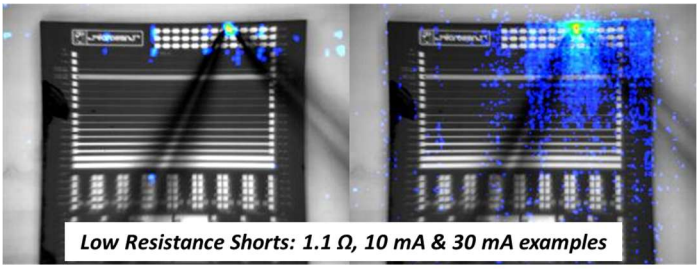
3287 Kifer Road
Santa Clara, CA 95051
www.microsanj.com

SanjSCOPE™ EZ-THERM LOCK-IN THERMAL IMAGING SYSTEM

The ***SanjSCOPE™ EZ-THERM LOCK-IN THERMAL IMAGING CAMERA SYSTEM*** provides an affordable platform to support both ***LOCK-IN INFRARED EMISSION THERMOGROPHY and LOCK-IN THERMOREFLECTANCE IMAGING.*** The EZ-THERM system comprises the EZ500A Controller with a selection of high performance INFRARED (IR) or THERMOREFLECTANCE (TR) sensors to address a wide range of thermal imaging applications and requirements. The sensors are easily integrated to existing semiconductor test systems and the EZ500A Controller can simultaneously support up to three sensors.

LOCK-IN THERMAL IMAGING

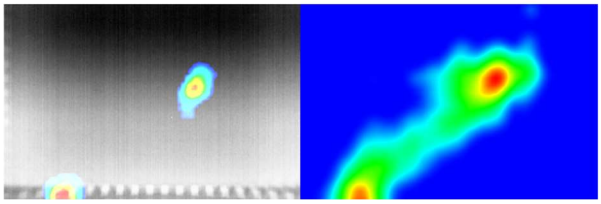
The lock-in technique enables repeated measurements to be made over time to significantly improve the signal to noise ratio and subsequently enhance the thermal sensitivity. With this approach thermal sensitivities in the 1 mK range can be achieved enabling detection of hot spots with power levels less than 10 microwatts with san IR sensor. With TR sensors, diffraction-limited spatial resolution addresses the resolution required for today's advanced devices.

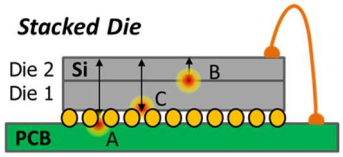


TEMPERATURE CALIBRATION

The EZ500A supports multiple techniques for temperature calibration. Included with the EZ500A is a high resolution thermocouple for monitoring the temperature of the device under test (DUT). The EZ500A can also be connected to an embedded thermal sensor. An optional Thermal Chuck is also available from Microsanj for added calibration flexiblity. A proprietary TransientCAL™ technique is used to obtain an emissivity map for the DUT to achieve a temperature accuracy of ±2 degrees C.

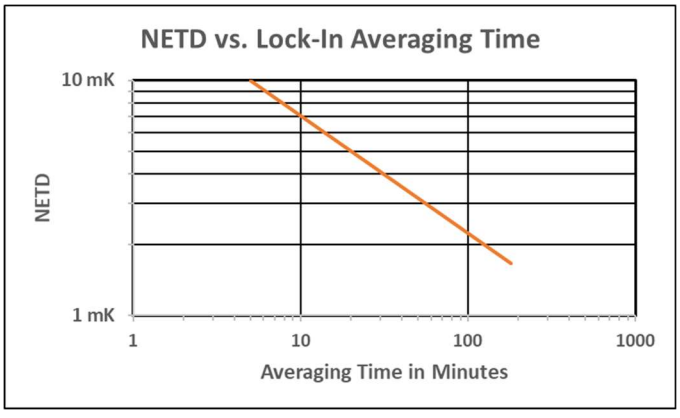
Packaged Device: Wire Bond Short





*The **EZ500A EZ-THERM LOCK-IN THERMAL IMAGING CAMERA SYSTEM*** includes:

- Controller with lock-in electronics for high resolution thermal imaging
- Embedded User-Friendly SanjVIEW™ and SanjANALYZER™ SW with advanced algorithms for system management, data acquisition, and data analysis
- TransientCAL™ technique for temperature calibration and emission mapping
- High resolution thermocouple for temperature sensing
- High performance monitor, keyboard, & mouse
- All necessary cables for installation and connection to customer-provided optical system and probe station
- User installation guide and operating manual



  Contact: info@microsanj.com

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PARAMETER	EZ500A SanjSCOPE™ EZ-THERM™ CONTROLLER
Thermal Imaging Method	Lock-in Imaging for VIS(TR), NIR(TR), MWIR & LWIR Emission
Software	SanjVIEW™ for system management and data acquisition SanjANALYZER™ for thermal data processing and analysis
Synchronization Modes	Input or Output TTL compatible Trigger
Absolute Temperature Calibration	±2.0 °C with TransientCAL™ Method for IR Imaging With embedded sensor or provided thermocouple
LED Illumination Wavelengths	405 nm, 470 nm, 530 nm, 780 nm, White
Temperature Measurement Range	+10 °C to +300 °C (High Gain) to +500 °C (Low Gain)
Height x Width x Depth	4.25” x 14“ x 12” (108 mm x 356 mm x 305 mm)
Ambient Operating Temperature	10 °C to 35 °C
Display, Keyboard & Mouse	Included

PARAMETER	THERMOREFLECTANCE & INFRARD-BASED SENSORS				
Model Number	EZTR-VIS2	EZTR-VIS4	EZTR-NIR	EZIR-LW12 EZIRS-LW12	EZIR-MW15
Detector Type	CMOS	CMOS	InGaAs	VO Micro-bolometer	Cooled InSb
Spectral Range	400 to 800 nm	365 to 800 nm	900 to 1700 nm	7.5 to 13 µm	3.4 to 5.1 µm
Active Thermal Pixels	1920 x 1200	2048 x 2048	640 x 512	640 x 512	640 x 512
Detector Pitch	5.86 µm	5.5 µm	15 µm	12 µm	15 µm
Movie Mode	30 Hz	30 Hz	30 Hz	EZIR: 30 Hz EZIRS: 8.6 Hz	30 Hz
Spatial Resolution	59 nm/pixel @100x	55 nm/pixel @100x	150 nm/pixel @100x	24 µm/pixel w/0.5x Lens	15 µm/pixel w/1x Lens
Field of View (FOV)	2.5 mm x 1.4 mm at 5x	2.25 mm x 2.25 mm at 5x	1.92 mm x 1.54 mm at 5x	15.4 mm x 12.3 mm at 0.5x	9.6 mm x 7.7 mm at 1x
NETD (with Lock-In, 5 min Avg)	100 mK	250 mK	1250 mK	10 mK	5 mK
High Speed Transient	50 µs	50 µs	50 µs	33 ms	17 ms
Mechanical Mount	C-Mount	C-Mount	C-Mount	SM1 thread (M25/M26/RMS adapters available)	

ACCESSORIES	DESCRIPTION
Thermal Chuck for IR Calibration	Provides 20 °C to 120 °C temperature controlled stage for thermal calibration and enhanced thermal sensitivity • Eliminates the need for thermocouple or embedded sensor • Enables higher operating temperature for enhanced emissivity
AF-100 Piezo Calibration Tool	Thermal calibration with auto-positioning & auto-focusing with 50 watt cooling capacity Enables C_{TR} calibration for sub-micron features
SA-200 SanjANALYZER-PLUS™	For advanced post-processing of SanjVIEW™ data files with simple interface to MATLAB

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