

Wideband Amplifier MITEQ AFS3-02000400-06-10P-4

Matthias, DD1US, April 6th 2024

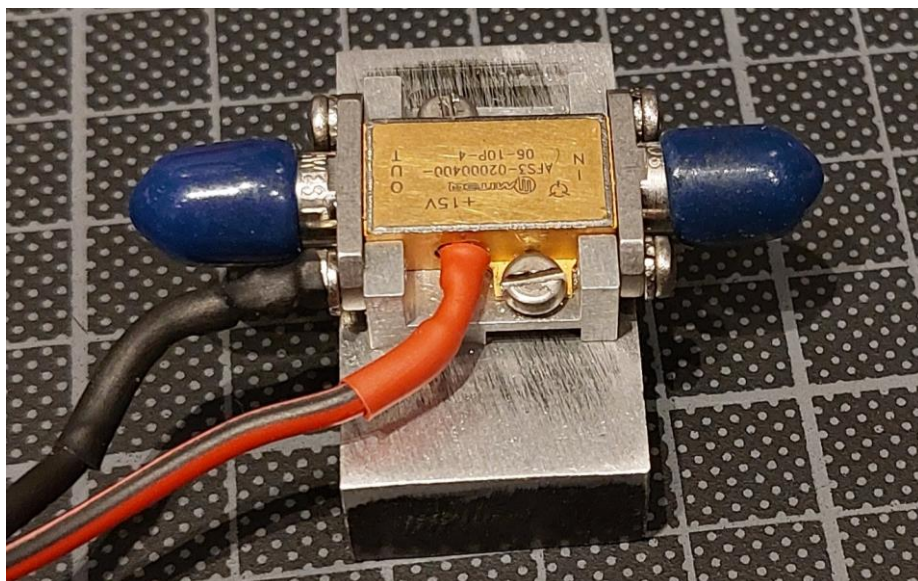
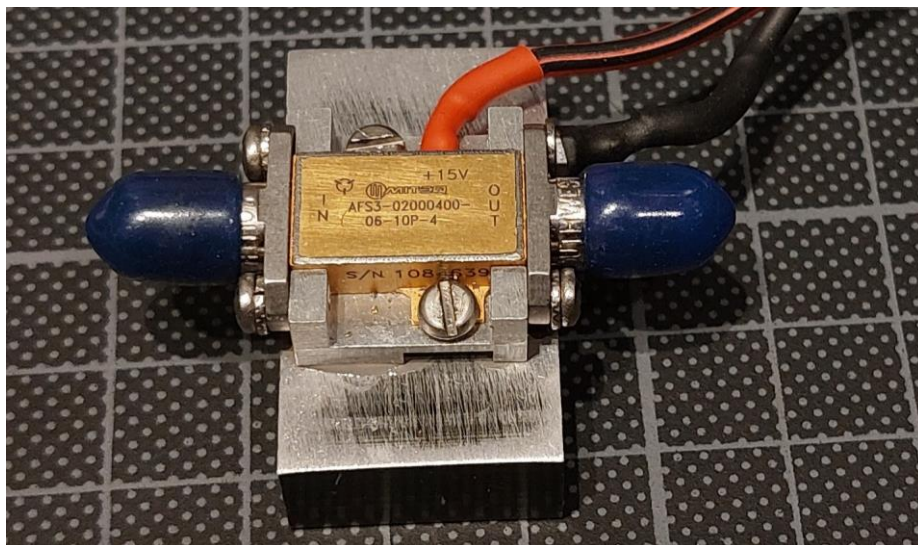
Some time ago I was able to acquire another wide band amplifier and now found the time to characterize them. Here is the data I measured of the MITEQ AFS3-02000400-06-10P-4 device.

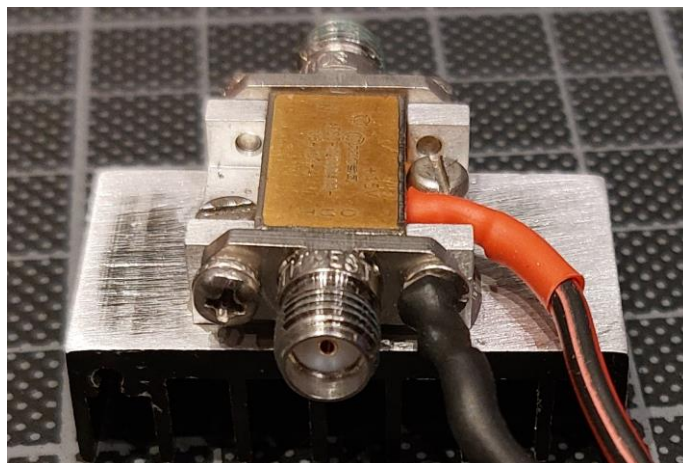
Here are the main parameters as specified in the datasheet of MITEQ:

Frequency range 2.0-4.0GHz
Gain 32dB min
Gain flatness ± 1.0 dB max.
Noise figure 0.6dB max.
VSWR in/out 2.0/2.0 max.
P1dB +10dBm
DC power +15VDC @125mA
Operating temp. -54 to +85°C

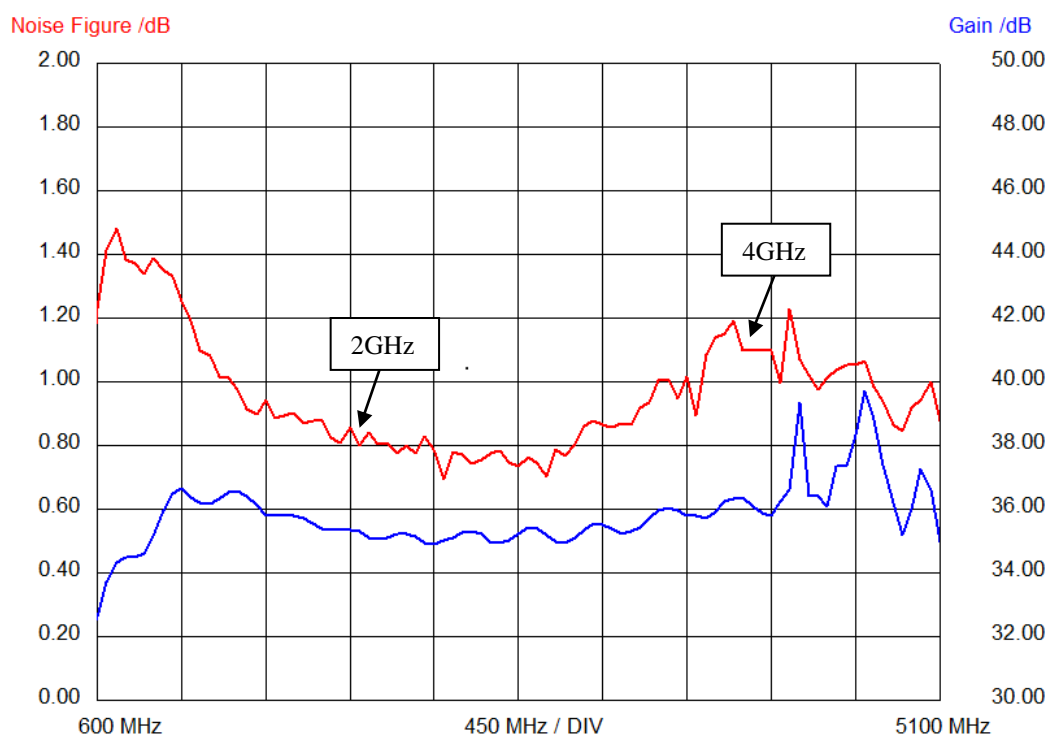
I mounted the amplifier on a small heat sink in order to avoid getting it too warm as this certainly degrades not only the lifetime but also performance, especially the noise figure.

Here are some pictures of my device:





As I know the MITEQ amplifiers usually cover a much broader frequency range than specified I measured the gain and noise figure in the frequency range 600MHz up to 5100MHz. Here are the results:



As can be seen in the measurement plot the gain is higher than specified. As there is only a minimum gain specified it is of course still in spec 😊

The gain flatness between 2.0 and 4.0GHz is well within the specified range of ± 1.0 dB.

The noise figure has a broad minimum centered around 2.7GHz but never reaches the specified value of 0.6dB.

Nevertheless, this amplifier is very useful for my purposes in the frequency range 1500MHz to 3500MHz with a gain of $35.5\text{dB} \pm 0.5\text{dB}$ and a noise figure $\leq 0.9\text{dB}$.

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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