

# **A Holographic Measurement System for the SMA Antennas at 680 GHz**

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We have set up a holographic measurement system for in-field characterization of the high frequency performance of the Sub-Millimeter Array (SMA) antennas and optics. The SMA is a reconfigurable sub-millimeter array of 8 antennas operating down to a wavelength of 350 micrometers on Mauna Kea, Hawaii. For the holography system, the test signal is provided by a low-power phase-locked CW source mounted on the Subaru Telescope building, in the near-field for the 6-m diameter SMA antennas. The complex beam pattern of the antenna under test is measured by raster scanning, with a second antenna of the Array providing the phase reference. In this presentation, we describe the design and characterization of the signal source and present preliminary measurements obtained with the system.