We evaluated IGS reproduction ephemeris during 1996 and 1999 applying Japanese dense GPS network data, and compare the coordinates repeatability with the original IGS final ephemeris. We use about 90 GEONET and 5 NIED GPS network sites in Tokai area, central Japan. First we fix the orbit and estimate the sites coordinates with other some parameters (ambiguity, tropospheric delay and gradient, and EOP parameters). Then the averages and standard deviations of the coordinates repeatability of the sites applying the reproduction orbit are 2.0±0.9 mm, 2.6±0.8 mm, and 6.4±1.3 mm for N-S, E-W, and U-D components respectively. On the other hand, those applying the original IGS final orbit are 2.1±0.9 mm, 3.0±0.8 mm, and 7.1±1.2 mm respectively. Although the result is not significant compared with the standard deviation, the coordinate repeatabilities of especially E-W and U-D components are improved applying the reproduction ephemeris. Next we adopt about 15 IGS fiducial sites in and around Eastern Asia which ITRF2005 site coordinates and velocities are given, and simultaneously estimate orbit parameters as well as the site coordinates with other parameters as same as above, then the averages and standard deviations of the coordinates repeatability applying the reproduction and the IGS final orbits becomes almost the same.