OMAP-L138 DSP+ARM9™ Development Kit

Low-cost development kit to jump-start real-time signal processing innovation

Texas Instruments' OMAP-L138 development kit is a new, robust low-cost development board designed to spark innovative designs based on the OMAP-L138 processor. Along with TI's new included Linux™ Software Development Kit (SDK), the OMAP-L138 development kit is ideal for power-optimized, networked applications including industrial control, medical diagnostics and communications. It includes the OMAP-L138 baseboard, SD cards with a Linux demo, DSP/BIOS™ kernel and SDK, and Code Composer Studio™ (CCStudio) Integrated Development Environment (IDE), a power supply and cord, VGA cable and USB cable.

Key features and benefits

- OMAP-L138 DSP+ARM9 software and development kit to jump-start real-time signal processing innovation
- Reduces design work with downloadable and duplicable board schematics and design files
- Fast and easy development of applications requiring fingerprint recognition and face detection with embedded analytics
- Low-power OMAP-L138 DSP+ ARM926EJ™ processor
- Scalable platform enables a variety of performance, power, peripheral and price options
- 456-MB TMS320C674x DSP
- 456-MB ARM926EJ processor
- 128-MByte DDR2 SDRAM
- 128-MByte NAND Flash memory
- Micro SD/MMC slot
- USB and SD connectors
- Wide variety of peripheral interfaces
- Line in, headphone out, MIC-in ports
- Expansion connectors
- Includes Code Composer Studio™ IDE v4.0
- Full documentation on CD-ROM

Technical details

The OMAP-L138 development kit is based on the OMAP-L138 DSP+ARM9 processor, a low-power applications processor based on an ARM926EJ-S and a TMS320C674x DSP core. It provides significantly lower power than other members of the TMS320C6000™ platform of DSPs. The OMAP-L138 processor enables developers to quickly design and develop devices featuring robust operating systems support and rich user interfaces with a fully integrated mixed-processor solution. The dual-core architecture of the device provides benefits of both DSP and Reduced Instruction Set Computer (RISC) technologies, enabling applications requiring a high-level operating system and more intensive digital signal processing.

With a wide variety of standard interfaces for connectivity and storage, the OMAP-L138 development kit enables developers to easily bring audio, video and other signals onto the board. Expansion headers allow customers to extend the functionality of the kit to include a camera sensor from Leopard Imaging or an LCD screen. Included interfaces are:

- USB serial port
- Fast Ethernet port (10/100 Mbps)
- USB host port (USB 1.1)
- USB OTG port (USB 2.0)
- SATA port (3 Gbps)
- VGA port (15-pin D-SUB)
- LCD port (Beagleboard-XM connectors)
- 3 audio ports
  - 1 line in
  - 1 line out
  - 1 MIC in
- Composite in (RCA jack)
- Leopard Imaging camera sensor input (32-pin ZIP connector)
- Authentic fingerprint sensor

Easy to write and optimize DSP code

Designers can readily target the OMAP-L138 processor through TI's robust and comprehensive Code Composer Studio IDE. CCStudio IDE includes an efficient optimizing C/C++ compiler assembler, linker, debugger;

integrated CodeWright editor with CodeSense technology for faster code creation; data visualization; a profiler and a flexible project manager. CCStudio IDE also includes a DSP/BIOS™ real-time kernel and Chip Support Library.

TI's new Linux SDK is included on a SD card with the development kit. The SDK has an updated kernel and low-latency inter-processor communication which speeds development of optimized system solutions. Designers can begin writing code in less than one hour with the latest tool chain GCC 4.5 and the latest TI DSP software components (SYS/BIOS™ and SysLink).

StarterWare provides a C-based OS-independent platform support for the ARM® and DSP platforms. It provides device abstraction layer libraries, peripheral programming examples such as Ethernet, graphics and USB, and board-level example applications. StarterWare can be used stand-alone or with a real-time operating system (RTOS).

Simple hardware development and software compatibility

TI helps reduce design work with free downloadable and duplicable board schematics and design files following TI's proven design rules. Designers can select the ideal combination of ARM® and DSP performance needed for any design with the software and pin-compatible OMAP-L138/2 DSP+ARM9™ processors. For designs needing only DSP performance, designers can scale to software and pin-to-pin compatible TMS320C6748/6/2 DSPs as well as other software-compatible TMS320C6000™ DSPs available at a variety of performance, power, peripheral and price options.

The OMAP-L138 development kit is supported by TI's online community **e2e.ti.com**. Complete collateral, CCStudio IDE drivers, Chip Support Library (CSL) and all the required production-quality documentation for the OMAP-L138 kit is available today. Complete schematics and layout files are available for the tool so customers can use this as a reference for their own system development.

TI's extensive Developer Network, as well as a complete Chip Support Library, comprehensive application notes, reference designs, application guides, videos and online communities help designers develop new products based on the OMAP-L138 processor with confidence and ease.

Get started today

The robust, low-cost OMAP-L138 development kit (part number: TMDXLCDK138) is available now for the low cost of U.S. $195. Pricing includes the OMAP-L138 baseboard as well as the industry-leading CCStudio IDE v.4, StarterWare software package, Linux demo and DSP/BIOS™ kernel and Linux SDK.
www.ti.com/omapl138lcdk

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