

The SG-DDR50 is an advanced technology security system that uses millimeter wavelength electromagnetic energy to stop, deter, turn back, and otherwise discourage a trespasser, thief, or belligerent and threatening person at relatively long distances.

The system consists of an electrical power source, a device producing millimeter wavelength electromagnetic energy, an energy director projecting a narrow energy beam towards a target, and mounting and connecting equipment.

The SG-DDR50 uses the susceptibility of skin nerve endings to millimeter wavelength electromagnetic energy to report a sensation of intense undesirable heat on the skin of the person in the energy beam, all while doing no harm.

Subtopic B

The purpose of the experimental license is to align the system to operational specifications using infrared imaging of patterns on a sensitive carbon impregnated teflon target having dimensions of 0.46m by 0.46m distance from the director of 50 meters. The use of the term “director” is synonymous with “antenna”, but is more in keeping with the quasi-optical physics of millimeter wavelength electromagnetic energy. **The radiofrequency emissions are similar to un-modulated radar. Because this is not a communications or actual radiolocation system, the characterizations of emissions and necessary bandwidth reflect a radar type of emissions being used for security purposes.**

The experimental test equipment used is a FLIR Systems ThermaCAM S65 HS to image test alignment patterns on the target, carbon loaded teflon (CLT) Target Board (25% carbon content), and a 1.22 meter by 1.83 meter radiation absorbing backstop of Eccosorb absorber material 10 meters behind the target on the boresight axis.

The duration of system activation for a test of the system is approximately 30 seconds per imaging session.