

# PurePulse Machine Model Module

## PurePulse Foundation

### “All Waveform” ESD System

A unified modular system that provides ALL 2-pin ESD testing for packaged parts, bare die, and wafer level devices.

*Expandable to provide comprehensive testing for Compliance to ESD Standards and Engineering Evaluation of design issues and new technologies.*

**PurePulse MM** is a member in the family of PurePulse waveform generators that includes:

- Human Body Model
- Transmission Line Pulse
- Very Fast Transmission Line Pulse
- Ultra Fast Transmission Line Pulse
- Human Metal Model

GTS Maestro software provides fully integrated control of the PurePulse device test platform, oscilloscope and source measurement unit (SMU), and optional probe station via a single, intuitive user interface.

Each PurePulse configuration comes with a multi-module signal routing subsystem. The PurePulse Smart Router routes the pulse generators to device test setups, including test fixture boards and probe needles, thus removing the need to change cabling when changing pulse types.

The Smart Router also provides and automates sensing connections of oscilloscope, DC and AC parametric test equipment for data collection.



## PurePulse MM Advantages

Precise stress testing at device, board, or wafer level

MM pulse generation for packaged and wafer device testing using cable and/or probe delivery

Meets the legacy specifications for machine model from JEDEC, ESD Association, and Automotive Electronics Council.

Member of the GTS PurePulse family of products

Flexible multi-waveform testing supported

Easy to use graphical interface software

Maestro control and analysis software

Compact desktop system

PurePulse system provides

Intelligent oscilloscope setting optimization with algorithms for noise reduction

Control of voltage stepping and pulse timing

Microprocessor based high voltage supply

Waveform recording and display

Network capable for data transfer

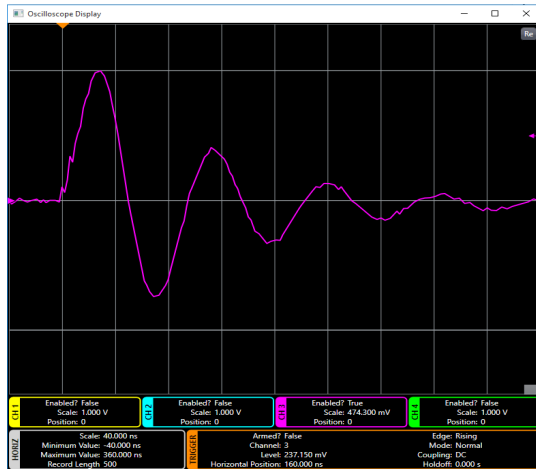
Optional automation with probe station and/or flying probes

Measure DC leakage and/or DC curve tracing with a high resolution Source Measure Unit (SMU) to detect device damage

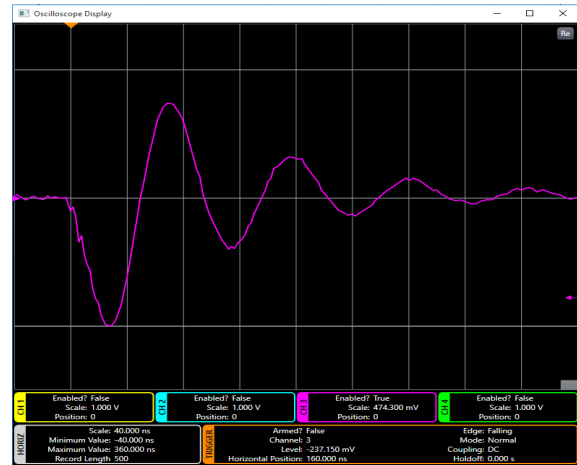
Performance backed by the GTS team with over 50 years of ESD test equipment design experience.

# PurePulse Machine Model Module

## TECHNICAL DETAILS



Sample positive current waveform



Sample negative current waveform

The PurePulse MM module has been carefully designed to apply stress pulses to ICs in a consistent and reproducible manner. Performance is optimized for packaged devices and sub-assemblies. The system incorporates a pulse generation method that can deliver MM pulses to your DUTs with minimal distortion in a repeatable manner.

As a member of the PurePulse family, the MM module can be combined with other pulse modules, such as Human Body Model (HBM), Transmission Line Pulse (TLP). The MM module meets the requirement of the ESDA STM 5.2-2012/JEDEC JESD22-A115C/AEC Q100-002 Rev-E Machine Model Standard.

## SPECIFICATIONS

<b>Voltage Range</b>	100 V to 400 V, positive, negative, or both
<b>Voltage Step Size</b>	1 V resolution
<b>Pulse Amplitude</b>	Peak current (IP1) is 17.5mA/V MM $\pm$ 15% into a short circuit
<b>Ring Frequency</b>	Between 11 and 16 MHz
<b>Pulse Monitoring</b>	MM pulse current signal is available from Smart Router for oscilloscope recording
<b>Power and Control</b>	Provided through GTS PurePulse platform (all-in-one PC with Maestro software, System Controller for high voltage, Gigabit Switch for PoE and 24V, and Smart Router)
<b>Size and Weight</b>	17.5" (w) x 14.5" (d) x 4" (h), 20 lbs

## OPTIONS

<b>Failure Detection</b>	Keithley 2400/2600 series SMUs to detect device failure
<b>Wafer Test Kit</b>	Probes and cables for micropositioners
<b>Pulse Recording</b>	Custom communication/control drivers for user's oscilloscope
<b>Voltage Range</b>	Voltages lower than the standards are available

*It's not how fast you test, it's how accurately you test fast!*

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