ZON

Whole House
Digital Audio

ZAC-60 Controller/Amplifier

Serial Configuration Software User's Guide

ZR-98 Router

OXMOOR®

www.zonaudio.com

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ZON Serial Configuration Utility Software User's Guide

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INTRODUCTION

The ZON Serial Configuration Utility ("ZON Config") provides additional flexibility to your ZON system installation. With this utility, you can tap into the system's all-digital architecture to create a customized system that is complimentary to the life style of the system user. This utility is simple to use and requires no special scripting or programming skills.

Here are a few of the many tasks that you can perform with this utility:

- Create unique and realistic names for the inputs to the ZON Router (e.g., "MEDIA ROOM DVD", "SATELLITE 2", "JOEY'S ROOM") - *See it on page 14*

- Set input trim for individual source inputs - See it on page 14

- Change the order of sources as they will appear in the SELECT SOURCE MENU on ZAC-60 Controllers - See it on page 15

- Define the default paging volume levels for each listening zone - See it on page 20

- Set which ZAC-60 Controllers can receive pages (defining your system-wide paging queue) - See it on page 19

- Set default values for each ZAC-60's tone, balance and EQ settings - See it on page 22

- Manage the source and menu content on specific ZAC-60 Controllers (ideal for parental control) - See it on page 21

- Set monitoring permissions for specific ZAC-60 Controllers - See it on page 23

- Apply and manage firmware updates for the ZON Router, ZAC-60 Controllers and ZON Expansion Modules - See it on page 29

- Configure the settings and operation of ZON Expansion Modules (e.g. ZIR-232 Device Commander) - Refer to the module's documentation for more details.

For more information on the operation and installation of the ZON system, please consult the ZON Installation and Operation Manual that was provided for your system. Also, visit the official ZON web site: http://www.zonaudio.com for handy references like answers to frequent asked questions, updated product literature, and application guides.

COMPUTER SYSTEM REQUIREMENTS AND SETUP

The following instructions guide you through installing the ZON Serial Configuration Utility. After installation, refer to this manual for information on how to use this software.

System Requirements

- Windows NT 4.0, 2000, or XP
- IBM-compatible 486 computer or higher
- 16 MB RAM (memory) *minimum* 32 MB or more recommended
- 10 MB available hard disk space
- VGA Monitor or better
- CD-ROM Drive
- Keyboard
- Mouse
- One available serial (COM) port

Setup Wizard

To ensure a safe and uninterrupted installation of the software, please perform the following steps before installing:

1. Exit any open programs, including those that run automatically at startup (e.g., Microsoft Office and virus protection programs).
2. If your software was provided to you on a CD-ROM, insert the disc into the computer's CD-ROM drive.
3. If your software was downloaded from the Internet, make sure that you have first "unpacked" or de-compressed the file before selecting the SETUP icon.
4. When the Setup Wizard appears, click the INSTALL button to begin the install procedure.
5. Follow the on-screen instructions to complete the installation.

At the end of the installation process, you should take the opportunity to view the "Read Me" file(s) that was/were included with the installation program. "Read Me" files provided contain important, up-to-date reference information about the software you will be using.

ZON SYSTEM CONFIGURATION BASICS

It is recommended that you organize all of the information about your system before starting your configuration tasks. The ZON Installation and Operation Manual contains a reference table that you can fill out during the system's installation. Using this reference table will give you quick access to the information about the components connected to your system.

Many installers prefer to leave the ZON system in the factory default configuration for a few days while the new system's owner(s) get the "feel" of their new system. This audition period will help establish preferences for labels, default volume settings for pages, and other settings that may not be thought about prior to trim-out.

There are two different ways you can approach your ZON system's configuration:

1. The Connected Approach - Connect your computer to a ZON router, establish communications and configure the router while maintaining a serial connection. The active connection between the ZR-98 and your computer will allow the software to "read" information from the router's memory area and place vital portions of that information into the software.

2. The Offline Approach - Instead of using your computer to establish a serial connection with a ZON router, one can work with System Configuration Files (SCF). A SCF can be created directly from the software, or could have been created from a previous "information upload" from a ZON router.

Some ZON Expansion modules may require you to be actively connected to a ZON router to create settings specific to the expansion module. The ZIR-232 Device Commander is an example of an expansion module that fits this requirement.

When choosing one of the two options above, you may want to consider the following:

- The Connected Approach is useful for making changes that affect a specific router, especially after applying a previously written SCF as a template.

- The Offline Approach is useful for creating SCFs that will be used as configuration templates. This is helpful when working with systems that have multiple ZON Routers or for working with a system's setup prior to installation and trim out.

Regardless of the method you choose, the way you enter and modify data for the system is the same. Also, regardless of the method, you always have the option to save your configuration settings as a SCF for later use or archiving.

ZON SYSTEM CONFIGURATION BASICS

Using the Software

The ZON Configuration Utility is broken down into the following main menus (Figure 4a shows the main menus, located on the left-hand side of the screen):

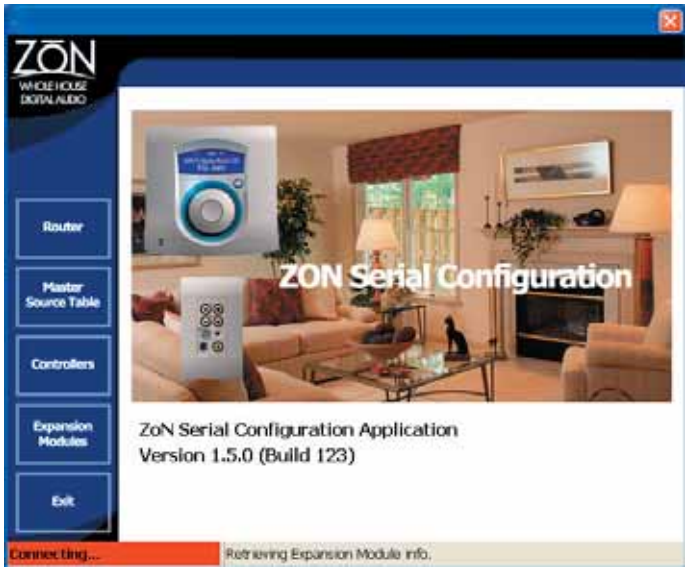


Figure 4a

1. Router - Displays basic information about the ZON Router. Learn about the router's firmware level, system support information and the router's paging options.
2. Master Source Table - Configure and manage all of the router's inputs (e.g., Input Modules, Local Input and ZAC-60 microphone inputs).
3. Controllers - Configure and manage all of the ZAC-60s connected to the router.
4. Expansion Modules - Configure and manage ZON Expansion Modules connected to the router. Also provides basic information about the module (type, firmware level, etc.).

Basic Steps of Configuring a ZON System

The main navigation buttons (as seen in Figure 4a above) provide you with a basic path for most ZON system configurations. The following are basic steps involved in most system configurations:

1. Modify basic router settings in the ROUTER screen. Typically, the factory default settings for router options are not changed for most systems.
2. Configure the router's inputs (ZIM-4 Input Modules connected the system and the router's "Local Input") in the MASTER SOURCE TABLE screen. This is typically where most of the system's customized settings are made.
3. Modify ZAC-60 settings in the CONTROLLERS screen. This part of the configuration process is where most all of the "finer" configuration settings are made - those settings that affect each listening zone's audio styling.
4. Work with Advanced Settings in the ADVANCED screen. Advanced configuration options typically involve working with firmware and system files. The ADVANCED screen is available from any main section.
5. Configure and work with ZON Expansion Modules in the EXPANSION MODULES screen.

Following the steps above, you should experience a logical and productive work flow for your system's configuration tasks.

ZON SYSTEM CONFIGURATION BASICS

When your configuration changes and modifications are complete, you can save them to the router's main memory area (referred to as the master source table). Following a save to the router's master source table, you can elect to update the connected controllers with the new settings. You can also choose to save your configuration settings as a SCF (System Configuration File).

Saving configuration changes and making those changes take effect is a two-step process. Figure 4b shows a flow diagram of the two-step saving process.

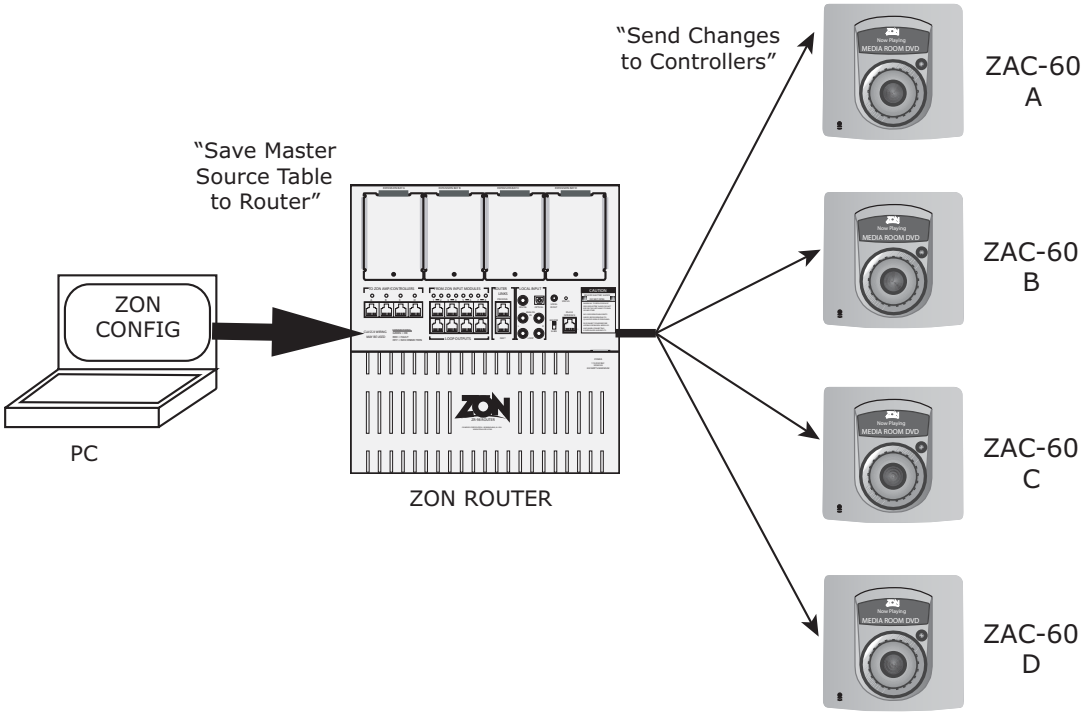


Figure 4b

The configuration data that you work with (and provide) via your PC is moved to the router's master source table with the "Save Master Source Table" option. The router's main memory area is comprised of an overall settings table and four sub-tables that contain each ZAC-60's settings. In order for the connected ZAC-60s to receive their share of the newly saved data, the "Send Changes to Controllers" option instructs the router to send each controller it's ear-marked settings from the master source table and other controller-specific settings you may have made (e.g., it's name, default paging volume, source restrictions, etc.).

The section, "Saving Configuration Changes/Modifications" on page 16 describes the process of saving information to the ZON router. The section, "Sending Changes to Controllers" on page 25 provides instructions on updating controllers with the router's stored data.

In a similar fashion, some ZON expansion modules use this same two-step process. Configuration settings are made via ZON config then saved to the module's main memory area. Refer to the module's documentation for more information.

ZON SYSTEM CONFIGURATION BASICS

Connecting Your Computer to a ZON Router

Before connecting your computer to a ZON router:

1. Verify your computer meets the system requirements on page 6.

2. Locate the DB-9 to RJ-11 adapter and RJ-11 cable that was provided with your ZON router.

Connect the adapter to your computer's serial port. Connect the supplied RJ-11 cable to the adapter and to the ZON router's RS-232 Serial Interface jack. The RS-232 Interface Jack on the router will light the connector when properly connected. Some computers (e.g., IBM laptops) will only light the connector when the software is running.

Advanced Installation Note: You should use the DB-9 to RJ-11 adapter and RJ-11 cord that is provided with the ZON router to prevent connection and communication problems. If the RJ-11 cable supplied with the router is not suitable for your particular situation, you can use a standard 4 wire RJ-11 telephone cable. RJ-11 cables with six conductors will not work with the ZON router.

The software requires a dedicated serial port. It cannot share a port with an internal modem or other device. If you are unsure about the exact location of the serial port on your computer, refer to the user's manual supplied with the computer.

ZON Config will use COM1 as the default port for a connection with the router. If you are unsure about your computer's COM port assignment, refer to the owner's manual supplied with your operating system to learn more. In the event that COM1 cannot be used in your particular situation, ZON Config provides an option to change the serial port used for the connection.

Advanced Installation Note: If you computer does not have a serial port (a nine-pin male, or known as a DB-9), we recommend that you use either a PCI (for desktops) or PCMCIA (for laptops) serial adapter card. You should not use a USB serial adapter. USB serial adapters are unreliable, and can cause intermittent character loss during serial communications.

Most technical support calls made to Oxmoor regarding connection problems with ZON Config are the result of using a non-Oxmoor supplied DB-9 to RJ-11 connector, using a 6-wire RJ-11 cable or using a USB Serial adapter.

ZON SYSTEM CONFIGURATION BASICS

Working with a Direct Connection

The following steps will help you make a direct (serial) connection with a ZON router:

1. Verify that you have AC power connected to the ZON router.

2. Connect your computer to the ZON router via the serial to RS-232 connection accessories as described on page 6.

3. Launch the ZON Config program. (The main executable for the software is typically found in C:/Program Files/ZON Audio/ZON Config.) You will see the "Select Connection Method" screen as shown in Figure 1 below:

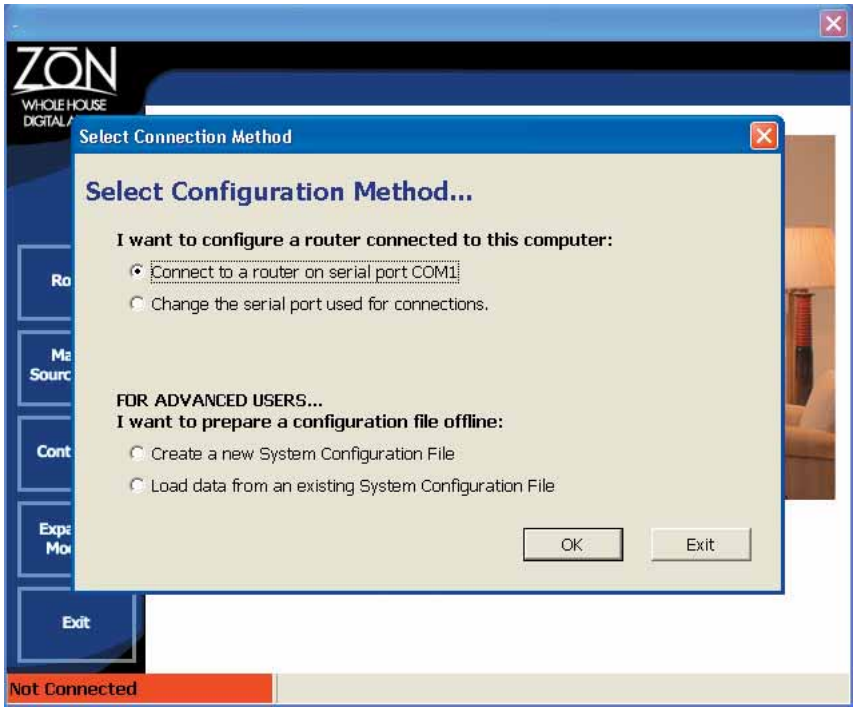


Figure 1

4. The "Connect to a router on serial port..." option should be selected. Make sure that the right COM port for your computer is listed at the end. Click "OK" to connect.

Advanced Installation Note: In the event that your computer cannot use the software's default COM1 port, choose "Change the serial port used for connections" and press "OK". Select the right COM port for your computer and press "OK" to continue. For more information on troubleshooting connection problems, see Appendix A, "In Case of Difficulty" on page 35.

ZON SYSTEM CONFIGURATION BASICS

When connecting to a ZON router, you can monitor the connection status as the software initializes the router and establishes communications. Figure 2 shows a typical screen during the connection process:

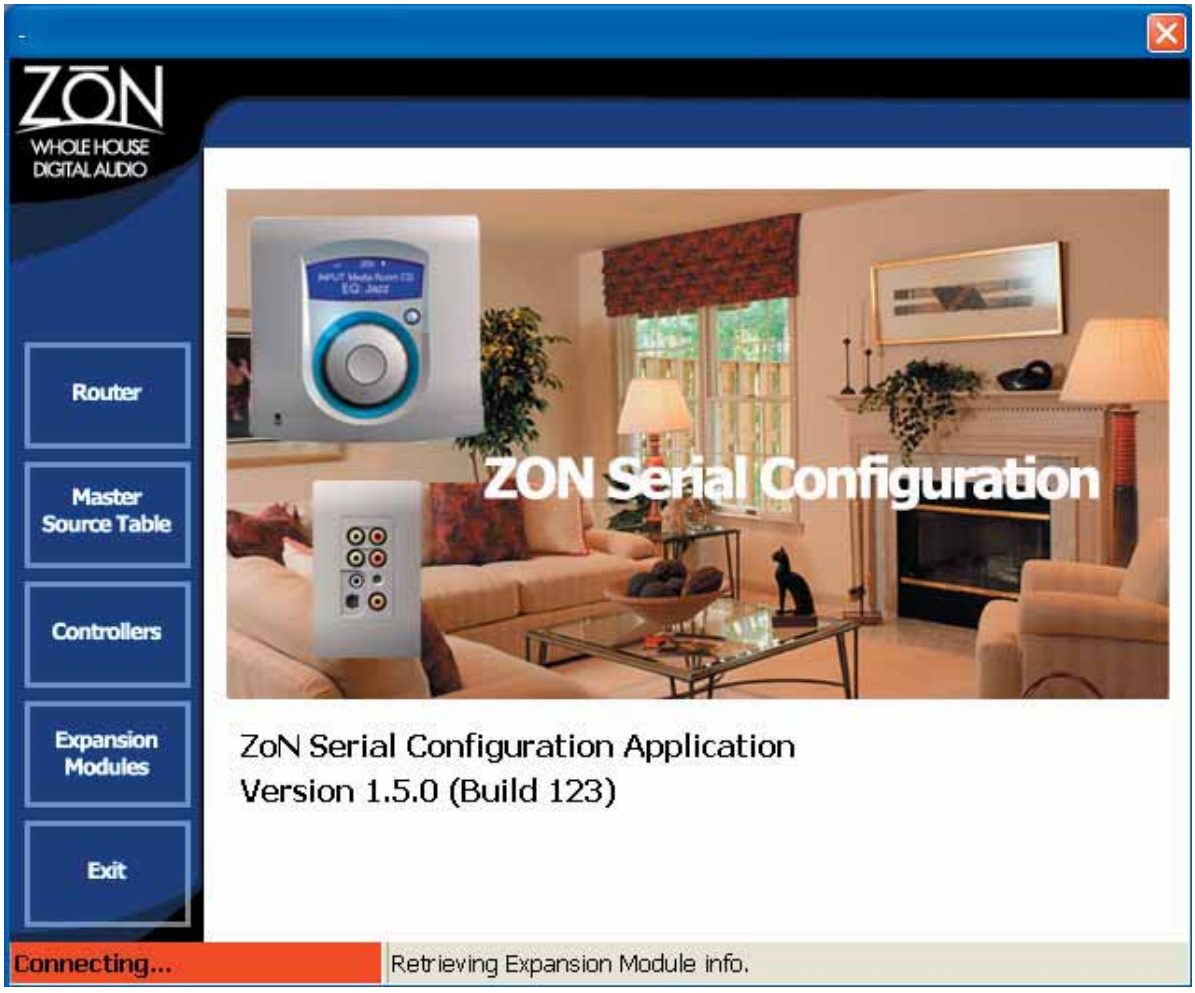


Figure 2

The status bar in the lower left-hand corner of the screen will be shaded red and read "Connecting..." during the time the software is establishing communications with the ZON router. A text area to the right of the status bar gives an indication of which connection "step" is being executed.

During the connection process, the utility is gathering all of the router's stored settings and collecting hardware status information. When all of the required information from the ZON router is complete, the status bar will turn green and read "Connected to COM1" or the COM part that you used (if different from the default). The software automatically starts on the ROUTER screen to begin the configuration process. If you are having trouble connecting to a ZON router, see Appendix A: In Case of Difficulty on page 35 for help.

ZON SYSTEM CONFIGURATION BASICS

Working with a System Configuration File

If you plan to follow the "offline" approach discussed earlier, you will connect to a ZON System Configuration File (SCF) instead of directly connecting to a ZON router. To connect to a SCF, launch ZON Config and refer to Figure 3 below:

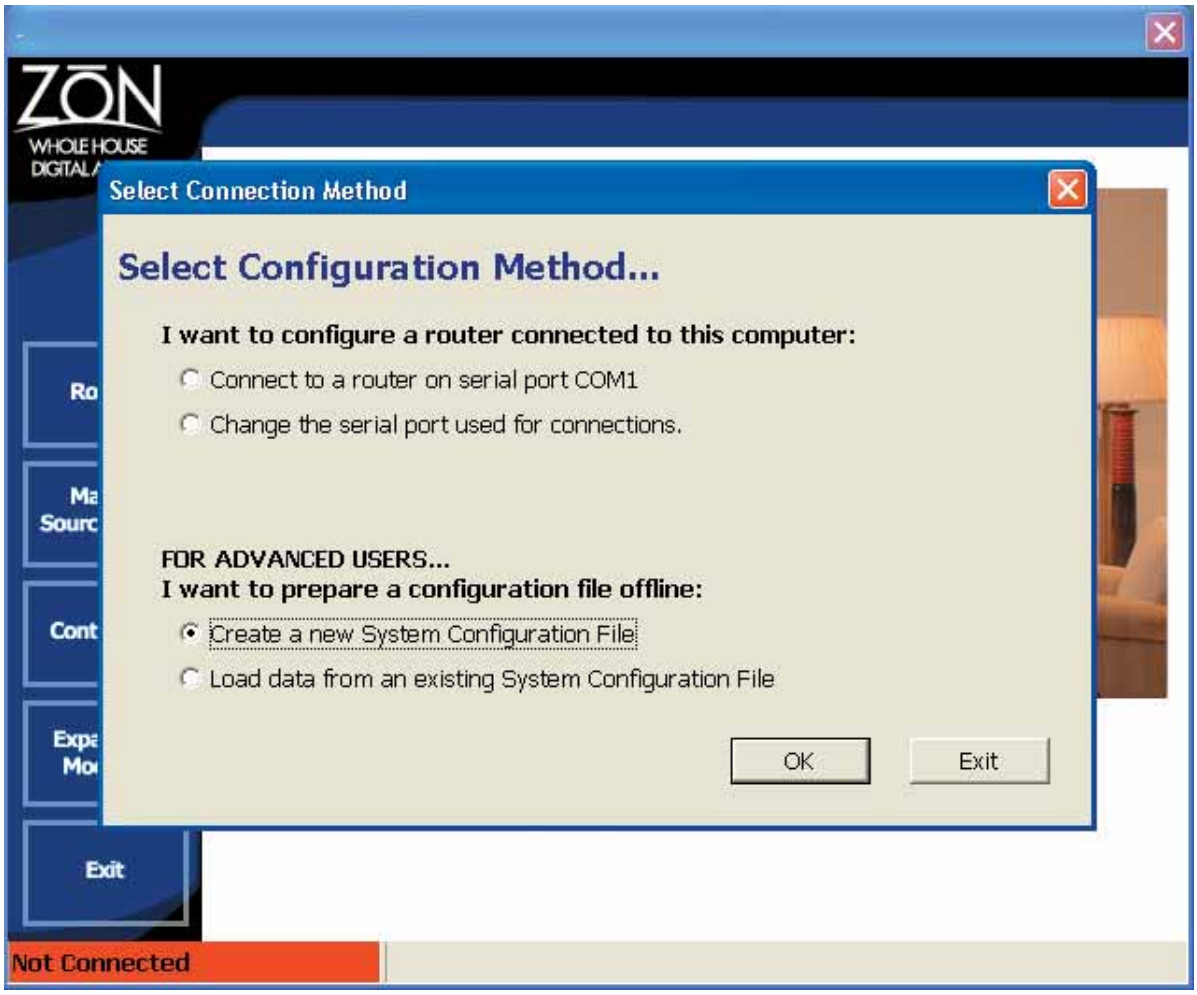


Figure 3

Choose "Create a new system Configuration File" (if you are starting from scratch) or choose "Connect to an existing System Configuration File" (if you are continuing from an existing SCF) and click "OK". In the next screen, provide the name and path of the file you wish to create (or load) and click "OK" to continue. The status bar will turn green and say "Connected to <filename>". The software automatically starts on the ROUTER screen to begin the configuration process.

Advanced Installation Note: ZON Config uses the "SCF" extension for ZON system configuration files. A ZON SCF is unique to the ZON Configuration Utility, and should not be confused with a system file used by your computer or computer's operating system.

ZON SYSTEM CONFIGURATION BASICS

Working with a Multiple-Router System

The ZON Configuration utility is designed to connect to one router at a time. If your ZON system contains multiple routers, you must connect to each router individually to complete the configuration process for your entire system.

Use the following guidelines as a suggestion for multiple router configurations:

1. Create and use one system configuration file as a baseline for each router in the system. A template helps you keep names and settings consistent router-to-router.

2. Connect to the first router (MASTER) in the system. See page 33 for instructions on how to apply a previously written SCF to the router.

3. Modify the settings for this particular router (e.g., ZAC-60 controller name). It is also recommended that you save each router's settings for future reference. See page 34 for instructions on how to create a SCF directly from a ZON router.

4. Exit the application. Remove the RJ-11 cable from the router's RS-232 jack. Connect to the next router in the system and re-launch the software.

After re-launching the software on the next router in the chain, load the SCF template, modify it as required for the specific router and save the changes to the router.

Disconnect from this router, and repeat as necessary for the remaining routers in the system.

Advanced System Configuration Note: Using a SCF as a template can save you time and effort. A template holds the data you wish to keep the same router-to-router (e.g., ZIM-4 input names and settings). For non-router specific settings, leave them at their default, and modify them after you have applied the template to the router.

CONFIGURATION SETTINGS: ZR-98 ROUTER

After you successfully connect to a ZON router or SCF, the ROUTER screen is the default starting point for the system configuration process. Figure 5 shows a typical ROUTER screen:

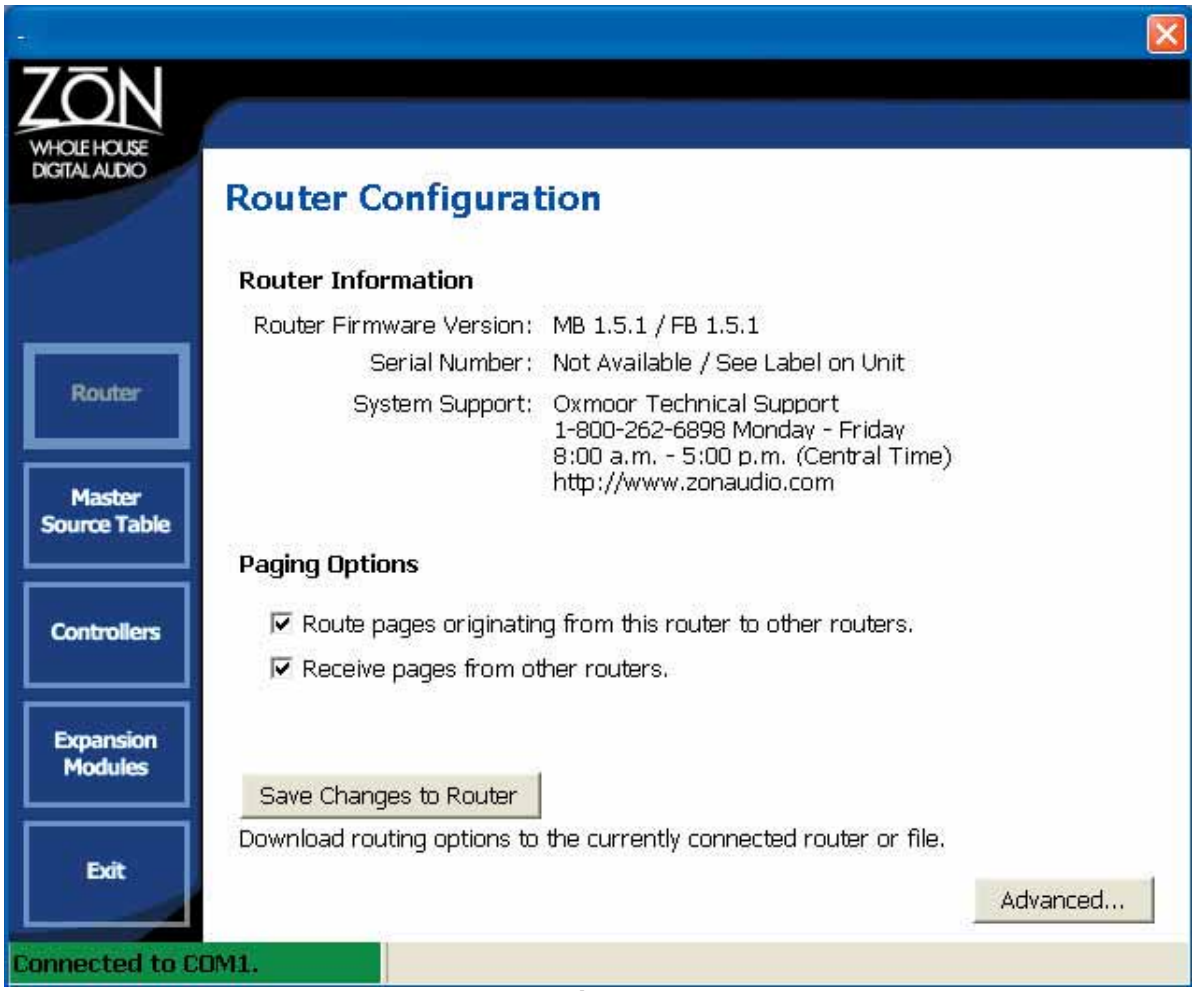


Figure 5

Router information, such as the firmware and system support information are listed here (Router information is read by the software only when there is a direct connection to the router.) The system support information is customized for your particular installation, and provided during the software help.

By default, a ZON router sends and receives paging data to all other routers in the system. Paging Options allow you to change the default paging behavior of the ZON system, especially in multi-router installations.

The "Save Changes to Router" button saves any changes you have made to the router (or a SCF file if you are working "offline").

The "Advanced" button, shown in Figure 5, and available on all of the main screens, is explained in the section, "Advanced Configuration Options" on page 28.

CONFIGURATION SETTINGS: MASTER SOURCE TABLE

The MASTER SOURCE TABLE screen (as shown in Figure 6) allows you to configure all of the ZON router inputs. ZON router inputs are:

- ZIM-4 Input Module Inputs (8 total)
- The router's Local Input (1 total)
- The ZAC-60 microphone inputs (4 total)*
- Any additional inputs provided by ZON Expansion modules

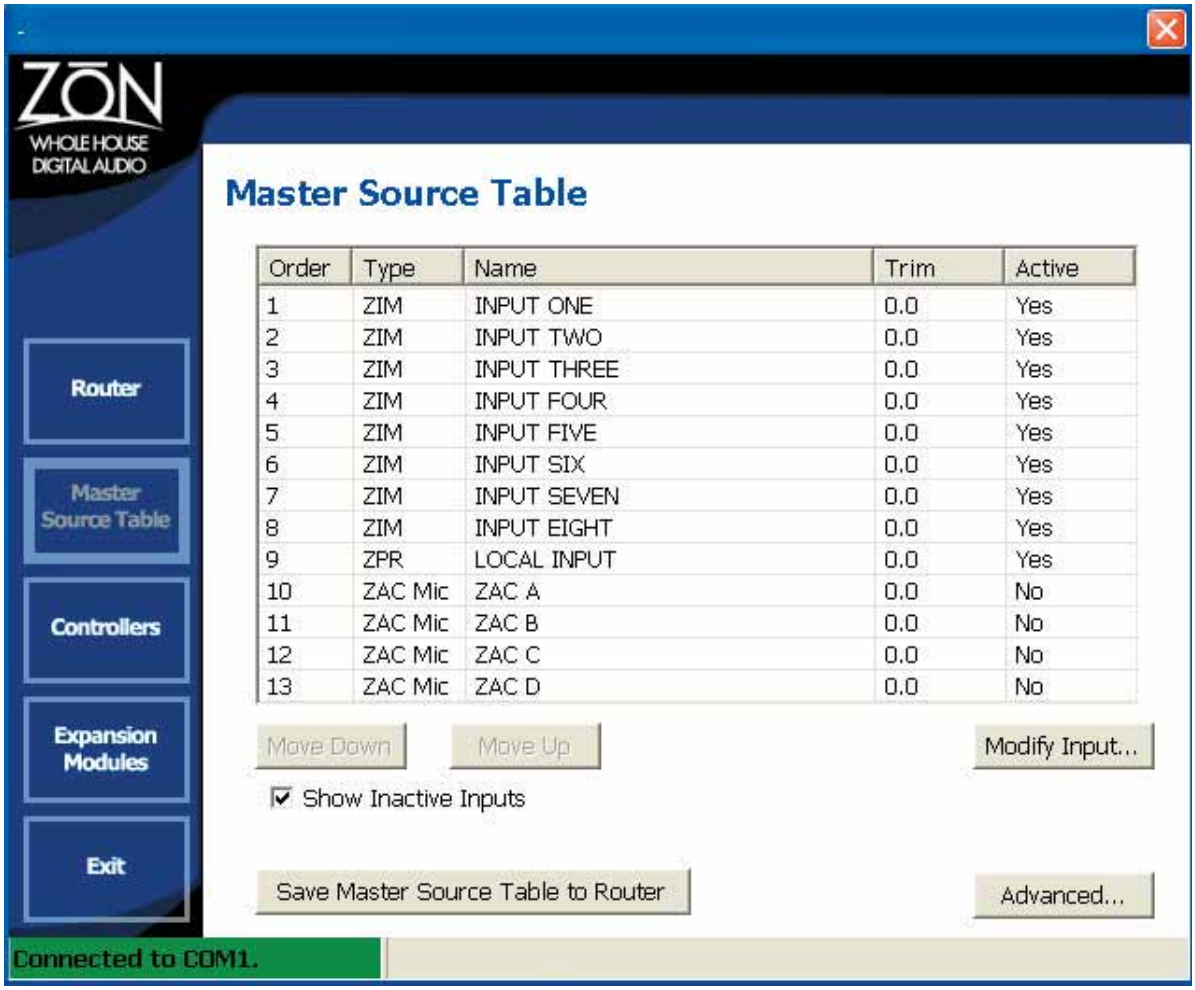


Figure 6

The table-style view of the router's master source table shows:

- The order of the inputs (the order as they appear on the ZAC-60 display)
- The type of the input (ZIM, Router Input, ZAC Microphone or Expansion)
- The names assigned to each
- The input trim ("Trim") setting for each
- The active/inactive status of each

**ZAC mics are used to set monitoring permissions. See page 23 for more details.*

CONFIGURATION SETTINGS: MASTER SOURCE TABLE

Modifying Inputs on the Master Source Table

To modify any input on the MASTER SOURCE TABLE, highlight the input and click "Modify Input..." or, double-click the desired input. Figure 7 shows a typical input's configuration screen:

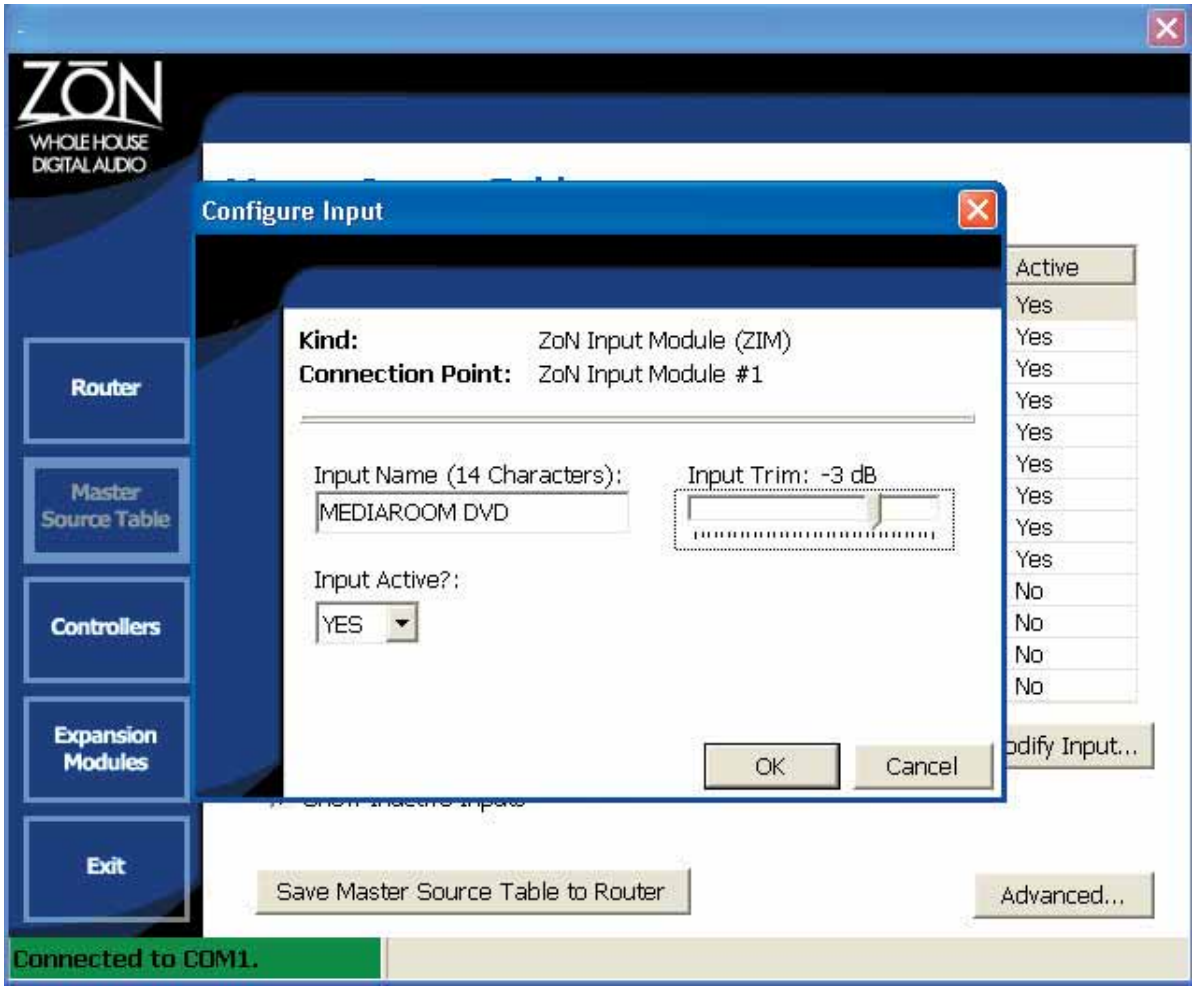


Figure 7

The "Configure Input" screen displays the kind of input and it's connection point on the ZON router. As shown in Figure 7, the selected ZIM-4 is connected to the FROM ZON INPUT MODULES jack labeled "1-2" on the router.

Advanced System Configuration Note: The "Connection Point" - Connection point data is important to remember, as it is the only way to associate an input with an active jack (or connection point) on the ZON router. "Connection Point" always tells you which component and it's jack you are configuring.

From the "Configure Input" screen, you can do the following:

- Change the name of the input (up to 16 alpha-numeric characters)
- Adjust the input trim (boost or cut in single dB increments)
- Modify the input's "Active" status (as a "Yes" or "No")

CONFIGURATION SETTINGS: MASTER SOURCE TABLE

Naming Inputs

ZON Config allows you to create unique names for the inputs used in the system. The names can be up to 16 characters. The system will recognize characters "A" through "Z" and "0" through "9". You can also use an apostrophe " ' ". The characters you supply will be displayed in upper case on the ZAC-60 display. If you use special characters other than the ones listed above, ZON Config will substitute those for blank spaces. After you configure the system, it's a good idea to "audition" the labels on a connected controller and tweak as necessary.

Adjusting Input Trim

Input trim adjustment is provided to help you with matching levels between multiple audio sources. The input trim has 30 dB of cut and 6 dB of gain. To adjust the input trim for a particular input, click on the slider bar and move the indicator to the desired position. By default, the input trim for each input is set to unity (0 dB).

Advanced System Configuration Note: Adjusting Input Trim - Gain should only be applied to low-level analog sources. You may apply gain to digital sources and high-level analog sources, but you could experience distortion.

Input Active/Inactive Assignments

The "Input Active?" pull-down menu allows you to set the active/inactive status of a particular input. By default, all of the router's ZIM inputs and Local Input are active and the ZAC Mic inputs are inactive. For more information on working with ZAC Mic inputs (monitoring), see the section "Working With Monitoring Settings" on page 23.

In an input's "Active" flag is set to "No", this input will not show up in the ZAC-60 controller's menu, and will not be available to the controller's source restriction screen (for more information on restricting sources, see page 21).

It is recommended that you set the "Active" flag of unused inputs to "No". Otherwise, unused inputs will appear on the controller's SELECT SOURCE menu (unless they are tagged as "restricted" sources).

CONFIGURATION SETTINGS: MASTER SOURCE TABLE

Working with the Master Source Table

There are additional tools available on the MASTER SOURCE TABLE screen to aid you in your configuration tasks.

Figure 7

In figure 8 above, you can see a typical router's master source table data without the "Show Inactive Inputs" filter being applied (note the checkbox just below the table).

The "Move Down" and "Move Up" buttons allow you to change the menu ordering for particular inputs. To change an input's position in the controller's menu structure, highlight the input you wish to move and then click the appropriate "Move" button. Regardless of an input's order in the table, it's assigned connection point on the router does not change (e.g., a ZIM input module connected to "7-8" jack on the ZON router can occupy the #1 position in the menu structure, will report back it's physical connection point in the "Configure Input" screen). The "Connection Point" information is the only way you can associate an input with an active jack on the ZON router.

CONFIGURATION SETTINGS: MASTER SOURCE TABLE

Saving Configuration Changes/Modifications

After you have made all of the configuration settings and modifications in the MASTER SOURCE TABLE screen, it is a good idea to save your data. If you are connected to a ZON router, you can save your changes to the router's main memory area by clicking on the "Save Master Source Table to Router" button (if you are working "offline", the button reads "Save Master Source Table to File").

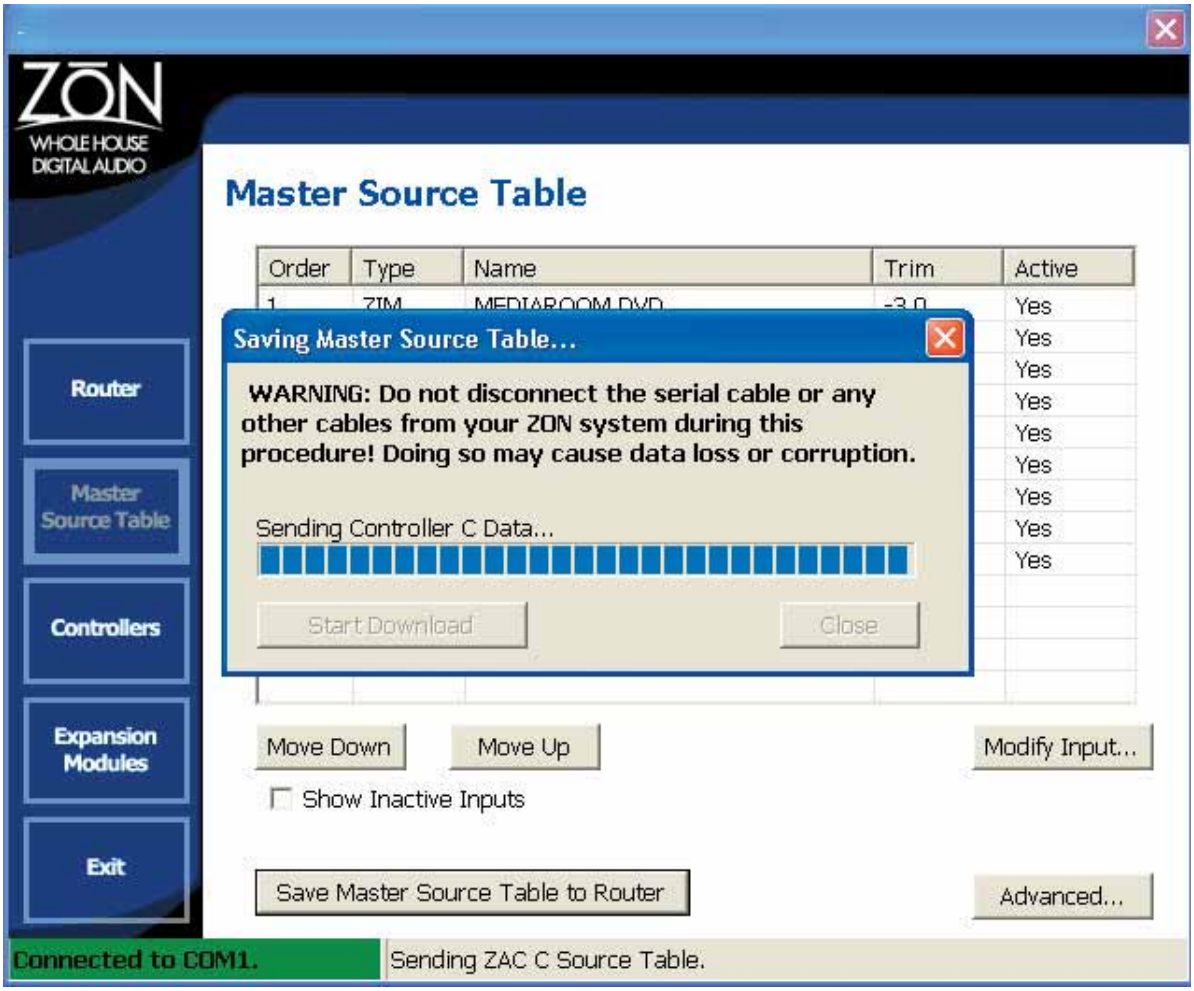


Figure 9

Figure 9 shows the "Saving Master Source Table..." screen. Click on "Start Download" to send your information to the ZON router. There is a progress bar with text descriptions that will keep you up to date on the saving procedure. Once the task is complete, you will see an on-screen notice similar to Figure 10 below:

Figure 10

CONFIGURATION SETTINGS: MASTER SOURCE TABLE

The ZON Configuration utility is designed to keep you on tack during the entire configuration process. After you acknowledge the "Successful Save" dialog box, the software will remind you that the new data saved to the ZON router's memory area has not been sent to the connected ZAC-60 controllers (Figure 11).

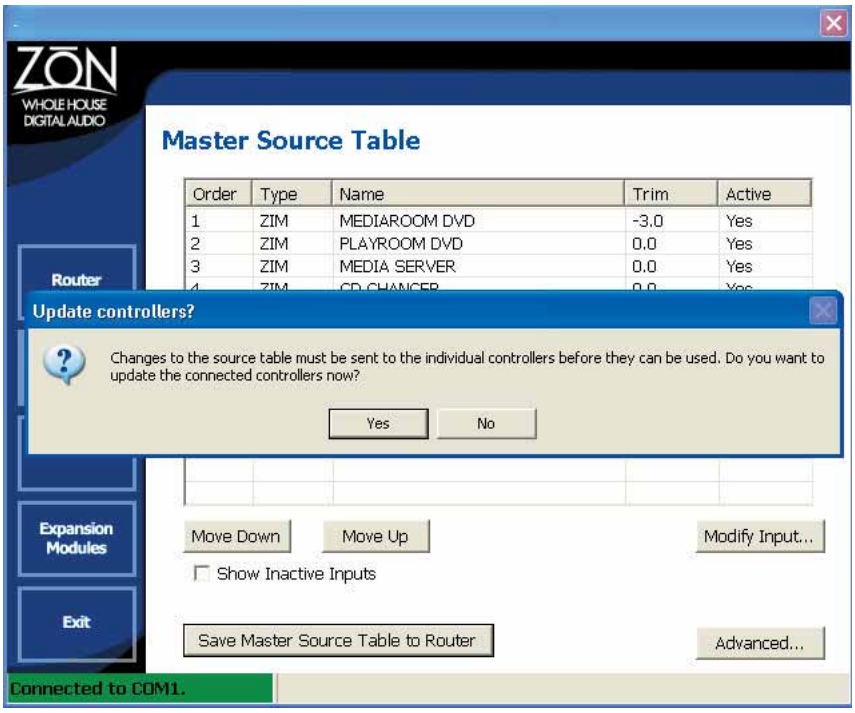


Figure 11

At this point in the configuration process, you have an option of updating the connected controllers or not. If you have not made any modifications to the connected ZAC-60s, you can choose "No" and move on with the remaining configuration tasks - which deal with the configuration settings for connected controllers. After making changes and modifications to the connected ZAC-60 controllers, the software will, once again, guide you through the required steps to keep the data in the router's main memory area up to date. You should also review Figure 4b and the information on page 5 to learn more about the two-step "saving" process that is involved with the software.

If you choose to go ahead and send the newly created configuration data to the ZAC-60 controllers, you may want to see the section "Sending Changes to Controllers" on page 25 for more instructions on how to do this successfully.

Advanced System Configuration Note: Saving Master Source Table to Router - Any time there is new data written to the router's master source table, connected controllers do not operate from the new settings unless they are updated with the new data (called "Sending Changes to Controllers"). When you are working with a new configuration, and have only made changes and modifications to the Master Source Table, you still have settings and modifications for individual controllers that need to be entered. Waiting until you have completed all of your configuration tasks before updating the controllers is a acceptable. In other cases, you should be aware of the two-step saving process involved with ZON Config and make it part of your routine to always save changes to the router then update the connected controllers. Doing this each time will make certain that you are keeping the data on the router and the data in the controllers consistent.

CONFIGURATION SETTINGS: CONTROLLERS

The CONTROLLERS screen (shown in Figure 12) allows you to configure the four ZAC-60 controllers available to the ZON router.

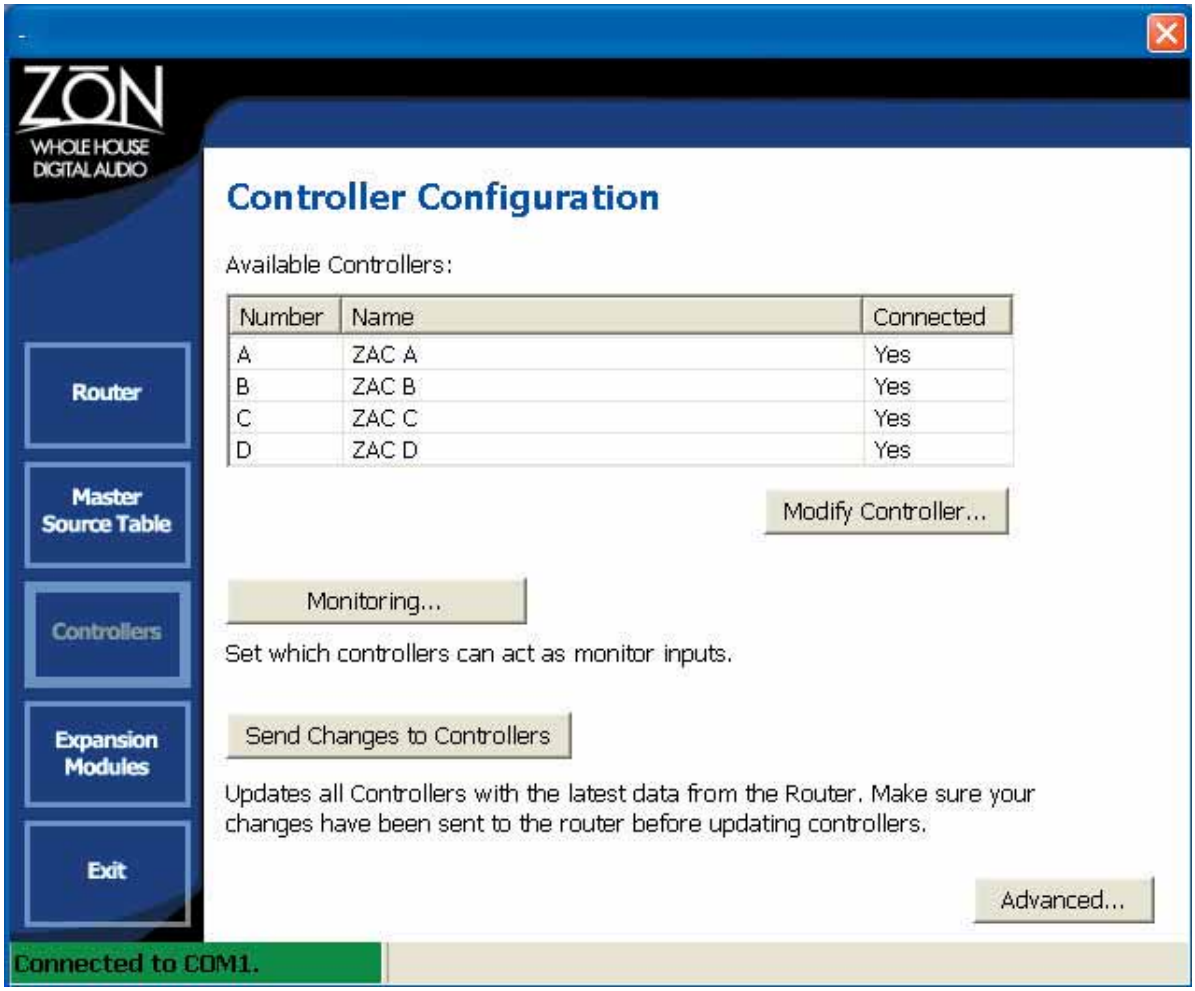


Figure 12

This screen lists controller designations ("A" through "D"), the names assigned to controllers, and each controller's connection status. If you are working "offline" all of the controllers will show a connection status of "No". If you are connected to a router, the true connection status of your router's ZAC-60s will be shown.

From the CONTROLLERS screen you can:

- Modify and set individual controller preferences
- Set room monitoring preferences
- Set defaults for treble, bass, balance and EQ presets
- Send settings and preferences to the ZON router and connected controllers.

Unlike the MASTER SOURCE TABLE inputs, you cannot change the order of the ZAC-60s in the table on the CONTROLLERS screen.

CONFIGURATION SETTINGS: CONTROLLERS

Modifying a ZAC-60 Audio Controller/Amplifier's Settings

To modify any ZAC-60 on the CONTROLLERS table, highlight the controller and click "Modify Controller..." or double-click the desired controller's row in the table. Figure 13 shows a typical controller's configuration screen:

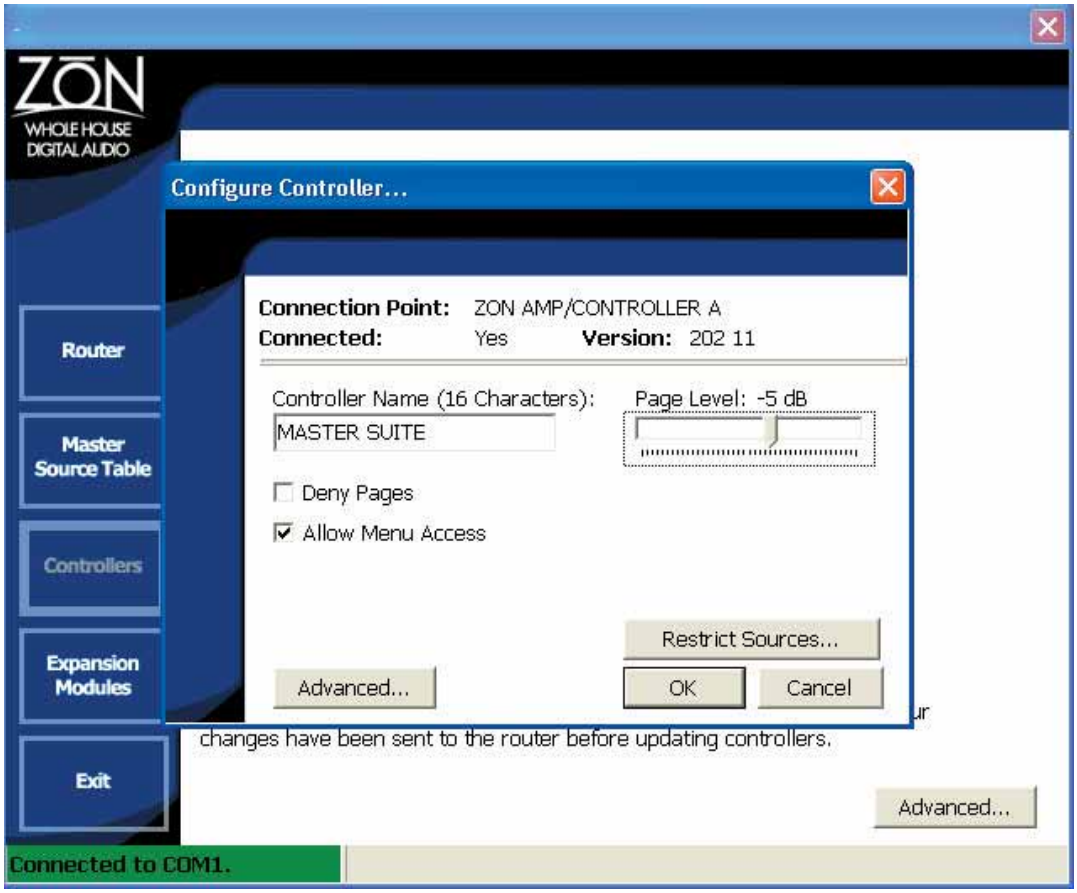


Figure 13

The "Configure Controller" screen displays the controller's connection point on the ZON router, it's connection status and it's firmware version.

> *Advanced System Configuration Note: ZAC-60 Connection Point - To determine exactly which ZAC-60 controller you are working with, read the "Connection Point" information provided in the "Configure Controller..." screen. This is the location where ZON Config provides a direct connection reference (e.g., ZON AMP/CONTROLLER A through D, which corresponds to the jack labels on the ZON router for the four ZAC-60 controllers).*

From the "Configure Controller" screen you can:

- Change the name of the controller
- Adjust paging and monitoring options
- Allow/Disallow menu access

CONFIGURATION SETTINGS: CONTROLLERS

Changing the Controller's Name

ZON Config allows you to create unique names for the controllers used in the system. The names can be up to 16 characters. The system will recognize characters "A" through "Z" and "0" through "9". You can also use an apostrophe " ' ". The characters you supply will be displayed in upper case on the ZAC-60 display. If you use special characters other than the ones listed above, ZON Config will substitute those for blank spaces. After you configure the system, it's a good idea to "audition" the labels on a connected controller and tweak as necessary.

Adjusting the Paging Volume

Incoming pages are heard at the controller's paging volume level. By default, this is set at unity (0 dB). Incoming pages take priority over the controller's current operational state unless the controller is OFF, in MUTE or has been configured not to accept pages.

To change the controller's paging volume, click on the PAGE LEVEL slider and move the indicator to the desired setting.

Accepting/Denying Pages

Selecting the checkbox for DENY PAGES will make the controller ignore incoming pages. By default, the controller is set to receive pages.

Advanced System Configuration Note: Paging Options - Selecting DENY PAGES in the software can later be changed from the ZAC-60 controller by accessing the controller's PREFERENCES menu. See the ZON Installation and Operation Guide for more information on accessing and using the controller's various PREFERENCES options.

Setting Menu Access Options

De-selecting ALLOW MENU ACCESS will prevent the controller from displaying the FUNCTIONS menu or the PREFERENCES menu. You will still be able to adjust volume and select sources. If your ZAC-60 controller will be configured to work with ZON expansion modules (e.g., ZIR-232 Device Commander), some (or all) commands relating to expansion modules will be available on the ZAC-60 even when you have de-selected ALLOW MENU ACCESS.

CONFIGURATION SETTINGS: CONTROLLERS

Restricting Sources from the ZAC-60 SELECT SOURCE Menu

To restrict a source (or sources) from being accessed by a specific ZAC-60 controller, click the "Restrict Sources" button on the specific ZAC-60 controller, click the "Restrict Sources" button on the specific controller's "Configure Controller..." screen. Figure 14 shows a typical ZAC-60 source list.

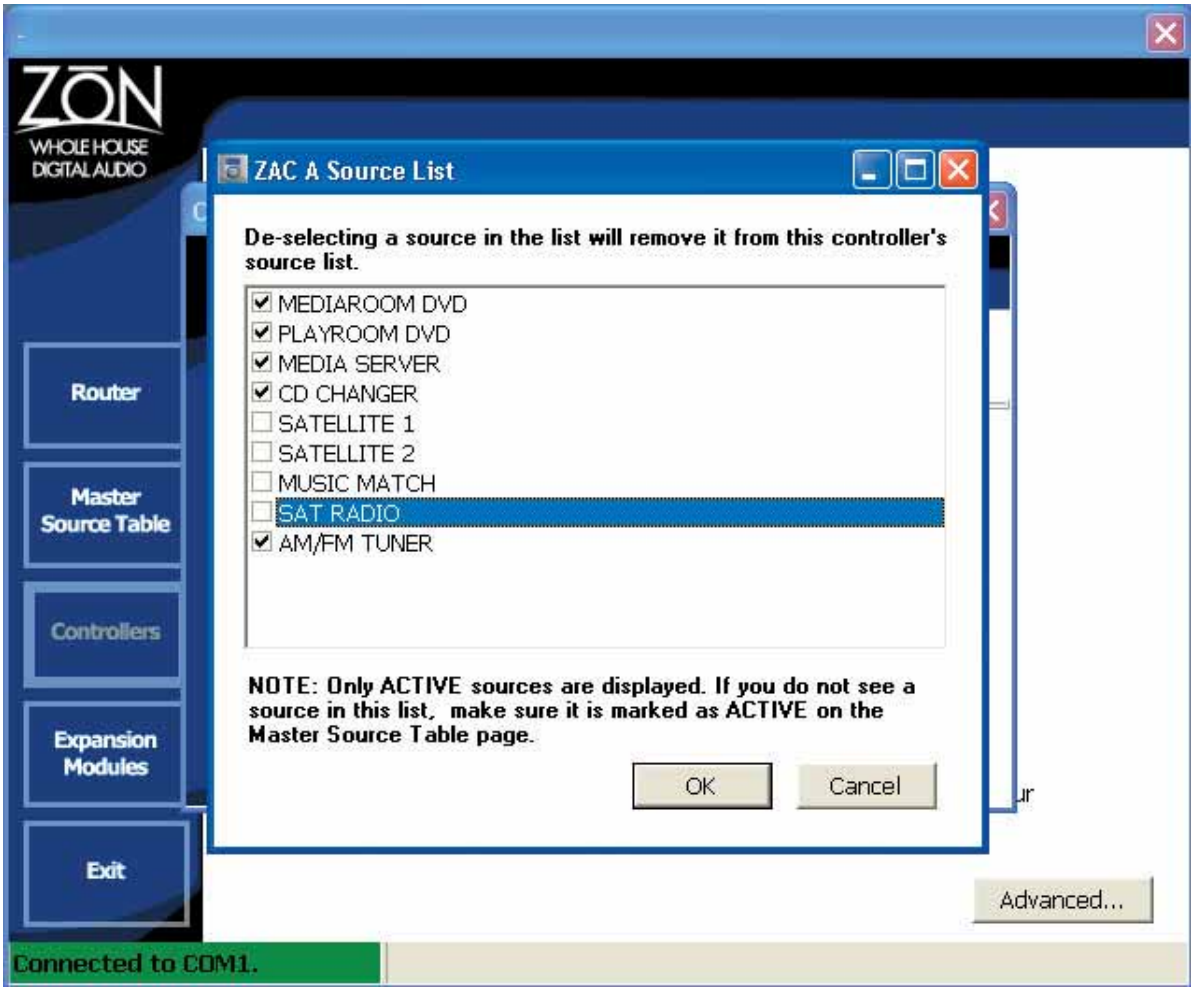


Figure 14

All of the audio source inputs from the MASTER SOURCE TABLE which have been set to "Active" appear on the "Source List" screen for each controller. De-selecting a source in either of these screens will cause that source not to be shown on the controller's display in the SELECT SOURCE menu. Click "OK" to reserve your choices and return to the CONTROLLERS screen.

Advanced System Configuration Note: Source Restriction and Source Ordering - You may note that source restriction is a ZAC-60 specific setting. Each controller on a router can have it's own source listing. In contrast, the order in which available sources appear on a controller's display is a router-specific setting, determined by the order in which the source input is listed on the MASTER SOURCE TABLE screen.

CONFIGURATION SETTINGS: CONTROLLERS

Working with a ZAC-60's Advanced Settings

To change the factory-set default settings for a controller's bass, treble, balance and EQ setting, click the "Advanced" button on the specific controller's "Configure Controller..." screen. Figure 15 shows a typical controller's advanced setting options.

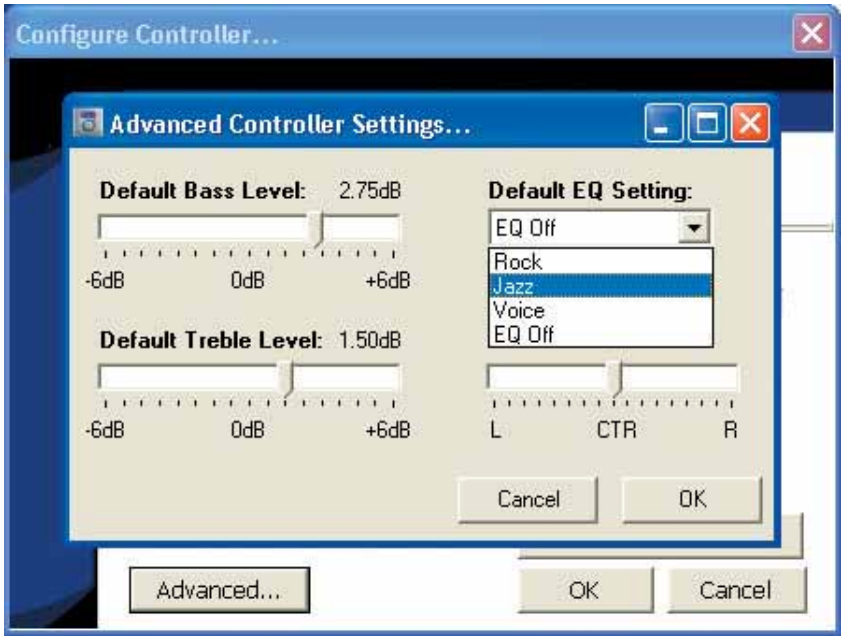


Figure 15

Changing settings on this screen become the default settings that the controller will use upon a hard power cycle. The controls are similar in design to the ones found on the ZAC-60's FUNCTIONS menu. Make all of your default settings and click "OK" to include these in the controller's settings information.

Advanced System Configuration Note: Power States for a Controller - A "soft" power cycle is when you use either the ZON remote or press and hold the controller's jog wheel until the unit "turns off". When you return from a soft power cycle, the controller will return to it's previous state (e.g., same volume, same source, etc.). A "hard" power cycle is when you remove AC power from the ZON router. When you return from a hard power cycle, the controller defaults to the first input in the system, and it's volume is the mute position. Using the Advanced settings for a controller will allow you to decide the ZAC-60's default settings for bass, treble, balance and EQ after a hard power cycle.

CONFIGURATION SETTINGS: CONTROLLERS

Working with Monitoring Settings

The ZON system allows for the active monitoring of listening zones from other controllers on the ZON router. Before a listening zone can be actively monitored by other controllers, an "Allow Monitoring" permission must be established. Figure 15b shows a typical monitoring screen:

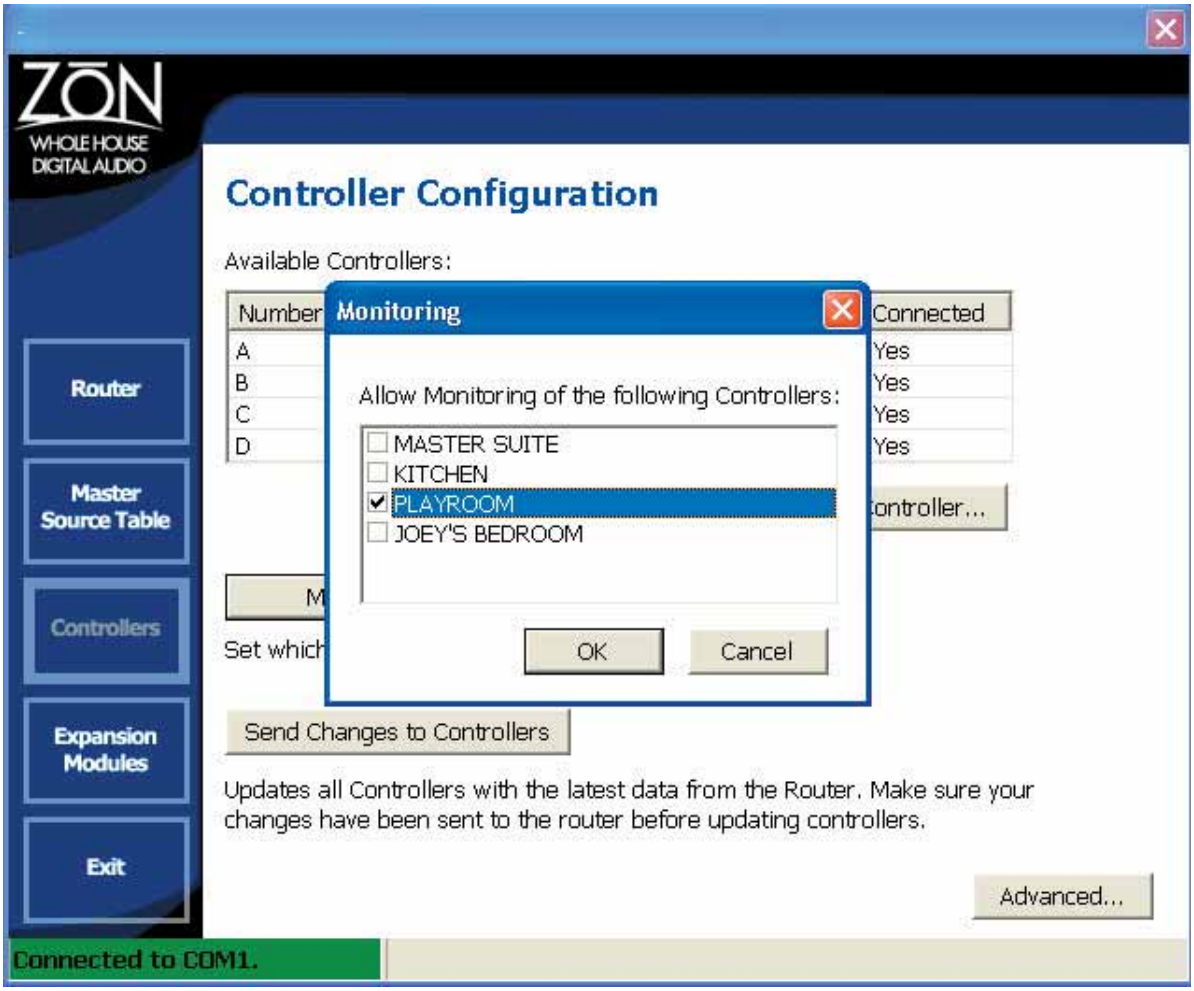


Figure 15b

Each of the ZON router's available ZAC-60 controllers are listed in the "Monitoring" screen. To allow a controller to be monitored by another ZAC-60 on the same router, click the checkbox next to it's name. The name of the controller will now be added to the available sources on the ZAC-60 SELECT SOURCE menu for all of the controllers on the router.

Make all of your monitoring permission selections and click "OK". Your settings will be saved and you will return to the CONTROLLERS screen.

CONFIGURATION SETTINGS: CONTROLLERS

When you set "Allow Monitor" permission for a ZAC-60 controller, the controller's microphone is set to "Active" on the MASTER SOURCE TABLE screen. Figure 16 shows how the ZAC-60 would appear on the MASTER SOURCE TABLE screen after the "Allow Monitoring" permission was set. Notice the "Active" column now contains the "Yes" flag.

Figure 16

It is possible to change monitoring permissions directly from the MASTER SOURCE TABLE screen by modifying the ZAC Mic input. Setting a ZAC Mic input to an Active status of "Yes" will enable monitoring on that ZAC-60 controller. Figure 17 is an example of a dialogue box that you receive when changing the Active status of a ZAC Mic input:

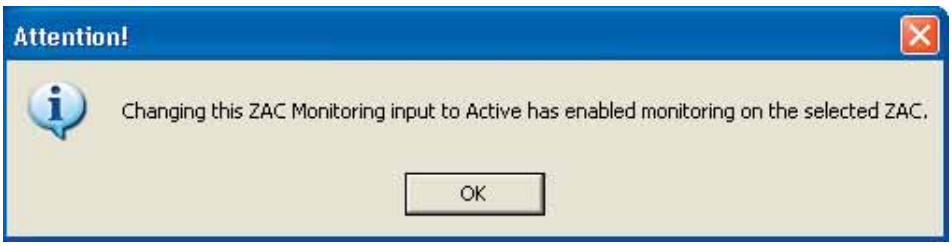


Figure 17

Monitoring permissions can be granted/denied directly from the MASTER SOURCE TABLE screen by changing the "Active" status of a ZAC MIC input to "Yes" (granted) or "No" (denied). Monitoring permissions set in one screen are applied automatically in the other.

CONFIGURATION SETTINGS: CONTROLLERS

Sending Changes to Controllers

Once you have made all of your controller-specific configurations and modifications, the data must be "sent" to the ZON router and ZAC-60 controllers for the changes to take effect. You may want to review figure 4b and the information on page 5 for details about sending changes to controllers.

From the CONTROLLERS screen, click "Send Changes to Controllers". You will see the following on-screen notice (Figure 18):

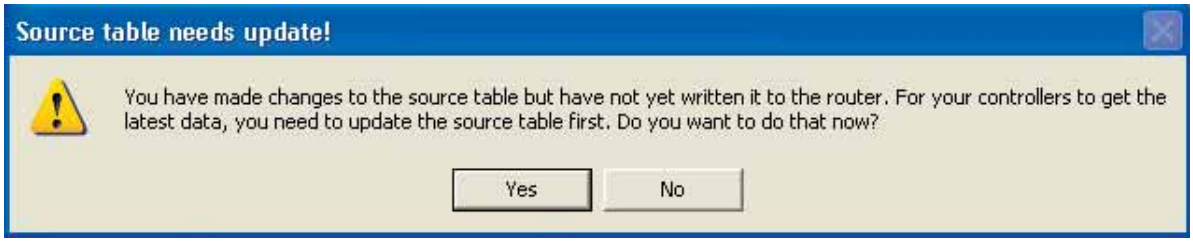


Figure 18

The ZON router's master memory area (master source table) needs to be updated prior to your being able to update the connected controllers with their share of configuration settings. Click "Yes" and then click "Start Download" on the "Saving Master Source Table..." screen (Figure 19):

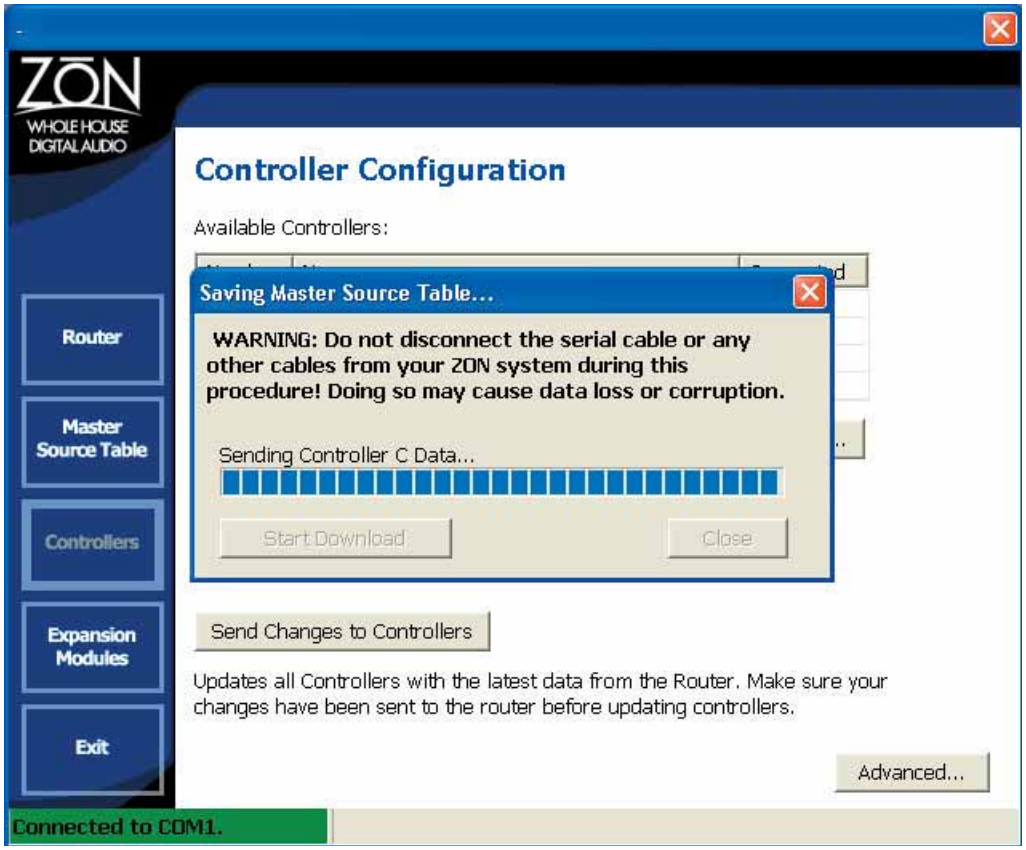


Figure 19

CONFIGURATION SETTINGS: CONTROLLERS

After the data has been saved to the router's master source table, the controllers are now ready to receive their updates from the router. Acknowledge the "Successful Save" dialogue box that appears by clicking "OK" and you will then be presented with a screen as depicted in Figure 20 below:

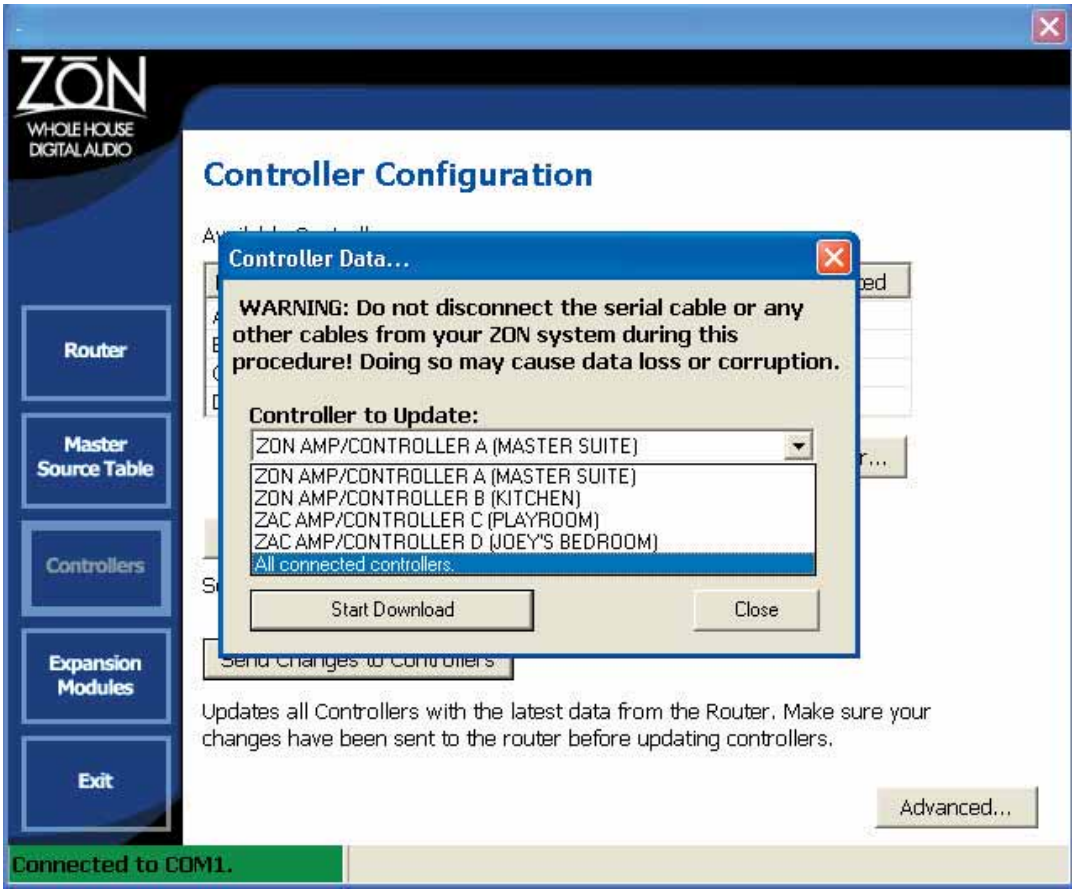


Figure 20

You can choose to update an individual controller, or all connected controllers from the pull-down menu. Make your selection and click "Start Download". You will see following dialogue box (Figure 21):

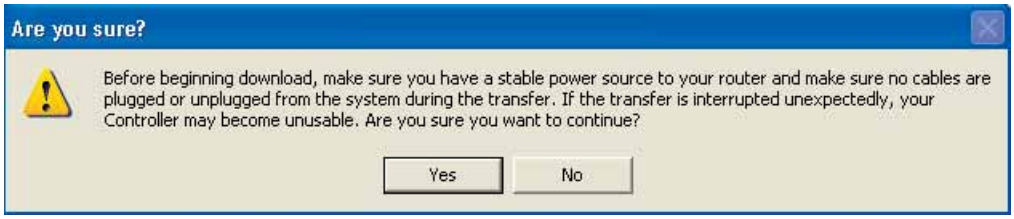


Figure 21

It is important that you have a stable power source connected to your ZON router and that no cables are plugged or unplugged from the system during the update procedure. Should the data transfer be interrupted, errors may cause the ZAC-60 to become unstable. If all is in order, click "Yes" to acknowledge the warning in Figure 21 and to start the controller update process.

CONFIGURATION SETTINGS: CONTROLLERS

As you start the controller update process, you will see a screen similar to Figure 22 below:

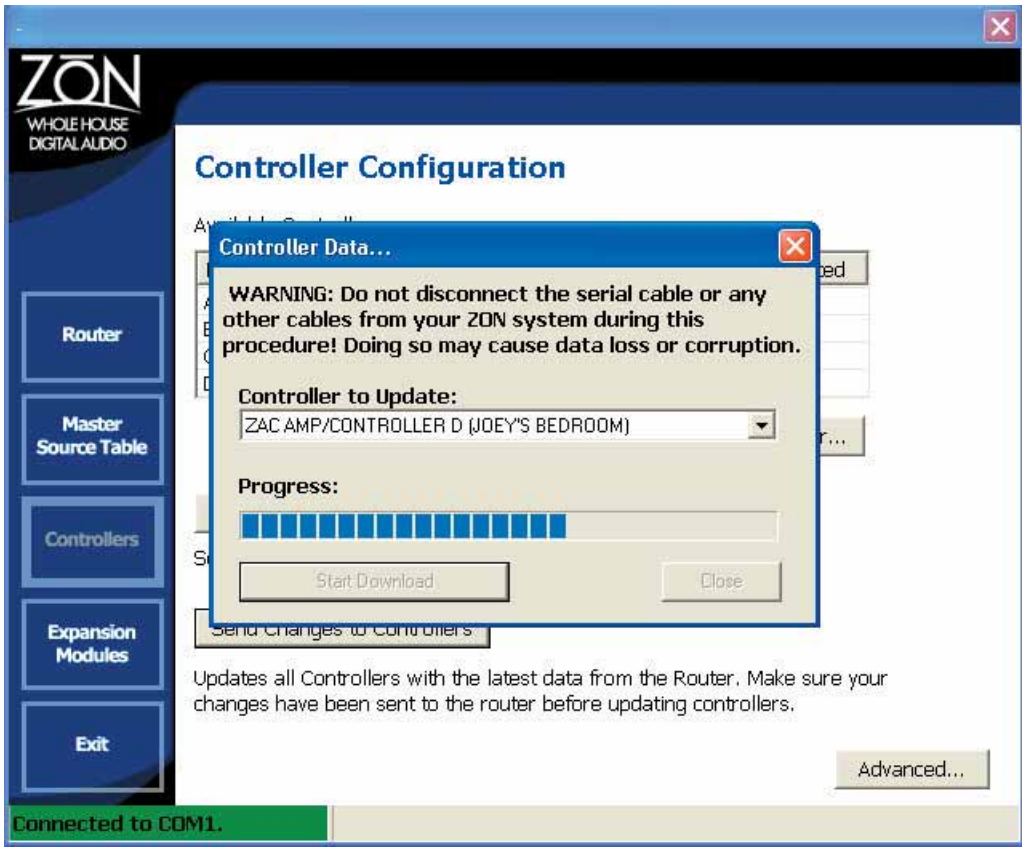


Figure 22

During the controller update procedure the ZAC-60 display will read "FLASHING: SETTINGS" and the controller's blue backlight will flash rapidly. When the process is complete, you will receive the following dialogue box (Figure 23):

Figure 23

In order for the ZAC-60 to recognize and use the new settings, you must hard power cycle the system. Click "OK" and remove the AC power from the ZON router. Click "Close" on the "Controller Data..." screen to be returned to the main CONTROLLERS screen.

Advanced System Configuration Note: ZR-98 Hard Power Cycle - After removing the AC power cord from the ZON router, you must wait for the ZAC-60 to completely "discharge" before you reconnect the AC power. It's a good idea to visually check one of the connected controllers to make sure it's display is completely off - not dimmed.

ADVANCED CONFIGURATION OPTIONS

The ADVANCED OPTIONS screen is accessible from any of the main screens. Figure 24 shows a typical ADVANCED OPTIONS screen:

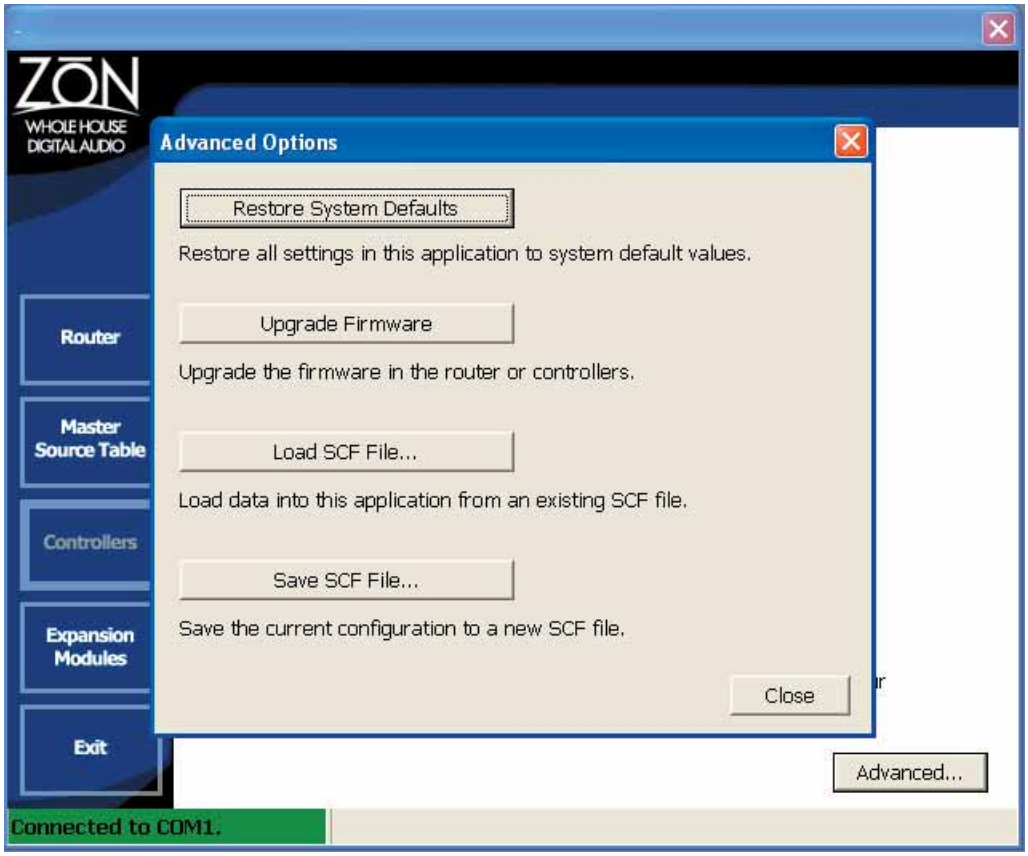


Figure 24

From the ADVANCED screen you can:

- **Restore System Defaults**

  Places all on-screen settings back to the factory default (but does not automatically load the data to the router's master source table or update controller settings).
- **Upgrade Firmware**

  Provides a path to load firmware updates for the ZON router and ZAC-60 controllers.
- **Load a System Configuration File (SCF)**

  Opens a previously saved SCF and places it's data inside ZON config (but does not automatically load the data to the router's master source table or update controller settings).
- **Save a SCF**

  Saves the current data in ZON Config as SCF on your computer.

ADVANCED CONFIGURATION OPTIONS

Restore System Defaults

The RESTORE SYSTEM DEFAULTS option returns all of the software's settings to the factory default level. When you elect to restore system defaults, any changes that you may have made prior to that point will be overwritten. The system defaults, at this point, appear on the screens in the ZON Configuration utility, but have not been applied to the ZON router or controller(s). Figure 25 shows a typical dialog box you will see after selecting RESTORE SYSTEM DEFAULTS:

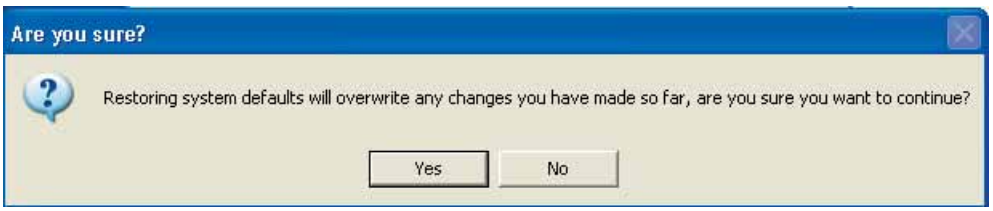


Figure 25

Click "Yes" to acknowledge the overwrite warning. Remember, clicking "Yes" will cause the software to overwrite any information in the software that you may have previously entered. When the default settings have been overwritten, you will see Figure 26:

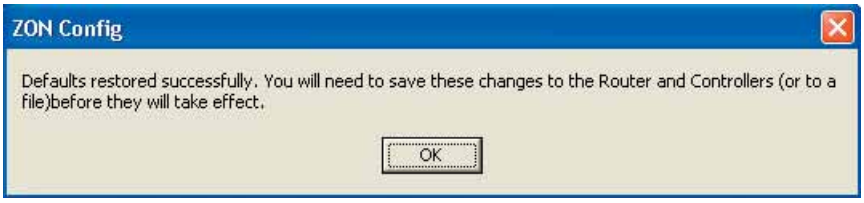


Figure 26

If you wish to send the system defaults to the ZON router and connected ZAC-60 controllers, go to the MASTER SOURCE TABLE screen and click on "Save Master Source Table to Router." You should review Figure 4b and the information on page 5 for details on how ZON Config's two-step saving and update procedure works. For specific instructions on how to apply the factory defaults to the ZON hardware, see the section "Configuration Settings: Master Source Table" on page 12.

Upgrade Firmware

Before you apply any firmware update to a ZON component, take note of the following special notices:

- Don't apply a firmware update to a ZON component that you feel may be experiencing a technical issue. Chances are, the attempted update may cause to you send the device back to the factory sooner than you planned.
- Don't apply a "back-rev" firmware file. Know your current firmware levels before attempting an update. Going backwards is never recommended.
- Work in a reliable environment. Cabling issues, not hardware or software failures, are the cause of many technical support calls.
- Read the available Application Guides and other documentation provided for (and with) the firmware update. If in doubt, contact Oxmoor technical support for assistance.

ADVANCED CONFIGURATION OPTIONS

To update the firmware on the ZON router and/or ZAC-60 controllers, use the UPGRADE FIRMWARE option found on the ADVANCED screen, as shown in Figure 27 below:

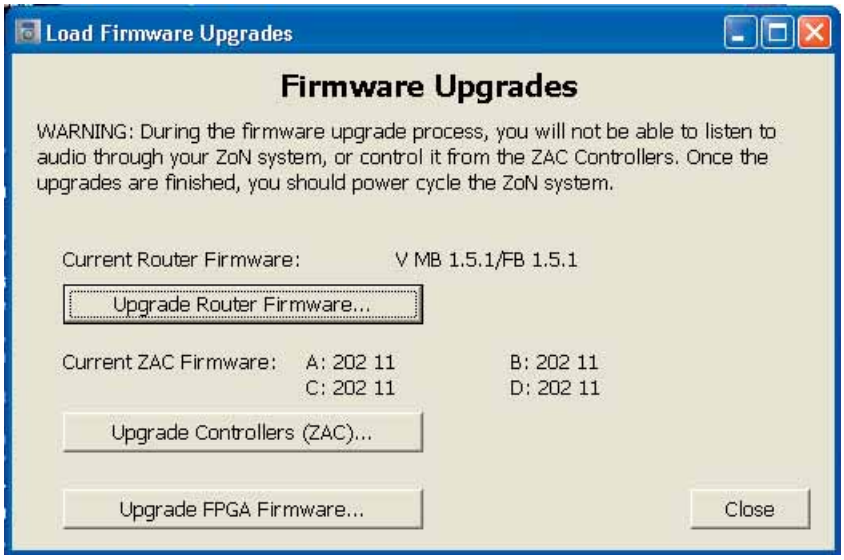


Figure 27

When applying firmware updates to the ZON router and/or ZAC-60 controllers, you should unplug all of the ZIM-4 input modules connected to the ZON router, and unplug any audio inputs connected to the router's local input. This will help keep the router's communication path stable during the update process. Always read the documentation that accompanies the firmware update for important information and/or special instructions required.

You should use your computer's built-in 9-pin DSUB serial adapter (9-pin COM port). If your computer does not have one, you should use either a PCI (for desktops) or PCMCIA (for laptops) serial adapter. Never use a USB serial adapter. These devices are not 100% reliable, and can cause your firmware update to fail.

When updating the firmware for ZAC-60 controllers, it is recommended that you have the controller(s) to be upgraded where you can connect the controller(s) to the ZON router on a standard 3 meter network patch cable (not a cross-over cable). This recommendation may make it necessary to uninstall a ZAC-60 from it's current location, so care should be used when doing so. The above is only a recommendation, not a requirement.

In most cases, updating firmware will not erase any configuration settings/modifications previously applied to the device(s). It is a good idea to make sure that you have current System Configuration Files archived for your hardware before updating firmware.

ADVANCED CONFIGURATION OPTIONS

Upgrading the ZON Router Firmware

To load a ZON router firmware update file to your system, connect to the ZON router (for information on how to do this, see the section, "Working with a Direct Connection" on page 7). Choose "Upgrade Router Firmware" from the UPGRADE FIRMWARE screen. Figure 28 shows a typical update screen:

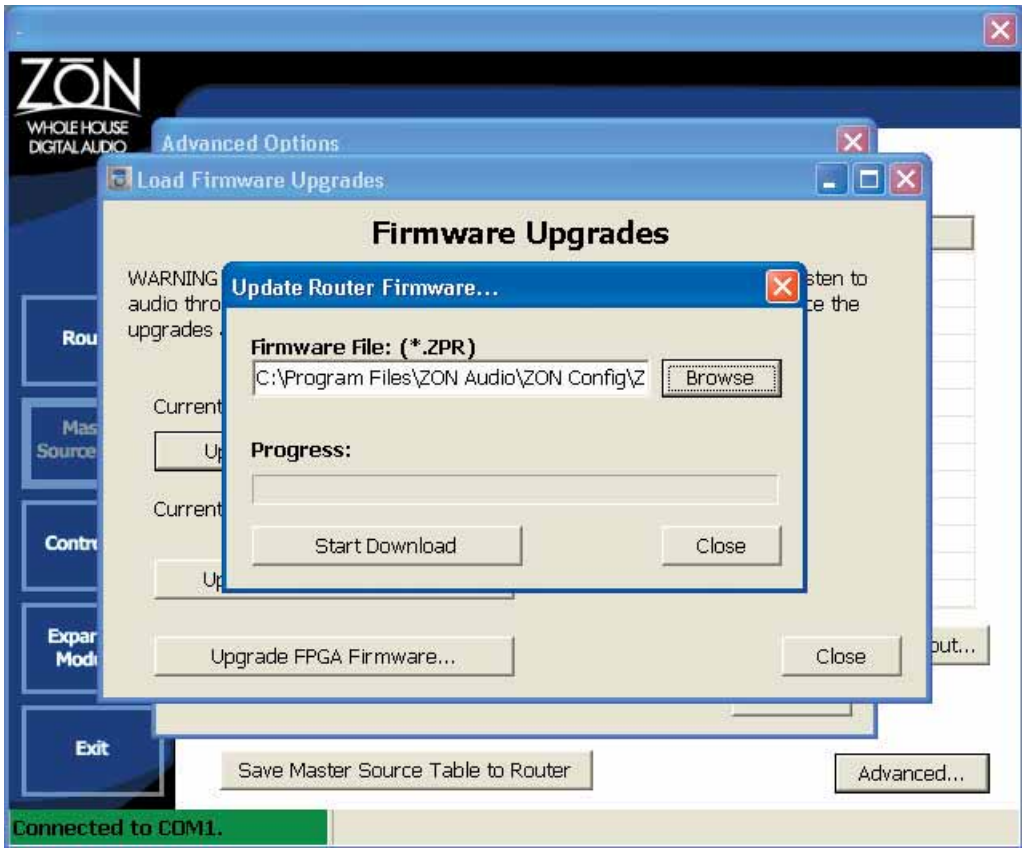


Figure 28

Firmware updates are typically provided with the ZON Config installer, and are typically located in C:\Program Files\ZON Audio\ZON Config. Click "Browse" to find the location of the required *.ZPR file and click "Start Download".

You will see a dialog box reminding you to have a stable power source for the ZON router and not to plug/unplug cables during the process. You should note that if the transfer of data during the update process is interrupted, your ZON router can be rendered unusable, and may require Oxmoor factory service. Click "OK" on the reminder dialog box to apply the firmware update or close to cancel.

Following the successful loading of the firmware update, you must reset the ZON router by disconnecting the AC power to the router for 30 or more seconds.

ADVANCED CONFIGURATION OPTIONS

Upgrading ZAC-60 Firmware

To load a ZON controller firmware update file to your system, connect to the ZON router (for more information on how to do this, see the section, "Working with a Direct Connection" on page 7). You should also make sure that the ZAC-60s you wish to upgrade to the ZON router are properly connected. Consult the ZON Installation and User's Guide for more information on connecting ZAC-60 controllers to the ZON router. Choose "Upgrade Controllers (ZAC)" from the UPGRADE FIRMWARE screen. Figure 29 shows the main "Controller Firmware" update screen:

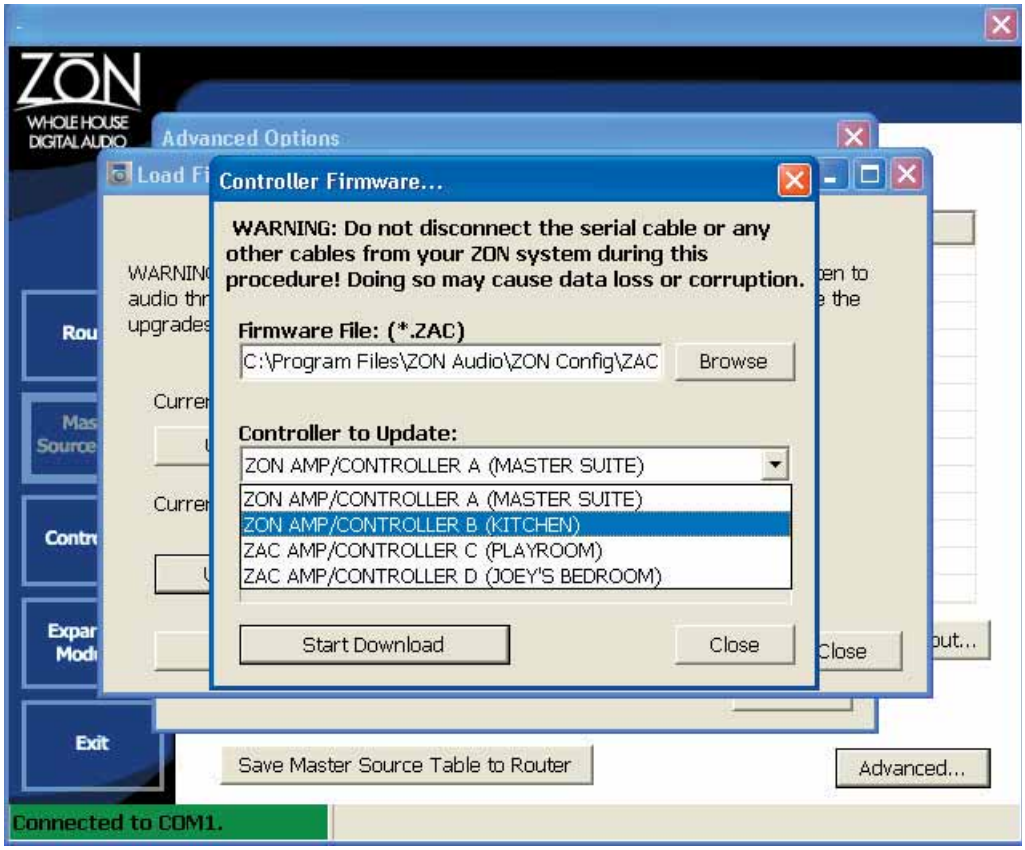


Figure 29

Firmware updates are typically provided with the ZON Config installer, and are typically located in C:\Program Files\ZON Audio\ZON Config. Click "Browse" to find the location of the required *.ZAC file. Then, from the pull-down menu, choose a ZAC-60 controller to update. Click "Start Download" to begin the process or close to cancel.

You will see a dialog box reminding you to have a stable power source for the ZON router and not to plug/unplug cables during the process. You should note that if the transfer of data during the update process is interrupted, your ZAC-60 controller can be rendered unusable, and may require Oxmoor factory service. Click "OK" on the reminder dialog box to apply the firmware update.

The firmware update can take several minutes to complete. Patience may be required.

When the update process for the ZAC-60 is complete, you will see a dialogue box similar to figure 30 below:

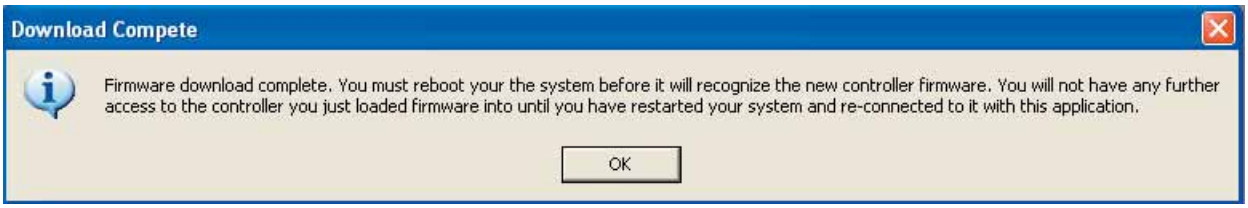


Figure 30

If you are updating more than one controller connected to the ZON router, you can bypass the system reset (disconnecting the AC power) until after you have updated all of the remaining controllers. Updated controllers will not function, or be available for any other changes or modifications until they have been reset according to the instructions provided in Figure 30 above.

Advanced System Configuration Note: Verifying a ZAC-60 Firmware Update - The dialogue box in Figure 30 only gives you an indication that the software completed the firmware update process, and does not give you any indication of the success of the update. There are two ways you can check the success of a firmware update. Prior to resetting the ZON router, you can look at the ZAC-60's volume indicator rings. If you see a LED in the seven o'clock position of this ring, the firmware update was not successful. After resetting the ZON router, a failed firmware update is indicated by a "blank" display and volume indicator ring. If you encounter either situation, you should refer to Appendix B: ZAC-60 Emergency Recovery on page xxx for details on how to use the Emergency Recovery Wizard to possibly recover from an error of this type.

Loading a System Configuration File (SCF)

To work with a previously written SCF, click on the "Load SCF File..." button in the ADVANCED screen. You will see a standard LOAD screen where you provide the filename and path of the SCF you want. ZON Config uses the default location of C:\Program Files\ZON Audio\ZON Config\ for placing SCFs that you create.

When you load a SCF, you will overwrite any information that is currently present in the software. After loading a SCF, you can then make changes required for your particular situation and then save those changes to the ZON router (and controllers). You should review Figure 4b and the information on page 5 for details on how the software's "two-step" save and update process works. For detailed instructions on how to save data to the ZON router and update controllers, see page xxx.

ADVANCED CONFIGURATION OPTIONS

Saving a System Configuration File (SCF)

To save the current settings and modifications that are present in the software, click on the "Save SCF File..." button in the ADVANCED screen. You will see a standard SAVE screen where you provide the filename and path of the SCF you wish to save. ZON Config uses the default location of C:\Program Files\ZON Audio\ZON Config\ for placing SCFs that you create. After the save process is completed, you will see a dialog box that confirms that the save was successful, and provide you with the name and path that was used in the process.

Advanced System Configuration Note: Creating a SCF directly from the contents of a ZON router - There may be some cases where you do not know and/or have the configuration settings for a particular router. Launch the software and connect to the router. The software will read the contents of the ZON router's master source table and place this data into ZON Config (just like you would see when loading a SCF file). Using the "Save SCF File" option from the ADVANCED screen, you can save the data to a file for use and/or future reference.

You should note that saving a SCF does not change configuration settings onboard the ZON router or connected controllers. The "Save SCF File..." option only writes your current, on-screen settings to a file on your computer.

APPENDIX A: IN CASE OF DIFFICULTY

Resolving Connection Issues

If you are experiencing difficulties connecting to a ZON router from your computer, you should first check the following:

1. System Requirements - Make sure that your computer meets the system requirements listed on page 2.

2. Cables and Connectors - You should be using the Oxmoor provided DB-9 to RJ-11 adapter. You should also use the RJ-11 cable shipped with the router, or use a standard RJ-11 4 conductor telephone cable to connect between the adapter and the RS-232 jack on the ZON router.

3. Power - Make sure that you have a stable power source for your ZON router and your computer.

4. Serial Port and COM Port Assignments - Consult the owner's manual for your computer and operating system to verify the proper installation and configuration of your serial port.

The following information should help you further diagnose your connection issue in the event that the above items do not help:

1. "No Response" Error Message - Receiving this error message when trying to connect is typically the result of a hardware or connection issue. You should verify that the ZON router has AC power and that you have properly connected your computer to the ZON router.

2. "Could Not Open Serial Port" Error Message - Receiving this error message when trying to connect is typically the result of an improperly configured or installed serial port on your computer. You should try to connect to a ZON router on different COM ports. See the section "Working with a Direct Connection" on page xxx.

3. "Communications Failure" Error Message - Receiving this error message when trying to connect is typically the result of a hardware failure with either the ZON router or your computer. You should try to eliminate the root cause of the problem by checking your computer, the connection between the computer and the ZON router, and also verify that you have a stable power source for both the computer and the router.

APPENDIX A: IN CASE OF DIFFICULTY

Troubleshooting a Connection Issue

Before you contact Oxmoor technical support to report a connection issue, you can use Hyper Terminal (a communications application that is installed on most all computers) to help troubleshoot your connection to a ZON router.

1. With the AC power disconnected on the ZON router, connect your computer to the router using the provided adapter and cable. If the supplied RJ-11 cable does not suit your particular application, you should use a known working, 4 conductor RJ-11 cable. (A 6 or 2 conductor RJ-11 cable will not work, and will result in a connection failure.

2. Launch Hyper Terminal on your computer. This is typically found under the COMMUNICATIONS menu in the ACCESSORIES main menu of your operating system.

3. When prompted, provide a name for the new connection, and click OK to continue.

4. In the "Connect To" screen, use the pull-down menu to select the COM port you have determined is assigned to your serial port. Click "OK" to continue.

5. In the "COM Properties" dialog box set the following:
   Bits per Second: 9600
   Data Bits: 8
   Parity: None
   Stop Bits: 1
   Flow Control: None

6. Click "OK". You should now see the terminal screen. Reconnect the AC power to the ZON router. If the COM port you used in the connection is working, you should see a block of data from the router that begins with "MOTHERBRAIN"....

If you do not see any data on the terminal screen, try disconnecting and reconnecting the AC power to the ZON router. In the event that this does not provide you with desired results, you will need to exit Hyper Terminal and try the test again, this time choosing a different COM port from Hyper Terminal's "Connect To" menu.

Once you see a response from the ZON router on the terminal screen, you have confirmed that the connection is successful and the ZON router is capable of serial communications. Should you not be able to communicate with a ZON router using this Hyper Terminal test, you should contact Oxmoor technical support for assistance.

When you contact Oxmoor technical support, you will need to have component serial numbers and a listing of any/all error messages you have received.

APPENDIX A: IN CASE OF DIFFICULTY

Resolving Software Issues

Before contacting Oxmoor technical support, review the following items to see if your particular issue can be resolved:

1. Missing and/or outdated Master Source Table - The software found the router's memory area to be empty or in an obsolete format. If you are connecting to a new ZON router for the first time, you may receive this message by default. You should allow the software to use the default table.

2. Missing Inputs on the MASTER SOURCE TABLE screen - The software has the ability to filter the inputs on the table by their "Active" status. Check whether or not you have a list filter in place. See page 15 for more information.

3. Changes You Supplied Not Present - You should verify that you have saved your data to the router and have also updated your ZAC-60 controllers with the data. Refer to Figure 4b and the information on page 5 for information on how the software's "two-step" save and update procedure works. For directions on how to save and apply settings to your hardware see page 16. You should also make sure that you properly reset the ZON system following the save and update procedure.

4. Unwanted/Unused Inputs Showing - Unused inputs should have their "Active" status set to "No" on the MASTER SOURCE TABLE screen. See page 16 for instructions on how to do this. Unwanted inputs, such as those that you want to restrict from a controller's SELECT SOURCE menu should be modified with the "Restrict Sources" option in the CONTROLLERS menu. See page 21 for instructions on how to restrict sources from a particular ZAC-60 controller.

5. Cannot Update a ZAC with New Settings - The software was unable to connect to the controller, or failed to put the controller into flash mode. You should verify that the controller has been properly reset following a firmware update or a previously applied settings update. You may also check to see if the controller is operating properly (i.e. it's display and controls respond to your input). If you have a controller that has a blank screen or will not respond, you may have to use the ZAC-60 Emergency Recovery Utility to reset the controller. See Appendix B on page xxx for more information.

6. Names Look Unusual or Wrong on ZAC-60 Display - The ZAC-60 display will accommodate names assigned to inputs that are 16 or less characters. There are some instances, however, where a name containing 16 characters "spills" over the left and right border of the controller display, and is more pronounced when scrolling through menus where the selection markers (solid triangles on the left and right of the display) crowd on top of the long name. The only remedy is to change/shorten the affected name label.

APPENDIX A: IN CASE OF DIFFICULTY

7. Cannot Find a Needed File - If you are having trouble locating a needed file, try searching on your computer for *.YYY" where YYY is the appropriate extension. File types used by the software include: System Configuration Files (*.SCF); ZAC-60 firmware files (*.ZAC); and ZON router firmware files (*.ZPR).

If you do not see your particular issue listed here, you may want to consult the ZON web site (www.zonaudio.com) and the Frequently Asked Questions (FAQ) section for the latest collection of known issues and their resolutions.

If you need to contact Oxmoor technical support to help resolve a software issue, you will need to have the following on hand:

- ZON hardware serial numbers and known firmware levels
- Information about your computer (processor, memory, OS, etc.)
- Text inside any error messages that you have seen

You may also find the official ZON web site (http://www.zonaudio.com) to be of some assistance to you. The site features all of the latest product literature as well as a searchable FAQ section.

APPENDIX B: ZAC-60 EMERGENCY RECOVERY WIZARD

The ZAC-60 Emergency Recovery Wizard is a special program that can help you recover from a firmware update that failed, or was otherwise interrupted.

Special Notice

You should not attempt to use this utility to "refresh" or "re-initialize" a known, working controller, nor should you use this program to apply a firmware update on a controller that may be experiencing other technical issues. Using this utility for anything but recovering from a failed firmware update will cause the controller to become unstable, and will require the device to be returned to the factory for service.

Before You Begin

It is suggested that you do the following prior to running the emergency recovery wizard:

1. To make the operation of the program easier for you, and to eliminate any possible cabling issues, it is best to have the affected ZAC-60 where you can connect it to a ZON router on a standard 3 meter network patch cable. This recommendation may make it necessary to uninstall a ZAC-60 from it's current location.
2. Disconnect all ZAC-60 and ZIM-4 input modules from the ZON router. Also disconnect any audio cables from the router's local input.
3. Use your computer's built in 9-pin DSUB serial adapter. If you don't have one, you should use either a PCI or PCMCIA serial adapter. You should not use a USB to serial adapter. The USB to serial adapter is not 100% reliable during serial communications.

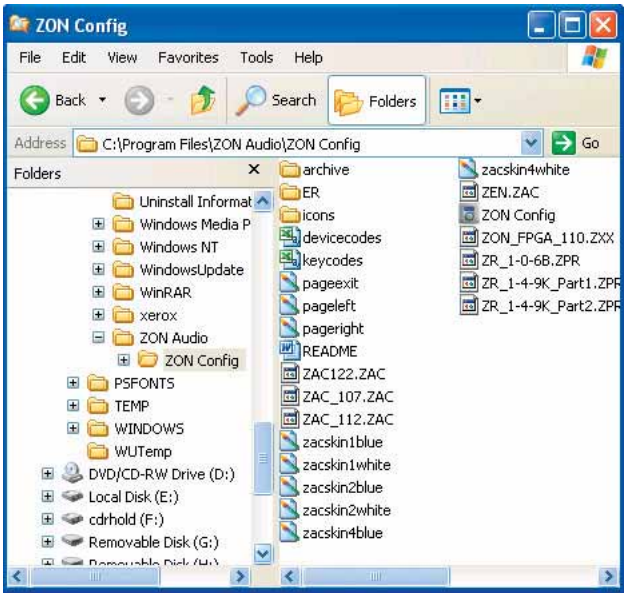


Figure 1

Locating the Emergency Recovery Wizard

The emergency recovery wizard is located in a folder called "ER" in the ZON CONFIG directory (which was created during the ZON Configuration Utility installation on your computer), as shown in Figure 1 above.

Figure 2

Using the Emergency Recovery Wizard

The wizard is a self-guided program that provides step-by-step instructions on each of it's screens. Figure 2 shows a typical instruction screen. You should take your time and read the instructions carefully before moving on to the next step.

The following is a summary of what you will be doing:

- Verify connections and equipment setup
- Connect the ZAC-60 to the ZON router
- Establish serial communications with the ZON router
- Apply a specific ZAC-60 firmware file

APPENDIX B: ZAC-60 EMERGENCY RECOVERY WIZARD

Helpful Hints:

Properly Connecting a ZAC-60 to the ZON Router

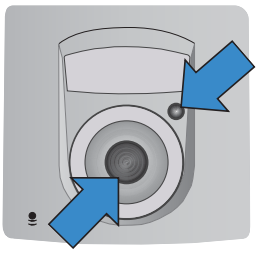


Figure 3

The wizard will prompt you when to connect the affected ZAC-60 to the ZON router.

Connect one end of the CAT-5e/CAT-6 cable to the FROM ROUTER jack on the back of the ZAC-60. When prompted, press and hold both the PAGING button and the JOG WHEEL while connecting the other end of the patch cable to the ZON router (Figure 3). If this step was successful, the ZAC-60 will illuminate; the volume indicator will be blank, and so will the controller's display.

Establishing Flash Mode

Knowing the correct COM port your computer uses for serial communications is important. If the wizard cannot communicate with the ZON router, it will be unable to place the ZAC-60 into flash mode. The wizard will ask you to choose the COM port your computer will use to connect to the ZON router. After successfully connecting to the ZON router, the wizard will place the ZAC-60 controller into "flash mode". When in flash mode, the controller's volume indicator will have a single LED illuminated in the 7 o'clock position (Figure 4a). There will also be a prompt from the wizard (Figure 4b) verifying the same. If the device is not in flash mode, you will need to restart the process.

Figure 4a

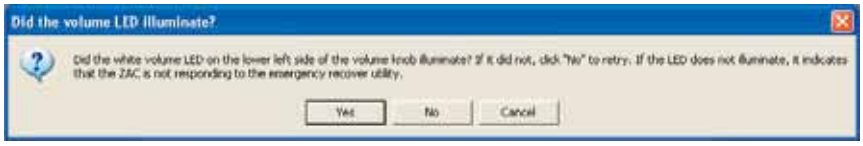


Figure 4b

Choosing the ZON AMP/CONTROLLER Port on the Router

The wizard does not read the MASTER SOURCE TABLE on the ZON router when it connects. The program shows each of the four ZAC-60 ports on the ZON router when it prompts you to choose the port in which your affected ZAC-60 is connected (Figure 5).

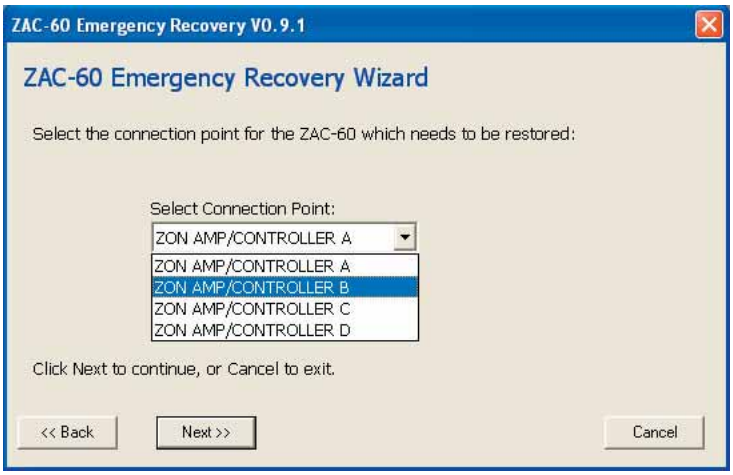


Figure 5

Working with Firmware Files

During the last steps of the wizard, you will be asked to locate the ZAC-60 firmware file the program will use.

Firmware files for the ZAC-60 are located in the main directory of ZON CONFIG on your computer. The files have the ".ZAC" extension. Figure 1 shows a typical ZON CONFIG directory.

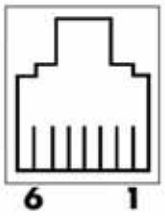
You may have several versions of ZAC firmware files in your ZON CONFIG directory. When using the wizard, it is recommended that you do not try to apply a firmware file that is less than what your device previously used. For example, if you were attempting to apply a version 112 firmware file to a version 107 ZAC, you should not go back to anything less than version 107 using this utility. It is okay to use the wizard to apply the save firmware version that failed while using the ZON serial configuration utility.

Notice:
Improper use of the Emergency Recovery Utility may cause damage to your ZAC-60 controller. Such damage may not be covered under Oxmoor's limited two year warranty. Refer to the ZON Installation and User's guide for warranty and factory service information.

APPENDIX C: RS-232/SERIAL PINOUTS

RJ-11Jack on ZON Router (RS-232 Interface)

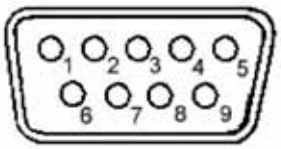
PIN	TYPE	DESCRIPTION
1	Unused	
2	Input	RXD - RS-232 Data In
3	Ground	Signal Common (Ground)
4	Ground	Signal Common (Ground)
5	Output	TXD - RS-232 Data Out
6	Ground	Chassis Ground



Note: Pin reference is as you look into the jack.

DB-9 (Male) Serial Port on Computer

PIN	TYPE	DESCRIPTION
1	Unused	
2	Input	RXD - RS-232 Data In
3	Output	TXD - RS-232 Data Out
4	Unused	
5	Ground	Signal Common (Ground)
6	Unused	



Note: Pin reference is as you look into the jack.

APPENDIX D: USER NOTES

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