

DATI Assistive Technology Facts Switches and Environmental Control Units

I am lord of myself, accountable to none.

- Benjamin Franklin

What is assistive technology?

Assistive technology, or AT, is any tool that allows individuals with disabilities to use their own unique abilities to reach their goals. AT can range from low-cost tools such as a jar opener to more complex devices such as a power wheelchair or communication aid.

Infants, children, adults, and older persons with any type of disability can be aided by the use of AT.

What are switches and environmental control units (ECUs)?

These devices enable persons without mobility, sufficient dexterity, or cognition to control household devices or make changes to the immediate environment. ECUs maximize a person's functional ability and provide independence in many environments.

ECUs range from a remote control used to operate the television to more complex, voice-activated computer-based systems which control such things as room temperature and the telephone.

Who can best make use of this type of AT device?

People who are unable to control their environment using standard equipment, such as a light switch or thermostat, would benefit most from this technology.

Where can I purchase switches and environmental control units?

Many companies specialize in the production of switches and ECUs. Some ECUs are stand-alone devices, while others are in the form of software that runs on standard personal computers.

With so many products available, an AT specialist will be able to help you pinpoint your needs and find equipment responsive to them.

Vendors or equipment demonstrations and loan centers are good sources of equipment for trial periods prior to making final purchase decisions.

What types of ECUs are available?

There are 4 different types of ECUs. They are:

- **AC power**
This type of system uses the electrical wiring already in your home. Each item to be controlled (lamp, radio, etc.) is plugged into a control box, which in turn is plugged into an electrical outlet. The user has an input device that communicates with each control box via the existing wiring system. A different control box is needed for each appliance. These systems are inexpensive and easy to install.
- **Infrared**
These ECU devices send an infrared signal to the control unit, which in turn sends another infrared signal to the appliance. This type of ECU is seen in most of our TV and VCR remote controls. In order for the device to work, the remote must be aimed directly at the control box with nothing blocking its path.
- **Radio control**
With this type of device, the remote sends radio waves to the control unit, which then sends the message to the appliance. This is the same technology that powers garage door openers. The remote and the control box can be in different rooms and still work, but the system has a range limit of 50-200 feet. Interference from another nearby control unit is also possible.
- **Ultrasound**
This type of ECU uses high frequency sound waves as the input and output signal. The sound wave will bounce around the room until it reaches the control box and delivers its message. The control box then sends a command signal to the appliance being controlled. The input device and the control box must be in the same room to work.

What type of ECU is best?

The choice of ECU depends upon general skill level, abilities, what will be controlled, the environment in which the ECU will be used, cost, and the support available.

What are some things to consider before purchasing switches and ECUs?

- What are my needs?
- Is it possible to change the way I use standard equipment instead of purchasing a switch or ECU?
- Will rearranging the environment eliminate the need for an ECU?
- What actions can I use to control the system?
- In what environment will I be using this equipment?
- Does the ECU continue to work when there is a power failure?



The **QuickStart Environmental Control Kit by AbleNet** contains everything needed to introduce switch-activated electrical and battery systems.



The **Tash Soft Switch** in a velvet case has auditory and tactile feedback, but is soft enough to mount for head use.



Tash's Sicare Pilot converts spoken commands into signals that control numerous devices within multiple environments.

DATI fact sheets are available on the following topics:

- Adapted Toys
- Aids for Daily Living
- Aids for Low Vision
- Assistive Listening Devices
- Augmentative and Alternative Communication
- Computer Access
- Seating, Positioning and Mobility
- Switches and Environmental Control Units
- Tools for Learning

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