Capable of operating as both an initiator and a target, this chip can be used in host adapters and control unit designs. It can handle asynchronous data rates as high as 1.5 Mbytes/s.

Single-chip controller handles SCSI

A single-chip controller from NCR not only is the first to implement the full Small Computer Systems Interface (SCSI) protocol, but also transfers data asynchronously at a maximum rate of 1.5 Mbytes/s. The NCR 5385 protocol chip offers a general-purpose microprocessor interface, as well as the SCSI control signals defined by the ANSI X3T9.2 standard. (The only SCSI signal not controlled by the chip is the Bus Reset line.)

The 5385 operates in both the

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initiator and the target mode. Thus it can be used in host adapters and in control unit designs. In these and in most other cases, the chip requires only external transceivers to drive the lines on the interface bus. In addition to the 8-bit SCSI data bus, the chip generates a parity bit when sending data or when checking parity on incoming data.

An external three-to-eight decoder helps the protocol chip perform bus arbitration, including reselection. For controlling DMA data transfers, a 24-bit transfer counter is built into the 5385. The

counter can also serve as a programmable selection timer: when the counter goes to zero, the controller will interrupt the host CPU, indicating no response to the attempted selection.
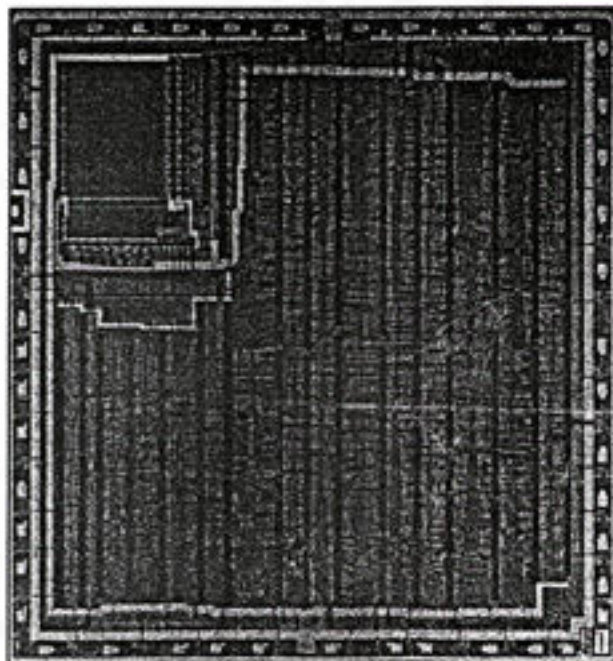
Various internal registers are used to control the 5385. These registers are loaded by the host, which addresses them as either standard or memory-mapped I/O ports. A 10-MHz (maximum) external clock signal supplies the internal timing. The chip's bus signal lines are designed to interface with open-collector or differential-pair line transceivers, thus providing a flexible system connection.

The controller responds to two types of commands: immediate and interrupting. The former commands, except for Pause, prompt immediate action (within three clock cycles). The interrupt commands do not, but their completion is flagged by the generation of an interrupt.

When purchased in 100-unit quantities, the commercial temperature (0° to 70°C) version of the controller is priced at $31.51 each. Samples are available from stock, with production quantities available in June.

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