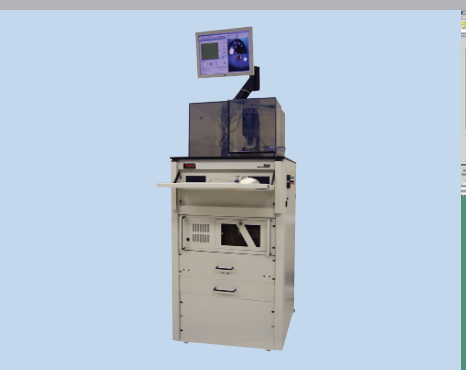
Product Specifications

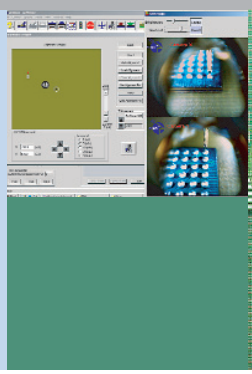
The Thermo Scientific Orion is a self-contained, floor standing robotic Charged Device Model (CDM) tester designed to meet JEDEC, ESDA, and AEC ESD test standards.

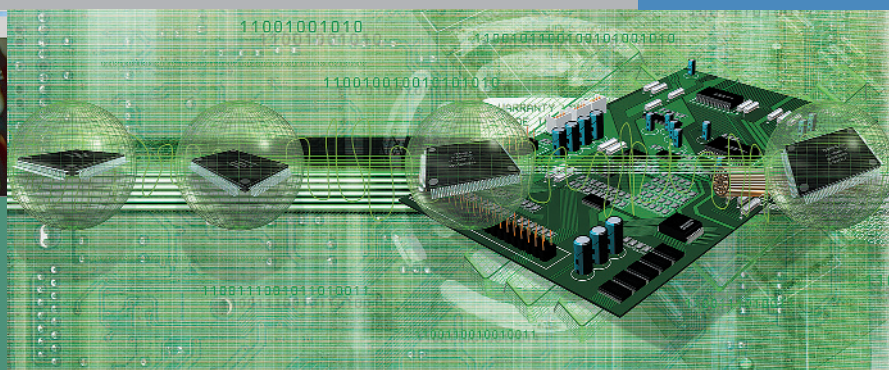
The system is designed to test high pin count parts with densities of up to 400 pins per square centimeter.

Thermo Scientific Orion

Robotic Charged Device Model (CDM) test system for simulating ESD threats







Features & Benefits

- **Test standards: JEDEC C101-A, ESDA 5.3.1, AEC Q100-01**
- **Dual camera display permits easy discharge pin alignment during set-up**
- **Fully-enclosed test area: antistatic, transparent safety cover enables moisture purge for testing in high humidity areas**
- **Event detector confirms ESD discharge and records event**
- **Waveform monitor probe to monitor waveform for calibration via an oscilloscope**
- **Device under test (DUT) held in place by a vacuum chuck; alignment assured via adjustable fixture**
- **Software enables user to program test voltages, polarity, and delay time between pulses**

The Thermo Scientific Orion can return substantial dividends

The Thermo Scientific Orion gives you the ability to test for potentially destructive effects of ESD, enabling you to identify and then to harden sensitive structures prior to full-scale production. Given the extremely high cost of IC production, as well as customer demands for precisely-timed component delivery schedules, Orion can save substantial costs in terms of time, material and lost opportunity.

Rapid device positioning

The dual camera display permits easy and rapid discharge pin alignment during the test setup routine. Both the X and Y axis are displayed simultaneously. The cameras may be left on during the test to monitor the pin alignment. Vacuum hold-down enables device testing regardless of device types and sizes.

Reproduces and documents real world CDM events

The Thermo Scientific Orion enables CDM testing to most prevalent industry standards. An event detector ensures each pin is discharged, while assuring proper alignment and contact between the device and the system discharge pin. Waveform verification is made with its built-in waveform monitor via an oscilloscope. Events are logged and reported upon test completion, providing confirmation of pin discharge, and indication of non-stressed pins that require retest.

In addition, waveform verification software analyzes the CDM pulse, provides the measured waveform parameter, and compares it to the appropriate test standard. The software then provides a PASS/FAIL report.

System description

The Thermo Scientific Orion robotic CDM tester base system includes the system controller, flat panel display, and operating software. A front panel mounted shelf contains the keyboard and mouse for user convenience. The emergency stop switch and a wrist grounding strap connector are also conveniently located. Discharge probes, associated hardware, and calibration disks specified in JEDEC, ESDA, and AEC test standards are optional at extra cost. The test area is fully enclosed with an antistatic, transparent safety cover, which allows the test area to be purged with dry nitrogen when testing in high humidity environments.

A complete system, Orion will retain its value particularly as device package geometries, including stab and smart cards, become smaller and more powerful.

ESD & Latch-Up Test Solutions

Experience the many benefits of working together with recognized experts in the field of ESD & Latch-Up testing. Our commitment to the discipline is wide ranging; we actively participate on global standards committees and have helped define test methodologies to achieve regulatory standards and product quality objectives.

Our goal is to support you with lifelong service-from applications support, calibration services and preventative maintenance scheduling to full technical field support.

We can help you reach the next level of success.

Thermo Scientific Orion CDM Test System

Charged Device Model (CDM) testing to JEDEC C101-A, ESDA 5.3.1, AEC Q100-00	Meets dominant industry CDM test methods
Dual camera display and vacuum	Rapid, accurate device positioning; enables monitoring of pin alignment during test
Test densities up to 400 pins per square centimeter	Tests complex parts
Test devices of any size or configuration	Test instrument retains value as device package geometries become smaller
Field-Induced Charge method	Elevates the entire DUT to selected voltage. Test pin is discharged to ground
Windows®-based application software	User-friendly interface
Pre-defined pin map screens	Facilitates pin location, fast device definition
Event Detection Circuit	Confirms discharge event
Enclosed test chamber	Allows for inert gas connection
System emergency stop switch	Ensures operator safety

Specifications

Test area	4 in. x 4 in. (10.2cm x10.2cm)
Motion system	x,y axis - min. step size .001" with .00025" accuracy (x,y axis - min. step size 25.4µm with 6µm accuracy) z axis - vertical travel to 1.5" with .00025" accuracy (z axis - vertical travel to 38.1mm with 6µm accuracy)
Test voltage range	±25 V to ±2000 V (±10V steps)
Temperature range	Operating temperature: +40F to +125F (+5C to +45C) Non-operating temperature: 40F to -140F (-5C to +60C)
Humidity range	10-80% non-condensing
Dimensions	23"W x 26"D x 48"H (59cm x 66cm x 122cm)
Weight	300 lbs. (112kg)
Power Requirement	120 volt or 240 volt single phase 50/60hz, 800 watts
Customer supplied	Vacuum: 26"Hg Dry nitrogen: .25 scfm

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