TITAN 2

HBM ESD TEST SYSTEM

System Overview

Titan 2 is a flexible, easy to use, HBM test system that meets all industry standards.

- Available configurations include manual and automated testing of packaged ICs, bare die, and wafers
- Standard voltage range is 30 to 4,000 V with higher voltages available
- Optional high accuracy, wide dynamic range, DC leakage measurements to determine DUT failure levels
- Touchscreen interface that is fast to learn and easy to operate

KEY FEATURES

Pulse Delivery Options

Wire Leads

Coax Probes

DUT Boards

Relay-Controlled Automation

Probe Station Integration

Fast Test Performance

Pulse speeds up to 10 Hz

Quick switching between HBM and Leakage

Integrated DC Leakage

Measure leakage before & between HBM pulses

SMU for high quality measurements

Optimize by per-pulse/per-polarity/per-voltage

Touchscreen Control

Responsive touchscreen for quick operation

No extra peripherals required

Or connect a Keyboard, Monitor, Mouse

Test Results Export

Export test data to USB or network

Remotely Programmable

Remotely command Titan 2 via SCPI

Fits into existing company workflows

HBM Fully Industry Standard Compliant

- American National Standards Institute (ANSI)
- Joint Electron Device Engineering Council (JEDEC)
- Electrostatic Discharge Association (ESDA)
- International Electrotechnical Commission (IEC)
- Automotive Electronics Council (AEC)
- USA Dept. of Defense (DoD) Military Stds (MIL-STD)
- Japan Electronics and Information Technology Industries Association (JEITA)

Waveform Verification

HBM waveforms verifiable with WaveAppraise

**WaveAppraise license included*

PurePulse ESD • A Division of Lucas Signatone Corp
www.purepulseesd.com • sales@purepulseesd.com • (408) 216-8364

Specifications

TITAN 2

HBM ESD TEST SYSTEM

HBM PULSE CHARACTERISTICS

HBM Voltage Range	±30 V to ±4,000 V	Optional higher voltages available
HBM Voltage Resolution	1 V	
Pulse Speed	Up to 10 Hz User selectable	
Polarities	Positive, Negative, Bipolar User selectable	
Charge Removal	10 KΩ discharge between pulses	

TRIGGER & CURRENT SENSE

Oscilloscope Trigger Output	5 V (50 Ω termination required)
DUT Current Sense	Optional DUT current measurement (Tek CT-2 characteristics)

LEAKAGE MEASUREMENT

Frequency	User selectable Per-Pulse, Per-Polarity, or Per-Voltage
Measurement Unit	Uses External SMU (Force/Limit dependent on SMU selected)
Current and Voltage Limits	100 pA to 1 A and 500 µV to 200 V, with other SMU range options

COMPLIANCE STANDARDS

ANSI/JEDEC/ESDA JS-001-2024	**MIL-STD 883E Method 3015.7**
IEC 60749-26	**JEITA ED-4701/300 Method 304**
AEC Q100-002 REV-E	

PHYSICAL SPECIFICATIONS

Power Requirements	100 - 240 VAC, 50 - 60 Hz, 0.5 A (max)
Operating Temperature	5° to 35°C (40° to 95°F)
Humidity	10 - 80% RH non-condensing
Dimensions	19” Rack mount with remote pulser unit

Live software demo in your browser:
https://titandemo.purepulseesd.com/

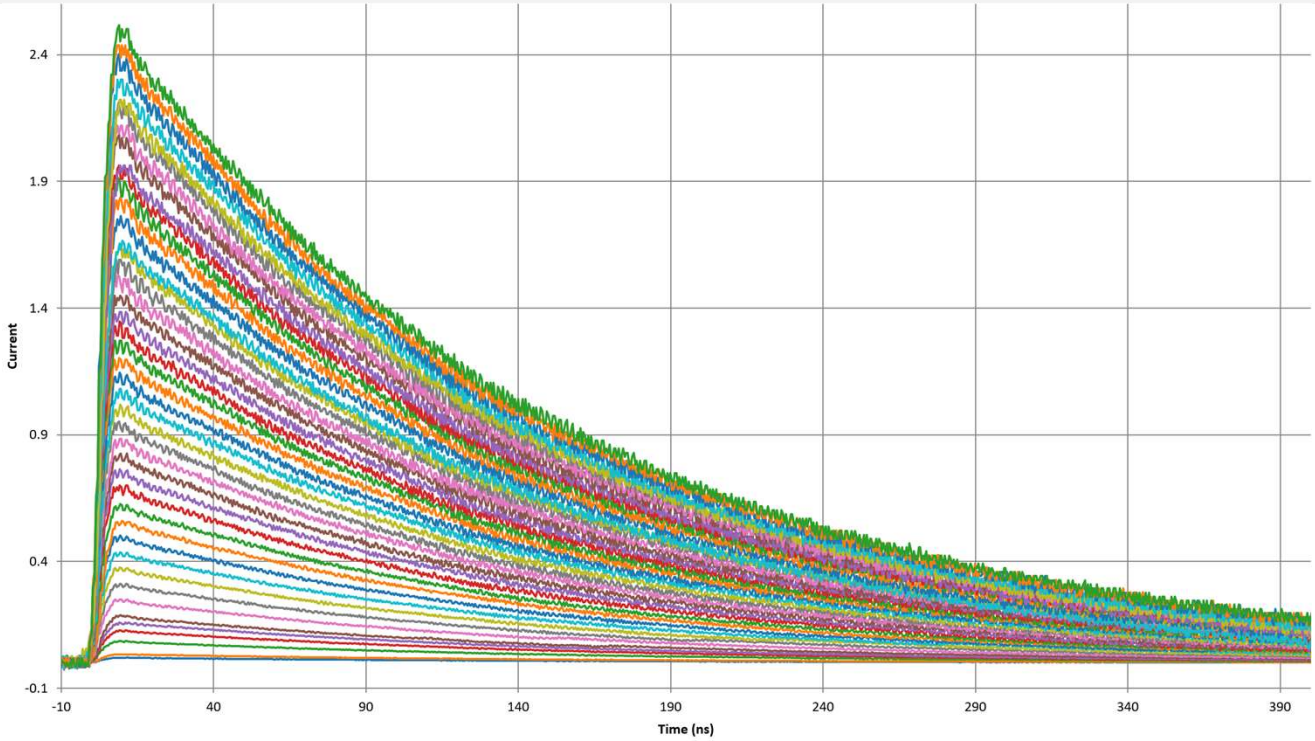
Contact Information: For sales and technical support, please visit www.purepulseesd.com or contact your local Lucas Signatone Corp. representative. Specifications subject to change without notice.

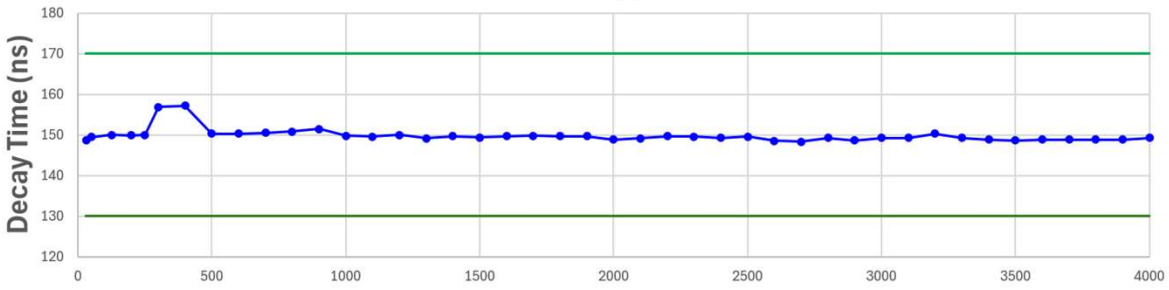
Performance

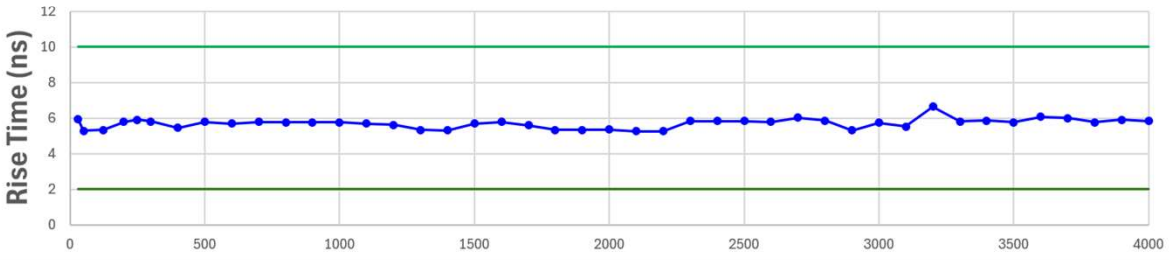
TITAN 2

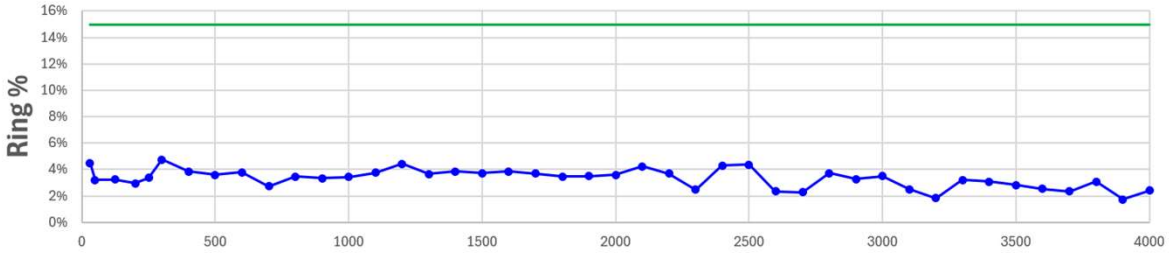
HBM ESD TEST SYSTEM

HBM WAVEFORMS – Typical overlapped current waveforms 30 V to 4 kV and major parameters







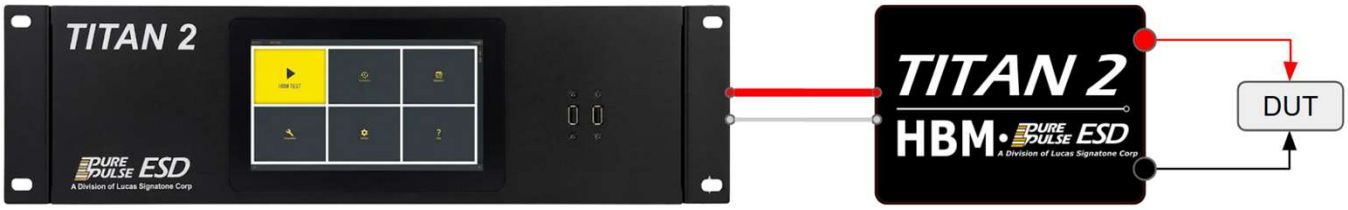


Configurations

TITAN 2
HBM ESD TEST SYSTEM

STANDARD HBM – Cost effective manual system with manual probing or test fixture board

HBM	±30 V to ±4,000 V



VERSATILE PROBING OPTIONS

Probe Needles

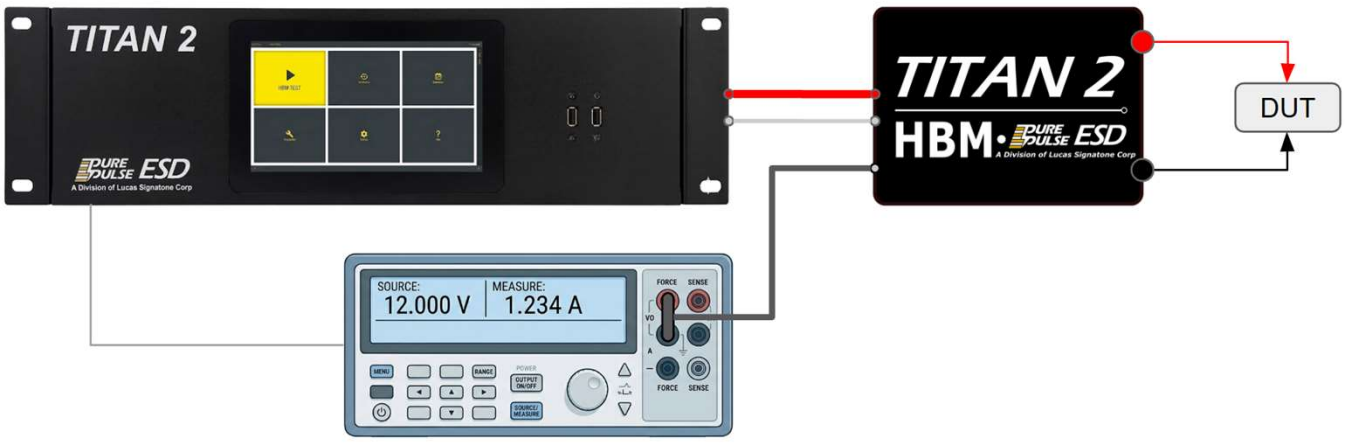
Insulated Clip Probes

Jumper Wires

Titan 2 HBM is expandable with the following optional configurations
Even more configurations are possible to meet your current and future needs

HBM & LEAKAGE – Adding an SMU for leakage

HBM	±30 V to ±4,000 V
LEAKAGE	SMU dependent

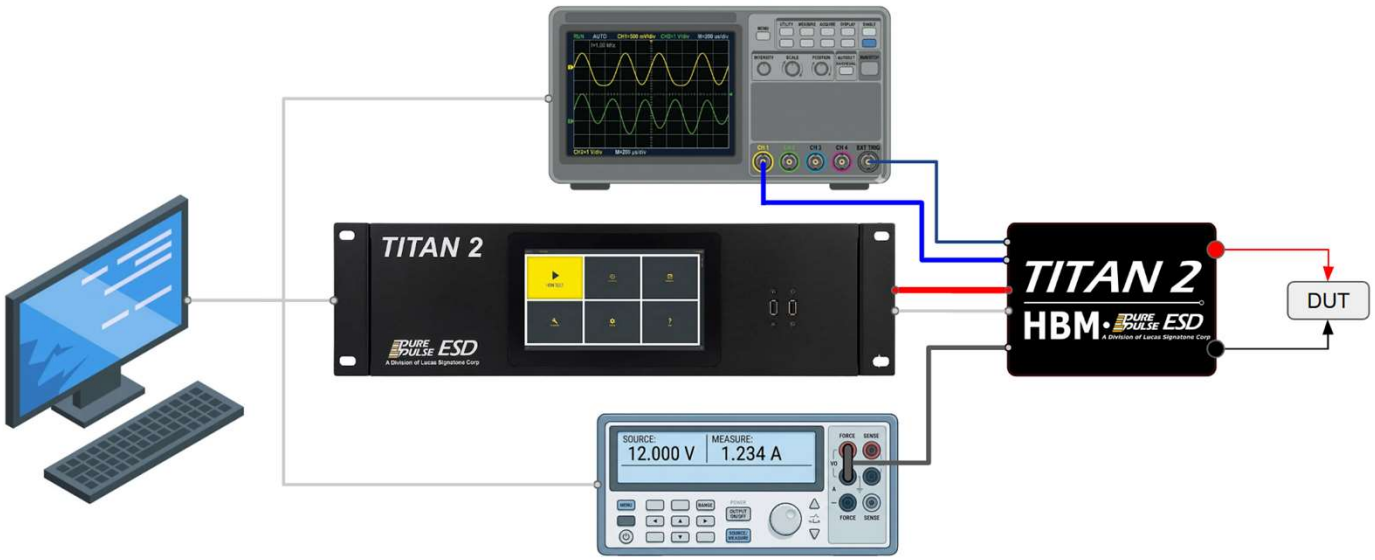


Configurations

TITAN 2
HBM ESD TEST SYSTEM

MAESTRO SOFTWARE, HBM, LEAKAGE, DUT CURRENT MEASURE

HBM	±30 V to ±4,000 V
LEAKAGE	SMU dependent
CURRENT MEASURE	CT-2 Current Probe with Oscilloscope
MAESTRO CONTROL	Windows PC with PurePulse Maestro software

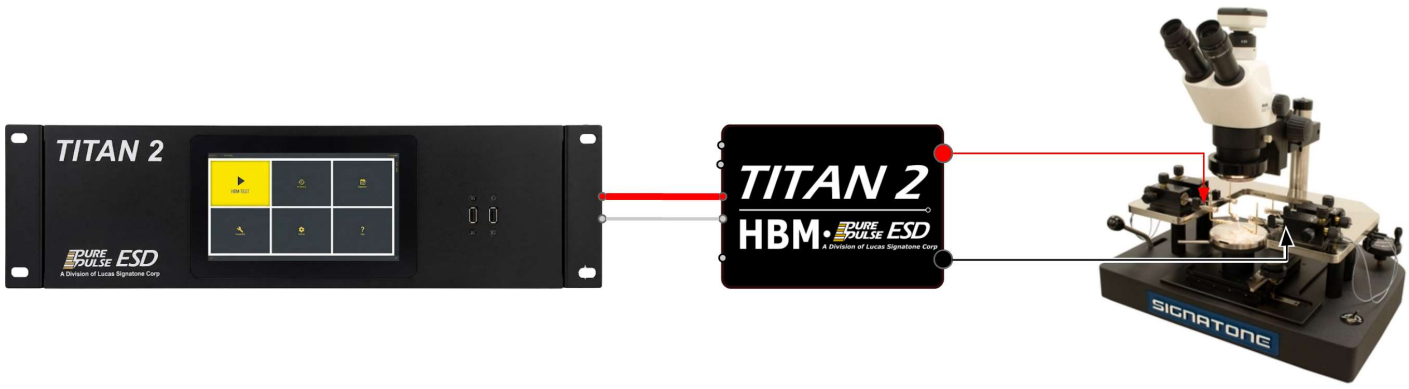


Configurations

TITAN 2
HBM ESD TEST SYSTEM

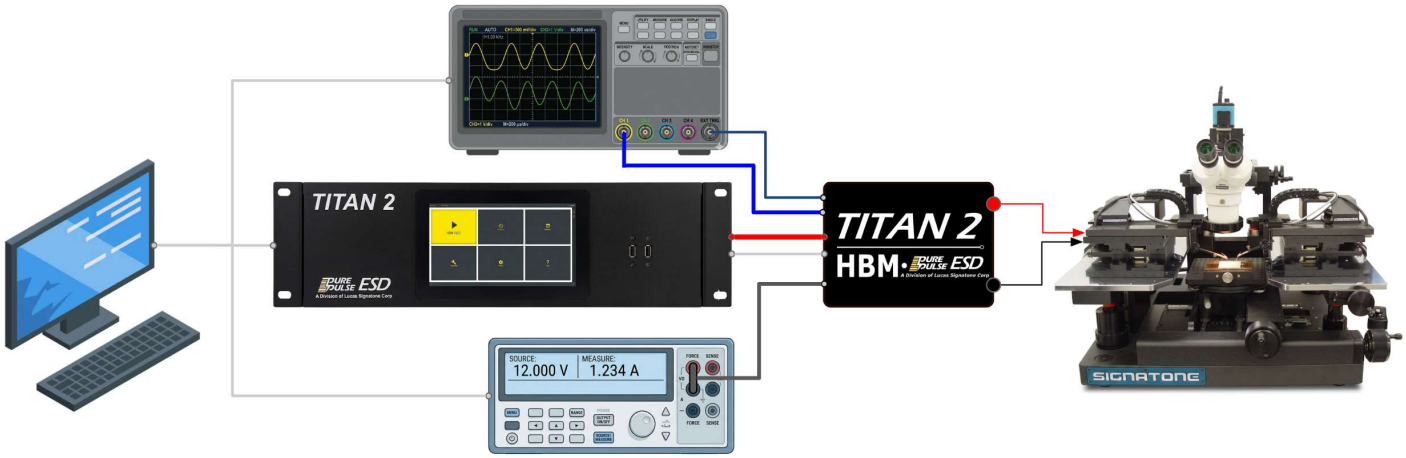
WITH SIGNATONE MANUAL PROBE STATIONS

HBM	±30 V to ±4,000 V
PROBE STATION	Bundled Signatone Probe Station (various models)



FULL AUTOMATION WITH SIGNATONE MOTORIZED PROBE STATIONS

HBM	±30 V to ±4,000 V
LEAKAGE	SMU dependent
CURRENT MEASURE	CT-2 Current Probe with Oscilloscope
MAESTRO CONTROL	Windows PC with PurePulse Maestro software
PROBE STATION	Signatone Semi-Auto Full Wafer with Vision Alignment, Motorized Positioners

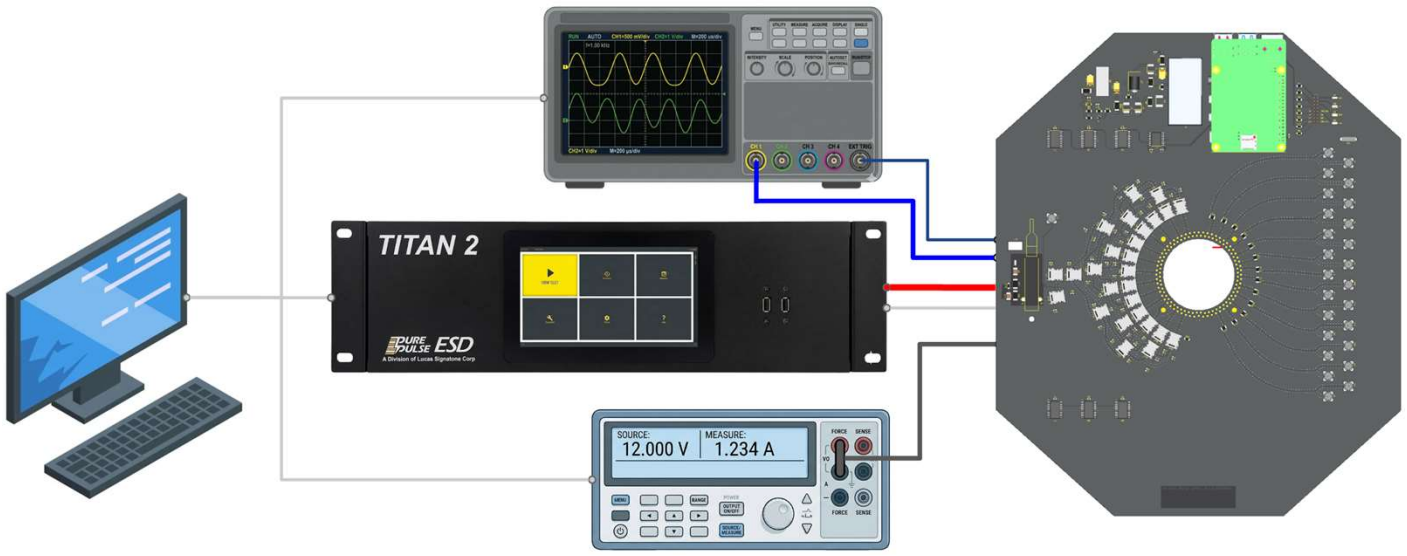


Configurations

TITAN 2
HBM ESD TEST SYSTEM

RELAY-SWITCHED AUTOMATION WITH GENUS RELAY BOARD

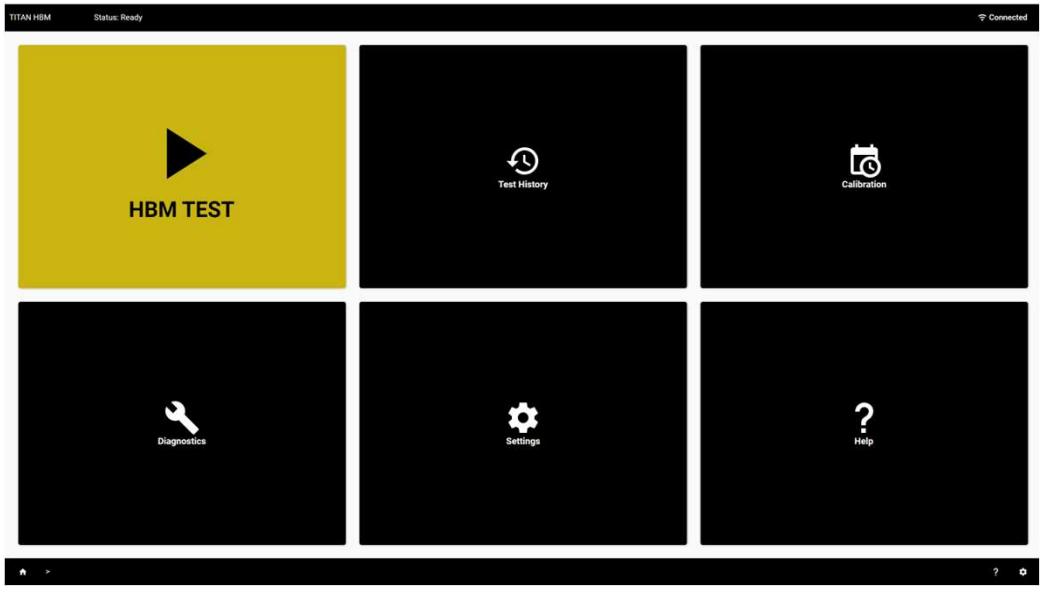
HBM	±30 V to ±4,000 V
LEAKAGE	SMU dependent
CURRENT MEASURE	CT-2 Current Probe with Oscilloscope
MAESTRO CONTROL	Windows PC with PurePulse Maestro software
RELAY MATRIX	Genus Board to automate testing of multiple pin combinations



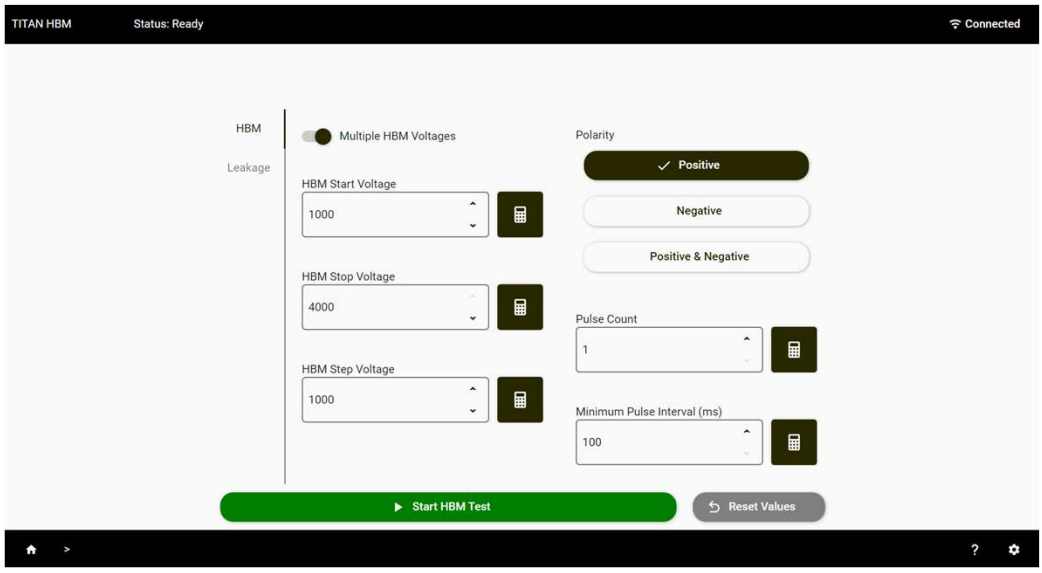
User Interface

TITAN 2
HBM ESD TEST SYSTEM

TITAN USER INTERFACE – Front Touch Panel Control



HBM TEST PARAMETERS – Simple Test Setup



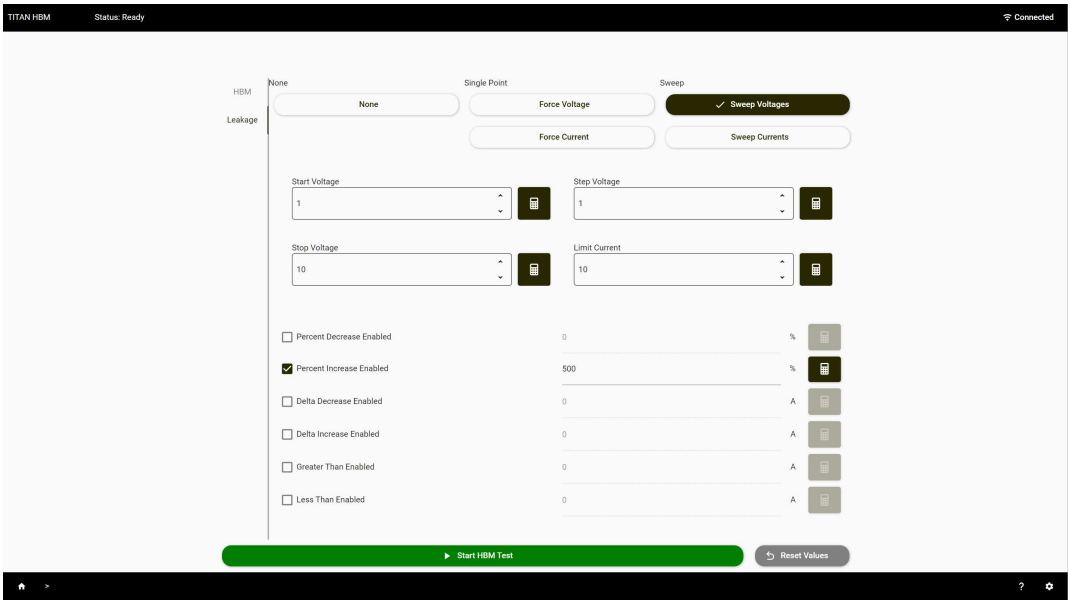
Live software demo in your browser:
https://titandemo.purepulseesd.com/

PurePulse ESD • A Division of Lucas Signatone Corp
www.purepulseesd.com • sales@purepulseesd.com • (408) 216-8364

User Interface

TITAN 2
HBM ESD TEST SYSTEM

LEAKAGE PARAMETERS – Select Failure Criteria



TEST EXECUTION – Pulsing and leakage measurement displayed in real time

Live software demo in your browser:
https://titandemo.purepulseesd.com/

PurePulse ESD • A Division of Lucas Signatone Corp
www.purepulseesd.com • sales@purepulseesd.com • (408) 216-8364

Wave Appraise

TITAN 2
HBM ESD TEST SYSTEM

WAVE APPRAISE – HBM Waveform Verification

WaveAppraise is a modern, efficient tool for analyzing HBM tester waveforms from virtually any source. It can be used independently to verify tester waveforms.

New Titan systems include 1 year of Wave Appraise Premium

WaveAppraise Features

Save Time

Significantly reduces the time on your routine waveform checks.

Open Source

Calculations are open-source for industry transparency & verification.

Easy to Use

Simple and easy to use. Imports waveforms quickly and efficiently.

Export Data

Exports to PDF reports, pictures or text.

Check your Data

WaveAppraise reports all of the critical data on your JS-001 and JS-002 waveforms.

Free Version

View and check your HBM and CDM waveforms with a free version.

https://www.purepulseesd.com/waveappraise