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Integrated Electron Density Measurements of End Loss Plasma in the C-2U Divertor DANIEL SHEFTMAN, LOTHAR SCHMITZ, MATTHEW THOMPSON, Tri Alpha Energy, TRI ALPHA ENERGY TEAM — Experiments demonstrating sustainment of field-reversed configuration (FRC) plasmas via neutral beam injection have been carried out on C-2U [1]. Accurate design and operation of an end-loss plasma divertor is of crucial importance to the sustainment of the FRC plasma, and the increase of electron and ion temperature. A single-chord, monostatic, homodyne 94 GHz microwave interferometer was developed and installed on the C-2U divertor, and was used to measure the integrated electron density of the end-loss plasma. Results of these measurements as well as an initial design of a multi-chord microwave interferometer, planned to be used on the divertor of the advanced C-2W experiment, will be presented. This diagnostic will provide a full radial electron-density profile of the end-loss plasma in the divertor. [1] M. W. Binderbauer et al., AIP Conference Proceedings **1721**, 030003 (2016).

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