

Validating the Lower Hybrid Interdigital-line Antenna on MST*

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The third generation interdigital-line antenna has been installed in MST and preliminary testing has been completed. Source power to the antenna has been increased to $>220\text{kW}$ in both feed directions. Under vacuum conditions the n_{\parallel} spectrum is peaked at ~ 7.5 as expected with excellent directionality. External tuning gives a $\text{VSWR} < 1.3$ under most operating conditions; however, power diagnostics on the resonators show a standing wave on the antenna which could affect launch spectrum. Initial plasma parameter surveys show behavior similar to the previous generation antenna. Increased diagnostic capability allows more detailed measurements of loading along the antenna structure.

*Work supported by US DOE Contract DE-FC02-05ER54814