

APPENDIX

Test Information:

Sample No.:	3BA3-1	Test Date:	2025-11-08 to 2026-02-07
Test Site:	RF	Test Mode:	Transmitting
Tester:	Benny Li/Cayde Hou	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	23-25	Relative Humidity: (%)	39-56	ATM Pressure: (kPa)	100.9-101.9
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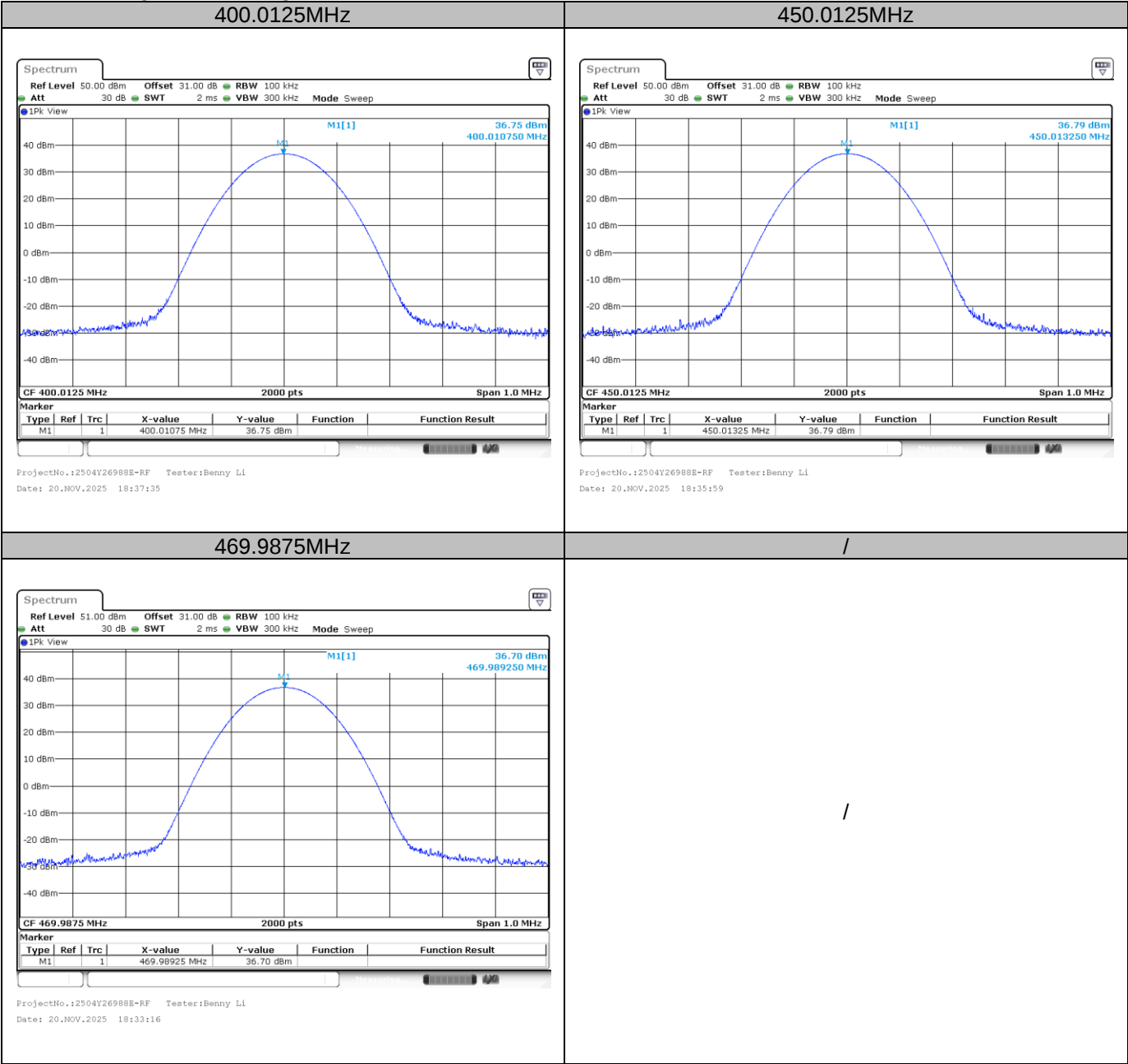
RF Output Power**Test Data:**

Mode	Frequency Spacing (kHz)	Frequency (MHz)	Power level	Output Power (dBm)	Output Power (W)	Limit (W)
Analog	12.5	400.0125	High	36.75	4.732	4.8
			Low	30.66	1.164	1.2
		450.0125	High	36.79	4.775	4.8
			Low	30.73	1.183	1.2
		469.9875	High	36.70	4.677	4.8
			Low	30.79	1.199	1.2
Analog	25	400.0125	High	36.7	4.677	4.8
			Low	30.65	1.161	1.2
		450.0125	High	36.63	4.603	4.8
			Low	30.75	1.189	1.2
		469.9875	High	36.31	4.276	4.8
			Low	30.4	1.096	1.2
Digital	12.5	400.0125	High	36.52	4.487	4.8
			Low	30.67	1.167	1.2
		450.0125	High	36.80	4.786	4.8
			Low	30.53	1.129	1.2
		469.9875	High	36.73	4.710	4.8
			Low	30.63	1.156	1.2

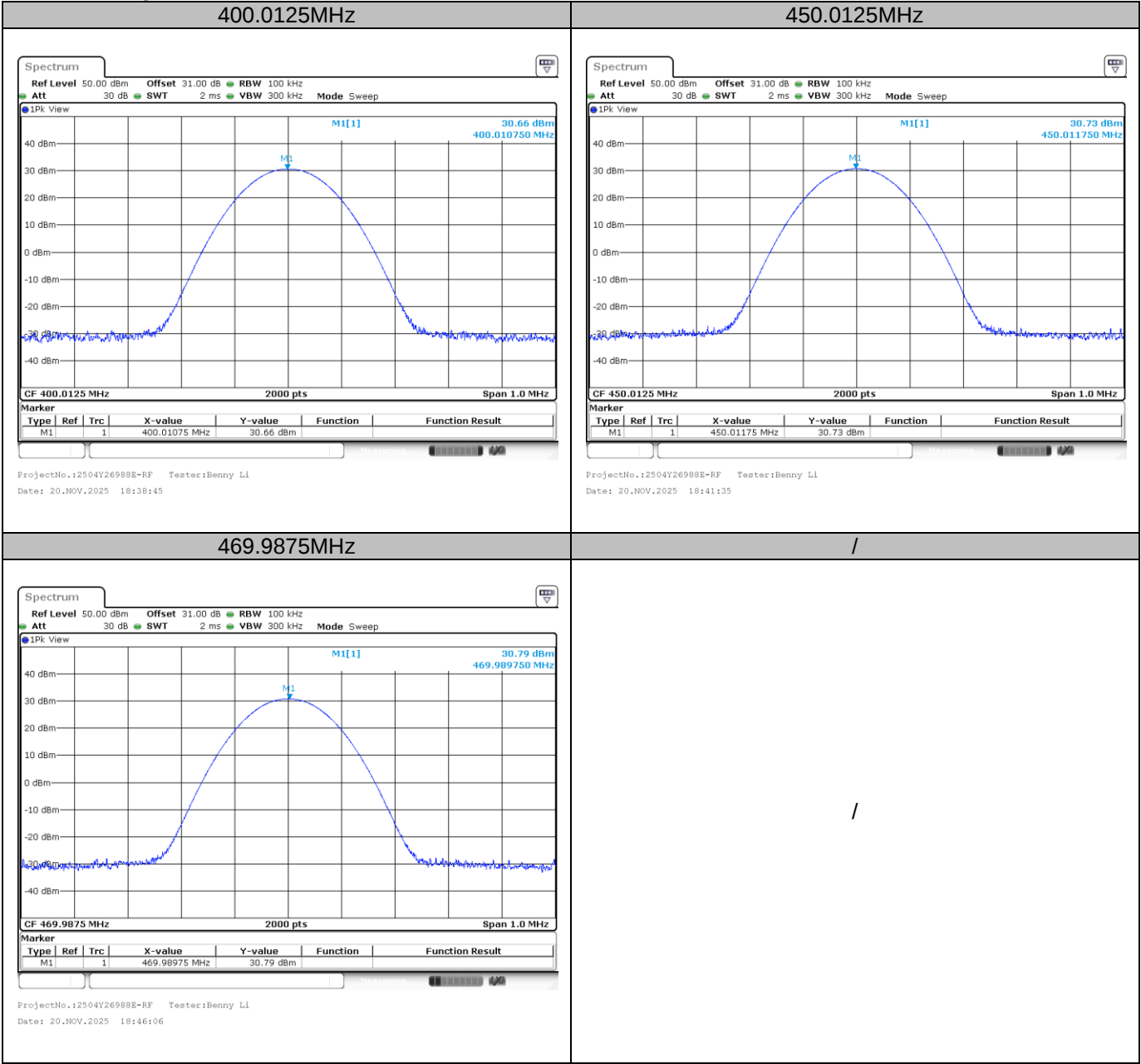
Note 1[#]: The high rated power level is 4W(36.021dBm), and low rated power level is 1W(30dBm).

Note 2: The output power shall not exceed by more than 20 percent the manufacturer's rated output power for the particular transmitter specifically listed on the authorization.

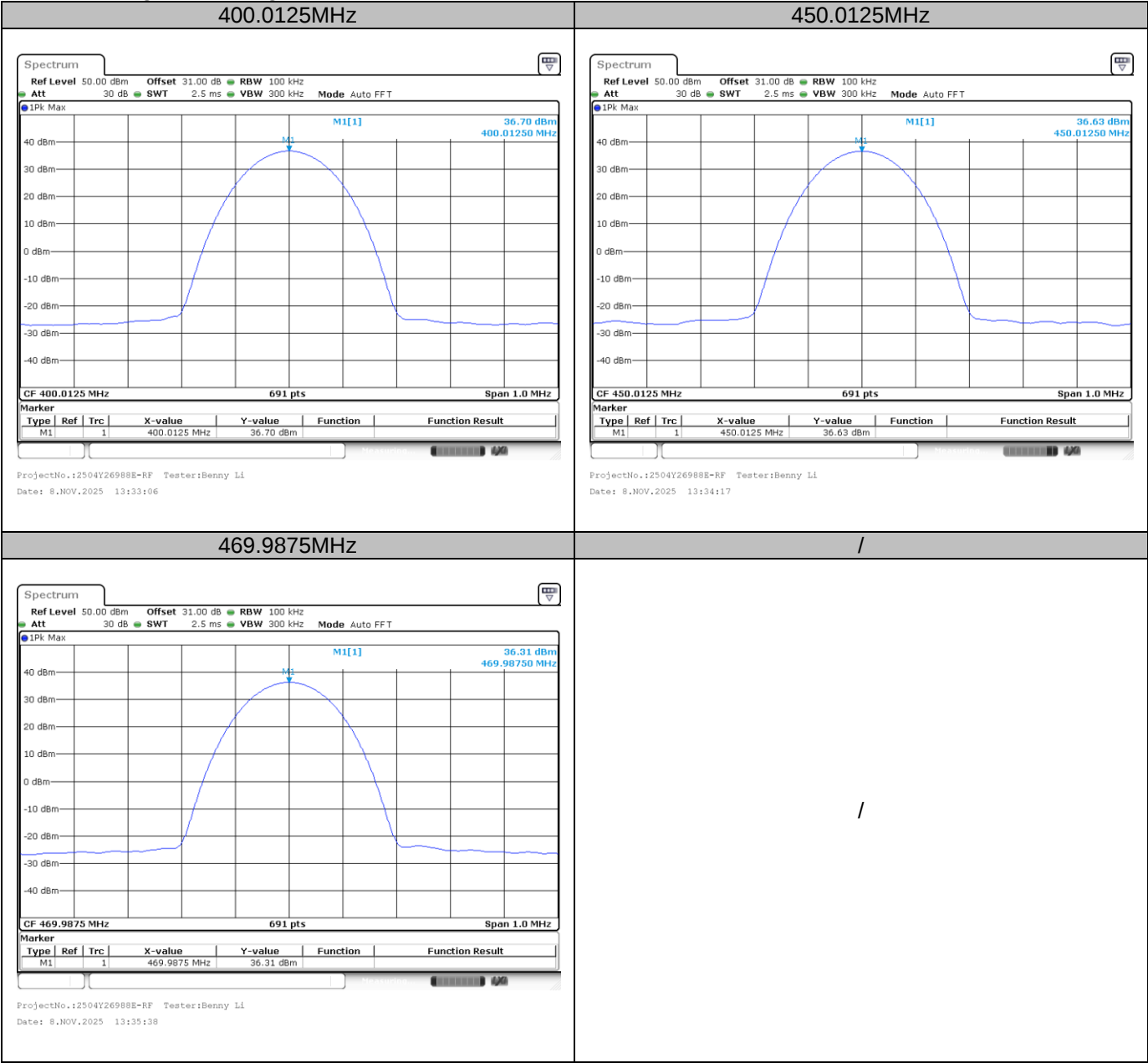
For Analog, 12.5kHz, High Power:



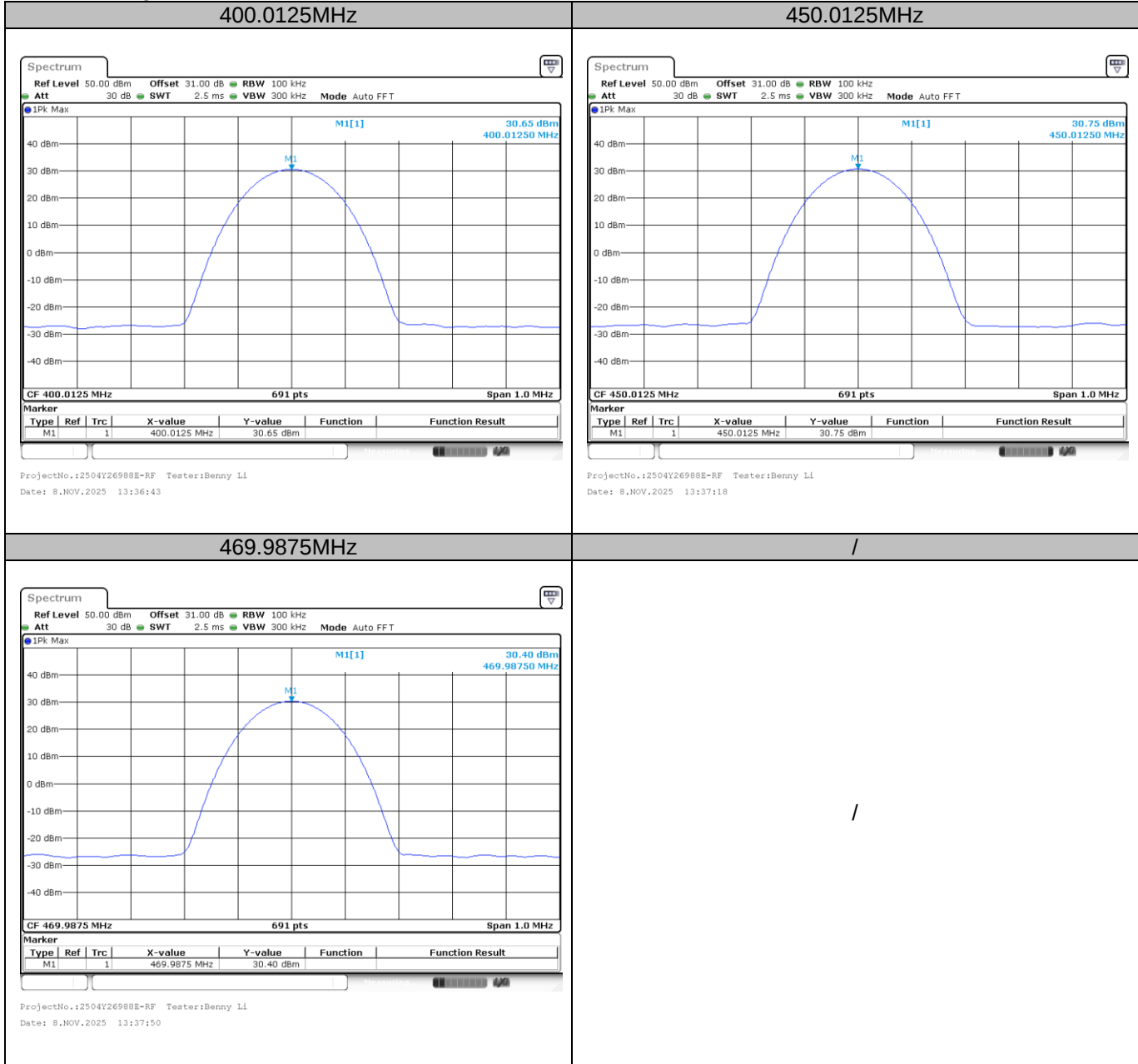
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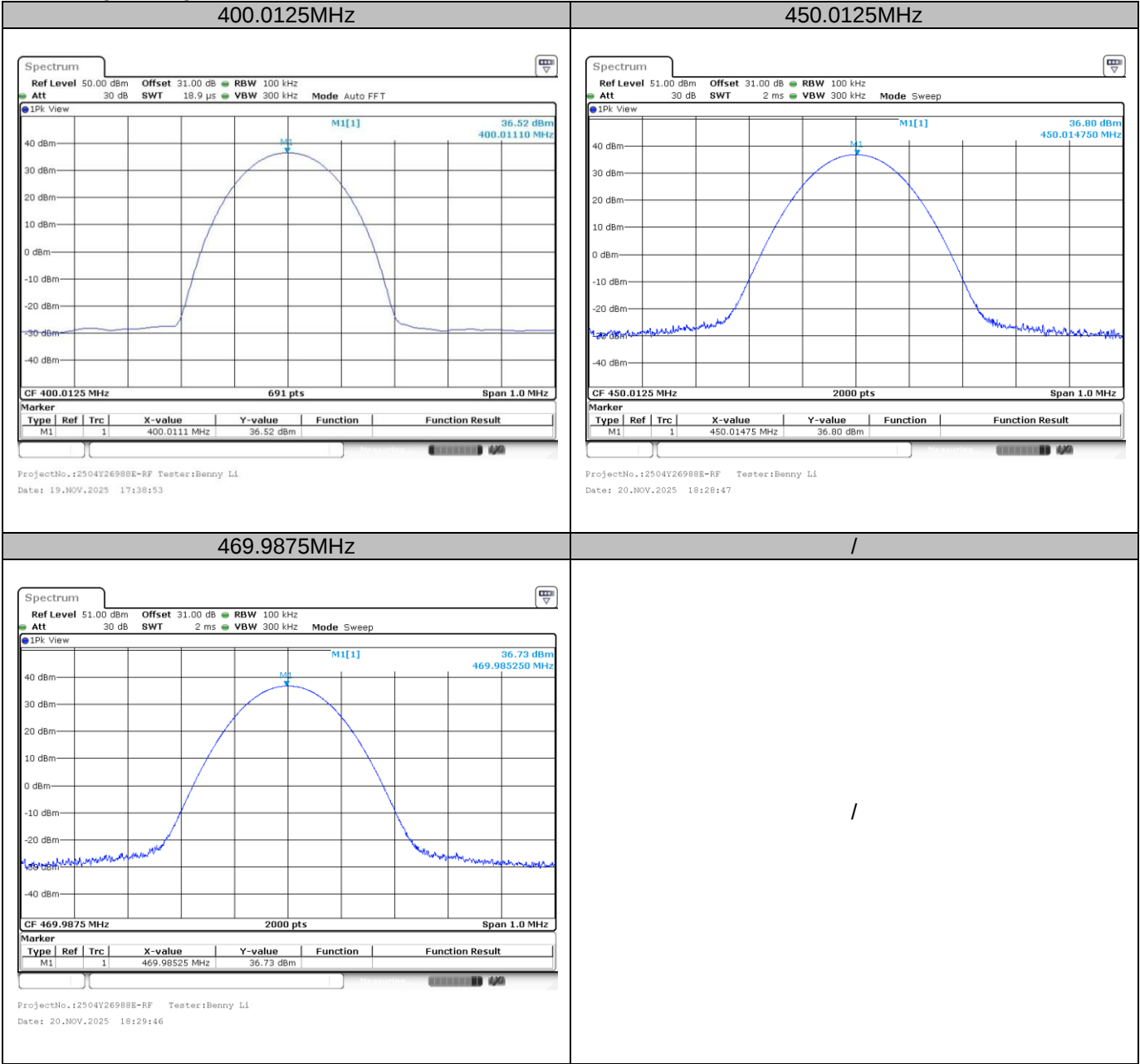
For Analog, 25kHz, High Power:



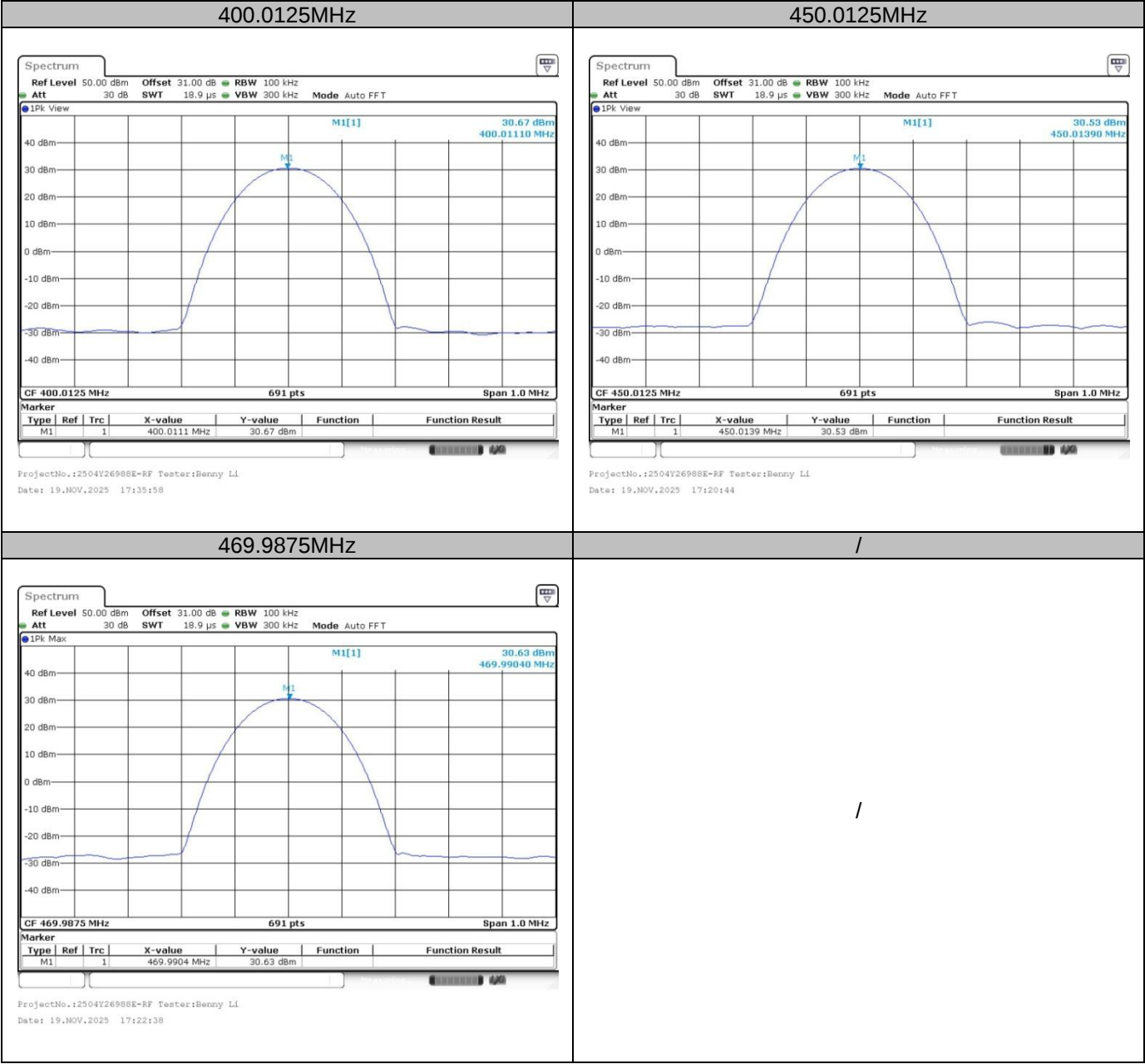
For Analog, 25kHz, Low Power:



For Digital, High Power:



For Digital, Low Power:



Frequency Stability

Test Data:
For Analog

Signal: CW, Reference Frequency: 450.0125MHz, Limit: ±2.5 ppm			
Test Environment		Frequency Measure with Time Elapsed	
Temperature (°C)	Voltage Supplied (V _{DC})	Measured Frequency (MHz)	Frequency Error (ppm)
Frequency Stability versus Input Temperature			
50	7.6	450.012201	-0.66
40	7.6	450.012105	-0.88
30	7.6	450.012177	-0.72
20	7.6	450.012382	-0.26
10	7.6	450.011966	-1.19
0	7.6	450.012054	-0.99
-10	7.6	450.012058	-0.98
-20	7.6	450.012198	-0.67
-30	7.6	450.012030	-1.04
Frequency Stability versus Input Voltage			
20	6.8	450.012151	-0.77
20	8.4	450.012114	-0.86

For Digital

Reference Frequency: 450.0125MHz, Limit: ±2.5 ppm			
Test Environment		Frequency Measure with Time Elapsed	
Temperature (°C)	Voltage Supplied (V _{DC})	Measured Frequency (MHz)	Frequency Error (ppm)
Frequency Stability versus Input Temperature			
50	7.6	450.012631	0.29
40	7.6	450.012566	0.15
30	7.6	450.012811	0.69
20	7.6	450.013024	1.16
10	7.6	450.012572	0.16
0	7.6	450.012603	0.23
-10	7.6	450.012652	0.34
-20	7.6	450.012722	0.49
-30	7.6	450.012870	0.82
Frequency Stability versus Input Voltage			
20	6.8	450.012737	0.53
20	8.4	450.012706	0.46

Note 1: The Operation Voltage range was provided by manufacturer.
Note 2: The measurement was measured in the absence of modulation.

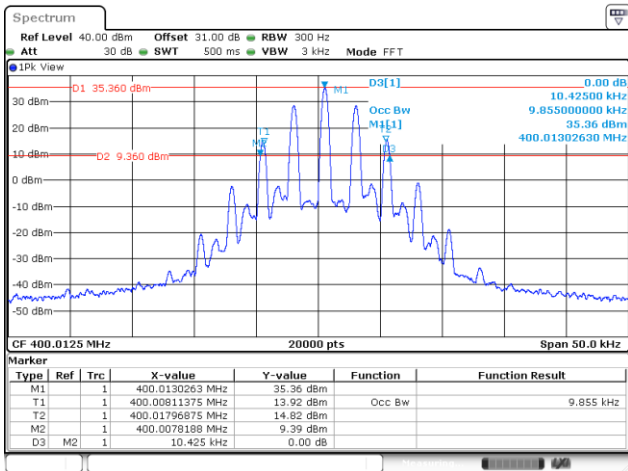
Occupied Bandwidth & Emission Mask

Test Data:

Modulation	Channel Separation (kHz)	Frequency (MHz)	Power Level	99% Occupied Bandwidth (kHz)	26 dB Emissions Bandwidth (kHz)
Analog	12.5	400.0125	High	9.855	10.425
			Low	9.865	10.425
		450.0125	High	9.81	10.4125
			Low	9.8125	10.415
		469.9875	High	9.6425	10.385
			Low	9.67	10.38
Analog	25	400.0125	High	14.805	15.52
			Low	14.85	15.535
		450.0125	High	14.745	15.505
			Low	14.775	15.515
		469.9875	High	12.63	15.485
			Low	12.655	15.49
Digital	12.5	400.0125	High	7.7475	9.8825
			Low	7.64	9.86
		450.0125	High	7.6125	9.62
			Low	7.7125	9.7925
		469.9875	High	7.565	9.7425
			Low	7.6	9.7675

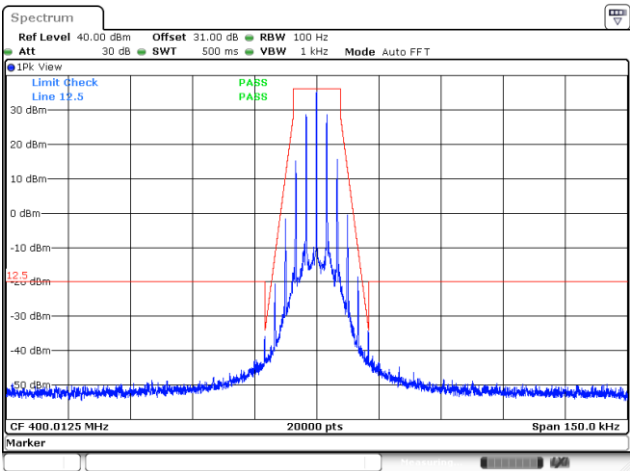
For Analog, 12.5kHz, High Power:

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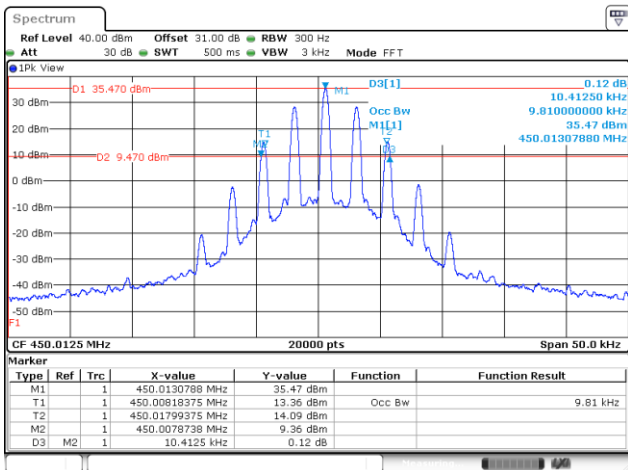
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400.0125MHz-MASK



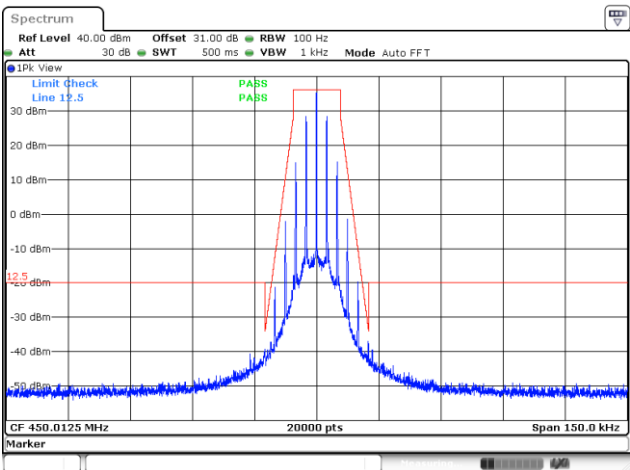
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450.0125MHz-OBW



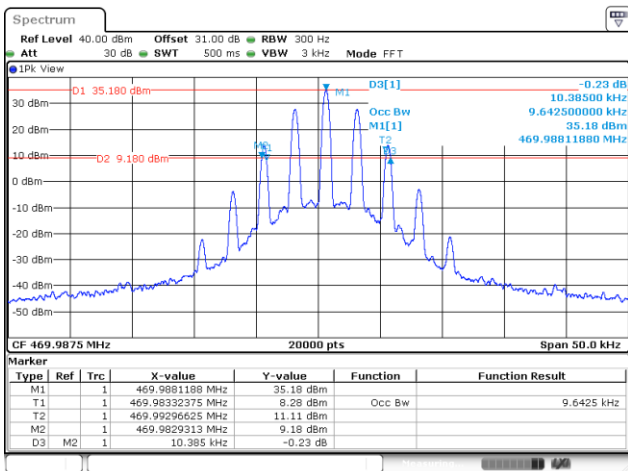
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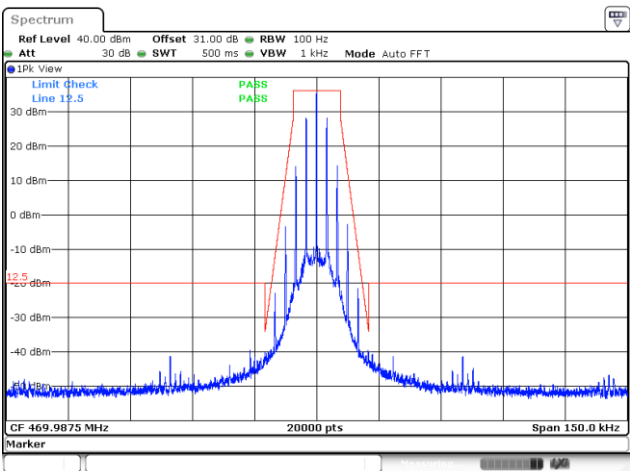
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Date: 10.NOV.2025 13:31:04

469.9875MHz-OBW



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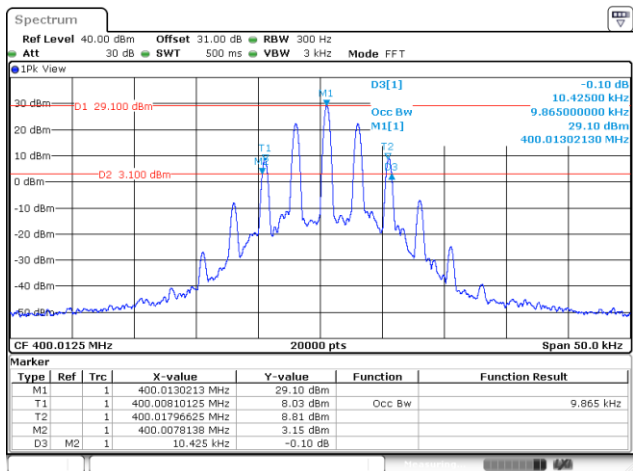
469.9875MHz-MASK



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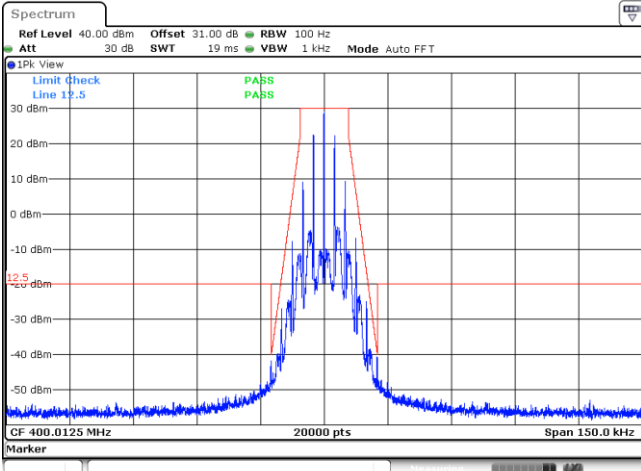
For Analog, 12.5kHz, Low Power:

400.0125MHz-OBW



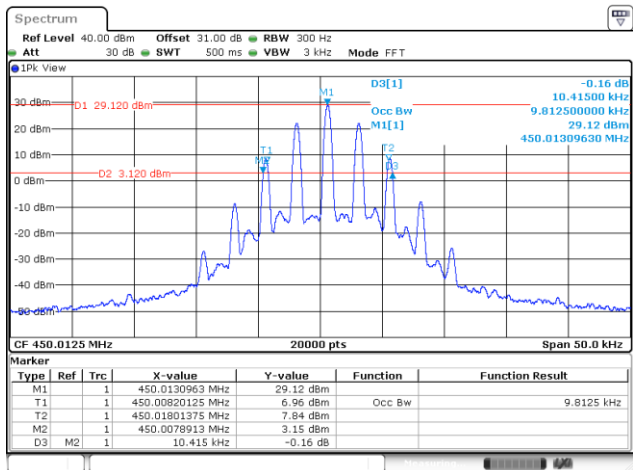
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400.0125MHz-MASK



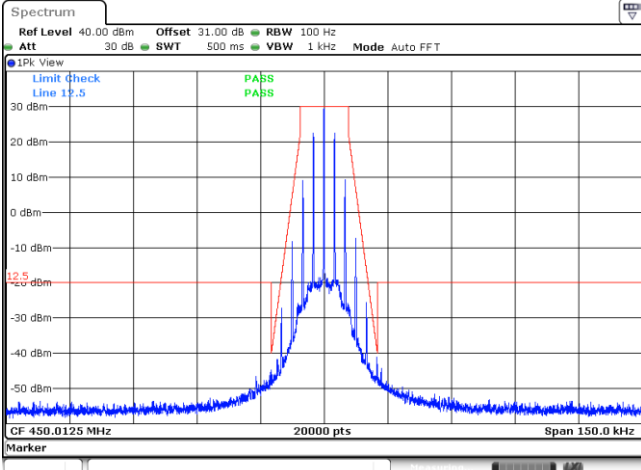
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450.0125MHz-OBW



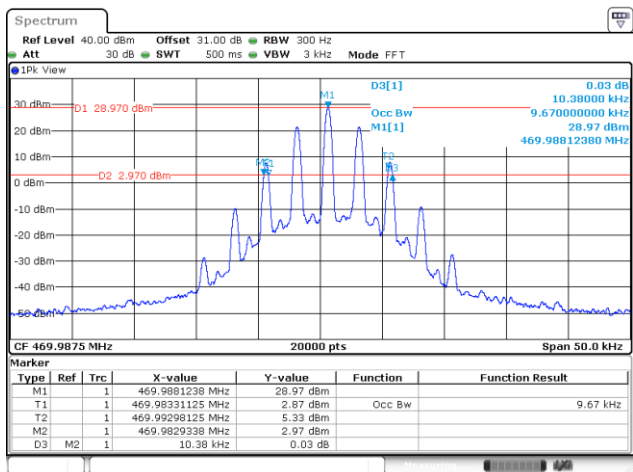
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450.0125MHz-MASK



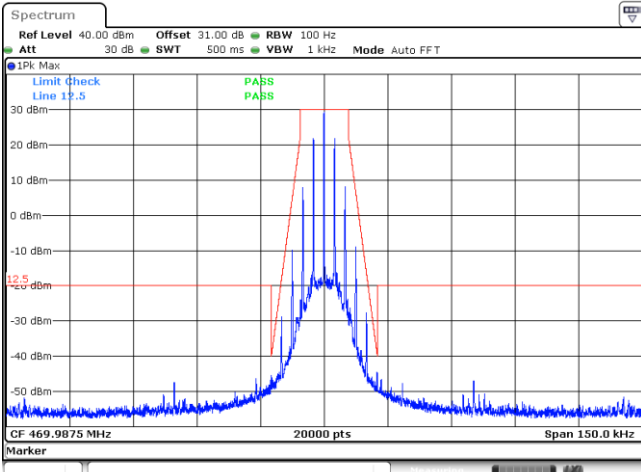
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469.9875MHz-OBW



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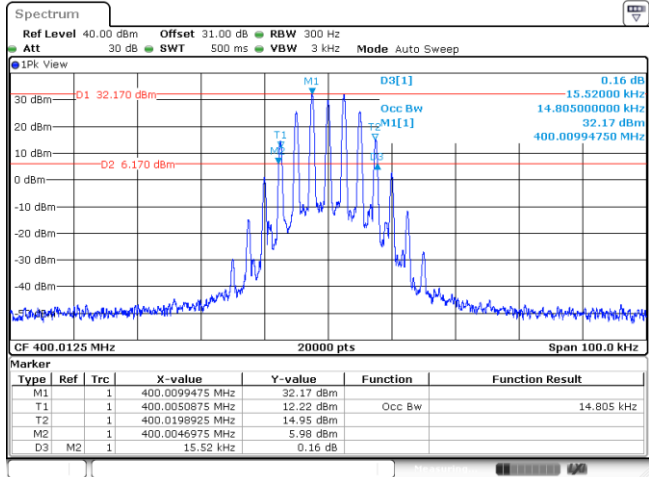
469.9875MHz-MASK



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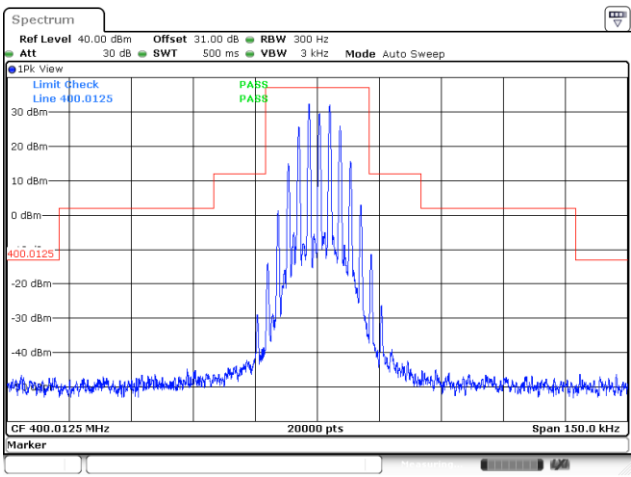
For Analog, 25kHz, HighPower:

400.0125MHz-OBW



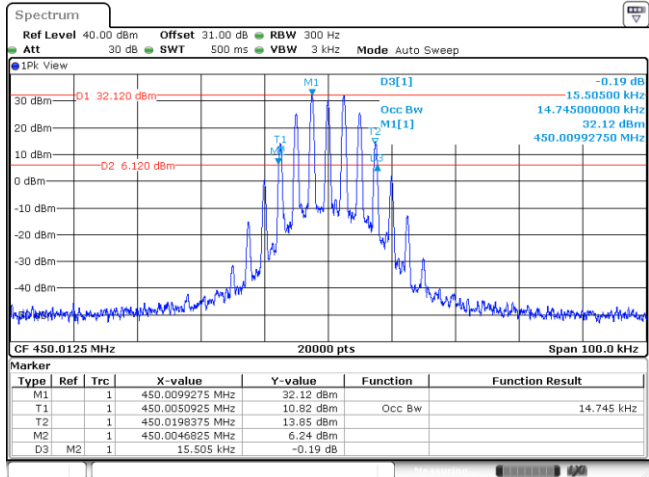
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Date: 8.NOV.2025 15:30:52

400.0125MHz-MASK



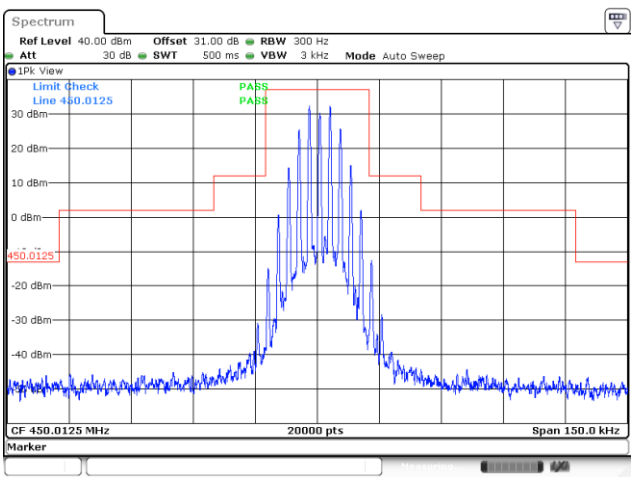
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450.0125MHz-OBW



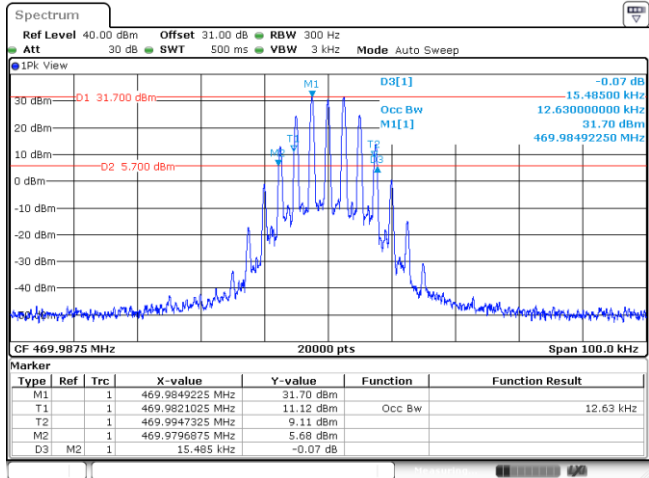
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450.0125MHz-MASK



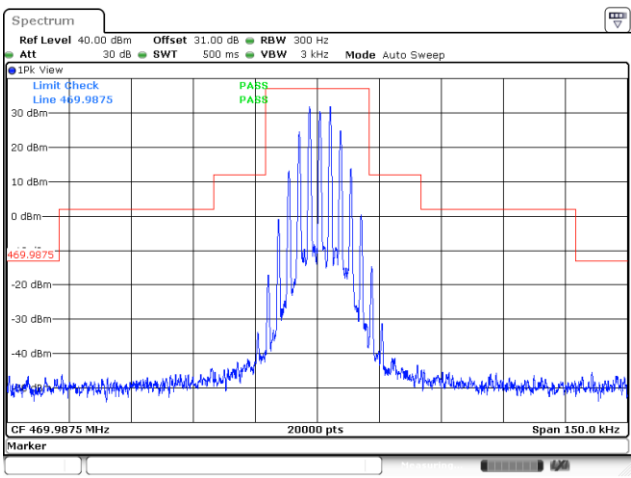
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Date: 30.JAN.2026 14:14:26

469.9875MHz-OBW



ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 8.NOV.2025 15:25:14

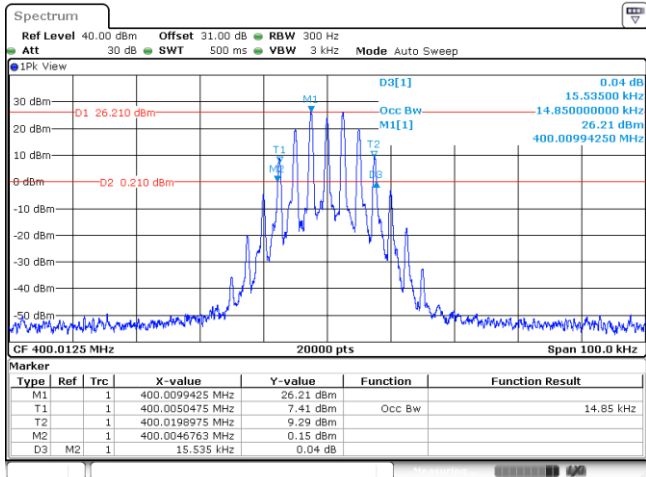
469.9875MHz-MASK



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Date: 30.JAN.2026 14:20:43

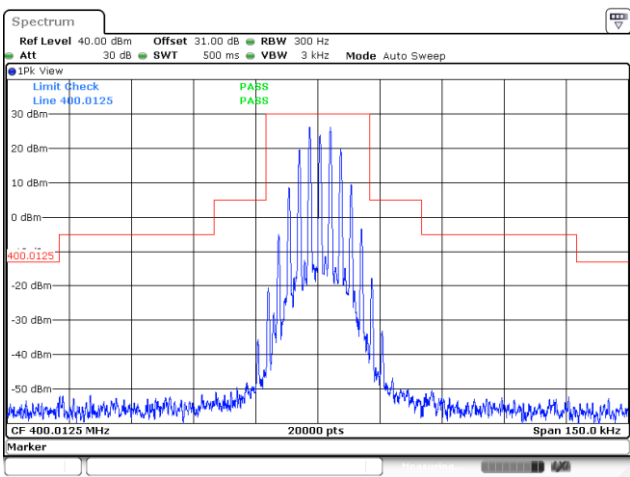
For Analog, 25kHz, Low Power:

400.0125MHz-OBW



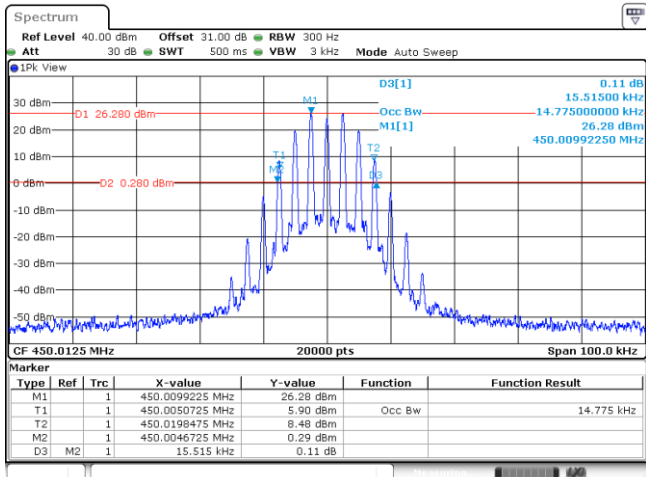
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400.0125MHz-MASK



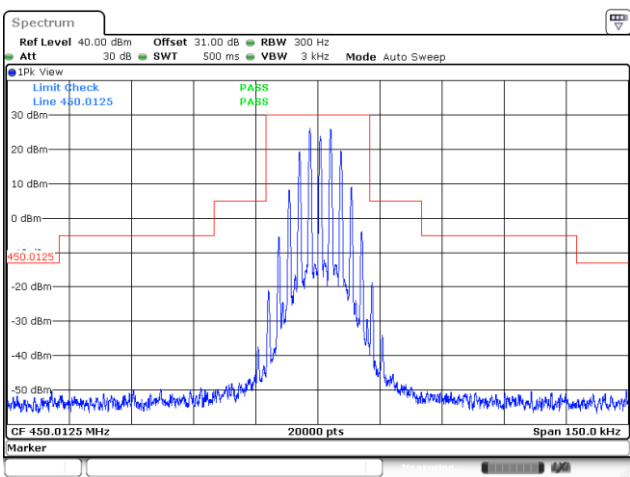
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450.0125MHz-OBW



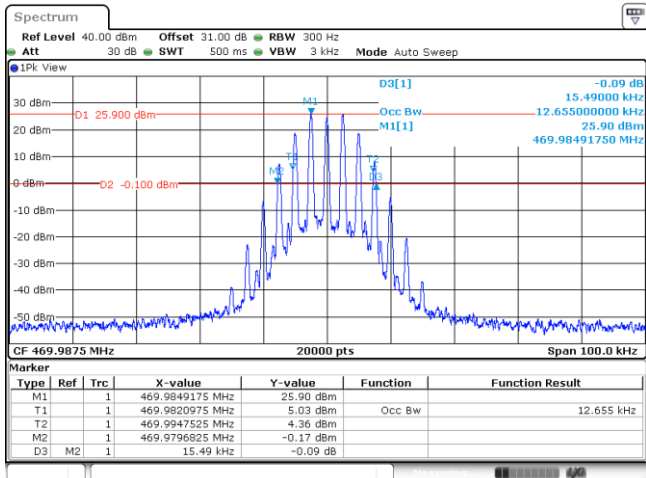
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450.0125MHz-MASK



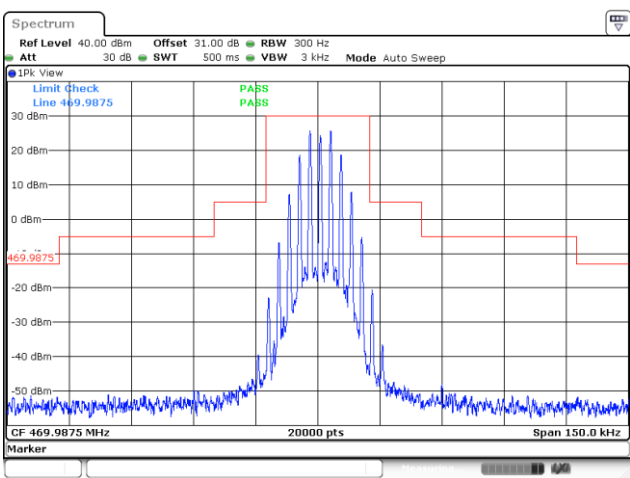
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469.9875MHz-OBW



ProjectNo.:2504Y26988E-RF Tester:Benny LI
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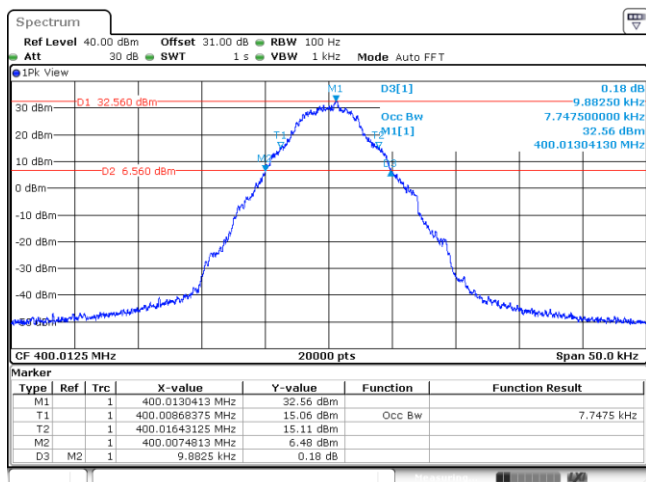
469.9875MHz-MASK



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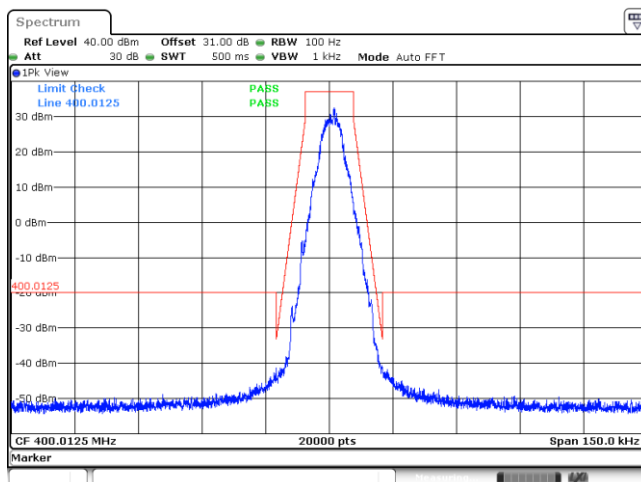
For Digital High Power:

400.0125MHz-OBW



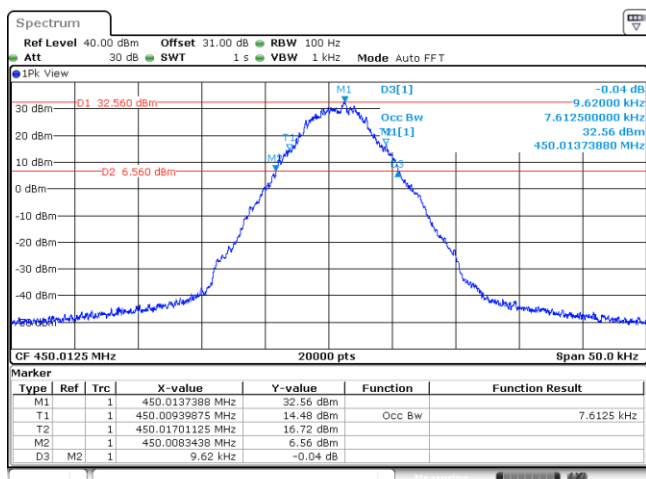
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400.0125MHz-MASK



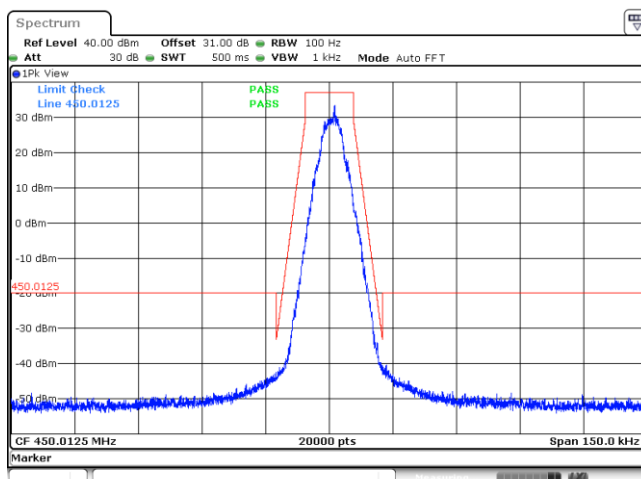
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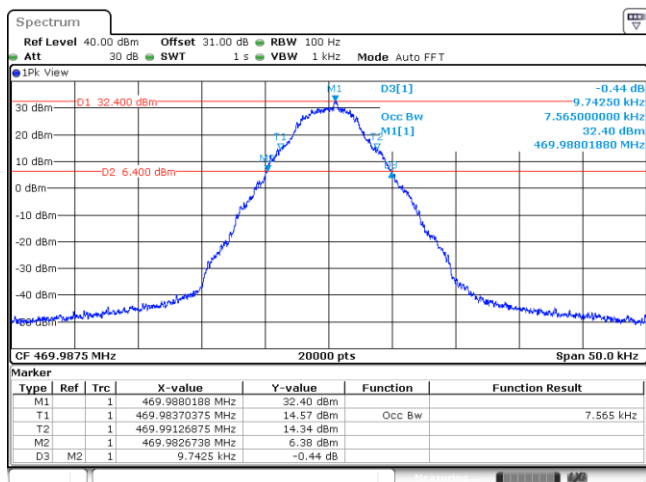
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450.0125MHz-MASK



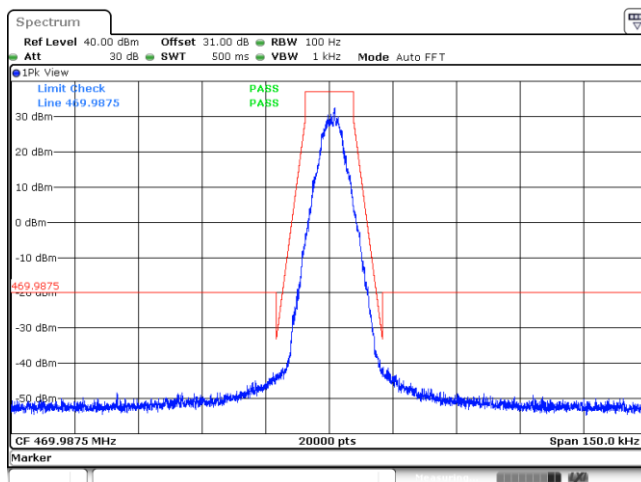
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Date: 30.JAN.2026 14:34:37

469.9875MHz-OBW



ProjectNo.:2504Y26988E-RF Tester:Benny LI
Date: 8.NOV.2025 14:38:39

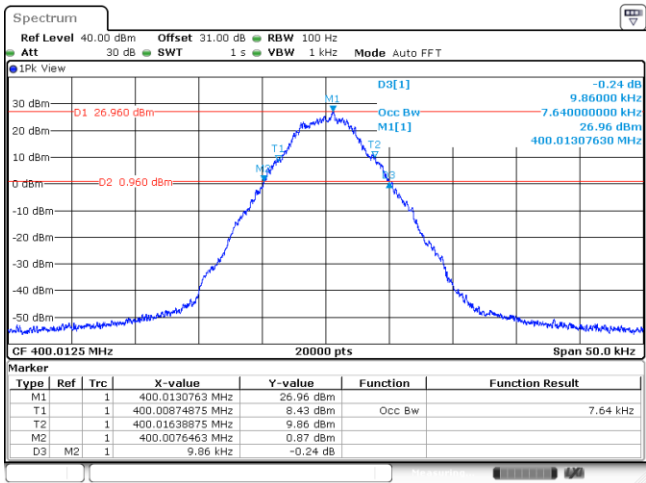
469.9875MHz-MASK



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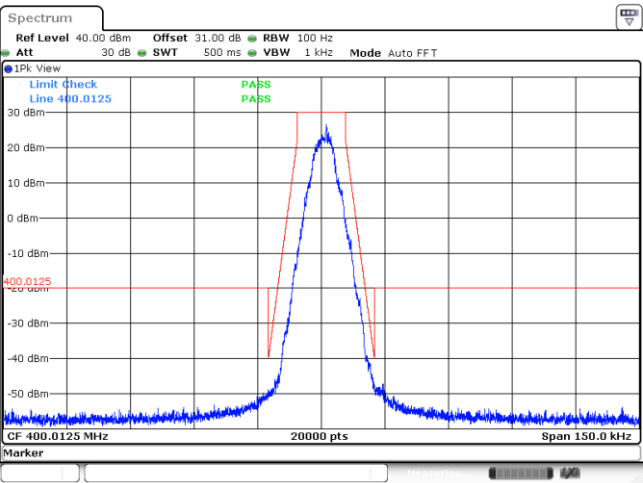
For Digital Low Power:

400.0125MHz-OBW



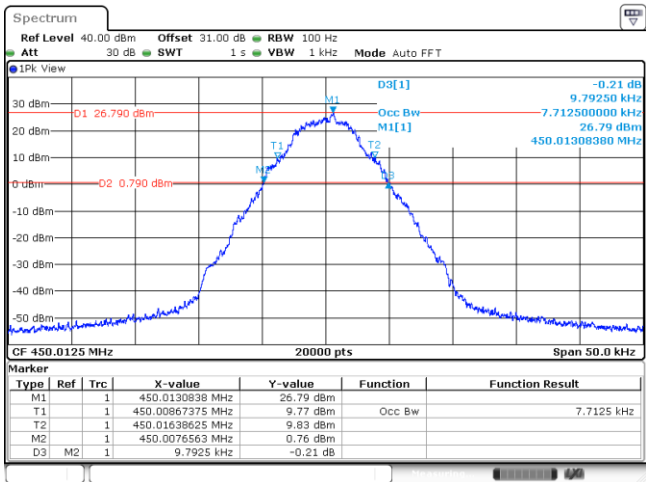
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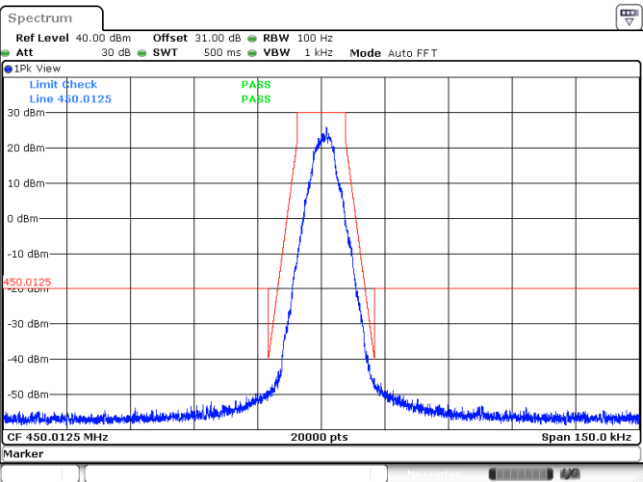
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450.0125MHz-OBW



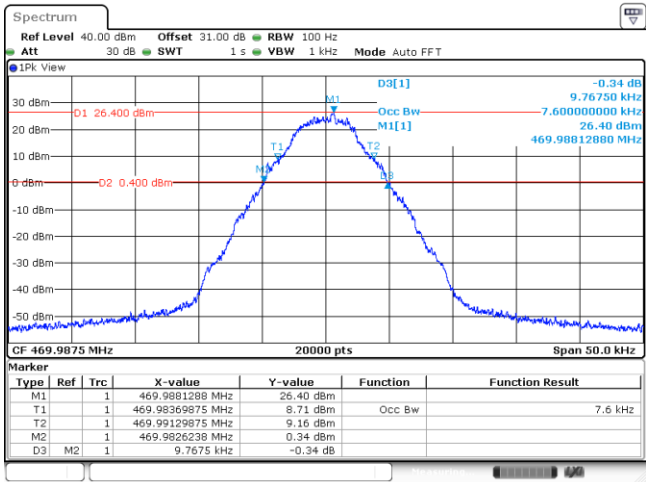
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Date: 8.NOV.2025 14:44:10

450.0125MHz-MASK



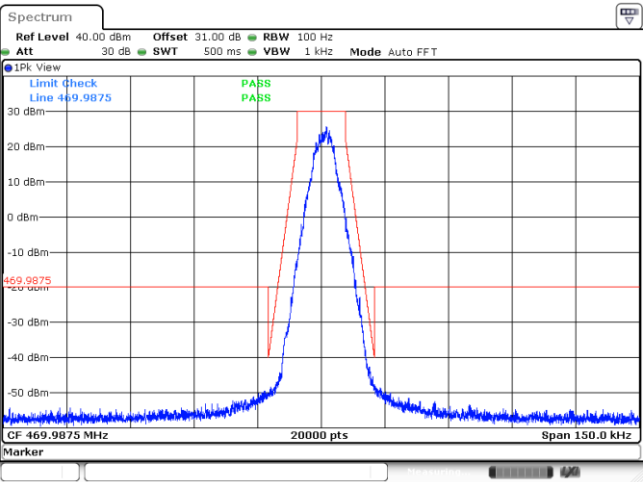
ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 30.JAN.2026 14:35:47

469.9875MHz-OBW



ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 8.NOV.2025 14:41:34

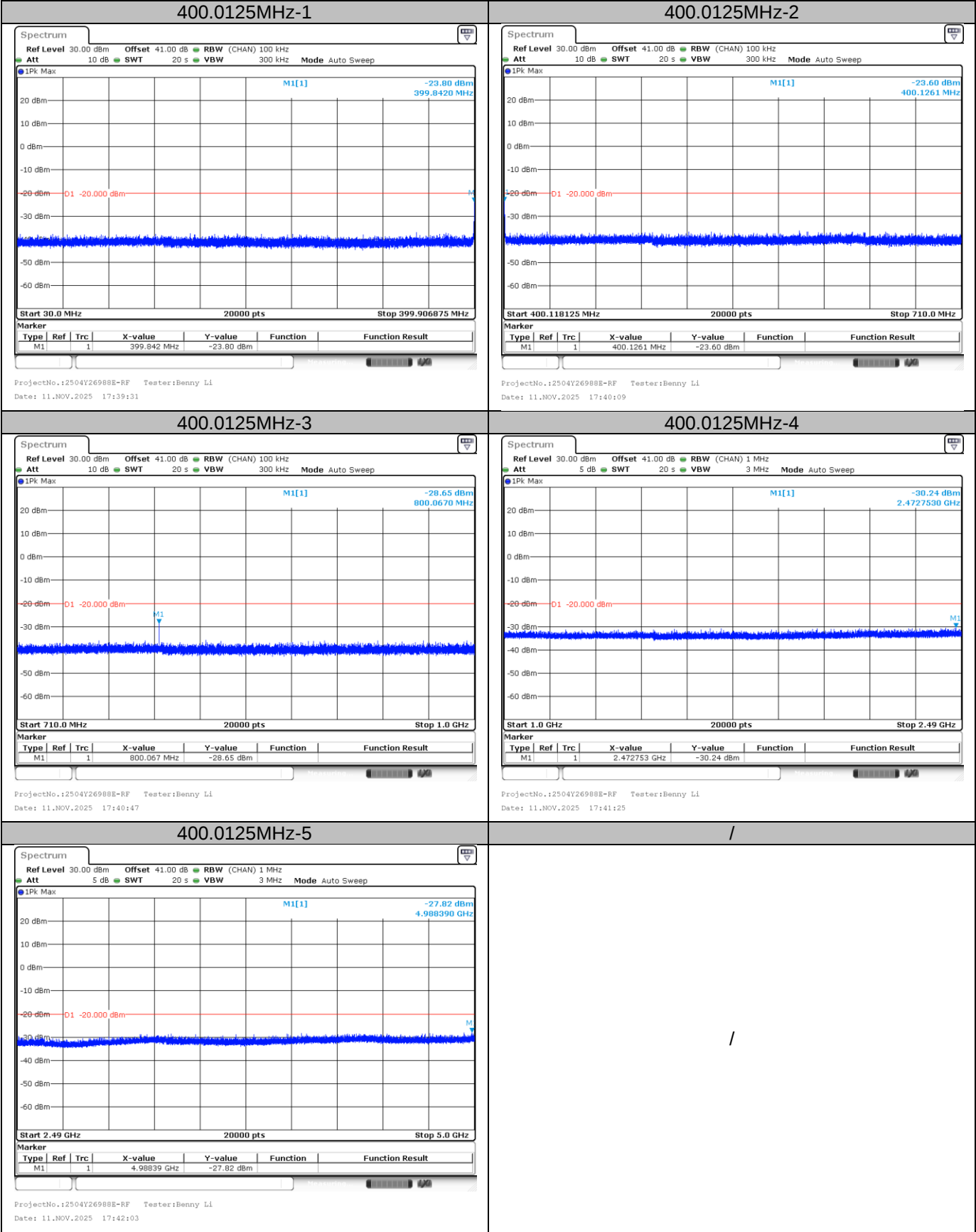
469.9875MHz-MASK



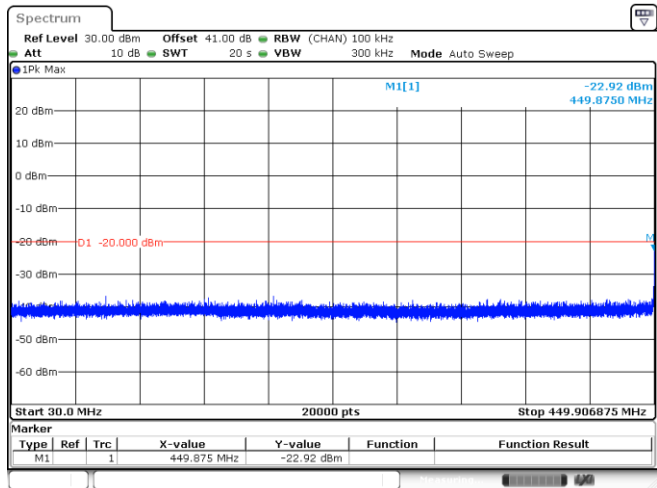
ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 30.JAN.2026 14:37:48

Spurious Emission at Antenna Terminal

For Analog, 12.5kHz, High Power:

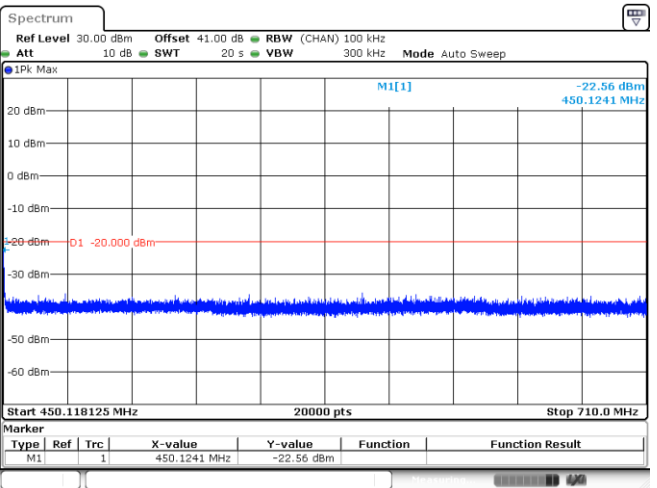


450.0125MHz-1



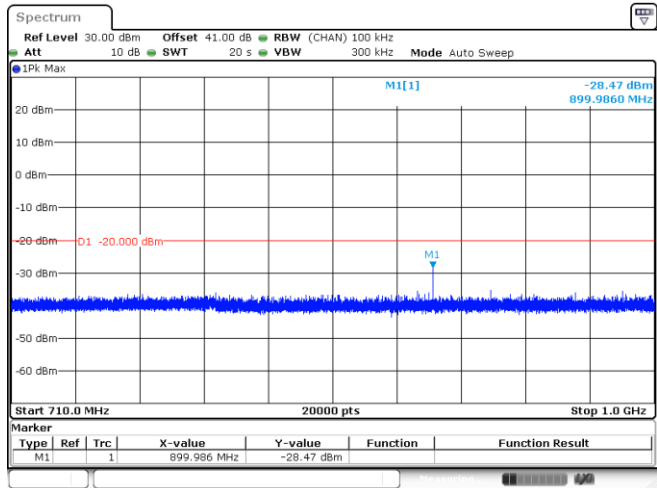
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450.0125MHz-2



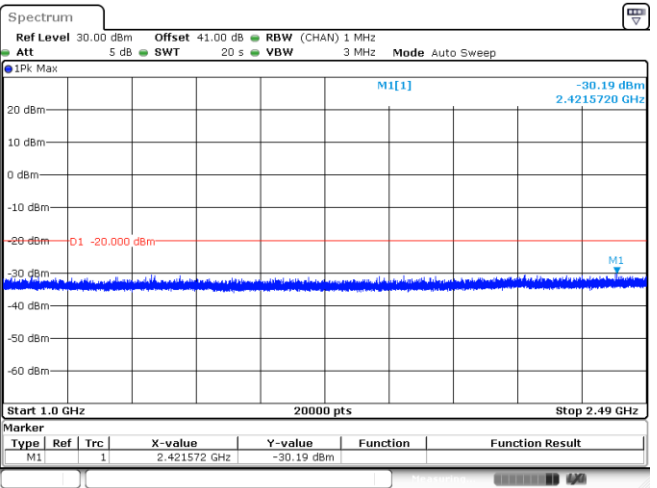
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450.0125MHz-3



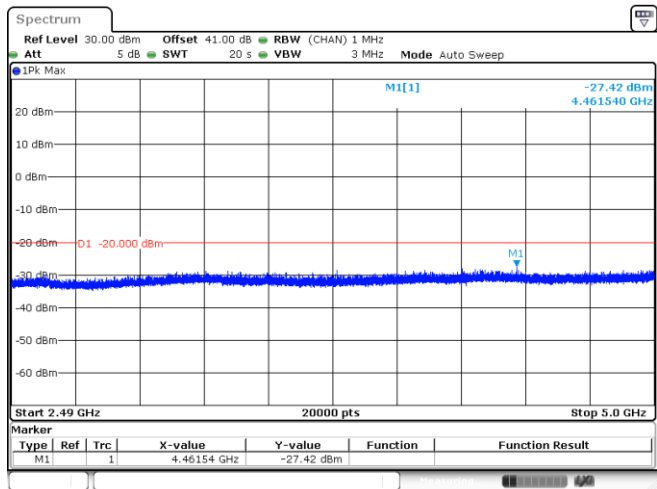
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450.0125MHz-4



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Date: 11.NOV.2025 17:44:58

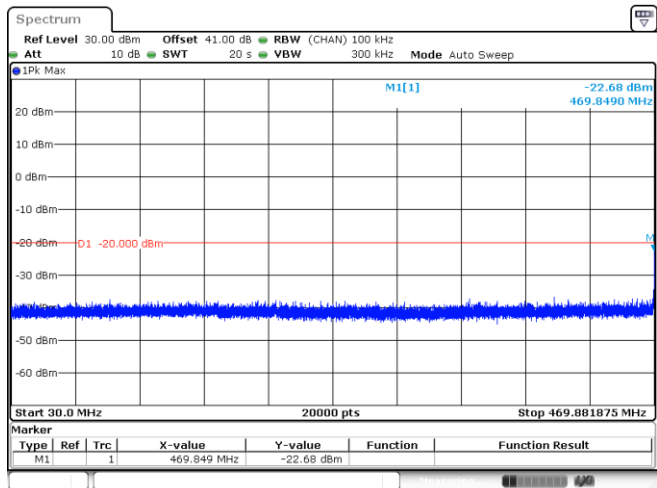
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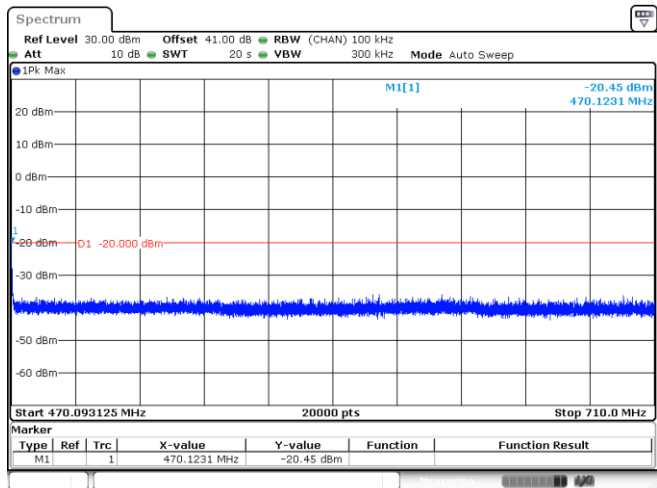
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469.9875MHz-1



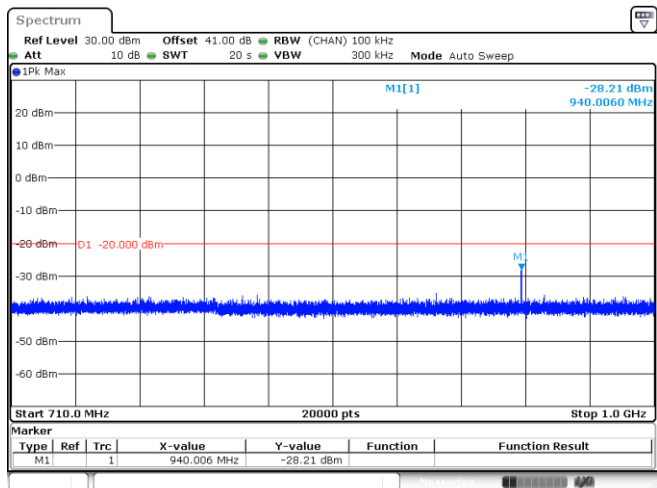
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469.9875MHz-2



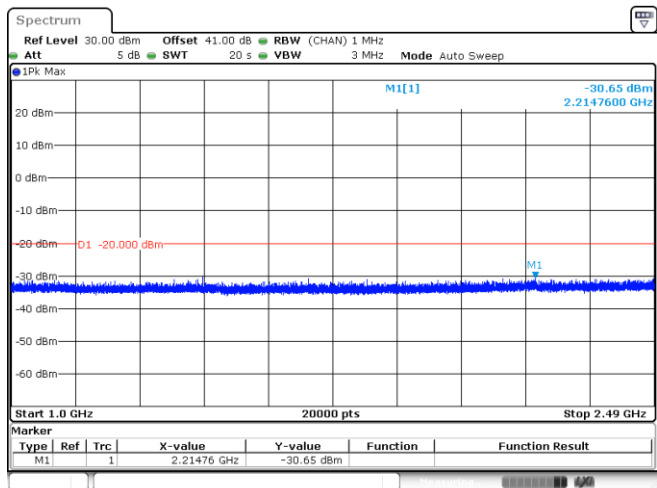
ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 11.NOV.2025 17:47:13

469.9875MHz-3



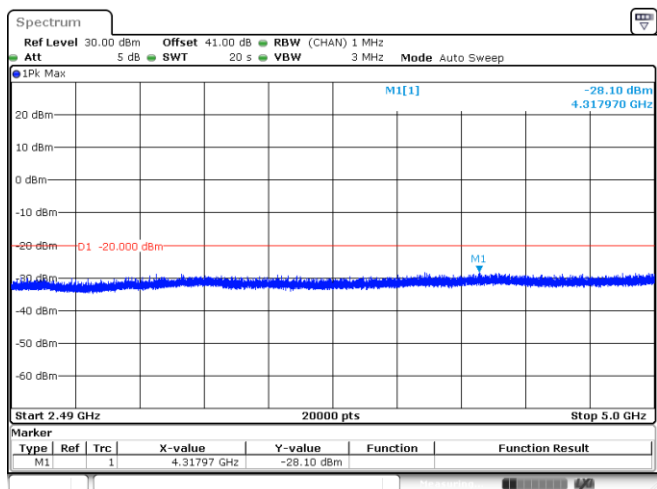
ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 11.NOV.2025 17:47:51

469.9875MHz-4



ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 11.NOV.2025 17:48:29

469.9875MHz-5

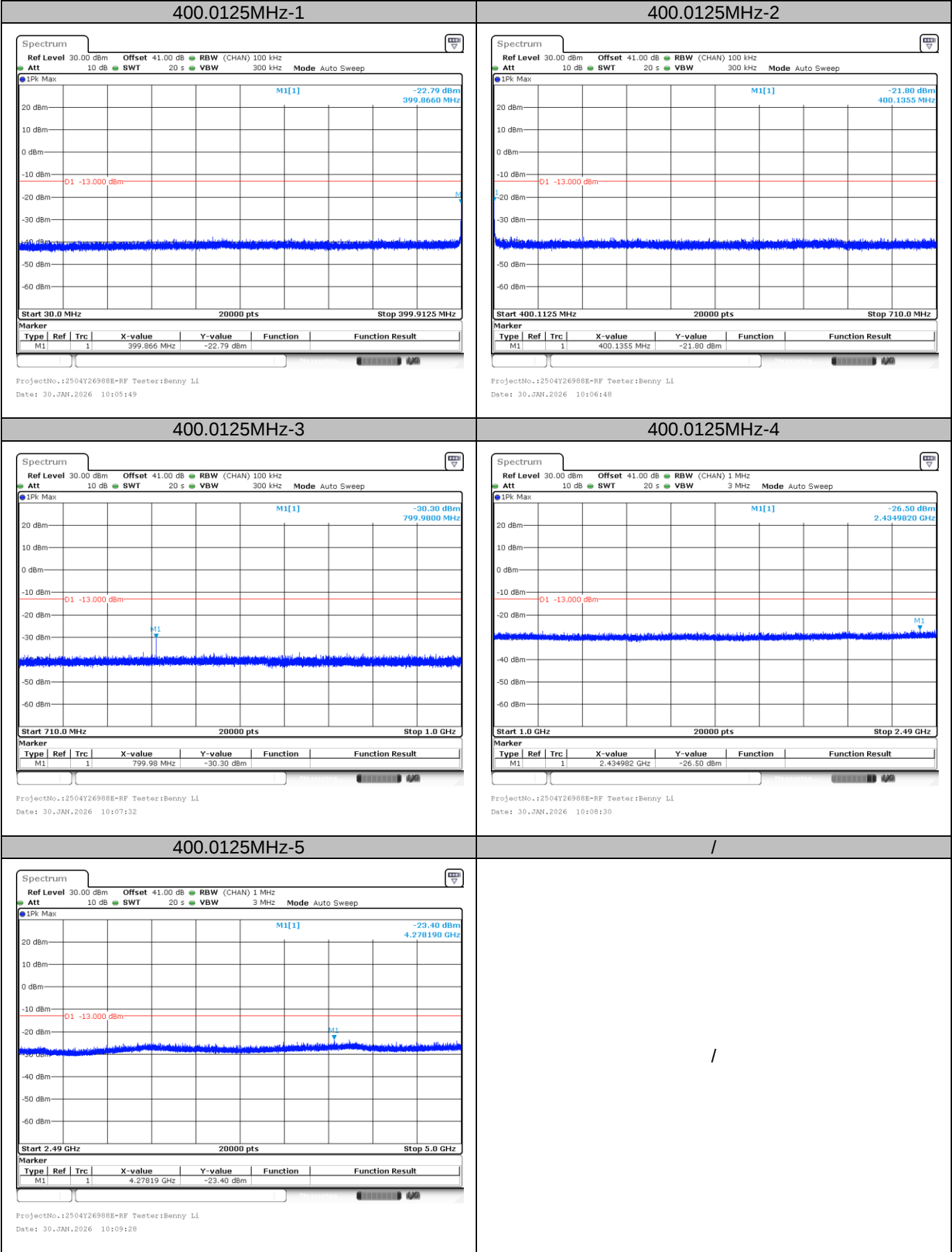


ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 11.NOV.2025 17:49:07

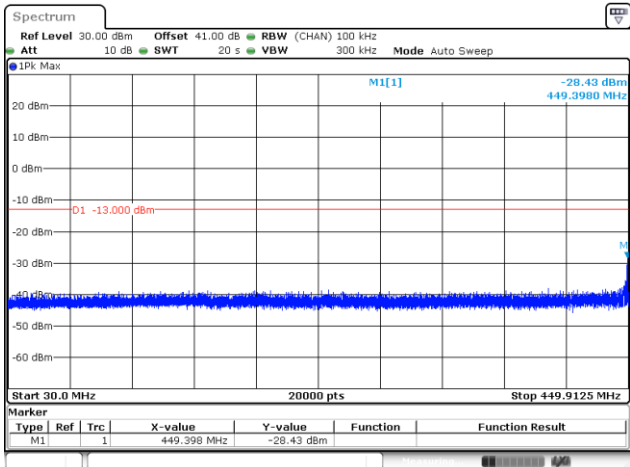
/

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For Analog, 25kHz, High Power:

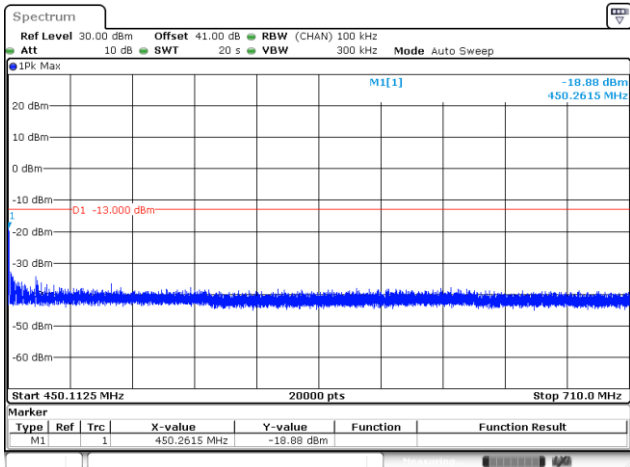


450.0125MHz-1



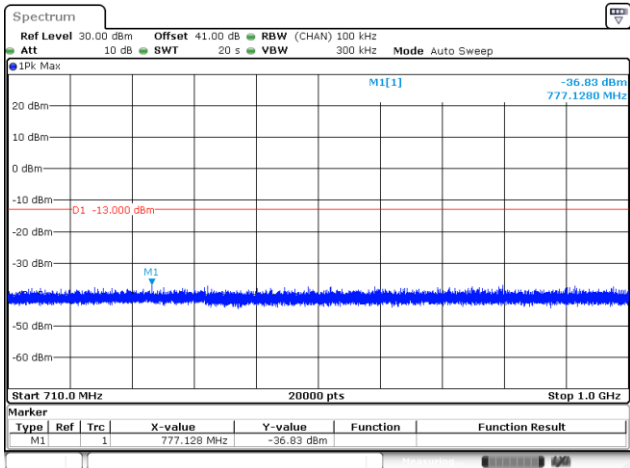
ProjectNo.:2504Y26988E-RF Tester:Benny LI
Date: 7.FEB.2026 11:59:29

450.0125MHz-2



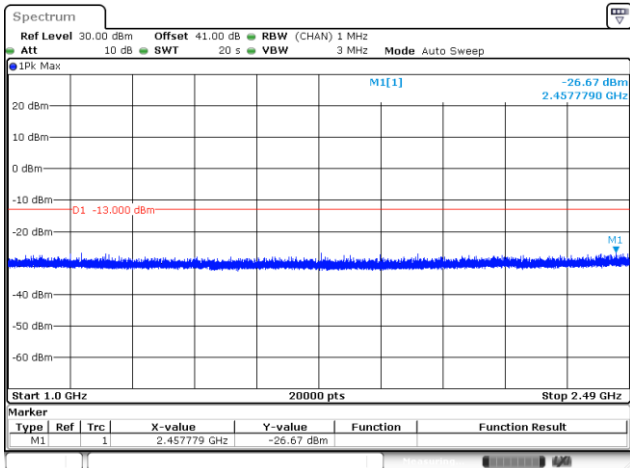
ProjectNo.:2504Y26988E-RF Tester:Benny LI
Date: 7.FEB.2026 12:00:07

450.0125MHz-3



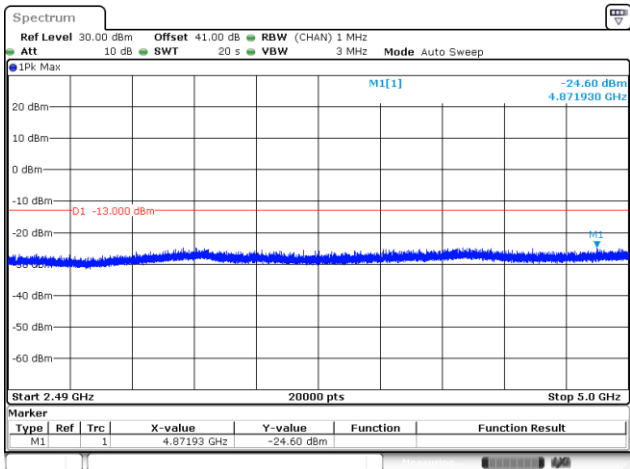
ProjectNo.:2504Y26988E-RF Tester:Benny LI
Date: 7.FEB.2026 12:00:45

450.0125MHz-4



ProjectNo.:2504Y26988E-RF Tester:Benny LI
Date: 7.FEB.2026 12:01:23

450.0125MHz-5

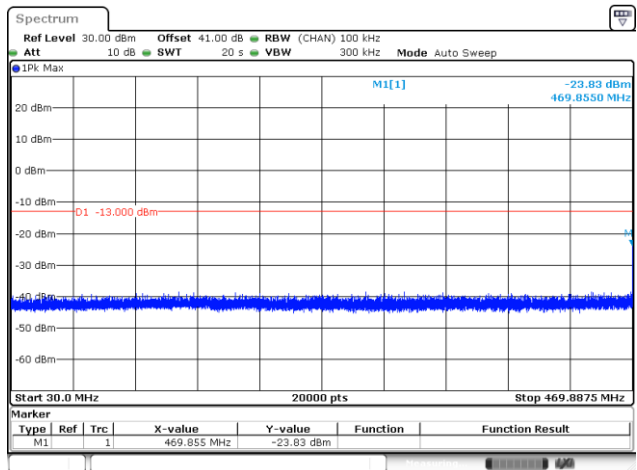


ProjectNo.:2504Y26988E-RF Tester:Benny LI
Date: 7.FEB.2026 12:02:01

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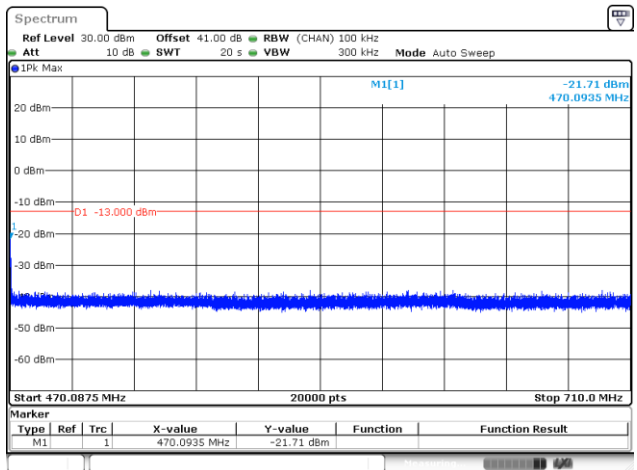
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469.9875MHz-1



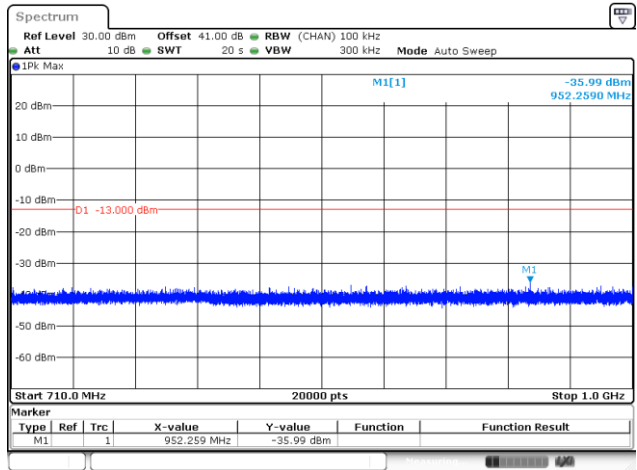
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Date: 7.FEB.2026 13:07:01

469.9875MHz-2



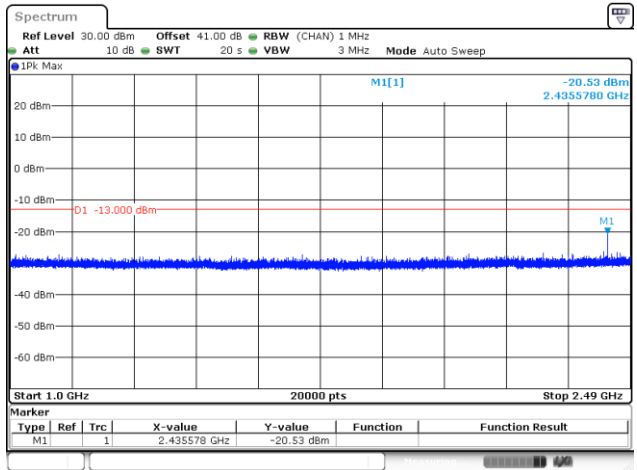
ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 7.FEB.2026 13:07:39

469.9875MHz-3



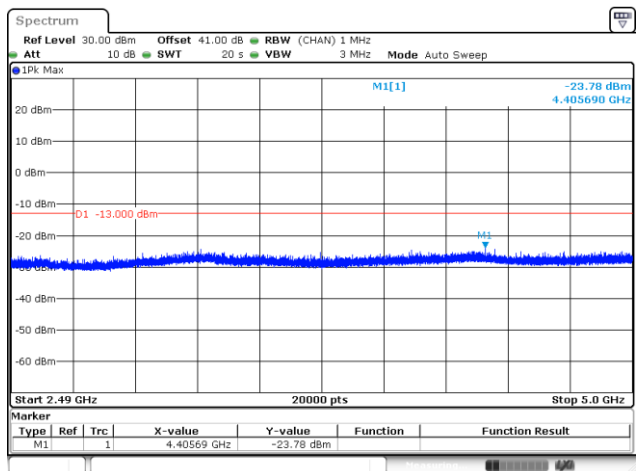
ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 7.FEB.2026 13:08:17

469.9875MHz-4



ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 7.FEB.2026 13:08:55

469.9875MHz-5

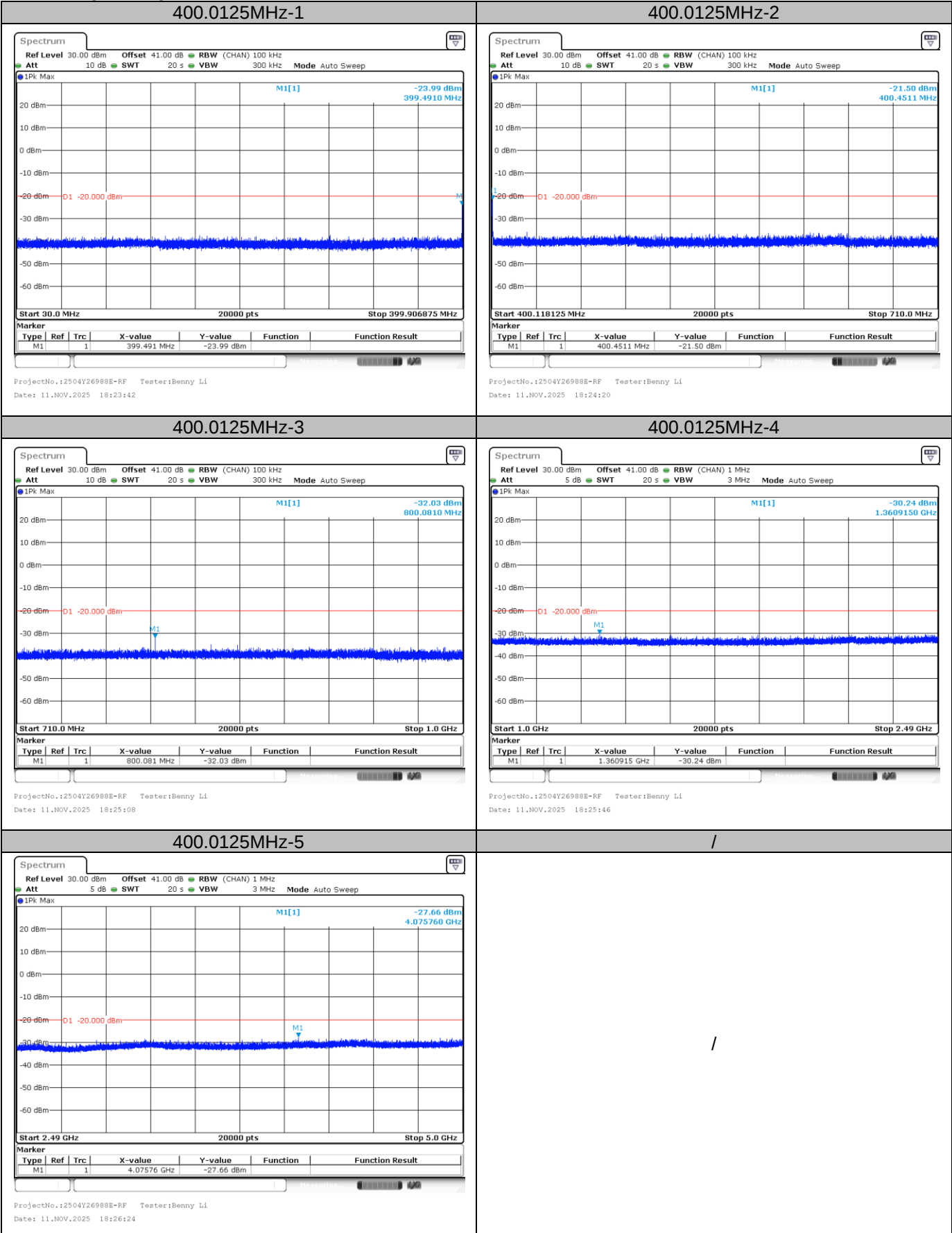


ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 7.FEB.2026 13:09:33

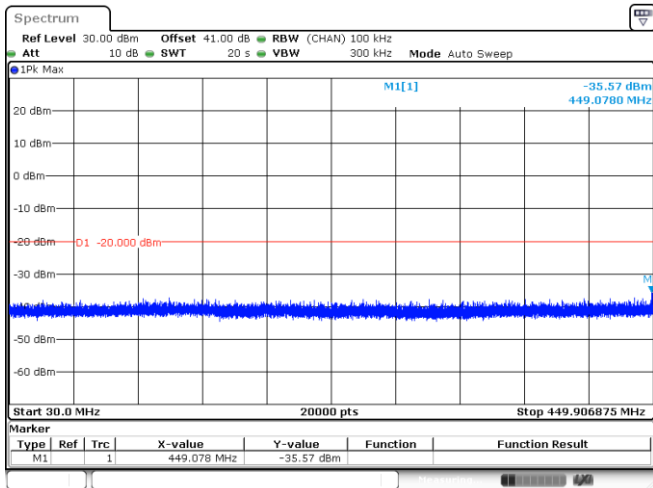
/

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For Digital, High Power:

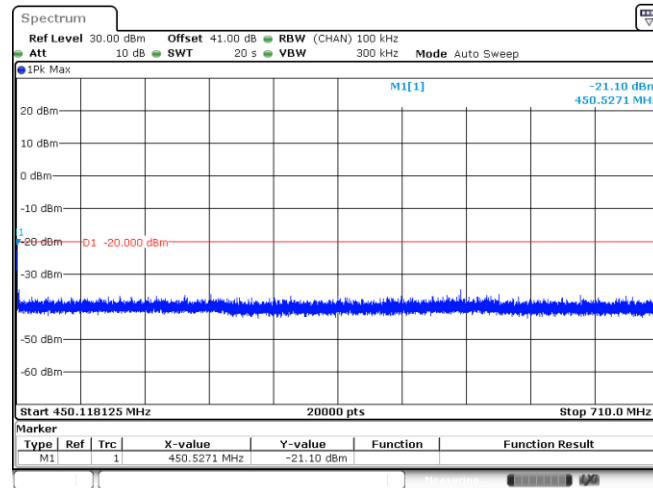


450.0125MHz-1



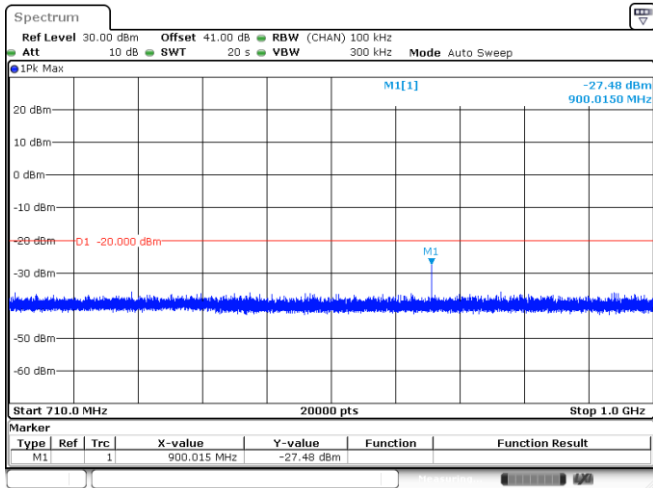
ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 11.NOV.2025 18:27:39

450.0125MHz-2



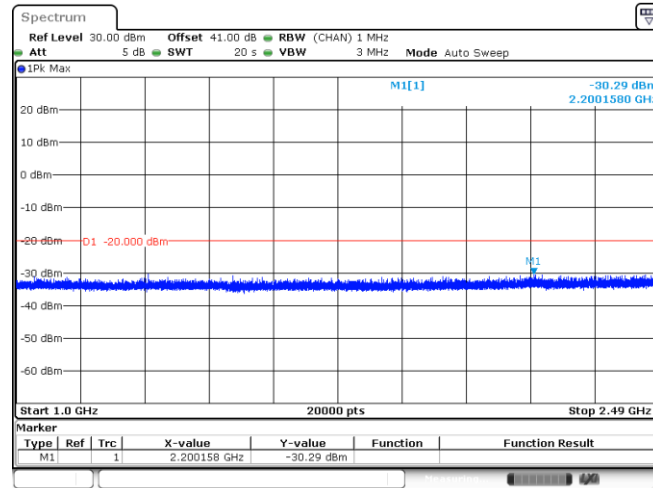
ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 11.NOV.2025 18:28:16

450.0125MHz-3



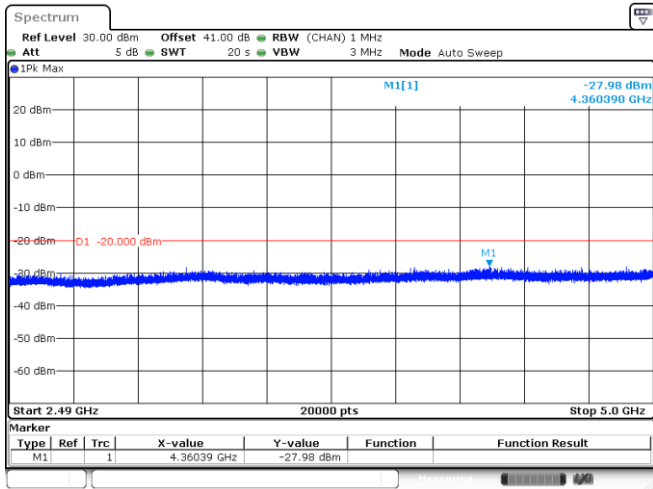
ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 11.NOV.2025 18:28:54

450.0125MHz-4



ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 11.NOV.2025 18:29:32

450.0125MHz-5

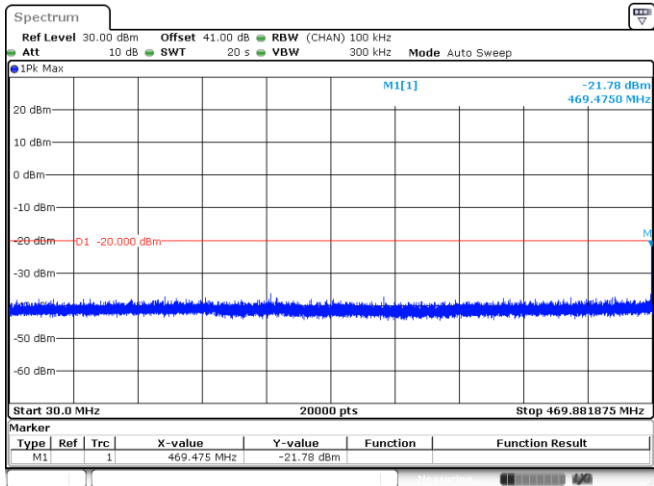


ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 11.NOV.2025 18:30:10

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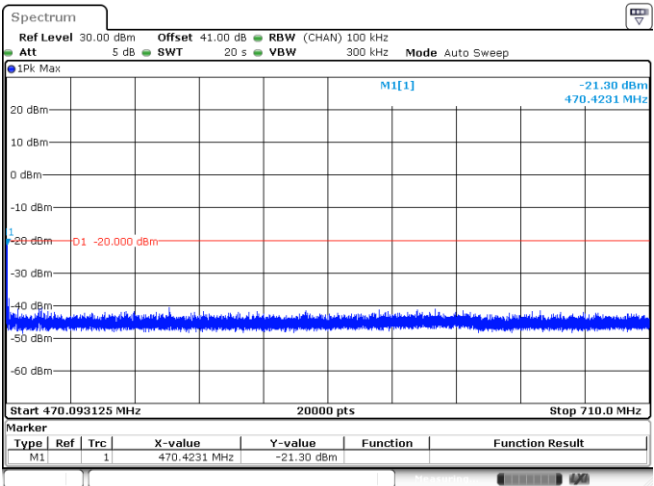
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469.9875MHz-1



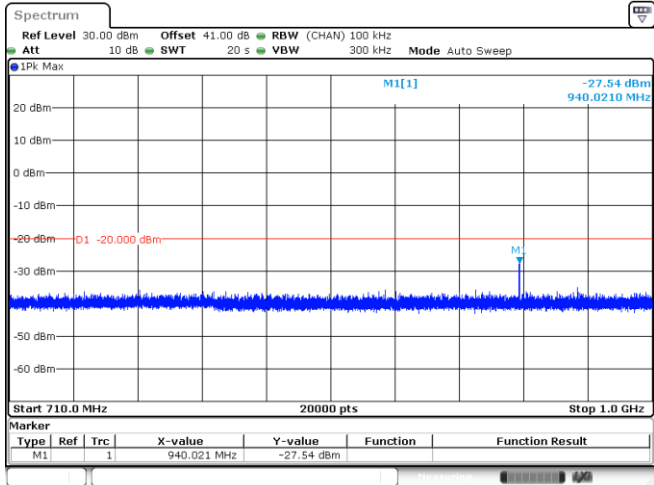
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Date: 11.NOV.2025 18:31:07

469.9875MHz-2



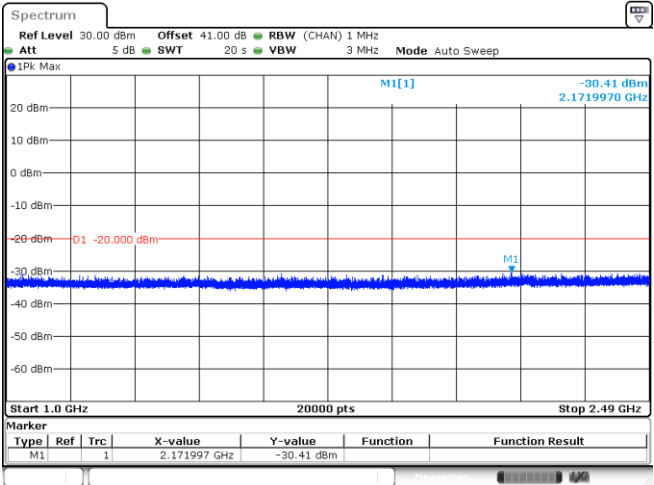
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Date: 11.NOV.2025 18:36:36

469.9875MHz-3



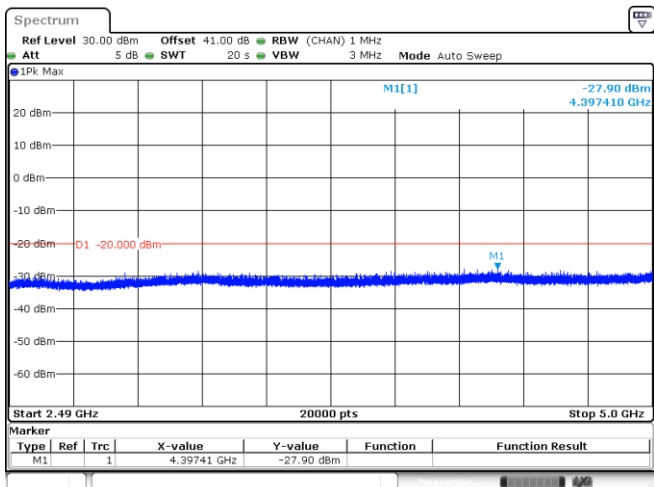
ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 11.NOV.2025 18:32:23

469.9875MHz-4



ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 11.NOV.2025 18:33:01

469.9875MHz-5



ProjectNo.:2504Y26988E-RF Tester:Benny Li
Date: 11.NOV.2025 18:33:39

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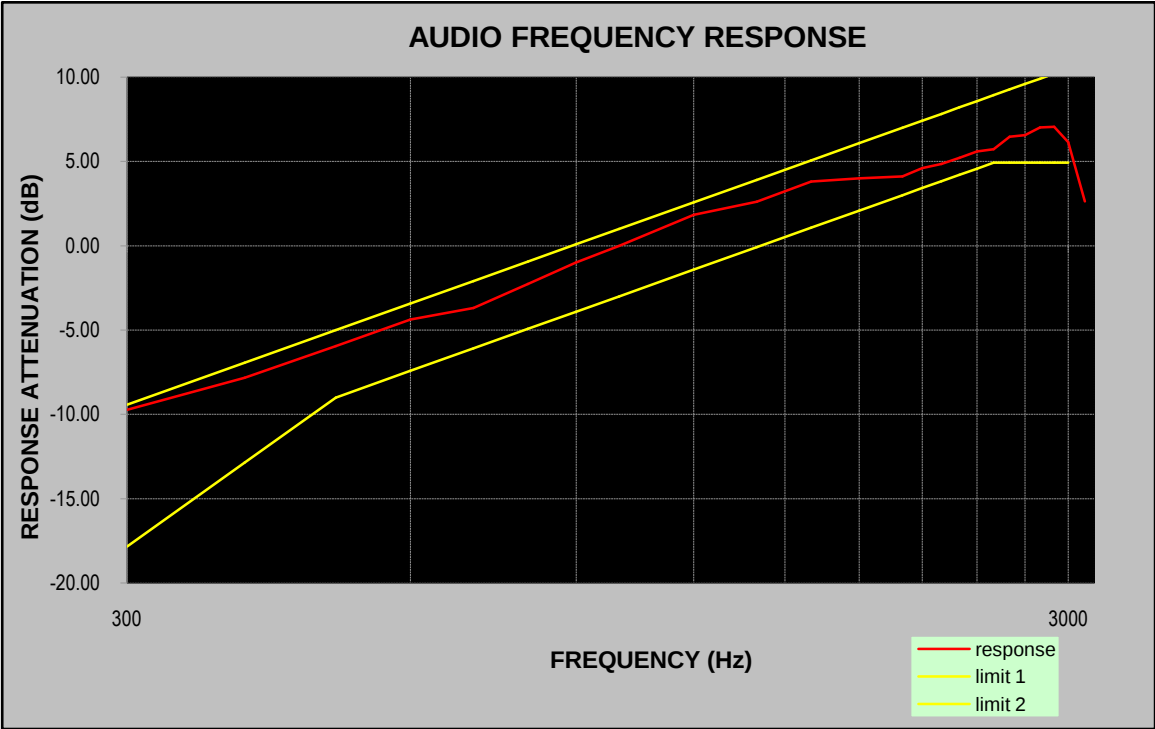
Modulation Characteristic

Test Data:

Audio Frequency Response – High Power

Carrier Frequency: 450.0125MHz,Channel Separation:12.5kHz

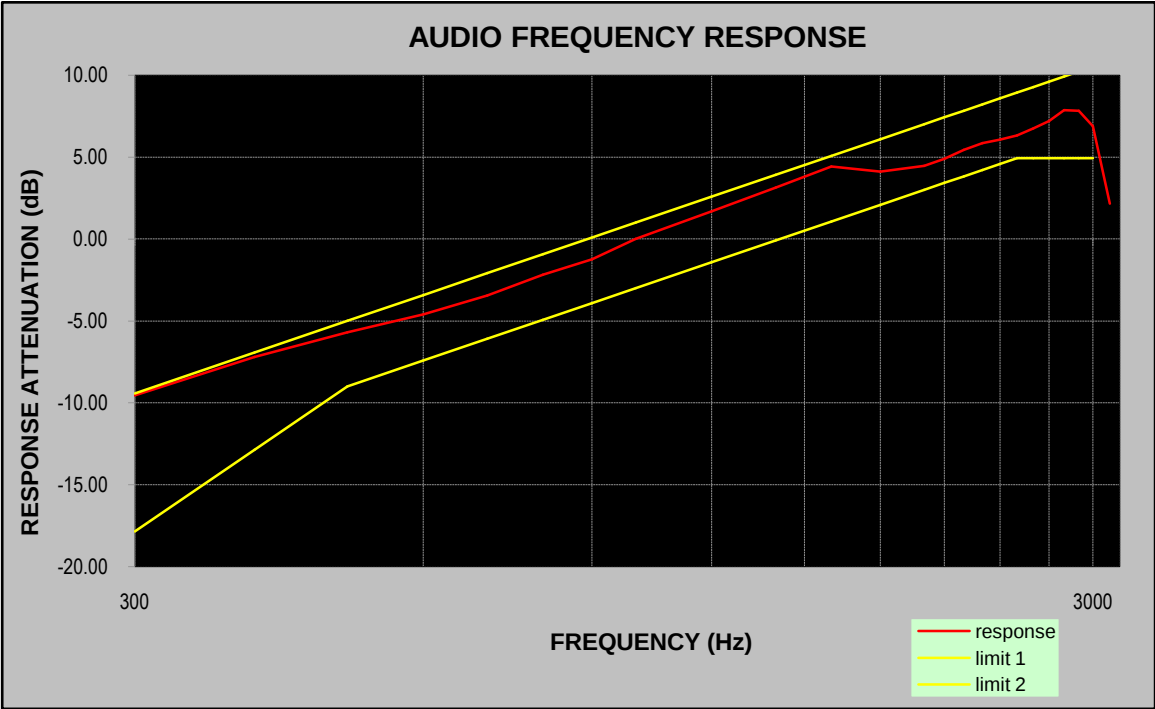
Audio Frequency (Hz)	Response Attenuation (dB)
300	-9.74
400	-7.83
500	-5.95
600	-4.38
700	-3.69
800	-2.27
900	-0.99
1000	0.00
1200	1.83
1400	2.61
1600	3.81
1800	4.00
2000	4.11
2100	4.60
2200	4.85
2300	5.21
2400	5.59
2500	5.72
2600	6.47
2700	6.56
2800	7.02
2900	7.05
3000	6.14
3125	2.63



Audio Frequency Response – High Power

Carrier Frequency: 450.0125MHz,Channel Separation:25kHz

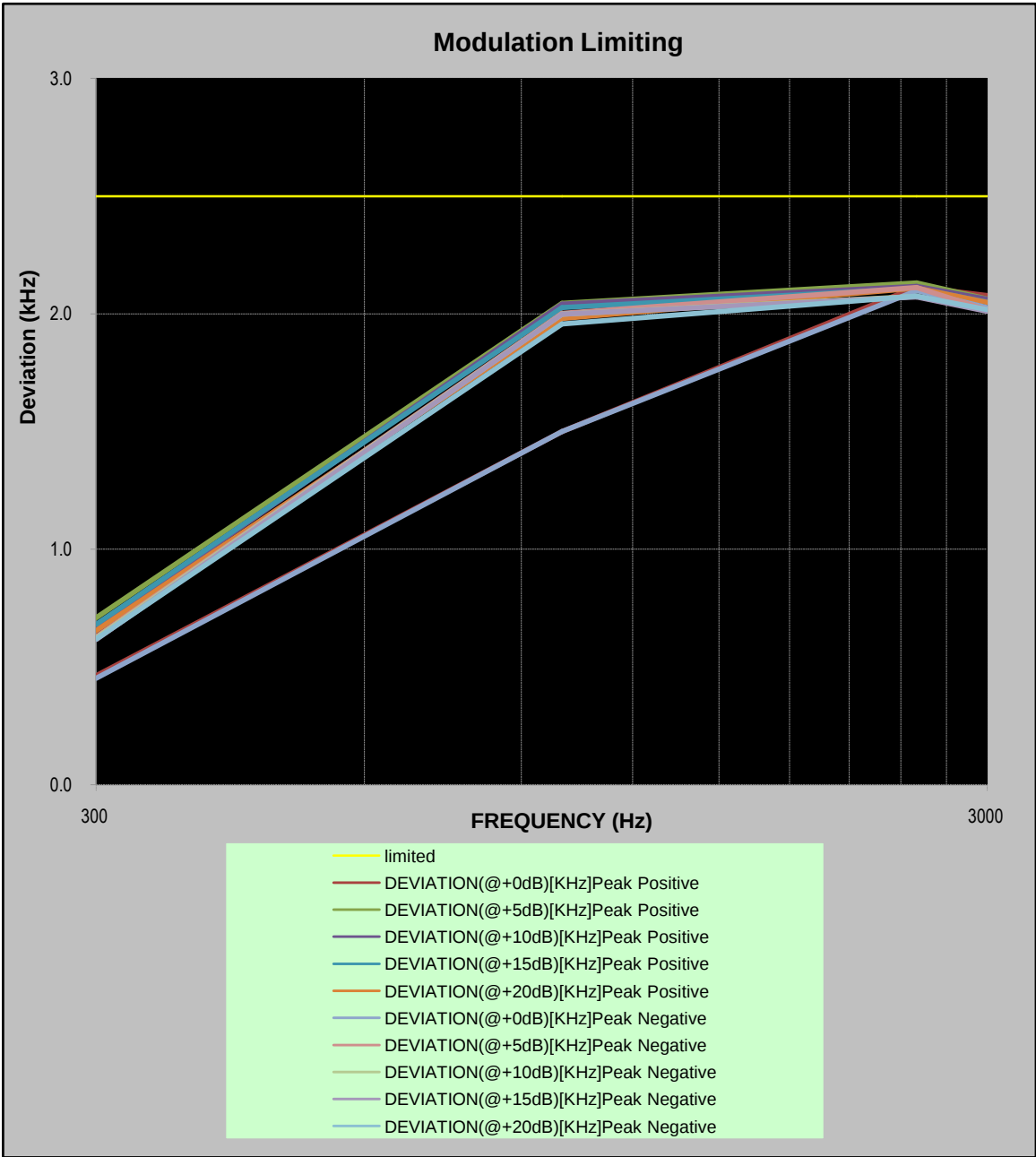
Audio Frequency (Hz)	Response Attenuation (dB)
300	-9.55
400	-7.19
500	-5.70
600	-4.60
700	-3.45
800	-2.18
900	-1.24
1000	0.00
1200	1.69
1400	3.14
1600	4.43
1800	4.12
2000	4.47
2100	4.90
2200	5.45
2300	5.86
2400	6.06
2500	6.32
2600	6.76
2700	7.20
2800	7.86
2900	7.82
3000	6.89
3125	2.15



Modulation Limiting – High Power

Carrier Frequency: 450.0125MHz,Channel Separation:12.5kHz

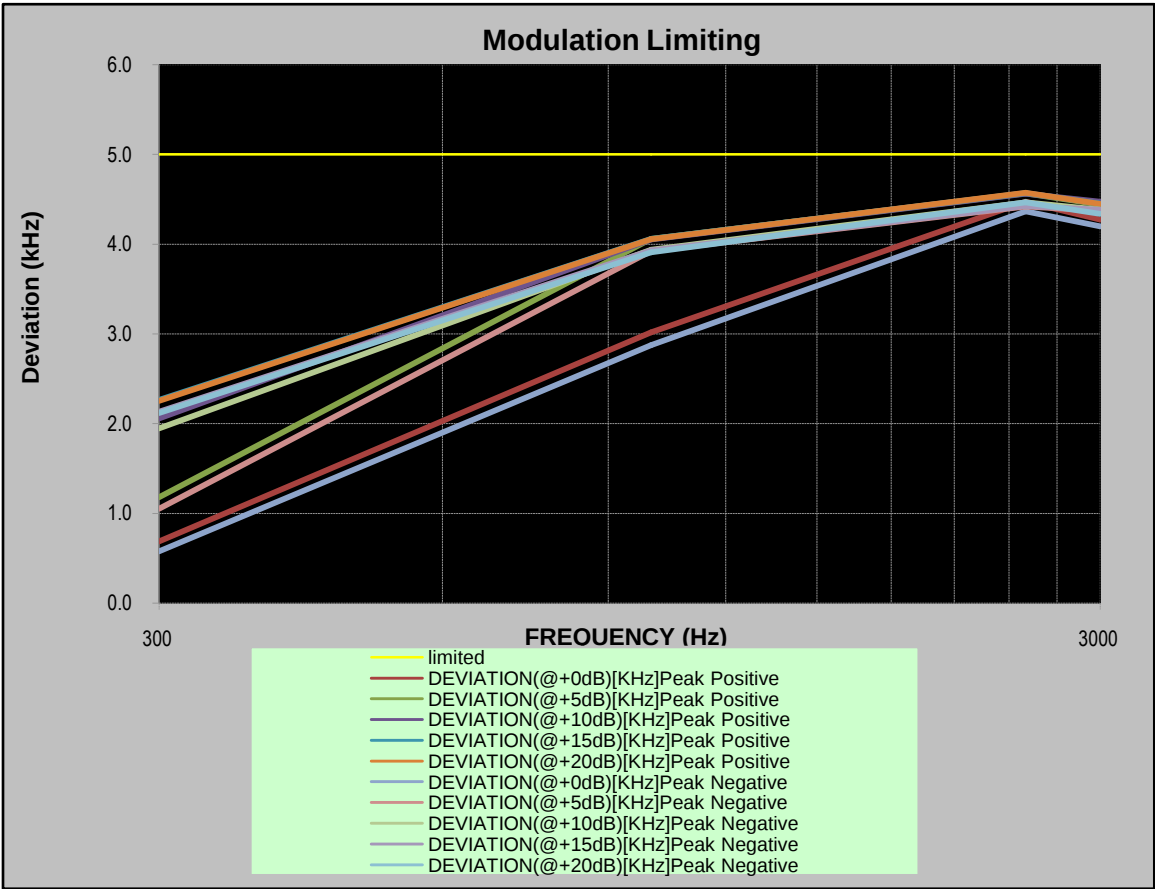
Audio Frequency (Hz)	DEVIATION (@+0dB) [kHz]		DEVIATION (@+5dB) [kHz]		DEVIATION (@+10dB) [kHz]		DEVIATION (@+15dB) [kHz]		DEVIATION (@+20dB) [kHz]		FCC Limit [kHz]
	Peak Positive	Peak Negative	Peak Positive	Peak Negative	Peak Positive	Peak Negative	Peak Positive	Peak Negative	Peak Positive	Peak Negative	
300	0.464	0.452	0.710	0.628	0.667	0.623	0.681	0.617	0.655	0.620	2.500
1000	1.500	1.500	2.045	2.003	2.042	1.999	2.027	1.999	1.980	1.957	2.500
2500	2.115	2.099	2.131	2.112	2.117	2.074	2.108	2.072	2.110	2.075	2.500
3000	2.078	2.027	2.063	2.017	2.062	2.015	2.050	2.011	2.049	2.018	2.500



Modulation Limiting – High Power

Carrier Frequency: 450.0125MHz,Channel Separation:25kHz

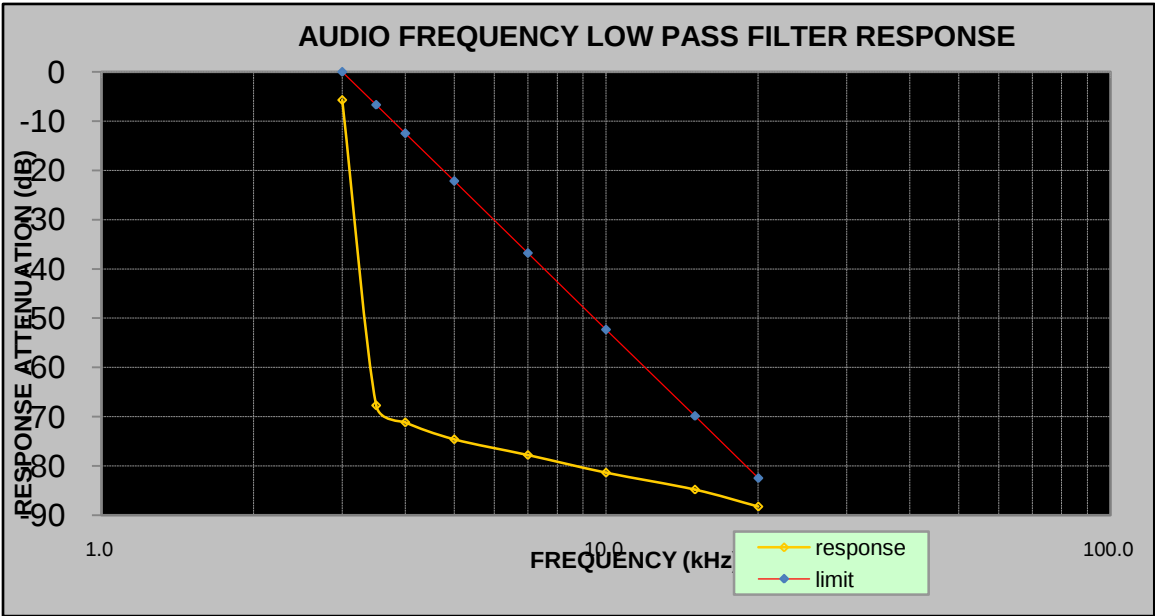
Audio Frequency (Hz)	DEVIATION (@+0dB) [kHz]		DEVIATION (@+5dB) [kHz]		DEVIATION (@+10dB) [kHz]		DEVIATION (@+15dB) [kHz]		DEVIATION (@+20dB) [kHz]		FCC Limit [kHz]
	Peak Positive	Peak Negative	Peak Positive	Peak Negative	Peak Positive	Peak Negative	Peak Positive	Peak Negative	Peak Positive	Peak Negative	
300	0.688	0.576	1.181	1.050	2.057	1.947	2.265	2.132	2.253	2.118	5.0
1000	3.019	2.874	4.060	3.923	4.052	3.939	4.061	3.931	4.056	3.911	5.0
2500	4.473	4.366	4.565	4.420	4.564	4.468	4.570	4.428	4.574	4.465	5.0
3000	4.272	4.198	4.443	4.374	4.475	4.383	4.451	4.383	4.448	4.339	5.0



Audio Frequency Low Pass Filter Response – High Power

Carrier Frequency: 450.0125MHz,Channel Separetion:12.5kHz

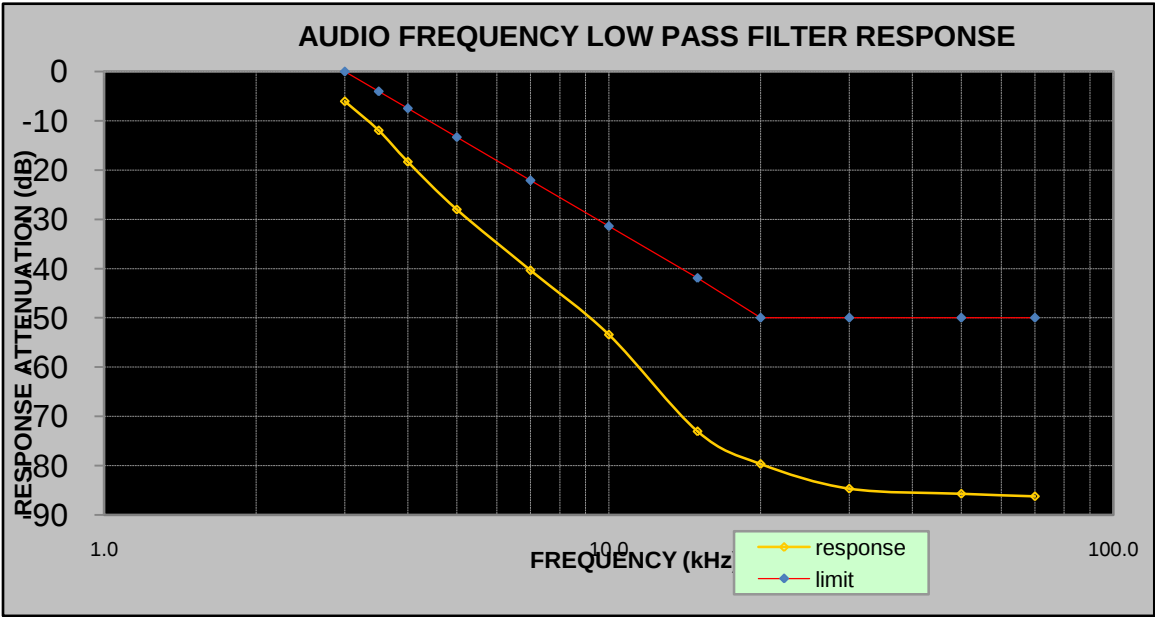
Audio Frequency (kHz)	Response Attenuation (dB)	FCC Limit (dB)
3.0	-5.7	0.0
3.5	-67.7	-6.7
4.0	-71.2	-12.5
5.0	-74.6	-22.2
7.0	-77.8	-36.8
10.0	-81.4	-52.3
15.0	-84.8	-69.9
20.0	-88.2	-82.5



Audio Frequency Low Pass Filter Response – High Power

Carrier Frequency: 450.0125MHz,Channel Separetion:25kHz

Audio Frequency (kHz)	Response Attenuation (dB)	FCC Limit (dB)
3.0	-6.0	0.0
3.5	-12.0	-4.0
4.0	-18.3	-7.5
5.0	-28.0	-13.3
7.0	-40.3	-22.1
10.0	-53.4	-31.4
15.0	-73.1	-41.9
20.0	-79.7	-50.0
30.0	-84.7	-50.0
50.0	-85.7	-50.0
70.0	-86.2	-50.0



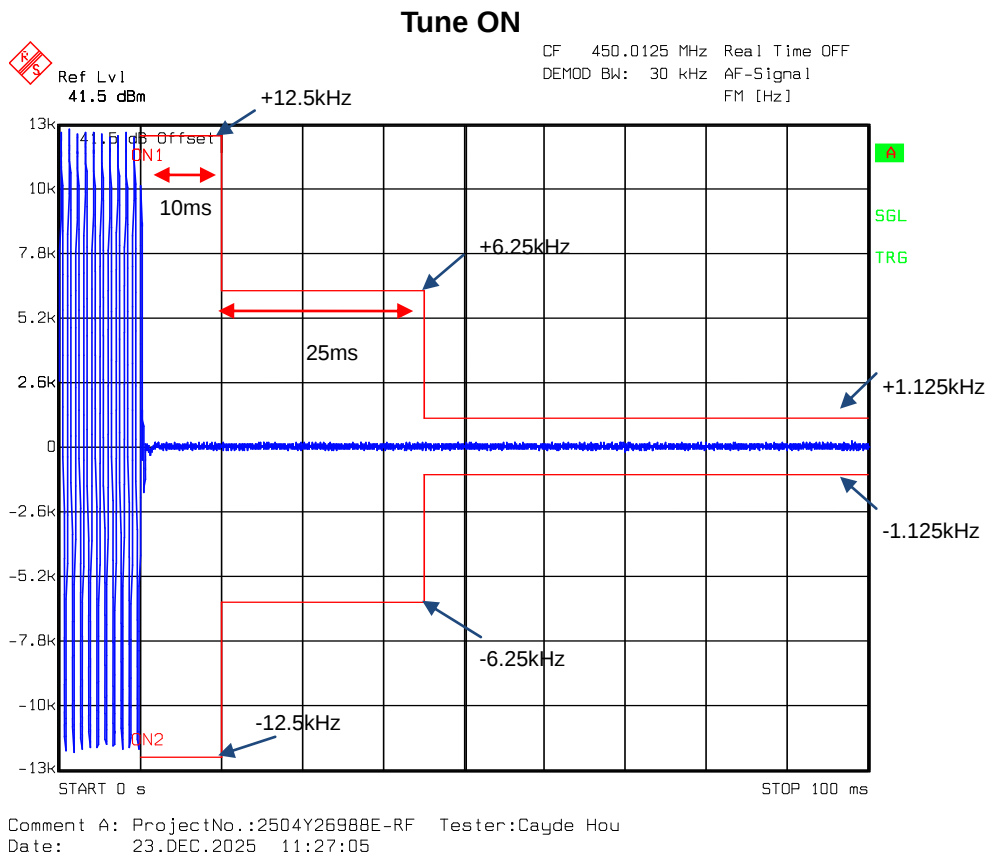
TRANSIENT FREQUENCY BEHAVIOR

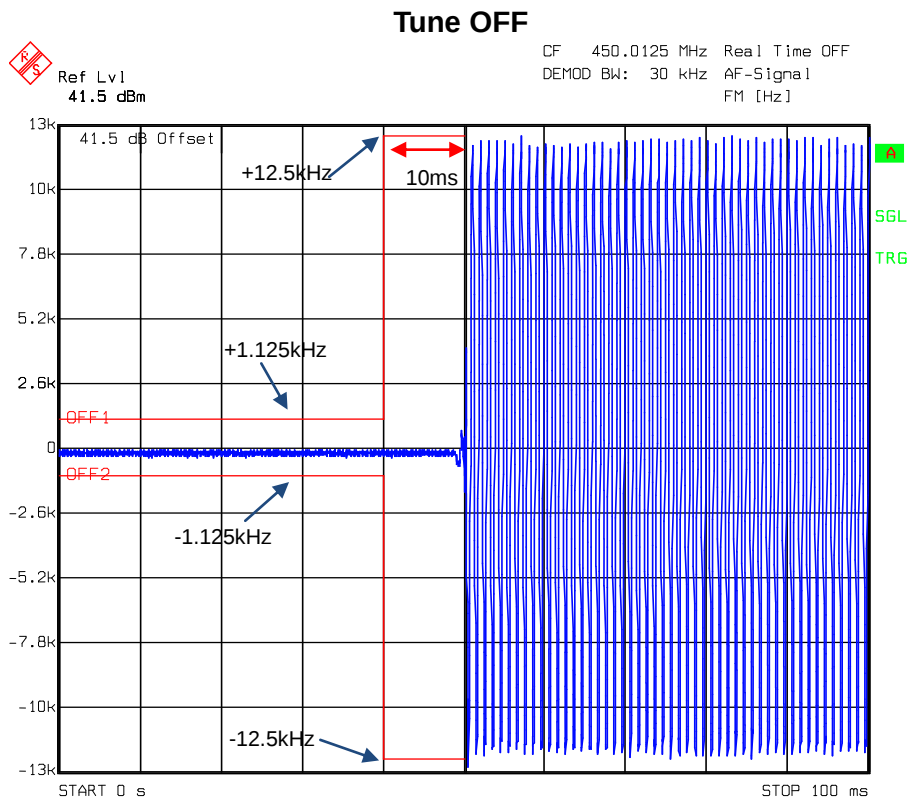
Test Data:

Channel Separation (kHz)	Transient Period (ms)	Transient Frequency	Result
12.5	10 (t1)	<+/-12.5 kHz	Pass
	25 (t2)	<+/-6.25 kHz	
	10 (t3)	<+/-12.5 kHz	

Note: During the time from the end of t2 to the beginning of t3, the frequency difference must not exceed the limits specified in §90.213:

For 450.0125 MHz 12.5kHz mode, limit is: $450.0125\text{ MHz} \times 2.5\text{ppm} = 1.125\text{kHz}$



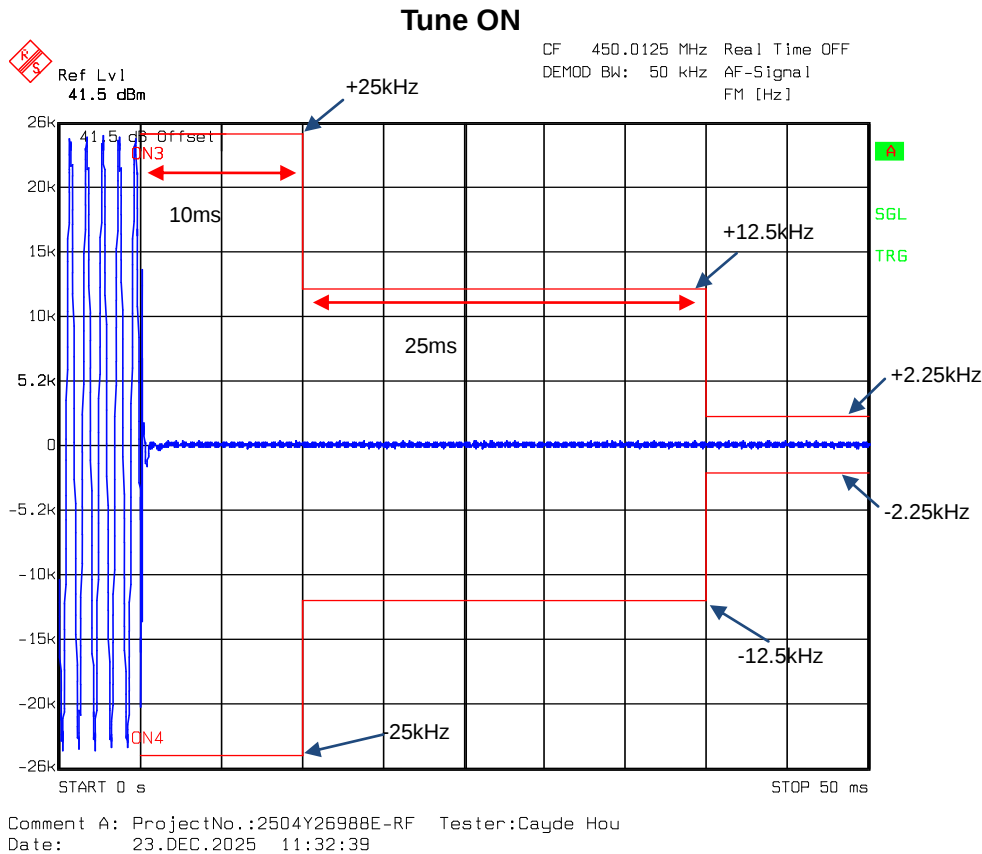


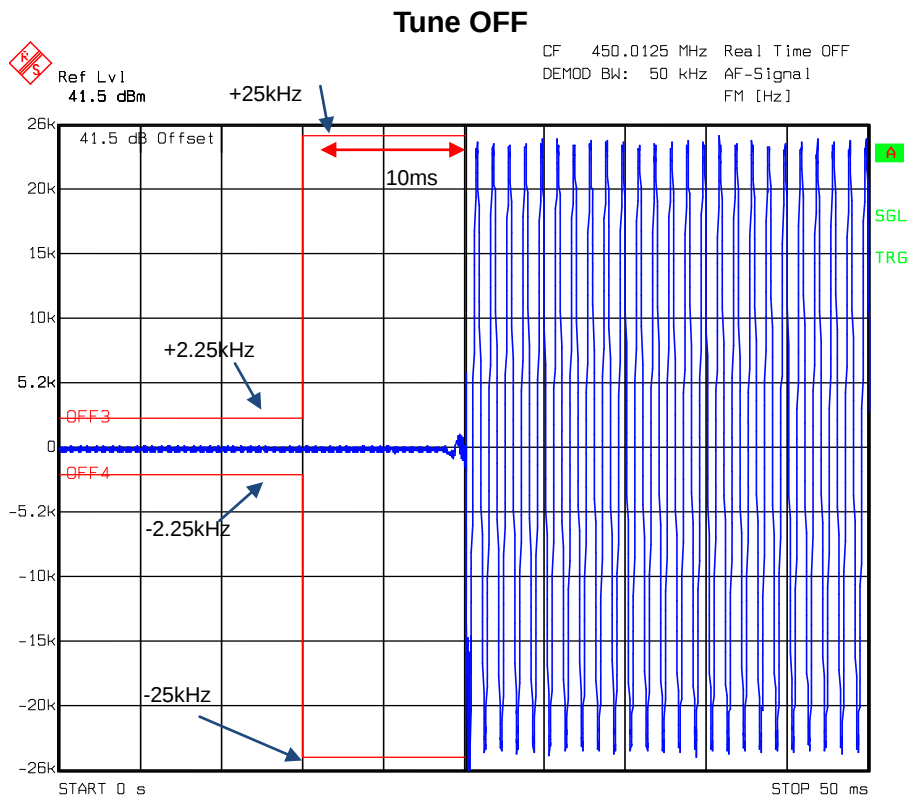
Comment A: ProjectNo.:2504Y26988E-RF Tester:Cayde Hou
Date: 23.DEC.2025 11:29:00

Channel Separation (kHz)	Transient Period (ms)	Transient Frequency	Result
25	10 (t1)	<+/-25kHz	Pass
	25 (t2)	<+/-12.5 kHz	
	10 (t3)	<+/-25 kHz	

Note: During the time from the end of t2 to the beginning of t3, the frequency difference must not exceed the limits specified in §90.213:

For 450.0125 MHz 25kHz mode, limit is: $450.0125\text{ MHz} \times 5\text{ppm} = 2.25\text{kHz}$





Comment A: ProjectNo.:2504Y26988E-RF Tester:Cayde Hou
Date: 23.DEC.2025 11:34:58

EXHIBIT A-EUT PHOTOGRAPHS

Please refer to the Attachment No.1 2504Y26988E-RF EUT External Photos and Attachment No.2 2504Y26988E-RF EUT Internal Photos.

EXHIBIT B-TEST SETUP PHOTOGRAPHS

Please refer to the Attachment No.6 2504Y26988E-RFF Test Photos.

***** END OF REPORT *****