

Abstract Submitted  
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**Component development for the ITER Ion Cyclotron Heating and Current Drive Transmission Line and Matching System**<sup>1</sup> R.H. GOULDING, M.P. MCCARTHY, D.A. RASMUSSEN, D.W. SWAIN, G.C. BARBER, C.N. BARBIER, I.H. CAMBELL, S.L. GRAY, R.L. MOON, P.V. PESAVENTO, R.M. SANABRIA, Oak Ridge National Laboratory, E. FREDD, N. GREENOUGH, Princeton Plasma Physics Laboratory — The transmission line and matching network for the ITER Ion Cyclotron Heating and Current Drive System feeds two equatorial launchers, each with 24 phased current straps combined into groups of three, and each designed to couple up to 20 MW into ELMy H-mode plasmas in the frequency range 40-55 MHz, for pulse lengths up to 3600 s. The network includes > 1 km of 50 Ohm 300 mm diameter transmission line carrying up to 6 MW net power per line at VSWR=1.5. In addition, there are 8 power splitters, 32 hybrid phase shifters incorporating 64 tuning stubs, 32 additional tuning stubs, and 36 vacuum capacitors, which are configured to provide pre-matching in the port cell region adjacent to the antenna, final matching, decoupling of mutual inductances between antenna elements, and passive ELM resilience. The development and design of the various system components will be discussed. High power tests of components have begun, and the latest results will be presented.

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