

ZHL-42+, ZHL-42X+

AN-60-098

The models ZHL-42+, ZHL-42X+ are the medium high power (up to 25W) connectorized wide band amplifiers. They were redesigned to improve the Gain and the Compression/OIP3 at high frequencies. Case style U36 is not changed.

COMPARISON PERFORMANCE TABLES: T_{AMB}=25°C

FREQUENCY (MHz)	GAIN		DIRECTIVITY		VSWR			
	(dB)		(dB)		(:1)			
					IN		OUT	
	24 V		24 V		24 V			
	NEW	OLD	NEW	OLD	NEW	OLD	NEW	OLD
700	38.94	33.91	55.12	64.29	1.57	1.54	1.63	1.53
1500	38.94	34.32	64.11	79.67	1.33	1.56	1.91	1.97
1800	38.44	34.03	62.19	59.98	1.23	1.34	1.62	1.44
2100	38.06	33.71	75.96	67.49	1.19	1.26	1.68	1.44
2700	38.00	35.12	59.35	65.90	1.31	1.32	1.77	1.61
3000	39.09	34.84	53.10	61.28	1.29	1.28	1.77	1.74
3300	39.18	33.91	54.42	69.68	1.32	1.32	1.70	1.90
3600	39.20	33.84	68.27	54.43	1.30	1.33	1.62	1.97
3900	38.82	34.47	53.71	50.52	1.11	1.32	1.33	1.76
4200	38.16	33.38	45.28	50.14	1.09	1.19	1.50	1.64

Table 1 GAIN, DIRECTIVITY, VSWR vs FREQUENCY

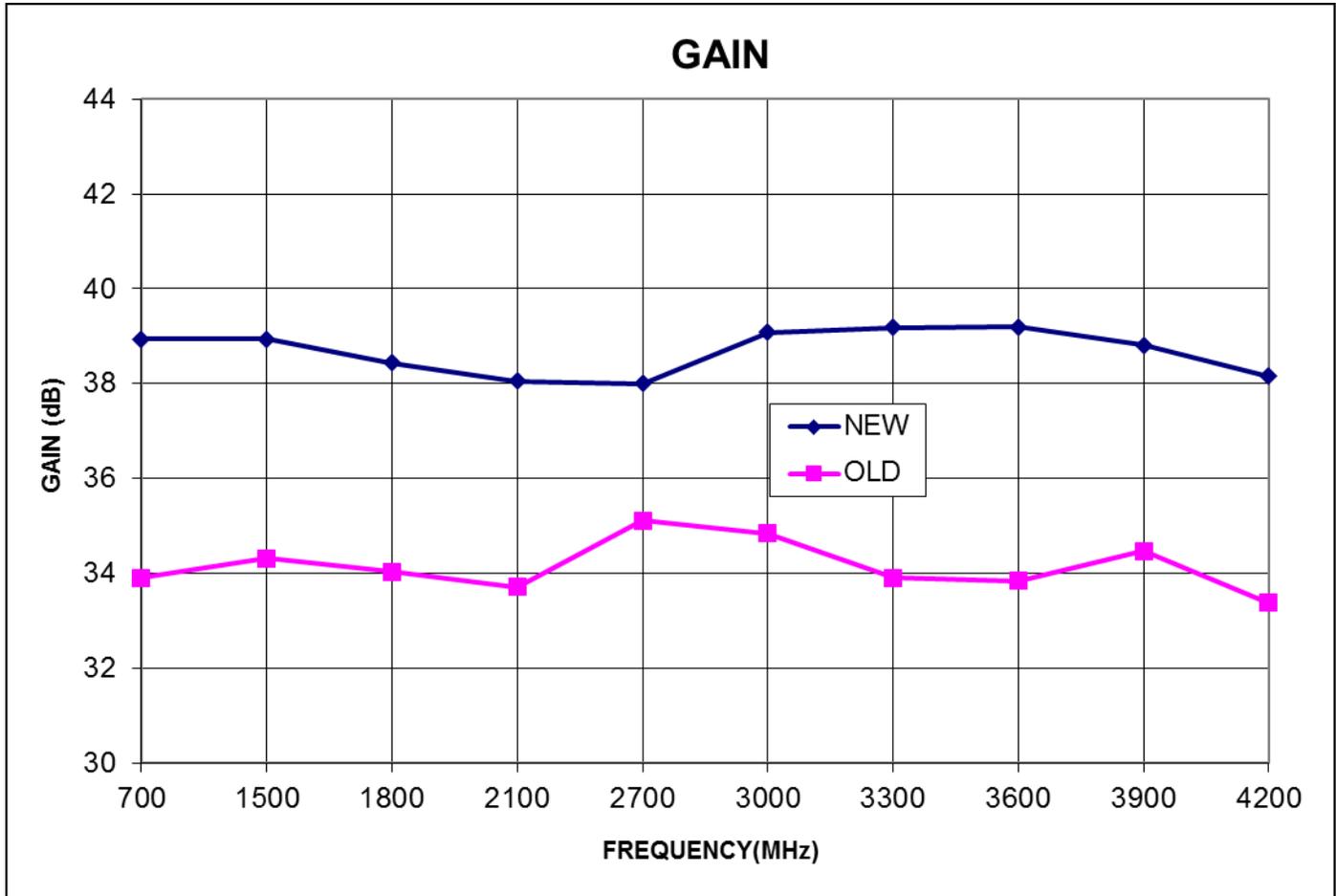
- a. Suitability within a particular system must be determined by and is solely the responsibility of the customer based on, among other things, electrical performance criteria, stimulus conditions, application, compatibility with other components and environmental conditions and stresses.

FREQUENCY (MHz)	NOISE FIGURE		Pout at 1 dB COMPR.		Pout at 3 dB COMPR.		OIP3	
			(dBm)		(dBm)		(dBm)	
	24 V		24 V		24 V		24 V	
	NEW	OLD	NEW	OLD	NEW	OLD	NEW	OLD
700	8.18	7.92	31.72	31.46	31.72	31.91	50.12	48.36
1500	8.24	8.03	31.76	31.24	31.76	31.68	44.93	46.03
1800	8.27	7.87	30.91	30.77	30.91	30.89	45.99	47.64
2100	8.08	7.78	31.58	31.78	31.58	32.09	47.85	46.90
2700	8.13	7.38	31.70	32.45	31.70	32.68	44.06	46.92
3000	8.11	7.36	31.71	31.70	31.71	32.39	47.68	47.71
3300	8.03	7.44	32.05	31.16	32.05	32.15	47.88	42.77
3600	8.46	7.65	31.57	30.33	31.57	31.41	46.83	44.44
3900	8.27	7.81	30.27	29.81	30.27	30.32	47.92	40.28
4200	8.74	8.03	29.31	29.25	29.31	29.57	42.62	41.79

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

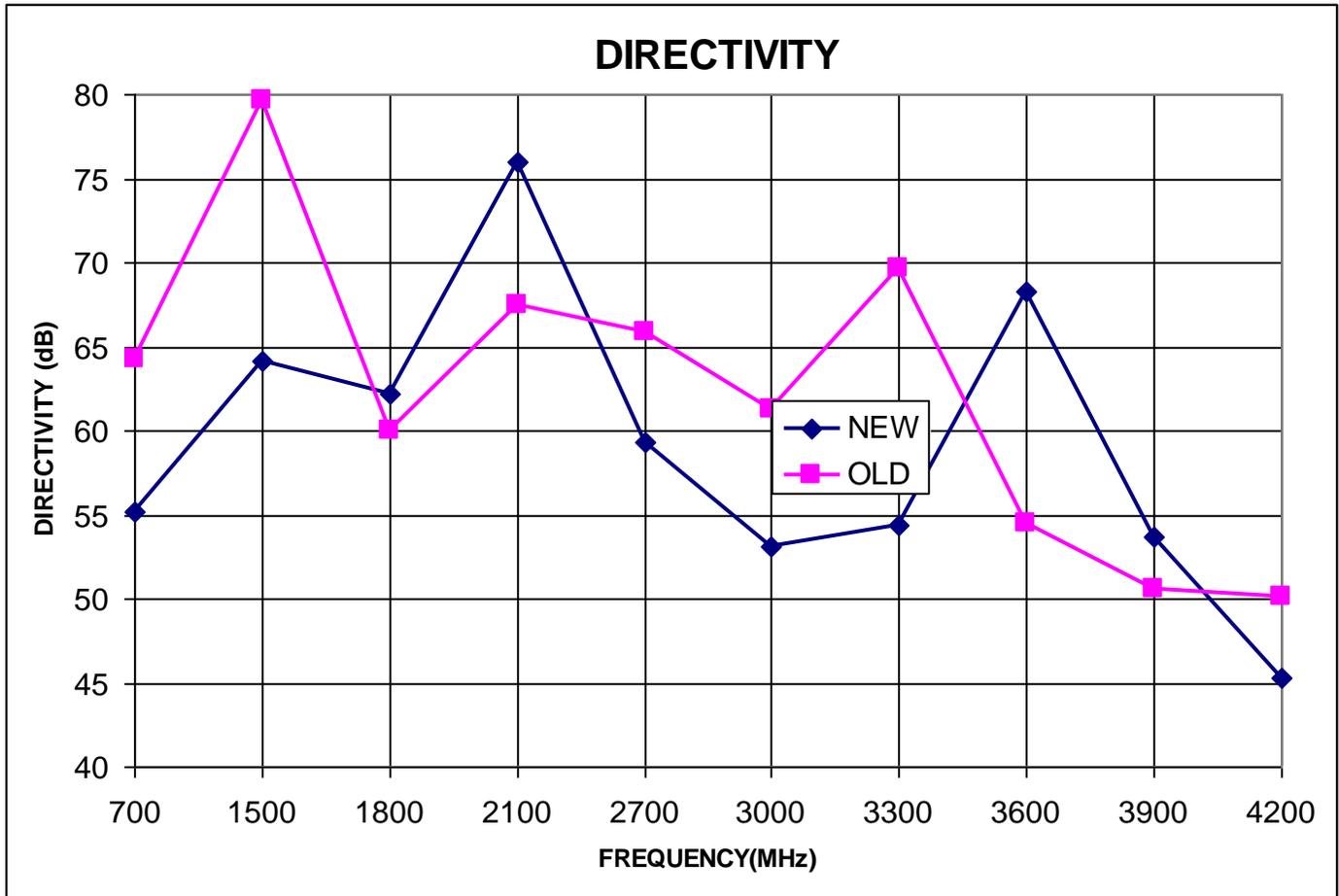
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COMPARISON PERFORMANCE GRAPHS: $T_{AMB}=25^{\circ}C$



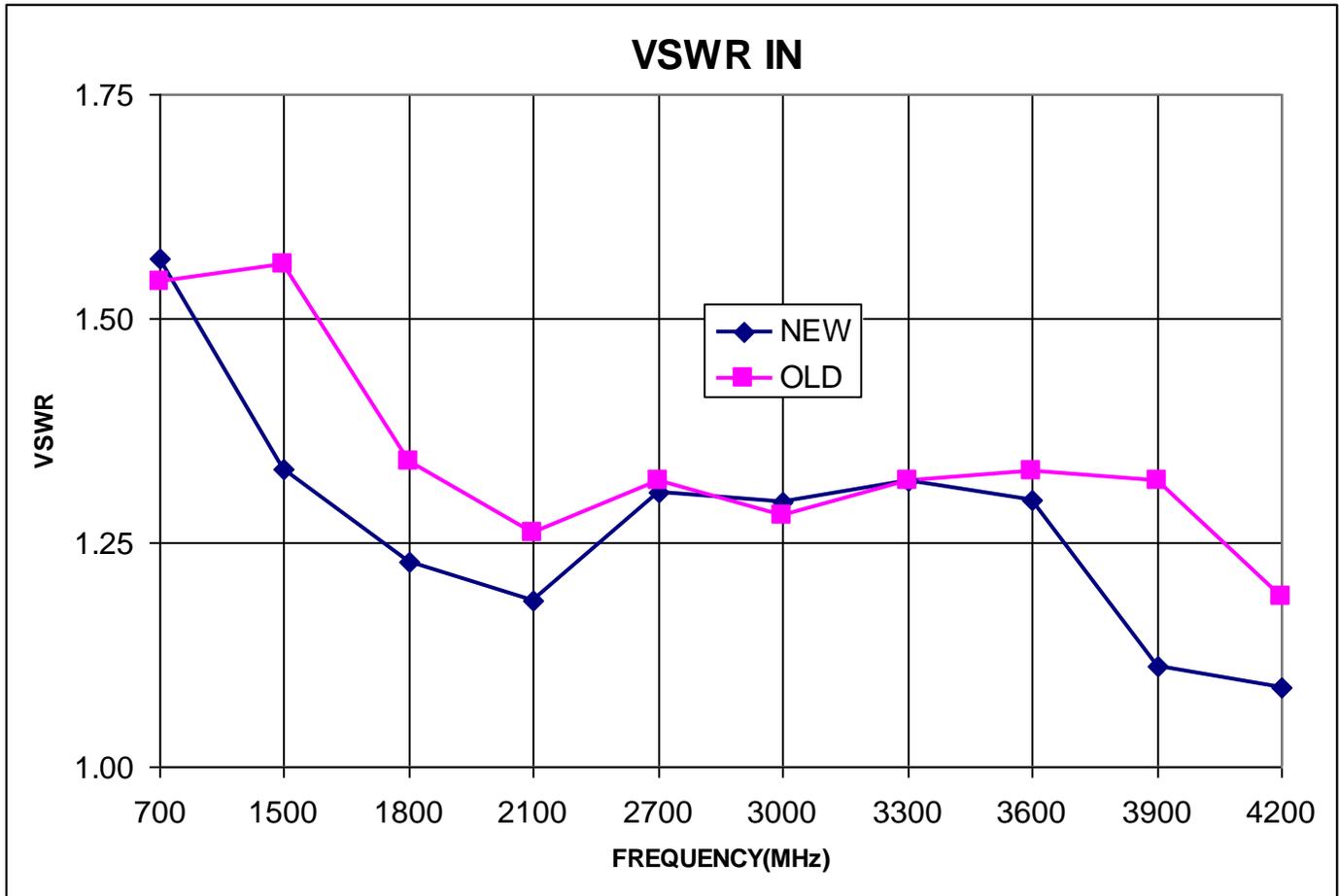
Graph 1 GAIN vs FREQUENCY

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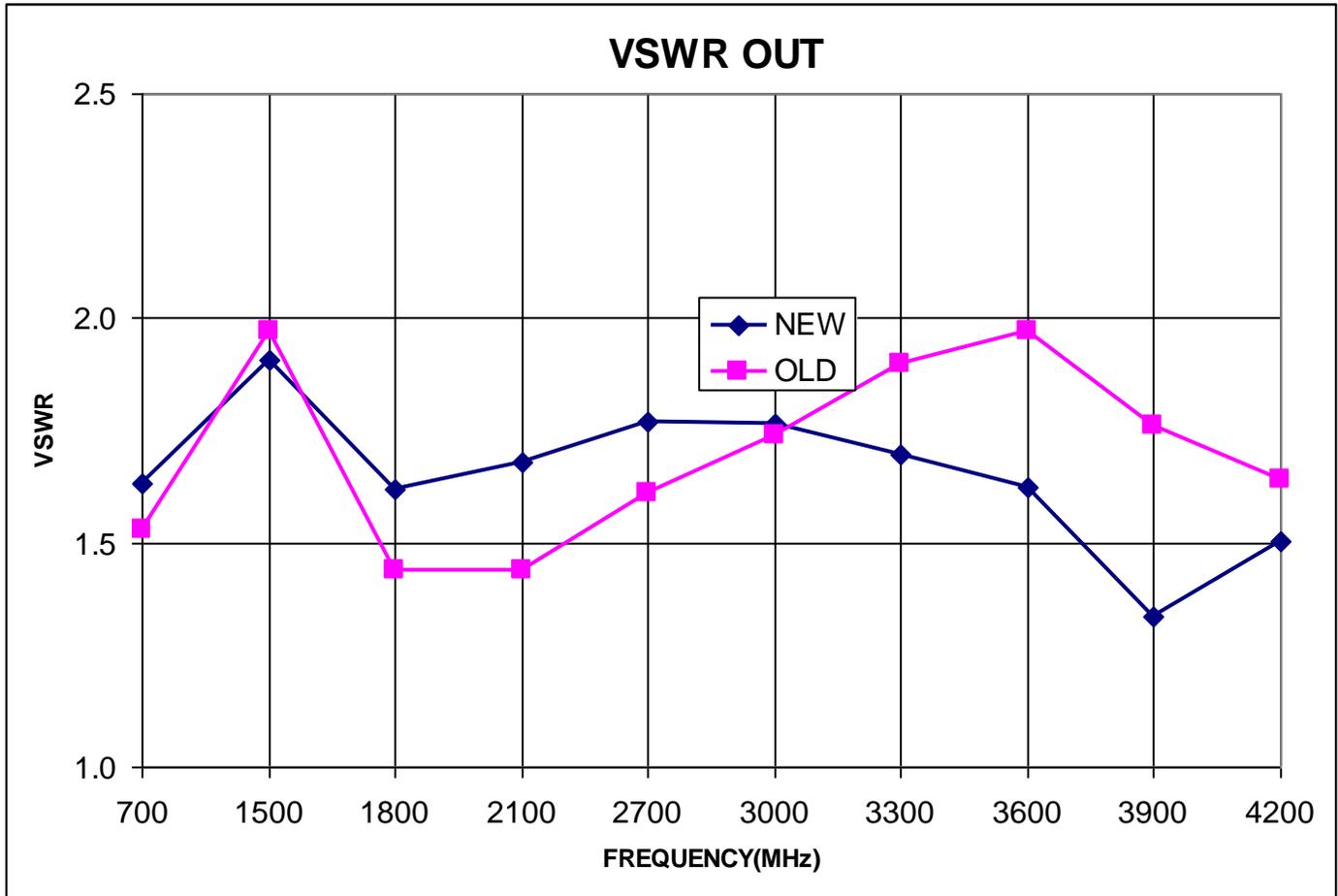
Graph 2 DIRECTIVITY vs FREQUENCY

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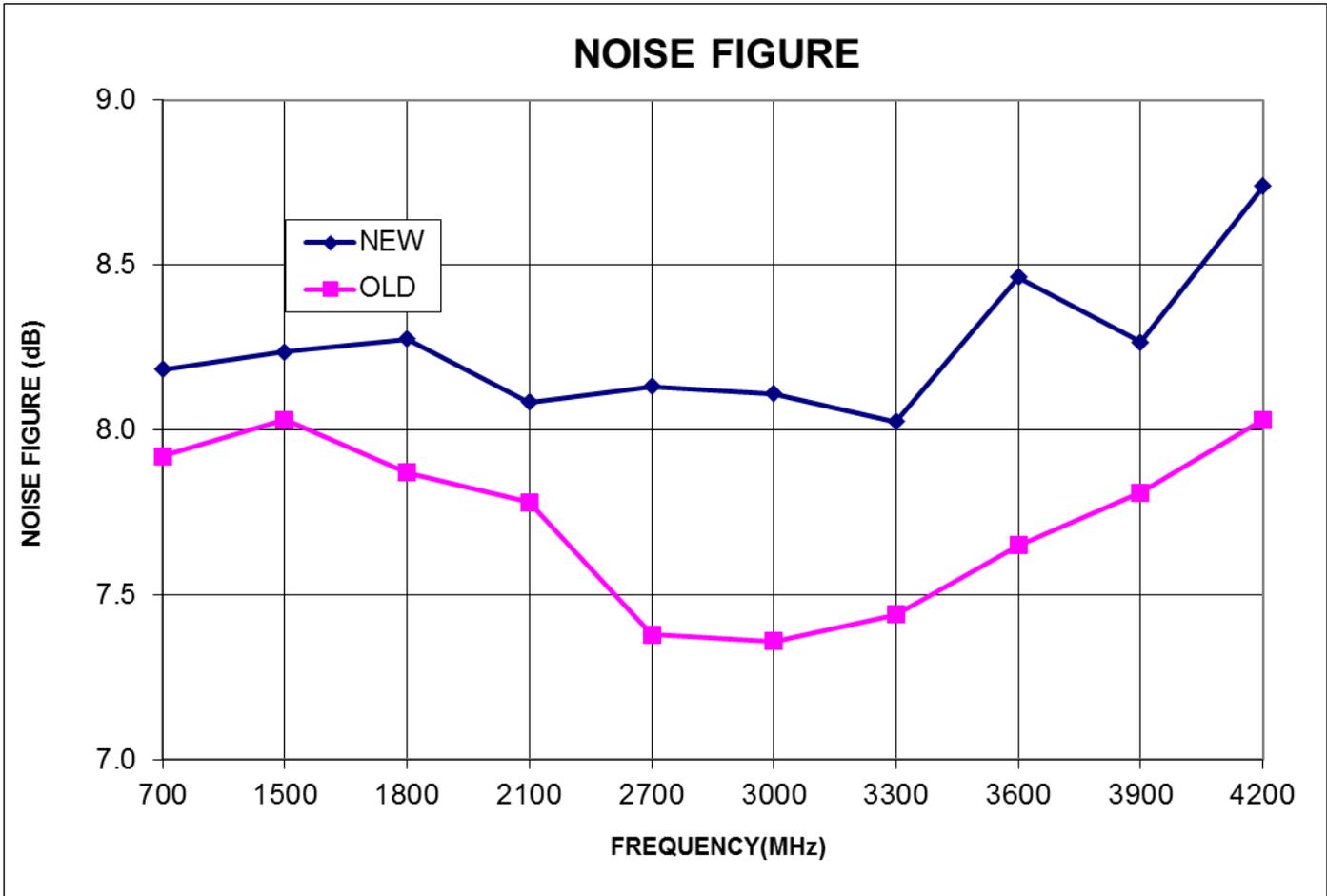
Graph 3 VSWR IN vs FREQUENCY

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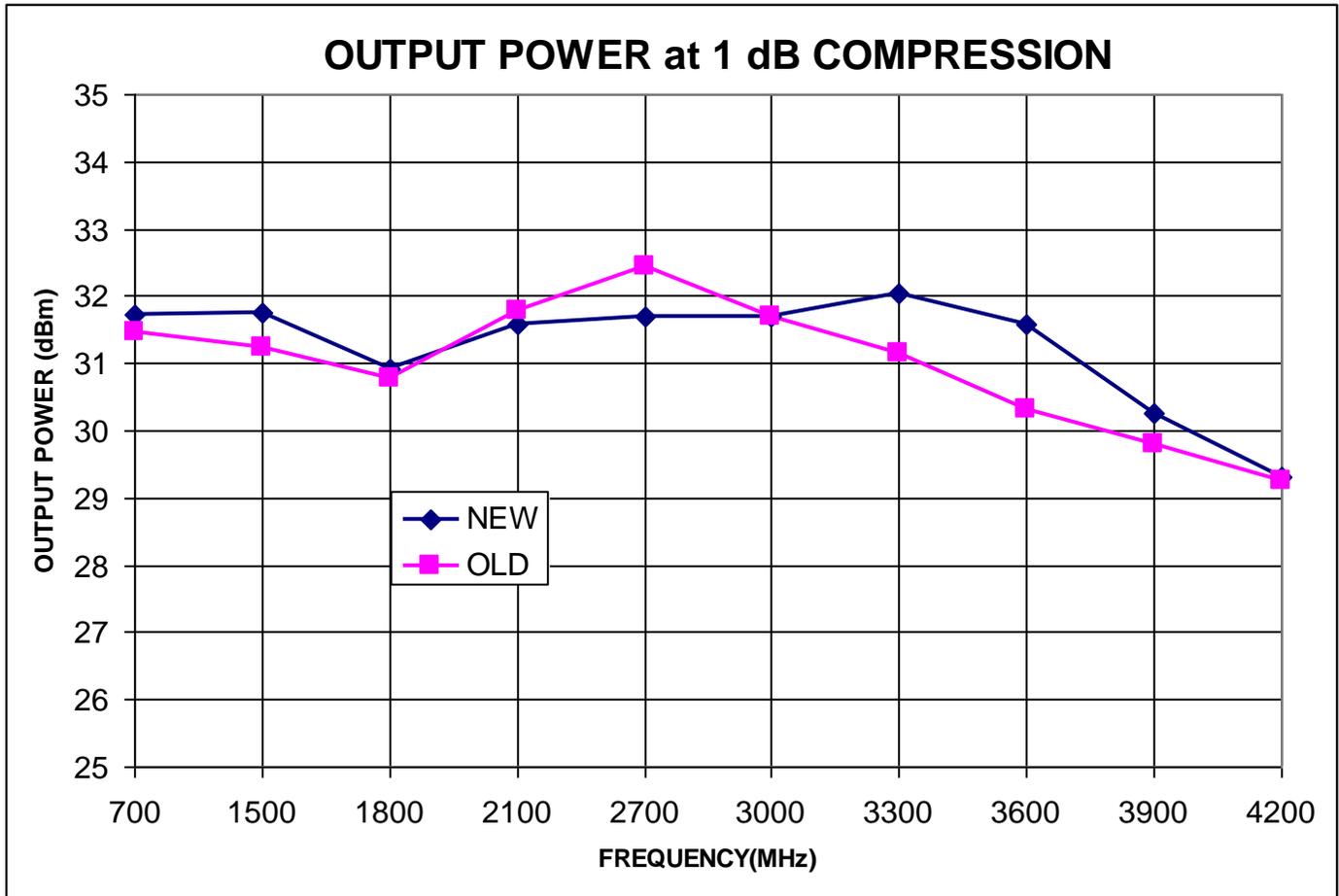
Graph 4 VSWR OUT vs FREQUENCY

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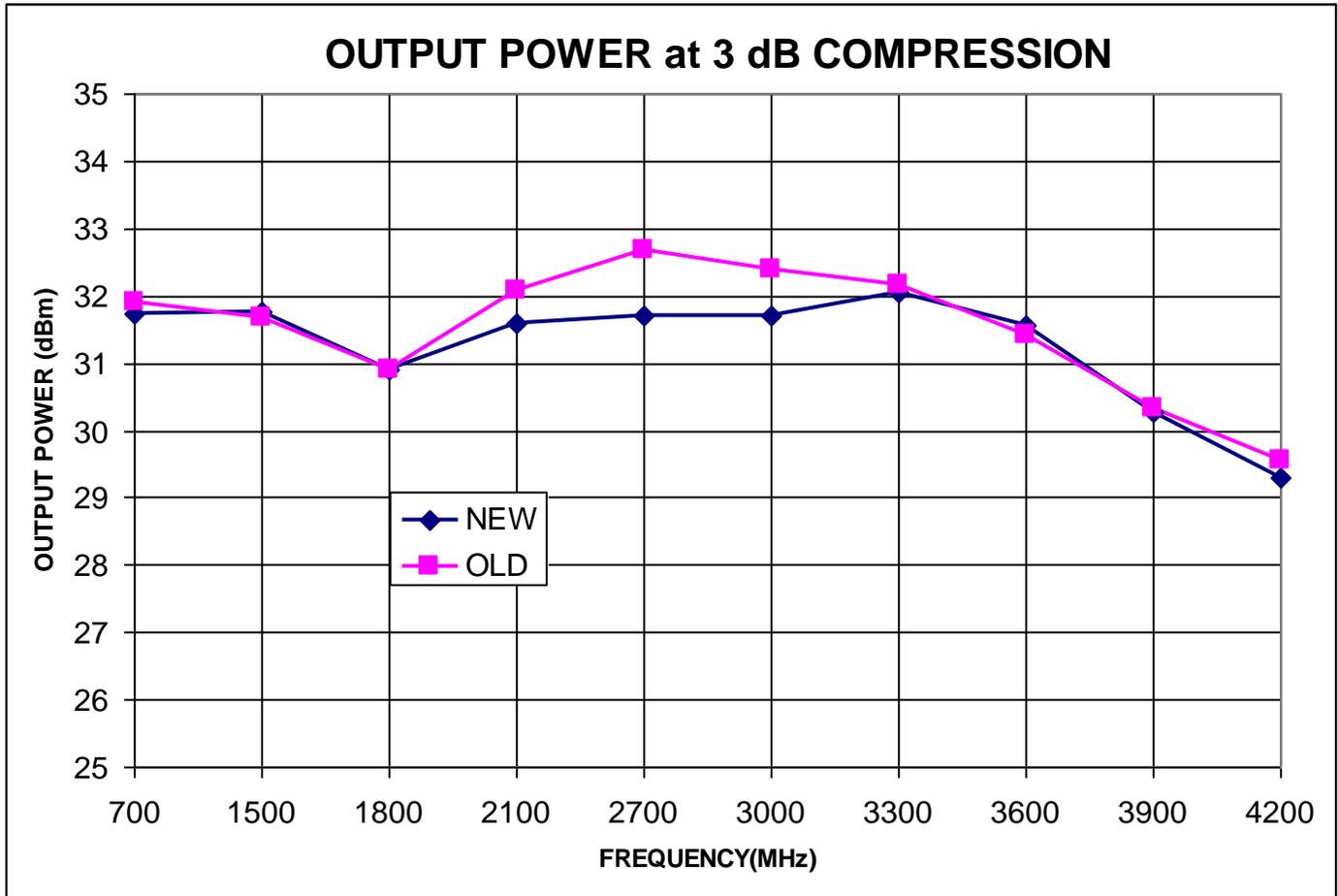
Graph 5 NOISE FIGURE vs FREQUENCY

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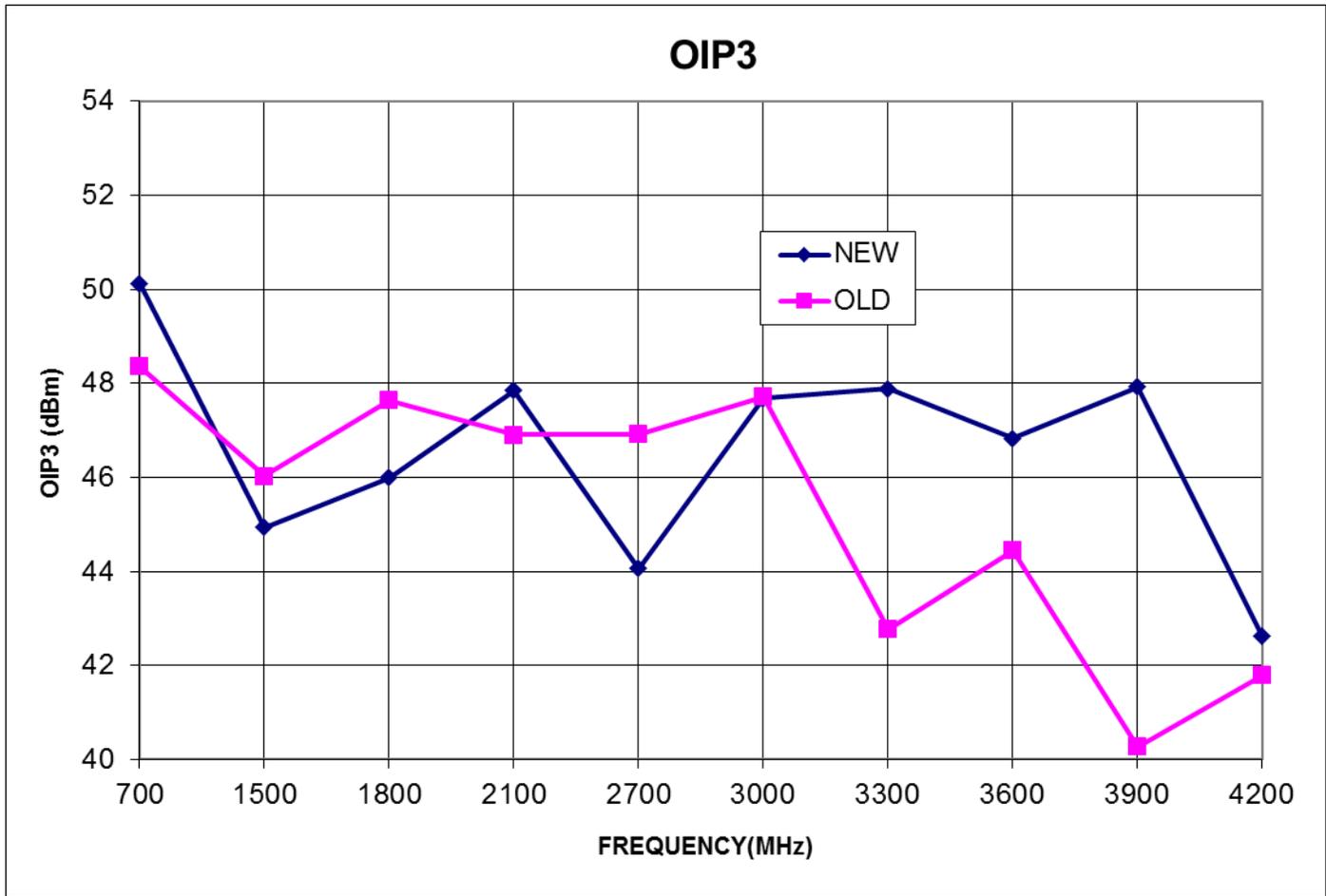
Graph 6 OUTPUT POWER at 1 dB COMPRESSION vs FREQUENCY

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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 4 dB higher or 38 dB typ instead of 34 dB typ.**
 - **P1dB is about 1 dB higher at the frequencies (3000-3900) MHz.**
 - **OIP3 is about (3-5) dB higher at the same frequency range.**
2. **The new design may replace the original catalog model.**

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