

PC87311A/PC87312 (SuperI/O™ II/III) Floppy Disk Controller with Dual UARTs, Parallel Port, and IDE Interface

General Description

The PC87311A/12 incorporates a floppy disk controller (FDC), two full function UARTs, a bidirectional parallel port, and IDE interface control logic in one chip. The PC87311A includes standard AT/XT address decoding for on-chip functions and a Configuration Register, offering a single chip solution to the most commonly used IBM® PC®, PC-XT®, and PC-AT® peripherals. The PC87312 includes standard AT address decoding for on-chip functions and a Configuration Register set, offering a single chip solution to the most commonly used ISA, EISA and Micro Channel peripherals.

The on-chip FDC is software compatible to the PC8477, which contains a superset of the DP8473 and NEC µPD765 and the N82077 floppy disk controller functions. The on-chip analog data separator requires no external components and supports the 4 Mb drive format as well as the other standard floppy drives used with 5.25" and 3.5" media.

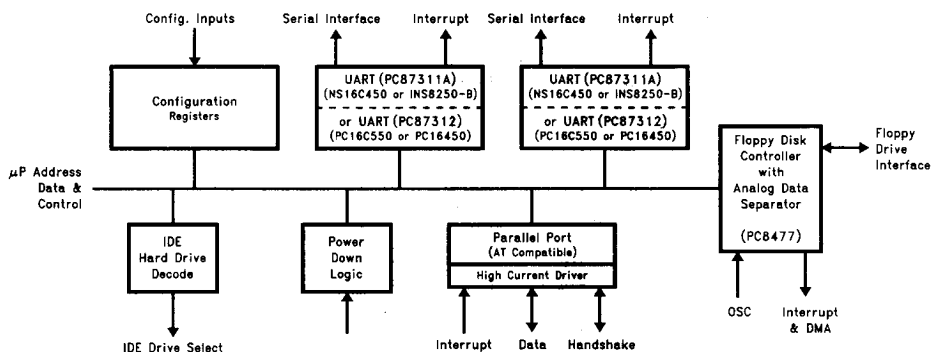
In the PC87311A, the UARTs are equivalent to two INS8250N-Bs or NS16450s. The bidirectional parallel port maintains complete compatibility with the IBM PC, XT and AT. In the PC87312 the UARTs are equivalent to two NS16450s or PC16550s. The bidirectional parallel port maintains complete compatibility with the ISA, EISA and Micro Channel parallel ports.

The IDE control logic provides a complete IDE interface except for the signal buffers. The Configuration Registers consist of three byte-wide registers. An Index and a Data Register which can be relocated within the ISA I/O address space access the Configuration Registers.

Features

- 100% compatible with IBM PC, XT, and AT architectures (PC87311A), or ISA, EISA, and Micro Channel architectures (PC87312)
- FDC:
 - Software compatible with the DP8473, the 765A and the N82077
 - 16-byte FIFO (default disabled)
 - Burst and Non-Burst modes
 - Perpendicular Recording drive support
 - High performance internal analog data separator (no external filter components required)
 - Low power CMOS with power down mode
- UARTs:
 - Software compatible with the INS8250N-B and the NS16450 (PC87311A), or PC16550A and PC16450 (PC87312)
- Parallel Port:
 - Bidirectional under either software or hardware control
 - Compatible with all IBM PC, XT and AT architectures (PC87311A), or all ISA, EISA, and Micro Channel architectures (PC87312)
 - Back Voltage protection circuit against damage caused when printer is powered up
- IDE Control Logic:
 - Provides a complete IDE interface except for optional buffers
- Address Decoder:
 - Provides selection of all primary and secondary ISA addresses including COM 1–4.
- 100-pin PQFP package
 - The PC87311A and PC87312 are pin compatible

Block Diagram



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