



# Familia de Microcontrolere AVR (ATMEL)

- I. Nucleul Microcontrolerului
- II. Setul de regiștri

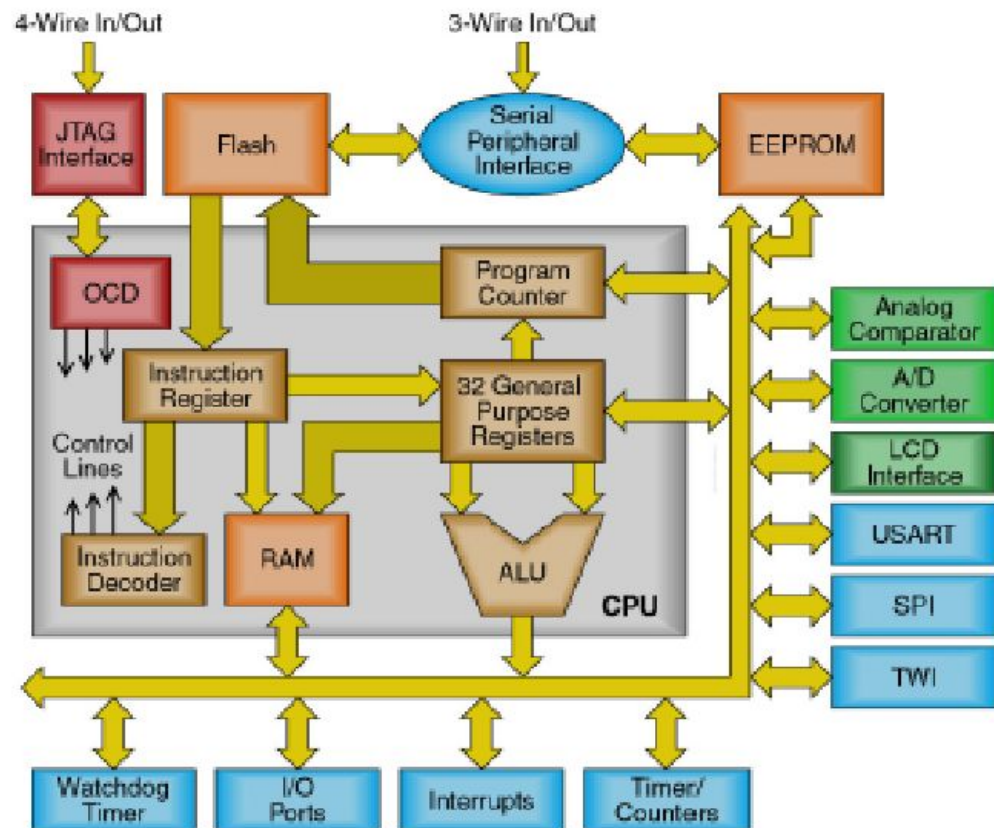


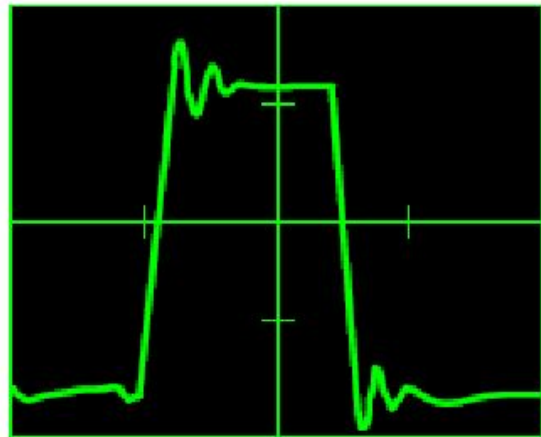


- High performance
- Low power consumption
- High code density
- Advanced memory technology
- High integration

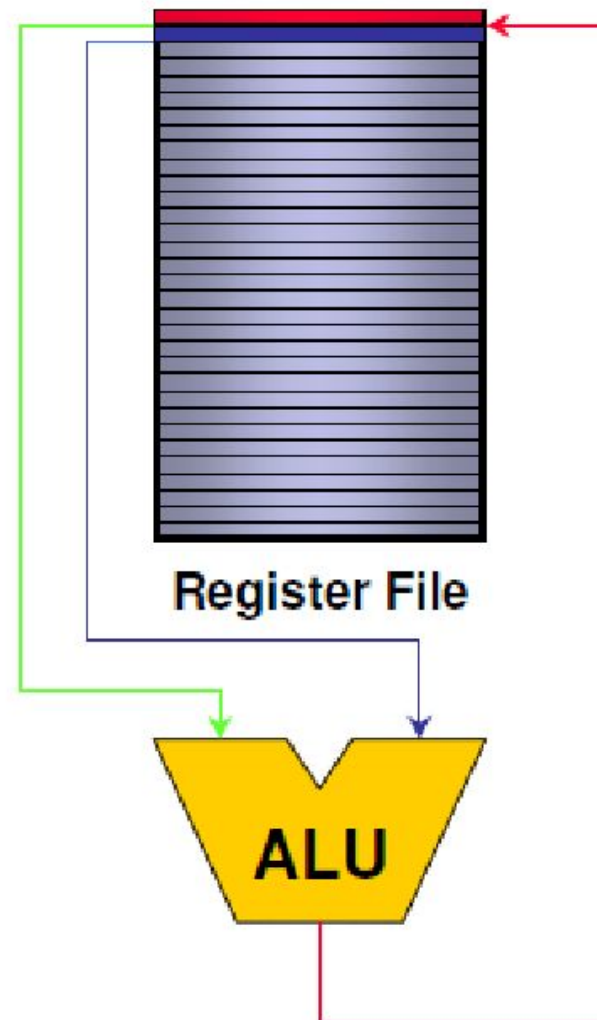
= Leading 8-bit microcontroller

- RISC architecture with CISC instruction set
  - Powerful instruction set for C and Assembly
- Scalable
  - Same powerful AVR core in all devices
- Single cycle execution
  - One instruction per external clock
  - Low power consumption
- 32 Working Registers
  - All Directly connected to ALU!
- Very efficient core
  - 20 MIPS @ 20MHz
- High System Level Integration
  - Lowest total system cost





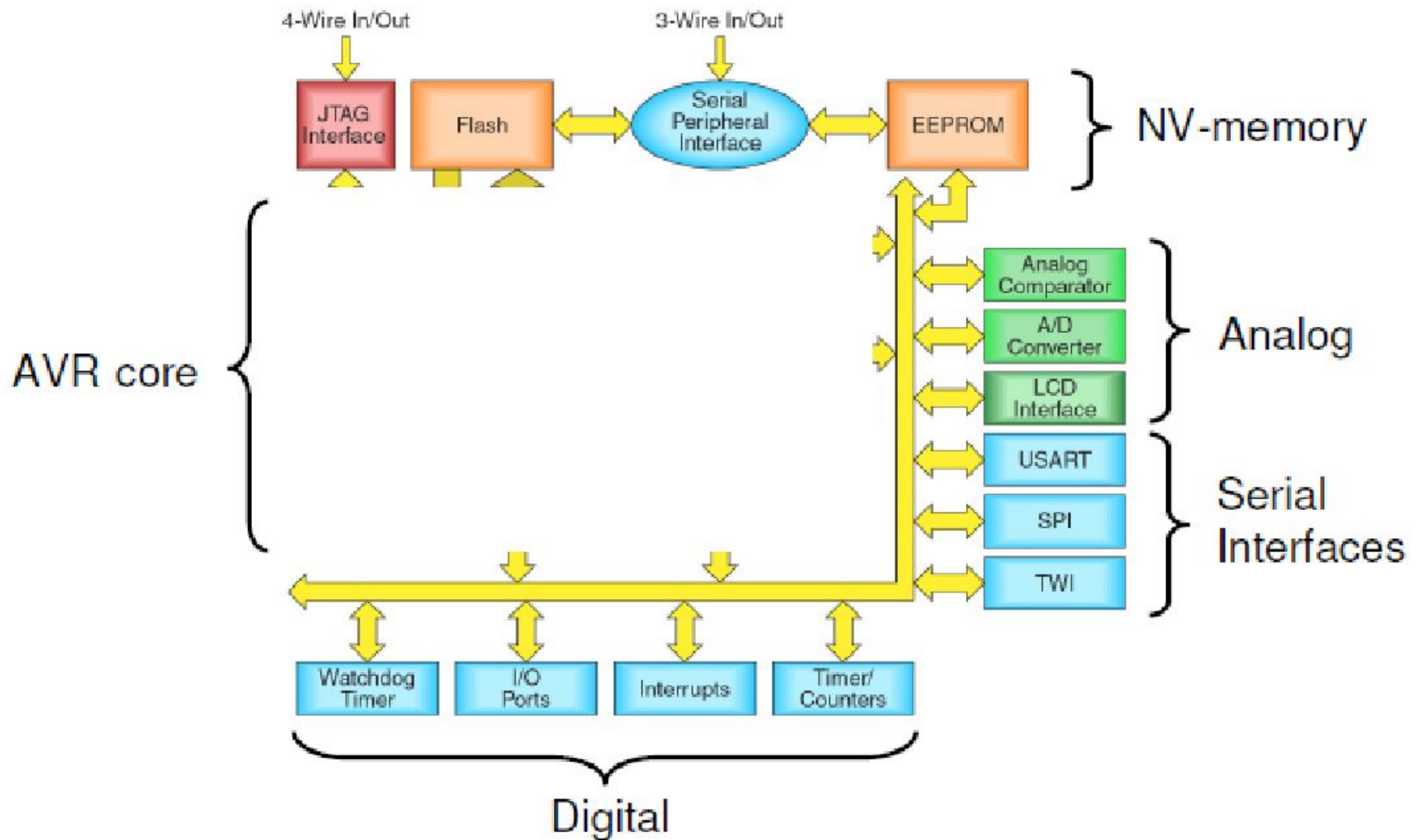
Register operations  
take **ONE** clock pulse  
on the **EXTERNAL** clock  
input

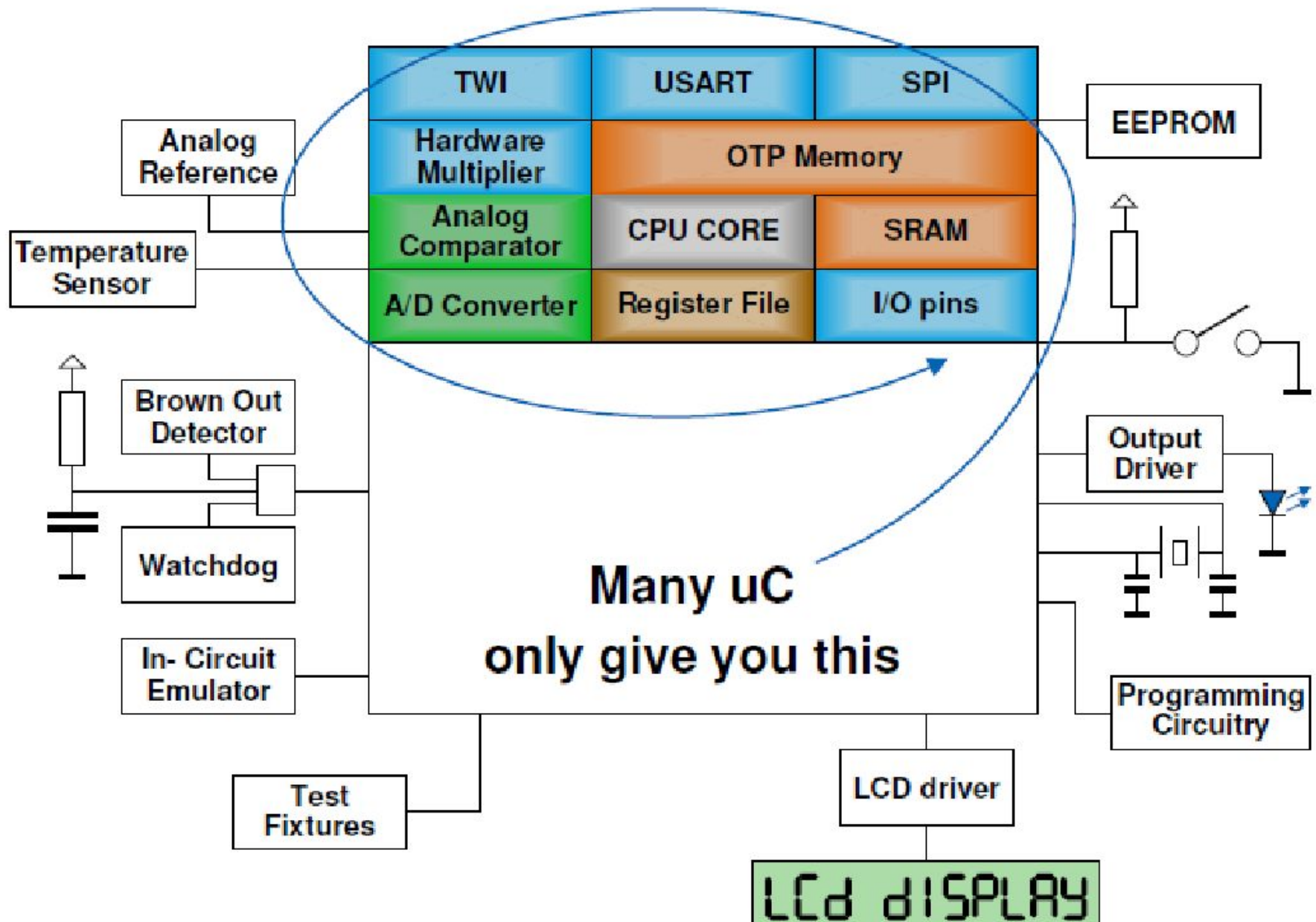


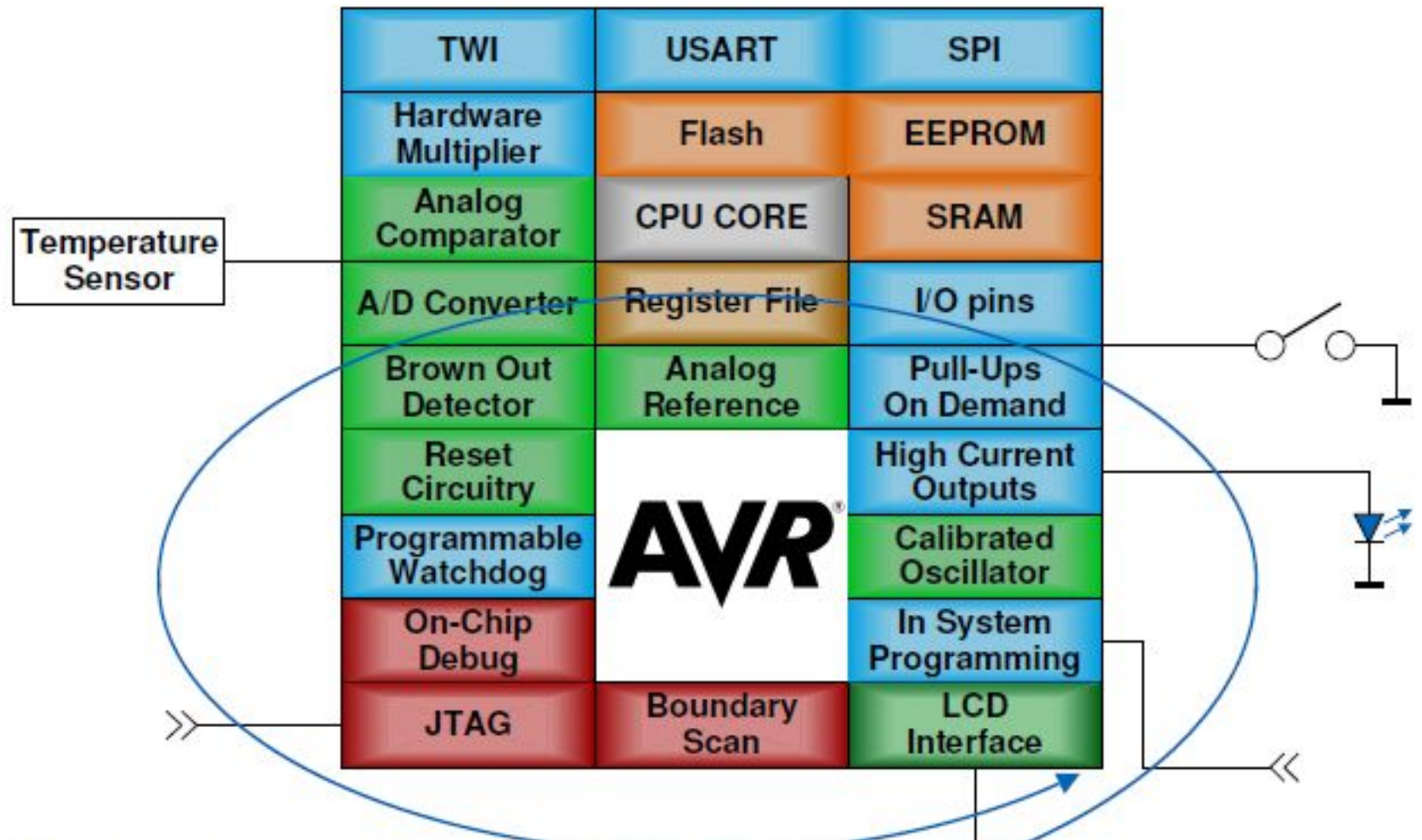
**20MIPS @ 20MHz**

- Architecture designed for C
- 32 general registers
- C-like addressing modes
- 16- and 32-bit arithmetic support
- Linear address maps







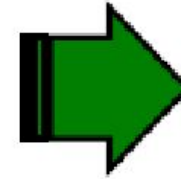
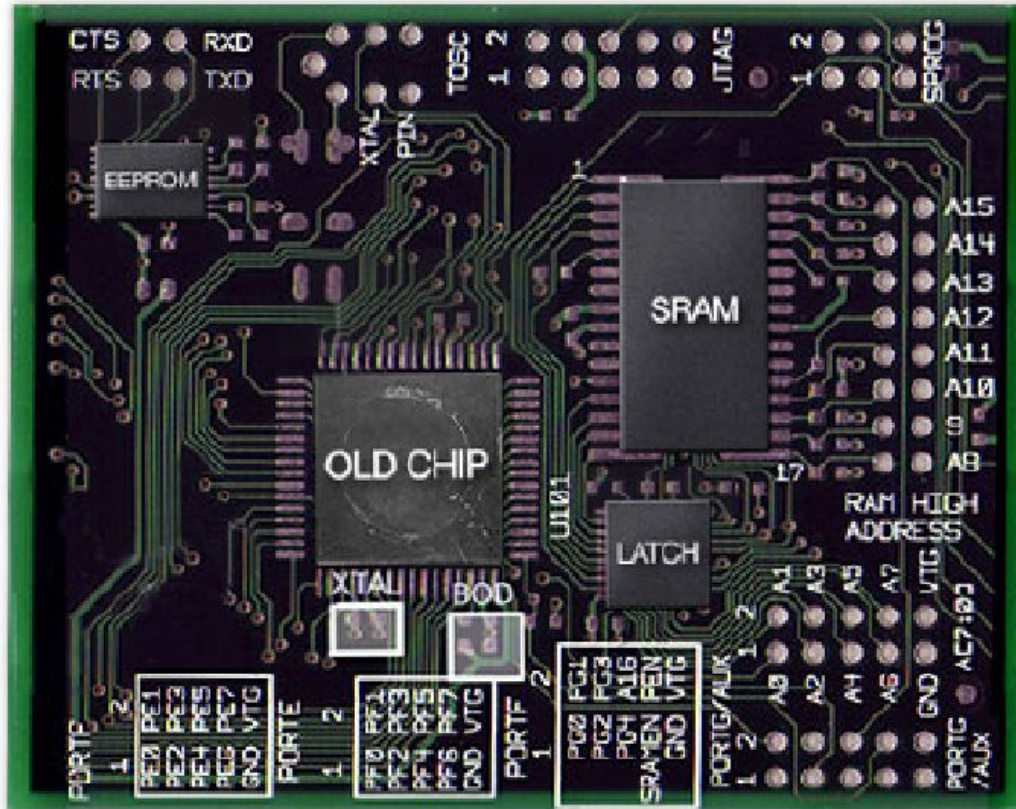


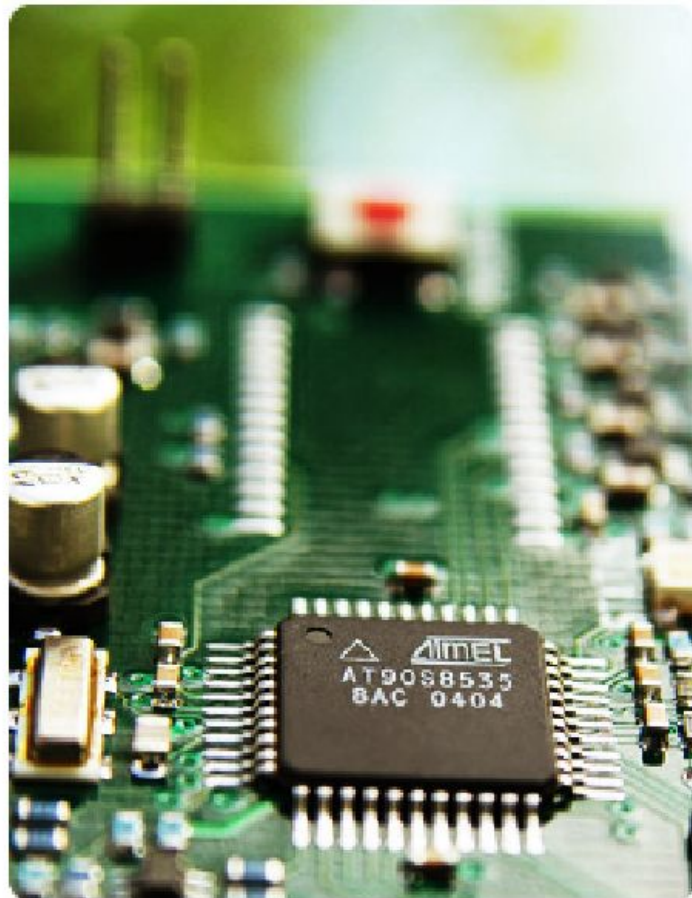
**AVR Integrates Much More!**

LCD DISPLAY



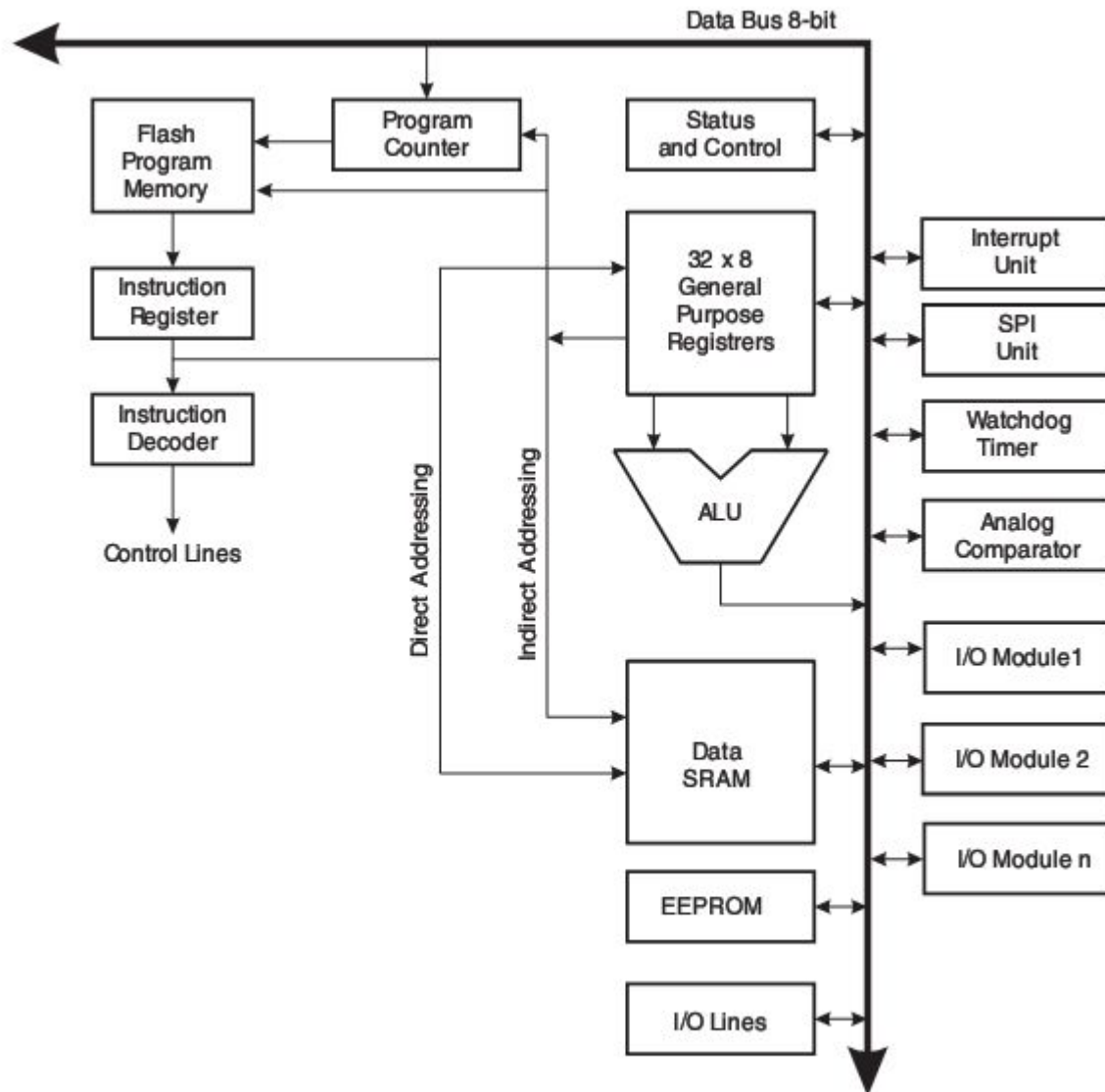
# Highest System Level Integration





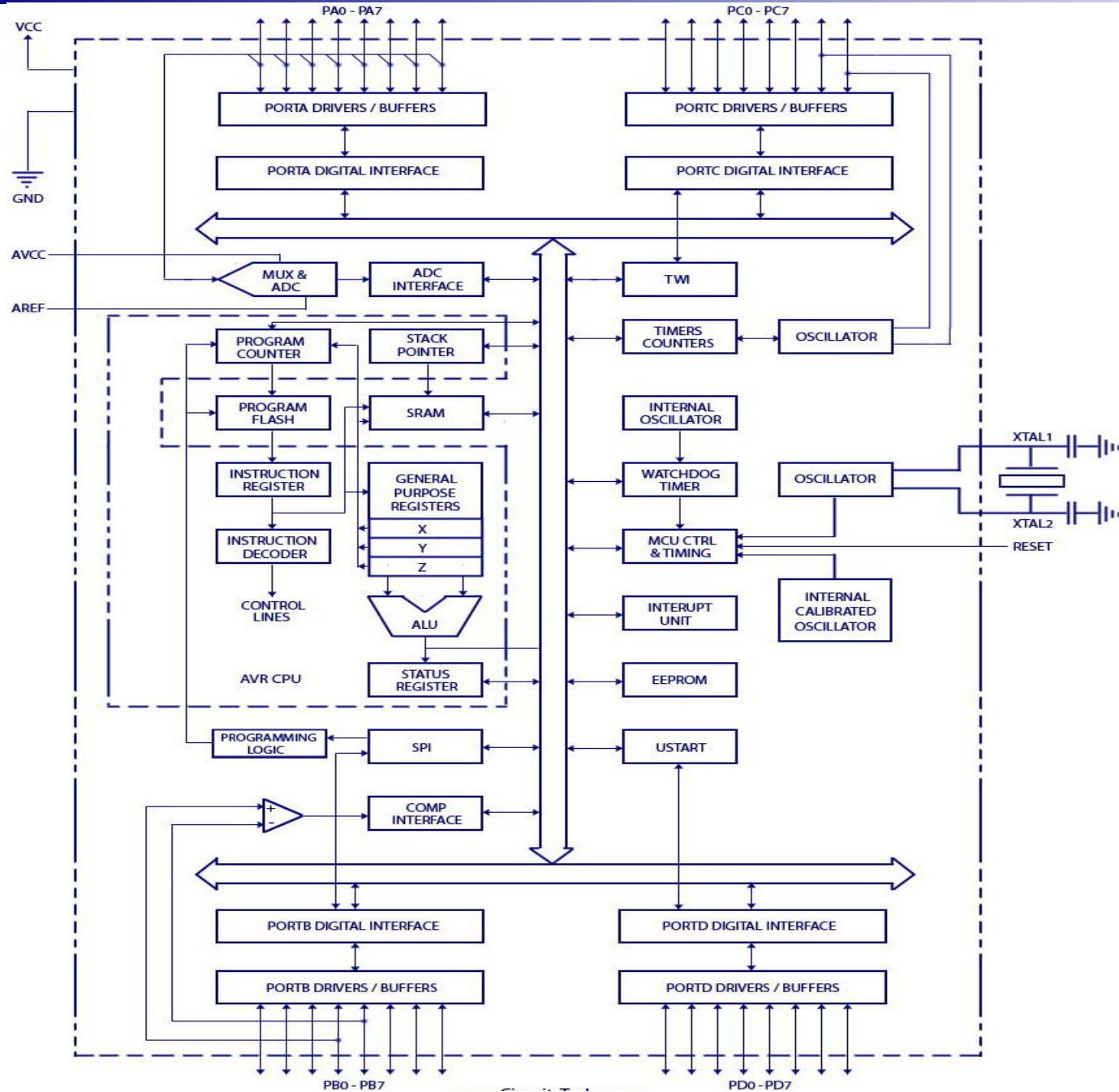
- In-System Programming
- In-System Debugging
- In-System Verification

# I. Nucleul microcontrolerului AVR



Nucleul:

# I. Nucleul microcontrolerului AVR



## Setul de regiștri de uz general

7	0	Addr.
	R0	\$00
	R1	\$01
	R2	\$02
	...	
	R13	\$0D
	R14	\$0E
	R15	\$0F
	R16	\$10
	R17	\$11
	...	
	R26	\$1A
	R27	\$1B
	R28	\$1C
	R29	\$1D
	R30	\$1E
	R31	\$1F

Nucleul AVR conține 32 regiștri de 8 biți, Care pot fi utilizați și în calitate de sursă, și în calitate de destinație.

6 regiștri *R26-R31* pot fi și utilizați ca regiștri de 16-biți

X-register Low Byte

X-register High Byte

Y-register Low Byte

Y-register High Byte

Z-register Low Byte

Z-register High Byte

# I. Nucleul microcontrolerului AVR

