# Stellaris® Family Development Kit

LUMINARY MICRO™

Development Board

Motherboard

- Two UART transceivers and DB9 male connectors
- All I/O available on headers
- One potentiometer and one photocell for driving the ADC and comparator inputs
- Eight user LEDs and one pushbutton for use with the Stellaris® GPIOs
- Standard ARM® 20-pin JTAG debug connector
- USB 2.0 full-speed interface allows JTAG/SWD debug without external in-circuit emulator (ICE)
- 8-Kbits I^2C EEPROM memory
- 1-Mbit SPI-based flash memory
- One buzzer for PWM use
- 32-KHz oscillator for real-time clock
- External reset switch and power-on reset supervisor
- 5-V and 3.3-V LED power indicators
- User-prototype area
- Peripheral Device Controller (PDC) CPLD for interface with:
  - 16 character by 2-line LCD display
  - 8 status LEDs
  - 8-position dual-inline package (DIP) switch
  - 24 GPIOs

Daughterboards

- Daughterboards enable support for multiple Stellaris package/pin-out options:
  - DB28 daughterboard for 28-pin SOIC
  - DB48 daughterboard for 48-pin LQFP
  - Daughterboards also available separately
- 6-MHz crystal mounted on pin sockets for easy crystal changes
- SMA connector for external clock
- Power and ground test loops
- Jumper-selectable 32.768-KHz clock
- All daughterboard connector signals accessible via headers on the daughterboard
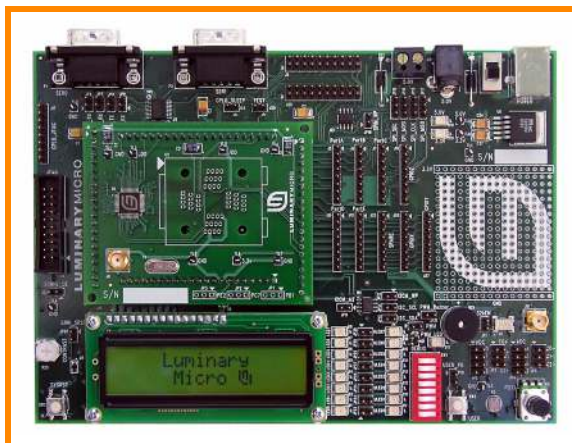
Software

- Stellaris peripheral driver library (source and object code), providing an easy API interface to all microcontroller peripherals
- Stellaris microcontroller code examples
- Application examples for included toolsets and RTOSs

Tools

ARM/Keil™ RealView® MDK

- Combines the ARM RealView® compilation tools with the Keil µVision® Integrated Development Environment, providing developers with a feature-rich environment optimized for Stellaris controllers
- Project management and device and tool configuration
- Source code editor optimized for embedded systems
- Target debugging and flash programming
- Address-limited (16 KB) evaluation version
- Includes Keil RTX Real-Time Kernel, which allows flexible scheduling of system resources such as CPU and memory

CodeSourcery G++ GNU Toolchain

- Eclipse Integrated Development Environment
- GNU ISO C/C++ compilers and runtime libraries
- Source-level and assembly-level debugging with the GNU debugger
- Powerful linker and flexible macro assembler
- Easy-to-install binary packages
- 30-day fully functional demonstration version of CodeSourcery's professional-quality version of the GNU toolchain

IAR Systems Embedded Workbench®

- Set of sophisticated and easy-to-use development tools for embedded applications
- Integrates the IAR C/C++ compiler, assembler, linker, librarian, text editor, project manager and C-SPY® debugger in one integrated development environment (IDE)
- 8-KB code-size limited KickStart™ version is included with device-, debug- and download support for Stellaris microcontrollers

Real-Time Operating Systems

FreeRTOS.org™ RTOS

- Portable, open-source miniature real-time kernel for embedded applications.
- Royalty-free, even for commercial applications
- Supports preemptive, cooperative, and co-routine execution
- Contains preconfigured demonstration application
- Includes source code

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Pumpkin Salvo™ Lite RTOS

- Scalable, easy to learn and highly configurable
- Event-driven priority-based multitasking RTOS with up to 16 separate dynamic task priority levels
- Provides intertask communications and synchronization, ISR-to-task communications, and resource sharing
- Extremely small data and memory footprints
- Demo version includes complete Salvo feature set (except for advanced configuration options and source code), and is limited to 4 tasks and 5 events

Express Logic ThreadX RTOS

- Easy to use, with a small footprint and fast response time
- Preemption-threshold™ technology eliminates excessive context switching and un-deterministic priority inversion, and enhances responsiveness
- Priority inheritance, flexible memory utilization, and dynamic creation of system resources
- Included demo version supports a limited set of RTOS objects and is provided in binary form only
- Demo application utilizes 8 threads and related objects (queues, semaphores, and so on)

Micrium µC/OS-II RTOS

- Highly portable, ROMable, scalable, preemptive real-time, deterministic, multitasking kernel
- Scalable to only contain the features needed, and thus provide a small footprint
- Execution time for most services is both constant and deterministic
- Includes full functionality and source code (must be licensed when used in a commercial application)

Kit Contents

The Stellaris Family Development Kit provides the tools that engineers need to develop and prototype embedded applications right out of the box:

- Development board and schematics
- Software, tools, and RTOSs
- Cables and jumpers (no separate power-supply required; power is supplied through the USB cable)
- Full documentation set on CD including data sheets, user manuals, reference manuals, application notes, errata, FAQs, readme, quickstart guides, and collateral

Ordering Information

Part Number	Description
DK-LM3S101	Stellaris Family Development Kit for the LM3S101 microcontroller
DK-LM3S102	Stellaris Family Development Kit for the LM3S102 microcontroller
DK-LM3S301	Stellaris Family Development Kit for the LM3S301 microcontroller
DK-LM3S801	Stellaris Family Development Kit for the LM3S310, LM3S601, and LM3S801 microcontrollers
DK-LM3S811	Stellaris Family Development Kit for the LM3S315, LM3S316, LM3S611, LM3S613, and LM3S811 microcontrollers
DK-LM3S815	Stellaris Family Development Kit for the LM3S610, LM3S612, LM3S615, LM3S812, and LM3S815 microcontrollers
DK-LM3S817	Stellaris Family Development Kit for the LM3S317, LM3S617, and LM3S817 microcontrollers
DK-LM3S818	Stellaris Family Development Kit for the LM3S618 and LM3S818 microcontrollers
DK-LM3S828	Stellaris Family Development Kit for the LM3S328, LM3S628, and LM3S828 microcontrollers
DB-LM3S101	Supplemental DB28 daughterboard for the LM3S101 microcontroller (Development Kit required)
DB-LM3S102	Supplemental DB28 daughterboard for the LM3S102 microcontroller (Development Kit required)
DB-LM3S301	Supplemental DB48 daughterboard for the LM3S301 microcontroller (Development Kit required)
DB-LM3S801	Supplemental DB48 daughterboard for the LM3S310, LM3S601, and LM3S801 microcontrollers (Development Kit required)
DB-LM3S811	Supplemental DB48 daughterboard for the LM3S315, LM3S316, LM3S611, LM3S613, and LM3S811 microcontrollers (Development Kit required)
DB-LM3S815	Supplemental DB48 daughterboard for the LM3S610, LM3S612, LM3S615, LM3S812, and LM3S815 microcontrollers (Development Kit required)
DB-LM3S817	Supplemental DB48 daughterboard for the LM3S317, LM3S617, and LM3S817 microcontrollers (Development Kit required)
DB-LM3S818	Supplemental DB48 daughterboard for the LM3S618 and LM3S818 microcontrollers (Development Kit required)
DB-LM3S828	Supplemental DB48 daughterboard for the LM3S328, LM3S628, and LM3S828 microcontrollers (Development Kit required)

PB-LM3SDKT-04

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Cortex
Intelligent Processors by ARM®