Product Limitation Note
EA-OEM-401

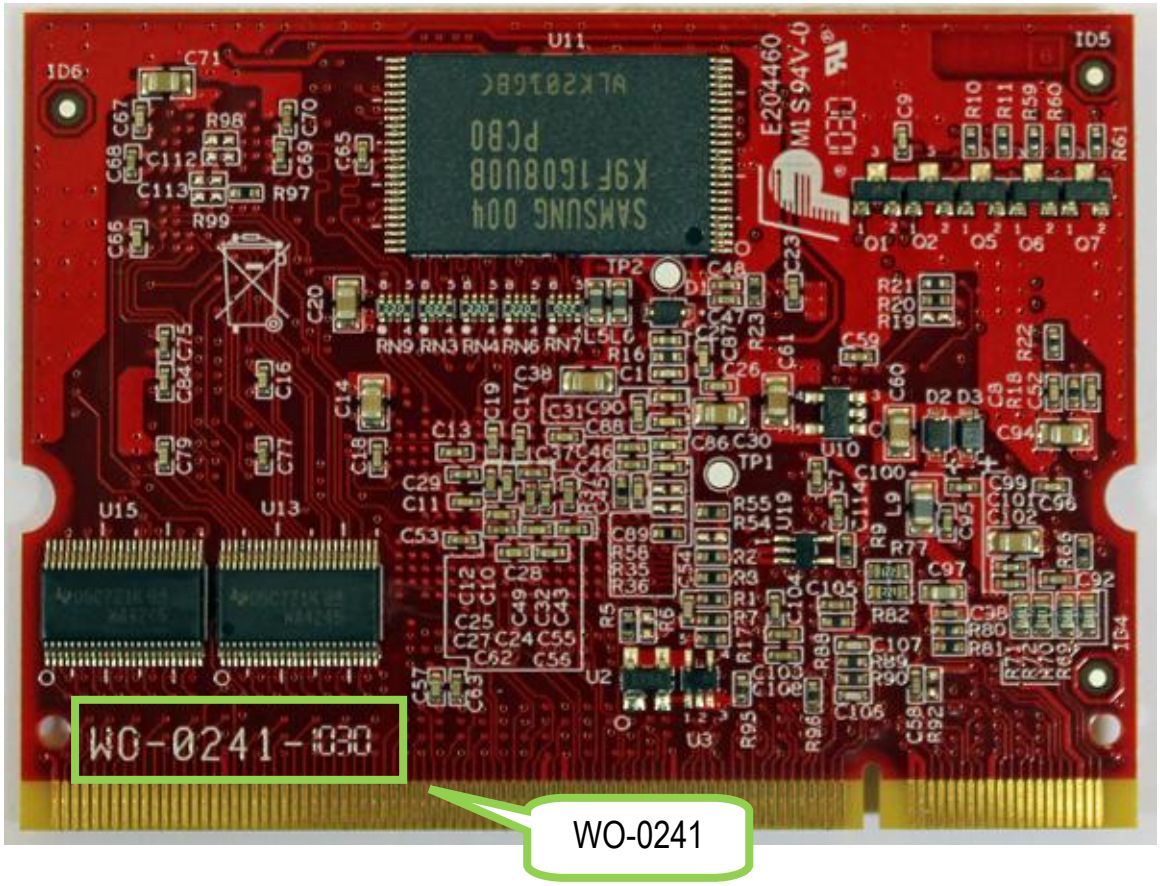
The Art of Embedded Systems Development – **made Easy™**

To Our Valued Customers,

This errata note affects a specific production batch of the LPC3250 OEM board (product number: EA-OEM-401). The board is also sold as part of the LPC3250 Developer's Kit (product number: EA-OEM-410).

Identification

The affected production batch of the LPC3250 OEM board is identified on the backside of the board, see picture below.



Boards marked with "WO-0241" are affected.
Boards that do not have this exact marking are not affected.

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Errata

The LPC3250 OEM board has previously used the Micron DDR SDRAM MT46H32M16LFCK-6. This chip has been obsolete by Micron. The chip that Micron recommend as a replacement, MT46H32M16LFBF-6:B, is used instead.
With the new DDR SDRAM, the design is affected by the DDR.2 errata of the LPC3250. See NXP LPC3250 errata documentation for details about this problem. In short, the problem is that the DQM0/DQM1 signals arrive a little too early compared to the 16 data bit signals. They need to be delayed (in the region of 200pS) to get reliable operation over the full temperature range (0-70 degrees Celsius).

The result is unreliable operation at 266 MHz core frequency. Most boards work at 266 MHz at room temperature and are fully functional. They may however fail with increasing temperature. Heavy usage pattern of the DDR SDRAM can make operation more unreliable.
Tests show reliable operations at 215 MHz with 60 degrees Celsius temperature.

Solution

For most customers evaluating, and working with, the LPC3250 OEM board in room temperature and on the QVGA Base board, there is no problem. Most boards are fully functional under these conditions. In case of problem, set the core frequency to 208 MHz or 215 MHz. Tests show reliable operations at 215 MHz with 60 degrees Celsius temperature.

For customers integrating LPC3250 OEM boards in end-products, Embedded Artists recommend to clock the boards at 208 MHz or 215 MHz.

If 266 MHz operation is needed over full temperature range, please contact Embedded Artists for replacement.

Please note that a Return Merchandise Authorization (RMA) number is needed before boards can be returned to Embedded Artists. Boards shipped without a RMB number will not be accepted by Embedded Artists.
Please contact us at: order@EmbeddedArtists.com

Kind Regards,
Embedded Artists AB
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