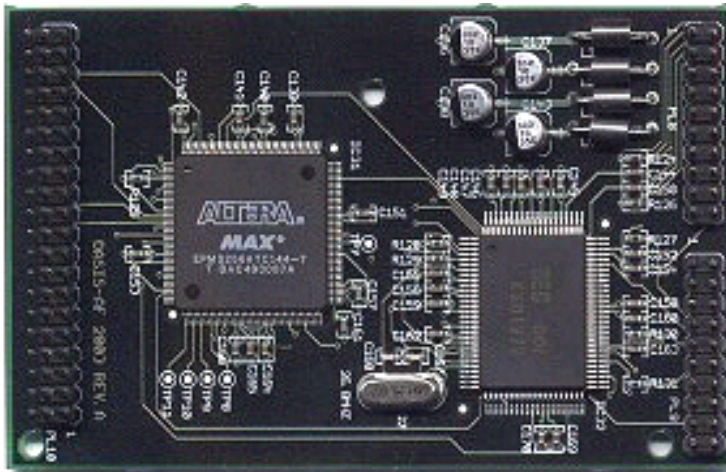
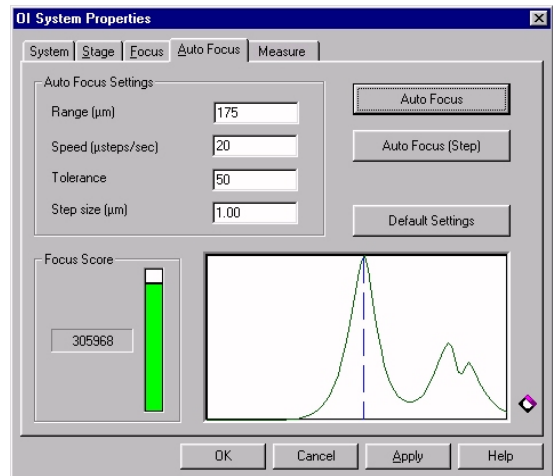


# OASIS-AF AutoFocus Module

The OASIS-AF Module is an optional plug-in daughter board that can be fitted to the OASIS-4i Four Axis Controller to automate microscope focus adjustment dependent on image content and user defined parameters. The efficient modular design of the hardware in combination with our powerful and versatile software functions provides an economical and highly optimised solution for complete microscope control.



OASIS-AF Module



Automatic focus settings with specimen focus plot (focus score vs. Z position)

## FEATURES

- ◆ Real time image processing hardware for high-performance automatic focus
- ◆ Programmable video window for user-selected region of interest
- ◆ Video-rate measurements of total area and maximum chord length for detected image details
- ◆ Adjustable threshold values, with frame and field detection modes providing multiple phase discrimination
- ◆ High-speed interface with the OASIS-4i Four Axis Controller for rapid, automatic operation through a tight "Measure and Move" feedback mechanism
- ◆ Accepts video inputs from Y/C, composite, and monochrome sources
- ◆ Simply plugs into the OASIS-4i controller for an easy and economical solution—no extra PCI slot or power supply required

## DESCRIPTION

The OASIS-AF AutoFocus module extends the capability of the OASIS-4i Four Axis Controller by providing real time video image processing hardware.

By continuously measuring the characteristics of each video frame, the OASIS-AF module enables rapid, automatic selection of the best point of focus.

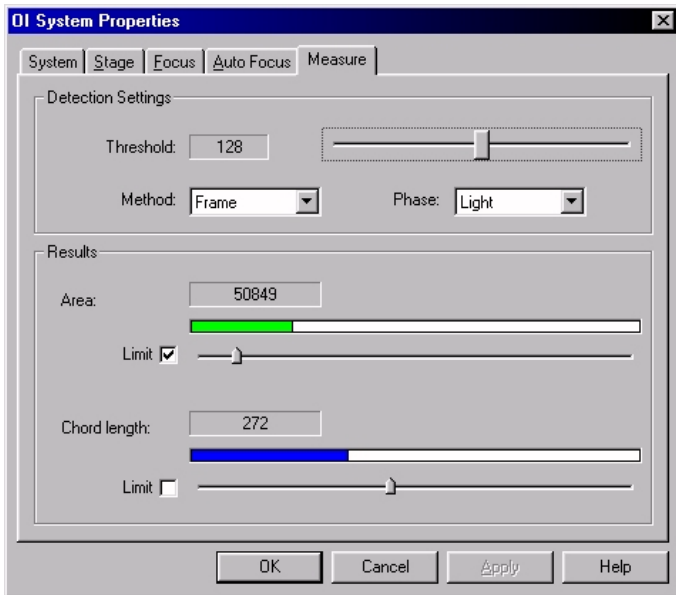
A tightly coupled "Measure and Move" Z-axis control feedback mechanism, performed in conjunction with the OASIS-4i controller, ensures maximum accuracy and speed of operation.

Video-rate measurements of total area and chord length data for detected image details are also performed by the OASIS-AF hardware for applications such as blank field and rare event identification.

To suit the needs of a diverse range of applications and samples, Objective Imaging's software libraries provide easy access to operational parameters and configuration settings, allowing the hardware to be perfectly matched to the physical characteristics of the imaging system and specimen.

Objective Imaging's OASIS-AF AutoFocus module, in combination with the OASIS-4i controller, provides a complete and reliable solution for demanding automated microscopy applications where performance counts.

# OASIS-AF : AutoFocus Module



*Video measurement settings with real-time indication of area and maximum chord length data for detected image details*

When using the OASIS-AF module, high-level image analysis software does not need to grab an image or process it further until the OASIS hardware has determined that the image is in focus and contains useful detail.

User-selectable, separate detection thresholds for odd and even video fields allow multiple phases to be measured continuously for desired levels during high-speed specimen scanning.

Integrated directly into the OASIS-4i automation controller using a high-speed interface, the OASIS-AF module allows excellent performance in applications where speed and accuracy of autofocus and the identification of appropriate fields of view critically impact throughput.

## OASIS-AF : Technical Specification

<b>Video Section</b>	Input requirement (Auto-detecting)  Channels Working area Detection threshold (for output measurements)	PAL (composite or Y/C) or NTSC (composite or Y/C) or SECAM or CCIR (mono) or RS170 (mono) 2 (composite/ mono) or 1 (Y/C) Full camera or user-defined rectangular focus window User definable (0-255)
<b>Outputs</b>	Real-time focus-score generation Real-time feature detection Real-time area measurement Real-time maximum chord measurement Sample frequency (maximum) Sample frequency (minimum)	Yes (available every field with corresponding Z position) Yes (dark and/or bright features) Yes (dark and/or bright features) Yes (dark and/or bright features) 60 Hz (field O/P - NTSC or RS170 input) 25 Hz min (frame O/P - PAL or CCIR input)
<b>Control</b>	Software (complete control of) Hardware	Range, speed, ROI, threshold, sensitivity, backlash Trackball (dedicated button repeats last autofocus)
<b>Power Requirements (Max)</b>	+5 V ( $\pm 5\%$ )	450 mA (Drawn from OASIS-4i PCB)
<b>Physical Dimensions</b>	Length / Height	95 mm x 60 mm, (3.75" x 2.4")
<b>Environment</b>	Operating temperature Relative humidity range	0 to 35 °C (ambient) 10 to 90% (non-condensing)



Innovative Solutions for Automated Microscopy