Home Theater
SYSTEM

Maestro™

7.1 Channel THX Ultra 2 Theater Processor

For those who consider perfection possible℠

AudioControl®
22410 70th Avenue West • Mountlake Terrace, WA 98043 USA
Phone 425-775-8461 • Fax 425-778-3166
www.audiocontrol.com

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Owners Manual – Maestro 7.1 Theater Processor
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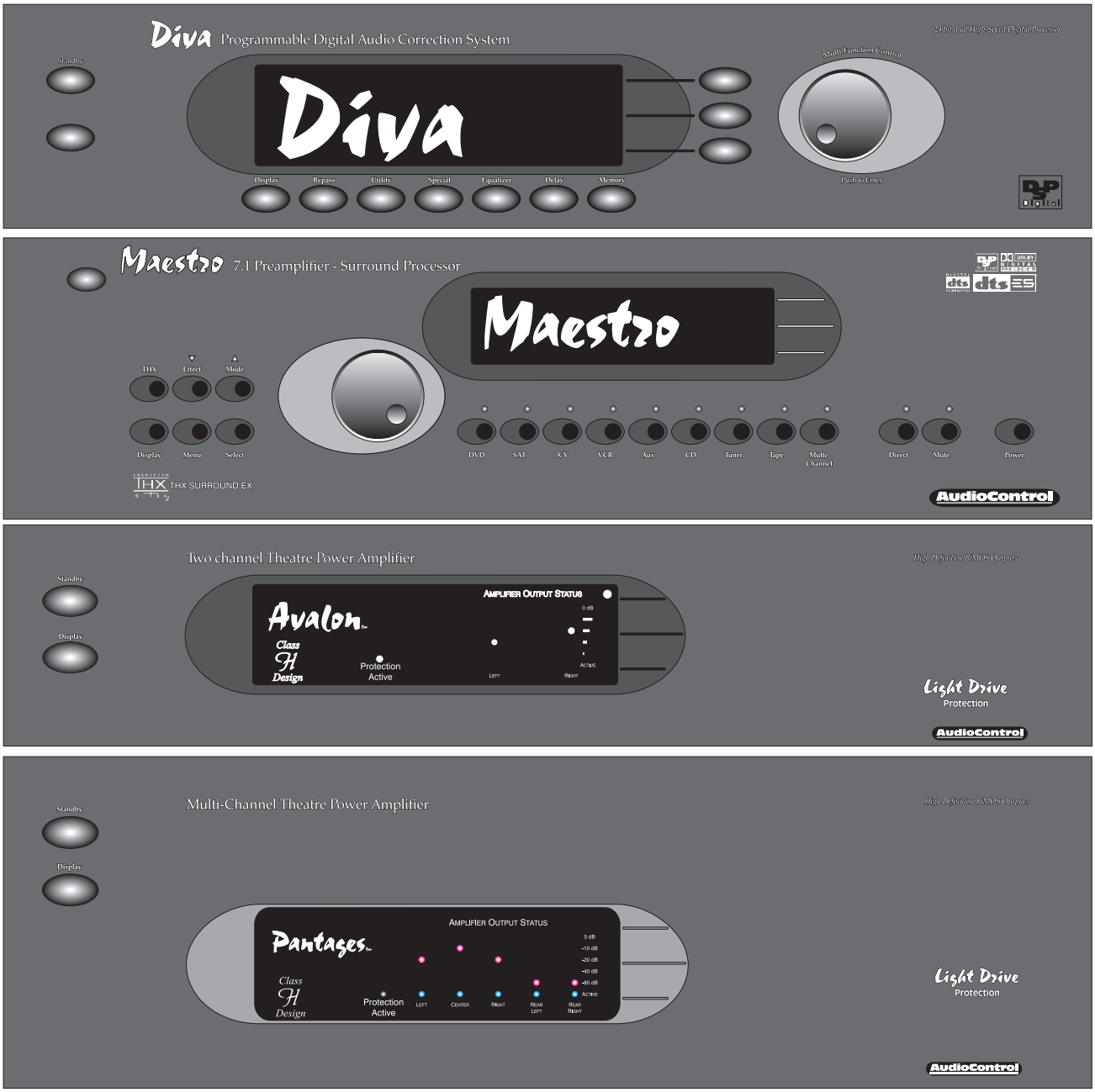

7.1 Plus Theater System

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Congratulations

Great attention to system design and installation makes the difference between an average multiplex theatre and a great movie palace. When creating your own personal movie palace experience, the choice of components is just as critical. AudioControl knows how important the right equipment is and for that reason we created our Home Theater System.

This new digital audio surround system is made by the only consumer electronics company in the world that specializes in making good sound better. AudioControl's passion for high quality, meticulous attention to detail and pro sound heritage shows itself in the dozens of awards we have won for our designs, products and service.

This manual is designed to help you get the most from the Maestro. So, even though you're dying to plug it in and start pushing buttons, please take thirty minutes or so to glance over this tome and learn about the Maestro 7.1 channel theater surround processor. Any component that does as much as the Maestro does deserves all the explanation it can get.

Most Important Instruction of All

Make certain the warranty card is filled out and mailed back to us. Also, record the serial number and put your sales receipt or invoice in a safe place. This is very important in the unlikely event that the Maestro gets a sudden illness, or for proof of ownership if somebody takes a fancy to your theater system in the middle of the night. Insurance companies have no imagination when it comes to components like the Maestro being part of the theater system. This concludes the nagging section of this manual.

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Key Features

AudioControl Home Theater System

The Maestro is part of the AudioControl Home Theater System. Also included in this system are the Diva Digital Room Correction Processor, the Avalon and Pantages High Definition Amplifiers and the Factory Certified System Calibration. Together these components ensure superior audio and video performance from your home theater system.

Multiple Surround Sound Formats

The powerful dual 24 bit DSP processors enable the Maestro to decode all current consumer 5.1, 6.1 and 7.1 channel THX, Dolby and DTS surround formats. The flash memory allows the Maestro to be upgraded in the future when new formats become available.

Broadcast Quality Video Routing

Great sound is important, but you need a great picture also to complete a super home theater. All video routing in the Maestro has it's roots in broadcast studio. With 300 MHz of video bandwidth you will see even the finest details from the video sources even with demanding 1080i and current progressive scan HDTV signals.

THX Ultra 2 Certified

Lucasfilm sets the standards of performance for THX certified components. Before any home theater component can carry the THX Ultra 2 logo, it must pass a demanding set of quality and performance tests. The THX Ultra 2 certification ensures that you will receive superior performance from this equipment for years to come.

Extensive Automation Integration

A touch screen or automation system is what really pulls a high-end home theater together. It puts the full power of the system at your fingertips. The RS-232 serial port and infrared remote control inputs feature an extensive command library to control all aspects of the Maestro. You have the power.

Non-Volatile Configuration Presets

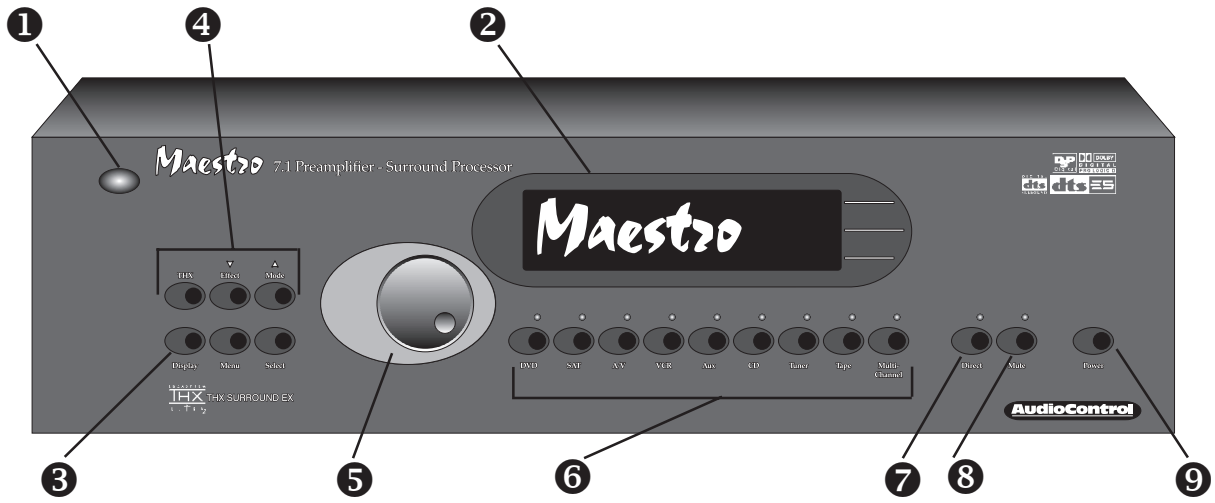
With five configuration presets, it is simple to quickly recall your favorite combinations of Input Source, Surround Processing Mode, Delays and DSP Effects. With one command, the Maestro jumps into action and makes all the changes that would normally take multiple button presses and menus. These presets are stored in Flash memory so they won't be lost when the power goes out.

Second Zone Outputs

Do you want to enjoy your home theater system in the bedroom also? The Second Zone output of the Maestro enables you to independently control the source selection and volume to a room outside of the home theater.

Award-Winning Quality

A product of AudioControl – an award winning manufacturer of high-quality audio components since 1977. This product line is backed up with a comprehensive Five-Year warranty.



Front Panel Features

❶ **IR Remote Control Sensor –** Behind this window is the infrared sensor remote control. If the Maestro is located in a system where this window is not line-of-sight with the main listening seat; a rear panel jack enables use of an outboard IR sensor.

❷ **Fluorescent Control Display –** With the easy to follow menus, it is simple to operate and configure the Maestro.

❸ **Display Brightness Select –** This button toggles the display between two brightness levels or completely turns the display off. This is nice to get rid of distractions while you're watching a good movie.

❹ **Menu Control Buttons –** These buttons control the surround mode, DSP effects and are used for the setup menus.

❺ **Multifunction Control Knob** – In normal use, this knob is the volume control. When in the setup menus, turn this knob to select menus and options.

❻ **Source Selection Buttons –** Simple enough, just press a button to choose what you want to watch or listen to. (The menu button enables you to listen to a different source than you are watching. Refer to page 4-1 for more information.)

❼ **Stereo Direct –** This button defeats all digital signal processing and directs the two-channel analog input from the selected source to the front outputs. Use this button when you want to do some serious quality listening.

❽ **Mute –** Need to answer the phone, but still keep an eye on the TV? Just press the Mute button to turn off the sound. Press it again and the audio gracefully ramps back up to where you were so rudely interrupted.

❾ **Main Power** – Think of this as the vacation switch. You should only need to turn off the Maestro with this button when the system will not be used for some time. Normally this button is left on and the Maestro is put into "Standby Mode" by the controller or automation system. When the main power button is turned off, you cannot turn the Maestro on with the Infrared or RS-232 inputs.

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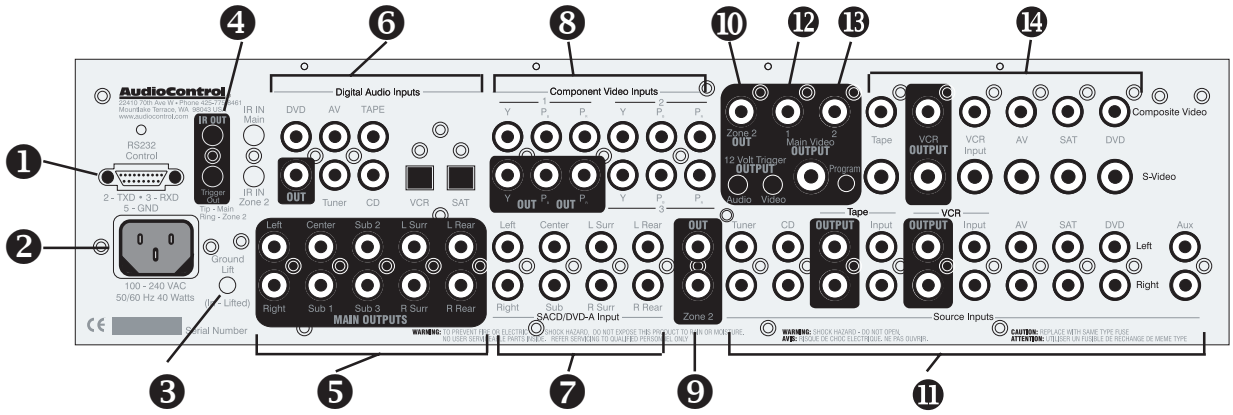

Rear Panel Features

❶ **RS232 Serial Port –** This connection is used to interface the Maestro with an external touch-screen or other automation system. It is also used when updating the internal Maestro firmware programming.

❷ **Main Power Connection** – All good AC power flows in here. The wide-range switching power supply enables the Maestro to operate at full capacity even during brown-outs.

❸ **Ground Lift Switch –** In complex home theater systems, ground loops can be a painful fact of life. This button isolates the signal ground connections on the Maestro from the AC Power ground. For safety reasons, the chassis remains earth grounded at all times.

❹ **IR Remote Control Connections –** These jacks enable use of external IR sensors and emitters for installations where it is not practical to use the front panel IR sensor.

❺ **Main Amplifier Outputs –** The RCA outputs feed the main theater power amplifiers.

❻ **Digital Audio Connections –** The Maestro features assignable Coaxial and Optical digital audio inputs. Don't worry if your satellite has a Coaxial digital output but the SAT connection on the back of the Maestro is Optical: You can reassign the connection.

❼ **Multi-Channel DVD-A / SACD Input –** Newer multi-channel audiophile recordings give you superb music audio quality in full surround. These players feature a surround decoder built into them. The Multi-channel inputs on the Maestro bypass all digital circuitry and connect the player to the amplifiers with only a volume control in the path. Enjoy!

❽ **Component Video Connections –** Component video is one of the highest quality formats available. Use them whenever possible.

❾ **Zone 2 Audio Output** – The second zone outputs enables listening to a source independently of the main theater system.

❿ **Zone 2 Video Output –** This is the composite video output for zone 2. You must connect the composite video input from each source unit to make them available for this second zone output.

⓫ **Stereo Analog Audio Connections –** Connect the two channel stereo outputs from your source units here.

⓬ **12 Volt Trigger Outputs** – These outputs provide a +12 volt signal to control the power amplifiers, source units, video projector, screens and curtains in the theater. The Main Trigger output is active whenever the Maestro is turned on; the Video Trigger is active whenever a video source is selected.

⓭ **Main Video Outputs –** These are the Composite and S-Video outputs to the main video display or projector. Since we know that converting between video formats is something best left to an external video processor, you should always connect the Composite, S-Video and the Component video outputs to your video display or processor.

⓮ **Composite and S-Video Connections –** These are the video inputs from the source units. If you are using the second zone video outputs, you should ALWAYS connect a composite video input from each source even if you are using a higher quality S-Video or Component signal for the main theater. These inputs are assignable so if your CD player has a video output and your tape deck doesn't, you can rearrange the inputs. Refer to page 3-8 for details.

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Installing the Maestro

System Configuration Questionnaire

Before you begin the system installation, there are a few things to think about. Please fill in the blanks and answer some questions to help make this process go easier. The appropriate section of the manual is referred to after each question to properly configure the Maestro.

Source Units – Fill in the blanks

Input	Source Unit	Digital Input	Component Video Input
Tuner	*example: Tuner*	*None*	*Tape*
CD			
Tape			
VCR			
A/V			
Sat			
DVD			
Aux			

Refer to Page 3-8 For assigning the Component Video Inputs

Refer to Page 3-9 For assigning the Digital Audio Inputs

Speakers – Check description that best fits the speakers

Channel	Large (Full Range)	Small (No Bass)
Left/Right		
Center		
Surround (side)		
Rear		

☞ Are the Rear Speakers further than 48″ apart? No / Yes

Refer to Page 3-5 For Setting the Speaker Sizes

Refer to Page 3-7 For THX Rear Speaker Array Settings

☞ How Many Subwoofers? (Circle one) 1 2 3

☞ Are the Subwoofers THX Certified? No / Yes / THX Ultra 2

Refer to Page 3-6 For Subwoofer Settings

Refer to Page 3-7 For THX Subwoofer Settings

☞ Do you need remote 12 volt triggers for the Amplifiers or Video Projector? No / Yes

Refer to Page 2-8 For using the remote trigger outputs

☞ Will you be controlling the Maestro with IR remote control? No / Yes

Refer to the Home Theater System CD for CCF files of the IR codes

or... Use the AudioControl MX-500 Theater System Remote (optional)

☞ Will you be controlling the Maestro with RS232 Serial Control? No / Yes

Refer to Page 8-5 For using the RS-232 Serial control protocol

Refer to the Home Theater System CD for the serial protocol specifications

☞ Do you want the ultimate performance from this system? No / Yes

Refer to the entire AudioControl Home Theater System product line and the factory calibration services available.

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Planning your installation

Connection Tips

Even if you're an electronics veteran, this part may seem repetitive, but some things can never be repeated too many times.

- Don't stand in a bucket of water when working with electricity.
- Turn off all components before making any connections.
- When making connections, make sure that "left goes to left" and "right goes to right." The obvious and time-honored way to assure this is to assign RED plugs to Right and WHITE/GREY/BLACK plugs to the left. Yellow is usually used for video cables or digital audio connections.
- Wherever possible, keep power cords away from signal cables (i.e., inputs from disk players, VCRs, etc.) to prevent induced hum. Bundle all power cords down one side of your equipment cabinet and all the signal cables down the other.
- Use high quality interconnect cables. We're not going to get into the debate about whether $100 per meter interconnects improve the sound and picture quality of your system. We do know from experience however that really, REALLY cheap connections can cause problems. They tend to corrode, oxidize, and disconnect inside; causing a hum or loss of signal. This not only degrades the sound quality, but it will also lead to call-backs to repair the system later.

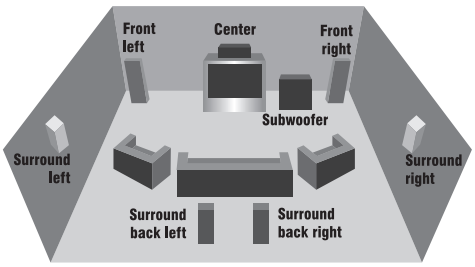
Unit Placement

We know you've heard all of this before, but here goes...

The Maestro can be placed almost anywhere in your audio equipment stack. This unit will generate a small amount of heat during normal operation. Ensure that the equipment location is properly ventilated. Make certain not to block the ventilation slots on any other component. Also, avoid placing Maestro directly over a large power amplifier. These amps can get pretty hot and have big power transformers that can induce hum into other audio components like Maestro. Make certain that there is an unobstructed line-of-sight between the location where the remote controller sits and the Maestro front panel.

Remember to consider the user when installing the Maestro in a rack. If the primary operator is taller than average you may want to put the Maestro and source units higher in the rack so they can see their front panels. The same rule applies on the shorter side. Remember, the person designing and installing the system isn't always the person who will be using it on a daily basis.

Speaker Considerations and Placement



Choosing the right speakers and putting them in the correct positions is crucial to getting the most out of a home theater system. For the full THX surround EX playback experience, we recommend choosing a THX certified speaker system. Once you have decided on the speakers you are using, make certain the Maestro is configured to match your speakers.

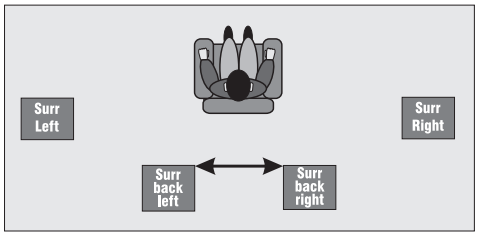
Front LCR (Left, Center, Right) Speakers

To present the most realistic soundstage, all three of the front speakers must be tonally balanced. Ideally, these speakers should be identical models. This ensures that the sound doesn't change as it pans across the screen. Place the speakers at the seated ear level. Whenever possible, the three front speakers should also be placed at the same horizontal level for best imaging.

Side Surround Speakers

The surround speakers provide the reverberant, or ambient, sound effects in a multi-channel theater audio system. These speakers should be placed on the side walls approximately 36" above the seated ear height of the listeners. If you are using surround speakers which have a dipole sound pattern they should be mounted in-line with the main seating position. If the surrounds are direct radiator, they should be just behind the main listening seat.

Rear (Back) Surround Speakers



These channels are used in 7.1 mode systems to provide extra depth in the soundfield. These speakers should be placed approximately 36" above the seated ear height of the listeners. These speakers should be mounted close together (12" to 48" apart) on the rear wall of the theater facing the screen. If you must place the speakers further apart, make certain to change the Advanced Speaker Array setting in the THX Setup Menu to maintain the optimum surround sound effect.

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Subwoofer

The subwoofer is a large speaker that provides the bottom end "kick" in the system. THX certified subwoofers are rated by the cubic volume of the room. Make certain you remember to include all spaces that open to the theater in that volume calculation. Depending on the size of your space, you may require more than one subwoofer to get the bass volume levels that you desire.

Power

Like many of today's intelligent home electronics, the Maestro should be plugged into an unswitched AC outlet so that it always has power. This allows the RS-232 and remote control features to work even when the Maestro is in standby. We always recommend the use a high quality surge protection device to keep all of your electronics safe from the evils of public power systems.

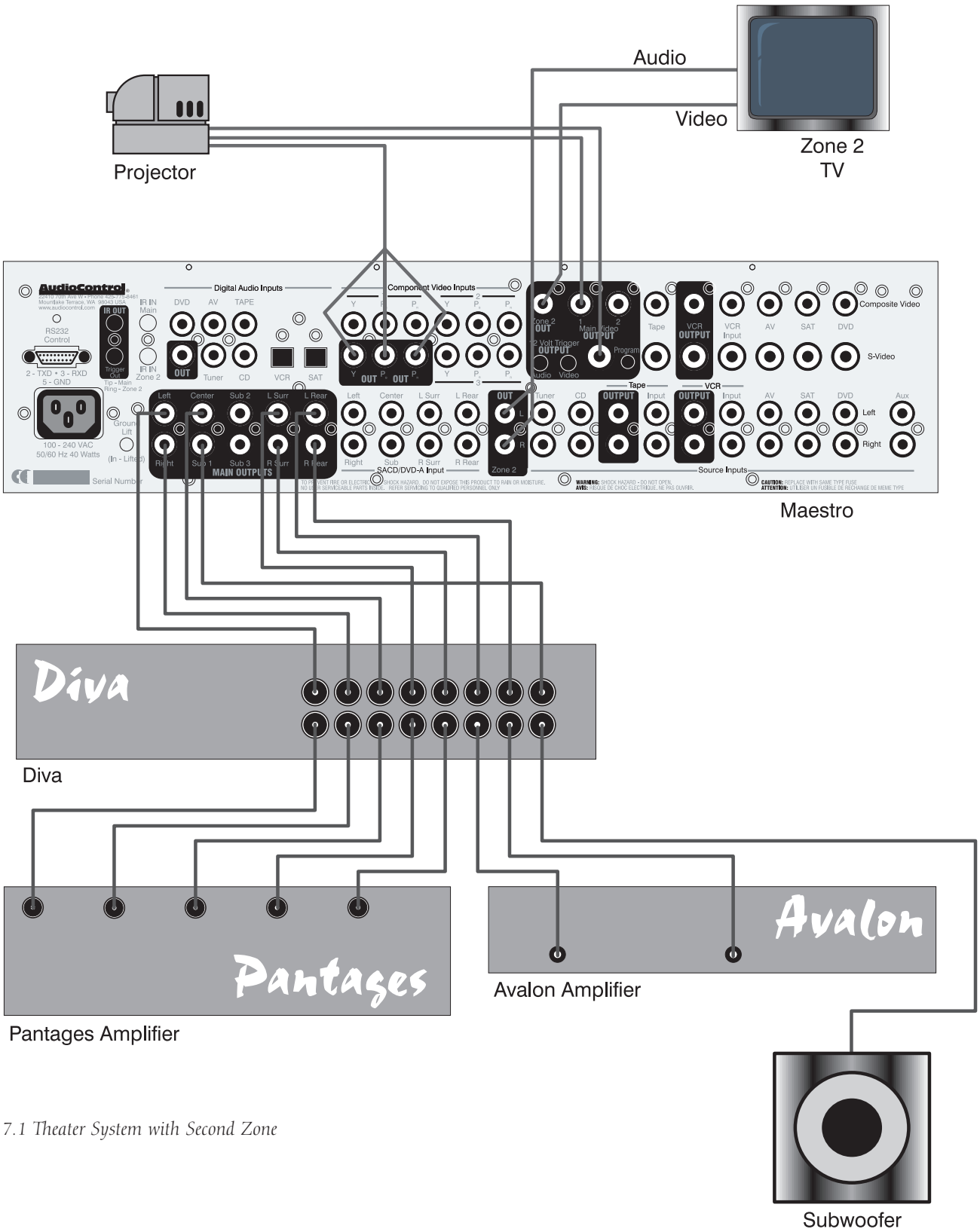
Audio Connections

Most of the sources will have two audio connections to the Maestro; the 2 channel analog audio and the multi-channel digital audio. When given the option, you should connect both of these audio signals to the Maestro. This will provide the digital audio signal necessary for high-quality digital surround sound along with the analog audio for tape recording and the second zone audio output.

Don't worry if your satellite receiver has a coaxial digital output and the Maestro SAT input is optical. Refer to the advanced configuration section on page 3-9 of this manual for more information regarding assigning a digital input to the optical or coaxial connection.

Multi-Channel Analog Audio

Newer audiophile surround recording formats such as SACD and DVD-A decode the multi-channel signals directly within the player. The Maestro features an 8 channel direct analog input for these sources. These inputs bypass the digital circuitry in the Maestro and route directly to the Main Amplifier outputs via its own volume control circuit. This ensures the highest possible audio quality for this input.



7.1 Theater System with Second Zone

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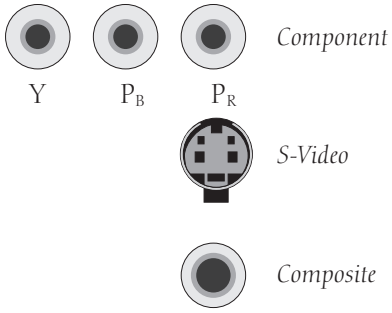
Video Connections

Choosing your video



Video Connections

There are three video signal connection formats ranging from Composite (Good), S-Video (Better) and Component (Best). Depending on the particular source unit you may have the option of more than one of these video connections. Always choose the highest quality video output available on your sources. These are not the same as the signal connection format with the video format (i.e. 480i, 480p, HDTV), so please don't confuse them.

Because of the higher bandwidths involved with video signals, the quality of the interconnect cables you choose is more critical than the audio cables. Video connections should always be made with cables specifically designed for video. Don't be tempted to grab some extra audio RCA cables laying around. Without the proper 75 ohm coaxial cabling, your picture quality will suffer from smear, ghosting or noise. It is always a good idea to make certain that the video and audio signal cables are routed away from any power wiring.

Important Installation Note: *If you plan on using the second zone feature of the Maestro, you will have to connect Composite video for a source in addition to whichever higher quality video connection you choose.*

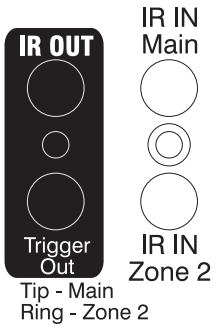
Video Conversion

High quality conversion between the various video signal connection formats is a tricky thing and best left to dedicated video processors. This is why the Maestro doesn't do this conversion. If a source input is S-Video, the Maestro will output S-Video to the monitor or projector. You will usually need to run all three (Composite, S-video, and Component) main video outputs of the Maestro to your video scaler or monitor.

Input Configuration

The component video inputs are fully assignable to the sources. This allows you to configure the Maestro to look for the video input from a particular source unit on one of the three component video inputs. Refer to the Configuration section of this manual on page 3-8 for more information regarding this feature.

IR Remote Control Connections

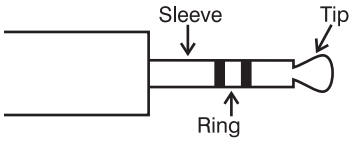


Since the Maestro is often hidden away in some dark closet or equipment rack, we have provided connections for external IR remote control receivers and emitters. This allows you to place the infrared receiver where it can "see" the signal from the remote control. The Zone 2 IR input controls the second zone functions of the Maestro and also repeats commands to the source units through the emitter output.

The IR receiver input connections are wired with a 3 conductor 3.5mm jack. The signals are compatible with third-party receivers such as a Xantech No. 291-10. AudioControl does not supply the IR receivers or emitters to use with the Maestro.

Tip	IR Signal
Ring	Ground
Sleeve	Current Limited +12 VDC (30 mA max.)

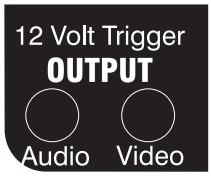
12V Trigger Connections



1/8" Mini Jack wiring

There are three mini-jack 12 volt trigger outputs on the rear panel of the Maestro. These are used to remotely control such things as the power amplifier turn-on, projector power, screens or curtains. The System Trigger Jack has two separate outputs. The jack is a three conductor; Tip, Ring, Sleeve, connection.

Tip	Main Zone On
Ring	Second Zone On
Sleeve	Ground



The other two trigger outputs carry one signal each. The Main Trigger connection has 12 volts DC when the Maestro is turned on. The Video Trigger jack goes to 12 volts when one of the video sources is selected.

Tip	+12 VDC
Sleeve	Ground

The Main Trigger would generally be used to control the power to the amplifiers and source units. The Video Trigger would be used to control the projector or video screen.

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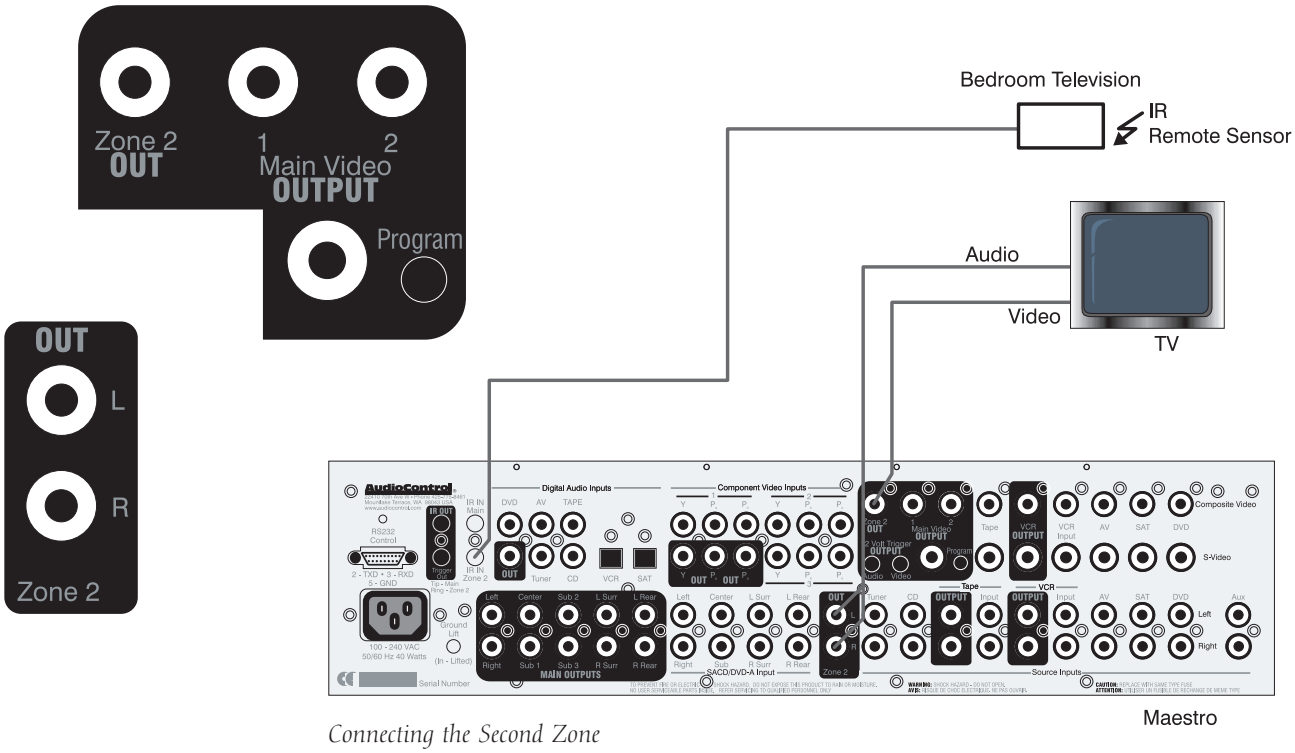
Second Zone Connections

Plug for other AudioControl products: The Active-Balanced Series products from AudioControl enables sending high-quality audio and video signals over standard Category 5 or better twisted pair wiring. Great for getting the second zone outputs of the Maestro across the house to your bedroom.

The Zone 2 outputs on the Maestro enable sending an independent audio and video signal to a second room, such as a bedroom. There is a 2 channel stereo analog audio output and a composite video output.

There is also an IR sensor input for the second zone. This enables you to remotely control the Maestro and also repeats the IR to your source units through the IR Output jack on the Maestro. Any IR signal received through the Maestro's front panel IR sensor or through an IR sensor connected to the IR inputs is repeated to the IR Output for controlling the source components in your system.

Since the Zone 2 outputs of the Maestro are 2 channel analog audio and composite video, you must have these signals connected from your source units to make them available. The Maestro does not convert a digital audio signal into analog for zone 2.



Connecting the Second Zone

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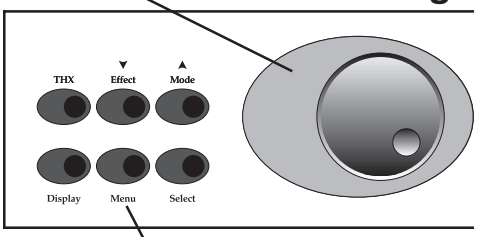
Multi-Function Knob



*Press & **Hold** Menu Button to enter setup*

Configuring the Maestro

There are many options to choose from when setting up the Maestro. If you haven't already done so, we highly recommend using the **Configuration Questionnaire** on page 2-1. It will help you gather together the information that you will need to know to setup the Maestro's options.

Entering the Setup Mode

To enter the System Setup menus: Press and Hold the MENU button for five seconds. The main Setup Menu will be displayed on the Maestro and the video display connected to the Main Video Outputs.

Configuration Menu Security Lock

To prevent idle fingers from changing the system configuration, the Maestro features a Setup Security Lock. To activate this lock feature: Press the SELECT, TUNER AND MULTI-CHANNEL buttons at the same time. Repeat this procedure to Unlock the setup menus.

Navigating the Menus

Once you have entered the Main Setup Menu:

1. Use the MULTI-FUNCTION CONTROL KNOB to step through the menus.
2. Use the arrow buttons ▲ (MODE) and ▼ (EFFECT) to step through the menu lines.
3. Use the MULTI-FUNCTION CONTROL KNOB to step through the setting options.
4. Use the arrow buttons ▲ (MODE) and ▼ (EFFECT) to step back up to the menu.
5. When finished, press the MENU button.
6. Use the MULTI-FUNCTION KNOB to choose Save or Exit with Saving
7. Press SELECT to choose the option and exit the setup menu.

```
Setup Menu Index

Basic            Advanced
1. General       1. Speaker EQ
2. Speaker Size  2. Video
3. Delays        3. Digital
4. Level Set     4. Zone 2
5. Sub Woofer    5. Input Trim
6. THX

Save Setup       Exit Setup
```

Setup Menu

Using Presets

```
Save Settings

No Save - Return to index

Save as: Preset 1*
         Preset 2
         Preset 3
         Preset 4
         Preset 5
Press OK to edit- Ok to save
```

The Maestro features 5 Preset Configuration Memories to simplify complex operation in advanced systems. All of the Maestro settings including Source Selection, Delays, Surround Modes, Effects, Everything is stored in these Presets. It is very simple to recall these presets using the IR or RS-232 control inputs. To recall a preset using the front panel:

1. Press the MENU button.
2. Press the ▼ (EFFECT) twice to select the Preset Menu.
3. Use the MULTI-FUNCTION KNOB to choose which Preset recall.
4. When finished, press the MENU button to return to normal operation.

Saving the Setup

Important Installation Tip:
You must SAVE any changed settings to a Preset or they will be lost when you power down the Maestro.

1. When finished, press the MENU button.
2. Use the MULTI-FUNCTION KNOB to choose Save or Exit
3. Press SELECT to choose the option and exit the setup menu.
4. Use the MULTI-FUNCTION KNOB to choose which Preset to Store settings into.
5. Press SELECT to save the preset and exit the setup menu.

Exit Setup without Saving

1. When finished, press the MENU button.
2. Use the MULTI-FUNCTION KNOB to choose Exit Setup
3. Press SELECT to choose the option and exit the setup menu.

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Basic Setup Menus

1. General Settings

```
1 - General Settings
Volume Display:  Normal 0-72
Max Volume:      +72
Max On Volume:   +20

Delay units:     English
OSD Mode:        Mixed
Video Status:    CNTL
HQ Video:        Comp
```

Volume Display – This controls how the system volume is displayed on the front panel and On-Screen Display (OSD). There are three options: **Normal** 0 to 72 (in 1 dB steps), **Fine** –72 to 0 (0.5 dB steps) and **THX Ref** –53 to +18 (in 1 dB steps). We recommend the THX Reference mode. This displays a level relative to the THX nominal level of 0 dB. This 0 dB reference level is the same as a commercial movie theater in a properly calibrated system.

Max Volume – This sets the highest volume that you can set the Maestro to. This is useful if you have speakers or amplifiers of limited power handling abilities.

Max On Volume – This is the highest volume that the Maestro will power on at. This prevents the Maestro from being turned on at shock volume levels from the last time you were watching a good movie.

Delay Units – The settings can be adjusted in **English** (Inches), **Metric** (Centimeters), or **Time** (milliseconds). **Important Installation Note:** When you change the Delay Units, all delay settings are returned to "0". Make certain you choose your preferred units BEFORE adjusting the delays.

Note: The On-Screen Display will automatically switch to full page mode when the video signal scan rate is higher than normal interlaced video (i.e. Progressive or HDTV).

OSD Mode – The On-Screen Display (OSD) can be displayed in either **Mixed** mode where the white text is overlaid onto the video image, or in **Full Page** mode where the video image is temporarily replaced with a black background.

Video Status – This sets the operation of the 12 volt trigger outputs. For normal operation, leave this set to **Screen Control**. This enables the Main and Video Trigger outputs to operate for equipment control triggers. The **SCART** option is only used on European video equipment to control external video switching and scan-rate converters.

HQ Video – Choose the operation of the OSD to match your video projector or display. Typical high-end video systems use Component Video (Y, PB, PR) for their signals. Don't confuse the colors on the RCA cables used to connect the video equipment with the format. Many Component video cables have their connectors colored red, green and

blue even though they are not sending an RGB signal. The RGB (Red, Green, Blue) signal format is more common in Europe.

Sync on Green – This option is only available if the HQ Video is set to RGB mode. Some RGB displays and projectors require a sync signal to be present on the Green video signal.

2. Speaker Sizes

What's a Large Speaker? –Digital surround formats allow a full range audio signal in all channels. Not all speakers are able to produce this amount of bass. For the purposes of setting the Maestro, a "Large" speaker is one that is capable of reproducing a full range (20-20KHZ) audio signal. A "Small" speaker is one that cannot reproduce deep bass frequencies (i.e. typical Satellite speakers). If you do not have a speaker connected to an output (i.e. No Subwoofer or Back Speakers) then set that speaker size to "None".

```
2 - Speaker Sizes

Auto Setup:      Custom

Front L/R:       Small
Center:          Small
Surr. L/R:       Small
Surr. Back L/R:  Small
Subwoofer:       Present

Rears for 5.1:   Both
```

Auto Setup – Allows quickly setting common speaker size configurations.

Config. 1, 2, and 3 – These are standard speaker combinations for home theater systems.

THX – Only select this if you are using a full THX certified speaker system. All crossovers are set to 80 Hz and the Back speakers are set to None. This configuration is not adjustable.

THX Surr. EX – This is the same as the THX setting, but it adds the Back speakers.

Custom – This gives you full control over each speaker channel.

Rears for 5.1 – This defines how a 7.1 channel installation will utilize the surround speakers.

Surr L/R sends all of the decoded surround information to the Surround Left/Right outputs. No audio is sent to the Back outputs.

Surr Back L/R send the surround audio to the Back outputs and nothing is sent to the Surround outputs.

The **Both** option sends the same decoded surround audio to both the Surround and Back outputs (the surround level is automatically reduced 3dB).

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Speaker	Config 1	Config 2	Config 3	Custom	THX	THX Surr.E Ex
Front L/R	Small	Large	Large	Sm/Lg	Small THX	Small THX
Center	Small	Small	Small	SM/Lge None	Small THX	Small THX
Surr L/R	Small	Small	Large	SM/Lge None	Small THX	Small THX
Surr Back L/R	Small	Small	Small	Sm/None	None	Small THX
Sub-woofer	Present	None	Present	Present/ None	Present THX	Present THX
5.1 Rears	Both	Both	Both	Surr L/R? Sur Back L/R/Both	Surr L/R	Both

Auto Setup Configuration

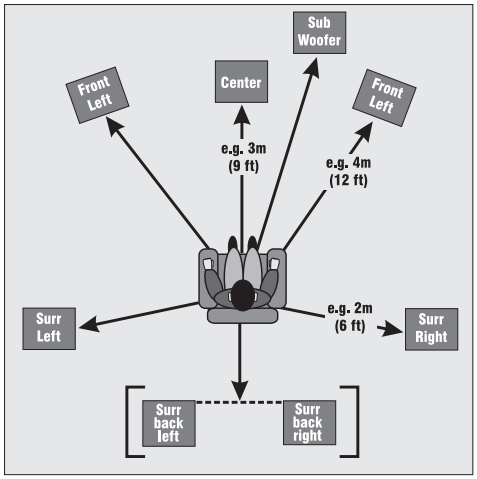
3. Delay Settings

The Speaker Delay settings help ensure that the sound from each speaker arrives at the listening seat at the same time. This provides a much more believable immersive sound environment. Proper delay settings should be done by a trained professional with audio test equipment such as the AudioControl Iasys HT to measure the actual sound delay timings. You can get a rough delay setting using an assistant and a tape measure. Measure the distance from the center of a speaker to the seated ear position of the main listening seat. Write each of these distances down and enter them into the Maestro.

```
3- Delay Setting

Front Left:       3Ft
Center:           3Ft
Front Right:      3Ft
Surr. Left:       3Ft
Surr. Back L/R    3Ft
Surr. Right:      3Ft
Subwoofer:        3Ft
```

***Install Note**: Make certain you set the Delay Units in Setup Menu 1 BEFORE setting any delays. If you change the units, all delay settings are returned to "0".*



4. Level Settings

```
4 - Level Settings
Test Tone Cycle:  Manual
Front L:          ---I--- +0dB
Center:           ---I--- +0dB
Front R:          ---I--- +0dB
Surr. R:          ---I--- +0dB
Surr. BR:         Not Present
Surr. BL:         Not Present
Surr: L:          ---I--- +0dB
Subwoofer:        ---I--- +0dB
Select Speaker for Tone
```

Install Note: *It may not be possible to achieve 75dB with non-THX certified speakers. If this happens, set the Left Speaker Level Setting to 0dB and measure the SPL of the Left Speaker. Now step through the other speaker channels and match their SPL readings to that of the Left speaker.*

It is critical to properly match the levels from each speaker to achieve a correct sound stage. The realism is totally lost if the footprints of a person walking across the screen change in volume as they move from left to center to right. We strongly recommend using a test analyzer such as our IasysHT or a sound level meter for this calibration. The levels are nearly impossible to judge by ear alone.

With the internal test noise generator of the Maestro, adjust each speaker for a sound pressure level (SPL) of 75 dB using a "slow" response time on the SPL meter placed at the main listening position at ear height. Use the ▲ Mode and ▼ Effect buttons on the Maestro to select a speaker channel, then adjust the volume of that speaker with the Multi-Function control knob.

The **Test Tone Cycle** setting is normally used on **Manual**. The **Automatic** option is used for a quick check by ear after you have manually calibrated the levels. The Automatic option steps through all the speaker with a two second burst of test noise. Sitting in the main listening position, you should not hear any change in volume level as each speaker is played.

5. Subwoofer Settings

```
5 - Subwoofer Settings

Crossover Freq.: 80Hz THX
Stereo Mode:     Sat+Sub
LFE Level:       ---I---  -0dB
DTS LFE Gain:      0dB   Normal
Sub Stereo:      ---I---  -0dB
DVD-A Sub Level: Normal
No. of Subwoofers:  1
```

Crossover Frequency – This controls the frequency at which bass is redirected from speaker channels set to "Small" and sent to the Subwoofer outputs. This frequency is adjustable from 40 Hz to 150 Hz in 10 Hz increments. If you choose the THX or THX Surr EX in the Speaker Settings menu, then this crossover frequency is fixed at 80 Hz to meet the THX specifications and cannot be adjusted.

Stereo Mode – This controls how the subwoofer operates in the Stereo music modes.

Large: All of the stereo audio is passed to the Left and Right Outputs. Nothing is sent to the Subwoofers.

Large + Sub: Same as above, but bass is also sent to the Subwoofer. This provides additional punch to the bottom end.

Sat + Sub: Provides full bass management when you are using smaller satellite-type front speakers. The lower bass

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frequencies are cut off from the Left and Right Outputs and sent to the Subwoofer Outputs.

LFE Level – Dolby Digital has a separate point one channel that includes the low frequency effects (explosions, crashes, thumps). This allows you to adjust the relative loudness of these effects versus the rest of the soundtrack.

DTS LFE Level – DTS soundtracks have a LFE (subwoofer) soundtrack recorded 10 dB lower than Dolby Digital. We recommend the –10dB setting to boost the LFE soundtrack to the same as other formats. The 0 dB setting leaves the DTS LFE channel unaffected.

Sub Stereo – This adjusts the relative level of the subwoofer channels in the Stereo Music modes. Your personal tastes should be the guideline for this adjustment after the other levels have been properly calibrated.

DVD-A Sub Level – The decoded subwoofer output channel of a DVD-A player is typically 10 dB lower that the other channels. The +10dB option boosts the subwoofer signal by 10dB. The 0dB passes the subwoofer channel unaffected.

No. of Subwoofers – The Maestro has three subwoofer outputs. This setting option tells the processor how many subwoofers are connected to automatically adjust the subwoofer gain levels.

6.THX Settings

```
6 - THX Settings

THX Surr. EX:  Auto

Boundary Gain Compensation
THX Ultra 2 Sub:  Yes
Boundary Gain Comp:  ON
Advanced Speaker Array
SurrBack L/R: 12 to 48in
```

THX Surr. EX – The Maestro can automatically switch between the THX and THX Surround EX modes when playing Surround EX encoded material. Set this option to Manual if you want to control which mode is used by the Maestro.

THX Ultra 2 Sub – THX Ultra 2 subwoofers are designed to operate solidly down to 20Hz. If you have a THX Ultra 2 subwoofer or another good subwoofer that will reliably operate down to 20Hz, set this option to **Yes**. Otherwise, set this option to **No**.

Boundary Gain Compensation – This setting tailors the low frequency response of the subwoofer. When set to "On", this rolls off the lowest frequencies to the subwoofer. This minimizes interactions and interference from floors and walls near the subwoofer. When set to "Off", the subwoofer output of the Maestro is flat to 20Hz.

ASA SurrBack L/R – Advanced Speaker Array: This sets the distance between the Surround Back speakers to ensure proper soundstage imaging. It is preferable to put these speakers within 48" of each other on the back wall. If this is not practical and they must be further than 48" apart, set this option to **48+ In** setting.

Advanced Setup Menus

ADV 1 – Speaker Equalization

```
Adv 1 - Speaker EQ
        Bass         Treble
FL:   --I-- +0dB    --I-- +0dB
C:    --I-- +0dB    --I-- +0dB
FR:   --I-- +0dB    --I-- +0dB
SR:   --I-- +0dB    --I-- +0dB
SBR:  --I-- +0dB    --I-- +0dB
SBL:  --I-- +0dB    --I-- +0dB
SL:   --I-- +0dB    --I-- +0dB

Auto Stereo Tone Bypass: Yes
```

Channel Equalization – While we strongly recommend the use of a good equalizer such as our Diva to get the best performance from a home theater system, we realize that not everybody is that committed to great sound (or they believe in that evil story that has been passed down over the generations that all equalizers are bad). For simple tone control, we have included Bass and Treble adjustments on the Maestro.

Auto Stereo Tone Bypass – Set this option to **Yes** to automatically defeat the above tone control settings when in the Stereo music mode.

ADV 2 – Video Settings

OSD – Controls the display of the On-Screen Display.

On: All volume control, source selection and setting options are displayed on the main video outputs.

Off: Only the Main and Setup menus are displayed.

```
Adv 2 - Video Settings
OSD              On
Video Input Aux: None
Video Input CD:  None
Video Input Tuner:None
Video Input DVD-A:None
Audio and Video: Tracked

HQ Vid 1  Comp/RGB:      None
HQ Vid 2  Comp/RGB:      None
HQ Vid 3  Comp/RGB:      None
```

Assigning Composite and S-Video Inputs – Just because a video input on the back of the Maestro says "Tape", that doesn't mean that you're stuck just using it for the cassette tape deck. Four of the source inputs have assignable video inputs: Aux, CD, Tuner and DVD-A (Multi-Channel). Each of these audio inputs can be assigned to the following composite and S-video inputs: None, DVD, SAT, AV, Tape, or VCR.

Audio and Video Tracking – Set this option to **Tracked** for normal operation where the Video input selection is the same as the assigned Audio input selection. If set to **Separate**, the Video input will remain on the same selection regardless of the Audio input source selection.

Simulcast Listening: Even when the Audio and Video Tracking option is set to **Tracked**, it is possible to listen and watch

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two separate sources (i.e. Watch the TV and listen to the Radio Tuner). Refer to page 4-2 for more information.

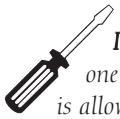
Assigning Component Video Inputs – The **HQ Vid** options select which source units will be using the Component Video inputs. Select the source input you want associated with each of the component video inputs.

ADV 3 – Digital Settings

```
Adv 3 - Digital Settings
Coaxial Inputs
 DVD input:      DVD button
 AV input:       AV button
 Tape input:     Tape button
 Tuner input:    Tuner button
 CD input:       CD button
Optical Inputs
 VCR input:      VCR button
 Sat input:      Sat button
```

Assigning the Digital Audio inputs – The Digital Audio inputs on the Maestro are fully assignable. Any digital input can be assigned to any source selection. Only one source can be assigned to a digital input. When planning your installation in the Installation Questionnaire at the beginning of this manual you should have noted whether each source unit has a Coaxial Digital, Optical Digital or No digital output. If the output of a source unit doesn't match the input preassigned on the Maestro (i.e. The satellite tuner has a Coaxial output instead of an Optical output), simply change the input assignments in this menu.

ADV 4 – Zone 2 Settings



Install Hint: *Only one source assignment is allowed per input, you may have to set the input option to "**No Button**" in order to free that digital input for another source.*

```
Adv 4 - Zone 2 Settings

Max Vol 20-72:   72
Fix Vol:         No
Max on Vol 0-72: 20
Zone 1 Standby:  Local Only
Zone 2 Standby:  Local Only
Local OSD:       On
Zone 1 Control:  Yes
Access:          All
```

Max Volume – This works just like the Main Zone maximum volume setting back in the basic menus. It limits the maximum volume control setting for the Zone 2 output.

Fixed Volume – If you are using the Zone 2 output from the Maestro to feed into another stereo receiver in the remote zone, you will want to set this option to Yes. This provides a constant signal level so you can use the volume control on the receiver in the second zone to control it's volume. Install Hint: Set the desired output volume level for Zone 2 with the volume control ***before*** setting this option to on. The Maestro locks the Zone 2 output at the current volume setting when this option is set to on.

Max. On Volume – Sets the maximum volume that the zone 2 output will play when the power is turned on.

Zone 1 Standby – Sets if Zone 1 can put both Zone 1 and 2 into Standby or only the Local Zone 1.

Zone 2 Standby – Sets if Zone 2 can put both Zone 1 and 2 into Standby or only the Local Zone 2.

Local OSD – Selects if the On-Screen Display of the zone 2 video output is On or Off.

Zone 1 Control – Selects if the Zone 2 IR input is allowed to control the Main Zone volume and source selections.

Access – This limits which sources are available to Zone 2. To set this option: Press the source input buttons to toggle a selection on or off.

ADV 5 – Input Trims

```
Adv 5 - Inputs Trims

Aux:              Reference 2V
DVD:              Reference 2V
Sat:              Reference 2V
AV:               Reference 2V
VCR:              Reference 2V
Tape:             Reference 2V
CD:               Reference 2V
Tuner:            Reference 2V
DVD-A:            Reference 2V
```

Adjusting the Source Unit Input Volume Trims – The input trims allow the installer to match the relative volumes of all sources and get the highest usable dynamic range. These trims affect only the two channel analog audio inputs from each source. There is no change to the digital audio levels. The reference 2 volt setting should be appropriate for most sources. To check the levels for a source:

1. Find a loud music selection or use a 0 dB reference disk.
2. Watch the bottom of the Maestro screen for the "Clip" indication.
3. If there is a "Clip" indication, turn up the Input Trim level to 4V or 8V until the clip indicator goes out.
4. If a source is quieter than the others, turn the Input Trim level down to 1V. Play a loud music track or use a 0dB reference disk to verify that the "Clip" indication does not come on at this setting.

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Using the Maestro

Now that you've gotten everything connected together and configured properly, it's time to sit back and enjoy the fruits of your labor. Since the Maestro gives you two independent "zones" to view and listen to your system (the Main home theater zone and the remote Zone 2) we'll cover them separately. The primary different between the two zones is that there is multi-channel surround sound for the Main zone and 2 channel stereo in the second zone.

Main Zone

All operation of the Maestro can be done with either the front panel display or the On-Screen Display (OSD) on the video display. The OSD is simpler to use since the larger display allows all the menu options to be listed at once.

Turning the Maestro On

There is actually two levels of turning the Maestro on. Firstly, the main front panel **Power** button must be pressed. This turns on the AC power to the Maestro. In most systems this power switch will ALWAYS be left on so the theater automation system can control the Maestro. When the Maestro receives a power off command from the IR or RS-232 inputs it goes into a sleep **Standby** mode. The Maestro is a very light sleeper and will wake back into normal operation by pressing any source input button or sending a power on command from the IR or RS-232 inputs.Choosing your Input

Using the Main Menus

The Main Menus enable the user to make temporary changes in the operation of the Maestro. These settings clear away when you turn the Maestro to Off or Standby. Refer to Section 3 - Configuration, for permanent changes.

Navigating the Menus

Selecting around the menus is a very simple and intuitive feat.

1. Press the MENU button to enter the **Main Menu Screens**.
2. Rotate the MULTI-FUNCTION KNOB to select Menu 1, 2 or 3.
3. Press the ▲ (MODE) and ▼ (EFFECT) buttons to select the menu options.
4. Use the MULTI-FUNCTION CONTROL KNOB to step through the setting options.
5. Press the MENU button to exit the **Main Menu Screens**.

Main Menu 1 – Inputs and Volume

```
Main Menu Screen 1
Vol:----------I--------- +0
Preset:          Preset 1
Audio Input:     DVD
Video Input:     DVD
Stereo Direct:   Off
Bass:            THX
Treble:          THX
Balance:         THX
```

Volume: Allows adjustment of the Main zone volume while in the Menu Screens.

Preset: Selects the currently active preset configuration. As you rotate between the five presets on this option, all changes will occur immediately on the Maestro.

Audio Input: Selects the currently active audio source input.

Video Input: Selects the currently active video source input.

Stereo Direct: Enables the Stereo Direct mode. This is the same as pressing the DIRECT button.

Bass and Treble Tone: Adjusts the tone control of the front Left and Right channels. Note: This option is not available in the THX mode.

Balance: Adjusts the left/right balance of the front outputs. Note: This option is not available in the THX mode.

Main Menu 2 – Recording Options

```
Main Menu Screen 2
Record to Tape:  Source
Record to VCR:   Source
Compression:     Off
Lip Sync:        +0ms
Pro Logic II Music Mode:
  Dimension:     +3
  Center Width:  +3
  Panorama:      Off
```

Record to Tape: Selects the audio source to record to Tape Output.

Record to VCR: Selects the audio and video source to record to VCR Output.

Compression: Compressing the dynamic bandwidth of the audio can be a good thing, especially for those late night action movie festivals. Compression increases the volume of quiet sections and reduces the volume of the louder sounds.

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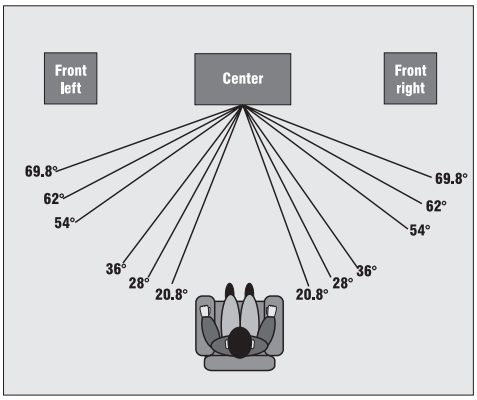
Note *that compression is only available in Dolby Digital and some DTS recordings. For a full time compressor, check out the Diva digital room correction processor in our Home Theater System lineup.*



Pro Logic II Center Width Settings

Display	Center width spreading effect
0	No center spreading
+1	20.8°
+2	28°
+3	36°
+4	54°
+5	62°
+6	69.8°

Pro Logic II Center Width Settings

There are three settings for the compressing:

Off: No Compression

Medium: Just a little off the top

High: Keep the sound down and don't wake the kids.

Lip Sync: Many video processors and line multipliers cause a slight delay between the sound and the video picture. Highly compressed video signals such as MPEG encoded satellite receivers and some DVD's also suffer from this problem. The Lip Sync setting delays the audio a small amount to allow the video image to catch up.

Pro Logic II Music Mode: Pro Logic II provides a more detailed surround decoding from two channel analog audio sources than the previous Pro Logic modes. There are several adjustments to get the best sound imaging from the ProLogic II mode:

Dimension – Adjusts the depth of the front/rear soundstage. For normal listening this should be set to +3. If you find the sound too spacious, turn this setting towards 0, if the sound is flat and you want more depth from front to rear, turn the adjustment up towards +6.

Center Width – Determines how strongly the Pro Logic II decoder processing creates the center channel image. Normally this signal is fed only to the center channel speaker output, but if the center speaker is set to "None" in the speaker setup, a phantom center channel is created from the front left and right channels. Normally this setting is left at +3.

Panorama – When the Panorama Mode is enabled, the front center image is extended to include the rear surround speakers. This provides a more enveloping wrap-around effect.

Main Menu 3 – Zone 2

```
Main Menu Screen 3

Zone 2
Vol:----------------I--- +0dB

Zone 2 Audio:    Follow Zone 1
Zone 2 Video:    Follow Zone 1

zone 2 Status:   On
```

Vol: Controls the current volume on the Zone 2 audio outputs.

Headphone Out: Not used on the Maestro.

Zone 2 Audio: Normally the Audio and Video sources track for zone 2. These options allow listening to a different source on zone 2 than the zone 2 video output.

Zone 2 Video: Selects the video source for the Zone 2 video output.

Zone 2 Status: Turns zone 2 on or off.

Choosing your Input

User Tip: The digital audio input always has priority over the two channel analog audio inputs. If you specifically wish to listen to the analog audio input for a source. Press and Hold the SOURCE *selection button for 2 seconds.*

The SOURCE selection buttons beneath the main Maestro display choose the source component that you want to view or listen to. There are nine sources available on the Maestro. When configuring the Maestro, there are several options to reassign the digital audio and video inputs to different sources.

Simulcast Listening

It is simple to choose separate audio and video sources with the Maestro. This allows you to watch one source and listen to the audio from another. From the Operation screen on the Maestro

1. Press the MENU button to enter the **Main Menu Screen 1: Inputs and Volume**.
2. Press the ▼ (EFFECT) until you see Audio Input.
3. Press a SOURCE Button to choose the Audio input source.
4. Press the ▼ (EFFECT) again and you will see Video Input.
5. Press a SOURCE Button to choose the Video input source.
6. Press the MENU button to exit the **Main Menu Screen 1**.
7. These input selections will stay in effect until you press a SOURCE Button to choose another source. The Video input will automatically return to tracking the Audio source.

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VCR and Tape Operation

The Maestro has full independent recording loops for a VCR and Tape Deck. Both of these inputs allow recording a separately from the one that you are listening to. Pressing the VCR or Tape button while another source is active enables you to continue recording that source, but monitor the output of the recording deck. Both source LEDs on the front of the Maestro will be lit.

Independent Recording

It is possible to record a source different from the source that you are listening to (i.e. Watching the DVD, but recording the CD player). To access this function:

1. Press the MENU button to enter the **Main Menu Screen 1:**
2. Turn the Multi-Function knob to **Main Menu Screen 2: Recording Options**
3. Press the ▼ (EFFECT) button to select **Record to Tape** or **Record to VCR** option.
4. Turn the Multi-Function knob to select the choice you want to record.
5. Press the MENU button to exit the **Main Menu Screen**.
6. These recording input selections will stay in effect until you return to Main Menu Screen 2 and return the recording selection to SOURCE.

Stereo Direct

For two-channel analog listening, the Maestro features a STEREO DIRECT input mode. This mode defeats all digital processing and passes a pure two channel analog audio signal from the input source to the main amplifier outputs of the Maestro. Most of the digital circuitry in the Maestro is powered down when in the Stereo Direct mode to minimize any possible noise.

Note: *Because the digital circuitry is not active in the Stereo Direct mode, the digital audio recording outputs are not available.*

Setting the Surround Modes

When listening to a source, the MODE button toggles between the available Surround Decoding Modes (Pro Logic II, DTS Neo, Dolby Digital, etc.). The modes available will change depending on the source materials encoding. Refer to the manual section on Surround Modes for more details about each mode.

THX Mode

When listening to a source, the **THX** button toggles between the available THX decoding modes. The modes available will change depending on the source materials encoding and the current surround mode settings on the Maestro. Refer to Section 6 on Surround Modes for more details about the THX modes.

DSP Effects

The Maestro isn't all work and no play. The Maestro features several DSP effects modes to simulate different listening environments. These effects provide different amounts of delay and reverberation so your theater will sound completely different. Try them out at your next party. Refer to the manual section on Surround Modes on page 6-6 for more details about the DSP effects.

Effect	Description
None	No effects active, stereo signal
Music	Extracted ambience and center information
Party	All speakers on
Club	Small room
Hall	Medium reverberant room
Sport	Very reverberant with extracted ambience and dry center dialog
Church	Long reverberant room

Display Brightness

Because everybody has different preferences in how the equipment in their home theater should look, we have provided a control over the brightness of the main Maestro display. This button toggles between three display levels: **Bright**, **Dim** and **Off**. In the Off mode, the display will momentarily come on when any button is pressed or the volume is changed and then return to the blank off state. The display mode is stored in the Presets so you may notice a change in the display brightness when you switch between Presets if they are not all stored at the same brightness level.

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Second Zone

```
Zone 2 Menu

Vol:---------------I---  +0
Audio Input      : DVD
Video Inut       : DVD
Record to Tape   : Source
Record to VCR    : Source
Zone 1 Status    : On
Zone 1 Volume    : +0dB
Zone 1 audio     : CD
Zone 1 Video     : DVD
```

The Zone 2 outputs provide a means for listening and viewing your home theater components in another room. The source selections and volume control for this second zone is independent of the main theater zone outputs. There are several options for controlling the second zone: The Main Menu screen from the Maestro, the external RS-232 serial control port, or the IR remote control.

The Zone 2 video output has an On-Screen Display and setup menu independent of the Main video outputs. This screen displays the current source selection status for Zone 2 along with the current Zone 1 settings. Depending on the Advanced Zone 2 settings in the Maestro configurations, you may not be able to change the Zone 1 settings from Zone 2.

Important Installation Note: *You must connect the two channel analog audio and composite video connections from all sources to use the Zone 2 option. The Maestro will not convert the digital audio, S-Video or Component video inputs for use in Zone 2.*

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Integration with Automation

Introduction

Part of the joy of a great home theater is that you don't have a tray of remote controls staring at you whenever you want to watch a movie. Hidden away behind the scenes is a workhorse that takes care of the mundane tasks of turning on all the components, lowering the curtains, dimming the lights, popping the corn, etc. This faithful servant can take the form of a simple learning remote control or a system as capable as a whole house automation system with touchscreens. There is a wide variety of theater controllers available.

There are two means of remotely controlling the Maestro: With Infrared (IR) Remote control and with the RS-232 Serial Port. Both of these methods feature a very extensive library of commands. It is really up to the system designers choice of user interface as to which of these methods will be used. It is possible to use both of these in the same installation depending on your needs.

Infrared Control versus RS-232

Infrared remote control systems are typically less expensive than RS-232 controllers. Their main limitation is that Infrared is strictly line-of-sight. That means that there has to be an unobstructed view between the controller sending the infrared commands and the IR sensor or front panel of the Maestro. When you try to send long groups of commands (macros) such as: Turn on the TV, Turn on the Maestro, Turn on the DVD, Select the DVD Input on the Maestro, Play the DVD; everything can easily get out of sync if you sit down the IR controller or somebody walks in front of you before all the Infrared commands have been sent. Infrared is also typically a one-way communication. There is no way for the IR remote to know if the command was received correctly.

RS-232 Serial control is a hard-wired connection. There is usually a wire connecting the user interface (keypad or touchscreen) to the controller system. Then another wire connecting the controller system to the Maestro. RS-232 is also a two-way communications scheme. This allows the

controller system to send very long, complex strings of commands and get an answer back to know that all those commands were executed properly.

RS-232 Serial Control

You must set the external RS-232 control system serial port to match the data speed and format that the Maestro is expecting. If these settings are not correct, the Maestro will not respond to the commands.

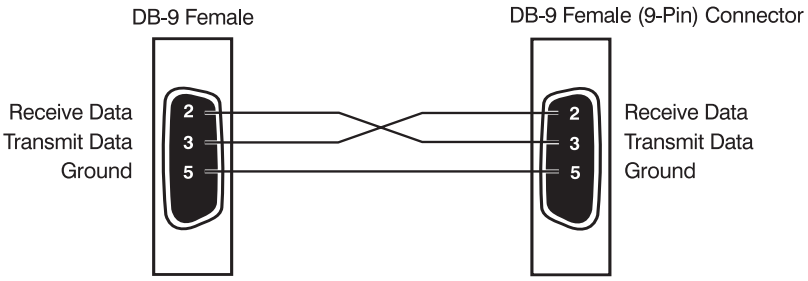
Set your communication parameters as follows:

Baud Rate: 38,400
Data Bits: 8
Parity: None
Stops Bits: 1
Flow Control: None

The cable wiring to connect the Maestro to your control system will depend on the RS-232 output connection on the controller. Make certain that you wire the Transmit Data output on the serial controller to the Receive Data on the Maestro and vice versa on the Receive Data line on the controller system. Connect the signal grounds on the control system and the Maestro together. The RS-232 connection on the Maestro is a DB-9 Male wired as follows:

Pin 2 Receive Data (RXD)
Pin 3 Transmit Date (TXD)
Pin 5 Ground

To connect the Maestro to a standard PC serial comm port; wire the cable in a 'null modem' arrangement.



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Protocol Structure

The RS-232 serial control protocol structure of the Maestro is a string of ASCII characters terminated with an ASCII Line Feed (0x0A hexadecimal). Multiple commands can be linked together on one line separated by a semicolon, but the total command string cannot contain more than 64 characters (including spaces and the Line Feed terminator).

In the following examples ***<lf>*** represents the ASCII Line Feed. How you actually enter that character into your serial control system varies by manufacturer. Check with their programming information about direct ASCII character entry.

Example:

To turn on the Maestro for Zone 1:

Z1PWR1***<lf>***

To turn on the Maestro and select the DVD source:

Z1PWR1;Z1AUD5***<lf>***

Command processing begins when the first semicolon separator line feed terminator is received. When a command is executed properly, the Maestro echoes the command back. If there is an error in the command, the Maestro will return an error message of "FAIL".

Control Commands

There are two types of serial control commands: Settings and Queries. The Setting commands instruct the Maestro to execute a function. The Query commands allow the external control system to ask the Maestro the current state of a function (i.e. Power, Mute, Input Source). To use the query function, precede the command with a question mark. Only a subset of all the serial commands have a query function.

Install Note: *Refer to Appendix "C" for the complete listing of commands.*

Example:

To query the current source selection for Zone 1:

?Z1AUD***<lf>***

If the DVD is currently selected, the Maestro will return:

Z1AUD5

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Surround Modes

The Maestro theater processor contains two powerful digital signal processing (DSP) ICs. These components enable the Maestro to decode multiple digital and analog multi-channel surround sound formats. Since the Maestro is fully programmable, new surround decoding formats can be incorporated as they become popular.

Selecting Surround Modes

There are three groups of surround processing modes in the Maestro. These are selected using the **THX**, **EFFECT** and **MODE** buttons on the front panel or their equivalent commands in the external control protocols. The **THX** button provides supplemental processing to improve the overall surround effect. The **EFFECT** button selects special DSP processing effects for two channel sources only. The **MODE** button manually selects the surround decoding mode when the source media does not automatically configure the Maestro.

Modes for Digital Sources

Digital surround recordings have details of their decoding requirements encoded into the media. The Maestro automatically detects this information and switches to the appropriate surround mode.

Modes for Analog Sources

Two channel analog audio sources do not contain information about their surround encoding method. This means that you will have to choose the surround mode that you find sounds best.

Mode Memory

The Maestro automatically remembers the last surround mode used for each source input. Since most digital surround recordings have control information encoded into them; the Maestro will switch to the decoding method requested by the source material.

THX® Modes

THX processing offers additional performance benefits in addition to the standard surround decoding modes. THX is an exclusive set of technologies and standards established

by Lucasfilm Ltd. THX grew from their desire to make your experience of home theater as close as possible to what the movie director intended.

THX engineers developed patented technologies to accurately translate the sound from the movie theater environment into the home, correct the tonal and spatial errors that would otherwise occur.

About THX Cinema Processing

Lucasfilm defined a series of technical performance standards that equipment must meet or exceed before it is allowed to wear the THX certification logo. Several levels of performance standards are defined, the most demanding standards are set for THX Ultra 2, which is your guarantee that the Home Theater products you purchase will give you superior performance for years to come.

A list of available DVD titles encoded with Dolby Digital Surround EX technology can be found at www.thx.com or www.dolby.com.

Re-Equalization™

The tonal balance of film soundtracks can be excessively bright and harsh when played back over home audio equipment because these soundtracks were mixed to be played back in a large movie theater. Re-Equalization restores the correct tonal balance for watching a movie in the smaller home environment.

Timbre Matching™

The human ear changes our perception of sound depending on the direction from which the sound is coming. In a commercial movie theater, there is an array of surround speakers so the sound information is coming from all around you. In a home theater there are usually only two speakers located to either side of you. the Timbre Matching feature filters the information going to the surround channels so that they more closely match the sounds coming from the front speakers. This ensures seamless panning between the front and rear surround speakers.

Adaptive Decorrelation™

The large number of surround speakers in a commercial movie theater provides an enveloping sound. Because there are fewer surround speakers and you are usually sitting much closer to them in a home theater, the surround sound image tends to collapse towards the speaker closest to you. Adaptive decorrelation slightly changes the time

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and phase relationship between the surround channels. This expands the listening position and creates a more spacious surround sound stage like a larger movie theater.

Advanced Speaker Array™

The Advanced Speaker Array (ASA) is a proprietary THX technology that processes the sound going to the side and rear surround speakers. This provides a more optimal surround sound experience. ASA is only available in the THX Ultra2 Cinema and Music modes.

THX Cinema

THX cinema mode provides the additional processing required for the optimal presentation of movies over the standard playback surround modes.

In Surround reproduction, this mode provides Re-Equalization, Timbre Matching and Adaptive Decorrelation as necessary to all channels.

In 2-Channel, this mode provides Re-Equalization of the Left and Right channels.

In Mono, this mode provides Re-Equalization of the mono signal.

THX Ultra 2 Cinema

THX Ultra 2 Cinema mode plays 5.1 surround movies using all 7.1 channels, giving you the best possible movie experience. In this mode, ASA Processing blends the side and rear surround speakers to provide the optimal mix of ambient and directional surround sounds.

DTS-ES (Matrix and 6.1 Discrete) and Dolby Digital Surround EX encoded soundtracks will be automatically detected in THX Ultra2 Cinema if the appropriate flag has been encoded into the material.

Some Dolby Digital Surround EX soundtracks are missing the digital flag the enables automatic switching. If you know that a movie you are watching is encoded in Surround EX, you can manually select the THX Surround EX surround mode with the **THX** button.

THX Surround EX and Surround ES

THX Surround EX – Dolby Digital Surround EX is a joint development of Dolby Labs and the THX division of Lucasfilms Ltd.

In a movie theater, soundtracks that are encoded with Surround EX technology are able to reproduce an extra channel which has been added during the mixing of the program. This channel, called Surround Back, places sounds behind the listener in addition to the rest of

the standard surround channels. This additional channel provides the opportunity for more detailed imaging behind the listener and brings more depth, spaciousness and sound localization than with standard 5.1 surround encoding.

THX Music

For playback of multi-channel music, the THX Music Mode can be used. In this mode, the THX ASA processing is applied to the surround channels to provide a wide, stable, rear soundstage.

Video Source Surround Modes

The following modes are available for multi-channel digital sources. Special modes such as DTS ES and DTS 6.1 Discrete are only available from properly encoded source materials.

Dolby Digital 5.1

This is the most commonly used surround format for DVD, Digital Satellite and Broadcast television. Dolby Digital 5.1 delivers surround sound with five discrete full-range channels and a low frequency bass effects (LFE) subwoofer channel.

DTS 5.1

The DTS 5.1 mix is less common that the Dolby Digital format, although it is generally acknowledged to having superior sound quality. It has the same five full range channels plus the subwoofer channel.

DTS-ES

DTS ES is a 5.1 channel format based on DTS 5.1. There is an additional center rear channel that is matrix encoded into the rear surround channels for playback.

DTS-ES 6.1 Discrete

This is a true discrete 6.1 channel sound format. Unlike DTS ES, this format has a true sixth channel mixed into the soundtracks. The DTS 6.1 Discrete mode only operates on sources with DTS 6.1 encoding. A list of available DVD titles with DTS ES and 6.1 Discrete can be found at www.dtsonline.com

Multi-channel Audio Source Modes

There are two different music surround playback methods: Those that use the internal digital decoding of the Maestro (Dolby Digital or DTS encoded) and the newer multi-channel audiophile Super Audio CD (SACD) and DVD-Audio formats that have the decoding built into the

players. The SACD and DVD-A formats bypass all internal processing in the Maestro and feed directly to the amplifiers through the volume control. Since the digital processing in the Maestro is defeated, there are no mode adjustments available. The Dolby Digital and DTS encoded music disks are treated the same as surround encoded movies and have the same options.

Two-channel Modes

The following surround modes are available with two channel audio sources. These include Stereo Analog, Dolby Digital 2.0 and PCM 2-channel digital sources.

Dolby Pro Logic II

This provides better surround channel separation that the original ProLogic format. There are two ProLogic II surround modes: Music and Movie. Use the method that sounds best to you.

Dolby Pro Logic Emulation

This mode should only be used on ProLogic encoded source materials. ProLogic processing on pure stereo sources can sound muffled and is not recommended.

DTS Neo:6 Cinema

A movie surround decoding mode designed to provide a movie theater environment soundstage with natural steering to all available surround channels.

DTS Neo:6 Music

Similar to the Cinema mode but with a tighter surround effect for most musical material.

Stereo

The Maestro works like a standard audio preamplifier in this mode. This mode plays back standard analog audio sources along with 2 channel digital sources such as Dolby Digital 2.0 from some DVD players and PCM digital CDs.

Mono

The left and right channels are combined into a single mono mix. This can benefit some older recordings and video tapes.

DSP Effects Modes

The Maestro has several DSP effects modes to enhance playback of a two channel audio source through the surround speakers. These modes are only available on stereo audio sources.

Effects Modes

Music – Music surround makes full use of the additional speakers in a theater system. This effect uses ambience extraction for the side and rear speakers and offers the most subtle surround processing with no reverberation or reflection sounds.

Party – The Party mode allows unprocessed stereo signals to be played over all the speakers for background music or maximum sound levels.

Club – The Club effect generates reflections and short reverberation to the front, side and rear speakers. It simulates a small night club venue.

Concert Hall – The Concert Hall effect generates the ambient information of a medium sized performance hall. Reflections and medium length reverberation information is sent to all channels.

Sports – The Sports Stadium effect is ideal for watching live sporting events. The open ambience is actively created around you. The center channel is used for the dialog commentary.

Church – The Church effect uses a reverberation algorithm that emphasizes the smooth, rich reverberant sound of a large space. As the name suggests, it works well for simulating the long reverberation of a cathedral or church.

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Troubleshooting Common Problems

General

There are no lights on the Maestro

- ✓ Pressing any Source selection button on the front panel should wake the Maestro from Standby.
- ✓ Verify that the power cord is plugged into a live AC outlet.
- ✓ Verify that the Power switch on the Maestro is pressed in (On).

The main front panel display is blank

- ✓ Press the Display button. This button controls the display brightness and also allows you to turn the display off entirely.

Unable to alter settings in menus

- ✓ The Maestro features a settings security lock to prevent curious fingers from tampering with the configuration settings. To unlock the settings, press the SELECT, TUNER and MULTI-CHANNEL buttons simultaneously. Press these buttons again to re-lock the settings.

The main zone changes while selecting sources from Zone 2

- ✓ Verify that the Zone 1 Control option in the Zone 2 Configuration Menu is set to Off.

Video

No video picture

- ✓ Verify the video display is turned on and set to the correct input for the Maestro. Press the MENU button on the Maestro and look for the Main Menu to show on the video display.
- ✓ Verify the correct input on the video display is selected for the output of the source (i.e. Component Video if the output of the DVD player is Component). For optimum video quality, the Maestro does not convert from one video input format to another (i.e. S-video to Component or Composite to S-Video).
- ✓ Verify the Video Input assignment configurations. Make certain that the correct video input is assigned to the source you are playing.

No Video on Zone 2

- ✓ Verify the composite video input from source is connected.

There is no On-Screen Display (OSD)

- ✓ Verify the OSD is turned on in the Maestro configuration settings.
- ✓ Verify that the correct input is selected on the video display or projector.

The OSD is pink/red

- ✓ Verify that the HQ Video Mode is set to Component in the Maestro configuration settings. If this is set to RGB, the on-screen display will be pink or red.

No On-Screen Display overlaid on video

- ✓ The Maestro cannot overlay the OSD onto video signal that have a higher than normal scan rate such as Progressive or HDTV. The Maestro automatically switches to Full Screen mode with black background when receiving these video signals.

Audio

The audio doesn't match the video

- ✓ The Video and Audio input can be selected independently in the Main Menu. Verify they are set the same.
- ✓ Verify the correct Video Input and Digital Audio input assignments are configured for the Source input button.

The sound is poor or distorted

- ✓ Verify the speaker settings configuration matches your speakers. If a speaker is set to Large and it cannot reproduce full range bass, you will hear distortion.
- ✓ If the trouble is only on some channels: Verify the audio RCA cables to the power amplifiers are working and seated properly.
- ✓ If the trouble is in all channels: Verify the Input Trim setting in the Advanced Configurations is not set too low. The "Clip" indicator should not be on.

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Cannot select Dolby Digital or DTS decoding mode

- ✓ The Maestro can only decode formats encoded onto the source. Normally these are marked on the packaging or liner notes of the material.
- ✓ Verify that the correct format is selected in the Start menu of the DVD.
- ✓ Verify that the digital input from the source is properly connected to the Maestro.
- ✓ Verify that the digital output of the source is enabled. Some DVD players have a setup menu that can only be accessed if there is no disk in the player.

Hum on analog inputs

- ✓ Verify that all the two channel analog audio cables are connected properly.
- ✓ If the hum only occurs on one source, try a different set of connecting cables.
- ✓ If the hum occurs on a source with an external connection such as an antenna or cable TV, try disconnecting that input. If the hum disappears, put a ground isolator on that connection.
- ✓ Try switching the ground lift switch on the back panel of the Maestro.

No Zone 2 audio when playing a DTS encoded video

- ✓ Most DVD players cannot output a stereo analog version of the soundtrack while playing a DTS encoded disk. If you want to watch the movie in the second zone, select the Dolby Digital soundtrack on the disk.

Unable to adjust the Bass and Treble controls

- ✓ The Bass and Treble tone controls are defeated while in THX surround modes.

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Appendix A – Menu Tree

Operation Menus

Main Menu 1 – Input and Volume

Volume	Preset	Audio Input	Video Input	Stereo Direct	Bass	Treble	Balance
	Preset 1 Preset 2 Preset 3 Preset 4 Preset 5	Select Source	Select Source	Off On			

Main Menu 2 – Recording Options

Record to Tape	Record to VCR	Compression	Lip Sync	Pro Logic II Dimension	Pro Logic II Center Width	Pro Logic II Panorama
Select Source	Select Source	Off Medium High	-5 mS to +220 mS	0 to +6	0 to +7	Off On

Main Menu 3 – Zone 2

Zone 2 Volume	Zone 2 Audio	Zone 2 Video	Zone 2 Status
	Follow Zone 1 Select Source	Follow Zone 1 Select Source	On Off

Setup Menus (* indicates factory defaults)

General Settings

Volume Display	Max Volume	Max On Volume	Delay Units	OSD Mode	Video Status	HQ Video
Normal 0 to 72dB (1dB steps) Fine –72 to 0dB (0.5dB steps) **THX Reference –53 to +19 dB***			English (feet) Metric (centimeters) **Time (milliseconds)***	Mixed **Full Screen***	**Screen Control*** SCART	**Composite*** RGB

Speaker Sizes

Auto Setup	Front L/R	Center	Surr. L/R	Surr. Back L/R	Sub-woofer	Rears for 5.1
Custom THX THX Surround EX **Config 1*** Config 2 Config 3	**Small*** Large	None **Small*** Large	**Small*** Large	None **Small*** Large	None **Present***	**Both *** Surr L/R Surr Back L/R

Delay Settings

Front Left	Center	Front Right	Surround Left	Surround Back L+R	Surround Right
0 to 105 mS	0 to 105 mS	0 to 105 mS	0 to 105 mS	0 to 105 mS	0 to 105 mS

Level Settings

Test Tone Cycle	Front Left	Center	Front Right	Surround Right	Surround Back Right	Surround Back Left	Surround Left	Sub-woofer
Manual*								
Automatic								

Subwoofer Settings

Crossover Frequency	Stereo Mode	LFE Level	DTS LFE Gain	Sub Stereo	DVD-A Sub Level	Number of Subwoofers
40 to 150 Hz (**80Hz THX Default ***)	Large		0 dB		Normal	**1***
	Large + Sub		**-10 dB***		**+10 dB***	2
	Sat + Sub*					3

THX Settings

THX Surround EX	THX Ultra 2 Subwoofer	Bound Gain Compensation	ASA
Auto*	Yes	On	0 to 12 In
Manual	**No***	**Off***	**12 to 48 In***
			+48In

Advanced 1 –Speaker Equalization

Front Left	Center	Front Right	Surround Right	Surround Back Right	Surround Back Left	Surround Left	AutoStereo Tone Bypass
Bass	Bass	Bass	Bass	Bass	Bass	Bass	**On***
Treble	Treble	Treble	Treble	Treble	Treble	Treble	Off

Advanced 2 – Video Settings

OSD	Video Input Aux	Video Input CD	Video Input Tuner	Video Input DVD-A	Audio and Video	HQ Video 1	HQ Video 2	HQ Video 3
On*	**None***	**None***	**None***	**None***	**Tracked***	None	None	**None***
Off	DVD	DVD	DVD	DVD	Separate	**DVD***	DVD	DVD
	SAT	SAT	SAT	SAT		SAT	**SAT***	SAT
	AV	AV	AV	AV		AV	AV	AV
	Tape	Tape	Tape	Tape		Tape	Tape	Tape
	VCR	VCR	VCR	VCR		VCR	VCR	VCR

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Advanced 3 – Digital Settings

Coaxial DVD Input	Coaxial AV Input	Coaxial Tape Input	Coaxial Tuner Input	Coaxial CD Input	Optical VCR Input	Optical SAT Input
DVD Button*	DVD Button	DVD Button	DVD Button	DVD Button	DVD Button	DVD Button
SAT Button	SAT Button	SAT Button	SAT Button	SAT Button	SAT Button	**SAT Button***
AV Button	**AV Button***	AV Button	AV Button	AV Button	AV Button	AV Button
VCR Button	VCR Button	VCR Button	VCR Button	VCR Button	**VCR Button***	VCR Button
Aux Button	Aux Button	Aux Button	Aux Button	Aux Button	Aux Button	Aux Button
CD Button	CD Button	CD Button	CD Button	**CD Button***	CD Button	CD Button
Tuner Button	Tuner Button	Tuner Button	**Tuner Button***	Tuner Button	Tuner Button	Tuner Button
Tape Button	Tape Button	**Tape Button***	Tape Button	Tape Button	Tape Button	Tape Button

Advanced 4 – Zone 2 Settings

Max Volume	Fixed Volume	Max On Volume	Zone 1 Standby	Zone 2 Standby	Local OSD	Zone 1 Control	Access
	Off*		**Local***	**Local***	**On***	**No***	**All***
	On		All Off	All Off	Off	Yes	Select Sources

Advanced 5 – Input Trims

AUX	DVD	SAT	AV	VCR	Tape	CD	Tuner	DVD-A
1 V	1 V	1 V	1 V	1 V	1 V	1 V	1 V	1 V
2 V *	**2 V ***	**2 V ***	**2 V ***	**2 V ***	**2 V ***	**2 V ***	**2 V ***	**2 V ***
4 V	4 V	4 V	4 V	4 V	4 V	4 V	4 V	4 V
8 V	8 V	8 V	8 V	8 V	8 V	8 V	8 V	8 V

Save Presets

No Save – Return to Index

Save As:

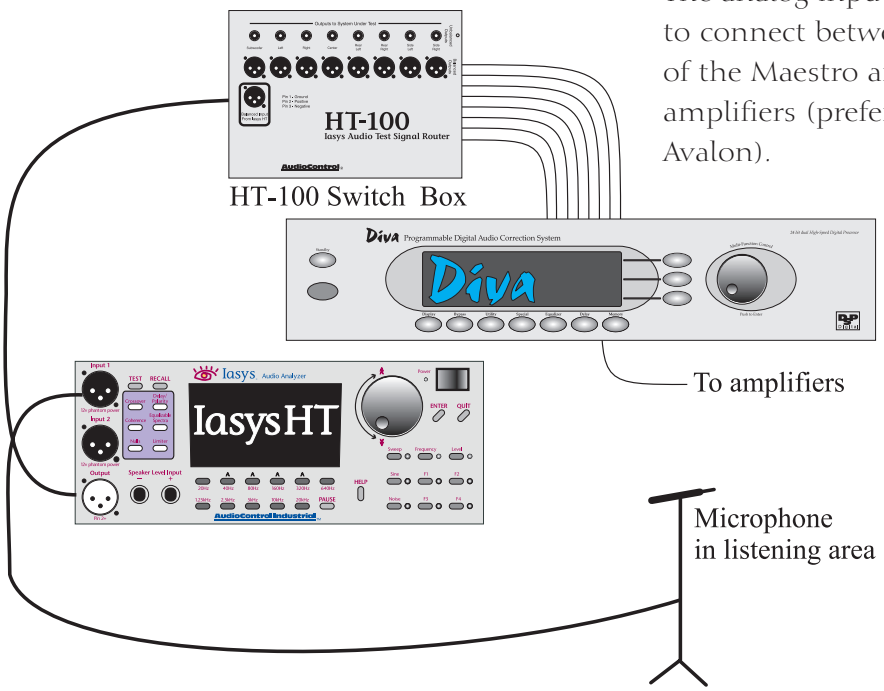
- **Preset 1 ***
- Preset 2
- Preset 3
- Preset 4
- Preset 5

Appendix B –

Using the Maestro with the Diva Room Correction Processor

While the Maestro is a very power surround processor, some things are best left to a specialist. The Diva 24 bit digital room correction processor is the part of the AudioControl Home Theater System product line up designed to take the theaters sound quality up to the next level. The Diva includes Graphic and Parametric Equalization, Digital Delays with 0.01 mS resolution, Crossover filtering, and Compressor/Limiter Dynamics control for 8 channels of audio. It also includes 20 user-configured preset memories and a powerful automation integration protocol to make this part of any dream system.

The Diva is simple to connect into the Maestro home theater system. The analog inputs and outputs enable the Diva to connect between the preamplifier outputs of the Maestro and the inputs of your power amplifiers (preferably the Pantages and Avalon).



For adjusting the Diva, we highly recommend using the AudioControl Industrial IasysHT theater analyzer with the HT-100 switcher. The IasysHT enables extremely precise one-twelfth audio analysis for treating room acoustic mode problems. The IasysHT is also very capable with speaker delay measurements. It will measure delay timings down to 1/8" to ensure the best sound imaging that you have ever heard from a home theater.

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Appendix C –
RS-232 Serial Control Protocol Commands

You must set the external RS-232 control system serial port to match the data speed and format that the Maestro is expecting. If these settings are not correct, the Maestro will not respond to the commands.

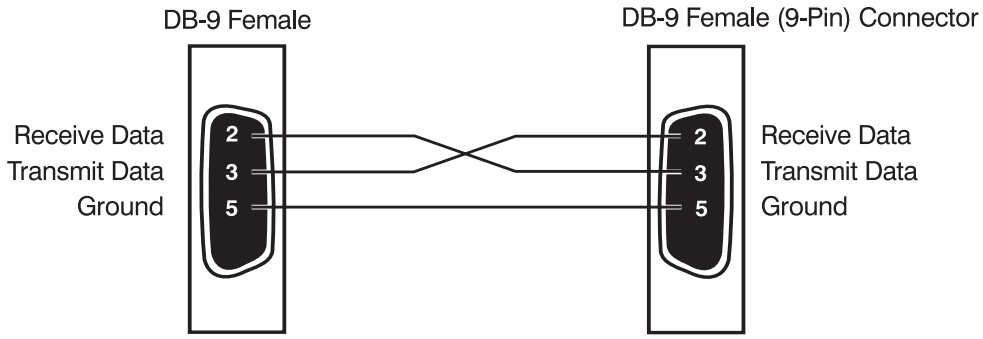
Set your communication parameters as follows:

Baud Rate:	38,400
Data Bits:	8
Parity:	None
Stops Bits:	1
Flow Control:	None

The cable wiring to connect the Maestro to your control system will depend on the RS-232 output connection on the controller. Make certain that you wire the Transmit Data output on the serial controller to the Receive Data on the Maestro and vice versa on the Receive Data line on the controller system. Connect the signal grounds on the control system and the Maestro together. The RS-232 connection on the rear panel of the Maestro is a DB-9 Male wired as follows:

Pin 2 Receive Data (RXD)
Pin 3 Transmit Data (TXD)
Pin 5 Ground

To connect the Maestro to a standard PC serial comm port; wire the cable in a 'null modem' arrangement.



Protocol Structure

The RS-232 serial control protocol structure of the Maestro is a string of ASCII characters terminated with an ASCII Line Feed (0x0A hexadecimal). Multiple commands can be linked together on one line separated by a semicolon, but the total command string cannot contain more than 64 characters (including spaces and the Line Feed terminator).

In the following examples **<*lf*>** represents the ASCII Line Feed. How you actually enter that character into your serial control system varies by manufacturer. Check with their programming information about direct ASCII character entry.

Command Structure

In the following commands, one or more of the following parameters may apply:

Parameter	Description
?	Query the command status.
z	Zone Selection. Valid values for this parameter are Z1 for the main zone and Z2 for the second zone outputs.
x	On/Off setting for the command. Valid values are 0 for off/no and 1for on/yes.
y	Value: Some commands will accept a range of inputs (i.e. Volume or Delay setting)
i	Input Source: Sets the command for a specific source input. Valid inputs for this parameter are: 0=None, 1=Source, 2=Aux, 3=CD, 4=Tuner, 5=DVD, 6=SAT, 7=AV, 8=Multi-channel, 9=Tape, A=VCR, B=Follow Zone 1.
s	Speaker: Sets the commands for specific speaker channels. Valid inputs for this parameter are: 0=Center, 1=Front Left, 2=Front Right, 3=Surround Left, 4=Surround Right, 5=Back Left, 6=Back Right, 7=Subwoofer, 8=All Channels.

Table 1 Command Parameters

Note: ALL commands are entered in Uppercase. The parameters are shown in lowercase for clarity.

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General Commands

Command	Description	Parameters	Parameter Values
PWR	Power On/Off	?zPWRx	See table
MUT	Mute On/Off	?zMUTx	See table
FAN	Force Analog	zFANx	See table
EFF	Effect Mode Selection	?EFFy	Valid y values are: 0=off, 1=Music, 2=Party, 3=Club, 4=Hall, 5=Sport, 6=Church, 7=Increment to next effect
THX	THX Mode Selection	?THXy	Valid y values are: 0=Off, 1=THX Cinema, 2=THX Ultra2 Cinema, 3=THX Music Mode, 4=THX Surr EX
DEC	Decode/Downmix Mode Select	DECy	For analog or PCM source, valid y values are: 0=Mono, 1=Stereo, 2=ProLogicII Movie, 3=ProLogicII Music, 4=ProLogic, 5=Neo:6 Cinema, 6=Neo:6 Music For digital sources, valid y values are: 0=Mono Downmix, 1=Stereo Downmix, 2=No Downmix
SIG	Current Audio Signal type	?zSIG	
TRM	Speaker Trim Levels	TRMsy	See table for s values. Valid inputs for y are –10 to +10

Main Commands

Command	Description	Parameters	Parameter Values
VOL	Volume	?zVOLy	Valid values for y are" –53 to +19
PRE	Preset select	PREy	Valid values for y are: 1 to 5
AUD	Audio source select	?zAUDi	See table for values
VID	Video source select	?zVIDi	See table for values
DIR	Stereo Direct	?DIRix	See table for values
BAL	Balance	BALy	See table for values
RCT	Record to Tape	RCTi	See table for values
RCV	Record to VCR	RCVi	See table for values
COM	Compression	COMy	See table for values
LIP	Lip Sync Delay	LIPy	Valid values for y are: -1 to +21 -1=-5mS, +21=105mS
DIM	PLII Music Dimension	DIMy	Valid values for y are: 0 to 6
CTW	PLII Music Center Width	CTWy	Valid values for y are: 0 to 7
PAN	PLII Music Panorama	PANx	See table for values

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Basic Setup Commands

Command	Description	Parameters	Parameter Values
VDS	Volume display	VDSy	Valid values for y are: 0=Normal, 1=THX Ref, 3=Fine
MXV	Max Volume	zMXVy	Valid values for y are: -33 to +19
MXO	Max On Volume	zMXOy	Valid values for y are: -53 to +19
DYU	Delay Units	DYUy	Valid values for y are: 0=Feet, 1=Centimeters, 2=Milliseconds
OMD	OSD Mode	OMDy	Valid values for y are: 0=Full Page, 1=Mixed
AST	Auto Setup	ASYy	Valid values for y are: 0=THX, 1=THX Surr EX, 2=Config 1, 3=Config 2, 4=Config 3, 5=Custom
SSZ	Speaker Size	SSZsy	Valid values for y are: 0=None, 1=Small, 2=Large
5P1	5.1 Rears	5P1y	Valid values for y are: 0=Surr L/R, 1=SurrBack L/R, 2=Both
DLY	Speaker Delays	DLYsy	Valid values for y are: 0 to 99 depends on delay units set.
LVL	Speaker Level Settings	LVLsy	Valid values for y are: -10 to +10
CRF	Crossover frequency	CRFy	Valid values for y are: 0 to 11 0=40Hz, 11=150Hz in 10Hz steps
LFE	LFE Level	LFEy	Valid values for y are: -10 to 0
DLF	DTS LFE Gain	DLFy	Valid values for y are: 0=0dB nominal, 1=-10dB
SST	Sub Stereo	SSTy	Valid values for y are: -10 to 0
DAL	DVD-A Sub level	DALy	Valid values for y are: 0=0dB Normal, 1=+10dB
NSW	Number of Subs	NSWy	Valid values for y are: 1 to 3
TEX	THX Surround EX Flag	TEXx	See table for values
U2S	THX Ultra2 Sub	U2Sx	See table for values
BGC	Boundary Gain Compen.	BGCx	See table for values
ASA	Advanced Spkr Array	ASAy	Valid values for y are: 0=0-12", 1=12-48", 2=+48"

Appendix D –

IR Remote Control Codes

The Maestro uses standard RC-5 encoding for the infrared (IR) remote control. Here is a table of the commands available including all discrete function commands. There is a full copy of these IR commands in Pronto CCF format included on the AudioControl Home Theater System Support CD included with the Maestro.

Depending if these IR commands are received through the Front Panel receiver of the Maestro or the Zone 2 IR input, they will control Zone 1 or Zone 2.

Table of Remote Control Commands

Command	Code	Command	Code
Standby	16-124	Dolby PL2 Music	16-109
Power On	16-123	Dolby ProLogic	16-110
Power Toggle	16-12	DTS NEO 6 Cinema	16-111
Display	16-59	DTS NEO 6 Music	16-112
Menu	16-82	THX Off	16-113
Info	16-55	THX Cinema	16-114
Mute	16-119	THX Ultra2 Cinema	16-115
Unmute	16-120	THX Music	16-116
Mute Toggle	16-13	THX Surround EX	16-117
Volume Up	16-16	Effect: Off	16-63
Volume Down	16-17	Effect: Music	16-64
SAT Input	16-0	Effect: Party	16-65
AV Input	16-2	Effect: Club	16-66
Tuner Input	16-3	Effect: Hall	16-67
DVD Input	16-4	Effect: Sport	16-68
Tape Input	16-5	Effect: Church	16-69
VCR Input	16-6	Preset 1	16-72
CD Input	16-7	Preset 2	16-73
AUX Input	16-8	Preset 3	16-74
Multi-Chan Input	16-9	Preset 4	16-75
Direct On	16-78	Preset 5	16-76
Direct Off	16-79	Arrow Up	16-85
Direct Toggle	16-10	Arrow Down	16-86
Modes Toggle	16-28	Arrow Left	16-81
THX Modes	16-32	Arrow Right	16-80
Effects Toggle	16-70	Select	16-87
Mono Mode	16-106	Trim Menu	16-37
Stereo Mode	16-107	Sub Trim	16-51
Dolby PL2 Movie	16-108	Lip Sync	16-50

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Appendix E -
Factory Theater Calibration Service

An integral part of the AudioControl Home Theater system is the acoustical calibration of the system. Especially in systems where the power of the Diva room correction processor is used. To help with this task, AudioControl offers a Factory Theater Calibration Service. A factory-trained technician using the AudioControl Industrial IasysHT theater analyzer and other tools of the trade, will come to your theater and ensure that you are getting the best sound possible from your system.

For more information about this service, contact your AudioControl sales representative.

Appendix F –
Updating the Maestro

The Maestro is designed to allow flash memory reprogramming of the operating firmware and the surround decoding via the rear panel RS-232 port. This task should only be done by a trained service technician. Refer to the AudioControl Home Theater System Support CD for the software update program and detailed programming instructions.

Important note: *The* **POWER AMPS** *connected to the Maestro* **MUST BE SWITCHED OFF** *when reprogramming. This is because when you put the Maestro into programming mode the microprocessor cannot control the mute circuits and the Maestro may make very loud thumps.*

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Warranty

and now a word from the legal department...

People are scared of warranties. Lots of fine print. Months of waiting around. Well, fear no more. This warranty is designed to make you rave about us to your friends. It's a warranty that looks out for you and helps you resist the temptation to have your friend, who's "good with electronics", try to repair your AudioControl product. So go ahead, read this warranty, then take a few days to enjoy your new Maestro home theater system before sending in the warranty card and comments.

"Conditional" doesn't mean anything ominous. The Federal Trade Commission tells all manufacturers to use the term to indicate that certain conditions have to be met before they'll honor the warranty. If you meet all of these conditions, we will warrant all materials and workmanship on the Maestro for five (5) years from the date you bought it, and we will fix or replace it, at our option, during that time.

Here are the conditional conditions:

1.You have to fill out the warranty card and send it to us within 15 days after purchasing the Maestro.

2.You must keep your sales receipt for proof of purchase showing when and from whom the unit was bought. We're not the only ones who require this, so it's a good habit to get into with any major purchase.

3.The Maestro must have originally been purchased from an authorized AudioControl dealer. You do not have to be the original owner, but you do need a copy of the original sales receipt or invoice.

4.You cannot let anybody who isn't: (A) the AudioControl factory; (B) somebody authorized in writing by AudioControl to service the Maestro. If anyone other than (A) or (B) messes with the Maestro, that voids your warranty.

5.The warranty is also void if the serial number is altered or removed, or if the Maestro has been used improperly. Now that sounds like a big loophole, but here is all we mean by it:

Unwarranted abuse is: (A) physical damage (don't use the Maestro to level your projection TV); (B) improper connections (120 volts into the RCA jacks can fry the poor thing); (C) sadistic things. This is the best product we know how to build, but if you strap it to the front bumper of your Range Rover, something will break.

Assuming you conform to 1 through 5 (and it really isn't all that hard to do) we get the option of fixing your original unit or replacing it with a new one.

Legalese Section

This is the only warranty given by AudioControl. This warranty gives you specific legal rights that vary from state to state. Promises of how well the Maestro will perform are not implied by this warranty. Other than what we have covered in this warranty, we have no obligation, express or implied. Also, we will not be obligated for direct or indirect consequential damage to your system caused by hooking up the AudioControl Maestro.

Failure to send in a properly completed warranty card negates any service claims.

Unwarranted abuse is: (A) physical damage (don't use the Maestro to level your projection TV); (B) improper connections (120 volts into the RCA jacks can fry the poor thing); (C) sadistic things. This is the best product we know how to build, but if you strap it to the front bumper of your Range Rover, something will break.

Assuming you conform to 1 through 5 (and it really isn't all that hard to do) we get the option of fixing your original unit or replacing it with a new one.

What to do if you need service

Normally service will be handled by your AudioControl system professional who installed the system. If you're the take charge kind of person who wants to do this themselves, contact AudioControl, either by phone 425/775-8461 or email at service@audiocontrol.com. We'll verify if there is anything wrong that you can fix yourself, or arrange to have it sent back to our factory for repair. Please include the following items with the returning unit:

1. A copy of your proof of purchase (that sales receipt we've been harping about). No originals please. We cannot guarantee returning them to you.
2. A brief explanation of the trouble you are having with the Maestro.
3. A return street address. (No PO Boxes, please)
4. A daytime phone number in case our technician has a question about the problem you are having.

You're responsible for the freight charges to us, but we'll pay the return freight back. We match whatever shipping method you send it to us, so if you return the unit overnight freight, we send it back overnight. We recommend UPS for any shipments.

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Specifications

Maestro Theater Surround Processor Specifications

Audio

S/N Ratio (unwtd 20Hz/20kHz) – analog . . . . . >100dB
S/N Ratio (unwtd 20Hz/20kHz) - digital . . . . . >98dB
THD – Analog Inputs 0.0012%
THD – Digital Inputs (24 bit) 0.0015%

Video

Composite & S-Video Bandwidth . . . . . >12 MHz
Component Video Bandwidth . . . . . 300 MHz

Digital

Coaxial Inputs/Outputs (level / impedance) . . . . 0.5V / 75 ohms
Sampling frequencies 44.1 kHz, 48kHz, and 96kHz (stereo only)
Optical Inputs/Outputs . . . . . S/PDIF

Inputs

Analog Audio Inputs . . . . . 8 Stereo Pairs
Multi-channel Analog Audio Input . . . . . 1 (8 channels)
Digital Audio Inputs - . . . . . 5 Coax, 2 Optical
Video Inputs . . . . . 5 Composite, 5 S-Video, 3 Component

Outputs

Main Audio Output . . . . . 1 (7.1 plus 2 additional subwoofers)
Second Zone Audio Output . . . . . 1 Stereo Pair
Digital Audio Output . . . . . 1 Coax
Main Video Outputs . . . . 2 Composite, 1 S-Video, 1 Component
Second Zone Video Output . . . . . 1 Composite

ControlAudio

12 Volt Trigger Output . . . . . 1 Main, 1 Video
RS-232 Serial Control . . . . . 1 – DB-9
IR Receiver Input - Main . . . . . 1 - 1/8" Minijack
IR Receiver Input – Zone 2 . . . . . 1 - 1/8" Minijack
IR Emitter Output . . . . . 1 - 1/8" Minijack

General

Power Consumption . . . . . 35 Watts
Dimensions . . . . . 17"W x 16.9"D x 5.12"H
Weight . . . . . 30 lbs

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