

ZHL-50W-52-S+, ZHL-50W-52X-S+

AN-60-097

The model ZHL-50W-52X+ is a high power (up to 50W) connectorized wide band amplifier. It was redesigned because of EOL of the output transistor. Case style BT1165 is not changed.

COMPARISON PERFORMANCE TABLES: $T_{AMB}=25^{\circ}C$

FREQUENCY (MHz)	GAIN (dB)		DIRECTIVITY (dB)		VSWR (:1)			
					IN		OUT	
	24 V		24 V		24 V			
	NEW	OLD	NEW	OLD	NEW	OLD	NEW	OLD
50	52.34	50.47	16.10	13.12	1.52	1.40	1.92	1.44
100	52.50	52.50	30.94	17.71	1.18	1.39	1.93	1.86
150	52.14	51.01	30.14	13.40	1.12	1.51	1.82	2.12
200	52.09	51.44	21.22	14.46	1.38	1.59	1.53	2.21
250	51.89	51.36	19.27	24.31	1.56	1.53	1.53	2.38
300	52.63	51.43	28.44	14.06	1.73	1.31	1.47	2.35
350	53.14	51.17	32.32	13.91	1.92	1.10	1.48	3.56
400	53.42	51.31	25.14	14.74	2.13	1.52	1.90	4.32
450	53.19	51.06	20.22	16.65	2.25	1.91	2.47	4.20
500	52.96	50.99	20.56	17.79	2.08	1.65	3.41	3.27

Table 1 GAIN, DIRECTIVITY, VSWR vs FREQUENCY

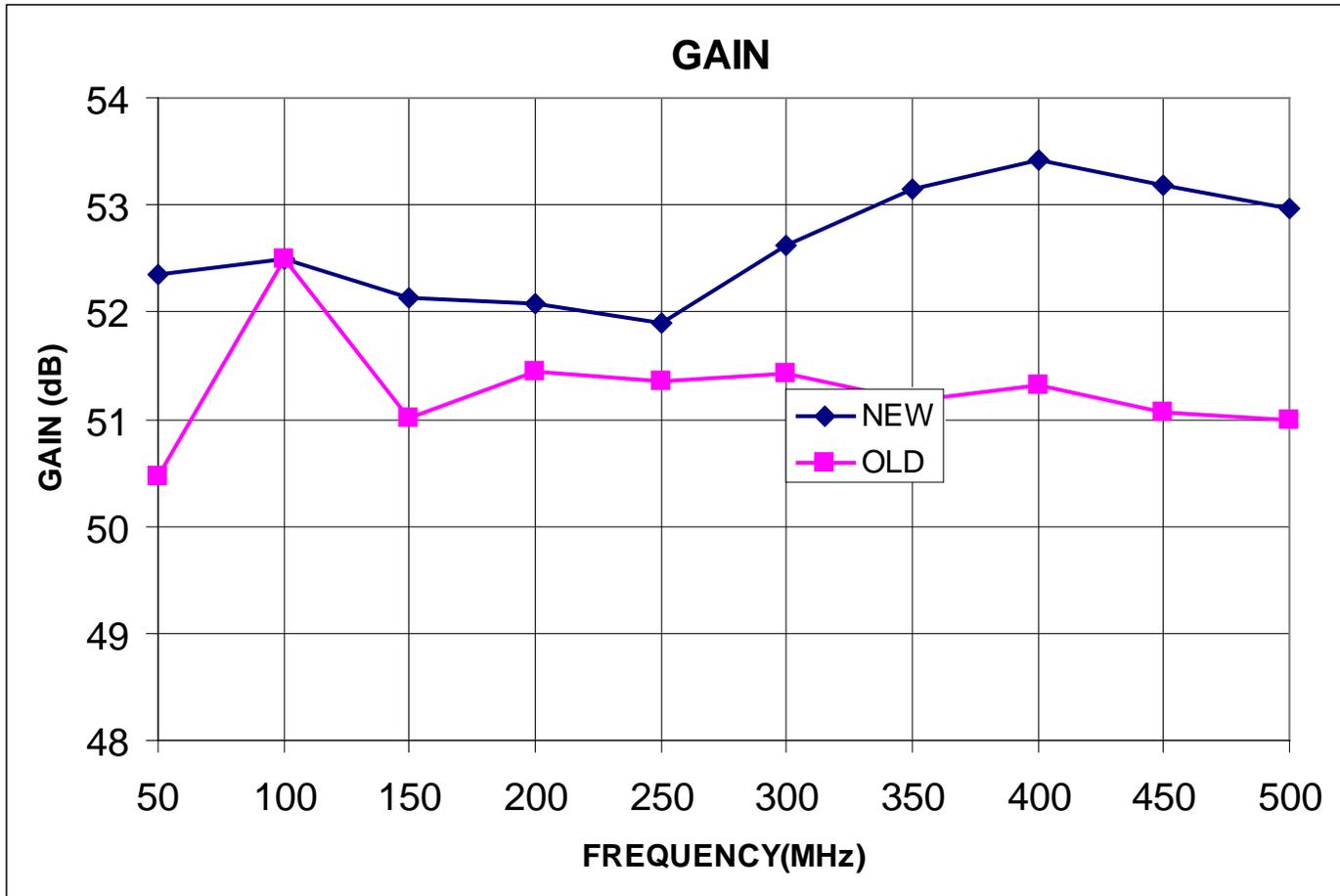
- a. Suitability within a particular system must be determined by and is solely the responsibility of the customer based on, among other things, electrical performance criteria, stimulus conditions, application, compatibility with other components and environmental conditions and stresses.

FREQUENCY (MHz)	NOISE FIGURE (dB)		Pout at 1 dB COMPR. (dBm)		Pout at 3 dB COMPR. (dBm)		IP3 (dBm)	
	24 V		24 V		24 V		24 V	
	NEW	OLD	NEW	OLD	NEW	OLD	NEW	OLD
50	4.33	4.29	46.94	46.47	48.12	47.06	61.08	63.09
100	4.02	3.9	46.78	46.79	47.70	47.64	60.57	62.52
150	4.03	3.8	47.69	47.31	49.05	48.37	61.07	61.74
200	4.14	3.73	48.16	47.11	49.22	48.28	62.12	60.55
250	4.37	3.88	47.97	46.17	49.27	47.45	62.11	58.48
300	4.56	3.99	47.91	45.73	49.20	47.20	61.5	57.95
350	4.74	4.04	47.21	45.47	48.50	47.38	60.97	57.61
400	4.86	4.08	47.63	45.56	48.83	47.14	60.13	57.62
450	4.94	4.15	46.20	44.74	47.79	46.56	59.07	57.35
500	5	4.23	45.88	44.62	47.60	46.23	58.52	57.35

Table 2 NOISE FIGURE, OUTPUT POWER at COMPRESSION, OIP3 vs FREQUENCY

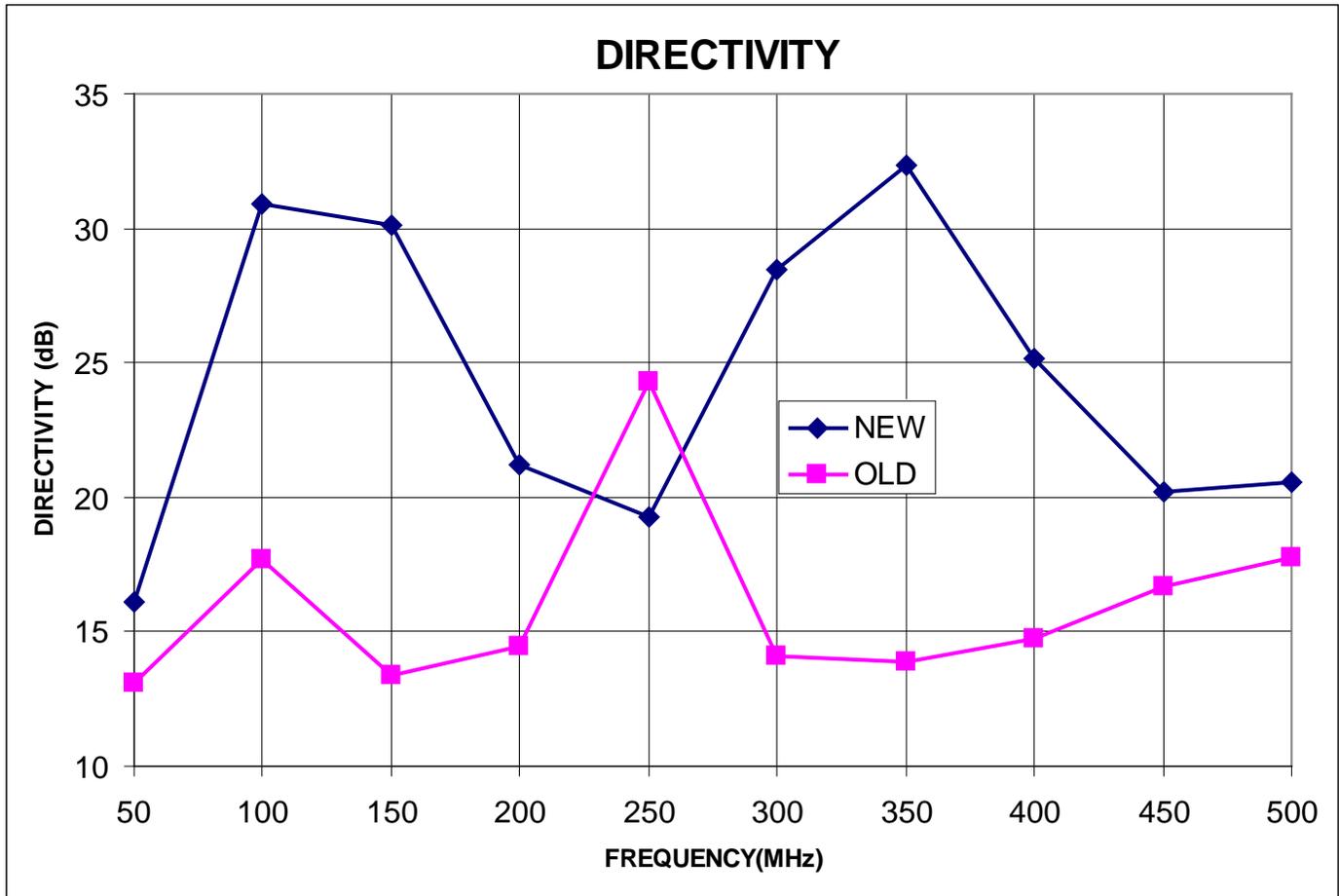
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COMPARISON PERFORMANCE GRAPHS: $T_{AMB}=25^{\circ}C$



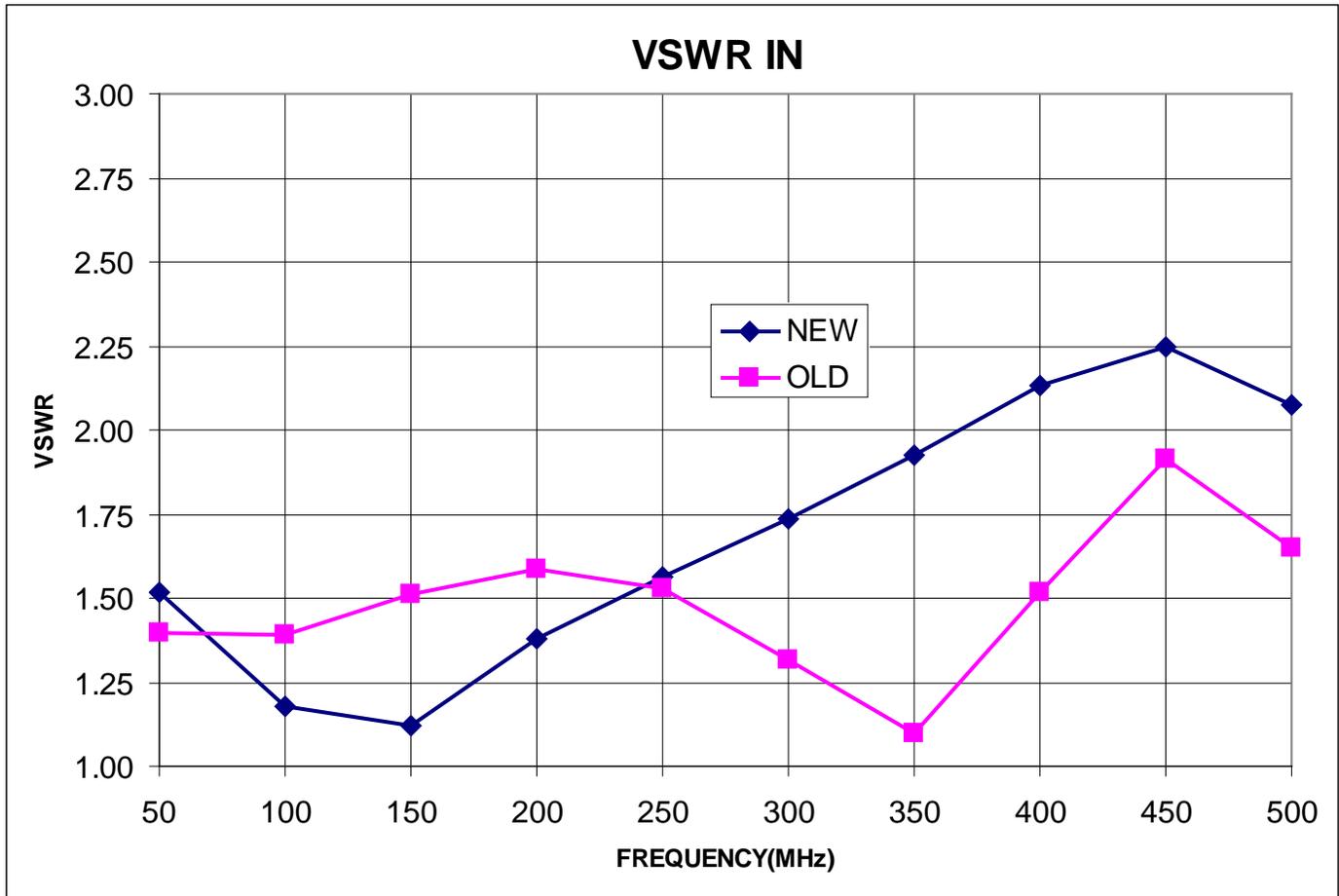
Graph 1 GAIN vs FREQUENCY

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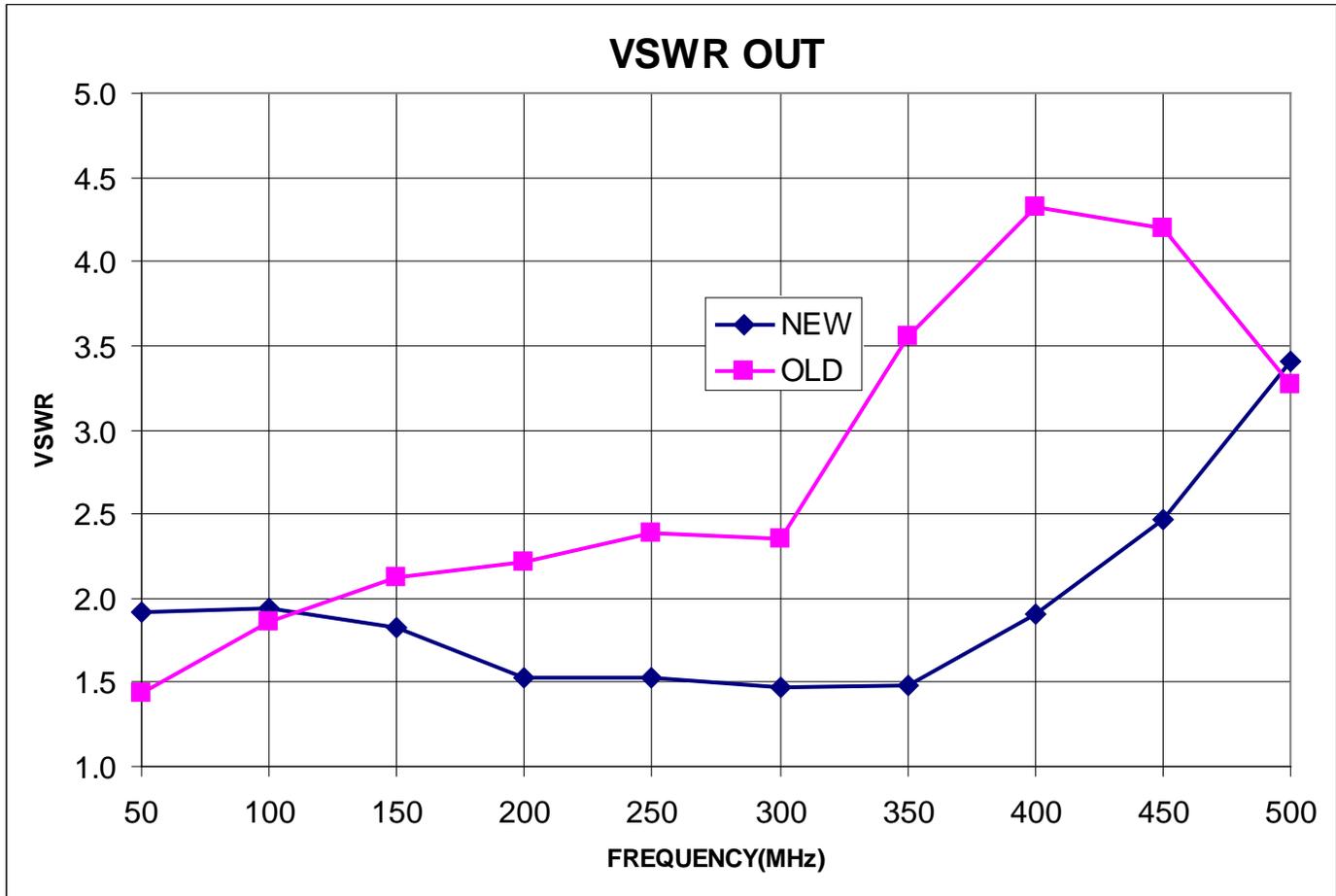
Graph 2 DIRECTIVITY vs FREQUENCY

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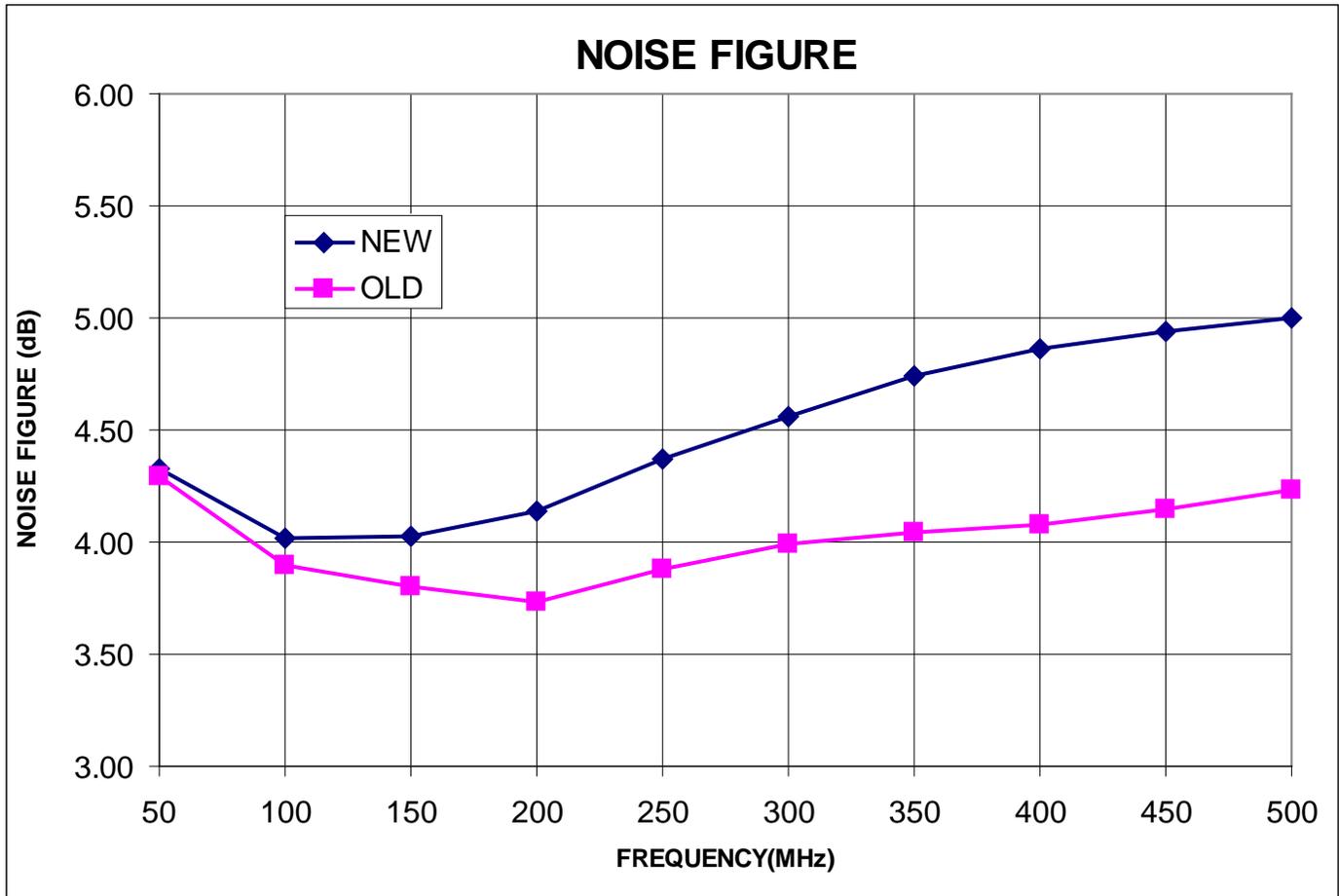
Graph 3 VSWR IN vs FREQUENCY

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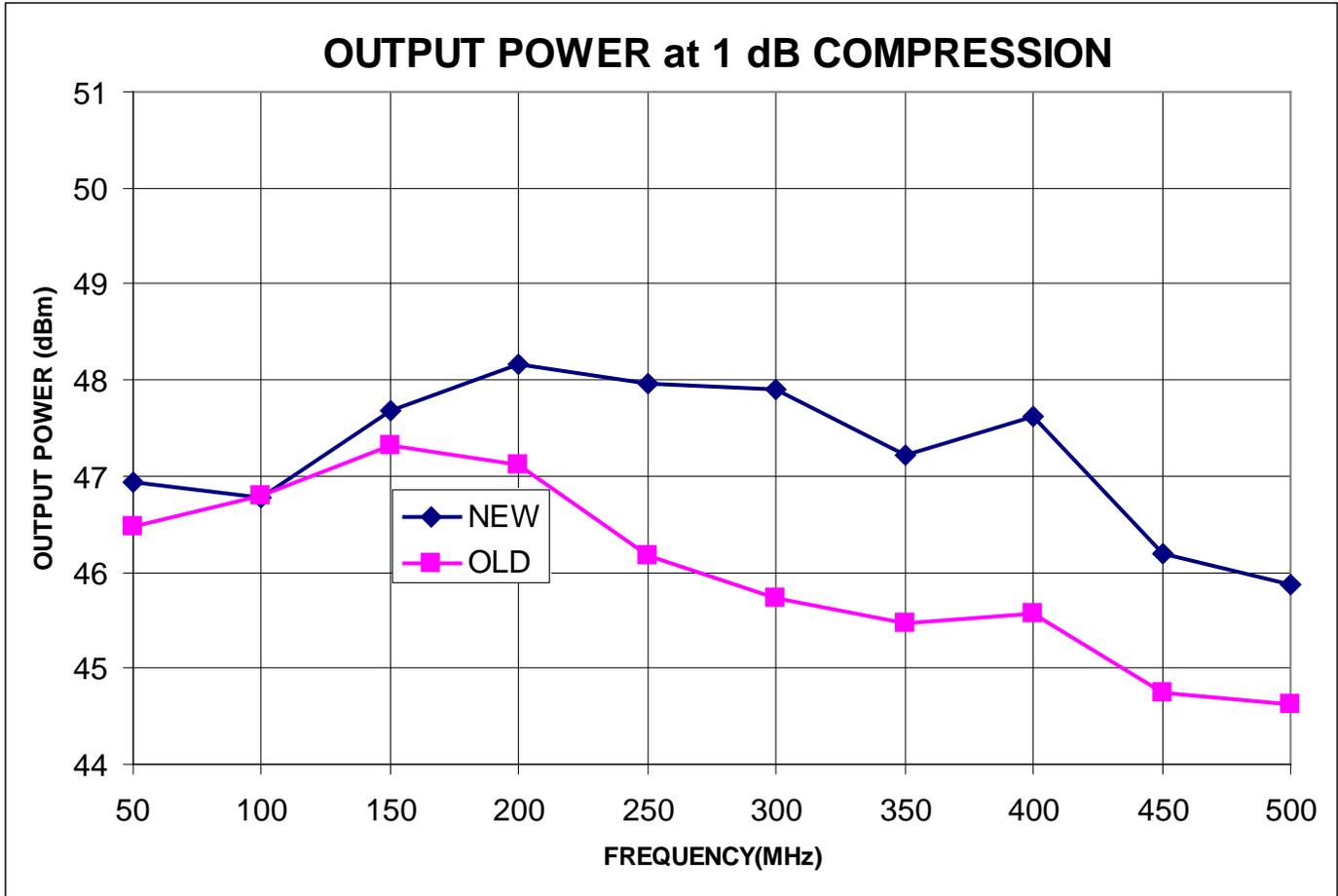
Graph 4 VSWR OUT vs FREQUENCY

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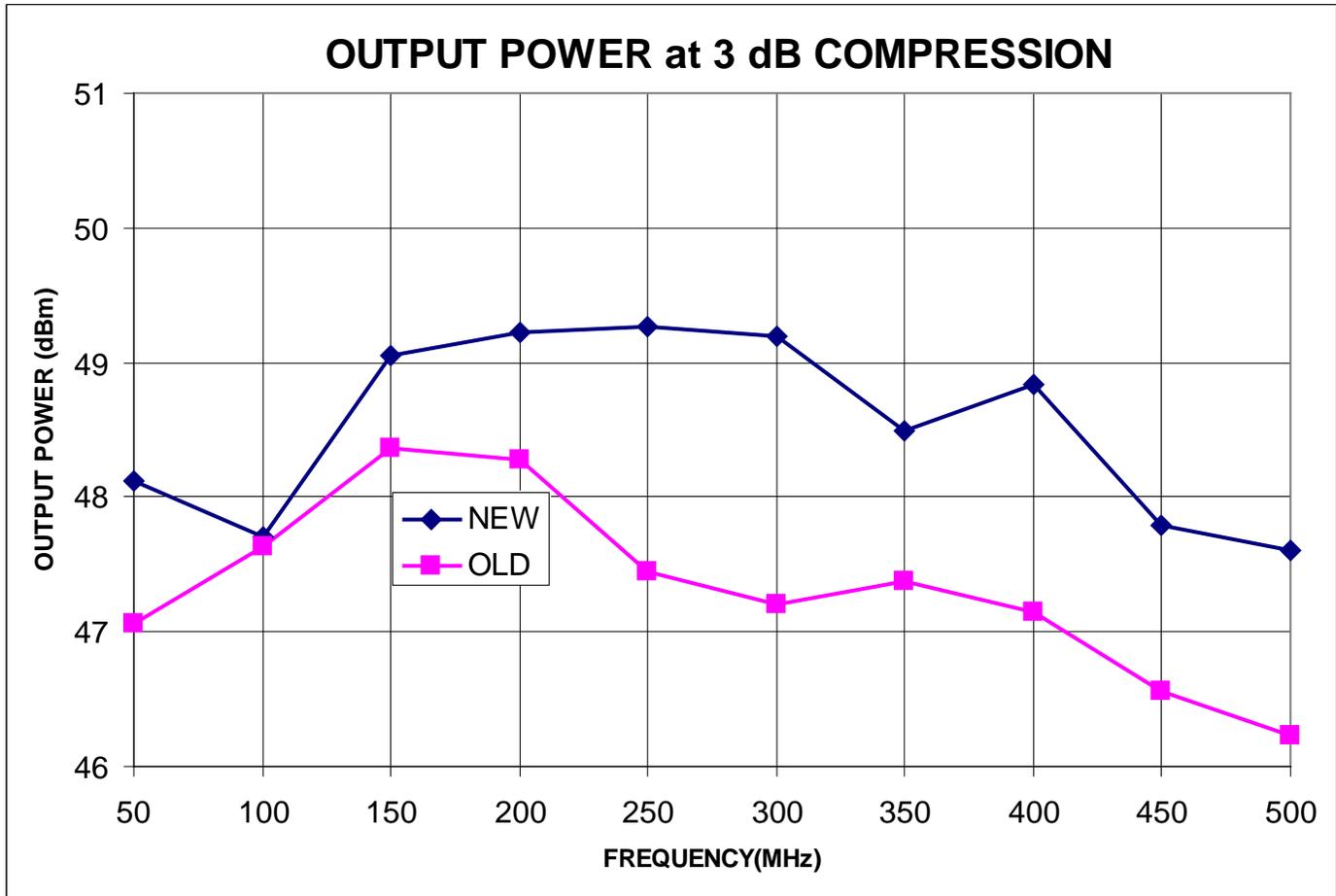
Graph 5 NOISE FIGURE vs FREQUENCY

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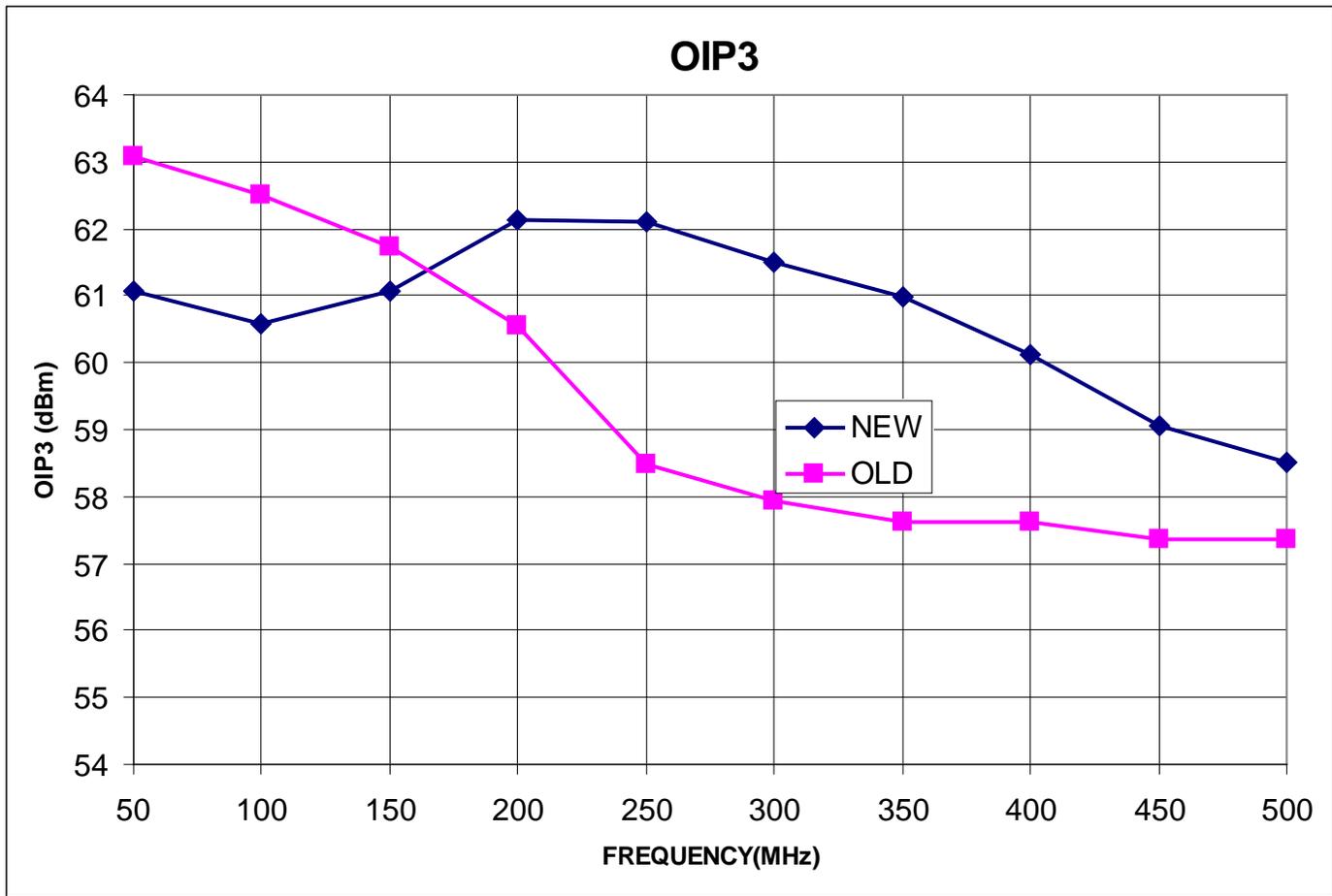
Graph 6 OUTPUT POWER at 1 dB COMPRESSION vs FREQUENCY

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Graph 7 OUTPUT POWER at 3 dB COMPRESSION vs FREQUENCY

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Graph 8 OIP3 vs FREQUENCY

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CONCLUSION

1. **The performance of the redesign model is slightly different from the performance of the original model:**
 - **Gain is 2 dB higher or 52 dB typ.**
 - **P1dB and P3dB are 0.5 dB higher**
 - **OIP3 is about 1 dB higher.**
2. **The new design may replace the original catalog model.**

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