

PCN# 20180117001

Obsolete 8MB NOR Flash on:

MitySOM-335x Modules

Date: January 17, 2018

To: Purchasing Agents & Design Engineers

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@critiallink.com).

Sincerely,

Critical Link, LLC

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**PCN Number:** 20180117001

**PCN Date:** Jan 17, 2018

**Title:** Obsolete 8MB NOR Flash

**Contact:** Bill Halpin

**Phone:** (315) 425-4045

**EOL Date:** 10/01/2019

## **Overview**

Changes to MitySOM-335x System on Modules are identified in the following sections.

### **1 Replace Obsolete 8MB NOR Flash with 16MB NOR flash**

#### **1.1 Description of Change**

Production for MitySOM-335x variants using 8MB SPI NOR flash memory will be discontinued as of October 1, 2019.

#### **1.2 Reason for Change**

Micron announced it was discontinuing production of 8MB NOR, moving to 45nm high density NOR Flash products (PCN 32162).

Critical Link will migrate the MitySOM-335x family to the 16MB NOR. Critical Link currently has stock of the 8MB NOR device and will continue to accept orders for the MitySOM-335x modules on a first-come first-serve basis. See Table 2.

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

Functionally, the memory will be expanded from 64 Mbit to 128 Mbit. The new 128 Mbit part is organized with the same-sized sectors (64 Kbytes), but increases the number of available sectors from 128 to 256. The new 128 Mbit part command set is backward compatible with the current 64 Mbit part. Additional commands, such as subsector erase, are supported with the 128 Mbit part. The JEDEC Read Identification Data sequence, which is used to identify the part over the SPI bus, has changed.

There is no impact on the hardware design, the electrical SPI bus interface has not changed.

The software impact is primarily associated with any software set that reads the JEDEC identification data. The following sections outline the impact for the following categories of code: First Stage Bootloader (AM3359 ROM Loader), Second Stage Bootloader (Preloader), Third Stage Bootloader (U-Boot), Operating System (Linux), Operating System (other), Applications / NOR partitioning. A summary of the impact is listed in Table 1.

**Table 1 Software Impact Summary**

Software Category	Impact	Recommendation
First Stage / ROM Bootloader	None	No Action
Second Stage Bootloader (Preloader)	None	No Action
Third Stage Bootloader(U-Boot)	None*	No Action*
Operating System (Linux)	Yes – New JEDEC code needed.	No action if the SPI NOR is not accessed from Linux. Otherwise, upgrade kernel to properly identify 16 MB NOR and gain access to it.
Operating System (other)	Contact Supplier	Contact OS Supplier for further detail.
Applications	None	Partition sizes are the same. Upgrade required only if access to additional space on 16MB NOR parts is necessary.

\*the version of U-Boot supported by Critical Link does not include support to read from the SPI NOR flash. However, patching U-Boot to provide this capability is supported. The software lead should confirm they do not requirement modification here in the event the U-Boot application was tailored for an application.

**First Stage Bootloader (AM3359 ROM bootloader)**

The SPI NOR on the MitySOM-335x is connected to SPI1. It has never been possible for the AM3359 ROM Loader to boot from SPI1. There is no impact to this software for this part change.

**Second Stage Bootloader (Preloader)**

The Preloader provided and supported by Critical Link does not support booting / loading code from the SPI1 NOR flash device installed on the MitySOM-335x modules. There is no impact to this software for this part change.

**Third Stage Bootloader (U-Boot)**

The version of U-Boot supported by Critical Link does not have SPI NOR flash access configured / enabled. There is no impact to this software for this part change. It should be noted, however, that the U-Boot application can be customized to enable access to the SPI NOR flash parts. If the customer’s software team has made modifications to U-Boot to add this capability, then they will need to ensure proper support for the new device is enabled. Contact Critical Link for further details.

**Operating System (Linux)**

Prior to 2017-12-25, the officially supported version of the Linux kernel by Critical Link (version 3.2) does not have the correct JEDEC table entry for the new 128 Mbit NOR device. Customers using these versions of the kernel with modules having the 128 Mbit device installed will only be able to access the first 8 MB of flash area (only because the sector sizes and command sets are compatible between the 64 Mbit and 128 Mbit device), and the kernel will not correctly identify the device during the boot process. Critical Link has included a patch set to introduce the new 128 Mbit part data in the kernel lookup table. The patches are available on the Critical Link support site.

There is no impact for customers that do not use the SPI NOR flash device under Linux.

Customers that access the SPI NOR flash devices under Linux should update their kernel version to include the patches listed below in order to correctly identify the device and access the upper 8 MB of FLASH memory on the 128 Mbit device.

mityarm-linux-v3.2 Branch:  
Critical Link to supply software patch.

### **Operating System (other)**

Customers that use operating system software such as embedded windows or QNX should contact their OS provider for details. Customers developing with Starterware or writing bare metal applications and are using the SPI NOR flash device must assess the impact, if any, of the device change on their application software. Contact Critical Link if further assistance is required.

### **Applications / NOR Partitioning**

Because both devices use 64 Kbyte sectors, there is no need to alter the NOR partitioning on a working / fielded application. No impact is anticipated on application software.

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

There is no impact to Quality or Reliability.

## 2 Products Affected

Details regarding the full revision history can be located in the MitySOM-335x Revision History section on the Critical Link support site.

[https://support.criticallink.com/redmine/projects/armc8-platforms/wiki/Module\\_Product\\_Change\\_Notifications](https://support.criticallink.com/redmine/projects/armc8-platforms/wiki/Module_Product_Change_Notifications)

**Table 2 Products Affected**

Model Number	Starting PCA	Replacement Model	Replacement PCA
3359-GX-226-RC	80-000509RC-1	3359-GX-326-RC	Contact Critical Link
3359-GX-226-RL	80-000509RL-1	3359-GX-326-RL	Contact Critical Link

## 3 Document Revision History

Date	Version	Change Description
17-Jan-2018	1.0	Initial Version
29-Jan-2018	1.1	Add 3359-GX-226-RC to Table 2 Change EOL to 2019.