

AMSAT-DL 2.4 GHz 6W PA

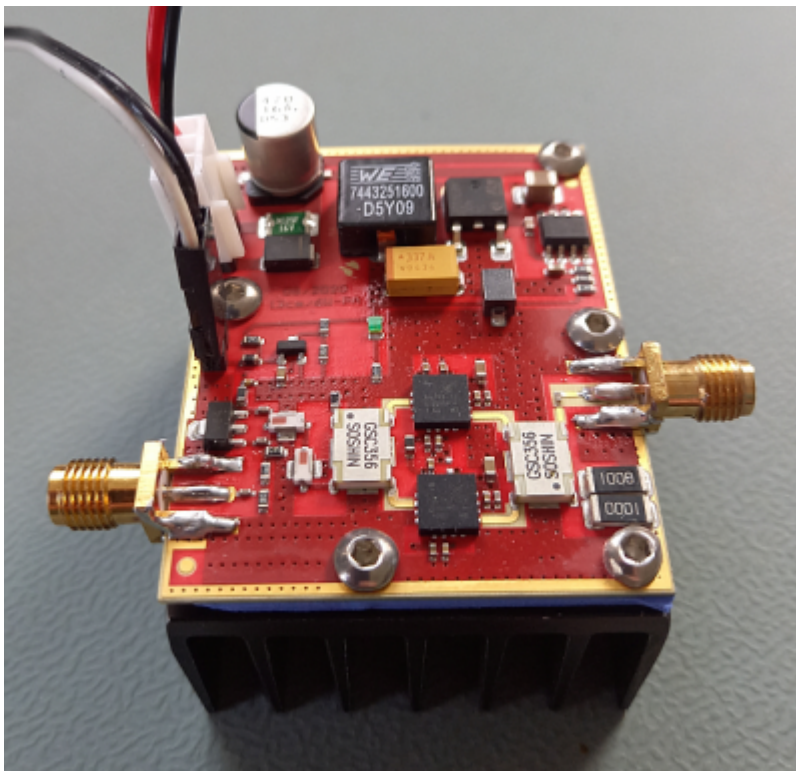
high sensitivity for e.g. SDRs

AMSAT-DL, Stefan DG8FAC and Matthias DD1US

Overview

There are various concepts for power amplifiers for the geostationary satellite QO-100. Unfortunately, many concepts are based on a supply voltage of 28V with a very low level of efficiency. In addition, many amplifiers have too little gain to be controlled directly with an SDR such as the ADALM-Pluto, a LimeSDR-USB or LimeSDR-mini.

The following design was developed by Stefan DG8FAC for operation with an SDR via the narrowband transponder. It is optimized for a wide voltage supply range from 6 to 15V and a high overall efficiency. It is therefore also particularly suitable for portable applications. The amplifier can also be used very well as a driver between an ADALM-Pluto and a High Power PA for DATV.



This PA delivers a saturated power output of over 6W. For SSB operation via QO-100, the PA should not be controlled above approx. 3W in order to ensure sufficient linearity. Due to the two-stage design with a high linear gain of approx. 46dB, approx. 120uW is sufficient to generate an output power of 3W.

Below you will find a detailed description of the circuit before you find the measurement results and a summary.

From:

<https://wiki.amsat-dl.org/> - **Satellite Wiki**

Permanent link:

<https://wiki.amsat-dl.org/doku.php?id=en:pa6:overview>

Last update: **2021/03/29 02:29**

