



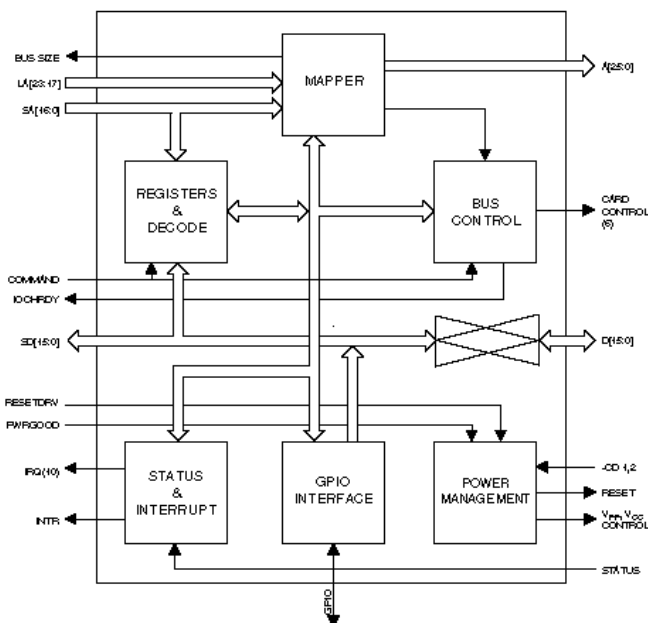
Overview

The Vadem VG-468 is a compact, highly integrated PC Card controller chip implementing the PCMCIA 2.1/JEIDA 4.1 specifications along with ExCA™ extensions. It is register compatible to the Intel® 82365SL. Supporting two PC Card sockets, it is uniquely designed for space-limited, cost-sensitive applications where battery life is an important factor. For systems requiring more than two sockets, the VG-468 can be cascaded to support up to eight sockets without external logic. With external decoder logic, unlimited cascading is possible. Typical VG-468 applications include small notebook computers, palmtops and other personal information devices.

The VG-468 supports the system bus timing of standard ISA and EISA architectures, including those based on the Intel 386SL. A programmable configuration mechanism allows the system manufacturer to control many PC Card setup parameters in software or firmware.

Power management based on activity monitoring together with the VG-468's very low current-draw combine to minimize its demand for battery power. The device is designed for a wide voltage-margin and will be available in a version which accepts both +5V and +3V supplies.

VG-468 Block Diagram



Key Features

- 208-pin chip provides full ExCA implementation of two PCMCIA 2.1/JEIDA 4.1 PC Card sockets.
■ Supports both memory cards and I/O cards (miniature peripherals).
■ Supports PCMCIA-ATA hard disks and semiconductor disks.
■ Memory-saving execute-in-place standard (XIP).
■ Supports overlapping I/O windows across sockets and duplicate I/O cards via *INPACK signal.
■ Cascadable up to eight sockets without "glue," unlimited cascading with external logic.
■ Register-compatible with Intel 82365SL.
■ Five mappable memory windows and two I/O windows for each socket.
■ Jumperless interrupt steering from PC Card to system bus.
■ Internal buffering supports "hot" insertion and removal of cards.
■ Selectable programming voltage for various programmable devices.
■ Power Management Support.
■ Integrated timer supports power management based on activity monitoring.
■ Individual socket power control.
■ Power saving with windows inactivity.
■ CS controlled powerdown.
■ Supports 3.3V SUSPEND with modem ring resume detection.
■ Includes two GPIO or programmable chip select pins.

Functional Description

- The VG-468 interfaces directly to a synchronous or asynchronous ISA bus. No external buffers or transceivers are needed. For systems based on the 386SL, the VG-468 provides the special signals PWRGOOD, *SPKROUT, *INTR and *RIO.
- A single VG-468 supports two PC Card sockets directly. Up to eight PC Card sockets may be supported by cascading VG-468's. If an external decoder is used, any number of sockets can be supported. Each VG-468 is uniquely selected using pull-up/pull-down resistors.
- Up to five memory window mapping ranges and up to two I/O window ranges are supported to avoid the possibility of system configuration conflicts. Each window is independently enabled and controlled.
- Each memory window may map portions of the 64 Mbytes PC Card common memory or attribute memory space into 16 Mbytes system address space. Memory data bus width, system bus wait states, write protect and card enable are controlled on a per window basis. Minimum memory window size is 4 Kbytes. Window range overlapping among memory windows is not allowed.
- Each I/O window can be located anywhere in the first 64 Kbytes of the I/O address space. I/O data bus width, system bus wait states and card enable are controlled on a per window basis. Minimum I/O window size is 1 byte. Window range overlapping among I/O windows is allowed if the card generates *INPACK signal.
- To avoid the possibility of conflicting interrupts from multiple PC Cards at the same interrupt level, the VG-468 permits steering of interrupt requests to any of ten system bus interrupts. The interrupts can be configured as edge-triggered or level mode.
- The status of the PC Card including card detection, memory write protect status, battery voltage detect, card power and ready/busy are accessible through the status register. A change in card status can cause an interrupt.
- The VG-468 supports I/O cards with special signals (e.g. *SPKR). These signals are passed through to the system bus without modification.

ADDITIONAL INFORMATION

Additional information regarding pinout and pin descriptions, register descriptions, timing characteristics and operating conditions may be obtained from the VG-468 data manual.

