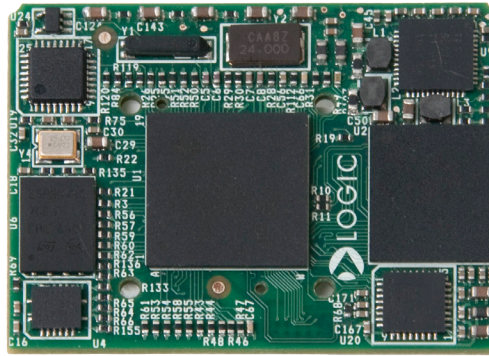# OMAP-L138 SOM-M1 System on Module

:: 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℃ to 70℃) Industrial temp (-40℃ to 85℃)
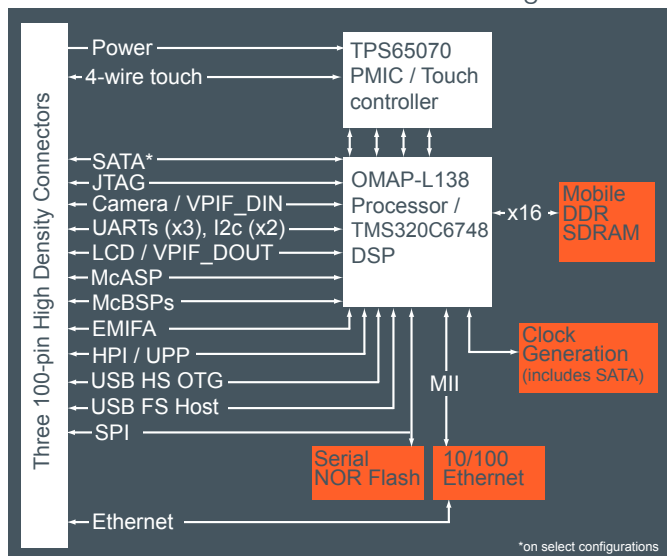+ RoHS compliant

ZOOM DEVELOPMENT KIT :: OPTIONS:

Low-cost eXperimenter Kit

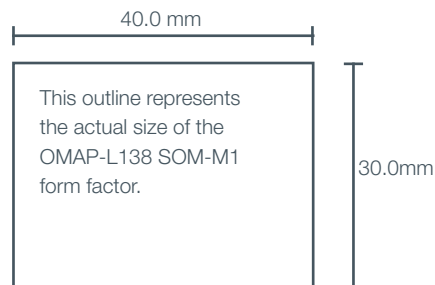+ OMAP-L138 SOM-M1 (128 MB Mobile DDR)
+ Application baseboard
+ 4.3" LCD panel

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

LOGIC PD™

OMAP-L138/C6748 SOM-M1 Block Diagram

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

Three 100-pin High Density Connectors

- Power
- 4-wire touch
- SATA*
- JTAG
- Camera / VPIF_DIN
- UARTs (x3), I2c (x2)
- LCD / VPIF_DOUT
- McASP
- McBSPs
- EMIFA
- HPI / UPP
- USB HS OTG
- USB FS Host
- SPI
- Ethernet

TPS65070 PMIC / Touch controller

OMAP-L138 Processor / TMS320C6748 DSP

←x16→ Mobile DDR SDRAM

Clock Generation (includes SATA)

MII

Serial NOR Flash

10/100 Ethernet

*on select configurations

40.0 mm

30.0mm

This outline represents the actual size of the OMAP-L138 SOM-M1 form factor.

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°
SOMOMAPL138-10-1602QHIR	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.

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

Texas Instruments
Integra DSP+ARM

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

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