

Automating Memory Characterization

Manual methods of performing memory characterization are time consuming and error prone. More so, manual checks for errors and multiple regeneration of memory behavior requirement affect productivity and time-to-market. Designers need a tool that is capable of automating the process of characterization and verifying the memory based on required memory behavior.

Interra's Touchstone automates memory characterization to rapidly provide accurate timing and power models for simulation, verification, and synthesis. Touchstone enables designers to quickly and accurately validate memory architectures that are high in performance and low in power consumption.

Easily programmable, Touchstone comes as a user-friendly platform to describe and characterize memories. Further, Touchstone can be easily integrated with MC2, Interra's comprehensive memory development platform.

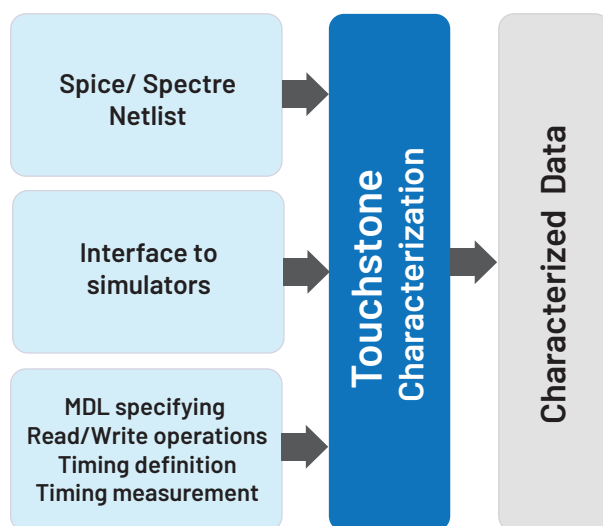
Touchstone is available on Linux platform.

Salient Features

- Performs Timing characterization and Power characterization
 - Supports Delay, Transition time, Setup, Hold, Recovery, Removal, Cycle time, and Pulse Width calculations.
 - Supports Bisection Method and Internal node delay difference method for constraint type timing parameters
 - Supports calculation of Dynamic, and leakage power, Supports Power calculation based on custom mathematical expressions
- Calculates capacitances, Rise and fall Currents
- Characterizes multiple PVT corners, multiple slewload pairs, and multiple configurations using single instruction file
- Measures setup, hold, delay, power, etc., for various slew load pairs of two or more participating signals
- Interfaces with third party simulators: HSPICE, HSIM, and SPECTRE
- Results can be generated in various formats: Tabular format (log file), raw data file format, Synopsys liberty format, or any custom format
- Functional Verification
- On the fly glitch calculation
- Graphical plotting utility to plot parameter trends as function of slew, loads and configuration parameters

Advantages

- Automates memory design and reduces manual effort in memory development
- Is independent of memory type
- Supports characterization instructions at a higher level of abstraction
- Supports parallel simulations
- Supports a modular and hierarchical mechanism for specifying memory operations for characterization
- Supports multiple simulators
- Can be easily integrated into the Design Flows and modified for user-specific requirements
- Comes with field-proven quality and tested processes that offer predictable quality
- Can be easily integrated with MC2 to provide a complete Memory Development Environment



TouchStone: Memory Characterization platform from Interra Systems

MDL: A proprietary language from Interra System to define tiling, netlisting, and characterization vectors