

## PCI Slot Differences

Video capture cards are available in a variety of configurations, and until recently were always PCI-based.

Recent developments and technological advances mean that the aging PCI bus is no longer always the best choice for expansion hardware. There are now four different PCI slot types each with their own compatibility differences. The picture on the right (click to enlarge) shows the standard PCI slot (5v) and two PCI express (PCI-e) slots, 1x and 16x.

### 5v Standard PCI

This is the original PCI slot, and still the most prominent on PC motherboards. It is usually white in colour, and has a dividing key near the end furthest from the back of the PC case. The majority of PCI cards available for consumer use are 5v types designed for this slot.

### 3.3v Standard PCI

The 3.3v slot looks like a 5v slot turned around 180 degrees. It also has a dividing key, but it's at the other end of the slot. This prevents a 5v card being plugged into a 3.3v slot and vice-versa. Ordinarily, you would only find server cards that are 3.3v only and requiring this slot. A large number of consumer-use PCI cards have two slots cut into the connector, allowing the card to be connected to either 5v or 3.3v slots.

### PCI-X

PCI-X was the first standard to extend the original PCI slot specification. It is based on the 3.3v slot, and can accept standard 3.3v cards or dual-slot cards (see above). The slot is longer than the original slot, but is usually still white in colour. The extended part expands the slot from 32bit to 64bit.

Unless otherwise specified, the PCI-X capture cards on this site will fit standard PCI slots (both 5v and 3.3v). The extra part will overhang in these slots, which is normal and will not affect operation. PCI-X slots are normally only found in server hardware.

### PCI Express or PCI-e

The second standard to improve on the original specification is PCI Express, sometimes known as PCI-e. This uses entirely new slot architecture and is not interchangeable with PCI 3.3v, PCI 5v, or PCI-X.

There are 5 slots in the PCI-e specification, referred to by the number of 'lanes' they support. PCI-e is a high speed serial data transfer system, where each 'lane' carries a data transfer channel, the number of lanes is designated by being suffixed by the letter x. PCI-e slots are available in 1x, 2x, 4x, 8x and 16x configurations.

PCI-e cards are upwardly compatible with wider slots, e.g. a 1x card can be plugged into an 8x slot, but you cannot plug an 8x card into a 1x slot. No adapters or configuration settings changes are necessary for this.

PCI-e cards cannot be plugged into PCI or PCI-X slots or vice-versa. As PCI-e is relatively new, you should ensure your PC has a suitable PCI-e slot available before purchasing a PCI-e card.

