

PCN# 20120612000

RTC Power Current Reduction on the
L138-1808-1810 Family of System On Modules

Date: June 12,2012
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: 20120612000
PCN Date: June 12, 2012
Title: Reduction in current consumption on RTC Battery Input
Contact: Bill Halpin
Phone: (315) 425-4045
Ship Date: 8/01/2012

Description of Change

The RTC battery backup power input circuit has been redesigned. The RTC battery input power is no longer fed to the on-board TPS65023 PMIC but instead “wire-or’d” with the 3.3V input power using diodes to avoid reverse current feed from the 3.3V in to the RTC Battery input. This signal then feeds a linear 1.2 V low drop out voltage regulator which supplies the RTC power domain of the OMAP-L138, AM-1808, or AM-1810 on-board processor.

Reason of Change

In the previous configuration, an impractical amount of current was being drawn from the RTC battery supply when the 3.3V input power was removed from the module. The drawn current could range from 50 micro amps to more than 500 micro amps, depending on the condition of the 3.3V input power (e.g., if the input was floating or grounded). This draw is due to leakage current associated with the on-board TPS65023 PMIC, which provides an internal FET switch and associated logic to select between the 3.3V input power or the RTC battery supply when driving the RTC power domain regulator.

The change was made to remove the PMIC switch and logic from the RTC voltage domain in order to reduce the current consumption to approximately 10 micro amps when the 3.3V input is not present (grounded, or floating), 10 micro amps is a value suitable for powering with smaller lithium cell “watch” batteries. This change addresses an Errata previously cited for the MityDSP-L138 product family.

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

For customers not utilizing the RTC backup function, no impact on form, fit, or function is anticipated. Customers that desire to use the RTC battery back feature should be able to select a much smaller battery than is currently required, assuming a 10 micro-amp draw. Customers should be aware that in the new configuration, if they are using a battery that provides a voltage greater than the 3.3V input voltage, the RTC domain (10 micro amp draw) will consume power from the battery even while the 3.3V input voltage is available.

Anticipated Impact on Quality or Reliability (positive / negative)

No impact on quality or reliability is anticipated with this change.

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-3 RevA	80-000307RC-4 RevA, B
1808-DX-225-RI	80-000414RI-2 RevA	80-000414RI-3 RevA, B
1810-DX-225-RC	80-000318RC-2 RevA	80-000318RC-3 RevA, B
1810-DX-225-RI	80-000415RI-2 RevA	80-000415RI-3 RevA, B
L138-FX-225-RC	80-000325RC-2 RevA	80-000325RC-3 RevA, B
L138-DX-225-RI	80-000416RI-2 RevA	80-000416RI-3 RevB
1808-FG-225-RC	80-000304RC-3 RevA	80-000304RC-4 RevA, A2
1808-DG-225-RI	80-000417RI-2 RevA	80-000417RI-3 RevA
1810-DG-225-RC	80-000308RC-2 RevA	80-000308RC-3 RevA, A2
1810-DG-225-RI	80-000418RI-2 RevA	80-000418RI-3 RevA
L138-DI-225-RI	80-000419RI-2 RevA	80-000419RI-3 RevA, A2
L138-DG-225-RI	80-000316RI-2 RevA	80-000316RI-3 RevA, A2
L138-FG-225-RC	80-000333RC-2 RevA	80-000333RC-3 RevA, A2
L138-FI-225-RC	80-000354RC-2 RevA	80-000354RC-3 RevA, A2
L138-FI-236-RC	80-000393RC-2 RevA	80-000393RC-3 RevA
L138-FI-236-RL	80-000381RL-2 RevA	80-000381RL-3 RevA, A2