First Results of Power Coupler Development for SC RF Cavities, S. CHEL, M. DESMONS, C. DUPERY, C. TRAVIER, CEA SACLAY; T. GARVEY, P. LEPERCQ, R. PANVIER, LAL ORSAY; S. BULHER, IPN ORSAY - New high power input couplers for superconducting TESLA cavities are now being developped by the IN2P3/CEA collaboration [1]. The aim is to obtain a 1 MW (1 ms, 10 Hz) coupler at low cost. For this purpose a facility has been built, with the possibility to test coupler components or/and a full coupler powered by 1 MW (0.8 ms, 0.1 Hz) klystron, the window being at 70 K as in a real TESLA coupler. After a brief description of the test bench with a special emphasis on the cryostat that has recently been added, the paper will present the first results concerning the test of lamda/2 disk windows. It will also describe the design of a travelling type window, a polarized waveguide to coax transition, and the preliminary design of a full coupler.

[1] Chel S., Desmons M., Dupery C., Hanus X., Mosnier A., Bienvenu G., Bourdon J. C., Garvey T., Le Duff J., Marini J., Mace J., Panvier R., Power Coupler Development for SC Cavities, Fith European Particle Accelerator Conference, June 10-14, 1996, Sitges", pp. 2088-2090