817
		40	17.050	18.314
	106T	53	17.100	17.921
		54	17.150	18.184
	242T	61	16.250	18.942
	SU	-	17.300	18.872
2 437	26T	0	15.850	18.377
		4	2.750	16.613
		8	17.050	18.591
	52T	37	17.100	18.129
		38	11.400	16.798
		40	17.050	18.350
	106T	53	17.100	17.900
		54	17.150	18.226
	242T	61	16.250	18.946
	SU	-	16.700	18.873
2 462	26T	0	15.850	18.376
		4	2.750	16.626
		8	17.050	18.591
	52T	37	17.100	18.124
		38	11.400	16.809
		40	17.050	18.355
	106T	53	17.100	17.890
		54	17.150	18.221
	242T	61	16.250	18.963
	SU	-	16.800	18.875

Frequency(MHz)	Tone	RU Offset	6 dB Bandwidth(MHz)	99% Bandwidth(MHz)
2 467	26T	0	15.850	18.370
		4	2.750	16.621
		8	17.050	18.583
	52T	37	17.100	18.118
		38	11.400	16.804
		40	17.050	18.344
	106T	53	17.100	17.882
		54	17.150	18.214
	242T	61	16.250	18.949
	SU	-	17.300	18.864
2 472	26T	0	17.100	18.493
		4	2.750	16.828
		8	17.050	18.689
	52T	37	17.100	18.162
		38	11.400	16.897
		40	17.100	18.369
	106T	53	17.100	17.927
		54	17.150	18.238
	242T	61	16.250	18.961
	SU	-	16.700	18.889

[DC 12 V]

Frequency(MHz)	Tone	RU Offset	6 dB Bandwidth(MHz)	99% Bandwidth(MHz)
2 412	26T	0	17.100	18.407
		4	2.750	16.627
		8	15.850	18.552
	52T	37	17.100	18.152
		38	11.400	16.814
		40	17.050	18.304
	106T	53	17.100	17.914
		54	17.150	18.183
	242T	61	16.250	18.941
	SU	-	17.300	18.867
2 437	26T	0	17.100	18.364
		4	2.750	16.626
		8	17.050	18.578
	52T	37	17.100	18.133
		38	11.400	16.807
		40	17.050	18.347
	106T	53	17.100	17.899
		54	17.150	18.220
	242T	61	16.800	18.947
	SU	-	17.300	18.874
2 462	26T	0	17.100	18.374
		4	2.750	16.630
		8	17.050	18.581
	52T	37	17.100	18.121
		38	11.400	16.798
		40	17.050	18.350
	106T	53	17.100	17.889
		54	17.150	18.217
	242T	61	16.250	18.962
	SU	-	16.700	18.868

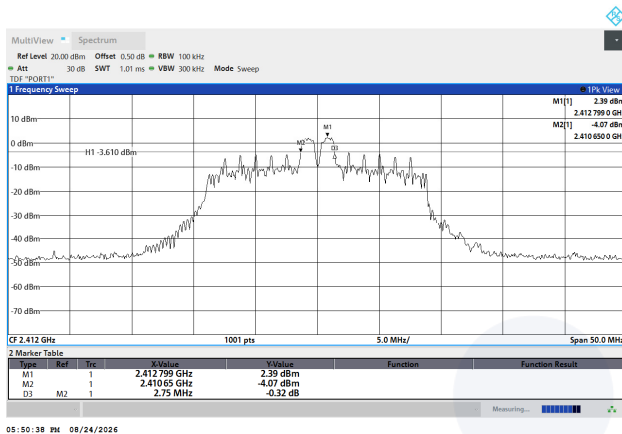
Frequency(MHz)	Tone	RU Offset	6 dB Bandwidth(MHz)	99% Bandwidth(MHz)
2 467	26T	0	15.850	18.375
		4	2.750	16.617
		8	17.050	18.585
	52T	37	17.100	18.115
		38	11.400	16.793
		40	17.050	18.355
	106T	53	17.100	17.880
		54	17.150	18.213
	242T	61	16.250	18.957
	SU	-	15.250	18.871
2 472	26T	0	17.100	18.471
		4	2.750	16.838
		8	17.050	18.703
	52T	37	17.100	18.171
		38	11.400	16.877
		40	17.100	18.377
	106T	53	17.100	17.922
		54	17.150	18.230
	242T	61	16.250	18.962
	SU	-	17.300	18.891

In order to simplify the report, attached plots were the worst case per RU & SU Mode.

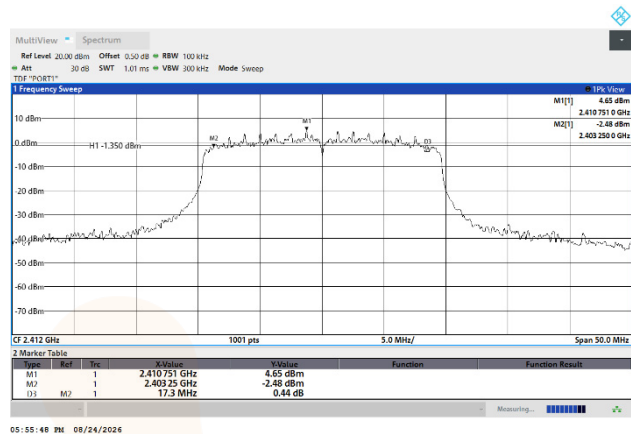
6 dB Bandwidth

[DC 5 V]

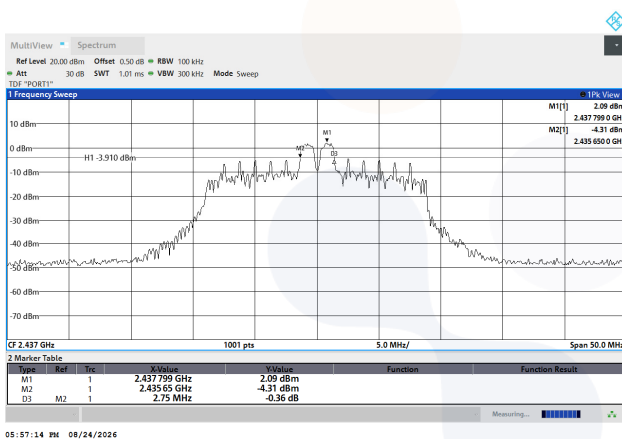
RU 26T offset 4 / 2 412 MHz



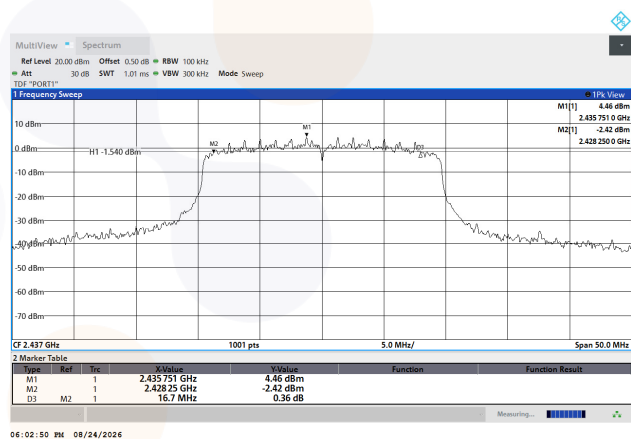
SU / 2 412 MHz



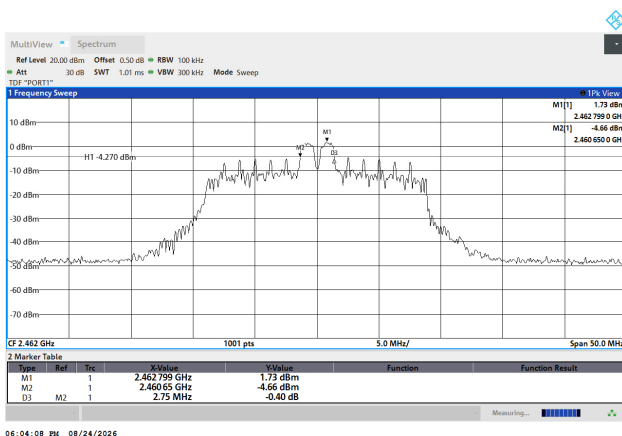
RU 26T offset 4 / 2 437 MHz



SU / 2 437 MHz



RU 26T offset 4 / 2 462 MHz



SU / 2 462 MHz

