OUTPUT CHARACTERISTICS OF THE HIGH POWER MICROWAVE GENERATED FROM AN AXIAL AND TRIODE VIRTUAL CATHODE OSCILLATOR

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We have investigated an efficiency enhancement of high power microwave generation from axial and triode virtual cathode oscillator in this experiment. This high power microwave generator is powered by the “Chundoong” intense relativistic electron beam pulser (Max : 600 kV, 88 kA and 60 ns duration).

It is noted in this experiment that the maximum output microwave power can be obtained under the various cathode diameter and anode-cathode distance. Cathode is adding the ring to the cathode with velvet. Experiment shown that output microwave frequency is 2~4 GHz from vircator with carbon cathode. The microwave peak power has been measured to be about 300 MW. In axial and triode vircator, the power, frequency are all sensitive to the frequency depends strongly on the anode-cathode gap distance.

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