

# ChipShover-PS1

## Three-Axis Positioning System



### General Description

ChipShover® is an XYZ table & driver, with a handy Python interface. It's designed for positioning both measurement probes and fault injection tools for close analysis of integrated circuits. In both specifications and cost it falls somewhere between 3D printers & microscope positioning systems.

The ChipShover® is a complete system for 3D positioning of embedded tools that includes:

- Solid machined aluminum XYZ platform based on high-precision stages driven by micro stepping drivers
- An electronic controller for the XYZ stage based on open-source Marlin firmware Python interface on computer
- 110-240VAC to 24VDC adapter  
All cables required for operation

The frame of the ChipShover® is made entirely of solid machined aluminum, ensuring high rigidity and repeatability. The ChipShover® has a precision better than 200 nm, and an accuracy (including backlash) better than 4  $\mu\text{m}$ .

### Applications

- Electromagnetic fault injection using a ChipSHOUTER® or other tool
- Positioning of electromagnetic field probes for side channel analysis
- Positioning of laser fault injection tools
- Positioning of macroscopic cameras or probes for die inspection

### Features

- Three axis positioning on a rigid frame
- Assembled machine fits on a 45 cm square
- Assembled Machine is 40 cm tall in its default configuration
- Movement range of a single configuration is up to 5 cm on each axis
- Better than 200 nm precision on each axis
- Better than 4  $\mu\text{m}$  of repeatability of each axis
- Controller with LCD screen for jogging and position readout
- Computer control over USB
- Adapter for use with the ChipSHOUTER® electromagnetic fault injection tool



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