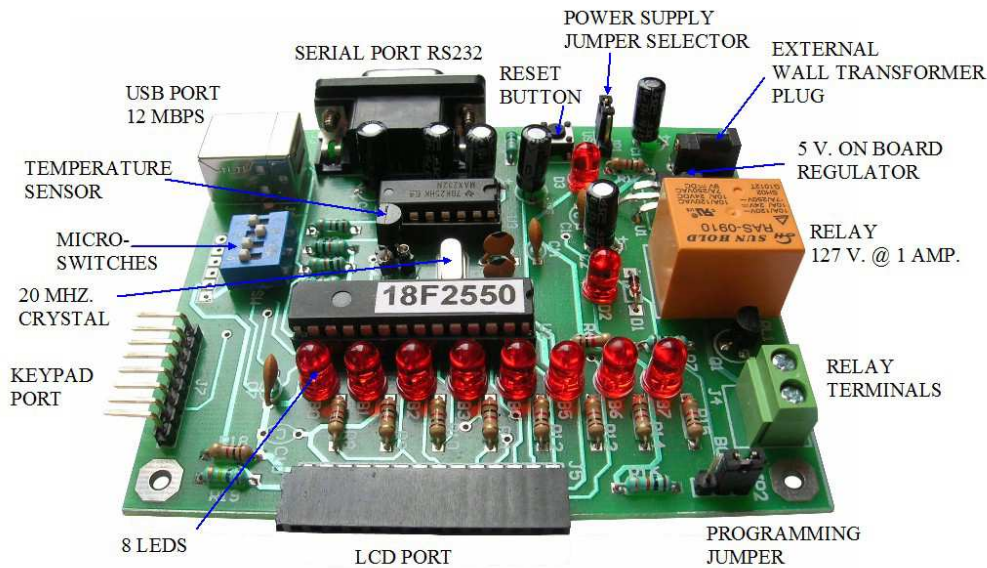


BOLT 18F2550 MICROCONTROLLER SYSTEM



HARDWARE:

- **Microcontroller:** 18F2550-I/SP Microchip, multifunction, high-performance, 28-pin DIP, operating at 20 MHz external crystal. Effective speed of 48 MHz, thanks to on-chip PLL multipliers. Harvard architecture, with RISC set of 75 instructions. Word length of 16 bits in code memory.
- **USB Port:** integrated to chip, v.2.0 compatible, 12 Mb/s. 18F2550 programming from the PC or Laptop via this port.
- **Power supply:** 5 volts directly from the USB port or an external wall transformer. Includes 5v. on board regulator.
- **Firmware bootloader:** preloaded, allows self-programming of FLASH memory through Bolt v.1.0.1 software.
- **Memory:** 32K bytes (16K words of 16 bits) FLASH, 2K bytes of RAM, 256 bytes of EEPROM.
- **Testing devices:** 8 leds connected as witnesses and 4 microswitches for emulation of digital inputs.
- **Input/Output Ports:** A total of 21 bits programmable as inputs or outputs. 25 ma. output sink or source.
- **Relay:** 127 VAC @ 1A, integrated into the card connector for triggering external devices.
- **Digital temperature sensor:** DS18B20, with a resolution of 0.1 degrees Celsius, integrated into the module.
- **Timers:** A total of 4, 8 and 16 bits for the generation of delays, real-time clock or event counters.
- **USART serial port:** for asynchronous communication, with standard RS232 interface and DB9 connector output.
- **Synchronous Serial Port:** SSP (Serial Port Synchronous) with 2 modes, SPI Master/Slave mode and I2C Slave Mode.
- **PWM (Pulse Wide Modulation):** 2 special outputs to generate PWM with 10 bit resolution.
- **A/D conversion channels:** a total of 10 channels of analog-digital conversion with 10 bit resolution.
- **LCD display port:** 14-pin, 8 data bits, for connection to standard LCD displays 16x1 or 16x2.
- **Keypad port:** 8-pin to 16-key matrix keypad. 6x auxiliary header for further expansion.
- **Special Features:** Watch Dog to prevent the microcontroller is out of operation. Brown Out protection circuit reset, which generates an automatic reset when detecting peaks in the 5v. voltage. Low Power Mode SLEEP.
- **System interrupts:** generated from multiple devices, including the state change from inputs in ports, timers, USART, writing in EEPROM and 3 external interrupts.
- **Consumption:** nanoWatt technology with very low consumption, <60 ma. @ 5 volts.
- **Dimensions:** 8 x 9.5 cms. Printed circuit board, fiberglass, Thru Hole.

SOFTWARE ON CD:

- **MPLAB IDE v.8.63** for any Windows platform, integrated development tool, which includes built-in editor, macroassembler, simulator and C language compiler.
- **C18 Compiler v.3.40** and HiTech C compiler which can be integrated into the MPAB IDE environment.
- **Software v.1.0.1**, compatible with Windows 7, 64 and 32 bit and Vista or XP, for FLASH memory programming of 18F2550 in Bolt card, through its USB port.
- **Projects and test programs** for each of the Bolt module interfaces and functions.
- **Set of complete C libraries**, functions, and projects, for fast development of applications.