



# ATV-1000 Mark Inspection System

## PC controlled, high speed image analysis based component mark verification and Pin 1 orientation system for ATM DIP and SOP products

The ATV-1000 is designed to perform fast, real-time inspection of Pin 1 orientation and component markings on packaged integrated circuit devices. The system can be factory installed on new equipment, or is field retrofittable on existing installations.

This modular option consists of:

- PLC controlled mechanical staging with reject part sorting mechanism
- CCD camera and lens
- Lighting (LED or fluorescent depending on mark type)
- "Wolverine" frame grabber PCB
- Computer/monitor system
- I-CITE IC inspection software

### Image Acquisition

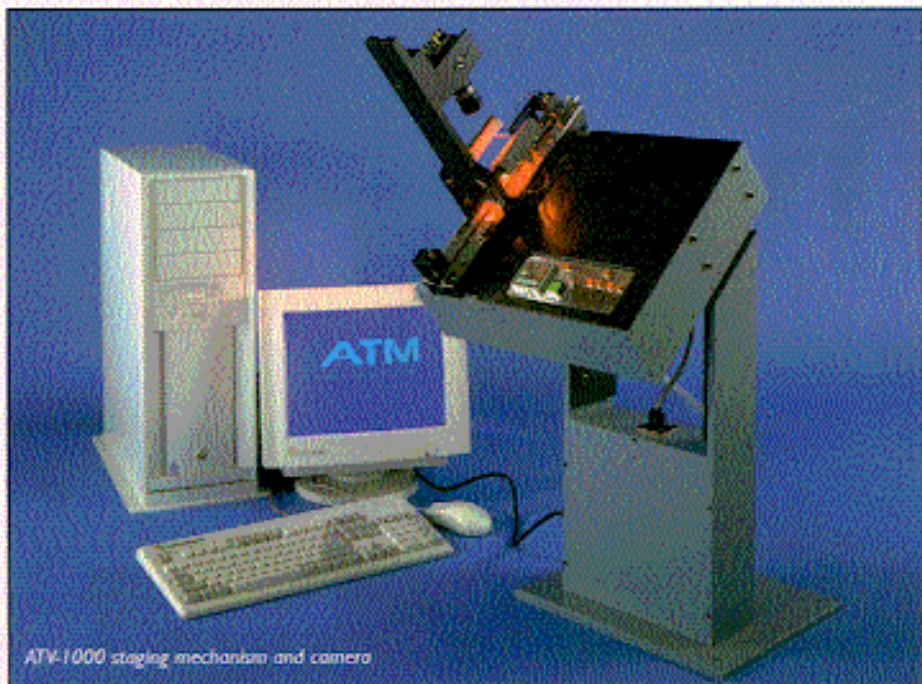
The high speed, Wolverine imaging circuit board is installed in a 16-bit ISA slot in the computer and its memory mapped onto the PC bus. As parts pass through the ATV-1000 module, they are stopped briefly under the CCD camera while the mark image is acquired. The Wolverine hardware is capable of new image acquisition and last image processing simultaneously.

### Pin 1 Inspection

Correct device orientation can be easily verified by locating the position of a typical "Pin 1 Indicator" (including notches, bevels, dimples, or printed marks).

### Mark Inspection

The ATV-1000 system inspects the component mark for print defects, low contrast marks, illegible marks, mark quality defects such as bleeds and voids, or even wrong parts! Both ink and laser marks can be analyzed. Inspection criteria can be set for either individual or groups of characters, and an option for processing "lots" of parts with different (mixed) marks is available. The versatile software package has a dynamic editing function which allows fine tuning of performance on a character by character basis.



ATV-1000 staging mechanism and camera

### Component Sorting

The mechanical staging of the ATV-1000 includes a "sort track" section of guide rail. Once the inspection software identifies a particular part as a reject, the sort track diverts this component into a separate tube.

### System Control

The I-CITE mark inspection software incorporates a graphical user interface (GUI) that is compatible with both mouse (or trackball) and keyboard control.

A series of pull down menus display the various choices available for each operation, and selections are made with a mouse click or single keystroke. Forwards and backwards arrows guide the operator through system setup. "Panels" which contain buttons, selection boxes and numeric entry boxes appear as required. These panels provide for control of function on and off, value increase and decrease and command execute.

### System Security

The ATV-1000 software incorporates a powerful security system to enable user defined, restricted access to a variety of its features; this prevents operators from changing and overwriting key settings.

### Database Capabilities

Inspection results can be stored on the computer hard disk in selected database files; this information can then be imported into a compatible spreadsheet program for further analysis. As well as recording operator name, lot number, date and time, total parts run and rejected part count (with reasons), the amount and type of data saved is user definable.

### Options

- Workstation
- Part rotator

# Specifications

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## Computer System

Processor: P75 Pentium running at 75 MHz  
Monitor: SVGA with 1024x768 resolution, 256 colors  
Memory: 8MB RAM  
Software: MS-DOS 6.22  
Mouse driver  
VESA BIOS

## Inspection

Overhead: Zero (new image is acquired while simultaneously processing previous image)  
Acquisition: 33 - 50 ms  
Transfer: 85 ms or less  
Reference srch: 5 - 50 ms  
Inspection time: 2 - 4 ms per character  
String size: 10 inspection windows  
Characters: Unlimited (within memory constraints)  
Pin 1 inspection: 5 - 50 ms



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