

Design of a 700 MHz High Efficiency 1 MW cw Klystron for Low Energy Demonstrator Accelerator, D. BOWLER, C.O' LOUGHLIN, E. SOBIERADZKI, D.M. WILCOX, EEV LTD - A 700 MHz, 1 MW cw high efficiency klystron has been designed, built and tested for the Low Energy Demonstrator Accelerator (LEDA) project at the Los Alamos National Laboratory. Computer simulation tools were used to design various aspects of the klystron including the electron gun, electromagnet, cavities and RF output structure; the results will be presented along with the design concepts. Important features of the design included a collector with full beam power dissipation capability and stable operation into a load with a VSWR of 1.2:1. A 1-D klystron simulation code was used to optimise the tuning pattern. A comparison of the results against the measured data will be given.