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# ***IGLOO2 HPMS***

***Single Error Correct / Double Error Detect (SEDED)  
Configuration***



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## Introduction

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In radiation prone environments, storage elements such as RAMs and FIFOs are susceptible to transient errors caused by heavy ions. Errors can be detected and corrected by employing error detection and correction (EDAC). The EDAC controllers implemented in IGLOO2 support single error correction and double error detection (SECDED). Memories protected by EDAC within IGLOO2 are the eSRAMs and the external DDR memories.

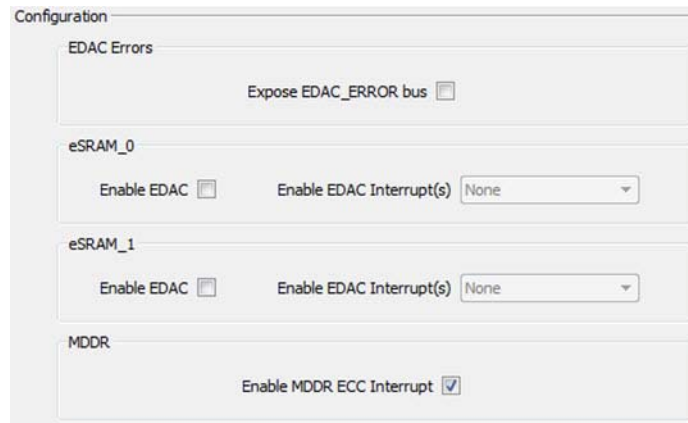
The values entered in the configurator will be loaded at power up (or when the DEVRST\_N external pad is asserted/de-asserted) in the SYSREG block.

For complete details please refer to the [Microsemi IGLOO2 User's Guide](#).

To configure the PCIe core use the High Speed Serial Interface configurator. For the Fabric DDR Controller use the DDR Memory Controller configurator. Both configurators are available from the Libero IP Catalog.

# 1 – Configuration Options

You can configure your EDAC options from the System Builder SECEDED page, as shown in [Figure 1-1](#).



**Figure 1-1 • Configure EDAC**

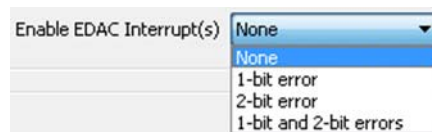
**Expose EDAC\_ERROR Bus** - Use this option to expose the EDAC\_ERROR bus signal to the FPGA fabric where it can be used by your design.

**Enable EDAC** - Use this option to enable the EDAC functionality for each of the following blocks:

- eSRAM\_0
- eSRAM\_1
- MDDR

For the eSRAMs, the EDAC Interrupt can be configured in one of four ways (as shown in [Figure 1-2](#)):

- None (for no Interrupts)
- 1-bit Error (Interrupts when there is a 1-bit error)
- 2-bit Error (Interrupts when there is a 2-bit error)
- 1-bit and 2-bit Error (Interrupts when BOTH 1-bit error AND 2-bit error occur)



**Figure 1-2 • Enable EDAC Interrupts**

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## 2 – Port Description

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**Table 2-1 • Port Description**

Port Name	Direction	PAD?	Description
EDAC_BUS[0]	Out	No	(ESRAM0_EDAC_1E & ESRAM0_EDAC_1E_EN)    (ESRAM0_EDAC_2E & ESRAM0_EDAC_2E_EN)
EDAC_BUS[1]	Out	No	(ESRAM1_EDAC_1E & ESRAM1_EDAC_1E_EN)    (ESRAM1_EDAC_2E & ESRAM1_EDAC_2E_EN)
EDAC_BUS[7]	Out	No	MDDR_ECC_INT & MDDR_ECC_INT_EN

## A – Product Support

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Microsemi SoC Products Group backs its products with various support services, including Customer Service, Customer Technical Support Center, a website, electronic mail, and worldwide sales offices. This appendix contains information about contacting Microsemi SoC Products Group and using these support services.

### Customer Service

Contact Customer Service for non-technical product support, such as product pricing, product upgrades, update information, order status, and authorization.

From North America, call 800.262.1060

From the rest of the world, call 650.318.4460

Fax, from anywhere in the world, 408.643.6913

### Customer Technical Support Center

Microsemi SoC Products Group staffs its Customer Technical Support Center with highly skilled engineers who can help answer your hardware, software, and design questions about Microsemi SoC Products. The Customer Technical Support Center spends a great deal of time creating application notes, answers to common design cycle questions, documentation of known issues, and various FAQs. So, before you contact us, please visit our online resources. It is very likely we have already answered your questions.

### Technical Support

Visit the Customer Support website ([www.microsemi.com/soc/support/search/default.aspx](http://www.microsemi.com/soc/support/search/default.aspx)) for more information and support. Many answers available on the searchable web resource include diagrams, illustrations, and links to other resources on the website.

### Website

You can browse a variety of technical and non-technical information on the SoC home page, at [www.microsemi.com/soc](http://www.microsemi.com/soc).

### Contacting the Customer Technical Support Center

Highly skilled engineers staff the Technical Support Center. The Technical Support Center can be contacted by email or through the Microsemi SoC Products Group website.

#### Email

You can communicate your technical questions to our email address and receive answers back by email, fax, or phone. Also, if you have design problems, you can email your design files to receive assistance. We constantly monitor the email account throughout the day. When sending your request to us, please be sure to include your full name, company name, and your contact information for efficient processing of your request.

The technical support email address is [soc\\_tech@microsemi.com](mailto:soc_tech@microsemi.com).

## My Cases

Microsemi SoC Products Group customers may submit and track technical cases online by going to [My Cases](#).

## Outside the U.S.

Customers needing assistance outside the US time zones can either contact technical support via email ([soc\\_tech@microsemi.com](mailto:soc_tech@microsemi.com)) or contact a local sales office. [Sales office listings](#) can be found at [www.microsemi.com/soc/company/contact/default.aspx](http://www.microsemi.com/soc/company/contact/default.aspx).

## ITAR Technical Support

For technical support on RH and RT FPGAs that are regulated by International Traffic in Arms Regulations (ITAR), contact us via [soc\\_tech\\_itar@microsemi.com](mailto:soc_tech_itar@microsemi.com). Alternatively, within [My Cases](#), select **Yes** in the ITAR drop-down list. For a complete list of ITAR-regulated Microsemi FPGAs, visit the [ITAR](#) web page.



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