

Abstract Submitted  
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**Frequency Swept 40 GHz Microwave Interferometer System**<sup>1</sup> J.W. VOLOCK, M. GILMORE, J. HERRERA, A. LYNN, University of New Mexico — A swept frequency 40 Gigahertz Microwave Interferometer has been constructed to measure line-averaged electron density in the new HELCAT (HELicon-CATHode) plasma device at UNM. This system utilizes many custom circuits, including a 1MHz sawtooth wave generator with a sweepback time less than 50ns, bandpass filters, and IF amplifiers. The system also utilizes easily adaptable mounts we designed and built that include adjustments for optical alignment. The system design and measurement results will be presented.

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