

Connect, Configure, Control Your Serial Devices

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25th
1984 ~ 2009
Anniversary



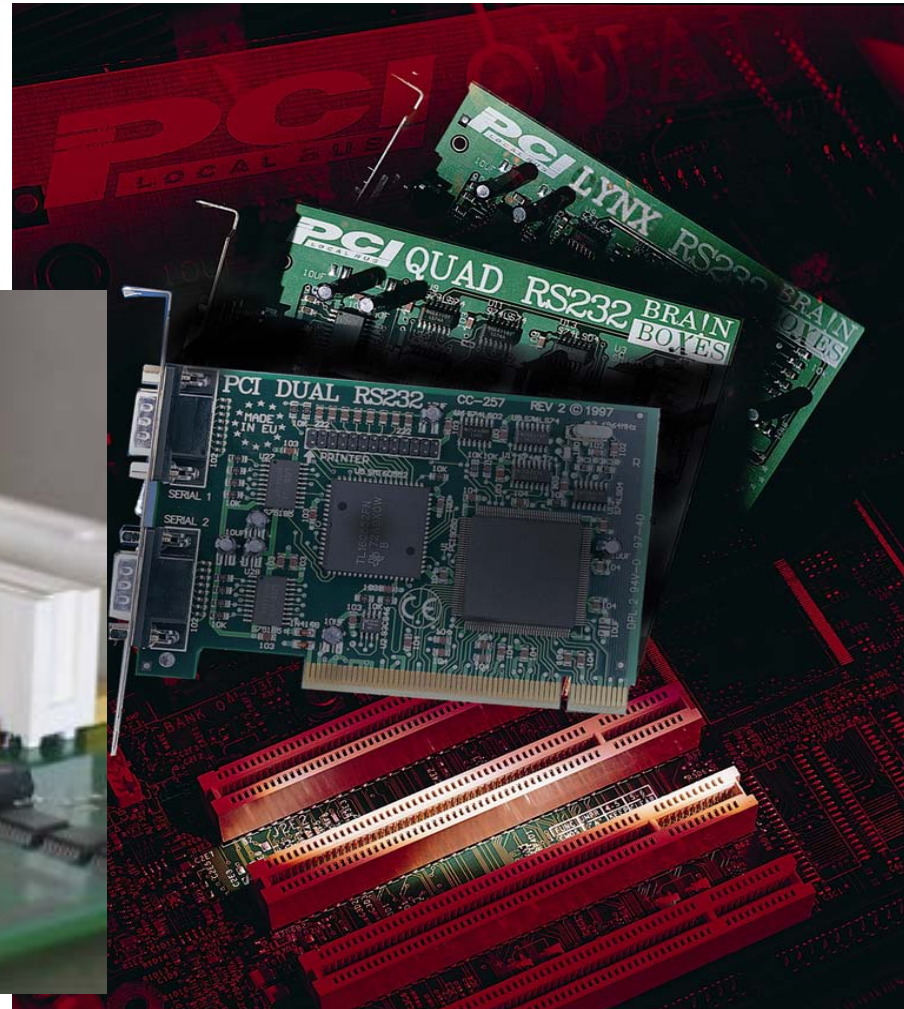
- European Manufacturer of the Year 2005
- UK Manufacturing Institute: Champions of Best Practice and Small Business of the Year 2007
- Merseyside Exporter of the Year 2005



- Brain Boxes have MS logo approval for all our top 10 selling products. RS232 Serial cards, PCMCIA serial and USB Bluetooth adapter.

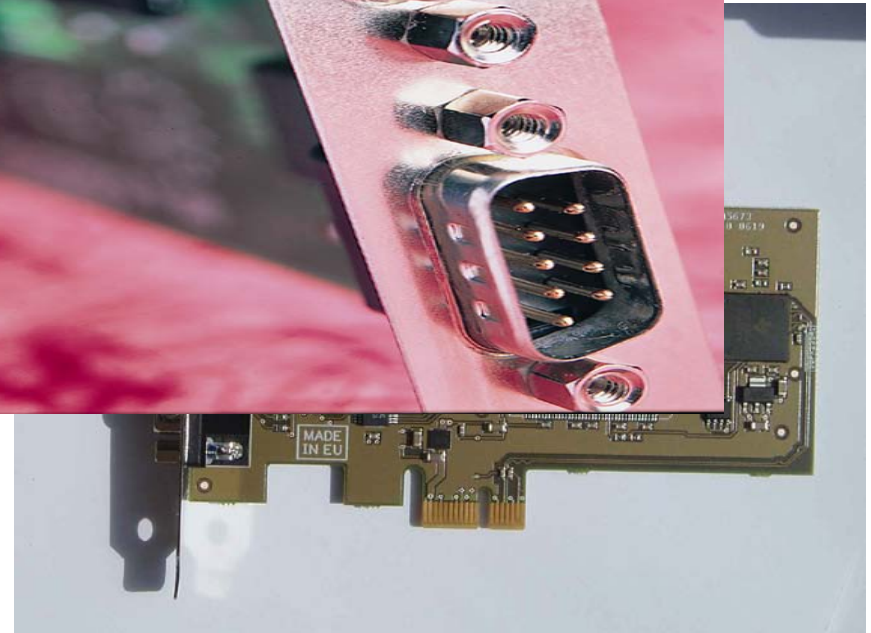
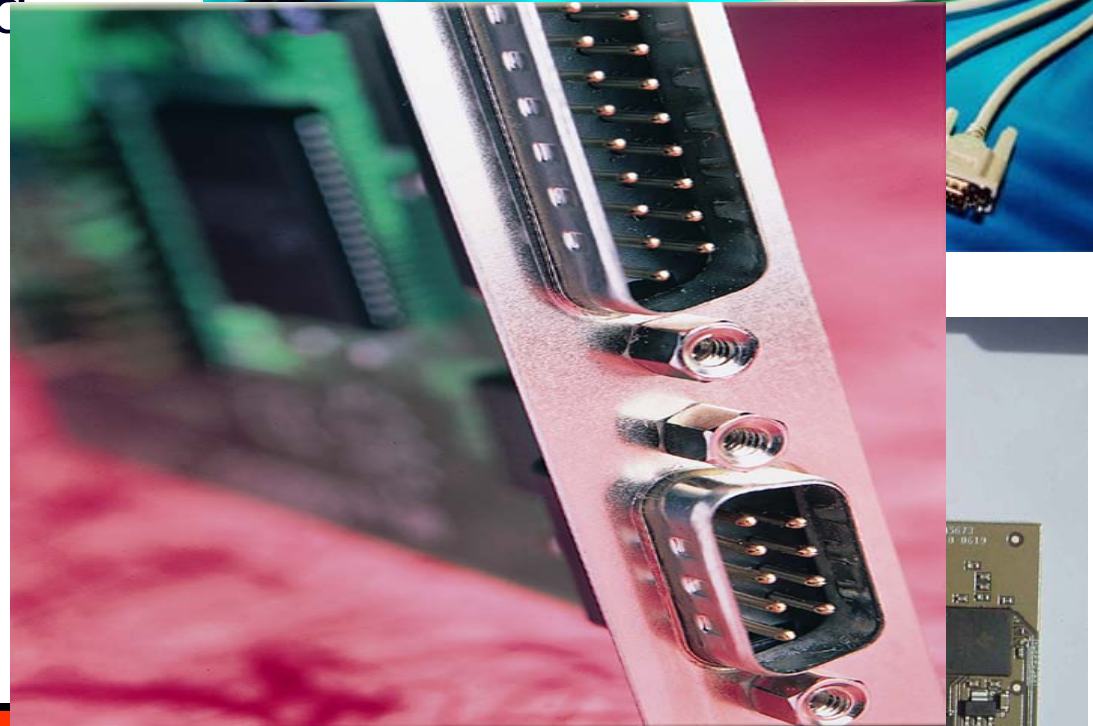
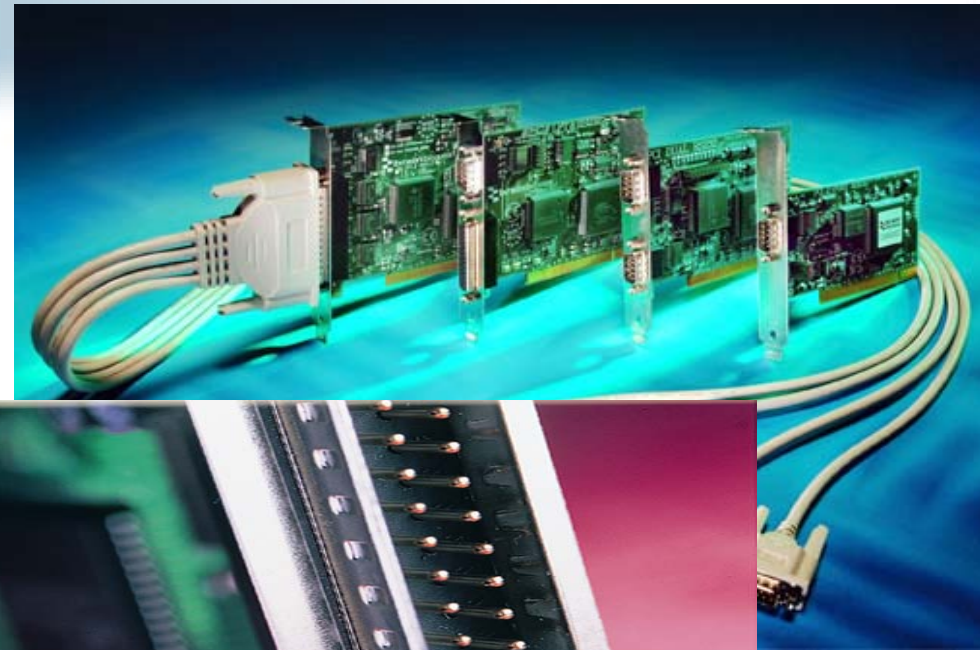


- Brainboxes: - an introduction.
- PCI Express



PCI standard introduced in 1992 has been extremely successful world wide and is the defacto standard for add on cards for server and computers.

Now PCI Express, which first appearing in computers in summer 2004 is the new standard.



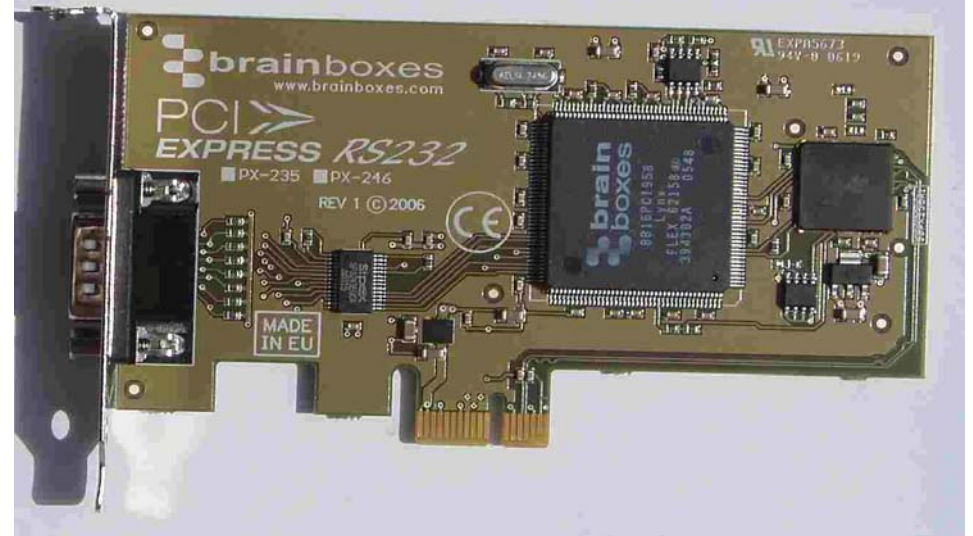


PCI Express boards are the same height and length as PCI cards.

PCI Express uses the same card brackets as PCI boards.

The difference is in the signals on the connector to the PC motherboard.

PCI Express is software compatible with PCI



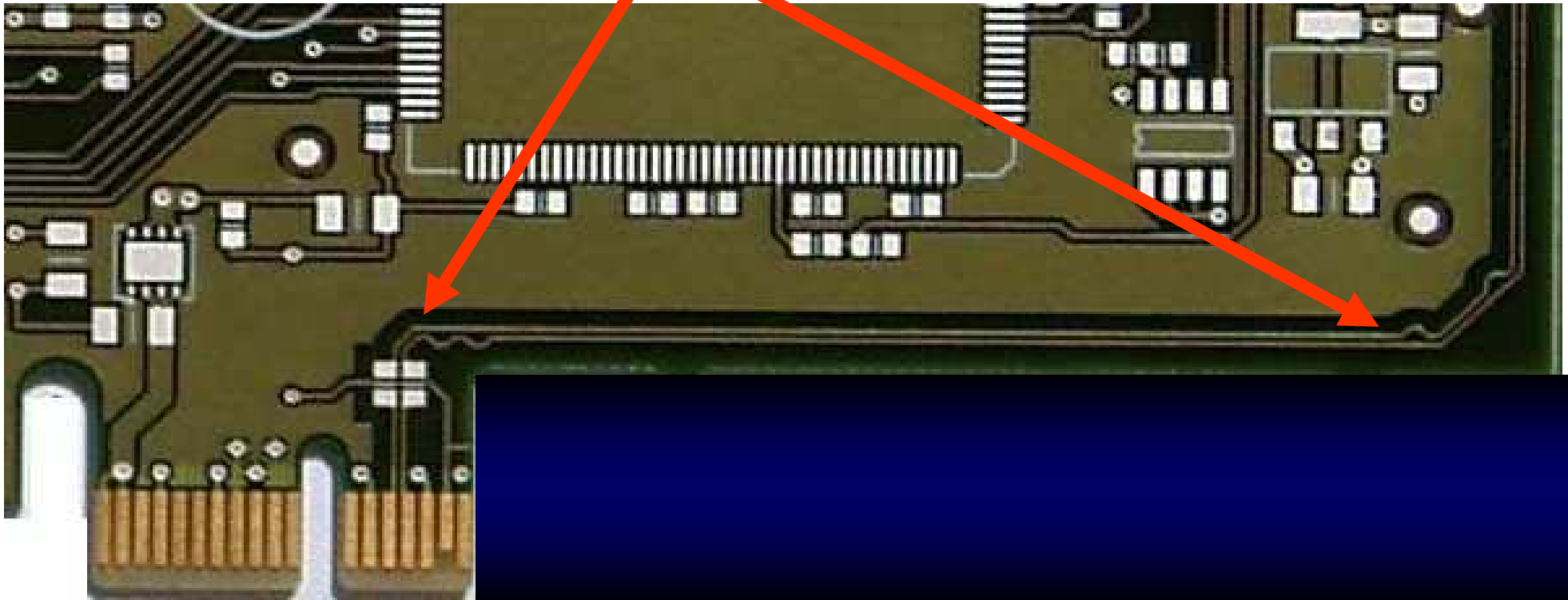
PCI has a long set of gold fingers, 58 per side, carrying a 32 bit address and data bus with several other control signals.

PCI Express has far fewer gold pcb fingers, 18 per side, and yet even the simplest implementation matches the PCI bandwidth

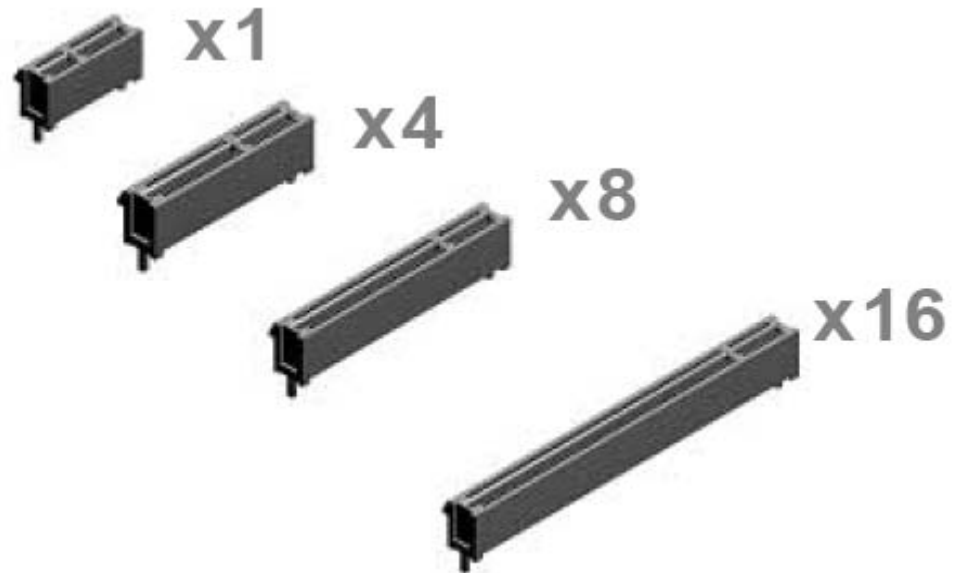
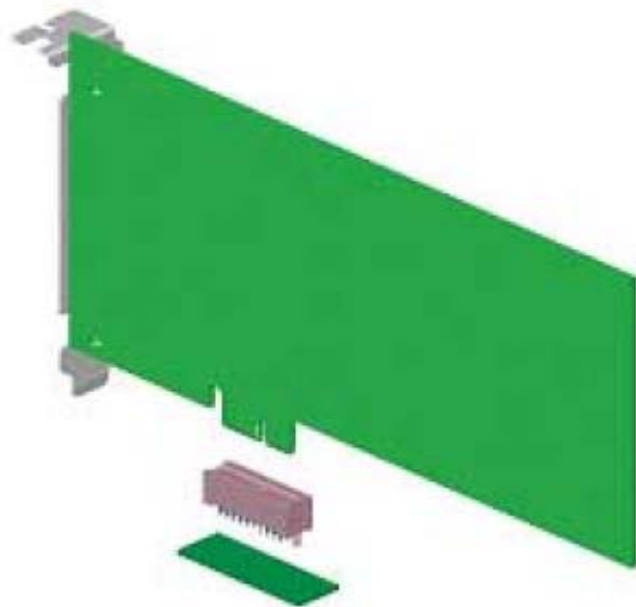


PCI Express has 3, very high speed, differential pairs of track, a TxD pair, a RxD pair and a Clock pair. Other signals are Reset, Power Management, Card Present, +12Volt +3.3volt and ground tracks. Each set is called a "Lane"

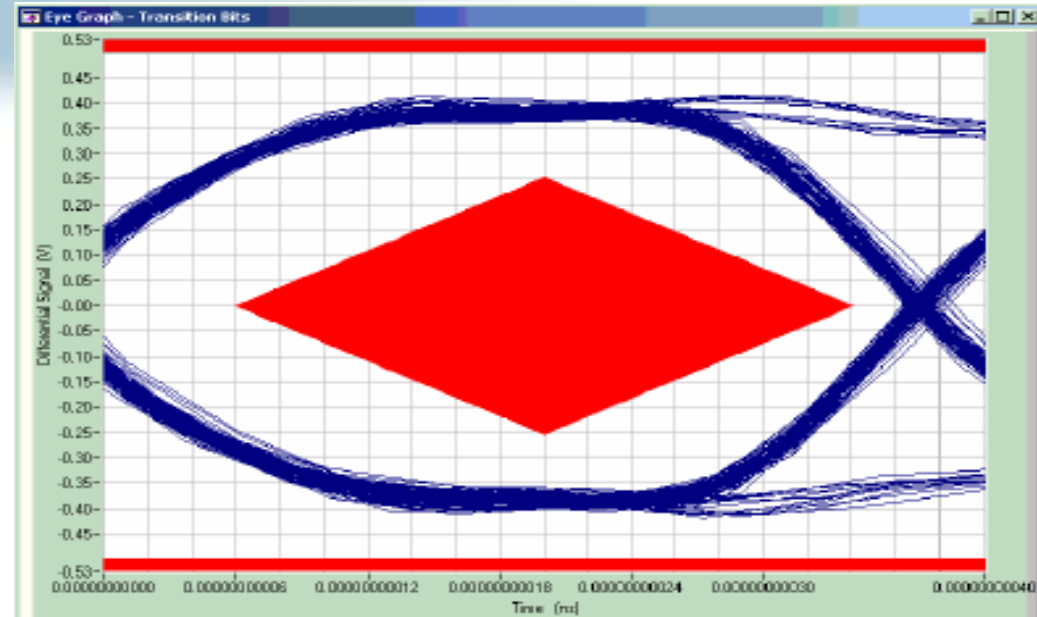
TxD Pair



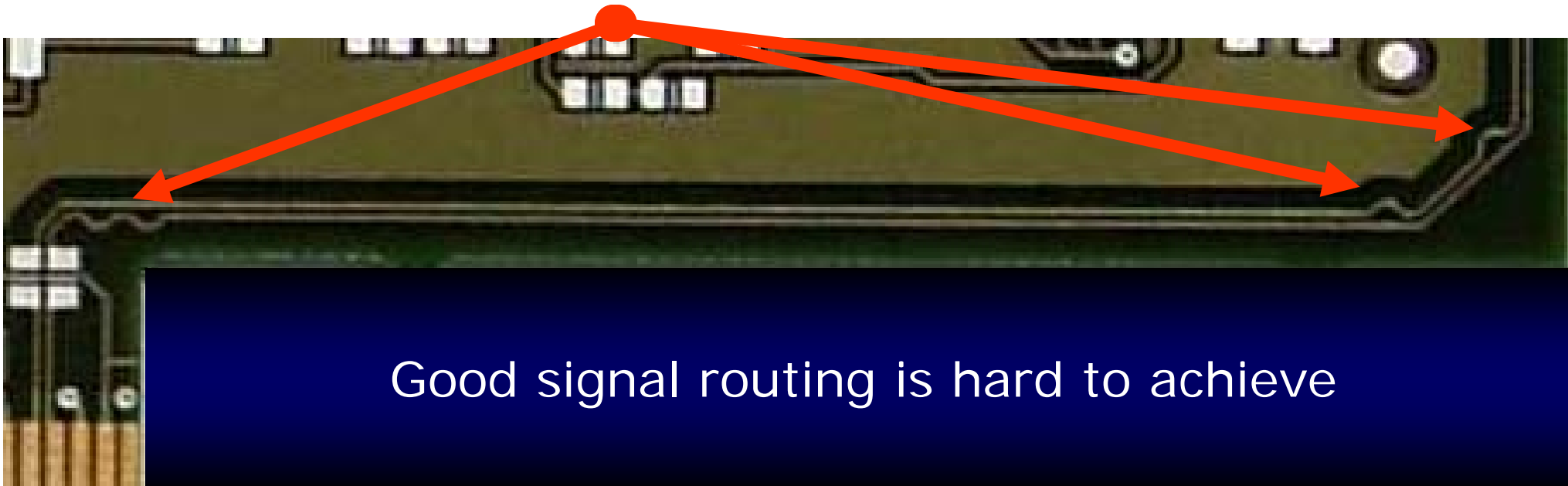
- The maximum bandwidth is governed by the size of the slot and so the number of TxD and RxD pairs, each running at 2.5Gb/s.
The x16 slots are used by graphics cards. =40Gb/s
- The x1 card can fit in ANY slot, eg x1, x4, x8 or x16



The PCI Express differential pair of track act as an analogue signal. It is necessary to match the track lengths in the pair to $\pm 0.12\text{mm}$.



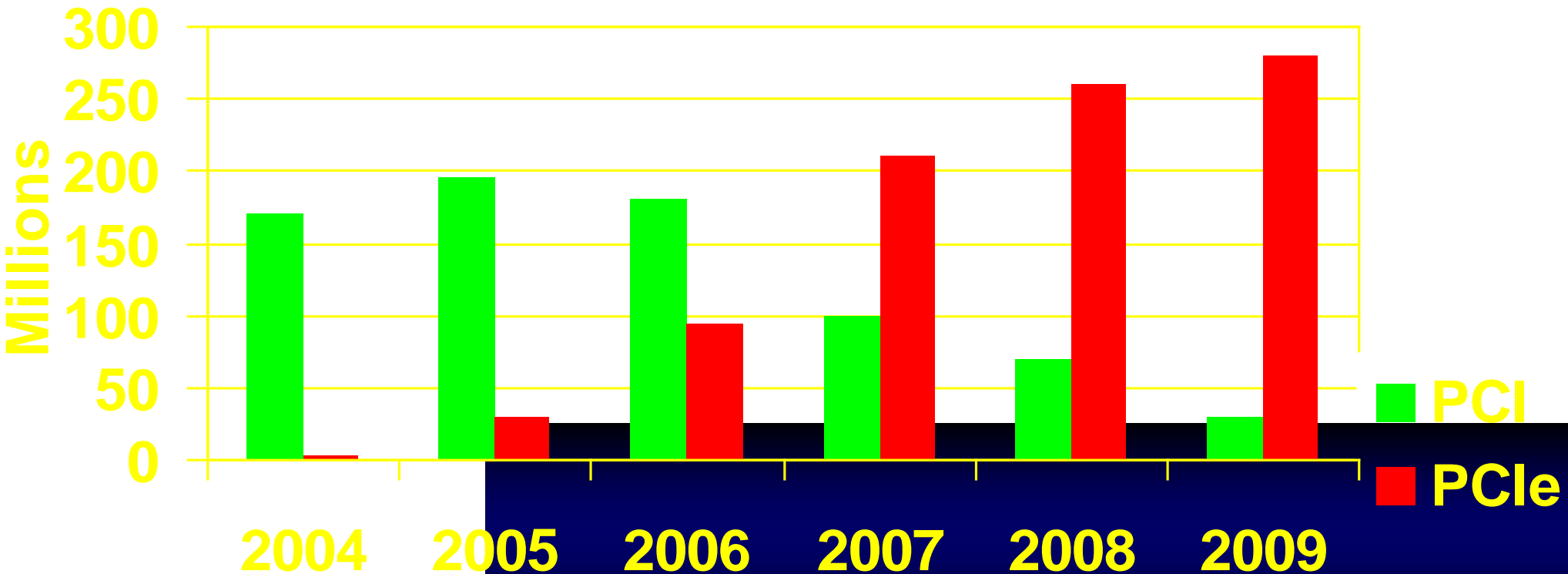
Serpentine in track to make length match at bends



Good signal routing is hard to achieve

PCI Express will coexist with PCI 2006-2008, most PC will have both
PCI Express is set to displace PCI by the end of 2009

Worldwide PCs Enabled with PCI and PCI Express

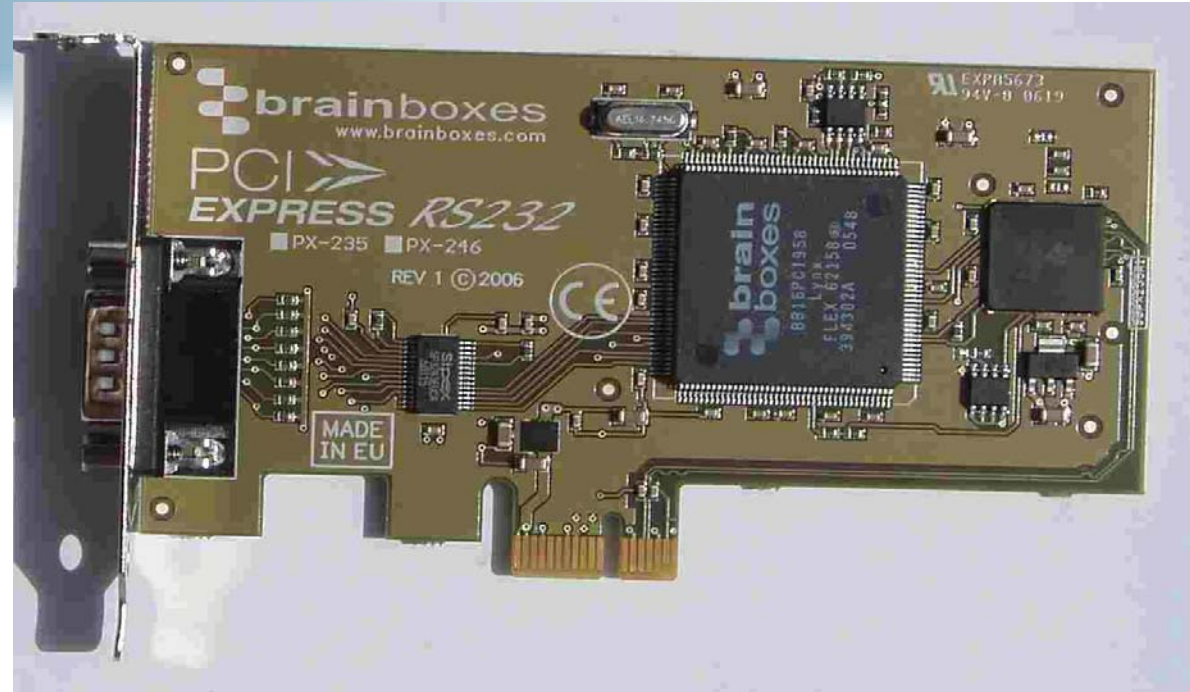


Brainboxes have PCI
Express serial cards
NOW

The x1 cards fit ANY
PCI slot.

Software for Windows
2000, XP and Vista

Full range of 1, 2, 4
and 8 RS232 and
RS422/485 available
over the summer.



- 5V cards & slots
- 3V cards & slots
- Universal cards & slots
- 32 bit slots
- 64 bit slots
- PCI-X slots

- Make Brainboxes your technology partner for any and all your Serial connections



- Connect, Configure, Control your serial ports no matter what computing equipment you have, no matter how it is connected.
- Serial connectivity products of every kind with full software support and technical backup