FOR MORE INFORMATION CONTACT:

Electronics & Integrated Solutions
2 Forbes Road, LEX01-112
Lexington, MA 02421-7306
Telephone 781- 863-3684
Fax 781- 863-4193
www.baesystems.com
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SCC500™ Series Uncooled Infrared Camera Cores

MicroIR® Technology

PUBS-04-a09

BAE SYSTEMS

Innovating for the future

Innovative designs, a state-of-the-art manufacturing facility and a dedication to product quality are what allow BAE Systems to provide the most advanced, uncooled, infrared camera cores.

As the leading supplier of microbolometer sensors and systems, BAE Systems is uniquely positioned to provide camera cores capable of meeting the current and future application requirements of today's commercial and military original equipment manufacturers (OEMs) and integrators. Our extensive engineering experience and expertise in thermal imaging system design, coupled with the manufacturing capabilities provided by our state-of-the-art MEMS foundry, allow us to provide high-performance camera cores with 160x120 and 320x240 resolutions.

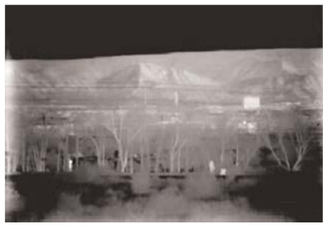
At BAE Systems, we are committed to assuring our products exceed your every expectation.

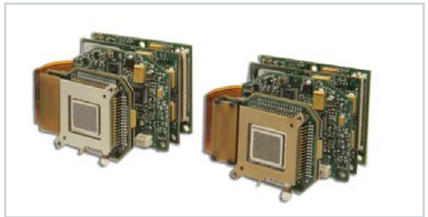
IR solutions for OEMs and integrators

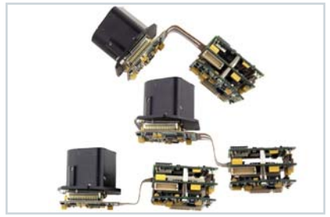
SCC500™ Series infrared camera cores
The SCC500 Series has established a new standard for high-performance, low-cost, IR camera cores aimed at the commercial and military OEM markets. Based on our MicroIR® technology, the SCC500 Series camera cores generate superior image quality over an extended operating temperature range with the wide dynamic range (14 bit) and real-time 60Hz frame rate you have come to expect from BAE Systems. All this performance is yours in an innovative, small, lightweight, and robust package.

Common architecture - one size fits all
Unique to the SCC500 Series are the common electronics package and mechanical interfaces shared by all three camera cores, providing the perfect solution for OEMs developing a family of systems differentiated by resolution. No other series of camera cores offers this level of commonality for ease of integration across applications.

Flexible form factor
The SCC500 Series camera cores incorporate a flex cable between the front end card/lens assembly and the back end electronics. This feature provides the OEM with the flexibility to adjust the camera core layout to meet critical packaging constraints.







Features

1. **Optics interface** – A universal mounting plate (UMP) with integral shutter assembly allows the SCC500 Series of IR camera cores to be configured with the optic required to meet specific OEM/integrator application requirements.

1a. The SCC500 Series also provides provisions for the direct mounting (no UMP required) of an optic with integral shutter - 9 mm optic shown.

2. **Focal Plane Array (FPA)** – The SCC500 Series incorporates MicroIR® technology based on our field-proven, vanadium oxide, microbolometer FPAs.

3. **Thermoelectric cooler** – The SCC500 Series camera cores utilize a high-efficiency thermoelectric cooler, ensuring optimum imaging performance over a superior -40 to +85 deg. C ambient operating temperature range.

4. **Single electrical interface** – A single low-profile connector provides all electrical interfaces including power input, video outputs, advanced serial links, and discrete I/O signals.

5. **Camera core architecture** – A Microprocessor without Interlocked Pipeline Stages (MIPS) processor and Wind River Vx-Works real time operating system combine to deliver a powerful standard feature set, yet provide an open architecture designed to accommodate application-specific software (and hardware) options. No other camera core offers the degree of configuration flexibility and upgradeability as the SCC500 Series.

SCC500H shown with universal mounting plate

Technical specifications

Detector	**SCC500L**	**SCC500H**
Detector type	Uncooled VOx microbolometer	Uncooled VOx microbolometer
Spectral response	8 - 14 µm	8 - 14 µm
Array size/format	160x120	320x240
Detector pitch	46µm	28µm
NETD (f/1.0 @ 30 Hz)	<0.05°C	<0.1°C
Video		
Frame rate	60 Hz	60 Hz
Analog video	RS-170 b&w/NTSC color	RS-170 b&w/NTSC color
Digital video	2 wire serialized LVDS	2 wire serialized LVDS
Gain/level adjustment - selectable	Automatic/manual	Automatic/manual
Image polarity - selectable	White hot/black hot	White hot/black hot
Communication interface and control		
Serial interface	RS-422	RS-422
Discrete interfaces (configurable functions)	7 digital I/Os, 2 analog inputs	7 digital I/Os, 2 analog inputs
Electrical		
Input voltage	5.5 to 12.8 VDC	5.5 to 12.8 VDC
Power (at 25°C)	2.0 watts	2.5 watts
Optics		
Mounting provisions	Universal mounting plate	Universal mounting plate
Options	Various optics available	Various optics available
Environmental		
Operating temperature range	-40 to 85°C (-40 to 185°F)	-40 to 85°C (-40 to 185°F)
Mechanical		
Weight w/o optic (nominal)	83g (0.18 lbs.)	83g (0.18 lbs.)
Core dimensions (LxWxH) w/o optic (nominal)	5.1 x 4.8 x 4.3 cm (2.0 x 1.9 x 1.7 in.)	5.1 x 4.8 x 4.3 cm (2.0 x 1.9 x 1.7 in.)
Options	Custom software, optics and electrical interfaces available	

Specifications are subject to change without notice.

This product requires export approval from the U.S. Government prior to delivery.

Meeting your application requirements

- Firefighting
- Surveillance
- Unattended sensors
- Unmanned vehicles
- Machine vision
- Robotics
- Process monitoring