

Design Advisory #1 **MC68SC302 Passive ISDN Protocol Engine**

March 31, 1997

This purpose of this note is to make designers of MC68SC302 based ISA PNP products aware of a problem with the Award Plug and Play BIOS that affects the MC68SC302.

The Award BIOS Plug and Play Initialization routine does not write to the Interrupt Request Type Select 0 register (address 71) when the Plug and Play resource data is requesting a high edge sensitive interrupt as *required* by the Plug and Play ISA Specification 1.0a. The MC68SC302 Interrupt Request Type Select 0 has a default of low edge after reset. Since the Award BIOS never programs this register during its Plug and Play initialization sequence the MC68SC302 will issue interrupts low edge sensitive and not be recognized in high edge sensitive systems.

This is only a problem with the following conditions: a non-Windows 95 system such as Windows NT (current versions without Plug and Play) or Windows 3.1, AND motherboards using the Award BIOS with this incompatibility. Windows 95 does not have this problem and will rerun the Plug and Play initialization sequence correctly. No other BIOSes have been found to have this bug.

The workaround is to write to the Interrupt Request Type Select 0 register with a \$02 which will set the MC68SC302 IRQ to a high, edge sensitive state. This can be done when the MC68SC302 device driver is invoked. This is an acceptable workaround for Windows NT systems.

Since most PC motherboards use high edge sensitive interrupt logic, a future revision of the MC68SC302 is planned to default after reset to high edge sensitive interrupts to improve its compatibility with non-compliant Plug and Play initialization routines. It is still advised to implement the work around described above if your product could be required to operate a non-compliant system.

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