

## Wideband Amplifier MITEQ AMF-5S-107117-12-13P

Matthias, DD1US, January 27<sup>th</sup> 2018

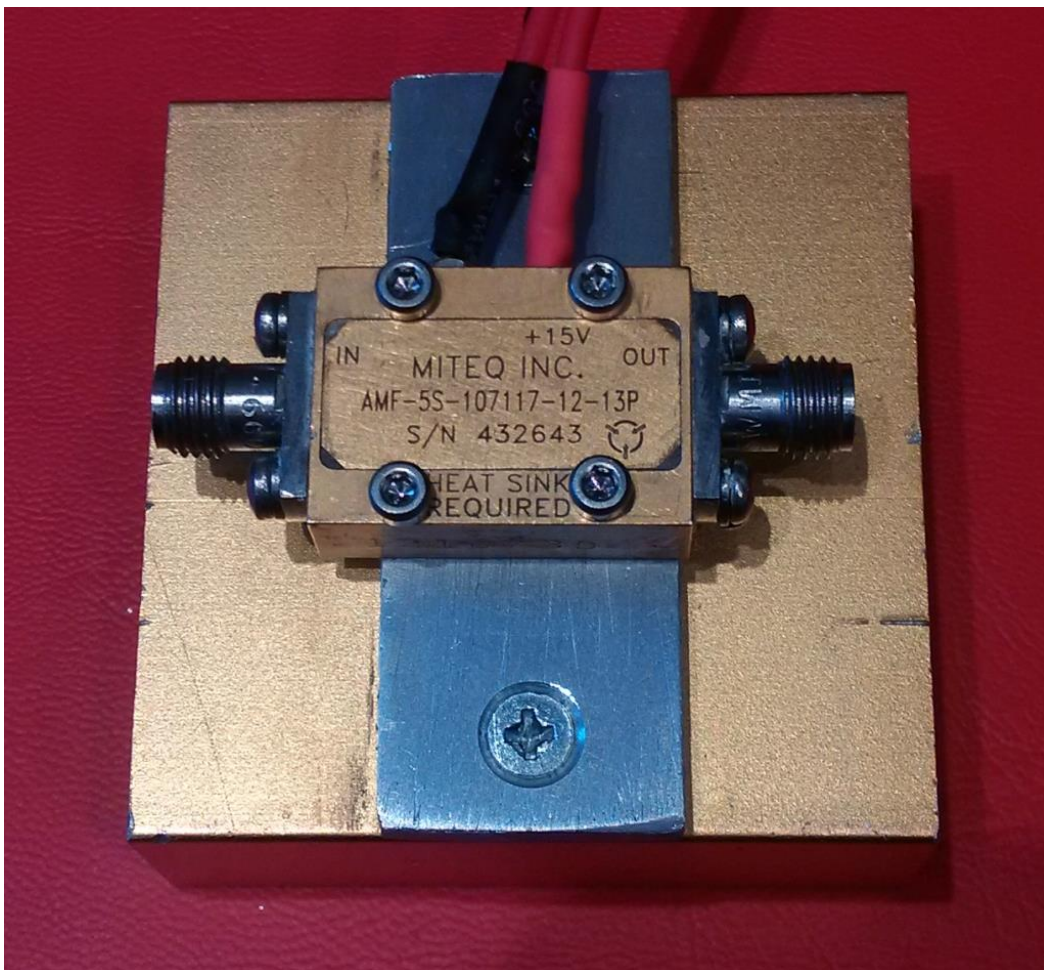
Some weeks ago, I was able to acquire a wide band amplifier for X- and KU-Band and now found the time to characterize it. Here is the data I measured of the MITEQ AMF-5S-107117-12-13P device.

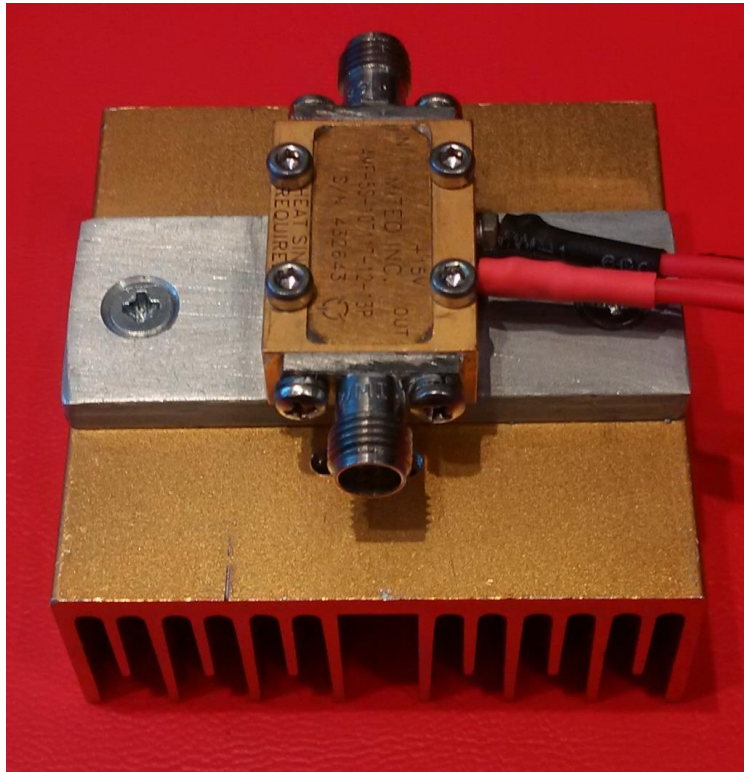
On the internet I did not find any data. The seller had provided the following data:

Model: MITEQ AMF-5S-107117-12-13P  
Description: Amplifier  
Frequency: 10.7 to 11.7 GHz  
Gain: 37-39 dB.  
Noise Figure: 1.2 dB  
P1dB Out: 13 dBm  
Voltage: 15 V  
Current: 110 mA

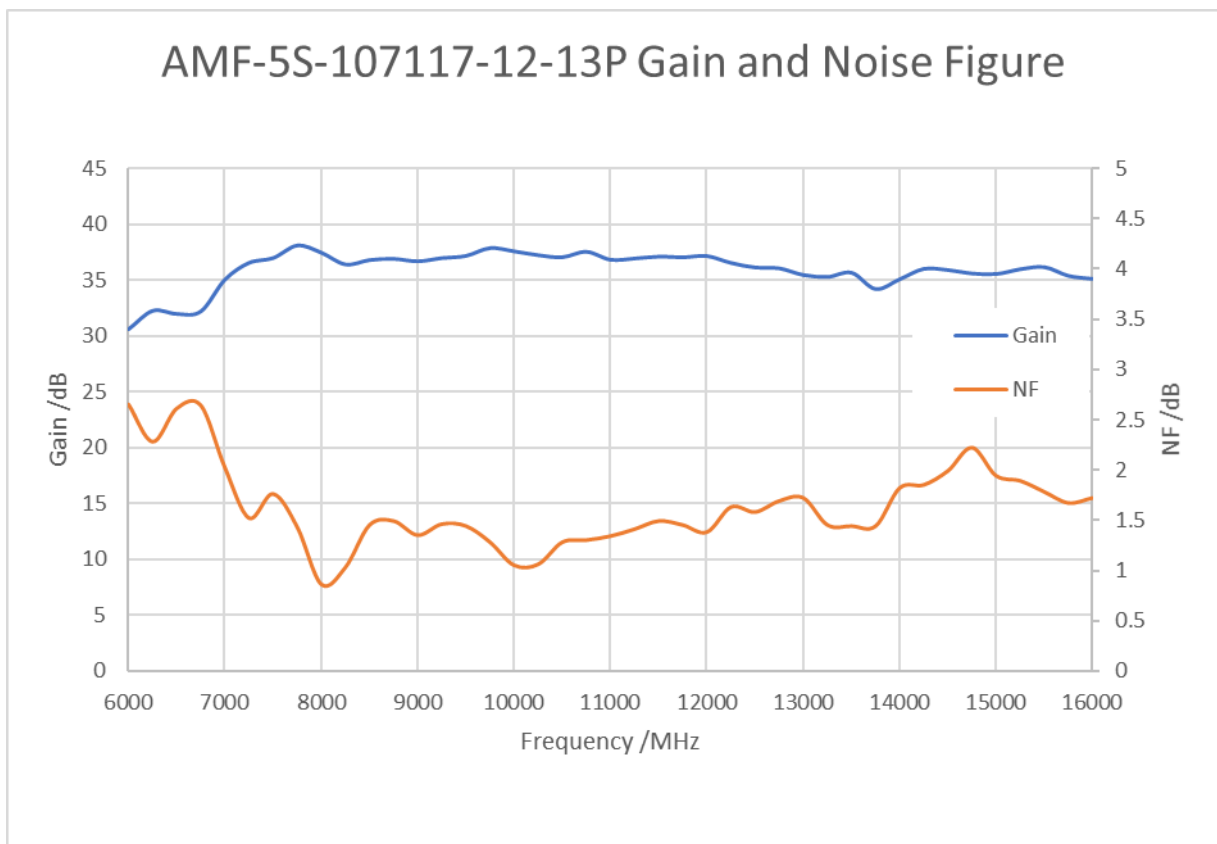
I mounted the amplifier on a heat sink in order to avoid getting it too warm as this certainly degrades not only the lifetime but also performance, especially the noise figure. My device has a current consumption of 110mA at a supply voltage of 15V. Reducing the supply voltage to 12V has not yet been tested in detail.

Here are some pictures of the device:





I measured the gain and noise figure of the device with my spectrum analyzer and noise source. Here are the results of the measurement between 6 GHz and 16 GHz:



Here is a table of the same data:

| Frequency | Gain     | NF      |
|-----------|----------|---------|
| 6000 MHz  | 30.63 dB | 2.65 dB |
| 6250 MHz  | 32.28 dB | 2.28 dB |
| 6500 MHz  | 32.01 dB | 2.61 dB |
| 6750 MHz  | 32.23 dB | 2.64 dB |
| 7000 MHz  | 35.07 dB | 2.02 dB |
| 7250 MHz  | 36.57 dB | 1.52 dB |
| 7500 MHz  | 37 dB    | 1.76 dB |
| 7750 MHz  | 38.12 dB | 1.43 dB |
| 8000 MHz  | 37.48 dB | 0.86 dB |
| 8250 MHz  | 36.43 dB | 1.03 dB |
| 8500 MHz  | 36.82 dB | 1.45 dB |
| 8750 MHz  | 36.93 dB | 1.49 dB |
| 9000 MHz  | 36.71 dB | 1.35 dB |
| 9250 MHz  | 37 dB    | 1.46 dB |
| 9500 MHz  | 37.19 dB | 1.44 dB |
| 9750 MHz  | 37.89 dB | 1.28 dB |
| 10 GHz    | 37.6 dB  | 1.05 dB |
| 10.25 GHz | 37.26 dB | 1.06 dB |
| 10.5 GHz  | 37.08 dB | 1.28 dB |
| 10.75 GHz | 37.56 dB | 1.3 dB  |
| 11 GHz    | 36.85 dB | 1.34 dB |
| 11.25 GHz | 36.96 dB | 1.41 dB |
| 11.5 GHz  | 37.13 dB | 1.49 dB |
| 11.75 GHz | 37.06 dB | 1.45 dB |
| 12 GHz    | 37.18 dB | 1.38 dB |
| 12.25 GHz | 36.56 dB | 1.63 dB |
| 12.5 GHz  | 36.16 dB | 1.58 dB |
| 12.75 GHz | 36.08 dB | 1.69 dB |
| 13 GHz    | 35.49 dB | 1.72 dB |
| 13.25 GHz | 35.31 dB | 1.45 dB |
| 13.5 GHz  | 35.69 dB | 1.44 dB |
| 13.75 GHz | 34.23 dB | 1.44 dB |
| 14 GHz    | 35.11 dB | 1.82 dB |
| 14.25 GHz | 36.03 dB | 1.85 dB |
| 14.5 GHz  | 35.93 dB | 1.99 dB |
| 14.75 GHz | 35.62 dB | 2.22 dB |
| 15 GHz    | 35.57 dB | 1.94 dB |
| 15.25 GHz | 36 dB    | 1.89 dB |
| 15.5 GHz  | 36.19 dB | 1.78 dB |
| 15.75 GHz | 35.41 dB | 1.67 dB |
| 16 GHz    | 35.14 dB | 1.72 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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