

MC68HC11F1 MC68HC11FC0

Technical Summary 8-Bit Microcontroller

1 Introduction

The MC68HC11F1 is a high-performance member of the M68HC11 family of microcontroller units (MCUs). High-speed expanded systems required the development of this chip with its extra input/output (I/O) ports, an increase in static RAM (one Kbyte), internal chip-select functions, and a non-multiplexed bus which reduces the need for external interface logic. The timer, serial I/O, and analog-to-digital (A/D) converter enable functions similar to those found in the MC68HC11E9.

The MC68HC11FC0 is a low cost, high-speed derivative of the MC68HC11F1. It does not have EEPROM or an analog-to-digital converter. The MC68HC11FC0 can operate at bus speeds as high as six MHz.

This document provides a brief overview of the structure, features, control registers, packaging information and availability of the MC68HC11F1 and MC68HC11FC0. For detailed information on M68HC11 subsystems, programming and the instruction set, refer to the *M68HC11 Reference Manual* (M68HC11RM/AD).

1.1 Features

- MC68HC11 CPU
- 512 Bytes of On-Chip Electrically Erasable Programmable ROM (EEPROM) with Block Protect (MC68HC11F1 only)
- 1024 Bytes of On-Chip RAM (All Saved During Standby)
- Enhanced 16-Bit Timer System
 - 3 Input Capture (IC) Functions
 - 4 Output Compare (OC) Functions
 - 4th IC or 5th OC (Software Selectable)
- On-Board Chip-Selects with Clock Stretching
- Real-Time Interrupt Circuit
- 8-Bit Pulse Accumulator
- Synchronous Serial Peripheral Interface (SPI)
- Asynchronous Nonreturn to Zero (NRZ) Serial Communication Interface (SCI)
- Power saving STOP and WAIT Modes
- Eight-Channel 8-Bit A/D Converter (MC68HC11F1 only)
- Computer Operating Properly (COP) Watchdog System and Clock Monitor
- Bus Speeds of up to 6 MHz for the MC68HC11FC0 and up to 5 MHz for the MC68HC11F1
- 68-Pin PLCC (MC68HC11F1 only), 64-Pin QFP (MC68HC11FC0 only), and 80-pin TQFP package options



1.2 Ordering Information

The following devices all have 1024 bytes of RAM. In addition, the MC68HC11F1 devices have 512 bytes of EEPROM. None of the devices contain on-chip ROM.

Table 1 MC68HC11F1 Standard Device Ordering Information

Package	Temperature	Frequency	MC Order Number	
80-Pin Thin Quad Flat Pack (TQFP) (14 mm X 14 mm, 1.4 mm thick)	0° to +70°	5 MHz	MC68HC11F1PU5	
	-40° to +85°C	2 MHz	MC68HC11F1CPU2	
		3 MHz	MC68HC11F1CPU3	
		4 MHz	MC68HC11F1CPU4	
		5 MHz	MC68HC11F1CPU5	
	- 40° to + 105° C	2 MHz	MC68HC11F1VPU2	
		3 MHz	MC68HC11F1VPU3	
		4 MHz	MC68HC11F1VPU4	
	- 40° to + 125° C	2 MHz	MC68HC11F1MPU2	
		3 MHz	MC68HC11F1MPU3	
		4 MHz	MC68HC11F1MPU4	
	68-Pin PLCC	0° to +70°	5 MHz	MC68HC11F1FN5
		- 40° to + 85° C	2 MHz	MC68HC11F1CFN2
3 MHz			MC68HC11F1CFN3	
4 MHz			MC68HC11F1CFN4	
5 MHz			MC68HC11F1CFN5	
- 40° to + 105° C		2 MHz	MC68HC11F1VFN2	
		3 MHz	MC68HC11F1VFN3	
		4 MHz	MC68HC11F1VFN4	
- 40° to + 125° C		2 MHz	MC68HC11F1MFN2	
		3 MHz	MC68HC11F1MFN3	
		4 MHz	MC68HC11F1MFN4	

Table 2 MC68HC11F1 Extended Voltage (3.0 to 5.5 V) Device Ordering Information

Package	Temperature	Frequency	MC Order Number
68-Pin Plastic Leaded Chip Carrier (PLCC)	0° to +70°C	3 MHz	MC68L11F1FN3
	-40° to +85°C	3 MHz	MC68L11F1CFN3
80-Pin Thin Quad Flat Pack (TQFP)	0° to +70°C	3 MHz	MC68L11F1PU3
	-40° to +85°C	3 MHz	MC68L11F1CPU3

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TABLE OF CONTENTS

Section	Page
1 Introduction	1
1.1 Features	1
1.2 Ordering Information	2
1.3 Block Diagrams	6
2 Pin Assignments and Signal Descriptions	8
2.1 MC68HC11F1 Pin Assignments	8
2.2 MC68HC11FC0 Pin Assignments	10
2.3 Pin Descriptions	12
3 Control Registers	14
3.1 MC68HC11F1 Control Registers	14
3.2 MC68HC11FC0 Control Registers	16
4 Operating Modes and System Initialization	18
4.1 Operating Modes	18
4.2 Memory Maps	19
4.3 System Initialization Registers	20
5 Resets and Interrupts	25
5.1 Interrupt Sources	25
5.2 Reset and Interrupt Registers	26
6 Electrically Erasable Programmable ROM	29
6.1 EEPROM Operation	29
6.2 EEPROM Registers	29
6.3 EEPROM Programming and Erasure	31
6.4 CONFIG Register Programming	32
7 Parallel Input/Output	33
7.1 Port A	33
7.2 Port B	33
7.3 Port C	33
7.4 Port D	33
7.5 Port E	33
7.6 Port F	33
7.7 Port G	34
7.8 Parallel I/O Registers	34
8 Chip-Selects	38
8.1 Chip-Select Operation	38
8.2 Chip-Select Registers	38
9 Serial Communications Interface (SCI)	42
9.1 SCI Block Diagrams	42
9.2 SCI Registers	44
10 Serial Peripheral Interface	49
10.1 SPI Block Diagram	49
10.2 SPI Registers	50
11 Analog-to-Digital Converter	53
11.1 Input Pins	54
11.2 Conversion Sequence	54
11.3 A/D Registers	55
12 Main Timer	57
12.1 Timer Operation	57
12.2 Timer Registers	59
13 Pulse Accumulator	64
13.1 Pulse Accumulator Block Diagram	64
13.2 Pulse Accumulator Registers	64

1.3 Block Diagrams

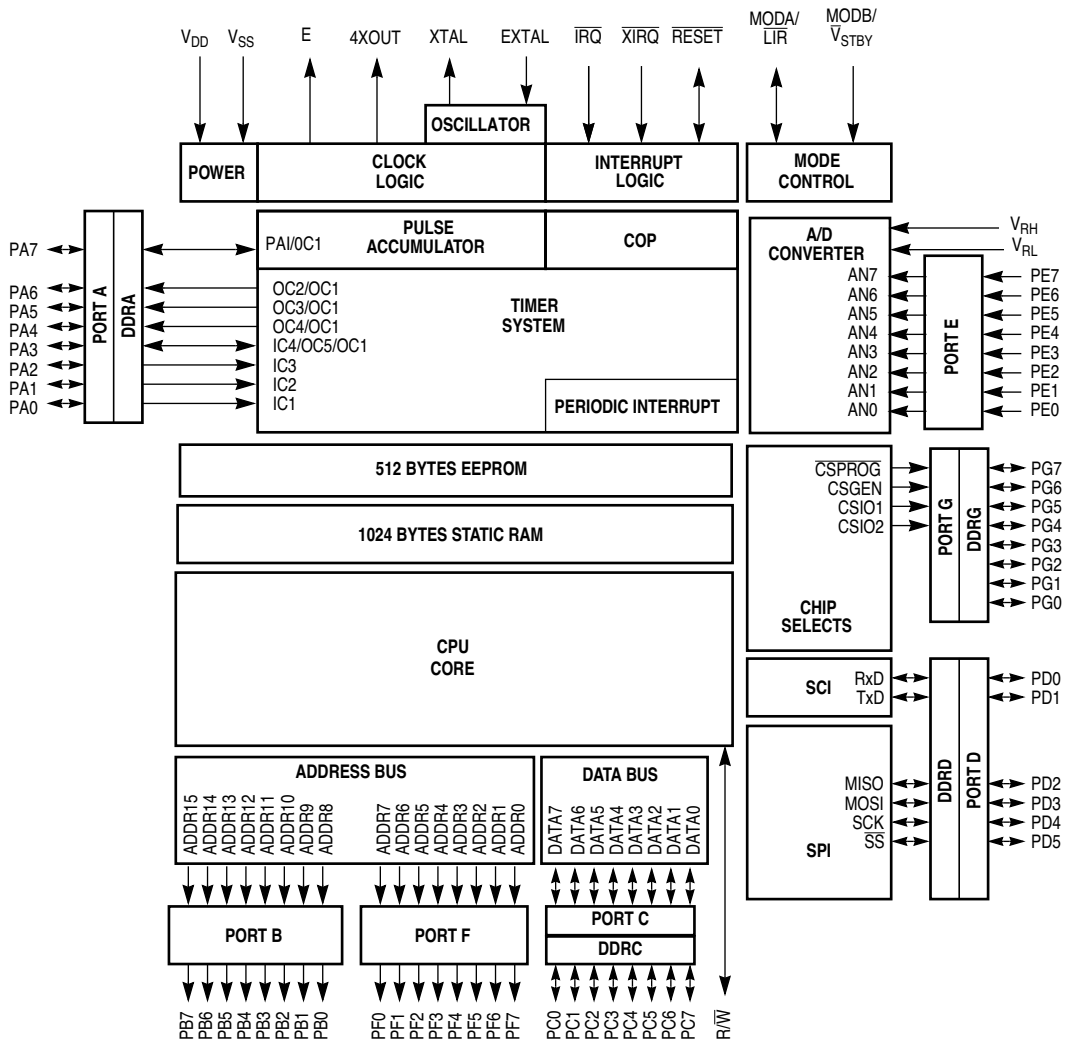


Figure 1 MC68HC11F1 Block Diagram

Home Page:

www.freescale.com

email:

support@freescale.com

USA/Europe or Locations Not Listed:

Freescale Semiconductor
Technical Information Center, CH370
1300 N. Alma School Road
Chandler, Arizona 85224
(800) 521-6274
480-768-2130

support@freescale.com

Europe, Middle East, and Africa:

Freescale Halbleiter Deutschland GmbH
Technical Information Center
Schatzbogen 7
81829 Muenchen, Germany
+44 1296 380 456 (English)
+46 8 52200080 (English)
+49 89 92103 559 (German)
+33 1 69 35 48 48 (French)
support@freescale.com

Japan:

Freescale Semiconductor Japan Ltd.
Headquarters
ARCO Tower 15F
1-8-1, Shimo-Meguro, Meguro-ku
Tokyo 153-0064, Japan
0120 191014
+81 2666 8080
support.japan@freescale.com

Asia/Pacific:

Freescale Semiconductor Hong Kong Ltd.
Technical Information Center
2 Dai King Street
Tai Po Industrial Estate,
Tai Po, N.T., Hong Kong
+800 2666 8080
support.asia@freescale.com

For Literature Requests Only:

Freescale Semiconductor
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