

Cluso InvMan

Smart Component Management

Cluso Vision Systems create innovative equipment for streamlining the electronics manufacturing process by dramatically reducing inventory management time.



Introducing Cluso InvMan-S1

**A flexible system
for managing
components
from goods
received to
delivered product**



Designed by manufacturers for manufacturers

Our technology comes from innovations implemented for our sister company [Circuitwise Electronics Manufacturing](#), an ISO 13485 certified contract manufacturer based in Sydney, Australia. We understand electronics manufacturing intimately, and Cluso was formed to share our innovations with other manufacturers. We have been in the market since 2000 selling to six of the top ten electronics manufacturers in the world.



Cluso InvMan...

- Simplifies receiving, storage and retrieval.
- Eliminates kitting.
- Automatically monitors stock levels.
- Enforces First-In-First-Out.
- Delivers full traceability.
- Reduces warehousing space.

Print barcode for received parts



Attach barcode to received parts



Scan barcode on received parts



Log new parts in to **InvMan** software



Scan rack location



Place new parts on shelves



Load BOM in to **InvMan** Software



Easily locate new reel using lights on shelves



Scan barcode on empty reels to request new reel



Load parts directly in to SMT pick-and-place



Select parts with lights on



How It Works: Cluso InvMan-S1 Smart Component Management System

Reel Storage

Reduce your warehousing space

The core element of the **InvMan-S1** is a wireless SMT reel storage solution which is flexible enough to accommodate all component types.

The defining feature of the storage solution is a lighting system that enables easy retrieval of components.

When a BOM for a production run is entered into **InvMan-S1**, or replace reel is requested, bright lights are activated in front of the required reels. Components can be retrieved in less than 5 seconds.

Features include:

- Store a reel by scanning any empty location and scanning the component barcode number.
- Adjust slot width to accommodate any reel width.
- Fit flat level shelf to store tubes, tray IC's and other non-reel packages.
- ESD Reel containers for cut tapes or loose components.
- Open bottom shelf for storing multiple odd form components.
- Convert existing shelving/warehouse space or configure as a stand alone trolley.

Specifications:

Power: 110V – 240V, 50/60hz with optional rechargeable battery.

Capacity: Stores up to 882 8mm reels. The height of each level can be adjusted in 60mm increments. All locations are fully adjustable to suit wider and taller reels.

Communication: Wi-Fi.

Trolley Dimensions:

1205mm L x 840mm W x 2330mm H (w light towers)
1860mm H (w/o light towers)

Retrieve components in less than 5 seconds.



Software

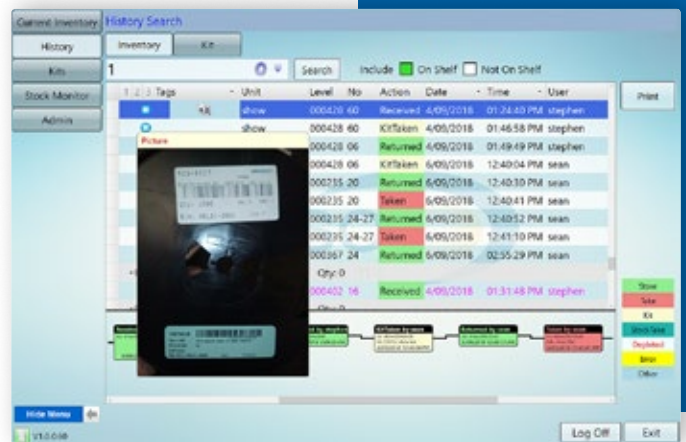
Discover what full traceability means

The **InvMan-S1/S2** advanced software system manages components from goods received right through to delivered product. The system includes a **Head Communicator (running on Windows 10)** which controls as many shelf units as you need.

Software features include:

- Allows up to 10 users at a time to store and search for components.
- Easy-to-use kit creation with auto-check to see if stock is available.
- Barcode printing for new components.
- Automates First-In-First-Out component retrieval.
- Easily check part history.
- Records what components were taken by whom and for what job.
- Each user/scanner is allocated a unique light colour eliminating any confusion.
- Image stored of original reel for full traceability.
- Keeps track of your inventory count.
- Easy to integrate with your existing MRP/ERP/MES.
- ODBC Capable.
- Automated alerts when stock quantity is running low

Fully traceable. Know which component was taken at what time, by whom and for which job.



Other inventory management systems allow only one user and one screen interface, requiring a user to wait until another user completes their task. Cluso eliminates this downtime.

Barcode Scanner

The **InvMan-S1/S2** barcode scanner is an android platform running a custom Cluso app that stores, finds, and picks kits. It can take an image of your inventory, to be saved on the full traceability timeline. When multiple users are operating at the same time, each scanner will be allocated a unique color so the user knows which light on the shelves are allocated to them.



Allows up to 10 users at any one time to store and search for components.

Carriers & Shelves

Use the **InvMan-S1** trolley to hold your shelving or convert existing racks into smart shelves with **InvMan Reel and Flat carriers**. **InvMan** carriers can also be placed into existing dry cabinets to convert **MSL cabinets into smart cabinets**.

Features include:

- High quality anodized lightweight aluminum with laser etched barcodes.
- 63 locations per rack.
- RGB light per location that generates multiple colours, facilitating concurrent users.
- 1 microcontroller communicator per 14 carriers.
- 1 Head controller to control the entire **InvMan** range.
- Fully adjustable locations, can hold any size reel

Flat shelves

The **InvMan-S1** system can be configured for flat shelves which are designed to handle sticks, Trays, ESD tubs and other non-reel components.

Features include:

- Shelves can be installed on **InvMan-S1** trolley or standard existing shelving/MSL dry cabinet.
- Fully adjustable in increments of 31.5mm.
- 35 locations per shelf.



Wall Brackets

InvMan wall brackets allow **InvMan** shelves to be slotted into a standard wall mounting fixture. Available in two sizes to suit 7" and 15" reels and Flat Shelves. Suitable for areas where space is restricted and a full trolley system is not required.



Convert your existing dry cabinet.

Swap any level for a Flat level



ESD Containers

Cluso ESD containers are designed to hold non-reel components or loose parts. These containers are a perfect size for cut tapes and will fit into one location on the **InvMan-S1** storage system.



Introducing Cluso InvMan-S2



A fully automatic version of Cluso InvMan for component reels only with continuous sensor monitoring of each storage location.

Reduces the amount of hand scanning for storage and retrieval.

Detects unauthorized removal.

InvMan S2

InvMan S2 is a Fully Wireless, portable SMT Reel Storage Solution

Fully compatible with S1 Systems and can be used in conjunction



Born out of the frustration of kitting times and lost inventory, the InvMan-S2 was designed to be as flexible as possible with the ability to adjust any location at any time to accommodate any width reel in less than 3 seconds.

To store a reel it is as easy as scanning the barcode on a reel and putting it into any empty location.

The InvMan-S2 Storage solution was designed with traceability and ISO13485 in mind, giving you a fully traceable timeline for unique reel identification as well as First in First Out -FIFO

InvMan-S2 utilises our standard barcode scanner to perform all the store, kit and remove functions.

The InvMan-S2 has patent pending sensor technology in every location

Trolley Dimensions -
1225mm L x 420mm W x 2170mm H (w light towers)
1850mm H (w/o light towers)

Power is supplied from standard wall outlet.

3 Trolley Versions

Same RGB LED Lighting system as S1

Same location width adjustment as S1



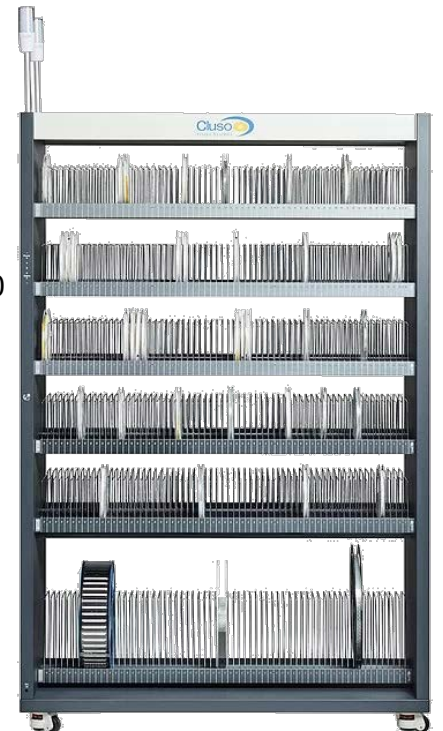
S2-14 Trolley

- For 7" reels only
- 14 Shelves (7 per side) for a total of 882 max storage locations
- Double the storage density of S1 trolley for 7" reels

7" Reels can always fit into large reel locations

S2-11 Trolley

- 10 Shelves for 7" reels (5 per side) for 630 max storage locations
- 1 Shelf for large reels w 63 max locations
- 693 total locations



S2-4 Trolley

- For 13" & 15" reels primarily.
- 4 Shelves for a total of 252 max storage locations
- 15" reels fit on the two bottom shelves



Introducing Cluso InvMan "Virtual Location"

"Virtual Location" is a Software option that allows any company to create unlimited additional storage locations for additional Component Reels, Stencil Carts, Feeder Storage Carts, Bulk Packaging on Shelves, etc.

For less than the cost of a single trolley, You can acheive complete control of all of the manufacturing inputs and display the locations right on the Hand Interface Unit to the operator.

Manufacturing efficiency at your fingertips.

Virtual Location

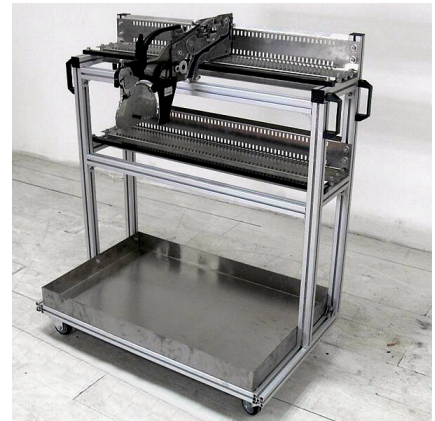
Create and print a bar code in Cluso for any storage location

Store and retrieve item as usual with the Cluso InvMan hand scanner interface unit.



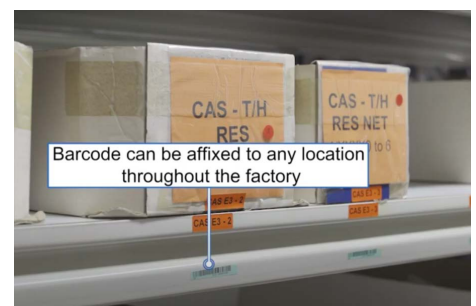
Example of a Vertical Lift Storage System to which "Virtual Location" could be applied

Find any Feeder stored on any Feeder Cart Instantaneously



Instantly locate any Stencil stored on any Stencil Cart

Bulk Packaging in a warehouse



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