

W91284PIC^(tm)

IEEE 1284 Peripheral Interface Controller IC

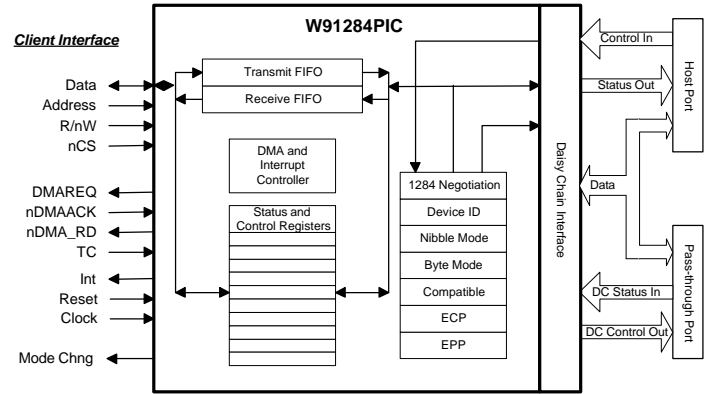
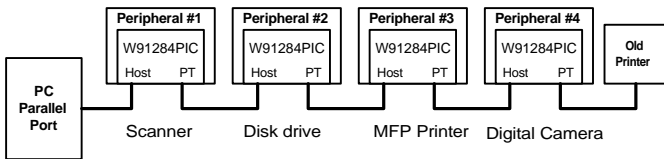
The W91284PIC is an integrated chip solution that can be used to provide an IEEE Std. 1284-1994 interface for any parallel port peripheral. Specifically, the W91284PIC can be used with appropriate firmware to provide a fully compliant IEEE 1284 peripheral interface. This interface provides fast, bi-directional data transfer when connected to a 1284 host parallel port. This IC is suitable for providing the peripheral interface for a wide variety of devices such as printers, scanners, multifunction and any other parallel port peripherals.

The 1284PIC implements all of the IEEE 1284 operating modes:

- **1284 Negotiation**
- **Device ID for LPT Plug and Play**
- **Fast Centronics**
- **Nibble Mode**
- **Byte Mode**
- **EPP**
- **ECP**

Port Sharing -- Daisy Chaining

In addition to these IEEE 1284-1994 modes the W91284PIC provides support for a pass-through port that allows a printer or other peripheral to share the same host PC parallel port. This is provided via the IEEE P1284.3 port sharing standard. This is also known as Daisy Chaining. The figure below shows an example of 4 daisy chain devices connected together sharing a single parallel port. At the end of the chain is a 'legacy' printer device.



W91284PIC Block Diagram

Registers

The W91284PIC implements the IEEE 1284 peripheral interface state machine in hardware. The state machine handles all of the 1284 signaling on the parallel port interface and acts as a data "bridge" to the client interface. The micro-controller firmware is not involved with the 1284 signaling.

There are a number of parameter registers that the firmware can set that will control the basic operation of the interface. These parameters include:

- Operational Modes
- Device_ID
- Compatible mode parameters
- Interrupt and DMA operation

The W91284PIC provides an IEEE 1284 Level II electrical interface, needing no external transceivers to interface to the cable. For peripherals requiring added protection there is support for external 74ACT1284 transceivers. The W91284PIC interfaces to the 1284 parallel port on one side, and the client's peripheral interface on the other. From the client side, the W91284PIC looks like a 'generic' micro-controller interface. The basic operation of the interface is controlled via settings in the W91284PIC control registers. Once enabled, the W91284PIC provides all of the handshaking and data transfer to and from the parallel port. This data is transferred across client interface using either DMA or PIO to the W91284PIC's transmit and receive FIFOs. It is not necessary for the client processor to implement any of the IEEE 1284 parallel port protocols. This is all managed via the W91284PIC state machines.

The W91284PIC is packaged in an industry standard 100 pin PQFP package.

For more information and a complete data sheet, please go to "www.fapo.com/1284pic.htm"