

Powered by the microcontroller-optimized ARM® Cortex™-M3 processor, the CAN-enabled Stellaris microcontrollers combine real-time networking with a powerful set of integrated peripherals. The integrated CAN controller enables connected industrial applications such as remote monitoring, motion control, factory automation, HVAC and building control, test and measurement equipment, fire and security, and transportation.

Product Features

32-Bit RISC Performance

- Up to 50-MHz operation with 32-bit ARM® Cortex™-M3 architecture
- Thumb®-compatible Thumb-2-only instruction set, with hardware-division and single-cycle-multiplication
- Integrated Nested Vectored Interrupt Controller (NVIC)
- Memory protection unit (MPU)

On-Chip Memory

- Up to 256-KB single-cycle flash
- Up to 64-KB single-cycle SRAM

Flexible Timer Capability

- Up to four general-purpose timers, each configurable as one 32-bit or two 16-bit timers
- Real-Time Clock (RTC) capability
- 24-bit system (SysTick) timer
- 32-bit watchdog timer

CAN Controllers

- Up to two CAN controllers supporting CAN protocol version 2.0 A/B
- 32 message objects, each with its own identifier mask
- Bit rates up to 1 Mb/s
- Disable automatic retransmission mode for TTCAN

Serial Interfaces

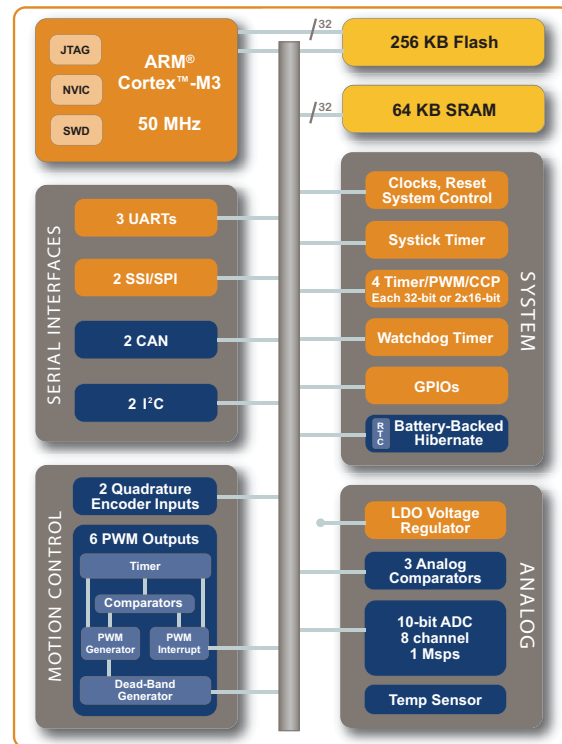
- Up to two synchronous serial interfaces (SSI) with master and slave modes for SPI, Microwire, or TI synchronous serial
- Up to two I²C interfaces (master and slave)
- Up to three 16C550-type UARTs with IrDA support

Analog-to-Digital Converter (ADC)

- Single- and differential-input configurations
- Up to eight 10-bit channels (inputs) when used as single-ended inputs
- Sample rate up to one million samples/second

Analog Comparators

- Up to three independent integrated analog comparators
- Configurable for output to: drive an output pin, generate an interrupt, or initiate an ADC sample sequence
- Compare external pin input to external pin input or to internal programmable voltage reference



Dedicated Motion-Control PWM

- Up to six motion-control PWM outputs
- Each PWM generator block has one 16-bit counter, two comparators, a PWM generator, and a dead-band generator
- Output control block with PWM output enable of each PWM signal
- Can initiate an ADC sample sequence

Quadrature Encoder Inputs

- Up to two hardware position integrators to track the encoder position
- Velocity capture using built-in timer
- Interrupt generation on index pulse, velocity-timer expiration, and direction change

GPIOs

- 5-V-tolerant input/outputs
- Programmable interrupt generation
- Fast toggle capable of a change every two clock cycles
- Programmable slew-rate control
- Programmable drive strength

Power

- On-chip Low Drop-Out (LDO) voltage regulator
- Battery-backed hibernation module with real-time clock and 256-bytes of non-volatile memory
- 3.3-V supply logical brown-out detection

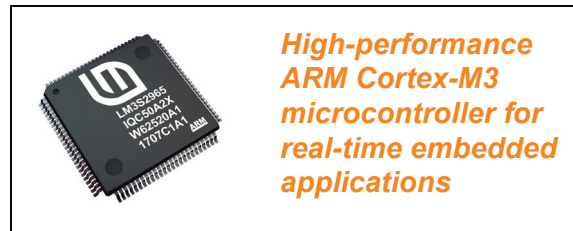
Package

- 100-pin RoHS-compliant LQFP
- Industrial operating temperature (-40°C to +85°C)



Target Applications

- Motion Control
- Factory Automation
- Fire and Security
- HVAC and Building Control
- Transportation
- Test and Measurement Equipment



Ordering Information

Part Number	Memory			Timers						Serial Interfaces				Analog			GPIOs (5-V tolerant)	Battery-Backed Hibernation Module	Package		
	Flash (KB)	SRAM (KB)	Max Speed (MHz)	System Tick Timer (24-bit)	Watchdog	General-Purpose	PWM			CAN Controllers	UART	I ² C	SSI/SPI	QEI	ADC (10-bit)					Internal Temp Sensor	Analog Comparators
							PWM	Dead-Band Generator	CCP						ADC Channels	ADC Speed (samples per second)					
LM3S2110	64	16	25	✓	✓	3	2	✓	4	1	1	1	1	-	-	-	3	11-40	-	100-pin LQFP	
LM3S2139	64	16	25	✓	✓	3	-	-	6	1	2	1	1	-	4	250K	✓	3	24-56	-	100-pin LQFP
LM3S2410	96	32	25	✓	✓	3	-	-	4	1	1	-	1	-	-	-	2	37-60	-	100-pin LQFP	
LM3S2412	96	32	25	✓	✓	3	2	✓	4	1	2	1	1	-	3	250K	✓	2	19-49	-	100-pin LQFP
LM3S2432	96	32	50	✓	✓	3	2	✓	4	1	2	1	1	-	3	250K	✓	2	4-34	-	100-pin LQFP
LM3S2533	96	64	50	✓	✓	4	6	✓	6	1	2	1	1	-	3	250K	✓	3	10-48	✓	100-pin LQFP
LM3S2620	128	32	25	✓	✓	4	4	✓	6	2	1	1	1	1	-	-	-	3	12-52	✓	100-pin LQFP
LM3S2637	128	32	50	✓	✓	4	-	-	6	1	2	1	1	-	4	500K	✓	3	15-46	✓	100-pin LQFP
LM3S2651	128	32	50	✓	✓	4	4	✓	6	1	3	1	2	-	4	500K	✓	1	16-53	✓	100-pin LQFP
LM3S2730	128	64	50	✓	✓	3	-	-	4	1	1	-	1	-	-	-	-	2	37-60	-	100-pin LQFP
LM3S2739	128	64	50	✓	✓	3	6	✓	6	1	2	1	1	1	4	500K	✓	1	18-56	✓	100-pin LQFP
LM3S2939	256	64	50	✓	✓	3	4	✓	4	1	3	1	1	1	3	500K	✓	3	17-57	✓	100-pin LQFP
LM3S2948	256	64	50	✓	✓	4	-	-	8	2	3	1	2	-	8	1M	✓	3	12-52	✓	100-pin LQFP
LM3S2950	256	64	50	✓	✓	4	6	✓	6	2	3	1	2	1	-	-	-	3	10-60	✓	100-pin LQFP
LM3S2965	256	64	50	✓	✓	4	6	✓	6	2	3	2	2	2	4	1M	✓	3	3-56	✓	100-pin LQFP

Evaluation Kit

The Luminary Micro Stellaris® LM3S2965 Evaluation Kit provides the hardware and software tools to speed development of powerful, network-connected devices. Ask your Luminary Micro distributor for part number EKK-LM3S2965 (ARM RealView® MDX tools), EKI-LM3S2965 (IAR Embedded Workbench® tools), or EKC-LM3S2965 (CodeSourcery Sourcery G++ tools). See the Luminary Micro web site for the latest tools available.



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