

Power Wheelchairs and Integrated Controls

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[Objectives]

- Overview of the modern power wheelchair
- Introduce Integrated Controls (IntCon)
- Demonstrate modern technology interfaces...Bluetooth® and Infrared
- Provide information to assist a power wheelchair user to take part in the selection of appropriate electronics control packages in future wheelchair selections

[The Modern Power Wheelchair]

Mobility

Seating

Integrated Controls

Modern Device Interfaces

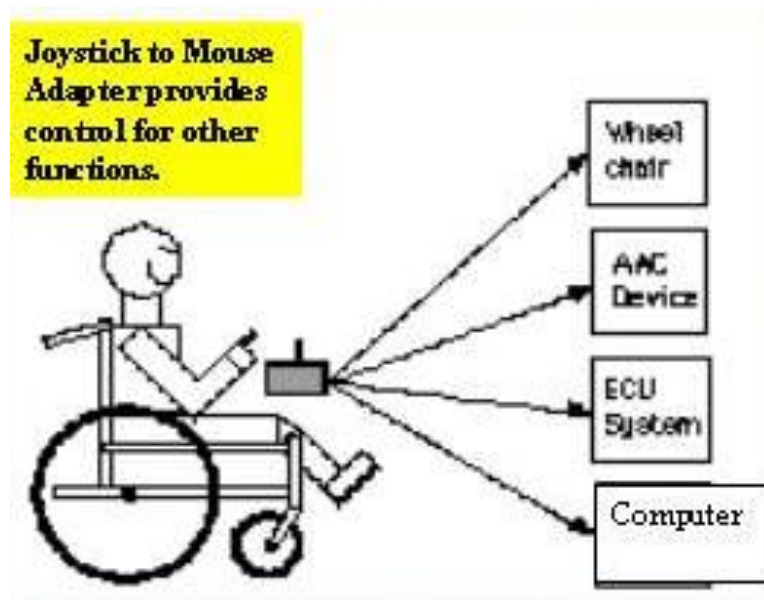
[What are Integrated Controls?]

In its simplest form Integrated Controls allow the user to control more than one assistive device through a single input device.

Integrated Controls is a broad term used to describe the method of interface, the hardware, the software, the electronics package, the associated technologies, and the accompanying hardware devices.

[Integrated Controls]

Integrated Controls are a type of Universal Remote



[Driving Mode Demonstration]



[Driving Mode Demonstration]



[Seating Mode Demonstration]



[Seating Mode: Tilt]



[Seating Mode: Tilt]



[Seating Mode: Recline]



[Seating Mode: Recline]



[Seating Mode: Power Leg]



[Seating Mode: Power Leg]



[Seating Mode: Recline + Leg]



[Seating Mode: Recline + Leg]



Seating Mode: Power Elevation



[Why use Integrated Controls?]

- Quick learning curve
- Versatility
- Streamlined approach to multiple device use
- Potential Cost effectiveness

But most of all...

Greater independence for the user.
Enhanced sense of control.

[What can you really control?]

- Infrared interface allows the user to control almost any modern consumer device that comes with a remote control
 - Televisions
 - Cable boxes
 - Heaters and Fans
- Bluetooth®
 - Mouse emulation
 - Many PCs, most laptops, Macs come with Bluetooth®
 - Inexpensive addition via USB dongle

[Technology: Infrared]

- Infrared is light frequency wavelength
- Used for wireless communication
- Common in consumer electronics
- Line of sight, directional
- Infrared codes may be learned by most integrated control systems
- IrDA (Infrared Data Association) requires a minimum of one meter of transmission but many consumer devices will transmit up to 3m+

[Infrared Demonstration]



[Infrared Demonstration]



[Infrared Demonstration]



[Technology: Bluetooth®]



- Wireless technology standard allowing electronic devices to communicate
- Wireless communication over short distances using radio transmission
- Becoming common in consumer electronics
- Omnidirectional
- Bluetooth® specs call for a maximum connection distance of ten meters

[Bluetooth® Demonstration]



[Bluetooth® Demonstration]



[Bluetooth® Demonstration]



Technology: Future

- Currently the Infrared and Bluetooth® are available only with the Enhanced Display...but expect these features will be provided in hand controls in future
- Integrated controls will provide interfaces with cell phones and tablets

Power Wheelchair User: Your next chair

- Features of chair should meet your needs
- Funding
- Bonus features might be a plus, but they should still meet your needs
- There are pros and cons
 - Power issues
 - Unable to use from bed