

C161S

Low Cost Consumer Class Controller



THE C161S is a new member in the C161 Family, which offers the full performance of the C166 Architecture. This device is focused on price sensitive applications such as communication or low end industrial control.

THIS FLEXIBLE Microcontroller comes with a host of useful peripherals, such as Real Time Clock, a clock generation via on chip PLL and a flexible power management. It also incorporates serial interfaces like USART and SPI making communications easy with other devices in target applications.

Applications

- Industrial Controls
- Telephone
- PBX
- Linecard

Features

- High Performance 16-bit CPU with 4-Stage Pipeline
- 80 ns Instruction Cycle Time at 25 MHz CPU Clock
- 400 ns Multiplication (16 × 16 bit), 800 ns Division (32/16 bit)
- Enhanced Boolean Bit Manipulation Facilities
- Additional Instructions to Support HLL and Operating Systems
- Register-Based Design with Multiple Variable Register Banks
- Single-Cycle Context Switching Support
- 16 Mbytes Total Linear Address Space for Code and Data
- 1024 bytes On-Chip Special Function Register Area
- 16-Priority-Level Interrupt System with 30 Sources, Sample-Rate down to 40 ns
- 8-Channel Interrupt-Driven Single-Cycle Data Transfer Facilities via Peripheral Event Controller (PEC)
- Clock Generation via On-Chip PLL (factors 1:1.5/2/2.5/3/4/5), via prescaler or via direct clock input
- On-Chip Memory Modules: 2 Kbytes On-Chip Internal RAM (IRAM)
- Two Multi-Functional General Purpose Timer Units with 5 Timers

- Two Serial Channels (Synchronous/Asynchronous and High-Speed-Synchronous)
- On-Chip Real Time Clock
- Up to 4/16 Mbytes External Address Space for Code and Data
- Programmable External Bus Characteristics for Different Address Ranges
- Multiplexed or demultiplexed External Address/Data Buses with 8-bit or 16-bit Data Bus Width
- Four Programmable Chip-Select Signals
- 4 Mbytes maximum address window size, results in a total external address space of 16 Mbytes, when all chip-select signal (address windows) are active
- Idle and Power Down Modes with Flexible Power Management
- Programmable Watchdog Timer and Oscillator Watchdog
- Up to 63 General Purpose I/O Lines, partly with Selectable Input Thresholds and Hysteresis
- Power Supply: the C161S can operate from a 5 V or a 3 V power supply
- Supported by a Large Range of Development Tools like C-Compilers, Macro-Assembler Packages, Emulators, Evaluation Boards, HLL-Debuggers, Simulators, Logic Analyzer Disassemblers, Programming Boards
- On-Chip Bootstrap Loader
- 80-Pin MQFP Green Package

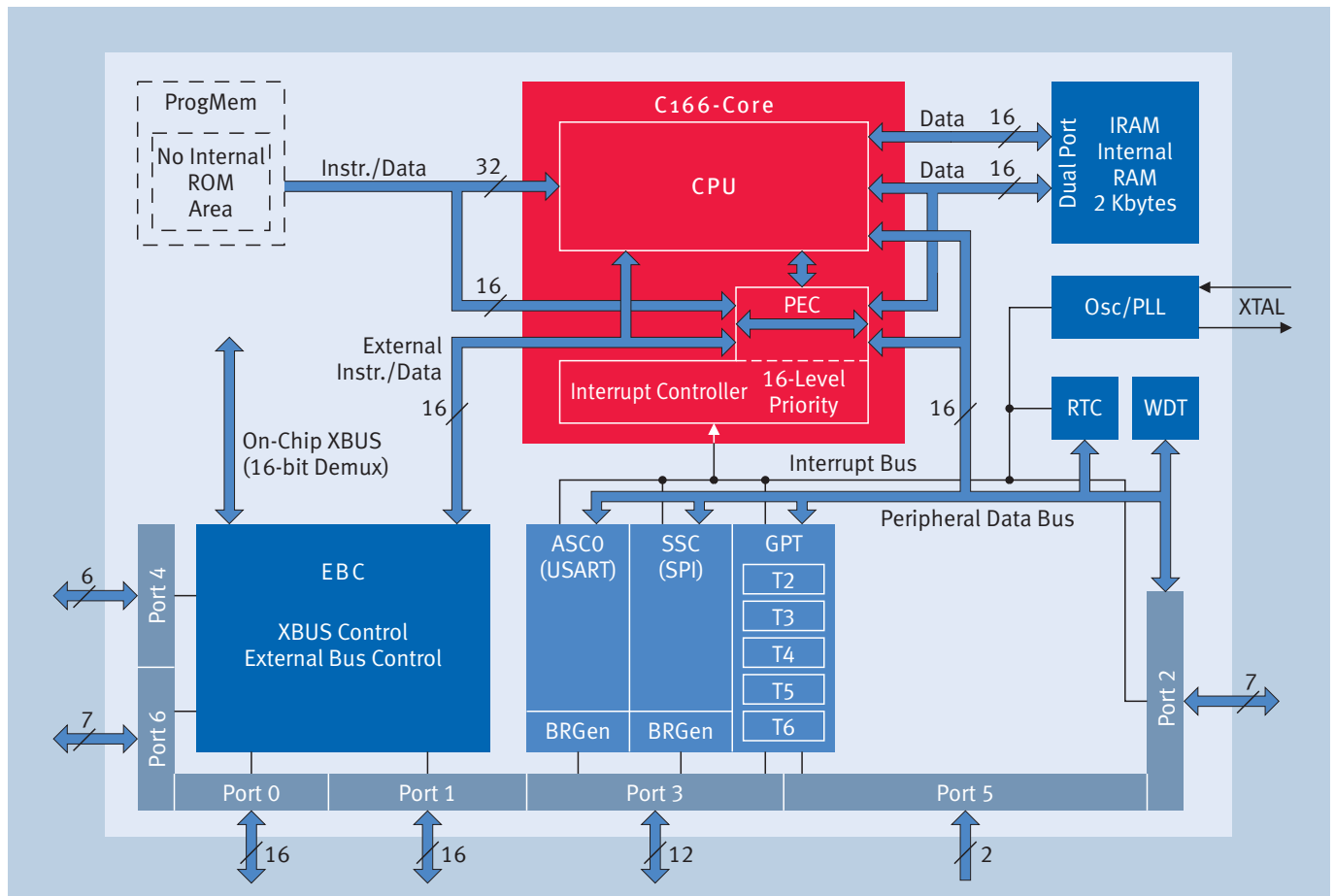
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Microcontrollers



Never stop thinking

C161S Block Diagram



Application Example

- Industrial Controls
- Industrial Networking
- Small PLC
- Telephone
- PBX
- Linecard
- Basestation

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