

MIDAS[©] 4500 Series Dynamic Burn-In Test System for Advanced Logic and Mixed Signal Testing Applications

The Reltech Limited 4500 Series test System offers a versatile and efficient approach to performing Reliability and Burn-In Testing of a wide range of advanced Logic and Mixed Signal devices.

The 4500 Series systems comprise of a high performance Burn-In chamber configured with either single or dual temperature zones. The system can also be configured with up to 12 Power Zones and 48 Signal Zones.

MIDAS[©] (Microprocessor based Data Acquisition System), is a conceptual approach to performing advanced and automated dynamic Burn-In and Reliability Testing of Logic, Microprocessor, Mixed Signal and S.O.C (System on Chip) devices.

MIDAS[©] provides a standardised and universal hardware and software platform. The MIDAS[©] Mother board contains functional modules, which can be easily changed, enabling fast and effective configuration for testing differing device technologies.

Designed and built by Reltech Limited, the MIDAS[©] driver hardware is built to rigid standards. The hardware provides up to eight 32 bit wide blocks (256 total) of signal I/O connections to the Burn-In Boards. The Burn-In Boards are uniquely identified and automatically interrogated and validated on insertion. I/O lines can be programmed for drive or monitor functions.

MIDAS[©] 4500 SYSTEM CONFIGURATION OPTIONS:

- 45148: 1 temperature Zone with 48 Burn-In Trays
- 45224: 2 temperature Zones with 24 Burn-In Trays per Zone
- 45412: 4 temperature Zones with 12 Burn-In Trays per Zone
- 2, 4 or 12 Power Zones per system utilising the unique MIDAS[©] Power Supply Unit providing 4 individually controlled outputs 0-8V @ 40 A (10A per board). Bulk Power Supplies can also be fitted for higher voltage and current testing applications.
- Burn-In Trays can be configured in signal zones in 4:1 or 1:1 BIB to Driver Ratios providing up to 48 Signal Zones per system.

KEY SYSTEM FEATURES:

- Local Control Console: Pentium[®] based computer running Windows[®] NT4 and MIDAS[©] software networked via TCP/IP bus allowing remote access and Driver functionality.

MIDAS[©] 4500 CHAMBER DETAILS:

- + 50 to +175 °C
- ± 0.2 °C Temperature Stability
- 48 Burn-In Trays per system
- Water cooling for rapid cool down and DUT dissipation control
- Rack mounted PC, Monitor & K/B
- ±2°C Temperature Gradient
- DUT Dissipation: 2500W per chamber
- Horizontal re-cycling airflow @ 3m/s
- 12 off Back-plane assemblies in 4:1 BIB to MIDAS[©] Driver Mode
- MIDAS[©] Operating Software



MIDAS[©] 4500 System

MODULAR DRIVER CARDS:

- Pattern Generator
- Sink/Source Current Drivers
- SRAM Fast Memory SIMM's
- CPLD modules controlling SRAM
- Embedded PC 104 Pentium Computer with Ethernet bus
- Analog Signal Generator
- Driver Cooling System
- MIDAS[©] DUT and Voh Power Supplies
- MIDAS[©] Driver Power Supplies
- MIDAS[©] Power Supply Modules provide up to 4 different DC voltage outputs regulated from a single AC source. Voltage levels are easily adjusted via the MIDAS[©] system software. As an option, rack mounted Power Supplies can be fitted to give up to 7 DC voltage outputs to the Burn-In Boards
- Sink/Source Current Driver modules: Easily changed to accommodate a wide range of currents and voltages

Meeting Your Demands for Reliability Assurance

- Fast Memory SIMM: A conventional 72-pin SIMM Socket contains high-speed SRAM devices. Standard depth is 128K depth memory. Test pattern width and depth can be software configured to suit users requirement.
- SIMM Interface & Drive: SRAM control is performed by Complex Programmable Logic Devices (CPLD's). These are re-programmable in situ to cater for new devices and functions. The Dynamic Allocation of RAM allowing a different width x depth set, is also available.
- Embedded PC104 Pentium Computer with Ethernet: This device provides the speed and capability to manipulate large amounts of data. The software uses a TCP/IP (Transmission Control Protocol/Internet Protocol) stack over the operating system. TCP/IP is a networking standard protocol that provides for the interconnection and operation of computer systems over Intranet and Internet resources.
- Remote Control: This facility delivers the same functionality as the local console when attached to a local area network (LAN). This function is available as an optional facility.

KEY SYSTEM PARAMETERS:

Pattern Generator/Driver Board

- 1:1 or 4:1 Signal Zones
- 2 Clocks up to 40MHz
- 32 to 256 (5 x 32 bit) 20MHz Vector Channels with 25nS resolution. 128K depth as standard. 2M optional
- 7 Sub Vectors up to 40MHz with 25nS resolution
- 64 Individual pages (time sets) of sub vectors
- Voh 0.5v to 15.0v
- 16 Bit Vector hold
- 500mA Static Sink/Source drive
- Multi-event initialisation/refresh cycling
- Loop count and elapsed time control
- Vector Tri-state programming in groups of 32 Bits
- Multi Voh programming in groups of 32 bits

DUT Power Supplies

- Up to 12 Power Zones per System
- MIDAS© PSU Modules or Rack Mounted Power Supplies
- V1, V2, V3, and Voh. 0v to 8v @10A/BIB (V4, v5 & V6 are optional)

Key MIDAS© Software Functions

- Windows®NT4 based
- Graphical representation of system components
- BIB/DUT type recognition initiating programme and PSU set up
- Modular object oriented software
- Remote or local control and set up
- Database capability for BIB identification, Lot tracking and equipment status
- Test pattern programming via:
 - Text File programme
 - ATE test programme conversion
 - Graphical Waveform Editor - "EDDY"
- System and optional DUT level monitoring
- Set chamber temperature
- System diagnostics

MIDAS© Analog Signal Generator

- Up to 20MHz signals
- Sine, Triangle, sawtooth, square o/p's
- Programmable 400MHz clock line
- External 75 ohm Video signal i/p
- MIDAS© software controlled

MIDAS© Monitoring functions

- BIB and Zone level Voltage and current monitoring
- Over voltage and current alarm
- 10 point chamber temperature monitoring
- "Wait for set temperature" before bias to DUT's
- Burn-In Lot Time-out

Specifications are subject to change without notice. The information contained in this Data Sheet is a guide to the performance specification of the system or systems described and shall not be construed to represent any part of a contract or order.

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