



FEATURES

- 512 x 511 Resistive Emitter Array Size
- Real-Time Automated Non-Uniformity Correction
- 14 bit High Gray-Scale Resolution for any UUT Integration Time
- Pixel Rise Time of 5.5 msec from 10% to 90%
- Advanced Micro-Emitter Array Technology
- Proprietary Unit Cell Design Minimizes Thermal and Electrical Crosstalk
- Windows™ XP based GUI Automates Setup and Operation of all MIRAGE Components
- Accepts Digital (DVI) and Analog (RS-170/NTSC/PAL) Video Inputs

OVERVIEW

MIRAGE™-1.5 is a complete turnkey infrared scene projector that utilizes unique resistive emitter array technology to produce high definition dynamic IR scenes. Signal processing electronics, power supplies, emitter array cooling, calibration (non-uniformity correction) hardware, and user interface software are all integrated with the MIRAGE™ emitter engine. MIRAGE™-1.5 accepts digital (DVI) and analog (RS-170/NTSC/PAL) video input, and delivers a high-fidelity infrared scene to the user's or SBIR-supplied optics. Typical test applications include hardware-in-the-loop testing of missile seekers, FLIR testing, counter measure simulation and testing of tracking systems.

SYSTEM COMPONENTS

Command & Control Electronics



The C&CE provides the user interface, user control, signal processing/formatting, NUC and data/image input for all MIRAGE systems. The C&CE is a PC-based subsystem installed in a rack mount configuration.

Thermal Support Subsystem & Chiller



The TSS includes power supplies, refrigerated chiller, an ion pump controller for DEE operation and a top-level ICD. Custom length cables and hoses available.

Digital Emitter Engine



The DEE is an advanced micro-emitter array. This state-of-the-art integrated circuit is constructed of thermally isolated mechanical structures with deposited thin film resistive heaters, fabricated on an advanced sub-micron silicon read-in integrated circuit (RIIC).

Solutions

for Every EO Test Requirement

30 S. Calle Cesar Chavez, Suite D • Santa Barbara, Ca. 93103
ph (805) 965-3669 • fax (805) 963-3858 • <http://www.sbir.com>

OPTIONS

Calibration Radiometry System (CRS)

The CRS compares emitter output on a pixel-by-pixel basis to the output of a pair of blackbodies, yielding a uniform and accurate radiant output over the full dynamic range of the emitter.

Calibration Radiometry System



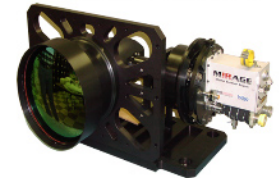
Real-time Image Playback System (RIPS)

SBIR's Real Time Image Playback System (RIPS) is a low cost PC disk array based real-time digital image capture and playback system. The RIPS is designed to capture real-time digital image data from a DVI interface and store the image sequences on a high speed disk array for real-time playback into the MIRAGE™-1.5 dynamic infrared scene projector. A user friendly GUI provides DVR type functionality to RECORD, PLAY, STOP, and LOOP through a selected image sequence. The image data is output (played back) in the DVI format for driving the MIRAGE™-1, MIRAGE™-1.5, MIRAGE™-H and MIRAGE™-XL IR scene projection systems.

Collimators

SBIR can provide and integrate custom collimators based on a customer's specifications.

Custom Collimator



SPECIFICATIONS

Emitter Array Resolution.....	512 x 511 pixels
Pixel Size.....	39 microns square
Effective Temperature Range.....	285-575K (3-5 μm), 285-470K (8-12 μm)
Thermal Resolution (MWIR).....	<50mK at 285K, <200mK at 400K
Input Frame Rate.....	20-200 Hz
Non-Uniformity Correction.....	16-point LUT
Max Pixels Change Per Frame.....	Full frame (261,632 pixels)
Pixel Rise Time (10%-90%).....	5.5 milliseconds
Dead Pixels.....	< 0.5%
DEE Size.....	8.5" diameter x 11" long
DEE Weight.....	16 pounds
Input Scene Data.....	Accepts digital (DVI) and analog RS-170/NTSC/PAL) video inputs

ORDER INFORMATION

Please contact the SBIR sales team at (805) 965-3669 to ensure proper part number and to receive a quotation.

* Specifications are subject to change without prior notice



Solutions

for Every EO Test Requirement

30 S. Calle Cesar Chavez, Suite D • Santa Barbara, Ca. 93103
 ph (805) 965-3669 • fax (805) 963-3858 • <http://www.sbir.com>