

Pegasus ESD Test System

2-Pin ESD test system

The Pegasus 2-pin ESD Test System is a low parasitic tester platform used in the evaluation of advanced IC devices at both wafer and package levels. Determination of ESD failure thresholds is made easy using one of the available ESD waveforms and built-in curve tracing capabilities.

- Fully compliant, Human Body Model (HBM) and Machine Model (MM) testing per the latest industry standards
- True system level ESD 150pF/330Ω network (not a 50Ω emulator) available to meet the proposed Human Metal Model (HMM) requirements
- 2 pin connection via wafer probes to any device in a package, die, or wafer
- Pre- and post-curve trace measurements for comparative failure analysis
- Oscilloscope interface (GPIB, USB or TCP/IP) with automatic internal attenuation
- Storage of all waveforms with automatic analysis using the latest industry standards
- Automatic voltage waveform capture
- Pods (ESD waveform generators) can easily be installed on a prober station
- Easily fits on a bench top, or alternatively the main controller can be installed in a 19" test rack
- Wafer prober interface
- Bias supply controls for pre- and post-Idd measurements



Low Parasitic ESD testing for characterization of ESD protection structures

The Thermo Scientific™ Pegasus™ ESD Test System is a low parasitic 2-pin tester which is used to characterize protection structures at wafer, die, or package level. The Pegasus can also be used as part of your device qualification routine, providing supplemental data to the results gathered when using an automated (relay based) high pin count ESD test system.

Testing is available to the latest industry standards for Human Body Model (HBM), Machine Model (MM) waveforms, as well as offering a true System Level (150pF/330Ω) IEC like waveform based on the EOS/ESD Association's Human Metal model (HMM).

Consistent, precise ESD waveforms

The system's pulse source design and pulse source delivery method ensures waveform performance directly at the device under test, not at the generator output. Current waveforms can be automatically captured and analyzed for each ESD event.

In addition, Voltage waveforms can be captured and used to determine the turn-on level of protection structures. They can also be used as a means of failure determination, as the voltage waveforms show changes after ESD events.

Easy-to-use testing operations

The Pegasus Scimitar Windows®-based software is both intuitive and comprehensive. Tests are set-up quickly, and user training requirements are minimal. Curve traces and waveform captures are automatically stored in an XML data base and can be compiled for reporting or exported for off-line manipulation.

System integration

The Pegasus design, allows the system to be integrated with the Thermo Scientific Celestron TLP System, providing TLP and ESD results from one combined platform.

Define, achieve and sustain your test objectives

The Pegasus Test System's flexible, modular design and options enable you to upgrade on-site when corporate or industry standards change. Options include adding additional ESD waveform Pods and control of different oscilloscopes for waveform capture.

Reach the next level of success

Experience the many benefits of working with recognized experts in the field of component reliability ESD and Latch-Up testing. Our goal is to support you with lifelong service—from applications support, calibration services, service contracts, and field service scheduling to full technical field support. We can help you reach that next level of success.

Automation, wafer prober communication

Scimitar software provides a flexible architecture which allows communication with semiautomatic probers, to further automate testing.

General specifications

Waveforms	HMM - Proposed ESDA HMM; HBM - JEDEC/ESDA JS-001, MIL-STD 883, and AEC Q100-002; MM - ESDA STM5.2, JEDEC JESD22-A115, and AEC Q100-003	
ZAP Voltage	+/- 15 V to 12 kV for HMM and HBM and +/- 50 V to 2 kV for MM	
ZAP Voltage Resolution	1V	
ZAP Voltage Accuracy	1% of set point +/-5 V source performance ZAP	
ZAP count/interval range	1 to 9999 count / 0.3 to 10 second intervals	
Curve Tracing		
Voltage	0 to 200 V (consult factory for higher voltages)	
Resolution	10 mV	
Voltage Ranges	200 mV, 2 V, 20 V, 200 V	
Current	0 to 1 A	
Resolution	100 nA	
Current Ranges	1 µA, 10 µA, 100 µA, 1 mA, 10 mA, 100 mA, 1 A Accuracy 0.5% of range	
Output	22 W: 21 V @ 1 A to 210 V @ 0.1 A	
Resistance Detection	1 ohm to 200 M ohm	
Measurement Points	10 to 250	
Pass/ Fail Criteria	Relative and Absolute Values	
Main Controller Dimension	43.2 cm (17 in) W x 43.2 cm (17 in) D x 13.2 cm (5.2 in) H	
Pod Dimension	16.4 cm (6 in) W x 12.7 cm (5 in) D x 8.9 cm (3.5 in) H	
Weight	Controller	8.4 Kg (18.5 lbs)
	Pod	1.4 Kg (3 lbs)
Main Controller Power	100 to 240 VAC, 2 Amp, 50/60 Hz	
Temperature Range	Operating Temperature	+15°C to +40°C (+59°F to +104°F)
	Non-operating temperature	4°C to +60°C (+40°F to +140°F)
	Humidity Range	30-60% non-condensing
Power Requirements	System	100-240 VAC, 2A, 50/60 Hz
	Computer and Monitor	100-240 VAC, 6.5A, 50/60 Hz

Scimitar software features

Summary Panel with easy navigation for test plan setup

Control of external oscilloscopes through the use of Scimitar's user programmable Plug-in capabilities

Flexible parametric tests that are defined and placed at an arbitrary position within the executable test plan

Comprehensive results viewer that provides:

- ESD data viewing capabilities

- Curves viewer with zooming capabilities and the ability to add user comments

- Data filtering on the following criteria – failed results, final stress levels

- A complete set or subset of results using user defined parameters

- Sorting in ascending or descending order by various column criteria

Tree-like logical view of the tests and test plans

Flexible data storage that provides the ability for the end-user to query the data

Off-line curve analyzing, including third-party generated waveforms

Automated waveform capture capability and analysis using the embedded EvaluWave software feature

Cross tester platform architecture - Scimitar's design allows the software to be used across a number of Thermo Scientific's tester platforms, which means testplans can be used on multiple systems, no need to recreate tests

Regardless of which tester platforma testplan was executed, results can be viewed on any system or even off-line for data manipulation

