Instability of Electron Beams at DSR, T. NAKAMURA, T. TANABE, M. WAKASUGI, RIKEN; T. KATAYAMA, CSN - We will construct double storage rings (DSR) in the RI beam factory project at RIKEN. We will store not only heavy ions but also electron beams in the DSR. The DSR has two different operation modes for electron beams, which are the large emittance mode and the small emittance mode for the e-RI collision experiment and the X-ray-RI collision experiment, respectively. The average current required from experiments for both modes is 500 mA. The energy has to be variable from 0.3 GeV to 2.5 GeV. One of the most important problem is that how large current of the electron beam can be obtained at low energy region. We have made computer simulation on the single-bunch and the coupled-bunch instability at the presently designed DSR. Preliminary results indicate that the threshold current is smaller than the requirement especially for the low emittance mode. This problem can be solved by optimizing ring structure i.e. beam tubes, RF cavities, etc. and adopting a feed-back system. In this paper, we show how can we take steps to store the electron beam of 500 mA at DSR and the results of the simulations.