



## Miniature Imager

Comtech AeroAstro's Miniature Imager design is a small, low power (less than 2W) space camera with versatile, customizable firmware. Based upon the hardware configuration of our Miniature Star Tracker, the imager has a  $24 \times 30$  degree field of view and consumes 1W nominal power in a mass of only 375g. The Miniature Imager is available in a low-cost commercial-off-the-shelf version tolerant up to 30 krad and can be modified for higher radiation tolerance. Images can be easily downloaded for ground processing, and customer mission-unique code can be integrated. Built-in test includes the ability to upload images and verify performance. Frame rates above 27 fps can be accommodated through windowing and / or sub-sampling techniques.

Like the Miniature Imager, we design and fabricate many spacecraft components in house, both for our own spacecraft and for those developed by other spacecraft providers and integrators. We offer a variety of off-the-shelf components, as well as custom design components to meet specific mission requirements. Additionally, we offer MIL-SPEC components and subsystems for customers requiring this level of reliability and qualification.



The Comtech AeroAstro Miniature Imager was initially developed with support from the Air Force Research Laboratory (AFRL). The Imager is the core of our Threat Detection System (TDS). TDS, a Department of Defense Space Experiments Review Board (SERB) payload, launched on a Minotaur IV in November 2010 (integrated on FASTSAT as part of the DoD STP-S26 mission). TDS is one of several applications, particularly in the area of space situational awareness, that are well suited to the Miniature Imager's capabilities.

Mass: 375g

Dimensions: 2.375" × 3" × 3" (6 × 7.62 × 7.62 cm)

Power: <2W (depending on amount of image processing required)

CMOS Imager: 1024 × 1280, others available, up to 27 frames / second acquisition @ 40 MHz clock speed

Input Voltage: 5 to 40V

Interface: RS-422, others available

Frame Rate: 0 to 27 fps acquisition

Memory: 32 MB RAM expandable to 64 MB, 16 MB Flash RAM

Output: Customer defined; able to implement customer's specific algorithms on board

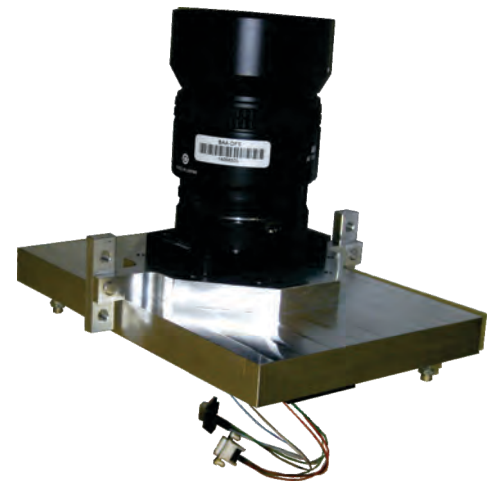
Thermal Test Levels: -29 to +66°C

Operating Temperature: -20 to 40°C

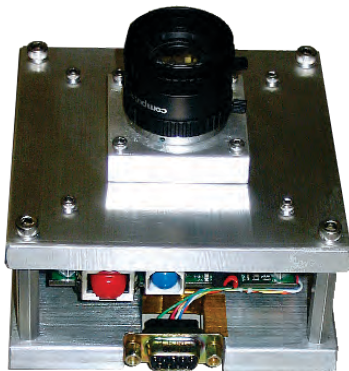
Vibration Test Levels: 14.1g protoqual



Miniature Imager Electronics



Customizable Optics



Miniature Imager Breadboard Unit



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