TSC 80251

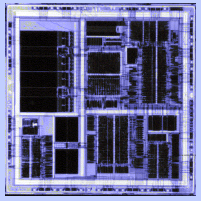
New "extended 8-bit" Architecture

A new Family of Application Specific Microcontrollers for High-end Applications

Core Performance	Application Specific Family	TSC 80251A1	TSC 80251G1	Development Tools

The Core Performance (1/5)

New Requirements for the 90's and Beyond



- Higher performance to support sophistication of equipment
- Re-use of existing code due to big development investments and software qualification
- Complex Software (memory space)
- Easier and efficient programming with "C" language
- Time to market with ASSP approach
- Less power consumption and noise
- System cost reduction

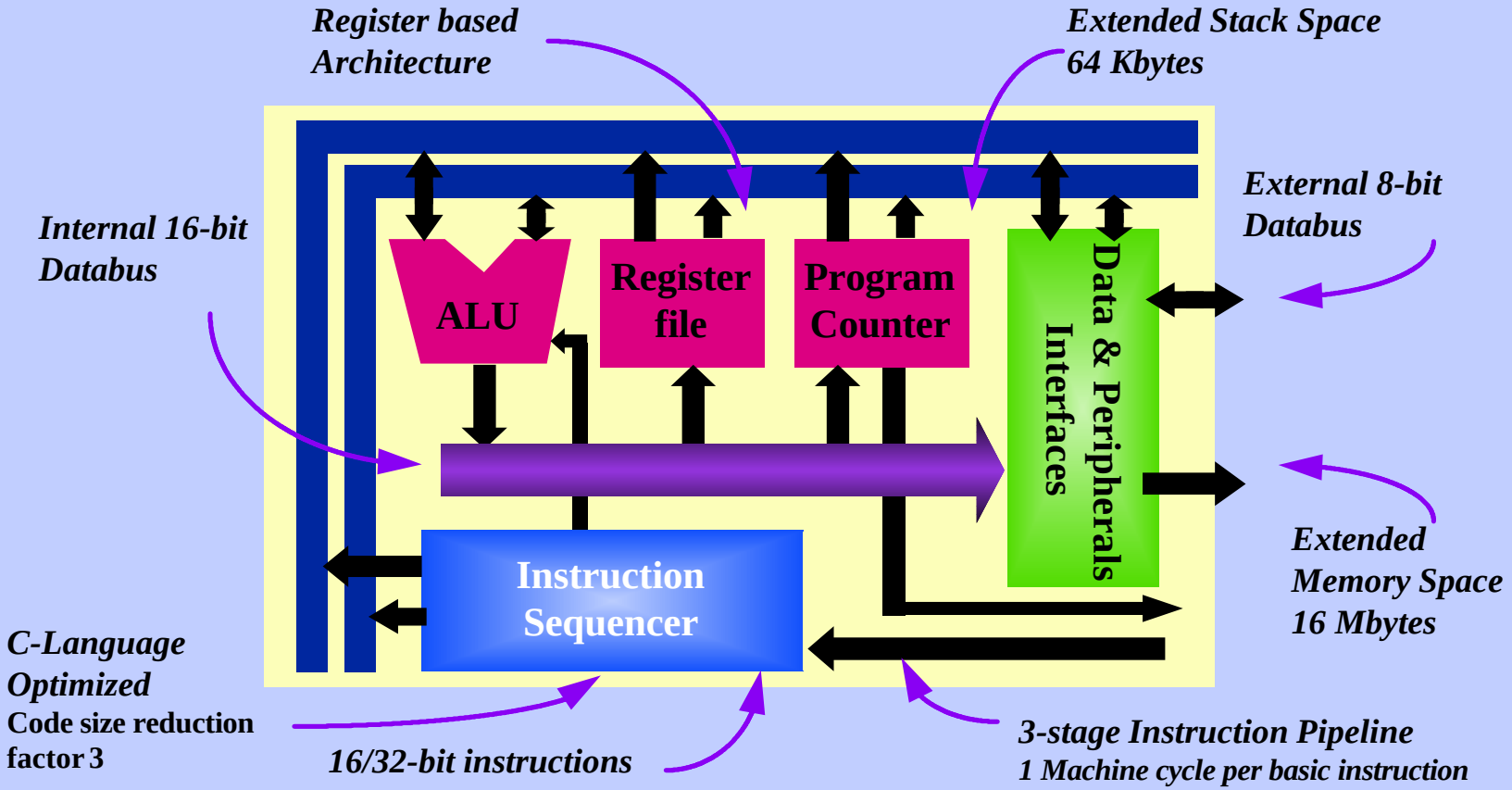
The Core Performance (2/5)

Features / Benefits

- Core fully licenced from INTEL
- Binary Code compatible with the 80C51 on its lowest perf. level
- 5 times faster than the 80C51 by using the same code at same frequency
- High instruction throughput with a new 3-stage pipeline architecture (2 clocks per basic instruction)
- 15 times faster than the 80C51 by using the 189 new 16/32 bit instructions
- Register based compared to 80C51 accumulator based
- C- Language optimized product
  - 64KB stack space
  - Fully "C"-oriented instructions
  - Low overhead with C-language
- Up to factor 3 of code size savings
- Increased up to 16MByte addressable code and data memory

The Core Performance (3/5)

Block Diagram



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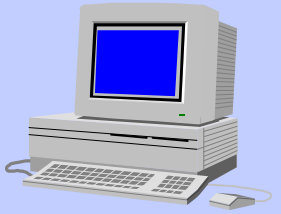
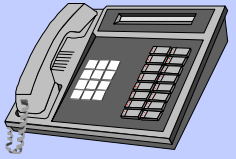
The Core Performance (4/5)

System Advantage





Use higher performance to reach new applications

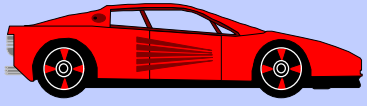
- High-end 8-bit and 16-bit applications
- All applications with a high demand of controlling, computing or dataprocessing performance:

Automotive: Airbag, Car-Navigation, Climate Control

Communication: Mobile phones, ISDN-phones, high speed Modems, Network Termination

Computer: CD-ROM, high-end Monitors, Disk Drives

Reduce Operating frequency while maintaining high level of CPU-power

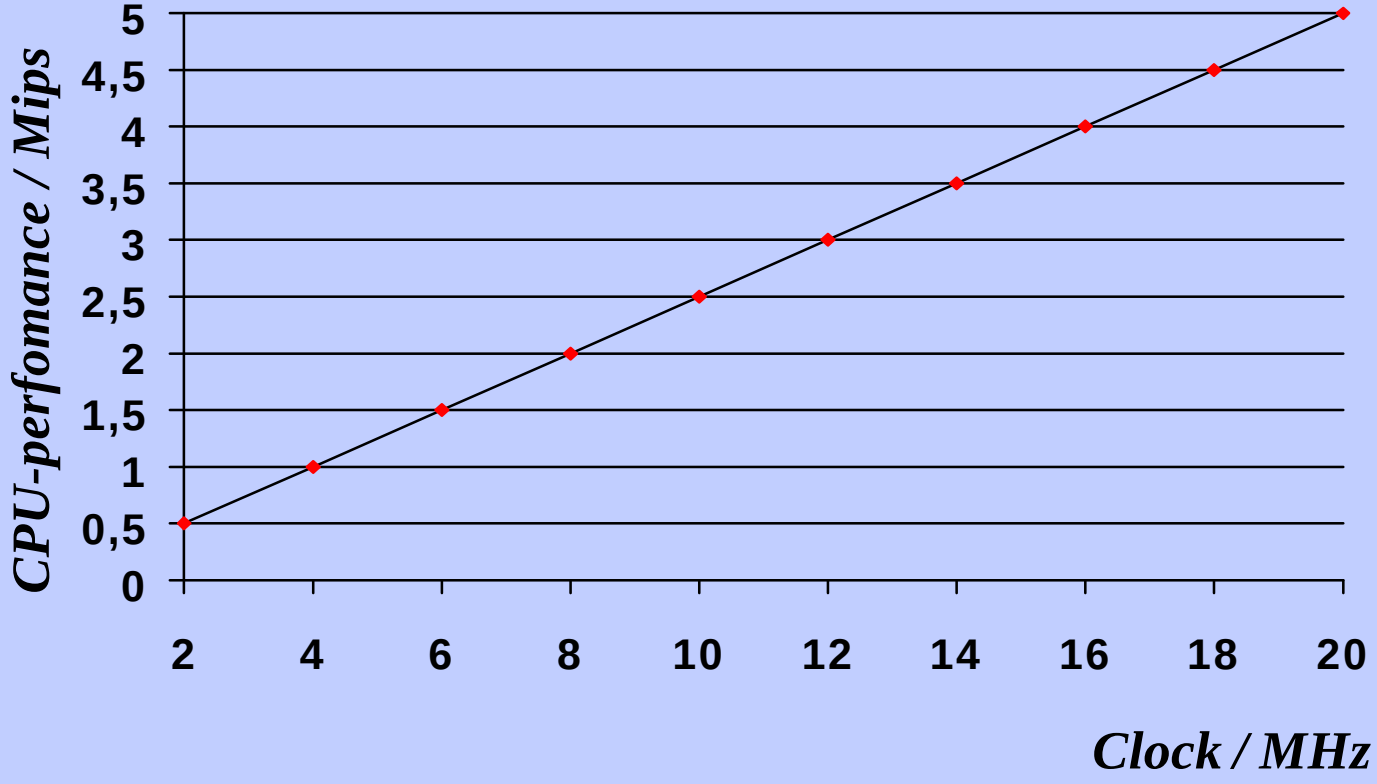


- Decrease Power Consumption
- Limit the EMC problems
- Reduce Systemcosts (Crystal, Memory..)

Use CPU for additional tasks (DSP, DTMF, ..)

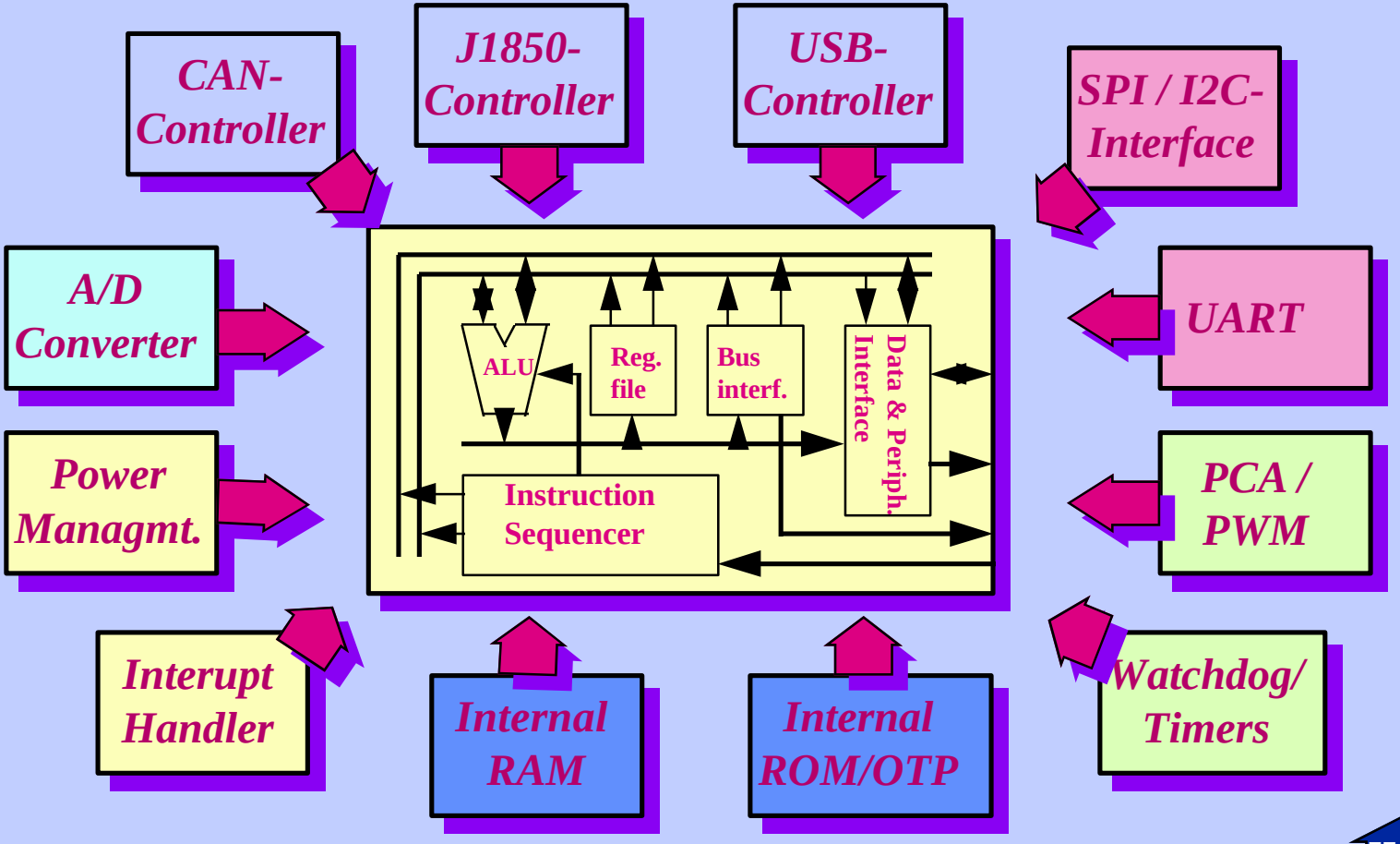
The Core Performance (5/5)

CPU Performance



Application Specific Family (1/2)

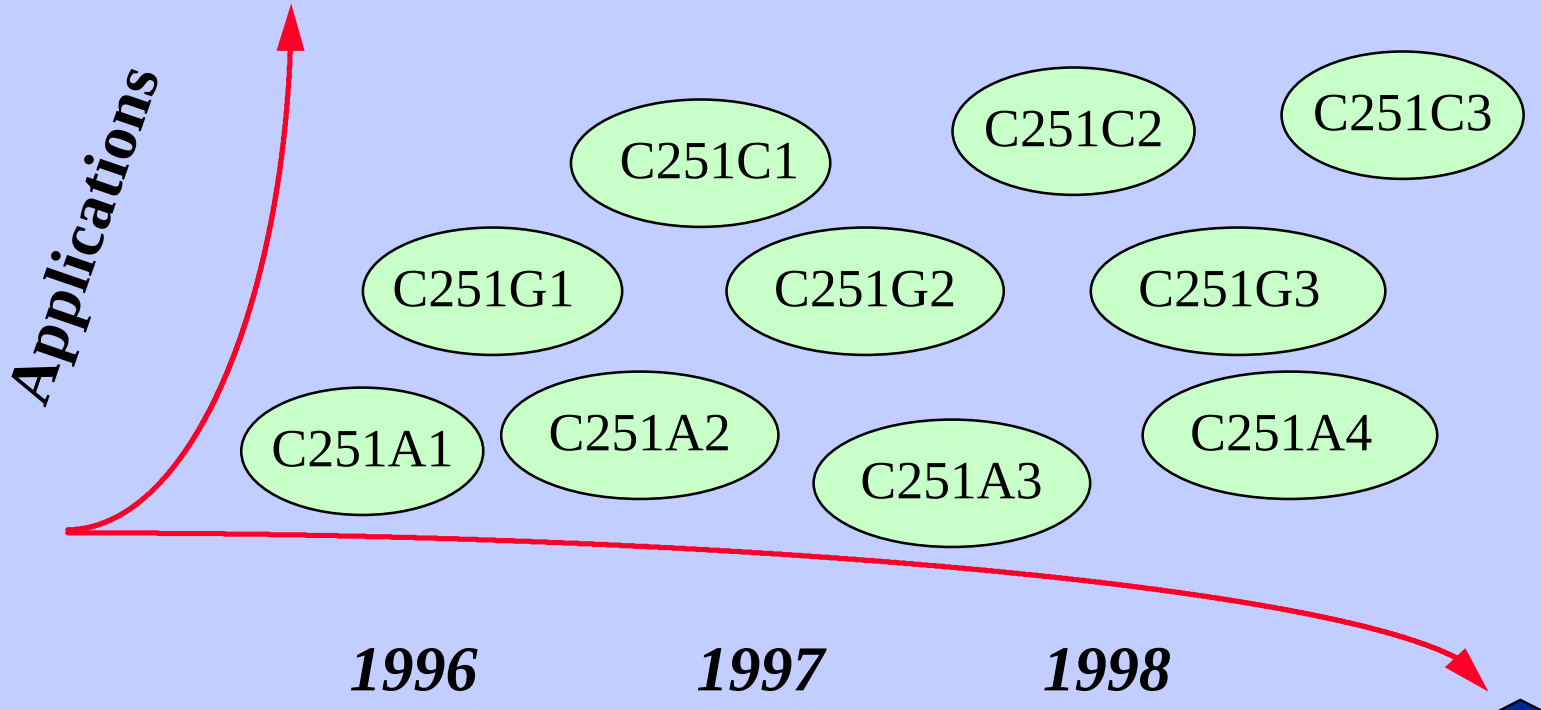
Peripherals



Application Specific Family (2/2)

Roadmap

A full range of derivatives will be designed around the C251 core

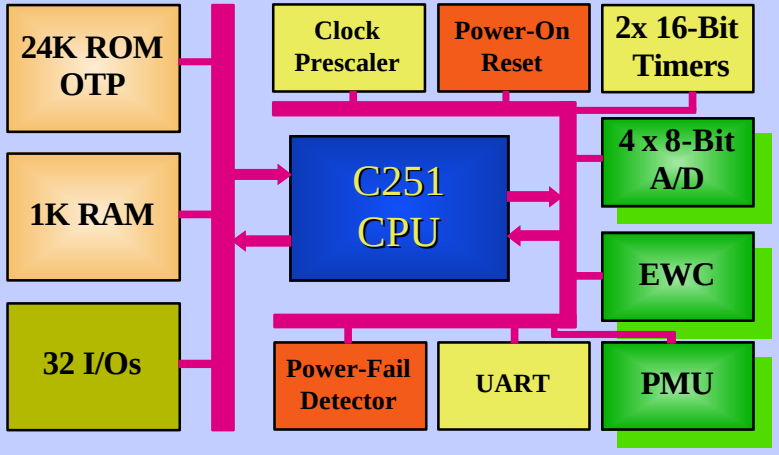


TSC80251A1 Extended 8-bit µC with analog interfaces

Specification (1/2)

- A/D converter 8-Bit (4 channels)
- PMU - 3 interface units for smart analog sensors
- EWC - 5 programmable counters for PWM and capture/compare functions
- Full duplex UART
- Two 16 -bit Timers
- 24 Kbyte of internal ROM or EPROM (OTP)
- 1 Kbyte of internal RAM
- External memory space 256 Kbytes
- 16 MHz max at 5V all ranges
- PLCC and TQFP 44 package

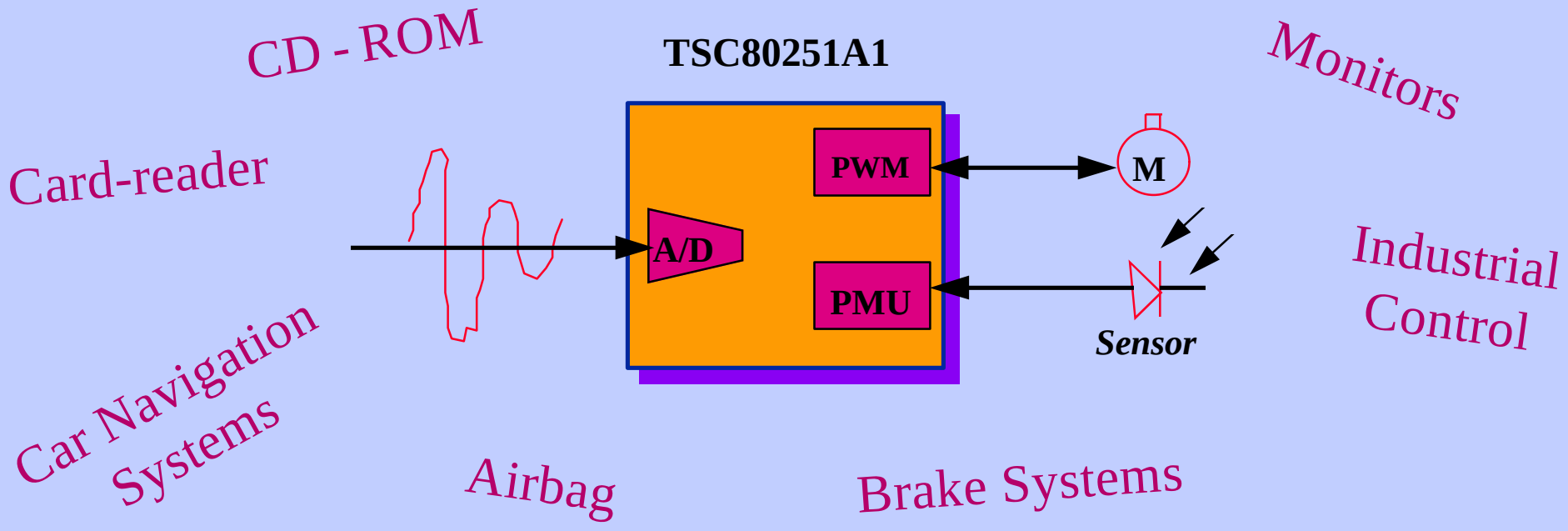
Available Now!



TSC80251A1 Extended 8-bit µC with analog interfaces

Applications (2/2)

The TSC80251A1 was tailored to embedded microcontroller applications requiring analog interface structures

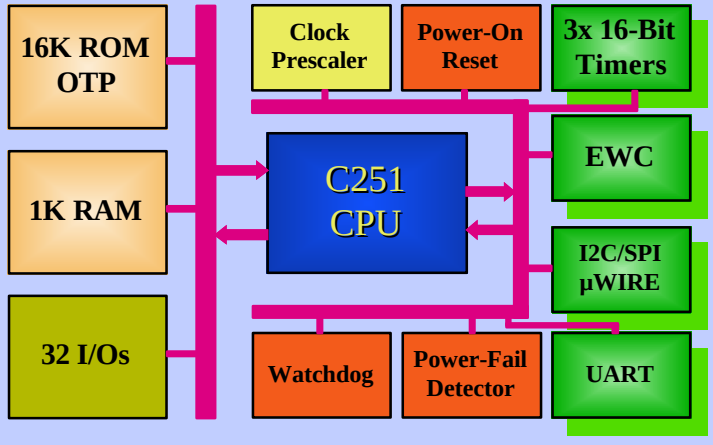


TSC80251G1 Extended 8-bit µC with communication interfaces

Specification (1/2)

Available Now!

- Pin & functional compatible to Intel C251-SB
- Synchronous serial interfaces (I2C, SPI, µWire)
- EWC - 5 programmable counters for PWM and compare/capture functions
- Keyboard feature on Port1
- Hardware watchdog
- Full duplex UART
- Three 16-bit Timers
- 16 Kbyte of internal ROM or EPROM (OTP)
- 1 Kbyte of internal RAM
- External memory space 256 Kbytes
- 16 MHz max at 5V all ranges / 44 PLCC & TQFP



TSC80251G1 Extended 8-bit µC with communication interfaces

Applications (2/2)

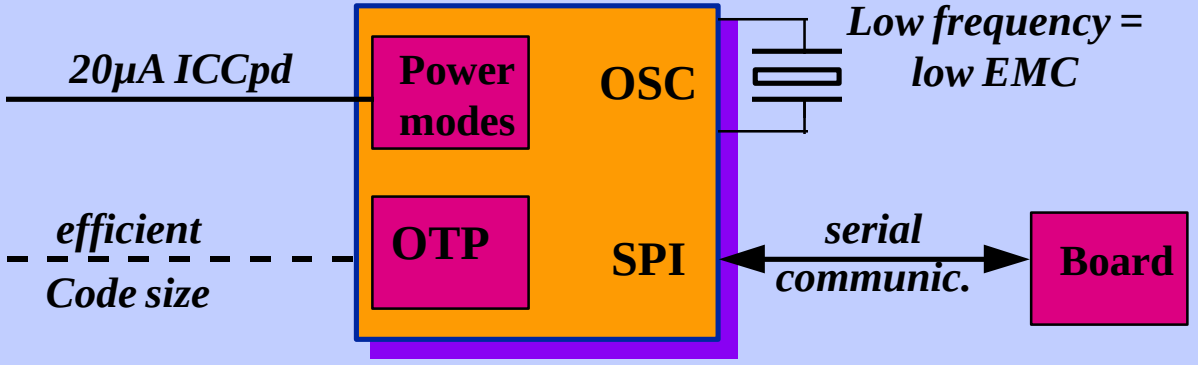
The TSC80251G1 is a general purpose microcontroller with communication interface for high-end 8-bit applications in telecommunication, computer and industrial segments

Mobile Phones

Handhelds

ISDN Terminals

Modems

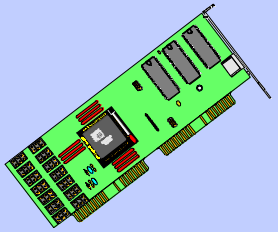


Network Terminator

Line Cards

Feature phones

Development Tools (1/2)



TEMIC and its Tool-partners provide a full set of development tools dedicated to each derivative product:

Compiler, Assembler

Two ANSI C Compilers are available:

- Keil C251 C-compiler & Assembler
- Tasking C251 C-compiler & Assembler

Instruction Simulator & ROM Monitor

Two Instruction debugger are available:

- Keil dScope-251 source level debugger
- Tasking Cross View-251 debugger

dScope-251 includes simulation models for all derivative products

Evaluation boards available controlled by ROM Monitor

Development Tools (2/2)

IN - Circuit Emulators

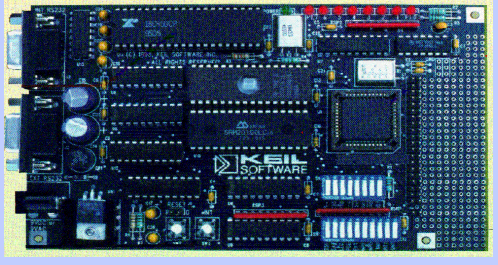
Three Emulators support the TSC80251 derivatives:

- Hitex ICE-251
- Nohau EMUL-251
- Metalink iceMaster-251

For each derivative a dedicated ICE-probecard is available

TEMIC TSC80251 Starter Kit

TEMIC offers a starter kit containing the following:



- C-Compiler (2k of code limit) Keil or Tasking version
- Assembler /Linker
- Instruction Simulator
- Optionally Evaluation board per derivative (connected to simulator)
- Documentation