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Upgrades to the profile and Doppler reflectometer systems on EAST JIAN QIANG HU, A. DI LIU, University of Science and Technology of China, EDWARD J. DOYLE, GUIDING WANG, University of California, Los Angeles, HONG LI, CHU ZHOU, XIAO HUI ZHANG, MING YUAN WANG, JIN ZHANG, CHANG XUAN YU, University of Science and Technology of China — The USTC reflectometer systems on the EAST Tokamak have been upgraded, including new Q- and V-band monostatic FMCW profile reflectometer systems with dynamic calibration, efficient transition lines with quasi-optical lenses and corrugated waveguides, dual polarization operation. The profile system is integrated with an 8-channel Doppler backscattering (DBS) system in a new flexible microwave front-end, and a second DBS system is at a separate toroidal location. The new systems cater for variable scenarios and allow for poloidal and toroidal turbulence correlations. We present the designs for these upgraded systems, system calibrations and measurements of the beam profile in laboratory, as well as the primary experimental results from EAST operation.

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