



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**
 - 80-MHz operation; 100 DMIPS performance
 - ARM Cortex SysTick Timer
 - Nested Vectored Interrupt Controller (NVIC)
- **On-Chip Memory**
 - 256 KB single-cycle Flash memory up to 50 MHz; a prefetch buffer improves performance above 50 MHz
 - 48 KB single-cycle SRAM
 - Internal ROM loaded with StellarisWare® software:
 - Stellaris® Peripheral Driver Library
 - Stellaris Boot Loader
 - Advanced Encryption Standard (AES) cryptography tables
 - Cyclic Redundancy Check (CRC) error detection functionality
- **External Peripheral Interface (EPI)**
 - 8/16/32-bit dedicated parallel bus for external peripherals
 - Supports SDRAM, SRAM/Flash memory, FPGAs, CPLDs
- **Advanced Serial Integration**
 - Three UARTs with IrDA and ISO 7816 support (one UART with full modem controls)
 - Two I²C 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
- Four 32-bit timers (up to eight 16-bit)
- Eight Capture Compare PWM pins (CCP)
- Lower-power battery-backed hibernation module
- Real-Time Clock in Hibernation module
- Two Watchdog Timers
 - One timer runs off the main oscillator
 - One timer runs off the precision internal oscillator
- Up to 67 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)**
- **100-pin LQFP and 108-ball BGA 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



LM3S1R21 Microcontroller

STELLARIS®
microcontrollers

Ordering Information

Orderable Part Number	Description
LM3S1R21-IQC80-C3	Stellaris LM3S1R21 Microcontroller Industrial Temperature 100-pin LQFP
LM3S1R21-IBZ80-C3	Stellaris LM3S1R21 Microcontroller Industrial Temperature 108-ball BGA
LM3S1R21-IQC80-C3T	Stellaris LM3S1R21 Microcontroller Industrial Temperature 100-pin LQFP Tape-and-reel
LM3S1R21-IBZ80-C3T	Stellaris LM3S1R21 Microcontroller Industrial Temperature 108-ball BGA Tape-and-reel

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), EKT-LM3S9B90 or EKT-LM3S9B92 (Code Red Technologies Red Suite tools), or EKS-LM3S9B90 or EKS-LM3S9B92 (Texas Instruments' Code Composer Studio™ IDE). See the website for the latest tools available.



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