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Development and Implementation of a 1 GHz SQUID amplifier for the Axion Dark Matter Experiment ANDREW WAGNER, University of Washington, AXION DARK MATTER EXPERIMENT COLLABORATION — The Axion Dark Matter eXperiment (ADMX) was designed to detect ultra-weakly interacting relic axion particles by searching for their conversion to microwave photons in a resonant cavity positioned in a strong magnetic field. Given the extremely low expected axion-photon conversion power we have designed, built and operated a microwave receiver based on a Superconducting QUantum Interference Device (SQUID). We describe the implementation of a SQUID amplifier in the ADMX microwave receiver chain and discuss progress made at the Washington Micro-Fabrication Facility toward the production of SQUID amplifiers from a $Nb - Al_xO_y - Nb$ trilayer.

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