

Universal Accelerating Complex for the Custom Examination, P. ALFEROV, B. BOGDANOVITCH, A. NESTEROVITCH, S. OSTRIKOV, A. PUCHKOV, S. STEPANOV, MEPHI, Moscow - X-ray radiators are used for the custom examination nowadays. The task of smuggling (explosive substances, drugs) definition on their composition can be effectively decided by means of gamma-radiation from targets irradiated by proton beam. In the report presented the description of a developed universal complex capable to solve both these tasks is given. It is supposed to set ion injector under potential of ground, that will simplify essentially its power supply. The target is supposed to be mounted on insulator inside the vacuum container. The case of a target will be charged up to 2 ÅV voltage by means of an electron beam from small-sized RF linac. A resistance divider connected to electrodes of ion source optical system is mounted inside insulators. Such decision allows to reduce essentially dimensions of insulator and installation as a whole, because the displacement of units in vacuum increases sparking limit in several times. At the same time, an electron beam deflection, with use of magnetic deflector, to a special target provides the device operation in an usual X-ray radiator mode. The special experimental researches carried out have proved correctness and efficiency of proposed technical decision. Nowadays a multiple-beam RF ion source with optical system is made and tested. An compact RF electron linac was successfully tested and will be used as charge device in the scheme of proton accelerator.