

Abstract Submitted  
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**Turbulence study via 2-D microwave imaging reflectometry system on KSTAR**<sup>1</sup> WOOSUNG LEE, J. LEEM, M. KIM, G.S. YUN, H.K. PARK, Y. NAM, POSTECH, Pohang, Korea, Y.G. KIM, H. PARK, K.W. KIM, Kyungpook National Univ., Daegu, Korea, C.W. DOMIER, N.C. LUHMANN, JR., Univ. California, Davis, KSTAR TEAM — A microwave imaging reflectometry (MIR) system [1] for KSTAR has been developed to study the turbulence based transport physics based on electron density fluctuation measurement in 2-D (radial and poloidal). Two-frequency source will be introduced for probing two adjacent X-mode cut-off layers, simultaneously. A poloidal array of 16 detectors enables 2-D imaging of the electron density fluctuations of the poloidal cross section. In this paper, test results of the system characteristics such as the spatial coverage and system resolutions using corrugated metal targets in the laboratory will be presented. In addition, descriptions of the two-frequency probing source, optics, detector array, and electronics will be provided. Preliminary measurements of the density fluctuations from 2012 campaign also will be reported.

[1] H. Park et al, Rev. Sci. Instrum. **74**, 4239 (2003).

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