Using μCs for EDP

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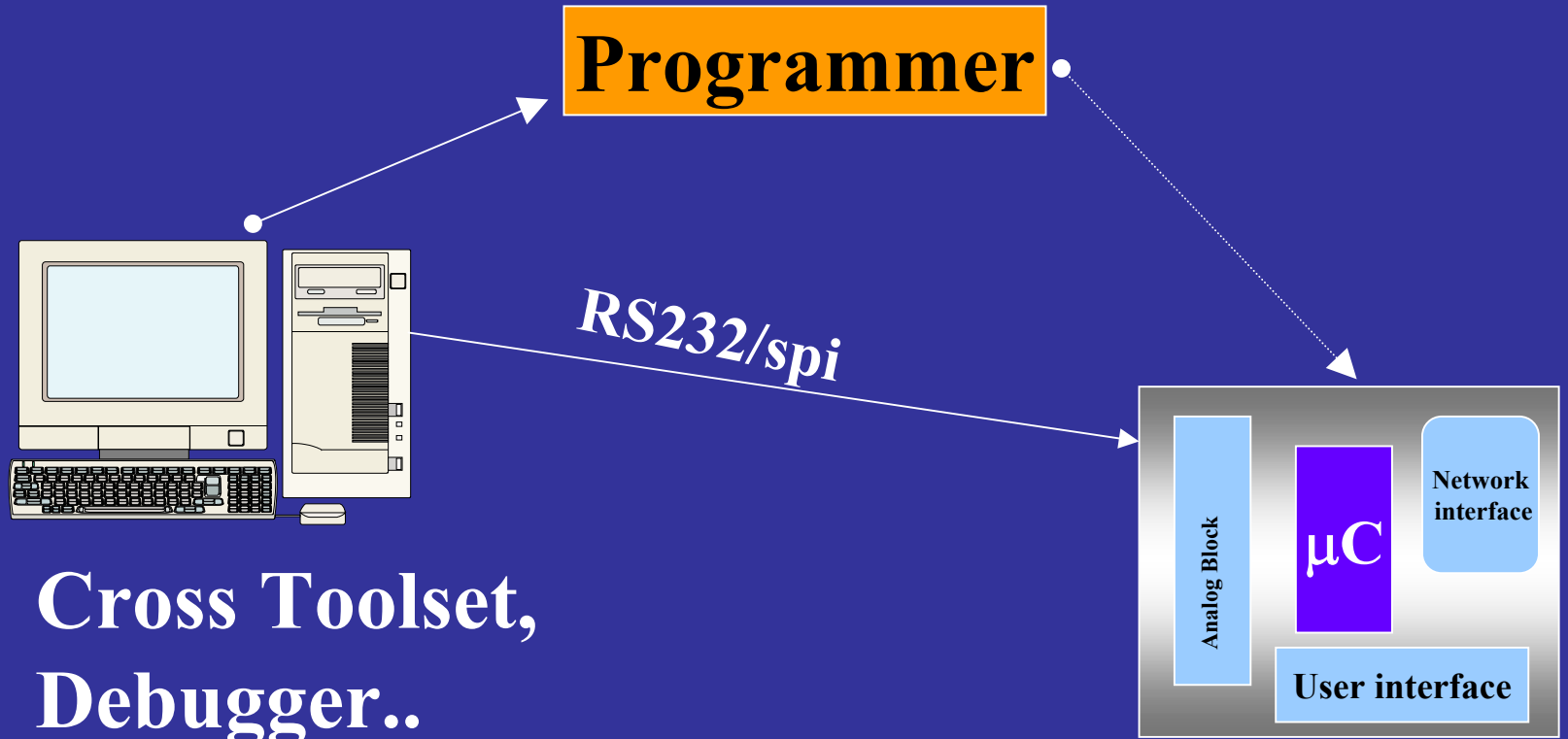
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Embedded System

Your projects' possible look:

Analog Block

µC

Network interface

User interface

Programming

Programmer

RS232/spi

Cross Toolset, Debugger..

Analog Block

μC

Network interface

User interface
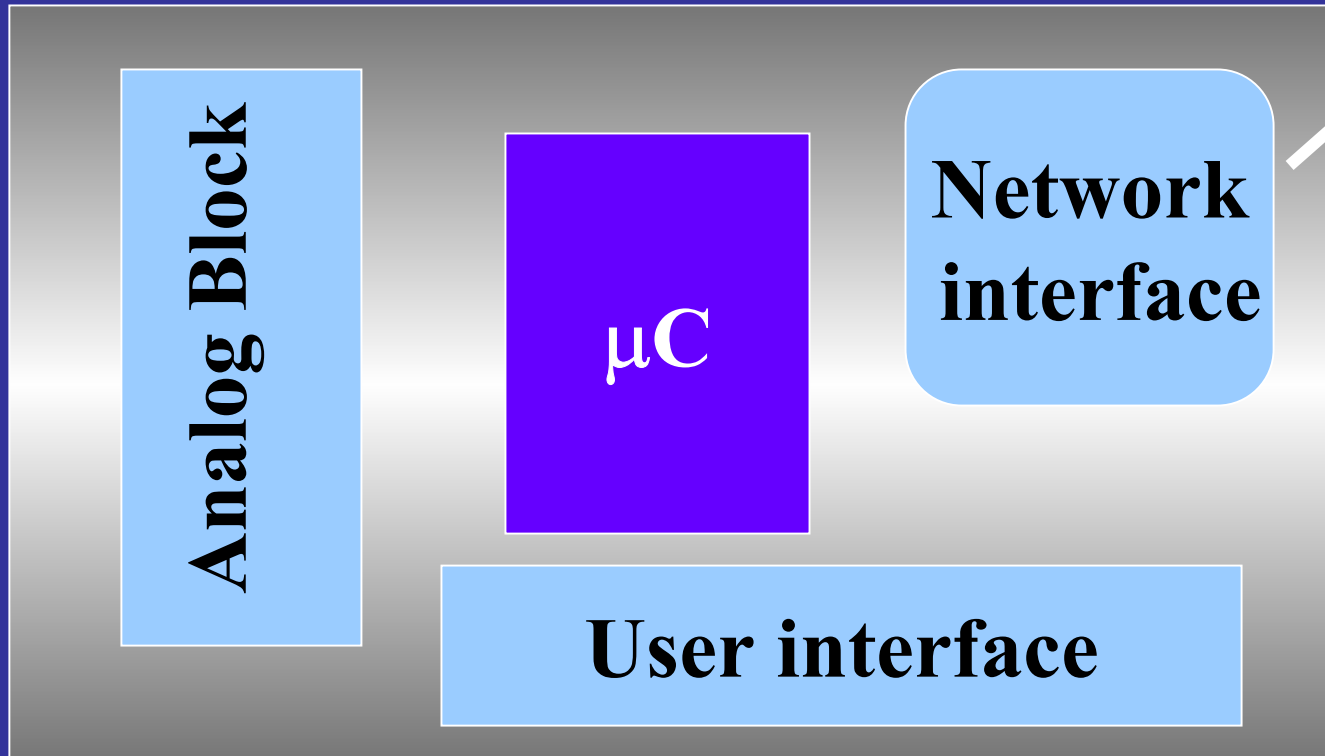
Target brd.

Modulewise Assembly and testing!

- Microcontroller chip should be <u>first</u>
  - Check for PCB errors BEFORE starting soldering!
  - make small test program like blinking led
  - then get the UI running
- Soldering next-module Precautions
  - remove mcu from socket to avoid damage, (static etc..)

Debugging

- **Power Supply ON PINS**
- **Check Heartbeat ! (ALE) for 805x (square wave)**
- **Write Many Test Programs**
  - **Blink**
  - **Switchboard test**
  - **Serial test**

COMMON ERRORS

- **Use ONLY 33pf on Crystal**
- **PSEN**
- **Crystal is fragile**
- **for 89c2051**
  - **Pwr ON Reset R > 60 K!** (read datasheet)

TIPS

- USE resistor SIP (single inline pack) to PULL UP

- DISABLE ALL UNUSED Interrupts

- Use a 10 µ F cap. across the ADC supply

- Put many Status Indicator LEDs on the board
  (helps A LOT in debugging and knowing if your software is working or not)

- disable watchdog timer initially and get the system running

- EACH DIGITAL CHIP SHOULD HAVE A DECOUPLING CAPACITOR near it, accros pwr. supply. (good design practice) [0.1 µF]