

# Motorola Semiconductor Engineering Bulletin

---

## EB267

## The Double Bus Fault Monitor

By Sharon Darley  
Austin, Texas

### Introduction

---

The *Modular Microcontroller Family SIM System Integration Module Manual*, Motorola document order numbers SIMRM/AD and SCIMRM/AD, refers to a double bus fault monitor. But the double bus fault monitor is not referred to in some of the older user's manuals because it was previously called the halt monitor.

### General Information

---

The halt monitor discussed in the *MC68332 User's Manual* is called the double bus fault monitor in the *SIM System Integration Module Manual*.

Basically, a double bus fault is an exception upon an exception. As explained in the SIM manual, a double bus fault can occur under these conditions:


1. When bus error exception processing begins and a second bus error is detected before the first instruction of the first exception handler is executed
2. When one or more bus errors occur before the first instruction after a reset exception is executed



- When a bus error occurs while the CPU is loading information from a bus error stack frame during execution of a return-from-exception (RTE) instruction (CPU32-based MCUs only).

After the double bus fault occurs, the MCU drives the HALT line low and can be restarted only by a reset. When the HALT line is driven low internally, the double bus fault monitor will cause a reset immediately if it is enabled.

If the double bus fault monitor has been disabled by clearing the HME bit in the system protection control register (SYPCR), the MCU will remain in the halted state indefinitely and must be reset externally.

Motorola reserves the right to make changes without further notice to any products herein. Motorola makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Motorola assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters which may be provided in Motorola data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Motorola does not convey any license under its patent rights nor the rights of others. Motorola products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motorola product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motorola products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motorola and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motorola was negligent regarding the design or manufacture of the part. Motorola and  are registered trademarks of Motorola, Inc. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

#### How to reach us:

**USA/EUROPE/Locations Not Listed:** Motorola Literature Distribution, P.O. Box 5405, Denver, Colorado 80217, 1-800-441-2447 or 1-303-675-2140. Customer Focus Center, 1-800-521-6274

**JAPAN:** Nippon Motorola Ltd.: SPD, Strategic Planning Office, 141, 4-32-1 Nishi-Gotanda, Shinagawa-ku, Tokyo, Japan. 03-5487-8488

**ASIA/PACIFIC:** Motorola Semiconductors H.K. Ltd., 8B Tai Ping Industrial Park, 51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298

**Mfax™, Motorola Fax Back System:** RMFAX0@email.sps.mot.com; <http://sps.motorola.com/mfax/>;

TOUCHTONE, 1-602-244-6609; US and Canada ONLY, 1-800-774-1848

**HOME PAGE:** <http://motorola.com/sps/>

Mfax is a trademark of Motorola, Inc.



**MOTOROLA**

© Motorola, Inc., 1998

EB267/D

**For More Information On This Product,  
Go to: [www.freescale.com](http://www.freescale.com)**