

C161K/O

The Basic 16-bit Microcontrollers



C161K/O MEMBERS of the C166 family offer all benefits of a full 16-bit controller at the average price of an 8-bit controller. The C161 product range is focused on price sensitive applications such as in consumer products. Grouped around the 25 MHz C166 core a variety of basic peripherals have been chosen for optimal product and system costs.

Device Cross-Reference

The table below describes the differences between the two C161 derivatives

| Features | C161K | C161O |
|---|-----------|-----------|
| Internal RAM Size (IRAM) | 1 KByte | 2 KBytes |
| Internal RAM Size (IRAM) | 2 | 4 |
| Bus Modes | MUX/DEMUX | MUX/DEMUX |
| Power Saving Modes | ✓ | ✓ |
| Fast External Interrupts | 4 | 7 |
| General Purpose Timer Unit 1 (GPT1) | ✓ | ✓ |
| Input/Output Functionality of GPT1 | ✓ | ✓ |
| General Purpose Time Unit 2 (GPT2) with Capture Input (CAPIN) Functionality | - | ✓ |
| Bootstrap-Loader | ✓ | ✓ |

Key Features

- High Performance 16-bit CPU with 4-stage pipeline
- 80 ns Instruction Cycle Time at 25 MHz CPU Clock
- 400 ns Multiplication (16 x 16 bit)
800 ns Division (32/16 bit)
- Clock Generation via Prescaler or via Direct Clock Input
- 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

- Up to 4 MBytes Linear Address Space for Code and Data
- Up to 2 KBytes On-Chip RAM
- Programmable External Bus Characteristics for Different Address Ranges
- 8-bit or 16-bit External Data Bus
- Multiplexed or Demultiplexed External Address/Data Buses
- Programmable Chip-Select Signals
- 1024 Bytes On-Chip Special Function Register Area
- Idle and Power Down Modes
- 8-Channel Interrupt-Driven Single-Cycle Data Transfer Facilities via Peripheral Event Controller (PEC)
- 16-Priority-Level Interrupt System with 20 Sources, (14 Sources on C161K)
- Multi-Functional General Purpose Timer Units with up to five 16-bit Timers
- Two Serial Channels (Synchronous/Asynchronous and High-Speed-Synchronous)
- Programmable Watchdog Timer
- Up to 63 General Purpose I/O Lines
- On-Chip Bootstrap-Loader
- 3 V Operation at max. CPU Clock of 20 MHz (C161O-LM 3 V only)
- Supported by large Range of Development Tools including C-Compilers, Makro-Assembler Packages, Real-Time Operating Systems, Emulators, Evaluation boards, HLL-Debuggers, Simulators, Logic Analyzers Disassemblers, Programming Boards
- 80-Pin MQFP Green Package

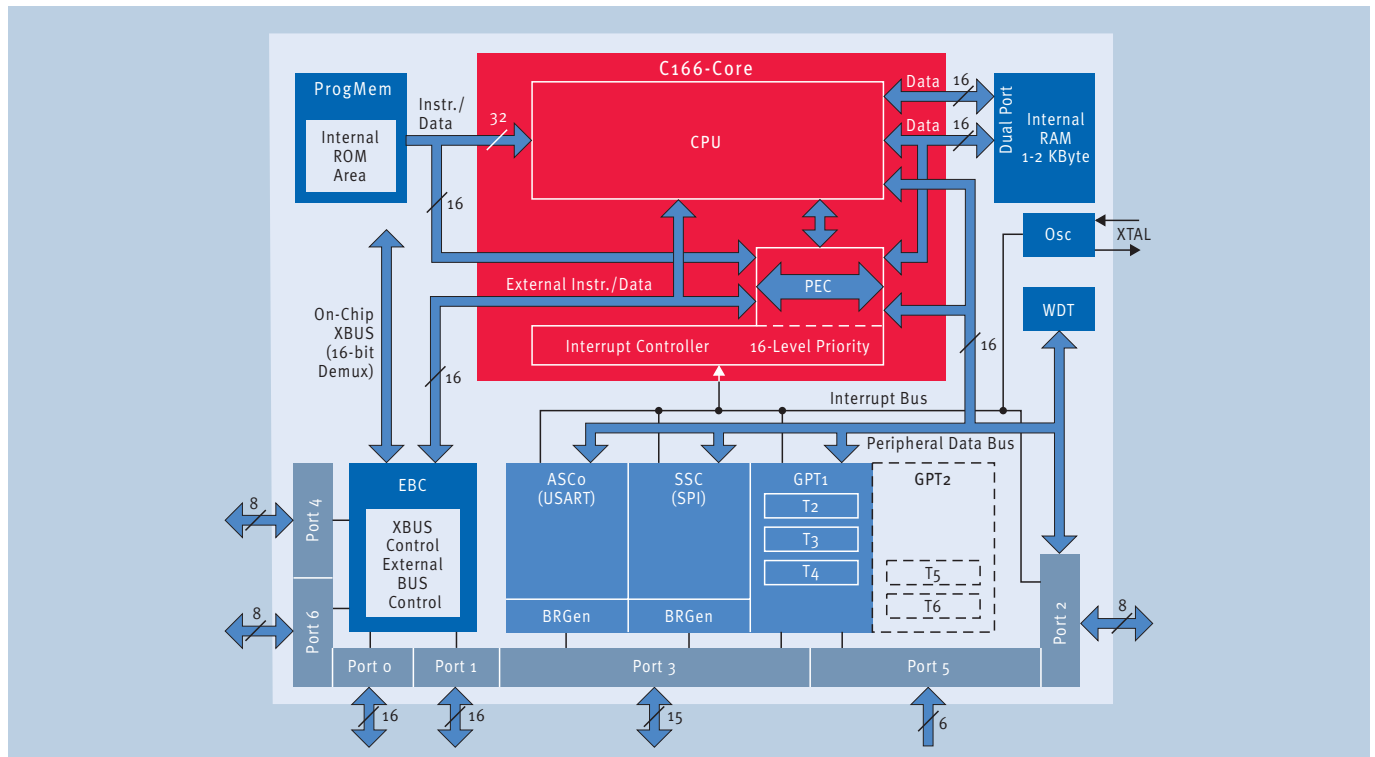
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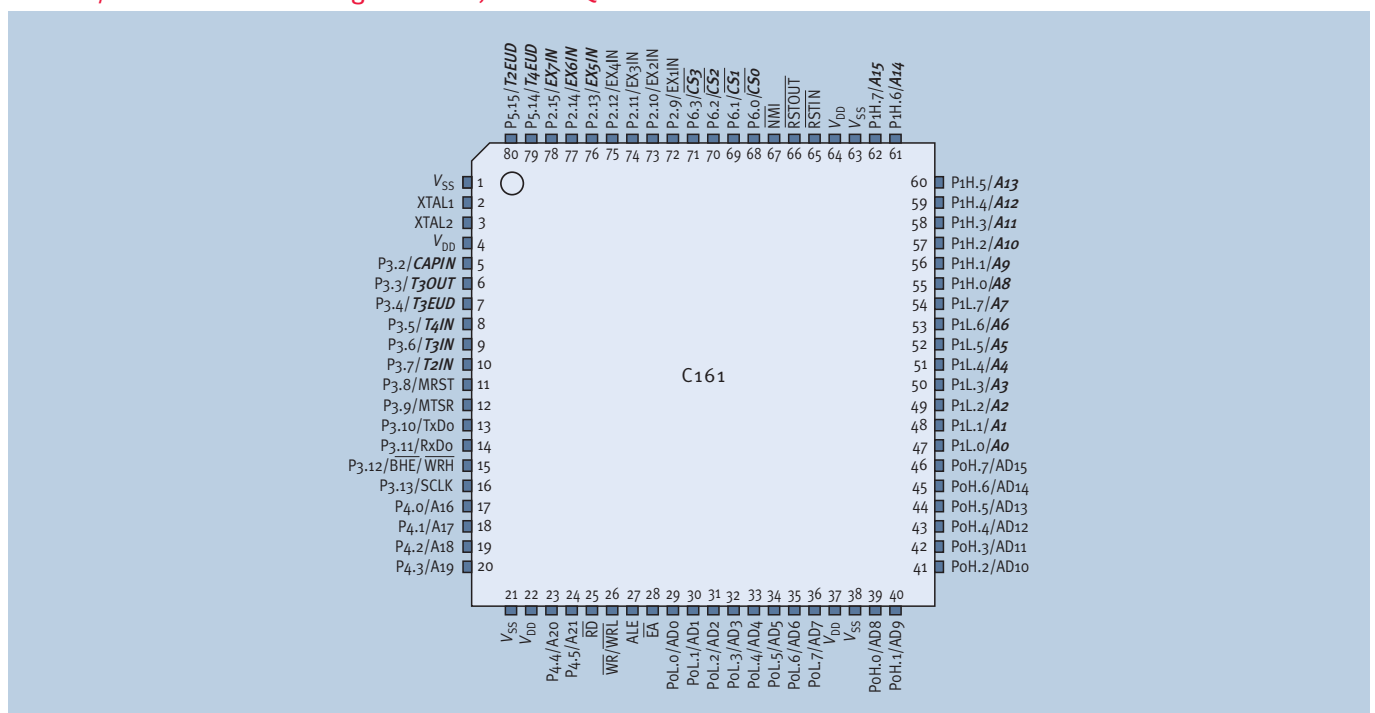


Never stop thinking

C161K/C161O Block Diagram



C161K/C161O Pin Configuration, PG-MQFP-80



Note: The marked signals are not available on all C161 derivatives. Please refer to the detailed description in the data sheet.

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