Expansion Board
REV2.0 “Tarantula”

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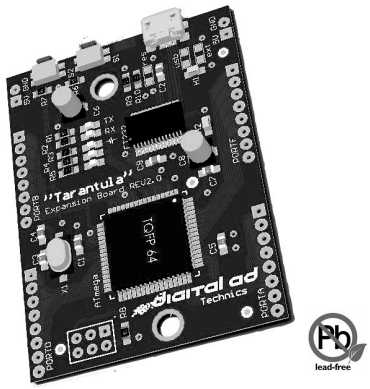
Features

- Atmel® AVR® ATmega128 MCU
- 16MHz oscillator
- AVR® In System Programming header
- FT232 USB-to-UART bridge
- Micro USB connector
- 2x tactile switches and 3x LEDs
- 5V USB or extern power selection
- 4x 8-bit general purpose ports
- Designed to fit a breadboard
- 60x40mm PCB size



Applications

- Interface for connecting lower-level hardware to a high-end computer
- Small processor circuit for embedded systems

Description

The circuit is build around Atmel’s ATmega128. 4 Of the microcontroller’s I/O ports are brought to the edge of the PCB on 8x1 headers, so all features described in the Atmega128’s datasheet concerning those ports are fully available for any use. These ports are PORTA (GPIO/External memory interface), PORTB (GPIO/PWM/SPI, I2C), PORTD (GPIO/External interrupt/UART/TWI) and PORTF. Connected to PORTE are 3 LEDs (PE3, PE4, PE5) and 2 buttons (PE6, PE7) to give basic possibilities for onboard I/O, and the UART-to-USB bridge (PE0, PE1 / UART0). The UART-to-USB bridge is connected to the micro USB header, and has 2 LEDs indicating RX and TX activity by default.

The microcontroller’s analoge power is extra decoupled from the digital power. The power source is selectable between 5V from USB (for smaller, low current applications) and 5V external from the 2x1 headers. With the crystal oscillator connected to XTAL1 and XTAL2, clockspeeds from 1MHz up to 16MHz are selectable. The microcontroller’s EEPROM and flash memory is programmable through the AVR ISP 3x2 header.