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Understanding [Embedded - Microcontroller, Microprocessor, FPGA Modules](#)

Embedded - Microcontroller, Microprocessor, and FPGA Modules are fundamental components in modern electronic systems, offering a wide range of functionalities and capabilities. Microcontrollers are compact integrated circuits designed to execute specific control tasks within an embedded system. They typically include a processor, memory, and input/output peripherals on a single chip. Microprocessors, on the other hand, are more powerful processing units used in complex computing tasks, often requiring external memory and peripherals. FPGAs (Field Programmable Gate Arrays) are highly flexible devices that can be configured by the user to perform specific logic functions, making them invaluable in applications requiring customization and adaptability.

Applications of [Embedded - Microcontroller,](#)

Details

Product Status	Active
Module/Board Type	MPU, DSP Core
Core Processor	TMS320C6748 (DSP)
Co-Processor	-
Speed	375MHz
Flash Size	16MB
RAM Size	128MB
Connector Type	-
Size / Dimension	1.18" x 1.57" (30mm x 40mm)
Operating Temperature	0°C ~ 70°C
Purchase URL	https://www.e-xfl.com/product-detail/logic-pd/somc6748-10-1603ahcr

PRODUCT BRIEF:

Logic PD :: Texas Instruments
www.logicpd.com/ti

OMAP-L138 SOM-M1 System on Module

:: SUPPORTED PROCESSORS:

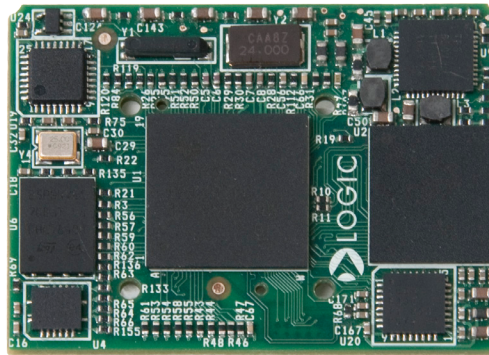
OMAP-L138
TMS320C6748

The OMAP-L138 System on Module (SOM) is a compact, product-ready hardware and software solution that fast forwards embedded designs while reducing risk and controlling cost.

Based on Texas Instruments' OMAP-L138 processor and designed in the SOM-M1 form factor, the OMAP-L138 module offers essential features for handheld and embedded networking applications. The OMAP-L138 SOM-M1 features the superset OMAP-L138 processor, but also supports the TMS320C6748 digital signal processor (DSP).

The OMAP-L138 SOM-M1 brings the industry leading low power ARM926 core to a small, off-the-shelf solution. The standard SOM-M1 form factor allows developers to reuse existing baseboard designs when upgrading to new OMAP processors, which extends roadmap possibilities for their end-product.

Two Zoom™ Development Kit options allow developers to choose the platform best suited to their application needs. By starting with the corresponding Zoom Development Kit, engineers can write application software on the same hardware that will be used in their final product.



OMAP-L138 SOM-M1

The compact size of the OMAP-L138 SOM-M1 is ideal for medical patient monitoring wearables and other portable instrumentation applications; the built-in Serial ATA (SATA) controller provides fast access to large capacity storage devices. For medical, industrial, audio, and communication products, the OMAP-L138 SOM-M1 allows for powerful versatility, long-life, and greener products.

OMAP-L138 SOM-M1 :: HIGHLIGHTS:

- + Product-ready System on Module with a TI OMAP-L138 processor or TMS320C6748 DSP running at 375 MHz
- + Compact form factor—SOM-M1 (30 x 40 x 4.1 mm)
- + Long product lifecycle
- + Linux™ DVSDK
- + Commercial temp (0°C to 70°C)
Industrial temp (-40°C to 85°C)
- + RoHS compliant

ZOOM DEVELOPMENT KIT :: OPTIONS:

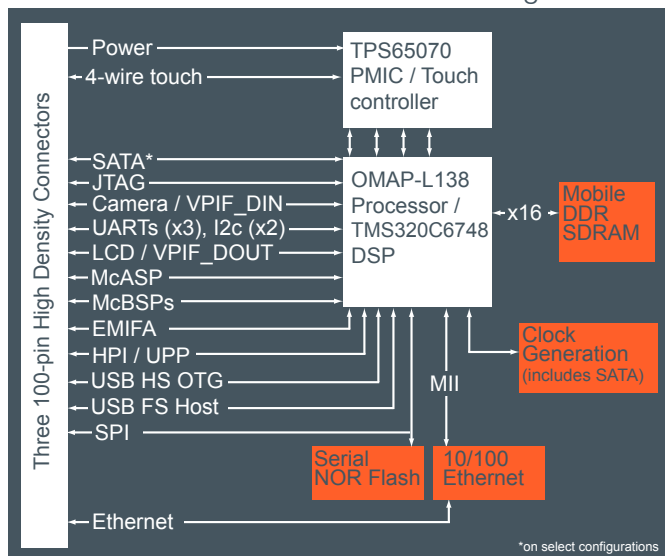
Low-cost eXperimenter Kit

- + OMAP-L138 SOM-M1 (128 MB Mobile DDR)
- + Application baseboard
- + 4.3" LCD panel

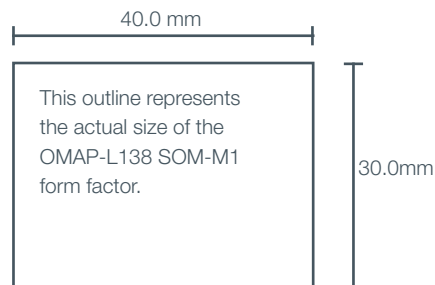
EVM Development Kit

- + OMAP-L138 SOM-M1 (128 MB Mobile DDR)
- + TMS320C6748 SOM-M1 (128 MB Mobile DDR)
- + Application baseboard
- + User Interface (UI) board
- + 4.3" LCD panel

OMAP-L138/C6748 SOM-M1 Block Diagram



(Block diagram is not drawn to scale. For reference purposes only.)



Product Features

Choice of Processor

- + TI OMAP-L138 processor with dual core ARM926EJ-S and C6748 VLIW DSP running at 375 MHz
- + TI TMS320C6748 VLIW DSP running at 375 MHz

SDRAM Memory

- + Mobile DDR, 64 or 128 MB

Flash Memory

- + Scalable serial NOR flash (8 MB standard)

Display

- + Programmable color LCD controller supports up to a 16 bpp TFT interface

Touchscreen

- + Integrated 4-wire touchscreen controller (TPS65070)

Network Support

- + 10/100 Base-T Ethernet controller

Serial ATA Controller

- + SATA 1.5 & 3.0 Gbps support

PC Card Expansion

- + MMC/SD card support

USB

- + One USB 2.0 high-speed On-the-Go interface
- + One USB 1.1 full-speed host interface

Serial Ports

- + Three external UARTs
- + Two I2Cs

GPIO

- + Programmable I/O depending on peripheral requirements

Software

- + U-Boot (bootloader/monitor)
- + Linux™ DVSDK
- + Windows® Embedded CE SDK
- + DSP/BIOS
- + Board Support Library (BSL) sample programs

Mechanical

- + SOM-M1 form factor
- + 30.0 mm wide x 40.0 mm long x 4.1 mm high

RoHS Compliant



OMAP-L138/C6748 SOM-M1 Ordering Information

Model Number	Processor	Speed (MHz)	mDDR (MB)	NOR Flash (MB)	Wired Ethernet	SATA	Temp (°C)
SOMOMAPL138-10-1602AHCR	OMAPL138	375	128	8	Y	Y	0°–70°
SOMOMAPL138-10-1502QHCR	OMAPL138	375	64	8	Y	N	0°–70°
SOMOMAPL138-10-1602QHCR	OMAPL138	375	128	8	Y	N	-40°–85°
SOMC6748-10-1602AHCR	TMS320C6748	375	128	8	Y	Y	0°–70°

NOTE: Custom configurations are available by special order. Please contact Logic PD Sales for details: product.sales@logicpd.com.

Zoom™ OMAP-L138 Development Kit Ordering Information

Development Kit ¹	Model Number	SOM-M1 Configuration(s) Included	Suggested Resale
EVM Development Kit	TMDSEVML138	SOMOMAPL138-11-1602AHCR ² SOMC6748-10-1602AHCR	\$1050
eXperimenter Kit	TMDSEXPL138	SOMOMAPL138-10-1602AHCR	\$495

NOTES: 1. The EVM Development Kit and eXperimenter Kit are available through Texas Instruments distributors.

2. This configuration is the SOMOMAPL138-10-1602AHCR with added power measurement circuitry.

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