HomeVoice™ User Guide

Version 2.3

1 HomeVoice™ User Guide

1.1 Overview

Successful operation of HomeVoice™ with the rest of your home automation (HA) equipment is dependent upon correctly accomplishing the following:

- Setting up users.
- Defining/editing voice command phrase(s).
- Identifying the (optional) voice response phrase(s) or sound file(s).
- Training the voice command phrase to increase recognition success and command execution reliability.
- Sampling background noise.

In the normal operating mode, HomeVoice™ will run in sleep mode listening for one of the user's wakeup commands against the general level of background noise. Once a wakeup command is recognized, the software makes the specific user's list of voice commands active. These lists of commands are referred to as grammars. Each user should have a minimum of two grammars, a wakeup list and an active command list. The wakeup grammar should only contain phrases designed to access the user's active command list or commands that switch to another user's command lists. In general it is not recommended to place automation commands in the wakeup grammar as you could likely experience these commands being executed during normal conversation. Wakeup Command Syntax discusses wakeup commands, Changing Users via Voice Command discusses how to switch from one user to another user using voice command. Refer to the Listen Users Guide for more complete information regarding grammars.

You may issue multiple voice commands while HomeVoice™ is awake. However, you must wait for the optional response to play before issuing any additional commands. After a short period of time when HomeVoice™ doesn't hear any recognized commands, the software will timeout and return to sleep mode. This timeout value is a parameter that can be changed to suit the user in User Preferences.

The initial voice recognition capability for HomeVoice™ voice commands is generally speaker independent. However, to obtain a high level of successful voice recognition and command execution, it is highly recommended that you train your voice commands. It takes only a few minutes to train a long list of commands. Training will allow HomeVoice™ to "learn" your voice and increase the ability for HomeVoice™ to properly identify your commands against a noisy background.

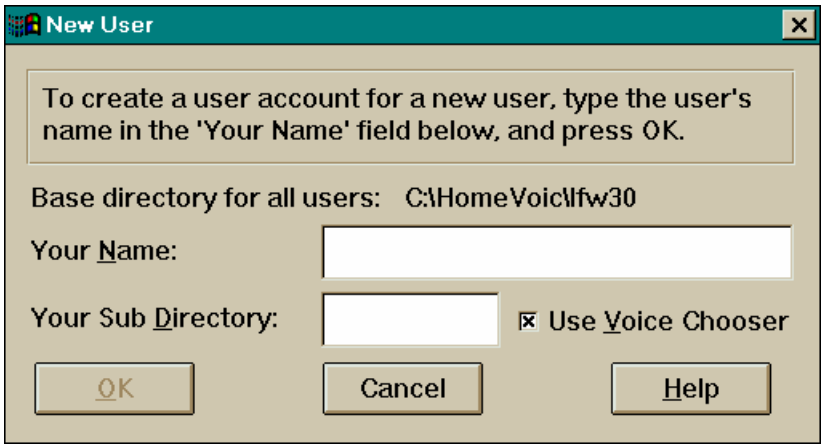
HomeVoice™ samples the background noise to establish a baseline level against which it listens for your voice commands. The software will take a noise sample when it is started and will prompt you to sample noise when training commands. Sampling noise can even be issued as a voice command and it is recommended that you issue the Sample Noise command whenever your home's noise level changes significantly. **Sample Noise** is one of the example commands that are provided with HomeVoice™ installation**. Note: DO NOT DELETE THIS COMMAND.**

The following sub-sections discuss how to accomplish user activities with the HomeVoice™ software.

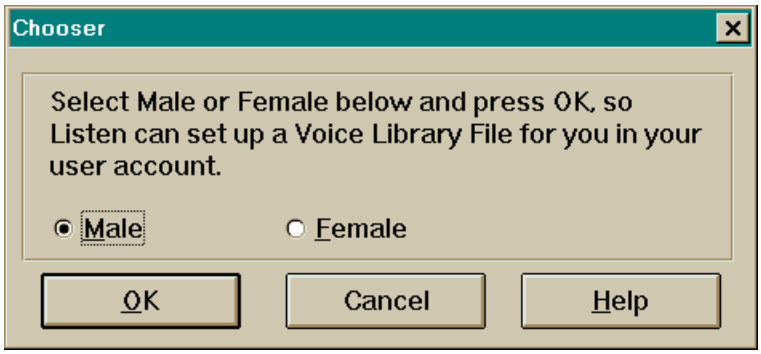
1.2 Initial HomeVoice™ Start-up

After installing the software you can start HomeVoice™ from the Windows **Start** button, selecting **Programs**, selecting **HomeVoice**, and selecting **HomeVoice 2.3**.

You will be prompted to set up the initial user of the system. Enter a name and click **OK**.



Do not change the sub directory field as it is directly related to your user ID. Both the response and the Listen™ library files reference this Sub directory. For proper operation, we recommend this field remain unchanged.



When prompted, **select** your voice gender. In general males under 14 should select female. Adult males have deeper base tones than females while the female voice is softer and not as deep. Use of this selection is correct for a young male's voice recognition since their voice has not developed yet and is still considered to be soft. Click on **OK** and continue.

When prompted, click **Yes** to sample the noise environment. The sample noise option will allow HomeVoice™ to measure background noise to allow for operation in a noisy environment. The software will measure the relative ambient background noise and then listen for identified commands against that background. This completes the user setup section.

To add additional users refer to Adding New Users.

1.3 Normal HomeVoice™ Start-up

You start HomeVoice™ from the Windows **Start** button, selecting **Programs**, selecting **HomeVoice™**, and selecting **HomeVoice™ 2.3**.

The HomeVoice™ window will appear with a blinking cursor in the window while the Listen engine starts. Once the Verbex Listen window is completely up, HomeVoice™ is now ready to accept voice commands and allow you to edit your commands and responses.

Please note that the HomeVoice™ and Verbex Listen windows must be active but can be minimized to the task bar for HomeVoice™ to operate correctly.

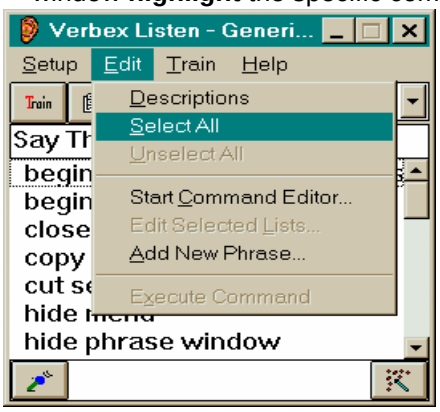
Note: If adding HomeVoice™ to the system startup menu, so that HomeVoice™ is started when the system is started, if there are other software packages that are also started, the Verbex Listen may not synchronize properly and you will receive an error (vassl –198). Restart HomeVoice™ after the system is up and everything should function properly.

1.4 Sampling Noise

As previously mentioned, sampling background noise is a commonly used command. It can be used at start-up, during command training sessions and at anytime a user wishes to reset the background noise level. This feature can be disabled in User Preferences, but noise sampling will only increase the voice recognition success. This feature is particularly helpful in high noise environments. With appropriate noise sampling and voice command training, the voice recognition can be extremely accurate in high noise environments.

1.5 Training Voice Commands

For better voice recognition, you must train the voice commands. From the "Verbex Listen" window **highlight** the specific commands you wish to train.

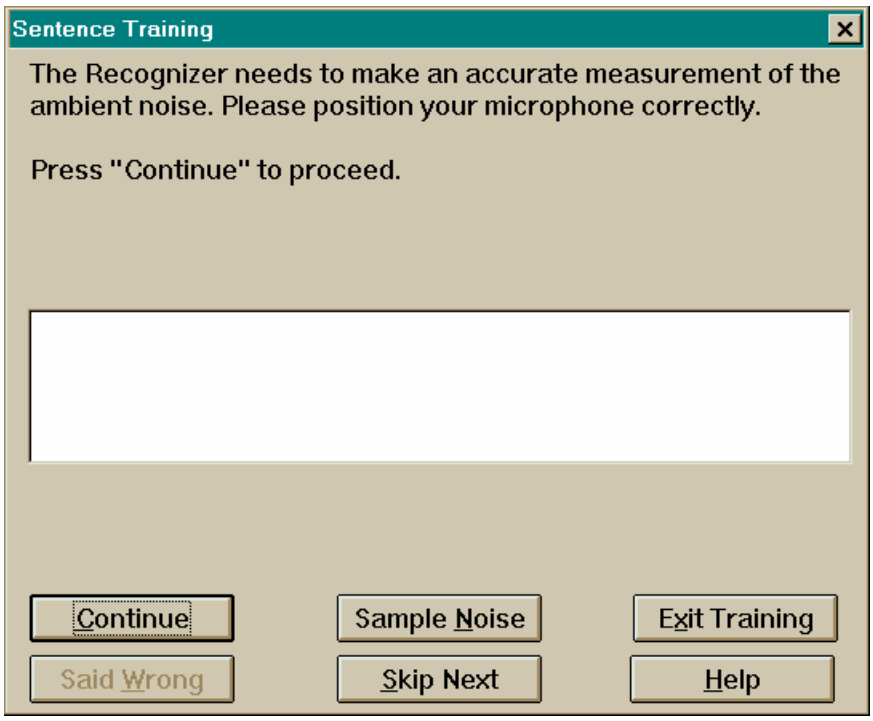


To train all the voice commands, choose **Select All** from the **Edit** menu. This selection will train your entire voice grammar including number training. This should be done initially after all phrases have been added or edited. In order to train all phrases over again all the phrases must be highlighted and selected for training.

To train a single phrase, highlight the phrase, choose **Train Selected** from the **Train** menu.

This process can also be used to train several phrases at once. Simply highlight the phrases that need to be trained (while holding down the control key) and then choose the **Train Selected** under the Train menu. This will only work in the current user's active window in which the phrases exist. If you want to train your active commands but your wake up commands are listed, then wake the system up and highlight the commands that you wish to train.

This will start the training process and the ambient noise will be sampled again.



The training should be done in the normal environment where the system will be used. Follow the instructions provided in the training window. After training the command, you may **Continue** to train additional voice inflections (recommended 2-3 times) or **Exit Training** to finish. Once you have finished command training, the system will need to rebuild the voice file. This may take a few moments depending on processor speeds. Once this rebuild process is complete, HomeVoice™ is ready for use again and will recognize your voice commands.

Note: When training commands only one voice should be present. Train with normal background noise, but do not train while other voices may be picked up on the microphone. When using multi-microphone systems, initial training should be performed with the microphones in other rooms turned off.

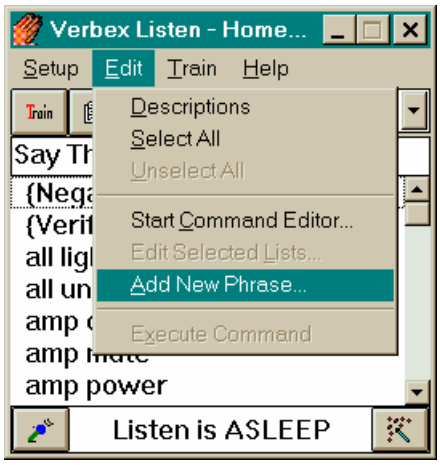
For example, it is difficult to train commands while two other people may be having a conversation which the microphone is picking up. Therefore if the two people are in a different room the microphone for that area should be disabled during initial training.

1.6 How to Add a New Command

1.6.1 General Command Overview

For Windows 95 and 98 only!

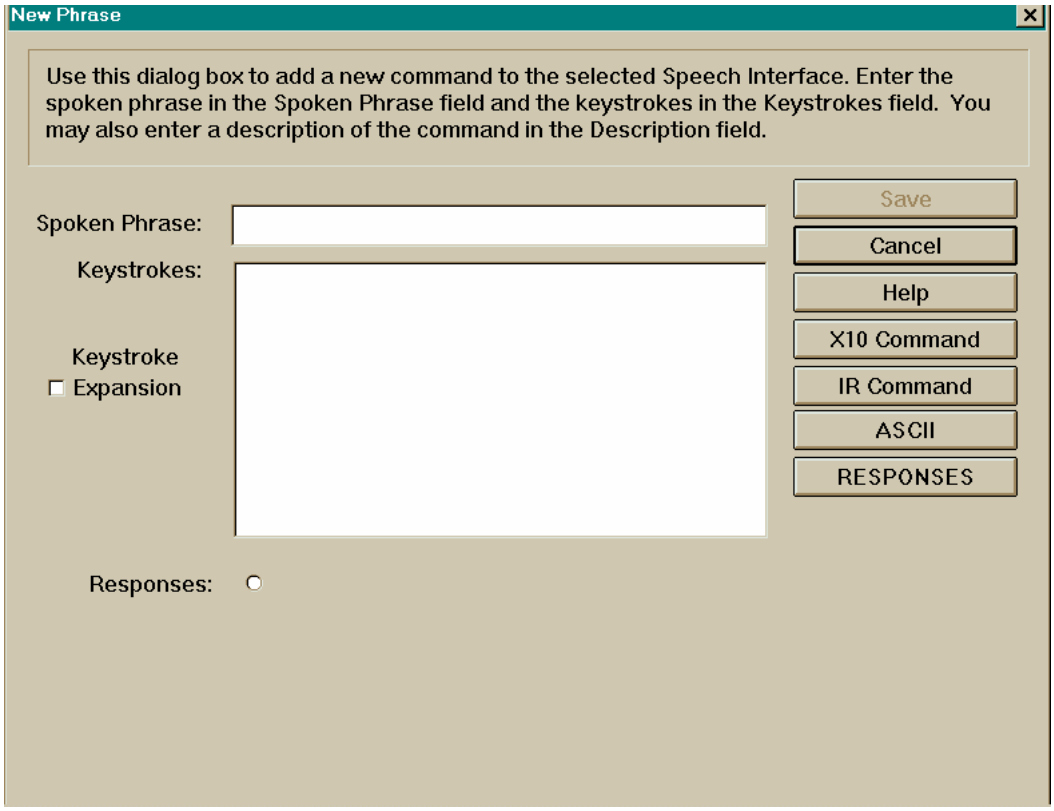
To add a command, select **Add New Phrase** under the **Edit** menu in the “Verbex Listen” window. This option will not be available if a command is highlighted; if you have a command highlighted, wait a few seconds for the timeout to put HomeVoice™ in sleep mode and then wake it up without highlighting a command and select **Add New Phrase**.



For all operating systems:

Creating or editing commands can also be accomplished through the Listen Command Editor (LCE). This method is recommended if you are adding, editing, or deleting more than one or two commands. See Page 26 for more information.

In the dialog provided (shown below), enter the **spoken phrase** you want. Use only lower case when entering the voice command in the **Spoken Phrase** area. The “Verbex Listen” voice recognition engine, unlike HomeVoice™ in general, is case sensitive and prefers to have lower case commands.



You have a choice of two methods for entering automation commands. In the keystrokes box, you can enter an X-10, Infrared or ASCII controller command text string or series of commands strings. Or by using the buttons on the right hand side of the dialog box, you may use a point and click selection method to build the proper command syntax for X-10, Infrared or ASCII. For Infrared, the point and click selection method will give you the ability to select from the list of Infrared commands contained in your Infrared database. You can also use the point and click method to enter a series of command strings that can be executed with one voice command.

The limit to creating a series of command strings is ten total X10, Infrared, and/or ASCII commands, or 128 characters total. With the use of a home controller with macro capabilities, names can be assigned to a macro and then an ASCII command using that named macro could be directed to the home controller. This is helpful if more than ten controller commands need to be issued with one voice command.

In addition to the controller command, you can also put in the optional responses for this voice command. Use the RESPONSES button for access to this capability. Section Responses discusses response creation in more detail.

Regardless of the method used to create commands, when you have finished, click **Save**. The system will then rebuild the voice files to add the new command. A window will appear that shows the progress of the rebuild process.

When this rebuild is complete, HomeVoice™ is ready for use.

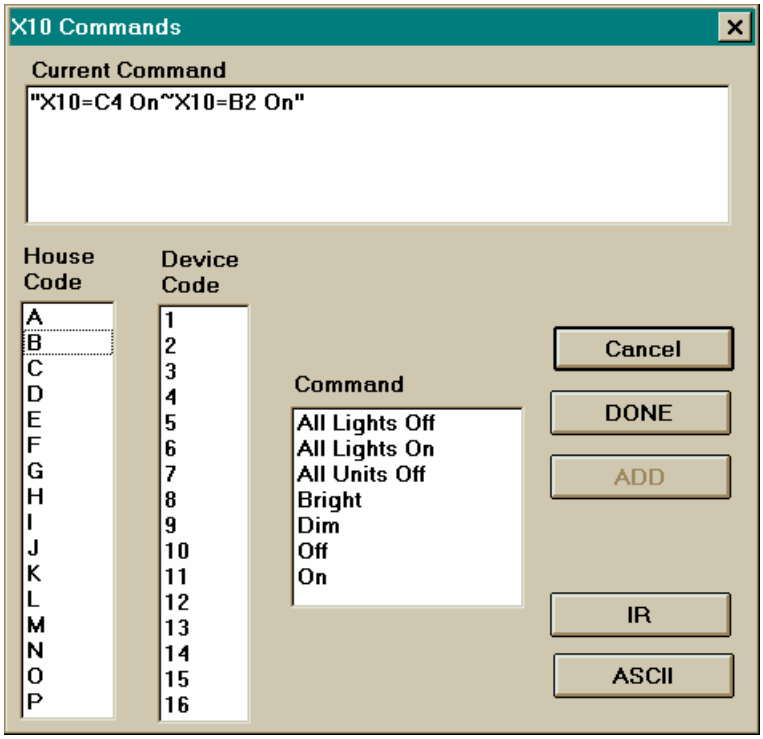
Note: There are certain characters, which may cause an error, which will cause the rebuild to fail. If this happens, there is a good copy of the users' grammar file, which is saved prior to making changes. This file is in the users' directory (e.g. C:\homevoic\lfw40\tom). The file is named "homevo.bak", by copying this file and replacing "homevo.grm". The change causing the error is removed. Any changes made during the last edit session are also lost.

1.6.2 X-10 Commands

This section will discuss building an X-10 command. As mentioned, you may manually enter the command or commands in the keystrokes box or you may use a point and click selection method to build proper command syntax. Regardless of the method, the following X-10 command set is used with HomeVoice™ and is shown in the key stoke field when building command strings:

House code	A-P
Device code	1-16
Action codes	OFF, ON, DIM, BRT (bright), ALON (all lights on), ALOFF (all lights off), AUOFF (all units off)
Repetitions	1-25

To use the point and click method, click on the **X-10** button in the New Phrase window (see How to Add a New Command). The following dialog box will appear:



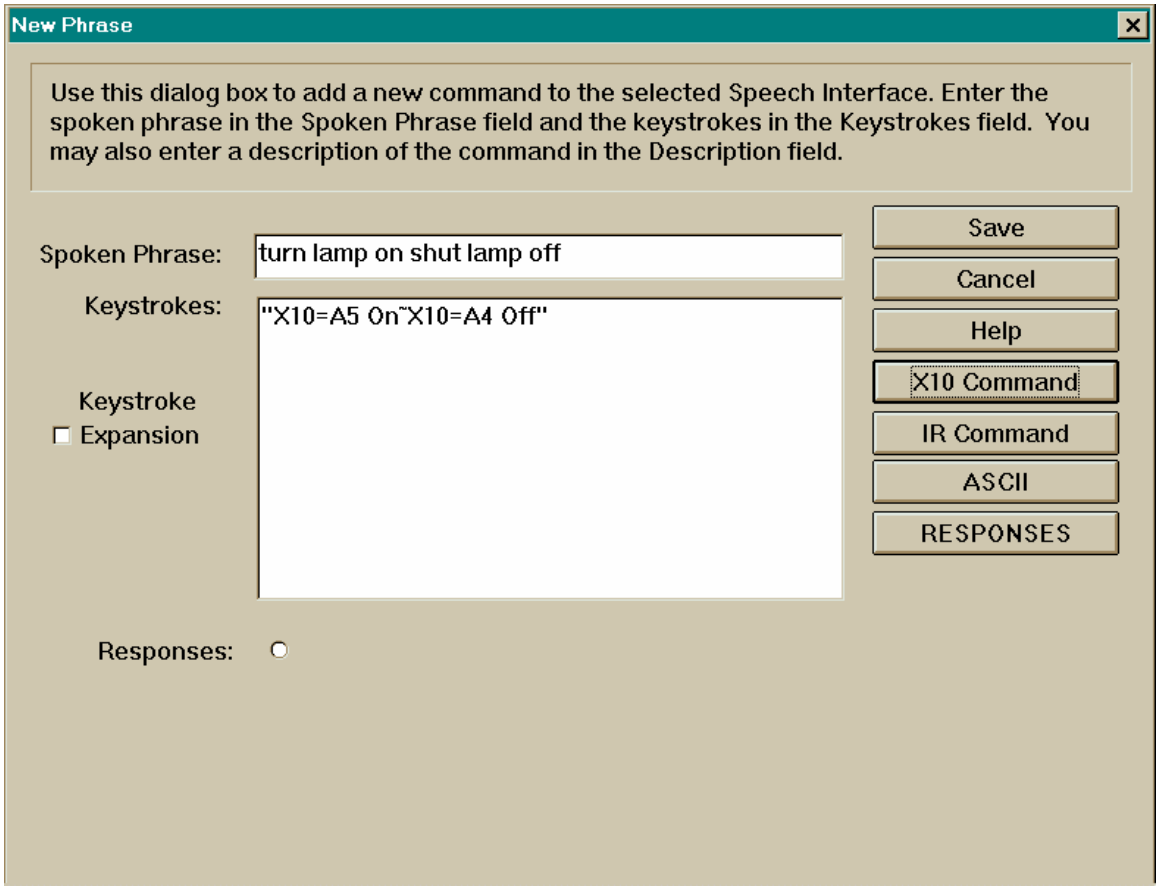
While creating a command with this method, any previously entered command strings will be displayed in the current command window. This comes in handy when building a voice command with multiple automation command strings.

To build a command string, click on the desired house code, device code and command as appropriate. To turn a unit on or off select the house and unit code and the appropriate command. To dim or brighten a light, select the house and unit code, choose **dim** or **bright** and enter the level in the small box that appears when you chose dim or bright. The all lights on (ALON), all lights off (ALOFF) and all units off (AUOFF) must include a house code. Click **Add** to add the new command string, click done when you are finished adding X-10 command strings. You may use the IR or ASCII button to add additional command strings of those types (discussed in the next sub-sections).

The general syntax for a X-10 command is:

"X10=(house code)(device number)<space>(action)=(repetitions)"

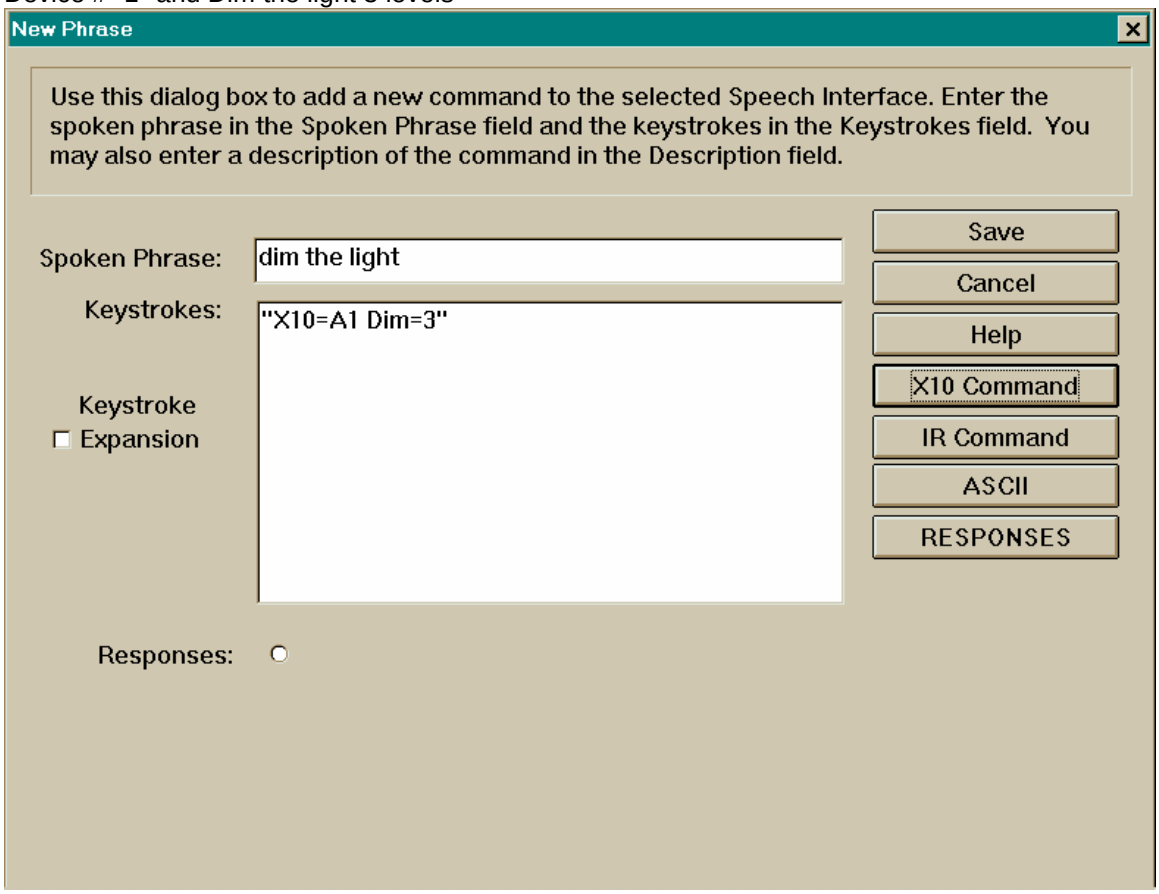
The following example shows the keystroke command syntax that will turn unit A5 on and unit A4 off.



The tilde '~' key is the required delimiter between the commands. If you use the point and click method for building commands, HomeVoice™ will automatically place this delimiter between the commands. If you are entering the command string manually, you must add this delimiter.

"X10=A5 on~x10=a4 off"

Note: It is better to place commands with repetitions at the end of a multiple command string. The following example command shows how to issue your equipment the X10 House Code "A" Device # "1" and Dim the light 3 levels



(One DIM command plus 3 repeats):

"X10=A1 DIM=3"

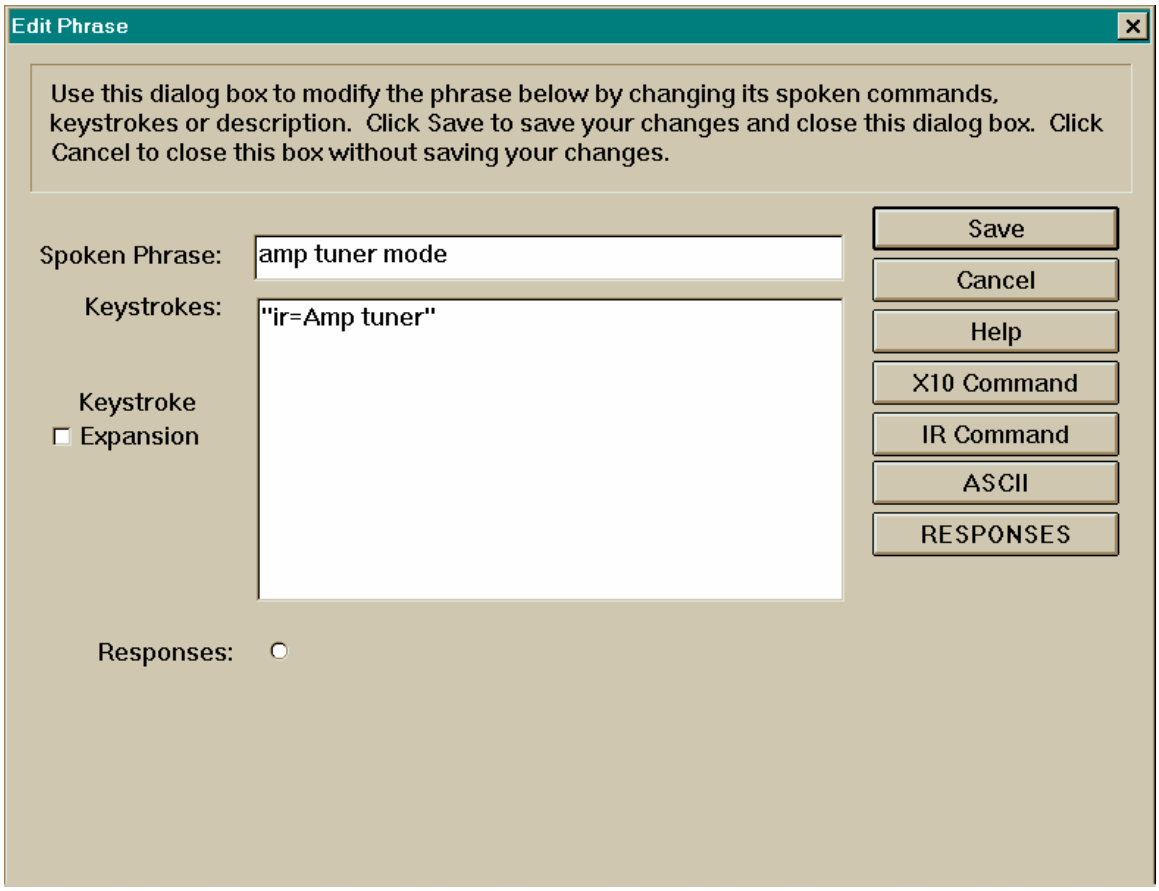
Remember to click SAVE to save and rebuild your new voice command when finished.

1.6.3 Infrared Commands

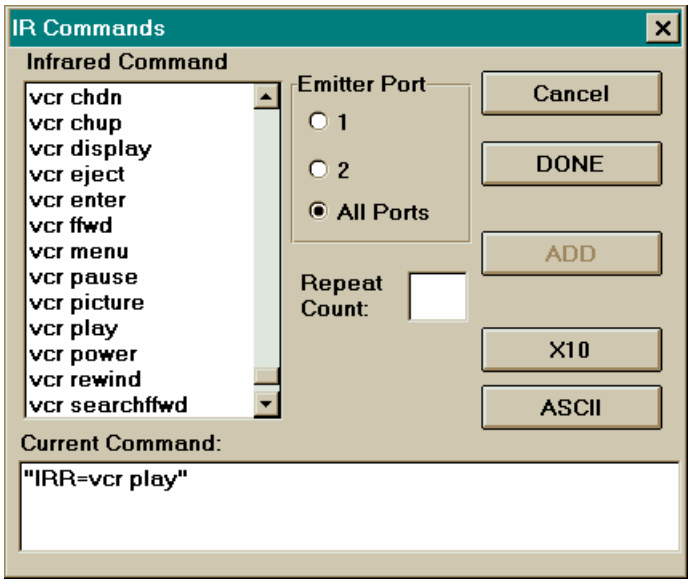
This section will discuss building an Infrared command for your new voice command, i.e., “spoken phrase”. As mentioned, you may manually enter the command or commands in the keystrokes box or you may use a point and click selection method to build proper command syntax. The Infrared commands that are used in either method must be consistent with your Infrared database. If you use the point and click method to build the command string, you will be choosing from a list of commands that are in your Infrared database, or are understood by your Infrared controller. Infrared command sets and databases are discussed in further detail in later sections. For the purpose of this section, we assume that a database is available.

To enter an Infrared command manually, type the command string in the Keystrokes area (note: HomeVoice™ is not upper/lower case sensitive). The following example would issue the amp tuner selection mode assuming you have this function mode with your equipment and it is trained in your database as "amp tuner".

"irr=Amp tuner”



To use the point and click method, click on the **IR Command** button in the New Phrase window. The following dialog box will appear:



You don't have to remember what you named the Infrared command when setting up the Infrared database. The IR Command button will not only show the existing command but will access your Infrared database to show what Infrared descriptions are associated with your Infrared buttons. If you are using Infrared zones, you can also make that identification here in building the IR command. (Available for JDS and AFT Controllers only)

Click **ADD** to add the new command string. Click **DONE** when you are finished adding Infrared command strings. You may use the X-10 or ASCII button to add additional command strings of those types (discussed in the other sub-sections). Click **SAVE** to save and rebuild your new voice command when finished.

For example:

Irr=tv 12
irr=dss 579
irr=vcr 07

This type of command syntax could be used for a favorite channel option, so if you wanted to watch HBO1 the spoken phrase could be "lets watch some HBO" and the actual command would be "irr=dss 110".

Another way to issue the same command would be to use a list command:

Irr=tv {tvlist}
irr=dss {dsslist}
irr=vcr {vcrlist}

List commands are used to abbreviate sequential strings of commands, If your DSS receiver has 500 channels you could create a list with numbers 1 to 500. This way 500 channel commands do not have to be entered in the users' commands, only one command with a reference to 500 numbers is used. To learn more on List commands refer to Using LISTS in HomeVoice™ or the Listen Users Guide.

For Infrared controllers which have more than one IR transmission zone or outputs, the irr will tell the controller to transmit the signal on all output ports. For individual port combinations refer to documentation on the specific IR controller in the appendix.

1.6.4 ASCII Commands

To accommodate controllers with an ASCII command capability, HomeVoice™ has an ASCII command capability. To enter ASCII commands, **click** the **ASCII** button and enter the ASCII command string you desire. This string should be in the format defined by your controller manufacturer.

The format for the ASCII command is:

asc=<ASCII Command String>

HomeVoice™ will send all characters following the equal sign (=) out the serial port specified in the Homevoic.ini file.

Below is an example of a HomeVision ASCII command:

asc=test macro

In this command HomeVoice™ will send the string “test macro”, without quotes, to the controller’s serial port. The controller may then key on this string to perform whatever action is specified.

If characters such as carriage returns, enter, backslash, etc., need to be sent to the controller in ASCII commands, check the **keystroke expansion** box on the edit phrase dialog. Then type the “Enter” key, <ENTER> will be placed in the command string. This tells HomeVoice™ to send the enter character.

With HomeVoice™ 2.3 there is support for three different controllers. In order to send ASCII commands to a controller other than the default the command **ASC, ASC1, ASC2** and **ASC3** are provided. ASC1 is the same as ASC and will send the ASCII string to the default controller. ASC2 will send the ASCII string to the X10 Controller and ASC3 will send the string to the IR Controller.

1.6.5 Hexadecimal Command

The ASCII command is used for standard keyboard type-able characters. Depending on the controller you are sending the command to it may be desirable to send ASCII characters which are not found on the keyboard. To send these characters the “Hex” command is used. The format of this command is:

Hex = 0f 13 67 49 67

This command will send the 5 characters corresponding to the hexadecimal values out the serial port. The spaces between the numbers are for readability, no spaces are sent unless the value for the space character is specified.

1.6.6 Pause Command

The pause command is for adjusting timing between HomeVoice™ and the controller. When a controller acknowledges receipt of a command HomeVoice™ will send the next command if there is one in the queue. In some situations the controller and HomeVoice™ send the signals faster

than the equipment can handle. In these cases the "Pause" command is used. The syntax of the command is:

Pause=time where time is specified in milliseconds

So to introduce a quarter second pause between two commands the keystrokes would be:

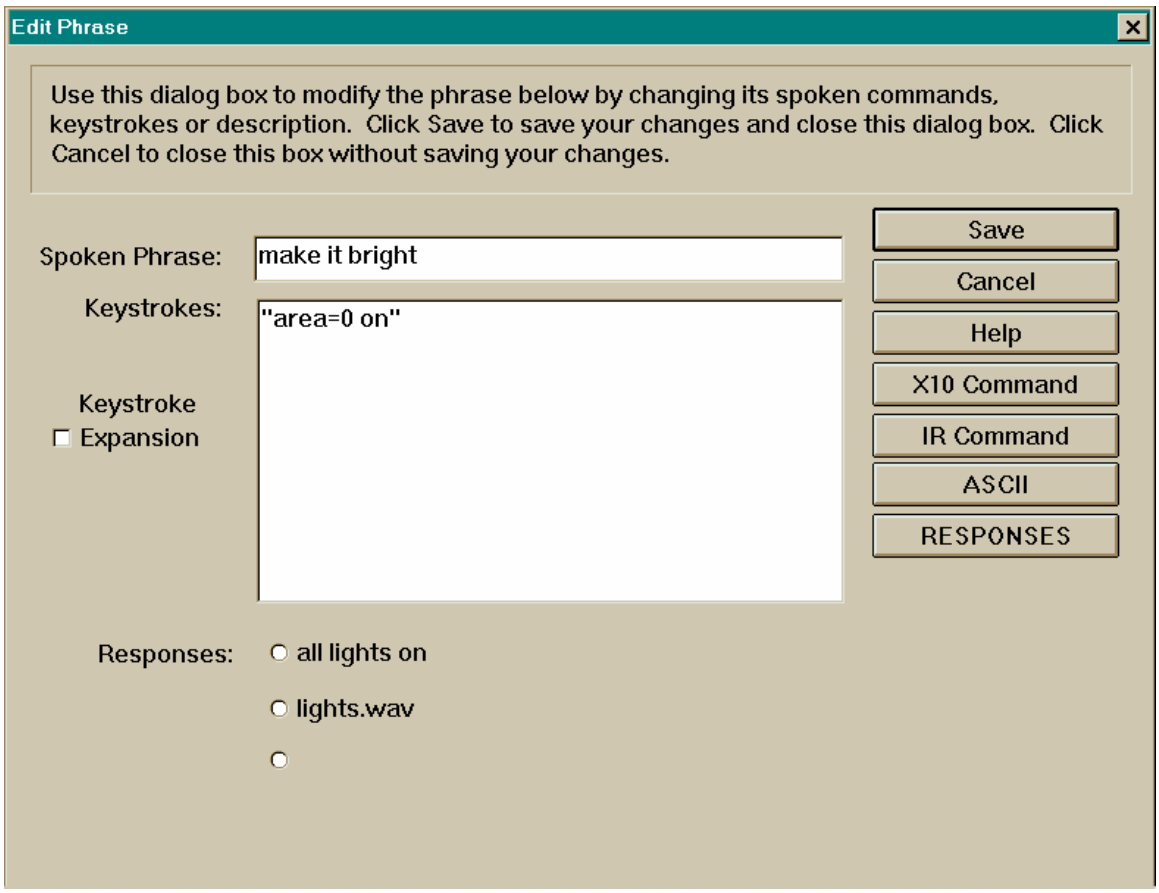
Irr=Amp power~pause=250~irr=amp tuner

In this example a 250-millisecond pause is placed between the transmission of the amp power signal and the amp tuner signal.

The pause command can be quite helpful for short duration, 10 seconds or less, timing issues. DO NOT use the pause command for long duration pauses, as it will interfere with HomeVoice™ command processing.

1.6.7 Responses

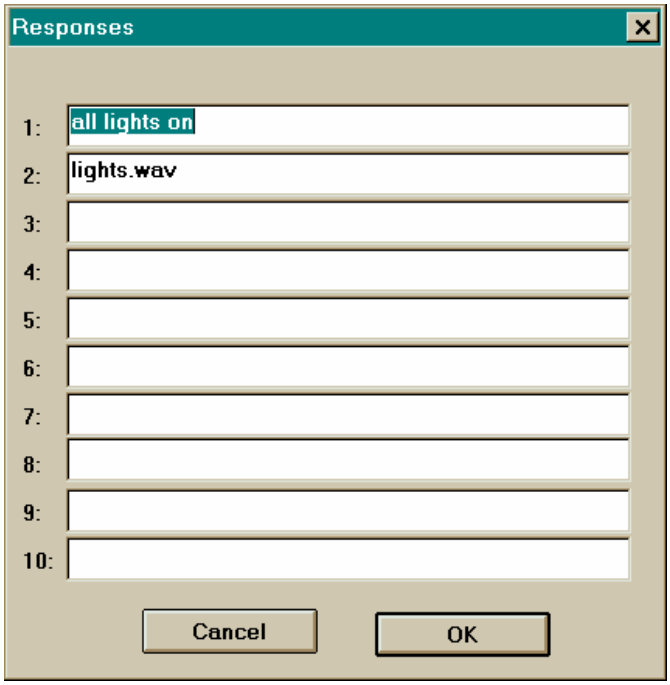
HomeVoice™ will play user-defined phrases, sound files (.wav) or text files (.txt) in response to the voice command being issued. HomeVoice™ allows for up to 10 responses for a given Spoken Phrase. When the spoken phrase is issued HomeVoice™ will select one of the responses specified at random. HomeVoice™ uses a 32-bit speech synthesizer to convert user-defined text input to speech output. HomeVoice™ will issue voice responses to commands if the responses are set up in the ‘Responses:’ field. Responses are specified in the Edit Phrase dialog window.



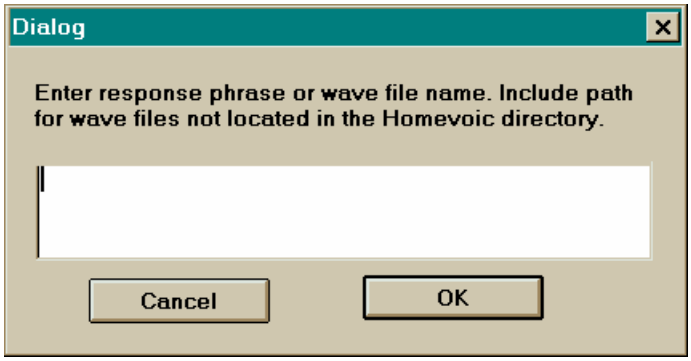
The ability to play wave files as well as voice responses (i.e., text to speech synthesis) is unique to HomeVoice™. This example shows how a combination of text to speech and wave files can be played.

HomeVoice™ allows for a total of 255 characters, for the total of all responses, in the response field. In general, responses to commands should be short, as voice commanding is unavailable while sound output is active. Responses are primarily for acknowledgment of command receipt by the controller. Longer responses will slow the ability to issue additional voice commands. For longer synthesized text responses a text file (.TXT) may be specified.

By clicking the REPONSES button you will receive the following dialog. You may enter or edit all ten responses for a command at one time using this dialog.



The response field can have up to ten different responses to the same command. The length of the wave file or the size of the text to speech response may cause the system to respond more slowly. Keep this in mind when adding responses. If you have one command with a long response and wonder why the system takes longer to receive the next command, try to shorten your responses.



You may also enter and edit responses one at a time by clicking on the radio button for the response. By clicking on the radio button you will see the following dialog.

1.6.7.1 How HomeVoice™ determines the response.

HomeVoice™ uses a two-tier algorithm to find responses when a command is issued. By proper application of this algorithm, a command may issue one or more responses.

HomeVoice™ searches first for a response for the spoken phrase issued. If it does not find a response for the spoken phrase it will then search for a response for the command issued. This allows for a spoken phrase with multiple commands attached to provide just one response or possibly a response for each command.

Example: (Multiple command phrase with one response)

Spoken Phrase: theater mode
Keystroke: “IRR=AMP POWER~IRR=VCR POWER~X10=A5 OFF~IRR=VCR PLAY”
Responses: Movie time!

In this example every time the command “theater mode” is issued the response will be “Movie time!”.

Example: (Multiple command phrase with multiple responses)

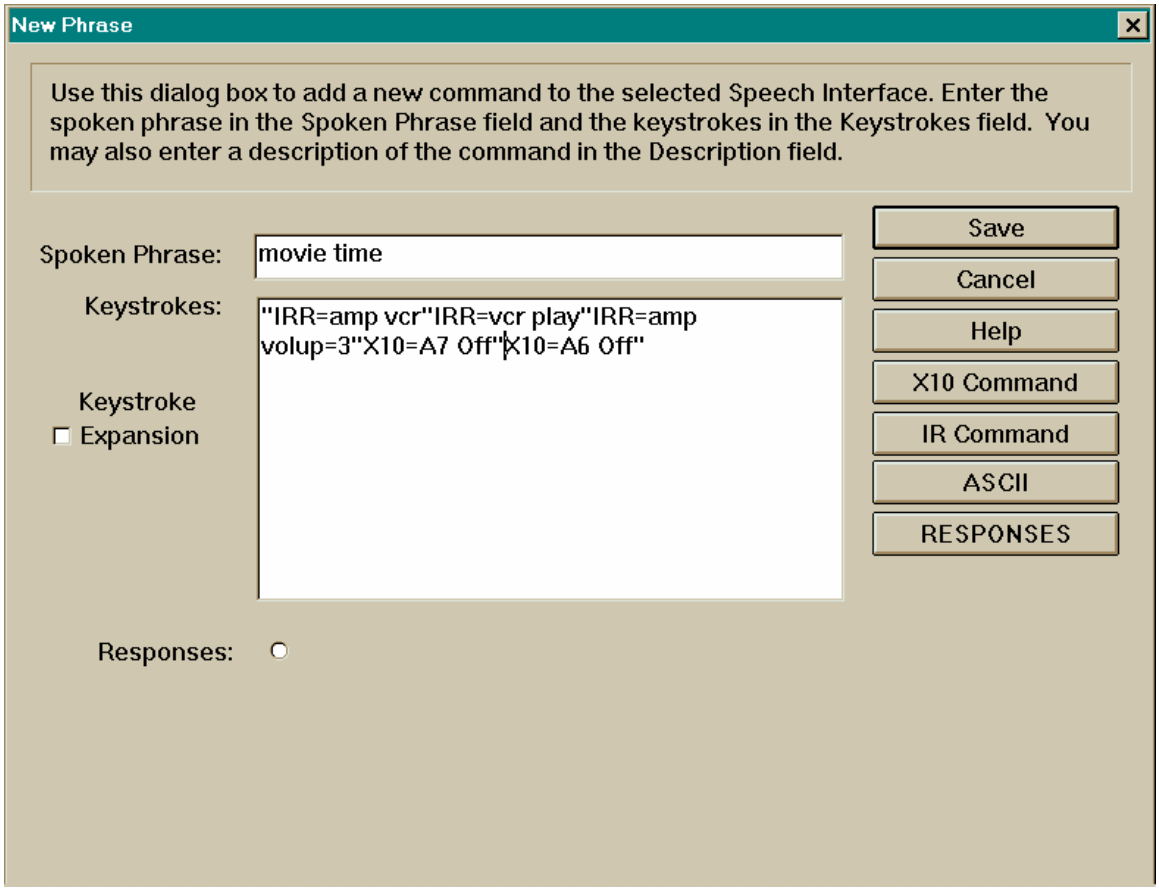
Spoken Phrase: theater mode
Keystroke: “IRR=AMP POWER~IRR=VCR POWER~X10=A5 OFF~IRR=VCR PLAY”

Spoken Phrase: Theater light off
Keystroke: “X10=A5 OFF”
Responses: light off

Spoken Phrase: amp power
Keystroke: “IRR=AMP POWER”
Responses: stereo on

In this example since there is no response for the spoken phrase “theater mode”, HomeVoice™ then looks for a match for each command issued. If a match is found then a response for that command is produced. So for this example, the response for the phrase “theater mode” would be “stereo on” followed by “light off”.

In this way it is possible to have multiple responses issued for a string of commands or to only have one response for a string of commands.



You can create any response that you would like the computer to answer with. Punctuation and grammatical symbols such as accents will change the way in which the response sounds. See Using the voice synthesizer capabilities of HomeVoice™ for details on this topic.

When a single response is issued for a string of multiple commands, the response will be issued prior to the commands being sent to the controller. When there is a response for each command or a single command, the response will be issued when the controller acknowledges receipt of the command.

The first time a response is issued when the system is brought up, there will be a slight delay.

A response is only verification that the controller received the command okay. It does not guarantee the controller carried out the command properly.

WAVE (.wav) sound files may be played in response to commands. You can mix WAVE files and normal responses.

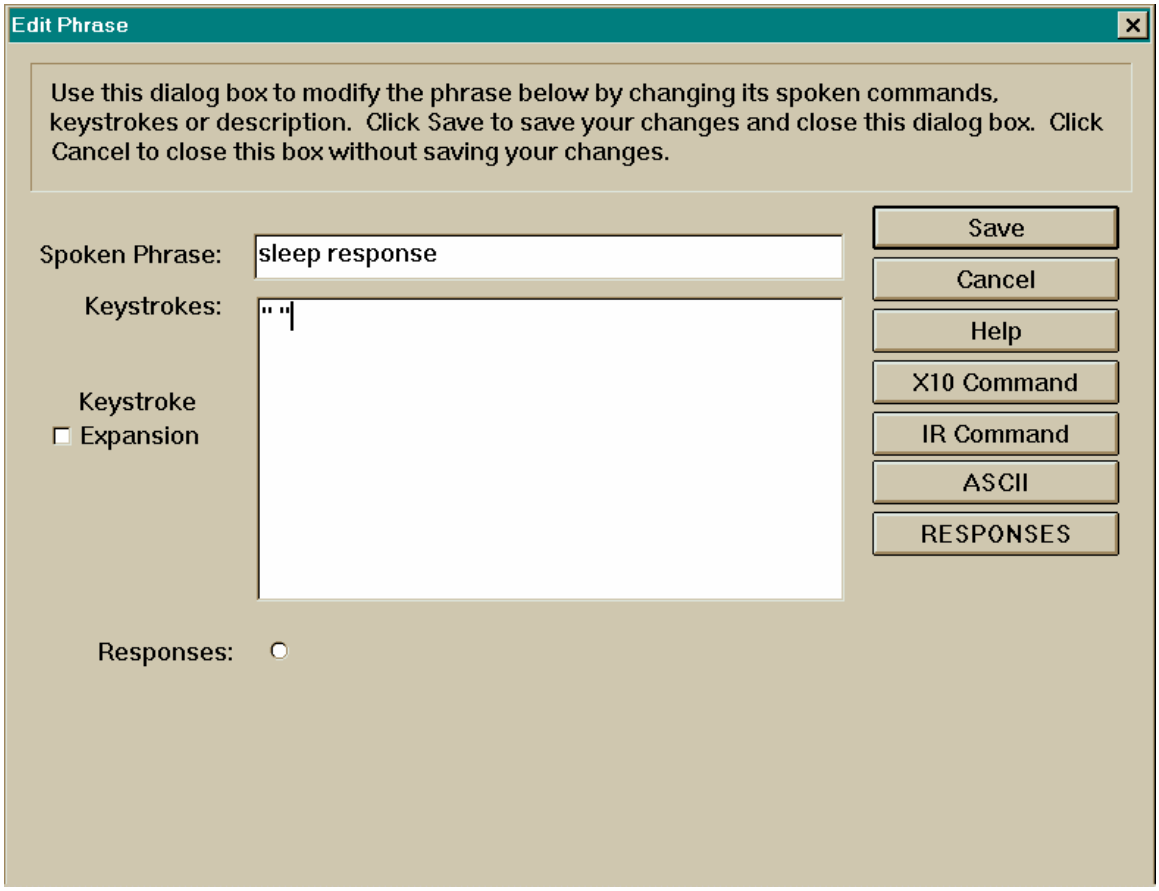
We recommend that you use whatever responses you wish. Have some fun with it. Please be aware that you don't need to have a voice response for every command. For example, if you have a command for turning on a light, you may not wish to have the computer reply with a voice response. The fact that the light turns on can be sufficient feedback to know your command has been obeyed. For commands that do not provide such overt action, we do recommend that you use a voice response phrase to confirm that the computer has issued the appropriate command. For example, if you were activating your burglar alarm, it would be reassuring to hear the response, "Alarm Active".

1.6.7.2 Sleep Mode Response (optional)

As mentioned earlier, HomeVoice™ has two modes of operation, sleep mode and awake or active mode. When changing from sleep mode to active or awake mode, a response to the wakeup command is specified for the wakeup command. In order to provide the user feedback when HomeVoice™ changes from awake or active mode to sleep mode through automatic time-out, a dummy command with responses is added to the users active command vocabulary.

The spoken phrase “sleep response” with two double quotes in the keystrokes field is used to allow users to program a system response when HomeVoice™ goes to sleep.

Use of a simple “ding” wave file or short phrase, is recommended so that the user knows when HomeVoice™ needs to be woken up again to issue voice commands from his or her command list.



1.6.8 Response Only Commands

If you want to speak a voice command with the only action being a response (i.e., no commands are issued to the controller), be sure to place “ ” (two double quotes) in the keystroke field of the spoken phrase. The two double quotes are the HomeVoice™ null command. Without the null

command, you will not receive a response. HomeVoice™ will only play a response if a command is successfully issued.

1.6.9 Command Verification Setup

In order to setup a command for verification the first character of the keystroke field must be an asterisk "*". This must proceed all other characters even the X10 or IRR or whatever is there, (e.g. "*X10=A1 ON"). When HomeVoice™ see this character is will prompt the user as specified in the "Verification Prompt" setup see below for details on changing the verification prompt. When prompted for verification HomeVoice™ will listen for a phrase from the "Verification" list before carrying out the command. If no verification is provided in 10 seconds or if anything other than a verification phrase is heard HomeVoice™ will ignore the command and go back to listening for a new command. While any command other than those contained in the "Verification" list, will terminate the command execution, the list "Negative_Verification" is provided and used for telling HomeVoice™ not to execute the command. See "List" later in this document and the "Listen Users Guide" for more details on dealing with lists.

1.6.10 Command Authentication

In addition to command verification HomeVoice™ now provides the ability to password protect commands. Password protection is to allow a minor level of security to restrict the use of certain commands. Each user may setup their password via the menu options described below. In order to setup a command for password authentication, you must set it up for verification as described above. With the addition of one more character prior to the command HomeVoice™ will prompt for the password after the verification prompt has been approved. By adding the "at sign" "@" after the asterisk "*" a command will prompt for a password. If the password does not match that set by the user the command will not be executed. (e.g. "*@X10=A1 ON"). During the password recognition process HomeVoice™ will tighten down the recognition algorithm as much as possible to do what it can to make spoofing as difficult as it can. DO NOT CONFUSE THIS WITH A VOICE PRINT!! It can be spoofed and should not be used for disarming security systems or other vital systems.

The password is passed to HomeVoice™ in the keystroke field. A list is provided "Password" which is an example of what can be setup for password usage. It is a four-digit number using the digits 0-9. A command can be setup such that the spoke phrase is "The password is "%Password"" and the keystroke field is just "%Password". In this way the user can respond to the password prompt "The password is 1234" and then if 1234 matches the password set by the user the command will be executed.

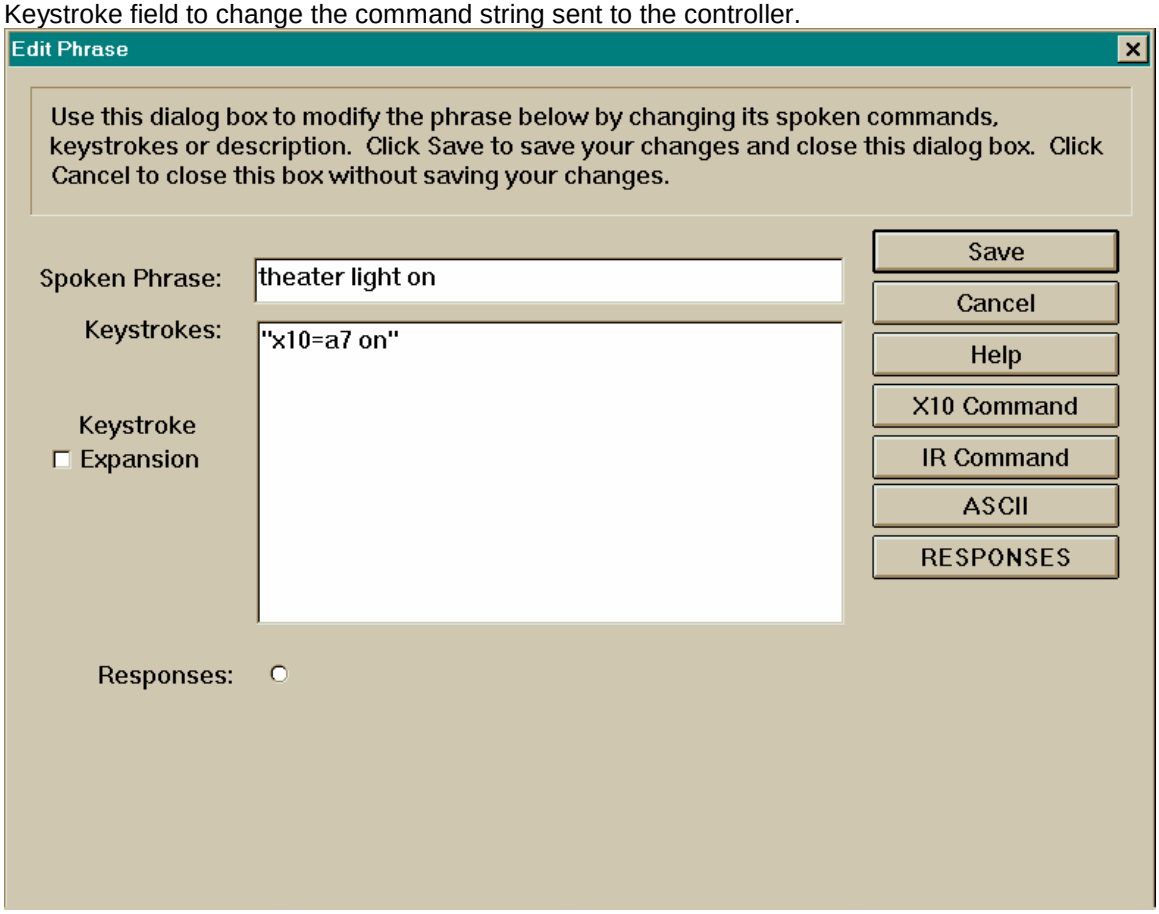
1.7 How to Edit Existing Commands

(This section is valid only for Windows 95 and 98 all other operating systems refer to the following section 1.8)

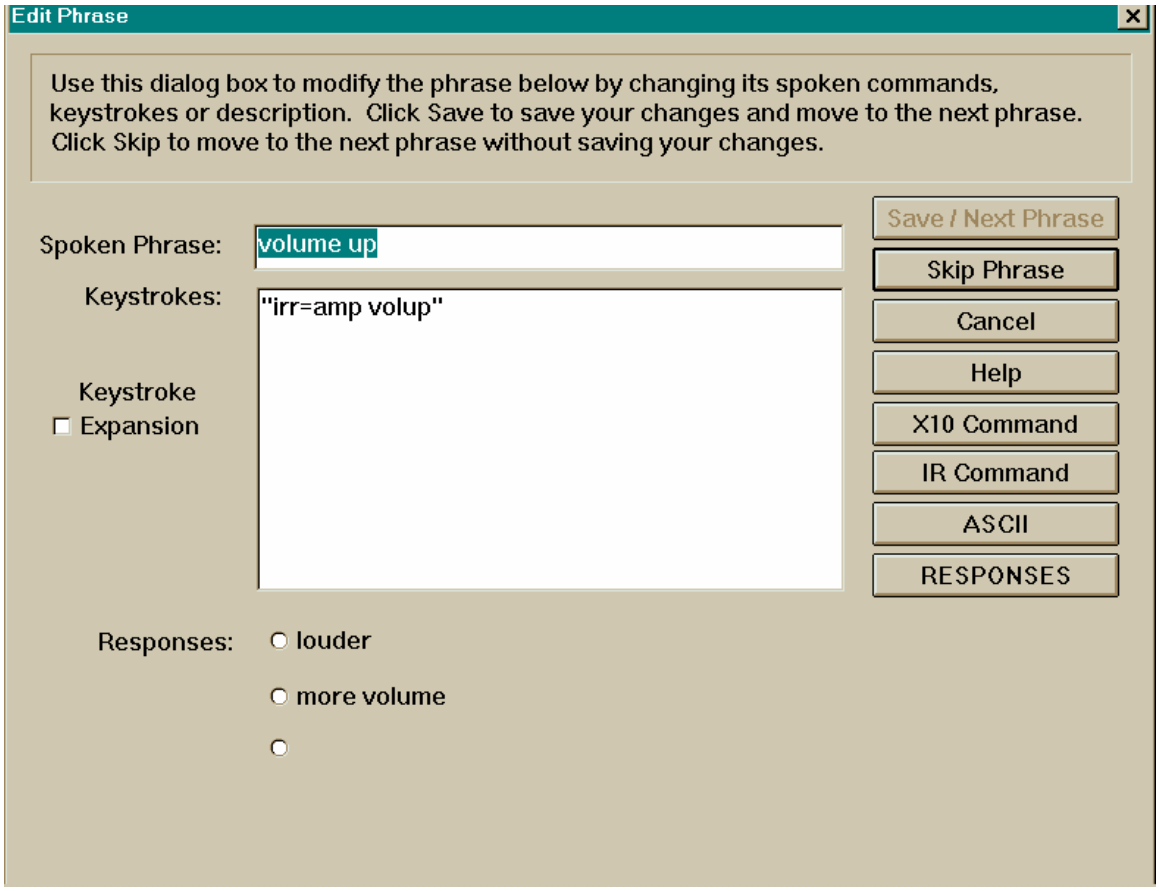
To edit or tailor an existing command, **highlight** the command in the “Verbex Listen” window. From the **Edit** menu, select **Edit Selected Phrases**. Creating or editing commands can also be accomplished through the Listen Command Editor (LCE). This method is recommended if you are adding, editing, or deleting more than one or two commands. See Section 6.8 for more information.

To highlight more than one command you can highlight the command and hold down the right mouse. Next, keeping the right mouse button held down, drag the mouse down the screen and stop when all commands to be edited have been selected. If the commands that need to be edited aren't in sequential order, then simply hold down the control, (Ctrl) key while selecting commands. Proceed to the Edit menu button and choose **Edit Selected Phrases**. The **Edit phrase** window will appear, by default the keystroke expansion field will be unchecked. This field allows for keyboard strokes to be entered directly in the keystroke field. Instead of a space appearing between commands the actual command <SPACE> would appear. HomeVoice™ can accept this type of formatting but in the case of multiple commands for one spoken phrase you may run out of room to put the commands in the keystroke field.

The "**Edit Phrase**" window will appear. Edit the Spoken Phrase if desired and/or change the Keystroke field to change the command string sent to the controller.



The previous example is an X-10 command. The following example shows an Infrared command needing to be edited. Follow the same procedures, as above but instead of X-10 command string syntax, you must use the appropriate syntax for an Infrared command.



When your changes are complete, click **Save**. The system will rebuild the voice files and a window will appear that shows the progress of the rebuild process.

When the rebuild is complete HomeVoice™ is again ready for use.

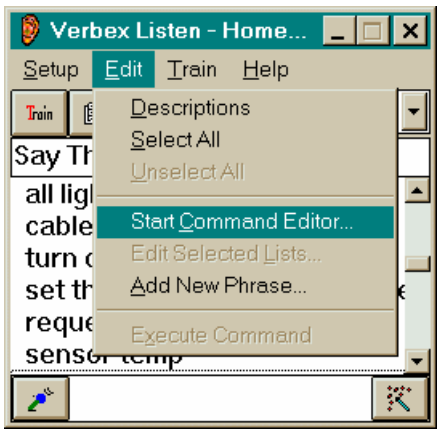
Note: Use only lower case when entering the voice command text in the **Spoken Phrase** area. The “Verbex Listen” voice recognition engine, unlike HomeVoice™ in general, is case sensitive and prefers to have lower case commands.

Note: There is a known bug that users need to be aware of when building new commands and editing existing commands. When the editing changes are completed and rebuilt, sometimes the Verbex window is not refreshed properly. There are two work arounds for this problem, click the microphone icon on the recognized text bar twice to toggle the microphone off and then on. The other method is by issuing the “Stop Listening” voice command and putting HomeVoice into sleep mode. When you wake it up with your wakeup command, the Verbex window should be refreshed with the changes you made. Another method is to click on the microphone button on

the recognized text bar turning the microphone off and then back on again. This will refresh the window exposing the commands.

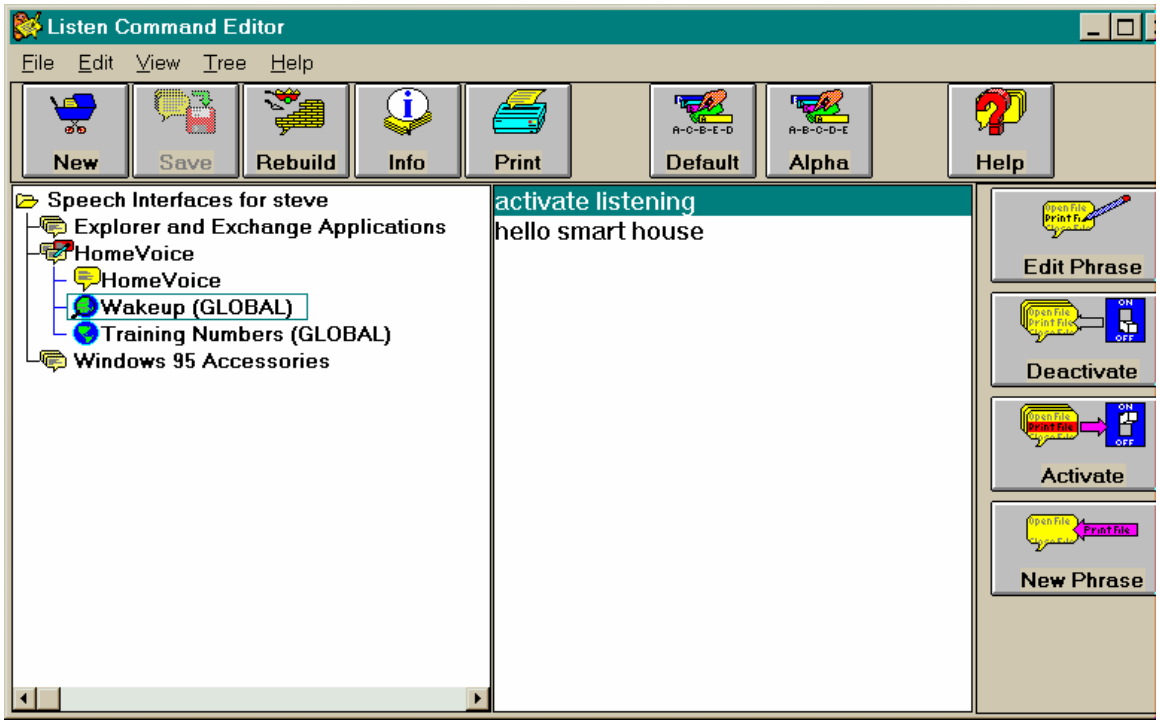
1.8 Adding or editing Multiple Commands

The software allows a process to make multiple changes or additions to your voice commands in the “Listen” engine. In the “Verbex Listen” window, select **Start Command Editor** from the **Edit** menu.



The limit to multiple command strings on any one spoken phrase command is ten total X10, Infrared and/or ASCII (or a combination thereof).

This will bring up a “Listen Command Editor” dialog box.

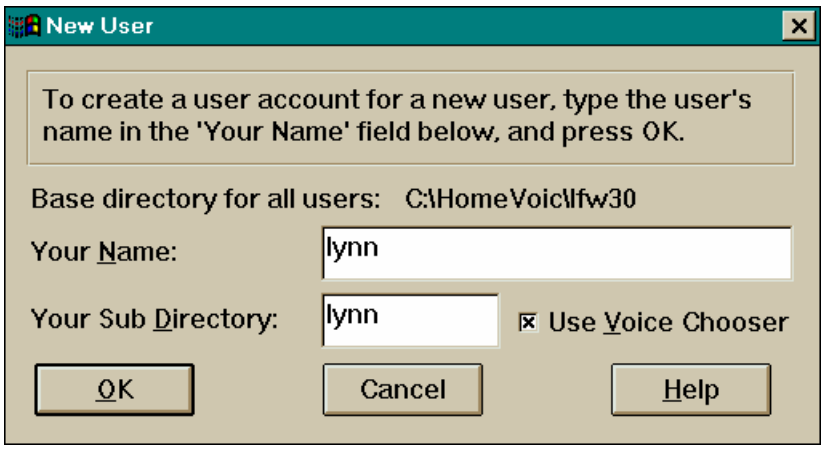


At this point you can edit Existing Phrases or add New Phrases. To add a new phrase, click on the **New Phrase button**. To edit a phrase, select the phrase and click on the **Edit Phrase**

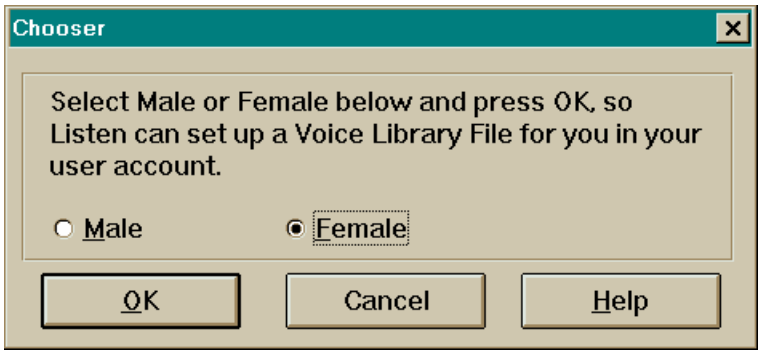
button. Both Buttons will bring up the window that will allow you to add/edit spoken phrase voice commands as well as add/edit the keystroke field. See How to Edit Existing Commands for the screen details involved with adding or editing a specific command.

1.9 Adding New Users

To add new users, chose the **Setup** drop-down menu in the 'Verbex Listen' window. Then select **New User**.



Do not change the sub directory field as it is directly related to your user ID. Both the response and the Listen™ library files reference this Sub Directory. For proper operation, we recommend this field remains unchanged.



When prompted, **select** your voice gender. Males under 14 should select female. Adult males have deeper base tones than females while the female voice is softer and not as deep. Use of this selection is correct for a young male's voice recognition since their voice has not developed yet and is still considered to be soft. Click on **OK** and continue.

If prompted, click **Yes** to sample the noise environment. The sample noise option will allow HomeVoice™ to measure background noise to allow for operation in noisy environments. The software will measure the relative ambient background noise and then listen for identified commands against that background. This completes the new user setup.

1.9.1 Copying User Files to New Users

When adding new users, it is convenient to copy an existing user's commands to the new user. This way, you do not have to rebuild every command for every new user to work with the automation setup in your home. You can also change the base set of commands every new user gets when a new user is setup.

1.9.1.1 To copy the current users' commands to a new user.

Create the new user as described above, then from the Listen Setup menu change users back to the user with the commands you want to copy. Then from the Start Menu start Microsoft Windows Explorer. Using Windows Explorer copy the following files from the current users directory to the new users directory.

Homevo.grm
Homevo.rec
Global95.inc

From: \Homevoic\LFW40\<current user directory>
To: \Homevoic\LFW40\<new user directory>

Where the actual names are substituted for, <current user directory> and <new user directory>.

When completed, the new user's voice commands will be the same as the current user whose voice commands were copied. From the Setup menu Listen window select Change User and switch to the new user. Start the command editor, it may prompt you to rebuild the HomeVoice™ Speech Interface, if so proceed with the rebuild. Verify the commands are those desired and make any modifications specific for the new user.

1.9.1.2 Changing the Base Commands for New Users

To change the default commands all new users get when they are created from the defaults shipped with the software. Follow the following procedure:

When you have your base set of commands completed, from the Start Menu start Microsoft Windows Explorer. Using Windows Explorer copy the following files from the user directory with the base command set to the LFW40 directory and make changes to the filenames as shown.

Current Name	New Name
Homevo.grm	Homevo.crm
Homevo.rec	Homevo.cec
Global95.inc	Global95.cnc

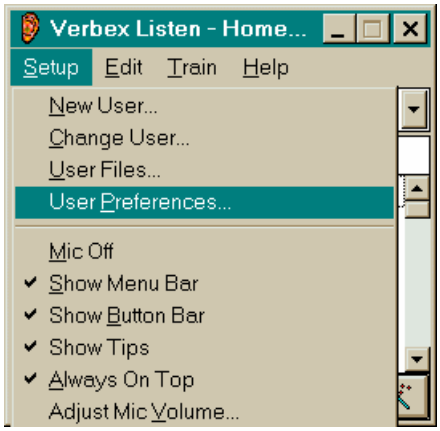
From: \Homevoic\LFW40\<base commands user directory>
To: \Homevoic\LFW40

Where the actual names are substituted for, <base commands user directory>.

When completed, all new users created will have the base voice commands to start with as those which were copied.

The new user can use the adding and editing processes described in How to Edit Existing Commands to change and personalize these copied commands.

1.10 User Preferences - Timeout Value and Sample Noise

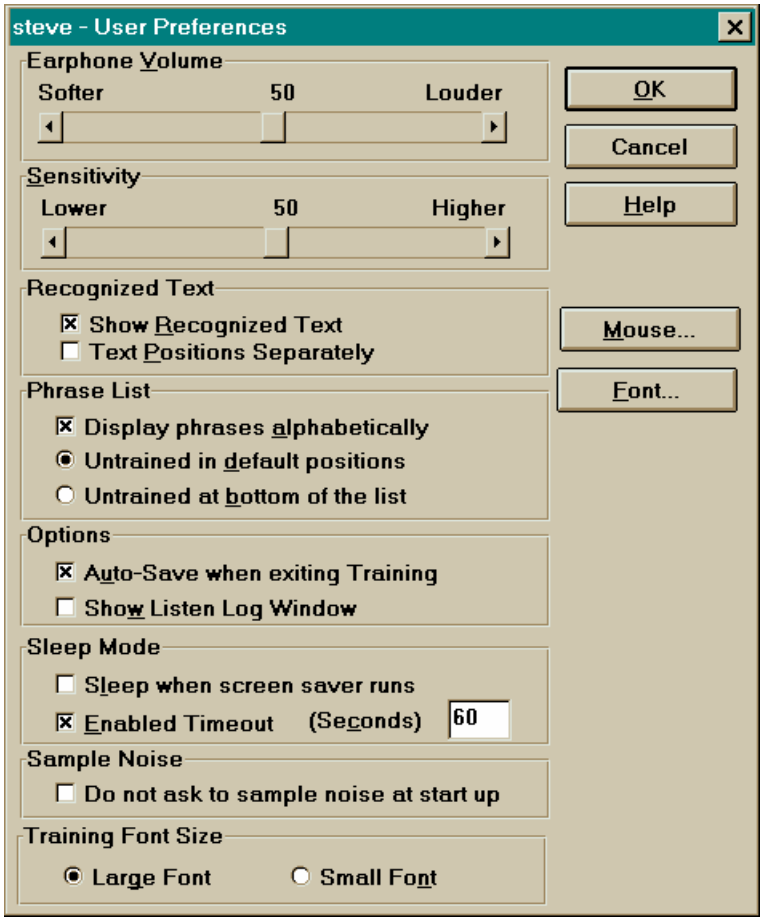


To change user preferences, chose the **Setup** drop-down menu in the 'Verbex Listen' window. Then select **User Preferences**.

The Timeout Value is the duration of time that HomeVoice™ will remain awake listening for a valid voice command phrase. The initial timeout value is either set as a program default or in the HomeVoice™ installation process. The timeout value can be changed in the **Sleep Mode** box. Change the value in the **Enable Timeout** box.

Note: For proper synchronization between HomeVoice™ and Listen the timeout value should be set through the HomeVoice™ **options** menu.

To turn off the request to sample the ambient background noise when HomeVoice™ is started, **de-select** the check-box on the **Sample Noise** option.



1.11 Wakeup Command Syntax

The command syntax for the wakeup commands is a specific string. For each wakeup voice command phrase, the following string must be input in the keystroke box when creating the command:

"\200\004\020\021\021\020"

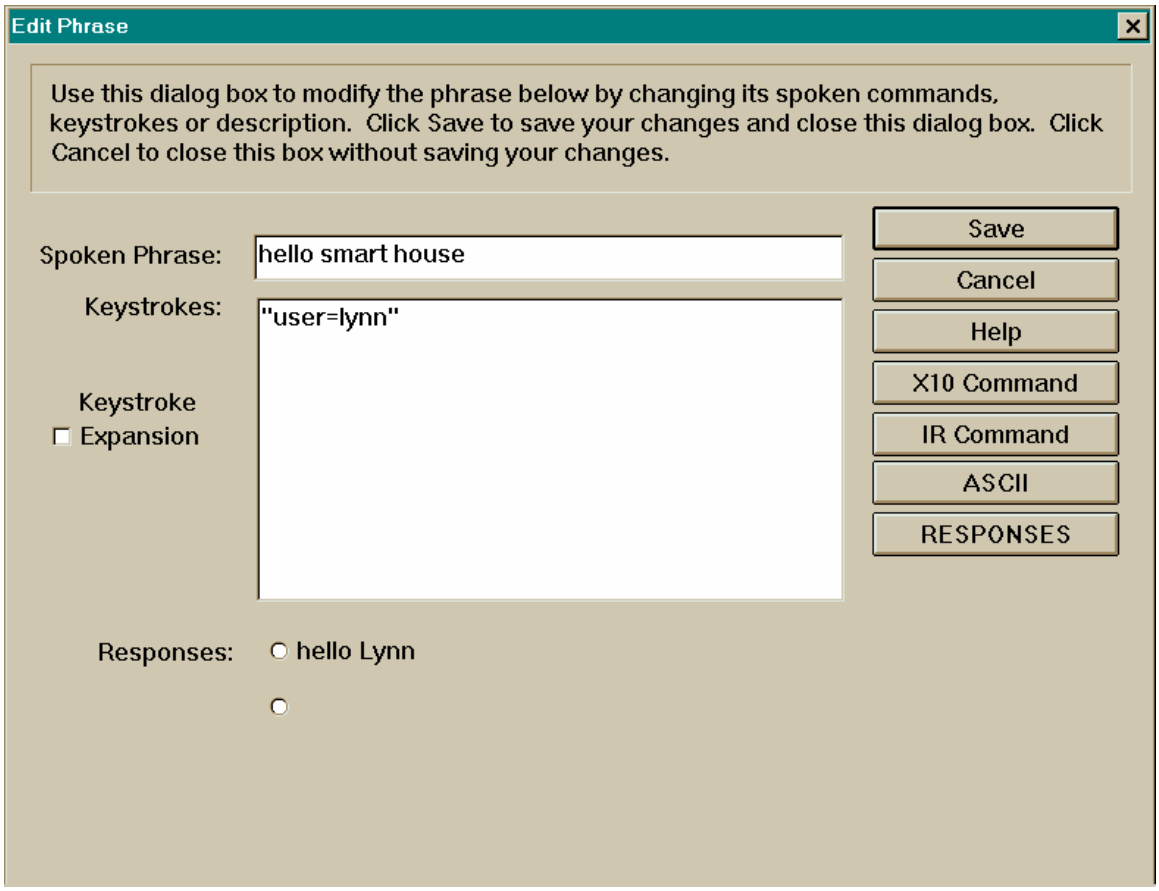
The voice recognition engine software requires this specific content. Further explanation of the coding of this string is irrelevant to operation of HomeVoice™ and is not provided to users. Failure to use this string will result in unreliable operation.

1.12 Changing Users via Voice Command

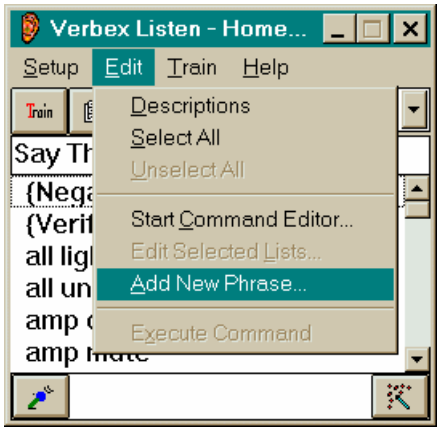
To change the user via voice command in HomeVoice™, you must use the following command syntax:

user=<username>

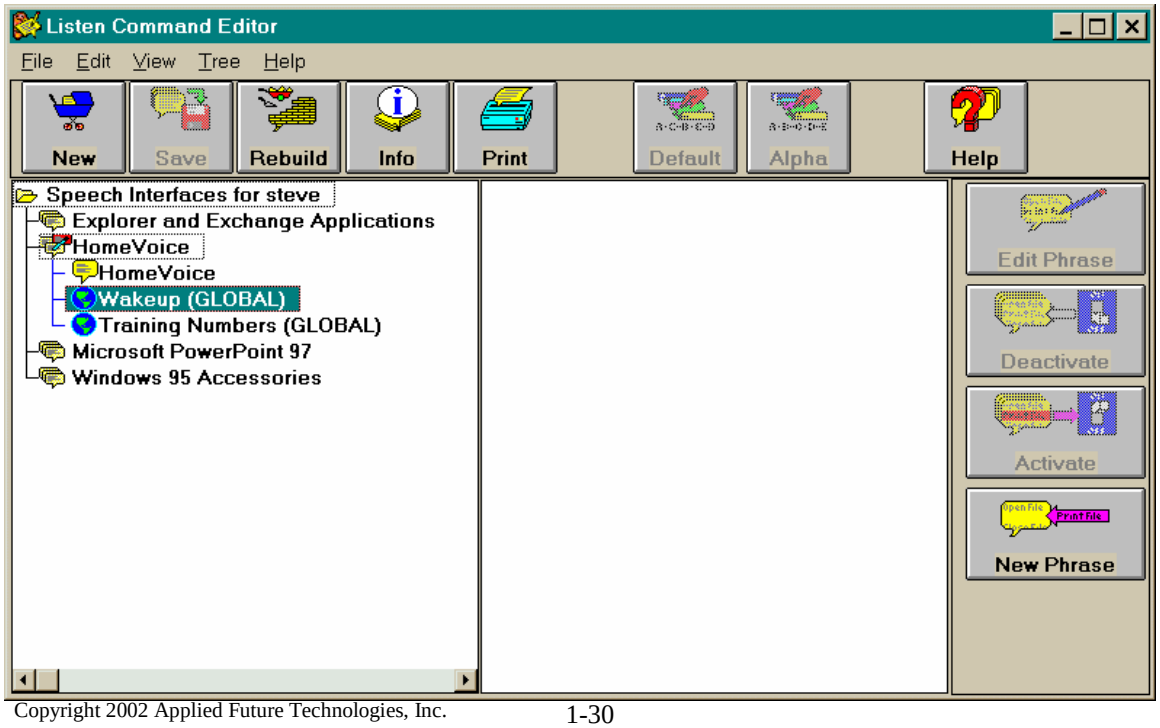
The reason for changing users via voice is to allow HomeVoice™ to switch from one user's set of commands to another user's set of commands.



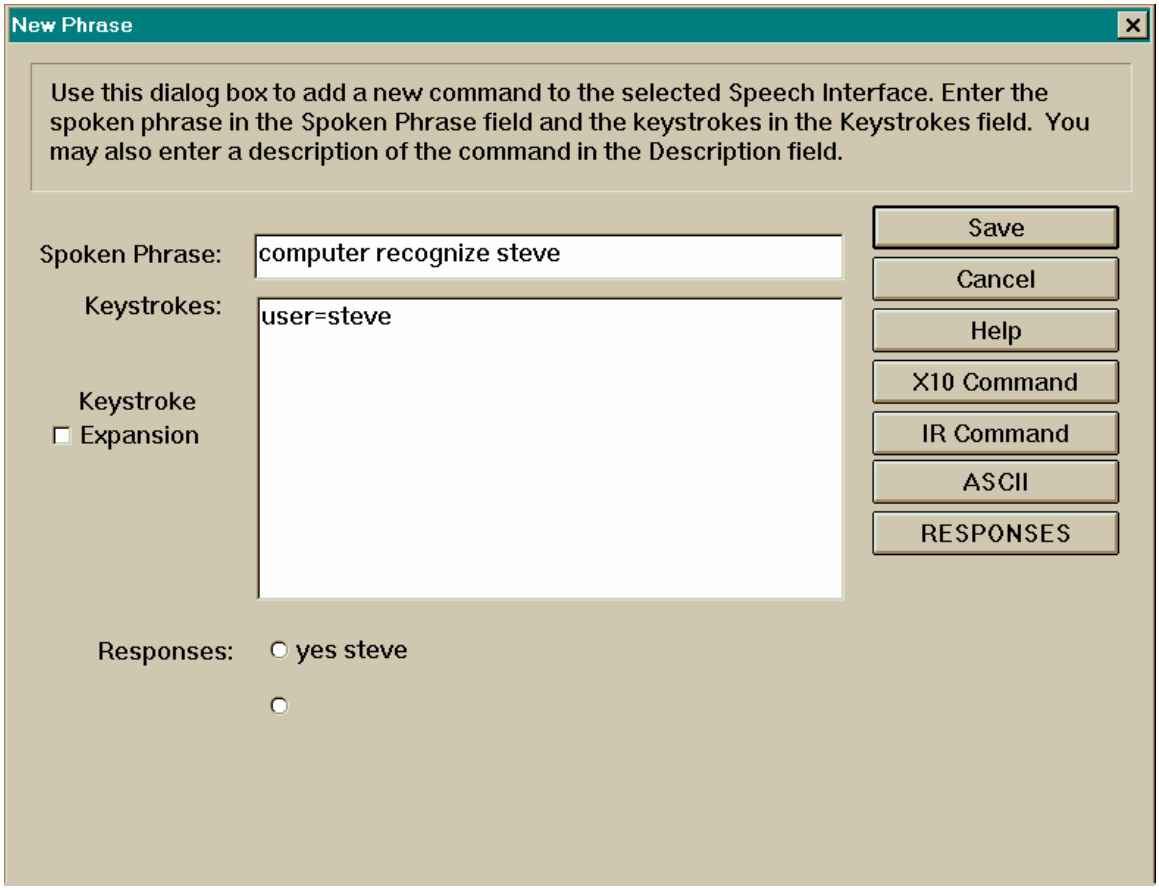
This command is entered in the keystroke field when entering commands in the **Listen Command Editor**. In general, these commands should be entered in the "Wakeup" grammar so that you may switch from one user's set of commands to another. In the above example, Lynn is placing a command in another user's wakeup command list that will allow HomeVoice™ to switch to Lynn's set of commands. This can be done when "Listen" is asleep by selecting **Add New Phrase** under the **Edit** menu in the "Listen" window. After making the change, Lynn should go into the other user's wakeup command list and train his switching command in his voice (using **train selected phrase**). The other user should place a similar voice switch command in Lynn's wakeup command list to allow him to switch to his list of commands if Lynn's user is active.



Another option is choosing **Listen Command Editor** from the "Listen" window **Edit** menu and then selecting the **Wakeup** grammar by double clicking on it in the left side of the dialog displayed.



In the example below the current user is placing a command in his wakeup grammar to change to user “Steve”.



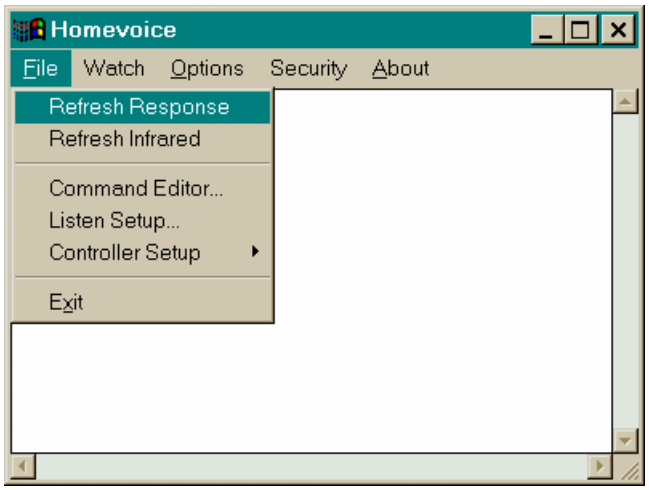
Then click **Save** and the voice files rebuilt. After saving, train the command to the appropriate user voice. In this example, Steve would voice train the command in the current user’s voice file. When the command "computer recognize steve" is recognized by HomeVoice™, it will switch to user “steve” and load his commands and grammar files. In this way HomeVoice™, can be configured for use by multiple users.

For switching users to work properly, each user should also turn off the "sample noise on startup" option. This is done by, selecting the **User Preferences** option from the **Setup** menu on the “Verbex Listen” window User Preferences. HomeVoice™ will automatically sample the noise whenever switching users by voice command if this option is not disabled.

This process needs to be done for all users of the system if you will be switching any users by voice.

You may also change users by clicking on the user list box found in the in the “Verbex Listen” window.

If you change users in this manner you must select **Refresh Response** from the **File** menu in the "HomeVoice™" window to load the responses for the new user.



This refresh response is done automatically when switching by voice command.

1.13 HomeVoice™ Menu Options

The following sections discuss the HomeVoice™ pull-down menu functions.

1.13.1 File Menu

The following list discusses options under the **File** Menu in the HomeVoice™ Window:

Refresh Response

Reloads the responses for the current user into memory. Use this option after changing your responses to update your responses in HomeVoice™ memory.

Refresh Infrared

Reloads the Infrared database descriptions into memory. Use this option after changing your Infrared database by adding commands or changing descriptions in the database.

Controller Setup >

This option is for adding or changing controller configurations.

Exit

Exits the HomeVoice™ application.

1.13.2 Watch Menu

The below list discusses options under the **File** Menu in the HomeVoice™ Window. The options under the Watch menu are used for debugging problems in grammars and commands.

Command

By checking the Command option HomeVoice™ will display the recognized phrase and the keystroke field in the HomeVoice™ window, as well as some high-level communication information.

Advanced

By checking this option HomeVoice™ will display the commands being sent and received on the serial interface to the HomeVoice™ window, in both actual and hexadecimal formats.

Show Settings

Show the current settings in the HomeVoi2.ini file

Display IR *(Only with learning IR capable controllers)*

This option will display the values for the IR database that it has loaded in memory.

Clear

The Clear command will clear all text from the HomeVoice™ window. This command does not clear the current settings.

1.13.3 Options Menu

The following discusses options under the **Option** Menu in the HomeVoice™ Window:

Stop Voice

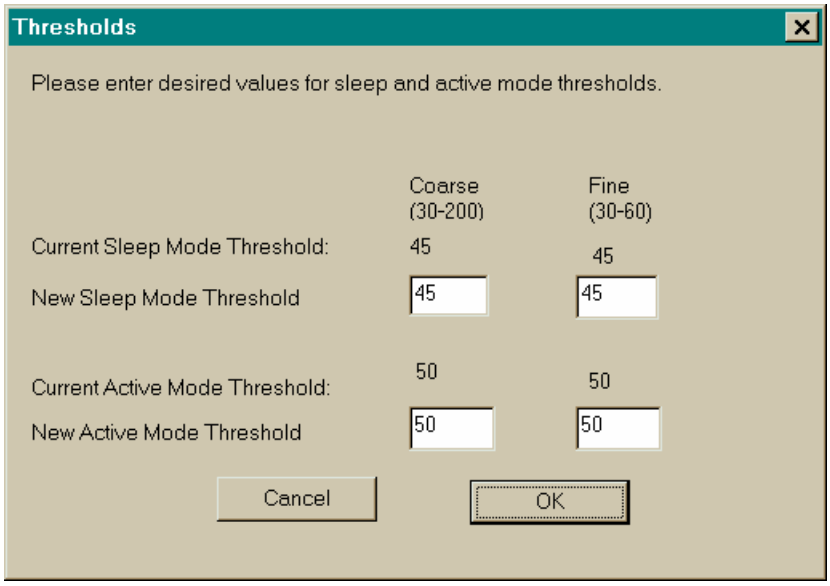
This sends a signal to HomeVoice to terminate the speech synthesizer. It is included for terminating the reading of text files that can get rather lengthy. It can be difficult to get the menu to come up when the speech synthesizer is active. It is possible with two deliberate mouse clicks to "get through" the Windows cycles and not actually see the menu. This is way this holds the first position in the menu. You can click on the Option menu and then move the mouse down to where the "Stop Voice" menu will appear and click again. These actions will be queued to the operating system and usually get though between synthesized segments.

Note: This can also be accomplished via X10 when a controller that supports two way X10 with HomeVoice. See X10 Event Processing later in the documentation.

Thresholds

HomeVoice™ allows for making adjustments in the recognition algorithms used by HomeVoice™. **Caution should be exercised in changing these parameters**. It is often more productive to choose words with more syllables to improve accuracy and reduce misfires. Adjustments to the recognition algorithm may be made to the HomeVoice™ sleep mode as well as the active mode. In most cases the values set are adequate. However in certain situations it may be desirable to make changes to improve recognition accuracy. These parameters allow the user to tighten or loosen, the two main parameters, which determine how tightly the recognition engine forces a pattern match for the words and phrases heard. The lower the parameters value the tighter the recognition algorithm.

As a rule of thumb when adjusting these parameters the coarse adjustments can be done ‘5’ at a time while the fine adjustments should be done ‘1’ or ‘2’ at a time. These parameter changes will take effect on closing the dialog. Make adjustments until the proper settings are determined.



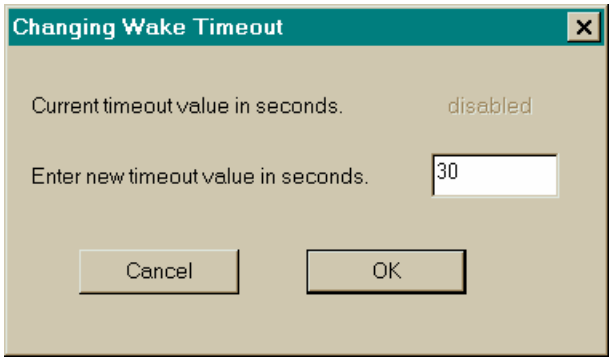
Note: These parameters are system wide so that changing them for one user will change them for all users.

Noise Sampling

When changing users via voice command, i.e. “user=steve”, HomeVoice™ will by default sample noise after changing users. This may be disabled by selecting **Sample Noise** Menu and unchecking **“When Changing Users**” option.

Timeout Value

The Timeout value can be set from the HomeVoice™ **Options** menu, by selecting the **Timeout Value** option. Specifying a value of zero will disable HomeVoice™ from going to sleep. When choosing a value for the timeout value the user should consider the length of responses they have set for their commands. Setting a short timeout with long responses means the user will have to keep waking up HomeVoice™ to issue multiple voice commands. Each user may set their own desired timeout values. The timeout values starts at the end of the last recognized phrase received, ***not*** *at the end of the last response issued*.



Verification Prompt…

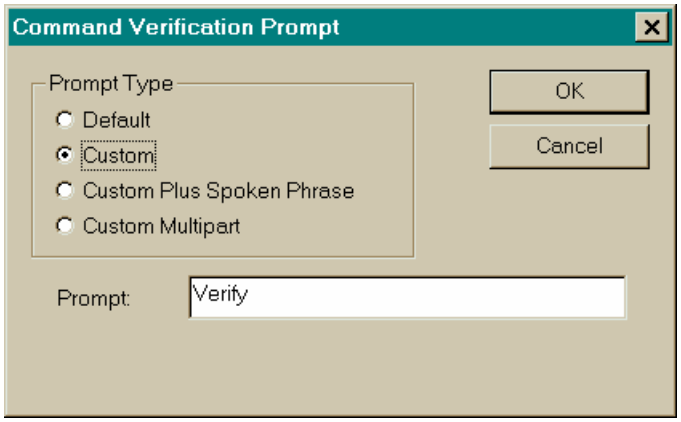
The Verification Prompt dialog is for setting how the system will respond when it receives a command requiring verification before it can be executed. When HomeVoice™ receives a command with an asterisk "*" as the first characters of the keystroke field it will issue a response prompting for verification to execute the command. The default response prompt is:

"I heard the command, <recognized command>, shall I execute?"

Where <recognized command> is the actual phrase recognized by the Verbex Listen engine.

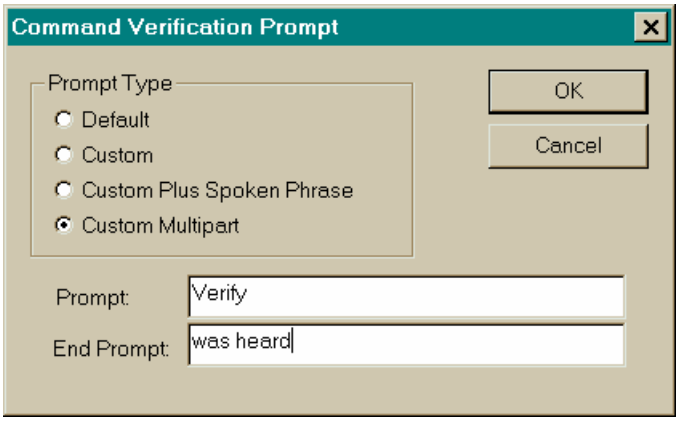
To customize this response to your own personal tastes select the Verification Prompt… menu. The dialog below will be displayed.

If you wish a completely custom response, which does not contain the spoken phrase, select custom and input your prompt.



If you would like a prompt which appends the phrase heard to the end of your custom prompt Select "Custom Plus Spoken Phrase". If you want to get more elaborate you may select "Custom Multipart". This will display the dialog below. In the "Prompt" field enter the first part of the verification prompt. In the "End Prompt" field enter the last portion of the prompt. The prompt for verification in this setting is:

<Prompt>, <Spoken Phrase>, <End Prompt>

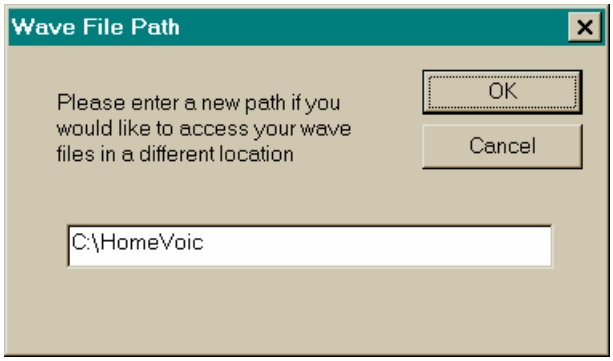


So in this example if the phrase "Arm security night mode" was heard and the first character of the keystroke field was an asterisk "*". The prompt, from HomeVoice™ would be:

"Verify, arm security night mode, was heard."

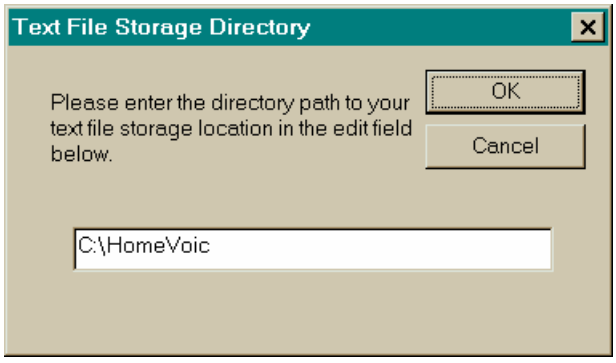
Wave File Path…

The Wave File Path… dialog is shown below. This dialog allows you to provide a directory location where HomeVoice™ will look for wave files, which are specified as responses. The default is the HomeVoice™ installation directory.



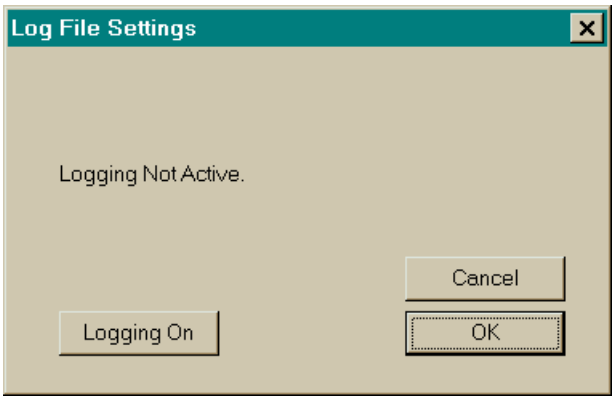
Text File Path…

The Text File Path… dialog is shown below. This dialog allows you to provide a directory location where HomeVoice™ will look for text files, which are specified as responses. The default is the HomeVoice™ installation directory.

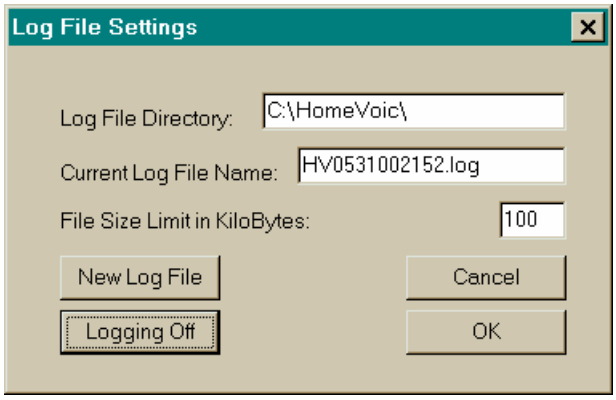


Command Logging…

Command logging is provided primarily as a method for problem isolation. By default command logging is disabled so when selecting command logging for the first time the dialog below will be displayed.



By clicking on the "Logging On" button the dialog below will be displayed.



The "Log File Directory" specifies the location where log files are to be created and stored. The "Current Log File Name" shows the name the log file will have unless you change it. The default log file is the current data and time. The "File Size Limit in Kilobytes" is the setting to tell HomeVoice when it should create a new file and start logging to the new file.

The "New Log File" will force creation of a new log file.

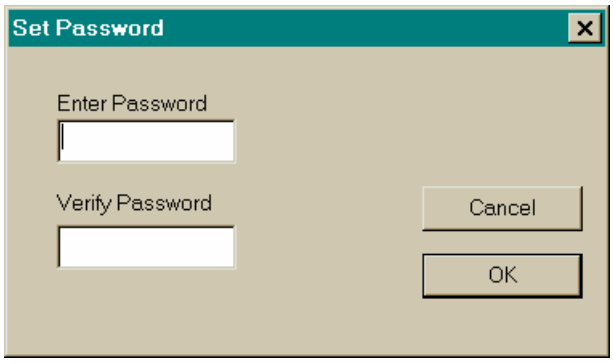
The "Logging Off" button will turn logging off.

HomeVoicePC

Selecting this option allows Listen for Windows to switch speech interfaces and control different applications. Applications may be switched to and started via voice commands to the PC. Speech interfaces for applications are created using the Listen Command Editor.

1.13.4 Security Menu

Set Password… brings up the following dialog.



Enter your password in the first window and then verify the password in the second edit box. Click on OK when done.

Change Password… brings up a dialog to change your password after it has been set. You must know your current password in order to change your password. Once you have input your current password you will receive a dialog for changing your password.

1.13.5 About Menu

The following discusses option under the **About Menu** in the HomeVoice™ Window:

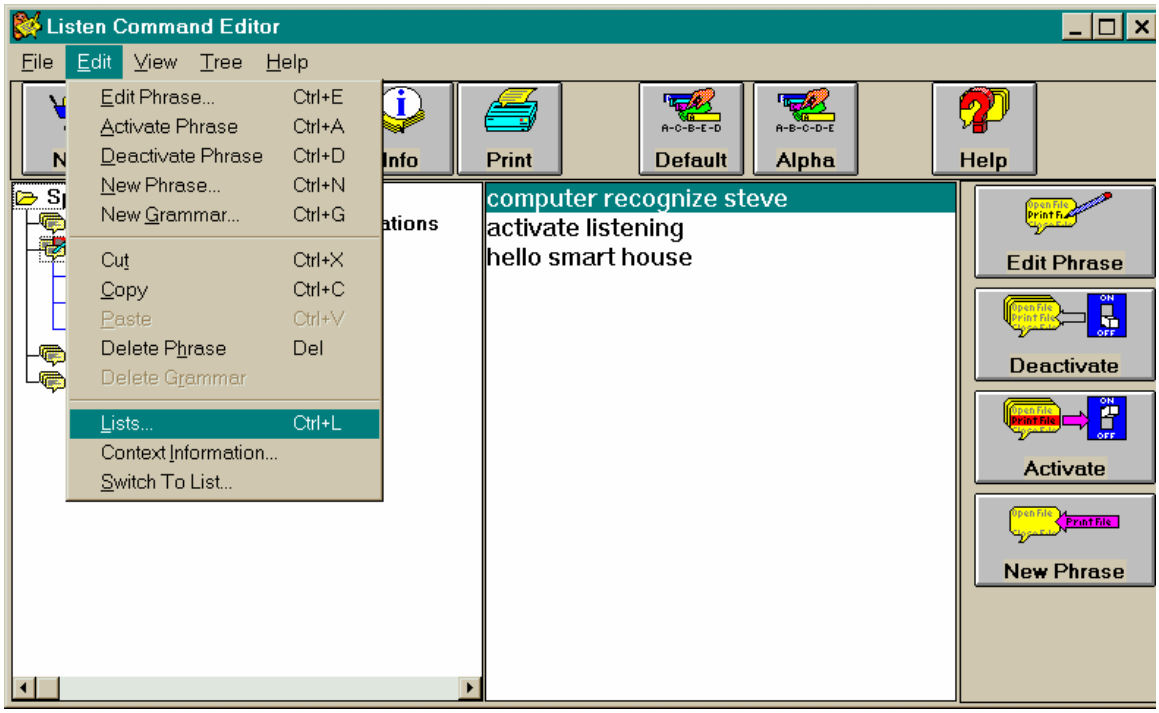
About HomeVoice…

Displays information about the current version of HomeVoice™.

2 Miscellaneous

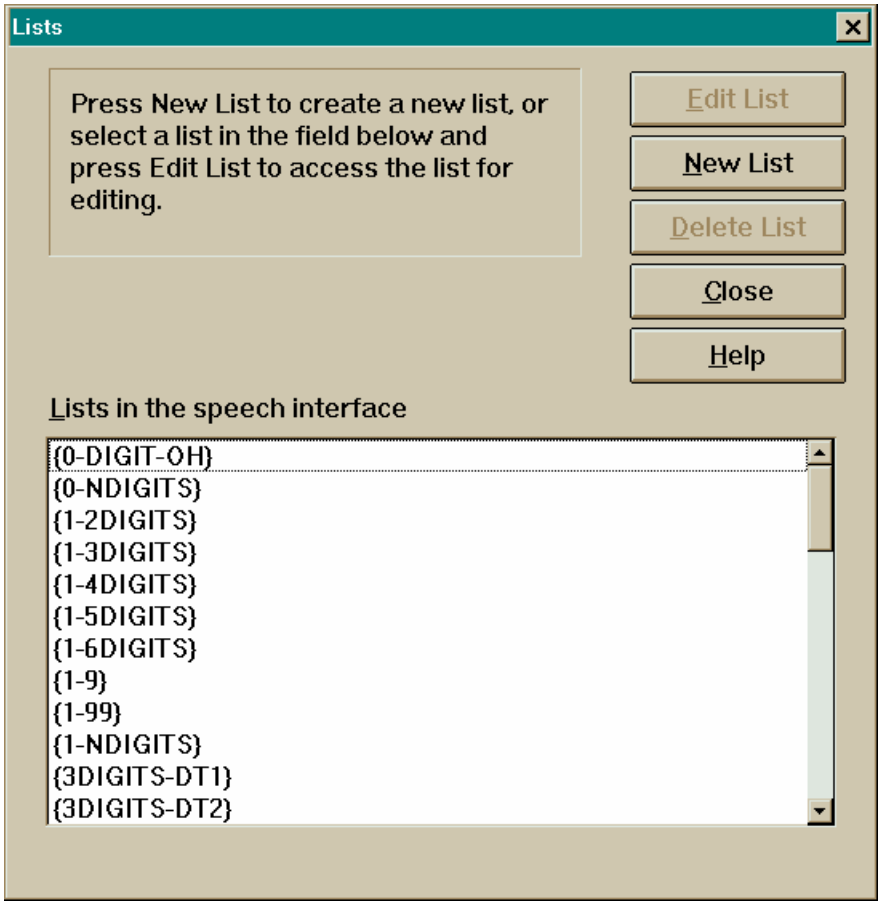
2.1 Using LISTS in HomeVoice™

The Listen Command Editor (LCE) is used to input multiple commands as well as create speech interfaces for other programs. In addition to these options, the LCE can also be used to create or edit lists. Under the LCE window, select **Lists...** from the **Edit** menu.

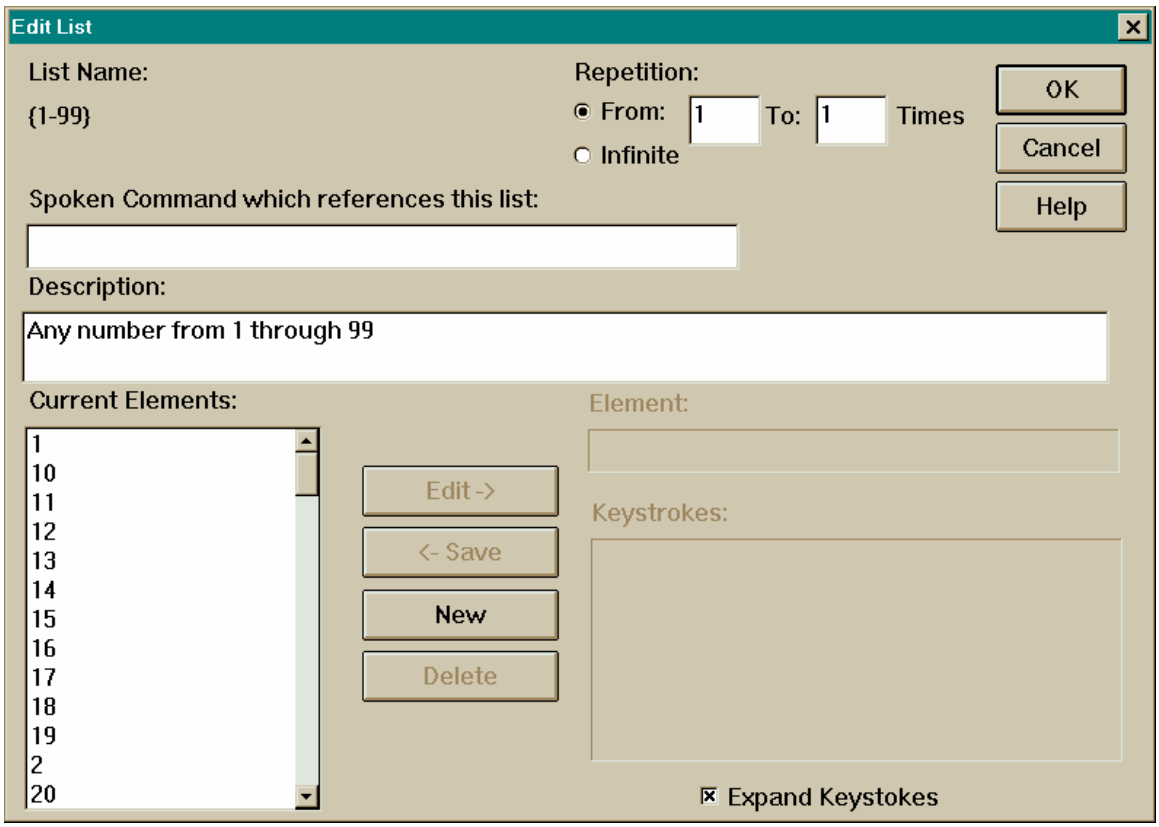


Lists are used to create various components of the speech interface. Instead of using a single command for each channel, a list of channels can be created.

Note: Lists must be consistent within a users grammar. You can not have two lists with different names which have the same elements but which have different keystroke mappings. In this situation there is confusion about which keystroke to send and the results are unpredictable.



This channel list would range from 1 - 9 and would cover all channels from 1 - 99.



In addition to number lists, word lists can also be used for better recognition in high noise environments.

2.2 Timing Issues

HomeVoice™ synchronizes sending commands based on the responses from the controllers. HomeVoice™ provides a "PAUSE" command for introducing delays between commands sent to the controller. If you are having problems with timing add a pause command between the commands you are having problems with. If you do not want to use a pause command you may try restructuring the command sent to the controller. In general, this may only occur when sending a string of commands to the controllers. It may be necessary to intermix X-10 and Infrared commands to adjust the timing performance of the command string because X-10 commands will, in general, take longer than Infrared. Another option is to use responses for the individual commands to adjust the timing by slowing things down.

2.3 HomeVoi2.ini File

Overview

HomeVoice™ 2.3 uses a new initialization file "HomeVoi2.ini". The new initialization file has multiple sections depending on the number of controllers in use. With HomeVoice™ 2.3 we have added the ability to use multiple controllers in order to allow greater flexibility and design capabilities. With HomeVoice™ 2.3 a default controller is required, optionally a separate controller can be specified for Infrared and X10 commands. The default controller setup information is specified in the [Default_Controller] section. The two optional controller setup information is specified in the [X10_CONTROLLER] and [IR_CONTROLLER] sections. With the use of these sections it is possible to use three different controllers at the same time. The default controller is required and will process all commands, unless either and X10 controller and/or and IR controller is specified. If an X10 controller is specified then this controller will process all commands starting with X10. If an IR controller is specified then that controller will process all command starting with IR. The default controller will handle all other types of commands. The thresholds section keeps track of the threshold settings which were not tracked previously so when the software had to be restarted these settings had to be manually reset. The [watch] section tracks the value of the watch menu settings. The [HomeVoice] section tracks the settings specified for various HomeVoice™ system level parameters. These parameters are set via the HomeVoice™ options menu. An example of this file follows.

Example HomeVoi2.ini file:

```
[DEFAULT_CONTROLLER]
controller=OMNI
comport=COM1
baudrate=9600
basehousecode=A

[X10_CONTROLLER]
controller=HOUSELINC
comport=COM2
baudrate=9600

[IR_CONTROLLER]
controller=HOMEISA
ir database=c:\homevoic\irdata.dbf

[Thresholds]
SleepThreshold = 45
```

SleepRelThreshold = 45
ActiveThreshold = 65
ActiveRelThreshold = 55

[Watch]
Commands=0
Advanced=0

[HomeVoice]
HomeVoicePC=0
SampleOnChange=0
WaveDirectory = C:\HomeVoic
TextDirectory = C:\HomeVoic
VerificationPrompt = Default
Prompt = Verify
Prompt1 =
CommandLogging = FALSE
LogFileDirectory = C:\HomeVoic

2.4 HomeVoic.ini File

The HomeVoic.ini file is located in the HomeVoice™ installation directory. With HomeVoice™ 2.3 this file is used only for Infrared controllers. This file contains information about the Infrared controller that is being used, comm port and baud settings and location of the Infrared database to be used. The structure of the HomeVoic.ini file is very important. The following examples should be used in reference to the home controller you are using. In general, format of the HomeVoic.ini file is as follows, please refer to the section on your specific controller to understand the deviations from the general format.

Line 1: Controller
Line 2: Serial Port settings
Line 3: Infrared database file

HomeISA™

HomeISA
Yes
C:\HomeVoic\irdata.dbf

Note: As the HomeISA™ controller does not use a serial port the second line specifies whether or not responses to X10 events should be issued.

If the line is “yes” HomeVoice™ will issue a response for the specific command received and if such a response is setup in the active users command set. If the line is “no” HomeVoice™ will ignore received X-10 events.

Houselinc and PROXi

Proxi
COM1 baud=9600 parity=n data=8 stop=1
none

Note: As the PROXi system does not have an Infrared database but uses predefined commands the third line is set to “none”.

Homebase

Homebase
COM1 baud=2400 parity=n data=8 stop=1
C:\HomeBase\ir.dbf

JDS Time Commander and Time Commander Plus

JDS
COM1 baud=2400 parity=n data=8 stop=1
C:\WinEVM\ir.dbf

JDS Stargate

JDS
COM1 baud=9600 parity=n data=8 stop=1
C:\stargate\ir.dbf

IBM Home Director and X10 Active Home (CM11A)

CM11A
COM1 baud=4800 parity=n data=8 stop=1
NONE

Note: As the CM11A does not support Infrared operations the third line is set to “none”.

HomeVision

HomeVision
COM1 baud=19200 parity=n data=8 stop=1
C:\HomeVis\schedule.hvx

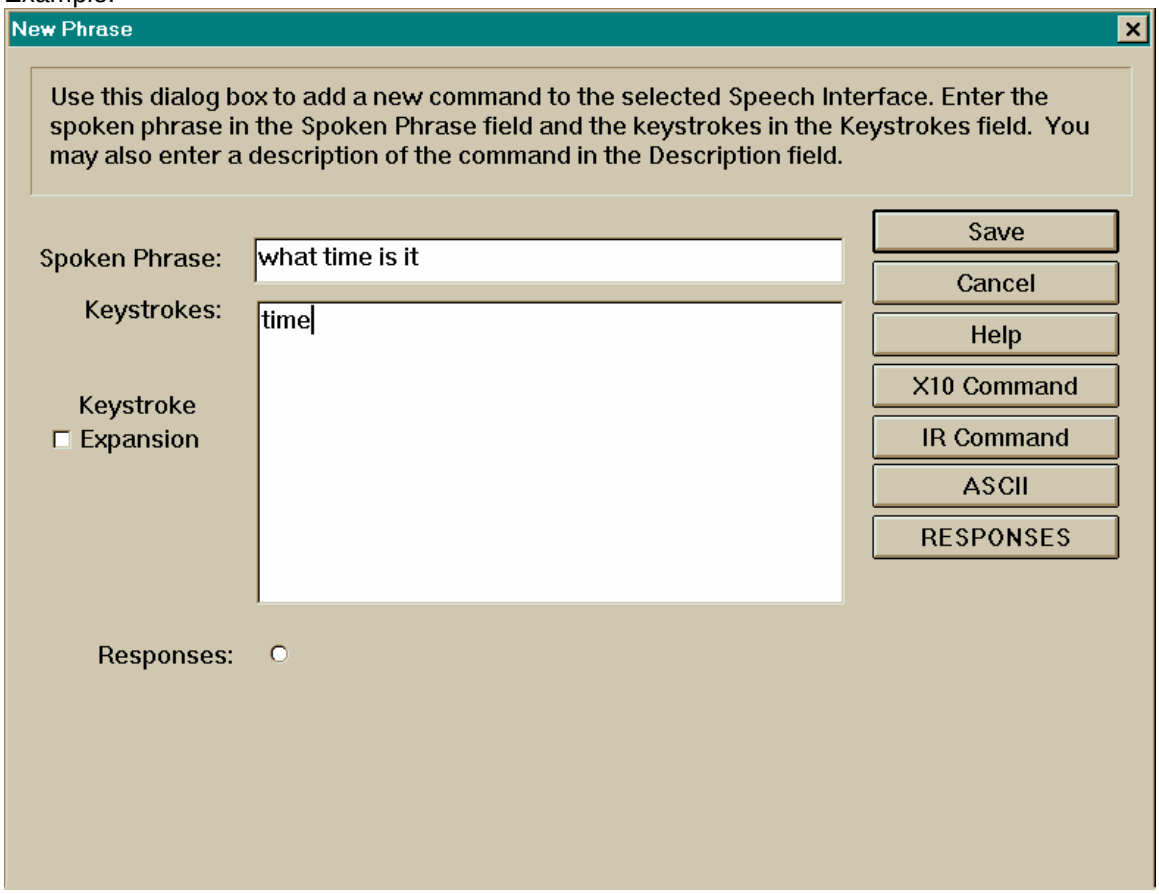
2.5 Time and Date Commands

This section discusses how Time and Date responses can be requested from HomeVoice™. This information is true for all controllers. HomeVoice™ provides three commands for receiving the current time and date information from HomeVoice™. These commands are entered in the Keystroke field. The three commands are:

time
date
timedate

One of these three commands is the only thing which should be in the Keystroke field.

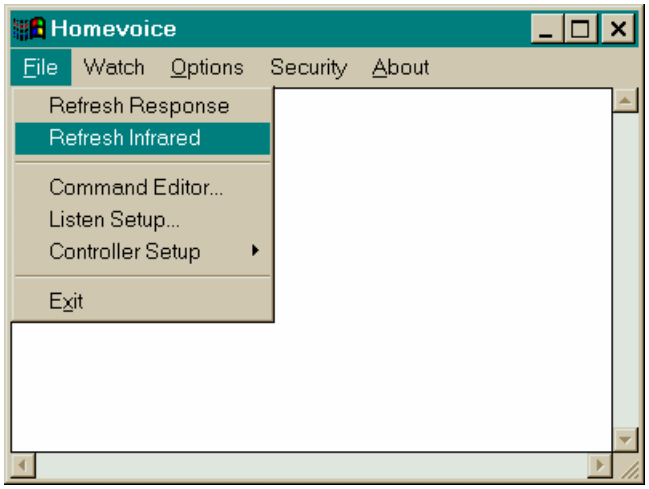
Example:



Do not add any additional responses for this command. Click **Save** and rebuild the interface.

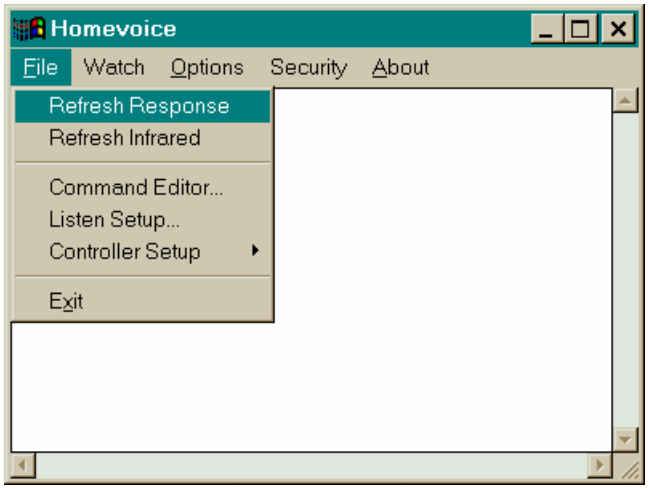
2.6 Changing or Adding New Infrared

If you update or make changes to the Infrared databases while HomeVoice™ is operational then you must update the corresponding data in HomeVoice™. Selecting **Refresh Infrared** from the File menu in the HomeVoice™ window does this.



2.7 Changing Voice Responses while HomeVoice™ is Active

If you update or make changes to the response field of a spoken command while HomeVoice™ is operational then you must update the data in HomeVoice™. Selecting **Refresh Response** from the File menu in the HomeVoice™ window does this.



3 The Speech Synthesizer

3.1 Using the voice synthesizer capabilities of HomeVoice™

The HomeVoice™ voice synthesizer analyzes input text and automatically assigns stress to simulate natural intonation and co-articulation patterns. You may alter the input text to force a stress pattern or create special effects in the **spoken phrase** window when adding or editing a voice command phrase.

3.1.1 Creating Pauses for Special Effect

To create a slight pause for special effect, insert two or more greater than marks (>>) preceded and followed by at least a single space. These marks should be inserted between any two words in the text to be synthesized, as follows:

- For a short pause insert 2 greater than marks (>>).
- For a longer pause, insert 3 greater than marks (>>>).
- For the longest pause insert 4 greater than marks (>>>>).

For example to give emphasis to "master" in the sentence "Yes master, what is your command.", the phrase would be entered:

"Yes, master >>> what is your command.".

3.1.2 Altering stress in text.

To alter stress in text, insert two left or right brackets preceded and followed by spaces immediately after the word whose stress is to be changed, as follows:

To give special stress to words not ordinarily stressed insert into the text immediately after the word to be stressed 2 left brackets ([[ ).

For example, to stress the word "not" in the phrase "I do not want to turn the light off" enter:

"I do not [[want to turn the light off."

To take stress away from words ordinarily stressed, insert two right brackets ( ]]) immediately after the word to be de-emphasized. For example, to de-emphasize the word "off" in the phrase "I do not want to turn the light off" enter:

"I do not want to turn the light off]] .".

Example of using both:

"I do not [[want to turn the light off]] .".

3.1.3 Creating Intonation with Punctuation Marks

To create special intonation in text where it ordinarily does not occur insert punctuation marks into the text as follows:

To insert puzzlement about a certain word inside a sentence insert a question mark immediately after the puzzling word.

For example, "I turned the light off. " can become:

"I turned the light? off."

To change a declarative sentence into an interrogative sentence, change the final punctuation from a period (.) or exclamation mark (!) to a question mark (?). For example "Turning the lights off.", can become:

"Turning the lights off?"

To insert joyful emphasis about certain words inside a sentence insert a comma (,) immediately after the joyful word. For example, "Turning the lights off." can become:

"Turning, the lights off."

To insert solemn emphasis to certain words inside a sentence, insert a period (.) immediately after the joyful word. For example, "Turning the lights off." can become:

"Turning. the lights off."

3.1.4 The User Dictionary Utility

The User Dictionary Utility makes it possible to control how the voice synthesizer speaks certain exotic English words or non-English words which require special pronunciation and accenting. Quite often, the voice synthesizer will speak the words acceptably; however, when different pronunciation is required, the user must add the special words to the User Dictionary and specify how the word should be pronounced.

The User Dictionary Utility allows the user to manipulate the synthesizer dictionary. You may add words, delete words or change the pronunciation. To start the User Dictionary Utility:

Click the **Start** button
Select **Run**..
Enter **x:\path\lfw40\userdict\Userdict.exe**

where:

x is the drive you have HomeVoice™ installed (for example “C”)
path is the directory structure where HomeVoice™ is installed (for example, “HomeVoic”)

Click **OK**

The main window gives you four menu options, **Add Word**, **Delete Word, View Dictionary**, and **Exit**. Use the **Exit** option to end the User Dictionary Utility.

3.1.4.1 Add Word

Clicking **Add Word** will bring up the **Add Word** Dialog box. Type the word you wish to add or change in the **Word** box. In the **Phonetic** box, enter the phonetic coding for the word being added or changed.

To phonetically encode a word, select the phonetic characters from the Phonetic Alphabet included in the Add Word Dialog box. The list labeled **Vowels** represent valid vowel phonetic characters. The list labeled **Consonants** represent valid consonant characters. For example:

drop	dro'p
teacher	te~c~u|
democratic	demukratik

You may insert an accent mark or marks. The slash character "/" represents the primary accent mark. The back slash character "\" represents the secondary accent mark. Use the accent marks as follows:

- If the word contains a single vowel, insert the primary accent mark immediately after the vowel and before any consonants, which follow the vowel. For example:

  drop dro'/p

- If the word contains two or more vowels and has only one accent, insert the primary accent immediately following the vowel needing the accent and before any consonant following that vowel. For example:

  teacher te~/c~u|

- If the word contains two or more vowels and contains more than one accent, insert the primary accent and the secondary accent marks immediately following the vowels needing those accents and before any consonant following those vowel. For example:

  democratic de\mukra/tik

- Usually, a word has only one primary accent. Any secondary accents always come before the primary accent.

Click on the **Click** button to check if the pronunciation is acceptable. If not, re-encode and continue testing until satisfied.

Click on the **Add** button to add the latest change to the User Dictionary.

Click on the **Done** button to add the latest change and return to the Main Window.

Click on the **Cancel** button to return to the Main Window without adding the latest change.

3.1.4.2 Delete Word

Clicking **Delete Word** will bring up the **Delete Entry from User Dictionary** Dialog box. To delete a word from the User Dictionary, click on the word you wish to delete. The word will be highlighted. Click on the **Delete** button. Click **OK** to return to the Main Window.

3.1.4.3 View Dictionary

Clicking **View Dictionary** will bring up the **View Dictionary** Dialog box. In the view dictionary mode, changes cannot be made to the spelling or phonetic encoding of an entry. Each entry in the User Dictionary appears with the spelling of the word on one line and the phonetic encoding on the next line. Use the scroll bar on the right hand side of the dialog box to move through the list of words. Click OK to return to the Main Window.

4 HomeVoice™ Technical Support

HomeVoice™ technical support for registered users is available by calling Applied Future Technologies, Inc. at 303-403-0457 or 800-790-3353. Our email address is support@appliedfuture.com. Our web site:

http://www.appliedfuture.com

will be updated with future product information, FAQs and other information related to HomeVoice™ and home automation. We realize that most homeowners are only available at night and weekends to work on home projects. After hours support is available, please call 303-403-0457 or 800-790-3353 and let us know if and when this support is needed so we may schedule a time, which is convenient to the HomeVoice™ user.

4.1 Other Products from AFT

AFT offers several related products for controlling your home using voice command capabilities.

HomeISA™ is our exciting and inexpensive home automation controller product. HomeISA™ is built as an ISA PC card and is capable of X-10 and IR control (two zones) and has 2 analog inputs that can be used for temperature sensors. AFT's HomeISA™ Kit includes the HomeISA™ card and software interface, HomeVoice™ software for voice control, a PZM Sound Grabber microphone for excellent voice pickup, an X-10 powerline interface module with a cable, an X-10 powerline lamp module, an IR emitter, an IR receiver for training the IR commands and a temperature sensor. HomeISA™ offers significant capability for an affordable price and gives you the basic foundation to build a voice-controlled solution for your home.

Our **HomeVoice™ Multi-Room Kits** have been assembled and tested to allow you to expand voice control throughout your home. Each HomeVoice™ Multi-Room Kit includes the HomeVoice™ software (call us for a price adjustment if you already have the software), PZM-11 microphones for the number of rooms ordered, and a mixer and sound gate to combine the multiple microphone inputs into your PC's single input. The components on these kits have been successfully used in home automation systems designed and installed by AFT. The included PZM-11 microphones provide superior and reliable voice pickup. The HomeISA™ card can be added to a HomeVoice™ Multi-Room Kit if you need a cost effective controller solution (call us for pricing). See the included Data Sheet for more information on our HomeVoice™ Multi-Room Kits.

To order any of these products or for additional information, visit our web site at **http://www.appliedfuture.com** or call Applied Future Technologies, Inc. Sales at 303-403-0457 or 800-790-3353. Our email address is **sales@appliedfuture.com**.

5 Trademarks

HomeVoice™ and HomeISA™ are trademarks of Applied Future Technologies, Inc. all other trademarks or registered trademarks are properties of their respective owners.

6 Appendix A: X10 Event Processing

HomeVoice™ can respond to X10 events when used with the HomeISA™, IBM Home Director (CM11A), X10 Active Home (CM11A), Houselinc and JDS controllers. In order to use this feature a text file, named "X10EventFile.txt" must be created in the HomeVoice™ installation directory. This file can then be edited to specify which X10 events the user want to have responses for. The response for an X10 event can be a voice response as specified in the response section above, or can be a command or set of commands as specified in the X10EventFile.txt. Each line of the file contains the X10 event and the comand or commands which are to be executed in response to the event. The format of the line in the file is:

X10 Event; commands; response

Each field is separated by a semi-colon (;). The X10 event is specified as listed above in the X10 section (e.g. A5 ON). The commands are specified in the standard format for HomeVoice™ keystroke field. Each command to be executed is separated by the tilde character (~). The response field is text to be passed to the speech synthesizer or the name of a wave file to be played or a text file to be synthesized. For example the entry:

A5 ON; X10=B1 ON~IRR=VCR RECORD; motion sensor triggered

Specifies that, if the command "A5 ON" is received on the power-line, the command "B1 ON" is to be sent followed by the Infrared command "VCR RECORD". The speech synthesizer will speak the phrase, "motion sensor triggered".

If only a voice response is desired the command section can be left empty, although at least on space is required, but the semicolon delimiter must still be present. For example the entry:

B7 ON; ; Someone is at the door.

Will speak the phrase "Someone is at the door." if the signal "B7 ON" is received.

7 Appendix B: Commands supported for HouseLinc from SmartLinc Inc.

The commands documented below are placed in the keystroke field for the command. Please consult your Houselinc documentation for specifics relating to any of the commands listed here.

X10 Commands

For sending X10 commands all standard X10 commands in the format specified earlier are supported. X-10 Commands for complete details of X10 commands and syntax.

Infrared Commands

The Houselinc controller is based on the universal chip for Infrared control. It has a set of standard "keypad buttons" programmed into the chip. The IR command set is as follows:

A	B	C	MAGIC
AUX	AUX2	VCR	TV
CABLE	CD	TUNER	AMP
A/B	SHIFT	DISP	REC
AUD	VID	PGM	MUTE
CHUP	CHDN	VOLUP	VOLDN
SCAN	0	1	2
3	4	5	6
7	8	9	POWER

In general commands are issued in combination of "device action" the format follows the standard format used with HomeVoice for infrared controllers as follows. The Command editor has not been updated for the standard format for this controller so it will build commands separately. The commands will function the same in either case. The standard format for HomeVoice™ infrared commands are as specified above.

IRR=AMP POWER
IRR=TV VOLDN

To provide the ability to address the infrared signal to a specified infrared port on the Houselinc the format of the IR commands was augmented slightly. The standard IR command header IRR is still valid and will send the IR signal to all 5 of the Houselinc emitter ports, the 5th port being the blast emitter on the front panel. Any Combination of emitter ports may be specified in the following manner.

IR1=AMP POWER	the signal AMP POWER is sent to port 1.
IR35=TV VOLDN	the signal TV VOLDN is sent to ports 3 and 5.
IR1234=TUNER CHUP	the signal TUNER CHUP is sent to ports 1, 2, 3 and 4.
IR12345=VCR REC	
or	
IRR=VCR REC	the signal VCR REC is sent to all ports.

Extended Infrared Commands.

The Houselinc provides the capability to program infrared commands into the controller that are not listed in the table in the infrared section. In order to access these commands HomeVoice™ provide the extended infrared command. Please consult your Houselinc documentation for details on this capability.

To transmit extended Infrared data the command is

EIRR=446 Transmit function code 466.

This command also supports the port-addressing scheme listed above in the IR command section.

Firmware Revision

To retrieve the revision data from the HouseLinc unit the command is:

revision

HomeVoice™ will respond via the speech synthesizer with the current firmware revision for the Houslinc.

Scenes

To execute a SCENE command to command format is:

SCENE=Movie Time

Where "Movie Time" in this example is the scene defined in the Houslinc software.

Note. HomeVoice is not case sensitive for commands.

8 Appendix C: Home Automation, Inc. Manufactured Controllers

The following command documentation is for using HomeVoice™ with Home Automation Controllers supporting the OMNI-LINK protocol specified by Home Automation Inc. The controllers manufactured by HAI are re-marketed under a variety of names including but not limited to HAI Omni and OmniPro. Home Systems Plus Aegis, AMP HMS 925 and HMS 1050. The command set documented here is for use in the “Keystroke” field of the HomeVoice™ command editor. Refer to your controller documentation for setup information referenced below.

NOTE: In order to use these commands the users must have setup their passwords and user codes in the HomeVoice™ security menu. Otherwise HomeVoice™ will not be able to gain access to the controller. If there are three login failures the controller will lockout serial connections for 1 hour. Refer to the controller documentation to determine the proper passwords and user codes.

In the command documentation that follows the following format is used.

COMMAND=AREA or UNIT or ZONE:QUALIFIER

For AREA, UNIT and ZONE the documentation will specify either 0-n or 1-n. This refers to the range of AREA, UNIT or ZONE specified. 0-n refers to the range zero to the nth item where n is the largest available value for that item type. 1-n refers to the range one to the nth item where n is the largest available value for that item type.

AREA

The AREA command is for affecting all units in an AREA

Format: AREA=AREA# COMMAND
AREA# = 0 - n 0 - specifies all areas
COMMAND = ON or OFF
Example:
AREA=3 OFF Turn all units in area 3 off.

ARM

The ARM command is used for setting the desired security level for the security system.

Format:

ARM=AREA:MODE

AREA = 0 - n where 0 specifies all areas

MODE can be specified as either a numeric value or a text value as follows:

0	or	disarm
1	or	day
2	or	night
3	or	away
4	or	vacation
5	or	instant
6	or	delayed

Example:

ARM=0:AWAY (Arm all areas in away mode)
ARM=3:NIGHT (Arm area 3 in night mode)

ASCII Commands

The ability to send ASCII strings to the controller is only supported using the PRO-LINK protocol. Therefore the ASCII command will not work unless the module setting for the serial interface is set to PRO-LINK.

Format: ASC=Text to be sent to controller

All characters following the ASC= command will be sent to the controller as specified in the text string.

Example: ASC=text string for trigger

The string “text string for trigger” is sent to the controller

BUTTON

The button command is used to execute macro buttons. Refer to your controller documentation for setting up button commands.

Format: BUTTON=BUTTON#

Where BUTTON# is the number of the button to execute, 1-n.

Example: BUTTON=23

Bypass Zone

The bypass zone command is used to bypass a zone via the users security code.

Format: BZ=ZONE# Where ZONE# = 1-n

Example: BZ=3

Bypass zone 3 with the current users security code.

CLEAR

The CLEAR command is used for clearing messages.

Format: CLEAR=MESSGE#:AREA#

Where Message number is 0 - n. 0 specifies all messages.

If Message number is 0 then AREA# is required to specify the area for the messages to be cleared. Specifying an area number of zero specifies all areas. This is the default if it is not specified.

COOL

The COOL command is used for setting the thermostat HIGH or COOL set point.

Format: COOL=TEMPERATURE
Where TEMPERATURE is the desired temperature.

Example: COOL=75 Set the cool set point to 75 degrees.

Energy Saver

The Energy Saver command is used for enabling and disabling the energy saving features of the controller.

Format: ES=UNIT# COMMAND:DURATION

Where: UNIT# = 1 - n
COMMAND = ON or OFF
DURATION is specified in the range as:
1 - 99 for 1 to 99 seconds
101-199 for 1 to 99 minutes
201-299 for 1 to 99 hours.

Example: ES=3 ON:212 Set energy saver on unit 3 for 12 hours.

FAN

The FAN command is used for setting the fan mode on the thermostat.

Format: FAN=MODE

Where MODE can be specified as a numeric digit or a text string
MODE = 1 or ON
0 or AUTO

Example: FAN=AUTO Set the fan mode to AUTO.

HEAT

The HEAT command is used for setting the thermostat LOW or HEAT set point.

Format: HEAT =TEMPERATURE
Where TEMPERATURE is the desired temperature.

Example: HEAT =65 Set the heat set point to 65 degrees.

HOLD

The HOLD command is used for setting the thermostat HOLD mode.

Format: HOLD=MODE

Where MODE can be specified as a numeric digit or a text string
MODE = 0 or OFF
255 or HOLD

LOG

The LOG message is for logging the message specified.

Format: LOG=MESSAGE#

Where MESSAGE# = 1 - n

Example: LOG=5 Log message number 5

MODE

The MODE command is used for setting the thermostat system mode.

Format: MODE=SETTING

Where SETTING can be specified as a numeric digit or a text string
SETTING = 0 or OFF
1 or HEAT
2 or COOL
3 or AUTO

Example: MODE=AUTO (Set system mode to auto)

PERCENT

The PERCENT command is to be used for setting the unit lighting level to the percentage specified.

Format: PERCENT=UNIT#:%SETTING

Where UNIT# = 1 - n
%SETTING = 0 - 100

PHONE

The PHONE command is used for calling numbers stored in the controller and playing messages stored in the controller.

Format: PHONE=PHONE#INDEX:MESSAGE#INDEX

Where PHONE#INDEX is the index value for the phone number desired.

MESSAGE#INDEX is the index for the message number desired.

Example: PHONE=4:8 (Dial number at index 4 and play message at index 8)

Restore All Area

The RESTORE ALL AREA command is used to restore all zones in an area using the users security code.

Format: RAA=AREA#

Where AREA# is 0 - n. Area 0 specifies all areas.

Example: RAA=0 Restore all zones in all areas.

Request Auxiliary Status

The Request Auxiliary Status command retrieves the status of an auxiliary device and verbally reports the information: The information returned is the Temperature, Relay Status, Heat Set Point, and Cool Set Point.

Format: RAS=UNIT#

Where UNIT# is the unit status is being requested for.

Example: RAS=6 Request status on Auxiliary device 6.

Request System Information

Request System Information is used to get information regarding the system. The information is returned verbally through the speech synthesizer. The information provided is the System Model, Version number, Phone number, RSI (Request System Information)

Format: RSS

Example: RSS

Request Thermostat Status

Request Thermostat Status is used for retrieving thermostat status information. The information is provided verbally through the voice synthesizer. The information provided is the Heat Set Point, Cool Set Point, System Mode, Fan Setting and Hold Status.

Format: RTS=THERMOSTAT#

Where THERMOSTAT# is the number of the thermostat.

Example: RTS=1 Request status of thermostat 1.

Request Unit Status

Request Unit Status is used to retrieve status of a unit. The unit status is reported via voice synthesizer and reports the units last commanded state. Statuses of devices commanded outside of the controller are not reported correctly. The statuses returned is On, Off, or last Dim or Bright level command.

Format: RUS=UNIT#

Where UNIT# is the number of the unit status is requested for.

Example: RUS=7 (Retrieve the status of unit 7)

Request Zone Status

Request Zone Status is used to retrieve the status of a zone. The information is presented verbally via the voice synthesizer. The information returned is the Current Condition, Latched Alarm Status and Arming Status.

Format: RZS=ZONE#

Where ZONE# is the number of the zone status is requested for. (1 - n)

Example: RZS=4 (Request Status of Zone 4)

Restore Zone

The Restore Zone Command is used to restore a zone using the user's authorization code.

Format: RZ=ZONE#

Where ZONE# is the number of the zone status is requested for. (1 - n)

Example: RZ=4 (Restore zone 4 using the current user's authorization code.)

SAY

The SAY command is used to say a message.

Format: SAY=MESSAGE#

Where: MESSAGE# is the number of message (1 - n).

Example: SAY=5 (Say message number 5)

SHOW

The SHOW command is used to show messages.

Format: SHOW=MESSAGE#

Where: MESSAGE# is the number of message (1 - n).

Example: SHOW=3 (Show message number 3)

Set Energy Cost

The Set Energy Cost command is used to set energy cost modules.

Format: SEC=COST

Where COST is a digit or text string specifying the unit cost.

COST = 0	or	low
1	or	mid
2	or	high

3 or critical

TEMP

The TEMP command is used to return the temperature from a thermostat. This is used when only the temperature is desired. Use Request Thermostat Status (RTS) when all information is desired. The temperature is returned via voice synthesizer.

Format: TEMP=THERMOSTAT#

Where THERMOSTAT# is the number of the thermostat to get the temperature from.

Example: TEMP=2 Get the temperature from thermostat 2.

TEMP_S

The TEMP_S command is to get the temperature from a temperature sensor. This is used when only the temperature is desired. Use Request Auxiliary Status (RAS) when all information is desired. The temperature is returned via voice synthesizer.

Format: TEMP_S=SENSOR#

Where SENSOR# is the number of the auxiliary sensor to get the temperature from.

Example: TEMP_S=4 Get the temperature from sensor 4.

UNIT

The UNIT command is used to change the status of a unit.

Format: UNIT=UNIT# COMMAND: DURATION

Where: UNIT# = 1 - n
COMMAND = ON, OFF, DIM, BRT
DURATION is specified in the range as:
1 - 99 for 1 to 99 seconds
101-199 for 1 to 99 minutes
201-299 for 1 to 99 hours.

NOTE: For the DIM and BRT commands the number of levels to be dimmed or brightened must be specified with the command.

Example: UNIT=65 DIM=5:123 Dim unit 65 five levels for 23 seconds.
UNIT=4 OFF Turn off unit 4.

X10

The X10 command is used for changing the status of X10 devices. This command is identical to the UNIT command in function.

Format: X10=HOUSECODEUNITCODE COMMAND:DURATION

Where HOUSECODE is the X10 units' house code (A-P)
UNITCODE is the X10 units' device code (1-16)
COMMAND = ON, OFF, DIM, BRT

DURATION is specified in the range as:
1 - 99 for 1 to 99 seconds
101-199 for 1 to 99 minutes
201-299 for 1 to 99 hours.

NOTE: For the DIM and BRT commands the number of levels to be dimmed or brightened must be specified with the command.

Example:	X10=D2 DIM=5:123	Dim unit D2 five levels for 23 seconds.
	X10=A4 OFF	Turn off unit A4.

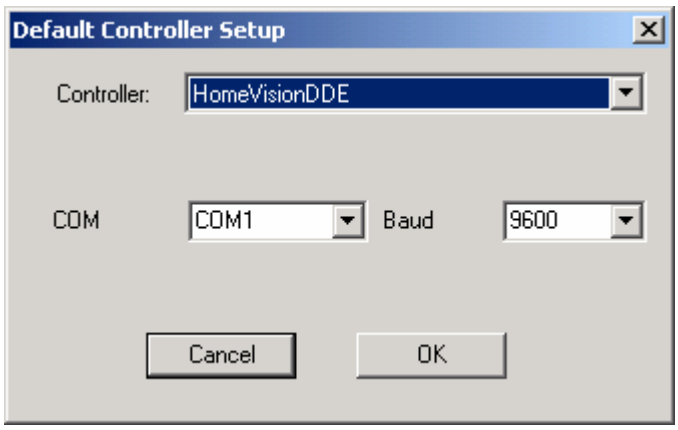
NOTE: There is not an ALL type of X10 command since the X10 house code does not map to an area number necessarily. Refer to AREA command for details.

9 Appendix D. HomeVision Additions in Version 2.3

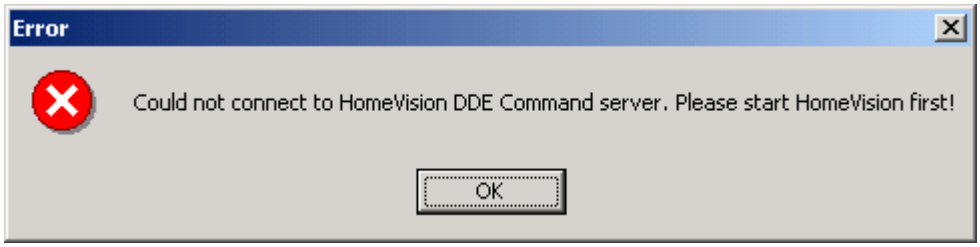
In version 2.3 HomeVoice™ added the ability to communicate with HomeVision via Dynamic Data Exchange (DDE). This allows the HomeVision software to be active at the same time that HomeVoice™ is running. When operating in DDE mode Homevoice™ sends the commands to the HomeVision software which then sends the commands via the computer serial port to the HomeVision controller.

Starting HomeVoice™ for DDE communication with HomeVision.

From the HomeVoice™ window select the **File** menu and then **Controller Setup >** and then select **Default Controller…**.You will be presented with the following dialog to change the controller. Select HomeVisionDDE from the controller list and then click on 'OK'.



You will receive the following error.



Click on ‘OK’ and HomeVoice™ will terminate. Start the HomeVision software and make sure DDE communication is enable in the HomeVision software. Consult your HomeVision documentation for details. Once the HomeVision software is up and running restart HomeVoice™.

Macro

HomeVoice™ also added support for HomeVision macros. To invoke a macro in HomeVision in the Keystroke field of the command enter:

Macro = <Macro Name>	Where the actual name of the macro, as saved in the HomeVision schedule is inserted for <Macro Name>.

Responses to Macros in HomeVoice

HomeVoice™ does not send the response until the HomeVision sends a completion acknowledgement to HomeVoice™. The HomeVision controller does not send the acknowledgement until the macro is completed. Depending on the length of the macro the response could be delayed for some time. During this time the HomeVision can not accept any new commands until macro completion. This means there is a possibility that HomeVoice™ commands may be issued but not processed by the controller.