



AM1808/OMAP-L138 SOM-M1 Compatibility

Application Note 442

Logic PD // Products
Published: July 2010

Abstract

This application note discusses effects of using an AM1808 SOM-M1 on an OMAP-L138 baseboard, and vice versa.

This document contains valuable proprietary and confidential information and the attached file contains source code, ideas, and techniques that are owned by Logic Product Development Company (collectively "Logic PD's Proprietary Information"). Logic PD's Proprietary Information may not be used by or disclosed to any third party except under written license from Logic Product Development Company.

Logic Product Development Company makes no representation or warranties of any nature or kind regarding Logic PD's Proprietary Information or any products offered by Logic Product Development Company. Logic PD's Proprietary Information is disclosed herein pursuant and subject to the terms and conditions of a duly executed license or agreement to purchase or lease equipment. The only warranties made by Logic Product Development Company, if any, with respect to any products described in this document are set forth in such license or agreement. Logic Product Development Company shall have no liability of any kind, express or implied, arising out of the use of the Information in this document, including direct, indirect, special or consequential damages.

Logic Product Development Company may have patents, patent applications, trademarks, copyrights, trade secrets, or other intellectual property rights pertaining to Logic PD's Proprietary Information and products described in this document (collectively "Logic PD's Intellectual Property"). Except as expressly provided in any written license or agreement from Logic Product Development Company, this document and the information contained therein does not create any license to Logic PD's Intellectual Property.

The Information contained herein is subject to change without notice. Revisions may be issued regarding changes and/or additions.

© Copyright 2010, Logic Product Development Company. All Rights Reserved.

Revision History

REV	EDITOR	DESCRIPTION	APPROVAL	DATE
A	JCA	-Initial release	JS	07/02/10

Table of Contents

1	Introduction	1
2	Hardware Differences	1
2.1	SOM Differences.....	1
2.2	Baseboard Differences.....	1
3	Software Differences	1
3.1	Board Support Library (BSL) Code.....	1
3.2	TI Software.....	1
4	Summary	1

1 Introduction

The AM1808 and OMAP-L138 SOMs are part of the same form factor family and type, SOM-M1. This means that they have the same PCB size, same board-to-board connectors, and share the essential electrical signals. Because of this similarity, it is possible to connect an AM1808 SOM-M1 to an OMAP-L138 baseboard, and vice versa. This application note discusses the experience a user can expect if they choose to do this.

2 Hardware Differences

The Texas Instruments (TI) OMAP-L138 low-power applications processor is a dual core system on chip (SoC) featuring one ARM9 core and one C674x DSP core. By comparison, the AM1808 microprocessor features only one ARM9 core. This distinction highlights the major differences between using the OMAP-L138 SOM-M1 and the AM1808 SOM-M1.

2.1 SOM Differences

The only difference between the SOMs is the additional C674x DSP core in the OMAP-L138 processor.

2.2 Baseboard Differences

The OMAP-L138 baseboard features a USB mini-B connector at reference designator J21. This connector features a USB100v1 JTAG emulator that connects directly to the C674x DSP core on the OMAP-L138 processor. Because this connector is only for use with the DSP core, it will not be available for accessing the AM1808 microprocessor.

The USB mini-B connector at reference designator J21 was removed from the AM1808 baseboard. Therefore, if an OMAP-L138 SOM-M1 is connected to an AM1808 baseboard, the USB100v1 JTAG emulator will not be available for accessing the C674x DSP core.

3 Software Differences

3.1 Board Support Library (BSL) Code

The AM1808 and OMAP-L138 utilize different Board Support Library (BSL) code. As a result, it is necessary to use the appropriate BSL code for the SOM that is being used. If the AM1808 SOM-M1 is connected to the baseboard, the AM1808 BSL code should be used; if the OMAP-L138 SOM-M1 is connected to the baseboard, the OMAP-L138 BSL code should be used.

3.2 TI Software

The majority of the TI created software is compatible with both platforms. However, it is considered best practice to use the software that is available from the specific processor's product page.

- AM1808: www.ti.com/am1808#toolssoftware
- OMAP-L138: www.ti.com/omap-l138-prprod1#toolssoftware

4 Summary

The AM1808 and OMAP-L138 SOMs may be used on each other's baseboards with limited impact. Use of the USB mini-B connector (J21) on the baseboard and the unique software offerings are the main points to be aware of if using mismatched SOMs and baseboards.