

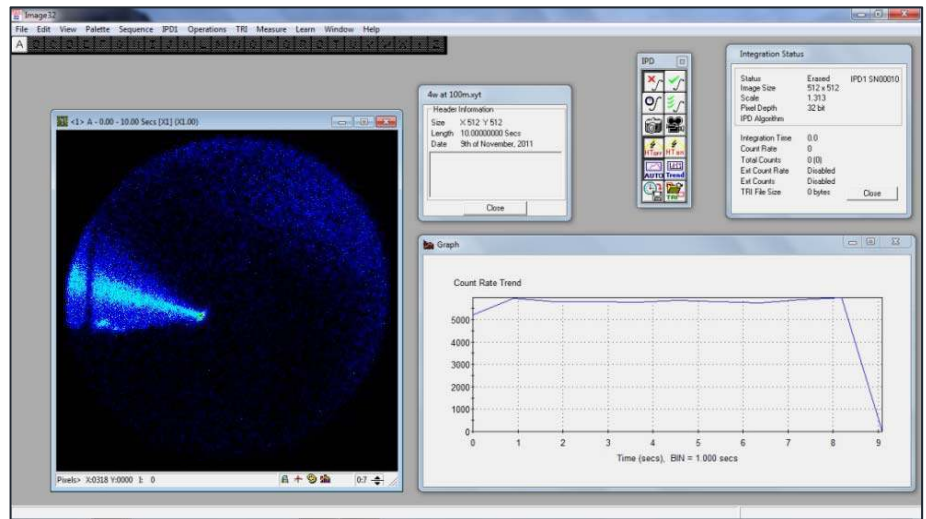
UV Imaging Radiometers

Ultraviolet (UV) Imaging Radiometers (IPD, ICCD, EMCCD)

Design, fabricate and characterize high speed/high resolution UV imaging radiometers in the spectral region from 250nm-300nm. Integrated sensors include Imaging Photon Detectors (IPDs), Intensified Charge-Coupled Devices (ICCDs) and Electron Multiplying Charge Coupled Devices (EMCCDs). These systems all feature narrow band solar blind filters (SBF) at specified wavelengths. Also included are custom UV optics at multiple focal lengths, neutral density filters (NDF) with a variety of optical densities, custom tripod mounts and imager carriage assemblies, and spotting scopes. These systems optionally feature ruggedized notebook computers.

IPD Imaging Radiometer

- Initially an in-house R&D effort
- In use as a laboratory & field test asset
- Second unit fielded at the Electronic Combat Range, China Lake, CA
- IPD Specifications:
 - Solar blind proximity focused detector
 - 512x512 (user defined) pixel image
 - Timing accuracy: +/-10ns
 - Frame rate: Selectable (1kHz Typical)
 - Image processing software
 - Max photon count rate: 1e6 cps
 - Responsivity: $\sim 2e-17$ W/cm²/cps
 - Image, count rate trend & video event storage

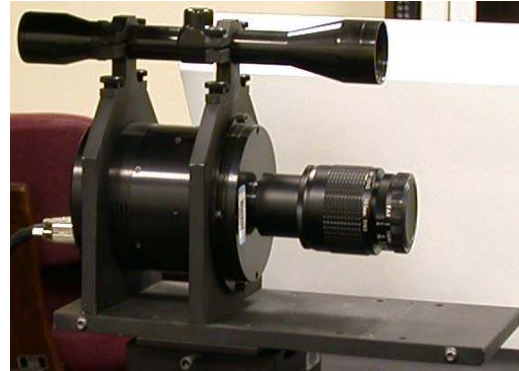
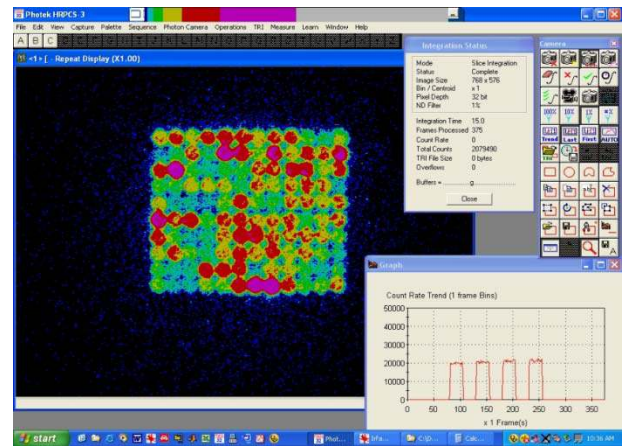


Test Range Image



ICCD Imaging Radiometers

- ICCD – Mod 1
- Initially an in-house R&D effort (2001)
- In use as a laboratory & field test asset since
- ICCD Specifications:
 - Solar blind detector w/ fused silica taper
 - 768x576 pixel image
 - Frame rate: 25 Hz
 - Image processing software
 - Max photon count rate: $3e6$ cps
 - Responsivity: $\sim 3e-17$ W/cm²/cps
 - Image, count rate trend & video event storage



EMCCD Imaging Radiometers

- Developed as a commercial product
- Four field-ready units sold:
 - 2 ICCDs, 2 EMCCDs
- EMCCD Specifications:
 - Back illuminated EMCCD detector
 - Solar blind, TE Cooled
 - 512x512 pixel image
 - Multiple digitization modes (100 kHz – 10 MHz)
 - Frame rate: 34 - 689 Hz
 - Image processing software
 - EM Gain 1-1000
 - Responsivity: $\sim 5e-17$ W/cm²/cps
 - Image, count rate trend & video event storage

