ECE complex on T-10 possesses the set of features which distinguish it from the diagnostics on others installations. First, measurements fulfills simultaneously on 1\textsuperscript{st} and 2\textsuperscript{nd} harmonics. Second, the frequency ranges of every harmonics are essentially broadened down that makes possible to analyse ECE of both main part of electrons (in high optical density conditions) and high energy electrons (in low optical density). Third, ECE measurements perform at the same time in two polarizations (ordinary for 1\textsuperscript{st} resonance and extraordinary for 2\textsuperscript{nd} resonance) that, in definite conditions, enables to determine the total, longitudinal and perpendicular velocity of both main body electrons and electrons of the tail part of distribution. Technically the complex consists of two groups of receivers. First group is the multichannel receivers in the cassette design with double frequency conversion and external local oscillator. Two devices with the manual control have summary 10+12 channels through 2 GHz interval on odd and even frequencies. New 12 channel receiver with computer control gives possibility to change slightly the carrier frequencies from gyrotron frequencies when the last deviate from the nominal values. The 1 GHz interval between channels provides twice as better space distribution in the profile measurements. The set of the replacement converters on IMPATT or Gann diodes enables an operation in different ranges of the frequency band 37 - 170 GHz. One- and two-channel receivers are additionally applied for certain experiments. The narrow band filters and pin-diodes used for the overload protection from gyrotrons. The periodicity of digitization is 1 μs. Local oscillators of second group (four receivers) are packaged BWO. The programmatically controlled high voltage power supply determines certain sweep of frequency by a given low. Total spectrum 37 – 178 GHz can be realized in 0.5 ms. Two similar antennae, which are the beginning of the oversize waveguides ø20 mm, are used for the regular measurements. Antennae are located in equatorial place and oriented perpendicularly to the magnetic axis of the installation. The beam delimiters on the polarizing grids guide energy to two pair of the paths in ordinary and extraordinary polarization. After the delimiters, every tract consists of a combination of the beam waveguide and different oversize rectangular waveguides. The optical axis is adjusted by a laser. The antenna system has the narrow angle diagram. This permits to find out the unevenness of a motion of the global plasma disturbances, to visualize the set of space peculiarities on the electron temperature profile and others. In certain experiments, the additional antennae angularly 60°, 120° и 180° in the poloidal section to main antennae are used for an analysis of the disturbances motion in the poloidal and toroidal directions. The vertical channels of the interferometer are applied for ECE measurements along chords with constant magnetic field value. The multichannel units without an external local oscillator are applied also for spectrum measurements of the potential plasma waves in the range 1 – 25 GHz. The examples of various applications of the ECE apparatus are presented.