



HAI Omni Integration Guide

Media Center Edition Control Server

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Overview

This document describes the procedure for integrating Autonomic Control's MCE-CS software with a Home Automation, Inc. Omni or Omni Pro controller. This manual will guide you through the process of establishing communications between your Media Center computer and the HAI device, as well walking through several control scenarios.

What can be accomplished by integrating these systems?

When an HAI Omni system is integrated with a computer running Microsoft Media Center edition, customers and installers obtain the power of incorporating media control into their home or facility automation macros (or "buttons" as they are referred to on the Omni platform). This creates limitless possibilities for the homeowner to enhance their automation systems by taking more complete control of the home's environment.

Here are some examples:

- Create Omni one touch Buttons for your favorite music or video play lists.
- Create a "Party" button that sets the lighting, adjusts the temperature, *and* starts your favorite music play list. If desired, this can be programmed to play a "Classical" play-list between January and November, and a "Holiday" play-list during the month of December. You can also start an appropriate photo slideshow while the music plays.
- Create a "Home" button that instructs Media Center to navigate to Live TV and set the tuner to the evening news when you disarm the system between 6 PM and 6:30 PM. The TV channel, or even the media type can be different for each user disarm code.
- Create a "Movie" button that dims the lights, plays a pre-show video or slideshow, and then starts the DVD player after a time.
- Pause the current media whenever the telephone rings.
- Post a message box on the TV to tell the viewer if a specific alarm zone has been tripped.
- Check the garage door zones at 10PM, and display a message box on the TV asking the viewer if they would like to close it. The HAI can react according to the user's specific response.
- When the driveway motion sensor is tripped, change the channel to display the driveway video camera.
- In a commercial environment, schedule specific music play lists, videos, or announcements to play at pre-determined times. Can be conditional dependant on external variables, such as date, alarm status, etc.
- Utilize motion detectors to play music, videos, or sounds. Great for video kiosks, or scaring the trick-or-treat crowd at Halloween!

How is this different than HAI's Home Control for Media Center Software?

HAI's **Home Control for Media Center** is an add-in for MCE that allows you to control your HAI system from within Media Center. Conversely, integrating Autonomic Control's MCE-CS software with your HAI system allows the HAI system to control Media Center. This enables the inclusion of media management into your home or facility automation macros and conditional programs.

Getting Ready

MCE Control Server requires Windows XP Media Center Edition, rollup 2, or Windows Vista in order to run.

This integration has been tested with a HAI Omni Pro II controller, running firmware version 2.7. It should work on other Omni controllers and likely will work with some earlier firmware versions, but this has not been tested.

Serial communications is utilized to facilitate communication between the HAI system and Autonomic Controls' software. In order to integrate these systems, there must be an open serial port available on the Omni controller or an expansion board. The Media Center PC must also have an open serial port. A USB-Serial adapter may be utilized on computers that do not have a standard 9-pin serial port. Our integration was tested using a Belkin USB-Serial adapter.

The examples in this guide utilize HAI PC Access software. This application allows you to create the HAI program on a PC, and then transfer it to the Omni device. It also enables you to back-up the HAI program and save it on your hard drive or external media. While it is possible to program the integration using the HAI keypads alone, we strongly recommend the use of PC Access. For more information on this and other software, contact your HAI authorized dealer.

Making the connection

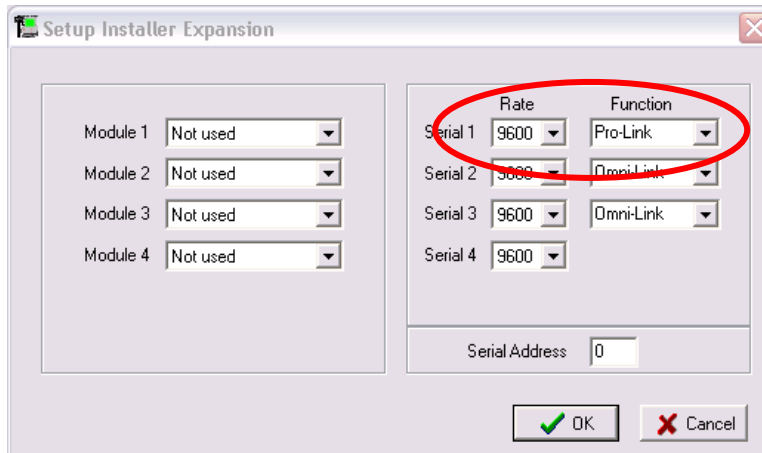
The HAI panel can be connected to the Media Center computer using one of two methods:

1. **Serial Connection:** Using the HAI provided RJ-11 to DB-9 adapter, connect an open 9 pin serial port on the Media Center Computer to an open RJ-11 serial connection on the HAI OMNI main or serial expansion board.
2. **USB Connection:** Using the RJ-11 to DB-9 adaptor and a USB to Serial adapter, connect an open USB port on the Media Center Computer to an open RJ-11 serial connection on the HAI OMNI main or serial expansion board.

Configuring the HAI Omni.

The built-in serial ports (J1-J3) on the controller are assigned to Serial Port 1 - Serial Port 3, respectively. Serial port 4 is a Serial Interface Module connected to the Expansion port on the controller.

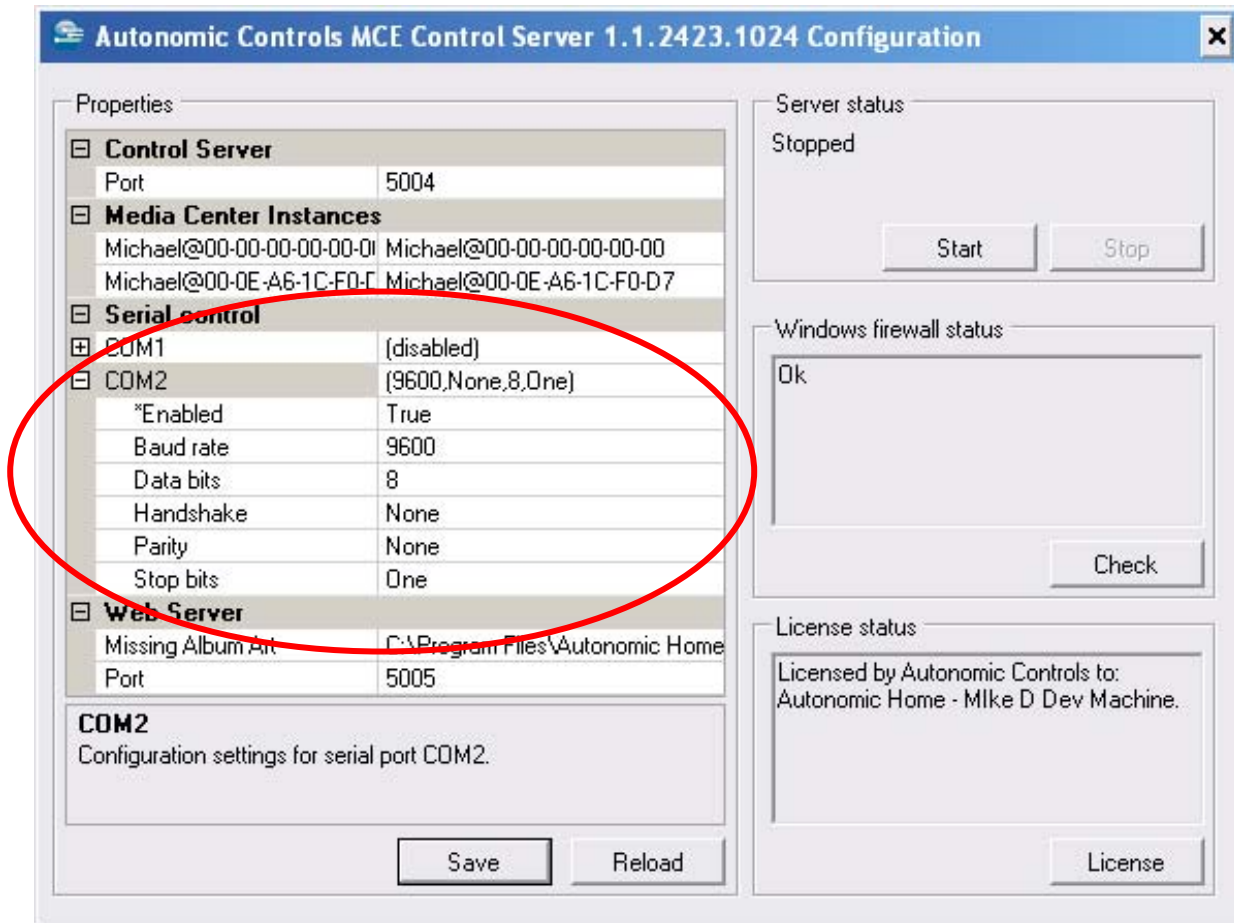
The serial port used on the Omni must be set to use the “Pro-link” protocol. This can be configured on the HAI using the Omni keypads, or by using the HAI PC Access Software as illustrated below.



Configuring MCE-CS

In order to communicate with the HAI Omni controllers, serial communications must be enabled using the MCE-CS configuration utility.

Configure the serial port which is connected to the HAI Omni controller (COM2 in this example). Set the Enabled value to True, and set the Baud Rate to match what was set on the Omni configuration. We recommend a baud rate of 9600. The other parameters should be set as illustrated.



Programming the HAI to communicate with MCE.

Basic Concepts

Sending Commands to Media Center

The Omni **Send Message** command allows you to send any of the text messages through the Pro-Link serial port. This is what will be used to send messages through the serial connection to the Autonomic Controls software running on the host Media Center PC.

The message is sent out through the specified Pro-Link port exactly as the message was entered in *Setup / Names / Message*.

The Autonomic Controls server requires all commands to be terminated with a carriage return or line feed. Carriage returns and line feed characters are not automatically appended to the end of HAI messages. To send ASCII control as part of the message, you must use the caret "^" character in the message. This character specifies that the next character is to be interpreted as an ASCII control character, such as "^M" to represent a carriage return.

Each message can be up to 15 characters long. To send a longer message, simply program two messages to be sent one after the other.

Receiving Feedback from Media Center

Pro-Link also has the capability to monitor the serial port for incoming text messages. When a text message is received, Pro-Link searches through all 128 messages for a matching message.

If one is found, the Program Command (macro) corresponding to the matching message is activated. It is then possible to use a "When *message cmd...*" program in the Omni to take action based on Media Center feedback.

When receiving an ASCII message that is over 15 characters, OmniPro II only processes the last 15 characters of the message.

Pro-Link determines that a message has been received when:

- One or more characters have been received followed by 100 ms of silence
- One or more characters followed by a carriage return character are received
- One or more characters followed by a line feed character are received

It is not necessary to enter the terminating carriage return or line feed character as part of the message name.

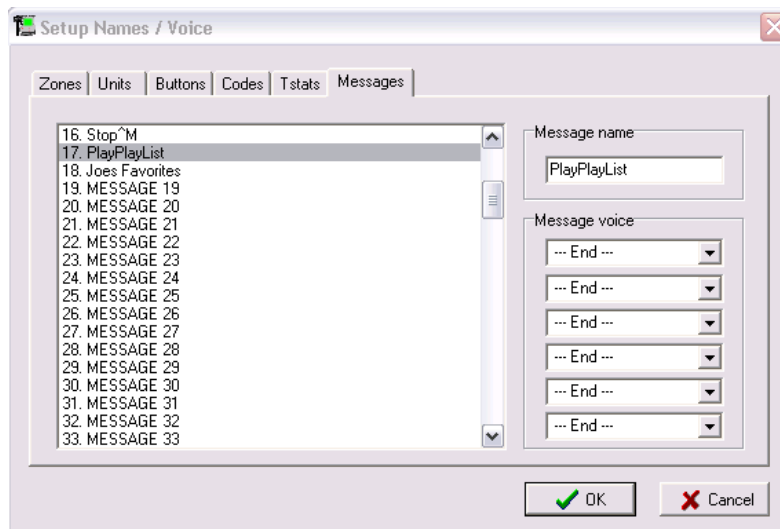
Creating Omni Buttons that Play Media.

It is possible setup HAI “Buttons” to playback specific media on the MCE computer. These buttons can be used as simple user interactive macros to enable you to start playlists, genres, or favorite albums, or they can be used as the building blocks for more complex media automation.

In this example we will use the MCE-CS **PlayPlaylist** *playlistname Enqueue* command. For more information on this and other commands used in this guide, refer to the MCE-CS Protocol Documentation.

Using HAI PC Access, Click the “Setup...Names/Voice”, and select the Messages tab. Start by creating a New OMNI Text Message called [PlayPlaylist]. (*Do not include the brackets*). This corresponds to MCE-CS **PlayPlaylist** command.

Notice the space after the text. This is very important because this message will be sent together with other messages to create a complete command. If you don’t include the space, the messages will be mashed together, and MCE-CS will not recognize the command.



This basic playlist command can be reused by combining it with messages that correspond to various playlists in Media Center.

Now you can create messages that match the name playlists you would like to start from the HAI. If your playlist contains spaces, you must enclose the name in double quotes (“”), for example [“My Playlist”]. Again, notice the space at the end.

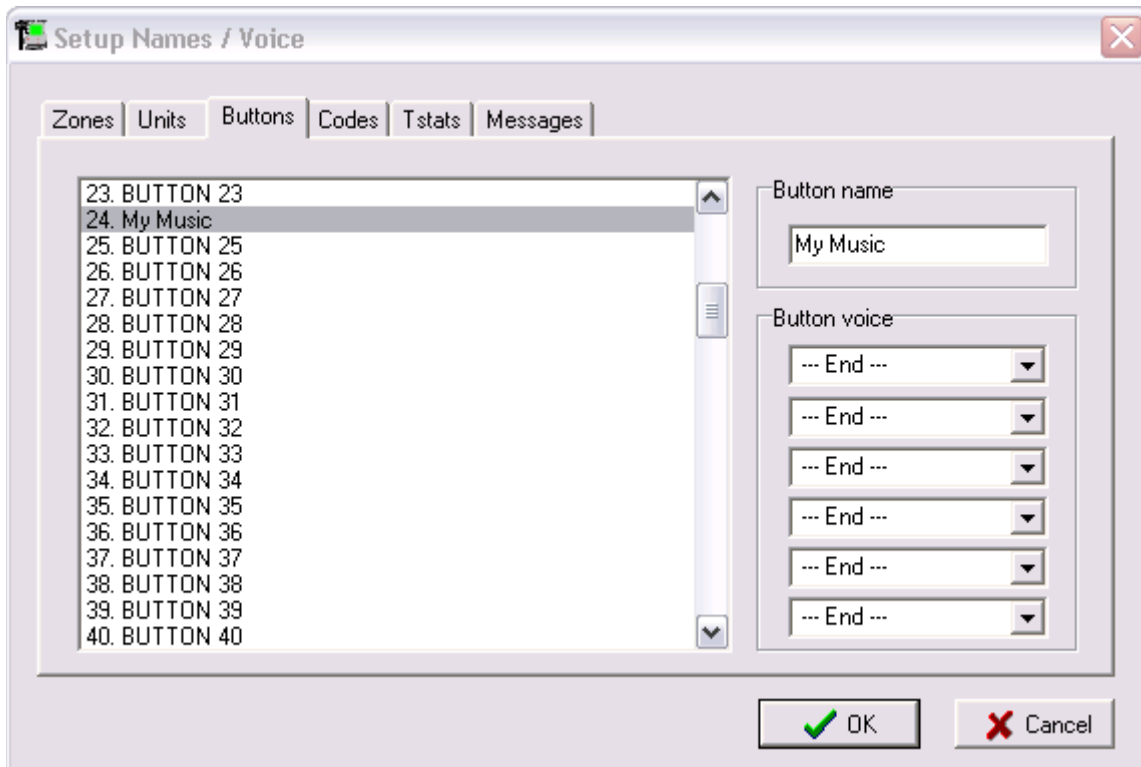
The last message that needs to be created is the *enqueue* parameter message and carriage return. When *enqueue* is set to True, the MCE-CS software adds songs from the playlist to

the end of the now playing queue, instead of playing it right now. Since we probably want to have Media Center play the list immediately when this command is sent, you'll want to set the parameter to **[False^M]**.

The “^M” at the end of the False command instructs the Omni to send a carriage return. This will tell the MCE-CS server that the command is complete. Like the “PlayPlayList” message, this message can be re-used for every button that ends with the *enqueue* parameter when you want to play the list or title immediately instead of queuing it. (PlayGenre, PlayArtist, etc...)

The last step is to create a HAI Button that will send these three messages to the server in sequence.

In PC Access, click on “Setup...Names / Voices”, and click on the **Button** tab. Create a new button called **[My Music]**, or an appropriate name for the play list or genre you want to play.



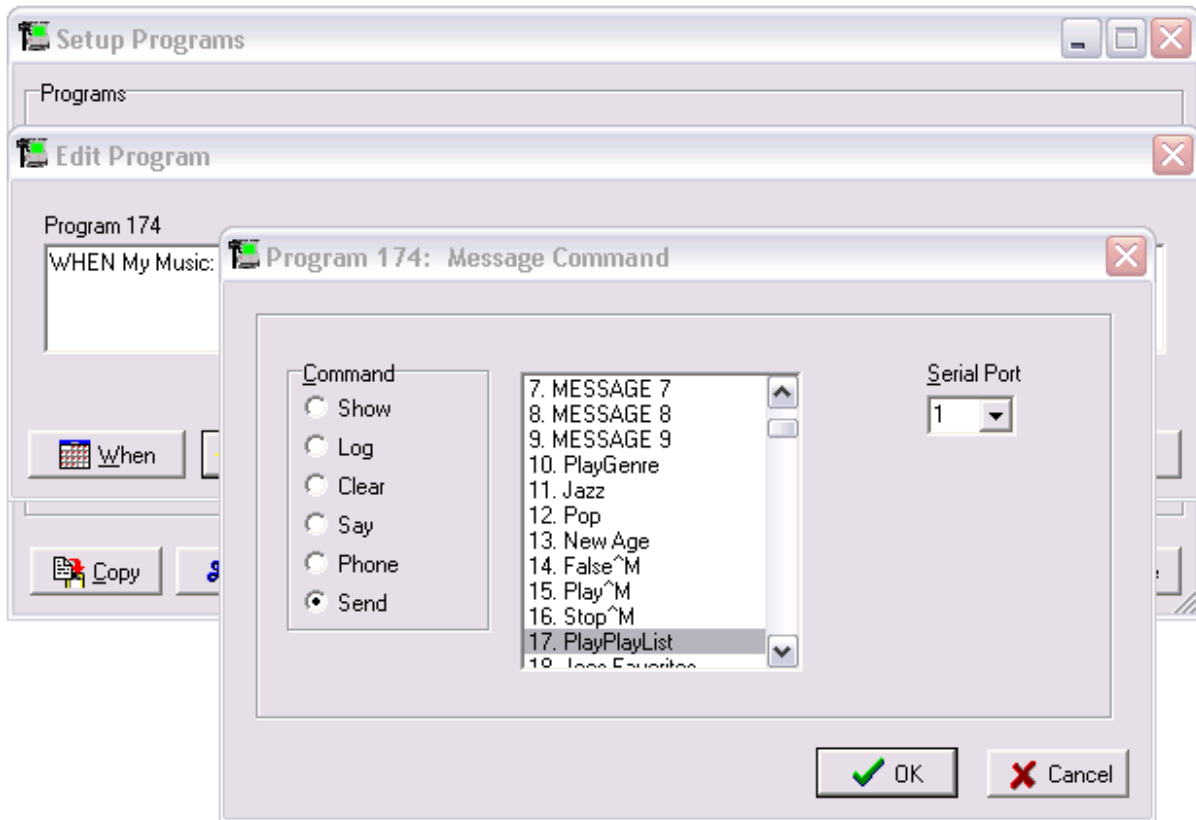
The final step in creating a media button is to write program commands that execute when the Button is selected to run.

In Pro-Link, click on Setup, Programs. Find an empty program slot to create the first program command and double click on in.

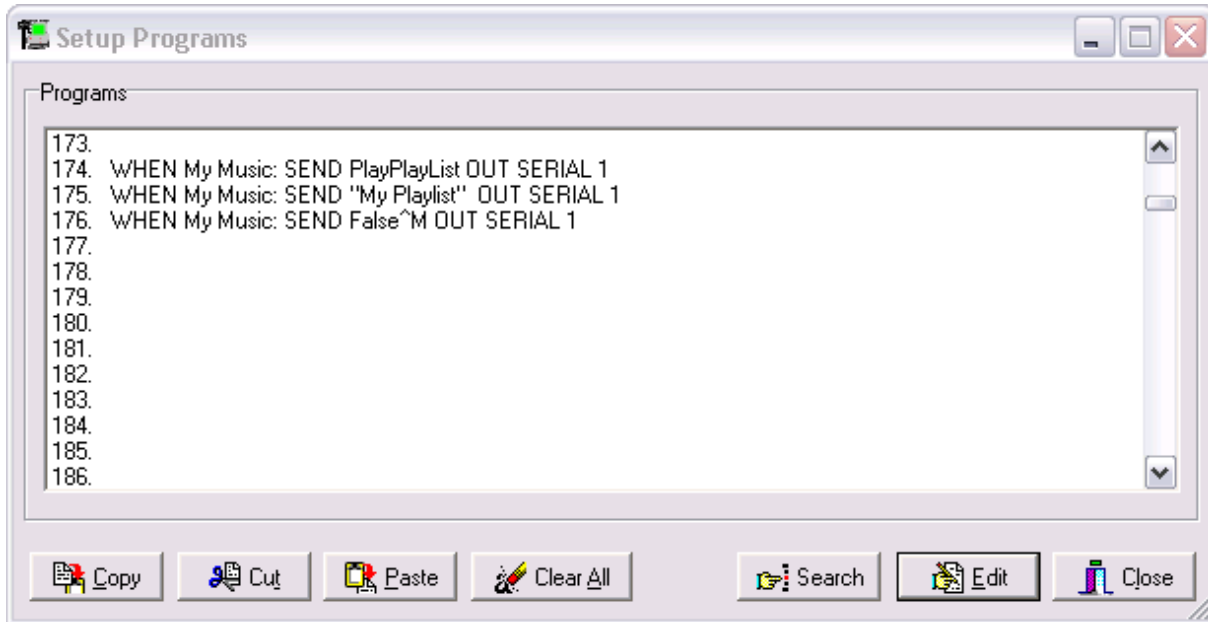
Click on the **When...** button, select **User Button**, and in the dialog box, select you're My Music button.

Now click on the **Command...** button, select **Message**, and in the dialog box, select the **Send** option, and then select the **PlayPlaylist** message that you created earlier from the list box.

Lastly, select the Serial Port that is configured and connected to the MCE computer.



Using the same method, create two more programs that will send the specific play list and then the **Enqueue (false)** parameter and carriage return. When you are finished, your program should look like this:



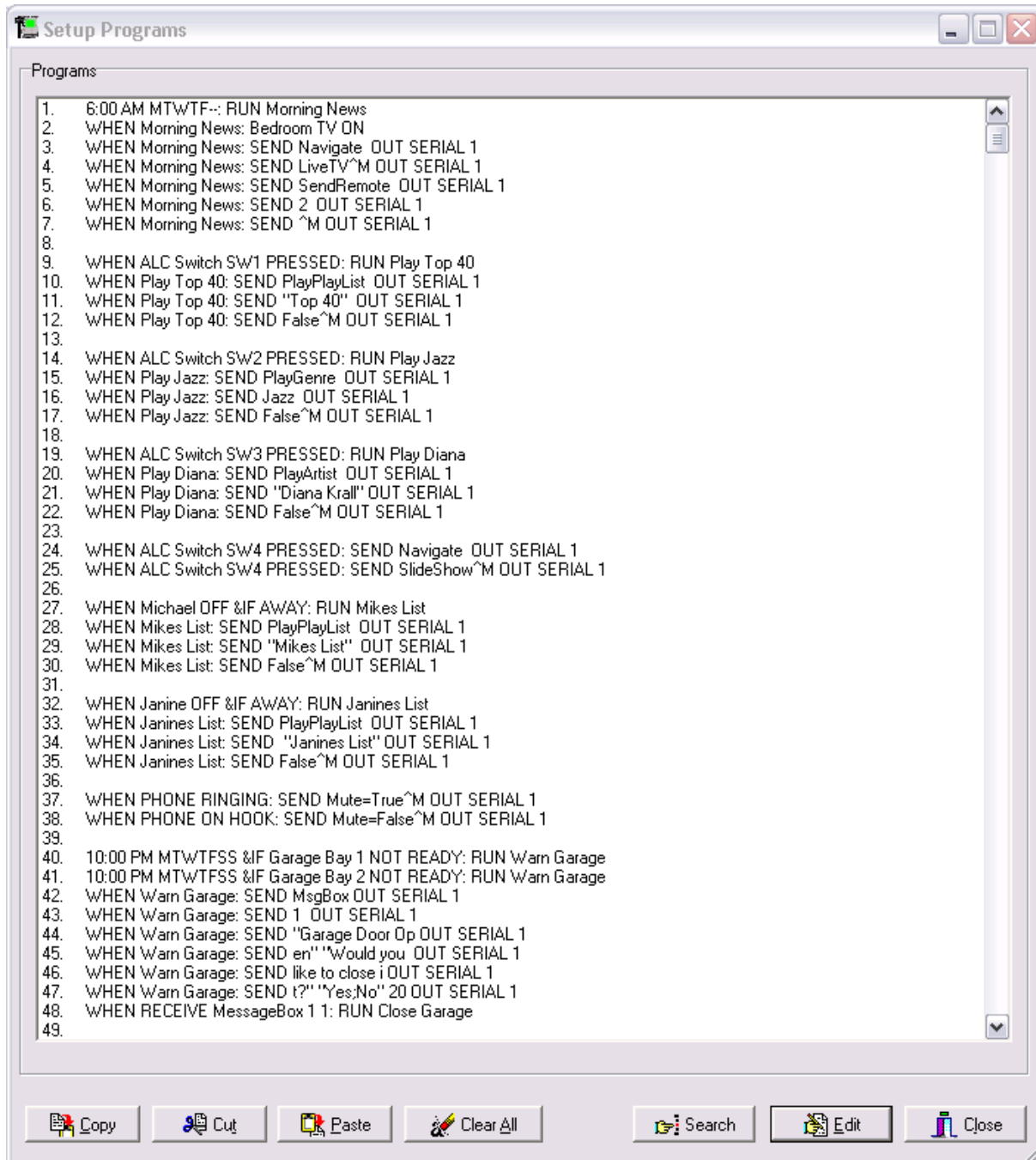
You can use the same concepts to create Buttons that queue and play entire Genres, Artists, Albums, or even specific titles.

For more information about additional media commands, refer to the MCE-CS Control Protocol Document.

The most important concepts when programming the commands are the spaces at the end of embedded command messages, and the **^M** (carriage return) at the end of each complete command sequence.

Additional Programming Examples.

The following PC Access screen image shows some additional programming examples.



Additional Support

For more information and downloads (including the sample program on the previous page), visit www.autonichome.com/support.htm

Please use our community forums to post questions and to share your integration ideas and success stories! www.autonichome.com/forum

For assistance, you may send e-mail to support@autonichome.com. It is helpful in some cases to export your HAI program and attach it to your support e-mail so our technicians can determine the cause of your problem.