RF Pulse Compressor using Disk-Loaded Delay Line for C-Band e^+e^- Linear Collider, N. AKASAKA, T. SHINTAKE, KEK - C-band (5712 MHz) rf system has been proposed as the optimum frequency for main linac in e^+e^- linear collider to achieve 500 GeV to 1 TeV c.m. energy. In order to get the accelerating gradient 30 MV/m, the rf pulse compression system, which compress the rf power 5 to 6 times, is requested. To ease the machine operation, the flat pulse output is preferred rather than the rapid decay pulse from the standard SLED system, and the SLED-II system has been chosen in C-band system. However, to get 500 nsec output pulse length, we need 75 metre long delay line. To make short the physical length, the disk-loaded structure using TE0-mode has been applied to the delay line. Optimization between the mode competition, resistive loss, dispersion, waveform distortion and bandwidth will be discussed.