

**Final Report on Hard Tube Pulsar Activities at DESY, M. BIELER, S. CHORоба, J. HAMEISTER, DESY; I. KAZAREZOV, V. LEONOV, BINP** - The development of adequate modulators for high peak power klystrons is one of the focus points for linear collider R & D programs. For the DESY/THD S-band linear collider study 150 MW rf pulse power at 50 Hz repetition rate and 3 microseconds pulse duration is required. Two different modulator schemes were investigated. One is the conventional line type pulser, using a pulse forming network and a step up transformer, the other one is a hard tube pulser, using a dc power source at the full klystron voltage and a switch tube. The hard tube pulser, which switches the high voltage directly from a storage capacitor to the klystron, should offer a simpler design and a better pulse quality than the conventional line type pulser. A 25 MW rf power test version of a hard tube pulser has been built up and tested at DESY. Circuitry and the results of the tests are reported. In addition to the tests theoretical investigations were carried out about a hard tube pulser for a klystron delivering 150 MW rf power. The results of these studies are presented. Finally the efficiency of a hard tube pulser and a line type pulser for a 150 MW klystron are compared.