Performance of High Energy Beam Transport System of Heavy Ion Medical Accelerator, HIMAC, M. KANAZAWA, K. NODA, H. OGAWA, Y. SATO, E. TAKADA, M. TORIKOSHI, S. YAMADA, NIRS; T. KOHNO, Tokyo Institute of Technology - The high energy beam transport system consists of horizontal beam lines and vertical beam lines with total length of about 240 m. The horizontal lines deliver beams extracted from a synchrotron ring installed on a lower level, and the vertical lines deliver beams from another synchrotron ring of an upper level. The beams are tuned with better than 1 mm accuracy at isocenters so as to spread the beams to obtain spatially uniform beam for charged particle therapy. In the system, the beams are switched from one therapy room to another within 5 minutes by changing only current of switching magnets. Reproducibility of beam position is less than 1 mm without tuning beams when the beam lines are switched. The beams of the horizontal and vertical lines can be independently tuned. A pulse magnet can merge the beams of both beam lines to make high duty heavy ion beams.