

Firmware & Schematics on Diskette!

The diskette accompanying *The Embedded PC's ISA Bus* by Ed Nisley contains all the C and Assembler firmware from the book, with **complete source listings and executable files**:

- **Boot loaders** for your embedded PC programs
 - Boot programs directly from a DOS diskette, without using DOS
 - Start during power-up from code in EPROM or nonvolatile RAM
- **Sample firmware** programs
 - Use ordinary COM files or EXE files converted to binary
 - Generate embedded programs with familiar DOS/Windows compilers!*
 - Hardware interrupt handlers that produce timing trace signals
 - Non-maskable interrupt handlers for hardware error detection
 - BIOS extensions written in Assembler or C
 - Build a no-moving-parts embedded PC from a standard system board!*
 - Real-Time Clock interrupts and alarms using BIOS functions
 - Unique hardware serial numbers for positive identification
 - Direct character LCD interfaces for text and graphic LCD panels
 - Using the PC's Worst Hack
 - ANSI cursor control sequence decoder
- **Hardware diagnostics** that check out your construction
 - A parallel port circuit with LEDs, trace outputs, and switch inputs
 - ISA bus data buffers and I/O address decoders
 - 16-bit LED digit display and switch input ports for simple digital I/O
 - 82C54 programmable timers for periodic interrupts and hardware control
 - ISA bus memory circuits:
 - EPROM for low-cost program storage
 - EEPROM for data logging and on-the-fly program updates
 - Battery-backed RAM with firmware write protection
 - A watchdog timer that detects program lockups
 - A power monitor that ensures proper shutdown after detecting a glitch
 - Dot-drawing and text routines for a big, bitmapped graphic LCD panel
- **Measurement firmware**
 - I/O wait state adjustment to show the effect of slow ISA bus cycles
 - ISA bus memory and I/O access times
 - Hardware interrupt response time measurement
 - Non-maskable interrupt sources and conditions
- **...and much more!**

The diskette also includes **complete schematics** for all the ISA bus hardware projects. You can import the TIFF files into your graphics program or word processor, then print them out in one piece for easy reference. See the Schematics appendix for a preview!