LM3S1Z16 Microcontroller

STELLARIS® microcontrollers

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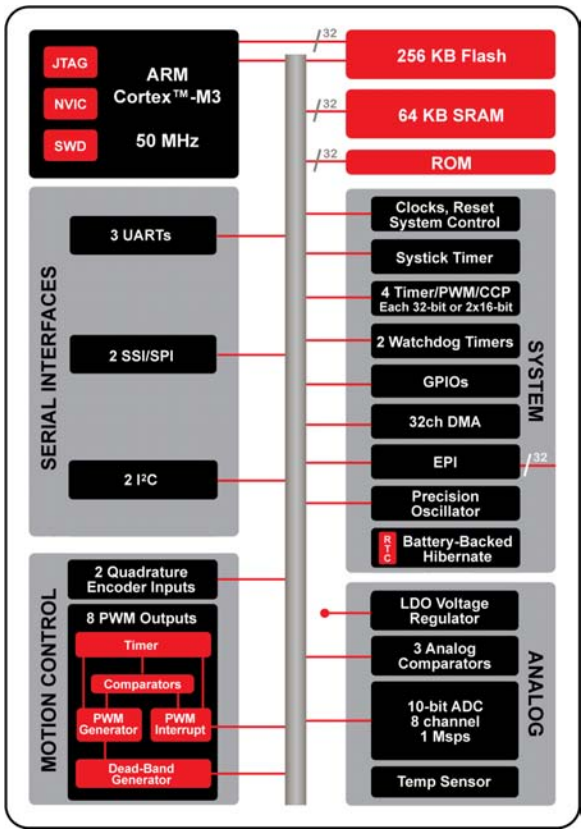

LM3S1000 Series Block Diagram. This block diagram shows the superset of features for the LM3S1000 series of microcontrollers.

Product Features

- ARM® Cortex™-M3 Processor Core
  - 50-MHz operation; 60 DMIPS performance
  - ARM Cortex SysTick Timer
  - Nested Vectored Interrupt Controller (NVIC)
- On-Chip Memory
  - 16 KB single-cycle Flash memory
  - 6 KB single-cycle SRAM
  - Internal ROM loaded with StellarisWare® software:
    - Stellaris® Peripheral Driver Library
    - Stellaris® Boot Loader
- Advanced Serial Integration
  - 10/100 Ethernet MAC with Media Independent Interface (MII)
  - Three UARTs with IrDA and ISO 7816 support
  - Two I^2C modules
  - Two Synchronous Serial Interface modules (SSI)
- System Integration
  - Direct Memory Access Controller (DMA)
  - System control and clocks including on-chip precision 16-MHz oscillator
  - Three 32-bit timers (up to six 16-bit)
  - Six Capture Compare PWM pins (CCP)
  - Lower-power battery-backed hibernation module
  - Real-Time Clock
  - Two Watchdog Timers
    - One timer runs off the main oscillator
    - One timer runs off the precision internal oscillator
  - Up to 33 GPIOs, depending on configuration
    - Highly flexible pin muxing allows use as GPIO or one of several peripheral functions
    - Independently configurable to 2, 4 or 8 mA drive capability
    - Up to 4 GPIOs can have 18 mA drive capability
- Analog
  - 10-bit Analog-to-Digital Converter (ADC) with eight analog input channels and sample rate of one million samples/second
  - Two analog comparators
  - Eight digital comparators
  - On-chip voltage regulator
- JTAG and ARM Serial Wire Debug (SWD)
- 64-pin LQFP package
- Industrial (-40°C to 85°C) Temperature Range

Target Applications

- Motion control
- Factory automation
- Fire and security
- HVAC and building control
- Test and measurement equipment
- Remote monitoring
- Electronic point-of-sale (POS) machines
- Network appliances and switches
- Gaming equipment

High-performance ARM Cortex-M3 microcontroller for real-time embedded applications

Ordering Information

Orderable Part Number	Description
LM3S1Z16-IQR50-C0	Stellaris® LM3S1Z16 Microcontroller Industrial Temperature 64-pin LQFP
LM3S1Z16-IQR50-C0T	Stellaris® LM3S1Z16 Microcontroller Industrial Temperature 64-pin LQFP Tape-and-reel

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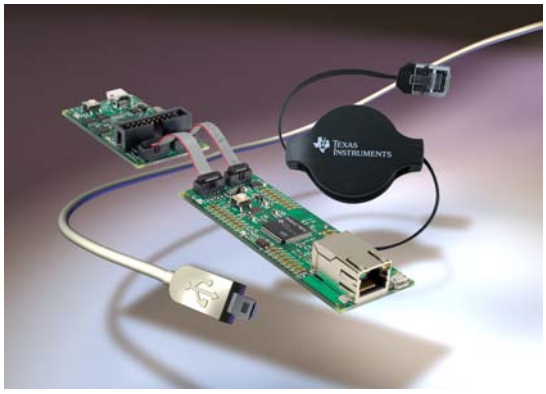
Development Kit

The Stellaris® LM3S9B96 Development Kit provides the hardware and software tools that engineers need to begin development quickly. Ask your distributor for part number DK-LM3S9B96. See the website for the latest tools available.

Evaluation Kit

The Stellaris® LM3S9B90 and LM3S9B92 Ethernet and USB-OTG Evaluation Kits provide the hardware and software tools to speed development using the LM3S9B90 and LM3S9B92 microcontrollers' integrated USB Full-Speed OTG port and 10/100 Ethernet controllers. Ask your distributor for part number EKK-LM3S9B90 or EKK-LM3S9B92 (ARM RealView® MDK tools), EKI-LM3S9B90 or EKI-LM3S9B92 (IAR Embedded Workbench® tools), EKC-LM3S9B90 or EKC-LM3S9B92 (CodeSourcery Sourcery G++ tools), or EKT-LM3S9B90 or EKT-LM3S9B92 (Code Red Technologies Red Suite tools). See the website for the latest tools available.



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ARM POWERED

Cortex Intelligent Processors by ARM

PB-LM3S1Z16-04

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