ATON

Technology in reach.™

DLA2/DLA4/DLA6

Multi-Room Speaker

Level Audio Router

www.atonhome.com

Safety Information

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential instal-lation. This equipment generates, uses and can radiate radio frequency energy and, if not in-stalled and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interfer-ence will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION: Changes or modifications not expressly approved by Elan Home Systems could void the user's authority to operate the equipment

DLA2/4/6 Power Source

The source of DLA2/4/6 power is the 12VDC wall transformer. A DC-IN jack connects the 12 VDC adapter with the DLA2/4/6 chassis to provide power for the unit. Protect the power supply cord from being walked on or pinched, particularly at plugs, outlets and the point where they exit from the apparatus.

Severe personal injury and equipment damage can result by not following proper procedures. Use only the 12VDC adapter designated for the DLA2/4/6.

Caring For the DLA2/4/6

Clean only with a dry soft cloth.
It is important to properly care for your DLA2/4/6 Speaker Selector. Follow these guidelines to ensure your device is preserved and protected.

- Do not expose the DLA2/4/6 to rain, liquids or moisture for an extended period of time.
- Do not expose the DLA2/4/6 to temperature extremes.
- Do not place any objects on top of the DLA2/4/6 to prevent chassis damage.

Operating Temperatures & Environments

- Operating Temperature: 32-104°F (0-40°C)
- Humidity: 0-90%

Precautions

- Always exercise care when operating the DLA2/4/6 Speaker Selector.
- Do not apply excessive amplification.
- ATON strongly recommends that you do not add more speakers than recommended.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- DO NOT use any 12 VDC adapter other than the one provided with the DLA2/4/6.
- In the unlikely event that smoke, abnormal noise, or strange odor is present, immediately power the DLA2/4/6 off. Please report the problem to your dealer immediately.
- Never attempt to disassemble the DLA2/4/6. You will lose any product warranty on the unit.

⚠ **Amplifier Input 125 Watts per Channel Max**

Package Contents

DLA2/4/6 Speaker Selector
12 VDC Power Adapter
Slim-Line IR Remote Control
User/Installation Manual
Quick Install Guide

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Contents

1. Introduction

A Simple Concept Reaches New Heights

The concept is simple and has been around for years - a device that allows you to connect extra speakers to your existing A/V or stereo receiver. Push a button - your speakers come on. Push it again - they go off. Turn a knob, and the volume goes up or down. Great concept. Good exercise, too - especially when your system is located downstairs or on the other side of the house. Introducing DLA2/4/6 Speaker Level Audio Routers - the most significant advancement in the history of speaker selectors!

Patent-Pending Intelligence & Performance

No other speaker selector available today is as smart! With its patent-pending design, The DLA2/4/6's pre-configured settings ensure that all speakers receive maximum power at all times, and that your receiver/amplifier isn't operating below its nominal impedance, which can cause some very undesirable side effects.

Sound Scenes

DLA2/4/6 lets you create Sound Scenes around your home.Using the front panel of the DLA, the optional RF remote or IR receivers, you can turn on groups of rooms - or every room. Kid's room too loud? Use the optional RF remote to turn the volume down in their room instantly from the den. At bedtime, turn off the audio throughout the entire house.

A Simple & Affordable Solution

DLA2/4/6 connects directly to your stereo receiver or amplifier, making it the affordable way to add up to 6 more rooms of music to your system. Add an optional RF remote and receiver in order to have full control anywhere in the house.

Figure 1-1 Front Panel

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Features

- DLA (Dynamic Level Adjustment) Technology delivers maximum adjustable volume levels to each room while protecting your amplifier from damage (patent-pending).

- Adds 2, 4, or 6 additional pairs of speakers to your home theater/stereo receiver or amplifier.

- Programmable "Scene" command for one-touch recall of your favorite system settings.

- One-touch "All On" command turns audio on in all rooms.

- One-touch "All Off" command turns audio off in all rooms.

- Room Identification Labels with adhesive backing included for easy Front Panel Room Identification

- Optional RF Remote controls volume levels independently for each room from inside or outside your home (up to 200 ft. range)

- Optional wired DLA Touchpad (DLATP) controls volume, mute and room/system power from an individual room. DLATP also includes a built-in IR Receiver.

- IR Remote included

- Quick Install Guide included for fast setup

- 2 Year Limited Warranty

ATON DLA2/4/6 Accessories

IR EmittersPlasma-Friendly IR Receivers

RF Remote & Receiver Kit

RF Remote Only

Rack Ear Kit (DLA4 & DLA6 only)

DLATP DLA Touchpad Controller

Replacement 12VDC/2.1A Power Supply

In-Wall, In-Ceiling, Outdoor &

Home Theater Speakers

Note: For more information and purchase options, visit our website at: www.atonhome.com.

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Front Panel

The front panel of the DLA2/4/6 has multiple selector buttons to access rooms and control power and volume states. Blue LEDs display Volume level and Room On status, while red LEDs show that a room is selected for adjustment. *Figure 1-2* and *Table 1-1* provide descriptions and locations of Front Panel controls and indicators.

> *Note: This manual will consistently show images of the DLA2 Two Room Speaker Selector. DLA4 and DLA6 models are identical in all respects but have additional Speaker Outputs, Room Select Buttons and Room Indicator LEDs.*
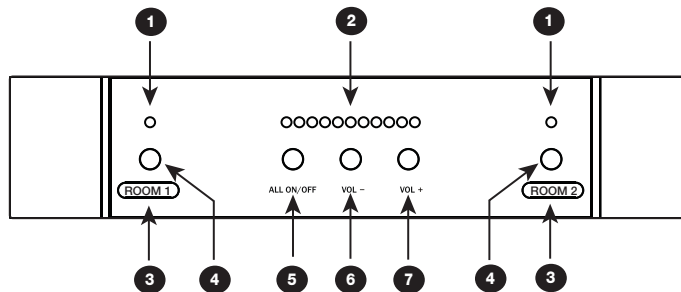
.

Figure 1-2: DLA2/4/6 Front Panel

	Indicator/Button	**Function**	**LED**
1	Room Indicator LED	Room ON - Selected Room ON - NOT Selected Room OFF Room Muted	Red Blue No LED Blue (Blinking)
2	Volume Indicator	Shows Volume Level for Selected Room- Level 1 to 11	Blue
3	Room Label Location	Place Label to Identify Rooms	
4	Room Select	Selects Room for Adjustment	
5	All ON/All OFF Button	Turns All Rooms ON or OFF	
6	VOL -	Decreases Volume of Selected Room by One Step-Press and Hold to Ramp Volume Down	
7	VOL +	Increases Volume of Selected Room by One Step-Press and Hold to Ramp Volume Up	

Table 1-1: Front Panel Indicators/Buttons

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Rear Panel

The Rear Panel of the DLA2/4/6 has connections for Power, Amplifier Input, Sense Inputs, page/Doorbell Trigger Inputs, the RF Receiver (ATON Port), IR Emitter Outputs, IR receiver Inputs and Speaker Outputs. Figure 1-3 and Table 1-2 provide description and location of Rear Panel connections.
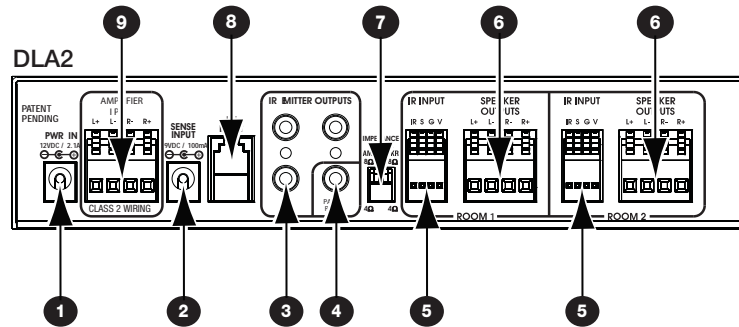

Figure 1-3 : DLA2/4/6 Rear Panel

	Connector	Function
1	12 VDC Power Connector	Connector for +12VDC/2.1A (PS3) Power Transformer
2	Sense Input Connector	Connector for optional +12 VDC/200mA (PS2) Sense Status Power Transformer
3	IR Emitter Outputs	3.5mm Mono Mini Jack Connectors for Use With ATON IR Emitters
4	Page/DB Trigger	3.5 mm. Stereo Mini-Jack Connector for use with ELAN Communication Controllers or equivalent
5	IR Receiver Inputs	Flip Lock Connectors for IR receivers or DLA Touchpads. IR receivers allow for individual room control or system-wide control using DLA discrete IR codes.*
6	Speaker Outputs	4-position Fliplock Connectors for 16 Gauge, 4 Conductor (16/4 AWG) Speaker Leads to Room Speakers
7	Impedance Match DIP Switches	Select The Impedance Value Of the Amplifier And Speakers, 4 Or 8 Ohms
8	ATON Port	Connects to Optional RF Receiver
9	Amplifier/Receiver Input	4-position Fliplock Connector for 16 Gauge, 4 Conductor (16/4 AWG) Speaker Leads From Amplifier or A/V Receiver Speaker Outputs • 125 Watts per Channel Max

Table 1-2: Rear Panel Connectors

* IR codes available for download at: www.atonhome.com. See Appendix C-3.

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2. System Design Overview

There are four typical system applications when installing the DLA2/4/6:

1.   Standard A/V or Stereo Receiver
2.   Zone 2 Output of an A/V Receiver
3.   External Amplifier
4.   Sub-Zone of a Multi-Room Controller

Figure 2-1 shows a DLA2 connected to an A/V receiver with optional ATON accessories including optional AIR3 IR Receivers, AIE2 IR Emitters and a DLA2RKT RF remote kit. This system is capable of house-wide control of the DLA2 through the RF Kit as well as Room 1 and Room 2 control using the included IR Remote. A universal remote or source remote can be used to control the DLA 2/4/6* as well as the equipment connected to the IR EMITTER OUTPUTS for even more convenience.
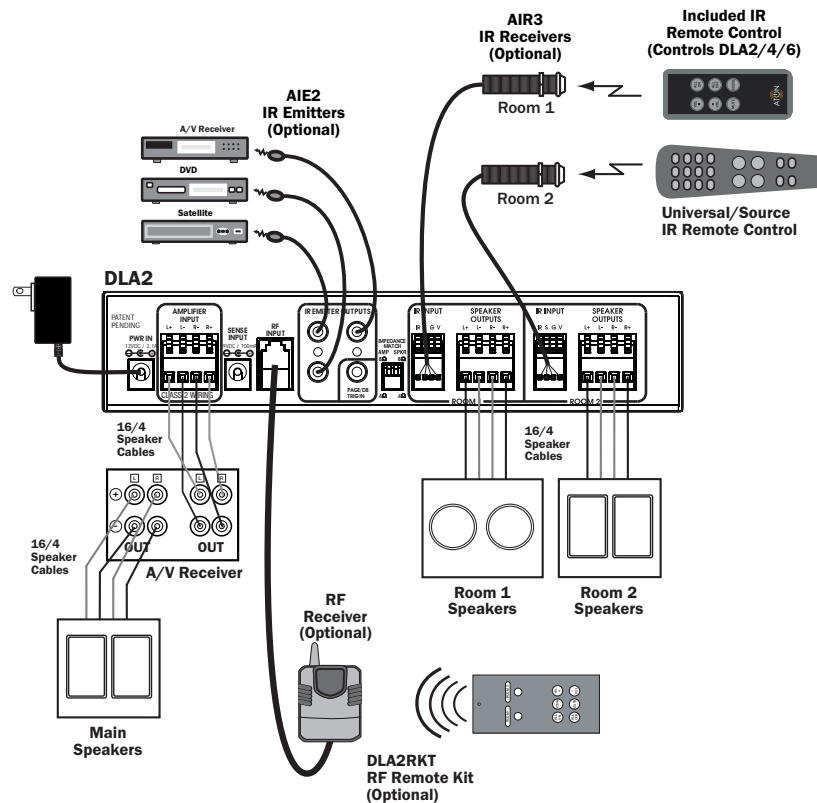
Figure 2-1: System Overview

* DLA discrete IR codes available for download at: www.atonhome.com. See Appendix C-3.

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Standard Audio/Video or Stereo Receiver

Most A/V Receivers and Stereo Receivers have two sets of Main Speaker Outputs (typically labelled "**A**" and "**B**". While it is certainly possible to connect the DLA2/4/6 to the "A" outputs, it is much more useful to connect the "A" outputs to the main speakers (stereo or surround) in the room in which the receiver is located and connect the "B" outputs to the DLA2/4/6 in order to expand the audio system to additional areas. *Figure 2-2* shows the "B" speaker outputs of an A/V receiver connected to to the AMPLIFIER INPUT of the DLA2. A pair of speakers are connected to the DLA2's Room 1 Speaker Outputs, while an additional pair of speakers is con- nected to the Room 2 Speaker Outputs. In this scenario, the A/V receiver's speakers play in the main listening area, while two additional pairs of speakers play in other areas of the home. This is a single-source application: all areas of the house will play the same audio source, but with separately controlled volume.

Note: For best audio quality, ATON recommends that Surround Sound and/or DSP modes (Concert, Hall, Jazz, etc.) be disabled prior to playing audio through the DLA2/4/6.
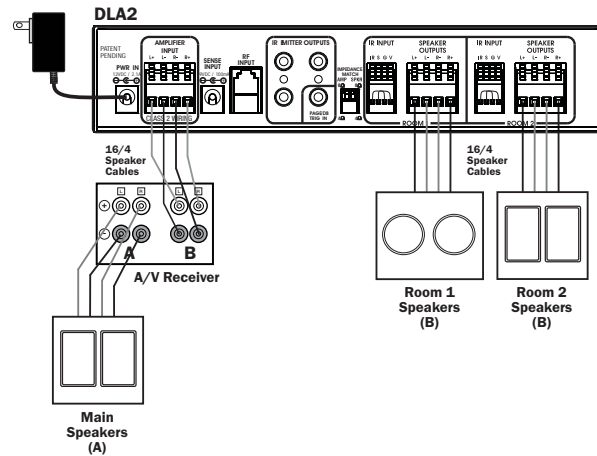

Figure 2-2: DLA2 with A/V Receiver Output B Overview

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Zone 2 Output of an A/V or Stereo Receiver

Certain A/V Receivers and Stereo Receivers have a Zone 2 feature that allows them to play a seperate source to a second zone. *Figure 2-3* shows the **Zone 2** speaker outputs of an A/V receiver connected to to the AMPLIFIER INPUT of the DLA2. Like the previous example, a pair of speakers are connected to the DLA2s Room 1 Speaker Outputs, while an additional pair of speakers is connected to the Room 2 Speaker Outputs. This application allows the A/V receiver's **Main** speakers to play in the room in which the receiver is located, while two additional pairs of speakers play in other areas of the home. This is a multi-source application: the Main speakers may play one source, while Zone 2 (the DLA2 locations) plays a different source.

Note: Set the Zone 2 volume level to the point where it achieves the maximum listenable level (prior to distortion). The DLA2/4/6's volume level will adjust up to this maximum level.

Figure 2-3: A/V Receiver Zone 2 Application

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External Amplifier

Some systems utilize an external amplifier for speakers that are connected to the DLA2/4/6. In A/V receiver or stereo receiver applications, a line-level output (Tape Loop, Monitor Out, etc.) is connected to the external amplifier (See *Figure 2-4*). In a Pre-Amp/Processor-based system, the Pre-Amp is connected to the external amplifier as shown in *Figure 2-5*.
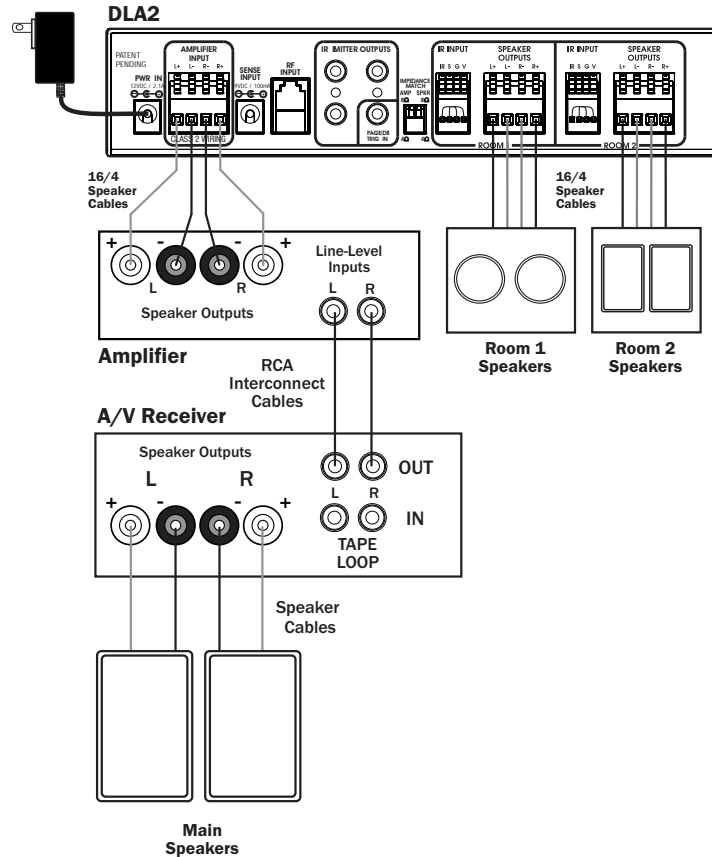

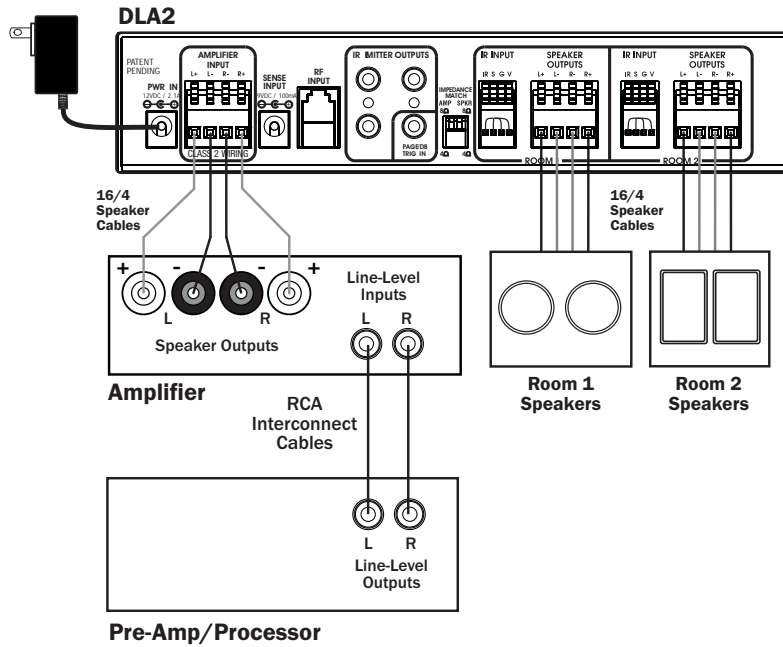*Figure 2-4: External Amplifier - A/V Receiver Tape Loop Application*

DLA2

Figure 2-5: Processor/Pre-Amp - Amplifier Application

Sub-Zone of a Multi-Room Controller

The DLA2/4/6 can be used to expand the number of speakers in a sub-zone of a multi-room controller-based system. This application provides independent control of each area within a sub-zone.

Note: The source will be identical between all areas of a zone, including all sub-zones and speakers connected to the DLA2/4/6 Speaker Selector.
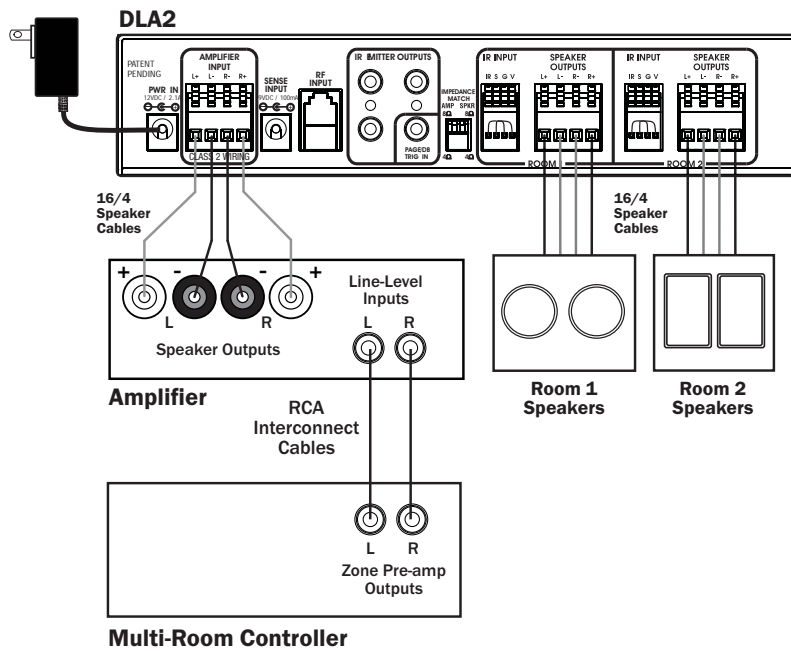

Figure 2-6: Multi-Room Controller Sub-Zone Application

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3. Connections

AMPLIFIER INPUT

Use 16 AWG stranded copper speaker wire to connect from a speaker level output of an A/V receiver, stereo receiver, or amplifer. Turn power for the output device OFF before making connections.

To make connections:

1. Cut the ends of the wire to length, allowing some free play (about 6 inches of slack) to allow for movement when physically connecting the wire.
2. Using wire strippers, remove 3/8 inch of insulation, then twist the wire to ensure that no stray strands are evident.
3. Define positive (+) and negative (-) at the amplifier end and the DLA2/4/6 end of the wire run and use the same conductor on each end.
4. Lift up each flip-lock connector until it is locked in the up position.
5. Place the bare lead from each speaker wire from the receiver/amplifier into the holes of the Amplifier Inputs terminal of the DLA2/4/6, maintaining the polarity of each lead (+ to +, - to -).

Note: To avoid damage to the receiver/amplfier, DO NOT allow speaker leads to touch each other.
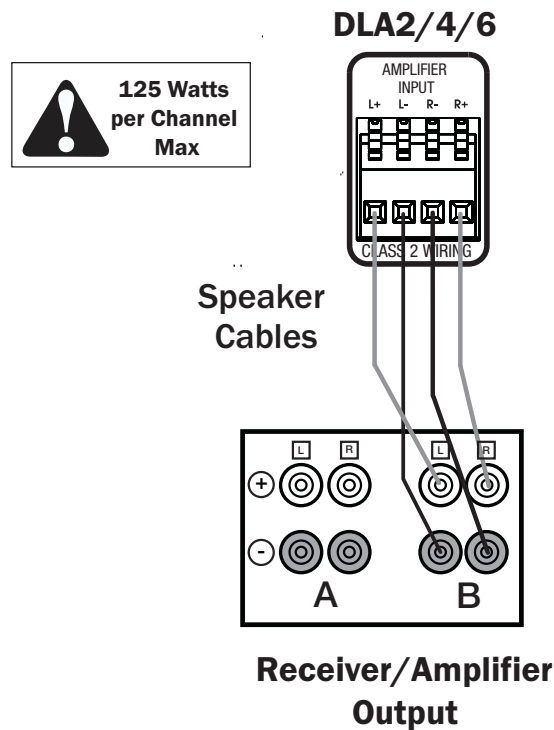

Figure 3-1: Receiver/Amplifier Output to DLA2/4/6 Amplifier Input

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SPEAKER OUTPUTS

Follow the procedures outlined in the previous section to connect the Speaker Outputs to the Room 1 and Room 2 speakers. Make sure to match the impedance of the speakers and amplifiers as noted.
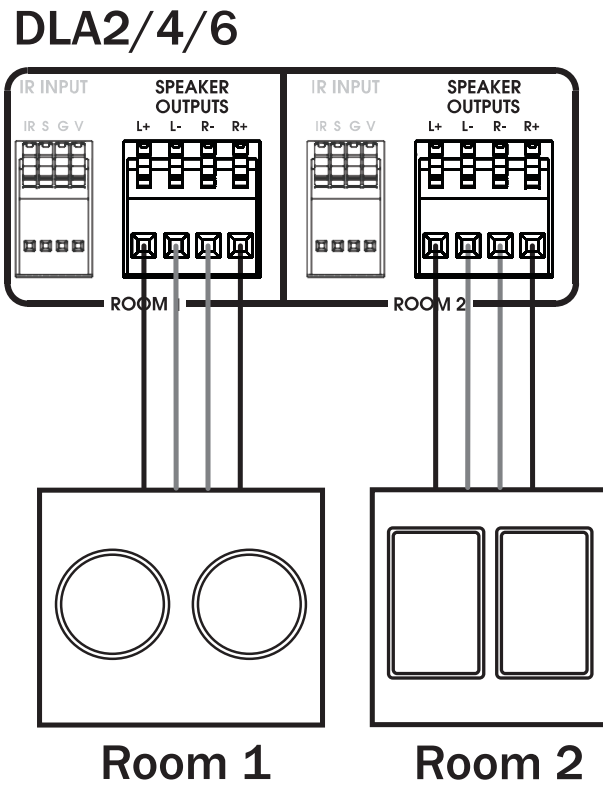
DLA2/4/6

Figure 3-2: DLA2/4/6 Speaker Outputs to Room Speakers

IR EMITTER OUTPUTS

Three IR Emitter outputs are provided for controlling components such as A/V Receivers, DVD Players, CD Players, Digital Music Servers, etc. Any IR signal received by a Room IR INPUT will be sent out of ALL of the IR EMITTER OUTPUTS.
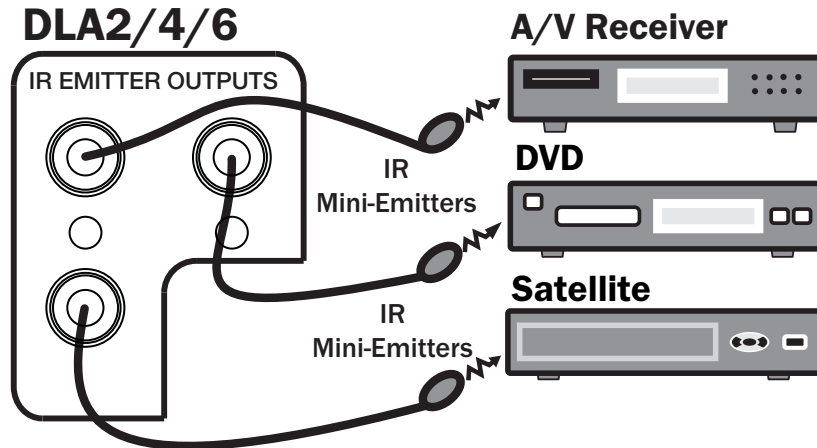

Figure 3-3: IR EMITTER OUTPUTS

ROOM IR INPUTS
IR Receiver Connections

The DLA2/4/6 features an IR Receiver Input for each room. To facilitate IR control of each room, connect a standard IR receiver (such as ATON's AIR1, AIR3, AIR5 and/or AIR6) to these inputs as shown in Figure 3-4. Each IR receiver will send IR signals to the DLA2/4/6 and control the room it is connected to.* Cat-5 cable can be used to extend the length of the IR receiver's connecting cable. Provisions exist for IR, Ground, and Voltage.
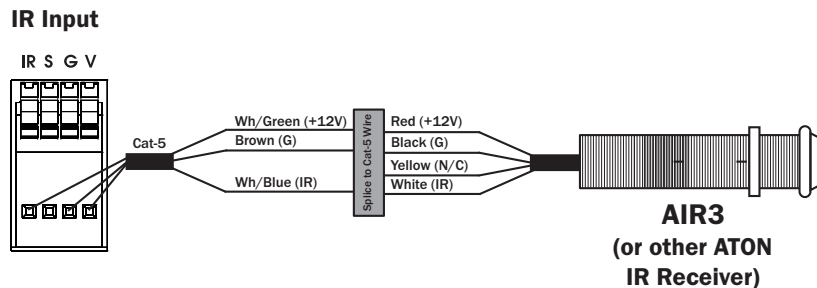

Figure 3-4: IR Receiver Connections

* System-wide control from one IR receiver location is possible using DLA discrete IR codes. See Appendix C-3.

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DLA Touchpad (DLATP) Connections

Connect a DLATP using Cat-5 cable to any Room IR Input to control volume, mute and room/system power for an individual room. The DLATP also provides Room and Sense Input status and includes a built-in IR receiver.

DLATP Rear

IR Input

IR S G V

Cat-5

Wh/Green (+12V)
Brown (G)
Orange (Sense)
Wh/Blue (IR)

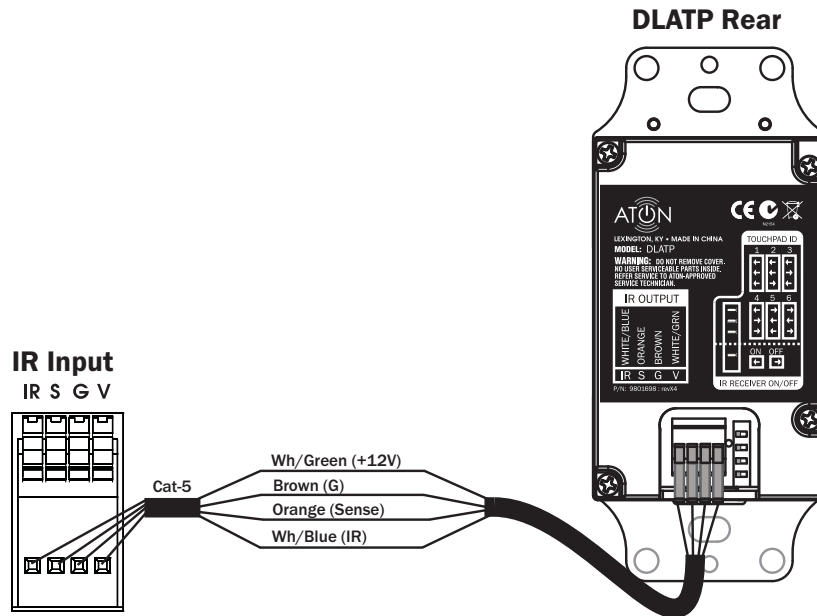**Figure 3-5: DLATP Connections**

PWR IN Connection

Connect the included 12VDC/2.1A power supply to the PWR IN port.

DLA2/4/6

PWR IN
12VDC/2.1A

PS3
12VDC
POWER
SUPPLY

Figure 3-6: PWR IN Connector

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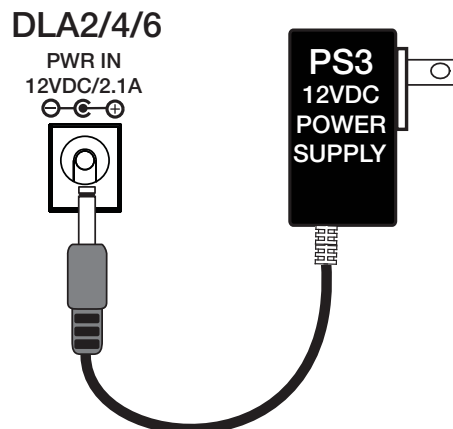## SENSE INPUT Connection

The SENSE INPUT is designed to provide power status of a connected A/V receiver on all DLATP Touchpads. Simply plug an ATON PS2 Power Supply (sold separately) into the DLA SENSE INPUT connector and into the switched outlet of an A/V receiver as shown in Figure 3-7. Whenever the A/V receiver is turned on, the SENSE INPUT LED will illuminate on all connected DLA Touchpads in the system.
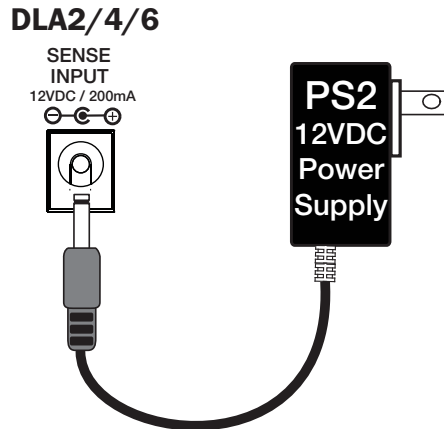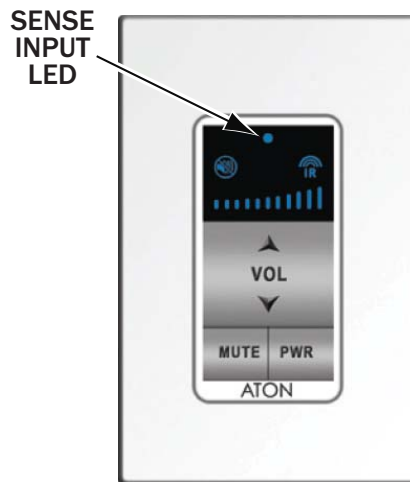
DLA2/4/6

SENSE INPUT LED

Figure 3-7: SENSE INPUT Connector

Figure 3-8: SENSE INPUT LED

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PAGE/DB TRIGGER IN Connection

The Page/Doorbell Trigger Input (PG/DB TRIG IN) needs to be connected when the DLA2/4/6 is installed as part of a "sub-zone" of an ELAN® Multi-Room Controller, such as the S8.6 or S12, which utilizes an ELAN COM2 Communications Controller. This application allows the DLA Room Outputs to pass an audible tone through the room's speakers at a preset level when the home's doorbell is activated.

To configure the PG/DB TRIGGER IN, simply connect a mono 3.5mm interconnect cable between the Page/Doorbell Trigger Out of the ELAN Multi-Room Controller and the PG/DB TRIG-GER IN of the DLA2/4/6 as shown below.
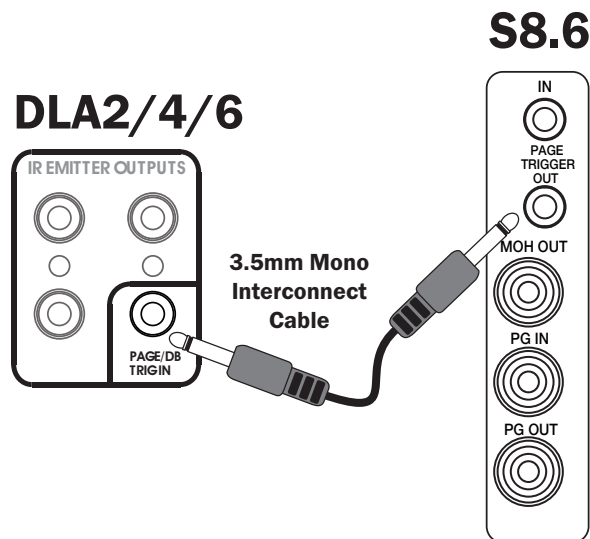
S8.6

DLA2/4/6

IR EMITTER OUTPUTS

IN

PAGE
TRIGGER
OUT

**3.5mm Mono
Interconnect
Cable**

MOH OUT

PAGE/DB
TRIG IN

PG IN

PG OUT

Figure 3-9: PAGE/DB TRIG IN Connection
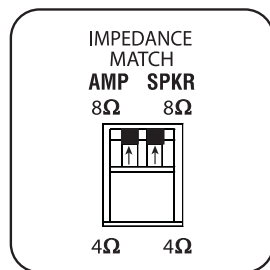
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ATⓊN™

IMPEDANCE MATCH DIP Switches

The IMPEDANCE MATCH DIP Switches are designed to allow various speaker loads to work safely with variously rated amplifiers. Speakers rated between 4 Ohms and 8 Ohms can be matched with amplifiers also rated from 4 to 8 Ohms.
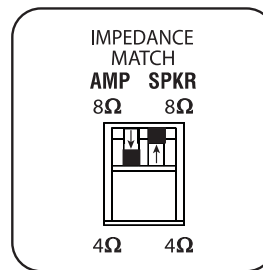
To set IMPEDANCE MATCH DIP Switches:

1. Determine the average impedance of all connected speakers (listed on the speaker or in the owner's manual).
2. Determine the minimum impedance rating of the amplifier (listed on the amplifier or in the owner's manual).
3. Set the AMP DIP Switch to the minimum impedance rating listed on the amplifier/receiver.
4. Set the SPKR DIP Switch to the average impedance of all connected speakers.

Note: Most speakers are 4 or 8 Ohms. In cases where 6 Ohms speakers are used, place the SPKR DIP Switch in the 4 Ohm position.

IMPEDANCE MATCH
AMP SPKR
8Ω   8Ω
4Ω   4Ω

**8 Ohm Amplifier
8 Ohm Speakers**

IMPEDANCE MATCH
AMP SPKR
8Ω   8Ω
4Ω   4Ω

**4 Ohm Amplifier
8 Ohm Speakers**

IMPEDANCE MATCH
AMP SPKR
8Ω   8Ω
4Ω   4Ω

**8 Ohm Amplifier
4 Ohm Speakers**
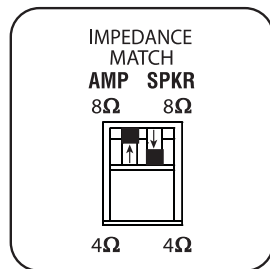
IMPEDANCE MATCH
AMP SPKR
8Ω   8Ω
4Ω   4Ω
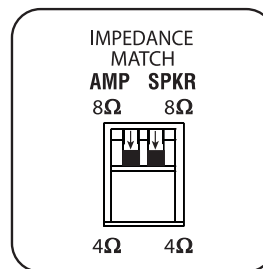
**4 Ohm Amplifier
4 Ohm Speakers**

Note: When using this setting, maximum volume is reduced to 10 steps.

Figure 3-10: Impedance Match DIP Switch Settings

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4. Settings & Operation

Functions of the DLA2/4/6 may be controlled from the Front Panel controls, through optional IR Receivers connected to the IR INPUTS, or with the optional RF Remote.

Volume Settings

Receiver/Amplfier Volume Settings

Prior to setting volume levels of the DLA2/4/6, proper volume level must be set of the Receiver/Amplifier. To set proper Receiver/Amplifier volume level:

1.   Turn on the Receiver/Amplifier and start an audio source (CD Player, Radio, etc.).

2.   Adjust the Receiver/Amplifier level to the lowest setting.

3.   Set the Receiver/Amplifier to Stereo and disable any surround sound or DSP modes or "Sound Fields".

4.   If using a Receiver/Amplifier with "A/B" speaker outputs, select the "B" speakers and turn off the "A" speakers for maximum output to the DLA2/4/6.

   Note: When the DLA2/4/6 is not in use, turn off the "B" speakers and turn on the "A" speakers for normal operation.

5.   Turn on one room of the DLA2/4/6 and adjust the volume level to maximum.

6.   While listening to the room turned on in the previous step, slowly adjust the receiver/amplifier volume to the loudest level possible without distortion. Make a note of the receiver/amplifier level for future reference.

RECEIVER/AMPLIFIER LEVEL

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7.   Turn on each room of the system and adjust the volume of the DLA2/4/6 to a comfortable level.

Volume Status Bar

The front panel includes a Volume Indicator LED bar with 11 LED's located above the **All On/ Off** and **Volume -/+** buttons. The Volume Indicator LEDs display the Volume for whichever **Room is selected.** When a Room is selected and ONE LED is lit, that room is at minimum volume. **When a Room is selected and** *ALL* **LEDs are lit, that room is at maximum volume.**
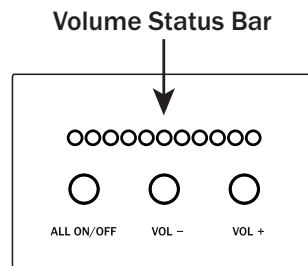
Volume Status Bar

Figure 4-1: Volume Status Bar

DLA2/4/6 Speaker Level Audio Router

Room Volume Adjustment

1. Press the **Room 1** Selector Button - the Room 1 Indicator LED will light up RED (indicating that Room 1 is selected for adjustment).
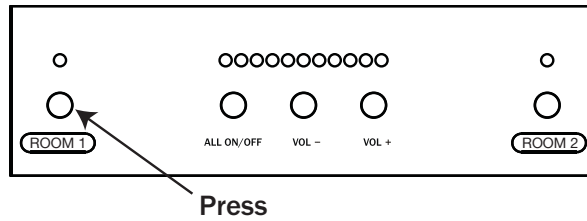
Press

2. Press **VOL -** or **VOL +** until the desired volume is obtained.
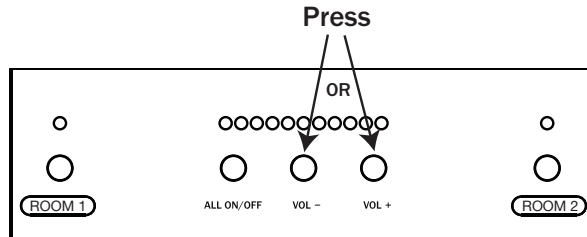
Press

3. Press the **Room 2** Selector Button - the Room 2 Indicator LED will light up RED (indicating that Room 2 is selected for adjustment), while the Room 1 Indicator LED will light up BLUE (indicating that Room 1 is ON).

Press

4. Press **VOL -** or **VOL+** until the desired volume is obtained.

Press

5. Continue this process for each additional Room.

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ALL ON/OFF

Press the **ALL ON/OFF** Button to turn the speakers in both Room 1 and Room 2 ON or OFF.

Press
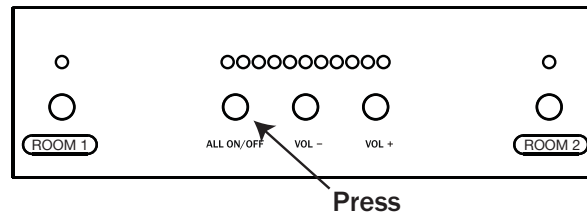
Max Turn-On Volume Level

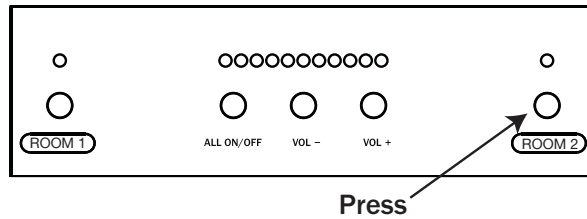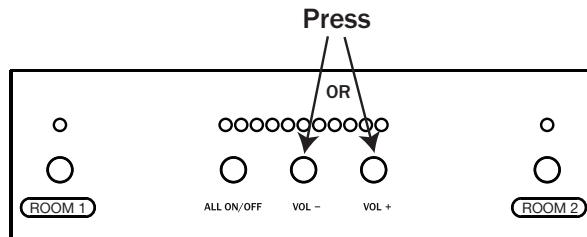In order to guard against unexpected high volume levels when the system is turned on, a Maximum Turn-On Volume Level may be set for each room. If the volume level prior to turning the room off is lower or equal to the Maximum Turn-On Volume Level, the room will come back on at the last volume. If the volume level prior to turning the room off is higher than the Maximum Turn-On Volume Level, the room will come back on at the Maximum Turn-On Volume Level instead of the last volume.

To set the Maximum Turn-On Volume Level for a Room:

1. Press the **Room** Button for the desired room.
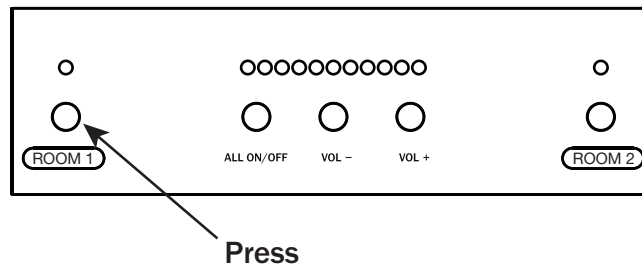
Press

2. Set the desired Maximum Turn-On Volume Level using the front panel Vol + and Vol - Buttons.
3. Press and hold the **Room** Button on the front panel (**Room LED will turn off and all Volume LED's will go off**).
4. Without releasing the **Room** button, press and hold the **Vol** - Button.

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DLA2/4/6 Speaker Level Audio Router

Press & Hold   **Press & Hold**
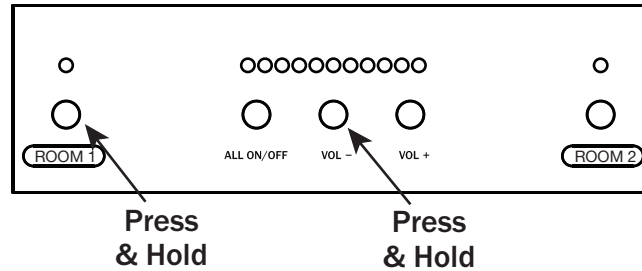
5. After 3 seconds the Maximum Turn-On Volume Level is saved.
6. **Room LED and Volume LED's blink four times (Room LED blinks RED).**
7. The Room will turn back on to the volume level it was set to prior to setting the Maximum Turn-On Volume Level.
8. Turn the Room Off, then back On to achieve the Maximum Turn-On Volume Level.

Note: Setting the Maximum Turn-On Volume Level to the highest volume level will essentially disable Maximum Turn-On Volume (the room will always come back on at the last volume level prior to turning the room Off).

Page/Doorbell Volume Level

By programming the Page/Doorbell Volume Level for each room of the DLA system, the volume levels for each of the rooms will jump to their programmed settings when the PAGE/DB INPUT of the DLA2/4/6 is activated.

To set the Page/Doorbell Volume Levels for a room:

1. **Press the Room Button for the desired room.**

Press
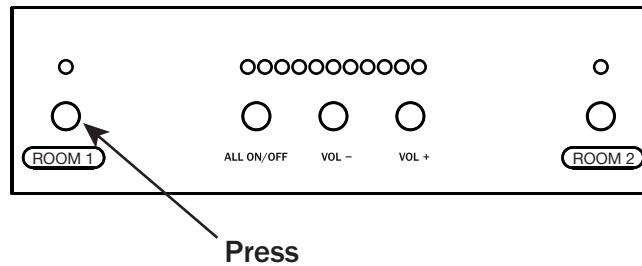
2. Set the desired Page/Doorbell Volume Level using the front panel Vol + and Vol - Buttons. Note: Any room whose LED is not lit (red or blue) will be considered Off when setting the Page/Doorbell volume level.
3. Initiate a Page or Doorbell signal from the ELAN COM2 Communications Controller to check the volume setting. Adjust the volume as required.
4. **Press and hold the Room Button on the front panel (Room LED will turn off and all Volume LED's will go off).**

5.   Without releasing the Room button, press and hold the Vol + Button.

ALL ON/OFF   VOL −   VOL +   ROOM 1   ROOM 2

Press & Hold   **Press & Hold**
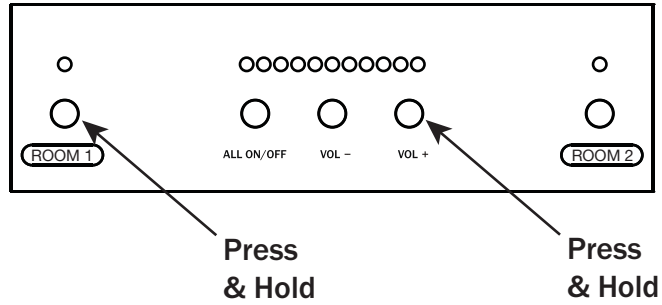
6.   After three seconds, the Page/Doorbell Volume Level is saved. The ROOM LED and Volume LEDs will blink four times
7.   Once set, the room reverts back to the volume level previously set.

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Scene Presets

Setting a Scene

A Scene Preset allows the volume level for each room to be saved and then recalled at any time with the press of a button.

To set a Scene Preset:

1.   Set the volume in each room to the desired level.

Note: Any room whose LED is not lit (red or blue) will be considered OFF when setting a Scene.

2.   Press and hold the **ALL ON/OFF** Button for three seconds.

ROOM 1   ALL ON/OFF   VOL −   VOL +   ROOM 2

**Press
& Hold**
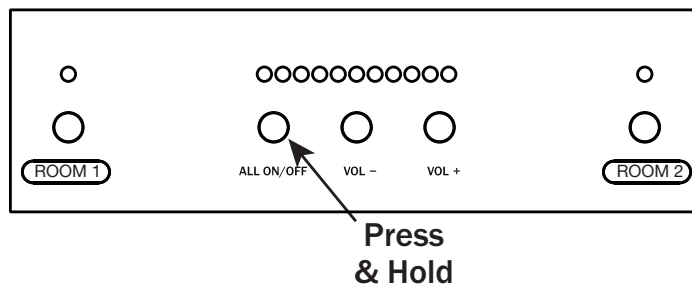
3.   Once the Scene Preset has been saved, the Room LEDs for the rooms included in the Scene Preset will blink on and off four times and the system will return to the levels prior to setting the Scene Preset.

Note: If a Room LED does NOT blink, it will not be activated when a Scene is selected.

Recalling a Scene Preset

The Scene Preset values for each room can be recalled in two ways:

1.   Press the **Scene** Button on the IR Remote (or optional RF Remote).
2.   Press the **Vol +** and **Vol -** simultaneously for one second on the front of the unit.

ROOM 1   ALL ON/OFF   VOL −   VOL +   ROOM 2

**Press
& Hold**
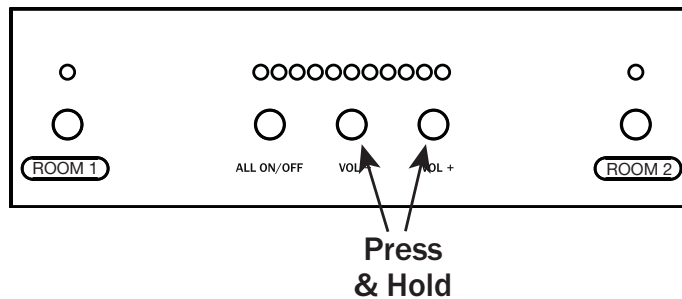
Note: Scene Presets override Default Volume Levels.

Note: Room LEDs are BLUE for any Room with Volume greater than 0 and OFF for any Room with Volume of 0.

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5. Troubleshooting

Table 5-1 provides troubleshooting information for the DLA2/4/6 Speaker Selector.

Audio

Symptom	Possible Cause	Solution
No audio present in a specific room	1. Source not playing.	Press Play, turn ON, etc.
	2. Room not selected	Select Room on Front Panel or from RF Remote
	3. Room Output volume turned all the way down	Increase volume.
	4. Speakers in room miswired or defective	a. Test known good speaker at back panel speaker connector b. Verify connections
No audio present in any room	1. See above	Perform steps above
	2. Amplifier/Receiver turned OFF or down	Turn On Amplifier/Receiver or increase volume
	3. Amplifier or Receiver in protection mode	Find cause of amplifier's protection mode and correct. Miswired speakers most likely cause. Verify that the impedance levels of the amp and speaker are not lower than 8 Ohms.
Hum or buzz through system speakers	1. Ground loop	Ensure proper grounding using a three prong grounded AC outlet.
	2. Receiver/Amplifier level too high	Reduce level
Poor audio quality	1. Clipping or distortion	Reduce Receiver/Amplfier level
	2. Speakers out of phase	Carefully check polarity of each speaker
	3. Incorrect assignment of left/right source RCA cables or speaker cables	Isolate to source or room and correct

Symptom	Possible Cause	Solution
Volume only ramps to 10	4 Ohm Speaker connected to 8 Ohm-rated amplifier.	Normal operation. Functions this way to protect amplifier.

IR Control

Symptom	Possible Cause	Solution
No source control in a Room from IR port	1. Wiring: IR signal not reaching Room input.	Check Room IR receiver and verify wiring.
	2. Remote Control batteries are dead.	Replace batteries.
No source control in any Room.	1. See above.	Perform steps above.
	2. Source IR Emitters unplugged or defective.	Reconnect or test with known good IR Emitters.
Intermittant source control.	Mild to moderate IR Flooding.	Check IR indicator on front panel. If it flickers, IR flooding is indicated. Check any IR receivers that may be receiving ambiant light or plasma TV noise.
Room appears to be on and selected but unabled to be controlled using front panel buttons.	Extreme IR flooding.The IR indicator will be solid red when the room is off, solid off when the room is on, or solid purple when the room is on and unselected.	Perform steps above.

RF Control

Symptom	Possible Cause	Solution
No control of DLA2/4/6 from optional RF Remote	1. Wiring: Signals from RF Receiver Base not reaching DLA2/4/6	Check RF Receiver Base connection to DLA2/4/6 and verify connectivity Check Room 1 indicator on front of DLA2/4/6 by sending a command from the RF remote. If the indicator LED flashes red, the RF signal is being received.
	2. Remote Control batteries are dead	Replace batteries
Intermittent control of DLA2/4/6 from optional RF Remote	1. Position of Receiver base not optimal	Move Receiver base to find optimum placement.
	2. Radio Frequency devices operating nearby in same frequency band	Check for other devices in the home or neighboring dwellings and relocate if possible

Appendix A: Specifications

DLA2/4/6

Power Input	**+12 VDC, 2.1 Amps**
Amplifier Impedance	**4 - 8 Ohms**
Speaker Impedance	**4 - 8 Ohms**
Frequency Response	**20 HZ to 20 kHZ +/- 1 dB**
Power Handling	**Per Channel: 125 Watts RMS**
Max Attenuation	**-56 dB @ Last Step**
Dynamic Range	**43 dB over 12 steps**
THD	**< 1%**
Connections	
Power	**2.1 mm Jack**
Amplifier Input	**4 Position Flip-lock Connector (16AWG Speaker Wire)**
Speaker Output	**4 Position Flip-lock Connector (16AWG Speaker Wire)**
Sense Inputs	**2.1mm Jack**
IR Input	**4 Position Flip-lock Connector**
Page/Doorbell Trigger In	**3.5mm Mono Jack**
IR Emitter Output	**3.5 mm Mono jack**
RF Input (ATON Port)	**RJ-11 jack**
Dimensions	
H x W x D (w/ feet) **DLA2**	**2 3/16" x 8 1/2" x 7 5/8" (5.6cm x 21.6cm x 19.4cm)**
DLA4/DLA6	**2 3/16" x 17" x 8 5/8" (5.6cm x 43.2cm x 21.9cm)**
Unit Height w/ Feet	**1 3/4" (4.5cm)**
Weight **DLA2**	**4.95lbs (2.3kg) unit weight 5.7lbs (2.6kg) shipping weight**
DLA4	**10.15lbs (4.6kg) unit weight 11lbs (5kg) shipping weight**
DLA6	**12.15lbs (5.5kg) unit weight 13lbs (5.9kg) shipping weight**

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Appendix B: Room Identification Labels

Use the included Room Identification Labels to customize the DLA2/4/6 front panel. Place the labels in the oval **Room Label Locations** located below the **Room Select Buttons**.

ATRIUM	CLOSET	GUARD	NURSERY	SHOWER
BACKYARD	DANCE	GUEST	NURSE	SITTING
BALLROOM	DARKROOM	GYM	OFFICE	SPA
BAR	DECK	HALL	OUTSIDE	STABLE
BATH 1	DEN	HOT TUB	PARLOR	STEREO
BATH 2	DINING	HOUSE KP	PATIO	STAIRWAY
BATH 3	DRESS RM	KITCHEN	POOL	STUDIO
BEDROOM 1	ENTRY	LANAI	PORCH	STUDY
BEDROOM 2	EXER ROOM	LAUNDRY	PORTICO	SUNROOM
BEDROOM 3	EXTRA ROOM	LIBRARY	READING	SURROUND
BEDROOM 4	FAMILY RM	LIVING	REC RM	TEAROOM
BEDROOM 5	FOYER	LOWER LEV	ROOM 1	THEATER
BEDROOM 6	FRONT YARD	MASTER BD	ROOM 2	TOWER
BILLIARD	GALLERY	MASTER BTH	ROOM 3	UTILITY RM
BOATHOUSE	GAME ROOM	MASTER SIT	ROOM 4	VANITY
BONUS RM	GARAGE	MEDIA	ROOM 5	WHIRLPOOL
BREEZEWAY	GARDEN	MONO	SAUNA	WINE CLR
BASEMENT	GAZEBO	MUDROOM	SECURITY	WORKSHOP
CABANA	GREAT ROOM	NANNY	SEWING	WORKROOM
CENTER	GREENHOUSE	NOOK	SHOP	WEIGHT RM

Figure B:1 Room Identification Labels

To place a Room Identification Label:

1. Choose an appropriate label for the room.
2. Make sure that the oval Room Label Location on the face of the DLA2/4/6 is clean and oil free.
3. Carefully peel the appropriate Room Identification Label from the card and place it in the Room Label Location for the chosen room.

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Appendix C: Remote Control Options
Option #1: DLA Slimline Remote (DLAIRM)

Any combination of DLA remote control options may be used on a single DLA2/4/6 system.

- Use the included DLAIRM IR Remote Control to program DLA IR codes into a third-party universal/learning remote.

DLAIRM

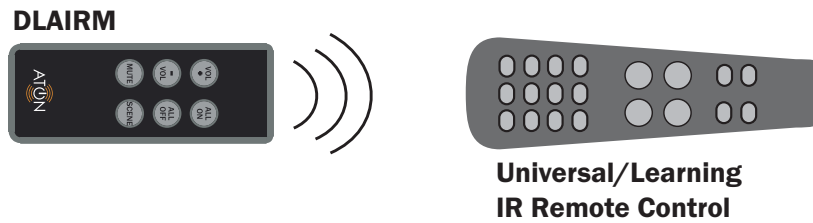**Universal/Learning
IR Remote Control**

Figure C-1: Universal Remote

- Use the DLAIRM as an IR remote for any individual room. Each room that is to be controlled with the DLAIRM requires an IR receiver wired into that specific room's IR Input as shown in Figure C-2.

IR Input

IR S G V

DLAIRM

Cat-5

AIR5
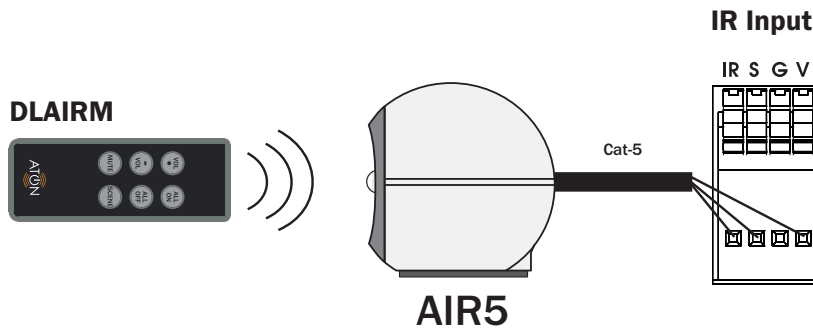
Figure C-2: DLAIRM as Room Controller

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Figure C-3 : DLAIRM Remote

Button	Function
ALL ON	**Turns all Rooms ON**
ALL OFF	**Turns all Rooms OFF**
SCENE	**Places Rooms into Scene Preset Mode**
MUTE (Toggle)	**Press to Reduce Volume of Room to 0** **Press Again to Restore Volume to Previous Level**
Volume +	**Increases Volume of Room by One Step** **Press & Hold to Ramp Volume Up**
Volume -	**Decreases Volume of Room by One Step** **Press & Hold to Ramp Volume Down**

Table C-1: IR Remote Functions

Option #2: DLA RF Remote & Receiver Kit

DLA2RKT, DLA4RKT, DLA6RKT

The DLA RF Remote & Receiver Kits (DLA2RKT, DLA4RKT and DLA6RKT) use Radio Frequencies (RF) to control the DLA system from anywhere in the home, up to 200 feet away. It is not necessary to point the remote at the main unit in order for it to function. Simply connect the RF Receiver base to the ATON Port on the rear of the unit as shown in Figure C-5. Place the receiver in a convenient location; preferably as high as possible. The RF Receiver Base utilizes mounting holes to mount the unit to a wall, cabinet or other surface.
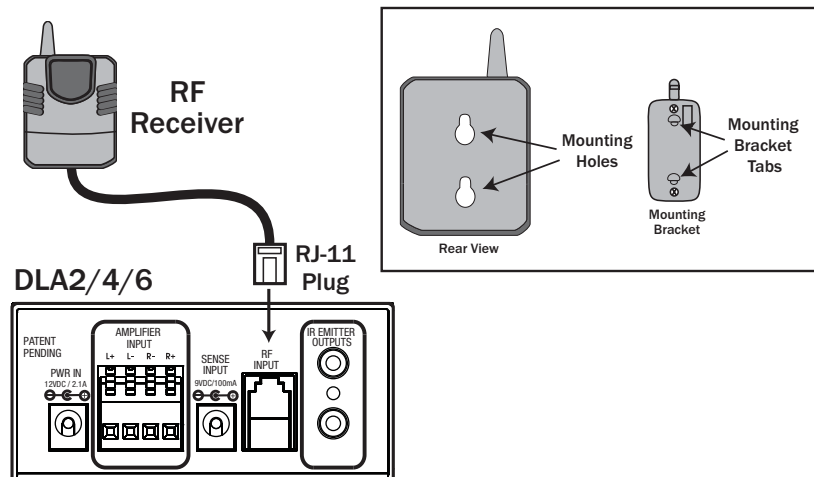

Figure C-4: **DLA2RKT, DLA4RKT, DLA6RKT**

Figure C-5: RF Base Connection

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Additional RF Remotes (DLA2RM, DLA4RM, DLA6RM)

Up to six additional DLA RF Remotes can be added to an exisiting RF receiver, providing convenient RF control for the entire family. Programming additional remotes can be accomplished in a matter of seconds. See the DLA RF Remote Instruction Sheet for more information.
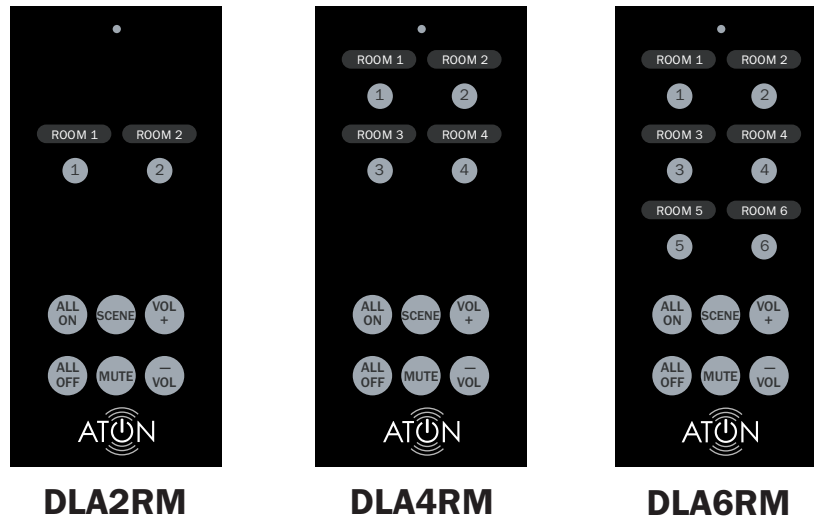

DLA2RM   **DLA4RM**   **DLA6RM**

Figure C-6: **DLA2RM, DLA4RM, DLA6RM**

Option #3: Third-Party Universal/Learning Remote Control

The DLA2/4/6 can be controlled with virtually any brand of universal/learning remote by downloading DLA discrete IR codes from ATON's website; www.atonhome.com. These codes can then be imported into most universal/learning remote software applications and transferred into the universal remote.

Tables C-2 through C-4 list all of the available DLA IR codes.

LOCAL

These commands control only the room that a single IR receiver is connected to.

Local Power On	FOB Volume Up	Local Volume = 1	Local Volume = 9
Local Power Off	FOB Volume Down	Local Volume = 2	Local Volume = 10
Local Power Toggle	FOB Mute Toggle	Local Volume = 3	Local Volume = 11
Local Set Default	FOB All On	Local Volume = 4	
Local Set Override	FOB All Off	Local Volume = 5	
Local Mute On	FOB Scene	Local Volume = 6	
Local Mute Off		Local Volume = 7	
Local Mute Toggle		Local Volume = 8	

Table C-2: **DLA Discrete IR Code Set - Local**

Note: Local Commands control only one room at a time. Do not atttempt to "daisy chain" one IR receiver into multiple Room IR Inputs as this will cause erratic system behavior.

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DLA2/4/6 Speaker Level Audio Router

Global

These commands control all rooms simultaneously from any ONE Room IR Receiver Input.

Global Volume Up	Global Set Override	Global Volume = 1	Global Volume = 7
Global Volume Down	Global Mute On	Global Volume = 2	Global Volume = 8
Global Power On	Global Mute Off	Global Volume = 3	Global Volume = 9
Global Power Off	Global Mute Toggle	Global Volume = 4	Global Volume = 10
Global Power Toggle	Global Store Preset	Global Volume = 5	Global Volume = 11
Global Set Default	Global Recall Reset	Global Volume = 6	

Table C-3: **DLA Discrete IR Code Set - Global**

Room Specific

These commands control a specific Room (1-6), from any ONE Room IR Receiver Input.

Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
Volume Up	Volume Up	Volume Up	Volume Up	Volume Up	Volume Up
Volume Down	Volume Down	Volume Down	Volume Down	Volume Down	Volume Down
Power On	Power On	Power On	Power On	Power On	Power On
Power Off	Power Off	Power Off	Power Off	Power Off	Power Off
Power Toggle	Power Toggle	Power Toggle	Power Toggle	Power Toggle	Power Toggle
Set Default	Set Default	Set Default	Set Default	Set Default	Set Default
Set Override	Set Override	Set Override	Set Override	Set Override	Set Override
Mute On	Mute On	Mute On	Mute On	Mute On	Mute On
Mute Off	Mute Off	Mute Off	Mute Off	Mute Off	Mute Off
Mute Toggle	Mute Toggle	Mute Toggle	Mute Toggle	Mute Toggle	Mute Toggle
Volume = 1	Volume = 1	Volume = 1	Volume = 1	Volume = 1	Volume = 1
Volume = 2	Volume = 2	Volume = 2	Volume = 2	Volume = 2	Volume = 2
Volume = 3	Volume = 3	Volume = 3	Volume = 3	Volume = 3	Volume = 3
Volume = 4	Volume = 4	Volume = 4	Volume = 4	Volume = 4	Volume = 4
Volume = 5	Volume = 5	Volume = 5	Volume = 5	Volume = 5	Volume = 5
Volume = 6	Volume = 6	Volume = 6	Volume = 6	Volume = 6	Volume = 6
Volume = 7	Volume = 7	Volume = 7	Volume = 7	Volume = 7	Volume = 7
Volume = 8	Volume = 8	Volume = 8	Volume = 8	Volume = 8	Volume = 8
Volume = 9	Volume = 9	Volume = 9	Volume = 9	Volume = 9	Volume = 9
Volume = 10	Volume = 10	Volume = 10	Volume = 10	Volume = 10	Volume = 10
Volume = 11	Volume = 11	Volume = 11	Volume = 11	Volume = 11	Volume = 11

Table C-4: **DLA Discrete IR Code Set - Room Specific**

Universal/Learning Remote Control Using an IR Receiver

Connect an IR receiver such as an ATON AIR5 to a Room IR Input as shown below to control any or all rooms from a single location.
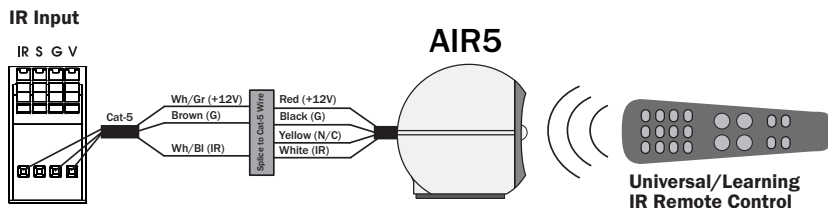
IR Input

IR S G V

Wh/Gr (+12V)
Brown (G)
Wh/Bl (IR)

Cat-5

Splice to Cat-5 Wire

Red (+12V)
Black (G)
Yellow (N/C)
White (IR)

AIR5

**Universal/Learning
IR Remote Control**

Figure C-7: Universal Remote w/ IR Receiver

Universal/Learning Remote Control Using an RF-to-IR Base Station

Connect a third party RF-to-IR base station to any one Room IR Input to control any or all rooms from any location in the house.
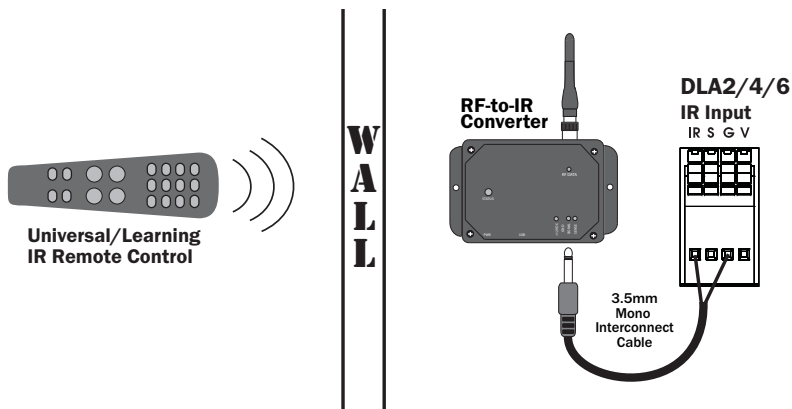
**Universal/Learning
IR Remote Control**

WALL

**RF-to-IR
Converter**

**DLA2/4/6
IR Input**

IR S G V

3.5mm
Mono
Interconnect
Cable

Figure C-8: Universal Remote w/ RF to IR Converter

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Appendix D: REKT Rack Ear Kit (Optional)

Use the optional REKT Rack Ear Kit to mount the DLA4 or DLA6 into a standard equipment rack. The DLA2 is NOT compatible with the rack ear Kit. Simply use the included screws to attach each rack ear to the side of the DLA4 or DLA6 as shown in *Figure D-1*. Use Rack screws (not included) to attach the assembled unit to the equipment rack as shown in *Figure D-2*.
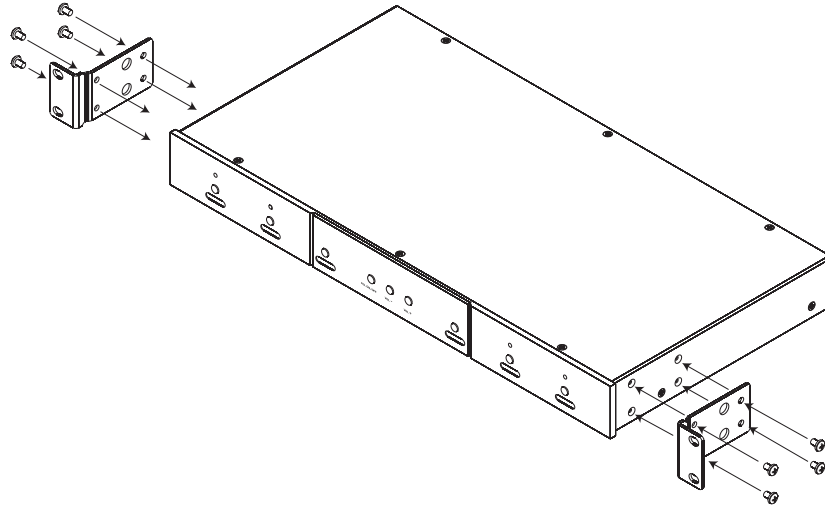

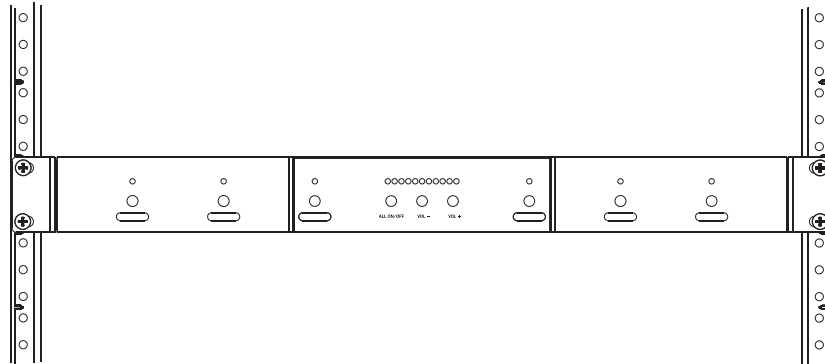*Figure D-1: REKT Rack Ear Kit-Mounting Rack Ears to Unit*

Figure D-2: REKT Rack Ear Kit-Mounting Unit to Rack

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Notes:

Limited Warranty

ATON warrants the DLA2, DLA4 and DLA6 Speaker Selectors to be free from defects in materials and workmanship for the period of two years (2 years) from date of purchase. If within the applicable warranty period above purchaser discovers that such item was not as warranted above and promptly contacts ATON at (859)-422-7137 or *service@atonhome.com*, ATON shall repair or replace the item at the company's option. This warranty shall not apply (a) to equipment not manufactured by ATON, (b) to equipment which is not installed to ATON's specifications, (c) to equipment which shall have been repaired or altered by others than ATON, (d) to equipment which shall have been subjected to negligence, accident, or dam-age by circumstances beyond ATON's control, including, but not limited to, lightning, flood, electrical surge, tornado, earthquake, or other catastrophic events beyond ATON's control, or to improper operation, maintenance or storage, or to other than normal use of service. With respect to equipment sold by, but not manufactured by ATON, the warranty obligations of ATON in all respects conform to the warranty actually extended to ATON by its supplier. The foregoing warranties do not cover reimbursement for labor, transportation, removal, installa-tion or other expenses which may be incurred in connection with repair or replacement.

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