

Compact High-Power RF Sources for Non-Lethal Applications.

Dr. G. Staines, M. Sporer, Dr. R. Stark

Diehl Munitionssysteme & Co., Fischbachstr. 16, D-90552 Röthenbach

Radio-frequency weapons (RFW) offer the promise of reduced lethality attack against electronic systems used to support civil infrastructure and military operations. The basic requirements for RFW systems are small size, robust construction, and high radiated power specifications.

The objective of RF weapon systems is to disrupt or destroy electronic systems necessary to support military operations or civil infrastructure. Due to the subtlety of the attack, RF weapons offer the possibility of covert engagements, which in the case of mobile repetitive sources may be conducted over extended target areas. An unprepared enemy may be ill-equipped to detect or defend against this type of attack. Short-pulse RF weapons are not anticipated to cause undesirable biological effects on personnel in the target area.

DIEHL has developed a range of high-power sources which are possible candidates for future RF weapon systems. These sources range from small, autonomous, man-portable systems to larger high-energy systems and multi-antenna arrays. Field strengths exceeding 300 kV/m normalised to 1 m range have been generated by these systems, with pulse durations in the range 5-50 ns. These sources have been designed to operate in the frequency range 50-500 MHz. This presentation includes an overview of various source technologies developed by DIEHL, together with some typical scenarios which show how future RF weapon systems may be deployed in the near term. Further development options for these systems will also be discussed.