

A magnetron oscillator comprises a cathode and an anode divided to segments by longitudinal slots being incorporated to hollow cavities, an output of SHF energy and an additional energy terminal, a power source, anode voltage of which is applied between a cathode and an anode. An external load is incorporated, which is matched with the SHF energy output and a reference source, a frequency discriminator connected to the SHF energy output and the reference source, a reactive load being adjusted which is connected to the additional energy terminal, a section of a line with a short-circuiter and the frequency discriminator.