Fact Sheet

MC9S12NE64
16-bit microcontrollers

Target Applications

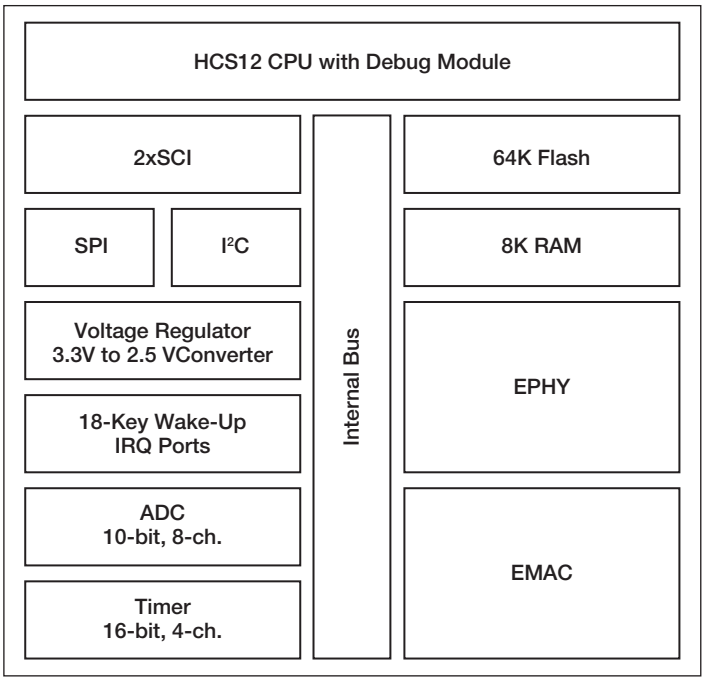
- Industrial Controls
- Network Appliances
- Remote Equipment
- Ethernet-Enabled Games
- Ethernet Bridge
- Automotive Meter Reading
- Vending Machines
- Home/Office Automation

The HCS12 family of microcontrollers is a part of the highly successful 68HC12 architecture. Using Freescale Semiconductor's 0.25µ flash, the MC9S12NE64 provides an upward migration path from the 68HC08, 68HC11 and 68HC12 architectures for applications that need larger memory, more peripherals and higher performance.

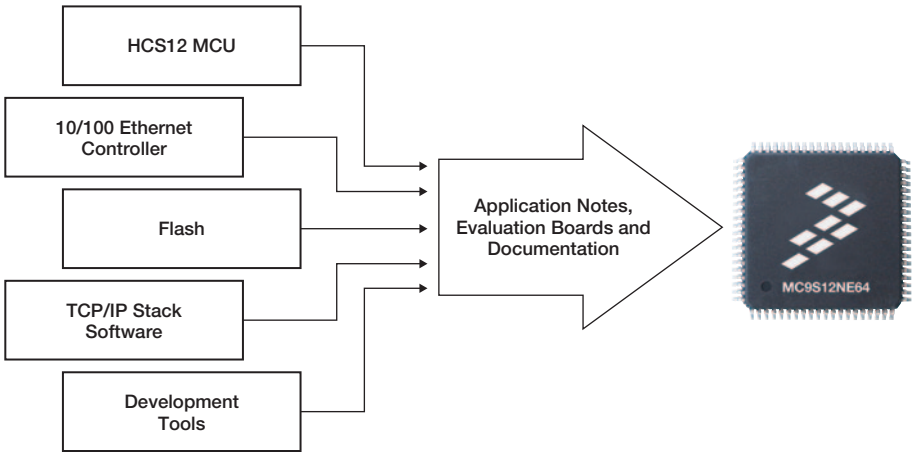
The MC9S12NE64 provides a total Ethernet connectivity solution in one microcontroller unit (MCU) with its integrated Ethernet Media Access Controller (EMAC), 10/100 Ethernet physical layer (EPHY) and on-chip flash memory.

Other features include two serial communications interfaces (SCIs), a four-channel timer, a serial peripheral interface (SPI), an inter-integrated circuit (I^2C) and a 10-bit analog-to-digital converter (ADC).

Block Diagram



A Full and Integrated Ethernet Connectivity Solution



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Development Tools

DEMO9S12NE64
MC9S12NE64 demonstration board in an enclosed plastic case with 10/100 Base-T Ethernet port, serial port, switches, LEDs, potentiometer and demo software including application code.

EVB9S12NE64
MC9S12NE64 evaluation board with 10/100 Base-T Ethernet port, dual serial ports, switches, LEDs, potentiometer, LCD port, keyboard port and demo software including application code.

USBMULTILINK12
Universal HC12/HCS12 in-circuit emulator, debugger and flash programming through BDM interface.

M68CYCLONEPRO
HC08/HCS08/HC12/HCS12 stand-alone flash programmer or in-circuit emulator, debugger and flash programmer. USB, serial or Ethernet interface options.

CWX-H12-SE
CodeWarrior Development Studio for HCS12 with Processor Expert autocode generator, full-chip simulation, assembler, linker and C compiler (code size limited, compiler upgrades available).

TCP/IP stack software is available through various third-party providers. Visit freescale.com/automotive for more information.

Package Options

Part Number	Package	Temp Range
MC9S12NE64VTU	80 Lead TQFP-EP	-40°C to +105°C
MC9S12NE64CPV	112 Lead LQFP	-40°C to +85°C

Features	Benefits
10-bit Analog-to-Digital Converter	
• 8-channel ADC • 7 µs, 10-bit single conversion time, scan mode available • Configurable external trigger capability	• Fast, easy conversion from analog inputs, such as temperature, pressure and fluid levels, to digital values for CPU processing
Clock and Reset Generator Module	
• Phase-lock loop (PLL) • Programmable clock frequency with 1,024 options ranging from divide by 16 to multiply by 64 from base oscillator • Real-time interrupt • Watchdog • Clock monitor with self-clock mode in case there is no external clock	• Reliable, robust operation • Provides high performance using cost-effective reference crystals • Low noise generation • Low power consumption
Timer	
• Four-channel, 16-bit • Programmable input capture or output compare • Gated time accumulation	• Flexible, programmable timer system
Two Serial Communications Interfaces	
• Programmable baud rate with prescaler • Infrared mode	• Asynchronous communication between the MCU and a terminal, a computer or a network of microcontrollers • Exact baud rate matching
Serial Peripheral Interface	
• Up to 6.25 Mbps	• High-speed synchronous communication between multiple MCUs or between an MCU and serial peripherals
Inter-Integrated Circuit Bus	
• 256 clock rate options	• Provides a simple, efficient method of data exchange between devices • Minimizes the need for large numbers of connections between devices and eliminates the need for an address decoder
8K Static RAM	
• On-chip RAM for EMAC buffers and system stack • Programmable buffer size	• Promote scalability between system stack and Ethernet performance
Up to 70 Input/Output Lines	
• Programmable pull-ups/pull-downs • Dual drive capability	• Reduce system cost • Able to tailor application for minimum EMC or high current loads

Learn More: For current information about Freescale products and documentation, please visit **freescale.com/automotive.**

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