

Title (en)
A MICROCONTROLLER INCLUDING AN INTERNAL MEMORY UNIT AND CIRCUITRY TO GENERATE AN ASSOCIATED ENABLE SIGNAL

Title (de)
MIKROCONTROLLER MIT INTERNER SPEICHEREINHEIT UND SCHALTUNG ZUR ERZEUGUNG EINES ZUGEHÖRIGEN FREIGABESIGNALS

Title (fr)
MICROCONTROLEUR COMPORTANT UNE MEMOIRE INTERNE ET UN CIRCUIT POUR GENERER UN SIGNAL DE VALIDATION ASSOCIE

Publication
EP 0931292 A1 19990728 (EN)

Application
EP 97927936 A 19970602

Priority
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Abstract (en)
[origin: WO9807099A1] A microcontroller is presented which includes a microcontroller core, an internal memory unit, an I/O pad interface unit, and several I/O pads, all formed on a single monolithic silicon substrate. The internal memory unit is configured to store data. A chip select unit within the microcontroller core generates a dedicated internal chip select (ICS#) signal which enables storage operations within the internal memory unit. Key operating parameters of the internal memory unit are stored in a single programmable internal memory chip select register (IMCSR) located within the chip select unit. The size of the internal memory unit is fixed, eliminating the need to store size information. The internal memory chip select register contains a base address field. The base address field includes a minimum number of the highest-ordered bits of a base address of the internal memory unit required to define which non-overlapping section of the physical address space the internal memory unit is mapped into. The method of accessing the internal memory unit allows backwards compatibility with existing microcontroller products. The microcontroller core also includes an execution unit and a bus interface unit. The execution unit executes microprocessor instructions, preferably instructions from an x86 instruction set. The bus interface unit handles all data transfer operations for the microcontroller core in accordance with established protocols. The I/O pad interface unit provides the microcontroller with off-chip data transfer capability, allowing the microprocessor to read data from or write data to external devices.

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