OMAP35x SOM-LV Product Change Notification

Hardware Documentation

Logic PD // Products
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Revision History

REV	EDITOR	DESCRIPTION	APPROVAL	DATE
A	JCA	-Initial release	NJK	09/12/08
B	JCA	-Release PCN 400: Hardware Changes	NJK	12/08/08
C	JCA	-Section 1.3: Updated image for 2D barcode label. -Updated PCN 400: Added USB2_PWR_nEN, Bluetooth, and Wi-Fi changes (items 8-10), which were mistakenly left out of the original release of the PCN. -Release PCN 405: Hardware Changes	NJK	04/10/09
D	JCA	-Release PCN 413: Silicon and Software Changes	NJK	07/20/09
E	JCA	-Release PCN 445: EOL Notice & Hardware Changes	KTL	07/01/10
F	JCA	-Added Part Numbers for the new models in PCN 445: EOL Notice & Hardware Changes	JCA	08/09/10
G	EN	-Release PCN 501: Software Changes	EN	10/24/11
H	SO	-Release PCN 548: Software Changes	JMC, EN	08/16/12
I	SO, NJK	-Section 1.2: Updated example of sticker on SOM to reflect correct format; -Release PCN 551: Hardware Changes	JMC, NJK	09/14/12
J	SO	-Release PCN 566: Hardware Changes	NJK, JMC, KJH	04/05/13
K	BSB	-Release PCN 581: Hardware Changes	RAH, JMC, SO	07/10/13
L	JMC	-Section 1.3: Updated table showing current SOMs in production -Release PCN 600: Hardware Changes	JMC, BSB	11/12/14

Table of Contents

1 OMAP35x SOM-LV PCN Introduction

1.1 Purpose of Document

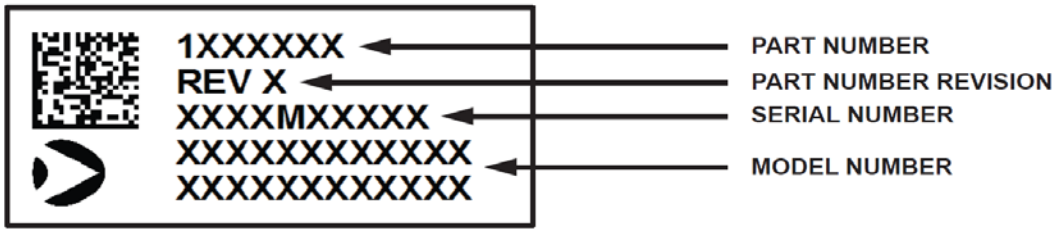
The purpose of this document is to provide a single repository for explaining design changes to a specific product family. The changes described in this document relate to the OMAP35x SOM-LV product family.

1.1.1 Relationship with Errata Document

This PCN document works in conjunction with the *OMAP35x SOM-LV Errata*[1] document to describe all known issues and changes to the OMAP35x SOM-LV. Whereas the errata document provides information about known issues that have not yet been resolved through new hardware, the PCN only describes changes that have occurred to the product between model revisions.

1.2 Determining What Build You Have

To determine whether your OMAP35x SOM-LV is affected by a PCN, locate the sticker on your System on Module (SOM) and compare the model number with the “Affected Models” table for each PCN. In some instances, a PCN may call out the “unique serial number” or “part number” to better identify the affected SOM. The figure below shows the location of each number on the sticker.



NOTE: Logic PD’s *WP 293 Model Number Explanation and Decoder*[2] goes into detail about these numbers and their relationship to one another.

1.3 Current Standard Model in Production

The table below lists the most current revisions of standard OMAP35x SOM-LVs. It also specifies the PCN that details the changes prompting the model revision.

Model Number & Rev	PCN Detailing Revision
SOMOMAP3503-11-1782GFIR-D	PCN 600: Hardware Changes
SOMOMAP3530-11-1782JFIR-E	PCN 600: Hardware Changes
SOMOMAP3530-11-1782IFXR-A	(newly released model)

1.4 Early Development Modules

SOMs that are manufactured before the model is released to full production status are sometimes sent to partners and targeted customers for evaluation. This section attempts to capture a history

[1] http://support.logicpd.com/downloads/1247/
[2] http://support.logicpd.com/downloads/601/U

of these pre-production builds for reference. Any products listed in the table below are not meant for production use and may not be actively supported by Logic PD.

Development Phase	Part Number
Alpha	1008400
Beta	1009329
Pilot	1009996

2 PCN 381: Pre-Production Hardware Changes

Published: September 2008

PCN Classification:

- [ ] A - Recall
- [ ] B - Customer Action Required
- [X] C - Product Upgrade
- [ ] D - Change of Production Line

2.1 Products Affected

This PCN describes hardware changes pertaining to pre-production OMAP35x SOM-LV modules. The changes described herein have been addressed on the first production OMAP35x SOM-LV modules.

Development Phase	Affected Part Number
Alpha	1008400
Beta	1009329
Pilot	1009996

2.2 Description of Change

1. The NOR flash block configuration was changed from being a “top parameter” type part to a “bottom parameter” type.
2. The 802.11b/g wireless Ethernet antenna signals were rerouted to improve the capabilities of the interface. Rerouting this signal moved the antenna connector (reference designator J4) from the bottom of the PCB to the top of the PCB.
3. The Bluetooth antenna signals were rerouted to improve the capabilities of the interface. Rerouting this signal moved the antenna connector (reference designator J3) from the bottom of the PCB to the top of the PCB.
4. The mounting holes on the OMAP35x SOM-LV are larger than the SOM-LV form factor standard. Pre-production OMAP35x SOM-LVs have mounting holes that are 3.18 mm (±0.08 mm) in diameter. Production OMAP35x SOM-LVs have mounting holes that are 2.70 mm (±0.08 mm) in diameter.
5. The USB Host PHY (reference designator U3) was changed from the NXP ISP1702 to the NXP ISP1704.
6. A connection to LCD_DON was added on the LCD interface through ICT_JTAG_TMS.
7. Support for PCC_REG was added on the PC card interface through uP_LA12.

2.3 Applications Affected

1. The NOR flash parameter change may affect any custom software. This change does not affect LogicLoader.
2. 802.11b/g wireless Ethernet may be functional on pre-production hardware; however, it suffers from degraded signal quality due to the original signal routing. Designs that use

the 802.11b/g wireless Ethernet should be reviewed to verify proper connection to the new antenna connector location on the PCB.

3. Bluetooth may be functional on pre-production hardware; however, it suffers from degraded signal quality due to the original signal routing. Designs that use the Bluetooth should be reviewed to verify proper connection to the new antenna connector location on the PCB.
4. In final designs, review the screw size that is used to secure the SOM-LV to the baseboard to make sure the screw can accommodate the smaller diameter hole. Designs that do not utilize the mounting holes will be unaffected.
5. The NXP ISP1704 is considered a drop-in replacement for the NXP ISP1702. Developers may need to be aware of this change if software calls out the specific device ID.
6. Additional signal to support more functionality of the LCD interface; no change required.
7. PCC_REG can be used to put certain memory cards into register mode. This signal needs to be controlled by software to read card-specific registers.

2.4 Work Around

No work around is necessary for the changes described in this PCN.

2.5 Solution

The changes described within this PCN have been implemented on production hardware. The first OMAP35x SOM-LVs built in the production phase have part number 1010194 and the associated model number is SOMOMAP3530-10-1672IFCR-A.

2.6 Contact

For further information or questions, please contact Logic PD.[3]

[3] http://support.logicpd.com/support/askaquestion.php

3 PCN 400: Hardware Changes

Published: December 2008
Updated: April 2009

PCN Classification:

- [ ] A - Recall
- [X] B - Customer Action Required
- [X] C - Product Upgrade
- [ ] D - Change of Production Line

3.1 Products Affected

This PCN describes hardware changes that were made to the OMAP35x SOM-LV. The changes described herein will be manufactured into products with the "New Model Number & Rev" listed below.

Affected Model Number & Rev	New Model Number & Rev
SOMOMAP3530-10-1672IFCR-A	SOMXOMAP3530-10-1672IFCR-B

3.2 Description of Change

1. A hardware audio mute option has been added to the board; components Q1, Q2, R103, and R105 have been added to the audio path. The mute function is to help control audio pop noises when enabling/disabling the audio portion of the TPS65950.
2. Resistor R61, connected to MSTR_nRST and SYS_nRESPWRON, has been changed to 1.0K ohms. This will allow external devices to drive MSTR_nRST.
3. The Ethernet PHY has changed from the SMSC LAN9211 to SMSC LAN9221.
4. Signal uP_DREQ0 is now connected to the processor GPIO_65 signal. Consequently, uP_DREQ1 is no longer available on pin J1.135.
5. The NXP ISP1704 USB PHY has been replaced with the NXP ISP1760 USB controller. This also adds USB ports 4 and 5 to the OMAP35x SOM-LV.
6. LCD_BACKLIGHT_PWR now defaults to the off position (low) during power on; added components Q3, Q4, and R107.
7. Corrected model number to use the 'X' indicating pre-release silicon from Texas Instruments (TI). The Affected Model Number did not have the 'X' as part of the number, even though it used pre-release silicon. Please review *WP 393 OMAP35x Pre-Release Processor Silicon*[4] for more information.
8. USB2_PWR_nEN is now pulled up to VIO_1V8.
9. The Bluetooth component (reference designator T1) changed from Murata PN LDB182G4505C-110 to TDK PN HHM1710D1.
10. Wi-Fi performance was improved through minor component changes. These changes are specific to the PCB layout used in the new models; therefore, implementing these changes on previous models is not recommended.

[4] http://support.logicpd.com/downloads/1138/

3.3 Applications Affected

1. The hardware audio mute is not enabled by default. Software must ensure that the processor pin GPIO177 is tri-stated for no mute function (default), or is controlled to “logic high” for mute and a “logic low” for no mute.
2. SYS_nRESPWRON is an output of the TPS65950 which is driven at all times. Resistor R61 was changed to a higher resistance value so that MSTR_nRST can be driven by an external device. No customer action is required.
3. The SMSC LAN9221 is functionally equivalent to the SMSC LAN9211. Software will need to be aware of a different device ID in the chip. Please see SMSC’s website[5] for more information, including *Application Note 183: Migrating from the LAN9210/LAN9211 to the LAN9220/LAN9221*.[6]
4. Software needs to use the processor GPIO_65 signal as uP_DREQ0; previously, this was connected to GPIO_57 of the processor. Because of this change, uP_DREQ1 has been removed from the board and is no longer available for software.
5. The NXP ISP1760 is connected to the processor’s GPMC interface rather than the ULPI interface. Software will need to be changed to use the ISP1760 for USB host applications. Note that the ISP1760 is a three-port device, so USB ports 4 and 5 are new features of the OMAP35x SOM-LV.
6. No change should be required in software; however, note that LCD_PANEL_PWR must be enabled (high) before LCD_BACKLIGHT_PWR can be controlled.
7. No applications affected by this change.
8. USB2_PWR_nEN is used to turn power on and off to the USB2 devices. If the power IC connected to USB2_PWR_nEN supports 1.8V signals, no change is required. If a higher voltage is needed to pass the turn off threshold, then an external pull-up resistor should be connected on the baseboard to compensate for the difference.
9. Bluetooth functionality is available on SOM-LVs with the new model number and revision.
10. These changes may affect how software initializes the Wi-Fi chip; the MIB file may require updating. For Logic PD BSPs, please refer to the BSP release notes to verify the version has incorporated these component changes.

3.4 Work Around

Bluetooth operability can be added by replacing the component at reference designator T1 with the TDK part referenced in Section 3.2 above.

The other changes described in this PCN do not have available work arounds.

3.5 Solution

The OMAP35x SOM-LVs containing the new model number and revision listed in Section 3.1 will have these changes incorporated at time of manufacture.

3.6 Contact

For further information or questions, please contact Logic PD.[7]

[5] http://www.smsc.com/
[6] http://www.smsc.com/index.php?download_by_product_name=TEFOOTIxMQ%3D%3D&download_by_type=&download_by_product_group=&tid=183&pid=&cid=&tab=
[7] http://support.logicpd.com/support/askaquestion.php

4 PCN 405: Hardware Changes

Published: April 2009

PCN Classification:

- [ ] A - Recall
- [X] B - Customer Action Required
- [X] C - Product Upgrade
- [ ] D - Change of Production Line

4.1 Products Affected

This PCN describes hardware changes that were made to the OMAP35x SOM-LV. The changes described herein will be manufactured into products with the “New Model Number & Rev” listed below.

Affected Model Number	New Model Number
SOMXOMAP3530-1-1672IFCR-B	SOMXOMAP3530-10-1672IFCR-C

4.2 Description of Change

4.2.1 Processor Silicon Revision

The processor silicon revision was changed from ES2.1 to ES3.1. This change impacts LogicLoader’s interaction with the CompactFlash (CF) interface in LogicLoader versions 2.4.7 and earlier. The GPIO that controls power to the CF interface, GPIO_128, was no longer working properly.

To work around this issue, use a newer version of LogicLoader or enter the following LogicLoader commands at the `losh>` prompt to turn on the PBIAS generation for GPIO_128:

```
w /w 0x48002520 0x00000083
w /w 0x48002520 0x00000283
```

4.2.2 Power Management IC (PMIC) Change

The PMIC chip was changed from Texas Instruments (TI) part number TWL4030 to TPS65950. These parts are functionally equivalent as designed on the OMAP35x SOM-LV; this change was made because the TPS65950 is the part available through general distribution.

This change may impact applications if software checks the specific device ID of the PMIC part.

4.3 Contact

For further information or questions, please contact Logic PD.[8]

[8] http://support.logicpd.com/support/askaquestion.php

5 PCN 413: Silicon and Software Changes

Published: July 2009

PCN Classification:

- [ ] A - Recall
- [ ] B - Customer Action Required
- [X] C - Product Upgrade
- [ ] D - Change of Production Line

5.1 Products Affected

This PCN describes silicon and software changes that were made to the OMAP35x SOM-LV. The changes described herein will be manufactured into products with the "New Model Number & Rev" listed below.

Affected Model Number	New Model Number
SOMXOMAP3530-10-1672IFCR-C	SOMOMAP3530-10-1672IFCR-C

5.2 Description of Change

5.2.1 Processor Silicon Revision

The processor silicon was changed from the pre-release version ES3.1 to the fully qualified version 3.1. There is no change to the performance or use of the processor with this change.

5.2.2 Model Number Change

With the release of the fully qualified processor silicon, the "X" in the model number indicating pre-release silicon has been removed.

5.2.3 LogicLoader Change

The new model number listed above has LogicLoader version 2.4.8p2[9] burned into flash during manufacture. Please refer to the *Release Notes* included in this release for changes and other information.

5.3 Contact

For further information or questions, please contact Logic PD.[10]

[9] http://support.logicpd.com/downloads/archives/2673/1013353.zip
[10] http://support.logicpd.com/support/askaquestion.php

6 PCN 445: EOL Notice & Hardware Changes

Published: July 2010
Updated: August 2010

PCN Classification:

- [ ] A - Recall
- [X] B - Customer Action Required
- [X] C - Product Upgrade
- [ ] D - Change of Production Line

6.1 Products Affected

This PCN describes hardware changes that were made to the OMAP35x SOM-LV. The changes described herein will be manufactured into products with the "Replacement Model Number & Rev" listed below.

Please be aware that these changes are significant enough from the previous model revisions that the model number version code has been incremented from -10 to -11. Therefore, the former -10 model numbers are being discontinued and the new -11 model numbers are being instituted, all beginning at revision A.

Affected Model Number & Rev (Part Number)	Replacement Model Number & Rev (Part Number
SOMOMAP3503-10-1670HFCR-A (1013281)	SOMOMAP3503-11-1670HFCR-A (1016383)
SOMOMAP3503-10-1672IFCR-A (1013291)	SOMOMAP3503-11-1672IFCR-A (1016378)
SOMOMAP3530-10-1670EFCR-A (1013047)	SOMOMAP3530-11-1670EFCR-A (1016373)
SOMOMAP3530-10-1672IFCR-C (1012637)	SOMOMAP3530-11-1672IFCR-A (1016346)
SOMOMAP3530-10-1672IFXR-A (1013337)	SOMOMAP3530-11-1672IFXR-A (1016347)
SOMOMAP3530-10-1672JFIR-A (1013642)	SOMOMAP3530-11-1782JFIR-A (1016361)

6.2 Description of Change

6.2.1 NAND Flash (PoP Memory) Change

Micron has issued an End of Life (EOL) notice for their 128 MB SDRAM / 256 MB NAND flash Package on Package (PoP) memory component, suggesting a migration route to the higher density 256 MB SDRAM / 512 MB NAND flash part. Additionally, the NAND flash is going through a die shrink which requires software to change from a 1-bit error-correcting code (ECC) to a 4-bit or higher ECC. This change in ECC requirements affects all software (bootloaders and operating systems).

Logic PD's solution for the OMAP35x-11 SOM-LV is to move all commercial temperature model configurations to a Hynix PoP component with a 128 MB SDRAM / 256 MB NAND flash density.

All industrial temperature model configurations will migrate to the larger density 256 MB SDRAM / 512 MB NAND flash Micron component.

Logic PD software (LogicLoader, Windows CE BSP, and Linux BSP) will be updated to support the new Hynix and Micron parts (see Section 6.2.9 for details).

6.2.2 USB Host Change

The ST-Ericsson ISP1760 USB host controller has been removed from the OMAP35x SOM-LV. USB host functionality has been modified to use a ULPI interface to communicate to an SMSC USB3320 transceiver. The USB3320 provides one high-speed USB host port; this high-speed USB port is then used to create three high-/full-/low-speed USB host ports through an SMSC USB2513 hub chip which goes off-board through the following signals: USB2, USB4, and USB5. The pinout of the USB signals remain unchanged on the OMAP35x SOM-LV's high-density connectors J1 and J2. The USB2_PWR_nEN, USB4_PWR_nEN, and USB5_PWR_nEN signals are now pulled up to 3.3V, whereas they were previously pulled up to VIO_1V8.

This hardware change will require software updates. Please see Section 6.2.9 for details regarding Logic PD-provided Windows Embedded CE and Linux BSPs.

6.2.3 Audio Mute Change

Audio mute is now controlled by GPIO_57 on the OMAP35x processor. Previously the audio mute function was controlled by GPIO_177 but this signal is now used for USB host.

This hardware change will require software updates. Please see Section 6.2.9 for details regarding Logic PD-provided Windows Embedded CE and Linux BSPs.

6.2.4 Wi-Fi Module Change

The CSR UF1050 802.11b/g chip has been replaced with a Murata 802.11b/g/n LBEH19XMMC module. The LBEH19XMMC is connected to the OMAP35x processor through the same MMC3 port that was used by the CSR chip. Likewise, the same antenna connector and location exist for external antenna connection.

To support the Murata LBEH19XMMC, U36-U38, R129, and R133-R135 were added to the design. U36-U38 and R129 provide GPIOs that are needed by the module for control and R133-R135 provide EMI control. Signals RF_LED0 and RF_LED1 have been removed from J2 as a result of replacing the CSR chip.

This hardware change will require software updates. Please see Section 6.2.9 for details regarding Logic PD-provided Windows Embedded CE and Linux BSPs.

IMPORTANT DESIGN NOTE: The Murata Wi-Fi module cannot be populated on SOMs used in military applications. Please contact Logic PD[11] with any questions regarding this regulation.

6.2.5 NOR Flash Change

The net uP_A10 was routed to the NOR Flash chip, U7, to allow larger density flash to be used. Also, components U39, U40, and R136-R139 were added to support boot from NOR. This change is backwards compatible and software is not impacted.

NOTE: Boot from NOR requires a custom SOM. The PoP NAND component cannot be present and the components above must be populated. Please contact Logic PD for more information.

[11] http://support.logicpd.com/support/askaquestion.php

6.2.6 Battery Charger Component Change

U19 and U24, Fairchild FDJ1027P, have been replaced with U42 and U43, Fairchild FDMA1027P. The FDJ1027P part is EOL, so it has been replaced. This change is backwards compatible and software is not impacted.

6.2.7 Extended Temperature Range Change

The extended temperature (X-temp) range for the OMAP35x-11 SOM-LV has changed to -20°C – +70°C from -20°C – +85°C. The Murata Wi-Fi module required this reduction in temperature range. For customers who need the extended temperature range to reach +85°C, but do not require Wi-Fi, a custom SOM removing the Wi-Fi components may be the optimal solution. Please contact Logic PD for more information.

6.2.8 PCB Change

The PCB design has changed to no longer use through-hole vias. This change does not impact physical size or location of connectors for external interfaces (e.g., board-to-board connectors, antenna connectors).

6.2.9 Software Updates

Logic PD will release updated LogicLoader, Windows Embedded CE 6.0 BSP, and Linux BSP versions to support the new OMAP35x-11 SOM-LV hardware.

- LogicLoader version 2.4.13 will be available when the new hardware ships the first week of September 2010.
- Windows Embedded CE 6.0 BSP version 2.1 will be available mid-September 2010 as a download from Logic PD's website.
- Linux BSP version 2.1 will be available late September 2010 as a download from Logic PD's website.

These software versions will be backwards compatible with the OMAP35x-10 SOM-LV models.

6.3 Contact

For further information or questions, please contact Logic PD.

7 PCN 501: Software Changes

Published: October 2011

PCN Classification:

- [ ] A - Recall
- [ ] B - Customer Action Required
- [X] C - Product Upgrade
- [ ] D - Change of Production Line

7.1 Products Affected

This PCN describes software changes made to the OMAP35x SOM-LV. The changes described herein will be manufactured into products with the “New Model Number & Rev” listed below.

Affected Model Number & Rev (Part Number)	New Model Number & Rev (Part Number
SOMOMAP3503-11-1670HFCR-A (1016383)	SOMOMAP3503-11-1670HFCR-B (1020769)
SOMOMAP3503-11-1672IFCR-A (1016378)	SOMOMAP3503-11-1672IFCR-B (1020770)
SOMOMAP3530-11-1670EFCR-A (1016373)	SOMOMAP3530-11-1670EFCR-B (1020862)
SOMOMAP3530-11-1672IFCR-A (1016346)	SOMOMAP3530-11-1672IFCR-B (1020863)
SOMOMAP3530-11-1672IFXR-A (1016347)	SOMOMAP3530-11-1672IFXR-B (1020864)
SOMOMAP3530-11-1782JFIR-A (1016361)	SOMOMAP3530-11-1782JFIR-B (1020865)

7.2 Description of Change

7.2.1 LogicLoader Change

The LogicLoader software included on the OMAP35x SOM-LVs has been upgraded to version 2.4.15. This new version of LogicLoader includes the updates noted below.

- NoLo now disables Smart Reflex prior to setting the core clocks as part of the boot process to prevent hang after reset.
- When LogicLoader gains control after an *exec* command, it now prints a warning that the *jump* command might be a better choice. This is based on the idea that *exec* should be used to launch an Operating System (OS) and never return, while *jump* should be used to launch an OS-less application and return.
- Invalid return codes were fixed for the following situations:
  - when loading .bin files
  - when unable to mount
  - when partitions are not supported

- when a .bin file is corrupt

- *Info mem* was updated to report the correct end block of the */lboot* partition.
- LogicLoader now mounts the NAND */lboot* partition from blocks 1 to 17 (inclusive), instead of blocks 1 to 18.
- When executing the *info device /dev/PMIC* command, the missing ADC10 voltage is now displayed.
- LogicLoader no longer sets RTC_CTRL_AUTO_COMP and RTC_CTRL_MODE_12_14 bits.
- The I2C and PMIC driver reentrancy issue that caused TFTP to fail when copying to a YAFFS partition has been fixed.
- The issue associated with loading unaligned data from a YAFFS partition that caused LogicLoader to crash periodically has also been fixed.

LogicLoader version 2.4.15 will be backwards compatible with both the -10 and -11 models of the OMAP35x SOM-LV modules.

7.3 Contact

For further information or questions, please contact Logic PD.[12]

[12] http://support.logicpd.com/support/askaquestion.php

8 PCN 548: Software Changes

Published: August 2012

PCN Classification:

- [ ] A - Recall
- [ ] B - Customer Action Required
- [X] C - Product Upgrade
- [ ] D - Change of Production Line

8.1 Products Affected

This PCN describes software changes made to the OMAP35x SOM-LV. The changes described herein will be manufactured into products with the “New Model Number & Rev” listed below.

Affected Model Number & Rev (Part Number)	New Model Number & Rev (Part Number
SOMOMAP3503-11-1670HFCR-B (1020769)	SOMOMAP3503-11-1670HFCR-C (1022426)
SOMOMAP3503-11-1672IFCR-B (1020770)	SOMOMAP3503-11-1672IFCR-C (1022427)
SOMOMAP3503-11-1782GFIR-A (1021776)	SOMOMAP3503-11-1782GFIR-B (1022585)
SOMOMAP3530-11-1670EFCR-B (1020862)	SOMOMAP3530-11-1670EFCR-C (1022428)
SOMOMAP3530-11-1672IFCR-B (1020863)	SOMOMAP3530-11-1672IFCR-C (1022567)
SOMOMAP3530-11-1672IFXR-B (1020864)	SOMOMAP3530-11-1672IFXR-C (1022568)
SOMOMAP3530-11-1782JFIR-B (1020865)	SOMOMAP3530-11-1782JFIR-C (1022569)

8.2 Description of Change

8.2.1 LogicLoader Change

The LogicLoader software included on the OMAP35x SOM-LV has been upgraded to version 2.4.16. This new version of LogicLoader includes the updates noted below.

- Fixed corrupt writes to the *lboot* partition.
- Implemented a work around to address the fact that the ID chip platform-specific bits were incorrectly programmed.

LogicLoader version 2.4.16 is backwards compatible with both the -10 and -11 models of the OMAP35x SOM-LVs.

8.3 Contact

For further information or questions, please contact Logic PD.[13]

[13] http://support.logicpd.com/support/askaquestion.php

9 PCN 551: Hardware Changes

Published: September 2012

PCN Classification:

- [ ] A - Recall
- [ ] B - Customer Action Required
- [X] C - Product Upgrade
- [ ] D - Change of Production Line

9.1 Products Affected

This PCN describes hardware changes made to the OMAP35x SOM-LV. The changes described herein will be manufactured into products with the “New Model Number & Rev” listed below.

Affected Model Number & Rev (Part Number)	New Model Number & Rev (Part Number
SOMOMAP3503-11-1672IFCR-C (1022427)	SOMOMAP3503-11-1672IFCR-D (1022801)
SOMOMAP3530-11-1672IFCR-C (1022567)	SOMOMAP3530-11-1672IFCR-D (1022807)
SOMOMAP3530-11-1672IFXR-C (1022568)	SOMOMAP3530-11-1672IFXR-D (1022813)

9.2 Description of Change

9.2.1 Wireless Module Change

The RF Monolithics WLS1271 wireless module has been replaced with an RF Monolithics WLS1271L module due to part obsolescence. The updated component incorporates changes to the Bluetooth interface; however, the OMAP35x SOM-LV hardware does not support the Bluetooth interface of the WLS1271L module. There is, therefore, no impact to the SOM. The Wi-Fi portion of the module, the overall performance, and the footprint will remain the same.

No software modifications are required to accommodate this change.

9.3 Contact

For further information or questions, please contact Logic PD.[14]

[14] http://support.logicpd.com/support/askaquestion.php

10 PCN 566: Hardware Changes

Published: April 2013

PCN Classification:

- [ ] A - Recall
- [ ] B - Customer Action Required
- [X] C - Product Upgrade
- [ ] D - Change of Production Line

10.1 Products Affected

This PCN describes hardware changes made to the OMAP35x SOM-LV. The changes described herein will be manufactured into products with the “New Model Number & Rev” listed below.

Affected Model Number & Rev (Part Number)	New Model Number & Rev (Part Number
SOMOMAP3503-11-1782GFIR-B (1022585)	SOMOMAP3503-11-1782GFIR-C (1023893)
SOMOMAP3530-11-1782JFIR-C (1022569)	SOMOMAP3530-11-1782JFIR-D (1023805)

10.2 Description of Change

10.2.1 NAND Flash (PoP Memory) Change

Micron issued an End of Life (EOL) notice for the Package-on-Package (PoP) memory component MT29C4G48MAZAPAKQ-5IT on the OMAP35x SOM-LV. A new PoP memory component, MT29C4G48MAZBAAKQ-5IT, is a die shrink update of the previous component and will be used as a replacement.

Logic PD re-qualified the OMAP35x SOM-LV with the new component and found no software modifications are necessary. Bus timings for the new memory component are also identical to the previous version.

NOTE: Logic PD recommends purchasing sample units and testing them with your software and manufacturing flow to verify compatibility in your application.

10.3 Contact

For further information or questions, please contact Logic PD. [15]

[15] http://support.logicpd.com/support/askaquestion.php

11 PCN 581: Hardware Changes

Published: July 2013

PCN Classification:

- [ ] A - Recall
- [ ] B - Customer Action Required
- [X] C - Product Upgrade
- [ ] D - Change of Production Line

11.1 Products Affected

This PCN describes hardware changes made to the OMAP35x SOM-LV. The changes described herein may be manufactured into products beginning the 21st week of 2012 and later. New SOM model numbers or revisions will not accompany these changes.

11.2 Description of Change

11.2.1 Processor Silicon Change

Texas Instruments (TI) has released a new die revision silicon (revision 3.1.2) that addresses TI advisory 3.1.1.165 and updates the ARM Cortex-A8 Variant/Revision from r1p3 to r1p7. Please see the TI *OMAP3530/25/15/03 Applications Processor Silicon Errata*[16] for additional information.

Revision 3.1.2 silicon was determined to be functionally equivalent to revision 3.1 and thus submitted as an approved vendor list (AVL) update to Logic PD part number 1012636. The AVL update allowed revision 3.1.2 silicon to be a direct substitute for any modules currently using revision 3.1 silicon.

Revision 3.1.2 silicon was not expected to require any software modifications; however, it has been determined that the silicon upgrade does impact U-Boot. See Section 11.4 for additional information about the necessary software modifications.

11.3 Identifying Upgraded OMAP35x SOM-LVs

No change will be made to the orderable part number of the OMAP35x SOM-LVs receiving this silicon upgrade. However, it is possible for software to detect the silicon revision change by reading the CONTROL.CONTROL_IDCODE[31:28] register bits in the OMAP35x microprocessor. The physical address for CONTROL.CONTROL_IDCODE is 0x4830A204.

Silicon Type	Value
ES 3.1	0b0100 or 0x4
ES 3.1.2	0b0111 or 0x7

[16] http://www.ti.com/product/omap3530

The example below shows a read of the CONTROL.CONTROL_IDCODE register in LogicLoader on an OMAP35x SOM-LV using version 3.1 silicon.

```
losh> x /w 0x4830A204
0x4830a204  4b7ae02f                                /.zK
```

11.3.1 Availability

As no part number change is associated with this silicon upgrade, confirming the availability of OMAP35x SOM-LVs containing revision 3.1.2 silicon is dependent upon the supply chain and distribution channels being fully cleared of processors with revision 3.1 silicon.

The AVL change occurred in the 22nd week of 2012. Any SOM manufactured before the 21st week of 2012 will not be affected. Any SOM manufactured after the 21st week of 2012 may be affected. OMAP35x SOM-LVs containing the new silicon began shipping during the third quarter of 2012. See "Section 2: Identifying Your Product" in *WP 293 Model Number Explanation & Decoder*[17] for additional information about how to determine when your SOM was manufactured.

11.4 Software Patch

Logic PD determined that the change to the silicon revision number impacts U-Boot. U-Boot attempts to read the silicon revision and does not have the ability to handle new silicon revision numbers. Logic PD has provided a patch to Timesys (*u-boot-2009.08-rc2-logic-30-cpu-revision.patch*) that updates the *u-boot-2009.08-rc2/cpu/arm_cortexa8/omap3/sys_info.c* source file to successfully detect 3.1.2 silicon revision numbers.

Customers affected by this PCN can request the patch by contacting Logic PD[18]; please reference ticket OMAP3LINUX-513 in your request.

11.5 Contact Information

For further information or questions, please contact Logic PD.

[17] http://support.logicpd.com/downloads/601/
[18] http://support.logicpd.com/support/askaquestion.php

12 PCN 600: Hardware Changes

Published: November 2014

PCN Classification:

- [ ] A - Recall
- [ ] B - Customer Action Required
- [X] C - Product Upgrade
- [ ] D - Change of Production Line

12.1 Products Affected

This PCN describes hardware changes made to the OMAP35x SOM-LV. The changes described herein will be manufactured into products with the “New Model Number & Rev” listed below.

Affected Model Number & Rev (Part Number)	New Model Number & Rev (Part Number
SOMOMAP3503-11-1782GFIR-C (1023893)	SOMOMAP3503-11-1782GFIR-D (1026566)
SOMOMAP3530-11-1782JFIR-D (1023805)	SOMOMAP3530-11-1782JFIR-E (1026574)

12.2 Description of Change

12.2.1 NAND/DDR (PoP Memory) Change

Micron issued an End of Life (EOL) notice for the Package-on-Package (PoP) memory component MT29C4G48MAZBAAKQ-5IT on the OMAP35x SOM-LV. A new PoP memory component, MT29C4G48MAZBBAKB-48IT, is a die shrink update of the previous component and will be used as a replacement.

Logic PD re-qualified the OMAP35x SOM-LV with the new component and found no software modifications are necessary. Bus timings for the new memory component are compatible with the previous version.

NOTE: Logic PD recommends purchasing sample units and testing them with your software and manufacturing flow to verify compatibility in your application.

12.2.2 Inductor Change

Coilcraft has issued a change notice for part LPS3314-102ML (reference designators L1 through L3). This part is being replaced on the OMAP35x SOM-LV with Coilcraft part LPS3314-102MR. This transition changes the component lead plating from silver-palladium-platinum to tin. All other specifications of this new part remain the same as the previous part.

Logic PD has qualified this new LPS3314-102MR part on the OMAP35x SOM-LV and found no impact to performance.

12.2.3 EEPROM Change

The Atmel AT93C46D EEPROM device (reference designator U11) has been replaced with Microchip 93AA46AT-I.

This EEPROM device is used on the OMAP35x SOM-LV to store the Ethernet MAC address for the assembly. It is connected directly to the Microchip LAN9221 Ethernet Controller chip (reference designator U30).

Recent review of the Atmel AT93C46D data sheet revealed that the maximum clock frequency is specified as 250 KHz, however the Microchip LAN9221 Ethernet Controller chip has a nominal clock frequency of 893 KHz for this EEPROM interface.

The replacement Microchip 93AA46AT-I device has a maximum clock frequency specification of 1 MHz which better meets the specification of the LAN9221 Ethernet Controller chip

Logic PD has performed qualification testing of the Microchip 93AA46AT-I device to verify operation with the LAN9221 Ethernet Controller chip.

12.3 Contact

For further information or questions, please contact Logic PD. [19]

[19] http://support.logicpd.com/support/askaquestion.php

