ES640 Charged Device Model (CDM) Test System

(Chamber, Enclosure and Software GUI maybe updated without notice)

1. Introduction

Charged Device Model (CDM) electrostatic discharge is a common cause of microelectronic circuit failure. Sensitive devices can be seriously damaged or destroyed by a CDM discharge at relatively low voltage. This often occurs when the static charged device contacts a metal surface at a different potential. Such an electrostatic discharge often has an extremely fast rise time.

The Model ES640 Charged Device Model (CDM) Test System is a robotic CDM test system designed to meet all popular CDM test methods, allowing both field induced air discharge methods (FICDM) and contact first (CCDM) methods. The system includes a computer, environment-controlled chamber, precision XYZ motion system, different types of CDM test setups, and an automated test and data analysis software.

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2. Features

- High resolution cameras (up to 3) allow for easy pin alignment operation
- High resolution motion control system (down to below 1 µm step)
- Allows multiple devices being tested in a batch
- Patent-pending CCDM method allows better repeatability
- Airtight environment chamber increases drying unit efficiency
- Support regenerative drying unit (no need of nitrogen)

3. Applications

- General charged device model (CDM) system for package and wafer level tests
- Support many popular latest CDM methods:
  - ✓ ANSI/ESDA/JEDEC JS-002-2018 (FICDM)
  - ✓ AEC Q100-011 Rev-D (2019 Ver. follows JS-002)
  - ✓ AEC Q101-005 Rev-A (2019 Ver. follows JS-002)
  - ✓ ANSI/ESD SP5.3.3-2018 (LI-CCDM, vf-TLP required)
  - ✓ CC-TLP (ESDA SP pending, vf-TLP required)
  - ✓ Patent pending RP-CCDM method
  - ✓ Legacy and customized solutions available upon request
- Customizable dimension for robotic CBM (Charged Board Model) and flat panel tests

4. Specifications

Parameters	ES640-150	ES640-300	Units	Comments
Max XY Motion Area	≥ 150 X 150	≥ 300 X 300	mm	Customizable
Max DUT Surface Area	160 X 160 200 X 300	320 X 320 400 X 600	mm	Standard Charge Plate Enlarged Charge Plate
Max Z Travel Distance	≥ 50		mm	Customizable
Min X, Y, Z Step Size	100		nm	
Reposition Repeatability	≤ ±6		µm	
Test Voltage Range	± 1 to 2000 or 4000		V	Default 2000V, Customizable
Test Voltage Step	1		V	
Test Voltage Accuracy	± 1% ± 0.1V		%	
XY Vision Resolution	1920 X 1080		Pixel	Zoom & Pan
Vertical Vision Resolution	2592 X 1944		Pixel	Zoom & Pan
Operating Temperature	10 to 40		(°C)	
Operating Humidity	10 to 80		%	
Power	120-240 VAC, 50/60 Hz		VAC	

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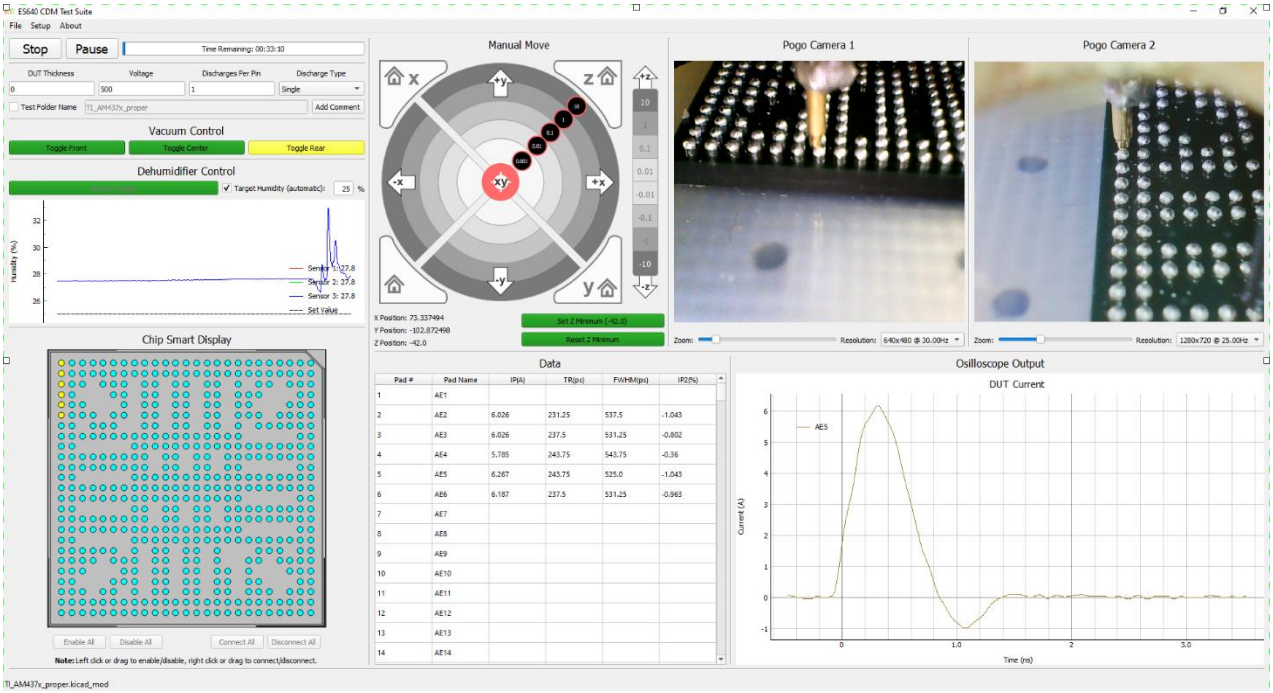
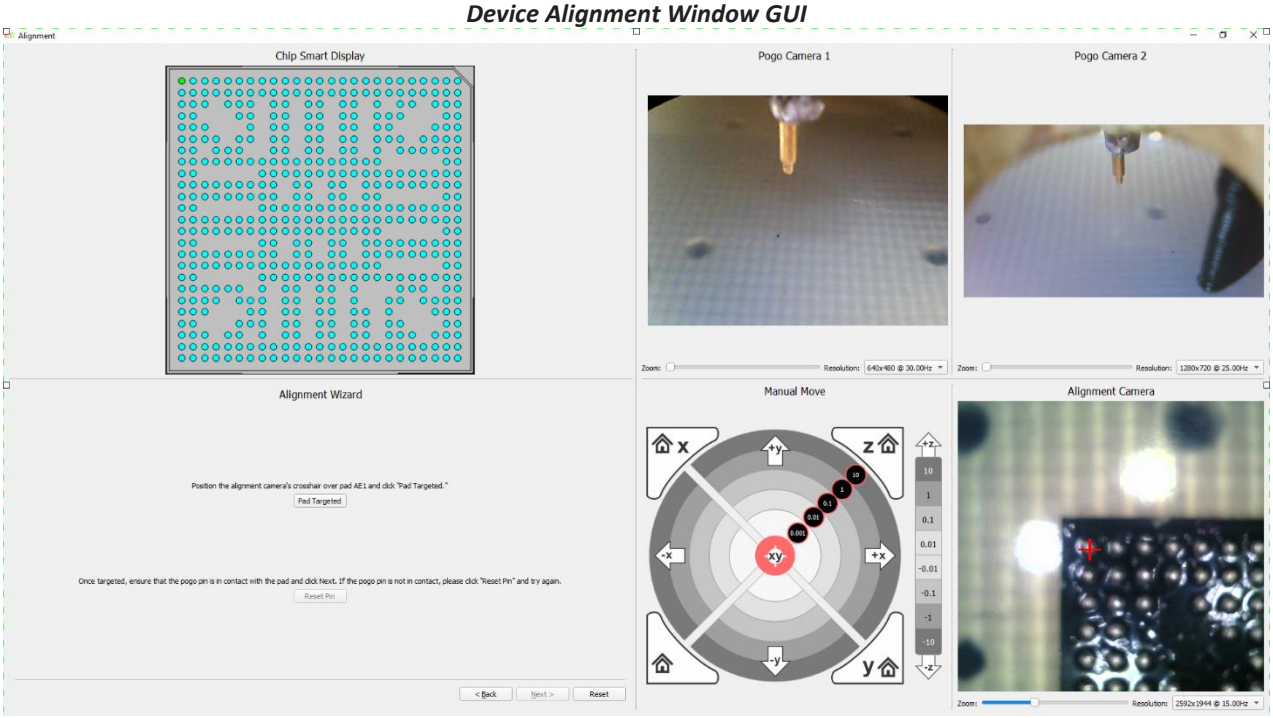
System & Software Pictures

Main Window GUI



Device Alignment Window GUI



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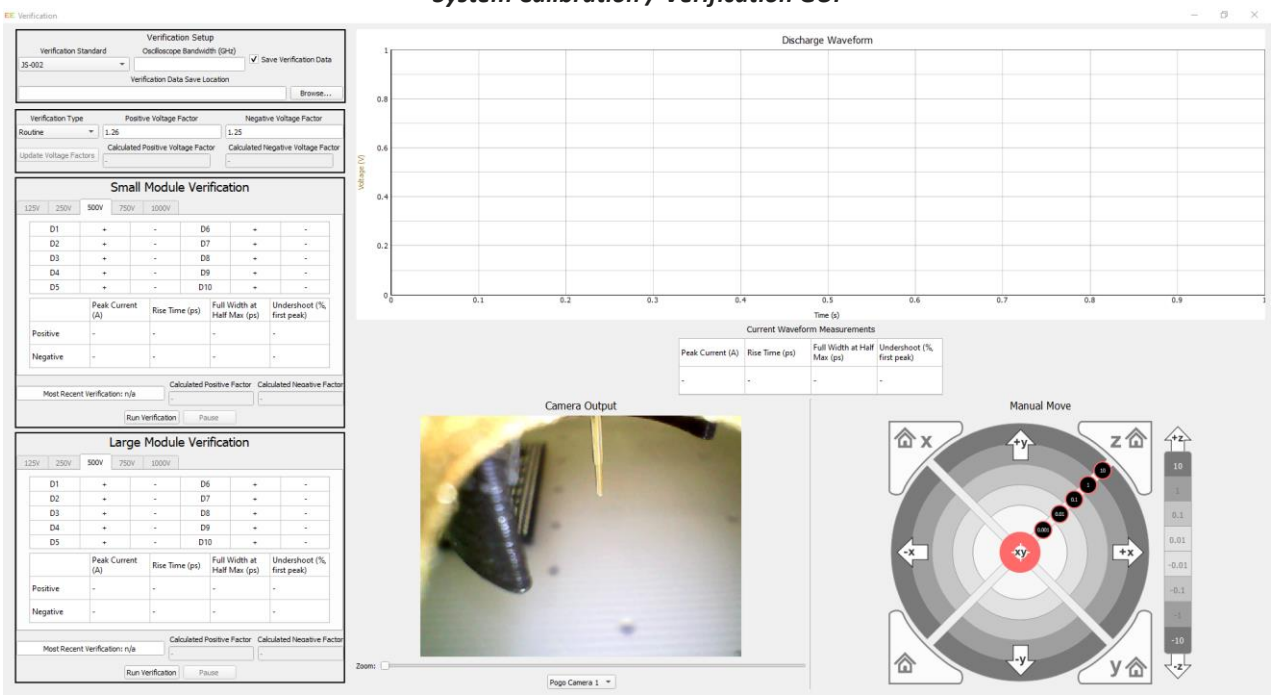
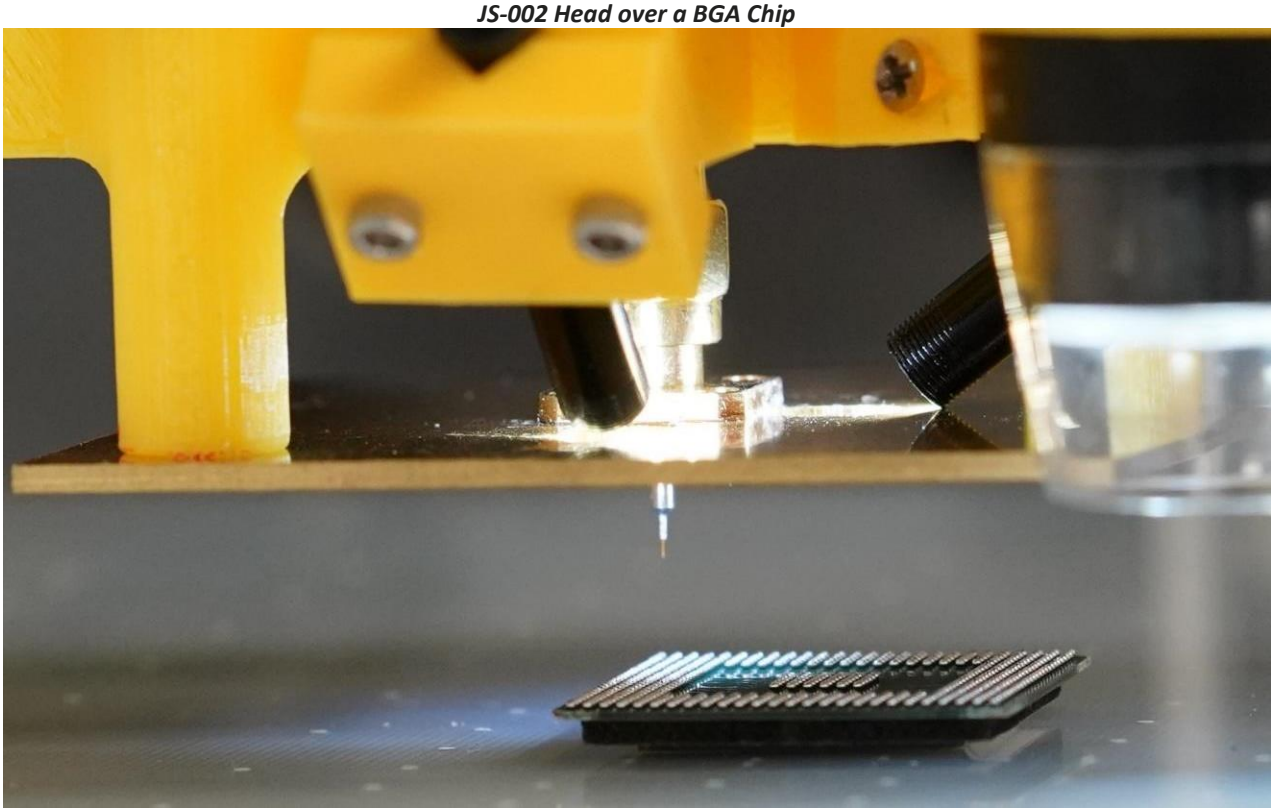
System Calibration / Verification GUI



JS-002 Head over a BGA Chip



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