Considered are the results of the experiment on modification of the ionosphere by high-power radio emission from the Sura heating facility carried out on October 2, 2007. The Sura facility was working in the mode of periodic heating at the radio frequency (RF) of 4.30 MHz. The modulation frequency was close to the frequency of natural Alfven oscillations of plasma in the local magnetic flux tube. The effects of modification were observed onboard the Russian Segment of the International Space Station (RS ISS). The observations have provided more than 1500 images of a bright local glow, which appeared within the field of view of the TV camera as the ISS was passing close to the location of the Sura facility. The brightness of aurora reached some hundreds of kiloRayleighs. The compact bright aurora appeared North-East of the heating facility and was moving East in the image plane. The modification effects were supported by satellite DEMETER (Parrot. M. et al., 2002) and ground based magnetometer and ionosonde measurements. The possible scenario is discussed: the field aligned current is intensified up to critical value inside this magnetic field tube and can be reason for region of anomaly resistance formation and artificial aurora generation. The intensive spread F2 can be signature of the field aligned current (Ossakov S.L. et al., 1979) during experiment. The analysis of helio-geophysical conditions did not reveal any significant anomalies during the experiment.