

## Multiple Pointing Device Support

With the advent of the USB protocol, it has become possible to have multiple pointing devices working simultaneously on a single PC. This feature can be particularly useful in some applications such as computer aided design (CAD) and point of information (POI) terminals.

For example in CAD applications it may be useful to have a mouse and a Trackball working simultaneously whereas in POI applications it may be of value to have a Trackball and a touchscreen working together.

However, the operating system drivers do not provide infinite flexibility in the connection of these pointing devices. This application note summarises the rules which govern connection of pointing devices.

This document assumes the use of a Windows operating system. Different rules may apply to other operating systems. Pretorian Technologies is constantly building its database of operating systems- please call us should you require further information.

### 1. USB protocol.

The USB protocol allows up to 127 peripherals to be simultaneously connected, although this would require a large number of hubs and would be very unwieldy. Most computers currently provide six or fewer USB sockets. Realistically speaking, the number of USB sockets on the computer itself sets the maximum number of USB pointing devices that

may be connected.

It is useful to note that USB pointing devices may be hot-plugged or unplugged at any time, allowing the pointing device configuration to be changed at any time.

### 2. PS/2 protocol.

Only one PS/2 pointing device may be connected to the computer since only one such socket is provided. This may operate simultaneously with any number of USB devices, although it is important to note that the PS/2 pointing device must be present during the boot sequence in order for the port to be enabled.

Note that it is not possible to connect a second PS/2 port via the PS/2 keyboard connector.

### 3. Microsoft serial protocol.

This is best described as a legacy protocol and the drivers are not written in such a way that the serial protocol may be used with any other type of pointing device. Therefore, only use the serial protocol if one pointing device is required.

Similarly, only one serial device may be used at any time, even if the computer has more than one COM port. Further, the driver uses a polling technique to examine all the COM ports when installed. Polling commences with COM1, then COM2 etc. The first COM port which is found to have a serial pointing device connected will be enabled.

Table 1 gives some example configurations of multiple pointing device, some of which will function and some of which will not. The table is not provided as an exhaustive list but rather as an example of common configurations.

USB	PS/2	Serial	Outcome
1	1	0	Both operational.
1	0	1	USB only operational.
0	1	1	PS/2 only operational.
1	1	1	USB and PS/2 operational. Serial non-operational.
2+	1	0	All operational.
0	0	2	Unit on lowest COM port number operational only.

*Table 1: Example configurations of multiple pointing devices*

*Whilst the information provided herein is to the best of our knowledge true and accurate, it is provided for guidance only. You are strongly advised to ensure that the information provided is up to date. This document does not constitute any part of a contract unless expressly agreed in writing. Use of Pretorian Technologies Ltd. products in life support systems is not permitted except with the express written approval of the Company.*

*Copyright in this document is vested in Pretorian Technologies Ltd. All rights reserved. No unauthorised copying, transmission or storage in retrieval systems except as permitted by relevant copyright law. All other trade names and trademarks mentioned herein are the property of their respective owners.*