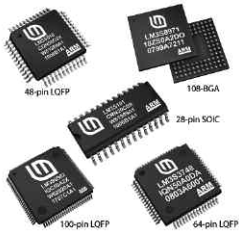




LUMINARY MICRO

Stellaris® Family

Core: Cortex-M3



Luminary Micro, Inc. designs, markets, and sells the award-winning Stellaris family of ARM® Cortex™-M3-based microcontrollers (MCUs). As ARM's lead partner for Cortex-M3 technology, Luminary Micro delivered the world's first silicon implementation of the Cortex-M3 processor and now

offers the world's largest selection of ARM-based MCUs in production, providing 32-bit performance at 8-/16-bit cost. Stellaris microcontrollers include single-cycle embedded flash and SRAM, a low drop-out voltage regulator, battery-backed

low-power hibernation capability, integrated brown-out reset and power-on reset functions, USB full-speed Host/Device, USB full-speed On-the-Go, 10/100 Ethernet MAC+PHY, CAN, and mixed-signal capabilities. Motion control PWMs and quadrature encoder inputs are included to provide advanced motor control support. The Stellaris family is ideal for cost-conscious applications requiring significant control processing and connectivity capabilities, including motion control, HVAC and building controls, power and energy monitoring and conversion, network appliances and switches, factory automation, test and measurement equipment, and medical instrumentation.

Features ▶

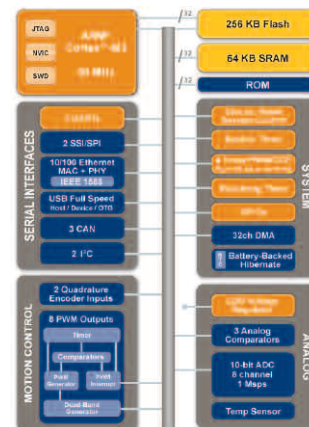
- 1.25 DMIPS/MHz—better than ARM7 and ARM9
- Single-cycle Flash and single-cycle SRAM accesses for maximum performance
- Deterministic, fast interrupt processing
- Every peripheral provided directly to the pins without feature multiplexing for ease of design
- Battery-backed low power hibernation capability
- All GPIOs can generate interrupts, are 5V-tolerant, and have programmable drive strength and slew rate control
- ARM Thumb™-2 mixed 16-/32-bit instruction set for compact, powerful code
- Extra on-chip debug support including data watchpoints and Flash patching
- Integrated low-dropout voltage regulator, brown-out reset, and power-on reset functions for easy system design
- High precision, low error 10-bit A/D converter yields better results than most 12-bit A/D converters

Benefits ▶

- Over 100 Stellaris family members to choose from to fit your specific needs
- Advanced communication capabilities, including 10/100 Ethernet MAC/PHY and CAN controllers
- Only integrated Ethernet MAC+PHY available in an ARM architecture MCU
- CAN controllers are Bosch-licensed—the golden standard in short-haul industrial networks

- USB 2.0 full-speed host/device and USB 2.0 full-speed On-the-Go
- Royalty-free advanced motion control support in hardware and software speeds time to market
- Ease of development with the royalty-free Stellaris Peripheral Driver Library's high-level API interface to the entire Stellaris peripheral set
- Requires half the Flash (code space) of ARM7 applications
- 2-4x faster than ARM7, 10x faster than 8051, and 8x faster than PIC24F on MCU control applications
- Enter an instruction-set-compatible family that ranges from \$1 to 1 GHz in the Cortex processor family—never upgrade again
- Cost-effective: utilize 32-bit performance for the same price as current 8-bit and 16-bit microcontroller designs
- No assembly code required—ever

Stellaris® Family Block Diagram



Family Comparative Features ▶

Part Number	Memory		Temperature °C	Package	Core Variant	Frequency (MHz)	A/D (channel/bits)	Timers (channels/bits)	Serial Interface (s) (#/Type)	GPIO	Ethernet (#/Type)	CAN #	Other Key Peripherals			
	Flash/ROM (KB)	RAM (KB)											PWM (PWM Pins)	PWM (CCP Pins)	Quadrature Encoder	LDO Voltage Regulator
Stellaris 8000 Series	96-256	32-64	-40 to +105	100-pin LQFP and 108-pin BGA	Cortex-M3	50	0-8ch/10b/+/- 1 LSB	4ch/32b or 8ch/16b	UART, SSI, I ² C	3-46	1 (10/100 MAC+PHY)	1-3	0-6	2-6	0-2	✓
Stellaris 6000 Series	64-256	16-64	-40 to +105	100-pin LQFP and 108-pin BGA	Cortex-M3	25-50	0-8ch/10b/+/- 1 LSB	up to 4ch/32b or 8ch/16b	UART, SSI, I ² C	3-60	1 (10/100 MAC+PHY)	-	0-6	4-6	0-2	✓
Stellaris 5000 Series	128	32-64	-40 to +105	64-pin LQFP and 100-pin LQFP	Cortex-M3	50	0-8ch/10b/+/- 1 LSB	-	UART, SSI, I ² C	0-61	-	1	0-8	2-8	0-1	✓
Stellaris 3000 Series	128	32-64	-40 to +105	64-pin LQFP and 100-pin LQFP	Cortex-M3	50	0-8ch/10b/+/- 1 LSB	-	UART, SSI, I ² C	0-61	-	-	0-8	7-8	0-1	✓
Stellaris 2000 Series	64-256	16-64	-40 to +105	64-pin LQFP, 100-pin LQFP and 108-pin BGA	Cortex-M3	25-50	0-8ch/10b/+/- 1 LSB	up to 4ch/32b or 8ch/16b	UART, SSI, I ² C	0-46	-	1-2	0-6	4-8	0-2	✓
Stellaris 1000 Series	64-256	16-64	-40 to +105	64-pin LQFP, 100-pin LQFP and 108-pin BGA	Cortex-M3	25-50	0-8ch/10b/+/- 1 LSB	up to 4ch/32b or 8ch/16b	UART, SSI, I ² C	4-60	-	-	0-6	2-8	0-2	✓
Stellaris 800 Series	64	8	-40 to +105	48-pin LQFP	Cortex-M3	50	0-8ch/10b/+/- 1 LSB	up to 3ch/32b or 6ch/16b	UART, SSI, I ² C	0-36	-	-	0-6	4-6	0-1	✓
Stellaris 600 Series	32	8	-40 to +105	48-pin LQFP	Cortex-M3	50	0-8ch/10b/+/- 1 LSB	up to 3ch/32b or 6ch/16b	UART, SSI, I ² C	0-36	-	-	0-6	4-6	0-1	✓
Stellaris 300 Series	16	4	-40 to +105	48-pin LQFP	Cortex-M3	25	0-8ch/10b/+/- 1 LSB	up to 3ch/32b or 6ch/16b	UART, SSI, I ² C	3-36	-	-	0-6	2-6	0	✓
Stellaris 100 Series	8	2	-40 to +105	28-pin SOIC	Cortex-M3	20	-	2ch/32b or 4ch/16b	-	0-18	-	-	0	1-2	0	✓

Development Tools Matrix ▶

Type	Description	Part Number
Evaluation Board	Stellaris® LM3S811 Evaluation Kit for Keil, IAR, CodeSourcery, Code Red	EK*-811
Evaluation Board	Stellaris® LM3S1968 Evaluation Kit for Keil, IAR, CodeSourcery, Code Red	EK*-1968
Evaluation Board	Stellaris® LM3S3762 Evaluation Kit for Keil, IAR, CodeSourcery, Code Red	EK*-2965
Evaluation Board	Stellaris® LM3S3748 Evaluation Kit for Keil, IAR, CodeSourcery, Code Red	EK*-3748
Evaluation Board	Stellaris® LM3S3768 Evaluation Kit for Keil, IAR, CodeSourcery, Code Red	EK*-3768
Evaluation Board	Stellaris® LM3S6965 Evaluation Kit for Keil, IAR, CodeSourcery, Code Red	EK*-6965
Evaluation Board	Stellaris® LM38962 Evaluation Kit for Keil, IAR, CodeSourcery, Code Red	EK*-8962
Reference Design Kit	Stellaris Stepper Motor Reference Design Kit	RDK-Stepper
Reference Design Kit	Stellaris ACIM Motor Reference Design Kit	RDK-ACIM
Reference Design Kit	Stellaris Brushless DC Motor Reference Design Kit	RDK-BLDC
Reference Design Kit	Stellaris Intelligent Display Reference Design Kit	RDK-IDM
Reference Design Kit	Stellaris Serial to Ethernet Reference Design Kit	RDK-S2E

*K for Keil Compiler
 I for IAR Compiler
 T for Code Red Technology Compiler
 C for Code Sourcery Compiler

Stellaris LM3S3748 Evaluation Kit



For more information on Arrow's ARM solutions, pricing, and availability, visit www.arrow.com/arm or call 1-866-910-3650.