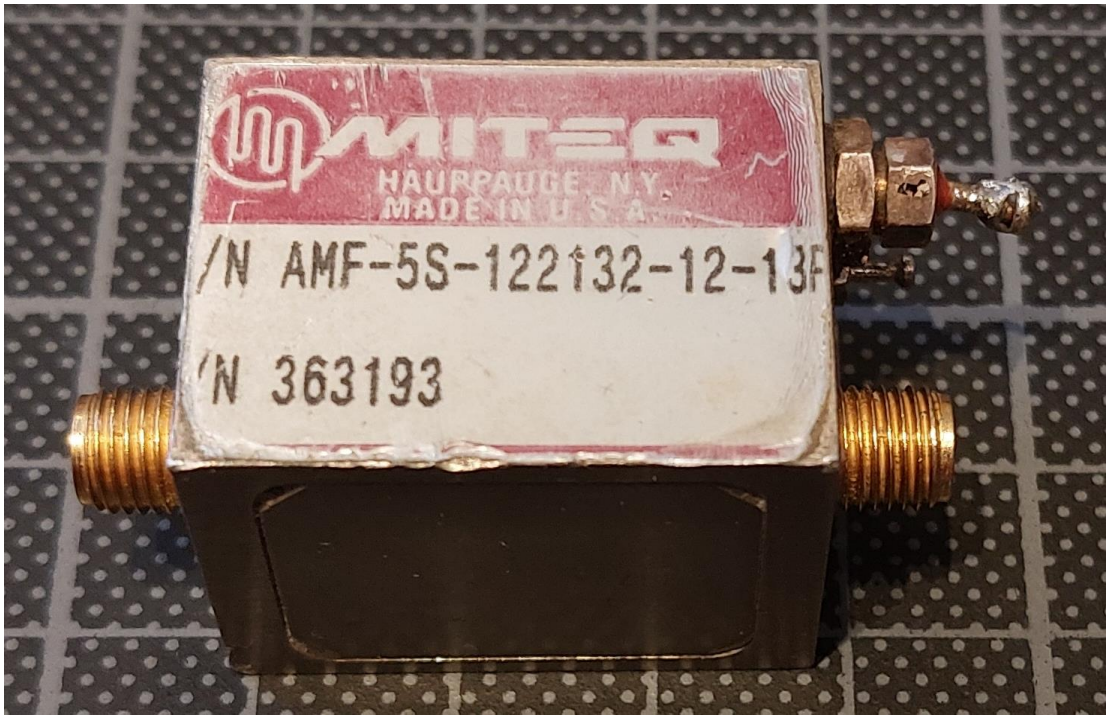
Wideband Amplifier MITEQ AMF-5S-122132-12-13P

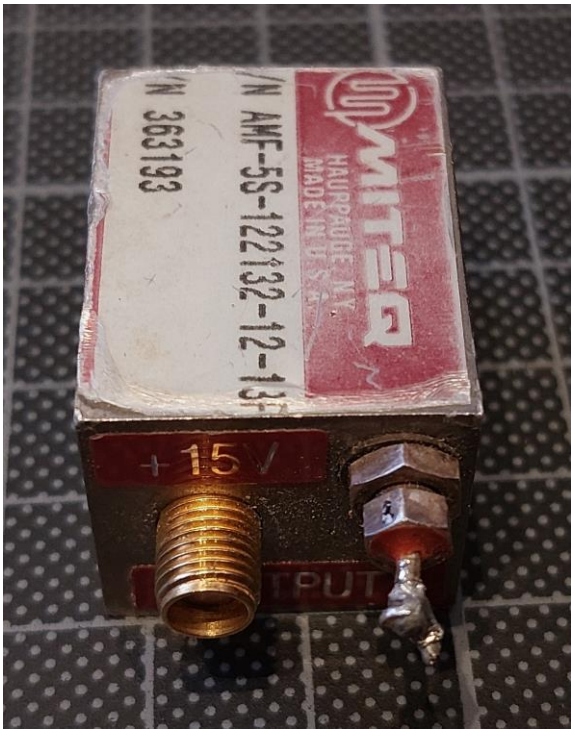
Matthias, DD1US, April 7th 2024

Recently a friend sent me one of his amplifiers which is a MITEQ AMF-5S-122132-12-13P wideband amplifier and asked me to measure its gain and noise figure in X-band, which is not the specified frequency range.

On the internet I did not find data about this amplifier. The part number suggests that the frequency range is 12.2 to 13.2 GHz, the noise figure 1.2dB and the P1dB is +13dBm. If you may have more data or maybe even a datasheet then please let me know.

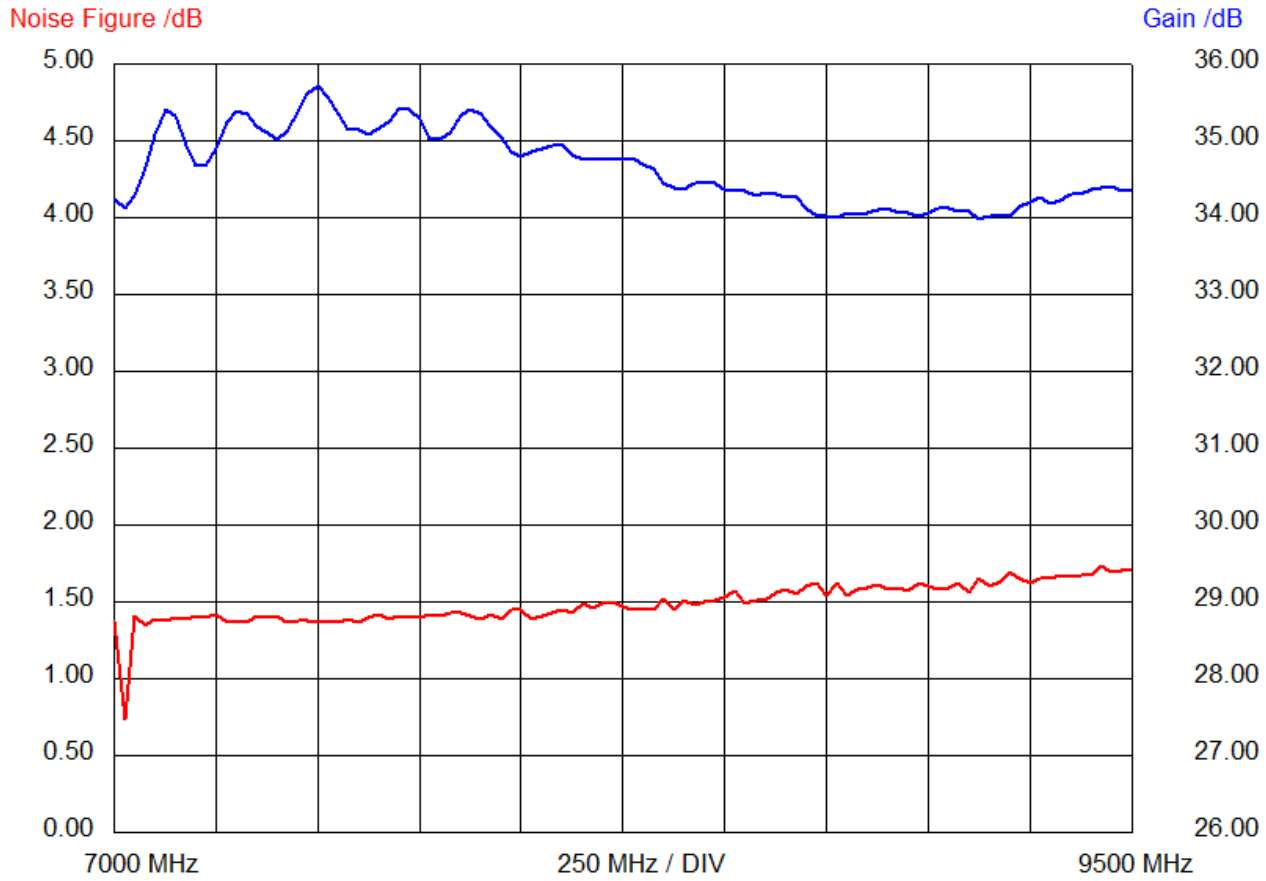
Here are some pictures of the device:





There us a label with the nominal supply voltage of +15V. I measured a current consumption of 138mA.

I measured the device with my noise measurement setup in the frequency range 7000 MHz to 9500MHz. Here are the results:



Frequency	Gain /dB	NF /dB	Frequency	Gain /dB	NF /dB
7000 MHz	34.24	1.38	7425 MHz	35.13	1.37
7025 MHz	34.13	0.74	7450 MHz	35.38	1.38
7050 MHz	34.30	1.41	7475 MHz	35.62	1.38
7075 MHz	34.65	1.35	7500 MHz	35.71	1.37
7100 MHz	35.08	1.39	7525 MHz	35.57	1.38
7125 MHz	35.42	1.38	7550 MHz	35.36	1.37
7150 MHz	35.33	1.40	7575 MHz	35.15	1.39
7175 MHz	34.94	1.39	7600 MHz	35.16	1.37
7200 MHz	34.69	1.41	7625 MHz	35.09	1.40
7225 MHz	34.69	1.40	7650 MHz	35.17	1.42
7250 MHz	34.90	1.42	7675 MHz	35.26	1.39
7275 MHz	35.25	1.38	7700 MHz	35.42	1.41
7300 MHz	35.38	1.38	7725 MHz	35.42	1.40
7325 MHz	35.36	1.37	7750 MHz	35.28	1.40
7350 MHz	35.20	1.41	7775 MHz	35.02	1.42
7375 MHz	35.11	1.40	7800 MHz	35.03	1.42
7400 MHz	35.03	1.41	7825 MHz	35.11	1.43

Frequency	Gain /dB	NF /dB	Frequency	Gain /dB	NF /dB
7850 MHz	35.34	1.43	8700 MHz	34.13	1.60
7875 MHz	35.41	1.41	8725 MHz	34.02	1.62
7900 MHz	35.36	1.39	8750 MHz	34.03	1.54
7925 MHz	35.19	1.42	8775 MHz	34.01	1.63
7950 MHz	35.04	1.40	8800 MHz	34.06	1.55
7975 MHz	34.85	1.45	8825 MHz	34.05	1.59
8000 MHz	34.81	1.45	8850 MHz	34.07	1.60
8025 MHz	34.86	1.39	8875 MHz	34.10	1.61
8050 MHz	34.91	1.41	8900 MHz	34.13	1.58
8075 MHz	34.95	1.43	8925 MHz	34.07	1.59
8100 MHz	34.94	1.45	8950 MHz	34.08	1.57
8125 MHz	34.83	1.43	8975 MHz	34.02	1.63
8150 MHz	34.75	1.49	9000 MHz	34.06	1.60
8175 MHz	34.78	1.46	9025 MHz	34.13	1.58
8200 MHz	34.77	1.49	9050 MHz	34.14	1.59
8225 MHz	34.75	1.50	9075 MHz	34.09	1.62
8250 MHz	34.76	1.47	9100 MHz	34.09	1.57
8275 MHz	34.78	1.45	9125 MHz	33.97	1.66
8300 MHz	34.69	1.45	9150 MHz	34.03	1.61
8325 MHz	34.63	1.45	9175 MHz	34.02	1.63
8350 MHz	34.45	1.52	9200 MHz	34.03	1.69
8375 MHz	34.39	1.45	9225 MHz	34.16	1.65
8400 MHz	34.36	1.51	9250 MHz	34.22	1.62
8425 MHz	34.44	1.49	9275 MHz	34.27	1.65
8450 MHz	34.46	1.50	9300 MHz	34.20	1.66
8475 MHz	34.45	1.51	9325 MHz	34.23	1.67
8500 MHz	34.36	1.53	9350 MHz	34.32	1.67
8525 MHz	34.35	1.58	9375 MHz	34.31	1.67
8550 MHz	34.35	1.50	9400 MHz	34.38	1.68
8575 MHz	34.29	1.52	9425 MHz	34.39	1.74
8600 MHz	34.33	1.51	9450 MHz	34.42	1.70
8625 MHz	34.31	1.57	9475 MHz	34.36	1.70
8650 MHz	34.26	1.59	9500 MHz	34.36	1.72
8675 MHz	34.28	1.55			

You can see that the gain (dark blue curve with the right scale) is quite constantly 35dB +/- 1dB. The noise figure (red curve with the left scale) at the same frequency range is also very constant around 1.5dB +/- 0.2dB There is a small “dip” at 7025MHz with a very noise figure which is certainly a measurement error in my setup.

I am always grateful to get feedback and will be happy to answer questions.

Please direct them to the Email address which you will find below.

Best regards

Matthias DD1US

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