NTS3700 Flash Memory Endurance Cycling System

- 3 Environmental Chambers
  - Chamber 1 Ambient to +150°C
  - Chamber 2 Ambient to +150°C
  - Chamber 3 -55°C to +150°C
- 4 Electrical Zones per Chamber
- 12 Independent Zone Controllers
- Algorithmic Pattern Generator
- Windows NT Host Platform
- 768 Device Capacity
- Self Contained Cooling Compressor
- C++ Test Language
- Engineering and Production Modes
- World Wide Customer Acceptance

NTS3700 APPLICATIONS

- Program / Erase Endurance Cycling
- Measure Vt Levels and Shifts
- Generate Vt Histogram Plots
- Determine Endurance at Hot/Cold Temperatures
- Detect Cell Disturb Phenomenon
- DC Stress
- Temperature Stress
- Qualify New Flash Device
- Qualify New Fabrication Process
- Qualify New Fabrication Plane
- Qualify New package
- Optimize Flash Device Design
- Fabrication Plant Process Monitor
- Competitor Evaluation Tool

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- **DEVICES SUPPORTED**
  - FLASH, $E^2$PROM, Serial $E^2$ and Other Typical NVM (NOR, NAND, DiNOR, AND)
  - High Density Packaging, PC Card (PCMCIA)
  - Embedded FLASH Micro-controllers, FLASH Test Vehicle Devices

- **SOCKET BOARD**
  - Up to 64 Devices Per Socket Board Typical
  - Limited by Mechanical Size of Device Socket

- **ADDRESS**
  - Software Based Algorithmic Address Generator
  - 28 Address Lines (Address / Data Mux)

- **DATA**
  - Algorithmically Generated
  - 64 Bit Wide System Data Bus - X1 X8 X16 Device I/O Operation Standard X32, X64 Bit I/O Available With Custom Applications Program

- **FAIL DATA**
  - Comparator With Programmable Reference

- **AFC** (Accumulated Fail Counter)
  - Counts Number of Failures For All DUT’s in the System

- **CONTROL LINES**
  - 64 Individual Chip Enables, 8 OE Lines, 1 WE Line,
  - 4 General Purpose Bi-directional Control Lines
  - 24 Additional Control Lines Available with Option Upgrade

- **POWER SUPPLIES**
  - **V1 (Vcc)**: 0 to +9V 10A Per Socket Board 5mv Resolution
  - **V2 (Vpp)**: 0 to +25V 5A Per Socket Board 15mv Resolution
  - **VsF**: -4V to +20V 200ma Per Socket Board 5mv Resolution
  - **Vih/Vll**: -2V to +7V 5mv Resolution
  - **Vout**: -5V to +9V 10mv Resolution (DUT Data Verify Comparator Voltage)

- **POWER SUPPLY OPTION UPGRADE**
  - **XRB (Extended Resource Option Board)** Provides 6 Additional Programmable Power Supplies

  - **V3**: -15V to +20V 1A (5A Peak) 10mv Res
  - **V4**: -15V to +20V 1A (5A Peak) 10mv Res
  - **V5**: -15V to +20V 1A (2A Peak) 10mv Res
  - **V6**: -15V to +20V 1A (2A Peak) 10mv Res
  - **V7**: -15V to +20V 1A (2A Peak) 10mv Res
  - **V8**: -15V to +20V 1A (2A Peak) 10mv Res
NTS3700 Flash Memory Endurance Cycling System

➢ SOFTWARE
  ● Windows NT Server Host Environment
  ● Test Language, C++
  ● Novtek Developed C++ Function Library for Tester and Pattern Generator Control
  ● Parameter File Allows For Quick Changes To Parameters and Program Limits Without the Need to Recompile

➢ COMPUTERS
  ● Controller, Pentium, DOS, 1 Controller per Driver Module
  ● Host, Pentium, Windows NT/Server Host  
    - Ethernet Link to All Zone Controllers
    - Windows GUI For All Development and User Interface Operations

➢ CYCLING ZONES
  ● Each Driver Module Is Connected to a Dedicated Pentium Controller.

➢ OPTION UPGRADE

  The following Additional Resources can be Installed
  ● 6 DUT Power Supplies
  ● 24 Additional Control Lines
  ● Programmable Oscillator, Selectable Ranges from 2 MHz to 20 MHz
  ● Pulse Generator, 100ns to 3.2ms in 50ns Steps
  ● Custom Resources can be Designed and Added to the System via the Option Slot