

PCN# 20160613000

1.8V Switching Frequency on:

MitySOM-5CSx
All 5CSE and 5CSX Modules

Date: June 06, 2016

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 Hardware Manager Bill Halpin (bill.halpin@criticallink.com).

Sincerely,

Critical Link, LLC

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PCN Number: 20160613000

PCN Date: June 06, 2016

Title: 1.8V Switching Speed

Contact: Bill Halpin

Phone: (315) 425-4045

Ship Date: 06/17/2016

Overview

Changes to MitySOM-5CSx are identified in the following sections.

1 1.8V Switching Frequency

1.1 Description of Change

There is a resistor on the RT input of the LTC3615 power supply that sets the switching frequency power supply outputs. This resistor value has been reduced to change the switching frequency of the 1.8V and 2.5V power supplies. Previously, these supplies switched at a nominal rate of 800kHz, and will now switch at 1.9MHz.

1.2 Reason for Change

Recent power supply devices could get into an unstable condition after running for 15-20 minutes. When they are unstable, the ripple voltage on the 1.8V supply would grow until it was large enough to trip the power-good detection on the power supply device. This would lead to a reset condition and in some cases, resulted in a continual reboot cycle.

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

There is no impact to form or fit.

The impact to function is only for modules that exhibit the 1.8V ripple growing over time. On these units, the voltage ripple on the 1.8V supply will remain stable and in general be a slightly lower level of ripple. Because the 1.8V supply is very lightly loaded, and therefore operates in discontinuous mode, there will be little effect on the observed switching frequency.

This supply is a dual-output supply with a single setting for the switching frequency. The other output is the 2.5V supply, which will also switch at the faster rate. This supply is expected to maintain the nominal voltage ripple levels. The 2.5V supply has significant differences on the output loading and bulk capacitance. With these differences, this supply remained stable before and after the change. No functional change is anticipated on this supply beyond the switching speed, which has not impacted functionality.

1.4 Anticipated Impact on Quality or Reliability (positive / negative)

This change will have no impact on quality or reliability with the exception of higher manufacturing yield. The issue was correlated to specific date-codes of the power supply device and assembly lot-code. Changing the switching frequency avoids the marginal performance exposed due to process and temperature differences. The

change will improve reliability of MitySOM-5CSx modules starting with the 15-12-03 lot-code. Previous assemblies appear to be minimally affected, even when tested over the full temperature range.

2 Products Affected

Details regarding the full revision history can be located in the MitySOM-5CSx Revision History section on the Critical Link support site.

<https://support.criticallink.com/redmine/projects/mityarm-5cs/wiki>

Table 1: Products Affected

| Model Number | Starting PCA | Replacement PCA |
|----------------|---------------|-----------------|
| 5CSE-L2-3Y8-RC | 80-000705RC-4 | 80-000705RC-5 |
| 5CSE-S2-3Y8-RI | 80-000729RI-4 | 80-000729RI-5 |
| 5CSE-H4-3YA-RC | 80-000713RC-4 | 80-000713RC-5 |
| 5CSE-H4-3YA-RI | 80-000713RI-4 | 80-000713RI-5 |
| 5CSX-H5-4YA-RC | 80-000714RC-4 | 80-000714RC-5 |
| 5CSX-H5-4YA-RI | 80-000714RI-4 | 80-000714RI-5 |
| 5CSX-H6-42A-RC | 80-000642RC-4 | 80-000642RC-5 |
| 5CSX-H6-42A-RI | 80-000642RI-4 | 80-000642RI-5 |
| 5CSX-H6-4YA-RC | 80-000772RC-4 | 80-000772RC-5 |
| 5CSX-H6-4YA-RI | 80-000772RI-4 | 80-000772RI-5 |
| 5CSX-H6-53B-RC | 80-000646RC-4 | 80-000646RC-5 |

See MitySOM-5CSx Datasheet and Carrier Board Design Guide for migration options across the MitySOM-5CSx family.

3 Document Revision History

| Date | Version | Change Description |
|-------------|---------|--------------------|
| 13-Jun-2016 | 1.0 | Initial Version |