PCN# 20120524000

SATA A/C decoupling added to

L138-1808-1810 Family of System On Modules

Date: May 24,2012
To: Purchasing Agents

Dear Customer,

     This is an initial announcement of a change to a product that is currently offered by Critical Link. The details of this change are on the following pages.
     For questions regarding this notice, contact the Production Manager, Bill Halpin (bill.halpin@criticallink.com).

Sincerely,

Critical Link, LLC
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PCN Number: 20120524000
PCN Date: May 24, 2012
Title: Addition of Decoupling Capacitors to SATA Data lines
Contact: Bill Halpin
Phone: (315) 425-4045
Ship Date: 6/01/2012

Description of Change

Per the OMAP-L138 and AM1808 CPU specification, 10 nF AC decoupling capacitors have been placed in-line with the SATA_TX_P/N and the SATA_RX_P/N pins.

Reason of Change

According to section 5.14.2 of the OMAP-L138 specification (Revision D), Texas Instruments requires 10 nf decoupling capacitors placed in line with the SATA external connector. Critical Link's current module design, in conjunction with the Industrial I/O reference design, does not currently include these capacitors.

This issue could be resolved by modifying the host boards and adding the capacitors inline prior to the connectors. However, because Critical Link's Industrial I/O board reference design indicates a direct connection should be made, it was felt that the modification should be made at the SOM level in order to minimize impact to ongoing / fielded customer designs.

Anticipated Impact on Form, Fit, Function (positive / negative)

There is no impact with customers implementing a SATA interface using a direct connection to the SATA connector (i.e., following the Industrial I/O reference design), or customers not using the SATA interface.

For customers that have added external decoupling capacitors using the SATA interface, they will need to assess the signal integrity of the new modules. Dual inline capacitors may not negatively impact the SATA signal integrity, the performance impact will be on a board to board basis. A worst case scenario will require replacing the external decoupling capacitors on the host board with zero ohm resistors (typically, a BOM change during the assembly process).

Anticipated Impact on Quality or Reliability (positive / negative)

This change should improve signal integrity margins on the SATA data line interface. Critical Link does not have quantified data-eye performance metrics at this time.

Products Affected:

Details regarding the full printed circuit assembly (PCA) revision history can be located in the MityDSP-L138 Errata on the Critical Link support site.

Model Number	Current PCA	New PCA
1808-FX-225-RC	80-000307RC-2 RevB	80-000307RC-3 RevA
1808-DX-225-RI	80-000414RI-1 RevA	80-000414RI-2 RevA
1810-DX-225-RC	80-000318RC-1 RevB	80-000318RC-2 RevA
1810-DX-225-RI	80-000415RI-1 RevA	80-000415RI-2 RevA
L138-FX-225-RC	80-000325RC-1 RevB	80-000325RC-2 RevA
L138-DX-225-RI	80-000416RI-1 RevA	80-000416RI-2 RevA
1808-FG-225-RC	80-000304RC-2 RevA	80-000304RC-3 RevA
1808-DG-225-RI	80-000417RI-1 RevA	80-000417RI-2 RevA
1810-DG-225-RC	80-000308RC-1 RevA	80-000308RC-2 RevA
1810-DG-225-RI	80-000418RI-1 RevA	80-000418RI-2 RevA
L138-DI-225-RI	80-000419RI-1 RevB	80-000419RI-2 RevA
L138-DG-225-RI	80-000316RI-1 RevB	80-000316RI-2 RevA
L138-FG-225-RC	80-000333RC-1 RevA	80-000333RC-2 RevA
L138-FI-225-RC	80-000354RC-1 RevB	80-000354RC-2 RevA
L138-FI-236-RC	80-000393RC-1 RevA	80-000393RC-2 RevA
L138-FI-236-RL	80-000381RL-1 RevA	80-000381RL-2 RevA