

MC68HC11EA9
MC68HC711EA9*Product Preview***8-bit HCMOS Single-Chip Microcontroller with A/D converter**

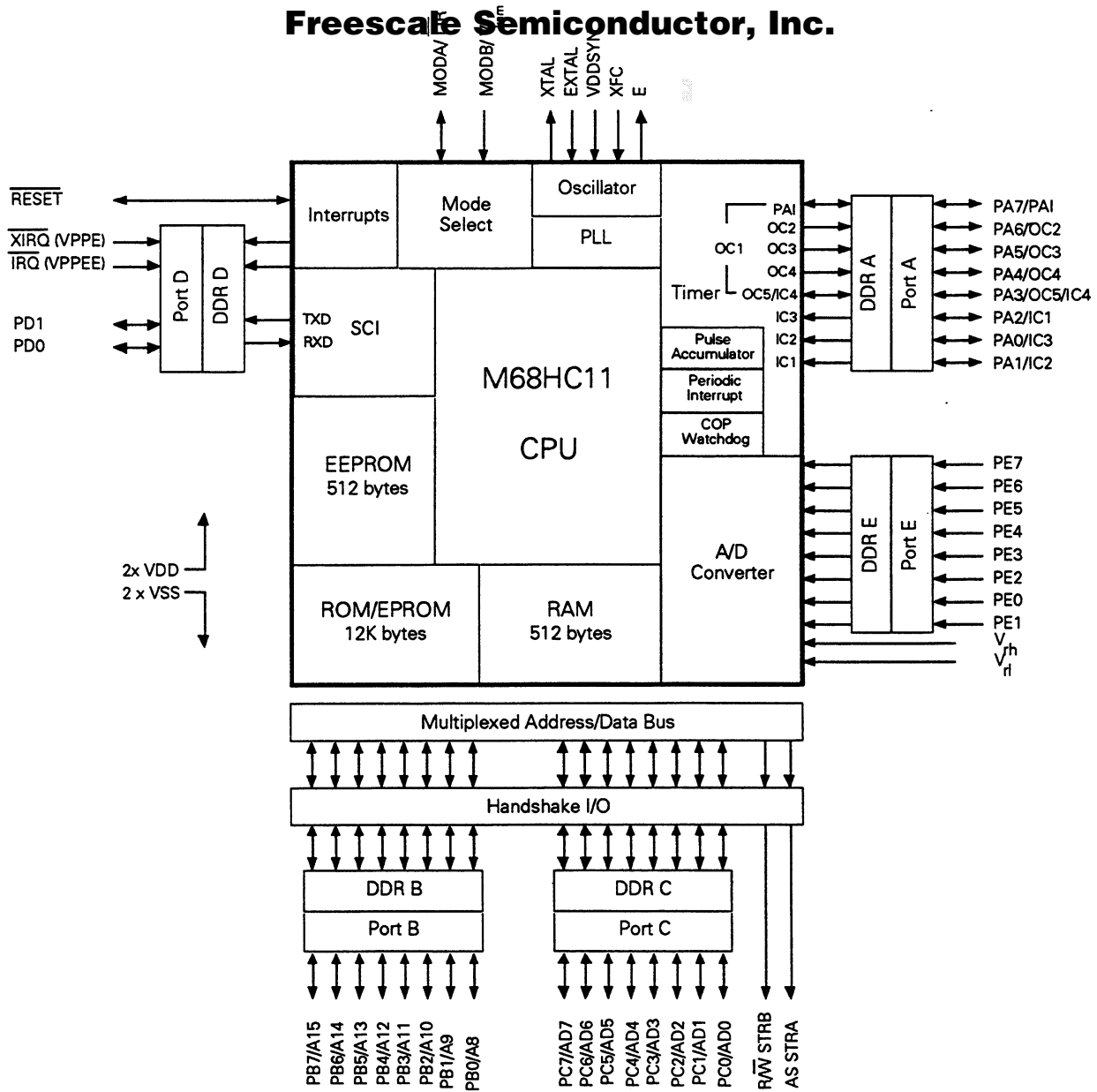
The MC68HC11EA9, with 12 kbytes of ROM, and the MC68HC711EA9, with 12 kbytes of EPROM, are high-performance microcontroller units based on the Motorola M68HC11 CPU core. Their hardware features make these devices suitable for use in a wide range of application areas including automotive and communications. Features common to both devices include a phase-lock-loop clock circuit, Serial Communications Interface (SCI) with 13-bit modulus prescaler, 16-bit timer with multiple input capture and output compare functions, 8-bit pulse accumulator, 8-channel A/D converter and a Computer Operating Properly (COP) watchdog timer. The phase-lock-loop clock circuit with its automatic disable capability during WAIT mode, combined with the pull-up loads on Ports A, B, C and D and the A/D converter, make the parts ideally suited to automotive body electronics applications such as air conditioning, automatic window mechanisms and central door locking, where the system is required to react to changes in speed/temperature or keypad activity. Another notable feature of these devices is their UART communication capability which, coupled with the A/D converter and the bi-directional parallel ports, makes them ideal for industrial control/communication environments. Both devices can operate in expanded multiplexed mode where they are capable of accessing a 64 kbyte address space.

The main features of the devices are listed below:

- Fully static design featuring the M68HC11 family CPU core with 2.1 MHz bus frequency
- Single-Chip, Expanded and Bootstrap modes of operation
- 64K addressing capability in expanded mode
- Power-saving phase-lock-loop (PLL) clock circuit with software selectable voltage-controlled oscillator
- Low-noise power supply and external filter capacitor can be connected using VDDSYN and XFC input pins, thus minimising distortion of the voltage-controlled oscillator
- E-clock output with software disable
- 12 kbytes of mask-programmable ROM (MC68HC11EA9) or 12 kbytes of EPROM (MC68HC711EA9)
- 512 bytes of EEPROM with block protection for enhanced security
- 512 bytes of RAM
- Power saving STOP and WAIT modes
- Automatic phase-lock-loop disable during WAIT mode, further reducing power consumption
- 16-bit timer with four-stage programmable prescaler, four output compare functions, three input capture functions and one software-selectable input capture or output compare channel
- 8-bit Pulse Accumulator
- Real Time Interrupt circuit
- Eight channel, 8-bit Analog-to-Digital (A/D) converter
- Computer Operating Properly (COP) watchdog timer
- Serial Communications Interface with 13-bit modulus prescaler for baud rate control, idle mode detect, receiver active flag and hardware parity circuit
- Three 8-bit bi-directional parallel ports, one 8-bit input-only port and one 2-bit bi-directional port
- Pull-up loads active in input mode on Ports A, B, C and D
- Two Interrupt Request inputs, one of which is non-maskable, plus 13 on-board hardware interrupt sources and one non-maskable software interrupt source (SWI)
- Both Interrupt Request inputs can be used as general purpose inputs using the Interrupt Request disable function in the Port D Data Direction register
- 52-pin PLCC and 56-pin SDIP packages

This document contains information on products under development. Motorola reserves the right to change or discontinue these products without notice.





Functional Block Diagram

Motorola reserves the right to make changes without further notice to any products herein. Motorola makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Motorola assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters can and do vary in different applications. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Motorola does not convey any license under its patent rights nor the rights of others. Motorola products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motorola product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motorola products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motorola and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motorola was negligent regarding the design or manufacture of the part. Motorola and are registered trademarks of Motorola, Inc. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

How to reach us:

USA/EUROPE/Locations Not Listed: Motorola Literature Distribution; P.O. Box 5405, Denver, Colorado 80217. 303-675-2140 or 1-800-441-2447

Mfax™: RMFAX0@email.sps.mot.com – TOUCHTONE 602-244-6609 – US & Canada ONLY 1-800-774-1848

INTERNET: <http://motorola.com/sps>

JAPAN: Nippon Motorola Ltd.; SPD, Strategic Planning Office, 4-32-1, Nishi-Gotanda, Shinagawa-ku, Tokyo, Japan. 81-3-5487-8488315

ASIA/PACIFIC: Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park, 51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298
Mfax is a trademark of Motorola, Inc.



MOTOROLA

31366-G PRINTED IN USA 8/97 IMPERIAL 1710 41

For More Information On This Product,
Go to: www.freescale.com

MC68HC11EA9/D

