

# GM82C700

## PC-AT-BUS-TO-SCSI-BUS HOST ADAPTER

### General Description

The GM82C700 is a single chip SCSI host adapter solution for PC AT and microprocessor controlled peripheral applications. The GM82C700 provides all of the functionality needed to implement a multiple-unit SCSI in one 80-pin QFP package.

Typical applications include laptops, portables, and low-end desktop computers. The power of SCSI protocol is demonstrated by a sustained data transfer capability of up to 10 M-bytes per second. SCSI bus connectivity gives the system the ability to hook up to any of the growing number of SCSI compatible peripherals available, from hard drives to high-capacity floppy drives, tape drives, CD-ROM, DAT, and removable drives.

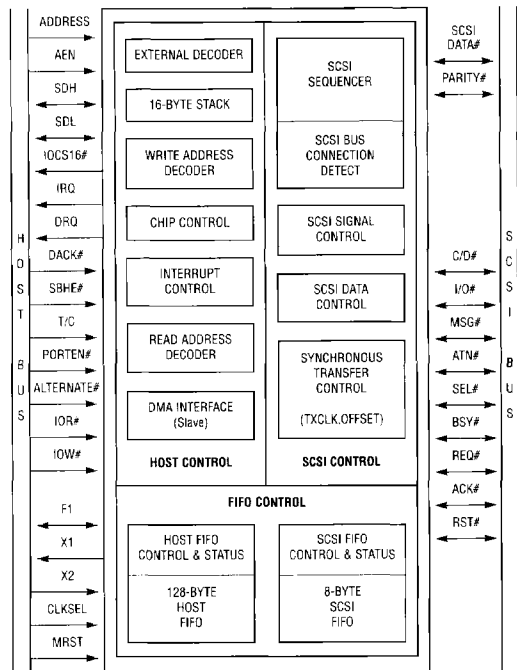
Embedding the GM82C700 increases reliability, reduces cost, and eliminates the need for a traditional host adapter card. This makes the chip an ideal I/O solution for both the desktop and laptop system.

The GM82C700 supports second party DMA transfers or programmed I/O. The chip contains a 128-byte data buffer to increase PIO performance. Synchronous or asynchronous SCSI transfer is supported. A built-in "sleep" mode saves power. With the multi-tasking SCSI Programming Interface Manager, which contains features such as Disconnect/Reconnect on the SCSI bus, the host CPU may work another job while peripherals execute time-consuming functions such as "Seek."

"Automatic Request Sense" can be done in the event of a "Check Condition" status from a SCSI target LUN. This ensures that valuable status data is not lost. BIOS code is available to allow booting from the SCSI hard drive and to emulate DOS hard disk calls. Configuration options are programmable and can be set by software during system power up.

The GM82C700 is designed as a Host Adapter which generally operates as an initiator. But for "Host-to-Host Data Transfer" the GM82C700 may be operated as a target device by configuring its internal register. All the SCSI part pins are bidirectional, and internal hardware such as transfer counter, interrupt sources, and ID register are designed to work either as an initiator or in the target role.

### GM82C700 Block Diagram



Note: # means active low signal

### Features

- Single chip SCSI solution
- 80-pin QFP
- Supports second party DMA transfer or programmed I/O
- Supports synchronous or asynchronous SCSI transfer
- Supports a full complement of SCSI driver software
- Contains a 128-byte host data buffer and a 8-byte SCSI data buffer
- Contains a 16-byte stack
- Built-in "Power-Down" mode
- Data transfer capability of up to 10 MByte/sec
- Operation frequency of up to 20 MHz
- Programmable configuration options
  - Enable/Disable Disconnect
  - AT bus ON/OFF time
  - SCSI ID
  - Parity Checking Disable
  - Synchronous Negotiation
  - Selection Time Out
  - DMA/PIO