Abstract Submitted
for the DPP13 Meeting of
The American Physical Society

ECE Diagnostics for ITER RICHARD ELLIS, University of Maryland, MAX AUSTIN, JOSEPH BENO, WILLIAM ROWAN, PERRY PHILLIPS, University of Texas, AMANDA HUBBARD, MIT, HITESH PANDYA, ITER-India, RUSSEL FEDER, Princeton Plasma Physics Laboratory — ECE on ITER will be used to measure electron temperature profiles and non thermal features of the distribution. The diagnostic has two systems, one radial, and the other viewing at a small oblique angle. Radiation will be conducted to the diagnostic area with large smooth wall waveguide. Emission will be measured with a multichannel Michelson interferometer and two microwave radiometers which cover the fundamental and second harmonic ECE (X and O mode). In-situ calibration employs a hot calibration source which has been designed, constructed, and tested. We report extensive wideband transmission measurements made on the DIII-D Michelson corrugated waveguide system. We have now completed design of the beam splitter box which separates X and O modes for both views. The box inputs are now located flush up against the vacuum windows on the port plug. We have then redesigned the Gaussian beam optics of the system to reduce the size of the calibration sources by 20% to allow a better fit with other diagnostics in the port plug. We will present the details of the entire new design.

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Date submitted: 11 Jul 2013 Electronic form version 1.4