

Problem Overview

Micron Technology Inc. desires a PC Based SDRAM (*Synchronous Dynamic Random Access Memory*) tester. The PC based tester will provide a portable, inexpensive alternative to the Micromate, Micron's current SDRAM test unit. The design must consist of both hardware and software interfaces for verifying the functionality of a 64 Meg SDRAM. The SDRAM tester must be user friendly and display a graphical representation of the memory array. The GUI must also display passing and failing memory locations. The Windows-based GUI must display the memory array locations in raster and text formats. The GUI must also display the voltage and current supplied to the SDRAM chip. The PC based tester must be executed under a Microsoft Windows NT environment.

The PC based SDRAM tester must have the ability to allow the user the option of writing various test patterns in checking for SDRAM failures. The user must be able to control the voltage via hardware, and monitor both the current and voltage into the SDRAM using the GUI display. The test unit must have the capability of being powered externally via battery and/or ac adapter. The visual block diagram shown below models the hardware and software interface and functionality.