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HIGH POWER, LOW NOISE BOOSTER FOR POWER AMPLIFICATION ON NANO SATELLITES RADIO TRANSCEIVERS

Abstract

In order to achieve the goals set for our primary mission design in the PEGASUS satellite of transmitting real time video from orbit continuously, a high power, low noise, very small footprint radio power amplifier had to be built into the transceiver board of the spacecraft.

Such power amplifier had to take a very weak signal, as low as 12dBm and boost it to 34dBm using only a 2.8 volts intake with an available printed circuit footprint of only 4 square centimeters, we designed the power amplifier over a multi stage, cascade amplifier chip, built the system and test it. The results were more than satisfactory to our power and link budget parameter guidelines as well as for our thermal dissipation and transfer models