

Motorola Semiconductor Engineering Bulletin

EB262

DSACK Generation on the System Integration and Single-Chip Integration

By Christopher Hale
Austin, Texas

General Information

The system integration module (SIM) and single-chip integration module (SCIM) provide programmable chip-select logic to help the designer interface a modular microcontroller to external peripherals.

Chip select assertion can be synchronized with the bus control timing to provide correct timing signals for external devices.

The chip select logic also generates DSACK and AVEC signals internally.

Question

A question that often arises is: What happens if a chip select is programmed as either discrete output or alternate function in the chip-select pin assignment register (CSPARx), but the chip-select base address (CSBARx) and chip-select option registers (CSORx) are also programmed?




Intent

The intent is to use the pin for discrete output or its alternate function and also use the internal chip select logic to generate a DSACK signal.

This assumes that the external address pins are being used to generate one or more chip-enable signals discretely and also that the external pins DSACK0 and DSACK1 are not used as bus control signals.

Although the user's manual states that doing this is allowed, it fails to state whether the DSACK is for an 8- or 16-bit port. In this case, if CSPARx is programmed for alternate function, the DSACK will be for a 16-bit port. But if CSPARx is programmed as discrete output, then the DSACK will be for an 8-bit port.

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, Inc., 1998



MOTOROLA

EB262/D

**For More Information On This Product,
Go to: www.freescale.com**