

# THE CLUSO VISION SYSTEM

## AREAS OF APPLICATION

### FIRST ARTICLE INSPECTION

Originally designed as a First Article Inspection system, Cluso excels in this space. If human visual inspection is occupying too much time during the line changeover process, it's very likely that Cluso will not only dramatically shorten that time but improve the accuracy of that process. While some existing first article tools help a little, Cluso is the only system that integrates all BOM, CAD & Visual images in a single interface, with a step by step process that ensures nothing is missed. This fast, yet comprehensive, coverage ensures rapid line changeover.



### 100% INSPECTION OF SMALL LOTS

The benefits of speed, efficiency & accuracy, so apparent with first article inspection, encourage many users to harness the power & flexibility of the Cluso system for 100% inspection of their small batch production. Unlike AOI systems, Cluso requires NO programming, & offers the capability to inspect product accurately, literally within minutes of emerging from the production line. Moreover, inspection of through hole devices is as simple as SMT parts.

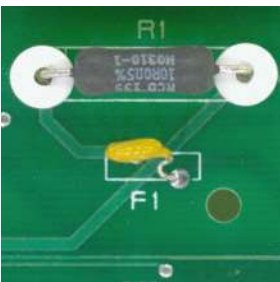


### NEW PRODUCT INTRO (NPI)

It's not a big leap from small lot inspection to having a high value inspection tool in the NPI area. The ability for inspection of quick turn, small batch prototyping is excellent & the resulting golden board is an ideal starting point for teaching an AOI!

### AUDIT INSPECTION

There are always concerns that an escape past standard inspection tools will allow a batch of defective product to make it through. Cluso is an ideal tool for catching those challenging polarity marks or weeding out the errant reel errors.



### END OF LINE or PRE-SHIP

Some products (& some EMS customers!) demand a Pre-Ship visual inspection. It may be a full inspection or an audit but if you have to do it, then Cluso allows you to cut costs & improve accuracy while having an audit trail. **Can also do wire adds.**

## WHO NEEDS VISUAL INSPECTION?

It really doesn't matter the degree of automation you have in your facility, the questions that are most interesting are these: Are there people "looking" at PCBs on my floor? Is someone "checking" a PCB somewhere in my process? Do I have any product that I don't trust enough to ship, without a final inspection?

If this is happening, then perhaps Cluso can make it happen more effectively. Be it manual assembly, mixed technology PCBs or weaknesses in existing methods, including AOI, the Cluso Vision System may be the answer to some of these challenges.

### DISTINCTLY DIFFERENT

Cluso is, quite simply, a different way of looking at things.

Especially PCBs!

It is faster & more accurate than traditional techniques, yet it retains the human input, while making the task of inspection highly tolerable & successful for inspection personnel.



# THE CLUSO VISION SYSTEM THE HARDWARE

## CLUSO & SIMPLICITY

### THE SCANNER MODULE

- Professional grade scanner module for reliable, long term PCB image capture capability
- Engineered optics for high resolution capture & 50mm (2") part height clearance
- Enhance lighting system for clear capture of laser etched component markings
- Rugged housing & drawer assembly for durability on the shop floor

### THE ENGINE

- Quad Core processor with 4GB RAM & large hard drive
- All the power & storage you need to facilitate a complete single station solution for all your inspection needs

### THE DATA CAPTURE KEYPAD

- The wireless keypad provides easy capture of inspection data in a step by step manner
- Easy P(ass) & F(ail) keys with user configurable keys (F1 thru F4) for most common defects
- Trigger input of comment fields with the Pc & Fc keys for added details on questionable Pass-Fail conditions
- Full Zoom, Cross Hair & Switching functionality right on the keypad
- Input measured values via the Sm key with the integration of a suitable multimeter

In keeping with the Cluso ease of use philosophy, the operator interface is a very simple wireless keypad for data entry.

With user defined failure mode keys, this effective data entry tool provides access to the vast majority of functionality required for the inspection process. This allows the inspector to focus on the job at hand. And that's just exactly what we would like!



# THE CLUSO VISION SYSTEM IN THE REAL WORLD

## EMS LARGE & SMALL

- The EMS environment can be subjected to high line changeover with a punishing loss of line up time. Cluso can often recover 75% or more of this time.
- Even smaller EMS houses can employ several inspectors for end of line or pre-ship inspection. Cluso can often reduce headcount by 50 to 75%.

## HIGH VOLUME, MOBILE PHONE & AUTOMOTIVE

- New technology & high speed often go together. Cluso is a real asset for NPI & audit inspection in this go-fast environment where an error can literally spin into thousands of rejects. Ever missed an incorrect polarity mark on an automated line?

## MILITARY & MEDICAL

- The more critical the product, the more we fear trusting an automated system. Despite the fact that visual inspection has a terrible reputation, we still value, highly, what human intuition brings. Cluso keeps the intuition but it also adds in the accuracy.

## WHERE IT FITS

- Anywhere that visual inspection is required, including through hole & wire adds.
- Complimentary to, rather than a replacement for, AOI & other automated systems.
- Where increased line utilization or reduced headcount is needed.

