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
- 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;

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)
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+ARM™ 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](http://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/omap138icdk](http://www.ti.com/omap138icdk)
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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
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