S-TEK INC.
ENGINEERING SERVICES

S-Tek provides a complete mechanical/electronic design package for your product including:

1. Complete turn-key product engineering and design: from generating an initial "wish list" of product features and specifications; through product production and testing.

2. Suggest methods for integrating product mechanics and electronic controls to cost reduce product and offer more product features/functions at lower cost.

3. Iterative review and design modification alternatives.

4. Clear project phases, sign-off objectives and milestones.

5. Proto-types: Proof-of-concept and pre-production; design, build, testing, verification and review.

6. Written product or control module specifications.

7. Complete project engineering documentation including: (Mechanical)- Pro-E or SolidWorks, mechanical part and assembly drawings; (Electrical)-Schematic diagrams; Gerber files for PCB foil layout, PCB component layout, PCB solder mask, PCB drill drawing; Assembly hook-up diagram; Bill-of-Material; Operation descriptions; Logic equations; Flow diagrams; Software; MPLAB, Assembler, C, Source Code (complete step annotation, operating partitions), Source Code Listing, Hex code file, etc.

8. Obtain module quotes from both domestic and far East sources.

9. Vendor evaluation for level of expertise and ability to produce quality modules on time.

10. Design of Test Fixtures for incoming inspection, production, service.

11. Product design evaluation including: U.L./CSA/etc. compliance; proper material selection; circuit safety design; component ratings; fail-safe analysis.

12. Technical patent write-up including: Abstract; Background of Invention; Technical description; Operation block diagrams; Operation flow diagrams; Suggested Claims.

13. Evaluating Engineering Personnel and Staff Capabilities.

14. Evaluating Product Concepts and Engineering approach to product design.

S-Tek strives to give you the correct solution to your design problems with full documentation and support. We offer all of the above services and more as you require. The fee structure is flexible and can be based upon: flat per hour rate, $85.00/hour, (longer term projects qualify for a 20% lower hourly rate($69.00/hour)); lower per hour rate plus royalty; total project fee; total project fee plus royalty; or other mutually agreeable terms. Each project has clear written objectives (phases) with management review and sign-offs at each step of the design process. This allows the customer to maintain strict control over the progress and accountability of the project.

S-Tek, Inc. - Designed PIC16F876A based I2C interface board.
The single chip, interface board operated a 16-character, x 2-line LCD module, status LED, and enabled 256 bytes of EEPROM R/W, flash memory storage, in the PIC. The interface to the motherboard was accomplished via an I2C connection. The PIC16F876A had a custom address to allow many other standard I2C components to be used on the same bus. Firmware allowed I2C codes to be sent that would write either function or CGRAM data, to the LCD module. The PIC wrote to the LCD module using a 7-line (3-control, 4-high/low nibble) interface. An adjustable contrast voltage pot was included to enhance the display contrast under varying temperature and supply voltage conditions. Other codes permitted the status LED to be "OFF", "ON", "SLOW BLINK", or "FAST BLINK", to indicate different status conditions of the server. The 256 bytes of EEPROM memory in the PIC could be written tp in 16 byte blocks, or read out from1 to all 256 bytes. The project was completed in seven weeks, on time, and on budget.

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