

# Development of compact generators of microwave and TeraHertz radiation for the non-lethal technology Stop Car

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Abstract.

The non-lethal technology Stop Car and facilities for remote control of the hidden explosives and weapons requires development of compact powerful radiation microwave and TeraHertz sources. TeraHertz sources using nonlinear optical methods are low-power. Conventional backward wave oscillators also cannot provide sufficient radiation power. Volume free electron lasers [1-4] are the new type of generators of radiation providing to overcome the above difficulties of conventional system using nonrelativistic and low-relativistic electron beams for generation microwaves.

Backward wave oscillator with a "grid" diffraction grating and the volume FEL with a "grid" volume resonator that is formed by a periodic set of metallic threads inside a rectangular waveguide [5] are described. Recent experimental results for generation microwaves are presented. Frequency tuning in such devices is analyzed. Possibility of development of a compact powerful microwave and TeraHertz sources on the base of the above prototypes is considered along with the possibility of their application to Stop Car devices and remote control of the hidden explosives and weapons.

References:

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