

PCN# 20240909000

Update Mechanical Interfaces for the:

MitySOM-A5E
All Agilex 5 Modules

Date: September 9, 2024

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 info@criticallink.com

Sincerely,

Critical Link, LLC

Phone: (315) 425-4045

Fax: (315) 425-4048



PCN Number: 20240909000

PCN Date: September 9, 2024

Title: Update Interface Connector and Board Size

Contact: info@criticallink.com

Phone: (315) 425-4045

Ship Date: Starting Dec 2024

Overview

Changes to MitySOM-A5E are identified in the following sections.

1 Change Mechanical Interface to Carrier Card

1.1 Description of Change

The main 400 pin interface connector, J1, was changed from Samtec LP Array™ series LPAF-50-03.5-L-08-2-K-TR to Samtec SEARAY™ series SEAF-50-05.0-S-08-2-A-K-TR. In addition, the dimensions of the board were increased from 71.12 x 50.08 mm to 82 x 50.08 mm to support additional mounting holes near the board to board connector in lieu of the “half-moon” mounting holes previously provided. Figure 1 and Figure 2 show the top and bottom dimensions of the original/prototype SOM design. Figure 3 Figure 4 show the top and bottom dimensions of the new design. Figure 5 shows the change in size.

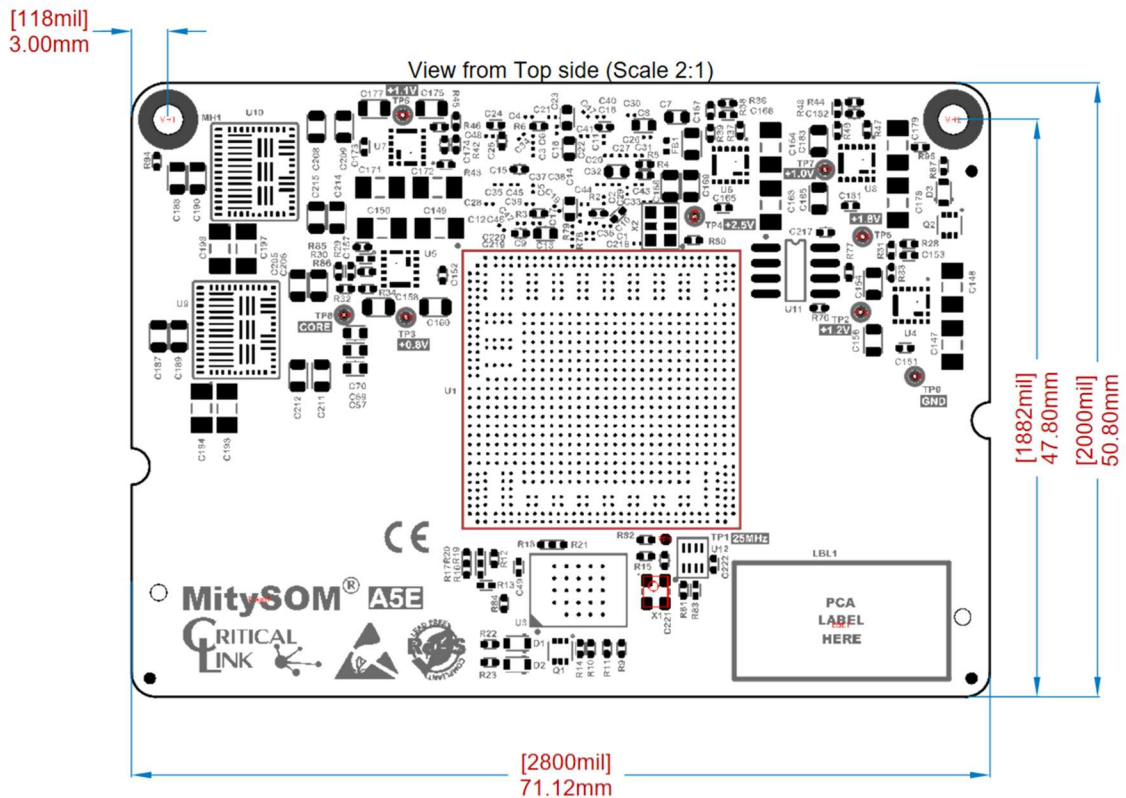


Figure 1 Original/Prototype Dimensions of MitySOM-A5E (Top View)

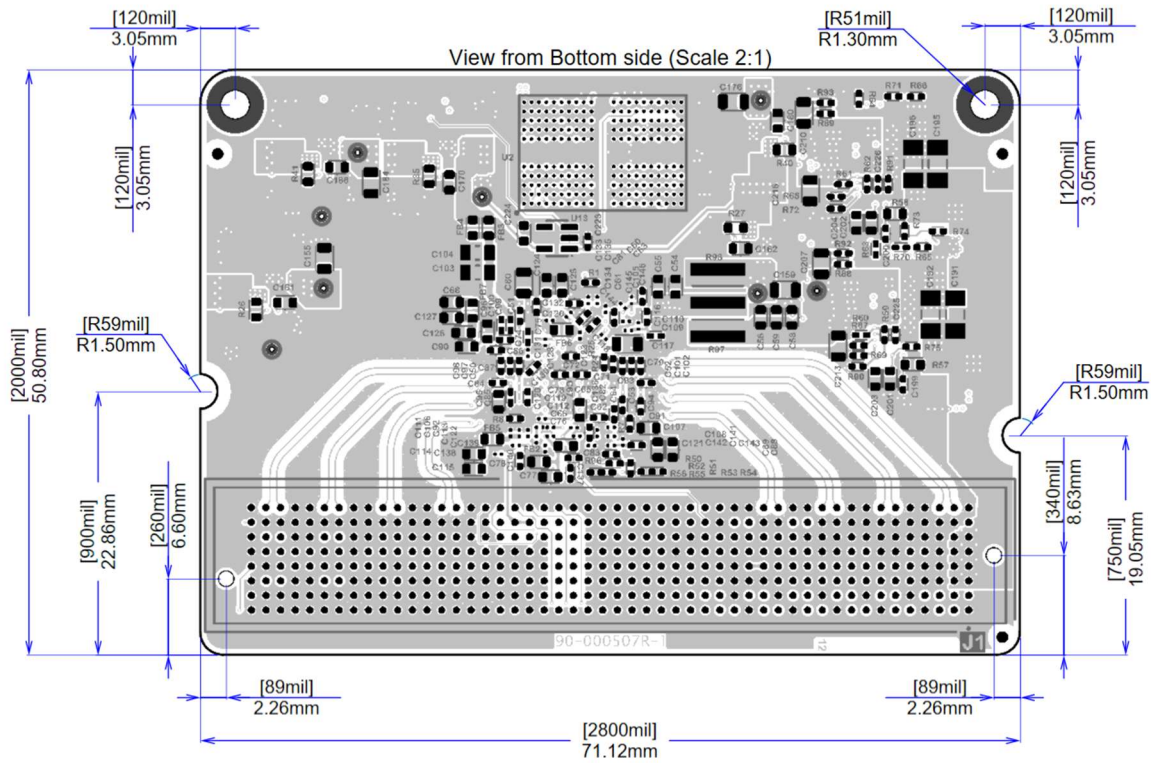


Figure 2 Original/Prototype Dimensions of MitySOM-A5E (Bottom View)

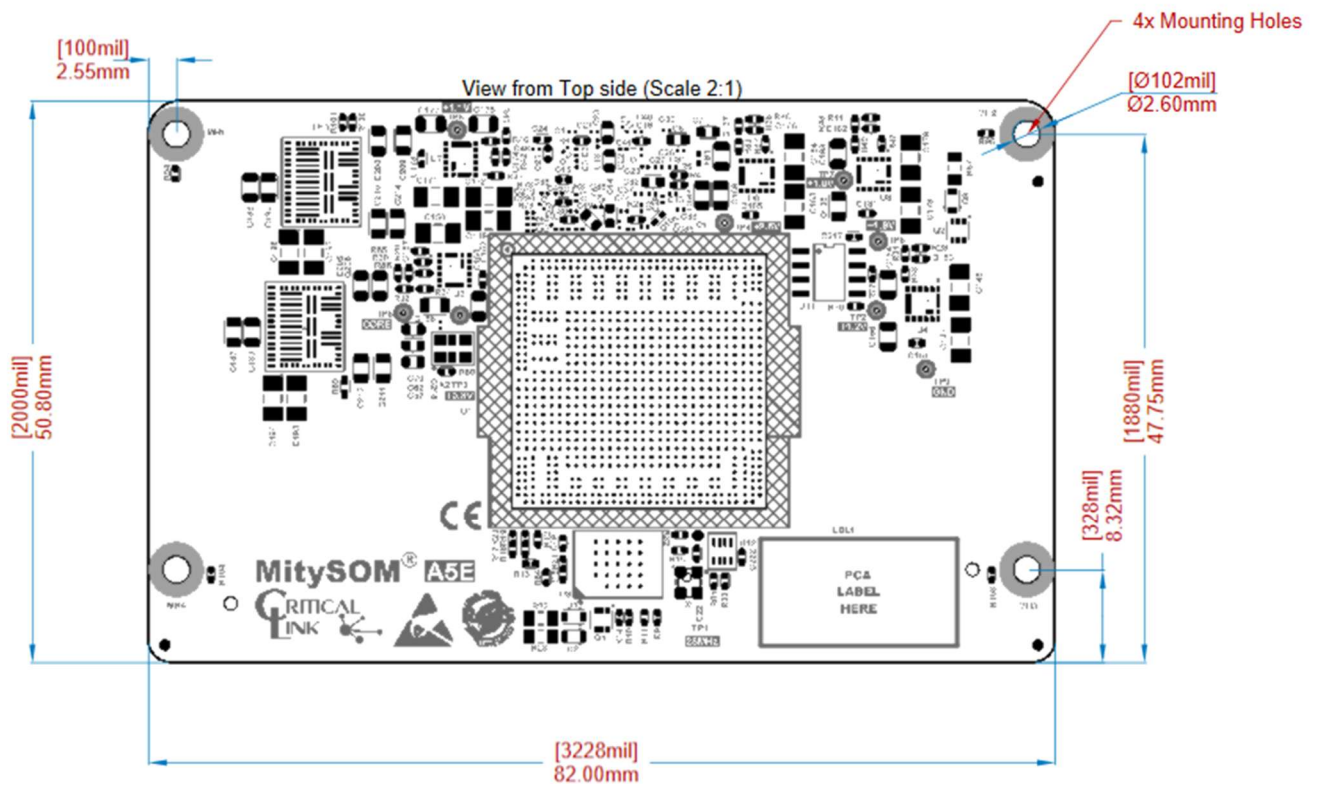


Figure 3 Current/New Dimensions of MitySOM-A5E (Top View)

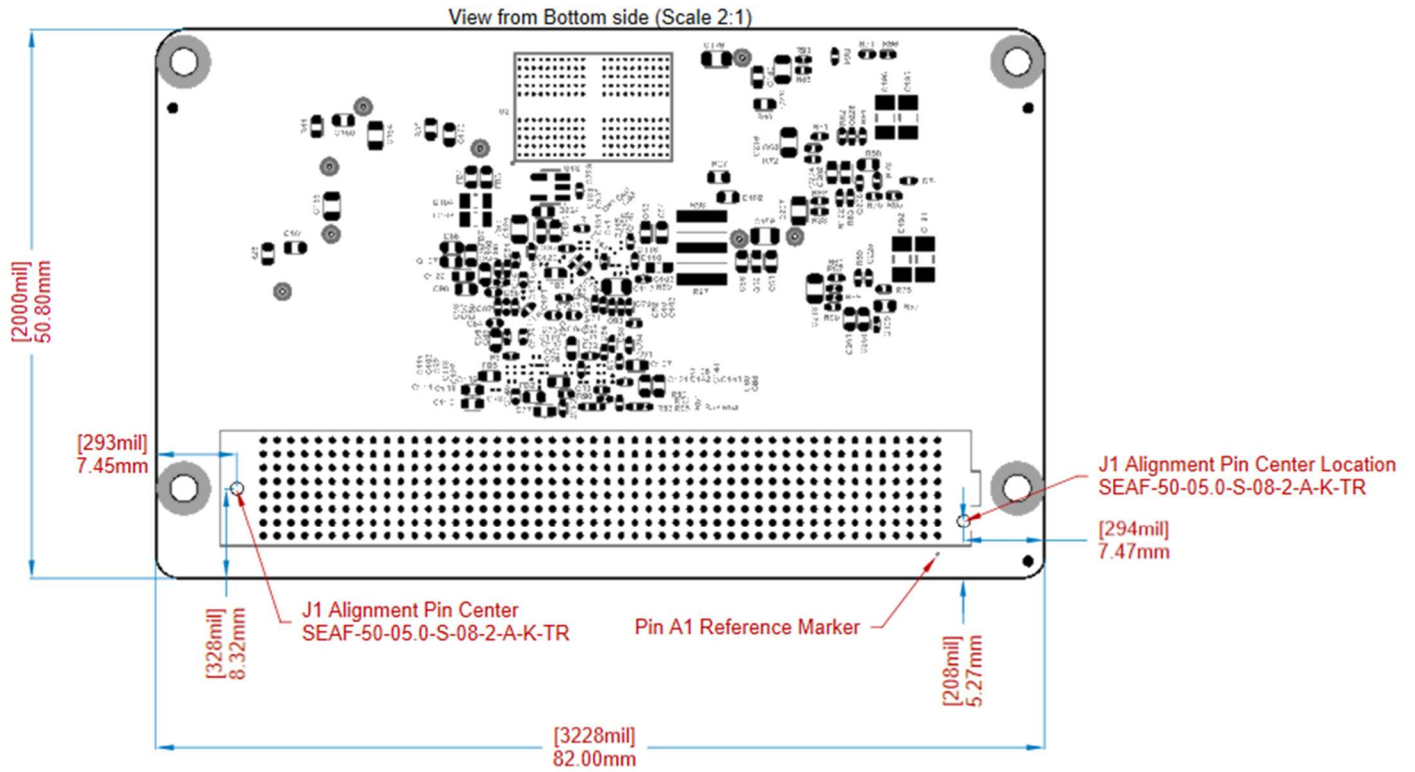


Figure 4 Current/New Dimensions of MitySOM-A5E (Bottom View)

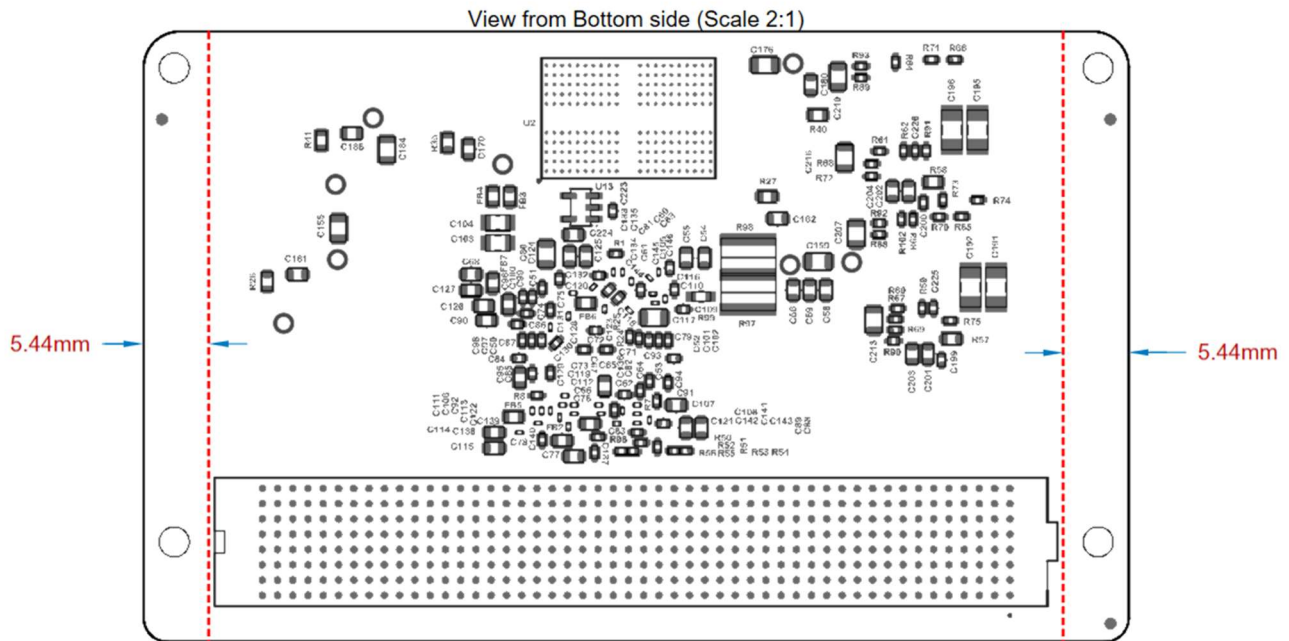


Figure 5 Board Size Increase (5.44mm on each side)

1.2 Reason for Change

The insertion force of the LP Array™ series connector is typically greater than 50 lbs. There is no positive feedback (e.g., a “click” or tactile sensation) to indicate that the connector is well seated during mating. It was noted that a large amount of stress was being placed onto carrier cards during installation of the prototype models and that removal of the module required external tools and was very difficult to perform without creating stress on the connector interface. To provide a better customer experience, as well as reduce potential damage to units during production testing, the LP Array™ series connector was replaced with a SEARAY™ series connector, which has roughly ½ the insertion force and provides tactile feedback that the interface is properly aligned and mated.

To provide options to use the module in extreme shock and vibration environments, the board was extended by 10.88 mm in width to allow additional mounting holes on the connector end of the module.

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

The carrier board connector must be changed to the Samtec SEARAY™ male series connector with the 8 rows by 50 contact arrangement, such as the SEAM-50-02.0-S-08-2-A-K-TR. Both the SEARAY™ and the LP Array™ connectors utilize a 50 mil (1.27 mm) pitch in the same 8x50 contact arrangement and the relative signal assignments have not changed between the current and new design. The migration of existing designs should not require a large change in printed circuit board layout. The range of stacking height using the new design will be from 7mm to 16mm, based on the specific male connector selected for the carrier card. In the original design a mating height of either 4.5mm or 5.0mm was possible.

The new SOM area (specifically, the width) is larger than the prototype SOM. Design engineers will need to account for the size difference in the new module as well as note the location change of the mounting hole positions along the top edge of the SOM. The larger SOM area will provide some additional heat spreading and dissipating capacity as compared to the original design.

Because provisions have been added to use up to 4 mounting screws, the board should withstand a higher shock and vibration stress than the previous design.

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

The new SOM design requires much less insertion or removal force, significantly reducing the potential for damage by the stress of inserting or removing the SOM during production test or field assembly. It is expected that this will have a positive impact on the SOM reliability over time.

2 Provide Clearance around FPGA for Heat Sink Attachment

2.1 Description of Change

As shown in Figure 3, a component keep-out region around the FPGA on the top side of the SOM has been added. Certain components have been moved on the board layout to honor the shown keep out region.

2.2 Reason for Change

The keep-out region is intended to support installation of clip on heat sink solutions to the FPGA, such as the Advanced Thermal Solutions (ATS) superGRIP™ Heat Sink Attachment Hardware. For designs not requiring extremely high amounts of power dissipation in a low shock and vibration environment, such an attachment

might be an ideal solution that would allow a designer to avoid a custom design of a heat spreading / dissipation solution.

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

The new design will allow customers to use off-the-shelf Heat Sink attachment hardware such as the ATS superGRIP™ clips. No impact to electrical functional performance is anticipated.

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

None.

3 Products Affected

Details regarding the full revision history is in the MitySOM-A5E Revision History section on the Critical Link support site.

https://support.criticallink.com/redmine/projects/mitysom_a5/wiki

| Model Number | Starting PCA | Replacement PCA |
|------------------|---------------|-----------------|
| A5ED-B9-XXF-RI-X | 80-001748RI-1 | 80-001748RI-2 |

Table 1: Products Affected

See MitySOM-A5E Datasheet and Carrier Board Design Guide for migration options across the MitySOM-A5E family.

4 Document Revision History

| Date | Version | Change Description |
|-------------------|---------|--------------------|
| 09-September-2024 | 1.0 | Initial Version |