



Technology Service Corporation

Hostile Fire Indicator (HFI) Test System

Missile warning systems currently under development by the United States military, such as the Joint and Allied Threat Awareness System (JATAS), are incorporating an additional warning requirement – that of hostile fire indication. Hostile fire includes small arms, rocket-propelled grenades, and other ground threats. Some ground-threat signatures exhibit rapid, short-duration bursts of infrared energy from the muzzle flashes of automatic weapons. Simulation of these signatures is necessary for test and evaluation (T&E) of the Hostile Fire Indicator (HFI) capability. Monitoring of the simulated signatures is also needed for verification and validation during testing.

Technology Service Corporation (TSC) has developed and demonstrated a high-speed infrared source and radiometer system that supports the HFI T&E requirements. The HFI Test System, or HFITS, is a portable open-air range (OAR) infrared source (omni-directional) that can simultaneously simulate multiple ground-fire signatures. Ground truth is performed with an integrated infrared radiometer system.

- The **HFITS infrared source** consists of computer-controlled propane torches mounted on a portable and self-contained cart. Individual torch control provides temporal and radiant intensity modulation. Signal bursts down to 40 msec (FWHM) can be produced at repetition rates up to 20 Hz. Radiant intensity levels exceeding 300 W/sr can be produced in the infrared band of interest to missile warning systems.
- The **HFITS infrared radiometer** is used to monitor the simulated HFITS signatures. The radiometer detector head or box utilizes a mercury-cadmium-telluride (MCT) mid-infrared detector that is DC-coupled, allowing monitoring of slowly changing signatures. The MCT detector is thermo-electrically (TE) cooled and features fast response and low drift. Analog-to-digital conversion is performed inside the detector box at a 30 kHz rate. The electronics bandwidth is 10 kHz. Multiple detector boxes can be configured for simultaneous monitoring in several infrared bands.
- TSC's HFI Test System can be customized to your application. Lower- and higher-power torches can be used to increase the modulation dynamic range and output radiant intensity. The system can be configured to operate remotely via an RF link (7 km ranges have been demonstrated).



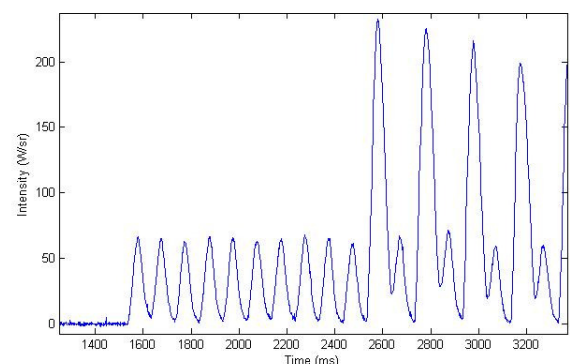
HFITS INFRARED SOURCE

WHY TSC?

TSC has over 15 years of hands-on experience in developing IR/UV simulator and monitoring systems for OAR applications. Our IR/UV technology and experience can be applied to any number of test requirements involving IR/UV sensor systems.

CONTACT INFORMATION

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HFITS (TWO) GROUND-FIRE SIGNATURES