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High Bandwidth FIReTIP Operation on NSTX[1] W-C. TSAI, C.W. DOMIER, K.C. LEE, N.C. LUHMANN, JR., University of California, Davis, Davis, CA 95616, H.K. PARK, Pohang University of Science and Technology, Pohang, Kyungbuk, 790-784, Korea — The Multichannel Far Infrared Tangential Interferometer/Polarimeter (FIReTIP) system has great potential in monitoring high frequency density fluctuations and magnetic field profiles on the National Spherical Torus Experiment (NSTX). The measurements are essential in understanding transport physics issues in NSTX as well as for future devices such as ITER in which fundamental understanding of microturbulence MHD issues is essential. The relatively narrow video bandwidths of the current FIReTIP system (250 kHz) have limited the speed and accuracy in which the above variations may be monitored. New electronics are under development to (1) extend the video bandwidth to >4 MHz; and (2) develop a parallel set of electronics to monitor 30 MHz density fluctuations induced by high harmonic fast wave heating. Experimental details and test results of the new electronics, scheduled for installation on NSTX in Fall 2008, will be presented.

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