

Abstract Submitted
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Bandwidth Upgrade for the NSTX FIRE TIP System¹ W-C. TSAI, C.W. DOMIER, K.C. LEE, N.C. LUHMANN, JR., University of California at Davis, H.K. PARK, Princeton Plasma Physics Laboratory — The multichannel Far Infrared Tangential Interferometer/Polarimeter (FIRE TIP) system, installed on the National Spherical Tokamak Experiment (NSTX) which has a great potential to be used as a monitoring system for the density fluctuations spanning from micro-turbulence to coherent MHD activities, is currently limited to a 250 kHz video bandwidth. New electronics under development at UC Davis will extend this to approximately 4 MHz in order to access the high frequency density fluctuation spectra and compressional Alfvén eigenmodes (CAE) modes driven by supra-Alfvénic neutral beam ions on NSTX. Such instabilities are expected to be important for the performance of the ITER burning plasma, where neutral beam and fusion alpha ions are also supra-Alfvénic. Additional electronics will allow the study of high harmonic fast wave (HHFW) induced 30 MHz density fluctuations superimposed on the FIRE TIP signals. Technical details regarding the FIRE TIP upgrade will be presented.

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