Abstract Submitted
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SOL reflectometer CORNWALL LAU, MIT PSFC, GREG HANSON, Oakridge National Laboratory, JOHN WILGEN, YIJUN LIN, STEVE WUKITCH, MIT PSFC — Antenna-plasma interactions during RF heating and current drive are greatly influenced by the SOL density profile. A swept-frequency X-mode reflectometer is being built for Alcator C-Mod to measure the SOL density profiles at top, middle and bottom locations in front of both the new Lower Hybrid Launcher and the new ICRF antenna [1]. The system is planned to operate between 100 and 146 GHz at sweep rates from 10 μs to 1 ms per sweep and will cover a density range of approximately 10^{16} to 10^{20} m^{-3} at 5-5.4 T. Design, test data, and calibration results for the electronics and waveguide runs for both the ICRF and LH antenna will be shown. Preliminary plans for using the reflectometer density profile results to study antenna-plasma interactions such as RF loading and RF sheaths will be discussed.

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