

CONNECTING PERIPHERALS

TO YOUR
PERSONAL COMPUTER

Connector ‘pins’

- Pin (computers), a slender prong used in computer circuitry. Pins are commonly encountered as the contacts protruding from a male connector. Connectors are often identified by the number of pins they have—for example, a 5-pin or a 9-pin connector.

THE '*serial port*'

- A socket on a computer used to connect a modem, data acquisition terminal or other serial device via a slow-speed serial interface. Earlier PCs used the serial port for the mouse, and earlier Macintoshes used the serial port to attach a printer.

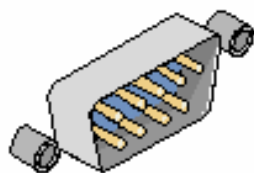
Serial port

- Although widely used in data acquisition, the serial port is a legacy interface on the PC, having been superseded by the USB bus.

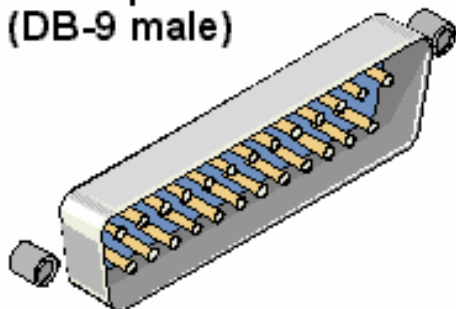
9 pin 'communication port'



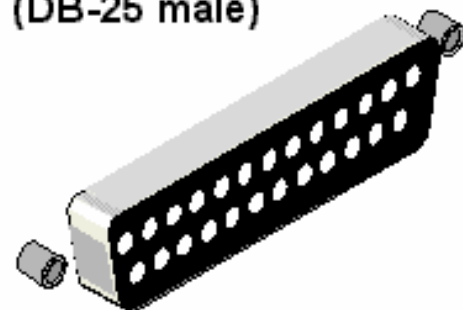
Serial & Parallel Ports on a PC



Serial port
(DB-9 male)



Serial port
(DB-25 male)



Parallel port
(DB-25 female)

A PC usually comes with two serial ports (COM1, COM2) and one parallel port (LPT1).

On the back of the PC, the serial ports are either two male DB-9 connectors or one DB-9 and one DB-25. The parallel port is a DB-25 female connector.

The 'PS/2' connector/port

- An IBM personal computer series introduced in 1987, superseding the original PC line. It introduced the 3.5" floppy disk, VGA graphics and Micro Channel bus. The 3.5" disks and VGA are common in all PCs, but the Micro Channel has since given way to the PCI bus. See also [PS/2 connector](#) and [PS2](#)

The '*universal serial bus*'

- A serial interface that can transfer data at up to 480 million bits per second and connect up to 127 daisy-chained peripheral devices.
Abbreviated USB.
- USB ports began to appear on PCs in 1997, and Windows 98 was the first Windows to support it natively. Within a few years, USB became

USB

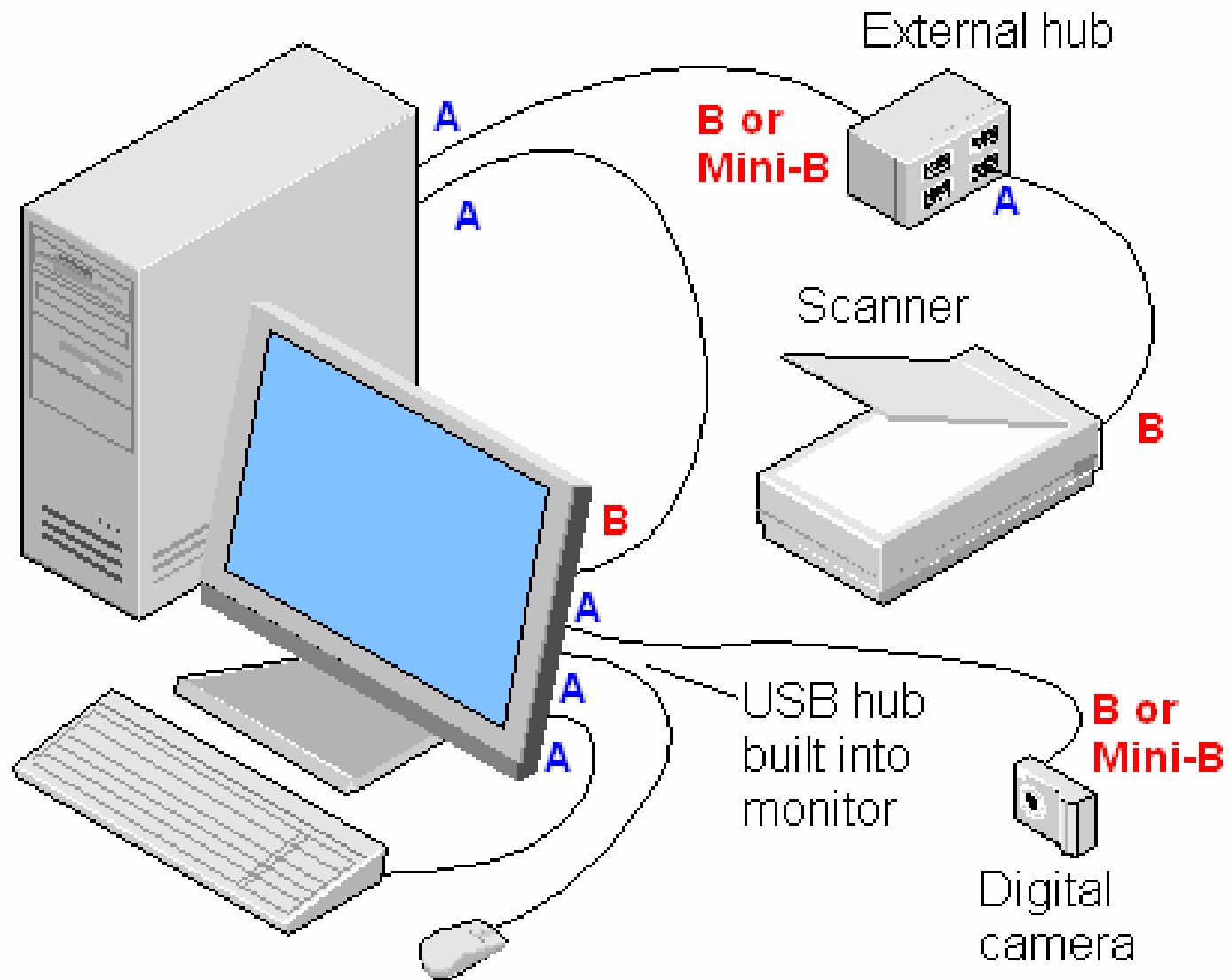
- popular for connecting nearly every external peripheral device. Replacing the serial and parallel ports on a PC, at least four USB ports are standard on every computer.

USB = *Hot Swappable*

- USB devices can be connected to without turning the computer off, enabling removable devices to be plugged and unplugged as needed. This feature, combined with easy-to-reach ports on the front of the computer case, gave rise to the ubiquitous USB drive, which is used for storage and numerous applications. See [USB drive](#) and [U3](#).

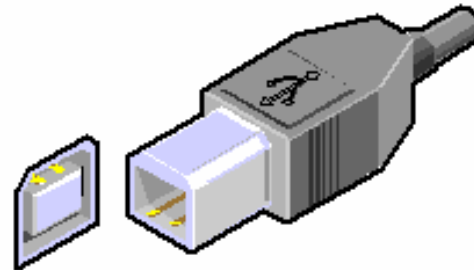
USB

- **USB 1.0 and USB 2.0**
- USB has a maximum bandwidth of 12 Mbps for USB 1.0 and 1.1 and 480 Mbps for Hi-Speed USB 2.0. Up to 127 peripheral devices can be attached to the bus, and USB 1.1 devices can plug into USB 2.0 ports. Fast devices can use the full bandwidth, while low-speed ones can use a 1.5 Mbps sub channel.





Type A (host or hub)



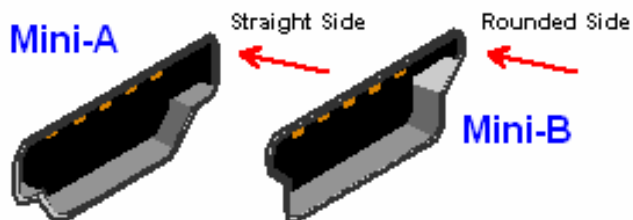
Type B (peripheral)



Mini-A

Mini-B

USB Mini connectors are used on PDAs, cameras, music players and USB hubs. The plugs and sockets are very small and look alike, but Mini-A has straighter sides, while Mini-B is more rounded.



Mini-A

Mini-B



**Mini-B
to Type A
on the
computer.**

**Type A sockets for
peripherals.**

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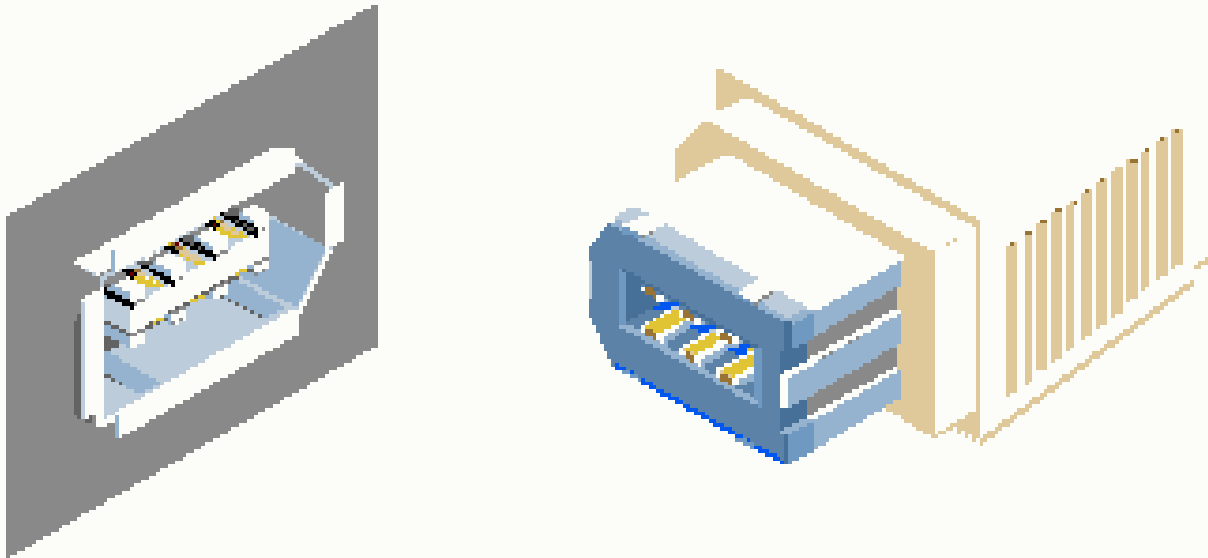
USB-based Land Warrior

Not your ordinary computer, the Land Warrior is a body-worn system that uses USB as its "personal network." Developed by Pacific Consultants, its USB controller was created by Trans Dimension. (Image courtesy of the U.S. Department of Defense.)



- A high-speed serial bus developed by Apple and Texas Instruments that allows for the connection of up to 63 devices. It is widely used for downloading video from digital camcorders to the computer. Also known as the IEEE 1394 standard, the i.Link connector and the High Performance Serial Bus (HPSB), the first version of FireWire supported 100, 200 and 400 Mbits/sec transfer rates and a distance of 4.5 meters between devices.

- IEEE 1394b provides 800, 1,600 and 3,200 Mbps speeds, increases cable distance to 100 meters and can use glass or plastic fiber and Cat 5 Ethernet cable. FireWire 800 was the first implementation of 1394b and became available in 2003. Backward compatible with FireWire 400, earlier devices run at the lower speed.
- FireWire supports hot swapping, multiple speeds on the same bus and isochronous data transfer, which guarantees bandwidth for multimedia operations.



FireWire Connectors:

The 6-pin socket is commonly found on desktop computers. A 4-pin version is used on laptops. The faster FireWire 800 requires a 9-pin connector.

The 'Ethernet'

- The standard local area network (LAN) access method. A specification for "LAN," "LAN connection" or "network card" automatically implies Ethernet without saying so. Ethernet connects devices to a company or home network as well as to a cable modem or DSL modem for Internet access. Ethernet is defined by the IEEE as the 802.3 standard (see [802.3](#)).

- Almost all PCs and Macs come with 10/100 Ethernet ports that connect internally to circuits on the motherboard. Ethernet can be added to older machines by plugging in a network adapter via PCI, PC Card or USB.



Ethernet Switch

This 10/100 switch from Omnitron has 16 ports and automatically senses the transmission rate of the line and adjusts accordingly.

The 'driver'

- Device Driver, in computer science, a software component that permits a computer system to communicate with a device. A printer driver is a device driver that translates computer data into a form understood by the intended printer. In most cases, the driver also manipulates the hardware in order to transmit the data to the device.

THE WIRELESS

- They are usually non-contact; no physical connectivity between concerned gadgets.
- These are commonly microwave or radio waves transmitted in space usually by line of site. The transmitter and receiver can 'see' each other.
- A very popular mode today; mobile telephony, bluetooth, Wi-Fi, TV, Headphones, remote car locks etc.