

Development of the RF Kicker for the Longitudinal Feedback System at SRRC,
L.H. CHANG, W.K. LAU, T.T. YANG, SRRC - A prototype of the RF kicker for the longitudinal feedback system is under development at SRRC. The kicker has a pillbox cavity with nine pieces of magnetic coupling loops. Three of the symmetrical coupling loops are dedicated for exciting the kicker RF field, which can enhance the longitudinal kick voltage and cancel the transverse kick voltage of on-axis if the excited RF fields are tuned to in phase. The other additional coupling loops make the modal field configuration similar to circular TM₀₁₀ cavity mode and increase the frequency bandwidth. The central frequency of the RF kicker is tuned to the design value of 1125 MHz by adjusting the length of coupling loops. Excited by a single coupling loop, the cold test results show that the full bandwidth for 3 dB return loss is larger than 250 MHz and the shunt impedance deduced from bead-pull measurement is about 80 Ohm.