

What Connection Type is Right for Me?

What connection types are available on Iomega® Hard Drives? How do I know which one I need? How do I find the right connection on my computer?



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What is a data connection?

A data connection, sometimes referred to as an interface connection or data interface, is the electronic path for communicating information between a computer and a device connected to the computer. All external storage devices, such as Iomega Hard Drives, use a data interface connection to communicate with the computer. The connection is made using a data interface cable that connects the external drive to a communications bus on the computer.

Today's computers typically include one or more built-in data interface connections for attaching external devices. The most common are USB, FireWire, and eSATA. A user can also add new data interface connections to a computer by installing PCI expansion cards.

Technical note: All of the newer data interface types are serial buses which transmit data as a single stream of bits. In contrast, the older data interfaces, such as SCSI and Parallel Port, were parallel communications buses which transmitted data in chunks using multiple concurrent data streams. The communications buses most frequently used inside the computer to connect the CPU (central processor) with the internal hard drive are also parallel communications buses. Examples of these are IDE and serial ATA (SATA).

How do the different data interface types compare?

Each interface type uses a specific architecture for the transmission of information across the communications bus, but for a computer user, the important differences are performance, cost, and availability. Performance is most frequently measured by the maximum data transfer rate for the interface, usually stated as Mega-bits of data transferred per second (Mbits/s). The following table shows the maximum data transfer rates for the interface types most commonly used for external hard drives.

Data Interface Type	Maximum Transfer Rate
eSATA	3000 Mbits/s*
FireWire 800	800 Mbits/s
FireWire 400	400 Mbits/s
USB 2.0	480 Mbits/s
USB 1.1	12 Mbits/s

*3000 Mbits/s = 3 Gbits/s

As a general rule, the cost for each interface is related to its performance – devices with faster interfaces tend to cost a bit more than those with slower interfaces. The newest and fastest interfaces also tend to be less available. For example, all new computers now include USB 2.0 connections, but only a few include eSATA built-in. Since USB 2.0 offers good performance and is both readily available and relatively cost effective, it has become the most common interface for connecting external hard drives. Devices that offer one of the higher performance interfaces, such as eSATA or FireWire 800, typically include a USB 2.0 connection as well.



Choosing an Interface

If you are buying an external hard drive and trying to decide which interface (or interfaces) will best meet your needs, consider the following factors:

- What interface connections are available on your computer?
- Will you use the drive on different computers?
- What do you plan to do with the drive? How important is performance to these tasks?
- How much are you willing to spend?

Performance is probably the most important selection factor if you will be using the drive for mission-critical data storage or high performance applications, such as editing video or high resolution graphics. Whether eSATA or FireWire 800 better meets your needs will probably depend on which interface is available on your computer. If you want the high performance of an eSATA drive but your computer doesn't have eSATA, consider adding an eSATA PCI Express expansion card to your system. If you currently have a computer with FireWire 800 but might upgrade in the future to a system that includes eSATA, consider a multi-interface drive that includes both interfaces.

If performance is less important to you, USB 2.0 is probably the best interface choice. For example, a USB 2.0 drive is ideal for routine backup or archiving tasks, especially if you use backup software to schedule automatic backups at a time when you're not using the computer. USB 2.0 also works well if you want to use the drive cross-platform on computers running Windows® PCs and Mac OS® X.

Finding Interface Connections on Your Computer

Most new computers have USB 2.0 connections (sometimes referred to as ports) on the front of the computer where they are readily available for connecting external devices, including hard drives. Usually there are additional interface connectors on the back of the computer. Some computers have expansion cards installed in the PCI slots that provide interface connections that were not initially built-in on the computer.

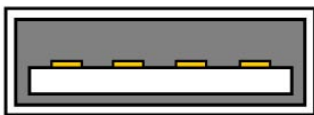
To identify interface connections, look for the symbols and connector shapes illustrated below. If you're still not certain what interface connections are available on your computer, refer to the manual that shipped with the computer.

USB Ports

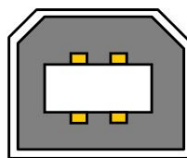
The shape of USB connectors are different on the drive (device ports) and the computer (host ports). The shape of USB 2.0 ports is the same as that for USB 1.1 ports – only the transfer speed is different. Often, USB ports are marked with the USB symbol (shown at right) or the letters "USB".



Here are illustrations of some USB ports:



USB host port
(connection on the computer)



Standard USB
(used on most Desktop HDs)



Mini-USB connector
(often used on portable HDs)

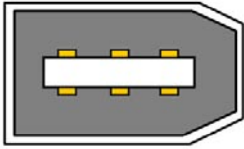


FireWire Ports

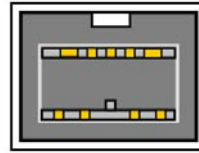
FireWire ports are usually marked with the FireWire symbol shown at right. FireWire ports have the same shape on the computer and the external device.



The ports for FireWire 800 (also referred to as FireWire b, 1394b or IEEE b) and FireWire 400 (also referred to as FireWire a, 1394a, or IEEE) are different shapes. You can use a FireWire a-b cable to connect a FireWire 400 device to a FireWire 800 port on the computer (or vice versa). When mixing FireWire interfaces, the data transfer performance will be that for FireWire 400.



FireWire 400 port
(1394a)



FireWire 800 port
(1394b)

eSATA Ports

The connections for eSATA (which is short for "external SATA") are the same on the computer and the external device. Sometimes eSATA ports are marked "eSATA" or just "SATA". There is a logo for eSATA, but it is not usually used to mark eSATA ports on the computer or external device.



eSATA port

Hub Connections

An interface hub is used to increase the number of connections available on a computer. This is especially useful for USB 2.0, which is often used to connect mice, keyboards, printers, and other devices, as well as external hard drives. Sometimes the computer simply doesn't have enough USB ports available for all the devices a user wants to connect. Hub connections often do not provide adequate power for USB-powered devices. If a USB device doesn't work when connected to a USB hub, try connecting it directly to a USB port on the computer.

FireWire Pass-through

Omega Hard Drives with more than one FireWire port can be used to connect other FireWire devices to the computer via the extra port(s). This daisy-chaining of devices is called FireWire pass-through. Any device connected to FireWire pass-through will need its own power supply connection. The first drive in the chain must, of course, be connected to a FireWire interface connection on the computer.



Connection Types on Iomega Hard Drives

Iomega® Desktop and Portable Hard Drives offer interface options that work with today's computers and meet a wide range of users' needs. The table below shows the interface connections available for the current Iomega Hard Drive family.

Iomega Hard Drive	USB 2.0	FireWire 400	FireWire 800	eSATA
eGo™ Desktop Hard Drive	✓			
Prestige™ Desktop Hard Drive	✓			
Professional Desktop Hard Drive	✓			✓
MiniMax Desktop Hard Drive	✓	✓		
UltraMax Single – dual interface	✓	✓		
UltraMax Single – tetra interface	✓	✓	✓	✓
UltraMax Plus	✓	✓	✓	✓
UltraMax Pro – dual interface	✓			✓
UltraMax Pro – triple interface	✓	✓	✓	
Prestige™ Portable Hard Drive	✓			
eGo™ Portable Hard Drives	✓			
eGo™ Portable Hard Drive, Mac Edition	✓	✓	✓	
Specialty eGo™ Portable Hard Drives	✓			



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