

In a method of reflectance factor measurement in the band of absorption the initial SHF oscillations are split with a  $90^\circ$  phase shift then every quadrature is amplitude modulated by the low frequency oscillations, split with the  $90^\circ$  phase shift as well. These modulated SHF oscillations are summed and subtracted, and a dissimilar environment is radiated by summed SHF oscillations. Incident and reflected SHF oscillations are mixed with the differential SHF oscillations. After that the dissimilar environment is radiated by the differential SHF oscillations, mixing the incident and reflected SHF oscillations with the summed SHF oscillations, and extract consequently from the mixed incident and reflected SHF oscillations the low frequency oscillations with a doubled frequency of modulation. From the low frequency signal extracted from the reflected SHF oscillations, the envelope tension is extracted, and the initial SHF oscillations frequency is subject to change until the tension disappears. A device for the method realization contains a transmitter-receiver antenna, a reference and a measuring channels, a two-channel commutator, a frequency divider, an integrator, the two amplitude SHF modulators, the quadrature low frequency and SHF phase shifters.