ActionVoice™

Digital Voice Messager and Switch Controller

Model ACTV-1 (1 Minute Capacity)
and
Model ACTV-2 (2 Minute Capacity)

User Manual and Instructions

Ability Research, Inc.
Minnetonka, MN

FCC NOTICE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an output circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

ONE-YEAR LIMITED WARRANTY

Ability Research, Inc. ("ARI") warrants this product against defects in material or workmanship for a period of one year from date of purchase. If you discover a defect, ARI will repair (or replace at ARI option) the defective product at no charge (except for shipping and handling). You should retain the dated invoice as evidence of the date of purchase.

This warranty does not cover any damage due to accident, misuse, abuse, misapplication, or negligence. ARI shall in no event be liable for loss of use of this product or any other product or damages to any other products or equipment. This warranty is valid only in the United States.

ARI reserves the right to make changes in design and to make improvements in its products without the obligation to incorporate the changes or improvements in any previously manufactured products.

REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY. THIS WARRANTY AND REMEDY ARE EXCLUSIVE AND IN LIEU OF ALL OTHERS, ORAL, WRITTEN, OR IMPLIED.

ARI SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THIS PRODUCT. ANY IMPLIED WARRANTIES ARISING FROM THE SALE OF THIS PRODUCT, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PURPOSE, ARE LIMITED TO THE DURATION OF THIS WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Contents

Contents

How to Use This Manual

Sections 1 and 2 will quickly take you through the basic operation and use of the ActionVoice™. Please read these few pages carefully. They will save you time and help you quickly learn the basic features and operation. Once you've read these sections and can record and play messages, the remainder of the manual will be easier to follow and will help you to get the most from your ActionVoice.

This manual covers both the 1-minute model (ACTV-1) and the 2-minute model (ACTV-2). Some features do not apply to the ACTV-1.

The remainder of this manual covers the details of operation, use and application. Please read the entire manual. The "Quick Start" sections are meant as an introduction only.

A word to the wise... Time spent in reading this manual and familiarizing yourself with the many ActionVoice features will save a lot of frustration. Also-- BE SURE TO READ THE SECTION "SAFETY CONSIDERATIONS" in chapter 3 as well as the IMPORTANT SAFEGUARDS at the end of the manual.

What is the ActionVoice

The ActionVoice lets you record messages and then play them back in any order. It's like a an electronic tape recorder, or more accurately, many small electronic tape recorders–one for each message. You can record anything you want in any of the messages–in any order. You can change any message as often as needed. Messages can be played back by single or dual switch scanning, keypad, or separate direct selection switches. The ACTV-2 also allows auditory scanning.

The ActionVoice also controls two switch closure outputs. Each message can control an output as well as play its recording. Programming of outputs is as simple as pressing the keys on the front panel. The ActionVoice "watches" the keys you press, times them and remembers them.

How do the ACTV-1 (1 minute) and ACTV-2 (2 minute) differ?

The two models are nearly identical except for extra features and recording time provided by the ACTV-2 model. Here is a brief comparison:

Feature	ACTV-1	ACTV-2
Message keys	10	10
Messages using 1 level	10	10
Messages using 2 levels	none	18
Total recording time	60 sec	120 sec
Keypad access	yes	yes
Direct switch inputs	4	4
Single-switch scanning	yes	yes
Dual-switch scanning	no	yes
LightBoard access	8 keys	16 keys
Auditory Scanning	no	yes
Switch closure outputs	2	2

In short, the ACTV-2 provides more time, 2 levels, more messages, and auditory scanning.

Unpacking the ActionVoice

Inspect the shipping box for any obvious signs of physical damage. If there are obvious signs of damage contact the shipping company for instructions.

Carefully remove the ActionVoice from its box and plastic shipping bag. Check it for any obvious signs of damage. Contact the shipping company or Ability Research immediately if there is damage.

You should also have received an AC adapter and two switch output cables.

Install a 9 volt alkaline battery (not included)in the ActionVoice as shown below.

Installing or Replacing the Battery

9 Volt Battery
Use Only
Alkaline Type

Built-in Speaker

Volume Control
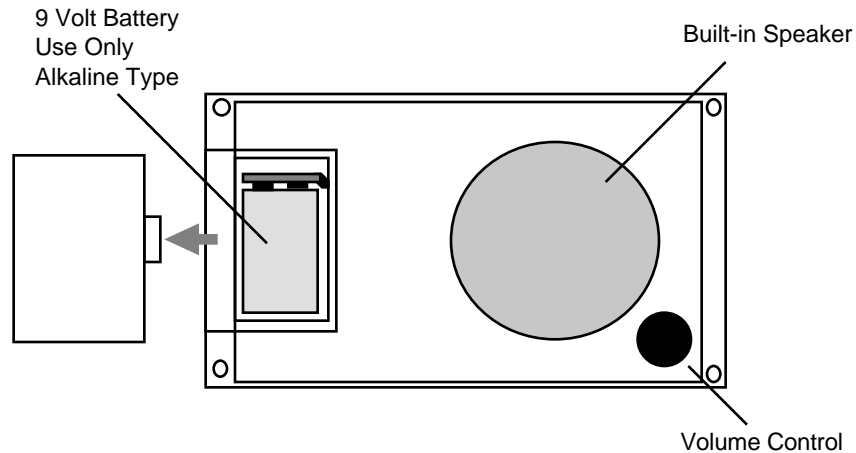
Figure 1 - Installing and removing the Battery.

To install a battery, proceed as follows:

1. Remove the battery compartment cover by carefully sliding it away from the center of the case.

2. Install a 9 volt alkaline battery (not included) onto the battery clip connector. <u>Do not remove the battery clip by pulling on the wires</u>.   Make sure to align the small terminal to the large and the large to the small. There should be a "snap" feel when you've made proper contact.

    Only Alkaline type batteries are recommended. Some compatible models are Eveready 522, Ray-O-Vac A1604, Kodak K9V, Duracell MN1604, and Panasonic 6AM6 9V. It is not recommended to use rechargable batteries, since they will have much a shorter life than alkaline batteries in this device.

    <u>WARNING!: NEVER ATTEMPT TO RECHARGE ALKALINE BATTERIES OR A RISK OF FIRE OR EXPLOSION COULD RESULT.</u> Be sure to dispose of batteries properly. Never dispose of in fire. The ActionVoice can be used with the AC adapter provided. It is not necessary to remove the battery when using the AC adapter.

3. Place the battery in the compartment. Position the wire from the battery connector so that it will not rub on the battery compartment cover.
   Replace the battery compartment. Make sure it is in the grooves on each side and that it closes all the way.

How to use the Action Voice

Using the ActionVoice requires you to follow these basic steps:

1. Decide on the messages you want to record and who will record them.
2. Make up a key label insert for the messages.
3. Record the messages for each key (and level, if you're using two).
4. If you will be using the outputs, program them to the desired messages.
5. If using auditory scanning on the ACTV-2 model, you may also need to record the auditory "prompts" the user will hear.
6. Setup the ActionVoice for the input method you'll be using (switches, scanning, etc) and connect switches, cables, etc as needed.

The ActionVoice can be used in a variety of ways. The way you set it up will depend upon how you want to use the ActionVoice. Read on to find out how to set it up for use.

Features and Controls

Here is a brief summary of the ActionVoice features:

*   Records and plays up to 10 voice messages with up to 1 minute total recording time for the ACTV-1 model. 10 messages on one level or 9 messages on each of two levels (18 messages and 2 minutes total) are available on the ACTV-2 model. Messages can be rerecorded as often as you like.

•   Messages can be accessed by keypad, single or dual-switch scanning, multiple-switches (up to 4) , or LightBoard™. The ACTV-2 model can also access messages using auditory scanning.

•   Two switch closure outputs allow messages to control adapted toys, appliance controllers, etc.

•   Small, lightweight, durable and portable.

- Battery powered or use with included AC adapter. Automatic "power saver"–No On/Off switch is required.

- Built-in speaker and microphone -- plus jacks for external speaker/phones and external audio input.

- Slide-in inserts allow key labels to be easily changed to match recorded messages.
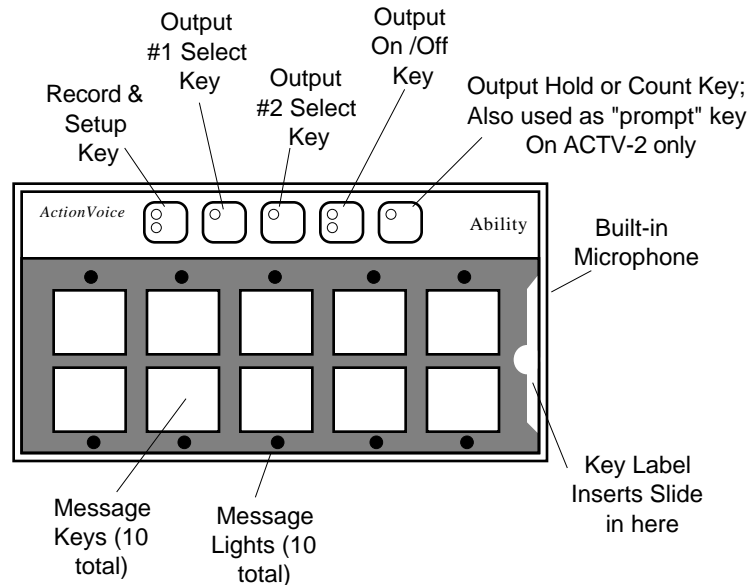

Figure 2. The ActionVoice Keypad and Controls

Recording Messages

Messages can be recorded and rerecorded very easily. Simply press the RECORD key once and then press and hold the message key while you record. Speak close to the microphone and release the message key at the end of the message. For 2 message levels (ACTV-2 only) see the section below on "Using Two Levels).

Playing Messages

To play any message simply press the message key for that message. Messages can also be accessed by 1 or 2 switch scanning, directly by up to 4 external switches, or by the Ability Research LightBoard™. The ACTV-2 model can also play messages using auditory scanning. See the detailed section on auditory scanning for more information. For 2 message levels (ACTV-2 only) see the section below on "Using Two Levels."

Programming the Outputs

The ActionVoice has two (2) switch closure outputs. Either output can be changed by any message in a flexible and easy to program way. A message can turn an output ON, OFF, alternate (from OFF to ON or ON to OFF), On for a period of time (from a quick ON/OFF to seconds or even minutes), or briefly ON/OFF a certain number of times.

Outputs are programmed by pressing the output (#1 or #2) key, followed by the message key which will control it. Next, the desired function key is pressed (ON/OFF or HOLD/COUNT). The ActionVoice records the times and keys and then remembers them automatically.

For 2 message levels (ACTV-2 only) see the section below on "Using Two Levels."

Using 2 Levels (ACTV-2 ONLY)

The ActionVoice ACTV-2 model can be used with either one or two levels. A level consists of a group of messages, one per key. A "shift key", just like on a typewriter or calculator is used to change between levels.

Two levels allow the user to pick from any of 18 messages at one time. They alternatively allow two different contexts of messages stored in the ActionVoice(one for home and one for school, for example). The 2ND level key (same as the upper left message key) is used to specify level. Setup mode is used to enable two levels and pick the method for using them.

NOTE "Option 1" in the SETUP mode is used to select the way two levels will be used. If Option 1 is NOT selected, the user can access 18 messages by preceding a message key with the 2ND Level key. If Option 1 is selected, each level is independent and the user can access 9 messages at a time. The 2ND Level key is used to change between levels.

Single and Dual Switch Scanning

Both single (automatic stepping) and dual (switch controlled stepping) are built into the ActionVoice. Both methods use linear rather than row/column scanning in the ActionVoice model ACTV-1 (the one minute model).

To select Scanning as the input method, enter the SETUP mode (see the section on Complete Operation of the ActionVoice) and press the "Scanning Input" key. Scanning rate can also be adjusted in this mode. After you leave the SETUP mode scanning will be active.

1-switch scanning uses the A or B switch inputs and 2-switch scanning uses the C and D switch inputs. The scanning method simply depends on which inputs you plug into.

NOTE   When using 2 Levels (ACTV-2 only), the second level is indicated by both the 2ND Level key's LED lighting and a quick flash on the LED for the message being scanned.

Auditory Scanning (ACTV-2 ONLY)

The ACTV-2 model also allows auditory scanning. It operates just like single and dual switch scanning (see above) except that an audible "prompt" is played as each message key is scanned rather than just the LEDs lighting. This is very useful for situations where a person cannot see or watch the LEDs as they scan. Auditory Mode is entered using the ActionVoice SETUP Mode keys (see below).

Auditory prompts can either be simply the first 1.1 seconds of the recorded message or a separate brief prompt message which is distinct from the message. It can be recorded in a different voice, in a quieter voice, etc to help distinguish it from the message when played.

NOTE   To use the first approx 1.1 seconds of a message as the prompt, you must record all messages with Auditory Mode turned off. When you switch to Auditory Mode, the beginning of each message will automatically be used as the prompt unless you rerecord either the prompt or message with Auditory Mode turned on.

Recording and Playing Auditory Prompts (ACTV-2 ONLY)

To record or play auditory prompts, you must first put the ActionVoice in Auditory Mode. This is done by using the ActionVoice setup mode..

To access a prompt for given message press the PROMPT key (the same key as the Output Hold/Count key) immediately before pressing the message key.

NOTE   If you are using the beginning of each message as the prompt, be sure to record all messages with Auditory Mode turned off. The Turn on Auditory mode to play the "prompts" (actually the beginning of each message) using the PROMPT key.

HINT   Auditory Mode and Scanning Input are separate selections in the SETUP mode. If you select Auditory Mode with Keypad Input mode, it's much easier to record or play prompts. Then turn on Scanning Input mode to actually begin auditory scanning.

Changing Keypad Label Inserts

Keypad label inserts slide in under the plastic blue panel with the windows over the keypad. They slide in and out from the right. At first the panel may be a little snug and it may take a bit of manipulation to get an insert in. The design is intended to keep the insert from falling out during transport.   If the insert is cut to proper size it should slide in without much effort. Don't force it. If it is difficult, try trimming it on the top and bottom edge. Please read the section on designing and making inserts to help prevent damage to the windows and get the best possible operation.

TIP   Be sure the insert is clean and dry before you insert it. The inside of the key windows could be imprinted by dirt, etc.

Recording Messages

1. Make sure the LOCK switch is not in the "LOCK" position.

2. Press RECORD/SETUP and release.   ◉ Record ○ Setup   The RECORD light will flash.

3. Press and hold the key for the message   *Any Message Key*   you want to record.
   Immediately speak closely into the microphone to record the message. Release
   the message key when you're finished. The message will be recorded from the
   moment you press the key for that message until you release it. The light for that
   message and the RECORD light will both remain ON until you release the key or
   the recording time for that message is exceeded.

HINT   It will help if you speak perpendicularly across the microphone (from the front of the
ActionVoice) rather than right straight into it (from the side of the ActionVoice). This
will help avoid "pops" or a blowing sound in your recorded messages.

NOTE   If you are using two levels with the ACTV-2 you may need to press the 2ND Level
key before the message key See the Section following which deals with "Using 2
Levels".

NOTE   Trying to record a shorter message will simply erase it (see "Erasing Messages"
below).

Erasing Messages

When a message is recorded, the message previously recorded for that key is
automatically erased.

A message may also be erased manually by going through the exact same steps as
in "Recording Messages" above, except that instead of holding the message key
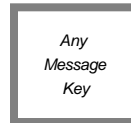
down and talking, you simply press and release it very quickly.

NOTE   When a message has been "ERASED,"   no sound will be played when the message key is pressed. The message will be automatically skipped if in scanning mode. As an indication that the message is erased and the ActionVoice is still working, the light (LED) for that message will flash briefly once each time the message key is pressed.

NOTE   If you are using two levels with the ACTV-2 you may need to press the 2ND Level key before the message key See the Section following which deals with "Using 2 Levels".

Playing Messages
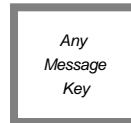
1. Press the key for the desired message [Any Message Key] and release it to play a message. The ActionVoice can be setup to require the key to be pressed for a longer time (the "key accept time") to avoid false key presses. In KEYPAD input mode you'll have to hold the message key down for at least the accept time programmed under the setup mode. In other input modes the key accept time is disabled.

If you hold the key down continuously, the message will not repeat automatically... you must press it again.

NOTE   If you are using two levels with the ACTV-2 you may need to press the

[2ND Level]   2ND Level key before the message key.

In addition, there are two ways to use the 2ND Level. See the Section following which deals with "Using 2 Levels".

Programming Outputs

The ActionVoice switch closure outputs can be controlled by any of the messages. One message key might be used to turn a lamp or television on or off, with a message saying "Television on/off," etc.   An output might also be used to control a toy or other adapted device.

WARNING NEVER CONNECT AN OUTPUT DIRECTLY TO THE AC LINE OR ATTEMPT TO CONTROL SUCH DEVICES WITHOUT THE PROPER ADAPTER.

To Program an OUTPUT and assign it to a given message:

1. Press the desired output key [Output #1] or [Output #2] . The light for that key should begin to flash.

2. Press the message key for the message [Any Message Key] you want to associate with the output.

Now the message's light should be on and the message (if any) will begin to play.

NOTE More than one message can be associated with an output, but only one output can be associated with a given message.

NOTE If you are using two levels with the ACTV-2 you may need to press the 2ND Level key before the message key See the Section following which deals with "Using 2 Levels".

ON TO program the output to go ON with the associated message:

Press the ON/OFF key [On/Off Output] once. The ON light will light.

OFF TO program the output to go OFF with the associated message:

Press the ON/OFF key [On/Off Output] [On/Off Output] twice. The OFF light will light.
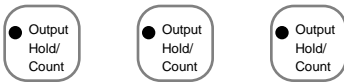
CHANGE   TO program the output to toggle from ON to OFF or OFF to ON with the associated message:

Press the ON/OFF key three times. The ON and OFF lights will both light.

MOMENTARY TO program the output to go ON for a period of time (momentarily) with the associated message: Press and hold the HOLD / COUNT key for as long as you want the output to stay on. The ActionVoice will time you and remember it.

COUNT   TO program the output to go ON momentarily a certain number of times with the associated message:

Press the HOLD/COUNT key ... ... as many times as you want the output to turn on and off. The ActionVoice will time you on the first press and then count how many presses and remember it.

TO FINISH To complete the programming and return to normal idle state:

Press the message key again. The message will play again and the output will perform its programmed function to help you verify that you did things correctly.

Using 2 Levels (ACTV-2 ONLY)

The ActionVoice ACTV-2 model can be used with either one or two levels. A level consists of a group of messages, one per key. A "shift key", just like on a typewriter or calculator is used to change between levels. There are two ways to use two levels.

All 18 messages [Option 1 NOT active]: The first allows the user to pick from any of 18 messages at one time. To select a message on the first level, they message key is simply pressed as it is for one level operation. Messages on the second level are accessed by

pressing the   key immediately before the message key.

2ND Level

Scanning (including auditory) will scan first one level then the other level in sequence.

All 9 messages at a time [Option 1 active]: The second way to use two levels is to keep two different contexts of messages stored in the ActionVoice(one for home and one for school, for example). Each level provides 9 messages. The 2ND LEVEL key can be used in a "locking" method by using the ActionVoice setup mode. Then the 2ND LEVEL key is pressed only once each time you change contexts.   You may even want to have a separate key label insert for each context. Scanning will scan only the presently selected level. Further, the direct switch inputs will apply separately for each level. That is, each level can have its own set of direct switch input / message selection combinations. See the section on "Using the Multiple Switch Input Method."

Whenever two levels are being used, the ActionVoice tells the user a 2ND level message is being played, recorded, scanned, etc with two visual cues. First, the LED near the 2ND Level key lights. Secondly, the LED for the message itself flashes one quickly just as it is selected. This second cue is especially helpful for scanning.

NOTE   Change between the two ways of using two level by selecting the "Option 1" key in SETUP mode (see the section Setup Mode and How to Use It).

NOTE   Regardless of the way you choose to use 2 levels, it is important to remember that there are actually two messages stored for each key and that each of the two messages is on a different level. These are each complete messages, including any output programming or auditory prompts you've programmed for each message.

Using the Keypad Input Method

In the **Keypad Input Method** messages are played by pressing any of the 10 message keys. If a message is recorded for a key and you hold that key for at least the key accept time (changed in the setup mode), that message light will go on and it will begin to play. The ActionVoice can be setup to require the key to be pressed for a longer time (the "key accept time") to avoid false key presses. The minimum key accept time is almost instantaneous and the maximum is about 3 seconds.

TIP The tendency when the key doesn't respond immediately is to press harder! This is not necessary and setting the accept time to the minimum time needed for the user will save a lot of wear and tear on the keypad.

NOTE If no message is recorded at a key, it's light will flash once very quickly when the key is pressed and no sound will be heard. This is to let you know the ActionVoice is still working; there's just no message to play.
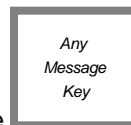
Using the Multiple Switch Input Method

NOTE Multiple Switch Input also uses the **Keypad Input Mode** (see above). All that is needed is to be in keypad input mode and plug in external switches.

Up to four external switches connected to any of the 4 switch inputs (A,B,C,D) may be used to activate any of the messages. To tell the ActionVoice which switch goes with which message, simply press (and hold) the message key and then press the switch you want briefly. The ActionVoice will remember this association until you change it.   There is a drawing in the section "Using the Scanning Input Method" which shows where the switches are to be plugged in.

To Associate a switch (one of the four external switch inputs) with a given message key:

> Any
> Message
> Key
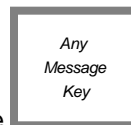
1. Press and hold the key for the message _____. The message will begin to play and its light will be ON.

2. While holding the message key, press the external switch. Then release them both. Thereafter, whenever the switch is pressed, it will be just as if the message key had been pressed.

NOTE THIS FUNCTION ONLY WORKS IN KEYPAD INPUT MODE. SEE SECTION ON SETUP OF INPUT MODES.

TIP When the ACTV-2 model is used in 2 level mode with **Option 1** selected, a the switch inputs can be tied to 8 messages: four on each level. Simply select the level and program the inputs and keys as above. The ActionVoice will remember each of the two levels separately.

Using the Scanning Input Methods

Switch Inputs

A   B
Either of **Inputs A or B** are also used for **Selecting** in 1 switch scanning

C   D
Input C is used to **select** and **Input D** is used to **step** in 2 switch scanning
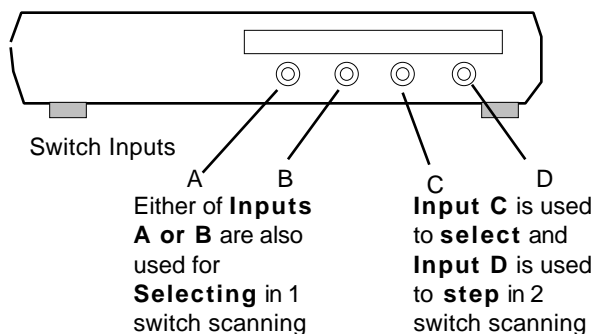
In the Scanning input method, each of the messages are presented in sequence by lighting the corresponding light (LED). The user selects a message as it is presented and the message is then played. Scanning starts with the upper left and works to the lower right. Message keys which have no message recorded are skipped.

NOTE If no message keys have messages recorded, a single message light will flash with a very short flash.

The ActionVoice supports both 1 and 2 switch scanning. In **1-switch scanning**, the choices are presented automatically at an adjustable rate and the sequence keeps repeating so that the user can keep playing messages. The user selects (plays) a message by hitting the external switch while the LED for that message is lighted. If no messages are selected within one minute, the scanning stops to save battery power. Scanning is resumed simply by hitting the external switch again.

2-switch scanning is just like 1-switch, except the choices are stepped manually by a second switch, rather than on an automatic timer. This allows the user who can

operate two switches to step at their own rate to the desired choice of message and then select (play) it with the other switch. Two switch scanning can also be used to allow a teacher or helper to set the correct message with the "stepping" switch. The user can then play the message using the "select" switch.

NOTE   If two levels are used on the ACTV-2, the ActionVoice indicates a message on the second level by both lighting the 2ND Level LED and flashing the message's LED quickly once as it is lighted.

Using the LightBoard Input Method

The LightBoard is plugged into the ActionVoice "Serial Input" connector on the ActionVoice rear. A special cable is required and can be obtained from Ability Research. When this input method is active, each time the user activates a "key" on the Lightboard, the ActionVoice plays a message which corresponds to it. Messages on the ActionVoice going left to right and top to bottom correspond to LightBoard columns as rows. For the ACTV-1 (or the ACTV-2 using one level) the 4 columns and two rows setup for the LightBoard must be used. Only the first 8 of the ActionVoice messages can be accessed by the LightBoard at present. The ACTV-2 using two levels can be used with the 16 key checkerboard setup to access the first 16 messages.

The ActionVoice keypad as well as the multiple external switches can also be used with LightBoard input method. This may be useful for teacher/helper as well as for cooperative activities.

Auditory Scanning (ACTV-2 ONLY)

The ACTV-2 model also allows auditory scanning. It operates just like single and dual switch scanning (see above) except that an audible "prompt" is played as each message key is scanned rather than just the LEDs lighting. This is very useful for situations where a person cannot see or watch the LEDs as they scan. Auditory Mode is entered using the ActionVoice Setup Mode keys (see below).

There are two kinds of prompts which can be used.

One kind of prompt is simply the first 1.2 seconds of the recorded message. This does not require you to record separate messages and prompts for each key, but messages must be designed properly to use it. For example, if the message is "I'm hungry" you might record "Hungry. I'm hungry" as the message so that the first part of the message would make sense when played by itself.

The second and often preferred kind of prompt is a separate brief prompt message which is distinct from the message. It can be recorded in a different voice, in a quieter voice, etc to help distinguish it from the message when played. In this case, the prompt might be "hungry" in one voice and the message could be "Please bring me to the lunchroom" in another voice. The drawback is that it takes extra time to record both a "prompt" and a "message" for each message key.

TIP The maximum time for an auditory prompt is 1.2 seconds. If a shorter prompt is recorded, only the amount recorded will be played. Setting the scanning rate slower or faster will not extend or cut short the recorded prompts, so if a fast scanning is to be used, prompts must be short.

Recording and Playing Auditory Prompts (ACTV-2 ONLY)

To record or play auditory prompts, you must first put the ActionVoice in Auditory Mode. This is done by using the ActionVoice SETUP mode and selecting the "Auditory Mode" key . Exit the SETUP mode and the ActionVoice is ready to record or play "prompts" (mini messages to be played as "cues" to the user while scanning).

To access a prompt for given message, you must first tell the ActionVoice you want the prompt portion. If you don't it will assume the message portion is what you mean when you press a message key. To specify "prompt," press the PROMPT

key (the same key as the Output Hold/Count key) immediately before

pressing the message key.

For example, to record the prompt for a message:

1. Make sure the LOCK switch is not in the "LOCK" position. Note that the ActionVoice must have been selected to be in Auditory Mode (see section below on using SETUP mode).

2. Press RECORD/SETUP and release. The RECORD light will flash.

3. Press PROMPT (same as Output Hold/Count and release. The key's light will begin to flash.
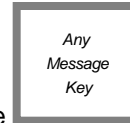
4. Press and hold the key for the message whose prompt you want to record. Immediately speak into the microphone to record the message. Release the message key when you're finished. The prompt will be recorded from the moment you press the key for that message until you release it. The light for that message will remain ON until you release the key or until the recording time for that prompt (about 1.2 seconds) is exceeded.

To Play a prompt for a given message:

1. Press PROMPT (same as Output Hold/Count and release. The key's light will begin to flash.

2. Press the key for the desired message and release it to play the prompt for that message.

TIP   It is much easier if you use "Keypad Input" rather than "Scanning Input" to record and play prompts while you're setting them up and testing them. This is to avoid the confusion of the prompts playing at you while scanning at the same time you're trying to figure which key you're recording.

NOTE   If you are using the beginning of each message as the prompt, be sure to record all messages with Auditory Mode turned off. The Turn on Auditory mode to play the "prompts" (actually the beginning of each message) using the PROMPT key.

Normal and Long Message Modes

This discussion explains a powerful feature of the ActionVoice. It may be a little confusing, so please read carefully. There is an example following. Please be patient...

The ActionVoice has two ways of using it's voice storage. One way (or "mode") splits up the total time for message storage evenly. The other lets any message use as much or little as it needs up to the full space remaining. The reason for two is to give the most flexibility in a single unit to accommodate many needs.

NOTE   To change between the two modes, see the section on "Setup Mode and How to Use It" which follows.

In the **normal mode**, each message can be any length up to 6 seconds and can be recorded and rerecorded in any order without affecting the other messages, as long as all messages are recorded in the normal mode. To keep the messages from "bumping into" each other the ActionVoice simply stops recording if you go beyond the allocated 6 seconds. To let you know this, the light (LED) for that message goes out when you've run out of time.

Long message mode allows any message in the ActionVoice to be as long or as short as desired, up to the maximum amount of storage which is not yet recorded. A single message can be up to a full minute for the ACTV-1 (or two minutes for the ACTV-2), providing there are no other messages recorded. As another ACTV-1 example the first message can be 51 seconds and the next 9 messages can be one second each. There is a price for this flexibility, however. The messages are recorded sequentially, and though you can play in any order, you may get confused when rerecording messages in the long message mode (or when changing between the normal and long modes).

To let you know if you've bumped into a previously recorded message, the ActionVoice turns on the light (LED) corresponding to that message. Any message you bump is erased and the space is reused for the new message. Normally, you'll see this in long message mode, since it is more likely you'll bump messages in this mode. If the ACTV-2 has messages recorded on the 2ND level, the LED will flash once as the bump occurs to indicate it's on level 2.

TIP   In long message mode, start recording at the upper left key and progress to the right on the top row and then similarly for the bottom row. Messages will only be automatically erased if you bump them and the LED turns on for that message. Put messages which are least likely to need to be rerecorded in first. You don't need to worry about this in normal mode.

There is one case where a message which is bumped will not be erased -- only cut

short. This is when you've recorded messages in long message mode and go back to normal mode.

CONFUSED? Here's an example. Let's say that an ActionVoice (model ACTV-1) will be used both at home and school. In the morning, the parent records a message to the teacher giving an update for the day. This message is recorded in the upper left key in long message mode and can be up to the full one minute. After playing the message, the teacher can either use the ActionVoice in normal or long message mode. Since the days activities require many short messages (basic needs and responses) the teacher uses the normal mode. Later in music class, the child sings a verse of a song using the long message mode. At the day's end, the teacher sends home a message, once again in the long message mode. At home, the parent sets up the ActionVoice for 10 basic needs and bedtime use using normal mode. This makes it easier to change a few messages freely as the evening progresses.

Obviously the long message mode is handy, so why bother with normal mode? The answer is it simply makes recording and rerecording much easier since you never have to worry about order or bumping messages. Another reason is that messages which have output attached to them will lose their output programming if erased (or "bumped"). Since bumping doesn't happen to messages recorded and played in normal mode, it can save output reprogramming time.

TIP When using auditory prompts (ACTV-2 only) and long message mode, recording either the prompts or the message can cause this "bumping," so it's best to record messages first, in order, and then the prompts for each message.

Setup Mode and How to Use It

In setup mode, the message keys are used to control ActionVoice operation and features rather than play messages. Each key has a label printed next to it on the ActionVoice top panel. To use these keys you must first enter the setup mode. Then press the keys as described below to make the changes you want. Finally, leave the setup mode to resume normal operation. All changes made in setup mode are automatically remembered until you change them.

To Enter Setup Mode:

Press and hold the RECORD/SETUP key ⊙ Record ○ Setup for at least 2 seconds. After holding for two seconds the SETUP light should go ON and the RECORD light should go OFF. You are now in SETUP mode and the 10 message keys have special functions as printed in light blue next to each key.

To Leave Setup Mode:

Press the RECORD/SETUP key. ○ Record ● Setup   The SETUP light will go OFF and the ActionVoice will return to its idle state. If you don't do this, the ActionVoice will automatically return to its normal idle state after about 15 seconds. NOTE: any changes made during SETUP mode are always updated as they're made, so regardless of how you leave SETUP mode, the changes will still be effective.
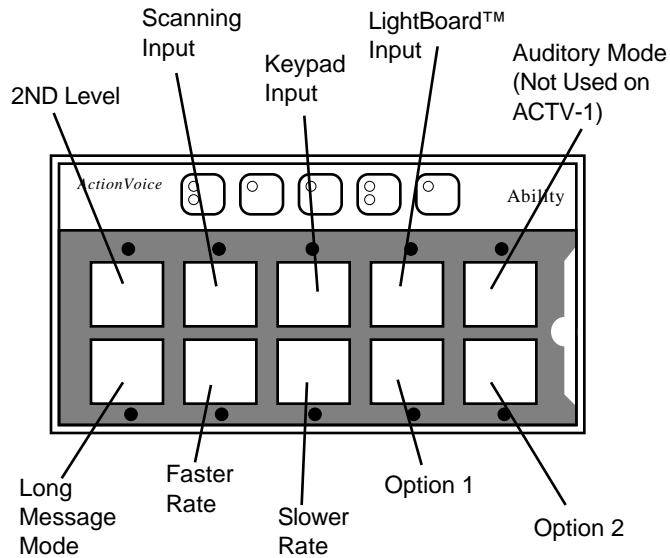
Setup Mode Key Descriptions:

2ND LEVEL   On the ACTV-2 model, press this key to switch between using one
                        level (10 messages, one per key) or two levels (9 messages per
                        level, two per key). In setup mode, this key selects whether you'll

use on or two levels. When not in setup mode it is used to "shift" between the two levels if you've enabled two-level operation. **Two Levels are not used on the ACTV-1, so this key will have no effect in setup mode for the model ACTV-1.**

KEYPAD INPUT   Press this key to select the keypad as the method to access messages. When in keypad mode, the user must hold down a message key for the length of time of the adjustable key-accept delay before the message will be played. See FASTER RATE and SLOWER RATE keys below for adjusting this delay.   The external four switch inputs are associated with any four of the available messages in KEYPAD mode. That is, pressing any of the external switches connected to the ActionVoice is just like pressing the message key itself for the associated message. **Note**: changing the association between message keys and external switches does not require setup mode.

SCANNING INPUT   Press this key to select scanning as the method to access messages. Note that the keypad will still work, but with the acceptance delay feature turned off. The external switches are used to control scanning.

In scanning input mode both one and two switch scanning are automatically supported simply based on which external inputs (A though D) the switches are plugged into. See the section "Using the Scanning Input Method" for more information.

LIGHTBOARD INPUT Press this key to select the LightBoard as the method to access messages. Note that the keypad will still work but with the acceptance delay feature turned off.

AUDITORY MODE   Press this key to switch between Auditory mode enabled and Auditory mode disabled. When Auditory mode is enabled, a separate "prompt" can be recorded for each message to be used in auditory scanning. Auditory mode can be enabled even if scanning mode is not selected. If auditory scanning is to be used, both Scanning Input mode and Auditory mode must be enabled. **Auditory mode is not available in ACTV-1.**

LONG MESSAGE   Press this key to enable or disable **long message mode**. If the light is ON the mode is enabled. Long Message mode allows any message to be of any length up to the total recording time

remaining, but has the drawback that messages may "bump into" each other when rerecorded or not recorded in sequential order starting at the upper left to the lower right, resulting in erasure of the bumped messages. It is far less flexible than normal mode but does allow very long messages. Examples of when it may best be used are 1) to send a long message home (say from a teacher to parent, etc); 2) to record an entire song, prayer, story, etc.

FASTER RATE
SLOWER RATE   Press FASTER RATE or SLOWER RATE to adjust the **key accept time** in **keypad mode** or the **scanning rate** in **scanning mode**. Note that the key accept time set in keypad mode will be carried over as the external switch accept time in either keypad or scanning modes. The light under FASTER RATE will flash at the rate set. As you press the FASTER RATE or SLOWER RATE keys the flashing rate will adjust to show the change you've made. The only thing tricky to remember is that you're setting two different times depending on whether you're in scanning or keypad mode. Note that to adjust the switch accept time for scanning, you must temporarily select the keypad input key to adjust the switch time and then re-select the scanning input key to adjust the scan rate.

OPTION 1   On the ACTV-2 model, the OPTION 1 key is used in setup mode along with the 2ND LEVEL key . The OPTION 1 key switches between OPTION 1 enabled and disabled each time it is pressed.

• If OPTION 1 is enabled and two level operation is enabled, each level will be independent. When not in setup mode, the 2ND LEVEL key will switch between levels and each message key will refer to the most recently selected level.

• If OPTION 1 is disabled, the 2ND level key is pressed immediately before any message key which is to refer to the 2nd level. After that message is played or recorded, the level will automatically switch back to level 1.

Think of OPTION 1 as changing the 2ND LEVEL key from a "shift" key into a "shift lock" key. **The OPTION 1 key is not active on the ACTV-1 model.**

OPTION 2   Not used at present

Connecting to the ActionVoice

The ActionVoice has connections on both the front and the rear. See the section "Using the Scanning Input Method) for a diagram of the switch input connections. The diagram below shows the rear connections.
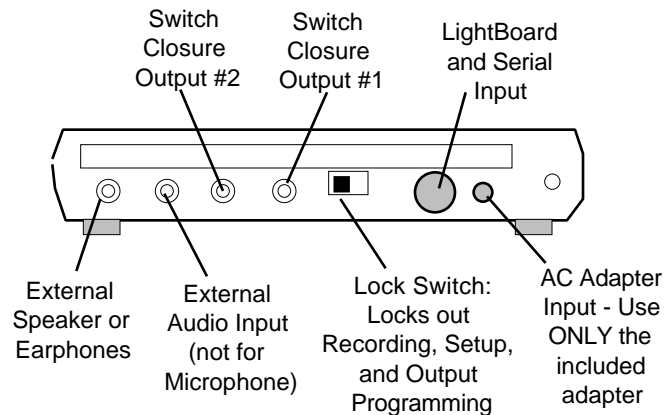
1. **Switch inputs** - Located on the front edge labeled A though D and are compatible with JellyBean™, Big Red™ and most other ability switches. Simply plug the switch into any of the four jacks. These switches already have the right connector for the ActionVoice.

2. **Switch Output**s - Two cables are provided with the ActionVoice to go between the "Switch Outputs" 1 and 2 on the back of the ActionVoice to your adaptive switch inputs on the device you want the ActionVoice to control.

WARNING: NEVER CONNECT DIRECTLY TO THE AC POWER LINE -- SEVERE OR FATAL ELECTRIC SHOCK OR FIRE MAY RESULT. Use only with low-voltage (or battery) devices intended to be controlled by an ability switch such as the JellyBean™. If you are controlling anything plugged into the AC line, even indirectly, see the warning below about not using in water or wet areas.

3. **AC Adapter** - connect to the POWER Input of the ActionVoice and the AC wall outlet as with other AC adapters. The ActionVoice battery will automatically be disabled while using the AC adapter... you don't need to remove it.

WARNING   NEVER USE THE AC ADAPTER IN OR NEAR WATER OR WET AREAS OR A RISK OF ELECTROCUTION MAY RESULT. This is the same warning as for all appliances or devices plugged into the AC power line.

4. **Speaker/Phones** - An amplified speaker or 8 ohms headphones can be used with the ActionVoice. Plug into the jack (connector) labeled "speaker/phones." See the AC line warnings above about wet areas if the speaker or other device is connected to the AC line.

5. **External Audio** - A "high level" audio source (such as the "AUX OUT" of a tape deck or the sound output of a Macintosh® or similar computer with sound can be used as the recording source for the ActionVoice. This is NOT a microphone input. See the AC line warnings above about wet areas if the speaker or other device is connected to the AC line.

Using External Audio, Speakers or Headphones

As described above in "Connecting to the ActionVoice," the ActionVoice can be used with external speaker, earphone, and audio input. Here are some specifics:

External Speaker
Both amplified and non-amplified speakers can be driven by the ActionVoice. Only external speakers of 8 ohms or more are recommended. Radio Shack makes a couple of different types of amplified speakers which work well with the ActionVoice.

Headphones
The ActionVoice can be used directly with most types of headphones having the proper connector provided the volume produced is not too loud for the user.

WARNING   If using headphones, it is very important to make sure the volume level is set properly (and not too loud for the user). The ActionVoice has a built-in amplifier which is capable of driving a speaker with plenty of volume and can easily overdrive headphones. Some headphones could potentially produce enough volume to cause pain or even hearing damage, so use care if considering headphones.

External Audio

The External audio input if for use with tape decks, etc. *(auxiliary audio outputs)* and is not for either microphones or speaker driver outputs. For the technically inclined, the level required is 150 mv at 600 ohms. A microphone won't probably give sufficient volume and a high level speaker output could actually damage the ActionVoice if connected directly.

An example of an audio output which works well with the ActionVoice is the Macintosh® computer's audio output.   Another is a tape deck or tuner's "aux" output.

TIP   If using the Macintosh®, set the sound level on the Macintosh's sound control panel to just above 1/2 way up.

WARNING Never attempt to modify either the ActionVoice or another device to connect it to the ActionVoice.

Safety Considerations

In most circumstances the ActionVoice is about as safe as a portable radio or similar device. To maintain this relative safety, several areas should be handled with care. Careful, safe, and prudent use of the ActionVoice is YOUR responsibility. You must evaluate the suitability of the ActionVoice for a given individual and a given application. Use careful judgement in allowing a person to use the ActionVoice without supervision.

General

The ActionVoice is useful for recording and playing messages for many applications. It should NOT be used in critical situations where the failure to or accidental playing of a message (or activation of a switch output) could cause potential harm or cost.

Switch Closure Outputs

The switch closure outputs should NEVER be used where the devices they control could cause potential harm if not properly used. They should NOT be used to control dangerous devices such as garbage disposals, paper shredders, etc. They are not intended for controlling powered wheelchairs.

WARNING: NEVER CONNECT DIRECTLY TO THE AC POWER LINE -- SEVERE OR FATAL ELECTRIC SHOCK OR FIRE MAY RESULT.   NEVER USE ANYTHING CONNECTED TO THE AC LINE IN WATER OR IN WET AREAS.

AC Adapter Use

Use only the AC adapter supplied with the ActionVoice. It is not recommended to

use the ActionVoice with Wheelchair battery adapters. Use the ActionVoice built-in battery instead.

PLEASE READ AND HEED ALL WARNINGS AND CAUTIONS IN THIS MANUAL.

Battery Life and Replacement

Battery life is highly dependent on the ActionVoice Usage.

In typical use, up to several weeks battery life should be possible using an alkaline battery. If the voice output were active at full volume 100% of the time, the battery would last less than 6 hours. When not in use, battery should last 6 months or more. Use of the AC adapter extends battery life, since the battery is automatically bypassed.

NOTE   **Battery life is very dependent on the speaker volume control setting.**   The lower the setting, the longer the battery life. Thus, you should use the minimum volume setting you need.

WHEN THE BATTERY RUNS LOW... several different symptoms may be noticed. Most likely, the ActionVoice will simply not play messages. The sound may also begin to be "raspy." Finally, messages may start to play but stop almost immediately before finishing.   If any of these symptoms are noticed it's time to replace the battery.

NOTE   **There is NO On/Off switch on the ActionVoice**. It automatically goes into a power-saving inactive mode when not in use. One additional note: the "LightBoard™ Input" setting (used only if you are using the ActionVoice with a LightBoard) consumes the battery faster than the others. If you're not using a LightBoard, don't leave the ActionVoice set for LightBoard Input.

Chapter 4　　　　　　Designing and Making Keypad Label Inserts

Keypad Label Inserts

A keypad insert is used to label the message keys. Keypad label inserts slide in under the plastic blue panel with the windows over the keypad. They slide in and out from the right. All the message keys are labeled with one insert at a time. This means an entire vocabulary can be re-labeled with the change of a single insert. It also means an insert must be made which has all the keys labeled even if only one key is different from another insert.

As mentioned in Chapter 2, the panel may at first may be a little snug and it may take a bit of manipulation to get an insert in. The design is intended to keep the insert from falling out during transport.   If the insert is cut to proper size it should slide in without much effort. Don't force it. If it is difficult, try trimming it on the top and bottom edge. Be sure to read the section on "Making Your Own Inserts" to help prevent damage to the windows and get the best possible operation.

CAUTION　MAKE SURE INSERTS ARE CLEAN BEFORE SLIDING THEM IN. THE KEY WINDOWS COULD BE DAMAGED

Making Your Own Inserts

Here are the basic steps to making an insert:

1. Start with one of the preprinted blank insert sheets provided.

2. Use markers, pens, pencils, computer printers, construction paper, etc to place labels inside the boxes. Leave at least a 1/8" border to be sure all your message will show.

3. Be absolutely sure the ink, glue, etc are dry. Any residue may permanently imprint on the inside of the ActionVoice windows.

4. If you have used pencils, a photocopier, or laser printer we recommend you place a plastic laminating sheet (available at office supply stores) over this sheet before cutting it out. Use the thinnest kind of clear overlay.

5. Cut out carefully along the dotted lines as shown using a scissors.

Here are a few tips to help you get the best results when making your own inserts:

- If you use photos, stickers or construction paper stick-ons be sure that no adhesive has oozed out along the edges. Otherwise, it may stick to the inside of the window and damage it.

- Using thick or stiff stick-ons may make the keys more difficult to press by increasing the force required. It may also make it hard to remove the insert. Thick or textured stick-ons may also leave a permanent impression on the windows over time.

- Photocopiers and laser printers are great tools for making up these overlays. The preprinted sheets can even be run through most printers or copiers. HOWEVER... since the toner used in copiers and laser printers is not completely permanent, some may transfer to the inside of the windows. It is for this reason that thin laminating sheets are recommended with them (see above). They are most likely to transfer when warm or hot (such as in a car or in the sun).

- Be sure to cut carefully, and if anything cut the overlay a bit smaller than the dotted lines. This will help make them easy to insert.

NOTE   The latest release of Mayer-Johnson's BoardMaker™ program for the Macintosh® will support the ActionVoice inserts (as of the time of this printing).   Older versions of BoardMaker can be used but require templates which must be made up in your drawing program.

Designing Messages and Labels

Deciding on the set of messages to use at any one time or place is important and somewhat challenging. Obviously the possibilities are extensive and the number of messages are few.

There is no way to provide a universal strategy, but here are a few ideas:

- For basic communication, look for ways to get the other person to do the talking. We recommend talking to a speech language professional and/or OT for specific ideas and approaches.

- Use simple, easy to see, intuitive words or icons to labels keys and let the messages themselves provide the detail. If the listener can see the keys being activated the icons may also communicate to the listener.

- When outputs are going to be used with a message, the message should normally relate specifically to the action of the output.

- Consider the message access method (keypad, scanning, etc) and make sure the design makes sense for that method. For example, if fewer than 10 messages are used in scanning mode, keeping them adjacent is helpful since messages with no recording are skipped.

- Make sure the labels will have good contrast when viewed through the windows. Light reflected off the windows may reduce contrast, so starting with more contrast is better.

- FOR 2 LEVELS (ACTV-2 Only): Label the upper left key as a level key and divide each of the message keys either diagonally or horizontally so that two labels can fit within each key.

TIP   If using the two levels separately (see the section on "Using Two Levels), it may be most convenient to make two separate inserts and change them when you switch levels. For example, if level 1 is school messages and level 2 is home messages, you'd change levels (and key labels) twice a day, but messages would not need rerecording each day.

Communication

Portable Supplemental Communication

Bring the ActionVoice where a full augmentative system or computer won't go. It is highly portable and rugged.   Just use the battery when on the move. Bring the AC adapter along if you like. Since the external power input is 9VDC, chair power could also be used with the appropriate third-party adapter.

Task or Location Oriented Communication and Control

EXAMPLE 1: Use one in bed and another to bring along. The bedside unit could be used with appliance adapters to provide control of room lights and a T.V. as well as basic bedtime vocabulary. The other unit has a completely different vocabulary.

EXAMPLE 2: Independence task of the week may be to order one's own meal at McDonalds - the vocabulary set up for the task.

EXAMPLE 3: Several ActionVoices might be set up at different locations. Each would have a vocabulary and control setup suitable for the task at hand. The user could use single switch scanning to activate the messages using a plug-in switch or even a remote switch link (so that a power chair user might be completely independent). The idea is to move the user -- not the vocabulary.

Early Education

Concept Reinforcement

EXAMPLE 1: Cause and effect: A particularly fun toy can be activated when the message is activated to help motivate the user and strengthen the effect. Two switches could activate two messages, each controlling its own toy, room light, etc (turning lights on and off can be a lot of fun).

EXAMPLE 2: Counting: The ActionVoice can turn its outputs on and off a variable number of times in response to each message. For example, if a fun toy is connected to one of the outputs it can be made to turn on one, two, three, etc times

for each message (with the recorded voice messages "one", "two", "three," etc).

EXAMPLE 3: Fast and Slow: The ActionVoice can be made to activate a toy at a fast rate, a slow rate or a medium rate by using the counting feature as in the previous example. Since it watches what you do on the keys and remembers it, you can set the rate simply by pressing the keys faster or slower to correspond with the voice messages.

Participation:

Story Reading: The ActionVoice is recorded with a voice reading the pages of the story (one page per message). A user can then "read" the pages of the story out loud by activating a single switch. The teacher "turns" the "pages" by using another switch to step to the next message. The ActionVoice is set up in the **two-switch step scanning mode** and user presses the "select" switch and the teacher uses the "step to next message" switch–Lots easier than moving cables.

Parent/Teacher Messages

The "**long message mode**" allows up to the full recording time to be used for a single message. This makes the ActionVoice useful for communicating voice messages between parent and teacher, between two aids, and so on.

Evaluation

Evaluation

The ActionVoice's flexibility make it ideal for trying many access method alternatives quickly by using a single unit. One ActionVoice can do keypad, scanning, switch access, and LightBoard Access.

The ActionVoice can provide an auditory response and reinforcement to switch actions and choices. It can also be used with the LightBoard for a simplified evaluation of optical pointing for an individual prior to setting up and entire computer system (The LightBoard can be used for computer access if its optical pointing technique proves to work well for a given individual).

Mounting the ActionVoice

The ActionVoice comes with rubber feet on the bottom for use on a table top or desk top. There are many applications where this will be adequate. In some cases it will be desirable to mount the ActionVoice tipped up and/or at eye level, etc.   The ActionVoice can be used with various mounting adaptations by using self-stick Dual-lock™ (or Velcro® for less demanding situations). Two strips are recommended, to be used on the bottom between the battery compartment and speaker.

3-1/2" x 3/4" Velcro or
Dual-Lock Strips

Do not cover battery
compartment or
speaker
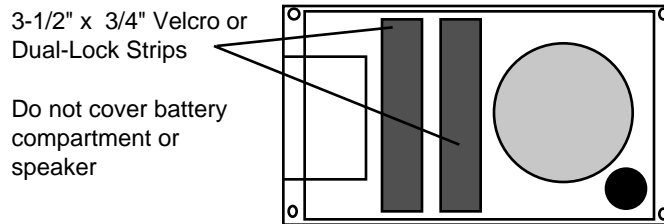
Cleaning both the bottom of the ActionVoice and your mounting adapter with alcohol is recommended to get best adhesion. Be sure speaker is not blocked and that mounting is secure when complete.

APPENDICES

APPENDIX A. ActionVoice Specifications*

Battery	9V Alkaline (Neda type 1604A)
Battery Life	Depends on usage and volume
	(3 to 10 Hrs continuous;
	1 to 4 wks typical use; 6 months inactive)
DC Power In	9 VDC @ 200 ma Max
AC Adapter input	120VAC 60Hz 5W; UL/CSA listed
Size	7.5" x 4.0" x 1.3"
Weight (with battery)	13 Oz
Key active size	Approx 0.75" x 0.75"
Key Size	1.0" x 1.0" on 1.25" centers
Key Activation Force	180 grams typical (with insert)
Switch Closure Inputs	3.5mm jack - momentary contact
Switch Closure Outputs	3.5mm jack; Rated 24Vdc @ 0.75A max
Aux Audio Input	3.5mm Jack MONO ONLY 150mV / 600
Internal Speaker	3 inch
Speaker/Phones Output	3.5mm Jack MONO ONLY 6Vp-p max / 8
Operating Temperature	0^oF to 90^oF

*Subject to change without notice

APPENDIX B. In Case of Difficulty

THERE ARE NO USER-SERVICEABLE PARTS INSIDE (EXCEPT FOR BATTERY REPLACEMENT). DO NOT OPEN THE CASE OR ATTEMPT SERVICE.

Troubleshooting guide:

1. **Nothing Happens when any message key is pressed**
   a) Battery may be dead or not installed - try the AC adapter and/or replace battery
   b) A long key accept time may be setup - it can be as long as a few seconds. Try holding a message key for a few seconds.
   c) If the light for that message flashes once, there is no message recorded at that

key

2. **A message which was recorded no longer plays to the end**
    a) Battery may be getting low. When the battery is almost dead, messages may cut off abruptly or seem to become shorter each time they're played. Replace the battery and the message should play normally.
    b) The message was recorded in **long message mode** and you've recorded over the end of it in **normal mode**.

3. **The light (LED) lights but no message is heard for a given key**
    a) Something is plugged into the external Speaker/Phones jack
    b) When recording you did not speak closely into the microphone
    c) Something was plugged into the external audio input jack while recording (and it wasn't providing sound in)
    d) The volume control is set too low

4. **The Actionvoice won't record or won't go into setup mode**
    a) The LOCK switch is set in the LOCK position
    b) The battery is dead
    c) The RECORD/SETUP key "hot spot" is not being pressed. It is in the lower right/center of the key.

5. **The speaker isn't loud enough**
    a) The volume control is set too low - try turning fully clockwise.
    b) The speaker may be blocked. Try tipping the ActionVoice so that the speaker (which is on the bottom) is elevated or angled from the table or desk.
    c) You need an amplified speaker for this application. Try a Radio Shack, Bose, or similar battery powered portable speaker amplifier combination. Plug it into the Speaker/Phones connector on the ActionVoice rear.

6. **The outputs don't operate an external adaptive device when a message key is pressed**.
    a) The message you're using has no output programmed for it. See Chapter 3 "Programming Outputs". If operating, you will hear a small "click" each time an output changes from on to off or vice-versa.
    b) No cable or an incorrect cable is connected to the proper ActionVoice "Switch Closure Output: connector on the rear.   Make sure you have #1 and #2 correct.
    c) The external adaptive device is not intended for control by this kind of switch closure (less than 24 volts, less than 0.75 Amp, 3.5mm connector).
    d) The external device may need a momentary or a "latched" switch closure.

Appendices

Most switches such as Jelly Bean™ are momentary, so the ActionVoice should provide a brief momentary output using the HOLD/COUNT key to simulate them.

7. **External switches don't activate the messages.**
   a) Switches are not plugged into the switch inputs (A-D) on the front.
   b) Key (and therefore switch) accept time is set too long. See Chapter 3 "Setup Mode and How to Use It."
   c) Battery needs replacement (if messages can't be activated by keys either).
   d) In Keypad mode, switches may not be "associated" with messages. See Chapter 3 "Using Multiple Switch Input Method."
   e) Option 1 may be selected (ACTV-2). If so, each level keeps it's own set of key to message associations. See "Using Two Levels."

8. **Can't change between Level 1 and Level 2**
   a) 2 Levels are supported only on the ACTV-2 model
   b) Two level operation has not been enabled using the Setup Mode
   c) The LOCK switch is set in the LOCK position and Option 1 is active
   d) Option 1 may be selected (ACTV-2). Press 2ND Level key to change levels.

CONTACT ABILITY RESEARCH, INC FOR SERVICE AT (612) 939-0121

APPENDIX C. Care of the ActionVoice

- The ActionVoice should require no preventative maintenance other than cleaning and battery replacement. To clean the ActionVoice use a damp cloth and wipe gently over the surface. Do not get water or other liquids inside the case. NEVER IMMERSE THE ACTIONVOICE OR AC ADAPTER IN WATER. Do not use chemicals or abrasive cleaners or scrubbers.

- If liquid is accidentally spilled into the ActionVoice or AC adapter, do not use it and contact Ability Research before using it any further.

- Protect the ActionVoice from high temperatures such as in a car in the sun. Very low temperatures may cause the plastic to be less durable.

- Protect from heavy physical shocks and abuse. The case is durable plastic, but it is not unbreakable. There are also sensitive components inside.

- Don't set anything heavy or sharp against the keypad or top panel. Don't

transport the ActionVoice in a way that this might happen in transport.

- Don't use any sharp objects (such as pencils, etc) to press the keys.

- Don't pull cables out by pulling directly on the cables. Instead, grasp the connector near the ActionVoice and pull gently. Don't force and connectors. Pull the AC adapter from the wall socket by grasping its body. Obviously, be sure to avoid the metal prongs!

- Read Chapter 4 about inserts. The inside of the ActionVoice windows cannot be cleaned, so it is important to use only clean inserts with materials that won't rub off.

APPENDIX D. Glossary

Key	Refers to one of the touch "keys" on the ActionVoice built-in keypad.
Key Label Insert	The paper which slides in under the ActionVoice message keys to provide a label for each key.
Keypad	The set of touch keys on the ActionVoice. Includes the 10 message keys and the five control keys ("Record", "Output #1", etc).
LED	Light Emitting Diode - Same as "Light" above.
Light	Refers to the small red lights (also called LEDs) in or next to the keys on the built-in keypad
Jack	Another word for the connectors on the ActionVoice.
Message	The sound or voice recorded for each key on the keypad. Sometimes message also is used to refer to a group of sounds or symbols but it is not used this way in this manual.
Prompt	Used with auditory scanning, the "prompt" is a brief mini message played as a cue to the user to indicate the message being scanned. For thew ActionVoice, it may be either the beginning of

the message or a separate mini-message.

Switch An external ability switch to be connected to the ActionVoice. Examples include a large switch such as the AbleNet Big Red™ or Jellybean™, a mouth or head switch, etc. Such switches normally come with their own built-in 3.5mm plug (which looks just like an earphone plug from a radio or tape player).

Switch Closure The connection made when a switch is activated. The ActionVoice has two Switch Closure Outputs. When properly connected these let the ActionVoice "look" like two electronically controlled Ability Switches which can be used to control devices adapted for control with low voltage switch closures.

Vocabulary The set of recorded messages in the ActionVoice at any one time. Normally, a key label insert will also go along with a vocabulary.

Low Voltage Refers to things which are battery operated or use an AC adapter. The switch closure is NOT directly connected to any AC power lines (110V, etc). ActionVoice switch closures are intended for only voltages below 24 volts and currents under 0.75 Ampere.

IMPORTANT SAFEGUARDS

1.   **Read Instructions** - All the safety and operating instructions in this manual should be read be for operating the ActionVoice™.

2.   **Retain Instructions** - This manual should be retained for future reference.

3.   **Heed Warnings** - All warnings and instructions on the ActionVoice™ and in the operating instructions should be adhered to.

4.   **Follow Instructions** - All operating and use instructions should be followed. If the person using the ActionVoice™ is not capable of understanding and following these instructions and all warnings, a supervisor should remain present during use.

5.   **Read "Safety Considerations" in Chapter 3**. It contains important information about safe use of the ActionVoice.

6.   **Never use the ActionVoice in wet or damp locations** with anything plugged into AC power and the ActionVoice. This applies to the AC adapter as well as the switches, switch outputs, or anything connected to them. The ActionVoice when operated by its battery alone and with nothing even indirectly connected to the AC power can be used in damp locations from a safety viewpoint, but remember it is NOT waterproof.

7.   **Cleaning** - The ActionVoice exterior may be cleaned if necessary. UNPLUG THE ActionVoice™ FROM THE AC ADAPTER AND UNPLUG THE AC ADAPTER FROM THE WALL before cleaning. NEVER IMMERSE ANY OF THE COMPONENTS IN WATER. See Appendix C for more information.

8.   **Power sources**. - The ActionVoice should be operated only from its own battery or its own AC adapter (supplied). Do not use "battery eliminators" or other AC adapters.

9.   **Power Cord Protection** - Power supply cord should be routed so that they are not likely to be walked on or pinched by items placed against them, paying particular attention to cords at plugs, receptacles, and the point where they exit the equipment and at the wall. Never unplug cords by pulling on the cords themselves.

9.   **Replacement Parts and Servicing** - There are no user-serviceable components in the ActionVoice (except for battery replacement). Refer all servicing to qualified, Ability Research, Inc. service personnel. See Appendix B.   See Limited Warranty.

      **FOR SERVICE, CALL Ability Research, Inc.
      at (612) 939-0121**