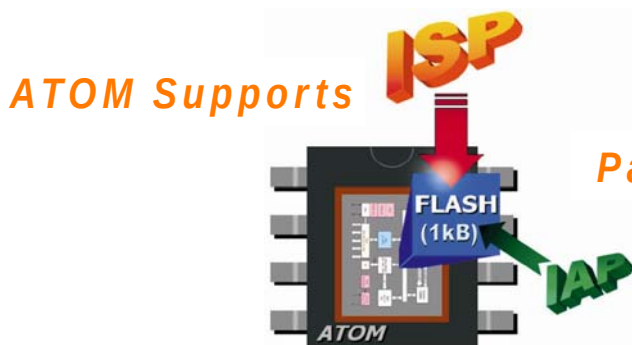


ATOM1.0 Microcontroller Family 4bit Mini 8051 Core



Atom1.0 Family

- ◆ **CPU:**
 - 4-bit reduced 8051 architecture
 - Continuous program addressing, not paged
 - 51 instructions including push, pop logic inst.
 - Instruction cycle : $F_{sys}/6$
 - Multi-level subroutine nesting with RAM based stack
- ◆ **On-Chip Memories:**
 - **FLASH:** 1024bytes (including 128 EEPROM)
 - **RAM:** 64 nibbles (including stack)
- ◆ **20 programmable I/O Pins:** 24-pin variant
 - Open drain, push-pull output (Port 2)
 - Input / Output and pull-up control
 - Schmitt Trigger input
- ◆ **Operating Voltage:** 1.8V ~ 5.5V
- ◆ **Temperature Range:** -20° to 85°C
- ◆ **Operating Frequencies:**
 - Internal/external Clock F_{oc} : 10MHz max. @ >2.7V
5MHz max. @ <2.7V
 - **System Frequency F_{sys} :** $F_{oc}/64 \sim 1F_{oc}$
- ◆ **Power Consumption:**
 - Stop mode : 0.1µA typ. @ 2V
 - Normal mode : 400µA typ. @2V, $F_{osc} = 4\text{MHz}$
- ◆ **Watchdog Timer:** program. Time-Out intervals
- ◆ **Oscillator:**
 - Crystal oscillator/Ceramic resonator
 - **Internal oscillator:** factory calibrated to $\pm 1\%$
- ◆ **Built-in IR LED Transmitter:**
 - **IR LED driver:** 280mA max. @3V
 - **REM output control register**
 - **Carrier pulse generation:** 7 types
- ◆ **Reset Sources:**
 - Power-on (POR), Low Voltage Detector (LVD) reset
 - Watchdog timer reset
 - Clock switch reset
- ◆ **ISP:** In System Programming of FLASH
- ◆ **IAP:** In Application Programming of FLASH
- ◆ **E.S.D. Protection:** 2kV
- ◆ **Latch-up Protection:** up to $\pm 200\text{mA}$
- ◆ **Packages:** 8/20/24-SOIC, 8-PDIP

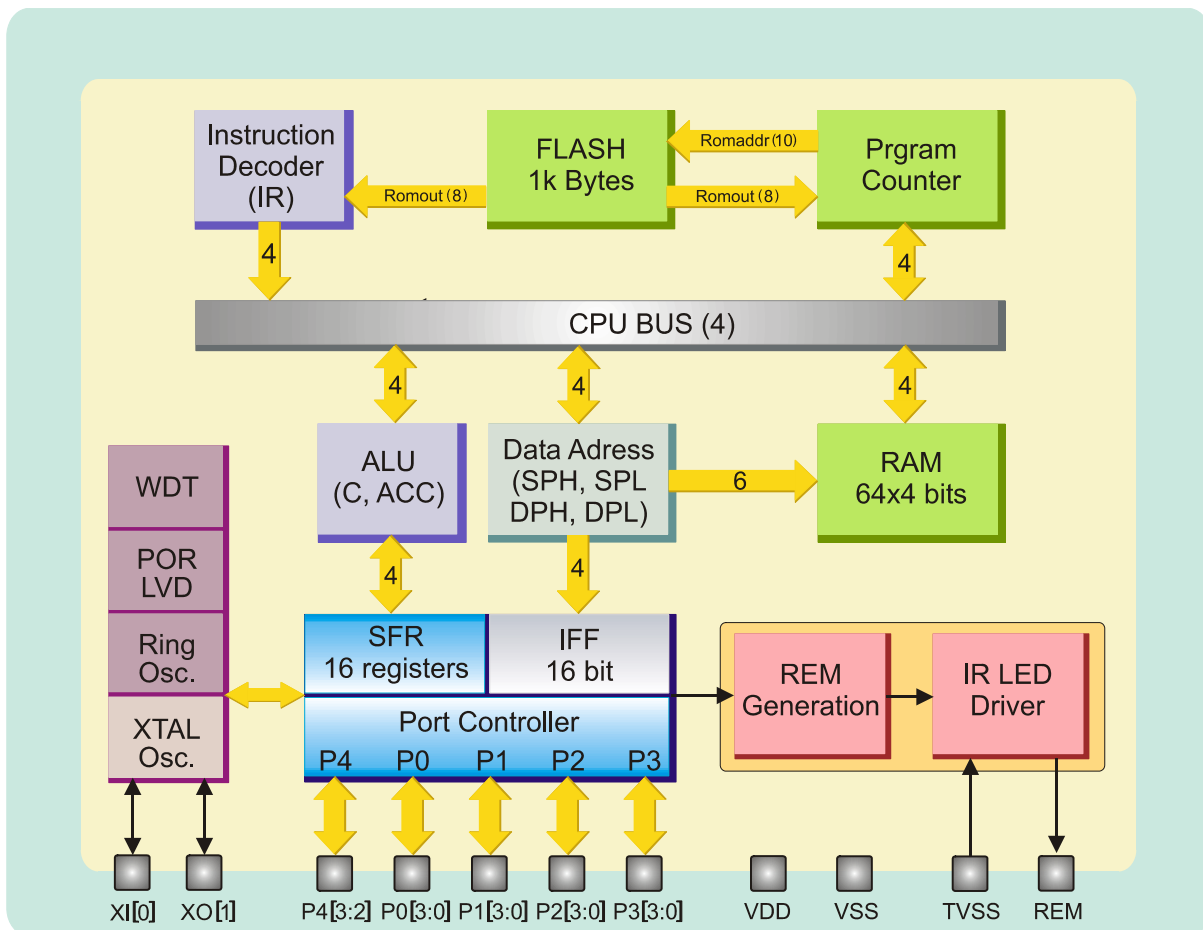


Package Variants

ATOM1.0 Product List

Series	FLASH [byte]	Mask ROM [byte]	EEPROM [byte]	RAM [nibble]	Volt [V]	Frequ. [MHz]	Timer Counter	I/O [pins]	REM Register	IR LED Driver [mA]	Package Leads	Features
GC49C501	1k	X	128	64	1.8~5.5	10 (5)	X	18(20) 14(16) 6	1	280	24/20/8	POR, LVD, WDT, Ring Osc.
GC41C501	X	1k	X	64	1.8~5.5	10 (5)	X		1	280	24/20/8	

Block Diagram ATOM1.0 24-pin Variant



Development Tools

- ◆ **Development Environment:**
 - IDE with Assembler

Evaluation Board



**Programmer &
In Circuit Debugger**